

**MT1000A Network Master Pro
MT1100A Network Master Flex
Remote Scripting Operation Manual**

25th Edition

ANRITSU CORPORATION

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- This is an addendum to “Network Master Pro Operation Manual” and “Network Master Flex Operation Manual”.
 - For safety and warning information, please read “Network Master Pro Operation Manual” or “Network Master Flex Operation Manual” before attempting to use the equipment.
 - Keep this manual with the equipment.

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About This Manual

This operation manual describes the SCPI (Standard Commands for Programmable Instruments) commands for Network Master Pro/Flex.

Note: SCPI commands described in this manual are supported in Network Master Pro/Flex version 9.01.

Some commands or queries in this manual may require that specific hardware or software options are installed. These options must be purchased separately.

This operation manual uses the notations described in the following standards:

- IEEE: Std 488.2-1992
- SCPI: VERSION 1999.0 (SCPI Consortium)

Contents

1	Overview	51
1.1	Ethernet Based Remote Control	51
1.1.1	Connecting Cable	51
1.1.2	Connect to an Instrument	52
1.1.3	Ethernet Remote Control Settings	52
1.1.4	Communication Buffers	52
1.2	Program Messages	53
1.2.1	Program Message Unit	53
1.2.2	Program Headers	54
1.2.3	Program Data	55
1.2.4	Program Message Terminator	56
1.2.5	Compound Program Messages	56
1.2.6	Sequential Execution	56
1.3	Response Messages	57
1.3.1	Response Data	57
1.3.2	Response Messages Terminator	59
1.3.3	Prompt	59
1.4	Status	60
1.4.1	Configuration of Status Registers	60
1.4.2	IEEE488.2-defined Registers	62
1.4.3	SCPI-defined Registers	65
1.4.4	Network Master Device-Dependent Status Registers	67
1.4.5	Reading, Writing and Clearing Status Registers	68
1.5	Controller Example	70
1.5.1	PuTTY	70
1.6	Definitions	73
1.6.1	NaN (Not a Number)	73
1.6.2	→ Right Arrow	73
1.6.3	Data Bit (DB)	73
1.6.4	Port Number (Logical Port)	73
2	SCPI Conformance Information	75
2.1	SCPI Version	75
2.2	IEEE 488.2 Mandatory Commands	76
2.2.1	*CLS	76
2.2.2	*ESE	76
2.2.3	*ESR?	77
2.2.4	*IDN?	77
2.2.5	*OPC	77
2.2.6	*RST	78
2.2.7	*SRE	78
2.2.8	*STB?	79
2.2.9	*TST?	79
2.2.10	*WAI	79
2.3	SCPI System Subsystem Commands	80
2.3.1	SYSTem:VERSion?	80
2.3.2	SYSTem:ERRor[:NEXT]?	80
2.3.3	SYSTem:ERRor:ADDitional[:MESSAge]	80
2.3.4	SYSTem:DATE	81

2.3.5	SYSTem:TIME	81
2.3.6	SYSTem:REBoot	81
2.3.7	SYSTem:GPS:NSATellites?	82
2.3.8	SYSTem:GPS:TIME?	82
2.3.9	SYSTem:GPS:LOCation?	82
2.3.10	SYSTem:GPS:POWER	82
2.3.11	SYSTem:GPS:POWER?	82
2.3.12	SYSTem:GPS:SYNCmode	82
2.3.13	SYSTem:GPS:SYNCmode?	83
2.3.14	SYSTem:GPS:ANTNpower	83
2.3.15	SYSTem:GPS:ANTNpower?	83
2.3.16	SYSTem:GPS:PWRElapsed?	83
2.3.17	SYSTem:GPS:SYNElapsed?	83
2.3.18	SYSTem:COMMunicate:TERMinator	84
2.3.19	SYSTem:PROMpt	84
2.3.20	SYSTem:LOCal:CONTRol	84
2.3.21	SYSTem:TIMing:EXTRnal?	85
2.3.22	SYSTem:STIMuli:INSert	85
2.3.23	SYSTem:STIMuli:CLR	85
2.3.24	SYSTem:WAIT[:IDLE]	85
2.3.25	SYSTem:WAIT:DURation	86
2.3.26	SYSTem:APPlication	86
2.3.27	SYSTem:APPlication?	86
2.4	SCPI Instrument Subsystem Commands	87
2.4.1	Connection to Application Server	87
2.4.2	Connection to multiple applications	87
2.4.3	Connection from multiple users	87
2.4.4	Force Termination of Application Server	87
2.4.5	INSTrument:STARt[:DEFault]	88
2.4.6	INSTrument:STARt:LAST	89
2.4.7	INSTrument:STARt:GUI	89
2.4.8	INSTrument:TERMinate	89
2.4.9	INSTrument:TERMinate:FORCe	90
2.4.10	INSTrument:COUNt?	91
2.4.11	INSTrument:CATalog?	91
2.4.12	INSTrument:STATe?	91
2.4.13	INSTrument:CONNeCT	91
2.4.14	INSTrument:CONNeCT:ALL	92
2.4.15	INSTrument:CONNeCT[:CATalog]?	92
2.4.16	INSTrument:DISConnect	92
2.4.17	INSTrument[:SELect]	92
2.4.18	INSTrument:ERRor[:NEXT]?	93
2.4.19	INSTrument:PORT?	93
2.4.20	INSTrument:PORT:FREE?	93
2.4.21	INSTrument:PORT:CATalog?	94
2.4.22	INSTrument:MODule:CATalog?	94
2.4.23	INSTrument:CTRL:NAME?	94
2.4.24	INSTrument:CTRL:SN?	94
2.4.25	INSTrument:CTRL:TRT?	94
2.4.26	INSTrument:CTRL:OPTion:CATalog?	94
2.4.27	INSTrument:MODule<Md>:NAME?	95
2.4.28	INSTrument:MODule<Md>:SN?	95
2.4.29	INSTrument:MODule<Md>:TRT?	95
2.4.30	INSTrument:MODule<Md>:OPTion:CATalog?	95
2.5	SCPI Status Subsystem Commands	96
2.5.1	STATus:OPERation[:EVENT]?	96
2.5.2	STATus:OPERation:CONDition?	96
2.5.3	STATus:OPERation:ENABle	96
2.5.4	STATus:OPERation:PTRansition	97

2.5.5	STATus:OPERation:NTRansition	97
2.5.6	STATus:QUEStionable[:EVENT]?	97
2.5.7	STATus:QUEStionable:CONDition?	98
2.5.8	STATus:QUEStionable:ENABle	98
2.5.9	STATus:QUEStionable:PTRansition	98
2.5.10	STATus:QUEStionable:NTRansition	99
2.5.11	STATus:PORT[:EVENT]?	99
2.5.12	STATus:PORT:CONDition?	99
2.5.13	STATus:PORT:ENABle	99
2.5.14	STATus:PORT:PTRansition	100
2.5.15	STATus:PORT:NTRansition	100
2.5.16	STATus:PRESet	101
2.5.17	STATus:INTerface:PORT<Pt>[:EVENT]?	101
2.5.18	STATus:INTerface:PORT<Pt>:CONDition?	102
2.6	Mass Memory Subsystem Commands	103
2.6.1	MMEMory:LOAD	103
2.6.2	MMEMory:STORe:STATe	103
2.6.3	MMEMory:STORe:DATA	103
2.6.4	MMEMory:DELeTe	104
2.6.5	MMEMory:DATA?	104
2.6.6	MMEMory:COpy	104
2.6.7	MMEMory:MOVE	104
2.6.8	MMEMory:INFO?	105
2.6.9	MMEMory:CATalog?	105
2.6.10	MMEMory:DCATalog?	105
2.6.11	MMEMory:MDIRectory	105
2.6.12	MMEMory:RDIRectory	106
2.6.13	MMEMory:SAVE	106
3	No frame	107
3.1	Interface Setup	107
3.1.1	NFRame:PORT<Pt>:INTerface:TYPE	107
3.1.2	NFRame:PORT<Pt>:INTerface:BITRate	108
3.1.3	NFRame:PORT<Pt>:INTerface:LANE	108
3.1.4	NFRame:PORT<Pt>:TIMing	109
3.1.5	NFRame:PORT<Pt>[:RX]:INTerface:PATtern:FOLLow	109
3.1.6	NFRame:PORT<Pt>:TX:INTerface:PATtern	109
3.1.7	NFRame:PORT<Pt>:RX:INTerface:PATtern	110
3.1.8	NFRame:PORT<Pt>:TX:INTerface:PINVersion	110
3.1.9	NFRame:PORT<Pt>:RX:INTerface:PINVersion	111
3.1.10	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PATtern	111
3.1.11	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PATtern	112
3.1.12	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PINVersion	112
3.1.13	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PINVersion	112
3.1.14	NFRame:PORT<Pt>:TX:INTerface:PATtern:LANE:FOLLow	113
3.1.15	NFRame:PORT<Pt>:RX:INTerface:PATtern:LANE:FOLLow	113
3.2	Stimuli	114
3.2.1	NFRame:PORT<Pt>:STIMuli:TX:FOFFset	114
3.2.2	NFRame:PORT<Pt>:STIMuli:TX:LANE	114
3.3	Result	114
3.3.1	NFRame:PORT<Pt>[:RX]:IFETch?	114
3.4	Status	115
3.4.1	NFRame:STATus:PORT<Pt>[:RX]:AESummary[:EVENT]?	115
3.4.2	NFRame:STATus:PORT<Pt>[:RX]:AESummary:CONDition?	115
3.4.3	NFRame:STATus:PORT<Pt>[:RX]:ALARm[:EVENT]?	116
3.4.4	NFRame:STATus:PORT<Pt>[:RX]:ALARm:CONDition?	116
3.4.5	NFRame:STATus:PORT<Pt>[:RX]:ERRor[:EVENT]?	116
3.4.6	NFRame:STATus:PORT<Pt>[:RX]:ERRor:CONDition?	116
3.4.7	NFRame:STATus:PORT<Pt>[:RX]:PSLevel?	117

3.4.8	NFRame:STATus:PORT<Pt>:TX:PSLevel?	117
3.4.9	NFRame:STATus:PORT<Pt>[:RX]:PFRequency?	117
3.4.10	NFRame:STATus:PORT<Pt>[:RX]:PDEVIation?	117
3.4.11	NFRame:STATus:PORT<Pt>[:RX]:PCDRlock?	117
4	CPRI/OBSAI	119
4.1	Port	119
4.1.1	CPRI:PORT<Pt>:MODE	119
4.1.2	CPRI:PORT<Pt>:TIMing:SOURce	119
4.1.3	CPRI:PORT<Pt>:LRATe	120
4.1.4	CPRI:PORT<Pt>:LRATe:MODE	120
4.1.5	CPRI:PORT<Pt>:CONTents	121
4.1.6	CPRI:PORT<Pt>:FEC	121
4.1.7	CPRI:PORT<Pt>:PATtern	121
4.1.8	CPRI:PORT<Pt>:PINVersion	122
4.1.9	CPRI:PORT<Pt>:UP32	122
4.1.10	CPRI:PORT<Pt>:PVERsion	122
4.1.11	CPRI:PORT<Pt>:PROLe	123
4.1.12	CPRI:PORT<Pt>:SSEQence	123
4.1.13	CPRI:PORT<Pt>:CMHDlc	123
4.1.14	CPRI:PORT<Pt>:EENable	124
4.1.15	CPRI:PORT<Pt>:CMEPointer	124
4.1.16	CPRI:PORT<Pt>:OBSai:FSSeed	124
4.1.17	CPRI:PORT<Pt>:OBSai:TX:FIDLe	125
4.1.18	CPRI:PORT<Pt>:OBSai:TX:SSIndex	125
4.1.19	CPRI:PORT<Pt>:OBSai:TX:SSValue	125
4.1.20	CPRI:PORT<Pt>:OBSai:TX:ADDReSS	126
4.1.21	CPRI:PORT<Pt>:OBSai:TX:TYPE	126
4.1.22	CPRI:PORT<Pt>:OBSai:RX:FILe	126
4.1.23	CPRI:PORT<Pt>:OBSai:RX:SSIndex	127
4.1.24	CPRI:PORT<Pt>:OBSai:RX:SSValue	127
4.1.25	CPRI:PORT<Pt>:OBSai:RX:ADDReSS	127
4.1.26	CPRI:PORT<Pt>:OBSai:RX:TYPE	127
4.1.27	CPRI:PORT<Pt>:SETup:FOLLow	128
4.2	Stimuli	129
4.2.1	CPRI:PORT<Pt>:STIMuli:ALARm	129
4.2.2	CPRI:PORT<Pt>:STIMuli:AINSerTion	129
4.2.3	CPRI:PORT<Pt>:STIMuli:ERRor	130
4.2.4	CPRI:PORT<Pt>:STIMuli:EINSerTion	130
4.2.5	CPRI:PORT<Pt>:STIMuli:EBLength	130
4.2.6	CPRI:PORT<Pt>:STIMuli:FOFFset	131
4.3	Result	132
4.3.1	CPRI:PORT<Pt>:IFETch?	132
4.4	Status	133
4.4.1	CPRI:PORT<Pt>:STATus:AESummary[:EVENT]?	133
4.4.2	CPRI:PORT<Pt>:STATus:AESummary:CONDiton?	133
4.4.3	CPRI:PORT<Pt>:STATus:ALARm<section>[:EVENT]?	133
4.4.4	CPRI:PORT<Pt>:STATus:ALARm<section>:CONDition?	134
4.4.5	CPRI:PORT<Pt>:STATus:ERRor[:EVENT]?	134
4.4.6	CPRI:PORT<Pt>:STATus:ERRor:CONDition?	134
4.4.7	CPRI:PORT<Pt>:STATus:FEC[:EVENT]?	134
4.4.8	CPRI:PORT<Pt>:STATus:FEC:CONDition?	134
4.4.9	CPRI:PORT<Pt>:STATus:TX:PSLevel?	135
4.4.10	CPRI:PORT<Pt>:STATus:RX:PSLevel?	135
4.4.11	CPRI:PORT<Pt>:STATus:TX:PDEVIation?	135
4.4.12	CPRI:PORT<Pt>:STATus:RX:PDEVIation?	135
4.4.13	CPRI:PORT<Pt>:STATus:TX:PBRate?	135
4.4.14	CPRI:PORT<Pt>:STATus:RX:PBRate?	136
4.4.15	CPRI:PORT<Pt>:STATus:TX:PPBRate?	136

4.4.16	CPRI:PORT<Pt>:STATUS:RX:PPBRate?	136
4.4.17	CPRI:PORT<Pt>:STATUS:LINK:STATE?	136
4.4.18	CPRI:PORT<Pt>:STATUS:LINK:PROLe?	136
4.4.19	CPRI:PORT<Pt>:STATUS:RX:LINK:PVERsion?	136
4.4.20	CPRI:PORT<Pt>:STATUS:RX:LINK:HRATe?	137
4.4.21	CPRI:PORT<Pt>:STATUS:RX:LINK:POINterp?	137
4.4.22	CPRI:PORT<Pt>:STATUS:TX:LINK:PVERsion?	137
4.4.23	CPRI:PORT<Pt>:STATUS:TX:LINK:HRATe?	137
4.4.24	CPRI:PORT<Pt>:STATUS:TX:LINK:POINterp?	137
4.4.25	CPRI:PORT<Pt>:STATUS:OBSai:TX:LINK:STATE?	137
4.4.26	CPRI:PORT<Pt>:STATUS:OBSai:RX:LINK:STATE?	138
4.5	RTD	139
4.5.1	CPRI:PORT<Pt>:RTD:ENABle	139
4.5.2	CPRI:PORT<Pt>:RTD:MLIMit	139
4.5.3	CPRI:PORT<Pt>:RTD:NUMBer?	139
4.5.4	CPRI:PORT<Pt>:RTD:ATIMe?	139
4.5.5	CPRI:PORT<Pt>:RTD:MTIME?	140
4.5.6	CPRI:PORT<Pt>:RTD:LTIMe?	140
4.6	APS	141
4.6.1	CPRI:PORT<Pt>:APS:ENABle	141
4.6.2	CPRI:PORT<Pt>:APS:EVENT	141
4.6.3	CPRI:PORT<Pt>:APS:PERiod	142
4.6.4	CPRI:PORT<Pt>:APS:MLIMit	142
4.6.5	CPRI:PORT<Pt>:APS:NUMBer?	142
4.6.6	CPRI:PORT<Pt>:APS:ATIMe?	142
4.6.7	CPRI:PORT<Pt>:APS:MTIME?	143
4.6.8	CPRI:PORT<Pt>:APS:LTIMe?	143
4.6.9	CPRI:PORT<Pt>:APS:CTIMe?	143
5	2 Mbps	145
5.1	Receiver	145
5.1.1	TMBPs:RX<Pt>[:ENABled]	145
5.1.2	TMBPs:RX<Pt>:FOLLow	145
5.1.3	TMBPs:RX<Pt>:CONNector	146
5.1.4	TMBPs:RX<Pt>:MODE	146
5.1.5	TMBPs:RX<Pt>:SENSitivity	146
5.1.6	TMBPs:RX<Pt>:CODE	147
5.1.7	TMBPs:RX<Pt>:PCMFrame	147
5.1.8	TMBPs:RX<Pt>:CRC4	147
5.1.9	TMBPs:RX<Pt>:EBITs	148
5.1.10	TMBPs:RX<Pt>:PATtern	148
5.1.11	TMBPs:RX<Pt>:PINVersion	149
5.1.12	TMBPs:RX<Pt>:PTSLots	149
5.1.13	TMBPs:RX<Pt>:UP16	150
5.1.14	TMBPs:RX<Pt>:UP32	150
5.1.15	TMBPs:RX<Pt>:UP2K	150
5.1.16	TMBPs:RX<Pt>:AUDio	151
5.1.17	TMBPs:RX<Pt>:ATSLot	151
5.1.18	TMBPs:RX<Pt>:CAS	151
5.2	Transmitter	152
5.2.1	TMBPs:TX<Pt>[:ENABled]	152
5.2.2	TMBPs:TX<Pt>:FOLLow	152
5.2.3	TMBPs:TX<Pt>:CONNector	152
5.2.4	TMBPs:TX<Pt>:DINSert[:ENABle]	153
5.2.5	TMBPs:TX<Pt>:TIMing	153
5.2.6	TMBPs:TX<Pt>:FOFFset	153
5.2.7	TMBPs:TX<Pt>:CODE	154
5.2.8	TMBPs:TX<Pt>:PCMFrame	154
5.2.9	TMBPs:TX<Pt>:CRC4	154

5.2.10	TMBPs:TX<Pt>:SABits	155
5.2.11	TMBPs:TX<Pt>:SABMode	155
5.2.12	TMBPs:TX<Pt>:SABMode?	156
5.2.13	TMBPs:TX<Pt>:PATtern	156
5.2.14	TMBPs:TX<Pt>:PINVersion	156
5.2.15	TMBPs:TX<Pt>:PTSLots	157
5.2.16	TMBPs:TX<Pt>:UP16	157
5.2.17	TMBPs:TX<Pt>:UP32	157
5.2.18	TMBPs:TX<Pt>:UP2K	158
5.2.19	TMBPs:TX<Pt>:UTSLots	158
5.2.20	TMBPs:TX<Pt>:SCContent	159
5.2.21	TMBPs:TX<Pt>:SCTSLOT	159
5.2.22	TMBPs:TX<Pt>:TFR	159
5.2.23	TMBPs:TX<Pt>:TLEVel	160
5.2.24	TMBPs:TX<Pt>:CAS	160
5.2.25	TMBPs:TX<Pt>:CASChannel	160
5.2.26	TMBPs:TX<Pt>:CASBits	161
5.2.27	TMBPs:TX<Pt>:COCBits	161
5.3	Stimuli	162
5.3.1	TMBPs:STIMuli:TX<Pt>:ALARm	162
5.3.2	TMBPs:STIMuli:TX<Pt>:ERRor	162
5.3.3	TMBPs:STIMuli:TX<Pt>:EINSert	163
5.3.4	TMBPs:STIMuli:TX<Pt>:EBLength	163
5.4	Result	163
5.4.1	TMBPs:RX<Pt>:IFETch?	163
5.5	Status	165
5.5.1	TMBPs:STATus:RX<Pt>:AESummary[:EVENT]?	165
5.5.2	TMBPs:STATus:RX<Pt>:AESummary:CONDition?	165
5.5.3	TMBPs:STATus:RX<Pt>:ALARm[:EVENT]?	165
5.5.4	TMBPs:STATus:RX<Pt>:ALARm:CONDition?	166
5.5.5	TMBPs:STATus:RX<Pt>:ERRor[:EVENT]?	166
5.5.6	TMBPs:STATus:RX<Pt>:ERRor:CONDition?	166
5.5.7	TMBPs:STATus:RX<Pt>:PSLevel?	167
5.5.8	TMBPs:STATus:RX<Pt>:PDEViation?	167
5.5.9	TMBPs:STATus:RX<Pt>:PBRate?	167
5.5.10	TMBPs:STATus:RX<Pt>:PPBRate?	167
5.5.11	TMBPs:STATus:RX<Pt>:FNFWord?	167
5.5.12	TMBPs:STATus:RX<Pt>:FDUMp?	168
5.5.13	TMBPs:STATus:RX<Pt>:ACONTent?	168
5.5.14	TMBPs:STATus:RX<Pt>:AEBContent?	168
5.5.15	TMBPs:STATus:RX<Pt>:APPeak?	168
5.5.16	TMBPs:STATus:RX<Pt>:ANPeak?	168
5.5.17	TMBPs:STATus:RX<Pt>:ALEVel?	168
5.5.18	TMBPs:STATus:RX<Pt>:AFRequency?	169
5.5.19	TMBPs:STATus:RX<Pt>:ACOFfset?	169
5.5.20	TMBPs:STATus:RX<Pt>:CMSignal?	169
5.5.21	TMBPs:STATus:RX<Pt>:CBITs?	169
5.6	APS	170
5.6.1	TMBPs:APS:STARt	170
5.6.2	TMBPs:APS:STOP	170
5.6.3	TMBPs:APS:RX<Pt>:NUMBer?	170
5.6.4	TMBPs:APS:RX<Pt>:ATIMe?	170
5.6.5	TMBPs:APS:RX<Pt>:MTIMe?	170
5.6.6	TMBPs:APS:RX<Pt>:LTIMe?	171
5.6.7	TMBPs:APS:RX<Pt>:EVENT	171
5.6.8	TMBPs:APS:RX<Pt>:MLIMit	171
5.7	RTD	172
5.7.1	TMBPs:RTD:RX<Pt>:NUMBer?	172
5.7.2	TMBPs:RTD:RX<Pt>:ATIMe?	172

5.7.3	TMBPs:RTD:RX<Pt>:MTime?	172
5.7.4	TMBPs:RTD:RX<Pt>:LTime?	172
6	T1	173
6.1	Receiver	173
6.1.1	T1:RX<Pt>[:ENABled]	173
6.1.2	T1:RX<Pt>:FOLLow	173
6.1.3	T1:RX<Pt>:MODE	174
6.1.4	T1:RX<Pt>:CODE	174
6.1.5	T1:RX<Pt>:PCMFrame	174
6.1.6	T1:RX<Pt>:FTYPE	175
6.1.7	T1:RX<Pt>:PATtern	175
6.1.8	T1:RX<Pt>:PINVersion	176
6.1.9	T1:RX<Pt>:PTSLots	176
6.1.10	T1:RX<Pt>:UP16	176
6.1.11	T1:RX<Pt>:UP32	177
6.1.12	T1:TX<Pt>:SCContent	177
6.1.13	T1:RX<Pt>:AUDio	177
6.1.14	T1:RX<Pt>:ATSLot	178
6.1.15	T1:RX<Pt>:UP2K	178
6.1.16	T1:RX<Pt>:CAS	178
6.2	Transmitter	179
6.2.1	T1:TX<Pt>[:ENABled]	179
6.2.2	T1:TX<Pt>:FOLLow	179
6.2.3	T1:TX<Pt>:DINSert[:ENABle]	180
6.2.4	T1:TX<Pt>:TIMing	180
6.2.5	T1:TX<Pt>:FOFFset	180
6.2.6	T1:TX<Pt>:CODE	181
6.2.7	T1:TX<Pt>:LBOut	181
6.2.8	T1:TX<Pt>:PCMFrame	181
6.2.9	T1:TX<Pt>:FTYPE	182
6.2.10	T1:TX<Pt>:PATtern	182
6.2.11	T1:TX<Pt>:PINVersion	183
6.2.12	T1:TX<Pt>:PTSLots	183
6.2.13	T1:TX<Pt>:UP16	184
6.2.14	T1:TX<Pt>:UP32	184
6.2.15	T1:TX<Pt>:UP2K	184
6.2.16	T1:TX<Pt>:UTSLots	185
6.2.17	T1:TX<Pt>:SCTSlot	185
6.2.18	T1:TX<Pt>:TFR	185
6.2.19	T1:TX<Pt>:TLEVel	186
6.2.20	T1:TX<Pt>:CAS	186
6.2.21	T1:TX<Pt>:CASChannel	186
6.2.22	T1:TX<Pt>:CASBits	187
6.2.23	T1:TX<Pt>:COCBits	187
6.2.24	T1:TX<Pt>:SF:CASBits	187
6.2.25	T1:TX<Pt>:SF:COCBits	188
6.3	Stimuli	188
6.3.1	T1:STIMuli:TX<Pt>:ALARm	188
6.3.2	T1:STIMuli:TX<Pt>:ERRor	189
6.3.3	T1:STIMuli:TX<Pt>:EINSert	189
6.3.4	T1:STIMuli:TX<Pt>:EBLength	190
6.3.5	T1:STIMuli:TX<Pt>:FDLink	190
6.3.6	T1:STIMuli:TX<Pt>:FDLink:UFDL	191
6.3.7	T1:STIMuli:TX<Pt>:FDLink:IBCode	191
6.4	Result	192
6.4.1	T1:RX<Pt>:IFETch?	192
6.5	Status	193
6.5.1	T1:STATus:RX<Pt>:AESummary[:EVENT]?	193

6.5.2	T1:STATUS:RX<Pt>:AESummary:CONDition?	193
6.5.3	T1:STATUS:RX<Pt>:ALARm[:EVENT]?	193
6.5.4	T1:STATUS:RX<Pt>:ALARm:CONDition?	194
6.5.5	T1:STATUS:RX<Pt>:ERRor[:EVENT]?	194
6.5.6	T1:STATUS:RX<Pt>:ERRor:CONDition?	194
6.5.7	T1:STATUS:RX<Pt>:PSLevel?	195
6.5.8	T1:STATUS:RX<Pt>:PDEViation?	195
6.5.9	T1:STATUS:RX<Pt>:PBRate?	195
6.5.10	T1:STATUS:RX<Pt>:FDUMp?	195
6.5.11	T1:STATUS:RX<Pt>:ACONtent?	195
6.5.12	T1:STATUS:RX<Pt>:AIBContent?	195
6.5.13	T1:STATUS:RX<Pt>:APPeak?	196
6.5.14	T1:STATUS:RX<Pt>:ANPeak?	196
6.5.15	T1:STATUS:RX<Pt>:ALEVel?	196
6.5.16	T1:STATUS:RX<Pt>:AFRequency?	196
6.5.17	T1:STATUS:RX<Pt>:ACOFset?	196
6.5.18	T1:STATUS:RX<Pt>:PPBRate?	196
6.5.19	T1:STATUS:RX<Pt>:FBIT?	197
6.5.20	T1:STATUS:RX<Pt>:SBIT?	197
6.5.21	T1:STATUS:RX<Pt>:MBIT?	197
6.5.22	T1:STATUS:RX<Pt>:FDL:MODE	197
6.5.23	T1:STATUS:RX<Pt>:FDL:MBIT:CODE?	197
6.5.24	T1:STATUS:RX<Pt>:FDL:INBand:CODE?	198
6.5.25	T1:STATUS:RX<Pt>:FDL:UDEFined	198
6.5.26	T1:STATUS:RX<Pt>:FDL:UCODE	198
6.5.27	T1:STATUS:RX<Pt>:FDL:TRIGger	198
6.5.28	T1:STATUS:RX<Pt>:CBITs?	199
6.6	APS	200
6.6.1	T1:APS:STARt	200
6.6.2	T1:APS:STOP	200
6.6.3	T1:APS:RX<Pt>:NUMBer?	200
6.6.4	T1:APS:RX<Pt>:ATIME?	200
6.6.5	T1:APS:RX<Pt>:MTIME?	200
6.6.6	T1:APS:RX<Pt>:LTIME?	201
6.6.7	T1:APS:RX<Pt>:EVENT	201
6.6.8	T1:APS:RX<Pt>:MLIMit	201
6.7	RTD	202
6.7.1	T1:RTD:RX<Pt>:NUMBer?	202
6.7.2	T1:RTD:RX<Pt>:ATIME?	202
6.7.3	T1:RTD:RX<Pt>:MTIME?	202
6.7.4	T1:RTD:RX<Pt>:LTIME?	202
7	E3	203
7.1	Receiver	203
7.1.1	E3:RX<Pt>[:ENABled]	203
7.1.2	E3:RX<Pt>:MODE	203
7.1.3	E3:RX<Pt>:FOLLow	204
7.1.4	E3:RX<Pt>:PCMFrame	204
7.1.5	E3:RX<Pt>:PATtern	205
7.1.6	E3:RX<Pt>:PINVersion	205
7.1.7	E3:RX<Pt>:UP16	206
7.1.8	E3:RX<Pt>:UP32	206
7.1.9	E3:RX<Pt>:UP2K	206
7.2	Transmitter	207
7.2.1	E3:TX<Pt>[:ENABled]	207
7.2.2	E3:TX<Pt>:FOLLow	207
7.2.3	E3:TX<Pt>:TIMing	207
7.2.4	E3:TX<Pt>:FOFFset	208
7.2.5	E3:TX<Pt>:PCMFrame	208

7.2.6	E3:TX<Pt>:PATtern	209
7.2.7	E3:TX<Pt>:PINVersion	209
7.2.8	E3:TX<Pt>:UP16	210
7.2.9	E3:TX<Pt>:UP32	210
7.2.10	E3:TX<Pt>:UP2K	210
7.3	Stimuli	211
7.3.1	E3:STIMuli:TX<Pt>:ALARm	211
7.3.2	E3:STIMuli:TX<Pt>:ERRor	211
7.3.3	E3:STIMuli:TX<Pt>:EINsert	212
7.3.4	E3:STIMuli:TX<Pt>:EBLength	212
7.4	Results	213
7.4.1	E3:RX<Pt>:IFETch?	213
7.5	Status	214
7.5.1	E3:STATus:RX<Pt>:PSLevel?	214
7.5.2	E3:STATus:RX<Pt>:PDEViation?	214
7.5.3	E3:STATus:RX<Pt>:PBRate?	214
7.5.4	E3:STATus:RX<Pt>:PPBRate?	214
7.5.5	E3:STATus:RX<Pt>:AESummary[:EVENT]?	214
7.5.6	E3:STATus:RX<Pt>:AESummary:CONDition?	215
7.5.7	E3:STATus:RX<Pt>:ALARm[:EVENT]?	215
7.5.8	E3:STATus:RX<Pt>:ALARm:CONDition?	215
7.5.9	E3:STATus:RX<Pt>:ERRor[:EVENT]?	216
7.5.10	E3:STATus:RX<Pt>:ERRor:CONDition?	216
7.6	RTD	217
7.6.1	E3:RTD:RX<Pt>:NUMBer?	217
7.6.2	E3:RTD:RX<Pt>:ATIME?	217
7.6.3	E3:RTD:RX<Pt>:MTIME?	217
7.6.4	E3:RTD:RX<Pt>:LTIME?	217
8	T3	219
8.1	Receiver	219
8.1.1	T3:RX<Pt>[:ENABled]	219
8.1.2	T3:RX<Pt>:MODE	219
8.1.3	T3:RX<Pt>:FOLLow	220
8.1.4	T3:RX<Pt>:PCMFrame	220
8.1.5	T3:RX<Pt>:FTYPE	220
8.1.6	T3:RX<Pt>:PATtern	221
8.1.7	T3:RX<Pt>:PINVersion	221
8.1.8	T3:RX<Pt>:UP16	222
8.1.9	T3:RX<Pt>:UP32	222
8.1.10	T3:RX<Pt>:UP2K	222
8.2	Transmitter	223
8.2.1	T3:TX<Pt>[:ENABled]	223
8.2.2	T3:TX<Pt>:FOLLow	223
8.2.3	T3:TX<Pt>:TIMing	223
8.2.4	T3:TX<Pt>:FOFFset	224
8.2.5	T3:TX<Pt>:PCMFrame	224
8.2.6	T3:TX<Pt>:FTYPE	224
8.2.7	T3:TX<Pt>:LBOut	225
8.2.8	T3:TX<Pt>:PATtern	225
8.2.9	T3:TX<Pt>:PINVersion	226
8.2.10	T3:TX<Pt>:UP16	226
8.2.11	T3:TX<Pt>:UP32	226
8.2.12	T3:TX<Pt>:UP2K	227
8.3	Stimuli	228
8.3.1	T3:STIMuli:TX<Pt>:ALARm	228
8.3.2	T3:STIMuli:TX<Pt>:ERRor	228
8.3.3	T3:STIMuli:TX<Pt>:EINsert	229
8.3.4	T3:STIMuli:TX<Pt>:EBLength	229

8.4	Results	230
8.4.1	T3:RX<Pt>:IFETch?	230
8.5	Status	231
8.5.1	T3:STATus:RX<Pt>:PSLevel?	231
8.5.2	T3:STATus:RX<Pt>:PDEViation?	231
8.5.3	T3:STATus:RX<Pt>:PBRate?	231
8.5.4	T3:STATus:RX<Pt>:PPBRate?	231
8.5.5	T3:STATus:RX<Pt>:AESummary[:EVENT]?	231
8.5.6	T3:STATus:RX<Pt>:AESummary:CONDition?	232
8.5.7	T3:STATus:RX<Pt>:ALARm[:EVENT]?	232
8.5.8	T3:STATus:RX<Pt>:ALARm:CONDition?	232
8.5.9	T3:STATus:RX<Pt>:ERRor[:EVENT]?	233
8.5.10	T3:STATus:RX<Pt>:ERRor:CONDition?	233
8.6	RTD	234
8.6.1	T3:RTD:RX<Pt>:NUMBer?	234
8.6.2	T3:RTD:RX<Pt>:ATIME?	234
8.6.3	T3:RTD:RX<Pt>:MTIME?	234
8.6.4	T3:RTD:RX<Pt>:LTIME?	234
9	E4	235
9.1	Receiver	235
9.1.1	E4:RX<Pt>[:ENABled]	235
9.1.2	E4:RX<Pt>:GAIN	235
9.1.3	E4:RX<Pt>:FOLLow	236
9.1.4	E4:RX<Pt>:PCMFrame	236
9.1.5	E4:RX<Pt>:PATtern	237
9.1.6	E4:RX<Pt>:PINVersion	237
9.1.7	E4:RX<Pt>:UP16	238
9.1.8	E4:RX<Pt>:UP32	238
9.1.9	E4:RX<Pt>:UP2K	238
9.2	Transmitter	239
9.2.1	E4:TX<Pt>[:ENABled]	239
9.2.2	E4:TX<Pt>:FOLLow	239
9.2.3	E4:TX<Pt>:TIMing	239
9.2.4	E4:TX<Pt>:FOFFset	240
9.2.5	E4:TX<Pt>:PCMFrame	240
9.2.6	E4:TX<Pt>:PATtern	241
9.2.7	E4:TX<Pt>:PINVersion	241
9.2.8	E4:TX<Pt>:UP16	242
9.2.9	E4:TX<Pt>:UP32	242
9.2.10	E4:TX<Pt>:UP2K	242
9.3	Stimuli	243
9.3.1	E4:STIMuli:TX<Pt>:ALARm	243
9.3.2	E4:STIMuli:TX<Pt>:ERRor	243
9.3.3	E4:STIMuli:TX<Pt>:EINSert	244
9.3.4	E4:STIMuli:TX<Pt>:EBLength	244
9.4	Status	245
9.4.1	E4:STATus:RX<Pt>:PSLevel?	245
9.4.2	E4:STATus:RX<Pt>:PDEViation?	245
9.4.3	E4:STATus:RX<Pt>:PBRate?	245
9.4.4	E4:STATus:RX<Pt>:PPBRate?	245
9.4.5	E4:STATus:RX<Pt>:AESummary[:EVENT]?	245
9.4.6	E4:STATus:RX<Pt>:AESummary:CONDition?	246
9.4.7	E4:STATus:RX<Pt>:ALARm[:EVENT]?	246
9.4.8	E4:STATus:RX<Pt>:ALARm:CONDition?	246
9.4.9	E4:STATus:RX<Pt>:ERRor[:EVENT]?	247
9.4.10	E4:STATus:RX<Pt>:ERRor:CONDition?	247
9.5	Results	248
9.5.1	E4:RX<Pt>:IFETch?	248

9.6	RTD	249
9.6.1	E4:RTD:RX<Pt>:NUMBer?	249
9.6.2	E4:RTD:RX<Pt>:ATime?	249
9.6.3	E4:RTD:RX<Pt>:MTIME?	249
9.6.4	E4:RTD:RX<Pt>:LTime?	249
10	SDH	251
10.1	Receiver	251
10.1.1	SDH:RX<Pt>:INterface	251
10.1.2	SDH:RX<Pt>:STMLevel	251
10.1.3	SDH:RX<Pt>:AUGroup	252
10.1.4	SDH:RX<Pt>:CONCatenation	252
10.1.5	SDH:RX<Pt>:CONTainer	253
10.1.6	SDH:RX<Pt>:SSTRucture	253
10.1.7	SDH:RX<Pt>:PATtern	254
10.1.8	SDH:RX<Pt>:UP16	254
10.1.9	SDH:RX<Pt>:UP32	255
10.1.10	SDH:RX<Pt>:UP2K	255
10.1.11	SDH:RX<Pt>:PINVersion	255
10.1.12	SDH:RX<Pt>:TCM	256
10.1.13	SDH:RX<Pt>:TUG3	256
10.1.14	SDH:RX<Pt>:TUG2	256
10.1.15	SDH:RX<Pt>:TU12	257
10.1.16	SDH:RX<Pt>:TU11	257
10.1.17	SDH:RX<Pt>:CHANnel	258
10.1.18	SDH:RX<Pt>:MAPPING	258
10.1.19	SDH:RX<Pt>:GAIN	258
10.1.20	SDH:RX<Pt>:FOLLOW	259
10.1.21	SDH:RX<Pt>:MEASurement:HPLM	259
10.1.22	SDH:RX<Pt>:MEASurement:LPLM	259
10.2	Transmitter	260
10.2.1	SDH:TX<Pt>:INterface	260
10.2.2	SDH:TX<Pt>[:ENABLE]	260
10.2.3	SDH:TX<Pt>:OPTical	260
10.2.4	SDH:TX<Pt>:ELECTrical	261
10.2.5	SDH:TX<Pt>:STMLevel	261
10.2.6	SDH:TX<Pt>:AUGroup	262
10.2.7	SDH:TX<Pt>:CONCatenation	262
10.2.8	SDH:TX<Pt>:CONTainer	263
10.2.9	SDH:TX<Pt>:SSTRucture	263
10.2.10	SDH:TX<Pt>:PATtern	264
10.2.11	SDH:TX<Pt>:UP16	264
10.2.12	SDH:TX<Pt>:UP32	265
10.2.13	SDH:TX<Pt>:UP2K	265
10.2.14	SDH:TX<Pt>:PINVersion	265
10.2.15	SDH:TX<Pt>:TIMing	266
10.2.16	SDH:TX<Pt>:TCM	266
10.2.17	SDH:TX<Pt>:TUG3	266
10.2.18	SDH:TX<Pt>:TUG2	267
10.2.19	SDH:TX<Pt>:TU12	267
10.2.20	SDH:TX<Pt>:TU11	268
10.2.21	SDH:TX<Pt>:CHANnel	268
10.2.22	SDH:TX<Pt>:MAPPING	268
10.2.23	SDH:TX<Pt>:SOH:DEFault	269
10.2.24	SDH:TX<Pt>:SOH:TRACe	269
10.2.25	SDH:TX<Pt>:SOH:TRACe:CRC	269
10.2.26	SDH:TX<Pt>:SOH	270
10.2.27	SDH:TX<Pt>:VC4:POH:DEFault	271
10.2.28	SDH:TX<Pt>:VC4:POH:TRACe	271

10.2.29	SDH:TX<Pt>:VC4:POH:TRACe:CRC	271
10.2.30	SDH:TX<Pt>:VC4:POH:TTCM	272
10.2.31	SDH:TX<Pt>:VC4:POH	272
10.2.32	SDH:TX<Pt>:VC3:POH:DEFault	273
10.2.33	SDH:TX<Pt>:VC3:POH:TRACe	273
10.2.34	SDH:TX<Pt>:VC3:POH:TRACe:CRC	273
10.2.35	SDH:TX<Pt>:VC3:POH:TTCM	274
10.2.36	SDH:TX<Pt>:VC3:POH	274
10.2.37	SDH:TX<Pt>:VC12:POH:DEFault	274
10.2.38	SDH:TX<Pt>:VC12:POH:TRACe	275
10.2.39	SDH:TX<Pt>:VC12:POH:TRACe:CRC	275
10.2.40	SDH:TX<Pt>:VC12:POH:TTCM	275
10.2.41	SDH:TX<Pt>:VC12:POH	276
10.2.42	SDH:TX<Pt>:VC11:POH:DEFault	276
10.2.43	SDH:TX<Pt>:VC11:POH:TRACe	276
10.2.44	SDH:TX<Pt>:VC11:POH:TRACe:CRC	277
10.2.45	SDH:TX<Pt>:VC11:POH:TTCM	277
10.2.46	SDH:TX<Pt>:VC11:POH	278
10.2.47	SDH:TX<Pt>:AU3:VC3:POH:DEFault	278
10.2.48	SDH:TX<Pt>:AU3:VC3:POH:TRACe	278
10.2.49	SDH:TX<Pt>:AU3:VC3:POH:TRACe:CRC	279
10.2.50	SDH:TX<Pt>:AU3:VC3:POH:TTCM	279
10.2.51	SDH:TX<Pt>:AU3:VC3:POH	279
10.2.52	SDH:TX<Pt>:FOLLow	280
10.2.53	SDH:TX<Pt>:OTHRough	280
10.2.54	SDH:TX<Pt>:OTHRough:BYTE	281
10.2.55	SDH:TX<Pt>:STL:MMAPing:LANE	281
10.3	Stimuli	282
10.3.1	SDH:STIMuli:TX<Pt>:FOFFset	282
10.3.2	SDH:STIMuli:TX<Pt>:ALARm	283
10.3.3	SDH:STIMuli:TX<Pt>:AINSerT	283
10.3.4	SDH:STIMuli:TX<Pt>:ANLength	284
10.3.5	SDH:STIMuli:TX<Pt>:AALength	284
10.3.6	SDH:STIMuli:TX<Pt>:ERRor	285
10.3.7	SDH:STIMuli:TX<Pt>:EINSerT	286
10.3.8	SDH:STIMuli:TX<Pt>:EBLength	286
10.3.9	SDH:STIMuli:TX<Pt>:ENLength	287
10.3.10	SDH:STIMuli:TX<Pt>:EELength	287
10.3.11	SDH:STIMuli:TX<Pt>:PTSequence	287
10.3.12	SDH:STIMuli:TX<Pt>:PMOVE	288
10.3.13	SDH:STIMuli:TX<Pt>:PJUMp	289
10.3.14	SDH:STIMuli:TX<Pt>:STL:AERRor:LANE	289
10.3.15	SDH:STIMuli:TX<Pt>:STL:ALARm	290
10.3.16	SDH:STIMuli:TX<Pt>:STL:AINSerT	290
10.3.17	SDH:STIMuli:TX<Pt>:STL:ABLength	290
10.3.18	SDH:STIMuli:TX<Pt>:STL:AALength	291
10.3.19	SDH:STIMuli:TX<Pt>:STL:ANLength	291
10.3.20	SDH:STIMuli:TX<Pt>:STL:ERRor	291
10.3.21	SDH:STIMuli:TX<Pt>:STL:EINSerT	292
10.3.22	SDH:STIMuli:TX<Pt>:STL:EELength	292
10.3.23	SDH:STIMuli:TX<Pt>:STL:ENLength	292
10.3.24	SDH:STIMuli:TX<Pt>:STL:SKEW:BIT	293
10.3.25	SDH:STIMuli:TX<Pt>:STL:SKEW:NS?	293
10.3.26	SDH:STIMuli:TX<Pt>:STL:SKEW:LANE	293
10.4	Result	294
10.4.1	SDH:RX<Pt>:IFETch?	294
10.4.2	SDH:PMOVement:RX<Pt>:FETCh?	298
10.5	Status	298
10.5.1	SDH:STATus:RX<Pt>:AESummary[:EVENT]?	298

10.5.2	SDH:STATus:RX<Pt>:AESummary:CONDition?	298
10.5.3	SDH:STATus:RX<Pt>:ALARm<section>[:EVENT]?	299
10.5.4	SDH:STATus:RX<Pt>:ALARm<section>:CONDition?	300
10.5.5	SDH:STATus:RX<Pt>:ERRor<section>[:EVENT]?	300
10.5.6	SDH:STATus:RX<Pt>:ERRor<section>:CONDition?	301
10.5.7	SDH:STATus:RX<Pt>:PSLevel?	301
10.5.8	SDH:STATus:TX<Pt>:PSLevel?	301
10.5.9	SDH:STATus:RX<Pt>:PDEViation?	301
10.5.10	SDH:STATus:RX<Pt>:PBRate?	301
10.5.11	SDH:STATus:RX<Pt>:DIFFerence?	302
10.5.12	SDH:STATus:RX<Pt>:RACCumulated	302
10.5.13	SDH:STATus:RX<Pt>:PPBRate?	302
10.5.14	SDH:STATus:RX<Pt>:CAPTure:SOH:TRACe?	302
10.5.15	SDH:STATus:RX<Pt>:CAPTure<Frame>:SOH?	303
10.5.16	SDH:STATus:RX<Pt>:CAPTure:VC4:POH:TRACe?	303
10.5.17	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC4:POH?	304
10.5.18	SDH:STATus:RX<Pt>:CAPTure:VC3:POH:TRACe?	304
10.5.19	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC3:POH?	304
10.5.20	SDH:STATus:RX<Pt>:CAPTure:VC12:POH:TRACe?	305
10.5.21	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC12:POH?	305
10.5.22	SDH:STATus:RX<Pt>:CAPTure:VC11:POH:TRACe?	305
10.5.23	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC11:POH?	305
10.5.24	SDH:STATus:RX<Pt>:CAPTure:AU3:VC3:POH:TRACe?	306
10.5.25	SDH:STATus:RX<Pt>:CAPTure<Frame>:AU3:VC3:POH?	306
10.6	APS	307
10.6.1	SDH:APS:STARt	307
10.6.2	SDH:APS:STOP	307
10.6.3	SDH:APS:RX<Pt>:PINterpret?	307
10.6.4	SDH:APS:RX<Pt>:NUMBer?	307
10.6.5	SDH:APS:RX<Pt>:ATIME?	307
10.6.6	SDH:APS:RX<Pt>:MTIME?	308
10.6.7	SDH:APS:RX<Pt>:LTIME?	308
10.6.8	SDH:APS:RX<Pt>:CTIME?	308
10.6.9	SDH:APS:RX<Pt>:EVENT	309
10.6.10	SDH:APS:RX<Pt>:MLIMit	309
10.6.11	SDH:APS:RX<Pt>:PERiod	310
10.6.12	SDH:APS:RX<Pt>:CONFig	310
10.6.13	SDH:APS:RX<Pt>:RTYPE	311
10.6.14	SDH:APS:RX<Pt>:K1	312
10.6.15	SDH:APS:RX<Pt>:K2	312
10.6.16	SDH:APS:RX<Pt>:APPLY	312
10.7	Tributary Scan	312
10.7.1	SDH:TSCan:STARt	312
10.7.2	SDH:TSCan:STOP	313
10.7.3	SDH:TSCan:RX<Pt>:NHOCOnainer?	313
10.7.4	SDH:TSCan:RX<Pt>:GHOCOnainer?	313
10.7.5	SDH:TSCan:RX<Pt>:SHOCOnainer	313
10.7.6	SDH:TSCan:RX<Pt>:SHOCOnainer?	313
10.7.7	SDH:TSCan:RX<Pt>:DHOCOnainer?	314
10.7.8	SDH:TSCan:RX<Pt>:NLOCOnainer?	314
10.7.9	SDH:TSCan:RX<Pt>:GLOCOnainer?	314
10.7.10	SDH:TSCan:RX<Pt>:DLOCOnainer?	314
10.7.11	SDH:TSCan:RX<Pt>:DMUX?	315
10.8	RTD	316
10.8.1	SDH:RTD:RX<Pt>:MLIMit	316
10.8.2	SDH:RTD:RX<Pt>:NUMBer?	316
10.8.3	SDH:RTD:RX<Pt>:ATIME?	316
10.8.4	SDH:RTD:RX<Pt>:MTIME?	316
10.8.5	SDH:RTD:RX<Pt>:LTIME?	317

10.8.6	SDH:RTD:RX<Pt>:CTIME?	317
11	SONET	319
11.1	Receiver	319
11.1.1	SONet:RX<Pt>:INTerface	319
11.1.2	SONet:RX<Pt>:OCLevel	319
11.1.3	SONet:RX<Pt>:STSLevel	320
11.1.4	SONet:RX<Pt>:STS3c	320
11.1.5	SONet:RX<Pt>:CONCatenation	321
11.1.6	SONet:RX<Pt>:CONTainer	321
11.1.7	SONet:RX<Pt>:SSTRucture	322
11.1.8	SONet:RX<Pt>:PATtern	322
11.1.9	SONet:RX<Pt>:UP32	323
11.1.10	SONet:RX<Pt>:UP2K	323
11.1.11	SONet:RX<Pt>:PINVersion	323
11.1.12	SONet:RX<Pt>:TCM	324
11.1.13	SONet:RX<Pt>:TUG3	324
11.1.14	SONet:RX<Pt>:VTG	324
11.1.15	SONet:RX<Pt>:VT2	325
11.1.16	SONet:RX<Pt>:VT15	325
11.1.17	SONet:RX<Pt>:CHANnel	326
11.1.18	SONet:RX<Pt>:MAPPing	326
11.1.19	SONet:RX<Pt>:GAIN	326
11.1.20	SONet:RX<Pt>:FOLLow	327
11.1.21	SONet:RX<Pt>:MEASurement:PLMP	327
11.1.22	SONet:RX<Pt>:MEASurement:PLMV	327
11.2	Transmitter	328
11.2.1	SONet:TX<Pt>:INTerface	328
11.2.2	SONet:TX<Pt>[:ENABle]	328
11.2.3	SONet:TX<Pt>:OPTical	328
11.2.4	SONet:TX<Pt>:ELECtrical	329
11.2.5	SONet:TX<Pt>:OCLevel	329
11.2.6	SONet:TX<Pt>:STSLevel	330
11.2.7	SONet:TX<Pt>:STS3c	330
11.2.8	SONet:TX<Pt>:CONCatenation	331
11.2.9	SONet:TX<Pt>:CONTainer	331
11.2.10	SONet:TX<Pt>:SSTRucture	332
11.2.11	SONet:TX<Pt>:PATtern	332
11.2.12	SONet:TX<Pt>:UP32	333
11.2.13	SONet:TX<Pt>:UP2K	333
11.2.14	SONet:TX<Pt>:PINVersion	333
11.2.15	SONet:TX<Pt>:TIMing	334
11.2.16	SONet:TX<Pt>:TCM	334
11.2.17	SONet:TX<Pt>:TUG3	334
11.2.18	SONet:TX<Pt>:VTG	335
11.2.19	SONet:TX<Pt>:VT2	335
11.2.20	SONet:TX<Pt>:VT15	336
11.2.21	SONet:TX<Pt>:CHANnel	336
11.2.22	SONet:TX<Pt>:MAPPing	336
11.2.23	SONet:TX<Pt>:TOH:DEFault	337
11.2.24	SONet:TX<Pt>:TOH:TRACe	337
11.2.25	SONet:TX<Pt>:TOH:TRACe:CRC	337
11.2.26	SONet:TX<Pt>:TOH	338
11.2.27	SONet:TX<Pt>:STS3:POH:DEFault	339
11.2.28	SONet:TX<Pt>:STS3:POH:TRACe	339
11.2.29	SONet:TX<Pt>:STS3:POH:TRACe:CRC	339
11.2.30	SONet:TX<Pt>:STS3:POH:TTCM	340
11.2.31	SONet:TX<Pt>:STS3:POH	340
11.2.32	SONet:TX<Pt>:STS1:POH:DEFault	341

11.2.33	SONet:TX<Pt>:STS1:POH:TRACe	341
11.2.34	SONet:TX<Pt>:STS1:POH:TRACe:CRC	341
11.2.35	SONet:TX<Pt>:STS1:POH:TTCM	342
11.2.36	SONet:TX<Pt>:STS1:POH	342
11.2.37	SONet:TX<Pt>:VT2:POH:DEFault	342
11.2.38	SONet:TX<Pt>:VT2:POH:TRACe	343
11.2.39	SONet:TX<Pt>:VT2:POH:TRACe:CRC	343
11.2.40	SONet:TX<Pt>:VT2:POH:TTCM	343
11.2.41	SONet:TX<Pt>:VT2:POH	344
11.2.42	SONet:TX<Pt>:VT15:POH:DEFault	344
11.2.43	SONet:TX<Pt>:VT15:POH:TRACe	344
11.2.44	SONet:TX<Pt>:VT15:POH:TRACe:CRC	345
11.2.45	SONet:TX<Pt>:VT15:POH:TTCM	345
11.2.46	SONet:TX<Pt>:VT15:POH	346
11.2.47	SONet:TX<Pt>:STS1:STS1:POH:DEFault	346
11.2.48	SONet:TX<Pt>:STS1:STS1:POH:TRACe	346
11.2.49	SONet:TX<Pt>:STS1:STS1:POH:TRACe:CRC	347
11.2.50	SONet:TX<Pt>:STS1:STS1:POH:TTCM	347
11.2.51	SONet:TX<Pt>:STS1:STS1:POH	347
11.2.52	SONet:TX<Pt>:FOLLow	348
11.2.53	SONet:TX<Pt>:OTHRough	348
11.2.54	SONet:TX<Pt>:OTHRough:BYTE	349
11.2.55	SONet:TX<Pt>:STL:MMAPIng:LANE	349
11.3	Stimuli	350
11.3.1	SONet:STIMuli:TX<Pt>:FOFFset	350
11.3.2	SONet:STIMuli:TX<Pt>:ALARm	351
11.3.3	SONet:STIMuli:TX<Pt>:AINsert	351
11.3.4	SONet:STIMuli:TX<Pt>:ANLength	352
11.3.5	SONet:STIMuli:TX<Pt>:AALength	352
11.3.6	SONet:STIMuli:TX<Pt>:ERRor	353
11.3.7	SONet:STIMuli:TX<Pt>:EINsert	354
11.3.8	SONet:STIMuli:TX<Pt>:EBLength	354
11.3.9	SONet:STIMuli:TX<Pt>:ENLength	355
11.3.10	SONet:STIMuli:TX<Pt>:EELength	355
11.3.11	SONet:STIMuli:TX<Pt>:PTSequence	355
11.3.12	SONet:STIMuli:TX<Pt>:PMOVE	356
11.3.13	SONet:STIMuli:TX<Pt>:PJUMP	357
11.3.14	SONet:STIMuli:TX<Pt>:STL:AERRor:LANE	357
11.3.15	SONet:STIMuli:TX<Pt>:STL:ALARm	358
11.3.16	SONet:STIMuli:TX<Pt>:STL:AINsert	358
11.3.17	SONet:STIMuli:TX<Pt>:STL:ABLength	358
11.3.18	SONet:STIMuli:TX<Pt>:STL:AALength	359
11.3.19	SONet:STIMuli:TX<Pt>:STL:ANLength	359
11.3.20	SONet:STIMuli:TX<Pt>:STL:ERRor	359
11.3.21	SONet:STIMuli:TX<Pt>:STL:EINsert	360
11.3.22	SONet:STIMuli:TX<Pt>:STL:EELength	360
11.3.23	SONet:STIMuli:TX<Pt>:STL:ENLength	360
11.3.24	SONet:STIMuli:TX<Pt>:STL:SKEW:BIT	361
11.3.25	SONet:STIMuli:TX<Pt>:STL:SKEW:NS?	361
11.3.26	SONet:STIMuli:TX<Pt>:STL:SKEW:LANE	361
11.3.27	SONet:STIMuli:TX<Pt>:STL:SKEW:LANE?	361
11.4	Result	362
11.4.1	SONet:RX<Pt>:IFETch?	362
11.4.2	SONet:PMOVement:RX<Pt>:FETCh?	366
11.5	Status	366
11.5.1	SONet:STATus:RX<Pt>:AESummary[:EVENT]?	366
11.5.2	SONet:STATus:RX<Pt>:AESummary:CONDition?	366
11.5.3	SONet:STATus:RX<Pt>:ALARm<section>[:EVENT]?	367
11.5.4	SONet:STATus:RX<Pt>:ALARm<section>:CONDition?	368

11.5.5	SONet:STATus:RX<Pt>:ERRor<section>[:EVENT]?	368
11.5.6	SONet:STATus:RX<Pt>:ERRor<section>:CONDition?	369
11.5.7	SONet:STATus:RX<Pt>:PSLevel?	369
11.5.8	SONet:STATus:TX<Pt>:PSLevel?	369
11.5.9	SONet:STATus:RX<Pt>:PDEViation?	369
11.5.10	SONet:STATus:RX<Pt>:PBRate?	369
11.5.11	SONet:STATus:RX<Pt>:DIFFerence?	370
11.5.12	SONet:STATus:RX<Pt>:RACCumulated	370
11.5.13	SONet:STATus:RX<Pt>:PPBRate?	370
11.5.14	SONet:STATus:RX<Pt>:CAPTure:TOH:TRACe?	370
11.5.15	SONet:STATus:RX<Pt>:CAPTure<Frame>:TOH?	371
11.5.16	SONet:STATus:RX<Pt>:CAPTure:STS3:POH:TRACe?	371
11.5.17	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS3:POH?	372
11.5.18	SONet:STATus:RX<Pt>:CAPTure:STS1:POH:TRACe?	372
11.5.19	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:POH?	372
11.5.20	SONet:STATus:RX<Pt>:CAPTure:VT2:POH:TRACe?	373
11.5.21	SONet:STATus:RX<Pt>:CAPTure<Frame>:VT2:POH?	373
11.5.22	SONet:STATus:RX<Pt>:CAPTure:VT15:POH:TRACe?	373
11.5.23	SONet:STATus:RX<Pt>:CAPTure<Frame>:VT15:POH?	373
11.5.24	SONet:STATus:RX<Pt>:CAPTure:STS1:STS1:POH:TRACe?	374
11.5.25	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:STS1:POH?	374
11.6	APS	375
11.6.1	SONet:APS:STARt	375
11.6.2	SONet:APS:STOP	375
11.6.3	SONet:APS:RX<Pt>:PINTerpret?	375
11.6.4	SONet:APS:RX<Pt>:NUMBer?	375
11.6.5	SONet:APS:RX<Pt>:ATIME?	375
11.6.6	SONet:APS:RX<Pt>:MTIME?	376
11.6.7	SONet:APS:RX<Pt>:LTIME?	376
11.6.8	SONet:APS:RX<Pt>:CTIME?	376
11.6.9	SONet:APS:RX<Pt>:EVENT	377
11.6.10	SONet:APS:RX<Pt>:MLIMit	377
11.6.11	SONet:APS:RX<Pt>:PERiod	378
11.6.12	SONet:APS:RX<Pt>:CONFig	378
11.6.13	SONet:APS:RX<Pt>:RTYPE	379
11.6.14	SONet:APS:RX<Pt>:K1	380
11.6.15	SONet:APS:RX<Pt>:K2	380
11.6.16	SONet:APS:RX<Pt>:APPLY	380
11.7	Tributary Scan	380
11.7.1	SONet:TSCan:STARt	380
11.7.2	SONet:TSCan:STOP	381
11.7.3	SONet:TSCan:RX<Pt>:NHOCContainer?	381
11.7.4	SONet:TSCan:RX<Pt>:GHOCContainer?	381
11.7.5	SONet:TSCan:RX<Pt>:SHOCContainer	381
11.7.6	SONet:TSCan:RX<Pt>:SHOCContainer?	381
11.7.7	SONet:TSCan:RX<Pt>:DHOCContainer?	382
11.7.8	SONet:TSCan:RX<Pt>:NLOCContainer?	382
11.7.9	SONet:TSCan:RX<Pt>:GLOCContainer?	382
11.7.10	SONet:TSCan:RX<Pt>:DLOCContainer?	382
11.7.11	SONet:TSCan:RX<Pt>:DMUX?	383
11.8	RTD	384
11.8.1	SONet:RTD:RX<Pt>:MLIMit	384
11.8.2	SONet:RTD:RX<Pt>:NUMBer?	384
11.8.3	SONet:RTD:RX<Pt>:ATIME?	384
11.8.4	SONet:RTD:RX<Pt>:MTIME?	384
11.8.5	SONet:RTD:RX<Pt>:LTIME?	385
11.8.6	SONet:RTD:RX<Pt>:CTIME?	385

12.1	Port Setup	387
12.1.1	ETHERnet:PORT<Pt>:ITYPE	387
12.1.2	ETHERnet:PORT<Pt>:MODE	388
12.1.3	ETHERnet:PORT<Pt>:ANEGotiate	388
12.1.4	ETHERnet:PORT<Pt>:FMODE	389
12.1.5	ETHERnet:PORT<Pt>:CMODE	389
12.1.6	ETHERnet:PORT<Pt>:MDICrossover	390
12.1.7	ETHERnet:PORT<Pt>:TIMing:SOURce	390
12.1.8	ETHERnet:PORT<Pt>:PFRames	390
12.1.9	ETHERnet:PORT<Pt>:FEC	391
12.2	WAN	392
12.2.1	ETHERnet:PORT<Pt>:WAN[:ENABLE]	392
12.2.2	ETHERnet:PORT<Pt>:WAN:TERMinology	392
12.2.3	ETHERnet:PORT<Pt>:WAN:SOH:DEFault	392
12.2.4	ETHERnet:PORT<Pt>:WAN:SOH:TRACe	393
12.2.5	ETHERnet:PORT<Pt>:WAN:SOH:TRACe:CRC	393
12.2.6	ETHERnet:PORT<Pt>:WAN:SOH	393
12.2.7	ETHERnet:PORT<Pt>:WAN:POH:DEFault	395
12.2.8	ETHERnet:PORT<Pt>:WAN:POH:TRACe	395
12.2.9	ETHERnet:PORT<Pt>:WAN:POH:TRACe:CRC	395
12.2.10	ETHERnet:PORT<Pt>:WAN:POH	396
12.3	Reflector	397
12.3.1	ETHERnet:PORT<Pt>:REFLector:SWAP[:ENABLE]	397
12.3.2	ETHERnet:PORT<Pt>:REFLector:SSMac	397
12.3.3	ETHERnet:PORT<Pt>:REFLector:SMAC	397
12.3.4	ETHERnet:PORT<Pt>:REFLector:IPSWap	398
12.3.5	ETHERnet:PORT<Pt>:REFLector:PSWap	398
12.3.6	ETHERnet:PORT<Pt>:REFLector:ATCP	398
12.4	PCS	399
12.4.1	ETHERnet:PORT<Pt>:PCS:MMAPing:LANE	399
12.5	Traffic	399
12.5.1	ETHERnet:TRAFfic:GENerator:START	399
12.5.2	ETHERnet:PORT<Pt>:TRAFfic:GENerator:START	399
12.5.3	ETHERnet:TRAFfic:GENerator:STOP	400
12.5.4	ETHERnet:PORT<Pt>:TRAFfic:GENerator:STOP	400
12.5.5	ETHERnet:PORT<Pt>:TRAFfic:GENerator:STATUS?	400
12.5.6	ETHERnet:PORT<Pt>:TRAFfic:DMODE	400
12.5.7	ETHERnet:PORT<Pt>:TRAFfic:DURation	401
12.5.8	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:TXMode	401
12.5.9	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile	401
12.5.10	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMP	
	[:MODE]	402
12.5.11	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad[:CONStant]	402
12.5.12	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP[:MODE]	403
12.5.13	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:START	403
12.5.14	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:END	404
12.5.15	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STEP	404
12.5.16	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:DURation	405
12.5.17	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMP	
	:DURation	405
12.5.18	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:PROFile	406
12.5.19	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe[:STARt]	406
12.5.20	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:END	406
12.5.21	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:STEP	407
12.5.22	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:DURation	407
12.5.23	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:PROFile	408
12.5.24	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VIDeo	408
12.5.25	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VOICe	409
12.5.26	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:NCHannels	409

12.5.27	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:MODe	409
12.5.28	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:MODe	410
12.5.29	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:BNUmber	410
12.5.30	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy [:DUTY]	411
12.5.31	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy :PERiod	411
12.5.32	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:DUTY?	411
12.5.33	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PERiod?	411
12.5.34	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BLENgtH	412
12.5.35	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BGAP	412
12.5.36	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:RMODe	413
12.5.37	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENgtH :STARt	413
12.5.38	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENgtH :END	414
12.5.39	ETHERnet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BGAP	414
12.6	Frame Content	415
12.6.1	ETHERnet:PORT<Pt>:STReam<St>:FRAMed	415
12.6.2	ETHERnet:PORT<Pt>:STReam<St>:MAC:SOURce	415
12.6.3	ETHERnet:PORT<Pt>:STReam<St>:MAC:DESTination	415
12.6.4	ETHERnet:PORT<Pt>:STReam<St>:MAC:ARP	416
12.6.5	ETHERnet:PORT<Pt>:STReam<St>:MAC:ARP:LKUP	416
12.6.6	ETHERnet:PORT<Pt>:STReam<St>:MAC:ARP:RESult?	416
12.6.7	ETHERnet:PORT<Pt>:STReam<St>:MAC:NDP	417
12.6.8	ETHERnet:PORT<Pt>:STReam<St>:MAC:NDP:LKUP	417
12.6.9	ETHERnet:PORT<Pt>:STReam<St>:MAC:NDP:RESult?	417
12.6.10	ETHERnet:PORT<Pt>:STReam<St>:MAC:BRoadcast	417
12.6.11	ETHERnet:PORT<Pt>:STReam<St>:MAC:DEFault	418
12.6.12	ETHERnet:PORT<Pt>:STReam<St>:MAC:ETYPe	418
12.6.13	ETHERnet:PORT<Pt>:STReam<St>:MAC:L3ETYPe	419
12.6.14	ETHERnet:PORT<Pt>:STReam<St>:MPLS[:ENABle]	419
12.6.15	ETHERnet:PORT<Pt>:STReam<St>:MPLS:LCounT	419
12.6.16	ETHERnet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:LABel	420
12.6.17	ETHERnet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:EBITs	420
12.6.18	ETHERnet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:TTL	421
12.6.19	ETHERnet:PORT<Pt>:STReam<St>:MPLS:ETHERnet[:ENABle]	421
12.6.20	ETHERnet:PORT<Pt>:STReam<St>:MPLS:ETHERnet:AINCRement	421
12.6.21	ETHERnet:PORT<Pt>:STReam<St>:MPLS:ETHERnet:SMAC	422
12.6.22	ETHERnet:PORT<Pt>:STReam<St>:MPLS:ETHERnet:DMAC	422
12.6.23	ETHERnet:PORT<Pt>:STReam<St>:MPLS:ETHERnet:ETYPe	423
12.6.24	ETHERnet:PORT<Pt>:STReam<St>:MIM[:ENABle]	423
12.6.25	ETHERnet:PORT<Pt>:STReam<St>:MIM:BTAG:DEI	423
12.6.26	ETHERnet:PORT<Pt>:STReam<St>:MIM:BTAG:PRiority	424
12.6.27	ETHERnet:PORT<Pt>:STReam<St>:MIM:BTAG:VID	424
12.6.28	ETHERnet:PORT<Pt>:STReam<St>:MIM:ITAG:UCA	425
12.6.29	ETHERnet:PORT<Pt>:STReam<St>:MIM:ITAG:DEI	425
12.6.30	ETHERnet:PORT<Pt>:STReam<St>:MIM:ITAG:PRiority	425
12.6.31	ETHERnet:PORT<Pt>:STReam<St>:MIM:ITAG:SID	426
12.6.32	ETHERnet:PORT<Pt>:STReam<St>:MIM:ETHERnet:SMAC	426
12.6.33	ETHERnet:PORT<Pt>:STReam<St>:MIM:ETHERnet:DMAC	426
12.6.34	ETHERnet:PORT<Pt>:STReam<St>:MIM:ETHERnet:ETYPe	427
12.6.35	ETHERnet:PORT<Pt>:STReam<St>:VLAN[:ENABle]	427
12.6.36	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LCounT	428
12.6.37	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ID	428
12.6.38	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI	428
12.6.39	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI	429
12.6.40	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:PRiority	429
12.6.41	ETHERnet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ETYPe	430

12.6.42	ETHernet:PORT<Pt>:STReam<St>:LLC[:ENABLE]	430
12.6.43	ETHernet:PORT<Pt>:STReam<St>:SNAP[:ENABLE]	431
12.6.44	ETHernet:PORT<Pt>:STReam<St>:L2Custom[:ENABLE]	431
12.6.45	ETHernet:PORT<Pt>:STReam<St>:IPV4[:ENABLE]	432
12.6.46	ETHernet:PORT<Pt>:STReam<St>:IPV4:SOURce	432
12.6.47	ETHernet:PORT<Pt>:STReam<St>:IPV4:DESTination	432
12.6.48	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway[:ENABLE]	433
12.6.49	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway:ADDRess	433
12.6.50	ETHernet:PORT<Pt>:STReam<St>:IPV4:NETMask	434
12.6.51	ETHernet:PORT<Pt>:STReam<St>:IPV4:HOST	434
12.6.52	ETHernet:PORT<Pt>:STReam<St>:IPV4:TTL	434
12.6.53	ETHernet:PORT<Pt>:STReam<St>:IPV4:TOS	435
12.6.54	ETHernet:PORT<Pt>:STReam<St>:IPV4:IDENtifier	435
12.6.55	ETHernet:PORT<Pt>:STReam<St>:IPV4:AINCrement	436
12.6.56	ETHernet:PORT<Pt>:STReam<St>:IPV4:MF	436
12.6.57	ETHernet:PORT<Pt>:STReam<St>:IPV4:DF	436
12.6.58	ETHernet:PORT<Pt>:STReam<St>:IPV4:RES	437
12.6.59	ETHernet:PORT<Pt>:STReam<St>:IPV4:PROTOcol	437
12.6.60	ETHernet:PORT<Pt>:STReam<St>:IPV4:TLENgth?	438
12.6.61	ETHernet:PORT<Pt>:STReam<St>:IPV4:CHECKsum?	438
12.6.62	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP[:ENABLE]	438
12.6.63	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:VERSion	438
12.6.64	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:GROup[:ADDRess]	439
12.6.65	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce[:ENABLE]	439
12.6.66	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce:ADDRess	440
12.6.67	ETHernet:PORT<Pt>:STReam<St>:DNS[:ENABLE]	440
12.6.68	ETHernet:PORT<Pt>:STReam<St>:DNS:PRIMary	440
12.6.69	ETHernet:PORT<Pt>:STReam<St>:DNS:SECOndary	441
12.6.70	ETHernet:PORT<Pt>:STReam<St>:IPV6[:ENABLE]	441
12.6.71	ETHernet:PORT<Pt>:STReam<St>:IPV6:TCLass	442
12.6.72	ETHernet:PORT<Pt>:STReam<St>:IPV6:FLABel	442
12.6.73	ETHernet:PORT<Pt>:STReam<St>:IPV6:NHeader	442
12.6.74	ETHernet:PORT<Pt>:STReam<St>:IPV6:HLIMit	443
12.6.75	ETHernet:PORT<Pt>:STReam<St>:IPV6:SOURce	443
12.6.76	ETHernet:PORT<Pt>:STReam<St>:IPV6:DESTination	444
12.6.77	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway[:ENABLE]	444
12.6.78	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway:ADDRess	444
12.6.79	ETHernet:PORT<Pt>:STReam<St>:IPV6:PREFIX	445
12.6.80	ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig	445
12.6.81	ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig:RESult?	446
12.6.82	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID	446
12.6.83	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID:AUTO	446
12.6.84	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:LINKlocal?	447
12.6.85	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:RAFLag?	447
12.6.86	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:SRCMac?	447
12.6.87	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:PREFIX?	447
12.6.88	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:PRFLag?	447
12.6.89	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:LTIme?	448
12.6.90	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:RENew	448
12.6.91	ETHernet:PORT<Pt>:STReam<St>:IPV6:PLENgth?	448
12.6.92	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD[:ENABLE]	448
12.6.93	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:VERSion	449
12.6.94	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:GROup[:ADDRess]	449
12.6.95	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce[:ENABLE]	449
12.6.96	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce:ADDRess	450
12.6.97	ETHernet:PORT<Pt>:STReam<St>:L3Custom[:ENABLE]	450
12.6.98	ETHernet:PORT<Pt>:STReam<St>:DHCP[:ENABLE]	451
12.6.99	ETHernet:PORT<Pt>:STReam<St>:DHCP:RENew	451
12.6.100	ETHernet:PORT<Pt>:STReam<St>:DHCP:DNS	451

12.6.101	ETHERnet:PORT<Pt>:STReam<St>:DHCP:GATeway	452
12.6.102	ETHERnet:PORT<Pt>:STReam<St>:DHCP:LETime?	452
12.6.103	ETHERnet:PORT<Pt>:STReam<St>:UDP[:ENABLE]	452
12.6.104	ETHERnet:PORT<Pt>:STReam<St>:UDP:SPORt	453
12.6.105	ETHERnet:PORT<Pt>:STReam<St>:UDP:DPORT	453
12.6.106	ETHERnet:PORT<Pt>:STReam<St>:UDP:LENGth?	453
12.6.107	ETHERnet:PORT<Pt>:STReam<St>:UDP:CNUl	454
12.6.108	ETHERnet:PORT<Pt>:STReam<St>:UDP:CHECKsum?	454
12.6.109	ETHERnet:PORT<Pt>:STReam<St>:TCP[:ENABLE]	454
12.6.110	ETHERnet:PORT<Pt>:STReam<St>:TCP:ACONnect	455
12.6.111	ETHERnet:PORT<Pt>:STReam<St>:TCP:LMODe	455
12.6.112	ETHERnet:PORT<Pt>:STReam<St>:TCP:SPORt	455
12.6.113	ETHERnet:PORT<Pt>:STReam<St>:TCP:DPORT	456
12.6.114	ETHERnet:PORT<Pt>:STReam<St>:TCP:SEQuence	456
12.6.115	ETHERnet:PORT<Pt>:STReam<St>:TCP:AINCrement	457
12.6.116	ETHERnet:PORT<Pt>:STReam<St>:TCP:ACKNowledge	457
12.6.117	ETHERnet:PORT<Pt>:STReam<St>:TCP:REServed	457
12.6.118	ETHERnet:PORT<Pt>:STReam<St>:TCP:FCWR	458
12.6.119	ETHERnet:PORT<Pt>:STReam<St>:TCP:FECE	458
12.6.120	ETHERnet:PORT<Pt>:STReam<St>:TCP:FURG	459
12.6.121	ETHERnet:PORT<Pt>:STReam<St>:TCP:FACK	459
12.6.122	ETHERnet:PORT<Pt>:STReam<St>:TCP:FPSH	459
12.6.123	ETHERnet:PORT<Pt>:STReam<St>:TCP:FRST	460
12.6.124	ETHERnet:PORT<Pt>:STReam<St>:TCP:FSYN	460
12.6.125	ETHERnet:PORT<Pt>:STReam<St>:TCP:FFIN	461
12.6.126	ETHERnet:PORT<Pt>:STReam<St>:TCP:WINDow	461
12.6.127	ETHERnet:PORT<Pt>:STReam<St>:TCP:UPOinter	461
12.6.128	ETHERnet:PORT<Pt>:STReam<St>:TCP:CHECKsum?	462
12.6.129	ETHERnet:PORT<Pt>:STReam1:BER:UTGenerator	462
12.6.130	ETHERnet:PORT<Pt>:STReam1:BER:SEQuence	462
12.6.131	ETHERnet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABLEd]	463
12.6.132	ETHERnet:PORT<Pt>:STReam1:BER:SDMeasure:DTYPE	463
12.6.133	ETHERnet:PORT<Pt>:STReam1:BER:SDMeasure:MLIMit	463
12.6.134	ETHERnet:PORT<Pt>:STReam1:BER:SDMeasure:MDISruption	464
12.6.135	ETHERnet:PORT<Pt>:STReam1:BER:SDMeasure:EFPeriod	464
12.6.136	ETHERnet:PORT<Pt>:STReam1:BER:STHResholds[:ENABLE]	464
12.6.137	ETHERnet:PORT<Pt>:STReam1:BER:STHResholds:VALue	465
12.6.138	ETHERnet:PORT<Pt>:STReam<St>:PAYLoad	465
12.6.139	ETHERnet:PORT<Pt>:STReam<St>:UP16	466
12.6.140	ETHERnet:PORT<Pt>:STReam<St>:UP32	466
12.6.141	ETHERnet:PORT<Pt>:STReam:PCMA	466
12.6.142	ETHERnet:PORT<Pt>:STReam:CROSSprbs	467
12.6.143	ETHERnet:PORT<Pt>:STReam<St>:LATency	467
12.6.144	ETHERnet:PORT<Pt>:STReam<St>:JITTer	467
12.6.145	ETHERnet:PORT<Pt>:STReam<St>:FLOSS	468
12.6.146	ETHERnet:PORT<Pt>:STReam<St>:FLOSS:THResholds[:ENABLE]	468
12.6.147	ETHERnet:PORT<Pt>:STReam<St>:FLOSS:THResholds:MODE	468
12.6.148	ETHERnet:PORT<Pt>:STReam<St>:FLOSS:THResholds:COUNt	469
12.6.149	ETHERnet:PORT<Pt>:STReam<St>:FLOSS:THResholds:RATio	469
12.6.150	ETHERnet:PORT<Pt>:STReam<St>:LATency:THResholds[:ENABLE]	470
12.6.151	ETHERnet:PORT<Pt>:STReam<St>:LATency:THResholds:VALue	470
12.6.152	ETHERnet:PORT<Pt>:STReam<St>:JITTer:THResholds[:ENABLE]	470
12.6.153	ETHERnet:PORT<Pt>:STReam<St>:JITTer:THResholds:VALue	471
12.6.154	ETHERnet:PORT<Pt>:STReam:TSTamp:CCTimestamp	471
12.6.155	ETHERnet:PORT<Pt>:STReam:TSTamp:TSRC	472
12.6.156	ETHERnet:PORT<Pt>:STReam:TSTamp:GCable	472
12.6.157	ETHERnet:PORT<Pt>:STReam:TSTamp:SYNC?	472
12.6.158	ETHERnet:PORT<Pt>:STReam<St>:VARIABLE<No>:FIELD	473
12.6.159	ETHERnet:PORT<Pt>:STReam<St>:VARIABLE<No>:TYPE	474

12.6.160	ETHERnet:PORT<Pt>:STReam<St>:VARiable<No>:OFFSet	474
12.6.161	ETHERnet:PORT<Pt>:STReam<St>:VARiable<No>:LENGth	475
12.6.162	ETHERnet:PORT<Pt>:STReam<St>:VARiable<No>:STARt	475
12.6.163	ETHERnet:PORT<Pt>:STReam<St>:VARiable<No>:END	475
12.6.164	ETHERnet:PORT<Pt>:STReam<St>:VARiable<No>:STEP	476
12.6.165	ETHERnet:PORT<Pt>:STReam<St>:CUSTom:LENGth	476
12.6.166	ETHERnet:PORT<Pt>:STReam<St>:CUSTom:DATA	477
12.7	Settings	478
12.7.1	ETHERnet:PORT<Pt>:SETTings:AARP	478
12.7.2	ETHERnet:PORT<Pt>:SETTings:ANDP	478
12.7.3	ETHERnet:PORT<Pt>:SETTings:APINg	478
12.7.4	ETHERnet:PORT<Pt>:SETTings:RLFSignaling	479
12.7.5	ETHERnet:PORT<Pt>:SETTings:ACMA	479
12.7.6	ETHERnet:PORT<Pt>:SETTings:PLENenght	479
12.7.7	ETHERnet:PORT<Pt>:SETTings:IPViolations	480
12.7.8	ETHERnet:PORT<Pt>:SETTings:ILThreshold	480
12.7.9	ETHERnet:PORT<Pt>:SETTings:FIViolations	480
12.7.10	ETHERnet:PORT<Pt>:SETTings:JFSize	481
12.7.11	ETHERnet:PORT<Pt>:SETTings:ERFault	481
12.7.12	ETHERnet:PORT<Pt>:SETTings:FRESults	481
12.7.13	ETHERnet:PORT<Pt>:SETTings:ACISetup	482
12.7.14	ETHERnet:PORT<Pt>:SETTings:ASTGenerator	482
12.7.15	ETHERnet:PORT<Pt>:SETTings:BER:OBAMeasuring	482
12.7.16	ETHERnet:PORT<Pt>:SETTings:BER:IAFFilter	483
12.7.17	ETHERnet:PORT<Pt>:SETTings:BER:CLFrames	483
12.7.18	ETHERnet:PORT<Pt>:SETTings:BER:HIDEframeLoss	483
12.7.19	ETHERnet:PORT<Pt>:SETTings:CINBand[:ENABLE]	484
12.7.20	ETHERnet:PORT<Pt>:SETTings:CINBand:PASSword[:ENABLE]	484
12.7.21	ETHERnet:PORT<Pt>:SETTings:CINBand:PASSword:VALue	484
12.7.22	ETHERnet:PORT<Pt>:SETTings:CINBand:MAC:SOURce	485
12.7.23	ETHERnet:PORT<Pt>:SETTings:CINBand:MAC:DEFault	485
12.7.24	ETHERnet:PORT<Pt>:SETTings:CINBand:IPV4:SOURce	485
12.7.25	ETHERnet:PORT<Pt>:SETTings:CINBand:DHCP[:ENABLE]	486
12.7.26	ETHERnet:PORT<Pt>:SETTings:CINBand:IPV4:NETMask	486
12.7.27	ETHERnet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway[:ENABLE]	486
12.7.28	ETHERnet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway:ADDRes	487
12.7.29	ETHERnet:PORT<Pt>:SETTings:CINBand:VLAN:LCount	487
12.7.30	ETHERnet:PORT<Pt>:SETTings:CINBand:VLAN:LEVel<Lv>:ID	487
12.8	Filter	488
12.8.1	ETHERnet:PORT<Pt>:FILTer[:ENABLE]	488
12.8.2	ETHERnet:PORT<Pt>:FILTer:RESet	488
12.8.3	ETHERnet:PORT<Pt>:FILTer:ENCapsulation	488
12.8.4	ETHERnet:PORT<Pt>:FILTer:PROTocols	489
12.8.5	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>[:ENABLE]	490
12.8.6	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SMAC	490
12.8.7	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DMAC	490
12.8.8	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:EMSMac	491
12.8.9	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:EMDMac	491
12.8.10	ETHERnet:PORT<Pt>:FILTer:POFFset	492
12.8.11	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:PATtern	492
12.8.12	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SPORT	492
12.8.13	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DPORT	493
12.8.14	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SIV4	493
12.8.15	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DIV4	494
12.8.16	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SIV6	494
12.8.17	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:HIV6	495
12.8.18	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:FIV6	495
12.8.19	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:LABel	496
12.8.20	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:EBITs	496

12.8.21	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:BOLStack	497
12.8.22	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:TTL	497
12.8.23	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:ID	498
12.8.24	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:CFI	498
12.8.25	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:DEI	499
12.8.26	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:PRiority	499
12.8.27	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMSMac	500
12.8.28	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMDMac	500
12.8.29	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:ID	500
12.8.30	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:PRiority	501
12.8.31	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:DEI	501
12.8.32	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:ID	502
12.8.33	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:PRiority	502
12.8.34	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:DEI	503
12.8.35	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:UCA	503
12.9	Thresholds	504
12.9.1	ETHERnet:PORT<Pt>:THResholds[:ENABle]	504
12.9.2	ETHERnet:PORT<Pt>:THResholds:SELect	504
12.9.3	ETHERnet:PORT<Pt>:THResholds:VALue	505
12.10	SyncE	507
12.10.1	ETHERnet:SYNCe:PTHROUGH:FCAPture	507
12.10.2	ETHERnet:PORT<Pt>:SYNCe:PTHROUGH:QLEVel[:ENABle]	507
12.10.3	ETHERnet:PORT<Pt>:SYNCe:PTHROUGH:QLEVel:USER	507
12.10.4	ETHERnet:PORT<Pt>:SYNCe[:ENABle]	508
12.10.5	ETHERnet:PORT<Pt>:SYNCe:MODE	508
12.10.6	ETHERnet:PORT<Pt>:SYNCe:FCAPture	508
12.10.7	ETHERnet:PORT<Pt>:SYNCe:QLEVel	509
12.10.8	ETHERnet:PORT<Pt>:SYNCe:MAC	509
12.10.9	ETHERnet:PORT<Pt>:SYNCe:MAC:AUTO	509
12.10.10	ETHERnet:PORT<Pt>:SYNCe:EFLag	510
12.11	Precision Time Protocol - IEEE 1588v2	511
12.11.1	ETHERnet:PORT<Pt>:PTP[:ENABle]	511
12.11.2	ETHERnet:PORT<Pt>:PTP:SONLy	511
12.11.3	ETHERnet:PORT<Pt>:PTP:CAST	511
12.11.4	ETHERnet:PORT<Pt>:PTP:UNEGotiate	512
12.11.5	ETHERnet:PORT<Pt>:PTP:PROFile	512
12.11.6	ETHERnet:PORT<Pt>:PTP:DOMain	512
12.11.7	ETHERnet:PORT<Pt>:PTP:TPRotocol	513
12.11.8	ETHERnet:PORT<Pt>:PTP:MAC[:SOURce]	513
12.11.9	ETHERnet:PORT<Pt>:PTP:MAC:AUTO	514
12.11.10	ETHERnet:PORT<Pt>:PTP:MAC:DESTination	514
12.11.11	ETHERnet:PORT<Pt>:PTP:MAC:SMULTicast	514
12.11.12	ETHERnet:PORT<Pt>:PTP:MAC:ARP	515
12.11.13	ETHERnet:PORT<Pt>:PTP:MAC:ARP:RESult?	515
12.11.14	ETHERnet:PORT<Pt>:PTP:MAC:NDP	515
12.11.15	ETHERnet:PORT<Pt>:PTP:MAC:NDP:RESult?	515
12.11.16	ETHERnet:PORT<Pt>:PTP:PTYPe	516
12.11.17	ETHERnet:PORT<Pt>:PTP:EXT	516
12.11.18	ETHERnet:PORT<Pt>:PTP:EXT:TYPE	516
12.11.19	ETHERnet:PORT<Pt>:PTP:EXT:LENGth	517
12.11.20	ETHERnet:PORT<Pt>:PTP:EXT:DATA	517
12.11.21	ETHERnet:PORT<Pt>:PTP:IP:IPV4:SOURce	518
12.11.22	ETHERnet:PORT<Pt>:PTP:IP:IPV4:DESTination	518
12.11.23	ETHERnet:PORT<Pt>:PTP:IPV4:IGMP[:ENABle]	518
12.11.24	ETHERnet:PORT<Pt>:PTP:IPV4:IGMP:VERSion	519
12.11.25	ETHERnet:PORT<Pt>:PTP:IP:IPV6:SOURce	519
12.11.26	ETHERnet:PORT<Pt>:PTP:IP:IPV6:DESTination	519
12.11.27	ETHERnet:PORT<Pt>:PTP:IPV6:ADDRconfig	520
12.11.28	ETHERnet:PORT<Pt>:PTP:IPV6:ADDRconfig:RESult?	520

12.11.29	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:IID	520
12.11.30	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:IID:AUTO	521
12.11.31	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:LINKlocal?	521
12.11.32	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:RAFLag?	521
12.11.33	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:SRcMac?	521
12.11.34	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:PREx?	521
12.11.35	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:PRFLag?	522
12.11.36	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:LTIME?	522
12.11.37	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:RENew	522
12.11.38	ETHernet:PORT<Pt>:PTP:IPV6:MLD[:ENABle]	522
12.11.39	ETHernet:PORT<Pt>:PTP:IPV6:MLD:VERsion	523
12.11.40	ETHernet:PORT<Pt>:PTP:IP:DSCP:EVENt	523
12.11.41	ETHernet:PORT<Pt>:PTP:IP:DSCP:NRMAle	523
12.11.42	ETHernet:PORT<Pt>:PTP:TUNNeling	524
12.11.43	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LCount	524
12.11.44	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ID	524
12.11.45	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI	525
12.11.46	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI	525
12.11.47	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:PRiority	526
12.11.48	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ETYPe	526
12.11.49	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LCount	527
12.11.50	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:LABel	527
12.11.51	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:EBITs	527
12.11.52	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:TTL	528
12.11.53	ETHernet:PORT<Pt>:PTP:FCAPture	528
12.11.54	ETHernet:PORT<Pt>:PTP:FCAPture:DIRecotry	528
12.11.55	ETHernet:PORT<Pt>:PTP:ELOG	529
12.11.56	ETHernet:PORT<Pt>:PTP:SMODE	529
12.11.57	ETHernet:PORT<Pt>:PTP:DMEchanism	530
12.11.58	ETHernet:PORT<Pt>:PTP:CLOCK:SOURce	530
12.11.59	ETHernet:PORT<Pt>:PTP:CLOCK:IDENTity	530
12.11.60	ETHernet:PORT<Pt>:PTP:CLOCK:IDENTity:AUTO	531
12.11.61	ETHernet:PORT<Pt>:PTP:CLOCK:P1	531
12.11.62	ETHernet:PORT<Pt>:PTP:CLOCK:P2	531
12.11.63	ETHernet:PORT<Pt>:PTP:CLOCK:CLASs	532
12.11.64	ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy	532
12.11.65	ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy:USER	533
12.11.66	ETHernet:PORT<Pt>:PTP:CLOCK:TSOURce	533
12.11.67	ETHernet:PORT<Pt>:PTP:CLOCK:TSOURce:USER	534
12.11.68	ETHernet:PORT<Pt>:PTP:TIMing:AINterval	534
12.11.69	ETHernet:PORT<Pt>:PTP:TIMing:ATIMEout	534
12.11.70	ETHernet:PORT<Pt>:PTP:TIMing:UOFFset	535
12.11.71	ETHernet:PORT<Pt>:PTP:TIMing:SINterval	535
12.11.72	ETHernet:PORT<Pt>:PTP:TIMing:DRINterval	536
12.11.73	ETHernet:PORT<Pt>:PTP:TIMing:UDURation	536
12.11.74	ETHernet:PORT<Pt>:PTP:TIMing:GCABLE	537
12.11.75	ETHernet:PORT<Pt>:PTP:FFIeld?	537
12.11.76	ETHernet:PORT<Pt>:PTP:FFIeld:AMFLag	537
12.11.77	ETHernet:PORT<Pt>:PTP:FFIeld:L61	537
12.11.78	ETHernet:PORT<Pt>:PTP:FFIeld:L59	538
12.11.79	ETHernet:PORT<Pt>:PTP:FFIeld:CUOValid	538
12.11.80	ETHernet:PORT<Pt>:PTP:FFIeld:PTIMescale	538
12.11.81	ETHernet:PORT<Pt>:PTP:FFIeld:TTRaceable	539
12.11.82	ETHernet:PORT<Pt>:PTP:FFIeld:FTRaceable	539
12.11.83	ETHernet:PORT<Pt>:PTP:FFIeld:SUNCertain	539
12.11.84	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv	540
12.11.85	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv:SPEEd	540
12.11.86	ETHernet:PORT<Pt>:PTP:LOG?	541
12.12	Follow	542

12.12.1	ETHERnet:FOLLow:TRAFfic	542
12.12.2	ETHERnet:FOLLow:STReam<St>	542
12.12.3	ETHERnet:FOLLow:GATeway<St>	542
12.12.4	ETHERnet:FOLLow:SETTings	543
12.12.5	ETHERnet:FOLLow:FILTer	543
12.12.6	ETHERnet:FOLLow:THResholds	543
12.12.7	ETHERnet:FOLLow:SYNCe	544
12.12.8	ETHERnet:FOLLow:PTP	544
12.12.9	ETHERnet:PORT<Pt>:FOLLow:TRAFfic	544
12.12.10	ETHERnet:PORT<Pt>:FOLLow:STReam<St>	545
12.12.11	ETHERnet:PORT<Pt>:FOLLow:GATeway<St>	545
12.12.12	ETHERnet:PORT<Pt>:FOLLow:SETTings	546
12.12.13	ETHERnet:PORT<Pt>:FOLLow:FILTer	546
12.12.14	ETHERnet:PORT<Pt>:FOLLow:THResholds	546
12.12.15	ETHERnet:PORT<Pt>:FOLLow:SYNCe	547
12.12.16	ETHERnet:PORT<Pt>:FOLLow:PTP	547
12.12.17	ETHERnet:PORT<Pt>:FOLLow:WAN	547
12.13	Stimuli	548
12.13.1	ETHERnet:PORT<Pt>:STIMuli:ALARm	548
12.13.2	ETHERnet:PORT<Pt>:STIMuli:ERRor	548
12.13.3	ETHERnet:PORT<Pt>:STIMuli:EINSection	549
12.13.4	ETHERnet:PORT<Pt>:STIMuli:EBLength	549
12.13.5	ETHERnet:PORT<Pt>:STIMuli:FEC:ERRor:LANE	550
12.13.6	ETHERnet:PORT<Pt>:STIMuli:WAN:ALARm	550
12.13.7	ETHERnet:PORT<Pt>:STIMuli:WAN:ERRor	551
12.13.8	ETHERnet:PORT<Pt>:STIMuli:WAN:EINSection	551
12.13.9	ETHERnet:PORT<Pt>:STIMuli:WAN:EBLength	551
12.13.10	ETHERnet:PORT<Pt>:STIMuli:DEViation	552
12.13.11	ETHERnet:PORT<Pt>:STIMuli:PCS:ALARm	552
12.13.12	ETHERnet:PORT<Pt>:STIMuli:PCS:ERRor	553
12.13.13	ETHERnet:PORT<Pt>:STIMuli:PCS:ERRor:LANE	553
12.13.14	ETHERnet:PORT<Pt>:STIMuli:PCS:EINSection	554
12.13.15	ETHERnet:PORT<Pt>:STIMuli:PCS:EBLength	554
12.13.16	ETHERnet:PORT<Pt>:STIMuli:PCS:ERATE	554
12.13.17	ETHERnet:PORT<Pt>:STIMuli:PCS:EELength	555
12.13.18	ETHERnet:PORT<Pt>:STIMuli:PCS:ENLength	555
12.13.19	ETHERnet:PORT<Pt>:STIMuli:PCS:SKEW:BIT	555
12.13.20	ETHERnet:PORT<Pt>:STIMuli:PCS:SKEW:TYPE	556
12.13.21	ETHERnet:PORT<Pt>:STIMuli:PCS:SKEW:LANE	556
12.13.22	ETHERnet:PORT<Pt>:STIMuli:PCS:SKEW:NS?	556
12.14	Result	557
12.14.1	ETHERnet:PORT<Pt>:IFETch?	557
12.14.2	ETHERnet:PORT<Pt>:TFETch?	563
12.14.3	ETHERnet:PORT<Pt>:TFRDifference:PSELection	564
12.15	Status	565
12.15.1	ETHERnet:STATus:PORT<Pt>:AESummary[:EVENT]?	565
12.15.2	ETHERnet:STATus:PORT<Pt>:AESummary:CONDition?	565
12.15.3	ETHERnet:STATus:PORT<Pt>:ALARm<section>[:EVENT]?	565
12.15.4	ETHERnet:STATus:PORT<Pt>:ALARm<section>:CONDition?	566
12.15.5	ETHERnet:STATus:PORT<Pt>:ERRor<section>[:EVENT]?	567
12.15.6	ETHERnet:STATus:PORT<Pt>:ERRor<section>:CONDition?	567
12.15.7	ETHERnet:STATus:PORT<Pt>:LINK?	568
12.15.8	ETHERnet:STATus:PORT<Pt>:INTerface?	568
12.15.9	ETHERnet:STATus:PORT<Pt>:FRAMes?	568
12.15.10	ETHERnet:STATus:PORT<Pt>:MPLS?	568
12.15.11	ETHERnet:STATus:PORT<Pt>:VLAN?	568
12.15.12	ETHERnet:STATus:PORT<Pt>:SPeed?	569
12.15.13	ETHERnet:STATus:PORT<Pt>:DUPLex?	569
12.15.14	ETHERnet:STATus:PORT<Pt>:MDI?	569

12.15.15	ETHernet:STATus:PORT<Pt>:L10G?	569
12.15.16	ETHernet:STATus:PORT<Pt>:LFS?	569
12.15.17	ETHernet:STATus:PORT<Pt>:ANComplete?	570
12.15.18	ETHernet:STATus:PORT<Pt>:PCAPable?	570
12.15.19	ETHernet:STATus:PORT<Pt>:APRequest?	570
12.15.20	ETHernet:STATus:PORT<Pt>:RFAult?	570
12.15.21	ETHernet:STATus:PORT<Pt>:LClock?	570
12.15.22	ETHernet:STATus:PORT<Pt>:SADuplex?	571
12.15.23	ETHernet:STATus:PORT<Pt>:UTILization?	571
12.15.24	ETHernet:STATus:PORT<Pt>:THRoughput?	571
12.15.25	ETHernet:STATus:PORT<Pt>:EFRames?	571
12.15.26	ETHernet:STATus:PORT<Pt>:PCS:SHLock?	572
12.15.27	ETHernet:STATus:PORT<Pt>:PCS:AMLock?	572
12.15.28	ETHernet:STATus:PORT<Pt>:TIMing?	572
12.15.29	ETHernet:STATus:PORT<Pt>:TIMing:SOURce?	572
12.15.30	ETHernet:STATus:PORT<Pt>:SYNCe?	572
12.15.31	ETHernet:STATus:PORT<Pt>:PTP:LClock?	573
12.15.32	ETHernet:STATus:PORT<Pt>:PTP:WCLock?	573
12.15.33	ETHernet:STATus:PORT<Pt>:PTP:PCLock?	573
12.15.34	ETHernet:STATus:PORT<Pt>:PTP:GClock?	573
12.15.35	ETHernet:STATus:PORT<Pt>:PTP:FMASters?	574
12.15.36	ETHernet:STATus:PORT<Pt>:WAN:CAPTure:SOH:TRACe?	574
12.15.37	ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:SOH?	574
12.15.38	ETHernet:STATus:PORT<Pt>:WAN:CAPTure:POH:TRACe?	575
12.15.39	ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:POH?	575
12.15.40	ETHernet:STATus:PORT<Pt>:TSRC:R10M?	576
12.15.41	ETHernet:STATus:PORT<Pt>:TSRC:RPPS?	576
12.15.42	ETHernet:STATus:PORT<Pt>:TSRC:GPS?	576
12.16	Ping	577
12.16.1	ETHernet:PING:STARt	577
12.16.2	ETHernet:PING:STOP	577
12.16.3	ETHernet:PING:SETup:PORT<Pt>:DMODE	577
12.16.4	ETHernet:PING:SETup:PORT<Pt>:SDURation	577
12.16.5	ETHernet:PING:SETup:PORT<Pt>:RDURation	578
12.16.6	ETHernet:PING:SETup:PORT<Pt>:INTerval	578
12.16.7	ETHernet:PING:SETup:PORT<Pt>:FSIZe	578
12.16.8	ETHernet:PING:SETup:PORT<Pt>:TOUT	579
12.16.9	ETHernet:PING:RESults:SUMMARY?	579
12.16.10	ETHernet:PING:RESults:RTT?	579
12.16.11	ETHernet:PING:RESults:NREQuests?	580
12.16.12	ETHernet:PING:RESults:SREQuest?	580
12.17	Traceroute	581
12.17.1	ETHernet:TRACeroute:STARt	581
12.17.2	ETHernet:TRACeroute:STOP	581
12.17.3	ETHernet:TRACeroute:SETup:NATTempts	581
12.17.4	ETHernet:TRACeroute:SETup:MNHops	581
12.17.5	ETHernet:TRACeroute:SETup:TOUT	582
12.17.6	ETHernet:TRACeroute:SETup:NTPHosts	582
12.17.7	ETHernet:TRACeroute:RESults:NHOPs?	582
12.17.8	ETHernet:TRACeroute:RESults:HOP?	582
12.18	RFC2544	584
12.18.1	ETHernet:RFC:STARt	584
12.18.2	ETHernet:RFC:STOP	584
12.18.3	ETHernet:RFC:SETup:GENeral:MODE	584
12.18.4	ETHernet:RFC:SETup:GENeral:TSElection	584
12.18.5	ETHernet:RFC:SETup:GENeral:E2E:OWAY	585
12.18.6	ETHernet:RFC:SETup:GENeral:E2E:ADDReSS	585
12.18.7	ETHernet:RFC:SETup:GENeral:E2E:TDIRection	585
12.18.8	ETHernet:RFC:SETup:GENeral:E2E:SSTore	586

12.18.9	ETHERnet:RFC:SETup:GENeral:TLFrames	586
12.18.10	ETHERnet:RFC:SETup:GENeral:IAFFilter	586
12.18.11	ETHERnet:RFC:SETup:GENeral:JITTer	587
12.18.12	ETHERnet:RFC:SETup:GENeral:ACCumulate	587
12.18.13	ETHERnet:RFC:SETup:GENeral:TCLayer	587
12.18.14	ETHERnet:RFC:SETup:GENeral:TTYPe	588
12.18.15	ETHERnet:RFC:SETup:GENeral:VERCompati	588
12.19	RFC2544 - Throughput	589
12.19.1	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:MODE	589
12.19.2	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:USER	589
12.19.3	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:JUMBo	590
12.19.4	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:BEGin	590
12.19.5	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:END	590
12.19.6	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:STEP	591
12.19.7	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:CONStant	591
12.19.8	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:FLEXible:COUNt	591
12.19.9	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:FSIZE:FLEXible<Count>:SIZE	592
12.19.10	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STOP	592
12.19.11	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MINimum	593
12.19.12	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum	593
12.19.13	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STEP	594
12.19.14	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch[:ENABLE]	594
12.19.15	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:MODE	594
12.19.16	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch :RESolution	595
12.19.17	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:DURation:STEP	595
12.19.18	ETHERnet:RFC:SETup:PORT<Pt>:THRoughput:DURation:REPeats	596
12.20	RFC2544 - Frame Loss	597
12.20.1	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:MODE	597
12.20.2	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:USER	597
12.20.3	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:JUMBo	598
12.20.4	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:BEGin	598
12.20.5	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:END	598
12.20.6	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:STEP	599
12.20.7	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:CONStant	599
12.20.8	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:FLEXible:COUNt	599
12.20.9	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:FSIZE:FLEXible<Count>:SIZE	600
12.20.10	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:STOP	600
12.20.11	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:MINimum	601
12.20.12	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:MAXimum	601
12.20.13	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:STEP	602
12.20.14	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:ASEarch[:ENABLE]	602
12.20.15	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:ASEarch:MODE	602
12.20.16	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:LLoad:ASEarch:RESolution	603
12.20.17	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:DURation:STEP	603
12.20.18	ETHERnet:RFC:SETup:PORT<Pt>:FLOSS:DURation:REPeats	604
12.21	RFC2544 - Throughput and Frame Loss	605
12.21.1	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:MODE	605
12.21.2	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:USER	605
12.21.3	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:JUMBo	606
12.21.4	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:BEGin	606
12.21.5	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:END	606
12.21.6	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:STEP	607
12.21.7	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:CONStant	607
12.21.8	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:FLEXible:COUNt	607
12.21.9	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:FLEXible<Count>:SIZE	608
12.21.10	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STOP	608
12.21.11	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MINimum	609
12.21.12	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MAXimum	609

12.21.13	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STEP	610
12.21.14	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch [:ENABLE]	610
12.21.15	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:MODE	611
12.21.16	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch :RESolution	611
12.21.17	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:STEP	611
12.21.18	ETHERnet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:REPeats	612
12.22	RFC2544 - Latency	613
12.22.1	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:MODE	613
12.22.2	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:USER	613
12.22.3	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:JUMBo	614
12.22.4	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:BEGin	614
12.22.5	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:END	614
12.22.6	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:STEP	615
12.22.7	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:CONStant	615
12.22.8	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:FLEXible:COUNt	615
12.22.9	ETHERnet:RFC:SETup:PORT<Pt>:LATency:FSIZE:FLEXible<Count>:SIZE	616
12.22.10	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:MINimum	616
12.22.11	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:MAXimum	617
12.22.12	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:STEP	617
12.22.13	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:ONLY	618
12.22.14	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:OTEST	618
12.22.15	ETHERnet:RFC:SETup:PORT<Pt>:LATency:LLoad:TLEVel	618
12.22.16	ETHERnet:RFC:SETup:PORT<Pt>:LATency:DURation:STEP	619
12.22.17	ETHERnet:RFC:SETup:PORT<Pt>:LATency:DURation:REPeats	619
12.23	RFC2544 - Burst	620
12.23.1	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:MODE	620
12.23.2	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:MODE	620
12.23.3	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:USER	620
12.23.4	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:JUMBo	621
12.23.5	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:BEGin	621
12.23.6	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:END	622
12.23.7	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:STEP	622
12.23.8	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:CONStant	622
12.23.9	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:FLEXible:COUNt	623
12.23.10	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FSIZE:FLEXible<Count>:SIZE	623
12.23.11	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:MODE	624
12.23.12	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:BEGin	624
12.23.13	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:END	624
12.23.14	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STEP	625
12.23.15	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:CONStant	625
12.23.16	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STOP	625
12.23.17	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch[:ENABLE]	626
12.23.18	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE	626
12.23.19	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution	627
12.23.20	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:SEConds	627
12.23.21	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:MODE	627
12.23.22	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:RESolution	628
12.23.23	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:DURation:STEP	628
12.23.24	ETHERnet:RFC:SETup:PORT<Pt>:BURSt:DURation:REPeats	629
12.24	RFC2544 - Result	630
12.24.1	ETHERnet:RFC:RESult:TEST	630
12.24.2	ETHERnet:RFC:RESult:PORT<Pt>:NSTep?	630
12.24.3	ETHERnet:RFC:RESult:PORT<Pt>:SElect	630
12.24.4	ETHERnet:RFC:RESult:PORT<Pt>:FETCh?	631
12.25	Y.1564 Service Activation Test	632
12.25.1	ETHERnet:SATest:STARt	632
12.25.2	ETHERnet:SATest:STOP	632

12.25.3	ETHERnet:SAtest:SETup:TMODe	632
12.25.4	ETHERnet:SAtest:SETup:OWTest:LTRemote[:ENABLE]	632
12.25.5	ETHERnet:SAtest:SETup:OWTest:RTLocal[:ENABLE]	633
12.25.6	ETHERnet:SAtest:SETup:OWTest:BSYmmetry	633
12.25.7	ETHERnet:SAtest:SETup:OWTest:SYNChronization	633
12.25.8	ETHERnet:SAtest:SETup:OWTest:TLSAddresses[:ENABLE]	634
12.25.9	ETHERnet:SAtest:SETup:CCFC	634
12.25.10	ETHERnet:SAtest:SETup:CBRate	634
12.25.11	ETHERnet:SAtest:SETup:SPTDuration	635
12.25.12	ETHERnet:SAtest:SETup:SPTDuration:CDURation	635
12.25.13	ETHERnet:SAtest:SETup:COFail	636
12.25.14	ETHERnet:SAtest:SETup:GENeral:IAFFilter	636
12.25.15	ETHERnet:SAtest:SETup:SERvice<no>[:ENABLE]	636
12.25.16	ETHERnet:SAtest:SETup:SERvice<no>:NAME	637
12.25.17	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote][:CIRate]	637
12.25.18	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal[:CIRate]	637
12.25.19	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote][:CIRate]:PROFile	638
12.25.20	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal[:CIRate]:PROFile	638
12.25.21	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote][:CIRate]:ENCoding :VIDeo	638
12.25.22	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal[:CIRate]:ENCoding :VIDeo	639
12.25.23	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote][:CIRate]:ENCoding :VOICe	639
12.25.24	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal[:CIRate]:ENCoding :VOICe	640
12.25.25	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote][:CIRate]:NCHannels	640
12.25.26	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal[:CIRate]:NCHannels	640
12.25.27	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:EIRate	641
12.25.28	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:EIRate	641
12.25.29	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:TPOLicing[:ENABLE]	641
12.25.30	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:TPOLicing[:ENABLE]	642
12.25.31	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:TPOLicing:MARGin	642
12.25.32	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:TPOLicing:MARGin	642
12.25.33	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CBSize	643
12.25.34	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CBSize	643
12.25.35	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:EBSize	643
12.25.36	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:EBSize	644
12.25.37	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare[:ENABLE]	644
12.25.38	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare[:ENABLE]	644
12.25.39	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare:CMETHod	645
12.25.40	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare:CMETHod	645
12.25.41	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare:DSCP:GREen	645
12.25.42	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare:DSCP:GREen	646
12.25.43	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare:DSCP :YELLow	646
12.25.44	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare:DSCP:YELLow	646
12.25.45	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare:PCP:GREen	647
12.25.46	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare:PCP:GREen	647
12.25.47	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:CAVare:PCP :YELLow	647
12.25.48	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:CAVare:PCP:YELLow	648
12.25.49	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:SACRiteria:FTDdelay	648
12.25.50	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:SACRiteria:FTDdelay	648
12.25.51	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:SACRiteria :FDVariation	649
12.25.52	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:SACRiteria:FDVariation	649
12.25.53	ETHERnet:SAtest:SETup:SERvice<no>[:LTRemote]:SACRiteria:FLRatio	649
12.25.54	ETHERnet:SAtest:SETup:SERvice<no>:RTLocal:SACRiteria:FLRatio	650

12.25.55	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:SACriteria:AVailability	650
12.25.56	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:SACriteria:AVailability	650
12.25.57	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:FSMode	651
12.25.58	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:FSMode	651
12.25.59	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:CFSize	651
12.25.60	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:CFSize	652
12.25.61	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:EMIX	652
12.25.62	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:EMIX	653
12.25.63	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:MTU	654
12.25.64	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:MTU	654
12.25.65	ETHernet:SAtest:SETup:SERvice<no>[:LTRemote]:UDFSize	654
12.25.66	ETHernet:SAtest:SETup:SERvice<no>:RTLocal:UDFSize	655
12.25.67	ETHernet:SAtest:SETup:SERvice<no>:SCTSteps:SDURation	655
12.25.68	ETHernet:SAtest:SETup:SERvice<no>:SCTSteps:NSTep	655
12.25.69	ETHernet:SAtest:SETup:SERvice<no>:SCTSteps:SLOPe	656
12.25.70	ETHernet:SAtest:RESult:TSYNchronization?	657
12.25.71	ETHernet:SAtest:RESult:SCTest[:LTRemote]?	657
12.25.72	ETHernet:SAtest:RESult:SCTest:RTLocal?	657
12.25.73	ETHernet:SAtest:RESult:SCTest:SERvice<no>[:LTRemote]:CIRate?	657
12.25.74	ETHernet:SAtest:RESult:SCTest:SERvice<no>:RTLocal:CIRate?	658
12.25.75	ETHernet:SAtest:RESult:SCTest:SERvice<no>[:LTRemote]:EIRate?	658
12.25.76	ETHernet:SAtest:RESult:SCTest:SERvice<no>:RTLocal:EIRate?	658
12.25.77	ETHernet:SAtest:RESult:SCTest:SERvice<no>[:LTRemote]:TPOLicing?	659
12.25.78	ETHernet:SAtest:RESult:SCTest:SERvice<no>:RTLocal:TPOLicing?	659
12.25.79	ETHernet:SAtest:RESult:SCTest:SERvice<no>[:LTRemote]:CBSize?	659
12.25.80	ETHernet:SAtest:RESult:SCTest:SERvice<no>:RTLocal:CBSize?	659
12.25.81	ETHernet:SAtest:RESult:SCTest:SERvice<no>[:LTRemote]:EBSize?	660
12.25.82	ETHernet:SAtest:RESult:SCTest:SERvice<no>:RTLocal:EBSize?	660
12.25.83	ETHernet:SAtest:RESult:SPTest[:LTRemote]?	661
12.25.84	ETHernet:SAtest:RESult:SPTest:RTLocal?	661
12.25.85	ETHernet:SAtest:RESult:SPTest:SERvice<no>[:LTRemote]?	661
12.25.86	ETHernet:SAtest:RESult:SPTest:SERvice<no>:RTLocal?	662
12.26	Cable Test	663
12.26.1	ETHernet:CABLe:STARt	663
12.26.2	ETHernet:CABLe:STOP	663
12.26.3	ETHernet:CABLe:CCStandard	663
12.26.4	ETHernet:CABLe:RESults:PAIR<Pr>?	664
12.27	IP Channel Statistics	665
12.27.1	ETHernet:CStat:STARt	665
12.27.2	ETHernet:CStat:STOP	665
12.27.3	ETHernet:CStat:SETup:FOLLow	665
12.27.4	ETHernet:CStat:SETup:PORT<Pt>:FOLLow	665
12.27.5	ETHernet:CStat:SETup:PORT<Pt>:CDEFinitions	666
12.27.6	ETHernet:CStat:SETup:PORT<Pt>:MERGe	666
12.27.7	ETHernet:CStat:SETup:PORT<Pt>:FRESults	667
12.27.8	ETHernet:CStat:RESults:PORT<Pt>:NCHannels?	667
12.27.9	ETHernet:CStat:RESults:PORT<Pt>:DFRames?	667
12.27.10	ETHernet:CStat:RESults:PORT<Pt>:FETCh?	667
12.27.11	ETHernet:CStat:RESults:RESet	669
12.28	Monitor Generator	670
12.28.1	ETHernet:MONGen:SETup:GENeral:IAFFilter	670
12.29	Sync Test	671
12.29.1	ETHernet:SYNTest:SETup:MPERiod	671
12.29.2	ETHernet:SYNTest:SETup:MPERiod:USERdefined	671
12.29.3	ETHernet:SYNTest:SETup:MPERiod:USERdefined:TIME	671
12.29.4	ETHernet:SYNTest:SETup:PPS:MODE[:ENABLE]	672
12.29.5	ETHernet:SYNTest:SETup:PPS:CABLeCorrection	672
12.29.6	ETHernet:SYNTest:SETup:PACKet:CABLeCorrection	672

12.29.7	ETHERnet:THResholds:PPS:PHASe[:ENABLE]	673
12.29.8	ETHERnet:THResholds:PPS:PHASe:MINValue	673
12.29.9	ETHERnet:THResholds:PPS:PHASe:MAXValue	673
12.29.10	ETHERnet:THResholds:PPS:FILTered[:ENABLE]	674
12.29.11	ETHERnet:THResholds:PPS:FILTered:MINValue	674
12.29.12	ETHERnet:THResholds:PPS:FILTered:MAXValue	674
12.29.13	ETHERnet:THResholds:PPS:DEViation[:ENABLE]	675
12.29.14	ETHERnet:THResholds:PPS:DEViation:MINValue	675
12.29.15	ETHERnet:THResholds:PPS:DEViation:MAXValue	675
12.29.16	ETHERnet:THResholds:OWD:SYNC[:ENABLE]	676
12.29.17	ETHERnet:THResholds:OWD:SYNC:MINValue	676
12.29.18	ETHERnet:THResholds:OWD:SYNC:MAXValue	676
12.29.19	ETHERnet:THResholds:OWD:FOLLow[:ENABLE]	677
12.29.20	ETHERnet:THResholds:OWD:FOLLow:MINValue	677
12.29.21	ETHERnet:THResholds:OWD:FOLLow:MAXValue	677
12.29.22	ETHERnet:THResholds:OWD:DELay[:ENABLE]	678
12.29.23	ETHERnet:THResholds:OWD:DELay:MINValue	678
12.29.24	ETHERnet:THResholds:OWD:DELay:MAXValue	678
12.29.25	ETHERnet:PORT<Pt>:SYNTest:ADVanced:ADAPte[:ENABLE]	679
12.29.26	ETHERnet:SYNTest:SETup:ADVanced:FOLLow	679
12.29.27	ETHERnet:PORT<Pt>:SYNCtest:RESults:BOUNds?	679
12.29.28	ETHERnet:SYNCtest:1PPS:RESults?	679
12.29.29	ETHERnet:PORT<Pt>:SYNCtest:OWD:RESults?	680
12.29.30	ETHERnet:PORT<Pt>:SYNCtest:TERR:RESults?	680
12.30	Frame Capture	680
12.30.1	ETHERnet:PORT<Pt>:CAPTure:STARt	680
12.30.2	ETHERnet:PORT<Pt>:CAPTure:STOP	680
12.30.3	ETHERnet:PORT<Pt>:CAPTure:STATus?	681
12.30.4	ETHERnet:PORT<Pt>:CAPTure:BUFSize	681
12.30.5	ETHERnet:PORT<Pt>:CAPTure:SLICing	681
12.30.6	ETHERnet:PORT<Pt>:CAPTure:ALOCation	682
12.30.7	ETHERnet:PORT<Pt>:CAPTure:TXFRame	682
12.30.8	ETHERnet:PORT<Pt>:CAPTure:TRIGger:TYPE	682
12.30.9	ETHERnet:PORT<Pt>:CAPTure:TRIGger:POSition	683
12.30.10	ETHERnet:PORT<Pt>:CAPTure:TRIGger:ERRor	683
12.30.11	ETHERnet:PORT<Pt>:CAPTure:TRIGger:OFFSet	684
12.30.12	ETHERnet:PORT<Pt>:CAPTure:TRIGger:PATtern	684
12.30.13	ETHERnet:PORT<Pt>:CAPTure:STORe	684
12.30.14	ETHERnet:PORT<Pt>:CAPTure:BUFFer?	685
12.31	Discovery	686
12.31.1	ETHERnet:DISCovery:SETup:TYPE	686
12.31.2	ETHERnet:DISCovery:SETup:TARGet:COUNt	686
12.31.3	ETHERnet:DISCovery:SETup:TARGet:IPV4[:BEGin]	686
12.31.4	ETHERnet:DISCovery:RESults:NREQuest?	687
12.31.5	ETHERnet:DISCovery:RESults:SREQuest?	687
12.31.6	ETHERnet:DISCovery:RESults:SREQuest:DETail?	687
12.31.7	ETHERnet:DISCovery:RESults:UPDate	688
12.31.8	ETHERnet:DISCovery:RESults:UPDate:RESult?	688
12.31.9	ETHERnet:DISCovery:CAPPLication[:EXECute]	688
12.31.10	ETHERnet:DISCovery:CAPPLication:PASSword	688
12.31.11	ETHERnet:DISCovery:CAPPLication:SAPPLication	689
12.31.12	ETHERnet:DISCovery:CAPPLication:TARGet:MAC:SOURce	689
12.31.13	ETHERnet:DISCovery:CAPPLication:TARGet:IPV4:SOURce	689
12.31.14	ETHERnet:DISCovery:CAPPLication:TARGet:IPV4:DESTination	690
12.31.15	ETHERnet:DISCovery:CAPPLication:TARGet:IPV4:NETMask	690
12.31.16	ETHERnet:DISCovery:CAPPLication:TARGet:IPV4:GATeway[:ENABLE]	690
12.31.17	ETHERnet:DISCovery:CAPPLication:TARGet:IPV4:GATeway:ADDReSS	691
12.31.18	ETHERnet:DISCovery:CAPPLication:TARGet:VLAN:LCount	691
12.31.19	ETHERnet:DISCovery:CAPPLication:TARGet:VLAN:LEVel<Lv>:ID	691

12.31.20	ETHernet:DISCovey:CAPPLication:IMULTi:MAC:SOURce	692
12.31.21	ETHernet:DISCovey:CAPPLication:IMULTi:IPV4:SOURce	692
12.31.22	ETHernet:DISCovey:CAPPLication:IMULTi:VLAN:LEVel<Lv>:ID	692
12.32	OAM	694
12.32.1	ETHernet:PORT<Pt>:OAM:PROTOcol	694
12.32.2	ETHernet:PORT<Pt>:OAM:SMAC	694
12.32.3	ETHernet:PORT<Pt>:OAM:MAC:ETYPe	695
12.32.4	ETHernet:PORT<Pt>:OAM:AH:DISCovey[:ENABle]	695
12.32.5	ETHernet:PORT<Pt>:OAM:AH:DISCovey:LMODe	695
12.32.6	ETHernet:PORT<Pt>:OAM:AH:DISCovey:VOUI	696
12.32.7	ETHernet:PORT<Pt>:OAM:AH:DISCovey:VSINfo	696
12.32.8	ETHernet:PORT<Pt>:OAM:AH:DISCovey:UNIDirectional	696
12.32.9	ETHernet:PORT<Pt>:OAM:AH:DISCovey:VRETrival	697
12.32.10	ETHernet:PORT<Pt>:OAM:AH:LDEFects:LFAults	697
12.32.11	ETHernet:PORT<Pt>:OAM:AH:LDEFects:DGASp	697
12.32.12	ETHernet:PORT<Pt>:OAM:AH:LDEFects:CEvent	698
12.32.13	ETHernet:PORT<Pt>:OAM:AG[:ENABle]	698
12.32.14	ETHernet:PORT<Pt>:OAM:AG:MEPid	698
12.32.15	ETHernet:PORT<Pt>:OAM:AG:MDLevel	699
12.32.16	ETHernet:PORT<Pt>:OAM:AG:DOMain	699
12.32.17	ETHernet:PORT<Pt>:OAM:AG:MAIDentifier	699
12.32.18	ETHernet:PORT<Pt>:OAM:AG:CCM:INTerval	700
12.32.19	ETHernet:PORT<Pt>:OAM:AG:LBM:OTLV	700
12.32.20	ETHernet:PORT<Pt>:OAM:AG:LBM:TLVLength	701
12.32.21	ETHernet:PORT<Pt>:OAM:AG:LBM:DTLV:VALue	701
12.32.22	ETHernet:PORT<Pt>:OAM:AG:LBM:TTLV:VALue	701
12.32.23	ETHernet:PORT<Pt>:OAM:AG:LTM:TTL	702
12.32.24	ETHernet:PORT<Pt>:OAM:AG:LTM:TID	702
12.32.25	ETHernet:PORT<Pt>:OAM:AG:MEPList:ADD	702
12.32.26	ETHernet:PORT<Pt>:OAM:AG:MEPList:DELeTe[:MEP]	703
12.32.27	ETHernet:PORT<Pt>:OAM:AG:MEPList:CATalog?	703
12.32.28	ETHernet:PORT<Pt>:OAM:Y[:ENABle]	703
12.32.29	ETHernet:PORT<Pt>:OAM:Y:MEPid	703
12.32.30	ETHernet:PORT<Pt>:OAM:Y:MEGid	704
12.32.31	ETHernet:PORT<Pt>:OAM:Y:MEGLevel	704
12.32.32	ETHernet:PORT<Pt>:OAM:Y:CCM:INTerval	705
12.32.33	ETHernet:PORT<Pt>:OAM:Y:LBM:OTLV	705
12.32.34	ETHernet:PORT<Pt>:OAM:Y:LBM:TLVLength	705
12.32.35	ETHernet:PORT<Pt>:OAM:Y:LBM:DTLV:VALue	706
12.32.36	ETHernet:PORT<Pt>:OAM:Y:LBM:TTLV:VALue	706
12.32.37	ETHernet:PORT<Pt>:OAM:Y:LTM:TTL	706
12.32.38	ETHernet:PORT<Pt>:OAM:Y:LTM:TID	707
12.32.39	ETHernet:PORT<Pt>:OAM:Y:TST:FTSend	707
12.32.40	ETHernet:PORT<Pt>:OAM:Y:TST:RATE	707
12.32.41	ETHernet:PORT<Pt>:OAM:Y:TST:OTLV	708
12.32.42	ETHernet:PORT<Pt>:OAM:Y:TST:TLVLength	708
12.32.43	ETHernet:PORT<Pt>:OAM:Y:TST:TTLV:VALue	708
12.32.44	ETHernet:PORT<Pt>:OAM:Y:MCC:OUI	709
12.32.45	ETHernet:PORT<Pt>:OAM:Y:MCC:DATA	709
12.32.46	ETHernet:PORT<Pt>:OAM:Y:LCK:CMEG	709
12.32.47	ETHernet:PORT<Pt>:OAM:Y:LCK:RATE	710
12.32.48	ETHernet:PORT<Pt>:OAM:Y:AIS:CMEG	710
12.32.49	ETHernet:PORT<Pt>:OAM:Y:AIS:RATE	710
12.32.50	ETHernet:PORT<Pt>:OAM:Y:DMONe:TYPE	711
12.32.51	ETHernet:PORT<Pt>:OAM:Y:DMONe:RATE	711
12.32.52	ETHernet:PORT<Pt>:OAM:Y:DMONe:FTSend	712
12.32.53	ETHernet:PORT<Pt>:OAM:Y:DMONe:OTLV	712
12.32.54	ETHernet:PORT<Pt>:OAM:Y:DMONe:TLVLength	712
12.32.55	ETHernet:PORT<Pt>:OAM:Y:DMONe:DTLV:VALue	713

12.32.56	ETHernet:PORT<Pt>:OAM:Y:DMONe:TTLV:VALue	713
12.32.57	ETHernet:PORT<Pt>:OAM:Y:DMM:TYPE	713
12.32.58	ETHernet:PORT<Pt>:OAM:Y:DMM:RATE	714
12.32.59	ETHernet:PORT<Pt>:OAM:Y:DMM:FTSend	714
12.32.60	ETHernet:PORT<Pt>:OAM:Y:DMM:FVTHreshold	714
12.32.61	ETHernet:PORT<Pt>:OAM:Y:DMM:OTLV	715
12.32.62	ETHernet:PORT<Pt>:OAM:Y:DMM:TLVLength	715
12.32.63	ETHernet:PORT<Pt>:OAM:Y:DMM:DTLV:VALue	715
12.32.64	ETHernet:PORT<Pt>:OAM:Y:DMM:TTLV:VALue	716
12.32.65	ETHernet:PORT<Pt>:OAM:Y:LMM:RATE	716
12.32.66	ETHernet:PORT<Pt>:OAM:Y:LMM:FTSend	716
12.32.67	ETHernet:PORT<Pt>:OAM:Y:LMM:FLTHreshold	717
12.32.68	ETHernet:PORT<Pt>:OAM:Y:SLM:RATE	717
12.32.69	ETHernet:PORT<Pt>:OAM:Y:SLM:FTSend	717
12.32.70	ETHernet:PORT<Pt>:OAM:Y:SLM:FLTHreshold	718
12.32.71	ETHernet:PORT<Pt>:OAM:Y:EXM:DATA	718
12.32.72	ETHernet:PORT<Pt>:OAM:Y:VSM:DATA	718
12.32.73	ETHernet:PORT<Pt>:OAM:Y:MEPList:ADD	719
12.32.74	ETHernet:PORT<Pt>:OAM:Y:MEPList:DELeTe[:MEP]	719
12.32.75	ETHernet:PORT<Pt>:OAM:Y:MEPList:CATalog?	719
12.32.76	ETHernet:PORT<Pt>:OAM:DISCoveRY:TYPE	719
12.32.77	ETHernet:PORT<Pt>:OAM:DISCoveRY:INTerval	720
12.32.78	ETHernet:PORT<Pt>:OAM:DISCoveRY:DMAX	720
12.32.79	ETHernet:PORT<Pt>:OAM:DISCoveRY:CATalog?	721
12.32.80	ETHernet:PORT<Pt>:OAM:MPLS[:ENABle]	721
12.32.81	ETHernet:PORT<Pt>:OAM:MPLS:LCOunt	721
12.32.82	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:LAbel	722
12.32.83	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TCLass	722
12.32.84	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TTL	722
12.32.85	ETHernet:PORT<Pt>:OAM:MPLS:TPRofile[:ENABle]	723
12.32.86	ETHernet:PORT<Pt>:OAM:MIM[:ENABle]	723
12.32.87	ETHernet:PORT<Pt>:OAM:MIM:BTAG:DEI	723
12.32.88	ETHernet:PORT<Pt>:OAM:MIM:BTAG:PRIOritY	724
12.32.89	ETHernet:PORT<Pt>:OAM:MIM:BTAG:VID	724
12.32.90	ETHernet:PORT<Pt>:OAM:MIM:ITAG:UCA	724
12.32.91	ETHernet:PORT<Pt>:OAM:MIM:ITAG:DEI	725
12.32.92	ETHernet:PORT<Pt>:OAM:MIM:ITAG:PRIOritY	725
12.32.93	ETHernet:PORT<Pt>:OAM:MIM:ITAG:SID	725
12.32.94	ETHernet:PORT<Pt>:OAM:MIM:SMAC	726
12.32.95	ETHernet:PORT<Pt>:OAM:MIM:ETHernet:DMAC	726
12.32.96	ETHernet:PORT<Pt>:OAM:VLAN[:ENABle]	726
12.32.97	ETHernet:PORT<Pt>:OAM:VLAN:LCOunt	727
12.32.98	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ID	727
12.32.99	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI	728
12.32.100	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI	728
12.32.101	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:PRIOritY	729
12.32.102	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ETYPe	729
12.32.103	ETHernet:PORT<Pt>:OAM:OUTPut:ULBM	730
12.32.104	ETHernet:PORT<Pt>:OAM:OUTPut:MLBM	730
12.32.105	ETHernet:PORT<Pt>:OAM:OUTPut:LTM	730
12.32.106	ETHernet:PORT<Pt>:OAM:OUTPut:MCC	730
12.32.107	ETHernet:PORT<Pt>:OAM:OUTPut:EXM	730
12.32.108	ETHernet:PORT<Pt>:OAM:OUTPut:VSM	731
12.32.109	ETHernet:PORT<Pt>:OAM:OUTPut:TST	731
12.32.110	ETHernet:PORT<Pt>:OAM:OUTPut:LMM	731
12.32.111	ETHernet:PORT<Pt>:OAM:OUTPut:SLM	731
12.32.112	ETHernet:PORT<Pt>:OAM:OUTPut:DMONe	731
12.32.113	ETHernet:PORT<Pt>:OAM:OUTPut:DMM	732
12.32.114	ETHernet:PORT<Pt>:OAM:OUTPut:CCM	732

12.32.115	ETHERnet:PORT<Pt>:OAM:OUTPut:AIS	732
12.32.116	ETHERnet:PORT<Pt>:OAM:OUTPut:LCK	732
12.32.117	ETHERnet:PORT<Pt>:OAM:OUTPut:LOOP	733
12.32.118	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:MODE?	733
12.32.119	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:PARSer?	733
12.32.120	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:MUXer?	733
12.32.121	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:OUI?	734
12.32.122	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:VSI?	734
12.32.123	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:UNIDirectional?	734
12.32.124	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:LEVents?	734
12.32.125	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:LBACK?	734
12.32.126	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:VRETrieval?	734
12.32.127	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:REVision?	735
12.32.128	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:MAC?	735
12.32.129	ETHERnet:PORT<Pt>:OAM:STATus:AH:REMOte:MPDU?	735
12.32.130	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:MODE?	735
12.32.131	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:PARSer?	735
12.32.132	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:MUXer?	735
12.32.133	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:UNIDirectional?	736
12.32.134	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:LEVents?	736
12.32.135	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:LBACK?	736
12.32.136	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:VRETrieval?	736
12.32.137	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:REVision?	736
12.32.138	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:MPDU?	736
12.32.139	ETHERnet:PORT<Pt>:OAM:STATus:AH:LOCal:STATe?	737
12.32.140	ETHERnet:PORT<Pt>:OAM:STATus:AH:VARiable:REQuest	737
12.32.141	ETHERnet:PORT<Pt>:OAM:STATus:AH:VARiable:RESPonse?	738
12.32.142	ETHERnet:PORT<Pt>:OAM:LOG?	738
12.33	TCP Throughput Test - RFC-6349	739
12.33.1	ETHERnet:TTTest:SETup:TCPPort	739
12.33.2	ETHERnet:TTTest:SETup:FATSequence	739
12.33.3	ETHERnet:TTTest:SETup:CIPerf	739
12.33.4	ETHERnet:TTTest:SETup:SLSName	740
12.33.5	ETHERnet:TTTest:SETup:LLSName	740
12.33.6	ETHERnet:TTTest:SETup:SRSName	740
12.33.7	ETHERnet:TTTest:SETup:LRSName	741
12.33.8	ETHERnet:TTTest:SETup:TDLR	741
12.33.9	ETHERnet:TTTest:SETup:TDRL	741
12.33.10	ETHERnet:TTTest:SETup:TDSimultaneos	742
12.33.11	ETHERnet:TTTest:SETup[:LTRemote]:CIRate	742
12.33.12	ETHERnet:TTTest:SETup[:LTRemote]:MTUSize	742
12.33.13	ETHERnet:TTTest:SETup:RTLocal:CIRate	743
12.33.14	ETHERnet:TTTest:SETup:RTLocal:MTUSize	743
12.33.15	ETHERnet:TTTest:SETup:PMTU:DISCover[:ENABLE]	743
12.33.16	ETHERnet:TTTest:SETup:PMTU:DISCover:MINimum	744
12.33.17	ETHERnet:TTTest:SETup:PMTU:DISCover:MAXimum	744
12.33.18	ETHERnet:TTTest:SETup:BRTT	744
12.33.19	ETHERnet:TTTest:SETup:BRTT:AUTO	745
12.33.20	ETHERnet:TTTest:SETup:BRTT:AUTO:DURation	745
12.33.21	ETHERnet:TTTest:SETup:WSTTest[:ENABLE]	745
12.33.22	ETHERnet:TTTest:SETup:WSTTest:MODE	746
12.33.23	ETHERnet:TTTest:SETup:WSCan[:LTRemote]:SDURation	746
12.33.24	ETHERnet:TTTest:SETup:WSCan[:LTRemote]:AMODE:MWSize	746
12.33.25	ETHERnet:TTTest:SETup:WSCan:RTLocal:SDURation	747
12.33.26	ETHERnet:TTTest:SETup:WSCan:RTLocal:AMODE:MWSize	747
12.33.27	ETHERnet:TTTest:SETup:WSCan:AMODE[:LTRemote]:STEP<no>[:ENABLE]	747
12.33.28	ETHERnet:TTTest:SETup:WSCan:AMODE:RTLocal:STEP<no>[:ENABLE]	748

12.33.29	ETHERnet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>[:ENABLE]	748
12.33.30	ETHERnet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:WSIZE	748
12.33.31	ETHERnet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:CONNECTIONS	749
12.33.32	ETHERnet:TTTest:SETup:WSCan:EMODE:RTLcal:STEP<no>[:ENABLE]	749
12.33.33	ETHERnet:TTTest:SETup:WSCan:EMODE:RTLcal:STEP<no>:WSIZE	749
12.33.34	ETHERnet:TTTest:SETup:WSCan:EMODE:RTLcal:STEP<no>:CONNECTIONS	750
12.33.35	ETHERnet:TTTest:SETup:TTESt[:LTRemote]:THRESHold[:ENABLE]	750
12.33.36	ETHERnet:TTTest:SETup:TTESt[:LTRemote]:THRESHold:PERCENTage	750
12.33.37	ETHERnet:TTTest:SETup:TTESt[:LTRemote]:SDURATION	751
12.33.38	ETHERnet:TTTest:SETup:TTESt:RTLcal:THRESHold[:ENABLE]	751
12.33.39	ETHERnet:TTTest:SETup:TTESt:RTLcal:THRESHold:PERCENTage	751
12.33.40	ETHERnet:TTTest:SETup:TTESt:RTLcal:SDURATION	752
12.33.41	ETHERnet:TTTest:SETup:TTESt:EMODE[:LTRemote][:ENABLE]	752
12.33.42	ETHERnet:TTTest:SETup:TTESt:EMODE[:LTRemote]:WSIZE	752
12.33.43	ETHERnet:TTTest:SETup:TTESt:EMODE[:LTRemote]:CONNECTIONS	753
12.33.44	ETHERnet:TTTest:SETup:TTESt:EMODE:RTLcal[:ENABLE]	753
12.33.45	ETHERnet:TTTest:SETup:TTESt:EMODE:RTLcal:WSIZE	753
12.33.46	ETHERnet:TTTest:SETup:TTESt:EMODE:RTLcal:CONNECTIONS	754
12.33.47	ETHERnet:TTTest:SETup:MSERVICE[:ENABLE]	754
12.33.48	ETHERnet:TTTest:SETup:MSERVICE[:LTRemote]:TDURATION	754
12.33.49	ETHERnet:TTTest:SETup:MSERVICE[:LTRemote]:WSIZE	755
12.33.50	ETHERnet:TTTest:SETup:MSERVICE[:LTRemote]:WSIZE:AUTO	755
12.33.51	ETHERnet:TTTest:SETup:MSERVICE:RTLcal:TDURATION	755
12.33.52	ETHERnet:TTTest:SETup:MSERVICE:RTLcal:WSIZE	756
12.33.53	ETHERnet:TTTest:SETup:MSERVICE:RTLcal:WSIZE:AUTO	756
12.33.54	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>[:ENABLE]	756
12.33.55	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>:DPORT	757
12.33.56	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>:DOT	757
12.33.57	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>:TCLASS	757
12.33.58	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>:FLABEL	758
12.33.59	ETHERnet:TTTest:SETup:MSERVICE:SERVICE<no>:NAME	758
12.33.60	ETHERnet:TTTest:RESULT:PARAMETERS?	759
12.33.61	ETHERnet:TTTest:RESULT:WSCAN?	759
12.33.62	ETHERnet:TTTest:RESULT:THROUGHput?	759
12.33.63	ETHERnet:TTTest:RESULT:THROUGHput:EXPORT	760
12.33.64	ETHERnet:TTTest:RESULT:MSERVICE?	761
12.33.65	ETHERnet:TTTest:RESULT:MSERVICE:TOTAL?	761
12.33.66	ETHERnet:TTTest:RESULT:MSERVICE:EXPORT	762

13 eCPRI/RoE BERT 763

13.1	Port Setup	763
13.1.1	ETHERnet:PORT<Pt>:DPIReference	763
13.2	PCS	763
13.3	Traffic	763
13.4	Settings	763
13.5	Thresholds	764
13.6	SyncE	764
13.7	Precision Time Protocol - IEEE 1588v2	764
13.8	Follow	764
13.9	Stimuli	764
13.10	Result	764
13.11	Status	764
13.12	Frame Content	765
13.12.1	ETHERnet:PORT<Pt>:STREAM<St>:RFRAME	765
13.12.2	ETHERnet:PORT<Pt>:STREAM<St>:ECPRi:MESSAGE	765
13.12.3	ETHERnet:PORT<Pt>:STREAM<St>:ECPRi:MVAL	766

13.12.4	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:LENGth	766
13.12.5	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:IQData:PCID	766
13.12.6	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:IQData:SEQId	767
13.12.7	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:BITSeq:PCID	767
13.12.8	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:BITSeq:SEQId	767
13.12.9	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RTCDData:PCID	768
13.12.10	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RTCDData:SEQId	768
13.12.11	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:GDTRans:PCID	768
13.12.12	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:GDTRans:SEQId	769
13.12.13	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:ACID	769
13.12.14	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:RW	769
13.12.15	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:RRESp	770
13.12.16	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:ELID	770
13.12.17	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:ADDRESS	771
13.12.18	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RMACess:LENGth	771
13.12.19	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:OWDMeas:MESId	771
13.12.20	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:OWDMeas:ACTType	772
13.12.21	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:OWDMeas:TSTamp	772
13.12.22	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:OWDMeas:CVALue	772
13.12.23	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RRESet:REID	773
13.12.24	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:RRESet:COPTion	773
13.12.25	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:CDAa	774
13.12.26	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:CLENGth	774
13.12.27	ETHERnet:PORT<Pt>:STReam<St>:ECPRi:CENable	774
13.12.28	ETHERnet:PORT<Pt>:STReam<St>:ROE:SUBType	775
13.12.29	ETHERnet:PORT<Pt>:STReam<St>:ROE:SVALue	775
13.12.30	ETHERnet:PORT<Pt>:STReam<St>:ROE:FLID	775
13.12.31	ETHERnet:PORT<Pt>:STReam<St>:ROE:LENGth	776
13.12.32	ETHERnet:PORT<Pt>:STReam<St>:ROE:OINFo	776
13.12.33	ETHERnet:PORT<Pt>:STReam<St>:ROE:CONTRol:OPCode	776
13.12.34	ETHERnet:PORT<Pt>:STReam<St>:ROE:CDAa	777
13.12.35	ETHERnet:PORT<Pt>:STReam<St>:ROE:CLENGth	777
13.12.36	ETHERnet:PORT<Pt>:STReam<St>:ROE:CENable	777
14	Fibre Channel	779
14.1	Port	779
14.1.1	FCHannel:PORT<Pt>:MODE	779
14.1.2	FCHannel:TX<Pt>:TIMing	779
14.2	Interface	780
14.2.1	FCHannel:PORT<Pt>:TOPology	780
14.2.2	FCHannel:PORT<Pt>:PTP:LOGIn	780
14.2.3	FCHannel:PORT<Pt>:FABRic:LOGIn	780
14.2.4	FCHannel:PORT<Pt>:EPORt:ELP	781
14.2.5	FCHannel:PORT<Pt>:FCONTRol[:ENABLE]	781
14.2.6	FCHannel:PORT<Pt>:FCONTRol:LCRedit	781
14.2.7	FCHannel:PORT<Pt>:FCONTRol:RCRedit	781
14.2.8	FCHannel:PORT<Pt>:SOURce:WWN	782
14.2.9	FCHannel:PORT<Pt>:SOURce:WWN:DEFault	782
14.2.10	FCHannel:PORT<Pt>:SOURce:ID	782
14.2.11	FCHannel:PORT<Pt>:DESTination:WWN	783
14.2.12	FCHannel:PORT<Pt>:DESTination:ID	783
14.2.13	FCHannel:PORT<Pt>:DESTination:LOGIn	783
14.3	Frame	784
14.3.1	FCHannel:PORT<Pt>:FRAMe:FRAMing	784
14.3.2	FCHannel:PORT<Pt>:FRAMe:CONTeNT	784
14.3.3	FCHannel:PORT<Pt>:FRAMe:UP32	785
14.3.4	FCHannel:PORT<Pt>:FRAMe:HEADer:SID	785
14.3.5	FCHannel:PORT<Pt>:FRAMe:HEADer:OID	785
14.3.6	FCHannel:PORT<Pt>:FRAMe:HEADer:RID	786

14.4	Generator	786
14.4.1	FCHannel:PORT<Pt>:TRAFFic:DmODE	786
14.4.2	FCHannel:PORT<Pt>:TRAFFic:DSEConds	786
14.4.3	FCHannel:PORT<Pt>:TRAFFic:DFRames	787
14.4.4	FCHannel:PORT<Pt>:TRAFFic:ASTGenerator	787
14.4.5	FCHannel:TRAFFic:GENerator:START	787
14.4.6	FCHannel:TRAFFic:GENerator:STOP	788
14.4.7	FCHannel:PORT<Pt>:TRAFFic:GENerator:START	788
14.4.8	FCHannel:PORT<Pt>:TRAFFic:GENerator:STOP	788
14.4.9	FCHannel:PORT<Pt>:TRAFFic:GENerator:STATus?	788
14.5	Stream	788
14.5.1	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:PROFile	788
14.5.2	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad[:CONStant]	789
14.5.3	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:RAMP[:MODE]	789
14.5.4	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:RAMP:START	789
14.5.5	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:RAMP:END	790
14.5.6	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:RAMP:STEP	790
14.5.7	FCHannel:PORT<Pt>:TRAFFic:STReam:LLOad:RAMP:DURation	790
14.5.8	FCHannel:PORT<Pt>:TRAFFic:STReam:FSIZE	791
14.5.9	FCHannel:PORT<Pt>:TRAFFic:STReam:LATency[:ENABle]	791
14.5.10	FCHannel:PORT<Pt>:TRAFFic:STReam:LATency:THResholds[:ENABle]	791
14.5.11	FCHannel:PORT<Pt>:TRAFFic:STReam:LATency:THResholds:VALue	792
14.5.12	FCHannel:PORT<Pt>:TRAFFic:STReam:JITTer[:ENABle]	792
14.5.13	FCHannel:PORT<Pt>:TRAFFic:STReam:JITTer:THResholds[:ENABle]	792
14.5.14	FCHannel:PORT<Pt>:TRAFFic:STReam:JITTer:THResholds:VALue	793
14.5.15	FCHannel:PORT<Pt>:TRAFFic:STReam:BER:SDMeasure[:ENABle]	793
14.5.16	FCHannel:PORT<Pt>:TRAFFic:STReam:BER:SDMeasure:MDISruption	793
14.5.17	FCHannel:PORT<Pt>:TRAFFic:STReam:BER:SDMeasure:THResholds[:ENABle]	794
14.5.18	FCHannel:PORT<Pt>:TRAFFic:STReam:BER:SDMeasure:THResholds:VALue	794
14.6	Settings	795
14.6.1	FCHannel:PORT<Pt>:SETTings:BER:OBAMeasuring	795
14.6.2	FCHannel:PORT<Pt>:SETTings:BER:IAFFilter	795
14.6.3	FCHannel:PORT<Pt>:SETTings:BER:CLFRames	795
14.6.4	FCHannel:PORT<Pt>:SETTings:BER:HIDeframeLoss	796
14.7	Thresholds	797
14.7.1	FCHannel:PORT<Pt>:THResholds[:ENABle]	797
14.7.2	FCHannel:PORT<Pt>:THResholds:SElect	797
14.7.3	FCHannel:PORT<Pt>:THResholds:VALue	798
14.8	Follow	798
14.8.1	FCHannel:PORT<Pt>:FOLLow:GENerator	798
14.8.2	FCHannel:PORT<Pt>:FOLLow:THResholds	799
14.8.3	FCHannel:PORT<Pt>:FOLLow:FRAMe	799
14.8.4	FCHannel:PORT<Pt>:FOLLow:STReam	799
14.9	Stimuli	800
14.9.1	FCHannel:PORT<Pt>:STIMuli:ALARm	800
14.9.2	FCHannel:PORT<Pt>:STIMuli:ERRor	800
14.9.3	FCHannel:PORT<Pt>:STIMuli:EINSerTion	801
14.9.4	FCHannel:PORT<Pt>:STIMuli:EBLength	801
14.9.5	FCHannel:PORT<Pt>:STIMuli:FOFFset	802
14.10	Results	803
14.10.1	FCHannel:PORT<Pt>:IFETch?	803
14.10.2	FCHannel:PORT<Pt>:TFETch?	804
14.11	Status	805
14.11.1	FCHannel:STATus:PORT<Pt>:AESummary[:EVENT]?	805
14.11.2	FCHannel:STATus:PORT<Pt>:AESummary:CONDition?	805
14.11.3	FCHannel:STATus:PORT<Pt>:ALARm[:EVENT]?	805
14.11.4	FCHannel:STATus:PORT<Pt>:ALARm:CONDition?	806

14.11.5	FCHannel:STATus:PORT<Pt>:ERRor[:EVENT]?	806
14.11.6	FCHannel:STATus:PORT<Pt>:ERRor:CONDition?	806
14.11.7	FCHannel:STATus:PORT<Pt>:SID?	806
14.11.8	FCHannel:STATus:PORT<Pt>:DID?	807
14.11.9	FCHannel:STATus:PORT<Pt>:PDEViation?	807
14.12	Performance Test	808
14.12.1	FCHannel:PERF:STARt	808
14.12.2	FCHannel:PERF:STOP	808
14.12.3	FCHannel:PERF:SETup:GENeral:MODE	808
14.12.4	FCHannel:PERF:SETup:GENeral:TSElection	808
14.12.5	FCHannel:PERF:SETup:GENeral:TCLayer	809
14.12.6	FCHannel:PERF:SETup:GENeral:TTYPE	809
14.12.7	FCHannel:PERF:SETup:FSIZe:MODE	810
14.12.8	FCHannel:PERF:SETup:FSIZe:USER	810
14.12.9	FCHannel:PERF:SETup:FSIZe:JUMBo	810
14.12.10	FCHannel:PERF:SETup:FSIZe:BEGin	811
14.12.11	FCHannel:PERF:SETup:FSIZe:END	811
14.12.12	FCHannel:PERF:SETup:FSIZe:STEP	811
14.12.13	FCHannel:PERF:SETup:FSIZe:CONStant	812
14.12.14	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum	812
14.12.15	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch :MODE	813
14.12.16	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch :RESolution	813
14.12.17	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:DURation:STEP	813
14.13	Performance Test - Traffic Profile	815
14.13.1	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MINimum	815
14.13.2	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MAXimum	815
14.13.3	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:STEP	816
14.13.4	FCHannel:PERF:SETup:PORT<Pt>:PROFile:DURation:STEP	816
14.14	Performance Test - Latency	817
14.14.1	FCHannel:PERF:SETup:PORT<Pt>:LATency:DURation:STEP	817
14.15	Performance Test - Burst	818
14.15.1	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:MODE	818
14.15.2	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:BEGin	818
14.15.3	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:END	818
14.15.4	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:STEP	819
14.15.5	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE	819
14.15.6	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution	820
14.16	Performance Test - Credit	821
14.16.1	FCHannel:PERF:SETup:PORT<Pt>:CREDit:MODE	821
14.16.2	FCHannel:PERF:SETup:PORT<Pt>:CREDit:BEGin	821
14.16.3	FCHannel:PERF:SETup:PORT<Pt>:CREDit:END	821
14.16.4	FCHannel:PERF:SETup:PORT<Pt>:CREDit:STEP	822
14.16.5	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:MODE	822
14.16.6	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:RESolution	822
14.16.7	FCHannel:PERF:SETup:PORT<Pt>:CREDit:DURation:STEP	823
14.17	Performance Test - Result	824
14.17.1	FCHannel:PERF:RESult:TEST	824
14.17.2	FCHannel:PERF:RESult:PORT<Pt>:NSTep?	824
14.17.3	FCHannel:PERF:RESult:PORT<Pt>:SElect	824
14.17.4	FCHannel:PERF:RESult:PORT<Pt>:FETCh?	825
15	OTN	827
15.1	Transmitter	827
15.1.1	OTN:TX<Pt>:INTerface	827
15.1.2	OTN:TX<Pt>[:ENABled]	827
15.1.3	OTN:TX<Pt>:TIMing	828
15.1.4	OTN:TX<Pt>:MAPPing:CSIGnal	828

15.1.5	OTN:TX<Pt>:PATtern	830
15.1.6	OTN:TX<Pt>:PINVersion	830
15.1.7	OTN:TX<Pt>:UP32	830
15.1.8	OTN:TX<Pt>:UP2K	831
15.1.9	OTN:TX<Pt>:MAPPING:OUTPutsignal	831
15.1.10	OTN:TX<Pt>:FEC	832
15.1.11	OTN:TX<Pt>:MAPPING:MULTiplexing<stage>	832
15.1.12	OTN:TX<Pt>:MAPPING:LANE	833
15.1.13	OTN:TX<Pt>:COPY	833
15.1.14	OTN:TX<Pt>:CSF	834
15.1.15	OTN:TX<Pt>:FOLLOW	835
15.1.16	OTN:OH:TX<Pt>:OTN:OH	835
15.1.17	OTN:OH:TX<Pt>:OTN:OH:DEFault	836
15.1.18	OTN:TX<Pt>:TP	836
15.1.19	OTN:TX<Pt>:TS	838
15.1.20	OTN:TX<Pt>:ODUFlex:TS	839
15.1.21	OTN:TX<Pt>:ALLocated	840
15.1.22	OTN:TX<Pt>:GFP:PTI	841
15.1.23	OTN:TX<Pt>:GFP:PFI	841
15.1.24	OTN:TX<Pt>:GFP:EXI	841
15.1.25	OTN:TX<Pt>:GFP:UPI	842
15.1.26	OTN:TX<Pt>:GFP:EXTHeader:CID	842
15.1.27	OTN:TX<Pt>:GFP:EXTHeader:SPARe	842
15.1.28	OTN:TX<Pt>:GFP:PTIMes	843
15.2	Receiver	844
15.2.1	OTN:RX<Pt>:INTerface	844
15.2.2	OTN:RX<Pt>:MAPPING:CSIGNAL	844
15.2.3	OTN:RX<Pt>:PATtern	846
15.2.4	OTN:RX<Pt>:PINVersion	846
15.2.5	OTN:RX<Pt>:UP32	846
15.2.6	OTN:RX<Pt>:UP2K	847
15.2.7	OTN:RX<Pt>:MAPPING:INPutsignal	847
15.2.8	OTN:RX<Pt>:MAPPING:MULTiplexing<stage>	848
15.2.9	OTN:RX<Pt>:FEC	848
15.2.10	OTN:RX<Pt>:FOLLOW	849
15.2.11	OTN:RX<Pt>:TP	849
15.2.12	OTN:RX<Pt>:TS	850
15.2.13	OTN:RX<Pt>:ODUFlex:TS	851
15.2.14	OTN:RX<Pt>:TPTS:DETect	852
15.2.15	OTN:RX<Pt>:MEAS:TTI:DET	853
15.3	Measurement Setup	854
15.3.1	OTN:TX<Pt>:MEAS:TTI:ENCoding	854
15.3.2	OTN:RX<Pt>:MEAS:TCM:ENABLE	854
15.3.3	OTN:RX<Pt>:MEASurement:PLM	855
15.3.4	MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:SETup	855
15.3.5	MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:MSIM?	856
15.3.6	MEASurement:SETup:PERFormance:OTN:RX<Pt>:PARAmeter	856
15.3.7	MEASurement:SETup:PERFormance:OTN:RX<Pt>:ALLocation	857
15.3.8	MEASurement:SETup:PERFormance:OTN:TPERiod	857
15.3.9	MEASurement:SETup:PERFormance:OTN:RX<Pt>:OBJectives	858
15.4	Result	859
15.4.1	OTN:RX<Pt>:IFETCh?	859
15.5	Status	862
15.5.1	OTN:STATus:RX<Pt>:AESummary[:EVENT]?	862
15.5.2	OTN:STATus:RX<Pt>:AESummary:CONDition?	862
15.5.3	OTN:STATus:RX<Pt>:ALARm<section>[:EVENT]?	863
15.5.4	OTN:STATus:RX<Pt>:ALARm<section>:CONDition?	863
15.5.5	OTN:STATus:RX<Pt>:ERRor<section>[:EVENT]?	865
15.5.6	OTN:STATus:RX<Pt>:ERRor<section>:CONDition?	865

15.5.7	OTN:STaTus:RX<Pt>:MSTage:AEsUmmary[:EvEnt]?	867
15.5.8	OTN:STaTus:RX<Pt>:MSTage:AEsUmmary:CoNDition?	867
15.5.9	OTN:STaTus:RX<Pt>:OTU:ASUMmary[:EvEnt]?	868
15.5.10	OTN:STaTus:RX<Pt>:OTU:ASUMmary:CoNDition?	868
15.5.11	OTN:STaTus:RX<Pt>:OTU:ESUMmary[:EvEnt]?	868
15.5.12	OTN:STaTus:RX<Pt>:OTU:ESUMmary:CoNDition?	869
15.5.13	OTN:STaTus:RX<Pt>:OTU:ALARm<section>[:EvEnt]?	869
15.5.14	OTN:STaTus:RX<Pt>:OTU:ALARm<section>:CoNDition?	869
15.5.15	OTN:STaTus:RX<Pt>:OTU:ERRor<section>[:EvEnt]?	870
15.5.16	OTN:STaTus:RX<Pt>:OTU:ERRor<section>:CoNDition?	871
15.5.17	OTN:STaTus:RX<Pt>:SONE:ASUMmary[:EvEnt]?	872
15.5.18	OTN:STaTus:RX<Pt>:SONE:ASUMmary:CoNDition?	872
15.5.19	OTN:STaTus:RX<Pt>:SONE:ESUMmary[:EvEnt]?	872
15.5.20	OTN:STaTus:RX<Pt>:SONE:ESUMmary:CoNDition?	872
15.5.21	OTN:STaTus:RX<Pt>:SONE:ALARm<section>[:EvEnt]?	873
15.5.22	OTN:STaTus:RX<Pt>:SONE:ALARm<section>:CoNDition?	873
15.5.23	OTN:STaTus:RX<Pt>:SONE:ERRor<section>[:EvEnt]?	874
15.5.24	OTN:STaTus:RX<Pt>:SONE:ERRor<section>:CoNDition?	874
15.5.25	OTN:STaTus:RX<Pt>:STWO:ASUMmary[:EvEnt]?	875
15.5.26	OTN:STaTus:RX<Pt>:STWO:ASUMmary:CoNDition?	875
15.5.27	OTN:STaTus:RX<Pt>:STWO:ESUMmary[:EvEnt]?	875
15.5.28	OTN:STaTus:RX<Pt>:STWO:ESUMmary:CoNDition?	875
15.5.29	OTN:STaTus:RX<Pt>:STWO:ALARm<section>[:EvEnt]?	876
15.5.30	OTN:STaTus:RX<Pt>:STWO:ALARm<section>:CoNDition?	876
15.5.31	OTN:STaTus:RX<Pt>:STWO:ERRor<section>[:EvEnt]?	876
15.5.32	OTN:STaTus:RX<Pt>:STWO:ERRor<section>:CoNDition?	876
15.5.33	OTN:STaTus:RX<Pt>:STHRee:ASUMmary[:EvEnt]?	877
15.5.34	OTN:STaTus:RX<Pt>:STHRee:ASUMmary:CoNDition?	877
15.5.35	OTN:STaTus:RX<Pt>:STHRee:ESUMmary[:EvEnt]?	877
15.5.36	OTN:STaTus:RX<Pt>:STHRee:ESUMmary:CoNDition?	877
15.5.37	OTN:STaTus:RX<Pt>:STHRee:ALARm<section>[:EvEnt]?	878
15.5.38	OTN:STaTus:RX<Pt>:STHRee:ALARm<section>:CoNDition?	878
15.5.39	OTN:STaTus:RX<Pt>:STHRee:ERRor<section>[:EvEnt]?	878
15.5.40	OTN:STaTus:RX<Pt>:STHRee:ERRor<section>:CoNDition?	878
15.5.41	OTN:STaTus:RX<Pt>:CLlEnt:ASUMmary[:EvEnt]?	879
15.5.42	OTN:STaTus:RX<Pt>:CLlEnt:ASUMmary:CoNDition?	879
15.5.43	OTN:STaTus:RX<Pt>:CLlEnt:ESUMmary[:EvEnt]?	879
15.5.44	OTN:STaTus:RX<Pt>:CLlEnt:ESUMmary:CoNDition?	879
15.5.45	OTN:STaTus:RX<Pt>:CLlEnt:ALARm<section>[:EvEnt]?	880
15.5.46	OTN:STaTus:RX<Pt>:CLlEnt:ALARm<section>:CoNDition?	880
15.5.47	OTN:STaTus:RX<Pt>:CLlEnt:ERRor<section>[:EvEnt]?	881
15.5.48	OTN:STaTus:RX<Pt>:CLlEnt:ERRor<section>:CoNDition?	881
15.5.49	OTN:STaTus:RX<Pt>:PSLeVel?	881
15.5.50	OTN:STaTus:TX<Pt>:PSLeVel?	882
15.5.51	OTN:STaTus:RX<Pt>:FREQuency?	882
15.5.52	OTN:STaTus:TX<Pt>:FREQuency?	882
15.5.53	OTN:STaTus:RX<Pt>:CAPTure:OH?	883
15.6	Stimuli	884
15.6.1	OTN:STIMuli:TX<Pt>:TYPE	884
15.6.2	OTN:STIMuli:TX<Pt>:AEINsert:LEVel	884
15.6.3	OTN:STIMuli:TX<Pt>:AEINsert:TYPE	885
15.6.4	OTN:STIMuli:TX<Pt>:AEINsert:INSert	886
15.6.5	OTN:STIMuli:TX<Pt>:AEINsert:BURSt	886
15.6.6	OTN:STIMuli:TX<Pt>:AEINsert:AERRor	886
15.6.7	OTN:STIMuli:TX<Pt>:AEINsert:NORMal	887
15.6.8	OTN:STIMuli:TX<Pt>:AEINsert:RATE	887
15.6.9	OTN:STIMuli:TX<Pt>:JUSTification:LEVel	888
15.6.10	OTN:STIMuli:TX<Pt>:JUSTification:BURSt	888
15.6.11	OTN:STIMuli:TX<Pt>:JUSTification:MOVement	888

15.6.12	OTN:STIMuli:TX<Pt>:JMOVe	889
15.6.13	OTN:STIMuli:TX<Pt>:FREQuency:OFFSet	889
15.6.14	OTN:STIMuli:TX<Pt>:PAYLoad:OFFSet<stage>	889
15.6.15	OTN:STIMuli:TX<Pt>:GMP:AEINsert:LEVel	890
15.6.16	OTN:STIMuli:TX<Pt>:GMP:AEINsert:TYPE	890
15.6.17	OTN:STIMuli:TX<Pt>:GMP:AEINsert:INSert	891
15.6.18	OTN:STIMuli:TX<Pt>:GMP:AEINsert:EBITs	891
15.6.19	OTN:STIMuli:TX<Pt>:GFP:AEINsert:TYPE	892
15.6.20	OTN:STIMuli:TX<Pt>:GFP:AEINsert:INSert	892
15.6.21	OTN:STIMuli:TX<Pt>:GFP:AEINsert:EBITs	893
15.6.22	OTN:STIMuli:TX<Pt>:GFP:AEINsert:BURSt	893
15.6.23	OTN:STIMuli:TX<Pt>:GFP:AEINsert:CMF:INTerval	893
15.6.24	OTN:STIMuli:TX<Pt>:FEC:AEINsert:TYPE	894
15.6.25	OTN:STIMuli:TX<Pt>:FEC:AEINsert:INSert	894
15.6.26	OTN:STIMuli:TX<Pt>:FEC:AEINsert:RMANtissa	894
15.6.27	OTN:STIMuli:TX<Pt>:FEC:AEINsert:REXPnent	895
15.6.28	OTN:STIMuli:TX<Pt>:FEC:AEINsert:EFAS	895
15.6.29	OTN:STIMuli:TX<Pt>:FEC:AEINsert:SUBRow	896
15.6.30	OTN:STIMuli:TX<Pt>:LLD:AEINsert:TYPE	896
15.6.31	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ALARm	896
15.6.32	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ERRor	897
15.6.33	OTN:STIMuli:TX<Pt>:LLD:AEINsert:INSert	897
15.6.34	OTN:STIMuli:TX<Pt>:LLD:AEINsert:BURSt	897
15.6.35	OTN:STIMuli:TX<Pt>:LLD:AEINsert:AERRor	898
15.6.36	OTN:STIMuli:TX<Pt>:LLD:AEINsert:NORMal	898
15.6.37	OTN:STIMuli:TX<Pt>:LLD:AEINsert:LANE	898
15.6.38	OTN:STIMuli:TX<Pt>:LLD:SKEW:LANE	899
15.6.39	OTN:STIMuli:TX<Pt>:LLD:SKEW:BIT	899
15.6.40	OTN:STIMuli:TX<Pt>:LLD:SKEW:TYPE	900
15.7	Tributary Scan	901
15.7.1	OTN:TSCan:STARt	901
15.7.2	OTN:TSCan:STOP	901
15.7.3	OTN:TSCan:RX<Pt>:ODU2:NUMBer?	901
15.7.4	OTN:TSCan:RX<Pt>:ODU2:GET?	901
15.7.5	OTN:TSCan:RX<Pt>:ODU2:DETailed?	901
15.7.6	OTN:TSCan:RX<Pt>:ODU1:NUMBer?	902
15.7.7	OTN:TSCan:RX<Pt>:ODU1:GET?	902
15.7.8	OTN:TSCan:RX<Pt>:ODU1:SCANning	902
15.7.9	OTN:TSCan:RX<Pt>:ODU1:DETailed?	902
15.7.10	OTN:TSCan:RX<Pt>:ODU0:NUMBer?	903
15.7.11	OTN:TSCan:RX<Pt>:ODU0:GET?	903
15.7.12	OTN:TSCan:RX<Pt>:ODU0:DETailed?	903
15.8	APS	904
15.8.1	OTN:APS:RX<Pt>:BEVent	904
15.8.2	OTN:APS:RX<Pt>:EEVent	905
15.8.3	OTN:APS:RX<Pt>:PERiod	905
15.8.4	OTN:APS:RX<Pt>:MLIMit	906
15.8.5	OTN:APS:STARt	906
15.8.6	OTN:APS:STOP	906
15.8.7	OTN:APS:RX<Pt>:NUMBer?	906
15.8.8	OTN:APS:RX<Pt>:MTIMe?	907
15.8.9	OTN:APS:RX<Pt>:LTIMe?	907
15.8.10	OTN:APS:RX<Pt>:ATIMe?	907
15.8.11	OTN:APS:RX<Pt>:CTIMe?	907
15.9	RTD	908
15.9.1	OTN:RTD:RX<Pt>:MLIMit	908
15.9.2	OTN:RTD:RX<Pt>:NUMBer?	908
15.9.3	OTN:RTD:RX<Pt>:ATIMe?	908
15.9.4	OTN:RTD:RX<Pt>:MTIMe?	908

15.9.5	OTN:RTD:RX<Pt>:LTime?	909
15.9.6	OTN:RTD:RX<Pt>:CTime?	909
16	Pluggable Module	911
16.1	Status	911
16.1.1	PMODule:STATus:PORT<Pt>:PRESent?	911
16.1.2	PMODule:STATus:PORT<Pt>:VENDor?	911
16.1.3	PMODule:STATus:PORT<Pt>:WAVelength?	911
16.1.4	PMODule:STATus:PORT<Pt>:BRATe?	911
16.1.5	PMODule:STATus:PORT<Pt>:COMPLiance?	912
16.1.6	PMODule:STATus:PORT<Pt>:PNUMber?	912
16.1.7	PMODule:STATus:PORT<Pt>:REVision?	912
16.1.8	PMODule:STATus:PORT<Pt>:SNUMber?	912
16.1.9	PMODule:STATus:PORT<Pt>:DATE?	912
16.1.10	PMODule:STATus:PORT<Pt>:LOT?	912
16.1.11	PMODule:STATus:PORT<Pt>:TPOWER?	913
16.1.12	PMODule:STATus:PORT<Pt>:RPOWER?	913
16.1.13	PMODule:STATus:PORT<Pt>:STATus?	913
16.1.14	PMODule:STATus:PORT<Pt>:GALarm?	913
16.1.15	PMODule:STATus:PORT<Pt>:PALarm?	913
16.1.16	PMODule:STATus:PORT<Pt>:AESummary[:EVENT]? .	914
16.1.17	PMODule:STATus:PORT<Pt>:AESummary:CONDition?	914
16.1.18	PMODule:STATus:PORT<Pt>:ALARm[:EVENT]? .	914
16.1.19	PMODule:STATus:PORT<Pt>:ALARm:CONDition?	914
16.2	MDIO	915
16.2.1	PMODule:PORT<Pt>:MDIO:WRITe	915
16.2.2	PMODule:PORT<Pt>:MDIO:READ?	915
16.3	I2C	915
16.3.1	PMODule:PORT<Pt>:I2C:WRITe	915
16.3.2	PMODule:PORT<Pt>:I2C:READ?	916
16.4	CFP2-QSFP28 Adaptor	916
16.4.1	PMODule:PORT<Pt>:MDIO:ADPT:WRITe	916
16.4.2	PMODule:PORT<Pt>:MDIO:ADPT:READ?	916
16.5	Tx reference clock output	916
16.5.1	PMODule:TOUTput:PORT<Pt>[:ENABLE]	916
16.5.2	PMODule:TOUTput:PORT<Pt>:FREQuency	917
16.5.3	PMODule:TOUTput:PORT<Pt>:SYNC:FREQuency	917
16.6	tunable SFP	918
16.6.1	PMODule:PORT<Pt>:TSFP:CHANnel	918
16.6.2	PMODule:PORT<Pt>:TSFP:CHANnel?	918
16.6.3	PMODule:PORT<Pt>:TSFP:WLENgth	918
16.6.4	PMODule:PORT<Pt>:TSFP:WLENgth?	918
16.7	Transceiver settings - CFP2-QSFP28 Adaptor	919
16.7.1	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN:TRACking	919
16.7.2	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN	919
16.7.3	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE:TRACking	919
16.7.4	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE	920
16.7.5	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST:TRACking	920
16.7.6	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST	920
16.7.7	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EAUTo	921
16.7.8	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer:TRACking	921
16.7.9	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer	921
16.7.10	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:REStore	922
16.7.11	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:AUTotune	922
16.7.12	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:DEFault	922
16.8	Transceiver settings - CFP2	923
16.8.1	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN:TRACking	923
16.8.2	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN	923
16.8.3	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE:TRACking	923

16.8.4	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE	924
16.8.5	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST:TRACking	924
16.8.6	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST	924
16.8.7	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EAUTo	925
16.8.8	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer:TRACking	925
16.8.9	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer	925
16.8.10	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:REStore	926
16.8.11	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:AUTotune	926
16.8.12	PMODule:PORT<Pt>:TRANsceiver:CFP2:DEFAult	926
16.9	Transceiver settings - CXP	927
16.9.1	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD:TRACking	927
16.9.2	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD	927
16.9.3	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt:TRACking	927
16.9.4	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt	928
16.9.5	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE:TRACking	928
16.9.6	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE	928
16.9.7	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond:TRACking	929
16.9.8	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond	929
16.9.9	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTRol:TRACking	929
16.9.10	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTRol	930
16.9.11	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain:TRACking	930
16.9.12	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain	931
16.9.13	PMODule:PORT<Pt>:TRANsceiver:CXP:DEFAult	931
16.10	Transceiver settings - CFP	932
16.10.1	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD:TRACking	932
16.10.2	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD	932
16.10.3	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt:TRACking	932
16.10.4	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt	933
16.10.5	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE:TRACking	933
16.10.6	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE	933
16.10.7	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond:TRACking	934
16.10.8	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond	934
16.10.9	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol:TRACking	935
16.10.10	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol	935
16.10.11	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain:TRACking	935
16.10.12	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain	936
16.10.13	PMODule:PORT<Pt>:TRANsceiver:CFP:DEFAult	936
16.11	Transceiver settings - QSFP	937
16.11.1	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD:TRACking	937
16.11.2	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD	937
16.11.3	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt:TRACking	937
16.11.4	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt	938
16.11.5	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE:TRACking	938
16.11.6	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE	938
16.11.7	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond:TRACking	939
16.11.8	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond	939
16.11.9	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol:TRACking	939
16.11.10	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol	940
16.11.11	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain:TRACking	940
16.11.12	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain	940
16.11.13	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST:TRACking	941
16.11.14	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST	941
16.11.15	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE:TRACking	941
16.11.16	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE	942
16.11.17	PMODule:PORT<Pt>:TRANsceiver:QSFP:DEFAult	942
16.12	Transceiver settings - SFP28	943
16.12.1	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:VOD	943
16.12.2	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:PRE	943
16.12.3	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:POST	943

16.12.4	PMODule:PORT<Pt>:TRANsceiver:SFP28:RX:DFE	944
16.12.5	PMODule:PORT<Pt>:TRANsceiver:SFP28:DEFAult	944
16.13	Transceiver settings - CFP4	945
16.13.1	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD:TRACking	945
16.13.2	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD	945
16.13.3	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE:TRACking	945
16.13.4	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE	946
16.13.5	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST:TRACking	946
16.13.6	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST	947
16.13.7	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE:TRACking	947
16.13.8	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE	947
16.13.9	PMODule:PORT<Pt>:TRANsceiver:CFP4:DEFAult	948
16.14	Transceiver settings - QSFP28	949
16.14.1	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD:TRACking	949
16.14.2	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD	949
16.14.3	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE:TRACking	949
16.14.4	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE	950
16.14.5	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST:TRACking	950
16.14.6	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST	951
16.14.7	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE:TRACking	951
16.14.8	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE	951
16.14.9	PMODule:PORT<Pt>:TRANsceiver:QSFP28:DEFAult	952
17	Common Application Settings	953
17.1	RTD	953
17.1.1	RTD:MODE	953
17.1.2	RTD:PERiod	953
17.1.3	RTD:IFMData	954
17.1.4	RTD:PDH:RX<Pt>:MLMit	954
17.2	Hierarchy	955
17.2.1	HIERarchy:PORT<Pt>:OTN:TX	955
17.2.2	HIERarchy:PORT<Pt>:OTN:RX	955
17.2.3	HIERarchy:PORT<Pt>:SDH:TX	955
17.2.4	HIERarchy:PORT<Pt>:SDH:RX	956
17.2.5	HIERarchy:PORT<Pt>:PDH:TX	956
17.2.6	HIERarchy:PORT<Pt>:PDH:RX	956
18	Measurement	957
18.1	Application, Start and Stop	958
18.1.1	MEASurement:APPLication?	958
18.1.2	MEASurement:STARt	959
18.1.3	MEASurement:STOP	959
18.2	Setup	959
18.2.1	MEASurement:SETup:PORT<Pt>:TERMinology	959
18.2.2	MEASurement:SETup:SElect	960
18.2.3	MEASurement:SETup:ILENgtH	960
18.2.4	MEASurement:SETup:STARt	961
18.2.5	MEASurement:SETup:STAT	961
18.2.6	MEASurement:SETup:STOP	962
18.2.7	MEASurement:SETup:SPAT	962
18.2.8	MEASurement:SETup:SDURation	963
18.2.9	MEASurement:SETup:MALLocation	963
18.2.10	MEASurement:SETup:PERFormance:TMBPs:PARAmeter	964
18.2.11	MEASurement:SETup:PERFormance:T1:PARAmeter	964
18.2.12	MEASurement:SETup:PERFormance:E3:PARAmeter	964
18.2.13	MEASurement:SETup:PERFormance:T3:PARAmeter	965
18.2.14	MEASurement:SETup:PERFormance:E4:PARAmeter	965
18.2.15	MEASurement:SETup:PERFormance:SDH:PARAmeter	965
18.2.16	MEASurement:SETup:PERFormance:SDH:MUX	966
18.2.17	MEASurement:SETup:PERFormance:SDH:VC4	966

18.2.18	MEASurement:SETup:PERformance:SDH:VC3	966
18.2.19	MEASurement:SETup:PERformance:SDH:VC12	967
18.2.20	MEASurement:SETup:PERformance:SDH:TPERiod	967
18.2.21	MEASurement:SETup:PERformance:SONet:PARAmeter	968
18.2.22	MEASurement:SETup:PERformance:SONet:MUX	968
18.2.23	MEASurement:SETup:PERformance:SONet:STS3	968
18.2.24	MEASurement:SETup:PERformance:SONet:STS1	969
18.2.25	MEASurement:SETup:PERformance:SONet:VT2	969
18.2.26	MEASurement:SETup:PERformance:SONet:TPERiod	969
18.2.27	MEASurement:SETup:PERformance:WAN:PARAmeter	970
18.2.28	MEASurement:SETup:EVALuation:RX<Pt>[:ENABLE]	970
18.2.29	MEASurement:SETup:EVALuation:RX<Pt>:INTERface	970
18.2.30	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM	971
18.2.31	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ALARm	971
18.2.32	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ERRor	972
18.2.33	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:TYPE	972
18.2.34	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:PASS	973
18.2.35	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:FAIL	973
18.2.36	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:PASS	973
18.2.37	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:FAIL	974
18.2.38	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:ITEM	974
18.2.39	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:TYPE	975
18.2.40	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:PASS	975
18.2.41	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:FAIL	975
18.2.42	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:PASS	976
18.2.43	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:FAIL	976
18.2.44	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:PASS	976
18.2.45	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:FAIL	977
18.2.46	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:HREFerence	977
18.2.47	MEASurement:SETup:EVALuation:E3:RX<Pt>:ITEM	978
18.2.48	MEASurement:SETup:EVALuation:E3:RX<Pt>:TYPE	978
18.2.49	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:PASS	979
18.2.50	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:FAIL	979
18.2.51	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:PASS	979
18.2.52	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:FAIL	980
18.2.53	MEASurement:SETup:EVALuation:E4:RX<Pt>:ITEM	980
18.2.54	MEASurement:SETup:EVALuation:E4:RX<Pt>:TYPE	981
18.2.55	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:PASS	981
18.2.56	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:FAIL	981
18.2.57	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:PASS	982
18.2.58	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:FAIL	982
18.2.59	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM	982
18.2.60	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ALARm	983
18.2.61	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ERRor	984
18.2.62	MEASurement:SETup:EVALuation:SDH:RX<Pt>:TYPE	984
18.2.63	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:PASS	985
18.2.64	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:FAIL	985
18.2.65	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:PASS	985
18.2.66	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:FAIL	986
18.2.67	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM	986
18.2.68	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ALARm	987
18.2.69	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ERRor	988
18.2.70	MEASurement:SETup:EVALuation:SONet:RX<Pt>:TYPE	988
18.2.71	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:PASS	989
18.2.72	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:FAIL	989
18.2.73	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:PASS	989
18.2.74	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:FAIL	990
18.2.75	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM	990
18.2.76	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ALARm	990

18.2.77	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ERRor	992
18.2.78	MEASurement:SETup:EVALuation:OTN:RX<Pt>:TYPE	993
18.2.79	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:PASS	993
18.2.80	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:FAIL	993
18.2.81	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:PASS	994
18.2.82	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:FAIL	994
18.2.83	MEASurement:SETup:EVALuation:BER:OBAMeasuring	994
18.2.84	MEASurement:SETup:EVALuation:BER:IAFFilter	995
18.2.85	MEASurement:SETup:EVALuation:BER:CLFrames	995
18.2.86	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds [:ENABLE]	995
18.2.87	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:MODE	996
18.2.88	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:COUNt	996
18.2.89	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:RATio	996
18.2.90	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds :PERCent	997
18.2.91	MEASurement:SETup:POINtermovement:SDH:MODE	997
18.2.92	MEASurement:SETup:POINtermovement:SONet:MODE	997
18.3	Information	998
18.3.1	MEASurement:INFO:TBEGin?	998
18.3.2	MEASurement:INFO:TEND?	998
18.3.3	MEASurement:INFO:MDURation?	998
18.3.4	MEASurement:INFO:STATus<Pt>?	998
18.3.5	MEASurement:INFO:IMIN?	999
18.3.6	MEASurement:INFO:IMAX?	999
18.3.7	MEASurement:INFO:IFIRst?	999
18.3.8	MEASurement:INFO:ILASt?	999
18.4	Event Log	999
18.4.1	MEASurement:ELOG:MINimum?	999
18.4.2	MEASurement:ELOG:MAXimum?	1000
18.4.3	MEASurement:ELOG:FETCh?	1000
18.4.4	MEASurement:ELOG:FETCh:NEXT?	1000
18.4.5	MEASurement:ELOG:EXPort	1000
18.5	Result	1001
18.5.1	MEASurement:RESult:SUMMary?	1001
18.5.2	MEASurement:RESult:SUMMary:STATistics:PORT<Pt>?	1001
A	Example Scripts	1003
A.1	Hints	1003
A.2	2 Mbps BERT	1004
A.3	2 Mbps Status & Stimuli	1005
A.4	E3 BERT	1006
A.5	E4 BERT	1007
A.6	SDH BERT	1008
A.7	Ethernet BERT	1009
A.8	Ethernet Discovery	1010
A.9	Fibre Channel BERT	1011
A.10	OTN BERT	1012
A.11	CPRI BERT	1013

List of Figures

1.1	System setup using Ethernet	51
-----	-----------------------------	----

1.2	Connector panel	51
1.3	Configure TCP Port for Remote Control	52
1.4	Program message structure	53
1.5	Program message unit	53
1.6	Response message structure	57
1.7	Configuration of Status Registers in the Network Master $\oplus$ means logical OR.	60
1.8	The register model for the Status registers.	61
1.9	Configuration of Status Byte Register and Service Request Enable Register	62
1.10	Configuration of Standard Event Status Register and Standard Event Status Enable Register	63
1.11	Configuration of Questionable Status Register	65
1.12	Configuration of Operation Status Register	66
1.13	Configuration of Port Status Register	67
1.14	The structure for the Port Interface Status Register	68
1.15	The generic structure for the AESummary register of interfaces	68
1.16	Enable Implicit CR in every LF in PuTTY	71
1.17	IP Address on the instrument	71
1.18	Specify the destination and Open the connection in PuTTY	72
1.19	Connection established with PuTTY	72
1.20	Data bit	73
1.21	Correspondence between physical and logical port numbers (Three ports)	73
1.22	Correspondence between physical and logical port numbers (One port)	74
1.23	Correspondence between physical and logical port numbers (Two ports)	74
2.1	INST:STAR automatically <i>connects</i> and selects started application server.	90
2.2	Original client session has to <i>disconnect</i> , before another client session can <i>connect</i> .	90
2.3	When connected to multiple application servers, client session <i>selects</i> to which application server the application specific commands are dispatched.	90

Chapter 1

Overview

The Network Master command based remote control functions support the built-in Ethernet service interface. Software specifications are in conformity with the IEEE488.2 standard based on SCPI version 1999 (Standard Commands for Programmable Instruments). Network Master becomes an automated measurement instrument when it is connected to an external controller.

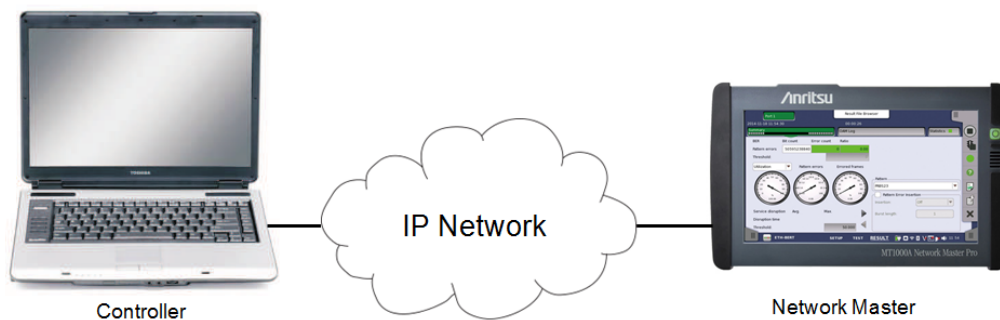


Figure 1.1: System setup using Ethernet

1.1 Ethernet Based Remote Control

1.1.1 Connecting Cable

To use remote control via the Ethernet service interface, connect an Ethernet cable to the Ethernet connector next to the power socket.



Figure 1.2: Connector panel

1.1.2 Connect to an Instrument

Remote commands are exchanged with the Network Master over a raw TCP/IP connection. Connect TCP port 56001 for program/response communication, see section 1.5 Controller Example.

1.1.3 Ethernet Remote Control Settings

Port Number

To change a TCP port number (for a valid range, see Table 1.1) type the number in the **TCP Port** field (see Figure 1.3).

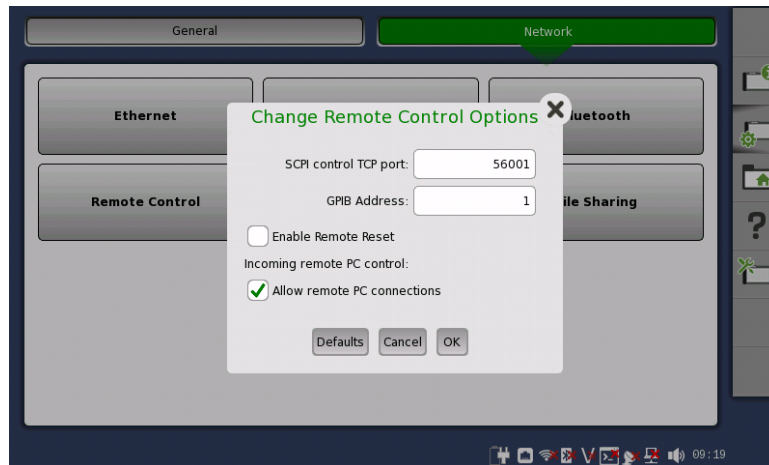


Figure 1.3: Configure TCP **Port** for Remote Control

Table 1.1: Allowable TCP port range

Setup item	Description	Allowable range
Port Number	TCP Port Number	1024 to 65535 (default: 56001)

1.1.4 Communication Buffers

The input- and output streams are buffered. Besides the TCP receive buffer (87380 bytes) and the TCP transmit buffer (16384 bytes), the two streams share a common command/response buffer of 32 entries. Each buffer entry can hold a compound program message of maximum 4 KB or a response message of maximum 64 KB.

Program data transferred as <ARBITRARY BLOCK PROGRAM DATA> does not go through the internal buffer, but is streamed directly from the TCP receive buffer to the internal file system. Similar for response data of type <DEFINITE LENGTH ARBITRARY BLOCK RESPONSE DATA>; it is streamed directly from the internal file system to the TCP transmit buffer.

1.2 Program Messages

Program messages are the remote commands sent to Network Master as shown in Figure 1.4.

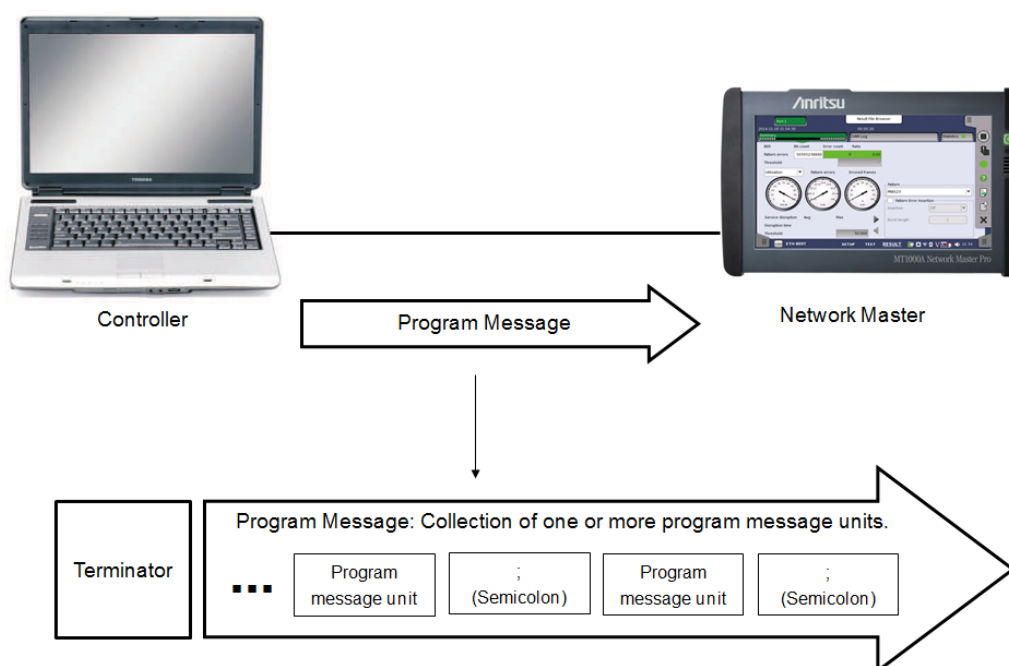


Figure 1.4: Program message structure

A program message consists of one or more program message units separated with a semicolon (;). Space(s) before or after a semicolon is ignored (space has no meaning). For more information on program message units, see section 1.2.1 Program Message Unit.

When a program message is sent to Network Master, a terminator is appended after it. Network Master receives the program message by detecting the terminator. For a description of the terminator, see section 1.2.4 Program Message Terminator.

The Network Master is able to handle program messages with a maximum length of 4096 characters including the message terminator.

1.2.1 Program Message Unit

A program message unit consists of a program header and a program data, see Figure 1.5.

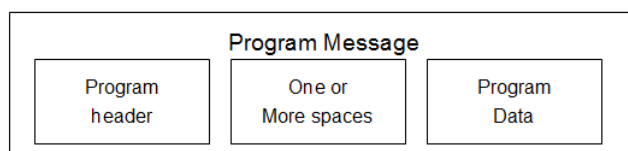


Figure 1.5: Program message unit

There must be one or more spaces between a program header and a program data. Network Master recognizes the program header and program data using the space(s). One or more spaces before a program header are ignored.

1.2.2 Program Headers

The program header specifies the function of the command message unit sent from the controller to Network Master. There are two types of program headers:

- Program headers for command message units.
- Program headers for query message units. Similar to headers for command message unit, but are always followed by a question mark "?".

The Network Master supports some of the common commands defined in the IEEE488.2 standard. These common commands are special in the way that they are always preceded by an asterisk "*"; e.g. ***IDN?**. All other commands are referred to as "device specific commands". Device specific commands consists of two or more <program mnemonic>'s (hereinafter called "mnemonic") separated with a colon ":".

[:]<program mnemonic>[:<program mnemonic>]... e.g. **SYSTem:TIME**

A mnemonic is a character string, which consists of capital and small letters. The capital part of the mnemonic is also referred to as the short form of the mnemonic.

- Long form program header: **INSTrument:STARt**
- Short form program header: **INST:STAR**

The Network Master recognizes a mnemonic even if only the short form is sent. For example, mnemonic **INSTrument** is recognized as a normal mnemonic when **INST** is sent.

In this way, capital and small letters are used for recognizing long and short forms of a mnemonic, The Network Master does not distinguish between capital and small letters when reading the program header. However, the Network Master only accepts the short form or the complete long form of a mnemonic. Hence **INSTru** is **not** a valid mnemonic. The following program headers are all acceptable and assumed to be the same:

- **SYSTEM:POWER:SOURCE?**
- **system:power:source?**
- **SySteM:PoWeR:SoUr?**
- **syst:POW:sour?**

1.2.3 Program Data

Program data is sent following the program header as parameters specified in the command message unit. This operation manual uses the notations given below in Table 1.2 for indicating the program data format. Most of them are defined in the IEEE488.2 standard.

Table 1.2: Acceptable program data

Program data type	Description
<BOOLEAN PROGRAM DATA>	Defined in IEEE488.2 Indicates On/Off, Enable/Disable, or Yes/No. To specify On/Enable state, set {ON 1}. To specify Off/Disable state, set {OFF 0}.
<NUMERIC PROGRAM DATA>	Comprises <DECIMAL NUMERIC PROGRAM DATA> and <NON-DECIMAL NUMERIC PROGRAM DATA> as defined in IEEE488.2 The Network Master accepts both decimal and non-decimal entries for the <NUMERIC PROGRAM DATA>.
<DECIMAL NUMERIC PROGRAM DATA>	Defined in IEEE488.2 Comprises <NR1>, <NR2> and <NR3> decimal values, where <NR1> indicates an integer value. <NR2> indicates a numeric value in fixed point format. <NR3> indicates a numeric value in floating point format. Examples: <NR1>: 123 <NR2>: -123.456 <NR3>: 1.23E-3
<NONDECIMAL NUMERIC PROGRAM DATA>	Defined in IEEE488.2 Comprises <HEXADECIMAL>, <OCTAL> or <BINARY> program data. See below for further details.
<HEXADECIMAL>	Conforms to the hexadecimal format defined in IEEE488.2 as follows: #{H h}{A a B b C c D d E e F f <digit>}... <digit> is an ASCII character with a value in the range of 0x30 to 0x39 (48 to 57 in decimal), that is, a numeric 0 to 9. Examples: #h1234ABCD #Hfe1a9
<OCTAL>	Conforms to the octal format defined in IEEE488.2 as follows: #{Q q}{0 1 2 3 4 5 6 7}... Examples: #q12345670 #Q77
<BINARY>	Conforms to the binary format defined in IEEE488.2 as follows: #{B b}{0 1}... Examples: #b10101010 #B110
<STRING PROGRAM DATA>	Defined in IEEE488.2 A character string in a pair of single quotation marks (') or double quotation marks ("). Examples: "Network Master" 'Testing the network'

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Program data type	Description
<CHARACTER PROGRAM DATA>	Defined in IEEE488.2 Indicates two or more mnemonics for selections. Like program header mnemonics, <CHARACTER PROGRAM DATA> mnemonics can have a short and a long form. The syntax used in the Network Master additionally allows a digit as the first character of a mnemonic and also allows a dash (-) inside a mnemonic.

1.2.4 Program Message Terminator

A program message terminator indicates the end of the program message. Upon reception of a terminator, the Network Master assumes that the program message is complete and starts processing the message. A terminator must always be added to the end of a program message. For Network Master the program message terminator is:

[<WHITE SPACE>]{NL} for Ethernet based remote control

<WHITE SPACE> is one or more ASCII characters with a value in the range of 0x00 to 0x09 or 0x0B to 0x20 (0 to 9 or 11 to 32 in decimal). These ranges include the ASCII control characters and space, except NL (newline). Since <WHITE SPACE> includes CR (0x0D) (13 in decimal), {CR}{NL} is also interpreted as a terminator by Network Master in Ethernet based remote control - to keep compatibility with conventional models.

1.2.5 Compound Program Messages

Compound headers are supported by the Network Master. Examples of the use of the compound headers are shown below.

The three program message units:

SYSTem:TIME?

SYSTem:DATE?

SYSTem:POWer:SOURce?

can be combined in one program message as follows:

SYSTem:TIME?; :SYSTem:DATE?; :SYSTem:POWer:SOURce?

or just:

SYSTem:TIME?; DATE?; POWer:SOURce?

(SYST: mnemonic can be omitted in the second and third program data units)

For further information on compound headers, see Appendix A of the IEEE488.2 standard.

1.2.6 Sequential Execution

The Network Master processes one program message unit at a time and in the same order in which they are arranged within the program message. The Network Master will not start processing a new program message until the processing of the current program message is finished.

1.3 Response Messages

Response messages are messages sent from a Network Master to a controller as reply to queries, see Figure 1.6.

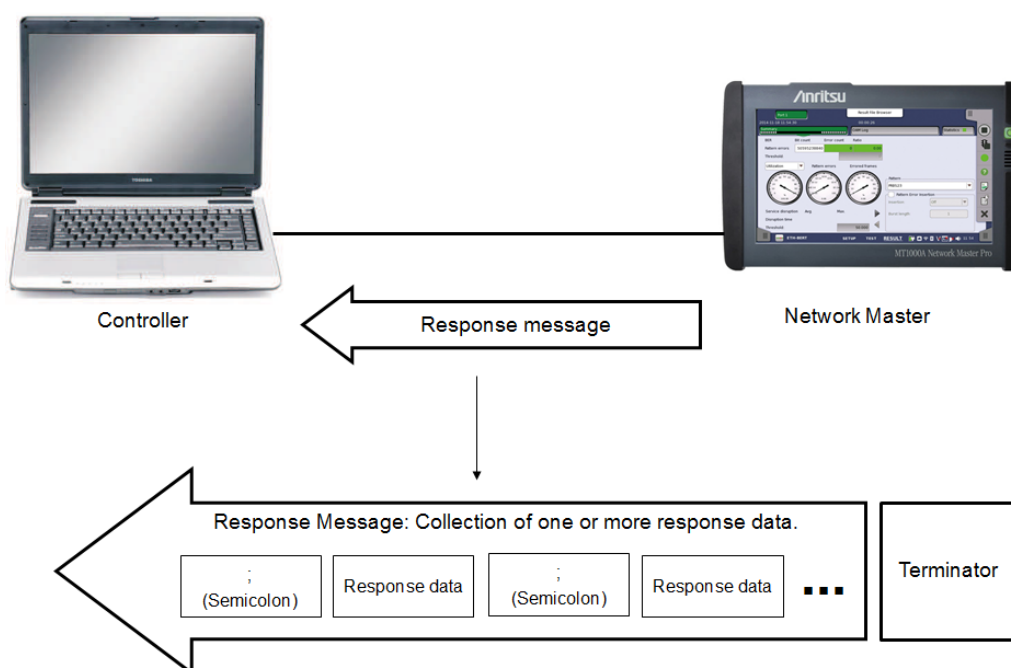


Figure 1.6: Response message structure

A response message consists of one or more response data separated with a semicolon (;). The response message is terminated with the response message terminator.

1.3.1 Response Data

Response data is a data returned by Network Master as reply to a query received from the controller. Table 1.3 shows examples of the response data format used in this manual.

Table 1.3: Network Master response data

Response data type	Description
<BOOLEAN RESPONSE DATA>	Defined in SCPI-99 Indicates On/Off, Enable/Disable, or Yes/No. When "1" is returned, it indicates an On/Enable state. When "0" is returned, it indicates an Off/Disable state.
<NR1 NUMERIC RESPONSE DATA>	Defined in IEEE488.2 Indicates an decimal integer value. Examples: 123 -500
<NR2 NUMERIC RESPONSE DATA>	Defined in IEEE488.2 Indicates a numeric value in fixed point format. Examples: 123.45 -500.0

continued on next page...

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Response data type	Description
<NR3 NUMERIC RESPONSE DATA>	Defined in IEEE488.2 Indicates a numeric value in floating point format. Examples: 1.23E3 -5.67E-4
<HEXADECIMAL NUMERIC RESPONSE DATA>	Conforms to the hexadecimal format defined in IEEE488.2 as follows: #H{A B C D E F <digit>}... <digit> is an ASCII character with a value in the range of 0x30 to 0x39 (48 to 57 in decimal), a numeric 0 to 9. Example: #H0011EEFF
<BINARY NUMERIC RESPONSE DATA>	Conforms to the binary format defined in IEEE488.2 as follows: #B{0 1}... Example: #B10101010
<STRING RESPONSE DATA>	Defined in IEEE488.2 A character string enclosed in a pair of double quotation marks ("). Example: "Network Master - Testing the network."
<CHARACTER RESPONSE DATA>	Defined in IEEE488.2 Indicates two or more mnemonics for selections. Like program header mnemonics, <CHARACTER RESPONSE DATA> mnemonics can have a short and a long form. The Network Master always returns the short form. The syntax used in the Network Master additionally allows a digit as the first character of a mnemonic and also allows a dash (-) inside a mnemonic.
<EXPRESSION RESPONSE DATA>	Defined in IEEE488.2 A Network Master-defined set of <RESPONSE DATA> elements separated by a comma (,) and enclosed by a set of parenthesis. Example: (2,0.5),(3,0.25),(4,1.75) For further details refer to the detailed description of the Network Master specific commands.
<DEFINITE LENGTH ARBITRARY BLOCK RESPONSE DATA>	Defined in IEEE488.2 This response data type is used when the instrument streams binary data (typically PDF files) to the controller. It is defined as #<nonzero digit><digits><8 bit data bytes> , where: <nonzero digit> is a single ASCII character in the range of '1'-'9'. It represents the length of <digits> in number of bytes. <digits> is a number of ASCII characters in the range of '0'-'9', which together are a decimal representation of the number of succeeding data bytes.
	Example: #49137<9137 bytes of binary data>

1.3.2 Response Messages Terminator

A response message terminator indicates the end of the response message. Network Master appends the terminator to the end of a response message to indicate the end of the message. For Network Master the response message terminator is `{NL}` .

1.3.3 Prompt

For Ethernet based remote control a prompt can optionally be returned by the Network Master when all commands in a program message has completed. The prompt is inserted after the response message if any. It can be useful to enable the prompt when manually typing commands on the command line of the remote control interface. The prompt inserted is:

`SCPI:>`

See section [2.3.20](#) on page [84](#) and section [1.5](#) Controller Example.

1.4 Status

Network Master has registers which show instrument status such as the error occurrence and the command procession. This section describes these registers.

1.4.1 Configuration of Status Registers

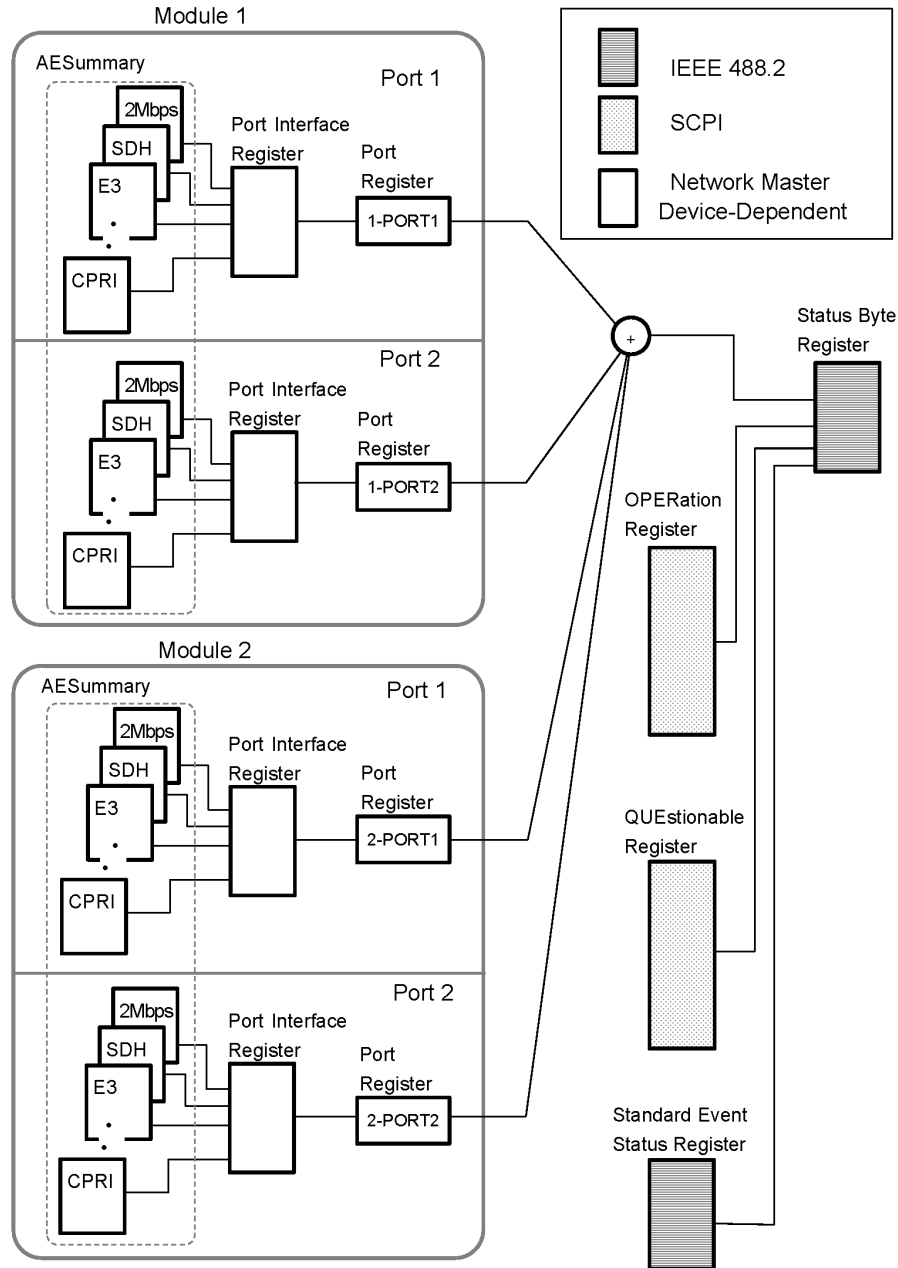


Figure 1.7: Configuration of Status Registers in the Network Master $\oplus$ means logical OR.

Each register has eight bits data or 16 bits and the bit enable register is provided against each register. The register model for SCPI defined status registers and Network Master device dependant registers is shown in Figure 1.8.

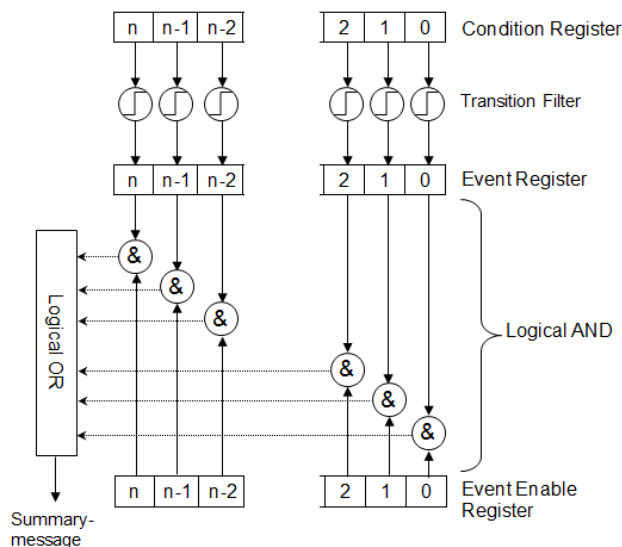


Figure 1.8: The register model for the Status registers.

Condition Registers

The Condition registers reflect the real-time status of the instrument or summary-message bits of other status registers. Thus, this register does not memorize the status.

Transition Filters

Sets the Condition Register data in the Event Register. The following three types of transition filters are available depending on which change of the Condition Register is to be evaluated.

- Positive direction change: The event becomes true only when the corresponding condition changes from false to true.
- Negative direction change: The event becomes true only when the corresponding condition changes from true to false.
- Bi-directional change: The event becomes true when a change arise either in the positive or negative direction.

The transition filters for the Network Master's Device-Dependent Status registers are locked to the "Positive transition" criteria. This means that events will be generated when the condition bits goes from 0 to 1. It is not possible to change the transition criteria.

Event Registers

The Event registers store the transition filter output. These registers are cleared when read.

Event Enable Registers

The Event Enable registers cannot be read or written and on power-on they are all set to zero. To enable the Event Enable registers and hence generation of summary-messages, the STATUS:PRESet command must be send. The STATUS:PRESet command changes all the bits in the Event Enable registers to 1.

1.4.2 IEEE488.2-defined Registers

Status Byte

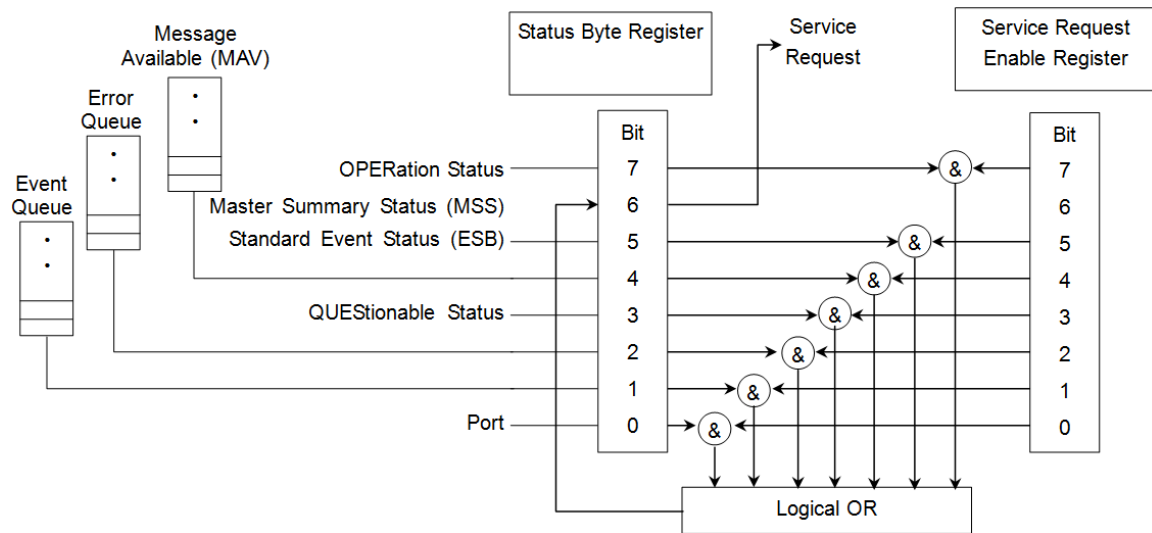


Figure 1.9: Configuration of Status Byte Register and Service Request Enable Register

Note:

When using the GPIB interface (J1667A GPIB-USB Converter), the service request is enabled. For more

Table 1.4: Bits in the Status Byte register

Bit	Name	Description
7	OPERation	Summary-message bit for the Operation Status register. Use the STATUS:OPERation:ENABLE command described in section 2.5.2 to enable generation of this summary-message.
6	Master Summary (MSS)	The Master Summary Status message. Use the *SRE command described in section 2.2.7 to enable generation of this summary-message.
5	Standard Event (ESB)	Summary-message bit for the Standard Event Status register. Use the *ESE command described in section 2.2.2 to enable generation of this summary-message.
4	Message Available (MAV)	Summary-message bit for the Output Queue.
3	QUESTionable	Summary-message bit for the Questionable Status register. Use the STATUS:QUESTionable:ENABLE command described in section 2.5.8 to enable generation of this summary-message.
2	Error Queue	Summary-message bit for the Error queue for all connected application servers. Use the INSTRument:ERRor[:NEXT]? command described in section 2.4.18 to retrieve the messages.
1	Event Queue	Summary-message bit for the Event Queue for the currently selected application server. Use the SYSTem:ERRor[:NEXT]? command described in section 2.3.2 to retrieve the messages.
0	Port	Summary-message bit for the Port Event Summary register. Use the STATUS:PRESet command described in section 2.5.16 and the STATUS:PORT:ENABLE command described in section 2.5.13 to enable generation of this summary-message.

information about the Status Byte register, see section 2.2.8 on page 79.

Standard Event Status

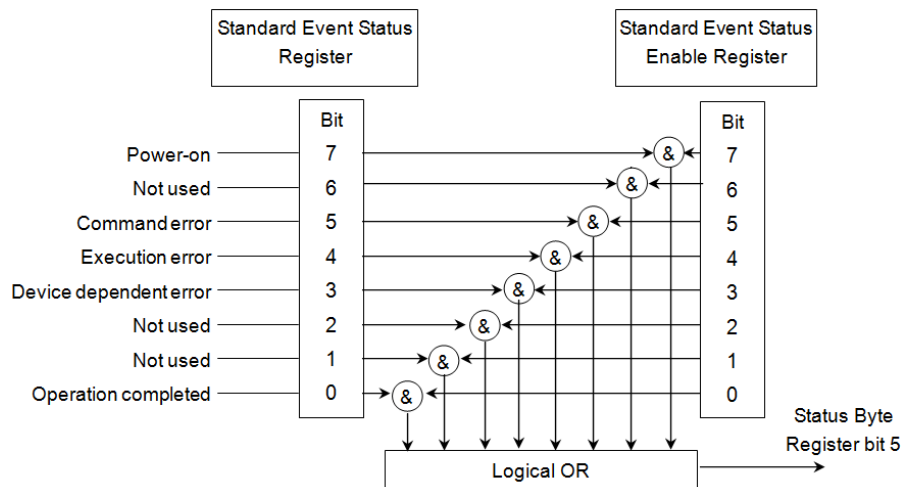


Figure 1.10: Configuration of Standard Event Status Register and Standard Event Status Enable Register

Table 1.5: Bits in the Standard Event Status register (unused bits are not listed)

Bit	Name	Description
7	Power On	The condition bit changes to 1 when the external power supply is connected.
5	Command Error	The condition bit changes to 1 when a unknown or errored command is received.
4	Execution Error	The condition bit changes to 1 when a command fail to execute properly.
3	Device Dependent Error	The condition bit changes to 1 when a required SW or HW options is missing or the Error/Event queue is full.
0	Operation Complete	The condition bit changes to 1 when *OPC command is received.

All condition bits are immediately changed back to 0 after they are set. This means that the only way to check the bits is to read the Event register. For more information on what triggers the Device Dependent, Execution and Command Errors see the Error/Event Queue section on page [64](#).

For more information on the Standard Event Status register see section [2.2.2](#) on page [76](#).

Error/Event Queue

When an unexpected error or event occurs, an entry is added to the Error/Event queue. This queue can hold 4 errors or events. If the queue overflows, the most recent events are discarded. A summary-message in bit 2 of the Status Byte is 1 when the queue is not empty. Table 1.6 gives an overview of the different errors and events inserted in the queue.

For more information about the Event queue, see section 2.4.18 on page 93.

Table 1.6: Errors and events that can occur in the Error/Event queue

Event Number	Error Description
0	No Error (when queue is empty)
<i>Command errors (Command Error bit is simultaneously set)</i>	
-100	Command error
-102	Syntax error
-104	Data type error
-115	Unexpected number of parameters
-130	Suffix error
-131	Invalid suffix
-138	Suffix not allowed
<i>Execution errors (Execution Error bit is simultaneously set)</i>	
-200	Execution error
-220	Parameter error
-221	Settings conflict
-222	Data out of range
-224	Illegal parameter value
-250	Mass storage error
<i>Device Dependent errors (Device Dependent Error bit is simultaneously set)</i>	
1	Options Missing
-350	Queue overflow

For more information about the Error queue, see section 2.3.2 on page 80.

1.4.3 SCPI-defined Registers

Questionable Status

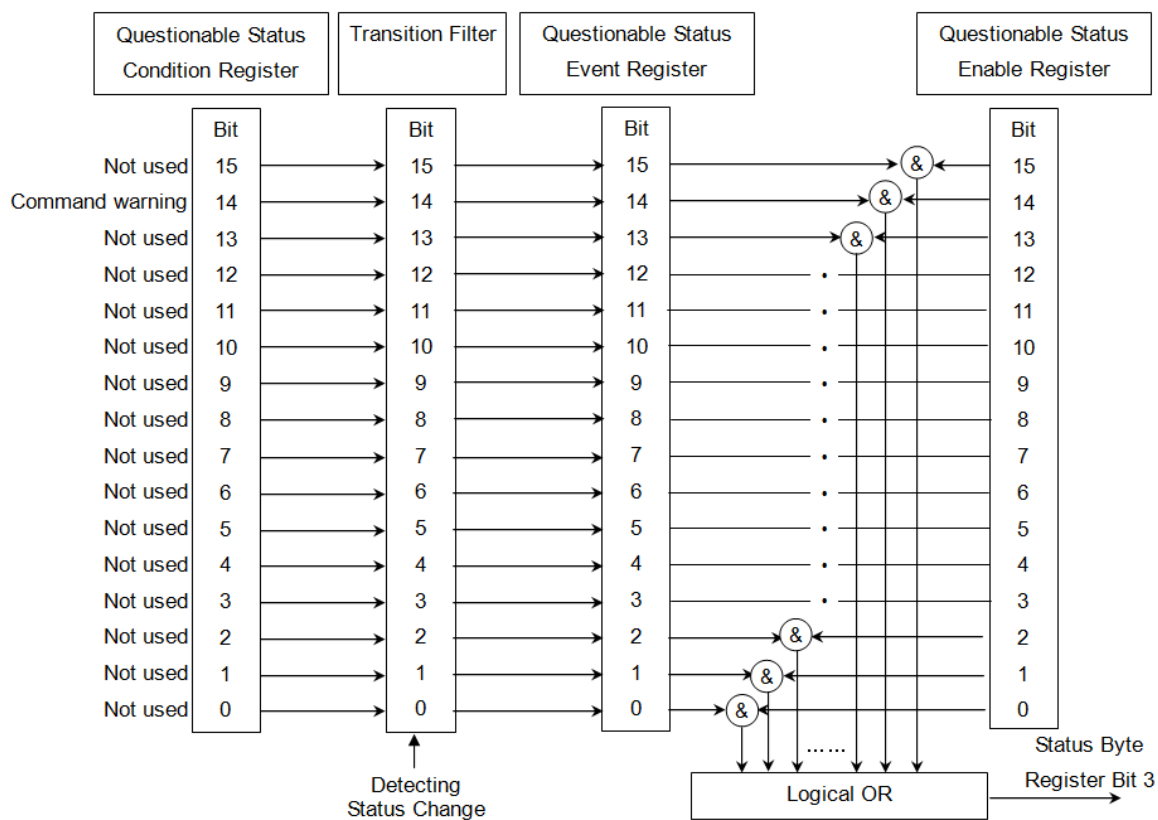


Figure 1.11: Configuration of Questionable Status Register

Table 1.7: Bit in the Questionable Status register (unused bits are not listed)

Bit	Name	Description
14	Command warning	The command warnig bit changes to 1 when the command which could not be processed was sent.

For more information about the Questionable Status register, see section 2.5.6 on page 97.

Operation Status

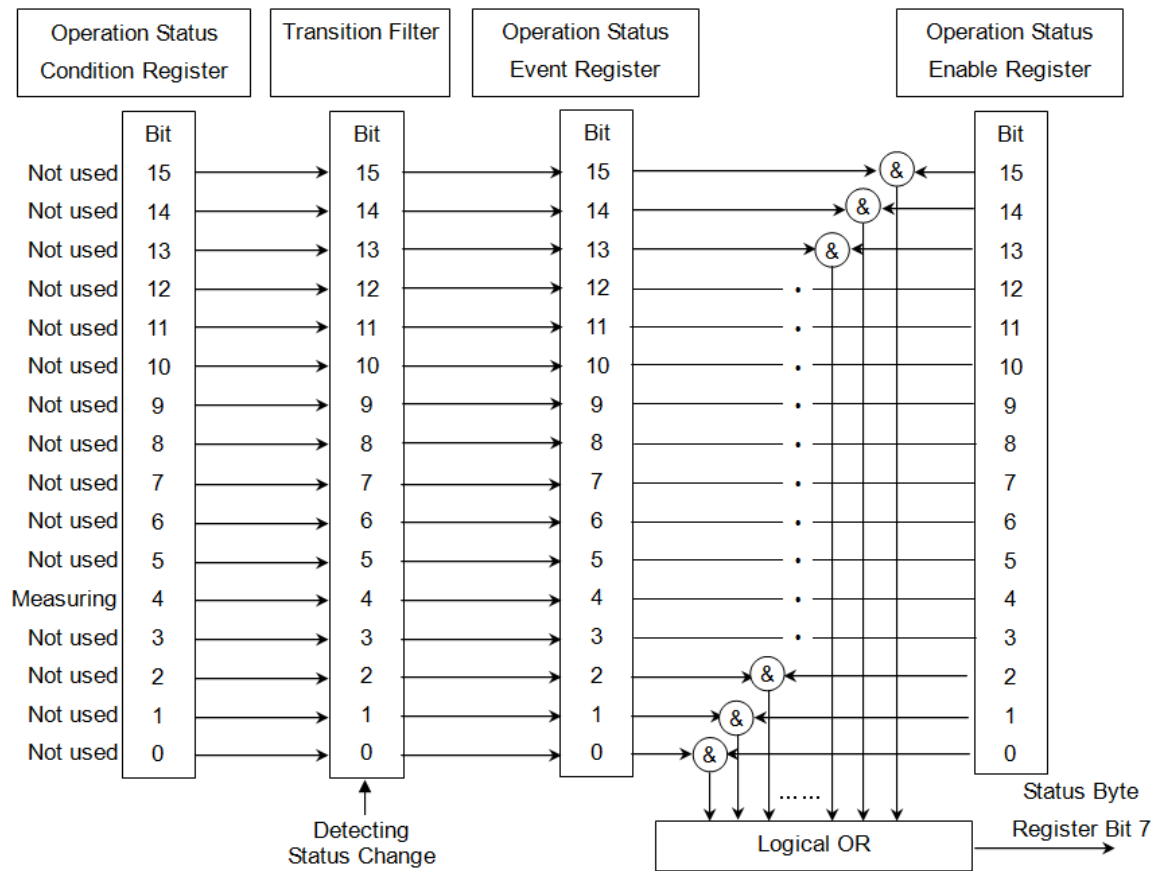


Figure 1.12: Configuration of Operation Status Register

Table 1.8: Bit in the Operation Status register (unused bits are not listed)

Bit	Name	Description
4	Measuring	The measuring condition bit changes to 1 when the an Application Server is running a measurement or a test. It returns to 0 when the measurement or test is stopped.

For more information about the Operation Status register, see section 2.5.1 on page 96.

1.4.4 Network Master Device-Dependent Status Registers

Figure 1.13 shows the structure of Post Status registers as the Network Master Device-Dependent status registers.

There is a Port Status register for each port on the Network Master. The Port Status registers summarize the

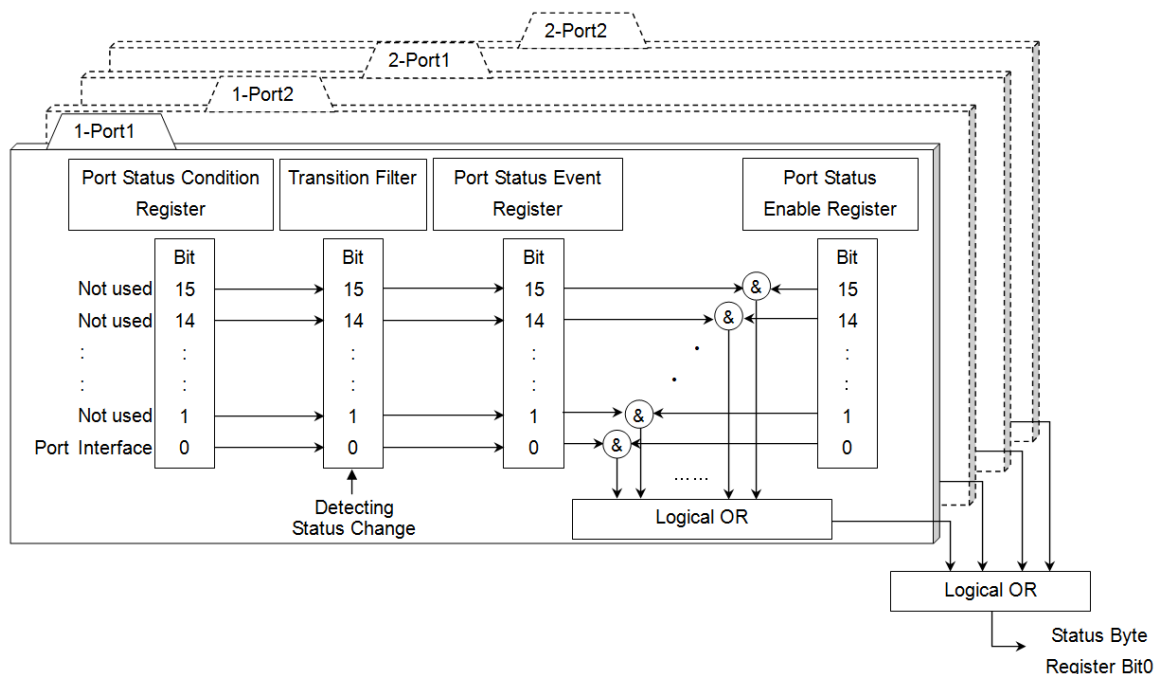


Figure 1.13: Configuration of Port Status Register

AESummary (Alarm and Error Summary) registers from the active interfaces. The Port Status registers are again summarized in bit 0 of the Status Byte, see Figure 1.15.

For more information about the Port Interface Status register, see section 2.5.17 on page 101.

Summary Register

The summarized status of the following registers is stored in the Summary Register (Refer to Table 1.14). The Network Master Device-Dependent Status registers are used to report alarms and errors for all interfaces. Each interface has one or more registers to represent the current alarm and error status. Each of these Alarm and Error registers are summarized in a General Interface Summary register (AESummary), see Figure 1.14. The exact layout of each register is found under the Status section for each interface.

- Alarm event registers
- Error event registers
- Event registers of lower layer summary registers

Like other status registers, the Summary register consists of the Condition register and the Event register, according to the register model defined in section 11.4.2 of IEEE488.2. The Summary register is locked to positive transition criteria because it consists of lower layer Event registers.

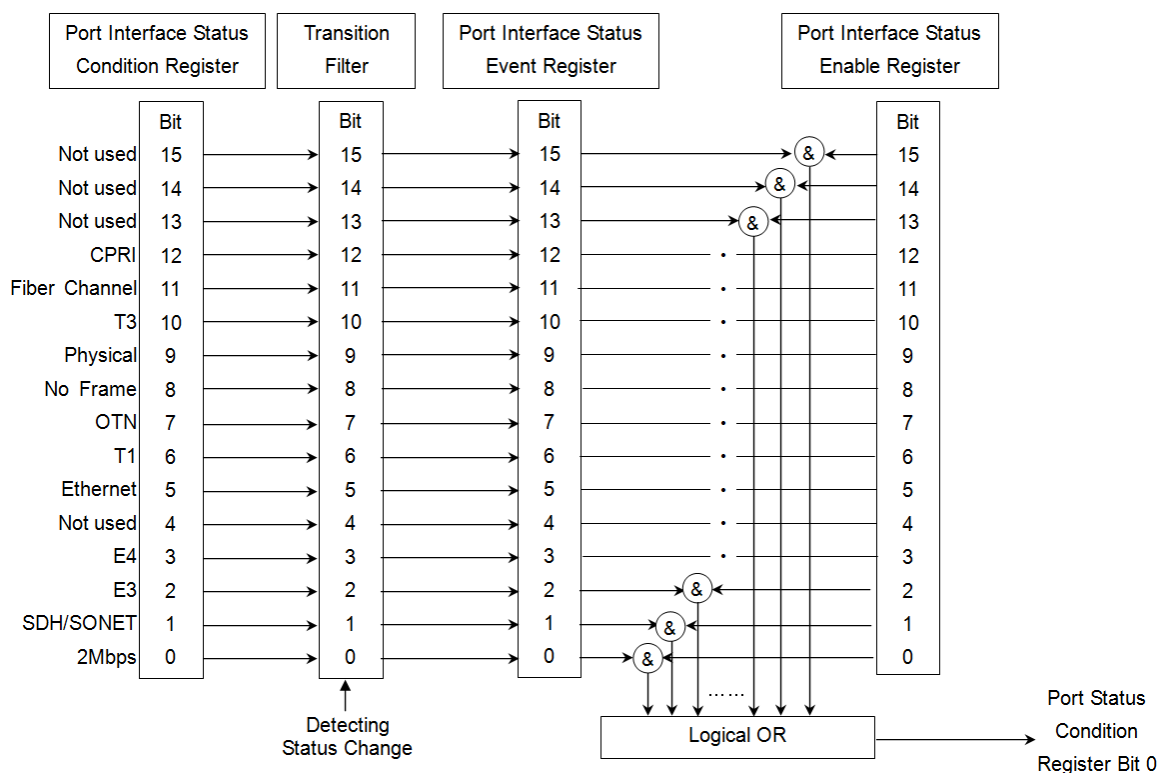


Figure 1.14: The structure for the Port Interface Status Register

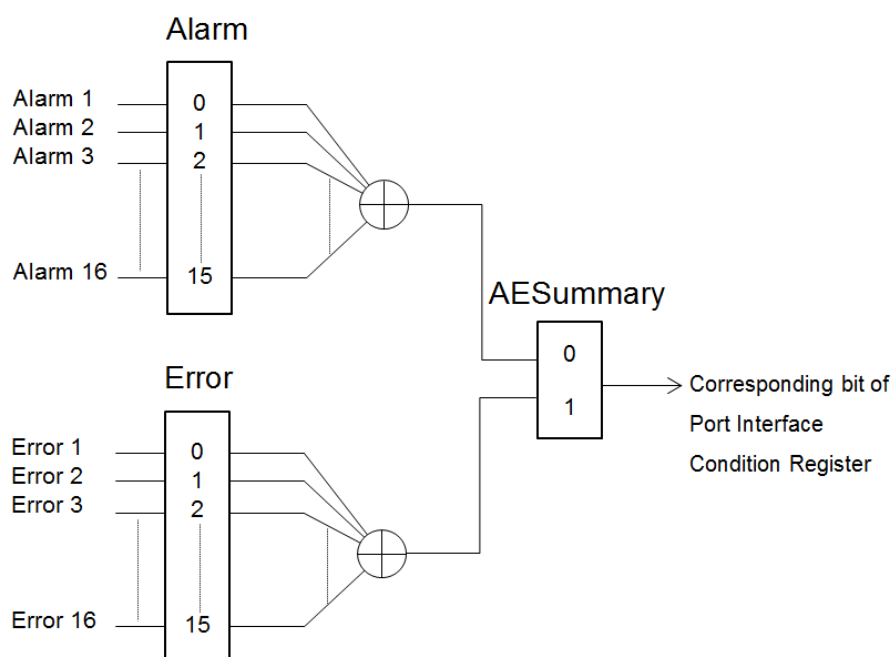


Figure 1.15: The generic structure for the AESummary register of interfaces

1.4.5 Reading, Writing and Clearing Status Registers

The following two tables list the possibilities for reading and writing the various status registers and queues. They also show when and how registers are cleared or enabled.

Table 1.9: Reading and writing of Status registers

Registers		Reading	Writing
IEEE488.2 standard status registers	Status Byte	*STB?	Not possible
	Service Request Enable	*SRE?	*SRE
	Standard Event Status	*ESR? After reading, the register content is cleared.	Not possible
	Standard Event Status Enable	*ESE?	*ESE
SCPI defined status registers	Error/Event Queue	SYST:ERR? After reading, the error/event is removed from the queue.	Not possible
	Operation Event	STAT:OPER? After reading, the register content is cleared.	Not possible
	Operation Enable	STAT:OPER:ENAB?	STAT:OPER:ENAB
	Questionable Event	STAT:QUES? After reading, the register content is cleared.	Not possible
	Questionable Enable	STAT:QUES:ENAB?	STAT:QUES:ENAB
Network Master device-dependent status registers	Condition	<Interface>:STAT:<Port>: <Register>:COND?	Not possible
	Transition Filter	Not possible	Not possible
	Event	<Interface>:STAT:<Port>: <Register>? After reading, the register content is cleared.	Not possible
	Enable	Not possible	Not possible

Notes

The Condition register of the Summary register is locked to positive transition criteria. Therefore, if clearing the register (*CLS) while an alarm or error is occurring, the register bits stay in "0" (cleared) in spite of the alarm or error occurrence.

Table 1.10: Status registers behaviour for different commands/events

Registers		*RST	*CLS	PowerOn	STAT:PRES
IEEE488.2 standard status registers	Status Byte	No Changes	Cleared	Cleared	No Changes
	Service Request Enable	No Changes	No Changes	Cleared	No Changes
	Standard Event Status	No Changes	Cleared	Cleared	No Changes
	Standard Event Status Enable	No Changes	No Changes	Cleared	No Changes
SCPI defined status registers	Error/Event Queue	No Changes	Cleared	Cleared	No Changes
	Operation Event	No Changes	Cleared	Cleared	No Changes
	Operation Enable	No Changes	No Changes	Cleared	No Changes
	Questionable Event	No Changes	Cleared	Cleared	No Changes
	Questionable Enable	No Changes	No Changes	Cleared	No Changes
Network Master Unique Status registers	Condition	No Changes	No Changes	Cleared	No Changes
	Transition Filter	No Changes	No Changes	No Changes	No Changes
	Event	No Changes	Cleared	Cleared	No Changes
	Enable	No Changes	No Changes	Cleared	Enabled (all 1's)

1.5 Controller Example

One example of how to connect a controller to the Network Master instrument is described in this section.

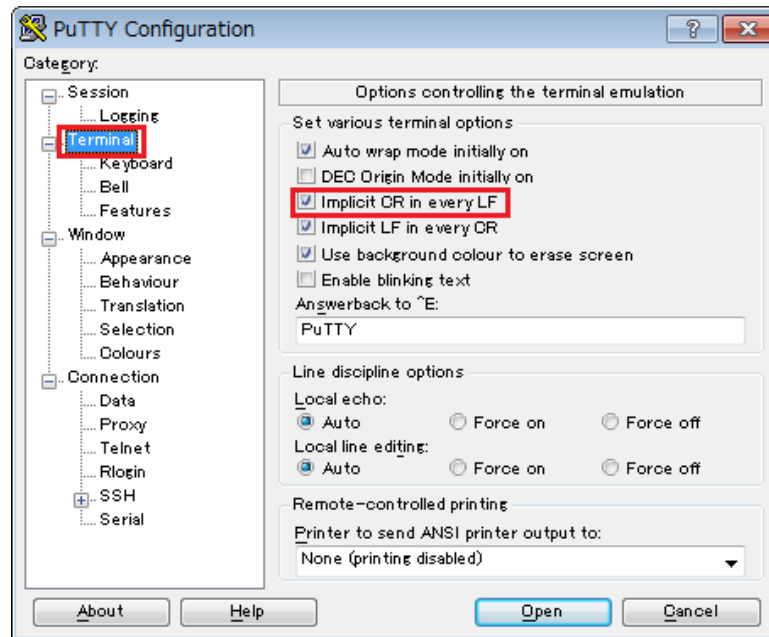
1.5.1 PuTTY

PuTTY is a free Telnet/SSH client which supports raw TCP connections. With PuTTY it is possible to get terminal emulation access to the instrument. It is recommended to enable the prompt when using PuTTY. PuTTY does not support file streaming like the MEAS:EXP command.

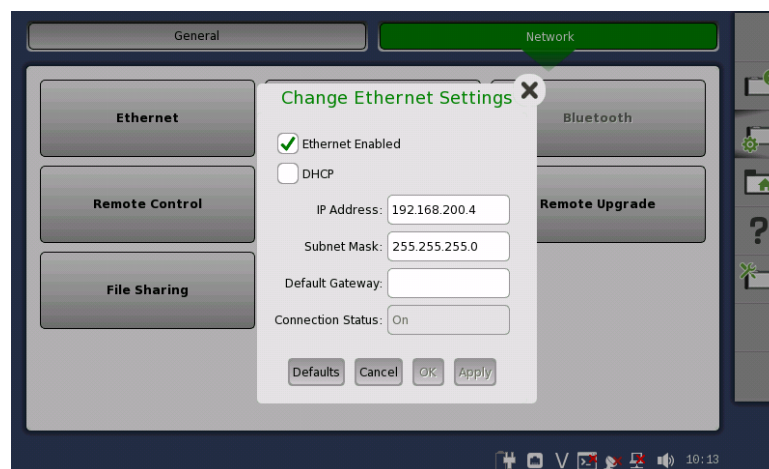
PuTTY can be downloaded from <http://www.chiark.greenend.org.uk/~sgtatham/putty/>

Setup

1. Install PuTTY.
2. Start PuTTY.
3. In the PuTTY Configuration enable **Implicit CR in every LF** at **Category:→Terminal**.

Figure 1.16: Enable **Implicit CR in every LF** in PuTTY

4. In the instrument GUI, find the instrument's **IP Address** information, see Figure 1.17. Then type it in PuTTY, see Figure 1.18.

Figure 1.17: **IP Address** on the instrument

5. In PuTTY, type 56001 in the **Port** field, select the **Raw** radio button in the **Connection type** field, and click the **Open** button. see Figure 1.18.

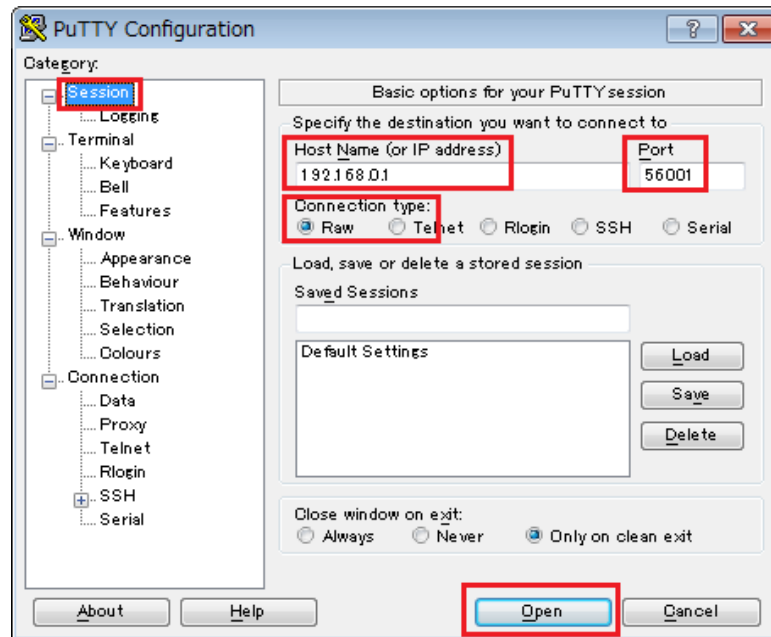


Figure 1.18: Specify the destination and **Open** the connection in PuTTY

6. A window appears, see Figure 1.19.

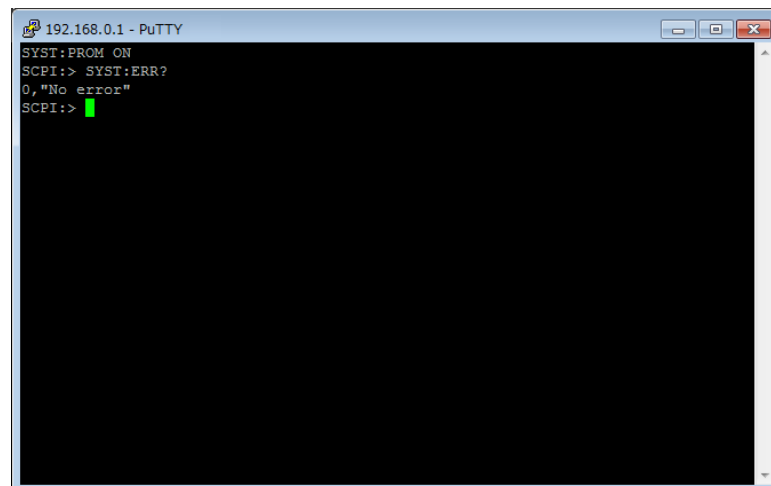


Figure 1.19: Connection established with PuTTY

1.6 Definitions

1.6.1 NaN (Not a Number)

NaN is defined in SCPI-99. NaN is represented as 9.91E37 (<NR3 NUMERIC RESPONSE DATA>) as defined in IEEE 754. NaN is also used to represent missing data.

1.6.2 → Right Arrow

The right arrow → used in this document has two meanings:

- On the left side of the arrow is a query and returned value on the right hand side.
Example: `TMBP:RX1:PATT?` → `PRBS11`

1.6.3 Data Bit (DB)

Data bit is represented as DBx where x represents the bit index in a register. DB1 is always LSB.

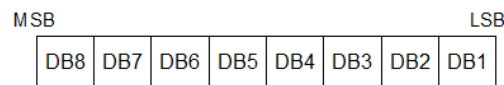


Figure 1.20: Data bit

1.6.4 Port Number (Logical Port)

Specify a logical port number assigned for each started application as a port number <Pt> in the SCPI command. The logical port numbers will be assigned in the order of Module1-Port1, Module1-Port2, Module2-Port1, and Module2-Port2. The logical port number starts with "1" regardless of the physical port numbers.

Example of logical port assignment when using the application start command

- `INST:STAR TP-BERT-OTN,1-PORT2,1-PORT1,2-PORT1` (Figure 1.21)
Physical Port : Logical Port
1-PORT1 : PORT1
1-PORT2 : PORT2
2-PORT1 : PORT3

When setting CFP for 2-PORT1 by using command, specify "3" for <Pt> in `OTN:TX<PT>:INTerface`.
Example: `OTN:TX3:INT CFP`

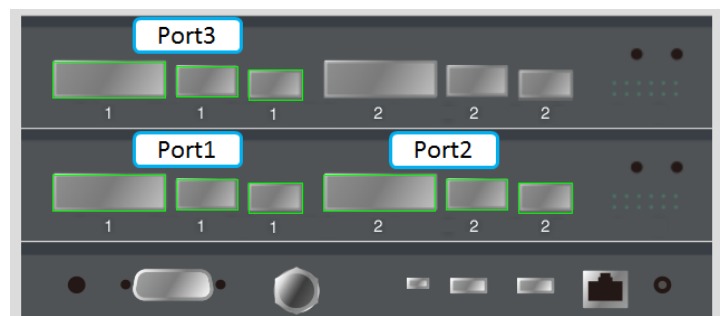


Figure 1.21: Correspondence between physical and logical port numbers (Three ports)

- `INST:STAR TP-BERT-OTN,2-PORT2` (Figure 1.22)
Physical Port : Logical Port
2-PORT2 : PORT1

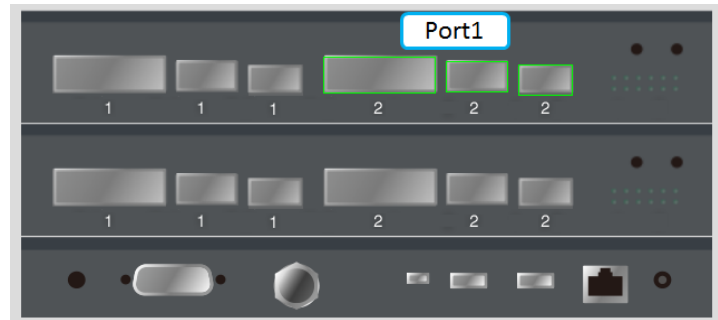


Figure 1.22: Correspondence between physical and logical port numbers (One port)

- `INST:STAR TP-BERT-ETH,1-PORT2,2-PORT1` (Figure 1.23)
 Physical Port : Logical Port
 1-PORT2 : PORT1
 2-PORT1 : PORT2

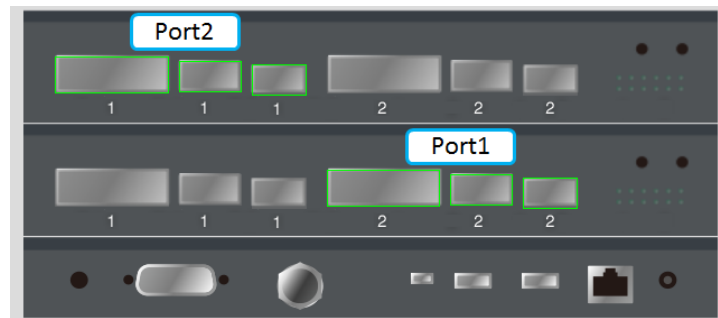


Figure 1.23: Correspondence between physical and logical port numbers (Two ports)

Notes

- The physical ports (1-PORT1, 2-PORT1 etc.) specified at application startup basically do not match the logical port numbers assigned in each application.
- The logical ports are not assigned in the same order of the physical ports described in the SCPI command for starting application.(Figure 1.17) For example, the following two commands include the same physical port numbers in different orders. However, for the both cases, 1-PORT is assigned to logical PORT1 and 1-PORT2 is assigned to logical PORT2.
`INST:STAR TP-BERT-OTN,1-PORT1,1-PORT2`
`INST:STAR TP-BERT-OTN,1-PORT2,1-PORT1`
- When multiple applications are started, the logical ports are numbered from 1 for each application.

Chapter 2

SCPI Conformance Information

2.1 SCPI Version

The Network Master Remote Control application conforms to SCPI 1999.0

2.2 IEEE 488.2 Mandatory Commands

2.2.1 *CLS

Syntax	*CLS
Description	This command clears all the event registers summarized in the Status Byte register. The error queue is emptied. Neither the Standard Event Status Enable register, nor the Service Request Enable register are affected by this command.
Parameter	None.
Response	None.
Example	*CLS
Note	All active (SCPI) sessions has their own set of standard registers.

2.2.2 *ESE

Syntax	*ESE <mask>
Description	This command sets bits in the Standard Event Status Enable register. A 1 in a bit in the enable register enables the corresponding bit in the Standard Event Status register. This register is cleared at power-on. The *RST and *CLS commands do not affect this register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the enable mask: DB1 (1) = Operation Complete DB2 = NOT USED DB3 = NOT USED DB4 (8) = Device Dependent Error DB5 (16) = Execution Error DB6 (32) = Command Error DB7 = NOT USED DB8 (128) = Power On <i>MINimum=0, MAXimum=255</i>
Response	None.
Example	*ESE 16
Note	All active sessions has their own Standard Event Status Enable register.

Syntax	*ESE?
Description	This query returns the contents of the Standard Event Status Enable register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA> See the *ESE command for bit values for the enable mask.
Example	*ESE? → 16
Note	

2.2.3 *ESR?

Syntax	*ESR?
Description	This query returns the contents of the Standard Event Status register. This register is cleared after being read.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1 (1) = Operation Complete DB2 = NOT USED DB3 = NOT USED DB4 (8) = Device Dependent Error DB5 (16) = Execution Error DB6 (32) = Command Error DB7 = NOT USED DB8 (128) = Power On
Example	*ESR? → 49
Note	All active sessions has their own Standard Event Status register.

2.2.4 *IDN?

Syntax	*IDN?
Description	This query returns the instrument identification over the interface.
Parameter	None.
Response	<manufacturer>,<model>,<serial>,<version> = <ARBITRARY ASCII RESPONSE DATA>
Example	*IDN? → Anritsu,MT1000A,6123456789,1.00
Note	

2.2.5 *OPC

Syntax	*OPC
Description	This command causes the instrument to generate the operation complete message in the Standard Event Status register when all pending selected instrument operations have been finished.
Parameter	None.
Response	None.
Example	*OPC
Note	All active sessions has their own Standard Event Status register.

Syntax	*OPC?
Description	This query places the ASCII character '1' into the instrument's output queue when all pending operations have been finished.
Parameter	None.
Response	<operation complete> = <NR1 NUMERIC RESPONSE DATA>
Example	*OPC? → 1
Note	Only application servers connected to by the current session are synchronized.

2.2.6 *RST

Syntax	*RST
Description	This command sets the instrument to reset setting (standard setting) stored in internal storage. The instrument is placed in the idle state awaiting a command. All running application/servers are closed when the *RST command is issued. The following are not changed: - Service Request Enable register (SRE) - Standard Event Status register (ESR) - Standard Event Status Enable register (ESE) - Any instrument specific Status Event or Status Event Enable registers
Parameter	None.
Response	None.
Example	*RST
Note	*RST is specially configured to be compatible with SCPI remote control.

2.2.7 *SRE

Syntax	*SRE <enable mask>
Description	This command sets bits in the Service Request Enable register. A 1 in a bit in the enable register enables the corresponding bit in the Status Byte, also sets the Master Summary Status bit (DB7) in the Status Byte. The register is cleared at power-on. The *RST and *CLS commands do not affect the register.
Parameter	<enable mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1 (1) = Port Event Summary DB2 (2) = Event Queue Summary for the currently selected application server. DB3 (4) = Error Queue Summary for all connected application servers. DB4 (8) = Questionable Status Summary DB5 (16) = Message Available (MAV) DB6 (32) = Standard Event Status Summary (ESB) DB7 = NOT USED DB8 (128) = Operation Status Summary <i>MINimum=0, MAXimum=255</i>
Response	None.
Example	*SRE 255
Note	All active sessions has their own Service Request Enable register.

Syntax	*SRE?
Description	This query returns the contents of the Service Request Enable register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA> See the *SRE command for bit values for the enable mask.
Example	*SRE? → 255
Note	

2.2.8 *STB?

Syntax	*STB?
Description	This query returns the contents of the Status Byte register. The Master Summary Status (MSS) bit is true when any bit of the STB register is set and a matching bit in the Service Request Enable Register is set, see *SRE. The Status Byte register including the MSS is not altered by this query.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1 (1) = Port Event Summary DB2 (2) = Event Queue Summary for the currently selected application server. DB3 (4) = Error Queue Summary for all connected application servers. DB4 (8) = Questionable Status Summary DB5 (16) = Message Available (MAV) DB6 (32) = Standard Event Status Summary (ESB) DB7 (64) = Master Summary Status (MSS) DB8 (128) = Operation Status Summary
Example	*STB? → 7
Note	

2.2.9 *TST?

Syntax	*TST?
Description	This query returns whether or not the instrument completed the self-test without any detected errors.
Parameter	None.
Response	<result> = <NR1 NUMERIC RESPONSE DATA> 0: No self-test errors detected 1: Self-test error detected
Example	*TST? → 0
Note	Self-test is performed automatically at the time of power up.

2.2.10 *WAI

Syntax	*WAI
Description	This command prevents the instrument from executing any further commands until the current command has been finished. All pending operations are completed during the wait period.
Parameter	None.
Response	None.
Example	*WAI
Note	*WAI functions for commands called "overlap command". For now Network Master does not have any overlap commands. So *WAI does not work on the current Network Master.

2.3 SCPI System Subsystem Commands

2.3.1 SYSTem:VERSion?

Syntax	SYSTem:VERSion?
Description	This query returns the SCPI revision to which the system complies.
Parameter	None.
Response	<version> = <NR2 NUMERIC RESPONSE DATA>
Example	SYST:VERS? → 1999.0
Note	

2.3.2 SYSTem:ERRor[:NEXT]?

Syntax	SYSTem:ERRor[:NEXT]?
Description	This query returns the oldest entry of the error queue and removes the returned entry from the queue.
Parameter	None.
Response	<error number> = <NR1 NUMERIC RESPONSE DATA> <description> = <STRING RESPONSE DATA>
Example	SYST:ERR? → -222,"Data out of range"
Note	All active sessions has their own error queue. Application server ID is added to each error message when the additional message is selected TEST or BOTH. Application server ID is -1 for system errors. Application server ID is fixed to 0 if no error message is in error queue. Error command is added to each error message when the additional message is selected COMMand or BOTH.

2.3.3 SYSTem:ERRor:ADDITIONal[:MESSAge]

Syntax	SYSTem:ERRor:ADDITIONal[:MESSAge] <message>
Description	This command select additional message in the error message.
Parameter	<message> = <CHARACTER PROGRAM DATA> NONE TEST COMMand BOTH
Response	None.
Example	SYST:ERR:ADD BOTH SYST:ERR? → -115,"Unexpected number of parameters:-1:INST:TERM"
Note	This setting is applied only for the current session and defaulted to NONE when session closed. See also SYSTem:ERRor[:NEXT]?

Syntax	SYSTem:ERRor:ADDITIONal[:MESSAge]?
Description	This query returns additional message in the error message.
Parameter	None.
Response	<message> = <CHARACTER RESPONSE DATA>
Example	SYST:ERR:ADD? → NON
Note	

2.3.4 SYSTem:DATE

Syntax	SYSTem:DATE <year>,<month>,<day>
Description	This command sets the date of the internal calender.
Parameters	<year> = <NUMERIC PROGRAM DATA> <i>MINimum = 1997, MAXimum = 2036</i> <month> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 12</i> <day> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 31</i>
Response	None.
Example	SYST:DATE 2009,12,31
Note	

Syntax	SYSTem:DATE?
Description	This query returns the date of the internal calender.
Parameter	None.
Response	<year>,<month>,<day> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:DATE? → 2009,07,04
Note	

2.3.5 SYSTem:TIME

Syntax	SYSTem:TIME <hour>,<minute>,<second>
Description	This command sets the time of the internal clock.
Parameters	<hour> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 23</i> <minute> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i> <second> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i>
Response	None.
Example	SYST:TIME 23,59,59
Note	

Syntax	SYSTem:TIME?
Description	This query gets the time of the internal clock.
Parameter	None.
Response	<hour>,<minute>,<second> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:TIME? → 15,45,03
Note	

2.3.6 SYSTem:REBoot

Syntax	SYSTem:REBoot
Description	This command will force a reboot of the instrument. A TCP remote connection to the instrument will be lost.
Parameter	None.
Response	None.
Example	SYST:REB
Note	

2.3.7 SYSTem:GPS:NSATellites?

Syntax	SYSTem:GPS:NSATellites?
Description	This query returns the number of satellites found by GPS.
Parameter	None.
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:NSAT? → 5
Note	Return "0" if GPS is not available.

2.3.8 SYSTem:GPS:TIME?

Syntax	SYSTem:GPS:TIME?
Description	This query returns the GPS time.
Parameter	None.
Response	<time> = <CHARACTER RESPONSE DATA>
Example	SYST:GPS:TIME? → 2014-01-01T12:34:56
Note	Return "0" if GPS is not available.

2.3.9 SYSTem:GPS:LOCation?

Syntax	SYSTem:GPS:LOCation?
Description	This query returns the location.
Parameter	None.
Response	<location> = <NR2 NUMERIC RESPONSE DATA>
Example	SYST:GPS:LOC? → 85 26.8444N, 22 20.4508E
Note	Return "0" if GPS is not available.

2.3.10 SYSTem:GPS:POWEr

Syntax	SYSTem:GPS:POWEr <power>
Description	This command turns GPS module's power ON/OFF (1 - ON, 0 - OFF).
Parameters	<power> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1</i>
Response	None.
Example	SYST:GPS:POWE 0
Note	

2.3.11 SYSTem:GPS:POWEr?

Syntax	SYSTem:GPS:POWEr?
Description	This query returns GPS module's power ON/OFF (1 - ON, 0 - OFF).
Parameter	None.
Response	<power> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:POWE? → 0
Note	

2.3.12 SYSTem:GPS:SYNCmode

Syntax	SYSTem:GPS:SYNCmode <mode>
Description	This command turns GPS module's sync mode to GPS/EXT (1 - GPS, 0 - EXT).
Parameters	<mode> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1</i>
Response	None.
Example	SYST:GPS:SYNC 0
Note	

2.3.13 SYSTem:GPS:SYNCmode?

Syntax	SYSTem:GPS:SYNCmode?
Description	This query returns GPS module's sync mode GPS/EXT (1 - GPS, 0 - EXT).
Parameter	None.
Response	<mode> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:SYNC? → 0
Note	

2.3.14 SYSTem:GPS:ANTNpower

Syntax	SYSTem:GPS:ANTNpower <power>
Description	This command turns GPS module's antenna power 5V/3.3V (1 - 5V, 0 - 3.3V).
Parameters	<power> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1</i>
Response	None.
Example	SYST:GPS:ANTN 0
Note	

2.3.15 SYSTem:GPS:ANTNpower?

Syntax	SYSTem:GPS:ANTNpower?
Description	This query returns GPS module's antenna power 5V/3.3V (1 - 5V, 0 - 3.3V).
Parameter	None.
Response	<power> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:ANTN? → 0
Note	

2.3.16 SYSTem:GPS:PWRElapsed?

Syntax	SYSTem:GPS:PWRElapsed?
Description	This query returns GPS module's power on elapsed seconds.
Parameter	None.
Response	<time> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:PWRE? → 0
Note	

2.3.17 SYSTem:GPS:SYNElapsed?

Syntax	SYSTem:GPS:SYNElapsed?
Description	This query returns GPS module's sync mode elapsed seconds.
Parameter	None.
Response	<time> = <NR1 NUMERIC RESPONSE DATA>
Example	SYST:GPS:SYNE? → 0
Note	

2.3.18 SYSTem:COMMunicate:TERMinator

Syntax	SYSTem:COMMunicate:TERMinator <terminator>
Description	This command sets the terminator code which is appended to the query response.
Parameter	<terminator> = <CHARACTER PROGRAM DATA> NONE(only GPIB) LF CRLF
Response	None.
Example	SYST:COMM:TERM LF
Note	This setting is applied only for the current session and defaulted to CRLF when session closed.

Syntax	SYSTem:COMMunicate:TERMinator?
Description	This query returns the terminator code which is appended to the query response.
Parameter	None.
Response	<terminator> = <CHARACTER RESPONSE DATA>
Example	SYST:COMM:TERM? → LF
Note	

2.3.19 SYSTem:PROMpt

Syntax	SYSTem:PROMpt <enable>
Description	This command enables/disables appending of prompt to all replies from Remote Control interface.
Parameter	<enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	SYST:PROM 1
Note	The prompt string is "SCPI:> " This setting is applied only for the current session and forgets when session closed.

Syntax	SYSTem:PROMpt?
Description	This query returns status of the prompt.
Parameter	None.
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	SYST:PROM? → SCPI:>1
Note	

2.3.20 SYSTem:LOCal:CONTRol

Syntax	SYSTem:LOCal:CONTRol <enable>
Description	This command enables/disables local control.
Parameter	<enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	SYST:LOC:CONT 1
Note	This setting is applied all connected sessions and forgets when turn off SCPI.

Syntax	SYSTem:LOCal:CONTRol?
Description	This query returns enables/disables local control.
Parameter	None.
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	SYST:LOC:CONT? → 1
Note	

2.3.21 SYSTem:TIMing:EXternal?

Syntax	SYSTem:TIMing:EXternal?
Description	This query returns external clock input signal status.
Response	<clock> = <STRING RESPONSE DATA> "2M" : 2MHz clock or E1 (SETS) signal "1.5M" : T1 (BITS) signal "10M" : 10MHz clock signal "N/A" : No Input
Example	SYST:TIM:EXT? → "2M"
Note	There must be a connected application server for this command to be recognized as a legal command.

2.3.22 SYSTem:STIMuli:INSert

Syntax	SYSTem:STIMuli:INSert
Description	This command emulates pressing the Error Insert button of the GUI. Errors are inserted in the outgoing data stream according to the configuration of the active Stimuli setup(s).
Parameter	None.
Response	None.
Example	SYST:STIM:INS
Note	There must be a connected application server for this command to be recognized as a legal command.

2.3.23 SYSTem:STIMuli:CLR

Syntax	SYSTem:STIMuli:CLR
Description	This command clears the Stimuli setup(s) for all interfaces.
Parameter	None.
Response	None.
Example	SYST:STIM:CLR
Note	There must be a connected application server for this command to be recognized as a legal command.

2.3.24 SYSTem:WAIT[:IDLE]

Syntax	SYSTem:WAIT[:IDLE]
Description	This command waits for the instrument to go into IDLE state, i.e. no measurement or test is pending, running, loading or being stored. It also waits for load and save of settings to finish.
Parameter	None.
Response	None.
Example	SYST:WAIT
Note	There must be a connected application server for this command to be recognized as a legal command. Be careful when using this command as it may lead to undesired blocking of the remote interface. In some situations the instrument requires a remote command or other user intervention in order to return to IDLE state; e.g. when a measurement is running and measurement stop mode is set to MANual (MEAS:SET:STOP → MAN). In this situation, for the instrument to return to IDLE state press the START/STOP button on the GUI or apply the MEASurement:STOP command. The latter is NOT possible if SYST:WAIT:IDLE is currently being executed. If an undesired blocking occurs close and re-open the remote connection. And then send *RST command to reset undesired blocking remote connection.

2.3.25 SYSTem:WAIT:DURation

Syntax	SYSTem:WAIT:DURation <seconds>
Description	This command waits for the specified number of seconds.
Parameter	<seconds> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 3600</i>
Response	None.
Example	SYST:WAIT:DUR 5
Note	There must be a connected application server for this command to be recognized as a legal command.

2.3.26 SYSTem:APPLication

Syntax	SYSTem:APPLication <application>
Description	This command selects between the BERT, APS and RTD applications <application> = <CHARACTER PROGRAM DATA> BERT: BERT Application APS: APS Application RTD: RTD Application <i>DEFault = BERT</i>
Response	None.
Example	SYST:APP BERT
Note	This command only applies in the OTN or SDH/SONET/PDH/DSn BERT applications

2.3.27 SYSTem:APPLication?

Syntax	SYSTem:APPLication?
Description	This command returns the application type
Response	<app> = <CHARACTER PROGRAM DATA> BERT: BERT Application APS: APS Application RTD: RTD Application
Example	SYST:APP? → BERT
Note	This command only applies in the OTN or SDH/SONET/PDH/DSn BERT applications

2.4 SCPI Instrument Subsystem Commands

To use the application-specific SCPI commands, you need to connect the client session to the application server. By sending SCPI commands to the application server connected, you can control the application.

2.4.1 Connection to Application Server

To connect the client session to the application server, do one of the following:

- Use the `INST:CONN:ALL` command.
This command connects a client session to the application server which is not occupied.
If a different client session is already connected to the server (application server is occupied), the connection attempt fails.
- Use the `INST:CONN` command.
This command connects a client session to all application servers which are not occupied.
- Use the `INST:STAR` command.
This command starts a new application server and connects a client session to the application server.

2.4.2 Connection to multiple applications

A client session can connect to multiple application servers simultaneously. In this case, the SCPI command destination will be the selected application server.

The destination can be set by using the `INST:SEL` command. To confirm the selected application server, use the `INST?` command.

When a new application server has started by the `INST:STAR` command, the SCPI command destination will be changed to the newly started application server.

2.4.3 Connection from multiple users

When using a Network Master by multi-users, multiple client sessions connect to a Network Master. Under this condition, make sure that the application server is not occupied by any other user.

If a client session has already connected to an application server, Network Master cannot connect any other client session to the application server.

To connect to the application server occupied by a client session, you need to release the application server by disconnecting the client session which is connecting currently. To release the application server, do one of the following:

- Use the `INST:DISC` command.
You can disconnect the server by sending the `INST:DISC` command from the connecting client session.
- Terminate the Client Session.
After the client session terminated, all application servers to which the client session was connected are released.
You can terminate the client session by disconnecting connection to Network Master from the User PC.

You can connect a client session to the released application server again by using the `INST:CONN` command or the `INST:CONN:ALL` command.

2.4.4 Force Termination of Application Server

An application server to which a session is connecting doesn't receive SCPI commands from any other session. An exception is the `INST:TERM:FORC` command. This command is always accepted even if sent from the other session and terminates the application server to which a session is connecting.

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2.4.5 INSTRument:START[:DEFault]

Syntax	INSTRument:START[:DEFault] <app name>[, <port name>[, <port name>,...]]
Description	This command starts an application server with default settings.
Parameters	<app name> = <CHARACTER PROGRAM DATA> TP-APS-OTN: OTN Automatic Protection Switching application. TP-APS-SDHPDH: SDH/PDH Automatic Protection Switching application. TP-APS-SDHPDH-OTN: SDH/PDH over OTN Automatic Protection Switching application. TP-BERT-CPRI: CPRI Bit Error Rate Test application. TP-BERT-CPRI-OTN: CPRI over OTN Bit Error Rate Test application. TP-BERT-ETH: Ethernet Bit Error Rate Test application. TP-BERT-ETH-OTN: Ethernet over OTN Bit Error Rate Test application. TP-BERT-FC: Fibre Channel Bit Error Rate Test application. TP-BERT-FC-OTN: Fibre Channel over OTN Bit Error Rate Test application. TP-BERT-OTN: OTN Bit Error Rate Test application. TP-BERT-ROE: eCPRI/RoE Bit Error Rate Test application. TP-BERT-SDHPDH: PDH/SDH Bit Error Rate Test application. TP-BERT-SDHPDH-OTN: PDH/SDH over OTN Bit Error Rate Test application. TP-CABLE-ETH: Ethernet cable test application. TP-CHSTAT-ETH: Ethernet channel statistics application. TP-DISC-ETH: Ethernet discovery application. TP-MONGEN-ETH: Ethernet monitor/generate application. TP-MONGEN-ETH-OTN: Ethernet over OTN monitor/generate application. TP-NOFRAME-DEVICE: No frame device test (Unframed Bit Error Rate Test) application. TP-PASS-CPRI: CPRI pass-through application. TP-PASS-ETH: Ethernet pass-through application. TP-PERF-FC: Fibre Channel performance test application. TP-PERF-FC-OTN: Fibre Channel over OTN performance test application. TP-PING-ETH: Ethernet ICMP ping application. TP-REFL-ETH: Ethernet reflector application. TP-REFL-ETH-OTN: Ethernet over OTN reflector application. TP-REFL-FC: Fibre Channel reflector application. TP-REFL-FC-OTN: Fibre Channel over OTN reflector application. TP-RFC-ETH: Ethernet RFC-2544 test application. TP-RFC-ETH-OTN: Ethernet over OTN RFC-2544 test application. TP-RFC6349-ETH: Ethernet RFC-6349 test application. TP-RTD-OTN: OTN Round Trip Delay test application. TP-RTD-SDHPDH: SDH/PDH Round Trip Delay test application. TP-RTD-SDHPDH-OTN: SDH/PDH Round Trip Delay test application. TP-SAT-ETH: Ethernet Service Activation Test application. TP-SAT-ETH-OTN: Ethernet over OTN Service Activation Test application. TP-SYNCTEST-ETH: Ethernet sync test application. TP-TRACE-ETH: Ethernet trace-route application. OTDR-OTDR: OTDR application. <port name> = <CHARACTER PROGRAM DATA> 1-PORT1: Port 1 on module 1 1-PORT2: Port 2 on module 1 2-PORT1: Port 1 on module 2 2-PORT2: Port 2 on module 2 1-PORT-SING1: Single port 1 on module 1 (for MU110011A/MU110012A/MU110013A) 1-PORT-MULT1: Port 1 on module 1 (for TP-BERT-ROE with "25G eCPRI/RoE Dual Ability") 1-PORT-MULT2: Port 2 on module 1 (for TP-BERT-ROE with "25G eCPRI/RoE Dual Ability")

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	The physical port(s) given as parameters are assigned to logical port numbers in the application server. The logical port number range is from 1 to the actual number of port assigned to the application server. The list of ports returned by the <code>INSTrument:STATe? <id></code> command reveals the virtual port number sequence. The ports will be shown sorted in (1 st) module order and (2 nd) port order.
Response	None.
Example	<code>INST:STAR TP-BERT-OTN,1-PORT1</code> <code>INST? → 2</code>
Note	Operators can get started application server ID by using the <code>INSTrument:SELeCt?</code> command. When you start an application server, the application server will be connected and selected automatically. When using this command, the application server will be started with <code>DEFault</code> setup.

2.4.6 INSTrument:STARt:LAST

Syntax	<code>INSTrument:STARt:LAST <app name>[, <port name>[, <port name>,...]]</code>
Description	This command starts an application server and loads the applicable auto saved settings.
Parameters	The parameters of this command are similar to the parameters of the <code>INSTrument:STARt[:DEFault]</code> command above.
Response	None.
Example	<code>INST:STAR:LAST TP-BERT-OTN,1-PORT1</code> <code>INST? → 2</code>
Note	Operators can get started application server ID by using the <code>INSTrument:SELeCt?</code> command. When you start an application server, the application server will be connected and selected automatically. When using this command, the application server will be started with <code>LAST</code> setup.

2.4.7 INSTrument:STARt:GUI

Syntax	<code>INSTrument:STARt:GUI [<test index>]</code>
Description	This command starts GUI for the application server.
Parameter	<code><test index> = <NUMERIC PROGRAM DATA></code> Defaults to the current application server if a value is omitted.
Response	None.
Example	<code>INST:STAR TP-BERT-OTN,1-PORT1</code> <code>INST:STAR:GUI</code>
Note	Must connect to the application server first.

2.4.8 INSTrument:TERMinate

Syntax	<code>INSTrument:TERMinate [<test index>]</code>
Description	This command terminates an application server.
Parameter	<code><test index> = <NUMERIC PROGRAM DATA></code> Defaults to the current application server if a value is omitted.
Response	None.
Example	<code>INST:STAR TP-BERT-OTN,1-PORT1</code> <code>INST? → 2</code> <code>INST:TERM 2</code>
Note	Must connect to the application server first.

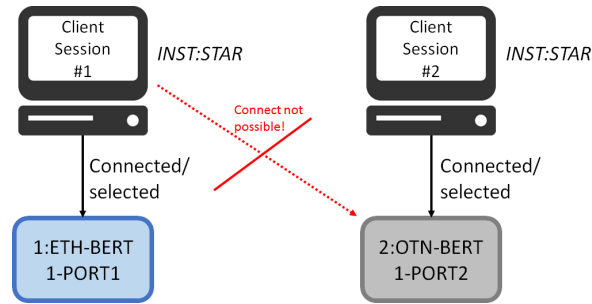


Figure 2.1: *INST:STAR* automatically *connects* and *selects* started application server.

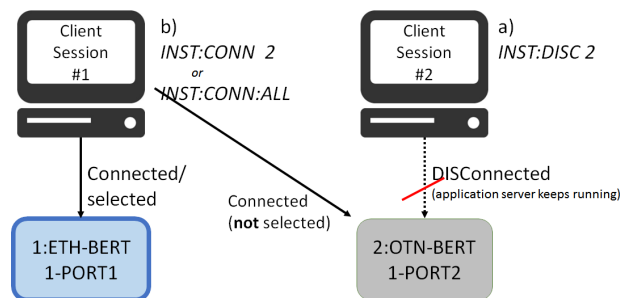


Figure 2.2: Original client session has to *disconnect*, before another client session can *connect*.

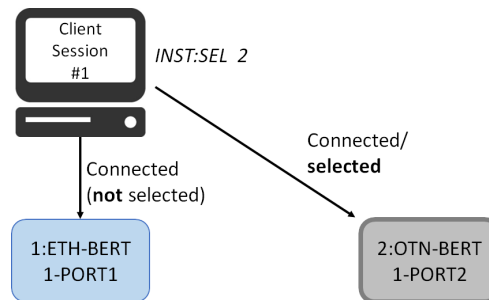


Figure 2.3: When connected to multiple application servers, client session *selects* to which application server the application specific commands are dispatched.

2.4.9 INSTRument:TERMinate:FORCe

Syntax	INSTRument:TERMinate:FORCe [<test index>]
Description	This command force terminates an application server.
Parameter	<test index> = <NUMERIC PROGRAM DATA> Defaults to the current application server if a value is omitted.
Response	None.
Example	INST:STAR TP-BERT-OTN, 1-PORT1 INST? → 2 INST:TERM:FORC 2
Note	WARNING. This command can terminate the application to which the other session communicating.

2.4.10 INSTRument:COUNT?

Syntax	INSTRument:COUNT?
Description	This query returns the number of active application servers.
Parameter	None.
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	INST:COUN? → 2
Note	

2.4.11 INSTRument:CATalog?

Syntax	INSTRument:CATalog?
Description	This query returns test indices, application name and port name of all active application servers.
Parameter	None.
Response	<test index> = <EXPRESSION RESPONSE DATA> Expression format: (<test index>,<app name>,<port name>)
Example	INST:CAT? → (1,TP-SAT-ETH,1-PORT1),(2,TP-BERT-SDHPDH,1-PORT2)
Note	Return -1 if no application server is running.

2.4.12 INSTRument:STATe?

Syntax	INSTRument:STATe? <test index>
Description	This query returns status information about a given application server.
Parameter	<test index> = <NUMERIC PROGRAM DATA>
Response	<app name> = <CHARACTER RESPONSE DATA> <client connection> = <CHARACTER RESPONSE DATA> NON IP Address <select status> = <CHARACTER RESPONSE DATA> NON SELECTED <port name> = <CHARACTER RESPONSE DATA> Expression format: Character list
Example	INST:STAT? 1 → TP-BERT-OTN,192.168.128.21,SELECTED,1-PORT1,2-PORT2...
Note	

2.4.13 INSTRument:CONNect

Syntax	INSTRument:CONNect <test index>
Description	This command allows client session to connect to an existing application server.
Parameter	<test index> = <NUMERIC PROGRAM DATA>
Response	None.
Example	INST:CONN 1
Note	This command fails if the application server is already connect to by another client session. Use INSTRument:CATalog? query to acquire the list of all existing application servers. If command succeeds, the application server will be selected automatically.

2.4.14 INSTRument:CONNect:ALL

Syntax	INSTRument:CONNect:ALL
Description	This command allows client session to connect to all existing application servers.
Parameter	None.
Response	None.
Example	INST:CONN:ALL
Note	This command fails if no application server is selected when the command exits, e.g. because all application servers was already connected to by other client sessions, or because there are no application servers at all. If connected to multiple application servers, the application server with the lowest index will be selected, but selected index will not change if an application server was already selected prior to issuing this command.

2.4.15 INSTRument:CONNect[:CATalog]?

Syntax	INSTRument:CONNect[:CATalog]?
Description	This query returns indices of all application servers for the current client session.
Parameter	None.
Response	<test index> = <EXPRESSION RESPONSE DATA> Expression format: Numeric list
Example	INST:CONN? $\rightarrow$ 0,1,...
Note	Return -1 if current client session has no application servers.

2.4.16 INSTRument:DISConnect

Syntax	INSTRument:DISConnect <test index>
Description	This command disconnect the application server from the client session.
Parameter	<test index> = <NUMERIC PROGRAM DATA>
Response	None.
Example	INST:DISC 1
Note	When current application is disconnected, the application server lowest ID will be selected automatically. When a client session is disconnected all the currently connected application servers will be disconnected automatically.

2.4.17 INSTRument[:SElect]

Syntax	INSTRument[:SElect] <test index>
Description	This command select the current application server.
Parameter	<test index> = <NUMERIC PROGRAM DATA>
Response	None.
Example	INST:STAR TP-BERT-OTN,1-PORT1 INST? $\rightarrow$ 1 INST:STAR TP-BERT-OTN,1-PORT2 INST? $\rightarrow$ 2 INST 1
Note	All future commands are forwarded to the current application server until the current application server is changed.

Syntax	INSTrument[:SElect]?
Description	This query returns index of the currently selected application server.
Parameter	None.
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	INST:STAR TP-BERT-OTN,1-PORT1 INST? → 1 INST:STAR TP-BERT-OTN,1-PORT2 INST? → 2 INST 1
Note	Return -1 if current client session does not have a currently selected application server.

2.4.18 INSTrument:ERRor[:NEXT]?

Syntax	INSTrument:ERRor[:NEXT]?
Description	This query returns the oldest entry of the event queue for the currently selected application server and removes the returned entry from the queue.
Parameter	None.
Response	<description> = <STRING RESPONSE DATA>
Example	INST:ERR? → "Signal abnormal"
Note	Application server has its own event queue. This event queue is not destroyed when the session is closed. Before checking the server status by using this command, controller may check DB2 (Event Queue Summary) of the Status Byte Register to see if it is set. DB2 of the Status Byte Register will aggregate input from potentially many application servers, and clear if event queues of all servers are empty.

2.4.19 INSTrument:PORT?

Syntax	INSTrument:PORT?
Description	This query returns ports assigned for the currently selected application server.
Parameter	None.
Response	<port name> = <CHARACTER RESPONSE DATA> Expression format: Character list
Example	INST:STAR TP-BERT-OTN,1-PORT1,1-PORT2 INST:PORT? → 1-PORT1,1-PORT2
Note	Operates on the application server currently selected by the INSTrument:SElect command. Returns NON if the client session does not have a currently selected application server. Returns NON if no ports are assigned for the currently selected application server.

2.4.20 INSTrument:PORT:FREE?

Syntax	INSTrument:PORT:FREE? <app name>
Description	This query returns all unused ports for the target application name.
Parameter	<app name> = <CHARACTER PROGRAM DATA>
Response	<port name> = <CHARACTER RESPONSE DATA> Expression format: Character list
Example	INST:PORT:FREE? TP-BERT-OTN → 1-PORT1,1-PORT2
Note	

2.4.21 INSTRument:PORT:CATalog?

Syntax	INSTRument:PORT:CATalog?
Description	This query returns all ports of device.
Parameter	None.
Response	<port name> = <CHARACTER RESPONSE DATA> Expression format: Character list
Example	INST:PORT:CAT? → 1-PORT1,1-PORT2
Note	When SCPI client uses any of the STATus:PORT: commands, <bit> index is the same as returned by the INSTRument:PORT:CATalog?

2.4.22 INSTRument:MODule:CATalog?

Syntax	INSTRument:MODule:CATalog?
Description	This query returns module names of device.
Parameter	None.
Response	{<module n>,*} = <CHARACTER RESPONSE DATA>
Example	INST:MOD:CAT? → MU100010A,MU100011A
Note	

2.4.23 INSTRument:CTRL:NAME?

Syntax	INSTRument:CTRL:NAME?
Description	This query returns model name.
Parameter	None.
Response	<model name> = <CHARACTER RESPONSE DATA>
Example	INST:CTRL:NAME? → MT1000A
Note	

2.4.24 INSTRument:CTRL:SN?

Syntax	INSTRument:CTRL:SN?
Description	This query returns controller serial number.
Parameter	None.
Response	<serial number> = <CHARACTER RESPONSE DATA>
Example	INST:CTRL:SN? → 1234567890
Note	

2.4.25 INSTRument:CTRL:TRT?

Syntax	INSTRument:CTRL:TRT?
Description	This query returns controller total run time(sec).
Parameter	None.
Response	<time> = <NR1 NUMERIC RESPONSE DATA>
Example	INST:CTRL:TRT? → 5000000
Note	

2.4.26 INSTRument:CTRL:OPTion:CATalog?

Syntax	INSTRument:CTRL:OPTion:CATalog?
Description	This query returns controller enabled options.
Parameter	None.
Response	{<option n>,*} = <CHARACTER RESPONSE DATA>
Example	INST:CTRL:OPT:CAT? → MT1000A-303,MT1000A-005
Note	

2.4.27 INSTRument:MODule<Md>:NAME?

Syntax	INSTRument:MODule<Md>:NAME?
Description	This query returns module model number.
Parameter	None.
Response	<model name> = <CHARACTER RESPONSE DATA>
Example	INST:MOD1:NAME? → MU100010A
Note	

2.4.28 INSTRument:MODule<Md>:SN?

Syntax	INSTRument:MODule<Md>:SN?
Description	This query returns module serial number.
Parameter	None.
Response	<serial number> = <CHARACTER RESPONSE DATA>
Example	INST:MOD1:SN? → 1234567890
Note	

2.4.29 INSTRument:MODule<Md>:TRT?

Syntax	INSTRument:MODule<Md>:TRT?
Description	This query returns module total run time(sec).
Parameter	None.
Response	<time> = <NR1 NUMERIC RESPONSE DATA>
Example	INST:MOD1:TRT? → 5000000
Note	

2.4.30 INSTRument:MODule<Md>:OPTion:CATalog?

Syntax	INSTRument:MODule<Md>:OPTion:CATalog?
Description	This query returns module enabled options.
Parameter	None.
Response	{<option n>, }* = <CHARACTER RESPONSE DATA>
Example	INST:MOD1:OPT:CAT? → MU100010A-001,MU100010A-002
Note	

2.5 SCPI Status Subsystem Commands

2.5.1 STATus:OPERation[:EVENTt]?

Syntax	STATus:OPERation[:EVENTt]?
Description	This query returns and clears the operation event register.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1-DB4 = NOT USED DB5 (16) = Measuring DB6-DB16 = NOT USED
Example	STAT:OPER? → 16
Note	All active sessions has their own register and it is cleared when the session starts.

2.5.2 STATus:OPERation:CONDition?

Syntax	STATus:OPERation:CONDition?
Description	This query returns the operation condition register.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1-DB4 = NOT USED DB5 (16) = Measuring DB6-DB16 = NOT USED
Example	STAT:OPER:COND? → 16
Note	

2.5.3 STATus:OPERation:ENABle

Syntax	STATus:OPERation:ENABle <mask>
Description	This command sets the enable mask for the operation event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB4 = NOT USED DB5 (16) = Measuring DB6-DB16 = NOT USED <i>MINimum = 0, MAXimum = 65535</i>
Response	None.
Example	STAT:OPER:ENAB 65535
Note	

Syntax	STATus:OPERation:ENABle?
Description	This query returns the enable mask for the operation event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:OPER:ENAB? → 16
Note	

2.5.4 STATus:OPERation:PTRansition

Syntax	STATus:OPERation:PTRansition <mask>
Description	This command sets the positive transition filter for the operation event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB4 = NOT USED DB5 (16) = Measuring DB6-DB16 = NOT USED <i>MINimum = 0, DEFault = 65535, MAXimum = 65535</i>
Response	None.
Example	STAT:OPER:PTR 16384
Note	

Syntax	STATus:OPERation:PTRansition?
Description	This query returns the positive transition filter for the operation event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:OPER:PTR? → 16384
Note	

2.5.5 STATus:OPERation:NTRansition

Syntax	STATus:OPERation:NTRansition <mask>
Description	This command sets the negative transition filter for the operation event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB4 = NOT USED DB5 (16) = Measuring DB6-DB16 = NOT USED <i>MINimum = 0, MAXimum = 65535</i>
Response	None.
Example	STAT:OPER:NTR 16384
Note	

Syntax	STATus:OPERation:NTRansition?
Description	This query returns the negative transition filter for the operation event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:OPER:NTR? → 16384
Note	

2.5.6 STATus:QUEStionable[:EVENTt]?

Syntax	STATus:QUEStionable[:EVENTt]?
Description	This query returns and clears the questionable event register.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1-DB14 = NOT USED DB15 (16384) = Command Warning DB16 = NOT USED
Example	STAT:QUES? → 16384
Note	All active sessions has their own register and it is cleared when the session starts.

2.5.7 STATus:QUEStionable:CONDition?

Syntax	STATus:QUEStionable:CONDition?
Description	This query returns the questionable condition register.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1-DB14 = NOT USED DB15 (16384) = Command Warning DB16 = NOT USED
Example	STAT:QUES:COND? → 16384
Note	

2.5.8 STATus:QUEStionable:ENABle

Syntax	STATus:QUEStionable:ENABle <mask>
Description	This command sets the enable mask for the questionable event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB14 = NOT USED DB15 (16384) = Command Warning DB16 = NOT USED <i>MINimum = 0, MAXimum = 65535</i>
Response	None.
Example	STAT:QUES:ENAB 16384
Note	

Syntax	STATus:QUEStionable:ENABle?
Description	This query returns the enable mask for the questionable event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:QUES:ENAB? → 16384
Note	

2.5.9 STATus:QUEStionable:PTRansition

Syntax	STATus:QUEStionable:PTRansition <mask>
Description	This command sets the positive transition filter for the questionable event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB14 = NOT USED DB15 (16384) = Command Warning DB16 = NOT USED <i>MINimum = 0, DEFault = 65535, MAXimum = 65535</i>
Response	None.
Example	STAT:QUES:PTR 16384
Note	

Syntax	STATus:QUEStionable:PTRansition?
Description	This query returns the positive transition filter for the questionable event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:QUES:PTR? → 16384
Note	

2.5.10 STATus:QUEStionable:NTRansition

Syntax	STATus:QUEStionable:NTRansition <mask>
Description	This command sets the negative transition filter for the questionable event register.
Parameter	<mask> = <NUMERIC PROGRAM DATA> The bits and their values for the register: DB1-DB14 = NOT USED DB15 (16384) = Command Warning DB16 = NOT USED <i>MINimum = 0, MAXimum = 65535</i>
Response	None.
Example	STAT:QUES:NTR 16384
Note	

Syntax	STATus:QUEStionable:NTRansition?
Description	This query returns the negative transition filter for the questionable event register.
Parameter	None.
Response	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	STAT:QUES:NTR? → 16384
Note	

2.5.11 STATus:PORT[:EVENTt]?

Syntax	STATus:PORT[:EVENTt]? <port name>
Description	This query returns and clears the port event register.
Parameter	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	STAT:PORT? 1-PORT1 → 1
Note	All active sessions has their own register and it is cleared when the session starts. <port name> is the same as the one returned by INSTRument:PORT:CATalog?.

2.5.12 STATus:PORT:CONDition?

Syntax	STATus:PORT:CONDition? <port name>
Description	This query returns the port condition register.
Parameter	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	STAT:PORT:COND? 1-PORT1 → 1
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

2.5.13 STATus:PORT:ENABLE

Syntax	STATus:PORT:ENABLE <port name>,<enable>
Description	This command sets the enable mask for the port event register.
Parameters	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list <enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	STAT:PORT:ENAB 1-PORT1,ON
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

Syntax	STATus:PORT:ENAB? <port name>
Description	This query returns the enable mask for the port event register.
Parameter	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	STAT:PORT:ENAB? 1-PORT1 → 1
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

2.5.14 STATus:PORT:PTRansition

Syntax	STATus:PORT:PTRansition <port name>,<enable>
Description	This command sets the positive transition filter for the port event register.
Parameters	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list <enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	STAT:PORT:PTR 1-PORT1,ON
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

Syntax	STATus:PORT:PTRansition? <port name>
Description	This query returns the positive transition filter for the port event register.
Parameter	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	STAT:PORT:PTR? 1-PORT1 → 1
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

2.5.15 STATus:PORT:NTRansition

Syntax	STATus:PORT:NTRansition <port name>,<enable>
Description	This command sets the negative transition filter for the port event register.
Parameters	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list <enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	STAT:PORT:NTR 1-PORT1,OFF
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

Syntax	STATus:PORT:NTRansition? <port name>
Description	This query returns the negative transition filter for the port event register.
Parameter	<port name> = <CHARACTER PROGRAM DATA> Expression format: Character list
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	STAT:PORT:NTR? 1-PORT1 → 0
Note	<port name> is the same as one of the returned by the INSTRument:PORT:CATalog?

2.5.16 STATus:PRESet

Syntax	STATus:PRESet
Description	For the instrument-dependent status data structures, the PRESet commands sets the enable register to all 1's and the transition filter register to recognize only positive transitions. For the SCPI-mandated status structures (operation, questionable and port status) the PRESet command sets the transition filter registers to recognize only positive transitions and set the enable registers to 0's. This command does not affect either the Status Byte or the Standard Event Status register. PRESet does not clear any of the event registers or any item from the error or event queues.
Parameter	None.
Response	None.
Example	STAT:PRES
Note	All active sessions has their own set of registers. This command affects registers in all connected application servers.

2.5.17 STATus:INTerface:PORT<Pt>[:EVENT]?

Syntax	STATus:INTerface:PORT<Pt>[:EVENT]?
Description	This query returns and clears the device dependent interface event status register. Events are summarized in Status Byte DB1 for port, DB2 for port 2 and so on.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1 (1) = 2 Mbps Summary DB2 (2) = SDH/SONET Summary DB3 (4) = E3 Summary DB4 (8) = E4 Summary DB5 (16) = NOT USED. Reserved for V-Series/Codir. Summary DB6 (32) = Ethernet Summary DB7 (64) = T1 Summary DB8 (128) = OTN Summary DB9 (256) = NoFrame Summary DB10 (512) = Physical Summary DB11 (1024) = T3 Summary DB12 (2048) = Fibre Channel Summary DB13 (4096) = CPRI Summary DB14 - DB16 = NOT USED
Example	STAT:INT:PORT1? → 16
Note	There must be a connected application server for this command to be recognized as a legal command.

2.5.18 STATus:INTerface:PORT<Pt>:CONDition?

Syntax	STATus:INTerface:PORT<Pt>:CONDition?
Description	This query returns the instrument dependent interface status condition register. This register summarize all events/alarms from the different interfaces.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> The bits and their values for the register: DB1 (1) = 2 Mbps Summary DB2 (2) = SDH/SONET Summary DB3 (4) = E3 Summary DB4 (8) = E4 Summary DB5 (16) = NOT USED. Reserved for V-Series/Codir. Summary DB6 (32) = Ethernet Summary DB7 (64) = T1 Summary DB8 (128) = OTN Summary DB9 (256) = NoFrame Summary DB10 (512) = Physical Summary DB11 (1024) = T3 Summary DB12 (2048) = Fibre Channel Summary DB13 (4096) = CPRI Summary DB14 - DB16 = NOT USED
Example	STAT:INT:PORT1:COND? → 16
Note	There must be a connected application server for this command to be recognized as a legal command.

2.6 Mass Memory Subsystem Commands

The commands in this section operates on files and directories placed in the following storage areas:

Location	Description
Internal/	The internal storage of the Network Master.
Usb/	An USB connected storage device. This location is only accessible when a USB storage device is mounted.
Internal/remote/	A remote network drive. Refer to the User Manual for information on how to connect to an external storage location. This location is only accessible when external storage is configured and the Network Master is able to connect to it.

Files must be located in one of the locations described in the table above - or a in a sub-directory of one of these.

2.6.1 MMEMory:LOAD

Syntax	MMEMory:LOAD <file>
Description	This command loads a file into the currently selected application server. The file may contain settings only or both settings and results data.
Parameter	<file> = <STRING PROGRAM DATA> The path and name of the file to be loaded.
Response	None
Example	MMEM:LOAD "Internal/SAT-settings.cfg"
Note	There must be a connected application server for this command to be recognized as a legal command.
	The application server must be in the idle state and the content of the loaded file must match the application server type.

2.6.2 MMEMory:STORe:STATe

Syntax	MMEMory:STORe:STATe <file>
Description	This command stores the current settings to a file on the instrument.
Parameter	<file> = <STRING PROGRAM DATA> The path and name of the file to store the data.
Response	None
Example	MMEM:STOR:STAT "Internal/my-bert-settings.cfg"
Note	There must be a connected application server for this command to be recognized as a legal command.
	The application server must be in the idle state.

2.6.3 MMEMory:STORe:DATA

Syntax	MMEMory:STORe:DATA <file>
Description	This command stores the current settings and result data to a file on the instrument.
Parameter	<file> = <STRING PROGRAM DATA> The path and name of the file to store the data.
Response	None
Example	MMEM:STOR:DATA "Usb/my-bert-result.res"
Note	There must be a connected application server for this command to be recognized as a legal command.
	The application server must be in the idle state.

2.6.4 MMEMory:DELeTe

Syntax	MMEMory:DELeTe <file>
Description	This command deletes a file.
Parameter	<file> = <STRING PROGRAM DATA> The path to the file to be deleted.
Response	None.
Example	MMEM:DEL "Internal/report.pdf"
Note	

2.6.5 MMEMory:DATA?

Syntax	MMEMory:DATA? <file>
Description	This command retrieves a file.
Parameter	<file> = <STRING PROGRAM DATA> The path to the file to be retrieved.
Response	<DEFINITE LENGTH ARBITRARY BLOCK RESPONSE DATA> = #<nonzero digit><digits><8 bit data bytes>, where: <nonzero digit> is a single ASCII character in the range of '1'-'9'. It represents the length of <digits> in number of bytes. <digits> is a number of ASCII characters in the range of '0'-'9', which together are a decimal representation of the number of succeeding data bytes.
Example	MMEM:DATA? "Internal/report.pdf" → #49137<9137 bytes of binary data>
Note	This command cannot be used together with other commands in a compound command.

2.6.6 MMEMory:COpy

Syntax	MMEMory:COpy <source-file>,<destination-file>
Description	This command copies a file.
Parameter	<source-file> = <STRING PROGRAM DATA> The path to the file to be copied. <destination-file> = <STRING PROGRAM DATA> The path to the new file.
Response	None.
Example	MMEM:COpy "Internal/report.pdf","Usb/report.pdf"
Note	

2.6.7 MMEMory:MOve

Syntax	MMEMory:MOve <old-file>,<new-file>
Description	This command moves or renames a file.
Parameter	<old-file> = <STRING PROGRAM DATA> The path to the file to be moved or renamed. <new-file> = <STRING PROGRAM DATA> The new path to the file.
Response	None.
Example	MMEM:MOve "Internal/report.pdf","Usb/report.pdf"
Note	

2.6.8 MMEemory:INFO?

Syntax	MMEemory:INFO? <file>
Description	This command retrieves information about a file.
Parameter	<file> = <STRING PROGRAM DATA> The path to the file to retrieve file information about.
Response	<file-date-time> = <STRING RESPONSE DATA> Last file modification date.
	<file-size> = <NR1 NUMERIC RESPONSE DATA> The file size in bytes.
Example	MMEM:INFO? "Internal/report.pdf" → "2015-05-29 16:02:20",9137
Note	

2.6.9 MMEemory:CATalog?

Syntax	MMEemory:CATalog? <directory>[,<pattern>]
Description	This command lists the files present in a directory.
Parameters	<directory> = <STRING PROGRAM DATA> The path to the directory to be listed.
	<pattern> = <STRING PROGRAM DATA> An optional case sensitive file name pattern. Wildcard characters are * and ?.
Response	({<item>} + {,}*) = <EXPRESSION RESPONSE DATA> A list of quoted file and directory names.
Example	MMEM:CAT? "Internal/reports" → ("report.pdf","setup.cfg")
Note	

2.6.10 MMEemory:DCATalog?

Syntax	MMEemory:DCATalog? <directory>
Description	This command lists the sub-directories present in a directory.
Parameter	<directory> = <STRING PROGRAM DATA> The path to the directory to be listed.
Response	({<directory>} + {,}*) = <EXPRESSION RESPONSE DATA> A list for quoted directory names.
Example	MMEM:DCAT? "Internal/" → ("diagnostics","favorites","logs","remote","screens","windowsinstaller")
Note	

2.6.11 MMEemory:MDIRectory

Syntax	MMEemory:MDIRectory <directory>
Description	This command makes a new sub-directory.
Parameter	<directory> = <STRING PROGRAM DATA> The path to the directory to be created.
Response	None.
Example	MMEM:MDIR "Internal/reports"
Note	

2.6.12 MMEMory:RDIRectory

Syntax	MMEMory:RDIRectory <directory>[,<force>]
Description	This command removes an existing directory.
Parameter	<directory> = <STRING PROGRAM DATA> The path to the directory to be created.
	<force> = <BOOLEAN PROGRAM DATA> If set to ON then ALL CONTENTS i.e. files and sub-directories will be deleted.
Response	None.
Example	MMEM:RDIR "Internal/reports"
Note	None.

2.6.13 MMEMory:SAVE

Syntax	MMEMory:SAVE <enable>
Description	This command enables or disables auto saving configuration when the application is terminated
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	INST:STAR:LAST TP-BERT-OTN,1-PORT1 MMEM:SAVE ON INST? → 2 INST:TERM 2
Note	

Syntax	MMEMory:SAVE?
Description	This query returns whether or not auto saving configuration enabled when the application is terminated .
Parameter	None.
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	MMEM:SAVE? → 1
Note	

Chapter 3

No frame

3.1 Interface Setup

3.1.1 NFRame:PORT<Pt>:INTerface:TYPE

Syntax	NFRame:PORT<Pt>:INTerface:TYPE <type>
Description	This command sets the interface type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF QSFP: QSFP optical interface (40 Gbps) CXP: CXP optical interface (100 Gbps) CFP: CFP optical interface (40/100 Gbps) CFP2: CFP2 optical interface (100 Gbps) QSFP28ADpt: CFP2-QSFP28 Adaptor interface (100 Gbps) CFP4: CFP4 optical interface (100 Gbps) QSFP28: QSFP28 optical interface (100 Gbps) SFP28: SFP28 optical interface (25 Gbps) <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:INT:TYPE QSFP
Note	

Syntax	NFRame:PORT<Pt>:INTerface:TYPE?
Description	This query returns the interface type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:INT:TYPE? → QSFP
Note	

3.1.2 NFRame:PORT<Pt>:INTerface:BITRate

Syntax	NFRame:PORT<Pt>:INTerface:BITRate <bitrate>
Description	This command sets the interface bitrate.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> E100G: 100G Ethernet E40G: 40G Ethernet E25G: 25G Ethernet STM256: STM256/OC768 OTU4 OTU3 OTU3E1 OTU3E2 <i>DEFault = E100G</i>
Response	None.
Example	NFR:PORT1:INT:BITR E100G
Note	

Syntax	NFRame:PORT<Pt>:INTerface:BITRate?
Description	This query returns the interface bitrate.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:INT:BITR? → E100G
Note	

3.1.3 NFRame:PORT<Pt>:INTerface:LANE

Syntax	NFRame:PORT<Pt>:INTerface:LANE <type>
Description	This command sets the lane type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> LANE10: 10 Lanes LANE20: 20 Lanes LANE4 : 4 Lanes LANE1 : 1 Lane <i>DEFault = LANE10</i>
Response	None.
Example	NFR:PORT1:INT:LANE LANE10
Note	

Syntax	NFRame:PORT<Pt>:INTerface:LANE?
Description	This query returns the lane type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:INT:LANE? → LANE10
Note	

3.1.4 NFRame:PORT<Pt>:TIMing

Syntax	NFRame:PORT<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal clock. EXTernal: External clock. <i>DEFault</i> = <i>INT</i>
Response	None.
Example	NFR:PORT1:TIM INT
Note	

Syntax	NFRame:PORT<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TIM? → INT
Note	

3.1.5 NFRame:PORT<Pt>[:RX]:INTERface:PATtern:FOLLow

Syntax	NFRame:PORT<Pt>[:RX]:INTERface:PATtern:FOLLow <follow>
Description	This command sets the receiver to follow transmitter setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> OFF: Do not follow ON: Follow the transmitter setup <i>DEFault</i> = <i>ON</i>
Response	None.
Example	NFR:PORT1:INT:PATT:FOLL ON
Note	

Syntax	NFRame:PORT<Pt>[:RX]:INTERface:PATtern:FOLLow?
Description	This query returns if the receiver follow transmitter setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:INT:PATT:FOLL? → ON
Note	

3.1.6 NFRame:PORT<Pt>:TX:INTERface:PATtern

Syntax	NFRame:PORT<Pt>:TX:INTERface:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> PRBS7 PRBS9 PRBS15 PRBS23 PRBS31 SWAVE: Square Wave <i>DEFault</i> = <i>PRBS7</i>
Response	None.
Example	NFR:PORT1:TX:INT:PATT PRBS31
Note	This command sets all lanes when 4Lanes is selected

Syntax	NFRame:PORT<Pt>:TX:INTerface:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TX:INT:PATT? → PRBS31
Note	

3.1.7 NFRame:PORT<Pt>:RX:INTerface:PATtern

Syntax	NFRame:PORT<Pt>:RX:INTerface:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> PRBS7 PRBS9 PRBS15 PRBS23 PRBS31 <i>DEFault = PRBS7</i>
Response	None.
Example	NFR:PORT1:RX:INT:PATT PRBS31
Note	This command sets all lanes when 4Lanes is selected

Syntax	NFRame:PORT<Pt>:RX:INTerface:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:RX:INT:PATT? → PRBS31
Note	

3.1.8 NFRame:PORT<Pt>:TX:INTerface:PINVersion

Syntax	NFRame:PORT<Pt>:TX:INTerface:PINVersion <inversion>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:TX:INT:PINV ON
Note	This command sets all lanes when 4Lanes is selected

Syntax	NFRame:PORT<Pt>:TX:INTerface:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inversion> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TX:INT:PINV? → 1
Note	

3.1.9 NFRame:PORT<Pt>:RX:INTerface:PINVersion

Syntax	NFRame:PORT<Pt>:RX:INTerface:PINVersion <inversion>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	NFR:PORT1:RX:INT:PINV ON
Note	This command sets all lanes when 4Lanes is selected

Syntax	NFRame:PORT<Pt>:RX:INTerface:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inversion> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:RX:INT:PINV? → 1
Note	

3.1.10 NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PATtern

Syntax	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PATtern <type>
Description	This command sets the pattern type(each lane).
Parameters	<Pt> = Port number <Ln> = Lane number (1-4) <type> = <CHARACTER PROGRAM DATA> PRBS7 PRBS9 PRBS15 PRBS23 PRBS31 <i>DEFault</i> = <i>PRBS7</i>
Response	None.
Example	NFR:PORT1:TX:INT:LANE2:PATT PRBS31
Note	This command can be used on 4Lanes

Syntax	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PATtern?
Description	This query returns the pattern type(each lane).
Parameter	<Pt> = Port number <Ln> = Lane number (1-4)
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TX:INT:LANE2:PATT? → PRBS31
Note	

3.1.11 NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PATtern

Syntax	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PATtern <type>
Description	This command sets the pattern type(each lane).
Parameters	<Pt> = Port number
	<Ln> = Lane number (1-4)
	<type> = <CHARACTER PROGRAM DATA> PRBS7 PRBS9 PRBS15 PRBS23 PRBS31 <i>DEFault = PRBS7</i>
Response	None.
Example	NFR:PORT1:RX:INT:LANE2:PATT PRBS31
Note	This command can be used on 4Lanes

Syntax	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PATtern?
Description	This query returns the pattern type(each lane).
Parameter	<Pt> = Port number
	<Ln> = Lane number (1-4)
Response	<type> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:RX:INT:LANE2:PATT? → PRBS31
Note	

3.1.12 NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PINVersion

Syntax	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PINVersion <inversion>
Description	This command enables or disables pattern inversion(each lane).
Parameters	<Pt> = Port number
	<Ln> = Lane number (1-4)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:TX:INT:LANE2:PINV ON
Note	This command can be used on 4Lanes

Syntax	NFRame:PORT<Pt>:TX:INTerface:LANE<Ln>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern(each lane).
Parameter	<Pt> = Port number
	<Ln> = Lane number (1-4)
Response	<inversion> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TX:INT:LANE2:PINV? → 1
Note	

3.1.13 NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PINVersion

Syntax	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PINVersion <inversion>
Description	This command enables or disables pattern inversion(each lane).
Parameters	<Pt> = Port number
	<Ln> = Lane number (1-4)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:RX:INT:LANE2:PINV ON
Note	This command can be used on 4Lanes

Syntax	NFRame:PORT<Pt>:RX:INTerface:LANE<Ln>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern(each lane).
Parameter	<Pt> = Port number <Ln> = Lane number (1-4)
Response	<inversion> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:RX:INT:LANE2:PINV? → 1
Note	

3.1.14 NFRame:PORT<Pt>:TX:INTerface:PATtern:LANE:FOLLow

Syntax	NFRame:PORT<Pt>:TX:INTerface:PATtern:LANE:FOLLow <follow>
Description	This command sets the transmitter follow the pattern of lane2 to lane4 from lane1 or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> OFF: Do not follow ON: Follow the lane2 to lane4 from lane1 <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:TX:INT:PATT:LANE:FOLL ON
Note	

Syntax	NFRame:PORT<Pt>:TX:INTerface:PATtern:LANE:FOLLow?
Description	This query returns if the transmitter follow pattern setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:TX:INT:PATT:LANE:FOLL? → ON
Note	

3.1.15 NFRame:PORT<Pt>:RX:INTerface:PATtern:LANE:FOLLow

Syntax	NFRame:PORT<Pt>:RX:INTerface:PATtern:LANE:FOLLow <follow>
Description	This command sets the receiver follow the pattern of lane2 to lane4 from lane1 or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> OFF: Do not follow ON: Follow the lane2 to lane4 from lane1 <i>DEFault = OFF</i>
Response	None.
Example	NFR:PORT1:RX:INT:PATT:LANE:FOLL ON
Note	

Syntax	NFRame:PORT<Pt>:RX:INTerface:PATtern:LANE:FOLLow?
Description	This query returns if the receiver follow pattern setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	NFR:PORT1:RX:INT:PATT:LANE:FOLL? → ON
Note	

3.2 Stimuli

3.2.1 NFRame:PORT<Pt>:STIMuli:TX:FOFFset

Syntax	NFRame:PORT<Pt>:STIMuli:TX:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-200.0, MAXimum=200.0, DEFault = 0</i>
Response	None.
Example	NFR:PORT1:STIM:TX:FOFF 10.0
Note	

Syntax	NFRame:PORT<Pt>:STIMuli:TX:FOFFset?
Description	This query returns the frequency offset (ppm) for the clock source.
Parameter	<Pt> = Port number
Response	<offset> = <NR2 NUMERIC RESPONSE DATA>
Example	NFR:PORT1:STIM:TX:FOFF? → 10.0
Note	

3.2.2 NFRame:PORT<Pt>:STIMuli:TX:LANE

Syntax	NFRame:PORT<Pt>:STIMuli:TX:LANE <lane>
Description	This command sets the bit error insertion lane.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> 4 lanes: <i>MINimum=#B0, MAXimum=#B1111, DEFault=#B0</i> 10 lanes: <i>MINimum=#B0, MAXimum=#B1111111111, DEFault=#B0</i> 20 lanes: <i>MINimum=#B0, MAXimum=#B11111111111111111111, DEFault=#B0</i>
Response	None.
Example	NFR:PORT1:STIM:TX:LANE #B101 This command add error into lane 0 and 2.
Note	

Syntax	NFRame:PORT<Pt>:STIMuli:TX:LANE?
Description	This query returns the bit error insertion lane.
Parameter	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	NFR:PORT1:STIM:TX:LANE? → #B1010 → #B1010000000 → #B10100000000000000000
Note	

3.3 Result

3.3.1 NFRame:PORT<Pt>[:RX]:IFETch?

Syntax	NFRame:PORT<Pt>[:RX]:IFETch? <parameter>
Description	This query fetches an NoFrame interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms LOS: Loss of signal. Response: <Seconds>,<Ratio>

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	Errors LSSx: Loss of signal synchronization of lane x (x = 0-19). Response: <Seconds>,<Ratio> ERRPRBS: PRBS Error (total). Response: <Count>,<Ratio> ERRPRBSx: PRBS Error of lane x (x = 0-19). Response: <Count>,<Ratio> Rx Frequency FREQDEV: Frequency deviation. Response: <ppm> FREQDEVx: Frequency deviation of lane x (x = 0-19). Response: <ppm>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	NFR:PORT1:IFET? (LOS,LSS0) → (3,0.00532),(4,0.00709)
Notes	This command fetches the results from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2). If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed.

3.4 Status

3.4.1 NFRame:STATus:PORT<Pt>[:RX]:AESummary[:EVENT]?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:AESummary[:EVENT]?
Description	This query returns the NoFrame alarms and errors summary event register. The content of this event register is summarized in DB9 of the STATus:INterface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 - DB8 = NOT USED DB9 (256) = Error summary DB10 - DB16 = NOT USED
Example	NFR:STAT:PORT1:AES? → 1
Note	

3.4.2 NFRame:STATus:PORT<Pt>[:RX]:AESummary:CONDition?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:AESummary:CONDition?
Description	This query returns the NoFrame alarms and errors summary condition register. DB1 is summary of NFRame:STATus:PORT<Pt>[:RX]:ALARm[:EVENT]? DB9 is summary of NFRame:STATus:PORT<Pt>[:RX]:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 - DB8 = NOT USED DB9 (256) = Error summary DB10 - DB16 = NOT USED
Example	NFR:STAT:PORT1:AES:COND? → 2
Note	

3.4.3 NFRame:STATus:PORT<Pt>[:RX]:ALARm[:EVENT]?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:ALARm[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 of the NFRame:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = LOS, Loss of signal DB2 (2) = LSS, Loss of signal synchronization DB3 (4) = CDRL, CDR Lock status DB4 - DB16 = NOT USED
Example	NFR:STAT:PORT1:ALAR? → 2
Notes	

3.4.4 NFRame:STATus:PORT<Pt>[:RX]:ALARm:CONDition?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = LOS, Loss of signal DB2 (2) = LSS, Loss of signal synchronization DB3 (4) = CDRL, CDR Lock status DB4 - DB16 = NOT USED
Example	NFR:STAT:PORT1:ALAR:COND? → 4
Notes	

3.4.5 NFRame:STATus:PORT<Pt>[:RX]:ERRor[:EVENT]?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:ERRor[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB9 of the NFRame:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = PRBS Error DB2 - DB16 = NOT USED
Example	NFR:STAT:PORT1:ERR? → 1
Notes	

3.4.6 NFRame:STATus:PORT<Pt>[:RX]:ERRor:CONDition?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:ERRor:CONDition?
Description	This query returns the errors condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = PRBS Error DB2 - DB16 = NOT USED
Example	NFR:STAT:PORT1:ERR:COND? → 1
Notes	

3.4.7 NFRame:STATus:PORT<Pt>[:RX]:PSLevel?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameters	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> " <power> dBm": Min: " < <min> dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	NFR:STAT:PORT1:PSL? → "-3 dBm"
Note	

3.4.8 NFRame:STATus:PORT<Pt>:TX:PSLevel?

Syntax	NFRame:STATus:PORT<Pt>:TX:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameters	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> " <power> dBm": Min: " < <min> dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	NFR:STAT:PORT1:TX:PSL? → "-3 dBm"
Note	

3.4.9 NFRame:STATus:PORT<Pt>[:RX]:PFRequency?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:PFRequency? [<lane>]
Description	This query returns the physical frequency. Unit: Hz.
Parameters	<Pt> = Port number <lane> = Lane number (0-9)
Response	<frequency> = <NR1 NUMERIC RESPONSE DATA>
Example	NFR:STAT:PORT1:PFR? → 103125000192 ¹ NFR:STAT:PORT1:PFR? 0 → 5250845696
Note	¹ <lane> is not used if the Lane Select is 20 Lanes.

3.4.10 NFRame:STATus:PORT<Pt>[:RX]:PDEViation?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:PDEViation? [<lane>]
Description	This query returns the physical frequency deviation. Unit: ppm.
Parameters	<Pt> = Port number <lane> = Lane number (0-9)
Response	<deviation> = <NR2 NUMERIC RESPONSE DATA>
Example	NFR:STAT:PORT1:PDEV? → 0.0 ¹ NFR:STAT:PORT1:PDEV? 0 → 0.0
Note	¹ <lane> is not used if the Lane Select is 20 Lanes.

3.4.11 NFRame:STATus:PORT<Pt>[:RX]:PCDRlock?

Syntax	NFRame:STATus:PORT<Pt>[:RX]:PCDRlock? [<lane>]
Description	This query returns the physical CDR lock status.
Parameters	<Pt> = Port number <lane> = Lane number (0-9)
Response	<status> = <BOOLEAN RESPONSE DATA> 0: CDR Locked 1: CDR Unlocked
Example	NFR:STAT:PORT1:PCDR? → 0 ¹ NFR:STAT:PORT1:PCDR? 0 → 0
Note	¹ <lane> is not used if the Lane Select is 20 Lanes.

Chapter 4

CPRI/OBSAI

4.1 Port

4.1.1 CPRI:PORT<Pt>:MODE

Syntax	CPRI:PORT<Pt>:MODE <mode>
Description	This command sets the port mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Port off NORMal: Normal THROUGH: (1 Port / 2 Port) Pass Through Mode <i>Default = OFF</i>
Response	None.
Example	CPRI:PORT1:MODE NORM
Note	This command is disabled when over OTN is selected.

Syntax	CPRI:PORT<Pt>:MODE?
Description	This query returns the port mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:MODE? → NORM
Note	This command is disabled when over OTN is selected.

4.1.2 CPRI:PORT<Pt>:TIMing:SOURce

Syntax	CPRI:PORT<Pt>:TIMing:SOURce <source>
Description	This command sets Timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTERNAL: Internal clock EXTERNAL: External clock GPS: GPS signal RX: Received clock <i>Default = INTERNAL</i>
Response	None.
Example	CPRI:PORT1:TIM:SOUR INT
Note	

Syntax	CPRI:PORT<Pt>:TIMing:SOURce?
Description	This query returns the timing source
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:TIM:SOUR? → INT
Note	

4.1.3 CPRI:PORT<Pt>:LRATe

Syntax	CPRI:PORT<Pt>:LRATe <rate>
Description	This command set Line Rate.
Parameters	<Pt> = Port number <rate> = <CHARACTER PROGRAM DATA> 614M: 614.4Mbps(CPRI) 768M: 768.0Mbps(OBSAI) 1228M: 1228.8Mbps(CPRI) 1536M: 1536.0Mbps(OBSAI) 2457M: 2457.6Mbps(CPRI) 3072M: 3072.0Mbps(CPRI/OBSAI) 4915M: 4915.2Mbps(CPRI) 6144M: 6144.0Mbps(CPRI/OBSAI) 9830M: 9830.4Mbps(CPRI) 10137M: 10137.6Mbps(CPRI) 12165M: 12165.12Mbps(CPRI) 24330M: 24330.24Mbps(CPRI) <i>DEFault = 614M</i>
Response	None.
Example	CPRI:PORT1:LRAT 614M
Note	This command is disabled when over OTN is selected. When selecting 768M or 4915M, the contents of signal becomes unframed.

Syntax	CPRI:PORT<Pt>:LRATe?
Description	This query returns Line rate.
Parameter	<Pt> = Port number
Response	<rate> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:LRAT? → 614M
Note	This command is disabled when over OTN is selected.

4.1.4 CPRI:PORT<Pt>:LRATe:MODE

Syntax	CPRI:PORT<Pt>:LRATe:MODE <mode>
Description	This command set Line rate mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> CPRI: CPRI OBSAI: OBSAI <i>DEFault = CPRI</i>
Response	None.
Example	CPRI:PORT1:LRAT:MODE OBSAI
Note	This command is disabled when over OTN is selected. When selecting OBSAI, the contents of signal becomes unframed.

Syntax	CPRI:PORT<Pt>:LRATe:MODE?
Description	This query returns Line rate mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:LRAT:MODE? → OBSAI
Note	This command is disabled when over OTN is selected.

4.1.5 CPRI:PORT<Pt>:CONTents

Syntax	CPRI:PORT<Pt>:CONTents <contents>
Description	This command sets contents.
Parameter	<Pt> = Port number <contents> = <CHARACTER PROGRAM DATA> UFRamed: Unframed LINK: CPRI Link OBLINK: OBSAI Link
Response	None.
Example	CPRI:PORT1:CONT UFR
Note	

Syntax	CPRI:PORT<Pt>:CONTents?
Description	This query returns contents.
Parameter	<Pt> = Port number
Response	<contents> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:CONT? → UFR
Note	

4.1.6 CPRI:PORT<Pt>:FEC

Syntax	CPRI:PORT<Pt>:FEC <mode>
Description	The command sets the FEC mode
Parameter	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:FEC ON
Note	This command is available when the line rate is 12165.12 Mbps or 24330.24 Mbps.

Syntax	CPRI:PORT<Pt>:FEC?
Description	This query returns the FEC mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:FEC? → 1
Note	

4.1.7 CPRI:PORT<Pt>:PATtern

Syntax	CPRI:PORT<Pt>:PATtern <type>
Description	This command sets Pattern type.
Parameter	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> PRBS15: PRBS15 pattern PRBS20: PRBS20 pattern PRBS23: PRBS23 pattern PRBS31: PRBS31 pattern USER32BIT: User Pattern (32bit) OFF: Pattern OFF
Response	None.
Example	CPRI:PORT1:PATT PRBS15
Note	This command supports CPRI and OBSAI mode.

Syntax	CPRI:PORT<Pt>:PATtern?
Description	This query returns pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:PATT? → PRBS15
Note	

4.1.8 CPRI:PORT<Pt>:PINVersion

Syntax	CPRI:PORT<Pt>:PINVersion <inversion>
Description	This command sets Inversion.
Parameter	<Pt> = Port number <inversion> = <CHARACTER PROGRAM DATA> NORMal: Invert Off INVerted: Invert On
Response	None.
Example	CPRI:PORT1:PINV NORM
Note	This command supports CPRI and OBSAI mode.

Syntax	CPRI:PORT<Pt>:PINVersion?
Description	This query returns inversion or normal
Parameter	<Pt> = Port number
Response	<inversion> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:PINV? → NORM
Note	

4.1.9 CPRI:PORT<Pt>:UP32

Syntax	CPRI:PORT<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when CONTENT is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Example	CPRI:PORT1:UP32 "0110"
Note	This command supports CPRI and OBSAI mode.

Syntax	CPRI:PORT<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	CPRI:PORT1:UP32? → "0110"
Note	

4.1.10 CPRI:PORT<Pt>:PVERsion

Syntax	CPRI:PORT<Pt>:PVERsion <version>
Description	This command sets protocol version.
Parameter	<Pt> = Port number <version> = <CHARACTER PROGRAM DATA> PVER1: Protocol version 1 (= Scrambling OFF) PVER2: Protocol version 2 (= Scrambling ON)
Response	None.
Example	CPRI:PORT1:PVER PVER1
Note	This command supports CPRI and OBSAI mode.

Syntax	CPRI:PORT<Pt>:PVERsion?
Description	This query returns protocol version.
Parameter	<Pt> = Port number
Response	<version> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:PVER? → PVER1
Note	

4.1.11 CPRI:PORT<Pt>:PROLe

Syntax	CPRI:PORT<Pt>:PROLe <role>
Description	This command sets port role.
Parameter	<Pt> = Port number <role> = <CHARACTER PROGRAM DATA> MASTer: Master SLAVE: Slave
Response	None.
Example	CPRI:PORT1:PROL MAST
Note	This command supports CPRI mode.

Syntax	CPRI:PORT<Pt>:PROLe?
Description	This query returns port role.
Parameter	<Pt> = Port number
Response	<role> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:PROL? → MAST
Note	

4.1.12 CPRI:PORT<Pt>:SSEQence

Syntax	CPRI:PORT<Pt>:SSEQence <sequence>
Description	This command enables/disables start-up sequence.
Parameter	<Pt> = Port number <sequence> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:SSEQ OFF
Note	This command supports CPRI mode.

Syntax	CPRI:PORT<Pt>:SSEQence?
Description	This query returns enables/disables start-up sequence.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:SSEQ? → 0
Note	This command supports CPRI mode.

4.1.13 CPRI:PORT<Pt>:CMHDlc

Syntax	CPRI:PORT<Pt>:CMHDlc <hdlc>
Description	This command sets CM HDLC.
Parameter	<Pt> = Port number <hdlc> = <CHARACTER PROGRAM DATA> NONE: NONE 240K: 240k 480K: 480k 960K: 960k 1920K: 1920k 2400K: 2400k HIGH: Highest Possible
Response	None.
Example	CPRI:PORT1:CMHD NONE
Note	This command supports CPRI mode.

Syntax	CPRI:PORT<Pt>:CMHdlc?
Description	This query returns CM HDLC.
Parameter	<Pt> = Port number
Response	<hdlc> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:CMHD? → NONE
Note	

4.1.14 CPRI:PORT<Pt>:EENable

Syntax	CPRI:PORT<Pt>:EENable <enable>
Description	This command sets Ethernet Enable.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:EEN OFF
Note	This command supports CPRI mode.

Syntax	CPRI:PORT<Pt>:EENable?
Description	This query returns Ethernet enables/disables.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:EEN? → 0
Note	

4.1.15 CPRI:PORT<Pt>:CMEPointer

Syntax	CPRI:PORT<Pt>:CMEPointer <pointer>
Description	This command sets the control manager ethernet pointer.
Parameters	<Pt> = Port number <pointer> = <NUMERIC PROGRAM DATA> <i>MINimum=20, MAXimum=63, DEFault=20</i>
Response	None.
Example	CPRI:PORT1:CMEP 63
Note	This command cannot be executed when Ethernet is disabled. This command supports CPRI mode.

Syntax	CPRI:PORT<Pt>:CMEPointer?
Description	This query returns the control manager ethernet pointer.
Parameter	<Pt> = Port number
Response	<pointer> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:CMEP? → 20
Note	

4.1.16 CPRI:PORT<Pt>:OBSai:FSSeed

Syntax	CPRI:PORT<Pt>:OBSai:FSSeed <enable>
Description	This command sets the forced scrambler seed.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> OFF ON
Response	None.
Example	CPRI:PORT1:OBS:FSS ON
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:FSSeed?
Description	This query returns the forced scrambler seed.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:OBS:FSS? → ON
Note	

4.1.17 CPRI:PORT<Pt>:OBSai:TX:FIDLe

Syntax	CPRI:PORT<Pt>:OBSai:TX:FIDLe <type>
Description	This command sets the Tx forced idle.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF: Idle OFF ON: Idle ON (up to 3072M) IREQ: Idle REQ (6144M) IACK: Idle ACK (6144M)
Response	None.
Example	CPRI:PORT1:OBS:TX:FIDL ON
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:TX:FIDLe?
Description	This query returns the Tx forced idle.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:OBS:TX:FIDL? → ON
Note	

4.1.18 CPRI:PORT<Pt>:OBSai:TX:SSIndex

Syntax	CPRI:PORT<Pt>:OBSai:TX:SSIndex <seed>
Description	This command sets the Tx scrambler seed index.
Parameters	<Pt> = Port number <seed> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=17, DEFault=0</i>
Response	None.
Example	CPRI:PORT1:OBS:TX:SSIN 1
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:TX:SSIndex?
Description	This query returns the Tx scrambler seed index.
Parameter	<Pt> = Port number
Response	<seed> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:TX:SSIN? → 1
Note	

4.1.19 CPRI:PORT<Pt>:OBSai:TX:SSValue

Syntax	CPRI:PORT<Pt>:OBSai:TX:SSValue?
Description	This query returns the Tx scrambler seed value.
Parameter	<Pt> = Port number
Response	<seed> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:TX:SSV? → #B11
Note	This command supports OBSAI mode.

4.1.20 CPRI:PORT<Pt>:OBSai:TX:ADDRess

Syntax	CPRI:PORT<Pt>:OBSai:TX:ADDRess <address>
Description	This command sets the Tx RP3 address.
Parameters	<Pt> = Port number <address> = <NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#H1FFF, DEFault=#H0000</i>
Response	None.
Example	CPRI:PORT1:OBS:TX:ADDR #H0001
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:TX:ADDRess?
Description	This query returns Tx RP3 address.
Parameter	<Pt> = Port number
Response	<address> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:TX:ADDR? → #H1
Note	

4.1.21 CPRI:PORT<Pt>:OBSai:TX:TYPE

Syntax	CPRI:PORT<Pt>:OBSai:TX:TYPE <type>
Description	This command sets the Tx RP3 type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> WCDMA: WCDMA/FDD GSM: GSM/EDGE IEEE80216: IEEE 802.16 LTE: LTE
Response	None.
Example	CPRI:PORT1:OBS:TX:TYPE LTE
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:TX:TYPE?
Description	This query returns the Tx RP3 type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:OBS:TX:TYPE? → LTE
Note	

4.1.22 CPRI:PORT<Pt>:OBSai:RX:FILTER

Syntax	CPRI:PORT<Pt>:OBSai:RX:FILTER <enable>
Description	This command sets the Rx filter enable. <enable> = <BOOLEAN PROGRAM DATA> OFF ON
Response	None.
Example	CPRI:PORT1:OBS:RX:FILT ON
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:RX:FILTER?
Description	This query returns the Rx filter enable.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:OBS:RX:FILT? → 0
Note	

4.1.23 CPRI:PORT<Pt>:OBSai:RX:SSIndex

Syntax	CPRI:PORT<Pt>:OBSai:RX:SSIndex <seed>
Description	This command sets the Rx scrambler seed index.
Parameters	<Pt> = Port number <seed> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=17, DEFault=0</i>
Response	None.
Example	CPRI:PORT1:OBS:RX:SSIN 1
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:RX:SSIndex?
Description	This query returns the Rx scrambler seed index.
Parameter	<Pt> = Port number
Response	<seed> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:RX:SSIN? → 1
Note	

4.1.24 CPRI:PORT<Pt>:OBSai:RX:SSValue

Syntax	CPRI:PORT<Pt>:OBSai:RX:SSValue?
Description	This query returns the Rx scrambler seed value.
Parameter	<Pt> = Port number
Response	<seed> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:RX:SSV? → #B11
Note	

4.1.25 CPRI:PORT<Pt>:OBSai:RX:ADDRess

Syntax	CPRI:PORT<Pt>:OBSai:RX:ADDRess <address>
Description	This command sets the Rx RP3 address.
Parameters	<Pt> = Port number <address> = <NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#H1FFF, DEFault=#H0000</i>
Response	None.
Example	CPRI:PORT1:OBS:RX:ADDR #H0001
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:RX:ADDRess?
Description	This query returns Rx forced idle.
Parameter	<Pt> = Port number
Response	<address> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:OBS:RX:ADDR? → #H1
Note	

4.1.26 CPRI:PORT<Pt>:OBSai:RX:TYPE

Syntax	CPRI:PORT<Pt>:OBSai:RX:TYPE <type>
Description	This command sets the Rx RP3 type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> WCDMA: WCDMA/FDD GSM: GSM/EDGE IEEE80216: IEEE 802.16 LTE: LTE
Response	None.
Example	CPRI:PORT1:OBS:RX:TYPE LTE
Note	This command supports OBSAI mode.

Syntax	CPRI:PORT<Pt>:OBSai:RX:TYPE?
Description	This query returns the Rx RP3 type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:OBS:RX:TYPE? → LTE
Note	

4.1.27 CPRI:PORT<Pt>:SETup:FOLLow

Syntax	CPRI:PORT<Pt>:SETup:FOLLow <follow>
Description	This command enables/disables that port2 follows port1.
Parameter	<Pt> = Port number <follow> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT2:SET:FOLL OFF
Note	This command supports CPRI and OBSAI mode.

Syntax	CPRI:PORT<Pt>:SETup:FOLLow?
Description	This query returns enables/disables that port2 follows port1.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:SET:FOLL? → 0
Note	

4.2 Stimuli

4.2.1 CPRI:PORT<Pt>:STIMuli:ALARm

Syntax	CPRI:PORT<Pt>:STIMuli:ALARm <alarm>
Description	This command sets stimuli alarm.
Parameter	<Pt> = Port number <alarm> = <CHARACTER PROGRAM DATA> SLOS: Optical Loss of signal LOS: Loss of Signal LOF: Loss of Frame LSS: Loss of signal synchronization RLOS: Remote LOS RLOF: Remote LOF RAI: L1-RAI (Remote Alarm Indication) SDI: L1-SDI (SAP Defect Indication) RESet: L1-Reset (Master:Reset confirmation; Slave:Reset Request)
Response	None.
Example	CPRI:PORT1:STIM:ALAR LOF
Note	When :CONTents is UNFramed only SLOS and LSS is valid.

Syntax	CPRI:PORT<Pt>:STIMuli:ALARm?
Description	This query returns stimuli alarm.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:STIM:ALAR? → LOS
Note	

4.2.2 CPRI:PORT<Pt>:STIMuli:AINSerion

Syntax	CPRI:PORT<Pt>:STIMuli:AINSerion <insertion>
Description	This command set Alarm insertion.
Parameter	<Pt> = Port number <insertion> = <CHARACTER RESPONSE DATA> OFF: Off PERManent: Permanent <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:STIM:AINS OFF
Note	

Syntax	CPRI:PORT<Pt>:STIMuli:AINSerion?
Description	This query returns Alarm insertion.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:STIM:AINS? → OFF
Note	

4.2.3 CPRI:PORT<Pt>:STIMuli:ERRor

Syntax	CPRI:PORT<Pt>:STIMuli:ERRor <error>
Description	This command sets stimuli Error.
Parameter	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> LCV: LCV SHV: SHV K307: K30.7 PE: Pattern Error FECSE: FEC Symbol Error
Response	None.
Example	CPRI:PORT1:STIM:ERR LCV
Note	

Syntax	CPRI:PORT<Pt>:STIMuli:ERRor?
Description	This query returns stimuli alarm.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:STIM:ERR? → LCV
Note	

4.2.4 CPRI:PORT<Pt>:STIMuli:EINSection

Syntax	CPRI:PORT<Pt>:STIMuli:EINSection <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 B08: Burst · 1E-08 B09: Burst · 1E-09 B10: Burst · 1E-10 <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:STIM:EINS OFF
Note	None.

Syntax	CPRI:PORT<Pt>:STIMuli:EINSection?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	CPRI:PORT1:STIM:EINS? → B04
Note	

4.2.5 CPRI:PORT<Pt>:STIMuli:EBLength

Syntax	CPRI:PORT<Pt>:STIMuli:EBLength <length>
Description	This command sets Error Burst Length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=256, DEFault=1</i>
Response	None.
Example	CPRI:PORT1:STIM:EBL 64
Note	This command is enabled when error insertion is Manual.

Syntax	CPRI:PORT<Pt>:STIMuli:EBLength?
Description	This query returns Error Burst Length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STIM:EBL → 64
Note	

4.2.6 CPRI:PORT<Pt>:STIMuli:FOFFset

Syntax	CPRI:PORT<Pt>:STIMuli:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-100, MAXimum=100, DEFault=0</i>
Response	None.
Example	CPRI:PORT1:STIM:FOFF 0
Note	

Syntax	CPRI:PORT<Pt>:STIMuli:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STIM:FOFF → 0
Note	

4.3 Result

4.3.1 CPRI:PORT<Pt>:IFETch?

Syntax	CPRI:PORT<Pt>:IFETch? <parameter>
Description	This query fetches a CPRI interval if available.
Parameters	<Pt> = Port number {(<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms SLOS: Optical loss of signal. Response: <Seconds>,<Ratio> LOS: Loss of signal. Response: <Seconds>,<Ratio> LOF: Loss of frame. Response: <Seconds>,<Ratio> NMES: No message. Response: <Seconds>,<Ratio> LSS: Loss of signal synchronization. Response: <Seconds>,<Ratio> L1Remote Alarm RLOS: Remote loss. Response: <Count>,<Ratio> RLOF: Remote loss of frame. Response: <Count>,<Ratio> RRAI: Remote alarm indication. Response: <Count>,<Ratio> RSDI: Remote SAP defect indication. Response: <Count>,<Ratio> RES: Reset. Response: <Count>,<Ratio> Errors LCV: LCV. Response: <Count>,<Ratio> SHV: SHV. Response: <Count>,<Ratio> K307: K30.7. Response: <Count>,<Ratio> PE: Pattern error. Response: <Count>,<Ratio> Frame TXHF: TX hyper frames. Response: <Count> TXCW: TX code words. Response: <Count> RXHF: RX hyper frames. Response: <Count> RXCW: RX code words. Response: <Count> TXMSGG: Tx OBSAI Message group. Response: <Count> RXMSGG: Rx OBSAI Message group. Response: <Count> FEC FECLOFA: Loss of FEC Alignment. Response: <Count> FECCORCW: Fec Corrected Codewords. Response: <Count> FECUCORCW: Fec Uncorrected Codewords. Response: <Count> FECSYMERR: Fec Symbol errors. Response: <Count> FECSYMERRRATE: Fec Symbol error rate. Response: <Count> Delay DEL: Delay. Response: <second> AVED: Average Delay. Response: <second> MIND: Maximum Delay. Response: <second> MAXD: Minimum Delay. Response: <second> DMC: Measurement Count. Response: <Count>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	CPRI:PORT1:IFET? (LOS,LOF) → (3,0.00532),(4,0.00709)
Notes	This command fetches the results from the interval selected using the MEASurement:SEtup:SElect command (see section 18.2.2). If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last "," is always removed.

4.4 Status

4.4.1 CPRI:PORT<Pt>:STATus:AESummary[:EVENT]?

Syntax	CPRI:PORT<Pt>:STATus:AESummary[:EVENT]?
Description	This query returns the alarms and errors summary event register. The content of this event register is summarized in DB13 of the STATus:INTERface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = CPRI Alarm DB2 (2) = CPRI Remote Alarm DB3 (4) = CPRI Error DB4 (8) = FEC Alarm/Error DB5 - DB16 = NOT USED
Example	CPRI:PORT1:STAT:AES? → 3
Note	

4.4.2 CPRI:PORT<Pt>:STATus:AESummary:CONDition?

Syntax	CPRI:PORT<Pt>:STATus:AESummary:CONDition?
Description	This query returns alarms and errors summary condition register. DB1/DB2 is summary of CPRI:PORT<Pt>:STATus:ALARm<section>[:EVENT]? DB3 is summary of CPRI:PORT<Pt>:STATus:ERRor[:EVENT]? DB4 is summary of CPRI:PORT<Pt>:STATus:FEC[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as CPRI:PORT<Pt>:STATus:AESummary[:EVENT]?
Example	CPRI:PORT1:STAT:AES:COND? → 3
Note	

4.4.3 CPRI:PORT<Pt>:STATus:ALARm<section>[:EVENT]?

Syntax	CPRI:PORT<Pt>:STATus:ALARm<section>[:EVENT]?
Description	This query returns one of the alarms event register.
Parameters	<Pt> = Port number <section> = CPRI Alarm(1), CPRI L1Remote Alarm(2), CPRI FEC Alarm(3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = Signal Loss DB2 (2) = LOS DB3 (4) = LOF DB4 (8) = LSS DB5 (16) = No message DB6 - DB16 = NOT USED <section> = 2: DB1 (1) = Remote LOS DB2 (2) = Remote LOF DB3 (4) = RAI DB4 (8) = SDI DB5 (16) = Reset DB6 - DB16 = NOT USED
Example	CPRI:PORT1:STAT:ALAR1? → 1
Note	

4.4.4 CPRI:PORT<Pt>:STATus:ALARm<section>:CONDition?

Syntax	CPRI:PORT<Pt>:STATus:ALARm<section>:CONDition?
Description	This query returns one of the alarms condition registers.
Parameters	<Pt> = Port number <section> = CPRI Alarm(1), CPRI L1Remote Alarm(2)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as CPRI:PORT<Pt>:STATus:ALARm<section>[:EVENT]?
Example	CPRI:PORT1:STAT:ALAR1:COND? → 1
Note	

4.4.5 CPRI:PORT<Pt>:STATus:ERRor[:EVENT]?

Syntax	CPRI:PORT<Pt>:STATus:ERRor[:EVENT]?
Description	This query returns the errors event register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = LCV DB2 (2) = SHV DB3 (4) = K30.7 DB4 (8) = Pattern error DB5 - DB16 = NOT USED
Example	CPRI:PORT1:STAT:ERR? → 3
Note	

4.4.6 CPRI:PORT<Pt>:STATus:ERRor:CONDition?

Syntax	CPRI:PORT<Pt>:STATus:ERRor:CONDition?
Description	This query returns errors condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as CPRI:PORT<Pt>:STATus:ERRor[:EVENT]?
Example	CPRI:PORT1:STAT:ERR:COND? → 3
Note	

4.4.7 CPRI:PORT<Pt>:STATus:FEC[:EVENT]?

Syntax	CPRI:PORT<Pt>:STATus:FEC[:EVENT]?
Description	This query returns the FEC alarms and errors event register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Loss of FEC Alignment (LOFA) DB2 (2) = FEC Corrected Codewords DB3 (4) = FEC Uncorrected Codewords DB4 (8) = FEC Symbol Errors DB5 - DB16 = NOT USED
Example	CPRI:PORT1:STAT:FEC? → 3
Note	

4.4.8 CPRI:PORT<Pt>:STATus:FEC:CONDition?

Syntax	CPRI:PORT<Pt>:STATus:FEC:CONDition?
Description	This query returns FEC alarms and errors condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as CPRI:PORT<Pt>:STATus:FEC[:EVENT]?
Example	CPRI:PORT1:STAT:FEC:COND? → 3
Note	

4.4.9 CPRI:PORT<Pt>:STATus:TX:PSLevel?

Syntax	CPRI:PORT<Pt>:STATus:TX:PSLevel?
Description	This query returns the TX signal level. Unit: dBm.
Parameters	<Pt> = Port number
Response	<signal-level> = <STRING RESPONSE DATA> " <signal-level> dBm": Min: " < <min> dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	CPRI:PORT1:STAT:TX:PSL? → "-3dBm"
Note	

4.4.10 CPRI:PORT<Pt>:STATus:RX:PSLevel?

Syntax	CPRI:PORT<Pt>:STATus:RX:PSLevel?
Description	This query returns the RX signal level. Unit: dBm.
Parameters	<Pt> = Port number
Response	<signal-level> = <STRING RESPONSE DATA> " <signal-level> dBm": Min: " < <min> dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	CPRI:PORT1:STAT:RX:PSL? → "-3dBm"
Note	

4.4.11 CPRI:PORT<Pt>:STATus:TX:PDEViation?

Syntax	CPRI:PORT<Pt>:STATus:TX:PDEViation? [<unit>]
Description	This query returns TX deviation.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million BPS = Bits per second
Response	<pdeviation> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:TX:PDEV? PPM → -3
Note	

4.4.12 CPRI:PORT<Pt>:STATus:RX:PDEViation?

Syntax	CPRI:PORT<Pt>:STATus:RX:PDEViation? [<unit>]
Description	This query returns RX deviation.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million BPS = Bits per second
Response	<pdeviation> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:RX:PDEV? PPM → 10
Note	

4.4.13 CPRI:PORT<Pt>:STATus:TX:PBRate?

Syntax	CPRI:PORT<Pt>:STATus:TX:PBRate?
Description	This query returns the bit rate on TX.
Parameters	<Pt> = Port number
Response	<pbrate> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:TX:PBR? → 614400000
Note	

4.4.14 CPRI:PORT<Pt>:STATus:RX:PBRate?

Syntax	CPRI:PORT<Pt>:STATus:RX:PBRate?
Description	This query returns the bit rate on RX.
Parameters	<Pt> = Port number
Response	<pbrate> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:RX:PBR? → 614400000
Note	

4.4.15 CPRI:PORT<Pt>:STATus:TX:PPBRate?

Syntax	CPRI:PORT<Pt>:STATus:TX:PPBRate?
Description	This query returns the pattern bit rate on TX.
Parameters	<Pt> = Port number
Response	<ppbrate> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:TX:PPBR? → 614400000
Note	

4.4.16 CPRI:PORT<Pt>:STATus:RX:PPBRate?

Syntax	CPRI:PORT<Pt>:STATus:RX:PPBRate?
Description	This query returns the pattern bit rate on RX.
Parameters	<Pt> = Port number
Response	<ppbrate> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:RX:PPBR? → 614400000
Note	

4.4.17 CPRI:PORT<Pt>:STATus:LINK:STATe?

Syntax	CPRI:PORT<Pt>:STATus:LINK:STATe?
Description	This query returns the CPRI link State.
Parameters	<Pt> = Port number
Response	<state> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:LINK:STAT? → "Standby"
Note	

4.4.18 CPRI:PORT<Pt>:STATus:LINK:PROLe?

Syntax	CPRI:PORT<Pt>:STATus:LINK:PROLe?
Description	This query returns the port role of CPRI link.
Parameters	<Pt> = Port number
Response	<role> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:LINK:PROL? → "Master"
Note	

4.4.19 CPRI:PORT<Pt>:STATus:RX:LINK:PVERsion?

Syntax	CPRI:PORT<Pt>:STATus:RX:LINK:PVERsion?
Description	This query returns the protocol version of CPRI link.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:RX:LINK:PVER? → "Version 1"
Note	

4.4.20 CPRI:PORT<Pt>:STATus:RX:LINK:HRATe?

Syntax	CPRI:PORT<Pt>:STATus:RX:LINK:HRATe?
Description	This query returns the HDLC Rate of CPRI link.
Parameters	<Pt> = Port number
Response	<rate> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:RX:LINK:HRAT? → "2400 kbit/s HDLC"
Note	

4.4.21 CPRI:PORT<Pt>:STATus:RX:LINK:POINterp?

Syntax	CPRI:PORT<Pt>:STATus:RX:LINK:POINterp?
Description	This query returns the ethernet pointer of CPRI link.
Parameters	<Pt> = Port number
Response	<pointer> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:RX:LINK:POIN? → 20
Note	

4.4.22 CPRI:PORT<Pt>:STATus:TX:LINK:PVERsion?

Syntax	CPRI:PORT<Pt>:STATus:TX:LINK:PVERsion?
Description	This query returns the protocol version of CPRI link.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:TX:LINK:PVER? → "Version 1"
Note	

4.4.23 CPRI:PORT<Pt>:STATus:TX:LINK:HRATe?

Syntax	CPRI:PORT<Pt>:STATus:TX:LINK:HRATe?
Description	This query returns the HDLC Rate of CPRI link.
Parameters	<Pt> = Port number
Response	<rate> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:TX:LINK:HRAT? → "2400 kbit/s HDLC"
Note	

4.4.24 CPRI:PORT<Pt>:STATus:TX:LINK:POINterp?

Syntax	CPRI:PORT<Pt>:STATus:TX:LINK:POINterp?
Description	This query returns the ethernet pointer of CPRI link.
Parameters	<Pt> = Port number
Response	<pointer> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:STAT:TX:LINK:POIN? → 20
Note	

4.4.25 CPRI:PORT<Pt>:STATus:OBSai:TX:LINK:STATe?

Syntax	CPRI:PORT<Pt>:STATus:OBSai:TX:LINK:STATe?
Description	This query returns the OBSAI link Tx State.
Parameters	<Pt> = Port number
Response	<state> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:OBS:TX:LINK:STAT? → "FRAME_TX"
Note	

4.4.26 CPRI:PORT<Pt>:STATus:OBSai:RX:LINK:STATe?

Syntax	CPRI:PORT<Pt>:STATus:OBSai:RX:LINK:STATe?
Description	This query returns the CPRI link Rx State.
Parameters	<Pt> = Port number
Response	<state> = <CHARACTER PROGRAM DATA>
Example	CPRI:PORT1:STAT:OBS:RX:LINK:STAT? → "FRAME_SYNC"
Note	

4.5 RTD

4.5.1 CPRI:PORT<Pt>:RTD:ENABLE

Syntax	CPRI:PORT<Pt>:RTD:ENABLE <enable>
Description	This command enables/disables Thresholds.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	CPRI:PORT1:RTD:ENAB ON
Note	

Syntax	CPRI:PORT<Pt>:RTD:ENABle?
Description	This query returns enables/disables Thresholds.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:RTD:ENAB? → 1
Note	

4.5.2 CPRI:PORT<Pt>:RTD:MLIMit

Syntax	CPRI:PORT<Pt>:RTD:MLIMit <limit>
Description	This command sets the Threshold of maximum limit. Unit: us.
Parameters	<Pt> = Port number <limit> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1,000,000, DEFault=1,000,000</i>
Response	None.
Example	CPRI:PORT1:RTD:MLIM 1000000.00
Note	

Syntax	CPRI:PORT<Pt>:RTD:MLIMit?
Description	This query returns the Threshold of maximum limit. Unit: us.
Parameter	<Pt> = Port number
Response	<limit> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:RTD:MLIM? → 1000000.00
Note	

4.5.3 CPRI:PORT<Pt>:RTD:NUMBer?

Syntax	CPRI:PORT<Pt>:RTD:NUMBer?
Description	This query returns the number of the RTD data.?
Parameters	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:RTD:NUMB? → 1
Note	

4.5.4 CPRI:PORT<Pt>:RTD:ATIMe?

Syntax	CPRI:PORT<Pt>:RTD:ATIMe?
Description	This query returns the Average delay. Unit:us.
Parameters	<Pt> = Port number
Response	<delay> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:RTD:ATIM? → 1.46
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

4.5.5 CPRI:PORT<Pt>:RTD:MTIME?

Syntax	CPRI:PORT<Pt>:RTD:MTIME?
Description	This query returns the maximum delay. Unit:us.
Parameters	<Pt> = Port number
Response	<delay> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	CPRI:PORT1:RTD:MTIM? → 1.46
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

4.5.6 CPRI:PORT<Pt>:RTD:LTIME?

Syntax	CPRI:PORT<Pt>:RTD:LTIME?
Description	This query returns the minimum delay. Unit:us.
Parameters	<Pt> = Port number
Response	<delay> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:RTD:LTIM? → 1.46
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

4.6 APS

4.6.1 CPRI:PORT<Pt>:APS:ENABLE

Syntax	CPRI:PORT<Pt>:APS:ENABLE <enable>
Description	This command enables/disables APS measurement.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	CPRI:PORT1:APS:ENAB ON
Note	

Syntax	CPRI:PORT<Pt>:APS:ENABle?
Description	This query returns enables/disables Thresholds.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	CPRI:PORT1:APS:ENAB? → 1
Note	

4.6.2 CPRI:PORT<Pt>:APS:EVENTt

Syntax	CPRI:PORT<Pt>:APS:EVENTt <events>
Description	This command sets the time reference event.
Parameters	<Pt> = Port number ({<events>} * {,}*) = <EXPRESSION PROGRAM DATA> SLOS : Signal loss LOS : LOS LOF : LOF LCV : LCV SHV : SHV PE : Pattern error RLOS : Remote LOS RLOF : Remote LOF RAI : RAI SDI : SDI RESet : Reset
Response	None.
Example	CPRI:PORT1:APS:EVEN (LOS,LOF)
Note	

Syntax	CPRI:PORT<Pt>:APS:EVENT?
Description	This query returns the time reference event.
Parameter	<Pt> = Port number
Response	{(<events>),}* = <EXPRESSION RESPONSE DATA>
Example	CPRI:PORT1:APS:EVEN? → (LOS,LOF)
Note	

4.6.3 CPRI:PORT<Pt>:APS:PERiod

Syntax	CPRI:PORT<Pt>:APS:PERiod <period>
Description	This command sets the error free period.
Parameters	<Pt> = Port number <period> = <NUMERIC PROGRAM DATA> 1,10,20,30,40,50,60,70,80,90,100 Unit ms <i>DEFault = 100</i>
Response	None.
Example	CPRI:PORT1:APS:PER 10
Note	

Syntax	CPRI:PORT<Pt>:APS:PERiod?
Description	This query returns the error free period.
Parameter	<Pt> = Port number
Response	<period> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:PER? → 10
Note	

4.6.4 CPRI:PORT<Pt>:APS:MLIMit

Syntax	CPRI:PORT<Pt>:APS:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 1000.000, DEFault = 50.000</i>
Response	None.
Example	CPRI:PORT1:APS:MLIM 50.000
Note	

Syntax	CPRI:PORT<Pt>:APS:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:MLIM? → 50.000
Note	

4.6.5 CPRI:PORT<Pt>:APS:NUMBer?

Syntax	CPRI:PORT<Pt>:APS:NUMBer?
Description	This query returns the number of times an APS Protocol event has occurred.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:NUMB? → 17
Note	

4.6.6 CPRI:PORT<Pt>:APS:ATIMe?

Syntax	CPRI:PORT<Pt>:APS:ATIMe?
Description	This query returns the average time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:ATIM? → 4.000
Note	The maximum measurable time is 1000 ms. The maximum measurable time will be responded if the result exceeds 1000 ms.

4.6.7 CPRI:PORT<Pt>:APS:MTIMe?

Syntax	CPRI:PORT<Pt>:APS:MTIMe?
Description	This query returns the maximum time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
	<limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	CPRI:PORT1:APS:MTIM? → 4.000,0
Note	The maximum measurable time is 1000 ms. The maximum measurable time will be responded if the result exceeds 1000 ms.

4.6.8 CPRI:PORT<Pt>:APS:LTIMe?

Syntax	CPRI:PORT<Pt>:APS:LTIMe?
Description	This query returns the least (minimum) time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:LTIM? → 4.000
Note	The maximum measurable time is 1000 ms. The maximum measurable time will be responded if the result exceeds 1000 ms.

4.6.9 CPRI:PORT<Pt>:APS:CTIMe?

Syntax	CPRI:PORT<Pt>:APS:CTIMe?
Description	This query returns the current time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<current> = <NR2 NUMERIC RESPONSE DATA>
Example	CPRI:PORT1:APS:CTIM? → 4.000
Note	The maximum measurable time is 1000 ms. The maximum measurable time will be responded if the result exceeds 9999.999 ms.

Chapter 5

2 Mbps

5.1 Receiver

5.1.1 TMBPs:RX<Pt>[:ENABled]

Syntax	TMBPs:RX<Pt>[:ENABled] <interface>
Description	This command enables or disables the 2 Mbps receiver.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Example	TMBP:RX1 ON
Note	

Syntax	TMBPs:RX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the 2 Mbps receiver.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1? → ON TMBP:RX1:ENAB? → SDH
Note	Returns SDH if E1 is over SDH or SONET.

5.1.2 TMBPs:RX<Pt>:FOLLow

Syntax	TMBPs:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX: Transmitter of the same port RX1: Receiver of port 1 <i>DEFault = NONE</i>
Response	None.
Example	TMBP:RX1:FOLL TX (i.e., RX1 follows TX1) TMBP:RX2:FOLL RX1 (i.e., RX2 follows RX1)
Note	

Syntax	TMBPs:RX<Pt>:FOLLow?
Description	This query returns if the receiver follow another setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:FOLL? → TX
Note	

5.1.3 TMBPs:RX<Pt>:CONNector

Syntax	TMBPs:RX<Pt>:CONNector <type>
Description	This command sets the physical type of connector.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> BALanced: Using balanced connector UNBalanced: Using unbalanced connector <i>DEFault = UNBalanced</i>
Response	None.
Example	TMBP:RX1:CONN BAL
Note	

Syntax	TMBPs:RX<Pt>:CONNector?
Description	This query returns the physical type of connector.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:CONN? → BAL
Note	

5.1.4 TMBPs:RX<Pt>:MODE

Syntax	TMBPs:RX<Pt>:MODE <mode>
Description	This command sets the signal termination mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> TERMinate: Nominal impedance. Normal frequency dependent AGC. BRIDged: High impedance. MONitor: Nominal impedance. Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	TMBP:RX1:MODE TERM
Note	

Syntax	TMBPs:RX<Pt>:MODE?
Description	This query returns the signal termination mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:MODE? → TERM
Note	

5.1.5 TMBPs:RX<Pt>:SENSitivity

Syntax	TMBPs:RX<Pt>:SENSitivity <sens>
Description	This command sets the input sensitivity.
Parameters	<Pt> = Port number <sens> = <CHARACTER PROGRAM DATA> FULL M20DB: Input sensitivity -20 dB M33DB: Input sensitivity -33 dB <i>DEFault = FULL</i>
Response	None.
Example	TMBP:RX1:SENS FULL
Note	

Syntax	TMBPs:RX<Pt>:SENSitivity?
Description	This query returns the input sensitivity
Parameter	<Pt> = Port number
Response	<sens> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:SENS? → FULL
Note	

5.1.6 TMBPs:RX<Pt>:CODE

Syntax	TMBPs:RX<Pt>:CODE <code>
Description	This command sets the line code type.
Parameters	<Pt> = Port number <code> = <CHARACTER PROGRAM DATA> AMI HDB3 <i>DEFault = HDB3</i>
Response	None.
Example	TMBP:RX1:CODE AMI
Note	

Syntax	TMBPs:RX<Pt>:CODE?
Description	This query returns the line code type.
Parameter	<Pt> = Port number
Response	<code> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:CODE? → AMI
Note	

5.1.7 TMBPs:RX<Pt>:PCMFrame

Syntax	TMBPs:RX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	TMBP:RX1:PCMF ON
Note	

Syntax	TMBPs:RX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:PCMF? → 1
Note	

5.1.8 TMBPs:RX<Pt>:CRC4

Syntax	TMBPs:RX<Pt>:CRC4 <enable>
Description	This command enables or disables the CRC4 bits.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	TMBP:RX1:CRC4 ON
Note	

Syntax	TMBPs:RX<Pt>:CRC4?
Description	This query returns the state (enabled/disabled) of the CRC4 bits.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:CRC4? → 1
Note	

5.1.9 TMBPs:RX<Pt>:EBITs

Syntax	TMBPs:RX<Pt>:EBITs <enable>
Description	This command enables or disables the E-bits.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	TMBP:RX1:EBIT ON
Note	

Syntax	TMBPs:RX<Pt>:EBITs?
Description	This query returns the state (enabled/disabled) of the E-bits.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:EBIT? → 1
Note	

5.1.10 TMBPs:RX<Pt>:PATtern

Syntax	TMBPs:RX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS6 PRBS7 PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 QRSS11 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS11</i>
Response	None.
Example	TMBP:RX1:PATT PRBS11
Note	

Syntax	TMBPs:RX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:PATT? → PRBS11
Note	

5.1.11 TMBPs:RX<Pt>:PINVersion

Syntax	TMBPs:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	TMBP:RX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, QRSSxx, ALT11, ALT13, ALT17, ALT324, USER32BIT and USER2048BIT.

Syntax	TMBPs:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:PINV? → 1
Note	

5.1.12 TMBPs:RX<Pt>:PTSLots

Syntax	TMBPs:RX<Pt>:PTSLots <slots>
Description	This command sets the pattern time slots.
Parameters	<Pt> = Port number <slots> = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of slot number(s) ranging from 1 to 31
Response	None.
Examples	TMBP:RX1:PTSL (1,3,5)
Note	

Syntax	TMBPs:RX<Pt>:PTSLots?
Description	This query returns the pattern time slots.
Parameter	<Pt> = Port number
Response	<slots> = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	TMBP:RX1:PTSL? → (1,3,5)
Note	

5.1.13 TMBPs:RX<Pt>:UP16

Syntax	TMBPs:RX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	TMBP:RX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

5.1.14 TMBPs:RX<Pt>:UP32

Syntax	TMBPs:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	TMBP:RX2:UP32 "01101"
Note	

Syntax	TMBPs:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	TMBP:RX2:UP32? → "01101"
Note	

5.1.15 TMBPs:RX<Pt>:UP2K

Syntax	TMBPs:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	TMBP:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when TMBP:RX2:PATT is USER2048BIT

Syntax	TMBPs:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	None.
Response	<pattern> = <STRING RESPONSE DATA>
Example	TMBP:RX1:UP2K? → "12DF"
Note	

5.1.16 TMBPs:RX<Pt>:AUDio

Syntax	TMBPs:RX<Pt>:AUDio <type>
Description	This command sets the audio decoding.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Example	TMBP:RX1:AUD ON
Note	

Syntax	TMBPs:RX<Pt>:AUDio?
Description	This query returns the audio decoding.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:RX1:AUD? → ON
Note	

5.1.17 TMBPs:RX<Pt>:ATSLot

Syntax	TMBPs:RX<Pt>:ATSLot <timeslotno>
Description	This command sets the audio timeslot to be monitored.
Parameters	<Pt> = Port number <timeslotno> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=31</i> <i>DEFault=2</i>
Response	None.
Example	TMBP:RX1:ATSL 4
Note	

Syntax	TMBPs:RX<Pt>:ATSLot?
Description	This query returns the monitored audio timeslot.
Parameter	<Pt> = Port number
Response	<timeslotno> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:ATSL? → 4
Note	

5.1.18 TMBPs:RX<Pt>:CAS

Syntax	TMBPs:RX<Pt>:CAS <enable>
Description	This command enables or disables the channel associated signaling.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	TMBP:RX1:CAS ON
Note	

Syntax	TMBPs:RX<Pt>:CAS?
Description	This query returns the state (enabled/disabled) of the channel associated signaling.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RX1:CAS? → 1
Note	

5.2 Transmitter

5.2.1 TMBPs:TX<Pt>[:ENABled]

Syntax	TMBPs:TX<Pt>[:ENABled] <interface>
Description	This command enables or disables the 2 Mbps transmitter.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	TMBP:TX1 ON TMBP:TX1:ENAB ON
Note	

Syntax	TMBPs:TX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the 2 Mbps transmitter.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Examples	TMBP:TX1? → ON TMBP:TX1:ENAB? → SDH
Note	Returns SDH if E1 is over SDH or SONET.

5.2.2 TMBPs:TX<Pt>:FOLLow

Syntax	TMBPs:TX<Pt>:FOLLow <follow>
Description	This command sets the transmitter setting to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX1: Follow the setting of the port 1 transmitter <i>DEFault = NONE</i>
Response	None.
Example	TMBP:TX2:FOLL TX1 (i.e., TX2 follows TX1)
Note	This command is not valid for :TX1

Syntax	TMBPs:TX<Pt>:FOLLow?
Description	This query returns if the transmitter follow the TX1 settings.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX2:FOLL? → TX1
Note	This command is not valid for :TX1

5.2.3 TMBPs:TX<Pt>:CONNector

Syntax	TMBPs:TX<Pt>:CONNector <type>
Description	This command sets the physical type of connector.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> BALanced: Using balanced connector UNBalanced: Using unbalanced connector <i>DEFault = UNBalanced</i>
Response	None.
Example	TMBP:TX1:CONN BAL
Note	

Syntax	TMBPs:TX<Pt>:CONNector?
Description	This query returns the physical type of connector.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:CONN? → BAL
Note	

5.2.4 TMBPs:TX<Pt>:DINSert[:ENABle]

Syntax	TMBPs:TX<Pt>:DINSert[:ENABle] <enable>
Description	This command enables/disables Drop and Insert.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	TMBP:TX1:DINS OFF
Note	

Syntax	TMBPs:TX<Pt>:DINSert[:ENABle]?
Description	This query returns whether or not Drop and Insert is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:DINS? → 0
Note	

5.2.5 TMBPs:TX<Pt>:TIMing

Syntax	TMBPs:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal timing source EXTernal: External timing source RX: Received signal on the same port <i>DEFault = INTernal</i>
Response	None.
Example	TMBP:TX1:TIM INT
Note	

Syntax	TMBPs:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:TIM? → INT
Note	

5.2.6 TMBPs:TX<Pt>:FOFFset

Syntax	TMBPs:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-125, MAXimum=125, DEFault=0</i> <i>Allowed suffix = ppm</i>
Response	None.
Example	TMBP:TX1:FOFF 0ppm
Note	

Syntax	TMBPs:TX<Pt>:FOFFset?
Description	This query returns the frequency offset (ppm) for the clock source.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:FOFF? → 0
Note	

5.2.7 TMBPs:TX<Pt>:CODE

Syntax	TMBPs:TX<Pt>:CODE <code>
Description	This command sets the line code type.
Parameters	<Pt> = Port number <code> = <CHARACTER PROGRAM DATA> AMI HDB3 <i>DEFault = HDB3</i>
Response	None.
Example	TMBP:TX1:CODE AMI
Note	

Syntax	TMBPs:TX<Pt>:CODE?
Description	This query returns the line code type.
Parameter	<Pt> = Port number
Response	<code> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:CODE? → AMI
Note	

5.2.8 TMBPs:TX<Pt>:PCMFrame

Syntax	TMBPs:TX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	TMBP:TX1:PCMF ON
Note	

Syntax	TMBPs:TX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:PCMF? → 1
Note	

5.2.9 TMBPs:TX<Pt>:CRC4

Syntax	TMBPs:TX<Pt>:CRC4 <enable>
Description	This command enables or disables the CRC4 bits.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	TMBP:TX1:CRC4 ON
Note	

Syntax	TMBPs:TX<Pt>:CRC4?
Description	This query returns the state (enabled/disabled) of the CRC4 bits.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:CRC4? → 1
Note	

5.2.10 TMBPs:TX<Pt>:SABits

Syntax	TMBPs:TX<Pt>:SABits <frame1>,<frame3>,<frame5>,<frame7>
Description	This command sets the Sa-bits.
Parameters	<Pt> = Port number <frame1> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000, <i>MAXimum</i> =#B11111 <i>DEFault</i> =#B11111 <frame3> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000, <i>MAXimum</i> =#B11111 <i>DEFault</i> =#B11111 <frame5> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000, <i>MAXimum</i> =#B11111 <i>DEFault</i> =#B11111 <frame7> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000, <i>MAXimum</i> =#B11111 <i>DEFault</i> =#B11111
Response	None.
Examples	TMBP:TX1:SAB #B11111,#B11111,#B11111,#B11111 TMBP:TX1:SAB 31,31,31,31 TMBP:TX1:SAB min,max,def,0
Note	

Syntax	TMBPs:TX<Pt>:SABits?
Description	This query returns the Sa-Bits.
Parameter	<Pt> = Port number
Response	<frame1> = <BINARY NUMERIC RESPONSE DATA> <frame3> = <BINARY NUMERIC RESPONSE DATA> <frame5> = <BINARY NUMERIC RESPONSE DATA> <frame7> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:TX1:SAB? → #B11111,#B11111,#B11111,#B11111
Note	

5.2.11 TMBPs:TX<Pt>:SABMode

Syntax	TMBPs:TX<Pt>:SABMode <mode>
Description	This command sets the Sa-Bits mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> INSert BYPass <i>DEFault</i> = <i>BYPass</i>
Response	None.
Example	TMBP:TX1:SABM INS
Note	

5.2.12 TMBPs:TX<Pt>:SABMode?

Syntax	TMBPs:TX<Pt>:SABMode?
Description	This query returns the Sa-Bits mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:SABM? → INS
Note	

5.2.13 TMBPs:TX<Pt>:PATtern

Syntax	TMBPs:TX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS6 PRBS7 PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 QRSS11 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS11</i>
Response	None.
Example	TMBP:TX1:PATT PRBS11
Note	

Syntax	TMBPs:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:PATT? → PRBS11
Note	

5.2.14 TMBPs:TX<Pt>:PINVersion

Syntax	TMBPs:TX<Pt>:PINVersion <inversion>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inversion> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	TMBP:TX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, QRSSxx, ALT11, ALT13, ALT17, ALT324, USER32BIT and USER2048BIT.

Syntax	TMBPs:TX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inversion> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:PINV? → 1
Note	

5.2.15 TMBPs:TX<Pt>:PTSLots

Syntax	TMBPs:TX<Pt>:PTSLots <timeslot>
Description	This command sets the pattern time slots.
Parameters	<Pt> = Port number <timeslots> = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of slot number(s) ranging from 1 to 31
Response	None.
Examples	TMBP:TX1:PTSL (1,3,5)
Note	

Syntax	TMBPs:TX<Pt>:PTSLots?
Description	This query returns the pattern time slots.
Parameter	<Pt> = Port number
Response	<timeslot> = <EXPRESSION RESPONSE DATA> Format: Numeric List.
Example	TMBP:TX1:PTSL? → (1,3,5)
Note	

5.2.16 TMBPs:TX<Pt>:UP16

Syntax	TMBPs:TX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	TMBP:TX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

5.2.17 TMBPs:TX<Pt>:UP32

Syntax	TMBPs:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	TMBP:TX1:UP32 "01101"
Note	

Syntax	TMBPs:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	TMBP:TX1:UP32? → "01101"
Note	

5.2.18 TMBPs:TX<Pt>:UP2K

Syntax	TMBPs:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	TMBP:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when TMBP:TX1:PATT is USER2048BIT

Syntax	TMBPs:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	TMBP:TX1:UP2K? → "12DF"
Note	

5.2.19 TMBPs:TX<Pt>:UTSLots

Syntax	TMBPs:TX<Pt>:UTSLots <content>
Description	This command sets the content of unused time slots.
Parameters	<Pt> = Port number <content> = <NUMERIC PROGRAM DATA> <i>MINimum=#B00000000, MAXimum=#B11111111</i> <i>DEFault=#B01010101</i>
Response	None.
Example	TMBP:TX1:UTSL 128
Note	

Syntax	TMBPs:TX<Pt>:UTSLots?
Description	This query returns the content of unused time slots.
Parameter	<Pt> = Port number <content> = <BINARY NUMERIC RESPONSE DATA>
Response	None.
Example	TMBP:TX1:UTSL? → #B10101010
Note	

5.2.20 TMBPs:TX<Pt>:SCContent

Syntax	TMBPs:TX<Pt>:SCContent <content>
Description	This command sets the channel content.
Parameters	<Pt> = Port number <content> = <CHARACTER PROGRAM DATA> OFF TONE TRANsparent SPEech <i>DEFault=OFF</i>
Response	None.
Example	TMBP:TX1:SCC TONE
Note	

Syntax	TMBPs:TX<Pt>:SCContent?
Description	This query returns the channel content.
Parameter	<Pt> = Port number
Response	<content> = <CHARACTER RESPONSE DATA>
Example	TMBP:TX1:SCC? → TONE
Note	

5.2.21 TMBPs:TX<Pt>:SCTSLOT

Syntax	TMBPs:TX<Pt>:SCTSLOT <timeslot>
Description	This command sets the channel time slot.
Parameters	<Pt> = Port number <timeslot> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=31</i> <i>DEFault=2</i>
Response	None.
Example	TMBP:TX1:SCTS 4
Note	

Syntax	TMBPs:TX<Pt>:SCTSLOT?
Description	This query returns the channel time slot.
Parameter	<Pt> = Port number
Response	<timeslot> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:SCTS? → 4
Note	

5.2.22 TMBPs:TX<Pt>:TFR

Syntax	TMBPs:TX<Pt>:TFR <frequency>
Description	This command sets the tone frequency.
Parameters	<Pt> = Port number <frequency> = <NUMERIC PROGRAM DATA> <i>MINimum = 1 hz, MAXimum = 4000 hz</i> <i>DEFault = 440</i> <i>Allowed suffixes = HZ, KHZ</i>
Response	None.
Example	TMBP:TX1:TFR 500HZ
Note	

Syntax	TMBPs:TX<Pt>:TFR?
Description	This query returns the tone frequency (Hz).
Parameter	<Pt> = Port number
Response	<frequency> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:TFR? → 500
Note	

5.2.23 TMBPs:TX<Pt>:TLEVel

Syntax	TMBPs:TX<Pt>:TLEVel <level>
Description	This command sets the tone level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = -70, <i>MAXimum</i> = 3 <i>DEFault</i> = -20 <i>Allowed suffixes</i> = dB
Response	None.
Example	TMBP:TX1:TLEV 2dB
Note	

Syntax	TMBPs:TX<Pt>:TLEVel?
Description	This query returns the tone level.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:TLEV? → 2
Note	

5.2.24 TMBPs:TX<Pt>:CAS

Syntax	TMBPs:TX<Pt>:CAS <enable>
Description	This command enables or disables the channel associated signaling.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	TMBP:TX1:CAS ON
Note	

Syntax	TMBPs:TX<Pt>:CAS?
Description	This query returns the state (enabled/disabled) of the channel associated signaling.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:CAS? → 1
Note	

5.2.25 TMBPs:TX<Pt>:CASChannel

Syntax	TMBPs:TX<Pt>:CASChannel <channel>
Description	This command sets the CAS channel number.
Parameters	<Pt> = Port number <channel> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =1, <i>MAXimum</i> =30, <i>DEFault</i> =1
Response	None.
Example	TMBP:TX1:CASC 5
Note	

Syntax	TMBPs:TX<Pt>:CASChannel?
Description	This query returns the CAS channel number.
Parameter	<Pt> = Port number
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:TX1:CASC? → 5
Note	

5.2.26 TMBPs:TX<Pt>:CASBits

Syntax	TMBPs:TX<Pt>:CASBits <bits>
Description	This command sets the CAS channel bits.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1111</i>
Response	None.
Example	TMBP:TX1:CASB #B1111
Note	

Syntax	TMBPs:TX<Pt>:CASBits?
Description	This query returns the CAS channel bits.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:TX1:CASB? → #B1111
Note	

5.2.27 TMBPs:TX<Pt>:COCBits

Syntax	TMBPs:TX<Pt>:COCBits <bits>
Description	This command sets the CAS other channel bits.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1001</i>
Response	None.
Example	TMBP:TX1:COCB #B0000
Note	

Syntax	TMBPs:TX<Pt>:COCBits?
Description	This query returns the CAS other channel bits.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:TX1:COCB? → #B0000
Note	

5.3 Stimuli

5.3.1 TMBPs:STIMuli:TX<Pt>:ALARm

Syntax	TMBPs:STIMuli:TX<Pt>:ALARm <type>
Description	This command sets the alarm type to be generated.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> NALarm: No alarm NSIGnal: No signal AIS: Alarm indication signal NFRame: No frame DALarm: Distant alarm (RDI) NSYNc: No pattern sync NCAM: No CAS MFAS DMF: Distant MF alarm <i>DEFault = NALarm</i>
Response	None.
Example	TMBP:STIM:TX1:ALAR NSIG
Note	

Syntax	TMBPs:STIMuli:TX<Pt>:ALARm?
Description	This query returns the generated alarm type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	TMBP:STIM:TX1:ALAR? → NSIG
Note	

5.3.2 TMBPs:STIMuli:TX<Pt>:ERRor

Syntax	TMBPs:STIMuli:TX<Pt>:ERRor <destination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <destination> = <CHARACTER PROGRAM DATA> FAS FNFas: FAS and NFAS FWORD: FAS word CRC4 CMFas: CRC4 MFAS CODE PATTern CAMFas: CAS MFAS EBIT: E-Bit PSLip: Pattern slip FSLip: Frame slip TRANSPARENT: Transparent <i>DEFault = CRC4</i>
Response	None.
Example	TMBP:STIM:TX1:ERR FAS
Note	

Syntax	TMBPs:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<destination> = <CHARACTER RESPONSE DATA>
Example	TMBP:STIM:TX1:ERR? → FAS
Note	

5.3.3 TMBPs:STIMuli:TX<Pt>:EINsert

Syntax	TMBPs:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B02: Burst · 1E-02 B03: Burst · 1E-03 B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 ES: Errored seconds SES: Severe errored seconds <i>DEFault = OFF</i>
Response	None.
Example	TMBP:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22

Syntax	TMBPs:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	TMBP:STIM:TX1:EINS? → MAN
Note	

5.3.4 TMBPs:STIMuli:TX<Pt>:EBLength

Syntax	TMBPs:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=1</i>
Response	None.
Example	TMBP:STIM:TX1:EBL 1
Note	For TMBP:STIM:TX<Pt>:ERR? → FWORD, <i>MAXimum = 16</i>

Syntax	TMBPs:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STIM:TX1:EBL? → 1
Note	

5.4 Result

5.4.1 TMBPs:RX<Pt>:IFETch?

Syntax	TMBPs:RX<Pt>:IFETch? <parameter>
Description	This command fetches results from a 2 Mbps interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms

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	NSIGnal: No signal. Response: <Seconds>,<Ratio> AIS: Alarm indication Signal. Response: <Seconds>,<Ratio> NFrame: No frame. Response: <Seconds>,<Ratio> NCMF: No CRC4 multi frame. Response: <Seconds>,<Ratio> DALarm: Distant alarm. Response: <Seconds>,<Ratio> NSYNc: No sync. Response: <Seconds>,<Ratio> NCAM: No CAS MF. Response: <Seconds>,<Ratio> DMF: Distant MF. Response: <Seconds>,<Ratio> Errors FAS: Frame alignment signal. Response: <Count>,<Ratio> PATtern: Pattern. Response: <Count>,<Ratio> CRC4: CRC4. Response: <Count>,<Ratio> CRCM: CRC4 MFAS. Response: <Count>,<Ratio> EBIT: E-Bits. Response: <Count>,<Ratio> CODE: Code. Response: <Count>,<Ratio> PSLip: Pattern slip. Response: <Count>,<Ratio> PBLock: Pattern block. Response: <Count>,<Ratio> FSLip: Frame slip. Response: <Count>,<Ratio> FAS performance errors FES: FAS ES. Response: <Count>,<Ratio%> FSES: FAS SES. Response: <Count>,<Ratio%> FBBE: FAS BBE. Response: <Count>,<Ratio%> FALS: FAS ALS. Response: <Count>,<Ratio%> FUAT: FAS UAT. Response: <Count>,<Ratio%> FAVT: FAS AVT. Response: <Count>,<Ratio%> FEFS: FAS EFS. Response: <Count>,<Ratio%> Pattern performance errors PES: Pattern ES. Response: <Count>,<Ratio%> PSES: Pattern SES. Response: <Count>,<Ratio%> PBBE: Pattern BBE. Response: <Count>,<Ratio%> PALS: Pattern ALS. Response: <Count>,<Ratio%> PUAT: Pattern UAT. Response: <Count>,<Ratio%> PAVT: Pattern AVT. Response: <Count>,<Ratio%> PEFS: Pattern EFS. Response: <Count>,<Ratio%> CRC4 performance errors CES: CRC4 ES. Response: <Count>,<Ratio%> CSES: CRC4 SES. Response: <Count>,<Ratio%> CBBE: CRC4 BBE. Response: <Count>,<Ratio%> CALs: CRC4 ALS. Response: <Count>,<Ratio%> CUAT: CRC4 UAT. Response: <Count>,<Ratio%> CAVT: CRC4 AVT. Response: <Count>,<Ratio%> CEFS: CRC4 EFS. Response: <Count>,<Ratio%> E-Bit performance errors EES: E-Bit ES. Response: <Count>,<Ratio%> ESES: E-Bit SES. Response: <Count>,<Ratio%> EBBE: E-Bit BBE. Response: <Count>,<Ratio%> EALS: E-Bit ALS. Response: <Count>,<Ratio%> EUAT: E-Bit UAT. Response: <Count>,<Ratio%> EAVT: E-Bit AVT. Response: <Count>,<Ratio%> EEFS: E-Bit EFS. Response: <Count>,<Ratio%>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List

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	Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement, returns NaN (section 1.6.1).
Example	TMBP:RX1:IFET? (AIS,FES) → (9,0.0429),(10,0.0343)
Note	This command fetches the results from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2). If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last "," is always removed.

5.5 Status

5.5.1 TMBPs:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	TMBPs:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns alarms and errors summary event register. The content of this event register is summarized in DB1 of the STATus:INTERface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	TMBP:STAT:RX1:AES? → 1 TMBP:STAT:RX1:AES:EVENT? → 1
Note	

5.5.2 TMBPs:STATus:RX<Pt>:AESummary:CONDition?

Syntax	TMBPs:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns alarms and errors summary operation register query. DB1 is summary of TMBPs:STATus:RX<Pt>:ALARm[:EVENT]? DB2 is summary of TMBPs:STATus:RX<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	TMBP:STAT:RX1:AES:COND? → 1
Note	

5.5.3 TMBPs:STATus:RX<Pt>:ALARm[:EVENT]?

Syntax	TMBPs:STATus:RX<Pt>:ALARm[:EVENT]?
Description	This query returns alarms event register query. The content of this register is summarized in DB1 of the TMBPs:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No sync DB2 (2) = Distant MF DB3 (4) = No CAS MF DB4 (8) = Distant DB5 (16) = No CRC4 MF DB6 (32) = No frame DB7 (64) = Alarm indication signal (AIS) DB8 (128) = No signal DB9 - DB16 = NOT USED
Example	TMBP:STAT:RX1:ALAR? → 64
Note	

5.5.4 TMBPs:STATus:RX<Pt>:ALARm:CONDition?

Syntax	TMBPs:STATus:RX<Pt>:ALARm:CONDition?
Description	This query returns alarms condition register query.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No sync DB2 (2) = Distant MF DB3 (4) = No CAS MF DB4 (8) = Distant DB5 (16) = No CRC4 MF DB6 (32) = No Frame DB7 (64) = Alarm Indication Signal (AIS) DB8 (128) = No Signal DB9 - DB16 = NOT USED
Example	TMBP:STAT:RX1:ALAR:COND? → 64
Note	

5.5.5 TMBPs:STATus:RX<Pt>:ERRor[:EVENT]?

Syntax	TMBPs:STATus:RX<Pt>:ERRor[:EVENT]?
Description	This query returns errors event register. The content of this register is summarized in DB2 of the TMBPs:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern slip DB2 (2) = Pattern DB3 (4) = E-Bit DB4 (8) = CRC4 DB5 (16) = Frame slip DB6 (32) = CRC4 MFAS DB7 (64) = FAS DB8 (128) = Code DB9 (256) = Sequence DB10 - DB16 = NOT USED
Example	TMBP:STAT:RX1:ERR? → 64
Note	

5.5.6 TMBPs:STATus:RX<Pt>:ERRor:CONDition?

Syntax	TMBPs:STATus:RX<Pt>:ERRor:CONDition?
Description	This query returns errors condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern slip DB2 (2) = Pattern DB3 (4) = E-Bit DB4 (8) = CRC4 DB5 (16) = Frame slip DB6 (32) = CRC4 MFAS DB7 (64) = FAS DB8 (128) = Code DB9 (256) = Sequence DB10 - DB16 = NOT USED
Example	TMBP:STAT:RX1:ERR:COND? → 64
Note	

5.5.7 TMBPs:STATus:RX<Pt>:PSLevel?

Syntax	TMBPs:STATus:RX<Pt>:PSLevel?
Description	This query returns physical signal level. Unit: dB.
Parameter	<Pt> = Port number
Response	<signallevel> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:PSL? → 0
Note	Minimum level is -11 dB.

5.5.8 TMBPs:STATus:RX<Pt>:PDEViation?

Syntax	TMBPs:STATus:RX<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA>
	<bps> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:PDEV? → 0, 0
Note	

5.5.9 TMBPs:STATus:RX<Pt>:PBRate?

Syntax	TMBPs:STATus:RX<Pt>:PBRate?
Description	This query returns physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:PBR? → 2048000
Note	

5.5.10 TMBPs:STATus:RX<Pt>:PPBRate?

Syntax	TMBPs:STATus:RX<Pt>:PPBRate?
Description	This query returns payload pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:PPBR? → 64000
Note	

5.5.11 TMBPs:STATus:RX<Pt>:FNFWord?

Syntax	TMBPs:STATus:RX<Pt>:FNFWord?
Description	This query returns FAS Non FAS word. Returns the content of time slot 0. Data length is always 2 · 64 bit shown as hexadecimal.
Parameter	<Pt> = Port number
Response	<hex> = <HEXADECEMAL NUMERIC RESPONSE DATA>
	Frame Group I, Frame 0-7
	<hex> = <HEXADECEMAL NUMERIC RESPONSE DATA>
Example	Frame Group II, Frame 8-15
	TMBP:STAT:RX1:FNFW? → #H5F1BDF1B5F1B5F9b, #HDF1BDF1BDF1BDF9B
Note	

5.5.12 TMBPs:STATus:RX<Pt>:FDUMp?

Syntax	TMBPs:STATus:RX<Pt>:FDUMp?
Description	This query returns a sample of a full E1 Frame (32 bytes).
Parameters	<Pt> = Port number
Response	<hex> = <EXPRESSION RESPONSE DATA> Expression format: Numeric list Contains all 32 Frame timeslots.
Example	TMBP:STAT:RX1:FDUM? → #H1B,#H55,#H55,...
Note	

5.5.13 TMBPs:STATus:RX<Pt>:ACONtent?

Syntax	TMBPs:STATus:RX<Pt>:ACONtent?
Description	This query returns audio channel content.
Parameter	<Pt> = Port number
Response	<audiocontent> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:ACON? → #B01010101
Note	For sub-rates this field shows the content of the sub channel.

5.5.14 TMBPs:STATus:RX<Pt>:AEBContent?

Syntax	TMBPs:STATus:RX<Pt>:AEBContent?
Description	This query returns sub channel audio even bit inverting content.
Parameter	<Pt> = Port number
Response	<audiocontent> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:AEB? → #B10000000
Note	With A-law coded speech, it is possible to observe the A-law code words before the even bit inverting.

5.5.15 TMBPs:STATus:RX<Pt>:APPeak?

Syntax	TMBPs:STATus:RX<Pt>:APPeak?
Description	This query returns sub channel audio positive peak value.
Parameter	<Pt> = Port number
Response	<positivepeak> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:APP? → 85
Note	This query only applies for A-law speech and shows the largest received A-law coded value.

5.5.16 TMBPs:STATus:RX<Pt>:ANPeak?

Syntax	TMBPs:STATus:RX<Pt>:ANPeak?
Description	This query returns sub channel audio negative peak value.
Parameter	<Pt> = Port number
Response	<negativepeak> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:ANP? → -85
Note	This query only applies for A-law speech and shows the smallest received A-law coded value.

5.5.17 TMBPs:STATus:RX<Pt>:ALEVel?

Syntax	TMBPs:STATus:RX<Pt>:ALEVel?
Description	This query returns sub channel audio level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<audiolevel> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:ALEV? → -4
Note	

5.5.18 TMBPs:STATus:RX<Pt>:AFRequency?

Syntax	TMBPs:STATus:RX<Pt>:AFRequency?
Description	This query returns sub channel audio tone frequency. Unit: Hz.
Parameter	<Pt> = Port number
Response	<audiofrequency> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:AFR? → 366
Note	

5.5.19 TMBPs:STATus:RX<Pt>:ACOffset?

Syntax	TMBPs:STATus:RX<Pt>:ACOffset?
Description	This query returns sub channel audio coder offset.
Parameter	<Pt> = Port number
Response	<coderoffset> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:ACOF? → 0
Note	Only available for 64 or 32 kbps audio sub channels.

5.5.20 TMBPs:STATus:RX<Pt>:CMSignal?

Syntax	TMBPs:STATus:RX<Pt>:CMSignal?
Description	This query returns CAS MFAS signal status.
Parameter	<Pt> = Port number
Response	<status> = <BINARY NUMERIC RESPONSE DATA>
Example	TMBP:STAT:RX1:CMS? → #B00000101
Note	

5.5.21 TMBPs:STATus:RX<Pt>:CBITs?

Syntax	TMBPs:STATus:RX<Pt>:CBITs?
Description	This query returns CAS bits.
Parameter	<Pt> = Port number
Response	<bits> = <EXPRESSION RESPONSE DATA> Expression format: Numeric list Contains all 30 CAS bit sets.
Example	TMBP:STAT:RX1:CBIT? → (#B0101,#B0101, ..., #B0101,#B0101)
Note	

5.6 APS

This section document commands for Automatic Protection Switching testing.

5.6.1 TMBPs:APS:STARt

Syntax	TMBPs:APS:STARt
Description	This command starts the APS (Automatic Protection Switching) measurement.
Parameter	None.
Response	None.
Example	TMBP:APS:STAR
Note	

5.6.2 TMBPs:APS:STOP

Syntax	TMBPs:APS:STOP
Description	This command stops the APS (Automatic Protection Switching) measurement.
Parameter	None.
Response	None.
Example	TMBP:APS:STOP
Note	

5.6.3 TMBPs:APS:RX<Pt>:NUMBer?

Syntax	TMBPs:APS:RX<Pt>:NUMBer?
Description	This query returns the number of times has measured.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:APS:RX1:NUMB? → 17
Note	

5.6.4 TMBPs:APS:RX<Pt>:ATIME?

Syntax	TMBPs:APS:RX<Pt>:ATIME?
Description	This query returns the average time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	TMBP:APS:RX1:ATIM? → 4.000
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

5.6.5 TMBPs:APS:RX<Pt>:MTIME?

Syntax	TMBPs:APS:RX<Pt>:MTIME?
Description	This query returns the maximum time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	TMBP:APS:RX1:MTIM? → 29.170,0
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

5.6.6 TMBPs:APS:RX<Pt>:LTIME?

Syntax	TMBPs:APS:RX<Pt>:LTIME?
Description	This query returns the minimum time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	TMBP:APS:RX1:LTIM? → 1.0
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

5.6.7 TMBPs:APS:RX<Pt>:EVENT

Syntax	TMBPs:APS:RX<Pt>:EVENT <event>
Description	This command sets the Time Reference event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> AIS = Alarm indication signal NFRame = No frame PERRor = Pattern error
Response	None.
Example	TMBP:APS:RX1:EVEN AIS
Note	

Syntax	TMBPs:APS:RX<Pt>:EVENT?
Description	This query returns the time reference event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	TMBP:APS:RX1:EVEN? → AIS
Note	

5.6.8 TMBPs:APS:RX<Pt>:MLIMit

Syntax	TMBPs:APS:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 4000.000, DEFault = 50.000</i>
Response	None.
Example	TMBP:APS:RX1:MLIM 50.000
Note	

Syntax	TMBPs:APS:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	TMBP:APS:RX1:MLIM? → 50.000
Note	

5.7 RTD

This section document commands to retrieve Round Trip Delay measurement results. Commands for general RTD settings are described in section 17.1 on page 953.

5.7.1 TMBPs:RTD:RX<Pt>:NUMBer?

Syntax	TMBPs:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	TMBP:RTD:RX1:NUMB? → 2
Note	

5.7.2 TMBPs:RTD:RX<Pt>:ATIMe?

Syntax	TMBPs:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	TMBP:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

5.7.3 TMBPs:RTD:RX<Pt>:MTIMe?

Syntax	TMBPs:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	TMBP:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

5.7.4 TMBPs:RTD:RX<Pt>:LTIMe?

Syntax	TMBPs:RTD:RX<Pt>:LTIMe?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	TMBP:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

Chapter 6

T1

6.1 Receiver

6.1.1 T1:RX<Pt>[:ENABLEd]

Syntax	T1:RX<Pt>[:ENABLEd] <interface>
Description	This command enables or disables the T1 receiver.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Example	T1:RX1 ON
Note	

Syntax	T1:RX<Pt>[:ENABLEd]?
Description	This query returns the state (enabled/disabled) of the T1 receiver.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	T1:RX1? → ON T1:RX1:ENAB? → SDH
Note	Returns SDH if T1 is over SDH or SONET.

6.1.2 T1:RX<Pt>:FOLLow

Syntax	T1:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX: Transmitter of the same port RX1: Receiver of port 1 <i>DEFault = NONE</i>
Response	None.
Example	T1:RX1:FOLL TX (i.e., RX1 follows TX1) T1:RX2:FOLL RX1 (i.e., RX2 follows RX1)
Note	

Syntax	T1:RX<Pt>:FOLLow?
Description	This query returns if the receiver follow another setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:FOLL? → TX
Note	

6.1.3 T1:RX<Pt>:MODE

Syntax	T1:RX<Pt>:MODE <mode>
Description	This command sets the signal termination mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> TERMinate: Nominal impedance. Normal frequency dependent AGC. BRIDged: High impedance. MONitor: Nominal impedance. Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	T1:RX1:MODE TERM
Note	

Syntax	T1:RX<Pt>:MODE?
Description	This query returns the signal termination mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:MODE? → TERM
Note	

6.1.4 T1:RX<Pt>:CODE

Syntax	T1:RX<Pt>:CODE <code>
Description	This command sets the line code type.
Parameters	<Pt> = Port number <code> = <CHARACTER PROGRAM DATA> AMI B8ZS <i>DEFault = B8ZS</i>
Response	None.
Example	T1:RX1:CODE AMI
Note	

Syntax	T1:RX<Pt>:CODE?
Description	This query returns the line code type.
Parameter	<Pt> = Port number
Response	<code> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:CODE? → AMI
Note	

6.1.5 T1:RX<Pt>:PCMFrame

Syntax	T1:RX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	T1:RX1:PCMF ON
Note	

Syntax	T1:RX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:RX1:PCMF? → 1
Note	

6.1.6 T1:RX<Pt>:FTYPE

Syntax	T1:RX<Pt>:FTYPE <type>
Description	This command sets the PCM frame type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> TSF: T1 SF/D4 mode TESF: T1 ESF mode JESF: J1 ESF mode <i>DEFault</i> = <i>TSF</i>
Response	None.
Example	T1:RX1:FTYP TESF
Note	

Syntax	T1:RX<Pt>:FTYPE?
Description	This query returns PCM frame type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:FTYP? → TESF
Note	

6.1.7 T1:RX<Pt>:PATTERN

Syntax	T1:RX<Pt>:PATTERN <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault</i> = <i>PRBS11</i>
Response	None.
Example	T1:RX1:PATT PRBS11

Syntax	T1:RX<Pt>:PATTERN?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:PATT? → PRBS11
Note	

6.1.8 T1:RX<Pt>:PINVersion

Syntax	T1:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:RX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, QRSSxx, ALT11, ALT13, ALT17, ALT324, USER32BIT and USER2048BIT.

Syntax	T1:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:RX1:PINV? → 1
Note	

6.1.9 T1:RX<Pt>:PTSLots

Syntax	T1:RX<Pt>:PTSLots <slots>
Description	This command sets the pattern time slots.
Parameters	<Pt> = Port number <slots> = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of slot number(s) ranging from 1 to 23
Response	None.
Examples	T1:RX1:PTSL (1,3,5)
Note	

Syntax	T1:RX<Pt>:PTSLots?
Description	This query returns the pattern time slots.
Parameter	<Pt> = Port number
Response	<slots> = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	T1:RX1:PTSL? → (1,3,5)
Note	

6.1.10 T1:RX<Pt>:UP16

Syntax	T1:RX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	T1:RX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

6.1.11 T1:RX<Pt>:UP32

Syntax	T1:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters.
Response	None.
Examples	T1:RX2:UP32 "01101"
Note	

Syntax	T1:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T1:RX2:UP32? → "01101"
Note	

6.1.12 T1:TX<Pt>:SCContent

Syntax	T1:TX<Pt>:SCContent <content>
Description	This command sets the channel content.
Parameters	<Pt> = Port number <content> = <CHARACTER PROGRAM DATA> OFF TONE TRANsparent SPEech <i>DEFault=OFF</i>
Response	None.
Example	T1:TX1:SCC TONE
Note	

Syntax	T1:TX<Pt>:SCContent?
Description	This query returns the channel content.
Parameter	<Pt> = Port number
Response	<content> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:SCC? → TONE
Note	

6.1.13 T1:RX<Pt>:AUDio

Syntax	T1:RX<Pt>:AUDio <type>
Description	This command sets the audio decoding.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Example	T1:RX1:AUD ON
Note	

Syntax	T1:RX<Pt>:AUDio?
Description	This query returns the audio decoding.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:RX1:AUD? → ON
Note	

6.1.14 T1:RX<Pt>:ATSLot

Syntax	T1:RX<Pt>:ATSLot <timeslotno>
Description	This command sets the audio timeslot to be monitored.
Parameters	<Pt> = Port number <timeslotno> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=23, DEFault=1</i>
Response	None.
Example	T1:RX1:ATSL 4
Note	

Syntax	T1:RX<Pt>:ATSLot?
Description	This query returns the monitored audio timeslot.
Parameter	<Pt> = Port number
Response	<timeslotno> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:RX1:ATSL? → 4
Note	

6.1.15 T1:RX<Pt>:UP2K

Syntax	T1:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	T1:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when T1:RX2:PATT is USER2048BIT

Syntax	T1:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T1:RX1:UP2K? → "12DF"
Note	

6.1.16 T1:RX<Pt>:CAS

Syntax	T1:RX<Pt>:CAS <enable>
Description	This command enables or disables the channel associated signaling.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:RX1:CAS ON
Note	

Syntax	T1:RX<Pt>:CAS?
Description	This query returns the state (enabled/disabled) of the channel associated signaling.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:RX1:CAS? → 1
Note	

6.2 Transmitter

6.2.1 T1:TX<Pt>[:ENABLEd]

Syntax	T1:TX<Pt>[:ENABLEd] <interface>
Description	This command enables or disables the T1 transmitter.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	T1:TX1 ON T1:TX1:ENAB ON
Note	

Syntax	T1:TX<Pt>[:ENABLEd]?
Description	This query returns the state (enabled/disabled) of the T1 transmitter.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Examples	T1:TX1? → ON T1:TX1:ENAB? → SDH
Note	Returns SDH if T1 is over SDH or SONET.

6.2.2 T1:TX<Pt>:FOLLow

Syntax	T1:TX<Pt>:FOLLow <follow>
Description	This command sets the transmitter setting to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX1: Follow the setting of the port 1 transmitter <i>DEFault = NONE</i>
Response	None.
Example	T1:TX2:FOLL TX1 (i.e., TX2 follows TX1)
Note	This command is not valid for :TX1

Syntax	T1:TX<Pt>:FOLLow?
Description	This query returns if the transmitter follow the TX1 settings.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	T1:TX2:FOLL? → TX1
Note	This command is not valid for :TX1

6.2.3 T1:TX<Pt>:DINSert[:ENABle]

Syntax	T1:TX<Pt>:DINSert[:ENABle] <enable>
Description	This command enables/disables Drop and Insert.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:TX1:DINS OFF
Note	

Syntax	T1:TX<Pt>:DINSert[:ENABle]?
Description	This query returns whether or not Drop and Insert is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:DINS? → 0
Note	

6.2.4 T1:TX<Pt>:TIMing

Syntax	T1:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal timing source EXTernal: External timing source RX: Received signal on the same port <i>DEFault = INTernal</i>
Response	None.
Example	T1:TX1:TIM INT
Note	

Syntax	T1:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:TIM? → INT
Note	

6.2.5 T1:TX<Pt>:FOFFset

Syntax	T1:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-125, MAXimum=125, DEFault=0</i> <i>Allowed suffixes = ppm</i>
Response	None.
Example	T1:TX1:FOFF 0ppm
Note	

Syntax	T1:TX<Pt>:FOFFset?
Description	This query returns the frequency offset (ppm) for the clock source.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:FOFF? → 0
Note	

6.2.6 T1:TX<Pt>:CODE

Syntax	T1:TX<Pt>:CODE <code>
Description	This command sets the line code type.
Parameters	<Pt> = Port number <code> = <CHARACTER PROGRAM DATA> AMI B8ZS <i>DEFault</i> = B8ZS
Response	None.
Example	T1:TX1:CODE AMI
Note	

Syntax	T1:TX<Pt>:CODE?
Description	This query returns the line code type.
Parameter	<Pt> = Port number
Response	<code> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:CODE? → AMI
Note	

6.2.7 T1:TX<Pt>:LBOut

Syntax	T1:TX<Pt>:LBOut <lbo>
Description	This command sets the line build out.
Parameters	<Pt> = Port number <lbo> = <CHARACTER PROGRAM DATA> 0TO133: 0 to 133 feet 133TO266: 133 tp 266 feet 266TO399: 266 to 399 feet 399TO533: 399 tp 533 feet 533TO655: 533 to 655 feet GMODe: Gain mode (Monitor) DB0: 0 db DB7: -7.5 db DB15: -15 db DB22: -22.5 db <i>DEFault</i> = 0TO133
Response	None.
Example	T1:TX1:LB0 133TO266
Note	

Syntax	T1:TX<Pt>:LBOut?
Description	This query returns the line build out setting.
Parameter	<Pt> = Port number
Response	<lbo> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:LB0? → 0TO133
Note	

6.2.8 T1:TX<Pt>:PCMFrame

Syntax	T1:TX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	T1:TX1:PCMF ON
Note	

Syntax	T1:TX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:PCMF? → 1
Note	

6.2.9 T1:TX<Pt>:FTYPE

Syntax	T1:TX<Pt>:FTYPE <type>
Description	This command sets the PCM frame type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> TSF: T1 SF/D4 mode TESF: T1 ESF mode JESF: J1 ESF mode <i>Default = TSF</i>
Response	None.
Example	T1:TX1:FTYP TESF
Note	

Syntax	T1:TX<Pt>:FTYPE?
Description	This query returns PCM frame type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:FTYP? → TESF
Note	

6.2.10 T1:TX<Pt>:PATTERN

Syntax	T1:TX<Pt>:PATTERN <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>Default = PRBS11</i>
Response	None.
Example	T1:TX1:PATT PRBS11

Syntax	T1:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:TX1:PATT? → PRBS11
Note	

6.2.11 T1:TX<Pt>:PINVersion

Syntax	T1:TX<Pt>:PINVersion <inversion>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inversion> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:TX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, QRSSxx, ALT11, ALT13, ALT17, ALT324, USER32BIT and USER2048BIT.

Syntax	T1:TX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inversion> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:PINV? → 1
Note	

6.2.12 T1:TX<Pt>:PTSLots

Syntax	T1:TX<Pt>:PTSLots <timeslot>
Description	This command sets the pattern time slots.
Parameters	<Pt> = Port number <timeslots> = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of slot number(s) ranging from 1 to 23
Response	None.
Example	T1:TX1:PTSL (1,3,5)
Note	

Syntax	T1:TX<Pt>:PTSLots?
Description	This query returns the pattern time slots.
Parameter	<Pt> = Port number
Response	<timeslot> = <EXPRESSION RESPONSE DATA> Format: Numeric List.
Example	T1:TX1:PTSL? → (1,3,5)
Note	

6.2.13 T1:TX<Pt>:UP16

Syntax	T1:TX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	T1:TX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

6.2.14 T1:TX<Pt>:UP32

Syntax	T1:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters.
Response	None.
Examples	T1:TX1:UP32 "01101"
Note	

Syntax	T1:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T1:TX1:UP32? → "01101"
Note	

6.2.15 T1:TX<Pt>:UP2K

Syntax	T1:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	T1:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when T1:TX2:PATT is USER2048BIT

Syntax	T1:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T1:TX1:UP2K? → "12DF"
Note	

6.2.16 T1:TX<Pt>:UTSLots

Syntax	T1:TX<Pt>:UTSLots <content>
Description	This command sets the content of unused time slots.
Parameters	<Pt> = Port number <content> = <NUMERIC PROGRAM DATA> <i>MINimum=#B00000000, MAXimum=#B11111111, DEFault=#B01010101</i>
Response	None.
Example	T1:TX1:UTSL 128
Note	

Syntax	T1:TX<Pt>:UTSLots?
Description	This query returns the content of unused time slots.
Parameter	<Pt> = Port number <content> = <BINARY NUMERIC RESPONSE DATA>
Response	None.
Example	T1:TX1:UTSL? → #B10101010
Note	

6.2.17 T1:TX<Pt>:SCTSlot

Syntax	T1:TX<Pt>:SCTSlot <timeslot>
Description	This command sets the channel time slot.
Parameters	<Pt> = Port number <timeslot> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=23, DEFault=1</i>
Response	None.
Example	T1:TX1:SCTS 4
Note	

Syntax	T1:TX<Pt>:SCTSlot?
Description	This query returns the sub channel time slot.
Parameter	<Pt> = Port number
Response	<timeslot> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:SCTS? → 4
Note	

6.2.18 T1:TX<Pt>:TFR

Syntax	T1:TX<Pt>:TFR <frequency>
Description	This command sets the tone frequency.
Parameters	<Pt> = Port number <frequency> = <NUMERIC PROGRAM DATA> <i>MINimum = 1 hz, MAXimum = 4000 hz</i> <i>DEFault = 440</i> <i>Allowed suffixes = HZ, KHZ</i>
Response	None.
Example	T1:TX1:TFR 500HZ
Note	

Syntax	T1:TX<Pt>:TFR?
Description	This query returns the tone frequency (Hz).
Parameter	<Pt> = Port number
Response	<frequency> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:TFR? → 500
Note	

6.2.19 T1:TX<Pt>:TLEVel

Syntax	T1:TX<Pt>:TLEVel <level>
Description	This command sets the tone level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = -70, <i>MAXimum</i> = 3 <i>DEFault</i> = -20 <i>Allowed suffixes</i> = dB
Response	None.
Example	T1:TX1:TLEV 2dB
Note	

Syntax	T1:TX<Pt>:TLEVel?
Description	This query returns the tone level.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:TLEV? → 2
Note	

6.2.20 T1:TX<Pt>:CAS

Syntax	T1:TX<Pt>:CAS <enable>
Description	This command enables or disables the channel associated signaling.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	T1:TX1:CAS ON
Note	

Syntax	T1:TX<Pt>:CAS?
Description	This query returns the state (enabled/disabled) of the channel associated signaling.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:CAS? → 1
Note	

6.2.21 T1:TX<Pt>:CASChannel

Syntax	T1:TX<Pt>:CASChannel <channel>
Description	This command sets the CAS channel number.
Parameters	<Pt> = Port number <channel> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =1, <i>MAXimum</i> =24, <i>DEFault</i> =1
Response	None.
Example	T1:TX1:CASC 5
Note	

Syntax	T1:TX<Pt>:CASChannel?
Description	This query returns the CAS channel number.
Parameter	<Pt> = Port number
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:TX1:CASC? → 5
Note	

6.2.22 T1:TX<Pt>:CASBits

Syntax	T1:TX<Pt>:CASBits <bits>
Description	This command sets the CAS channel bits.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1111</i>
Response	None.
Example	T1:TX1:CASB #B1111
Note	

Syntax	T1:TX<Pt>:CASBits?
Description	This query returns the CAS channel bits.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:TX1:CASB? → #B1111
Note	

6.2.23 T1:TX<Pt>:COCBits

Syntax	T1:TX<Pt>:COCBits <bits>
Description	This command sets the CAS other channel bits.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1001</i>
Response	None.
Example	T1:TX1:COCB #B0000
Note	

Syntax	T1:TX<Pt>:COCBits?
Description	This query returns the CAS other channel bits.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:TX1:COCB? → #B0000
Note	

6.2.24 T1:TX<Pt>:SF:CASBits

Syntax	T1:TX<Pt>:SF:CASBits <bits>
Description	This command sets the CAS channel bits for SF framing.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B00, MAXimum=#B11, DEFault=#B11</i>
Response	None.
Example	T1:TX1:SF:CASB #B11
Note	

Syntax	T1:TX<Pt>:SF:CASBits?
Description	This query returns the CAS channel bits for SF framing.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:TX1:SF:CASB? → #B11
Note	

6.2.25 T1:TX<Pt>:SF:COCBits

Syntax	T1:TX<Pt>:SF:COCBits <bits>
Description	This command sets the CAS other channel bits for SF framing.
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum=#B00, MAXimum=#B11, DEFault=#B11</i>
Response	None.
Example	T1:TX1:SF:COCB #B00
Note	

Syntax	T1:TX<Pt>:SF:COCBits?
Description	This query returns the CAS other channel bits for SF framing.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:TX1:SF:COCB? → #B00
Note	

6.3 Stimuli

6.3.1 T1:STIMuli:TX<Pt>:ALARm

Syntax	T1:STIMuli:TX<Pt>:ALARm <type>
Description	This command sets the alarm type to be generated.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> NALarm: No alarm OOF: Out of frame NSIGnal: No signal AIS: Alarm indication signal RAI: Remote Alarm Indication NSYNc: No pattern sync (LSS) <i>DEFault = NALarm</i>
Response	None.
Example	T1:STIM:TX1:ALAR NSIG
Note	

Syntax	T1:STIMuli:TX<Pt>:ALARm?
Description	This query returns the generated alarm type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T1:STIM:TX1:ALAR? → NSIG
Note	

6.3.2 T1:STIMuli:TX<Pt>:ERRor

Syntax	T1:STIMuli:TX<Pt>:ERRor <destination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <destination> = <CHARACTER PROGRAM DATA> OFF CRC6: CRC-6 PATtern: Pattern Error FBIT: F-Bit SBIT: S-Bit BPV: Bipolar Violation PSLip: Pattern slip EXZ: Excessive Zeroes <i>DEFault = OFF</i>
Response	None.
Example	T1:STIM:TX1:ERR CODE
Note	

Syntax	T1:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<destination> = <CHARACTER RESPONSE DATA>
Example	T1:STIM:TX1:ERR? → CODE
Note	

6.3.3 T1:STIMuli:TX<Pt>:EINsert

Syntax	T1:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B02: Burst · 1E-02 B03: Burst · 1E-03 B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 ES: Errored seconds SES: Severe errored seconds <i>DEFault = OFF</i>
Response	None.
Example	T1:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22

Syntax	T1:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	T1:STIM:TX1:EINS? → MAN
Note	

6.3.4 T1:STIMuli:TX<Pt>:EBLength

Syntax	T1:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=1</i>
Response	None.
Example	T1:STIM:TX1:EBL 1
Note	For T1:STIM:TX<Pt>:ERR? → CODE, <i>MAXimum = 1</i>

Syntax	T1:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STIM:TX1:EBL? → 1
Note	

6.3.5 T1:STIMuli:TX<Pt>:FDLink

Syntax	T1:STIMuli:TX<Pt>:FDLink <code>
Description	This command sets the transmitted FDL- or in-bound code.
Parameters	<Pt> = Port number <code> = <CHARACTER PROGRAM DATA> OFF: LLA: LLD: PLA: PLD: ULB: NLA: USER: Use the user defined FDL value ACS: DCS: AN1: DN1: AN2: DN2: 100K: UINBand: Use the user defined in-band coed. <i>DEFault = OFF</i>
Response	None.
Example	T1:STIM:TX1:FDL LLA
Note	

Syntax	T1:STIMuli:TX<Pt>:FDLink?
Description	This query returns the transmitted FDL- or inbound code.
Parameter	<Pt> = Port number
Response	<code> = <CHARACTER RESPONSE DATA>
Example	T1:STIM:TX1:FDL? → LLA
Note	

6.3.6 T1:STIMuli:TX<Pt>:FDLink:UFDL

Syntax	T1:STIMuli:TX<Pt>:FDLink:UFDL <value>
Description	This command sets the user defined FDL code.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=63, DEFault=0</i>
Response	None.
Example	T1:STIM:TX1:FDL:UFDL #B111111
Note	

Syntax	T1:STIMuli:TX<Pt>:FDLink:UFDL?
Description	This query returns the user defined FDL code.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STIM:TX1:FDL:UFDL? → 63
Note	

6.3.7 T1:STIMuli:TX<Pt>:FDLink:IBCode

Syntax	T1:STIMuli:TX<Pt>:FDLink:IBCode <value>
Description	This command sets the user defined in-bound code.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=16777215, DEFault=0</i>
Response	None.
Example	T1:STIM:TX1:FDL:IBC #HFFFFFFE
Note	

Syntax	T1:STIMuli:TX<Pt>:FDLink:IBCode?
Description	This query returns the user defined in-bound code.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STIM:TX1:FDL:IBC? → 16777214
Note	

6.4 Result

6.4.1 T1:RX<Pt>:IFETch?

Syntax	T1:RX<Pt>:IFETch? <parameter>
Description	This command fetches results from a T1 interval if available.
Parameters	<Pt> = Port number {(<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms NSIGNAL: No signal. Response: <Seconds>,<Ratio> AIS: Alarm indication Signal. Response: <Seconds>,<Ratio> OOF: Out of frame. Response: <Seconds>,<Ratio> NSYNc: No sync (LSS). Response: <Seconds>,<Ratio> RAI: Remote Alarm Indication. Response: <Seconds>,<Ratio> Errors PATtern: Pattern. Response: <Count>,<Ratio> PSLip: Pattern slip. Response: <Count>,<Ratio> PBLocK: Pattern block. Response: <Count>,<Ratio> CODE: Bipolar Violation (BPV). Response: <Count>,<Ratio> FBIT: F-bit. Response: <Count>,<Ratio> SBIT: S-bit. Response: <Count>,<Ratio> CRC6: CRC-6. Response: <Count>,<Ratio> EZERro: Excessive Zeroes. Response: <Count>,<Ratio> FAS performance errors FES: FAS ES. Response: <Count>,<Ratio%> FSES: FAS SES. Response: <Count>,<Ratio%> FBBE: FAS BBE. Response: <Count>,<Ratio%> FALS: FAS ALS. Response: <Count>,<Ratio%> FUAT: FAS UAT. Response: <Count>,<Ratio%> FAVT: FAS AVT. Response: <Count>,<Ratio%> FEFS: FAS EFS. Response: <Count>,<Ratio%> Pattern performance errors PES: Pattern ES. Response: <Count>,<Ratio%> PSES: Pattern SES. Response: <Count>,<Ratio%> PBBE: Pattern BBE. Response: <Count>,<Ratio%> PALS: Pattern ALS. Response: <Count>,<Ratio%> PUAT: Pattern UAT. Response: <Count>,<Ratio%> PAVT: Pattern AVT. Response: <Count>,<Ratio%> PEFS: Pattern EFS. Response: <Count>,<Ratio%> CRC6 performance errors CES: CRC6 ES. Response: <Count>,<Ratio%> CSES: CRC6 SES. Response: <Count>,<Ratio%> CBBE: CRC6 BBE. Response: <Count>,<Ratio%> CALS: CRC6 ALS. Response: <Count>,<Ratio%> CUAT: CRC6 UAT. Response: <Count>,<Ratio%> CAVT: CRC6 AVT. Response: <Count>,<Ratio%> CEFS: CRC6 EFS. Response: <Count>,<Ratio%>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement, returns NaN (section 1.6.1).
Example	T1:RX1:IFET? (AIS,PATT) → (9,0.0429),(10,0.0343)
Note	This command fetches the results from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2). If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last "," is always removed.

6.5 Status

6.5.1 T1:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	T1:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns alarms and errors summary event register. The content of this event register is summarized in DB7 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	T1:STAT:RX1:AES? → 1 T1:STAT:RX1:AES:EVENT? → 1
Note	

6.5.2 T1:STATus:RX<Pt>:AESummary:CONDition?

Syntax	T1:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns alarms and errors summary operation register query. DB1 is summary of T1:STATus:RX<Pt>:ALARm[:EVENT]? DB2 is summary of T1:STATus:RX<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	T1:STAT:RX1:AES:COND? → 1
Note	

6.5.3 T1:STATus:RX<Pt>:ALARm[:EVENT]?

Syntax	T1:STATus:RX<Pt>:ALARm[:EVENT]?
Description	This query returns alarms event register query. The content of this register is summarized in DB1 of the T1:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No sync (LSS) DB2 (2) = NOT USED DB3 (4) = CRC6err DB4 (8) = Remote Alarm Indication (RAI) DB5 (16) = NOT USED DB6 (32) = Out of frame (OOF) DB7 (64) = Alarm indication signal (AIS) DB8 (128) = No signal DB9 - DB16 = NOT USED
Example	T1:STAT:RX1:ALAR? → 64
Note	

6.5.4 T1:STATus:RX<Pt>:ALARm:CONDition?

Syntax	T1:STATus:RX<Pt>:ALARm:CONDition?
Description	This query returns alarms condition register query.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No sync (LSS) DB2 (2) = NOT USED DB3 (4) = CRC6err DB4 (8) = Remote Alarm Indication (RAI) DB5 (16) = NOT USED DB6 (32) = Out of frame (OOF) DB7 (64) = Alarm indication signal (AIS) DB8 (128) = No signal DB9 - DB16 = NOT USED
Example	T1:STAT:RX1:ALAR:COND? → 64
Note	

6.5.5 T1:STATus:RX<Pt>:ERRor[:EVENT]?

Syntax	T1:STATus:RX<Pt>:ERRor[:EVENT]?
Description	This query returns errors event register. The content of this register is summarized in DB2 of the T1:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern slip DB2 (2) = Pattern DB3 (4) = S-Bit DB4 (8) = CRC-6 DB5 (16) = NOT USED DB6 (32) = Excessive Zeroes (EXZ) DB7 (64) = F-Bit DB8 (128) = Bipolar Violation (BPV) DB9 - DB16 = NOT USED
Example	T1:STAT:RX1:ERR? → 64
Note	

6.5.6 T1:STATus:RX<Pt>:ERRor:CONDition?

Syntax	T1:STATus:RX<Pt>:ERRor:CONDition?
Description	This query returns errors condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern slip DB2 (2) = Pattern DB3 (4) = S-Bit DB4 (8) = CRC-6 DB5 (16) = NOT USED DB6 (32) = Excessive Zeroes (EXZ) DB7 (64) = F-Bit DB8 (128) = Bipolar Violation (BPV) DB9 - DB16 = NOT USED
Example	T1:STAT:RX1:ERR:COND? → 64
Note	

6.5.7 T1:STATus:RX<Pt>:PSLevel?

Syntax	T1:STATus:RX<Pt>:PSLevel?
Description	This query returns physical signal level. Unit: dB.
Parameter	<Pt> = Port number
Response	<signallevel> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:PSL? → 0
Note	Minimum level is -11 dB.

6.5.8 T1:STATus:RX<Pt>:PDEViation?

Syntax	T1:STATus:RX<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA> <bps> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:PDEV? → 0, 0
Note	

6.5.9 T1:STATus:RX<Pt>:PBRate?

Syntax	T1:STATus:RX<Pt>:PBRate?
Description	This query returns physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:PBR? → 1544000
Note	

6.5.10 T1:STATus:RX<Pt>:FDUMp?

Syntax	T1:STATus:RX<Pt>:FDUMp?
Description	This query returns a sample of a full DS1 Frame (24 bytes).
Parameters	<Pt> = Port number
Response	<hex> = <EXPRESSION RESPONSE DATA> Expression format: Numeric list Contains all 24 Frame timeslots.
Example	T1:STAT:RX1:FDUM? → #H55,#H55,#H55,...
Note	

6.5.11 T1:STATus:RX<Pt>:ACONtent?

Syntax	T1:STATus:RX<Pt>:ACONtent?
Description	This query returns audio channel content.
Parameter	<Pt> = Port number
Response	<audiocontent> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:ACON? → #B01010101
Note	For sub-rates this field shows the content of the sub channel.

6.5.12 T1:STATus:RX<Pt>:AIBContent?

Syntax	T1:STATus:RX<Pt>:AIBContent?
Description	This query returns sub channel audio all bit inverting content.
Parameter	<Pt> = Port number
Response	<audiocontent> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:AIBC? → #B10000000
Note	With u-law coded speech, it is possible to observe the u-law code words before the bit inverting.

6.5.13 T1:STATus:RX<Pt>:APPeak?

Syntax	T1:STATus:RX<Pt>:APPeak?
Description	This query returns sub channel audio positive peak value.
Parameter	<Pt> = Port number
Response	<positivepeak> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:APP? → 85
Note	This query only applies for u-law speech and shows the largest received u-law coded value.

6.5.14 T1:STATus:RX<Pt>:ANPeak?

Syntax	T1:STATus:RX<Pt>:ANPeak?
Description	This query returns sub channel audio negative peak value.
Parameter	<Pt> = Port number
Response	<negativepeak> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:ANP? → -85
Note	This query only applies for u-law speech and shows the smallest received u-law coded value.

6.5.15 T1:STATus:RX<Pt>:ALEVel?

Syntax	T1:STATus:RX<Pt>:ALEVel?
Description	This query returns sub channel audio level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<audiolevel> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:ALEV? → -4
Note	

6.5.16 T1:STATus:RX<Pt>:AFRequency?

Syntax	T1:STATus:RX<Pt>:AFRequency?
Description	This query returns sub channel audio tone frequency. Unit: Hz.
Parameter	<Pt> = Port number
Response	<audiofrequency> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:AFR? → 366
Note	

6.5.17 T1:STATus:RX<Pt>:ACOffset?

Syntax	T1:STATus:RX<Pt>:ACOffset?
Description	This query returns sub channel audio coder offset.
Parameter	<Pt> = Port number
Response	<coderoffset> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:ACOF? → 0
Note	Only available for 64 kbps audio channels.

6.5.18 T1:STATus:RX<Pt>:PPBRate?

Syntax	T1:STATus:RX<Pt>:PPBRate?
Description	This query returns payload pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:PPBR? → 64000
Note	

6.5.19 T1:STATus:RX<Pt>:FBIT?

Syntax	T1:STATus:RX<Pt>:FBIT?
Description	This query returns FAS bits. (Frame Alignment Signal bits). Data is shown as binary.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:FBIT? → #B101010
Note	

6.5.20 T1:STATus:RX<Pt>:SBIT?

Syntax	T1:STATus:RX<Pt>:SBIT?
Description	This query returns S-Bits (Multi Frame Alignment Signal bits). Data is shown as binary.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:SBIT? → #B001110
Note	

6.5.21 T1:STATus:RX<Pt>:MBIT?

Syntax	T1:STATus:RX<Pt>:MBIT?
Description	This query returns M-Bits (Data Link Message bits). Data is shown as binary.
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:MBIT? → #B0000000000000000
Note	

6.5.22 T1:STATus:RX<Pt>:FDL:MODE

Syntax	T1:STATus:RX<Pt>:FDL:MODE <interface>
Description	This command selects the FDL mode. This can be MBIT or INBand.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> MBIT INBand <i>DEFault = MBIT</i>
Response	None.
Example	T1:STAT:RX1:FDL:MODE INB
Note	

Syntax	T1:STATus:RX<Pt>:FDL:MODE?
Description	This query returns the state of the FDL mode.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	T1:STAT:RX1:FDL:MODE? → MBIT
Note	

6.5.23 T1:STATus:RX<Pt>:FDL:MBIT:CODE?

Syntax	T1:STATus:RX<Pt>:FDL:MBIT:CODE?
Description	This query returns MBIT FDL Code (Data Link Message mnemonic).
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:FDL:MBIT:CODE? → PLA
Note	

6.5.24 T1:STATus:RX<Pt>:FDL:INBand:CODE?

Syntax	T1:STATus:RX<Pt>:FDL:INBand:CODE?
Description	This query returns Inband FDL Code (Data Link Message mnemonic).
Parameter	<Pt> = Port number
Response	<bits> = <BINARY NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:FDL:INB:CODE? → AN1
Note	

6.5.25 T1:STATus:RX<Pt>:FDL:UDEFined

Syntax	T1:STATus:RX<Pt>:FDL:UDEFined <enable>
Description	This command enables or disables the User Defined check mark.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:STAT:RX1:FDL:UDEF 1
Note	

Syntax	T1:STATus:RX<Pt>:FDL:UDEFined?
Description	This query returns the state of the User Defined check mark.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	T1:STAT:RX1:FDL:UDEF? → 1
Note	

6.5.26 T1:STATus:RX<Pt>:FDL:UCODE

Syntax	T1:STATus:RX<Pt>:FDL:UCODE <max>
Description	This command sets the FDL User Code.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 16777215, DEFault = 0</i>
Response	None.
Example	T1:STAT:RX1:FDL:UCOD 123456
Note	

Syntax	T1:STATus:RX<Pt>:FDL:UCODE?
Description	This query returns the FDL User Code.
Parameter	<Pt> = Port number
Response	<max> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:STAT:RX1:FDL:UCOD? → 123456
Note	

6.5.27 T1:STATus:RX<Pt>:FDL:TRIGger

Syntax	T1:STATus:RX<Pt>:FDL:TRIGger <interface>
Description	This command enables or disables the FDL trigger.
Parameters	<Pt> = Port number <interface> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	T1:STAT:RX1:FDL:TRIG ON
Note	

Syntax	T1:STATus:RX<Pt>:FDL:TRIGger?
Description	This query returns the state of the FDL trigger.
Parameter	<Pt> = Port number
Response	<interface> = <BOOLEAN RESPONSE DATA>
Example	T1:STAT:RX1:FDL:TRIG? → 1
Note	

6.5.28 T1:STATus:RX<Pt>:CBITs?

Syntax	T1:STATus:RX<Pt>:CBITs?
Description	This query returns CAS bits.
Parameter	<Pt> = Port number
Response	<bits> = <EXPRESSION RESPONSE DATA> Expression format: Numeric list Contains all 24 CAS bit sets.
Example	T1:STAT:RX1:CBIT? → (#B0101,#B0101, ..., #B0101,#B0101)
Note	

6.6 APS

6.6.1 T1:APS:STARt

Syntax	T1:APS:STARt
Description	This command starts the APS (Automatic Protection Switching) measurement.
Parameter	None.
Response	None.
Example	T1:APS:STAR
Note	

6.6.2 T1:APS:STOP

Syntax	T1:APS:STOP
Description	This command stops the APS (Automatic Protection Switching) measurement command.
Parameter	None.
Response	None.
Example	T1:APS:STOP
Note	

6.6.3 T1:APS:RX<Pt>:NUMBer?

Syntax	T1:APS:RX<Pt>:NUMBer?
Description	This query returns the number of times has measured.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:APS:RX1:NUMB? → 17
Note	

6.6.4 T1:APS:RX<Pt>:ATIMe?

Syntax	T1:APS:RX<Pt>:ATIMe?
Description	This query returns the average time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	T1:APS:RX1:ATIM? → 4.000
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

6.6.5 T1:APS:RX<Pt>:MTIMe?

Syntax	T1:APS:RX<Pt>:MTIMe?
Description	This query returns the maximum time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	T1:APS:RX1:MTIM? → 29.170,0
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

6.6.6 T1:APS:RX<Pt>:LTIMe?

Syntax	T1:APS:RX<Pt>:LTIMe?
Description	This query returns the minimum time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	T1:APS:RX1:LTIM? → 1.0
Note	The maximum measurable time is 4000 ms. The maximum measurable time will be responded if the result exceeds 4000 ms.

6.6.7 T1:APS:RX<Pt>:EVENTt

Syntax	T1:APS:RX<Pt>:EVENTt <event>
Description	This command sets the Time Reference event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> AIS = Alarm indication signal OOF = Out of frame PERRor = Pattern error
Response	None.
Example	T1:APS:RX1:EVEN AIS
Note	

Syntax	T1:APS:RX<Pt>:EVENT?
Description	This query returns the time reference event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	T1:APS:RX1:EVEN? → AIS
Note	

6.6.8 T1:APS:RX<Pt>:MLIMit

Syntax	T1:APS:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 4000.000, DEFault = 50.000</i>
Response	None.
Example	T1:APS:RX1:MLIM 50.000
Note	

Syntax	T1:APS:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	T1:APS:RX1:MLIM? → 50.000
Note	

6.7 RTD

This section document commands to retrieve Round Trip Delay measurement results. Commands for general RTD settings are described in section 17.1 on page 953.

6.7.1 T1:RTD:RX<Pt>:NUMBer?

Syntax	T1:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	T1:RTD:RX1:NUMB? → 2
Note	

6.7.2 T1:RTD:RX<Pt>:ATIME?

Syntax	T1:RTD:RX<Pt>:ATIME?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	T1:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

6.7.3 T1:RTD:RX<Pt>:MTIME?

Syntax	T1:RTD:RX<Pt>:MTIME?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	T1:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

6.7.4 T1:RTD:RX<Pt>:LTIME?

Syntax	T1:RTD:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	T1:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

Chapter 7

E3

7.1 Receiver

7.1.1 E3:RX<Pt>[:ENABled]

Syntax	E3:RX<Pt>[:ENABled] <state>
Description	This command enables/disables the receiver.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	E3:RX1 ON E3:RX1:ENAB ON
Note	

Syntax	E3:RX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the receiver.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	E3:RX1? → ON E3:RX1:ENAB? → SDH
Note	Returns SDH if E3 is over SDH or SONET.

7.1.2 E3:RX<Pt>:MODE

Syntax	E3:RX<Pt>:MODE <mode>
Description	This command sets the signal termination mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> TERMinate: Nominal impedance. Normal frequency dependent AGC. MONitor: Nominal impedance. Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	E3:RX1:MODE TERM
Note	

Syntax	E3:RX<Pt>:MODE?
Description	This query returns the signal termination mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	E3:RX1:MODE? → TERM
Note	

7.1.3 E3:RX<Pt>:FOLLow

Syntax	E3:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX: Transmitter of the same port RX1: Receiver of port 1 <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	E3:RX1:FOLL TX
Note	

Syntax	E3:RX<Pt>:FOLLow?
Description	This query returns if the receiver follow another setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	E3:RX1:FOLL? → TX
Note	

7.1.4 E3:RX<Pt>:PCMFrame

Syntax	E3:RX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	E3:RX1:PCMF ON
Note	

Syntax	E3:RX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:RX1:PCMF? → 1
Note	

7.1.5 E3:RX<Pt>:PATtern

Syntax	E3:RX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS31 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	E3:RX1:PATT PRBS11
Note	

Syntax	E3:RX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	E3:RX1:PATT? → PRBS11
Note	

7.1.6 E3:RX<Pt>:PINVersion

Syntax	E3:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	E3:RX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, FOX, ALL1, ALL0, ALT11, ALT13, ALT17, ALT324, UP16 and UP2K.

Syntax	E3:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:RX1:PINV? → 1
Note	

7.1.7 E3:RX<Pt>:UP16

Syntax	E3:RX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	E3:RX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

7.1.8 E3:RX<Pt>:UP32

Syntax	E3:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Example	E3:RX2:UP32 "01101"
Note	

Syntax	E3:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E3:RX2:UP32? → "01101"
Note	

7.1.9 E3:RX<Pt>:UP2K

Syntax	E3:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	E3:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when E3:RX2:PATT is USER2048BIT

Syntax	E3:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E3:RX1:UP2K? → "12DF"
Note	

7.2 Transmitter

7.2.1 E3:TX<Pt>[:ENABled]

Syntax	E3:TX<Pt>[:ENABled] <state>
Description	This command enables/disables the transmitter.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	E3:TX1 ON E3:TX1:ENAB ON
Note	The ENABled command is the default node for E3:TX<Pt>.

Syntax	E3:TX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the transmitter.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	E3:TX1? → ON E3:TX1:ENAB? → SDH
Note	Returns SDH if E3 is over SDH or SONET.

7.2.2 E3:TX<Pt>:FOLLow

Syntax	E3:TX<Pt>:FOLLow <follow>
Description	This command sets the transmitter setting to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX1: Follow the setting of the port 1 transmitter <i>DEFault = NONE</i>
Response	None.
Example	E3:TX2:FOLL TX1
Note	This command is not valid for :TX1

Syntax	E3:TX<Pt>:FOLLow?
Description	This query returns if the transmitter follow the TX1 settings.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	E3:TX2:FOLL? → TX1
Note	This command is not valid for :TX1

7.2.3 E3:TX<Pt>:TIMing

Syntax	E3:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal timing source EXTernal: External timing source RX: Received signal on the same port <i>DEFault = INTernal</i>
Response	None.
Example	E3:TX1:TIM INT
Note	

Syntax	E3:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	E3:TX1:TIM? → INT
Note	

7.2.4 E3:TX<Pt>:FOFFset

Syntax	E3:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-125, MAXimum=125, DEFault=0</i> <i>Allowed suffix = ppm</i>
Response	None.
Example	E3:TX1:FOFF -25ppm
Note	

Syntax	E3:TX<Pt>:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:TX1:FOFF? → -25
Note	

7.2.5 E3:TX<Pt>:PCMFrame

Syntax	E3:TX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	E3:TX1:PCMF ON
Note	

Syntax	E3:TX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:TX1:PCMF? → 1
Note	

7.2.6 E3:TX<Pt>:PATtern

Syntax	E3:TX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS31 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	E3:TX1:PATT PRBS11
Note	

Syntax	E3:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	E3:TX1:PATT? → PRBS11
Note	

7.2.7 E3:TX<Pt>:PINVersion

Syntax	E3:TX<Pt>:PINVersion <inverted>
Description	This command sets pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	E3:TX1:PINV ON
Note	

Syntax	E3:TX<Pt>:PINVersion?
Description	This query returns pattern inversion.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:TX1:PINV? → 1
Note	

7.2.8 E3:TX<Pt>:UP16

Syntax	E3:TX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	E3:TX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

7.2.9 E3:TX<Pt>:UP32

Syntax	E3:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Example	E3:TX1:UP32 "01101"
Note	

Syntax	E3:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E3:TX1:UP32? → "01101"
Note	

7.2.10 E3:TX<Pt>:UP2K

Syntax	E3:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	E3:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when E3:TX2:PATT is USER2048BIT

Syntax	E3:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E3:TX1:UP2K? → "12DF"
Note	

7.3 Stimuli

7.3.1 E3:STIMuli:TX<Pt>:ALARm

Syntax	E3:STIMuli:TX<Pt>:ALARm <alarmtype>
Description	This command sets the alarm type to generate.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> NALarm: No alarm NSIGnal: No signal AIS: Alarm Indication Signal NFRame: No frame DALarm: Distant alarm (RDI) NSYNc: No pattern sync <i>DEFault = NALarm</i>
Response	None.
Example	E3:STIM:TX1:ALAR NALarm
Note	

Syntax	E3:STIMuli:TX<Pt>:ALARm?
Description	This query returns the stimuli alarm type.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	E3:STIM:TX1:ALAR? → NSIG
Note	

7.3.2 E3:STIMuli:TX<Pt>:ERRor

Syntax	E3:STIMuli:TX<Pt>:ERRor <errordestination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <errordestination> = <CHARACTER PROGRAM DATA> FRAME: Frame CODE: Code PATtern: Pattern PSLip: Pattern slip <i>DEFault = FRAME</i>
Response	None.
Example	E3:STIM:TX1:ERR CODE
Note	

Syntax	E3:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<errordestination> = <CHARACTER RESPONSE DATA>
Example	E3:STIM:TX1:ERR? → CODE
Note	

7.3.3 E3:STIMuli:TX<Pt>:EINsert

Syntax	E3:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B02: Burst · 1E-02 B03: Burst · 1E-03 B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 <i>DEFault = OFF</i>
Response	None.
Example	E3:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22

Syntax	E3:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	E3:STIM:TX1:EINS? → MAN
Note	

7.3.4 E3:STIMuli:TX<Pt>:EBLength

Syntax	E3:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=1</i>
Response	None.
Example	E3:STIM:TX1:EBL 1
Note	

Syntax	E3:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:STIM:TX1:EBL? → 1
Note	

7.4 Results

7.4.1 E3:RX<Pt>:IFETch?

Syntax	E3:RX<Pt>:IFETch? <parameters>
Description	This query fetches an interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms NSIG: No signal. Response: <Seconds>,<Ratio> AIS: Alarm indication signal. Response: <Seconds>,<Ratio> NFR: No frame. Response: <Seconds>,<Ratio> NSYN: No sync. Response: <Seconds>,<Ratio> DAL: Distant Alarm. Response: <Seconds>,<Ratio> Errors FASW: FAS words. Response: <Count>,<Ratio> CODE: Code. Response: <Count>,<Ratio> PATT: Pattern. Response: <Count>,<Ratio> PSL: Pattern slip. Response: <Count>,<Ratio> PBL: Pattern block. Response: <Count>,<Ratio> Rx frequency DEV: Frequency deviation. Response: <ppm> FAS performance errors FES: FAS ES. Response: <Count>,<Ratio%> FSES: FAS SES. Response: <Count>,<Ratio%> FBBE: FAS BBE. Response: <Count>,<Ratio%> FALS: FAS ALS. Response: <Count>,<Ratio%> FUAT: FAS UAT. Response: <Count>,<Ratio%> FAVT: FAS AVT. Response: <Count>,<Ratio%> FEFS: FAS EFS. Response: <Count>,<Ratio%> Pattern performance errors PES: Pattern ES. Response: <Count>,<Ratio%> PSES: Pattern SES. Response: <Count>,<Ratio%> PBBE: Pattern BBE. Response: <Count>,<Ratio%> PALS: Pattern ALS. Response: <Count>,<Ratio%> PUAT: Pattern UAT. Response: <Count>,<Ratio%> PAVT: Pattern AVT. Response: <Count>,<Ratio%> PEFS: Pattern EFS. Response: <Count>,<Ratio%>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	E3:RX1:IFET? (FES,PATT) → (2,0.5),(4,0.25)
Notes	This command fetches the result from the interval selected by the MEASurement:SEtup:SElect command (see section 18.2.2). NFR, DAL, FASW, FASB return NaN (section 1.6.1), if the PCM frame is disabled (E3:RX<Pt>:PCMFrame? → 0). If requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed.

7.5 Status

7.5.1 E3:STATus:RX<Pt>:PSLevel?

Syntax	E3:STATus:RX<Pt>:PSLevel?
Description	This query returns physical signal level. Unit: dB.
Parameter	<Pt> = Port number
Response	<signallevel> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:STAT:RX1:PSL? → 0
Note	Minimum level is -48 dB.

7.5.2 E3:STATus:RX<Pt>:PDEViation?

Syntax	E3:STATus:RX<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA> <bps> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:STAT:RX1:PDEV? → 0, 0
Note	

7.5.3 E3:STATus:RX<Pt>:PBRate?

Syntax	E3:STATus:RX<Pt>:PBRate?
Description	This query returns physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:STAT:RX1:PBR? → 34368000
Note	

7.5.4 E3:STATus:RX<Pt>:PPBRate?

Syntax	E3:STATus:RX<Pt>:PPBRate?
Description	This query returns payload pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:STAT:RX1:PPBR? → 34099504
Note	

7.5.5 E3:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	E3:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the E3 alarms and errors summary event register. The content of this event register is summarized in DB3 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	E3:STAT:RX1:AES? → 1
Note	

7.5.6 E3:STATus:RX<Pt>:AESummary:CONDition?

Syntax	E3:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns the E3 alarms and errors summary condition register. DB1 is summary of E3:STATus:RX<Pt>:ALARm[:EVENT]? DB2 is summary of E3:STATus:RX<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	E3:STAT:RX1:AES:COND? → 2
Note	

7.5.7 E3:STATus:RX<Pt>:ALARm[:EVENT]?

Syntax	E3:STATus:RX<Pt>:ALARm[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 of the E3:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = Alarm Indication Signal (AIS) DB3 (4) = No frame DB4 (8) = Distant DB5 (16) = No sync DB6 - DB16 = NOT USED
Example	E3:STAT:RX1:ALAR? → 2
Note	The No frame and Distant are only valid when the PCM frame is enabled (E3:RX<Pt>:PCMFrame? → 1).

7.5.8 E3:STATus:RX<Pt>:ALARm:CONDition?

Syntax	E3:STATus:RX<Pt>:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = Alarm Indication Signal (AIS) DB3 (4) = No frame DB4 (8) = Distant DB5 (16) = No sync DB6 - DB16 = NOT USED
Example	E3:STAT:RX1:ALAR:COND? → 4
Note	The No frame and Distant are only valid when the PCM frame is enabled (E3:RX<Pt>:PCMFrame? → 1).

7.5.9 E3:STATus:RX<Pt>:ERRor[:EVENT]?

Syntax	E3:STATus:RX<Pt>:ERRor[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB2 of the E3:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = FAS words DB2 (2) = NOT USED DB3 (4) = Pattern DB4 (8) = Code DB5 (16) = Pattern slip (PSL) DB6 - DB16 = NOT USED
Example	E3:STAT:RX1:ERR? → 8
Notes	The FAS words and FAS bits are only valid when the PCM frame is enabled (E3:RX<Pt>:PCMFrame? → 1). The Code is not valid when using E3 over SDH.

7.5.10 E3:STATus:RX<Pt>:ERRor:CONDition?

Syntax	E3:STATus:RX<Pt>:ERRor:CONDition?
Description	This query returns the errors condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = FAS words DB2 (2) = NOT USED DB3 (4) = Pattern DB4 (8) = Code DB5 (16) = Pattern slip (PSL) DB6 - DB16 = NOT USED
Example	E3:STAT:RX1:ERR:COND? → 8
Note	The FAS words and FAS bits are only valid when the PCM frame is enabled (E3:RX<Pt>:PCMFrame? → 1). The Code is not valid when using E3 over SDH.

7.6 RTD

This section document commands to retrieve Round Trip Delay measurement results. Commands for general RTD settings are described in section 17.1 on page 953.

7.6.1 E3:RTD:RX<Pt>:NUMBer?

Syntax	E3:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:RTD:RX1:NUMB? → 2
Note	

7.6.2 E3:RTD:RX<Pt>:ATIMe?

Syntax	E3:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	E3:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

7.6.3 E3:RTD:RX<Pt>:MTIMe?

Syntax	E3:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA>
Example	E3:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

7.6.4 E3:RTD:RX<Pt>:LTIMe?

Syntax	E3:RTD:RX<Pt>:LTIMe?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	E3:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

Chapter 8

T3

8.1 Receiver

8.1.1 T3:RX<Pt>[:ENABled]

Syntax	T3:RX<Pt>[:ENABled] <state>
Description	This command enables/disables the receiver.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	T3:RX1 ON T3:RX1:ENAB ON
Note	

Syntax	T3:RX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the receiver.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	T3:RX1? → ON T3:RX1:ENAB? → SDH
Note	Returns SDH if T3 is over SDH or SONET.

8.1.2 T3:RX<Pt>:MODE

Syntax	T3:RX<Pt>:MODE <mode>
Description	This command sets the signal termination mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> TERMinate: Nominal impedance. Normal frequency dependent AGC. MONitor: Nominal impedance. Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	T3:RX1:MODE TERM
Note	

Syntax	T3:RX<Pt>:MODE?
Description	This query returns the signal termination mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	T3:RX1:MODE? → TERM
Note	

8.1.3 T3:RX<Pt>:FOLLow

Syntax	T3:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX: Transmitter of the same port RX1: Receiver of port 1 <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	T3:RX1:FOLL TX
Note	

Syntax	T3:RX<Pt>:FOLLow?
Description	This query returns if the receiver follow another setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	T3:RX1:FOLL? → TX
Note	

8.1.4 T3:RX<Pt>:PCMFrame

Syntax	T3:RX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	T3:RX1:PCMF ON
Note	

Syntax	T3:RX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:RX1:PCMF? → 1
Note	

8.1.5 T3:RX<Pt>:FTYPE

Syntax	T3:RX<Pt>:FTYPE <type>
Description	This command sets the PCM frame type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> M13: M13 mode CBIT: C-bit mode <i>DEFault</i> = <i>M13</i>
Response	None.
Example	T3:RX1:FTYP CBIT
Note	

Syntax	T3:RX<Pt>:FTYPE?
Description	This query returns PCM frame type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T3:RX1:FTYP? → CBIT
Note	

8.1.6 T3:RX<Pt>:PATtern

Syntax	T3:RX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	T3:RX1:PATT PRBS11
Note	

Syntax	T3:RX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T3:RX1:PATT? → PRBS11
Note	

8.1.7 T3:RX<Pt>:PINVersion

Syntax	T3:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	T3:RX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, FOX, ALL1, ALL0, ALT11, ALT13, ALT17, ALT324, UP16 and UP2K.

Syntax	T3:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:RX1:PINV? → 1
Note	

8.1.8 T3:RX<Pt>:UP16

Syntax	T3:RX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	T3:RX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

8.1.9 T3:RX<Pt>:UP32

Syntax	T3:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters.
Response	None.
Example	T3:RX2:UP32 "01101"
Note	

Syntax	T3:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T3:RX2:UP32? → "01101"
Note	

8.1.10 T3:RX<Pt>:UP2K

Syntax	T3:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	T3:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when T3:RX2:PATT is USER2048BIT

Syntax	T3:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T3:RX1:UP2K? → "12DF"
Note	

8.2 Transmitter

8.2.1 T3:TX<Pt>[:ENABled]

Syntax	T3:TX<Pt>[:ENABled] <state>
Description	This command enables/disables the transmitter.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	T3:TX1 ON T3:TX1:ENAB ON
Note	The ENABled command is the default node for T3:TX<Pt>.

Syntax	T3:TX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the transmitter.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	T3:TX1? → ON T3:TX1:ENAB? → SDH
Note	Returns SDH if T3 is over SDH or SONET.

8.2.2 T3:TX<Pt>:FOLLow

Syntax	T3:TX<Pt>:FOLLow <follow>
Description	This command sets the transmitter setting to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX1: Follow the setting of the port 1 transmitter <i>DEFault = NONE</i>
Response	None.
Example	T3:TX2:FOLL TX1
Note	This command is not valid for :TX1

Syntax	T3:TX<Pt>:FOLLow?
Description	This query returns if the transmitter follow the TX1 settings.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	T3:TX2:FOLL? → TX1
Note	This command is not valid for :TX1

8.2.3 T3:TX<Pt>:TIMing

Syntax	T3:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal timing source EXTernal: External timing source RX: Received signal on the same port <i>DEFault = INTernal</i>
Response	None.
Example	T3:TX1:TIM INT
Note	

Syntax	T3:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	T3:TX1:TIM? → INT
Note	

8.2.4 T3:TX<Pt>:FOFFset

Syntax	T3:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-125, MAXimum=125, DEFault=0</i> <i>Allowed suffix = ppm</i>
Response	None.
Example	T3:TX1:FOFF -25ppm
Note	

Syntax	T3:TX<Pt>:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:TX1:FOFF? → -25
Note	

8.2.5 T3:TX<Pt>:PCMFrame

Syntax	T3:TX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	T3:TX1:PCMF ON
Note	

Syntax	T3:TX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:TX1:PCMF? → 1
Note	

8.2.6 T3:TX<Pt>:FTYPE

Syntax	T3:TX<Pt>:FTYPE <type>
Description	This command sets the PCM frame type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> M13: M13 mode CBIT: C-bit mode <i>DEFault = M13</i>
Response	None.
Example	T3:TX1:FTYP CBIT
Note	

Syntax	T3:TX<Pt>:FTYPE?
Description	This query returns PCM frame type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T3:TX1:FTYP? → CBIT
Note	

8.2.7 T3:TX<Pt>:LBOut

Syntax	T3:TX<Pt>:LBOut <lbo>
Description	This command sets the line build out.
Parameters	<Pt> = Port number <lbo> = <CHARACTER PROGRAM DATA> HIGH: High-0 ft DSX: DSX-450 ft <i>DEFault = HIGH</i>
Response	None.
Example	T3:TX1:LB0 DSX
Note	

Syntax	T3:TX<Pt>:LBOut?
Description	This query returns the line build out setting.
Parameter	<Pt> = Port number
Response	<lbo> = <CHARACTER RESPONSE DATA>
Example	T3:TX1:LB0? → DSX
Note	

8.2.8 T3:TX<Pt>:PATtern

Syntax	T3:TX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 FOX FOXCMA3000 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	T3:TX1:PATT PRBS11
Note	

Syntax	T3:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	T3:TX1:PATT? → PRBS11
Note	

8.2.9 T3:TX<Pt>:PINVersion

Syntax	T3:TX<Pt>:PINVersion <inverted>
Description	This command sets pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	T3:TX1:PINV ON
Note	

Syntax	T3:TX<Pt>:PINVersion?
Description	This query returns pattern inversion.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:TX1:PINV? → 1
Note	

8.2.10 T3:TX<Pt>:UP16

Syntax	T3:TX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	T3:TX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

8.2.11 T3:TX<Pt>:UP32

Syntax	T3:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters.
Response	None.
Examples	T3:TX1:UP32 "01101"
Note	

Syntax	T3:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T3:TX1:UP32? → "01101"
Note	

8.2.12 T3:TX<Pt>:UP2K

Syntax	T3:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	T3:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when T3:TX2:PATT is USER2048BIT

Syntax	T3:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	T3:TX1:UP2K? → "12DF"
Note	

8.3 Stimuli

8.3.1 T3:STIMuli:TX<Pt>:ALARm

Syntax	T3:STIMuli:TX<Pt>:ALARm <alarmtype>
Description	This command sets the alarm type to generate.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> NALarm: No alarm NSIGnal: No signal AIS: Alarm Indication Signal RAI: Remote Alarm Indication IDLE: Idle NFRame: No frame (LOF) NSYNc: No pattern sync (LSS) <i>DEFault</i> = <i>NALarm</i>
Response	None.
Example	T3:STIM:TX1:ALAR NALarm
Note	

Syntax	T3:STIMuli:TX<Pt>:ALARm?
Description	This query returns the stimuli alarm type.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	T3:STIM:TX1:ALAR? → NSIG
Note	

8.3.2 T3:STIMuli:TX<Pt>:ERRor

Syntax	T3:STIMuli:TX<Pt>:ERRor <errordestination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <errordestination> = <CHARACTER PROGRAM DATA> OFF CBIT: C-Bit FBIT: F-Bit PBIT: P-Bit FEBE: PATtern: Pattern Error PSLip: Pattern slip BPV: <i>DEFault</i> = <i>FBIT</i>
Response	None.
Example	T3:STIM:TX1:ERR FEBE
Note	

Syntax	T3:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<errordestination> = <CHARACTER RESPONSE DATA>
Example	T3:STIM:TX1:ERR? → FEBE
Note	

8.3.3 T3:STIMuli:TX<Pt>:EINsert

Syntax	T3:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B02: Burst · 1E-02 B03: Burst · 1E-03 B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 <i>DEFault = OFF</i>
Response	None.
Example	T3:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22

Syntax	T3:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	T3:STIM:TX1:EINS? → MAN
Note	

8.3.4 T3:STIMuli:TX<Pt>:EBLength

Syntax	T3:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=1</i>
Response	None.
Example	T3:STIM:TX1:EBL 1
Note	

Syntax	T3:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:STIM:TX1:EBL? → 1
Note	

8.4 Results

8.4.1 T3:RX<Pt>:IFETch?

Syntax	T3:RX<Pt>:IFETch? <parameters>
Description	This query fetches an interval if available.
Parameters	<Pt> = Port number {(<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms NSIG: No signal. Response: <Seconds>,<Ratio> AIS: Alarm indication signal. Response: <Seconds>,<Ratio> NFR: No frame. Response: <Seconds>,<Ratio> NSYN: No sync (LSS). Response: <Seconds>,<Ratio> DAL: Distant Alarm (RAI). Response: <Seconds>,<Ratio> IDLE: Idle alarm. Response: <Seconds>,<Ratio> Errors CODE: Code (BPV). Response: <Count>,<Ratio> FBIT: F-bit. Response: <Count>,<Ratio> CBIT: C-bit. Response: <Count>,<Ratio> PATT: Pattern. Response: <Count>,<Ratio> PSL: Pattern slip. Response: <Count>,<Ratio> PBL: Pattern block. Response: <Count>,<Ratio> PAR: Parity. Response: <Count>,<Ratio> FEBE: FEBE. Response: <Count>,<Ratio> Rx frequency DEV: Frequency deviation. Response: <ppm> FAS performance errors FES: FAS ES. Response: <Count>,<Ratio%> FSES: FAS SES. Response: <Count>,<Ratio%> FBBE: FAS BBE. Response: <Count>,<Ratio%> FALS: FAS ALS. Response: <Count>,<Ratio%> FUAT: FAS UAT. Response: <Count>,<Ratio%> FAVT: FAS AVT. Response: <Count>,<Ratio%> FEFS: FAS EFS. Response: <Count>,<Ratio%> Pattern performance errors PES: Pattern ES. Response: <Count>,<Ratio%> PSES: Pattern SES. Response: <Count>,<Ratio%> PBBE: Pattern BBE. Response: <Count>,<Ratio%> PALS: Pattern ALS. Response: <Count>,<Ratio%> PUAT: Pattern UAT. Response: <Count>,<Ratio%> PAVT: Pattern AVT. Response: <Count>,<Ratio%> PEFS: Pattern EFS. Response: <Count>,<Ratio%>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN.
Example	T3:RX1:IFET? (FES,PATT) → (2,0.5),(4,0.25)
Notes	This command fetches the result from the interval selected by the MEASurement:SETup:SElect command (see section 18.2.2). NFR, DAL, FASW, FASB return NaN, if the PCM frame is disabled (T3:RX<Pt>:PCMFrame? → 0). If requested result is not available, NaN is returned. If there is one or more results, the last ",," is always removed.

8.5 Status

8.5.1 T3:STATus:RX<Pt>:PSLevel?

Syntax	T3:STATus:RX<Pt>:PSLevel?
Description	This query returns physical signal level. Unit: dB.
Parameter	<Pt> = Port number
Response	<signallevel> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:STAT:RX1:PSL? → 0
Note	Minimum level is -48 dB.

8.5.2 T3:STATus:RX<Pt>:PDEViation?

Syntax	T3:STATus:RX<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA> <bps> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:STAT:RX1:PDEV? → 0, 0
Note	

8.5.3 T3:STATus:RX<Pt>:PBRate?

Syntax	T3:STATus:RX<Pt>:PBRate?
Description	This query returns physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:STAT:RX1:PBR? → 44736000
Note	

8.5.4 T3:STATus:RX<Pt>:PPBRate?

Syntax	T3:STATus:RX<Pt>:PPBRate?
Description	This query returns payload pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:STAT:RX1:PPBR? → 44209704
Note	

8.5.5 T3:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	T3:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the T3 alarms and errors summary event register. The content of this event register is summarized in DB11 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	T3:STAT:RX1:AES? → 1
Note	

8.5.6 T3:STATus:RX<Pt>:AESummary:CONDition?

Syntax	T3:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns the T3 alarms and errors summary condition register. DB1 is summary of T3:STATus:RX<Pt>:ALARm[:EVENT]? DB2 is summary of T3:STATus:RX<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	T3:STAT:RX1:AES:COND? → 2
Note	

8.5.7 T3:STATus:RX<Pt>:ALARm[:EVENT]?

Syntax	T3:STATus:RX<Pt>:ALARm[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 of the T3:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = NOT USED DB3 (4) = Alarm Indication Signal (AIS) DB4 (8) = No frame (LOF) DB5 (16) = NOT USED DB6 (32) = Distant (RAI) DB7 (64) = No sync (LSS) DB8 (128) = Idle DB9 - DB16 = NOT USED
Example	T3:STAT:RX1:ALAR? → 2
Note	The No frame and Distant are only valid when the PCM frame is enabled (T3:RX<Pt>:PCMFrame? → 1).

8.5.8 T3:STATus:RX<Pt>:ALARm:CONDition?

Syntax	T3:STATus:RX<Pt>:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = NOT USED DB3 (4) = Alarm Indication Signal (AIS) DB4 (8) = No frame (LOF) DB5 (16) = NOT USED DB6 (32) = Distant (RAI) DB7 (64) = No sync (LSS) DB8 (128) = Idle DB9 - DB16 = NOT USED
Example	T3:STAT:RX1:ALAR:COND? → 4
Note	The No frame and Distant are only valid when the PCM frame is enabled (T3:RX<Pt>:PCMFrame? → 1).

8.5.9 T3:STATus:RX<Pt>:ERRor[:EVENT]?

Syntax	T3:STATus:RX<Pt>:ERRor[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB2 of the T3:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = F-bit DB2 (2) = NOT USED DB3 (4) = Pattern DB4 (8) = Code (BPV) DB5 (16) = Pattern slip (PSL) DB6 (32) = Parity DB7 (64) = C-bit DB8 (128) = FEBE DB9 - DB16 = NOT USED
Example	T3:STAT:RX1:ERR? → 8
Notes	The FAS words and FAS bits are only valid when the PCM frame is enabled (T3:RX<Pt>:PCMFrame? → 1). The Code is not valid when using T3 over SDH.

8.5.10 T3:STATus:RX<Pt>:ERRor:CONDition?

Syntax	T3:STATus:RX<Pt>:ERRor:CONDition?
Description	This query returns the errors condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = F-bit DB2 (2) = NOT USED DB3 (4) = Pattern DB4 (8) = Code (BPV) DB5 (16) = Pattern slip (PSL) DB6 (32) = Parity DB7 (64) = C-bit DB8 (128) = FEBE DB9 - DB16 = NOT USED
Example	T3:STAT:RX1:ERR:COND? → 8
Note	The FAS words and FAS bits are only valid when the PCM frame is enabled (T3:RX<Pt>:PCMFrame? → 1). The Code is not valid when using T3 over SDH.

8.6 RTD

This section document commands to retrieve Round Trip Delay measurement results. Commands for general RTD settings are described in section 17.1 on page 953.

8.6.1 T3:RTD:RX<Pt>:NUMBer?

Syntax	T3:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	T3:RTD:RX1:NUMB? → 2
Note	

8.6.2 T3:RTD:RX<Pt>:ATIME?

Syntax	T3:RTD:RX<Pt>:ATIME?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	T3:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

8.6.3 T3:RTD:RX<Pt>:MTIME?

Syntax	T3:RTD:RX<Pt>:MTIME?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	T3:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

8.6.4 T3:RTD:RX<Pt>:LTIME?

Syntax	T3:RTD:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	T3:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

Chapter 9

E4

9.1 Receiver

9.1.1 E4:RX<Pt>[:ENABled]

Syntax	E4:RX<Pt>[:ENABled] <state>
Description	This command enables/disables the receiver.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	E4:RX1 ON E4:RX1:ENAB ON
Note	ENABled is the default node for E4:RX<Pt>.

Syntax	E4:RX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the receiver.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	E4:RX1? → ON E4:RX1:ENAB? → SDH
Note	Returns SDH if E4 is over SDH or SONET.

9.1.2 E4:RX<Pt>:GAIN

Syntax	E4:RX<Pt>:GAIN <gain>
Description	This command sets the gain for the receiver.
Parameters	<Pt> = Port number <gain> = <CHARACTER PROGRAM DATA> TERMinate: Nominal impedance. Normal frequency dependent AGC. MONitor: Nominal impedance. Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	E4:RX1:GAIN MON
Note	

Syntax	E4:RX<Pt>:GAIN?
Description	This query returns the gain of the receiver.
Parameter	<Pt> = Port number
Response	<gain> = <CHARACTER RESPONSE DATA>
Example	E4:RX1:GAIN? → MON
Note	

9.1.3 E4:RX<Pt>:FOLLow

Syntax	E4:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX: Transmitter of the same port RX1: Receiver of port 1 <i>DEFault = NONE</i>
Response	None.
Example	E4:RX1:FOLL TX
Note	

Syntax	E4:RX<Pt>:FOLLow?
Description	This query returns if the receiver follow another setup.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	E4:RX1:FOLL? → TX
Note	

9.1.4 E4:RX<Pt>:PCMFrame

Syntax	E4:RX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	E4:RX1:PCMF ON
Note	

Syntax	E4:RX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:RX1:PCMF? → 1
Note	

9.1.5 E4:RX<Pt>:PATtern

Syntax	E4:RX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	E4:RX1:PATT PRBS23
Note	

Syntax	E4:RX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	E4:RX1:PATT? → PRBS11
Note	

9.1.6 E4:RX<Pt>:PINVersion

Syntax	E4:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	E4:RX1:PINV ON
Note	The following patterns can be inverted: PRBSxx, QRSSxx, ALL1, ALL0, ALT11, ALT13, ALT17 and UP16.

Syntax	E4:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:RX1:PINV? → 1
Note	

9.1.7 E4:RX<Pt>:UP16

Syntax	E4:RX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535</i> <i>DEFault=0</i>
Response	None.
Example	E4:RX1:UP16 #B1111000011110000
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

9.1.8 E4:RX<Pt>:UP32

Syntax	E4:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	E4:RX1:UP32 "01101"
Note	

Syntax	E4:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E4:RX1:UP32? → "01101"
Note	

9.1.9 E4:RX<Pt>:UP2K

Syntax	E4:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	E4:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when E4:RX2:PATT is USER2048BIT

Syntax	E4:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E4:RX1:UP2K? → "12DF"
Note	

9.2 Transmitter

9.2.1 E4:TX<Pt>[:ENABled]

Syntax	E4:TX<Pt>[:ENABled] <state>
Description	This command enables/disables the transmitter.
Parameters	<Pt> = Port number <state> = <CHARACTER PROGRAM DATA> OFF ON <i>DEFault = OFF</i>
Response	None.
Examples	E4:TX ON E4:TX1:ENAB ON
Note	The ENABled command is the default node for E4:TX.

Syntax	E4:TX<Pt>[:ENABled]?
Description	This query returns the state (enabled/disabled) of the transmitter.
Parameter	<Pt> = Port number
Response	<state> = <CHARACTER RESPONSE DATA>
Examples	E4:TX? → ON E4:TX1:ENAB? → SDH
Note	Returns SDH if E4 is over SDH or SONET.

9.2.2 E4:TX<Pt>:FOLLow

Syntax	E4:TX<Pt>:FOLLow <follow>
Description	This command sets the transmitter setting to follow another setup or not to follow.
Parameters	<Pt> = Port number <follow> = <CHARACTER PROGRAM DATA> NONE: Do not follow TX1: Follow the setting of the port 1 transmitter <i>DEFault = NONE</i>
Response	None.
Example	E4:TX2:FOLL TX1
Note	This command is not valid for :TX1

Syntax	E4:TX<Pt>:FOLLow?
Description	This query returns if the transmitter follow the TX1 settings.
Parameter	<Pt> = Port number
Response	<follow> = <CHARACTER RESPONSE DATA>
Example	E4:TX2:FOLL? → TX1
Note	This command is not valid for :TX1

9.2.3 E4:TX<Pt>:TIMing

Syntax	E4:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal timing source EXTernal: External timing source RX: Received signal on the same port <i>DEFault = INTernal</i>
Response	None.
Example	E4:TX1:TIM INT
Note	

Syntax	E4:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	E4:TX1:TIM? → INT
Note	

9.2.4 E4:TX<Pt>:FOFFset

Syntax	E4:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-125, MAXimum=125, DEFault=0</i> <i>Allowed suffix = ppm</i>
Response	None.
Example	E4:TX1:FOFF 0ppm
Note	

Syntax	E4:TX<Pt>:FOFFset?
Description	This query returns the frequency offset for the clock source.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:TX1:FOFF? → 0
Note	Returned value is in ppm.

9.2.5 E4:TX<Pt>:PCMFrame

Syntax	E4:TX<Pt>:PCMFrame <enable>
Description	This command enables or disables the PCM frame.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	E4:TX1:PCMF ON
Note	

Syntax	E4:TX<Pt>:PCMFrame?
Description	This query returns whether or not PCM frame is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:TX1:PCMF? → 1
Note	

9.2.6 E4:TX<Pt>:PATtern

Syntax	E4:TX<Pt>:PATtern <type>
Description	This command sets the pattern type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OFF USER16BIT: Obsolete. For backward compatibility only. Same as USER32BIT. USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 QRSS20 ALL0 ALL1 ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 ALT324: Alternating 3:24 <i>DEFault = PRBS23</i>
Response	None.
Example	E4:TX1:PATT PRBS23
Note	

Syntax	E4:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	E4:TX1:PATT? → PRBS11
Note	

9.2.7 E4:TX<Pt>:PINVersion

Syntax	E4:TX<Pt>:PINVersion <inverted>
Description	This command sets pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	E4:TX1:PINV ON
Note	

Syntax	E4:TX<Pt>:PINVersion?
Description	This query returns pattern inversion.
Parameter	<Pt> = Port number
Response	<inverted> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:TX1:PINV? → 1
Note	

9.2.8 E4:TX<Pt>:UP16

Syntax	E4:TX<Pt>:UP16 <pattern>
Description	This command sets 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535</i> <i>DEFault=0</i>
Response	None.
Example	E4:TX1:UP16 #B1111000011110000
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

9.2.9 E4:TX<Pt>:UP32

Syntax	E4:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	E4:TX1:UP32 "01101"
Note	

Syntax	E4:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E4:TX1:UP32? → "01101"
Note	

9.2.10 E4:TX<Pt>:UP2K

Syntax	E4:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	E4:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when E4:TX2:PATT is USER2048BIT

Syntax	E4:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	E4:TX1:UP2K? → "12DF"
Note	

9.3 Stimuli

9.3.1 E4:STIMuli:TX<Pt>:ALARm

Syntax	E4:STIMuli:TX<Pt>:ALARm <alarmtype>
Description	This command sets the alarm type to generate.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> NALarm: No alarm NSIGnal: No signal AIS: Alarm Indication Signal NFRame: No frame DALarm: Distant alarm (RDI) NSYNc: No pattern sync <i>DEFault = NALarm</i>
Response	None.
Example	E4:STIM:TX1:ALAR NSIG
Note	

Syntax	E4:STIMuli:TX<Pt>:ALARm?
Description	This query returns the stimuli alarm type.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	E4:STIM:TX1:ALAR? → NSIG
Note	

9.3.2 E4:STIMuli:TX<Pt>:ERRor

Syntax	E4:STIMuli:TX<Pt>:ERRor <errordestination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <errordestination> = <CHARACTER PROGRAM DATA> FRAME: Frame PATtern: Pattern PSLip: Pattern slip <i>DEFault = FRAME</i>
Response	None.
Example	E4:STIM:TX1:ERR PATT
Note	

Syntax	E4:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<errordestination> = <CHARACTER RESPONSE DATA>
Example	E4:STIM:TX1:ERR? → PATT
Note	

9.3.3 E4:STIMuli:TX<Pt>:EINsert

Syntax	E4:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B02: Burst · 1E-02 B03: Burst · 1E-03 B04: Burst · 1E-04 B05: Burst · 1E-05 B06: Burst · 1E-06 B07: Burst · 1E-07 <i>DEFault = OFF</i>
Response	None.
Example	E4:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22

Syntax	E4:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	E4:STIM:TX1:EINS? → MAN
Note	

9.3.4 E4:STIMuli:TX<Pt>:EBLength

Syntax	E4:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=1</i>
Response	None.
Example	E4:STIM:TX1:EBL 1
Note	

Syntax	E4:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:STIM:TX1:EBL? → 1
Note	

9.4 Status

9.4.1 E4:STATus:RX<Pt>:PSLevel?

Syntax	E4:STATus:RX<Pt>:PSLevel?
Description	This query returns physical signal level. Unit: dB.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA>
Example	E4:STAT:RX1:PSL? → "-0.5"
Notes	If signal levels is too high, the response will be "TOO HIGH".

9.4.2 E4:STATus:RX<Pt>:PDEViation?

Syntax	E4:STATus:RX<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA> <bps> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:STAT:RX1:PDEV? → 1,136
Note	

9.4.3 E4:STATus:RX<Pt>:PBRate?

Syntax	E4:STATus:RX<Pt>:PBRate?
Description	This query returns physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:STAT:RX1:PBR? → 139264000
Note	

9.4.4 E4:STATus:RX<Pt>:PPBRate?

Syntax	E4:STATus:RX<Pt>:PPBRate?
Description	This query returns payload pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:STAT:RX1:PPBR? → 137361488
Note	

9.4.5 E4:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	E4:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the E4 alarms and errors summary event register. The content of this event register is summarized in DB4 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	E4:STAT:RX1:AES? → 1
Note	

9.4.6 E4:STATus:RX<Pt>:AESummary:CONDition?

Syntax	E4:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns the E4 alarms and errors summary condition register. DB1 is summary of E4:STATus:RX<Pt>:ALARm[:EVENT]? DB2 is summary of E4:STATus:RX<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	E4:STAT:RX1:AES:COND? → 2
Note	

9.4.7 E4:STATus:RX<Pt>:ALARm[:EVENT]?

Syntax	E4:STATus:RX<Pt>:ALARm[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 of the E4:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = Alarm Indication Signal (AIS) DB3 (4) = No frame DB4 (8) = Distant DB5 (16) = No sync DB6 - DB16 = NOT USED
Example	E4:STAT:RX1:ALAR? → 2
Note	The No frame and Distant are only valid when the PCM frame is enabled (E4:RX<Pt>:PCMFrame? → 1).

9.4.8 E4:STATus:RX<Pt>:ALARm:CONDition?

Syntax	E4:STATus:RX<Pt>:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = No signal DB2 (2) = Alarm Indication Signal (AIS) DB3 (4) = No frame DB4 (8) = Distant DB5 (16) = No sync DB6 - DB16 = NOT USED
Example	E4:STAT:RX1:ALAR:COND? → 4
Note	The No frame and Distant are only valid when the PCM frame is enabled (E4:RX<Pt>:PCMFrame? → 1).

9.4.9 E4:STATus:RX<Pt>:ERRor[:EVENT]?

Syntax	E4:STATus:RX<Pt>:ERRor[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB2 of the E4:STATus:RX<Pt>:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = FAS words DB2 - DB3 = NOT USED DB4 (8) = Pattern DB5 (16) = Pattern slip DB6 - DB16 = NOT USED
Example	E4:STAT:RX1:ERR? → 8
Note	The FAS words is only valid when PCM frame is enabled (E4:RX<Pt>:PCMFrame? → 1).

9.4.10 E4:STATus:RX<Pt>:ERRor:CONDition?

Syntax	E4:STATus:RX<Pt>:ERRor:CONDition?
Description	This query returns the errors condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = FAS words DB2 - DB3 = NOT USED DB4 (8) = Pattern DB5 (16) = Pattern slip DB6 - DB16 = NOT USED
Example	E4:STAT:RX1:ERR:COND? → 8
Notes	The FAS words is only valid when the PCM frame is enabled (E4:RX<Pt>:PCMFrame? → 1).

9.5 Results

9.5.1 E4:RX<Pt>:IFETch?

Syntax	E4:RX<Pt>:IFETch? <parameters>
Description	This query fetches an interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,})* = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms NSIG: No signal. Response: <Seconds>,<Ratio> AIS: Alarm indication signal. Response: <Seconds>,<Ratio> NFR: No frame. Response: <Seconds>,<Ratio> DAL: Distant alarm. Response: <Seconds>,<Ratio> NSYN: No sync. Response: <Seconds>,<Ratio> Errors FASW: FAS words. Response: <Count>,<Ratio> PATT: PAttern. Response: <Count>,<Ratio> PSL: Pattern Slip. Response: <Count>,<Ratio> PBL: Pattern block. Response: <Count>,<Ratio> Rx frequency DEV: Frequency deviation. Response: <ppm> DIFF: Frequency difference (RX1-RX2). Response: <ppm> (Only for RX1, RX2 is always NaN (section 1.6.1)) FAS performance errors FES: FAS ES. Response: <Count>,<Ratio%> FSES: FAS SES. Response: <Count>,<Ratio%> FBBE: FAS BBE. Response: <Count>,<Ratio%> FALS: FAS ALS. Response: <Count>,<Ratio%> FUAT: FAS UAT. Response: <Count>,<Ratio%> FAVT: FAS AVT. Response: <Count>,<Ratio%> FEFS: FAS EFS. Response: <Count>,<Ratio%> Pattern performance errors PES: Pattern ES. Response: <Count>,<Ratio%> PSES: Pattern SES. Response: <Count>,<Ratio%> PBBE: Pattern BBE. Response: <Count>,<Ratio%> PALS: Pattern ALS. Response: <Count>,<Ratio%> PUAT: Pattern UAT. Response: <Count>,<Ratio%> PAVT: Pattern AVT. Response: <Count>,<Ratio%> PEFS: Pattern EFS. Response: <Count>,<Ratio%>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	E4:RX1:IFET? (FES,PATT) → (2,0.5),(4,0.25)
Notes	This command fetches the result from the interval selected by the MEASurement:SETup:SElect command (see section 18.2.2). NFR, DAL, FASW, FASB will only return NaN (section 1.6.1), if the PCM frame is disabled (E4:RX<Pt>:PCMFrame? → 0). If requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed.

9.6 RTD

This section document commands to retrieve Round Trip Delay measurement results. Commands for general RTD settings are described in section 17.1 on page 953.

9.6.1 E4:RTD:RX<Pt>:NUMBer?

Syntax	E4:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:RTD:RX1:NUMB? → 2
Note	

9.6.2 E4:RTD:RX<Pt>:ATIMe?

Syntax	E4:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	E4:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

9.6.3 E4:RTD:RX<Pt>:MTIMe?

Syntax	E4:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA>
Example	E4:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

9.6.4 E4:RTD:RX<Pt>:LTIMe?

Syntax	E4:RTD:RX<Pt>:LTIMe?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	E4:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

Chapter 10

SDH

Use `MEAS:SET:PORT<Pt>:TERM` to change the SDH/SONET terminology (see section [18.2.1](#)).

10.1 Receiver

10.1.1 SDH:RX<Pt>:INTerface

Syntax	SDH:RX<Pt>:INTerface <mode>
Description	This command sets the used interface or switches off the receiver.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Disables receiver ELECtrical: Electrical interface SFP: SFP/SFP+ optical interface CFP: CFP optical interface OPTical: Obsolete. For CMA 3000 backward compatibility only. Same as SFP <i>DEFault = OFF</i>
Response	None.
Example	SDH:RX1:INT OFF
Note	

Syntax	SDH:RX<Pt>:INTerface?
Description	This query returns the used interface.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:INT? → OFF
Note	Returns OTN when SDH over OTN.

10.1.2 SDH:RX<Pt>:STMLevel

Syntax	SDH:RX<Pt>:STMLevel <level>
Description	This command sets the STM level of the SDH receiver.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 1: STM-1 signal. 4: STM-4 signal. 16: STM-16 signal. 64: STM-64 signal. 256: STM-256 signal. PRBSTRANS: Trans.(PRBS). NULLTRANS: Trans.(NULL). <i>DEFault = 1</i>
Response	None.
Example	SDH:RX1:STML 1
Note	Setting the STM level may change the VC-4 concatenation level.

Syntax	SDH:RX<Pt>:STMLevel?
Description	This query returns the STM level of the SDH receiver.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:STMLevel? → 1
Note	

10.1.3 SDH:RX<Pt>:AUGroup

Syntax	SDH:RX<Pt>:AUGroup <aug>
Description	This command sets the AU Group(s) to be used in the signal structure.
Parameters	<Pt> = Port number <aug> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 768, DEFault = 1</i>
Response	None.
Example	SDH:RX1:AUGR 1
Note	The specified AUG cannot exceed the STM level divided by the VC-4 concatenation level.

Syntax	SDH:RX<Pt>:AUGroup?
Description	This query returns AU Group(s) used in the signal structure.
Parameter	<Pt> = Port number
Response	<aug> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:AUGR? → 1
Note	

10.1.4 SDH:RX<Pt>:CONCatenation

Syntax	SDH:RX<Pt>:CONCatenation <level>
Description	This command sets the VC concatenation level.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> VC3 VC4 4C 16C 64C 256C <i>DEFault = VC4</i>
Response	None.
Example	SDH:RX1:CONC VC4
Note	Setting the VC concatenation level may change the STM level.

Syntax	SDH:RX<Pt>:CONCatenation?
Description	This query returns the VC concatenation level.
Parameter	<Pt> = Port number
Response	<level> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:CONC? → VC4
Note	

10.1.5 SDH:RX<Pt>:CONTainer

Syntax	SDH:RX<Pt>:CONTainer <type>
Description	This command sets the container type (container-n).
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> C3 C4 C11 C12 <i>DEFault</i> = C4
Response	None.
Example	SDH:RX1:CONT C4
Note	Setting the container type.

Syntax	SDH:RX<Pt>:CONTainer?
Description	This query returns the container type (container-n).
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:CONT? → 4C
Note	

10.1.6 SDH:RX<Pt>:SSTRucture

Syntax	SDH:RX<Pt>:SSTRucture <structure>
Description	This command sets the expected SDH signal structure.
Parameters	<Pt> = Port number <structure> = <CHARACTER PROGRAM DATA> BULK: Bulk data in the VC-4. E1: E1 signal in a VC-12 in one or all AU-4's E3: E3 signal in a VC-3 in one or all AU-4's DS1: DS1 signal in a VC-11 in one or all AU-4's DS3: DS3 signal in a VC-3 in one or all AU-4's E4: E4 signal in a VC-4 in one or all AU-4's <i>DEFault</i> = BULK
Response	None.
Example	SDH:RX1:SSTR BULK
Note	Choosing any of the interfaces above requires the corresponding option to be present.

Syntax	SDH:RX<Pt>:SSTRucture?
Description	This query returns the expected SDH signal structure.
Parameter	<Pt> = Port number
Response	<structure> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:SSTR? → BULK
Note	

10.1.7 SDH:RX<Pt>:PATtern

Syntax	SDH:RX<Pt>:PATtern <pattern>
Description	This command sets the pattern to be expected as payload when SSTRucture is BULK.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> OFF USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9: PRBS-9 pattern. PRBS11: PRBS-11 pattern. PRBS15: PRBS-15 pattern. PRBS20: PRBS-20 pattern. PRBS23: PRBS23 pattern. PRBS29: PRBS-29 pattern. PRBS31: PRBS-31 pattern. ALL0: Pattern of all zeros. ALL1: Pattern of all ones. ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 B2IN8: Random pattern with two ones for every eight bits. <i>DEFault = PRBS23</i>
Response	None.
Example	SDH:RX1:PATT PRBS23
Note	

Syntax	SDH:RX<Pt>:PATtern?
Description	This query returns the pattern to be expected as payload when SSTRucture is BULK.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:PATT? → PRBS23
Note	

10.1.8 SDH:RX<Pt>:UP16

Syntax	SDH:RX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	SDH:RX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

10.1.9 SDH:RX<Pt>:UP32

Syntax	SDH:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	SDH:RX1:UP32 "01101"
Note	

Syntax	SDH:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SDH:RX1:UP32? → "01101"
Note	

10.1.10 SDH:RX<Pt>:UP2K

Syntax	SDH:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	SDH:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when SDH:RX1:PATT is USER2048BIT

Syntax	SDH:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SDH:RX1:UP2K? → "12DF"
Note	

10.1.11 SDH:RX<Pt>:PINVersion

Syntax	SDH:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables PRBS pattern inversion (when SSTRucture is BULK).
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	SDH:RX1:PINV OFF
Note	

Syntax	SDH:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	SDH:RX1:PINV? → 0
Note	

10.1.12 SDH:RX<Pt>:TCM

Syntax	SDH:RX<Pt>:TCM <mode>
Description	This command sets the Tandem Connection Monitoring mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Off VC4: N1 (VC-4) VC3: N1 (VC-3) VC12: N2 (VC-12) VC11: N2 (VC-12) <i>DEFault = OFF</i>
Response	None.
Example	SDH:RX1:TCM OFF
Note	This command requires the TCM option to be present.

Syntax	SDH:RX<Pt>:TCM?
Description	This query returns Tandem Connection Monitoring mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:TCM? → OFF
Note	

10.1.13 SDH:RX<Pt>:TUG3

Syntax	SDH:RX<Pt>:TUG3 <id>
Description	This command sets the TUG-3 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-3 number one. 2: TUG-3 number two. 3: TUG-3 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SDH:RX1:TUG3 1
Note	This value influences the channel number.

Syntax	SDH:RX<Pt>:TUG3?
Description	This query returns TUG3 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:TUG3? → 1
Note	

10.1.14 SDH:RX<Pt>:TUG2

Syntax	SDH:RX<Pt>:TUG2 <id>
Description	This command sets the TUG-2 number for signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-2 number one. 2: TUG-2 number two. ... 7: TUG-2 number seven. <i>MINimum = 1, MAXimum = 7, DEFault = 1</i>
Response	None.
Example	SDH:RX1:TUG2 1
Note	This value influences the channel number.

Syntax	SDH:RX<Pt>:TUG2?
Description	This query returns TUG2 number for signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:TUG2? → 1
Note	

10.1.15 SDH:RX<Pt>:TU12

Syntax	SDH:RX<Pt>:TU12 <id>
Description	This command sets the TU-12 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TU-12 number one. 2: TU-12 number two. 3: TU-12 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SDH:RX1:TU12 1
Note	This value influences the channel number.

Syntax	SDH:RX<Pt>:TU12?
Description	This query returns TU-12 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:TU12? → 1
Note	

10.1.16 SDH:RX<Pt>:TU11

Syntax	SDH:RX<Pt>:TU11 <id>
Description	This command sets the TU-11 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TU-11 number one. 2: TU-11 number two. 3: TU-11 number three. 4: TU-11 number four. <i>MINimum = 1, MAXimum = 4, DEFault = 1</i>
Response	None.
Example	SDH:RX1:TU11 1
Note	This value influences the channel number.

Syntax	SDH:RX<Pt>:TU11?
Description	This query returns TU-11 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:TU11? → 1
Note	

10.1.17 SDH:RX<Pt>:CHANnel

Syntax	SDH:RX<Pt>:CHANnel <id>
Description	This command sets the channel number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=84, DEFault = 1</i>
Response	None.
Example	SDH:RX1:CHAN 1
Note	This value influences the TUG-3, TUG-2, TU-12 and TU-11 numbers.

Syntax	SDH:RX<Pt>:CHANnel?
Description	This query returns the channel number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RX1:CHAN? → 1
Note	

10.1.18 SDH:RX<Pt>:MAPPing

Syntax	SDH:RX<Pt>:MAPPing <type>
Description	This command sets the mapping type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SYNChronous: Synchronous mapping. ASYNchronous: Asynchronous mapping. <i>DEFault = SYNC</i>
Response	None.
Example	SDH:RX1:MAPP SYNC
Note	

Syntax	SDH:RX<Pt>:MAPPing?
Description	This query returns the mapping type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:MAPP? → SYNC
Note	

10.1.19 SDH:RX<Pt>:GAIN

Syntax	SDH:RX<Pt>:GAIN <type>
Description	This command sets the receiver gain.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> TERMinate: Frequency dependent AGC. MONitor: Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	SDH:RX1:GAIN TERM
Note	

Syntax	SDH:RX<Pt>:GAIN?
Description	This query returns the receiver gain.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:GAIN? → TERM
Note	

10.1.20 SDH:RX<Pt>:FOLLow

Syntax	SDH:RX<Pt>:FOLLow <mode>
Description	This command sets the receiver setup to follow another setup or not to follow.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> NONE: Do not follow. TX: Follows setup of the Tx port. RX1: Follows setup of the Rx port1. <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	SDH:RX1:FOLL NONE
Note	

Syntax	SDH:RX<Pt>:FOLLow?
Description	This query returns the receiver setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:RX1:FOLL? → NONE
Note	

10.1.21 SDH:RX<Pt>:MEASurement:HPLM

Syntax	SDH:RX<Pt>:MEASurement:HPLM <enable>
Description	This command enables or disables HP-PLM measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	SDH:RX1:MEAS:HPLM ON
Note	

Syntax	SDH:RX<Pt>:MEASurement:HPLM?
Description	This query returns whether or not HP-PLM measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	SDH:RX1:MEAS:HPLM? → 1
Note	

10.1.22 SDH:RX<Pt>:MEASurement:LPLM

Syntax	SDH:RX<Pt>:MEASurement:LPLM <enable>
Description	This command enables or disables LP-PLM measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	SDH:RX1:MEAS:LPLM ON
Note	

Syntax	SDH:RX<Pt>:MEASurement:LPLM?
Description	This query returns whether or not LP-PLM measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	SDH:RX1:MEAS:LPLM? → 1
Note	

10.2 Transmitter

10.2.1 SDH:TX<Pt>:INTErface

Syntax	SDH:TX<Pt>:INTErface <mode>
Description	This command sets the used interface of the transmitter.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ELECTrical: Electrical interface SFP: SFP/SFP+ optical interface CFP: CFP optical interface <i>DEFault = ELEC</i>
Response	None.
Example	SDH:TX1:INT SFP
Note	

Syntax	SDH:TX<Pt>:INTErface?
Description	This query returns the used interface.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:INT? → SFP
Note	Returns OTN when SDH over OTN.

10.2.2 SDH:TX<Pt>[:ENABLE]

Syntax	SDH:TX<Pt>[:ENABLE] <mode>
Description	This command sets the mode of the transmitter.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Turn off the transmitter. NORMal: Normal transmission mode using the configured signal. THROugh: Through mode. The signal from the receiver is transmitted. OTHROugh: OH overwrite through mode. THA: Obsolete. For CMA 3000 backward compatibility only. Same as THROugh. <i>DEFault = OFF</i>
Response	None.
Example	SDH:TX1 NORM
Note	

Syntax	SDH:TX<Pt>[:ENABLE]?
Description	This query returns the mode of the transmitter.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1? → NORM
Note	

10.2.3 SDH:TX<Pt>:OPTical

Syntax	SDH:TX<Pt>:OPTical <mode>
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SDH:TX<Pt>:INT SFP and SDH:TX<Pt>
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA>
Response	None.
Example	SDH:TX1:OPT NORM
Note	Compared to CMA 3000 there is no longer a suffix on the last node.

Syntax	SDH:TX<Pt>:OPTical?
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SDH:TX<Pt>?
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:OPT? → NORM
Note	

10.2.4 SDH:TX<Pt>:ELECtrical

Syntax	SDH:TX<Pt>:ELECtrical <mode>
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SDH:TX<Pt>:INT ELEC and SDH:TX<Pt>
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA>
Response	None.
Example	SDH:TX1:ELEC NORM
Note	Compared to CMA 3000 mode=THB is no longer supported.

Syntax	SDH:TX<Pt>:ELECtrical?
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SDH:TX<Pt>?
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:ELEC? → NORM
Note	

10.2.5 SDH:TX<Pt>:STMLevel

Syntax	SDH:TX<Pt>:STMLevel <level>
Description	This command sets the STM level of the transmitted SDH signal.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 1: STM-1 signal. 4: STM-4 signal. 16: STM-16 signal. 64: STM-64 signal. 256: STM-256 signal. PRBSTRANS: Trans.(PRBS). NULLTRANS: Trans.(NULL). <i>DEFault = 1</i>
Response	None.
Example	SDH:TX1:STML 1
Note	Setting the STM level may change the VC-4 concatenation level.

Syntax	SDH:TX<Pt>:STMLevel?
Description	This query returns the STM level of the transmitted SDH signal.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:STML? → 1
Note	

10.2.6 SDH:TX<Pt>:AUGroup

Syntax	SDH:TX<Pt>:AUGroup <value>
Description	This command sets the AUG where the test signal is inserted.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> ALL 1 to 768 <i>DEFault</i> = <i>ALL</i>
Response	None.
Example	SDH:TX1:AUGR ALL
Note	The specified AUG cannot exceed the STM level divided by the VC-4 concatenation level.

Syntax	SDH:TX<Pt>:AUGroup?
Description	This query returns the AUG where the test signal has been inserted.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:AUGR? → ALL
Note	

10.2.7 SDH:TX<Pt>:CONCatenation

Syntax	SDH:TX<Pt>:CONCatenation <level>
Description	This command sets the VC concatenation level.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> VC3 VC4 4C 16C 64C 256C <i>DEFault</i> = <i>VC4</i>
Response	None.
Example	SDH:TX1:CONC 4C
Note	Setting the VC concatenation level may change the STM level.

Syntax	SDH:TX<Pt>:CONCatenation?
Description	This query returns the VC concatenation level.
Parameter	<Pt> = Port number
Response	<level> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:CONC? → 4C
Note	

10.2.8 SDH:TX<Pt>:CONTainer

Syntax	SDH:TX<Pt>:CONTainer <type>
Description	This command sets the container type (container-n).
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> C3 C4 C11 C12 <i>DEFault = C4</i>
Response	None.
Example	SDH:TX1:CONT C4
Note	Setting the container type.

Syntax	SDH:TX<Pt>:CONTainer?
Description	This query returns the container type (container-n).
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:CONT? → 4C
Note	

10.2.9 SDH:TX<Pt>:SSTRucture

Syntax	SDH:TX<Pt>:SSTRucture <structure>
Description	This command sets the SDH signal structure.
Parameters	<Pt> = Port number <structure> = <CHARACTER PROGRAM DATA> BULK: Bulk data in the VC-4. E1: E1 signal in a VC-12 in one or all AU-4's E3: E3 signal in a VC-3 in one or all AU-4's DS1: DS1 signal in a VC-11 in one or all AU-4's DS3: DS3 signal in a VC-3 in one or all AU-4's E4: E4 signal in a VC-4 in one or all AU-4's <i>DEFault = BULK</i>
Response	None.
Example	SDH:TX1:SSTR BULK
Note	Choosing any of the interfaces above requires the corresponding option to be present.

Syntax	SDH:TX<Pt>:SSTRucture?
Description	This query returns the SDH signal structure.
Parameter	<Pt> = Port number
Response	<structure> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:SSTR? → BULK
Note	

10.2.10 SDH:TX<Pt>:PATtern

Syntax	SDH:TX<Pt>:PATtern <pattern>
Description	This command sets the pattern to be used as payload when SSTRucture is BULK.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> OFF USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9: PRBS-9 pattern. PRBS11: PRBS-11 pattern. PRBS15: PRBS-15 pattern. PRBS20: PRBS-20 pattern. PRBS23: PRBS23 pattern. PRBS29: PRBS-29 pattern. PRBS31: PRBS-31 pattern. ALL0: Pattern of all zeros. ALL1: Pattern of all ones. ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 B2IN8: Random pattern with two ones for every eight bits. <i>DEFault = PRBS23</i>
Response	None.
Example	SDH:TX1:PATT PRBS23
Note	

Syntax	SDH:TX<Pt>:PATtern?
Description	Queries the pattern to be used as payload when SSTRucture is BULK.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:PATT? → PRBS23
Note	

10.2.11 SDH:TX<Pt>:UP16

Syntax	SDH:TX<Pt>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	SDH:TX1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

10.2.12 SDH:TX<Pt>:UP32

Syntax	SDH:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	SDH:TX1:UP32 "01101"
Note	

Syntax	SDH:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SDH:TX1:UP32? → "01101"
Note	

10.2.13 SDH:TX<Pt>:UP2K

Syntax	SDH:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	SDH:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when SDH:TX1:PATT is USER2048BIT

Syntax	SDH:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SDH:TX1:UP2K? → "12DF"
Note	

10.2.14 SDH:TX<Pt>:PINVersion

Syntax	SDH:TX<Pt>:PINVersion <inverted>
Description	This command enables or disables PRBS pattern inversion (when SSTRucture is BULK).
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	SDH:TX1:PINV OFF
Note	

Syntax	SDH:TX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:PINV? → 0
Note	

10.2.15 SDH:TX<Pt>:TIMing

Syntax	SDH:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal clock. EXTernal: External clock. RX: Received Rx signal clock. <i>DEFault = INT</i>
Response	None.
Example	SDH:TX1:TIM INT
Note	

Syntax	SDH:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:TIM? → INT
Note	

10.2.16 SDH:TX<Pt>:TCM

Syntax	SDH:TX<Pt>:TCM <mode>
Description	This command sets the TCM mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Off VC4: N1 (VC-4) VC3: N1 (VC-3) VC12: N2 (VC-12) VC11: N2 (VC-12) <i>DEFault = OFF</i>
Response	None.
Example	SDH:TX1:TCM OFF
Note	

Syntax	SDH:TX<Pt>:TCM?
Description	Queries the TCM mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:TCM? → OFF
Note	

10.2.17 SDH:TX<Pt>:TUG3

Syntax	SDH:TX<Pt>:TUG3 <id>
Description	This command sets the TUG-3 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-3 number one. 2: TUG-3 number two. 3: TUG-3 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SDH:TX1:TUG3 1
Note	This value influences the channel number.

Syntax	SDH:TX<Pt>:TUG3?
Description	This query returns TUG3 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:TUG3? → 1
Note	

10.2.18 SDH:TX<Pt>:TUG2

Syntax	SDH:TX<Pt>:TUG2 <id>
Description	This command sets the TUG-2 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-2 number one. 2: TUG-2 number two. ... 7: TUG-2 number seven. <i>MINimum = 1, MAXimum = 7, DEFault = 1</i>
Response	None.
Example	SDH:TX1:TUG2 1
Note	This value influences the channel number.

Syntax	SDH:TX<Pt>:TUG2?
Description	This query returns TUG2 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:TUG2? → 1
Note	

10.2.19 SDH:TX<Pt>:TU12

Syntax	SDH:TX<Pt>:TU12 <id>
Description	This command sets the TU-12 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TU-12 number one. 2: TU-12 number two. 3: TU-12 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SDH:TX1:TU12 1
Note	This value influences the channel number.

Syntax	SDH:TX<Pt>:TU12?
Description	This query returns TU-12 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:TU12? → 1
Note	

10.2.20 SDH:TX<Pt>:TU11

Syntax	SDH:TX<Pt>:TU11 <id>
Description	This command sets the TU-11 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TU-11 number one. 2: TU-11 number two. 3: TU-11 number three. 4: TU-11 number four. <i>MINimum = 1, MAXimum = 4, DEFault = 1</i>
Response	None.
Example	SDH:TX1:TU11 1
Note	This value influences the channel number.

Syntax	SDH:TX<Pt>:TU11?
Description	This query returns TU-11 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:TU11? → 1
Note	

10.2.21 SDH:TX<Pt>:CHANnel

Syntax	SDH:TX<Pt>:CHANnel <id>
Description	This command sets the channel number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=84, DEFault = 1</i>
Response	None.
Example	SDH:TX1:CHAN 1
Note	The value influences the TUG-3, TUG-2 and TU-12 numbers.

Syntax	SDH:TX<Pt>:CHANnel?
Description	This query returns the channel number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TX1:CHAN? → 1
Note	

10.2.22 SDH:TX<Pt>:MAPPing

Syntax	SDH:TX<Pt>:MAPPing <type>
Description	This command sets the mapping type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SYNChronous: Synchronous mapping. ASYNchronous: Asynchronous mapping. <i>DEFault = SYNC</i>
Response	None.
Example	SDH:TX1:MAPP SYNC
Note	

Syntax	SDH:TX<Pt>:MAPPing?
Description	This query returns the mapping type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:MAPP? → SYNC
Note	

10.2.23 SDH:TX<Pt>:SOH:DEFault

Syntax	SDH:TX<Pt>:SOH:DEFault
Description	This command sets all STM SOH bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:SOH:DEF
Note	There is no query version of this command.

10.2.24 SDH:TX<Pt>:SOH:TRACe

Syntax	SDH:TX<Pt>:SOH:TRACe <string>[,<idlechar>]
Description	This command sets the SOH trace (J0) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: The string to be used as section trace string. <i>DEFault</i> = "Message_Test_J0" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:SOH:TRAC "Message_Test_J0",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated.

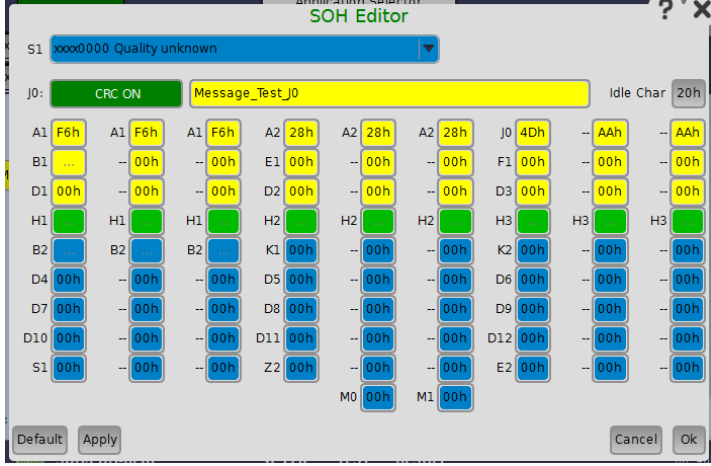
Syntax	SDH:TX<Pt>:SOH:TRACe?
Description	This query returns the SOH trace for string and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:SOH:TRAC? → "Message_Test_J0",#H20
Note	

10.2.25 SDH:TX<Pt>:SOH:TRACe:CRC

Syntax	SDH:TX<Pt>:SOH:TRACe:CRC <mode>
Description	This command sets the SOH trace (J0) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:SOH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:SOH:TRACe:CRC?
Description	This query returns the mode of the SOH trace (J0) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:SOH:TRAC:CRC? → 1
Note	

10.2.26 SDH:TX<Pt>:SOH

Syntax	SDH:TX<Pt>:SOH <SOH-byte>,<value1>[,<value2>[,<value3>]]
Description	This command sets the value of the specified bytes in the SOH.
Parameters	<Pt> = Port number <SOH-byte> = <CHARACTER PROGRAM DATA> A1: 3 bytes. A2: 3 bytes. J0: 3 bytes. Note: The defined trace string will be disabled. B1: 2 bytes. <value3> is ignored. E1: 3 bytes. F1: 3 bytes. D1: 3 bytes. D2: 3 bytes. D3: 3 bytes. K1: 3 bytes. K2: 3 bytes. D4: 3 bytes. D5: 3 bytes. D6: 3 bytes. D7: 3 bytes. D8: 3 bytes. D9: 3 bytes. D10: 3 bytes. D11: 3 bytes. D12: 3 bytes. S1: 3 bytes. Z2: 3 byte. E2: 3 bytes. M0: 1 byte. <value2> and <value3> are ignored. ¹ M1: 1 byte. <value2> and <value3> are ignored.  <value1> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255 <value2> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255 <value3> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Examples	SDH:TX1:SOH A1,0,0,0 SDH:TX1:SOH D7,253,32,26 SDH:TX1:SOH B1,4,5 SDH:TX1:SOH M1,0
Note	¹ Only valid for SDH:TX<Pt>:STMLevel = 64 or 256.

Syntax	SDH:TX<Pt>:SOH? <SOH-byte>
Description	This query returns the value of the specified bytes in the SOH.
Parameters	<Pt> = Port number <SOH-byte> = <CHARACTER PROGRAM DATA>
Response	<value1> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value2> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value3> = <HEXADECIMAL NUMERIC RESPONSE DATA>]]
Examples	SDH:TX1:SOH? A1 → #H00,#H00,#H00 SDH:TX1:SOH? D7 → #HFD,#H20,#H1A SDH:TX1:SOH? B1 → #H04,#H05 SDH:TX1:SOH? M1 → #H00
Note	

10.2.27 SDH:TX<Pt>:VC4:POH:DEFault

Syntax	SDH:TX<Pt>:VC4:POH:DEFault
Description	This command sets all VC-4 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:VC4:POH:DEF
Note	There is no query version of this command.

10.2.28 SDH:TX<Pt>:VC4:POH:TRACe

Syntax	SDH:TX<Pt>:VC4:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VC-4 path trace (J1) to the specified string and its idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: The string to be used as path trace string. <i>DEFault</i> = "Message_Test_J1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC4:POH:TRAC "Message_Test_J1",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated.

Syntax	SDH:TX<Pt>:VC4:POH:TRACe?
Description	This query returns the VC-4 path trace text and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC4:POH:TRAC? → "Message_Test_J1",#H20
Note	

10.2.29 SDH:TX<Pt>:VC4:POH:TRACe:CRC

Syntax	SDH:TX<Pt>:VC4:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:VC4:POH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:VC4:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:VC4:POH:TRAC:CRC? → 1
Note	

10.2.30 SDH:TX<Pt>:VC4:POH:TTCM

Syntax	SDH:TX<Pt>:VC4:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VC-4 TCM trace (N1) to the specified string and its idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_N1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC4:POH:TTCM "Apid_TCM_N1",#H20
Note	

Syntax	SDH:TX<Pt>:VC4:POH:TTCM?
Description	This query returns the VC-4 TCM trace text and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC4:POH:TTCM? → "Apid_TCM_N1",#H20
Note	

10.2.31 SDH:TX<Pt>:VC4:POH

Syntax	SDH:TX<Pt>:VC4:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VC-4 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SDH:TX1:VC4:POH C2,0
Note	

Syntax	SDH:TX<Pt>:VC4:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VC-4 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Examples	SDH:TX1:VC4:POH? C2 → #H00 SDH:TX1:VC4:POH? H4 → #HFF
Note	

10.2.32 SDH:TX<Pt>:VC3:POH:DEFault

Syntax	SDH:TX<Pt>:VC3:POH:DEFault
Description	This command sets all VC-3 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:VC3:POH:DEF
Note	There is no query version of this command.

10.2.33 SDH:TX<Pt>:VC3:POH:TRACe

Syntax	SDH:TX<Pt>:VC3:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VC-3 path trace (J1) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Message_Test_J1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC3:POH:TRAC "Message_Test_J1",#H20
Note	

Syntax	SDH:TX<Pt>:VC3:POH:TRACe?
Description	This query returns the VC-3 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC3:POH:TRAC? → "Message_Test_J1",#H20
Note	

10.2.34 SDH:TX<Pt>:VC3:POH:TRACe:CRC

Syntax	SDH:TX<Pt>:VC3:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:VC3:POH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:VC3:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:VC3:POH:TRAC:CRC? → 1
Note	

10.2.35 SDH:TX<Pt>:VC3:POH:TTCM

Syntax	SDH:TX<Pt>:VC3:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VC-3 TCM trace (N1) to the specified string, and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_N1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC3:POH:TTCM "Apid_TCM_N1",#H20
Note	

Syntax	SDH:TX<Pt>:VC3:POH:TTCM?
Description	This query returns the VC-3 TCM trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC3:POH:TTCM? → "Apid_TCM_N1",#H20
Note	

10.2.36 SDH:TX<Pt>:VC3:POH

Syntax	SDH:TX<Pt>:VC3:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VC-3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte. Only available when there is no TCM. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SDH:TX1:VC3:POH C2,0
Note	

Syntax	SDH:TX<Pt>:VC3:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VC-3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC3:POH? C2 → #H00
Note	

10.2.37 SDH:TX<Pt>:VC12:POH:DEFault

Syntax	SDH:TX<Pt>:VC12:POH:DEFault
Description	This command sets all VC-12 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:VC12:POH:DEF
Note	There is no query version of this command.

10.2.38 SDH:TX<Pt>:VC12:POH:TRACe

Syntax	SDH:TX<Pt>:VC12:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VC-12 path trace (J2) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Message_Test_J2" <idlechar> = <NUMERIC PROGRAM DATA>
Response	None.
Example	SDH:TX1:VC12:POH:TRAC "Message_Test_J2",#H20
Note	

Syntax	SDH:TX<Pt>:VC12:POH:TRACe?
Description	This query returns the VC-12 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC12:POH:TRAC? → "Message_Test_J2",#H20
Note	

10.2.39 SDH:TX<Pt>:VC12:POH:TRACe:CRC

Syntax	SDH:TX<Pt>:VC12:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J2) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:VC12:POH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:VC12:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J2) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:VC12:POH:TRAC:CRC? → 1
Note	

10.2.40 SDH:TX<Pt>:VC12:POH:TTCM

Syntax	SDH:TX<Pt>:VC12:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VC-12 TCM trace (N2) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_N2" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC12:POH:TTCM "Apid_TCM_N2",#H20
Note	

Syntax	SDH:TX<Pt>:VC12:POH:TTCM?
Description	This query returns the VC-12 trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC12:POH:TTCM? → "Apid_TCM_N2",#H20
Note	

10.2.41 SDH:TX<Pt>:VC12:POH

Syntax	SDH:TX<Pt>:VC12:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VC-12 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5 byte. N2: N2 byte. K4: K4 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255</i>
Response	None.
Example	SDH:TX1:VC12:POH V5,#H04
Note	

Syntax	SDH:TX<Pt>:VC12:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VC-11 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC12:POH? V5 → #H04
Note	

10.2.42 SDH:TX<Pt>:VC11:POH:DEFault

Syntax	SDH:TX<Pt>:VC11:POH:DEFault
Description	This command sets all VC-11 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:VC11:POH:DEF
Note	There is no query version of this command.

10.2.43 SDH:TX<Pt>:VC11:POH:TRACe

Syntax	SDH:TX<Pt>:VC11:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VC-11 path trace (J2) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault = "Message_Test_J2"</i> <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault = #H20</i>
Response	None.
Example	SDH:TX1:VC11:POH:TRAC "Message_Test_J2",#H20
Note	

Syntax	SDH:TX<Pt>:VC11:POH:TRACe?
Description	This query returns the VC-11 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC11:POH:TRAC? → "Message_Test_J2",#H20
Note	

10.2.44 SDH:TX<Pt>:VC11:POH:TRACe:CRC

Syntax	SDH:TX<Pt>:VC11:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J2) CRC mode (OFF/ON).
Parameters	<Pt> = Port number
	<mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:VC11:POH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:VC11:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J2) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:VC11:POH:TRAC:CRC? → 1
Note	

10.2.45 SDH:TX<Pt>:VC11:POH:TTCM

Syntax	SDH:TX<Pt>:VC11:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VC-11 TCM trace (N2) to the specified string and the idle char.
Parameters	<Pt> = Port number
	<string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_N2"
	<idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:VC11:POH:TTCM "Apid_TCM_N2",#H20
Note	

Syntax	SDH:TX<Pt>:VC11:POH:TTCM?
Description	This query returns the VC-11 trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC11:POH:TTCM? → "Apid_TCM_N2",#H20
Note	

10.2.46 SDH:TX<Pt>:VC11:POH

Syntax	SDH:TX<Pt>:VC11:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VC-11 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5 byte. N2: N2 byte. K4: K4 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255</i>
Response	None.
Example	SDH:TX1:VC11:POH V5,#H04
Note	

Syntax	SDH:TX<Pt>:VC11:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VC-11 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:VC11:POH? V5 → #H04
Note	

10.2.47 SDH:TX<Pt>:AU3:VC3:POH:DEFault

Syntax	SDH:TX<Pt>:AU3:VC3:POH:DEFault
Description	This command sets all VC-3 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:TX1:AU3:VC3:POH:DEF
Note	There is no query version of this command.

10.2.48 SDH:TX<Pt>:AU3:VC3:POH:TRACe

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VC-3 path trace (J1) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault = "Message_Test_J1"</i> <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault = #H20</i>
Response	None.
Example	SDH:TX1:AU3:VC3:POH:TRAC "Message_Test_J1",#H20
Note	

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TRACe?
Description	This query returns the VC-3 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:AU3:VC3:POH:TRAC? → "Message_Test_J1",#H20
Note	

10.2.49 SDH:TX<Pt>:AU3:VC3:POH:TRACe:CRC

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SDH:TX1:AU3:VC3:POH:TRAC:CRC ON
Note	

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SDH:TX1:AU3:VC3:POH:TRAC:CRC? → 1
Note	

10.2.50 SDH:TX<Pt>:AU3:VC3:POH:TTCM

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VC-3 TCM trace (N1) to the specified string, and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_N1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SDH:TX1:AU3:VC3:POH:TTCM "Apid_TCM_N1",#H20
Note	

Syntax	SDH:TX<Pt>:AU3:VC3:POH:TTCM?
Description	This query returns the VC-3 TCM trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:AU3:VC3:POH:TTCM? → "Apid_TCM_N1",#H20
Note	

10.2.51 SDH:TX<Pt>:AU3:VC3:POH

Syntax	SDH:TX<Pt>:AU3:VC3:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VC-3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte. Only available when there is no TCM. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SDH:TX1:AU3:VC3:POH C2,0
Note	

Syntax	SDH:TX<Pt>:AU3:VC3:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VC-3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:TX1:AU3:VC3:POH? C2 → #H00
Note	

10.2.52 SDH:TX<Pt>:FOLLow

Syntax	SDH:TX<Pt>:FOLLow <mode>
Description	This command sets the transmitter setup to follow another setup or not to follow.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> NONE: Do not follow. TX1: Follows setup of the Tx port1. <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	SDH:TX1:FOLL NONE
Note	

Syntax	SDH:TX<Pt>:FOLLow?
Description	This query returns the transmitter setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:FOLL? → NONE
Note	

10.2.53 SDH:TX<Pt>:OTHRough

Syntax	SDH:TX<Pt>:OTHRough <mode>
Description	This command sets the OH Overwrite Position.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SOH: SOH Data. A1A2: A1/A2 byte. K1K2: K1/K2 byte. S1: S1 byte. DCC1TO3: DCC1-3 byte. DCC4TO12: DCC4-12 byte. J0: J0 byte. SOH1BYTE: 1 byte of SOH.(selectable) <i>DEFault</i> = <i>SOH</i>
Response	None.
Example	SDH:TX1:OTHR A1A2
Note	

Syntax	SDH:TX<Pt>:OTHRough?
Description	This query returns the OH Overwrite Position.
Parameter	<Pt> = Port number
Response	<position> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:OTHR? → A1A2
Note	

10.2.54 SDH:TX<Pt>:OTHRough:BYTE

Syntax	SDH:TX<Pt>:OTHRough:BYTE <byte>
Description	This command sets the OH Overwrite Position.
Parameters	<Pt> = Port number <byte> = <CHARACTER PROGRAM DATA> A11-A13: A1 bytes. A21-A23: A2 bytes. J0: J0 byte. E1: E1 byte. F1: F1 byte. D1: D1 byte. D2: D2 byte. D3: D3 byte. K1: K1 byte. K2: K2 byte. D4: D4 byte. D5: D5 byte. D6: D6 byte. D7: D7 byte. D8: D8 byte. D9: D9 byte. D10: D10 byte. D11: D11 byte. D12: D12 byte. S1: S1 byte. M0: M0 byte. M1: M1 byte. E2: E2 byte. X18-X99: X<Line><Column> <i>DEFault = A11</i>
Response	None.
Example	SDH:TX1:OTHR:BYTE A11
Note	

Syntax	SDH:TX<Pt>:OTHRough:BYTE?
Description	This query returns the OH Overwrite Position.
Parameter	<Pt> = Port number
Response	<byte> = <CHARACTER RESPONSE DATA>
Example	SDH:TX1:OTHR:BYTE? → A11
Note	

10.2.55 SDH:TX<Pt>:STL:MMAPing:LANE

Syntax	SDH:TX<Pt>:STL:MMAPing:LANE <value>
Description	This command sets the STL lane marker assignment.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of the value of the lane marker ranging from 0 to 3.
Response	None.
Example	SDH:TX1:STL:MMA:LANE (0,1,2,3)
Note	This command can be used on 40G

Syntax	SDH:TX<Pt>:STL:MMAPing:LANE?
Description	This query returns the STL lane marker assignment.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	SDH:TX1:STL:MMAP:LANE? → (0,1,2,3)
Note	This command can be used on 40G

10.3 Stimuli

10.3.1 SDH:STIMuli:TX<Pt>:FOFFset

Syntax	SDH:STIMuli:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> MT1000A: <i>MINimum</i> =-50, <i>MAXimum</i> =50, <i>DEFault</i> =0 MT1100A: <i>MINimum</i> =-200.0, <i>MAXimum</i> =200.0, <i>DEFault</i> = 0
Response	None.
Example	SDH:STIM:TX1:FOFF 0
Note	

Syntax	SDH:STIMuli:TX<Pt>:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	MT1000A: <offset> = <NR1 NUMERIC RESPONSE DATA> MT1100A: <offset> = <NR2 NUMERIC RESPONSE DATA>
Example	MT1000A: SDH:STIM:TX1:FOFF? → 0 MT1100A: SDH:STIM:TX1:FOFF? → 0.0
Note	

10.3.2 SDH:STIMuli:TX<Pt>:ALARm

Syntax	SDH:STIMuli:TX<Pt>:ALARm <alarmtype>
Description	This command sets the type of alarm to be generated.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> LOS: Loss of signal LOF: Loss of frame OOF: Out of frame MSAIS: MS alarm indication signal MSRDI: MS remote defect indicator AUAIS: AU alarm indication signal AULOP: AU loss of pointer HPTIM: HP trace identifier mismatch HPPLM: HP payload label mismatch HPUNEQ: HP unequipped HPRDI: HP remote defect indicator TUAIS: TU alarm indication signal TULOP: TU loss of pointer TULOM: TU loss of multiframe LPTIM: LP trace identifier mismatch LPUNEQ: LP unequipped LPRDI: LP remote defect indicator LPPLM: LP payload label mismatch LSS: Loss of signal synchronization TCUNEQ: TC unequipped TCLTC: TC loss of tandem connection TCTIM: TC trace identifier mismatch TCAIS: TC alarm indication signal TCRDI: TC remote defect indicator TCODI: TC outgoing defect indicator <i>Default = LOS</i>
Response	None.
Example	SDH:STIM:TX1:ALAR LOS
Note	

Syntax	SDH:STIMuli:TX<Pt>:ALARm?
Description	This query returns the type of alarm to be generated.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:ALAR? → LOS
Note	

10.3.3 SDH:STIMuli:TX<Pt>:AINSert

Syntax	SDH:STIMuli:TX<Pt>:AINSert <insertion>
Description	This command sets the method to insert alarm.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF PERManent ALTerminate <i>Default = OFF</i>
Response	None.
Example	SDH:STIM:TX1:AINS PERM
Note	

Syntax	SDH:STIMuli:TX<Pt>:AINsert?
Description	This query returns the alarm insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:AINS? → PERM
Note	

10.3.4 SDH:STIMuli:TX<Pt>:ANLength

Syntax	SDH:STIMuli:TX<Pt>:ANLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 1, <i>MAXimum</i> = 8000, <i>DEFault</i> =1 Maximum depends on the error insert method, see SDH:STIM:TX<Pt>:AINS
Response	None.
Example	SDH:STIM:TX1:ANL 1
Note	

Syntax	SDH:STIMuli:TX<Pt>:ANLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:ANL? → 1
Note	

10.3.5 SDH:STIMuli:TX<Pt>:AALength

Syntax	SDH:STIMuli:TX<Pt>:AALength <frames>
Description	This command sets the alternate alarm length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 1, <i>MAXimum</i> = 8000, <i>DEFault</i> =1 Maximum depends on the error insert method, see SDH:STIM:TX<Pt>:AINS
Response	None.
Example	SDH:STIM:TX1:AAL 1
Note	

Syntax	SDH:STIMuli:TX<Pt>:AALength?
Description	This query returns the alternate alarm length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:AAL? → 1
Note	

10.3.6 SDH:STIMuli:TX<Pt>:ERRor

Syntax	SDH:STIMuli:TX<Pt>:ERRor <errordestination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <errordestination> = <CHARACTER PROGRAM DATA> A1A2: Frame alignment word B1: B1 checksum byte B2: B2 checksum byte MSREI: MS remote error indication B3: B3 checksum byte HPREI: HP Remote error indication V5LPB3: B3 checksum of the low-order path LPREI: LP remote error indication PRBS: Pattern error ETRans: ERR-TRANS TCIEC: Tandem Connection incoming error count TCREI: Tandem Connection remote error indication TCOEI: Tandem Connection outgoing error indication TCBIP2: 2-bit Bit Interleaved Parity for Tandem Connection <i>DEFault = A1A2</i>
Response	None.
Example	SDH:STIM:TX1:ERR MSREI
Note	Some errors are depended on type of content, setting them without the correct type of content will set EINSert to OFF. Changing the error may also change the insert method. See section 10.3.7.

Syntax	SDH:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<errordestination> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:ERR? → MSREI
Note	

10.3.7 SDH:STIMuli:TX<Pt>:EINsert

Syntax	SDH:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B03: Burst · 1E-03 ¹ B04: Burst · 1E-04 ¹ B05: Burst · 1E-05 ¹ B06: Burst · 1E-06 ² B07: Burst · 1E-07 B08: Burst · 1E-08 B09: Burst · 1E-09 B10: Burst · 1E-10 ALternate DEFault = OFF
Response	None.
Example	SDH:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22. ¹ Is available for PRBS and ETRans (B03 is only available for ETRans if the STM Level is 1). ² Is available for PRBS, ETRans, B2, V5LPB3, LPREI, TCIEC, TCBIP2, TCRI and TCOEI. Selecting an unsupported burst rate will reset the rate to the closest possible.

Syntax	SDH:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:EINS? → MAN
Note	

10.3.8 SDH:STIMuli:TX<Pt>:EBLength

Syntax	SDH:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> MINimum = 1, DEFault = 1 Maximum depends on the error insert method, see SDH:STIM:TX<Pt>:EINS B03 - B10: Maximum = 1 MANual: Maximum = 8000¹
Response	None.
Example	SDH:STIM:TX1:EBL 1
Note	¹ If VC12 is active the maximum value for LPREI, V5LPB3, TCIEC, TCBIP2, TCRI and TCOEI is 2000. The maximum value is 4000 when :STIM:TX<Pt>:ERR is PRBS (Pattern error).

Syntax	SDH:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:EBL? → 1
Note	

10.3.9 SDH:STIMuli:TX<Pt>:ENLength

Syntax	SDH:STIMuli:TX<Pt>:ENLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SDH:STIM:TX<Pt>:EINS
Response	None.
Example	SDH:STIM:TX1:ENL 1
Note	

Syntax	SDH:STIMuli:TX<Pt>:ENLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:ENL? → 1
Note	

10.3.10 SDH:STIMuli:TX<Pt>:EELength

Syntax	SDH:STIMuli:TX<Pt>:EELength <frames>
Description	This command sets the alternate error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SDH:STIM:TX<Pt>:EINS
Response	None.
Example	SDH:STIM:TX1:EEL 1
Note	

Syntax	SDH:STIMuli:TX<Pt>:EELength?
Description	This query returns the alternate error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:EEL? → 1
Note	

10.3.11 SDH:STIMuli:TX<Pt>:PTSequence

Syntax	SDH:STIMuli:TX<Pt>:PTSequence <type>,<sequence>
Description	This command sets the SDH pointer test sequence.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> AU4: AU-4 pointer AU3: AU-3 pointer TU3: TU-3 pointer TU12: TU-12 pointer TU11: TU-11 pointer <sequence> = <CHARACTER PROGRAM DATA> NONE: No test sequence SALternating: Single alternating RDOuble: Regular + double RMISsing: Regular + missing DALternating: Double alternating
Response	None.
Example	SDH:STIM:TX1:PTS AU4,NONE
Note	

Syntax	SDH:STIMuli:TX<Pt>:PTSequence? <type>
Description	This query returns the SDH pointer test sequence.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> AU4: AU-4 pointer AU3: AU-3 pointer TU3: TU-3 pointer TU12: TU-12 pointer TU11: TU-11 pointer
Response	<sequence> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:PTS? AU4 → NONE
Note	

10.3.12 SDH:STIMuli:TX<Pt>:PMOVE

Syntax	SDH:STIMuli:TX<Pt>:PMOVE <type>,<value>
Description	This command sets the SDH pointer movement sequence. The value specifies the number of pointer increments.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> AU4: AU-4 pointer AU3: AU-3 pointer TU3: TU-3 pointer TU12: TU-12 pointer TU11: TU-11 pointer <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = -100, <i>MAXimum</i> = 100
Response	None.
Example	SDH:STIM:TX1:PMOV AU4,9
Notes	There is no query version of this command. A value of zero has no effect. A negative value results in pointer decrements.

10.3.13 SDH:STIMuli:TX<Pt>:PJUMp

Syntax	SDH:STIMuli:TX<Pt>:PJUMp <type>,<value>[,<ndf>]
Description	This command sets the SDH pointer jump. The value specifies the new pointer value.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> AU4: AU-4 pointer AU3: AU-3 pointer TU3: TU-3 pointer TU12: TU-12 pointer TU11: TU-11 pointer <value> = <NUMERIC PROGRAM DATA> The valid range depends on SDH:STIMuli:TX<Pt>:PTYPE AU4: 0 to 782 AU3: 0 to 782 TU3: 0 to 764 TU12: 0 to 139 TU11: 0 to 103 <ndf> = <CHARACTER PROGRAM DATA> WITH: With new data flag (NDF) WOUT: Without new data flag (NDF) <i>DEFault = WITH</i>
Response	None.
Example	SDH:STIM:TX1:PJUM AU4,300
Notes	There is no query version of this command. A negative value disables new data flag (NDF).

10.3.14 SDH:STIMuli:TX<Pt>:STL:AERRor:LANE

Syntax	SDH:STIMuli:TX<Pt>:STL:AERRor:LANE <lane>
Description	This command sets the lane of the multi lane alarm/error to be inserted.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1000</i>
Response	None.
Example	SDH:STIM:TX1:STL:AERR:LANE #B01 SDH:STIM:TX1:STL:AERR:LANE #B0100 These commands add error into lane 1.
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:AERRor:LANE?
Description	This query returns the lane of the multi lane alarm/error to be inserted.
Parameters	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:AERR:LANE? → #B0100
Note	This command can be used on 40G

10.3.15 SDH:STIMuli:TX<Pt>:STL:ALARm

Syntax	SDH:STIMuli:TX<Pt>:STL:ALARm <alarmtype>
Description	This command sets the type of alarm to be inserted.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> LOFOOF: LOF/OOF-STL LOROOR: LOR/OOR-STL <i>DEFault = LOFOOF</i>
Response	None.
Example	SDH:STIM:TX1:STL:ALAR LOFOOF
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:ALARm?
Description	This query returns the type of alarm to be inserted.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:STL:ALAR? → LOFOOF
Note	This command can be used on 40G

10.3.16 SDH:STIMuli:TX<Pt>:STL:AINSert

Syntax	SDH:STIMuli:TX<Pt>:STL:AINSert <insertion>
Description	This command sets the method to insert alarm.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual ALTernate <i>DEFault = OFF</i>
Response	None.
Example	SDH:STIM:TX1:STL:AINS MAN
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:AINSert?
Description	This query returns the alarm insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:STL:AINS? → MAN
Note	This command can be used on 40G

10.3.17 SDH:STIMuli:TX<Pt>:STL:ABLength

Syntax	SDH:STIMuli:TX<Pt>:STL:ABLength <frames>
Description	This command sets the alarm burst length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:ABL 8000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:ABLength?
Description	This query returns the alarm burst length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:ABL? → 8000
Note	This command can be used on 40G

10.3.18 SDH:STIMuli:TX<Pt>:STL:AALength

Syntax	SDH:STIMuli:TX<Pt>:STL:AALength <frames>
Description	This command sets the alternate alarm length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:AAL 8000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:AALength?
Description	This query returns the alternate alarm length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:AAL? → 8000
Note	This command can be used on 40G

10.3.19 SDH:STIMuli:TX<Pt>:STL:ANLength

Syntax	SDH:STIMuli:TX<Pt>:STL:ANLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:ANL 8000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:ANLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:ANL? → 8000
Note	This command can be used on 40G

10.3.20 SDH:STIMuli:TX<Pt>:STL:ERRor

Syntax	SDH:STIMuli:TX<Pt>:STL:ERRor <errortype>
Description	This command sets the type of error to be inserted.
Parameters	<Pt> = Port number <errortype> = <CHARACTER PROGRAM DATA> A1A2: A1A2-STL <i>DEFault = A1A2</i>
Response	None.
Example	SDH:STIM:TX1:STL:ERR A1A2
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:ERRor?
Description	This query returns the type of error to be inserted.
Parameter	<Pt> = Port number
Response	<errortype> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:STL:ERR? → A1A2
Note	This command can be used on 40G

10.3.21 SDH:STIMuli:TX<Pt>:STL:EINSert

Syntax	SDH:STIMuli:TX<Pt>:STL:EINSert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF ALternate <i>DEFault = OFF</i>
Response	None.
Example	SDH:STIM:TX1:STL:EINS ALT
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:EINSert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SDH:STIM:TX1:STL:EINS? → ALT
Note	This command can be used on 40G

10.3.22 SDH:STIMuli:TX<Pt>:STL:EELength

Syntax	SDH:STIMuli:TX<Pt>:STL:EELength <frames>
Description	This command sets the alternate error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:EEL 8000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:EELength?
Description	This query returns the alternate error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:EEL? → 8000
Note	This command can be used on 40G

10.3.23 SDH:STIMuli:TX<Pt>:STL:ENLength

Syntax	SDH:STIMuli:TX<Pt>:STL:ENLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:ENL 8000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:ENLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:ENL? → 8000
Note	This command can be used on 40G

10.3.24 SDH:STIMuli:TX<Pt>:STL:SKEW:BIT

Syntax	SDH:STIMuli:TX<Pt>:STL:SKEW:BIT <bits>
Description	This command sets the bits of the skew .
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 138240, DEFault=1</i>
Response	None.
Example	SDH:STIM:TX1:STL:SKEW:BIT 1000
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:SKEW:BIT?
Description	This query returns the bits of the skew .
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:SKEW:BIT? → 1000
Note	This command can be used on 40G

10.3.25 SDH:STIMuli:TX<Pt>:STL:SKEW:NS?

Syntax	SDH:STIMuli:TX<Pt>:STL:SKEW:NS?
Description	This query returns the time of the skew to be inserted. Unit: ns
Parameter	<Pt> = Port number
Response	<skew> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:SKEW:NS? → 100.469
Note	This command can be used on 40G

10.3.26 SDH:STIMuli:TX<Pt>:STL:SKEW:LANE

Syntax	SDH:STIMuli:TX<Pt>:STL:SKEW:LANE <lane>
Description	This command sets the lane of the skew to be inserted.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1000</i>
Response	None.
Example	SDH:STIM:TX1:STL:SKEW:LANE #B01 SDH:STIM:TX1:STL:SKEW:LANE #B0100 These commands add skew into lane 1.
Note	This command can be used on 40G

Syntax	SDH:STIMuli:TX<Pt>:STL:SKEW:LANE?
Description	This query returns the lane of the skew to be inserted.
Parameters	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	SDH:STIM:TX1:STL:SKEW:LANE? → #B0100
Note	This command can be used on 40G

10.4 Result

10.4.1 SDH:RX<Pt>:IFETch?

Syntax	SDH:RX<Pt>:IFETch? <parameter>
Description	This query fetches a SDH interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms LOS: Loss of signal. Response: <Seconds>,<Ratio> GAIS: Generic alarm indication signal. Response: <Seconds>,<Ratio> LOF: Loss of frame. Response: <Seconds>,<Ratio> OOF: Out of frame. Response: <Seconds>,<Ratio> MSAIS: Multiplex section alarm indication signal. Response: <Seconds>,<Ratio> MSRDI: Multiplex section remote defect indicator. Response: <Seconds>,<Ratio> AUAIS: Administrative unit - alarm indication signal. Response: <Seconds>,<Ratio> AULOP: Administrative unit - loss of pointer. Response: <Seconds>,<Ratio> HPTIM: High-order path trace identifier mismatch. Response: <Seconds>,<Ratio> HPPLM: Payload label mismatch. Response: <Seconds>,<Ratio> HPUNEQ: High-order path unequipped. Response: <Seconds>,<Ratio> HPRDI: High-order path remote defect indicator. Response: <Seconds>,<Ratio> TUAIS: Tributary unit alarm indication signal¹. Response: <Seconds>,<Ratio> TULOP: Tributary unit loss of pointer¹. Response: <Seconds>,<Ratio> TULOM: Tributary unit loss of multi frame¹. Response: <Seconds>,<Ratio> LPTIM: Low-order path trace identifier mismatch¹. Response: <Seconds>,<Ratio> LPUNEQ: Low-order path unequipped¹. Response: <Seconds>,<Ratio> LPRDI: Low-order path remote defect indicator¹. Response: <Seconds>,<Ratio> LPPLM: Low-order path payload label mismatch¹. Response: <Seconds>,<Ratio> LSS: Loss of signal synchronization¹. Response: <Seconds>,<Ratio> Errors A1A2: Response: <Count>,<Ratio> B1: Response: <Count>,<Ratio> B2: Response: <Count>,<Ratio> MSREI: Response: <Count>,<Ratio> B3: Response: <Count>,<Ratio> HPREI: Response: <Count>,<Ratio> V5LPB3: ¹Response: <Count>,<Ratio> ERRPRBS: Pattern errors¹. Response: <Count>,<Ratio> ERRPRBSBLK: Pattern block errors¹. Response: <Count>,<Ratio> LPREI: Response: <Count>,<Ratio> AUNDF: Response: <Count>,<Ratio> TUNDF: Response: <Count>,<Ratio> SAPS: Switch APS. Response: <Count>,<Ratio> Rx frequency FREQ: Frequency deviation. Response: <ppm> FREQDIF: Frequency difference (RX1-RX2). Response: <ppm> (Only for RX1, RX2 is always NaN (section 1.6.1)) Mux quality MFES: Forward ES. Response: <Count>,<Ratio%> MFSES: Forward SES. Response: <Count>,<Ratio%> MFUNAV: Forward UNAV. Response: <Count>,<Ratio%> MBES: Backward ES. Response: <Count>,<Ratio%> MBSES: Backward SES. Response: <Count>,<Ratio%> MBUNAV: Backward UNAV. Response: <Count>,<Ratio%> VC-4 quality VC4FES: Forward ES. Response: <Count>,<Ratio%> VC4FSES: Forward SES. Response: <Count>,<Ratio%>

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VC4FUNAV: Forward UNAV. Response: <Count>,<Ratio%> VC4BES: Backward ES. Response: <Count>,<Ratio%> VC4BSES: Backward SES. Response: <Count>,<Ratio%> VC4BUNAV: Backward UNAV. Response: <Count>,<Ratio%> VC-3 quality¹ VC3FES: Forward ES. Response: <Count>,<Ratio%> VC3FSES: Forward SES. Response: <Count>,<Ratio%> VC3FUNAV: Forward UNAV. Response: <Count>,<Ratio%> VC3BES: Backward ES. Response: <Count>,<Ratio%> VC3BSES: Backward SES. Response: <Count>,<Ratio%> VC3BUNAV: Backward UNAV. Response: <Count>,<Ratio%> VC-12 quality¹ VC12FES: Forward ES. Response: <Count>,<Ratio%> VC12FSES: Forward SES. Response: <Count>,<Ratio%> VC12FUNAV: Forward UNAV. Response: <Count>,<Ratio%> VC12BES: Backward ES. Response: <Count>,<Ratio%> VC12BSES: Backward SES. Response: <Count>,<Ratio%> VC12BUNAV: Backward UNAV. Response: <Count>,<Ratio%> VC-11 quality¹ VC11FES: Forward ES. Response: <Count>,<Ratio%> VC11FSES: Forward SES. Response: <Count>,<Ratio%> VC11FUNAV: Forward UNAV. Response: <Count>,<Ratio%> VC11BES: Backward ES. Response: <Count>,<Ratio%> VC11BSES: Backward SES. Response: <Count>,<Ratio%> VC11BUNAV: Backward UNAV. Response: <Count>,<Ratio%> Bulk quality ES: ES. Response: <Count>,<Ratio%> SES: SES. Response: <Count>,<Ratio%> UNAV: UNAV. Response: <Count>,<Ratio%> AU-4 pointer AUPOINT: AU pointer. Response: <Count> AUNEG: Negative. Response: <Count> AUPOS: Positive. Response: <Count> TU-3 or TU-12 or TU-11 pointer¹ TUPOINT: TU pointer. Response: <Count> TUNEG: Negative. Response: <Count> TUPOS: Positive. Response: <Count> Justification¹ JNEG: Negative justification. Response: <Count> JPOS: Positive justification. Response: <Count> MUX performance¹ PMPES: Performance MUX PO limit ES. Response: <Count>,<Ratio%> PMPSES: Performance MUX PO limit SES. Response: <Count>,<Ratio%> PMPBBE: Performance MUX PO limit BBE. Response: <Count>,<Ratio%> PMBS1ES: Performance MUX BIS limit S1ES. Response: <Count> PMBS2ES: Performance MUX BIS limit S2ES. Response: <Count> PMBS1SES: Performance MUX BIS limit S1SES. Response: <Count> PMBS2SES: Performance MUX BIS limit S2SES. Response: <Count> PMFSTAT: Performance MUX forward status. Response: <STRING RESPONSE DATA> PMFES: Performance MUX forward ES. Response: <Count>,<Ratio%> PMFSES: Performance MUX forward SES. Response: <Count>,<Ratio%> PMFUNAV: Performance MUX forward UNAV. Response: <Count>,<Ratio%> PMFBBE: Performance MUX forward BBE. Response: <Count>,<Ratio%> PMBSTAT: Performance MUX backward status. Response: <STRING RESPONSE DATA> PMBES: Performance MUX backward ES. Response: <Count>,<Ratio%>
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	PMBSES: Performance MUX backward SES. Response: <Count>,<Ratio%> PMBUNAV: Performance MUX backward UNAV. Response: <Count>,<Ratio%> PMBBBE: Performance MUX backward BBE. Response: <Count>,<Ratio%> VC-4 performance¹ PVC4PES: Performance VC4 PO limit ES. Response: <Count>,<Ratio%> PVC4PSES: Performance VC4 PO limit SES. Response: <Count>,<Ratio%> PVC4PBBE: Performance VC4 PO limit BBE. Response: <Count>,<Ratio%> PVC4BS1ES: Performance VC4 BIS limit S1ES. Response: <Count> PVC4BS2ES: Performance VC4 BIS limit S2ES. Response: <Count> PVC4BS1SES: Performance VC4 BIS limit S1SES. Response: <Count> PVC4BS2SES: Performance VC4 BIS limit S2SES. Response: <Count> PVC4FSTAT: Performance VC4 forward status. Response: <STRING RESPONSE DATA> PVC4FES: Performance VC4 forward ES. Response: <Count>,<Ratio%> PVC4FSES: Performance VC4 forward SES. Response: <Count>,<Ratio%> PVC4FUNAV: Performance VC4 forward UNAV. Response: <Count>,<Ratio%> PVC4FBBE: Performance VC4 forward BBE. Response: <Count>,<Ratio%> PVC4BSTAT: Performance VC4 backward status. Response: <STRING RESPONSE DATA> PVC4BES: Performance VC4 backward ES. Response: <Count>,<Ratio%> PVC4BSES: Performance VC4 backward SES. Response: <Count>,<Ratio%> PVC4BUNAV: Performance VC4 backward UNAV. Response: <Count>,<Ratio%> PVC4BBBE: Performance VC4 backward BBE. Response: <Count>,<Ratio%> VC-12 performance¹ PVC12PES: Performance VC12 PO limit ES. Response: <Count>,<Ratio%> PVC12PSES: Performance VC12 PO limit SES. Response: <Count>,<Ratio%> PVC12PBBE: Performance VC12 PO limit BBE. Response: <Count>,<Ratio%> PVC12BS1ES: Performance VC12 BIS limit S1ES. Response: <Count> PVC12BS2ES: Performance VC12 BIS limit S2ES. Response: <Count> PVC12BS1SES: Performance VC12 BIS limit S1SES. Response: <Count> PVC12BS2SES: Performance VC12 BIS limit S2SES. Response: <Count> PVC12FSTAT: Performance VC12 forward status. Response: <STRING RESPONSE DATA> PVC12FES: Performance VC12 forward ES. Response: <Count>,<Ratio%> PVC12FSES: Performance VC12 forward SES. Response: <Count>,<Ratio%> PVC12FUNAV: Performance VC12 forward UNAV. Response: <Count>,<Ratio%> PVC12FBBE: Performance VC12 forward BBE. Response: <Count>,<Ratio%> PVC12BSTAT: Performance VC12 backward status. Response: <STRING RESPONSE DATA> PVC12BES: Performance VC12 backward ES. Response: <Count>,<Ratio%> PVC12BSES: Performance VC12 backward SES. Response: <Count>,<Ratio%> PVC12BUNAV: Performance VC12 backward UNAV. Response: <Count>,<Ratio%> PVC12BBBE: Performance VC12 backward BBE. Response: <Count>,<Ratio%> VC-11 performance¹ PVC11PES: Performance VC11 PO limit ES. Response: <Count>,<Ratio%> PVC11PSES: Performance VC11 PO limit SES. Response: <Count>,<Ratio%> PVC11PBBE: Performance VC11 PO limit BBE. Response: <Count>,<Ratio%> PVC11BS1ES: Performance VC11 BIS limit S1ES. Response: <Count> PVC11BS2ES: Performance VC11 BIS limit S2ES. Response: <Count> PVC11BS1SES: Performance VC11 BIS limit S1SES. Response: <Count> PVC11BS2SES: Performance VC11 BIS limit S2SES. Response: <Count> PVC11FSTAT: Performance VC11 forward status. Response: <STRING RESPONSE DATA> PVC11FES: Performance VC11 forward ES. Response: <Count>,<Ratio%> PVC11FSES: Performance VC11 forward SES. Response: <Count>,<Ratio%> PVC11FUNAV: Performance VC11 forward UNAV. Response: <Count>,<Ratio%> PVC11FBBE: Performance VC11 forward BBE. Response: <Count>,<Ratio%>
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	PVC11BSTAT: Performance VC11 backward status. Response: <STRING RESPONSE DATA> PVC11BES: Performance VC11 backward ES. Response: <Count>,<Ratio%> PVC11BSES: Performance VC11 backward SES. Response: <Count>,<Ratio%> PVC11BUNAV: Performance VC11 backward UNAV. Response: <Count>,<Ratio%> PVC11BBBE: Performance VC11 backward BBE. Response: <Count>,<Ratio%> VC-3 performance¹ PVC3PES: Performance VC3 PO limit ES. Response: <Count>,<Ratio%> PVC3PSES: Performance VC3 PO limit SES. Response: <Count>,<Ratio%> PVC3PBBE: Performance VC3 PO limit BBE. Response: <Count>,<Ratio%> PVC3BS1ES: Performance VC3 BIS limit S1ES. Response: <Count> PVC3BS2ES: Performance VC3 BIS limit S2ES. Response: <Count> PVC3BS1SES: Performance VC3 BIS limit S1SES. Response: <Count> PVC3BS2SES: Performance VC3 BIS limit S2SES. Response: <Count> PVC3FSTAT: Performance VC3 forward status. Response: <STRING RESPONSE DATA> PVC3FES: Performance VC3 forward ES. Response: <Count>,<Ratio%> PVC3FSES: Performance VC3 forward SES. Response: <Count>,<Ratio%> PVC3FUNAV: Performance VC3 forward UNAV. Response: <Count>,<Ratio%> PVC3FBBE: Performance VC3 forward BBE. Response: <Count>,<Ratio%> PVC3BSTAT: Performance VC3 backward status. Response: <STRING RESPONSE DATA> PVC3BES: Performance VC3 backward ES. Response: <Count>,<Ratio%> PVC3BSES: Performance VC3 backward SES. Response: <Count>,<Ratio%> PVC3BUNAV: Performance VC3 backward UNAV. Response: <Count>,<Ratio%> PVC3BBBE: Performance VC3 backward BBE. Response: <Count>,<Ratio%> Frequency DEV: Deviation(ppm). Response: <Min>,<Max>,<Avg> SDH TCM¹ TCUNEQ: Tandem connection unequipped. response: <Count>,<Ratio%> TCLTC: Response: <Count>,<Ratio%> TCTIM: Tandem connection trace identifier mismatch. Response: <Count>,<Ratio%> TCAIS: Tandem connection alarm indication signal. Response: <Count>,<Ratio%> TCRDI: Tandem connection remote defect indicator. Response: <Count>,<Ratio%> TCODI: Tandem Connection Outgoing Defect Indicator. Response: <Count>,<Ratio%> TCIEC: Response: <Count>,<Ratio%> TCBIP2: Response: <Count>,<Ratio%> TCREI: Response: <Count>,<Ratio%> TCOEI: Response: <Count>,<Ratio%> TAPID: TCM APID. Response N1 or N2 TCM ID: <id> STL LOFSTL: STL LOF. Response: <Seconds> x 4 lanes LORSTL: STL LOR. Response: <Seconds> x 4 lanes OOFSTL: STL OOF. Response: <Frames> x 4 lanes ORSTL: STL OOR. Response: <Frames> x 4 lanes A1A2STL: A1A2-STL. Response: <Count> x 4 lanes OLA: OLA. Response: <Seconds>,<Ratio%> RSKEW: Relative Skew. Response: <Nanoseconds> x 4 lanes MMAp: Marker Map. Response: <NR1> x 4 lanes
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	SDH:RX1:IFET? (LOS,LOF,00F) → (3,0.00532),(4,0.00709),(5,0.00887)
Notes	This command fetches the results from the interval selected using the MEASurement:SEtup:SElect command (see section 18.2.2).

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	¹ Requires the current interface/application is active in the measurement. If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last "," is always removed.
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10.4.2 SDH:PMOVement:RX<Pt>:FETCh?

Syntax	SDH:PMOVement:RX<Pt>:FETCh? <pointer>,<min_time>,<max_time>
Description	This query fetches the pointer values.
Parameters	<pointer> = <CHARACTER PROGRAM DATA> AU: AU-4 or AU-3 pointer movements TU: TU pointer movements. TU-3 or TU-12 or TU-11 depending on SDH interface setup. <min_time> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=31536000</i> Beginning of the interval in seconds. <max_time> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=31536000</i> End of the interval in seconds.
Response	{<pointermovements>}* = <EXPRESSION RESPONSE DATA> The response is all pointer movements taking place in the requested time interval. Format: (pointerChange0,timestamp0),(pointerChange1,timestamp1),...
Example	SDH:PMOV:RX1:FETC? AU,0,3600 → (1,10.000),(-1,15.002)
Notes	The interval is closed, i.e., it includes both endpoints. The displayed resolution of the timestamps is 1/1000 second = 0.001s.

10.5 Status

10.5.1 SDH:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	SDH:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the alarms and errors summary event register. The content of this event register is summarized in DB2 of the STATus:INTERface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Physical and high-order alarm summary DB2 (2) = Low-order path and tandem connection alarm summary DB3 (4) = Error section 1 summary DB4 (8) = Error section 2 summary DB5 (16) = STL alarm summary DB6 (32) = STL error summary DB7 - DB16 = NOT USED
Example	SDH:STAT:RX1:AES? → 3
Note	SDH can embed E1, E3 or E4 so if a PDH signal is embedded it is a good idea to send the following query STAT:INT:PORT<Pt>[:EVENT]? to see if there is alarms or error at the embedded signal.

10.5.2 SDH:STATus:RX<Pt>:AESummary:CONDition?

Syntax	SDH:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns alarms and errors summary condition register. DB1/DB2/DB5 is summary of SDH:STATus:RX<Pt>:ALARm<section>[:EVENT]? DB3/DB4/DB6 is summary of SDH:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SDH:STATus:RX<Pt>:AESummary[:EVENT]?
Example	SDH:STAT:RX1:AES:COND? → 3
Note	

10.5.3 SDH:STATus:RX<Pt>:ALARm<section>[:EVENT]?

Syntax	SDH:STATus:RX<Pt>:ALARm<section>[:EVENT]?
Description	This query returns one of the alarms event register. These registers are summarized in DB1/DB2/DB5 of the SDH:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Physical- and high-order path alarms(1), Low-order path and tandem connection alarms(2) or STL alarms(3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = LOS, Loss of signal DB2 (2) = LOF, Loss of frame DB3 (4) = OOF, Out of frame DB4 (8) = MS-AIS, Multiplex section - alarm indication signal DB5 (16) = MS-RDI, Multiplex section - remote defect indicator DB6 (32) = AU-AIS, Administrative unit - alarm indication signal DB7 (64) = AU-LOP, Administrative unit - loss of pointer DB8 (128) = HP-TIM, High-order path - trace identifier mismatch DB9 (256) = HP-PLM, High-order path - payload label mismatch DB10 (512) = HP-UNEQ, High-order path - unequipped DB11 (1024) = HP-RDI, High-order path - remote defect indicator DB12 (2048) = TU-AIS, Tributary unit - alarm indication signal DB13 (4096) = TU-LOP, Tributary unit - loss of pointer DB14 (8192) = TU-LOM, Tributary unit - loss of multi frame DB15 (16384) = G-AIS, Generic alarm indication signal DB16 = NOT USED <section> = 2: DB1 (1) = LP-TIM, Low-order path - trace identifier mismatch DB2 (2) = LP-UNEQ, Low-order path - unequipped DB3 (4) = LP-RDI, Low-order path - remote defect indicator DB4 (8) = LSS, Loss of signal synchronization DB5 = NOT USED DB6 (32) = LP-PLM, Low-order path - payload label mismatch DB7 (64) = TC-UNEQ, Tandem connection - unequipped DB8 (128) = TC-LTC, Tandem connection - loss of tandem connection DB9 (256) = TC-TIM, Tandem connection - trace identifier mismatch DB10 (512) = TC-AIS, Tandem connection - alarm indication signal DB11 (1024) = TC-RDI, Tandem connection - remote defect indicator DB12 (2048) = TC-ODI, Tandem connection - outgoing defect indicator DB13 - DB16 = NOT USED <section> = 3: DB1 (1) = STL LOF DB2 (2) = STL OOF DB3 (4) = STL LOR DB4 (8) = STL OOR DB5 (16) = OLA DB6 - DB16 = NOT USED
Example	SDH:STAT:RX1:ALAR1? → 1
Note	

10.5.4 SDH:STATus:RX<Pt>:ALARm<section>:CONDition?

Syntax	SDH:STATus:RX<Pt>:ALARm<section>:CONDition?
Description	This query returns one of the alarms condition registers.
Parameters	<Pt> = Port number <section> = Physical- and high-order path alarms(1), Low-order path and tandem connection alarms(2) or STL alarms(3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SDH:STATus:RX<Pt>:ALARm<section>[:EVENT]?
Example	SDH:STAT:RX1:ALAR1:COND? → 1
Note	

10.5.5 SDH:STATus:RX<Pt>:ERRor<section>[:EVENT]?

Syntax	SDH:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB3/DB4/DB6 of the SDH:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = (1-3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = A1A2 DB2 (2) = B1 DB3 (4) = B2 DB4 (8) = MS-REI DB5 (16) = B3 DB6 (32) = HP-REI DB7 (64) = V5/LP-B3 DB8 (128) = LP-REI DB9 (256) = PRBS DB10 (512) = TU-NDF DB11 (1024) = AU-NDF DB12 (2048) = APS DB13 - DB16 = NOT USED <section> = 2: DB1 (1) = TU-NEG DB2 (2) = TU-POS DB3 (4) = AU-NEG DB4 (8) = AU-POS DB5 not used DB6 (32) = TC-IEC DB7 (64) = TC-BIP-2 DB8 (128) = TC-REI DB9 (256) = TC-OEI DB10 - DB16 = NOT USED <section> = 3: DB1 (1) = A1A2-STL DB2 - DB16 = NOT USED
Example	SDH:STAT:RX1:ERR1? → 3
Note	

10.5.6 SDH:STATus:RX<Pt>:ERRor<section>:CONDition?

Syntax	SDH:STATus:RX<Pt>:ERRor<section>:CONDition?
Description	This query returns errors condition register.
Parameters	<Pt> = Port number <section> = (1-3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SDH:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Example	SDH:STAT:RX1:ERR1:COND? → 3
Note	

10.5.7 SDH:STATus:RX<Pt>:PSLevel?

Syntax	SDH:STATus:RX<Pt>:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> "N/A": Module not present or not ready. - Electrical(STM1) - " <power> dBm": Min: "< -48 dBm", Max: "Exceeds Level" - Optical(Both module types) - " <power> dBm": Min: "< -27 dBm", Max: "Exceeds Level"
Example	SDH:STAT:RX1:PSL? → "-3 dBm"
Note	

10.5.8 SDH:STATus:TX<Pt>:PSLevel?

Syntax	SDH:STATus:TX<Pt>:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> " <power> dBm": Min: "< -27 dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	SDH:STAT:TX1:PSL? → "-3 dBm"
Note	Only available for Optical.

10.5.9 SDH:STATus:RX<Pt>:PDEViation?

Syntax	SDH:STATus:RX<Pt>:PDEViation? [<unit>]
Description	This query returns the physical deviation.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million BPS = Bits per second <i>DEFault = PPM</i>
Response	<deviation> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:PDEV? PPM → 0
Note	

10.5.10 SDH:STATus:RX<Pt>:PBRate?

Syntax	SDH:STATus:RX<Pt>:PBRate?
Description	This query returns the physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:PBR? → 155520000
Note	

10.5.11 SDH:STATus:RX<Pt>:DIFFerence?

Syntax	SDH:STATus:RX<Pt>:DIFFerence?
Description	This query returns physical bit rate difference between port A and port B (RX1 - RX2). Units: ppm, bps and bits.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA>
	<bps> = <NR1 NUMERIC RESPONSE DATA>
	<acc> = <NR1 NUMERIC RESPONSE DATA> Accumulated difference in bits.
Example	SDH:STAT:RX1:DIFF? → -1,-4,-324
Note	A valid response is only available if both RX1 and RX2 are on. Using either RX1 or RX2 will give the same results.

10.5.12 SDH:STATus:RX<Pt>:RACCumulated

Syntax	SDH:STATus:RX<Pt>:RACCumulated
Description	This command resets the accumulated difference.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:STAT:RX1:RACC
Note	Using either RX1 or RX2 will give the same results.

10.5.13 SDH:STATus:RX<Pt>:PPBRate?

Syntax	SDH:STATus:RX<Pt>:PPBRate?
Description	This query returns physical pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:PPBR? → 149760000
Note	

10.5.14 SDH:STATus:RX<Pt>:CAPTure:SOH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:SOH:TRACe?
Description	This query returns the SOH trace (J0) for the latest captured frames.
Parameter	<Pt> = Port number
Response	<J0_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:SOH:TRAC? → "Message_Test_J0"
Note	If one of the alarms LOS or LOF is present, an empty string is returned.

10.5.15 SDH:STATus:RX<Pt>:CAPTure<Frame>:SOH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:SOH? <SOH-byte>
Description	This query returns the SOH bytes from the selected frame. 256 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<SOH-byte> = <CHARACTER PROGRAM DATA> A1: Returns 3 bytes. A2: Returns 3 bytes. J0: Returns 3 bytes. B1: Returns 3 bytes. E1: Returns 3 bytes. F1: Returns 3 bytes. D1: Returns 3 bytes. D2: Returns 3 bytes. D3: Returns 3 bytes. H1: Returns 3 bytes. H2: Returns 3 bytes. H3: Returns 3 bytes. B2: Returns 3 bytes. K1: Returns 3 bytes. K2: Returns 3 bytes. D4: Returns 3 bytes. D5: Returns 3 bytes. D6: Returns 3 bytes. D7: Returns 3 bytes. D8: Returns 3 bytes. D9: Returns 3 bytes. D10: Returns 3 bytes. D11: Returns 3 bytes. D12: Returns 3 bytes. S1: Returns 3 bytes. Z2: Returns 3 bytes. E2: Returns 3 bytes. M0: Returns 1 byte. ¹ M1: Returns 1 byte.
Response	<byte1>[,<byte2>[,<byte3>]] = <HEXADECIMAL NUMERIC RESPONSE DATA> Refer to <SOH-byte> parameter description above to see how many bytes this command returns.
Examples	SDH:STAT:RX1:CAPT64:SOH? A1 → #HF6,#HF6,#HF6 SDH:STAT:RX2:CAPT23:SOH? H1 → #H69,#H93,#H93 SDH:STAT:RX1:CAPT1:SOH? M1 → #H00
Note	If one of the alarms LOS or LOF is present NaN (section 1.6.1) is returned. ¹ Only valid for SDH:RX<Pt>:STMLevel = 64 or 256.

10.5.16 SDH:STATus:RX<Pt>:CAPTure:VC4:POH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:VC4:POH:TRACe?
Description	This query returns the VC4 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:VC4:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, HPUNEQ or AULOP is present, an empty string is returned.

10.5.17 SDH:STATus:RX<Pt>:CAPTure<Frame>:VC4:POH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC4:POH? <POH-byte>
Description	This query returns the VC4 path overhead bytes from the selected frame. 256 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT1:VC4:POH? H4 → #HFF
Note	If one of the alarms LOS, LOF, HPUNEQ or AULOP is present NaN (section 1.6.1) is returned.

10.5.18 SDH:STATus:RX<Pt>:CAPTure:VC3:POH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:VC3:POH:TRACe?
Description	This command queries the VC3 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:VC3:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present, an empty string is returned.

10.5.19 SDH:STATus:RX<Pt>:CAPTure<Frame>:VC3:POH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC3:POH? <POH-byte>
Description	This query returns the VC3 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT1:VC3:POH? C2 → #HA3
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present NaN (section 1.6.1) is returned. Use the SDH:RX<Pt>:VC3:POH:CMASk command to selected which bytes to be captured.

10.5.20 SDH:STATus:RX<Pt>:CAPTure:VC12:POH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:VC12:POH:TRACe?
Description	This query returns VC12 path overhead trace (J2) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J2_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:VC12:POH:TRAC? → "Message_Test_J2"
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present, an empty string is returned.

10.5.21 SDH:STATus:RX<Pt>:CAPTure<Frame>:VC12:POH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC12:POH? <POH-byte>
Description	This query returns the VC12 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5-SL byte. J2: J2 byte. N2: N2 byte. K4: K4 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT1:VC12:POH? V5 → #H04
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present NaN (section 1.6.1) is returned.

10.5.22 SDH:STATus:RX<Pt>:CAPTure:VC11:POH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:VC11:POH:TRACe?
Description	This query returns VC11 path overhead trace (J2) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J2_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:VC11:POH:TRAC? → "Message_Test_J2"
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present, an empty string is returned.

10.5.23 SDH:STATus:RX<Pt>:CAPTure<Frame>:VC11:POH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:VC11:POH? <POH-byte>
Description	This query returns the VC11 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5-SL byte. J2: J2 byte. N2: N2 byte. K4: K4 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT1:VC11:POH? V5 → #H04
Note	If one of the alarms LOS, LOF, HPUNEQ or LPUNEQ is present NaN (section 1.6.1) is returned.

10.5.24 SDH:STATus:RX<Pt>:CAPTure:AU3:VC3:POH:TRACe?

Syntax	SDH:STATus:RX<Pt>:CAPTure:AU3:VC3:POH:TRACe?
Description	This query returns the VC3 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameters	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT:AU3:VC3:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, HPUNEQ or AULOP is present, an empty string is returned.

10.5.25 SDH:STATus:RX<Pt>:CAPTure<Frame>:AU3:VC3:POH?

Syntax	SDH:STATus:RX<Pt>:CAPTure<Frame>:AU3:VC3:POH? <POH-byte>
Description	This query returns the VC3 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SDH:STAT:RX1:CAPT1:AU3:VC3:POH? H4 → #HFF
Note	If one of the alarms LOS, LOF, HPUNEQ or AULOP is present NaN (section 1.6.1) is returned.

10.6 APS

10.6.1 SDH:APS:START

Syntax	SDH:APS:START
Description	This command starts the APS (Automatic Protection Switching) measurement.
Parameter	None.
Response	None.
Example	SDH:APS:STAR
Note	

10.6.2 SDH:APS:STOP

Syntax	SDH:APS:STOP
Description	This command stops the APS (Automatic Protection Switching) measurement.
Parameter	None.
Response	None.
Example	SDH:APS:STOP
Note	

10.6.3 SDH:APS:RX<Pt>:PINTerpret?

Syntax	SDH:APS:RX<Pt>:PINTerpret?
Description	This query returns the protocol interpretation.
Parameter	<Pt> = Port number
Response	<interpretation> = <STRING RESPONSE DATA>
Example	SDH:APS:RX1:PINT? → "00:00:19 Number 0 Time: 0.000ms ----- k1: Signal degrade (protection) Destination Node (K1) 2 k2: Short Source Node (K2) 7"
Note	

10.6.4 SDH:APS:RX<Pt>:NUMBER?

Syntax	SDH:APS:RX<Pt>:NUMBER?
Description	This query returns the number of times has measured.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:NUMB? → 17
Note	

10.6.5 SDH:APS:RX<Pt>:ATIME?

Syntax	SDH:APS:RX<Pt>:ATIME?
Description	This query returns the average time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:ATIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

10.6.6 SDH:APS:RX<Pt>:MTIMe?

Syntax	SDH:APS:RX<Pt>:MTIMe?
Description	This query returns the maximum time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
	<limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	SDH:APS:RX1:MTIM? → 4.000,0
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

10.6.7 SDH:APS:RX<Pt>:LTIMe?

Syntax	SDH:APS:RX<Pt>:LTIMe?
Description	This query returns the least (minimum) time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:LTIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

10.6.8 SDH:APS:RX<Pt>:CTIMe?

Syntax	SDH:APS:RX<Pt>:CTIMe?
Description	This query returns the current time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<current> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:CTIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 99999.999 ms.

10.6.9 SDH:APS:RX<Pt>:EVENTt

Syntax	SDH:APS:RX<Pt>:EVENTt <event>
Description	This command sets the time reference event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> LOS = Loss of signal LOF = Loss of frame OOF = Out of frame MSAIS = MS alarm indication signal MSRDI = MS remote defect indicator APSS = APS switch-over AUAIS = AU alarm indication signal AULOP = AU loss of pointer HPTIM = HP trace identifier mismatch HPPLM = HP payload label mismatch HPUNEQ = HP unequipped TULOM = TU loss of multiframe TUAIS = TU alarm indication signal TULOP = TU loss of pointer LPTIM = LP trace identifier mismatch LPPLM = LP payload label mismatch LPUNEQ = LP unequipped A1A2 = Frame alignment word error B1 = B1 checksum byte error B2 = B2 checksum byte error MSREI = MS remote error indication B3 = B3 checksum byte error V5 = B3 checksum of the low-order path PERRor = Pattern error ANYERROR = Any errors <i>DEFault = LOS</i>
Response	None.
Example	SDH:APS:RX1:EVEN LOF
Note	

Syntax	SDH:APS:RX<Pt>:EVENT?
Description	This query returns the time reference event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	SDH:APS:RX1:EVEN? → LOF
Note	

10.6.10 SDH:APS:RX<Pt>:MLIMit

Syntax	SDH:APS:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 10000.000, DEFault = 50.000</i>
Response	None.
Example	SDH:APS:RX1:MLIM 50.000
Note	

Syntax	SDH:APS:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:MLIM? → 50.000
Note	

10.6.11 SDH:APS:RX<Pt>:PERiod

Syntax	SDH:APS:RX<Pt>:PERiod <period>
Description	This command sets the error free period.
Parameters	<Pt> = Port number <period> = <NUMERIC PROGRAM DATA> 1,10,20,30,40,50,60,70,80,90,100 Unit ms <i>DEFault</i> = 1
Response	None
Example	SDH:APS:RX1:PER 1
Note	

Syntax	SDH:APS:RX<Pt>:PERiod?
Description	This query returns the error free period.
Parameter	<Pt> = Port number
Response	<period> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:PER? → 1
Note	

10.6.12 SDH:APS:RX<Pt>:CONFig

Syntax	SDH:APS:RX<Pt>:CONFig <protection>,<path>
Description	This command sets the protection type and the path or architecture.
Parameters	<Pt> = Port number <protection> = <CHARACTER PROGRAM DATA> RING = Ring protection LINear = Linear <i>DEFault</i> = RING <path> = <CHARACTER PROGRAM DATA> Ring Path: SHRT = Short path LONG = Long path <i>DEFault</i> = SHRT Linear Architecture: 1P1 = 1+1 Architecture 1N = 1:n Architecture
Response	None.
Example	SDH:APS:RX1:CONF RING,SHRT
Notes	

Syntax	SDH:APS:RX<Pt>:CONFig?
Description	This query returns the protection type and the path or architecture.
Parameter	<Pt> = Port number
Response	<protection> = <CHARACTER RESPONSE DATA> <path> = <CHARACTER PROGRAM DATA>
Example	SDH:APS:RX1:CONF? → RING,SHRT
Note	

10.6.13 SDH:APS:RX<Pt>:RTYPE

Syntax	SDH:APS:RX<Pt>:RTYPE <type>
Description	This command sets the request type for the transmitter.
Parameter	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> Ring Request Types: for SDH:APS:RX<Pt>:CONFig? → RING,.... RLOP = Lockout of protection (span) RFSS = Forced switch (span) RFSR = Forced switch (ring) RSFS = Signal fail (span) RSFR = Signal fail (ring) RSDP = Signal degrade (protection) RSDS = Signal degrade (span) RSDR = Signal degrade (ring) RMSS = Manual switch (span) RMSR = Manual switch (ring) RWTR = Wait to restore REXS = Exercise (span) REXR = Exercise (ring) RRRS = Reverse request (span) RRRR = Reverse request (ring) RNRQ = No request <i>DEFault = RLOP</i> Linear Request Types: for SDH:APS:RX<Pt>:CONFig? → LIN,.... LLOP = Lockout of protection LFSW = Forced switch LSFH = Signal fail (high priority) LSFL = Signal fail (low priority) LSDH = Signal degrade (high priority) LSDL = Signal degrade (low priority) LMSW = Manual switch (ring) LWTR = Wait to restore LEXC = Exercise LRRQ = Reverse request LDNR = Do not revert LNRQ = No request <i>DEFault = LLOP</i>
Response	None.
Example	SDH:APS:RX1:RTYP RLOP
Note	Use the SDH:APS:RX<Pt>:APPLy command to apply the request to the transmitter.

Syntax	SDH:APS:RX<Pt>:RTYPE?
Description	This query returns the request type for the transmitter.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SDH:APS:RX1:RTYP? → RLOP
Note	

10.6.14 SDH:APS:RX<Pt>:K1

Syntax	SDH:APS:RX<Pt>:K1 <value>
Description	This command sets the destination node/source channel (K1).
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault = 0</i>
Response	None.
Example	SDH:APS:RX1:K1 3
Notes	Cannot be changed if the SDH:APS:CONFIg command is set to LIN, 1P1. Changes to SDH:APS:CONFIg will reset this value to 0.

Syntax	SDH:APS:RX<Pt>:K1?
Description	This query returns the destination node/source channel (K1).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:K1? → 3
Note	

10.6.15 SDH:APS:RX<Pt>:K2

Syntax	SDH:APS:RX<Pt>:K2 <value>
Description	This command sets the source node/bridged channel (K2).
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault = 0</i>
Response	None.
Example	SDH:APS:RX1:K2 3
Notes	Cannot be changed if the SDH:APS:CONFIg command is set to LIN, 1P1. Changes to SDH:APS:CONFIg will reset this value to 0.

Syntax	SDH:APS:RX<Pt>:K2?
Description	This query returns the source node/bridged channel (K2).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:APS:RX1:K2? → 3
Note	

10.6.16 SDH:APS:RX<Pt>:APPLy

Syntax	SDH:APS:RX<Pt>:APPLy
Description	This command applies the K1/K2 request setup to the transmitter.
Parameter	<Pt> = Port number
Response	None.
Example	SDH:APS:RX1:APPL
Notes	

10.7 Tributary Scan

10.7.1 SDH:TSCan:STARt

Syntax	SDH:TSCan:STARt
Description	This command starts the tributary scan test.
Parameter	None.
Response	None.
Example	SDH:TSC:STAR
Note	It is possible to run only one test or measurement at a time. The SDH interface must be active for at least one of the receivers.

10.7.2 SDH:TSCan:STOP

Syntax	SDH:TSCan:STOP
Description	This command stops the tributary scan test.
Parameter	None.
Response	None.
Example	SDH:TSC:STOP
Note	

10.7.3 SDH:TSCan:RX<Pt>:NHOCContainer?

Syntax	SDH:TSCan:RX<Pt>:NHOCContainer?
Description	This query returns the number of High-order containers (VC-4/3)
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TSC:RX1:NHOC? → 4
Note	If '0' is returned, no High-order containers were found. To get more information, use the SDH:TSCan:RX<Pt>:MUX? query.

10.7.4 SDH:TSCan:RX<Pt>:GHOCContainer?

Syntax	SDH:TSCan:RX<Pt>:GHOCContainer?
Description	This query returns the state of High-order containers (VC-4/3)
Parameter	<Pt> = Port number
Response	({<value>,+}) = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that VC-4 #1 is the first on the list. 0 = No alarms or errors. 1 = Alarms or errors present.
Example	SDH:TSC:RX1:GHOC? → (0,0,1,0)
Note	If there is one or more results, the last ",," is always removed.

10.7.5 SDH:TSCan:RX<Pt>:SHOCContainer

Syntax	SDH:TSCan:RX<Pt>:SHOCContainer <VC4>
Description	This command sets the High-order container (VC-4/3) for scanning.
Parameters	<Pt> = Port number <VC4> = High-order container number <i>MINimum=1, MAXimum=768</i>
Response	None.
Example	SDH:TSC:RX1:SHOC 2
Note	

10.7.6 SDH:TSCan:RX<Pt>:SHOCContainer?

Syntax	SDH:TSCan:RX<Pt>:SHOCContainer?
Description	This query returns the High-order container (VC-4/3) set for scanning.
Parameter	<Pt> = Port number
Response	<VC4> = High-order container number
Example	SDH:TSC:RX1:SHOC? → 2
Note	

10.7.7 SDH:TSCan:RX<Pt>:DHOCContainer?

Syntax	SDH:TSCan:RX<Pt>:DHOCContainer? <VC4/3>
Description	This query returns the detailed alarm and error information from a High-order container (VC-4/3).
Parameters	<Pt> = Port number <VC4> = High-order container number <i>MINimum=1, MAXimum=768</i>
Response	<selected>, = <STRING RESPONSE DATA>. {RXn} _□ {High-order}, separated by one space character. RXn = RX1 or RX2 High-order = VC-4#0 ... VC-4#64 or VC-3#0 ... VC-3#192 ({<alarmerrors>,*}) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SDH:TSC:RX1:DHOC? 1 → "RX1 VC-4#1",("B1","A1A2")
Note	If there is one or more responses, the last "," is always removed.

10.7.8 SDH:TSCan:RX<Pt>:NLOCContainer?

Syntax	SDH:TSCan:RX<Pt>:NLOCContainer?
Description	This query returns the number of Low-order containers (VC-3/12/11).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:TSC:RX1:NLOC? → 3
Note	

10.7.9 SDH:TSCan:RX<Pt>:GLOCContainer?

Syntax	SDH:TSCan:RX<Pt>:GLOCContainer?
Description	This query returns the state of Low-order containers (VC-3/12/11).
Parameter	<Pt> = Port number
Response	({<value>,*}) = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that VC-4 #1 is the first in the list. 0 = No alarms or errors. 1 = Alarms or errors present.
Example	SDH:TSC:RX1:GLOC? → (0,1,1)
Note	If there is one or more responses, the last "," is always removed.

10.7.10 SDH:TSCan:RX<Pt>:DLOCContainer?

Syntax	SDH:TSCan:RX<Pt>:DLOCContainer? <VC3/12/11>
Description	This query returns the detailed alarm and error information from a Low-order container (VC-3/12/11).
Parameters	<Pt> = Port number <VC3/12/11> = Low-order container number <i>MINimum=1, MAXimum=84</i>
Response	<selected>, = <STRING RESPONSE DATA>. {RXn} _□ {High-order}:{Low-order}, First separated by one space character and next with a colon char. RXn = RX1 or RX2 High-order = VC-4#0 ... VC-4#64 or VC-3#0 ... VC-3#192 Low-order = VC-3#1 ... VC-3#3 or VC-12#1 ... VC-12#63 or VC-11#1 ... VC-11#84 ({<alarmerrors>,*}) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SDH:TSC:RX1:DLOC? 1 → "RX1 VC-4#1:VC-3#1",("B1","A1A2")
Notes	To select the High-order container, use the SDH:TSCan:RX<rx>:SHOCContainer command. If there is one or more responses, the last "," is always removed.

10.7.11 SDH:TSCan:RX<Pt>:DMUX?

Syntax	SDH:TSCan:RX<Pt>:DMUX?
Description	This query returns the detailed alarm and error information from the MUX.
Parameter	<Pt> = Port number
Response	<selected> = <STRING RESPONSE DATA>. {Rx} MUX
	({<alarmerrors>, }*) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SDH:TSC:RX1:DMUX? → "Rx1 MUX", ("LOS", "LOF", "OOF")
Notes	This query is only available when no High-order containers are present. To determine if MUX is available, use the SDH:TSCan:RX<Pt>:NHOCContainer? query. If there is one or more responses, the last ", " is always removed.

10.8 RTD

This section document commands for the Round Trip Delay application.
Commands for general RTD settings are described in section 17.1 on page 953.

10.8.1 SDH:RTD:RX<Pt>:MLIMit

Syntax	SDH:RTD:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: us.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0, MAXimum = 10000000.0, DEFault = MAXimum</i>
Response	None.
Example	SDH:RTD:RX1:MLIM 0.0
Note	

Syntax	SDH:RTD:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:RTD:RX1:MLIM? → 0.0
Note	

10.8.2 SDH:RTD:RX<Pt>:NUMBER?

Syntax	SDH:RTD:RX<Pt>:NUMBER?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	SDH:RTD:RX1:NUMB? → 2
Note	

10.8.3 SDH:RTD:RX<Pt>:ATIMe?

Syntax	SDH:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

10.8.4 SDH:RTD:RX<Pt>:MTIMe?

Syntax	SDH:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	SDH:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

10.8.5 SDH:RTD:RX<Pt>:LTIME?

Syntax	SDH:RTD:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:RTD:RX1:LTIME? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

10.8.6 SDH:RTD:RX<Pt>:CTIME?

Syntax	SDH:RTD:RX<Pt>:CTIME?
Description	This query returns the current time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SDH:RTD:RX1:CTIME? → 1.0
Note	The maximum measurable time will be responded if the result exceeds 99999999.9 us.

Chapter 11

SONET

Use `MEAS:SET:PORT<Pt>:TERM` to change the SDH/SONET terminology (see section [18.2.1](#)).

11.1 Receiver

11.1.1 SONet:RX<Pt>:INTerface

Syntax	SONet:RX<Pt>:INTerface <mode>
Description	This command sets the used interface or switches off the receiver.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Disables receiver ELECtrical: Electrical interface SFP: SFP/SFP+ optical interface CFP: CFP optical interface OPTical: Obsolete. For CMA 3000 backward compatibility only. Same as SFP <i>DEFault = OFF</i>
Response	None.
Example	SON:RX1:INT OFF
Note	

Syntax	SONet:RX<Pt>:INTerface?
Description	This query returns the used interface.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:INT? → OFF
Note	Returns OTN when SONET over OTN.

11.1.2 SONet:RX<Pt>:OCLevel

Syntax	SONet:RX<Pt>:OCLevel <level>
Description	This command sets the OC level of the SONET receiver.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 3: OC-3 signal. 12: OC-12 signal. 48: OC-48 signal. 192: OC-192 signal. 768: OC-768 signal. <i>DEFault = 3</i>
Response	None.
Example	SON:RX1:OCL 3
Note	Setting the OC level may change the STS-3cSPE concatenation level.

Syntax	SONet:RX<Pt>:OCLevel?
Description	This query returns the OC level of the SONET receiver.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:OCL? → 3
Note	

11.1.3 SONet:RX<Pt>:STSLevel

Syntax	SONet:RX<Pt>:STSLevel <level>
Description	This command sets the STS level of the SONET receiver.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 3: STS-3 signal. 12: STS-12 signal. 48: STS-48 signal. 192: STS-192 signal. 768: STS-768 signal. <i>DEFault = 3</i>
Response	None.
Example	SON:RX1:STSL 3
Note	Setting the STS level may change the STS-3cSPE concatenation level.

Syntax	SONet:RX<Pt>:STSLevel?
Description	This query returns the STS level of the SONET receiver.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:STSL? → 3
Note	

11.1.4 SONet:RX<Pt>:STS3c

Syntax	SONet:RX<Pt>:STS3c <sts>
Description	This command sets the STS Group(s) to be used in the signal structure.
Parameters	<Pt> = Port number <sts> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 768, DEFault = 1</i>
Response	None.
Example	SON:RX1:STS3 1
Note	The specified STS3c cannot exceed the OC level divided by the STS-3cSPE concatenation level.

Syntax	SONet:RX<Pt>:STS3c?
Description	This query returns STS Group(s) used in the signal structure.
Parameter	<Pt> = Port number
Response	<sts> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:STS3? → 1
Note	

11.1.5 SONet:RX<Pt>:CONCatenation

Syntax	SONet:RX<Pt>:CONCatenation <level>
Description	This command sets the STS concatenation level.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> STS1SPE STS3CSPE STS12C STS48C STS192C STS768C <i>DEFault = STS3CSPE</i>
Response	None.
Example	SON:RX1:CONC STS3CSPE
Note	Setting the STS concatenation level may change the OC level.

Syntax	SONet:RX<Pt>:CONCatenation?
Description	This query returns the STS concatenation level.
Parameter	<Pt> = Port number
Response	<level> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:CONC? → STS3CSPE
Note	

11.1.6 SONet:RX<Pt>:CONTainer

Syntax	SONet:RX<Pt>:CONTainer <type>
Description	This command sets the container type (container-n).
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> C3 C4 C11 C12 <i>DEFault = C4</i>
Response	None.
Example	SON:RX1:CONT C4
Note	Setting the container type.

Syntax	SONet:RX<Pt>:CONTainer?
Description	This query returns the container type (container-n).
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:CONT? → C4
Note	

11.1.7 SONet:RX<Pt>:SSTRucture

Syntax	SONet:RX<Pt>:SSTRucture <structure>
Description	This command sets the expected SONET signal structure.
Parameters	<Pt> = Port number <structure> = <CHARACTER PROGRAM DATA> BULK: Bulk data in the STS3. E1: E1 signal in a VT2 in one or all STS's E3: E3 signal in a STS1 in one or all STS's DS1: DS1 signal in a VT15 in one or all STS's DS3: DS3 signal in a STS1 in one or all STS's E4: E4 signal in a STS3 in one or all STS's <i>DEFault</i> = <i>BULK</i>
Response	None.
Example	SON:RX1:SSTR BULK
Note	

Syntax	SONet:RX<Pt>:SSTRucture?
Description	This query returns the expected SONET signal structure.
Parameter	<Pt> = Port number
Response	<structure> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:SSTR? → BULK
Note	

11.1.8 SONet:RX<Pt>:PATtern

Syntax	SONet:RX<Pt>:PATtern <pattern>
Description	This command sets the pattern to be expected as payload when SSTRucture is BULK.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> OFF USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9: PRBS-9 pattern. PRBS11: PRBS-11 pattern. PRBS15: PRBS-15 pattern. PRBS20: PRBS-20 pattern. PRBS23: PRBS23 pattern. PRBS29: PRBS-29 pattern. PRBS31: PRBS-31 pattern. ALL0: Pattern of all zeros. ALL1: Pattern of all ones. ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 B2IN8: Random pattern with two ones for every eight bits. <i>DEFault</i> = <i>PRBS23</i>
Response	None.
Example	SON:RX1:PATT PRBS23
Note	

Syntax	SONet:RX<Pt>:PATtern?
Description	This query returns the pattern to be expected as payload when SSTRucture is BULK.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:PATT? → PRBS23
Note	

11.1.9 SONet:RX<Pt>:UP32

Syntax	SONet:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	SON:RX1:UP32 "01101"
Note	

Syntax	SONet:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SON:RX1:UP32? → "01101"
Note	

11.1.10 SONet:RX<Pt>:UP2K

Syntax	SONet:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	SON:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when SON:RX1:PATT is USER2048BIT

Syntax	SONet:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SON:RX1:UP2K? → "12DF"
Note	

11.1.11 SONet:RX<Pt>:PINVersion

Syntax	SONet:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables PRBS pattern inversion (when SSTRucture is BULK).
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	SON:RX1:PINV OFF
Note	

Syntax	SONet:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	SON:RX1:PINV? → 0
Note	

11.1.12 SONet:RX<Pt>:TCM

Syntax	SONet:RX<Pt>:TCM <mode>
Description	This command sets the Tandem Connection Monitoring mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Off STS3: Z5 (STS3) STS1: Z5 (STS1) VT2: Z6 (VT2) VT15: Z6 (VT1.5) <i>DEFault = OFF</i>
Response	None.
Example	SON:RX1:TCM OFF
Note	

Syntax	SONet:RX<Pt>:TCM?
Description	This query returns Tandem Connection Monitoring mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:TCM? → OFF
Note	

11.1.13 SONet:RX<Pt>:TUG3

Syntax	SONet:RX<Pt>:TUG3 <id>
Description	This command sets the TUG-3 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-3 number one. 2: TUG-3 number two. 3: TUG-3 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SON:RX1:TUG3 1
Note	This value influences the channel number.

Syntax	SONet:RX<Pt>:TUG3?
Description	This query returns TUG3 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:TUG3? → 1
Note	

11.1.14 SONet:RX<Pt>:VTG

Syntax	SONet:RX<Pt>:VTG <id>
Description	This command sets the VTG number for signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VTG number one. 2: VTG number two. ... 7: VTG number seven. <i>MINimum = 1, MAXimum = 7, DEFault = 1</i>
Response	None.
Example	SON:RX1:VTG 1
Note	This value influences the channel number.

Syntax	SONet:RX<Pt>:VTG?
Description	This query returns VTG number for signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:VTG? → 1
Note	

11.1.15 SONet:RX<Pt>:VT2

Syntax	SONet:RX<Pt>:VT2 <id>
Description	This command sets the VT2 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VT2 number one. 2: VT2 number two. 3: VT2 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SON:RX1:VT2 1
Note	This value influences the channel number.

Syntax	SONet:RX<Pt>:VT2?
Description	This query returns VT2 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:VT2? → 1
Note	

11.1.16 SONet:RX<Pt>:VT15

Syntax	SONet:RX<Pt>:VT15 <id>
Description	This command sets the VT1.5 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VT1.5 number one. 2: VT1.5 number two. 3: VT1.5 number three. 4: VT1.5 number four. <i>MINimum = 1, MAXimum = 4, DEFault = 1</i>
Response	None.
Example	SON:RX1:VT15 1
Note	This value influences the channel number.

Syntax	SONet:RX<Pt>:VT15?
Description	This query returns VT1.5 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:VT15? → 1
Note	

11.1.17 SONet:RX<Pt>:CHANnel

Syntax	SONet:RX<Pt>:CHANnel <id>
Description	This command sets the channel number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=84, DEFault = 1</i>
Response	None.
Example	SON:RX1:CHAN 1
Note	This value influences the TUG-3, VTG, VT2 and VT1.5 numbers.

Syntax	SONet:RX<Pt>:CHANnel?
Description	This query returns the channel number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RX1:CHAN? → 1
Note	

11.1.18 SONet:RX<Pt>:MAPPING

Syntax	SONet:RX<Pt>:MAPPING <type>
Description	This command sets the mapping type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SYNChronous: Synchronous mapping. ASYNchronous: Asynchronous mapping. <i>DEFault = SYNC</i>
Response	None.
Example	SON:RX1:MAPP SYNC
Note	

Syntax	SONet:RX<Pt>:MAPPING?
Description	This query returns the mapping type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:MAPP? → SYNC
Note	

11.1.19 SONet:RX<Pt>:GAIN

Syntax	SONet:RX<Pt>:GAIN <type>
Description	This command sets the receiver gain.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> TERMinate: Frequency dependent AGC. MONitor: Frequency linear AGC. <i>DEFault = TERMinate</i>
Response	None.
Example	SON:RX1:GAIN TERM
Note	

Syntax	SONet:RX<Pt>:GAIN?
Description	This query returns the receiver gain.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:GAIN? → TERM
Note	

11.1.20 SONet:RX<Pt>:FOLLow

Syntax	SONet:RX<Pt>:FOLLow <mode>
Description	This command sets the receiver setup to follow another setup or not to follow.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> NONE: Do not follow. TX: Follows setup of the Tx port. RX1: Follows setup of the Rx port1. <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	SON:RX1:FOLL NONE
Note	

Syntax	SONet:RX<Pt>:FOLLow?
Description	This query returns the receiver setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:RX1:FOLL? → NONE
Note	

11.1.21 SONet:RX<Pt>:MEASurement:PLMP

Syntax	SONet:RX<Pt>:MEASurement:PLMP <detected>
Description	This command enables or disables PLM-P measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	SON:RX1:MEAS:PLMP ON
Note	

Syntax	SONet:RX<Pt>:MEASurement:PLMP?
Description	This query returns whether or not PLM-P measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	SON:RX1:MEAS:PLMP? → 1
Note	

11.1.22 SONet:RX<Pt>:MEASurement:PLMV

Syntax	SONet:RX<Pt>:MEASurement:PLMV <detected>
Description	This command enables or disables PLM-V measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	SON:RX1:MEAS:PLMV ON
Note	

Syntax	SONet:RX<Pt>:MEASurement:PLMV?
Description	This query returns whether or not PLM-V measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	SON:RX1:MEAS:PLMV? → 1
Note	

11.2 Transmitter

11.2.1 SONet:TX<Pt>:INTerface

Syntax	SONet:TX<Pt>:INTerface <mode>
Description	This command sets the used interface of the transmitter.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ELECtrical: Electrical interface SFP: SFP/SFP+ optical interface CFP: CFP optical interface <i>DEFault = ELEC</i>
Response	None.
Example	SON:TX1:INT SFP
Note	

Syntax	SONet:TX<Pt>:INTerface?
Description	This query returns the used interface.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:INT? → SFP
Note	Returns OTN when SONET over OTN.

11.2.2 SONet:TX<Pt>[:ENABLE]

Syntax	SONet:TX<Pt>[:ENABLE] <mode>
Description	This command sets the mode of the transmitter.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Turn off the transmitter. NORMal: Normal transmission mode using the configured signal. THRough: Through mode. The signal from the receiver is transmitted. OTHRough: OH overwrite through mode. THA: Obsolete. For CMA 3000 backward compatibility only. Same as THRough. <i>DEFault = OFF</i>
Response	None.
Example	SON:TX1 NORM
Note	

Syntax	SONet:TX<Pt>[:ENABLE]?
Description	This query returns the mode of the transmitter.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1? → NORM
Note	

11.2.3 SONet:TX<Pt>:OPTical

Syntax	SONet:TX<Pt>:OPTical <mode>
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SON:TX<Pt>:INT SFP and SON:TX<Pt>
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA>
Response	None.
Example	SON:TX1:OPT NORM
Note	Compared to CMA 3000 there is no longer a suffix on the last node.

Syntax	SONet:TX<Pt>:OPTical?
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SON:TX<Pt>?
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:OPT? → NORM
Note	

11.2.4 SONet:TX<Pt>:ELECtrical

Syntax	SONet:TX<Pt>:ELECtrical <mode>
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SON:TX<Pt>:INT ELEC and SON:TX<Pt>
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA>
Response	None.
Example	SON:TX1:ELEC NORM
Note	Compared to CMA 3000 mode=THB is no longer supported.

Syntax	SONet:TX<Pt>:ELECtrical?
Description	Obsolete. For CMA 3000 backward compatibility only. Same as SON:TX<Pt>?
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:ELEC? → NORM
Note	

11.2.5 SONet:TX<Pt>:OCLevel

Syntax	SONet:TX<Pt>:OCLevel <level>
Description	This command sets the OC level of the transmitted SONET signal.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 3: OC-3 signal. 12: OC-12 signal. 48: OC-48 signal. 192: OC-192 signal. 768: OC-768 signal. <i>DEFault</i> = 3
Response	None.
Example	SON:TX1:OCL 3
Notes	Setting the OC level may change the STS-3cSPE concatenation level.

Syntax	SONet:TX<Pt>:OCLevel?
Description	This query returns the OC level of the transmitted SONET signal.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:OCL? → 1
Note	

11.2.6 SONet:TX<Pt>:STSLevel

Syntax	SONet:TX<Pt>:STSLevel <level>
Description	This command sets the STS level of the SONET receiver.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> 3: STS-3 signal. 12: STS-12 signal. 48: STS-48 signal. 192: STS-192 signal. 768: STS-768 signal. <i>DEFault</i> = 3
Response	None.
Example	SON:TX1:STSL 3
Note	Setting the STS level may change the STS-3cSPE concatenation level.

Syntax	SONet:TX<Pt>:STSLevel?
Description	This query returns the STS level of the SONET receiver.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:STSL? → 3
Note	

11.2.7 SONet:TX<Pt>:STS3c

Syntax	SONet:TX<Pt>:STS3c <value>
Description	This command sets the STS where the test signal is inserted.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> ALL 1 to 768 <i>DEFault</i> = ALL
Response	None.
Example	SON:TX1:STS3 ALL
Note	The specified STS3c cannot exceed the OC level divided by the STS-3cSPE concatenation level.

Syntax	SONet:TX<Pt>:STS3c?
Description	This query returns the STS where the test signal has been inserted.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:STS3? → ALL
Note	

11.2.8 SONet:TX<Pt>:CONCatenation

Syntax	SONet:TX<Pt>:CONCatenation <level>
Description	This command sets the STS concatenation level.
Parameters	<Pt> = Port number <level> = <CHARACTER PROGRAM DATA> STS1SPE STS3CSPE STS12C STS48C STS192C STS768C <i>DEFault = STS3CSPE</i>
Response	None.
Example	SON:TX1:CONC STS3CSPE
Note	Setting the STS concatenation level may change the STM level.

Syntax	SONet:TX<Pt>:CONCatenation?
Description	This query returns the STS concatenation level.
Parameter	<Pt> = Port number
Response	<level> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:CONC? → STS3CSPE
Note	

11.2.9 SONet:TX<Pt>:CONTainer

Syntax	SONet:TX<Pt>:CONTainer <type>
Description	This command sets the container type (container-n).
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> C3 C4 C11 C12 <i>DEFault = C4</i>
Response	None.
Example	SON:TX1:CONT C4
Note	Setting the container type.

Syntax	SONet:TX<Pt>:CONTainer?
Description	This query returns the container type (container-n).
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:CONT? → C4
Note	

11.2.10 SONet:TX<Pt>:SSTRucture

Syntax	SONet:TX<Pt>:SSTRucture <structure>
Description	This command sets the SONET signal structure.
Parameters	<Pt> = Port number <structure> = <CHARACTER PROGRAM DATA> BULK: Bulk data in the STS3. E1: E1 signal in a VC-12 in one or all STS's E3: E3 signal in a VC-3 in one or all STS's DS1: DS1 signal in a VC-11 in one or all STS's DS3: DS3 signal in a VC-3 in one or all STS's E4: E4 signal in a VC-4 in one or all STS's <i>DEFault = BULK</i>
Response	None.
Example	SON:TX1:SSTR BULK
Note	

Syntax	SONet:TX<Pt>:SSTRucture?
Description	This query returns the SONET signal structure.
Parameter	<Pt> = Port number
Response	<structure> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:SSTR? → BULK
Note	

11.2.11 SONet:TX<Pt>:PATtern

Syntax	SONet:TX<Pt>:PATtern <pattern>
Description	This command sets the pattern to be used as payload when SSTRucture is BULK.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> OFF USER32BIT: 32 bit user defined pattern. USER2048BIT: 2048 bit user defined pattern. PRBS9: PRBS-9 pattern. PRBS11: PRBS-11 pattern. PRBS15: PRBS-15 pattern. PRBS20: PRBS-20 pattern. PRBS23: PRBS23 pattern. PRBS29: PRBS-29 pattern. PRBS31: PRBS-31 pattern. ALL0: Pattern of all zeros. ALL1: Pattern of all ones. ALT11: Alternating 1:1 ALT13: Alternating 1:3 ALT17: Alternating 1:7 B2IN8: Random pattern with two ones for every eight bits. <i>DEFault = PRBS23</i>
Response	None.
Example	SON:TX1:PATT PRBS23
Note	

Syntax	SONet:TX<Pt>:PATtern?
Description	Queries the pattern to be used as payload when SSTRucture is BULK.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:PATT? → PRBS23
Note	

11.2.12 SONet:TX<Pt>:UP32

Syntax	SONet:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Examples	SON:TX1:UP32 "01101"
Note	

Syntax	SONet:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SON:TX1:UP32? → "01101"
Note	

11.2.13 SONet:TX<Pt>:UP2K

Syntax	SONet:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	SON:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when SON:TX1:PATT is USER2048BIT

Syntax	SONet:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	SON:TX1:UP2K? → "12DF"
Note	

11.2.14 SONet:TX<Pt>:PINVersion

Syntax	SONet:TX<Pt>:PINVersion <inverted>
Description	This command enables or disables PRBS pattern inversion (when SSStructure is BULK).
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	SON:TX1:PINV OFF
Note	

Syntax	SONet:TX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:PINV? → 0
Note	

11.2.15 SONet:TX<Pt>:TIMing

Syntax	SONet:TX<Pt>:TIMing <source>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal clock. EXTernal: External clock. RX: Received Rx signal clock. <i>DEFault = INT</i>
Response	None.
Example	SON:TX1:TIM INT
Note	

Syntax	SONet:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:TIM? → INT
Note	

11.2.16 SONet:TX<Pt>:TCM

Syntax	SONet:TX<Pt>:TCM <mode>
Description	This command sets the TCM mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Off STS3: Z5 (STS3) STS1: Z5 (STS1) VT2: Z6 (VT2) VT15: Z6 (VT1.5) <i>DEFault = OFF</i>
Response	None.
Example	SON:TX1:TCM OFF
Note	

Syntax	SONet:TX<Pt>:TCM?
Description	Queries the TCM mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:TCM? → OFF
Note	

11.2.17 SONet:TX<Pt>:TUG3

Syntax	SONet:TX<Pt>:TUG3 <id>
Description	This command sets the TUG-3 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: TUG-3 number one. 2: TUG-3 number two. 3: TUG-3 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SON:TX1:TUG3 1
Note	This value influences the channel number.

Syntax	SONet:TX<Pt>:TUG3?
Description	This query returns TUG3 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:TUG3? → 1
Note	

11.2.18 SONet:TX<Pt>:VTG

Syntax	SONet:TX<Pt>:VTG <id>
Description	This command sets the VTG number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VTG number one. 2: VTG number two. ... 7: VTG number seven. <i>MINimum = 1, MAXimum = 7, DEFault = 1</i>
Response	None.
Example	SON:TX1:VTG 1
Note	This value influences the channel number.

Syntax	SONet:TX<Pt>:VTG?
Description	This query returns VTG number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:VTG? → 1
Note	

11.2.19 SONet:TX<Pt>:VT2

Syntax	SONet:TX<Pt>:VT2 <id>
Description	This command sets the VT2 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VT2 number one. 2: VT2 number two. 3: VT2 number three. <i>MINimum = 1, MAXimum = 3, DEFault = 1</i>
Response	None.
Example	SON:TX1:VT2 1
Note	This value influences the channel number.

Syntax	SONet:TX<Pt>:VT2?
Description	This query returns VT2 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:VT2? → 1
Note	

11.2.20 SONet:TX<Pt>:VT15

Syntax	SONet:TX<Pt>:VT15 <id>
Description	This command sets the VT1.5 number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> 1: VT1.5 number one. 2: VT1.5 number two. 3: VT1.5 number three. 4: VT1.5 number four. <i>MINimum = 1, MAXimum = 4, DEFault = 1</i>
Response	None.
Example	SON:TX1:VT15 1
Note	This value influences the channel number.

Syntax	SONet:TX<Pt>:VT15?
Description	This query returns VT1.5 number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:VT15? → 1
Note	

11.2.21 SONet:TX<Pt>:CHANnel

Syntax	SONet:TX<Pt>:CHANnel <id>
Description	This command sets the channel number for the signal structure.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=84, DEFault = 1</i>
Response	None.
Example	SON:TX1:CHAN 1
Note	The value influences the TUG-3, TUG-2 and TU-12 numbers.

Syntax	SONet:TX<Pt>:CHANnel?
Description	This query returns the channel number for the signal structure.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TX1:CHAN? → 1
Note	

11.2.22 SONet:TX<Pt>:MAPPing

Syntax	SONet:TX<Pt>:MAPPing <type>
Description	This command sets the mapping type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SYNChronous: Synchronous mapping. ASYNchronous: Asynchronous mapping. <i>DEFault = SYNC</i>
Response	None.
Example	SON:TX1:MAPP SYNC
Note	

Syntax	SONet:TX<Pt>:MAPPING?
Description	This query returns the mapping type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:MAPP? → SYNC
Note	

11.2.23 SONet:TX<Pt>:TOH:DEFault

Syntax	SONet:TX<Pt>:TOH:DEFault
Description	This command sets all OC TOH bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:TOH:DEF
Note	There is no query version of this command.

11.2.24 SONet:TX<Pt>:TOH:TRACe

Syntax	SONet:TX<Pt>:TOH:TRACe <string>[,<idlechar>]
Description	This command sets the TOH trace (J0) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: The string to be used as section trace string. <i>DEFault</i> = "Message_Test_J0" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:TOH:TRAC "Message_Test_J0",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated.

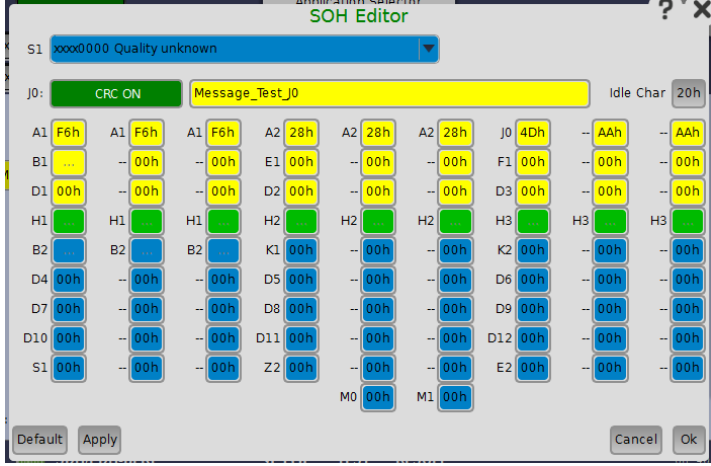
Syntax	SONet:TX<Pt>:TOH:TRACe?
Description	This query returns the TOH trace for string and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:TOH:TRAC? → "Message_Test_J0",#H20
Note	

11.2.25 SONet:TX<Pt>:TOH:TRACe:CRC

Syntax	SONet:TX<Pt>:TOH:TRACe:CRC <mode>
Description	This command sets the TOH trace (J0) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:TOH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:TOH:TRACe:CRC?
Description	This query returns the mode of the TOH trace (J0) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:TOH:TRAC:CRC? → 1
Note	

11.2.26 SONet:TX<Pt>:TOH

Syntax	SONet:TX<Pt>:TOH <TOH-byte>,<value1>[,<value2>[,<value3>]]
Description	This command sets the value of the specified bytes in the TOH.
Parameters	<Pt> = Port number <TOH-byte> = <CHARACTER PROGRAM DATA> A1: 3 bytes. A2: 3 bytes. J0: 3 bytes. Note: The defined trace string will be disabled. B1: 2 bytes. <value3> is ignored. E1: 3 bytes. F1: 3 bytes. D1: 3 bytes. D2: 3 bytes. D3: 3 bytes. K1: 3 bytes. K2: 3 bytes. D4: 3 bytes. D5: 3 bytes. D6: 3 bytes. D7: 3 bytes. D8: 3 bytes. D9: 3 bytes. D10: 3 bytes. D11: 3 bytes. D12: 3 bytes. S1: 3 bytes. Z2: 3 bytes. E2: 3 bytes. M0: 1 byte. <value2> and <value3> are ignored. ¹ M1: 1 byte. <value2> and <value3> are ignored.  <value1> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255 <value2> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255 <value3> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Examples	SON:TX1:TOH A1,0,0,0 SON:TX1:TOH D7,253,32,26 SON:TX1:TOH B1,4,5 SON:TX1:TOH M1,0
Note	¹ Only valid for SONet:TX<Pt>:OCLevel = 192 or 768.

Syntax	SONet:TX<Pt>:TOH? <TOH-byte>
Description	This query returns the value of the specified bytes in the TOH.
Parameters	<Pt> = Port number <SOH-byte> = <CHARACTER PROGRAM DATA>
Response	<value1> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value2> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value3> = <HEXADECIMAL NUMERIC RESPONSE DATA>]]
Examples	SON:TX1:TOH? A1 → #H00,#H00,#H00 SON:TX1:TOH? D7 → #HFD,#H20,#H1A SON:TX1:TOH? B1 → #H04,#H05 SON:TX1:TOH? M1 → #H00
Note	

11.2.27 SONet:TX<Pt>:STS3:POH:DEFault

Syntax	SONet:TX<Pt>:STS3:POH:DEFault
Description	This command sets all STS3 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:STS3:POH:DEF
Note	There is no query version of this command.

11.2.28 SONet:TX<Pt>:STS3:POH:TRACe

Syntax	SONet:TX<Pt>:STS3:POH:TRACe <string>[,<idlechar>]
Description	This command sets the STS3 path trace (J1) to the specified string and its idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: The string to be used as path trace string. <i>DEFault</i> = "Message_Test_J1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:STS3:POH:TRAC "Message_Test_J1",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated.

Syntax	SONet:TX<Pt>:STS3:POH:TRACe?
Description	This query returns the STS3 path trace text and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS3:POH:TRAC? → "Message_Test_J1",#H20
Note	

11.2.29 SONet:TX<Pt>:STS3:POH:TRACe:CRC

Syntax	SONet:TX<Pt>:STS3:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:STS3:POH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:STS3:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:STS3:POH:TRAC:CRC? → 1
Note	

11.2.30 SONet:TX<Pt>:STS3:POH:TTCM

Syntax	SONet:TX<Pt>:STS3:POH:TTCM <string>[,<idlechar>]
Description	This command sets the STS3 TCM trace (Z5) to the specified string and its idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_Z5" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:STS3:POH:TTCM "Apid_TCM_Z5",#H20
Note	

Syntax	SONet:TX<Pt>:STS3:POH:TTCM?
Description	This query returns the STS3 TCM trace text and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS3:POH:TTCM? → "Apid_TCM_Z5",#H20
Note	

11.2.31 SONet:TX<Pt>:STS3:POH

Syntax	SONet:TX<Pt>:STS3:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the STS3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte. Only available when there is no TCM. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SON:TX1:STS3:POH C2,0
Note	

Syntax	SONet:TX<Pt>:STS3:POH? <POH-byte>
Description	This query returns the value of the specified byte in the STS3 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Examples	SON:TX1:STS3:POH? C2 → #H00 SON:TX1:STS3:POH? H4 → #HFF
Note	

11.2.32 SONet:TX<Pt>:STS1:POH:DEFault

Syntax	SONet:TX<Pt>:STS1:POH:DEFault
Description	This command sets all STS1 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:STS1:POH:DEF
Note	There is no query version of this command.

11.2.33 SONet:TX<Pt>:STS1:POH:TRACe

Syntax	SONet:TX<Pt>:STS1:POH:TRACe <string>[,<idlechar>]
Description	This command sets the STS1 path trace (J1) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Message_Test_J1" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:STS1:POH:TRAC "Message_Test_J1",#H20
Note	

Syntax	SONet:TX<Pt>:STS1:POH:TRACe?
Description	This query returns the STS1 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:POH:TRAC? → "Message_Test_J1",#H20
Note	

11.2.34 SONet:TX<Pt>:STS1:POH:TRACe:CRC

Syntax	SONet:TX<Pt>:STS1:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:STS1:POH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:STS1:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:STS1:POH:TRAC:CRC? → 1
Note	

11.2.35 SONet:TX<Pt>:STS1:POH:TTCM

Syntax	SONet:TX<Pt>:STS1:POH:TTCM <string>[,<idlechar>]
Description	This command sets the STS1 TCM trace (Z5) to the specified string, and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_Z5" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:STS1:POH:TTCM "Apid_TCM_Z5",#H20
Note	

Syntax	SONet:TX<Pt>:STS1:POH:TTCM?
Description	This query returns the STS1 TCM trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:POH:TTCM? → "Apid_TCM_Z5",#H20
Note	

11.2.36 SONet:TX<Pt>:STS1:POH

Syntax	SONet:TX<Pt>:STS1:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the STS1 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte. Only available when there is no TCM. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SON:TX1:STS1:POH C2,0
Note	

Syntax	SONet:TX<Pt>:STS1:POH? <POH-byte>
Description	This query returns the value of the specified byte in the STS1 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:POH? C2 → #H00
Note	

11.2.37 SONet:TX<Pt>:VT2:POH:DEFault

Syntax	SONet:TX<Pt>:VT2:POH:DEFault
Description	This command sets all VT2 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:VT2:POH:DEF
Note	There is no query version of this command.

11.2.38 SONet:TX<Pt>:VT2:POH:TRACe

Syntax	SONet:TX<Pt>:VT2:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VT2 path trace (J2) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Message_Test_J2" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:VT2:POH:TRAC "Message_Test_J2",#H20
Note	

Syntax	SONet:TX<Pt>:VT2:POH:TRACe?
Description	This query returns the VT2 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT2:POH:TRAC? → "Message Test J2",#H20
Note	

11.2.39 SONet:TX<Pt>:VT2:POH:TRACe:CRC

Syntax	SONet:TX<Pt>:VT2:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J2) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:VT2:POH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:VT2:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J2) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:VT2:POH:TRAC:CRC? → 1
Note	

11.2.40 SONet:TX<Pt>:VT2:POH:TTCM

Syntax	SONet:TX<Pt>:VT2:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VT2 TCM trace (Z6) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_Z6" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:VT2:POH:TTCM "Apid_TCM_Z6",#H20
Note	

Syntax	SONet:TX<Pt>:VT2:POH:TTCM?
Description	This query returns the VT2 trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT2:POH:TTCM? → "Apid_TCM_Z6",#H20
Note	

11.2.41 SONet:TX<Pt>:VT2:POH

Syntax	SONet:TX<Pt>:VT2:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VT2 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5 byte. Z6: Z6 byte. Z7: Z7 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255</i>
Response	None.
Example	SON:TX1:VT2:POH V5,#H04
Note	

Syntax	SONet:TX<Pt>:VT2:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VT2 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT2:POH? V5 → #H04
Note	

11.2.42 SONet:TX<Pt>:VT15:POH:DEFault

Syntax	SONet:TX<Pt>:VT15:POH:DEFault
Description	This command sets all VT1.5 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:VT15:POH:DEF
Note	There is no query version of this command.

11.2.43 SONet:TX<Pt>:VT15:POH:TRACe

Syntax	SONet:TX<Pt>:VT15:POH:TRACe <string>[,<idlechar>]
Description	This command sets the VT1.5 path trace (J2) to the specified string and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault = "Message_Test_J2"</i> <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault = #H20</i>
Response	None.
Example	SON:TX1:VT15:POH:TRAC "Message_Test_J2",#H20
Note	

Syntax	SONet:TX<Pt>:VT15:POH:TRACe?
Description	This query returns the VT1.5 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT15:POH:TRAC? → "Message_Test_J2",#H20
Note	

11.2.44 SONet:TX<Pt>:VT15:POH:TRACe:CRC

Syntax	SONet:TX<Pt>:VT15:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J2) CRC mode (OFF/ON).
Parameters	<Pt> = Port number
	<mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:VT15:POH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:VT15:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J2) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:VT15:POH:TRAC:CRC? → 1
Note	

11.2.45 SONet:TX<Pt>:VT15:POH:TTCM

Syntax	SONet:TX<Pt>:VT15:POH:TTCM <string>[,<idlechar>]
Description	This command sets the VT1.5 TCM trace (Z6) to the specified string and the idle char.
Parameters	<Pt> = Port number
	<string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_Z6"
	<idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:VT15:POH:TTCM "Apid_TCM_Z6",#H20
Note	

Syntax	SONet:TX<Pt>:VT15:POH:TTCM?
Description	This query returns the VT1.5 trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT15:POH:TTCM? → "Apid_TCM_Z6",#H20
Note	

11.2.46 SONet:TX<Pt>:VT15:POH

Syntax	SONet:TX<Pt>:VT15:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the VT1.5 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5 byte. Z6: Z6 byte. Z7: Z7 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255</i>
Response	None.
Example	SON:TX1:VT15:POH V5,#H04
Note	

Syntax	SONet:TX<Pt>:VT15:POH? <POH-byte>
Description	This query returns the value of the specified byte in the VT1.5 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:VT15:POH? V5 → #H04
Note	

11.2.47 SONet:TX<Pt>:STS1:STS1:POH:DEFault

Syntax	SONet:TX<Pt>:STS1:STS1:POH:DEFault
Description	This command sets all STS1 path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	SON:TX1:STS1:STS1:POH:DEF
Note	There is no query version of this command.

11.2.48 SONet:TX<Pt>:STS1:STS1:POH:TRACe

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TRACe <string>[,<idlechar>]
Description	This command sets the STS1 path trace (J1) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault = "Message_Test_J1"</i> <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault = #H20</i>
Response	None.
Example	SON:TX1:STS1:STS1:POH:TRAC "Message_Test_J1",#H20
Note	

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TRACe?
Description	This query returns the STS1 path trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:STS1:POH:TRAC? → "Message_Test_J1",#H20
Note	

11.2.49 SONet:TX<Pt>:STS1:STS1:POH:TRACe:CRC

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TRACe:CRC <mode>
Description	This command sets the section overhead trace (J1) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	SON:TX1:STS1:STS1:POH:TRAC:CRC ON
Note	

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TRACe:CRC?
Description	This query returns the mode of the overhead trace (J1) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <BOOLEAN RESPONSE DATA>
Example	SON:TX1:STS1:STS1:POH:TRAC:CRC? → 1
Note	

11.2.50 SONet:TX<Pt>:STS1:STS1:POH:TTCM

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TTCM <string>[,<idlechar>]
Description	This command sets the STS1 TCM trace (Z5) to the specified string, and the idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> Quoted string: Path trace string. <i>DEFault</i> = "Apid_TCM_Z5" <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	SON:TX1:STS1:STS1:POH:TTCM "Apid_TCM_Z5",#H20
Note	

Syntax	SONet:TX<Pt>:STS1:STS1:POH:TTCM?
Description	This query returns the STS1 TCM trace.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA>, <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:STS1:POH:TTCM? → "Apid_TCM_Z5",#H20
Note	

11.2.51 SONet:TX<Pt>:STS1:STS1:POH

Syntax	SONet:TX<Pt>:STS1:STS1:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the STS1 path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte. Only available when there is no TCM. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	SON:TX1:STS1:STS1:POH C2,0
Note	

Syntax	SONet:TX<Pt>:STS1:STS1:POH? <POH-byte>
Description	This query returns the value of the specified byte in the STS1 path overhead.
Parameters	<Pt> = Port number
	<POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:TX1:STS1:STS1:POH? C2 → #H00
Note	

11.2.52 SONet:TX<Pt>:FOLLow

Syntax	SONet:TX<Pt>:FOLLow <mode>
Description	This command sets the transmitter setup to follow another setup or not to follow.
Parameters	<Pt> = Port number
	<mode> = <CHARACTER PROGRAM DATA>
	NONE: Do not follow.
	TX1: Follows setup of the Tx port1. <i>DEFault = NONE</i>
Response	None.
Example	SON:TX1:FOLL NONE
Note	

Syntax	SONet:TX<Pt>:FOLLow?
Description	This query returns the transmitter setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:FOLL? → NONE
Note	

11.2.53 SONet:TX<Pt>:OTHRough

Syntax	SONet:TX<Pt>:OTHRough <mode>
Description	This command sets the OH Overwrite Position.
Parameters	<Pt> = Port number
	<mode> = <CHARACTER PROGRAM DATA>
	TOH: SOH Data.
	A1A2: A1/A2 byte.
	K1K2: K1/K2 byte.
	S1: S1 byte.
	DCC1TO3: DCC1-3 byte.
	DCC4TO12: DCC4-12 byte.
Parameters	J0: J0 byte.
	TOH1BYTE: 1 byte of TOH.(selectable)
	<i>DEFault = TOH</i>
Response	None.
Example	SON:TX1:OTHR A1A2
Note	

Syntax	SONet:TX<Pt>:OTHRough?
Description	This query returns the OH Overwrite Position.
Parameter	<Pt> = Port number
Response	<position> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:OTHR? → A1A2
Note	

11.2.54 SONet:TX<Pt>:OTHRough:BYTE

Syntax	SONet:TX<Pt>:OTHRough:BYTE <byte>
Description	This command sets the OH Overwrite Position.
Parameters	<Pt> = Port number <byte> = <CHARACTER PROGRAM DATA> A11-A13: A1 bytes. A21-A23: A2 bytes. J0: J0 byte. E1: E1 byte. F1: F1 byte. D1: D1 byte. D2: D2 byte. D3: D3 byte. K1: K1 byte. K2: K2 byte. D4: D4 byte. D5: D5 byte. D6: D6 byte. D7: D7 byte. D8: D8 byte. D9: D9 byte. D10: D10 byte. D11: D11 byte. D12: D12 byte. S1: S1 byte. M0: M0 byte. M1: M1 byte. E2: E2 byte. X18-X99: X<Line><Column> <i>DEFault = A11</i>
Response	None.
Example	SON:TX1:OTHR:BYTE A11
Note	

Syntax	SONet:TX<Pt>:OTHRough:BYTE?
Description	This query returns the OH Overwrite Position.
Parameter	<Pt> = Port number
Response	<byte> = <CHARACTER RESPONSE DATA>
Example	SON:TX1:OTHR:BYTE? → A11
Note	

11.2.55 SONet:TX<Pt>:STL:MMAPIng:LANE

Syntax	SONet:TX<Pt>:STL:MMAPIng:LANE <lanes>
Description	This command sets the STL lane marker assignment.
Parameters	<Pt> = Port number {(<lanes>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of the value of the lane marker ranging from 0 to 3.
Response	None.
Example	SON:TX1:STL:MMAPIng:LANE (0,1,2,3)
Note	This command can be used on 40G

Syntax	SONet:TX<Pt>:STL:MMAPing:LANE?
Description	This query returns the STL lane marker assignment.
Parameter	<Pt> = Port number
Response	{(<lanes>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	SON:TX1:STL:MMAP:LANE? → (0,1,2,3)
Note	This command can be used on 40G

11.3 Stimuli

11.3.1 SONet:STIMuli:TX<Pt>:FOFFset

Syntax	SONet:STIMuli:TX<Pt>:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> MT1000A: <i>MINimum</i> =-50, <i>MAXimum</i> =50, <i>DEFault</i> =0 MT1100A: <i>MINimum</i> =-200.0, <i>MAXimum</i> =200.0, <i>DEFault</i> = 0
Response	None.
Example	SON:STIM:TX1:FOFF 0
Note	

Syntax	SONet:STIMuli:TX<Pt>:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	MT1000A: <offset> = <NR1 NUMERIC RESPONSE DATA> MT1100A: <offset> = <NR2 NUMERIC RESPONSE DATA>
Example	MT1000A: SON:STIM:TX1:FOFF? → 0 MT1100A: SON:STIM:TX1:FOFF? → 0.0
Note	

11.3.2 SONet:STIMuli:TX<Pt>:ALARm

Syntax	SONet:STIMuli:TX<Pt>:ALARm <alarmtype>
Description	This command sets the type of alarm to be generated.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> LOS: Loss of signal LOF: Loss of frame OOF: Out of frame AISL(MSAIS): MS alarm indication signal RDIL(MSRDI): MS remote defect indicator AISP(AUAIS): AU alarm indication signal LOPP(AULOP): AU loss of pointer TIMP(HPTIM): HP trace identifier mismatch PLMP(HPPLM): HP payload label mismatch UNEQP(HPUNEQ): HP unequipped RDIP(HPRDI): HP remote defect indicator AISV(TUAIS): TU alarm indication signal LOPV(TULOP): TU loss of pointer LOMV(TULOM): TU loss of multiframe TIMV(LPTIM): LP trace identifier mismatch UNEQV(LPUNEQ): LP unequipped RDIV(LPRDI): LP remote defect indicator PLMV(LPPLM): LP payload label mismatch LSS: Loss of signal synchronization TCUNEQ: TC unequipped TCLTC: TC loss of tandem connection TCTIM: TC trace identifier mismatch TCAIS: TC alarm indication signal TCRDI: TC remote defect indicator TCODI: TC outgoing defect indicator <i>DEFault = LOS</i>
Response	None.
Example	SON:STIM:TX1:ALAR LOS
Note	

Syntax	SONet:STIMuli:TX<Pt>:ALARm?
Description	This query returns the type of alarm to be generated.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:ALAR? → LOS
Note	

11.3.3 SONet:STIMuli:TX<Pt>:AINSert

Syntax	SONet:STIMuli:TX<Pt>:AINSert <insertion>
Description	This command sets the method to insert alarm.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF PERManent ALTerbate <i>DEFault = OFF</i>
Response	None.
Example	SON:STIM:TX1:AINS PERM
Note	

Syntax	SONet:STIMuli:TX<Pt>:AINsert?
Description	This query returns the alarm insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:AINS? → PERM
Note	

11.3.4 SONet:STIMuli:TX<Pt>:ANLength

Syntax	SONet:STIMuli:TX<Pt>:ANLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SON:STIM:TX<Pt>:AINS
Response	None.
Example	SON:STIM:TX1:ANL 1
Note	

Syntax	SONet:STIMuli:TX<Pt>:ANLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:ANL? → 1
Note	

11.3.5 SONet:STIMuli:TX<Pt>:AALength

Syntax	SONet:STIMuli:TX<Pt>:AALength <frames>
Description	This command sets the alternate alarm length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SON:STIM:TX<Pt>:AINS
Response	None.
Example	SON:STIM:TX1:AAL 1
Note	

Syntax	SONet:STIMuli:TX<Pt>:AALength?
Description	This query returns the alternate alarm length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:AAL? → 1
Note	

11.3.6 SONet:STIMuli:TX<Pt>:ERRor

Syntax	SONet:STIMuli:TX<Pt>:ERRor <errordestination>
Description	This command sets the error destination.
Parameters	<Pt> = Port number <errordestination> = <CHARACTER PROGRAM DATA> A1A2: Frame alignment word B1: B1 checksum byte B2: B2 checksum byte REIL(MSREI): MS remote error indication B3: B3 checksum byte REIP(HPREI): HP Remote error indication V5LPB3: B3 checksum of the low-order path REIV(LPREI): LP remote error indication PRBS: Pattern error ETRans: ERR-TRANS TCIEC: Tandem Connection incoming error count TCREI: Tandem Connection remote error indication TCOEI: Tandem Connection outgoing error indication TCBIP2: 2-bit Bit Interleaved Parity for Tandem Connection <i>DEFault = A1A2</i>
Response	None.
Example	SON:STIM:TX1:ERR MSREI
Note	Some errors are depended on type of content, setting them without the correct type of content will set EINSert to OFF. Changing the error may also change the insert method. See section 11.3.7.

Syntax	SONet:STIMuli:TX<Pt>:ERRor?
Description	This query returns the error destination.
Parameter	<Pt> = Port number
Response	<errordestination> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:ERR? → MSREI
Note	

11.3.7 SONet:STIMuli:TX<Pt>:EINsert

Syntax	SONet:STIMuli:TX<Pt>:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual B03: Burst · 1E-03 ¹ B04: Burst · 1E-04 ¹ B05: Burst · 1E-05 ¹ B06: Burst · 1E-06 ² B07: Burst · 1E-07 B08: Burst · 1E-08 B09: Burst · 1E-09 B10: Burst · 1E-10 ALternate DEFault = OFF
Response	None.
Example	SON:STIM:TX1:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22. ¹ Is available for PRBS and ETRans (B03 is only available for ETRans if the STM Level is 1). ² Is available for PRBS, ETRans, B2, V5LPB3, REIL, TCIEC, TCBIP2, TCRI and TCOEI. Selecting an unsupported burst rate will reset the rate to the closest possible.

Syntax	SONet:STIMuli:TX<Pt>:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:EINS? → MAN
Note	

11.3.8 SONet:STIMuli:TX<Pt>:EBLength

Syntax	SONet:STIMuli:TX<Pt>:EBLength <burstlength>
Description	This command sets the error burst length to generate.
Parameters	<Pt> = Port number <burstlength> = <NUMERIC PROGRAM DATA> MINimum = 1, DEFault = 1 Maximum depends on the error insert method, see SON:STIM:TX<Pt>:EINS B03 - B10: Maximum = 1 MANual: Maximum = 8000¹
Response	None.
Example	SON:STIM:TX1:EBL 1
Note	¹ If VC12 is active the maximum value for REIL, V5LPB3, TCIEC, TCBIP2, TCRI and TCOEI is 2000. The maximum value is 4000 when :STIM:TX<Pt>:ERR is PRBS (Pattern error).

Syntax	SONet:STIMuli:TX<Pt>:EBLength?
Description	This query returns the error burst length to generate.
Parameter	<Pt> = Port number
Response	<burstlength> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:EBL? → 1
Note	

11.3.9 SONet:STIMuli:TX<Pt>:ENLength

Syntax	SONet:STIMuli:TX<Pt>:ENLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SON:STIM:TX<Pt>:EINS
Response	None.
Example	SON:STIM:TX1:ENL 1
Note	

Syntax	SONet:STIMuli:TX<Pt>:ENLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:ENL? → 1
Note	

11.3.10 SONet:STIMuli:TX<Pt>:EELength

Syntax	SONet:STIMuli:TX<Pt>:EELength <frames>
Description	This command sets the alternate error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i> Maximum depends on the error insert method, see SON:STIM:TX<Pt>:EINS
Response	None.
Example	SON:STIM:TX1:EEL 1
Note	

Syntax	SONet:STIMuli:TX<Pt>:EELength?
Description	This query returns the alternate error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:EEL? → 1
Note	

11.3.11 SONet:STIMuli:TX<Pt>:PTSequence

Syntax	SONet:STIMuli:TX<Pt>:PTSequence <type>,<sequence>
Description	This command sets the SONET pointer test sequence.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> STS3: STS3 pointer STS1: STS1 pointer TU3: TU-3 pointer VT2: VT2 pointer VT15: VT1.5 pointer <sequence> = <CHARACTER PROGRAM DATA> NONE: No test sequence SALternating: Single alternating RDOuble: Regular + double RMISsing: Regular + missing DALternating: Double alternating
Response	None.
Example	SON:STIM:TX1:PTS STS3,NONE
Note	

Syntax	SONet:STIMuli:TX<Pt>:PTSequence? <type>
Description	This query returns the SONET pointer test sequence.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> STS3: STS3 pointer STS1: STS1 pointer TU3: TU-3 pointer VT2: VT2 pointer VT15: VT1.5 pointer
Response	<sequence> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:PTS? STS3 → NONE
Note	

11.3.12 SONet:STIMuli:TX<Pt>:PMOVe

Syntax	SONet:STIMuli:TX<Pt>:PMOVe <type>,<value>
Description	This command sets the SONET pointer movement sequence. The value specifies the number of pointer increments.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> STS3: STS3 pointer STS1: STS1 pointer TU3: TU-3 pointer VT2: VT2 pointer VT15: VT1.5 pointer <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = -100, <i>MAXimum</i> = 100
Response	None.
Example	SON:STIM:TX1:PMOV AU4,9
Notes	There is no query version of this command. A value of zero has no effect. A negative value results in pointer decrements.

11.3.13 SONet:STIMuli:TX<Pt>:PJUMp

Syntax	SONet:STIMuli:TX<Pt>:PJUMp <type>,<value>[,<ndf>]
Description	This command sets the SONET pointer jump. The value specifies the new pointer value.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> STS3: STS3 pointer STS1: STS1 pointer TU3: TU-3 pointer VT2: VT2 pointer VT15: VT1.5 pointer <value> = <NUMERIC PROGRAM DATA> The valid range depends on SONet:STIMuli:TX<Pt>:PTYPE STS3: 0 to 782 STS1: 0 to 782 TU3: 0 to 764 VT2: 0 to 139 VT15: 0 to 103 <ndf> = <CHARACTER PROGRAM DATA> WITH: With new data flag (NDF) WOUT: Without new data flag (NDF) <i>DEFault = WITH</i>
Response	None.
Example	SON:STIM:TX1:PJUM AU4,300
Notes	There is no query version of this command. A negative value disables new data flag (NDF).

11.3.14 SONet:STIMuli:TX<Pt>:STL:AERRor:LANE

Syntax	SONet:STIMuli:TX<Pt>:STL:AERRor:LANE <lane>
Description	This command sets the lane of the multi lane alarm/error to be inserted.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1000</i>
Response	None.
Example	SON:STIM:TX1:STL:AERR:LANE #B01 SON:STIM:TX1:STL:AERR:LANE #B0100 These commands add error into lane 1.
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:AERRor:LANE?
Description	This query returns the lane of the multi lane alarm/error to be inserted.
Parameter	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:AERR:LANE? → #B0100
Note	This command can be used on 40G

11.3.15 SONet:STIMuli:TX<Pt>:STL:ALARm

Syntax	SONet:STIMuli:TX<Pt>:STL:ALARm <alarmtype>
Description	This command sets the type of alarm to be inserted.
Parameters	<Pt> = Port number <alarmtype> = <CHARACTER PROGRAM DATA> LOFOOF: LOF/OOF-STL LOROOR: LOR/OOR-STL <i>DEFault = LOFOOF</i>
Response	None.
Example	SON:STIM:TX1:STL:ALAR LOF
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:ALARm?
Description	This query returns the type of alarm to be inserted.
Parameter	<Pt> = Port number
Response	<alarmtype> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:STL:ALAR? → LOF
Note	This command can be used on 40G

11.3.16 SONet:STIMuli:TX<Pt>:STL:AINSert

Syntax	SONet:STIMuli:TX<Pt>:STL:AINSert <insertion>
Description	This command sets the method to insert alarm.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF MANual ALternate <i>DEFault = OFF</i>
Response	None.
Example	SON:STIM:TX1:STL:AINS MAN
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:AINSert?
Description	This query returns the alarm insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:STL:AINS? → MAN
Note	This command can be used on 40G

11.3.17 SONet:STIMuli:TX<Pt>:STL:ABLength

Syntax	SONet:STIMuli:TX<Pt>:STL:ABLength <frames>
Description	This command sets the alarm burst length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:ABL 8000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:ABLength?
Description	This query returns the alarm burst length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:ABL? → 8000
Note	This command can be used on 40G

11.3.18 SONet:STIMuli:TX<Pt>:STL:AALength

Syntax	SONet:STIMuli:TX<Pt>:STL:AALength <frames>
Description	This command sets the alternate alarm length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:AAL 8000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:AALength?
Description	This query returns the alternate alarm length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:AAL? → 8000
Note	This command can be used on 40G

11.3.19 SONet:STIMuli:TX<Pt>:STL:ANLength

Syntax	SONet:STIMuli:TX<Pt>:STL:ANLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:ANL 8000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:ANLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:ANL? → 8000
Note	This command can be used on 40G

11.3.20 SONet:STIMuli:TX<Pt>:STL:ERRor

Syntax	SONet:STIMuli:TX<Pt>:STL:ERRor <errortype>
Description	This command sets the type of error to be inserted.
Parameters	<Pt> = Port number <errortype> = <CHARACTER PROGRAM DATA> A1A2: A1A2-STL <i>DEFault = A1A2</i>
Response	None.
Example	SON:STIM:TX1:STL:ERR A1A2
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:ERRor?
Description	This query returns the type of error to be inserted.
Parameter	<Pt> = Port number
Response	<errortype> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:STL:ERR? → A1A2
Note	This command can be used on 40G

11.3.21 SONet:STIMuli:TX<Pt>:STL:EINsert

Syntax	SONet:STIMuli:TX<Pt>:STL:EINsert <insertion>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> OFF ALternate <i>DEFault = OFF</i>
Response	None.
Example	SON:STIM:TX1:STL:EINS ALT
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:EINsert?
Description	This query returns the error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	SON:STIM:TX1:STL:EINS? → ALT
Note	This command can be used on 40G

11.3.22 SONet:STIMuli:TX<Pt>:STL:EELength

Syntax	SONet:STIMuli:TX<Pt>:STL:EELength <frames>
Description	This command sets the alternate error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:EEL 8000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:EELength?
Description	This query returns the alternate error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:EEL? → 8000
Note	This command can be used on 40G

11.3.23 SONet:STIMuli:TX<Pt>:STL:ENLength

Syntax	SONet:STIMuli:TX<Pt>:STL:ENLength <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:ENL 8000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:ENLength?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:ENL? → 8000
Note	This command can be used on 40G

11.3.24 SONet:STIMuli:TX<Pt>:STL:SKEW:BIT

Syntax	SONet:STIMuli:TX<Pt>:STL:SKEW:BIT <bits>
Description	This command sets the bits of the skew .
Parameters	<Pt> = Port number <bits> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 138240, DEFault=1</i>
Response	None.
Example	SON:STIM:TX1:STL:SKEW:BIT 1000
Note	This command can be used on 40G

Syntax	SONet:STIMuli:TX<Pt>:STL:SKEW:BIT?
Description	This query returns the bits of the skew .
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:SKEW:BIT? → 1000
Note	This command can be used on 40G

11.3.25 SONet:STIMuli:TX<Pt>:STL:SKEW:NS?

Syntax	SONet:STIMuli:TX<Pt>:STL:SKEW:NS?
Description	This query returns the time of the skew to be inserted. Unit: ns
Parameter	<Pt> = Port number
Response	<skew> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:SKEW:NS? → 100.469
Note	This command can be used on 40G

11.3.26 SONet:STIMuli:TX<Pt>:STL:SKEW:LANE

Syntax	SONet:STIMuli:TX<Pt>:STL:SKEW:LANE <lane>
Description	This command sets the lane of the skew to be inserted.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B1000</i>
Response	None.
Example	SON:STIM:TX1:STL:SKEW:LANE #B01 SON:STIM:TX1:STL:SKEW:LANE #B0100 These commands add skew into lane 1.
Note	This command can be used on 40G

11.3.27 SONet:STIMuli:TX<Pt>:STL:SKEW:LANE?

Syntax	SONet:STIMuli:TX<Pt>:STL:SKEW:LANE?
Description	This query returns the lane of the skew to be inserted.
Parameters	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	SON:STIM:TX1:STL:SKEW:LANE? → #B0100
Note	This command can be used on 40G

11.4 Result

11.4.1 SONet:RX<Pt>:IFETch?

Syntax	SONet:RX<Pt>:IFETch? <parameter>
Description	This query fetches a SONEt interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Alarms LOS: Loss of signal. Response: <Seconds>,<Ratio> GAIS: Generic alarm indication signal. Response: <Seconds>,<Ratio> LOF: Loss of frame. Response: <Seconds>,<Ratio> OOF: Out of frame. Response: <Seconds>,<Ratio> AISL: Multiplex section alarm indication signal. Response: <Seconds>,<Ratio> RDIL: Multiplex section remote defect indicator. Response: <Seconds>,<Ratio> AISP: Administrative unit - alarm indication signal. Response: <Seconds>,<Ratio> LOPP: Administrative unit - loss of pointer. Response: <Seconds>,<Ratio> TIMP: High-order path trace identifier mismatch. Response: <Seconds>,<Ratio> PLMP: Payload label mismatch. Response: <Seconds>,<Ratio> UNEQP: High-order path unequipped. Response: <Seconds>,<Ratio> RDIP: High-order path remote defect indicator. Response: <Seconds>,<Ratio> AISV: Tributary unit alarm indication signal¹. Response: <Seconds>,<Ratio> LOPV: Tributary unit loss of pointer¹. Response: <Seconds>,<Ratio> LOMV: Tributary unit loss of multi frame¹. Response: <Seconds>,<Ratio> TIMV: Low-order path trace identifier mismatch¹. Response: <Seconds>,<Ratio> UNEQV: Low-order path unequipped¹. Response: <Seconds>,<Ratio> RDIV: Low-order path remote defect indicator¹. Response: <Seconds>,<Ratio> PLMV: Low-order path payload label mismatch¹. Response: <Seconds>,<Ratio> LSS: Loss of signal synchronization¹. Response: <Seconds>,<Ratio> Errors A1A2: Response: <Count>,<Ratio> B1: Response: <Count>,<Ratio> B2: Response: <Count>,<Ratio> REIL: Response: <Count>,<Ratio> B3: Response: <Count>,<Ratio> REIP: Response: <Count>,<Ratio> V5LPB3: ¹Response: <Count>,<Ratio> ERRPRBS: Pattern errors¹. Response: <Count>,<Ratio> ERRPRBSBLK: Pattern block errors¹. Response: <Count>,<Ratio> REIV: Response: <Count>,<Ratio> STSNDF: Response: <Count>,<Ratio> VTNDF: Response: <Count>,<Ratio> SAPS: Switch APS. Response: <Count>,<Ratio> Rx frequency FREQ: Frequency deviation. Response: <ppm> FREQDIF: Frequency difference (RX1-RX2). Response: <ppm> (Only for RX1, RX2 is always NaN (section 1.6.1)) Mux quality MFES: Forward ES. Response: <Count>,<Ratio%> MFSES: Forward SES. Response: <Count>,<Ratio%> MFUNAV: Forward UNAV. Response: <Count>,<Ratio%> MBES: Backward ES. Response: <Count>,<Ratio%> MBSES: Backward SES. Response: <Count>,<Ratio%> MBUNAV: Backward UNAV. Response: <Count>,<Ratio%> STS3CSPE quality STS3CSPEFES: Forward ES. Response: <Count>,<Ratio%> STS3CSPEFSES: Forward SES. Response: <Count>,<Ratio%>

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STS3CSPEFUNAV: Forward UNAV. Response: <Count>,<Ratio%>
 STS3CSPEBES: Backward ES. Response: <Count>,<Ratio%>
 STS3CSPEBSES: Backward SES. Response: <Count>,<Ratio%>
 STS3CSPEBUNAV: Backward UNAV. Response: <Count>,<Ratio%>
STS1SPE quality¹
 STS1SPEFES: Forward ES. Response: <Count>,<Ratio%>
 STS1SPEFSES: Forward SES. Response: <Count>,<Ratio%>
 STS1SPEFUNAV: Forward UNAV. Response: <Count>,<Ratio%>
 STS1SPEBES: Backward ES. Response: <Count>,<Ratio%>
 STS1SPEBSES: Backward SES. Response: <Count>,<Ratio%>
 STS1SPEBUNAV: Backward UNAV. Response: <Count>,<Ratio%>
VT2 quality¹
 VT2FES: Forward ES. Response: <Count>,<Ratio%>
 VT2FSES: Forward SES. Response: <Count>,<Ratio%>
 VT2FUNAV: Forward UNAV. Response: <Count>,<Ratio%>
 VT2BES: Backward ES. Response: <Count>,<Ratio%>
 VT2BSES: Backward SES. Response: <Count>,<Ratio%>
 VT2BUNAV: Backward UNAV. Response: <Count>,<Ratio%>
VT15 quality¹
 VT15FES: Forward ES. Response: <Count>,<Ratio%>
 VT15FSES: Forward SES. Response: <Count>,<Ratio%>
 VT15FUNAV: Forward UNAV. Response: <Count>,<Ratio%>
 VT15BES: Backward ES. Response: <Count>,<Ratio%>
 VT15BSES: Backward SES. Response: <Count>,<Ratio%>
 VT15BUNAV: Backward UNAV. Response: <Count>,<Ratio%>
Bulk quality
 ES: ES. Response: <Count>,<Ratio%>
 SES: SES. Response: <Count>,<Ratio%>
 UNAV: UNAV. Response: <Count>,<Ratio%>
STS pointer
 STSPOINT: AU pointer. Response: <Count>
 STSNEG: Negative. Response: <Count>
 STSPOS: Positive. Response: <Count>
VT pointer¹
 VTPOINT: VT pointer. Response: <Count>
 VTNEG: Negative. Response: <Count>
 VTPOS: Positive. Response: <Count>
Justification¹
 JNEG: Negative justification. Response: <Count>
 JPOS: Positive justification. Response: <Count>
MUX performance¹
 PMPES: Performance MUX PO limit ES. Response: <Count>,<Ratio%>
 PMPSES: Performance MUX PO limit SES. Response: <Count>,<Ratio%>
 PMPBBE: Performance MUX PO limit BBE. Response: <Count>,<Ratio%>
 PMBS1ES: Performance MUX BIS limit S1ES. Response: <Count>
 PMBS2ES: Performance MUX BIS limit S2ES. Response: <Count>
 PMBS1SES: Performance MUX BIS limit S1SES. Response: <Count>
 PMBS2SES: Performance MUX BIS limit S2SES. Response: <Count>
 PMFSTAT: Performance MUX forward status.
 Response: <STRING RESPONSE DATA>
 PMFES: Performance MUX forward ES. Response: <Count>,<Ratio%>
 PMFSES: Performance MUX forward SES. Response: <Count>,<Ratio%>
 PMFUNAV: Performance MUX forward UNAV. Response: <Count>,<Ratio%>
 PMFBBE: Performance MUX forward BBE. Response: <Count>,<Ratio%>
 PMBSTAT: Performance MUX backward status.
 Response: <STRING RESPONSE DATA>
 PMBES: Performance MUX backward ES. Response: <Count>,<Ratio%>

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	PMBSES: Performance MUX backward SES. Response: <Count>,<Ratio%> PMBUNAV: Performance MUX backward UNAV. Response: <Count>,<Ratio%> PMBBBE: Performance MUX backward BBE. Response: <Count>,<Ratio%> STS3CSPE performance¹ PSTS3CSPEPES: Performance VC4 PO limit ES. Response: <Count>,<Ratio%> PSTS3CSPEPSES: Performance VC4 PO limit SES. Response: <Count>,<Ratio%> PSTS3CSPEPBBE: Performance VC4 PO limit BBE. Response: <Count>,<Ratio%> PSTS3CSPEBS1ES: Performance VC4 BIS limit S1ES. Response: <Count> PSTS3CSPEBS2ES: Performance VC4 BIS limit S2ES. Response: <Count> PSTS3CSPEBS1SES: Performance VC4 BIS limit S1SES. Response: <Count> PSTS3CSPEBS2SES: Performance VC4 BIS limit S2SES. Response: <Count> PSTS3CSPEFSTAT: Performance VC4 forward status. Response: <STRING RESPONSE DATA> PSTS3CSPEFES: Performance VC4 forward ES. Response: <Count>,<Ratio%> PSTS3CSPEFSES: Performance VC4 forward SES. Response: <Count>,<Ratio%> PSTS3CSPEFUNAV: Performance VC4 forward UNAV. Response: <Count>,<Ratio%> PSTS3CSPEFBBE: Performance VC4 forward BBE. Response: <Count>,<Ratio%> PSTS3CSPEBSTAT: Performance VC4 backward status. Response: <STRING RESPONSE DATA> PSTS3CSPEBES: Performance VC4 backward ES. Response: <Count>,<Ratio%> PSTS3CSPEBSES: Performance VC4 backward SES. Response: <Count>,<Ratio%> PSTS3CSPEBUNAV: Performance VC4 backward UNAV. Response: <Count>,<Ratio%> PSTS3CSPEBBBE: Performance VC4 backward BBE. Response: <Count>,<Ratio%> VT2 performance¹ PVT2PES: Performance VC12 PO limit ES. Response: <Count>,<Ratio%> PVT2PSES: Performance VC12 PO limit SES. Response: <Count>,<Ratio%> PVT2PBBE: Performance VC12 PO limit BBE. Response: <Count>,<Ratio%> PVT2BS1ES: Performance VC12 BIS limit S1ES. Response: <Count> PVT2BS2ES: Performance VC12 BIS limit S2ES. Response: <Count> PVT2BS1SES: Performance VC12 BIS limit S1SES. Response: <Count> PVT2BS2SES: Performance VC12 BIS limit S2SES. Response: <Count> PVT2FSTAT: Performance VC12 forward status. Response: <STRING RESPONSE DATA> PVT2FES: Performance VC12 forward ES. Response: <Count>,<Ratio%> PVT2FSES: Performance VC12 forward SES. Response: <Count>,<Ratio%> PVT2FUNAV: Performance VC12 forward UNAV. Response: <Count>,<Ratio%> PVT2FBBE: Performance VC12 forward BBE. Response: <Count>,<Ratio%> PVT2BSTAT: Performance VC12 backward status. Response: <STRING RESPONSE DATA> PVT2BES: Performance VC12 backward ES. Response: <Count>,<Ratio%> PVT2BSES: Performance VC12 backward SES. Response: <Count>,<Ratio%> PVT2BUNAV: Performance VC12 backward UNAV. Response: <Count>,<Ratio%> PVT2BBBE: Performance VC12 backward BBE. Response: <Count>,<Ratio%> VT1.5 performance¹ PVT15PES: Performance VC11 PO limit ES. Response: <Count>,<Ratio%> PVT15PSES: Performance VC11 PO limit SES. Response: <Count>,<Ratio%> PVT15PBBE: Performance VC11 PO limit BBE. Response: <Count>,<Ratio%> PVT15BS1ES: Performance VC11 BIS limit S1ES. Response: <Count> PVT15BS2ES: Performance VC11 BIS limit S2ES. Response: <Count> PVT15BS1SES: Performance VC11 BIS limit S1SES. Response: <Count> PVT15BS2SES: Performance VC11 BIS limit S2SES. Response: <Count> PVT15FSTAT: Performance VC11 forward status. Response: <STRING RESPONSE DATA> PVT15FES: Performance VC11 forward ES. Response: <Count>,<Ratio%> PVT15FSES: Performance VC11 forward SES. Response: <Count>,<Ratio%> PVT15FUNAV: Performance VC11 forward UNAV. Response: <Count>,<Ratio%> PVT15FBBE: Performance VC11 forward BBE. Response: <Count>,<Ratio%>
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	PVT15BSTAT: Performance VC11 backward status. Response: <STRING RESPONSE DATA> PVT15BES: Performance VC11 backward ES. Response: <Count>,<Ratio%> PVT15BSES: Performance VC11 backward SES. Response: <Count>,<Ratio%> PVT15BUNAV: Performance VC11 backward UNAV. Response: <Count>,<Ratio%> PVT15BBBE: Performance VC11 backward BBE. Response: <Count>,<Ratio%> STS1SPE performance¹ PSTS1SPEPES: Performance VC3 PO limit ES. Response: <Count>,<Ratio%> PSTS1SPEPSES: Performance VC3 PO limit SES. Response: <Count>,<Ratio%> PSTS1SPEPBBE: Performance VC3 PO limit BBE. Response: <Count>,<Ratio%> PSTS1SPEBS1ES: Performance VC3 BIS limit S1ES. Response: <Count> PSTS1SPEBS2ES: Performance VC3 BIS limit S2ES. Response: <Count> PSTS1SPEBS1SES: Performance VC3 BIS limit S1SES. Response: <Count> PSTS1SPEBS2SES: Performance VC3 BIS limit S2SES. Response: <Count> PSTS1SPEFSTAT: Performance VC3 forward status. Response: <STRING RESPONSE DATA> PSTS1SPEFES: Performance VC3 forward ES. Response: <Count>,<Ratio%> PSTS1SPEFSES: Performance VC3 forward SES. Response: <Count>,<Ratio%> PSTS1SPEFUNAV: Performance VC3 forward UNAV. Response: <Count>,<Ratio%> PSTS1SPEFBBE: Performance VC3 forward BBE. Response: <Count>,<Ratio%> PSTS1SPEBSTAT: Performance VC3 backward status. Response: <STRING RESPONSE DATA> PSTS1SPEBES: Performance VC3 backward ES. Response: <Count>,<Ratio%> PSTS1SPEBSES: Performance VC3 backward SES. Response: <Count>,<Ratio%> PSTS1SPEBUNAV: Performance VC3 backward UNAV. Response: <Count>,<Ratio%> PSTS1SPEBBBE: Performance VC3 backward BBE. Response: <Count>,<Ratio%> Frequency DEV: Deviation(ppm). Response: <Min>,<Max>,<Avg> SDH TCM¹ TCUNEQ: Tandem connection unequipped. response: <Count>,<Ratio%> TCLTC: Response: <Count>,<Ratio%> TCTIM: Tandem connection trace identifier mismatch. Response: <Count>,<Ratio%> TCAIS: Tandem connection alarm indication signal. Response: <Count>,<Ratio%> TCRDI: Tandem connection remote defect indicator. Response: <Count>,<Ratio%> TCODI: Tandem Connection Outgoing Defect Indicator. Response: <Count>,<Ratio%> TCIEC: Response: <Count>,<Ratio%> TCBIP2: Response: <Count>,<Ratio%> TCREI: Response: <Count>,<Ratio%> TCOEI: Response: <Count>,<Ratio%> TAPID: TCM APID. Response N1 or N2 TCM ID: <id> STL LOFSTL: STL LOF. Response: <Seconds> x 4 lanes LORSTL: STL LOR. Response: <Seconds> x 4 lanes OOFSTL: STL OOF. Response: <Frames> x 4 lanes ORSTL: STL OOR. Response: <Frames> x 4 lanes A1A2STL: A1A2-STL. Response: <Count> x 4 lanes OLA: OLA. Response: <Seconds>,<Ratio> RSKEW: Relative Skew. Response: <Nanoseconds> x 4 lanes MMAp: Marker Map. Response: <NR1> x 4 lanes
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	SON:RX1:IFET? (LOS,LOF,00F) → (3,0.00532),(4,0.00709),(5,0.00887)
Notes	This command fetches the results from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2).

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	¹ Requires the current interface/application is installed and is currently active in the measurement. If requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ",," is always removed.
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11.4.2 SONet:PMOVement:RX<Pt>:FETCh?

Syntax	SONet:PMOVement:RX<Pt>:FETCh? <pointer>,<min_time>,<max_time>
Description	This query fetches the pointer values.
Parameters	<pointer> = <CHARACTER PROGRAM DATA> STS: STS3 or STS1 pointer movements VT: VT pointer movements. VTG or VT2 or VT1.5 depending on SONET interface setup. <min_time> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=31536000</i> Beginning of the interval in seconds. <max_time> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=31536000</i> End of the interval in seconds.
Response	{<pointermovements>}* = <EXPRESSION RESPONSE DATA> The response is all pointer movements taking place in the requested time interval. Format: (pointerChange0,timestamp0),(pointerChange1,timestamp1),...
Example	SON:PMOV:RX1:FETC? AU,0,3600 → (1,10.000),(-1,15.002)
Notes	The interval is closed, i.e., it includes both endpoints. The displayed resolution of the timestamps is 1/1000 second = 0.001s.

11.5 Status

11.5.1 SONet:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	SONet:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the alarms and errors summary event register. The content of this event register is summarized in DB2 of the STATus:INTERface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Physical and high-order alarm summary DB2 (2) = Low-order path and tandem connection alarm summary DB3 (4) = Error section 1 summary DB4 (8) = Error section 2 summary DB5 (16) = STL alarm summary DB6 (32) = STL error summary DB7 - DB16 = NOT USED
Example	SON:STAT:RX1:AES? → 3
Note	SDH can embed E1, E3 or E4 so if a PDH signal is embedded it is a good idea to send the following query STAT:INT:PORT<Pt>[:EVENT]? to see if there is alarms or error at the embedded signal.

11.5.2 SONet:STATus:RX<Pt>:AESummary:CONDition?

Syntax	SONet:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns alarms and errors summary condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SONet:STATus:RX<Pt>:AESummary[:EVENT]?
Example	SON:STAT:RX1:AES:COND? → 3
Note	

11.5.3 SONet:STATus:RX<Pt>:ALARm<section>[:EVENT]?

Syntax	SONet:STATus:RX<Pt>:ALARm<section>[:EVENT]?
Description	This query returns one of the alarms event register. These registers are summarized in DB1/DB2/DB5 of the SONet:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Physical- and high-order path alarms(1), Low-order path and tandem connection alarms(2) or STL alarms(3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = LOS, Loss of signal DB2 (2) = LOF, Loss of frame DB3 (4) = OOF, Out of frame DB4 (8) = AISL, Multiplex section - alarm indication signal DB5 (16) = RDIL, Multiplex section - remote defect indicator DB6 (32) = AISP, Administrative unit - alarm indication signal DB7 (64) = LOPP, Administrative unit - loss of pointer DB8 (128) = TIMP, High-order path - trace identifier mismatch DB9 (256) = PLMP, High-order path - payload label mismatch DB10 (512) = UNEQP, High-order path - unequipped DB11 (1024) = RDIP, High-order path - remote defect indicator DB12 (2048) = AISV, Tributary unit - alarm indication signal DB13 (4096) = LOPV, Tributary unit - loss of pointer DB14 (8192) = LOMV, Tributary unit - loss Of multi frame DB15 (16384) = G-AIS, Generic alarm indication signal DB16 = NOT USED <section> = 2: DB1 (1) = TIMV, Low-order path - trace identifier mismatch DB2 (2) = UNEQV, Low-order path - unequipped DB3 (4) = RDIV, Low-order path - remote defect indicator DB4 (8) = LSS, Loss of signal synchronization DB5 = NOT USED DB6 (32) = PLMV, Low-order path - payload label mismatch DB7 (64) = TC-UNEQ, Tandem connection - unequipped DB8 (128) = TC-LTC, Tandem connection - loss of tandem connection DB9 (256) = TC-TIM, Tandem connection - trace identifier mismatch DB10 (512) = TC-AIS, Tandem connection - alarm indication signal DB11 (1024) = TC-RDI, Tandem connection - remote defect indicator DB12 (2048) = TC-ODI, Tandem connection - outgoing defect indicator DB13 - DB16 = NOT USED <section> = 3: DB1 (1) = STL LOF DB2 (2) = STL OOF DB3 (4) = STL LOR DB4 (8) = STL OOR DB5 (16) = OLA DB6 - DB16 = NOT USED
Example	SON:STAT:RX1:ALAR1? → 1
Note	

11.5.4 SONet:STATus:RX<Pt>:ALARm<section>:CONDition?

Syntax	SONet:STATus:RX<Pt>:ALARm<section>:CONDition?
Description	This query returns one of the alarms condition registers.
Parameters	<Pt> = Port number <section> = Physical- and high-order path alarms(1), Low-order path and tandem connection alarms(2) or STL alarms(3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SONet:STATus:RX<Pt>:ALARm<section>[:EVENT]?
Example	SON:STAT:RX1:ALAR1:COND? → 1
Note	

11.5.5 SONet:STATus:RX<Pt>:ERRor<section>[:EVENT]?

Syntax	SONet:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB3/DB4/DB6 of the SONet:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = (1-3)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = A1A2 DB2 (2) = B1 DB3 (4) = B2 DB4 (8) = REIL DB5 (16) = B3 DB6 (32) = REIP DB7 (64) = V5/LP-B3 DB8 (128) = REIV DB9 (256) = PRBS DB10 (512) = VT-NDF DB11 (1024) = STS-NDF DB12 (2048) = APS DB13 - DB16 = NOT USED <section> = 2: DB1 (1) = TU-NEG DB2 (2) = TU-POS DB3 (4) = AU-NEG DB4 (8) = AU-POS DB5 not used DB6 (32) = TC-IEC DB7 (64) = TC-BIP-2 DB8 (128) = TC-REI DB9 (256) = TC-OEI DB10 - DB16 = NOT USED <section> = 3: DB1 (1) = A1A2-STL DB2 - DB16 = NOT USED
Example	SON:STAT:RX1:ERR1? → 3
Note	

11.5.6 SONet:STATus:RX<Pt>:ERRor<section>:CONDition?

Syntax	SONet:STATus:RX<Pt>:ERRor<section>:CONDition?
Description	This query returns errors condition register.
Parameters	<Pt> = Port number <section> = (1-2)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as SONet:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Example	SON:STAT:RX1:ERR1:COND? → 3
Note	

11.5.7 SONet:STATus:RX<Pt>:PSLevel?

Syntax	SONet:STATus:RX<Pt>:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> "N/A": Module not present or not ready. - Electrical(STM1) - " <power> dBm": Min: "< -48 dBm", Max: "Exceeds Level" - Optical(Both module types) - " <power> dBm": Min: "< -27 dBm", Max: "Exceeds Level"
Example	SON:STAT:RX1:PSL? → "-3 dBm"
Note	

11.5.8 SONet:STATus:TX<Pt>:PSLevel?

Syntax	SONet:STATus:TX<Pt>:PSLevel?
Description	This query returns the physical signal level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> " <power> dBm": Min: "< -27 dBm", Max: "Exceeds Level" "N/A": Module not present or not ready.
Example	SON:STAT:TX1:PSL? → "-3 dBm"
Note	Only available for Optical.

11.5.9 SONet:STATus:RX<Pt>:PDEViation?

Syntax	SONet:STATus:RX<Pt>:PDEViation? [<unit>]
Description	This query returns the physical deviation.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million BPS = Bits per second <i>DEFault = PPM</i>
Response	<deviation> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:PDEV? PPM → 0
Note	

11.5.10 SONet:STATus:RX<Pt>:PBRate?

Syntax	SONet:STATus:RX<Pt>:PBRate?
Description	This query returns the physical bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:PBR? → 155520000
Note	

11.5.11 SONet:STATus:RX<Pt>:DIFFerence?

Syntax	SONet:STATus:RX<Pt>:DIFFerence?
Description	This query returns physical bit rate difference between port A and port B (RX1 - RX2). Units: ppm, bps and bits.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA>
	<bps> = <NR1 NUMERIC RESPONSE DATA>
	<acc> = <NR1 NUMERIC RESPONSE DATA>
	Accumulated difference in bits.
Example	SON:STAT:RX1:DIFF? → -1,-4,-324
Note	A valid response is only available if both RX1 and RX2 are on. Using either RX1 or RX2 will give the same results.

11.5.12 SONet:STATus:RX<Pt>:RACCumulated

Syntax	SONet:STATus:RX<Pt>:RACCumulated
Description	This command resets the accumulated difference.
Parameter	<Pt> = Port number
Response	None.
Example	SON:STAT:RX1:RACC
Note	Using either RX1 or RX2 will give the same results.

11.5.13 SONet:STATus:RX<Pt>:PPBRate?

Syntax	SONet:STATus:RX<Pt>:PPBRate?
Description	This query returns physical pattern bit rate. Unit: bps.
Parameter	<Pt> = Port number
Response	<bitrate> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:PPBR? → 149760000
Note	

11.5.14 SONet:STATus:RX<Pt>:CAPTure:TOH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:TOH:TRACe?
Description	This query returns the TOH trace (J0) for the latest captured frames.
Parameter	<Pt> = Port number
Response	<J0_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:TOH:TRAC? → "Message_Test_J0"
Note	If one of the alarms LOS or LOF is present, an empty string is returned.

11.5.15 SONet:STATus:RX<Pt>:CAPTure<Frame>:TOH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:TOH? <TOH-byte>
Description	This query returns the TOH bytes from the selected frame. 256 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<TOH-byte> = <CHARACTER PROGRAM DATA> A1: Returns 3 bytes. A2: Returns 3 bytes. J0: Returns 3 bytes. B1: Returns 3 bytes. E1: Returns 3 bytes. F1: Returns 3 bytes. D1: Returns 3 bytes. D2: Returns 3 bytes. D3: Returns 3 bytes. H1: Returns 3 bytes. H2: Returns 3 bytes. H3: Returns 3 bytes. B2: Returns 3 bytes. K1: Returns 3 bytes. K2: Returns 3 bytes. D4: Returns 3 bytes. D5: Returns 3 bytes. D6: Returns 3 bytes. D7: Returns 3 bytes. D8: Returns 3 bytes. D9: Returns 3 bytes. D10: Returns 3 bytes. D11: Returns 3 bytes. D12: Returns 3 bytes. S1: Returns 3 bytes. Z2: Returns 3 bytes. E2: Returns 3 bytes. M0: Returns 1 byte. ¹ M1: Returns 1 byte.
Response	<byte1>[,<byte2>[,<byte3>]] = <HEXADECIMAL NUMERIC RESPONSE DATA> Refer to <TOH-byte> parameter description above to see how many bytes this command returns.
Examples	SON:STAT:RX1:CAPT64:TOH? A1 → #HF6,#HF6,#HF6 SON:STAT:RX2:CAPT23:TOH? H1 → #H69,#H93,#H93 SON:STAT:RX1:CAPT1:TOH? M1 → #H00
Note	If one of the alarms LOS or LOF is present NaN (section 1.6.1) is returned. ¹ Only valid for SONet:RX<Pt>:OCLevel = 192 or 768.

11.5.16 SONet:STATus:RX<Pt>:CAPTure:STS3:POH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:STS3:POH:TRACe?
Description	This query returns the STS3 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:STS3:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, UNEQP or LOPP is present, an empty string is returned.

11.5.17 SONet:STATus:RX<Pt>:CAPTure<Frame>:STS3:POH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS3:POH? <POH-byte>
Description	This query returns the STS3 path overhead bytes from the selected frame. 256 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:CAPT1:STS3:POH? H4 → #HFF
Note	If one of the alarms LOS, LOF, UNEQP or LOPP is present NaN (section 1.6.1) is returned.

11.5.18 SONet:STATus:RX<Pt>:CAPTure:STS1:POH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:STS1:POH:TRACe?
Description	This command queries the STS1 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:STS1:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present, an empty string is returned.

11.5.19 SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:POH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:POH? <POH-byte>
Description	This query returns the STS1 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:CAPT1:STS1:POH? C2 → #HA3
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present NaN (section 1.6.1) is returned. Use the SONet:RX<Pt>:STS1:POH:CMASk command to selected which bytes to be captured.

11.5.20 SONet:STATus:RX<Pt>:CAPTure:VT2:POH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:VT2:POH:TRACe?
Description	This query returns VT2 path overhead trace (J2) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J2_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:VT2:POH:TRAC? → "Message_Test_J2"
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present, an empty string is returned.

11.5.21 SONet:STATus:RX<Pt>:CAPTure<Frame>:VT2:POH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:VT2:POH? <POH-byte>
Description	This query returns the VT2 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5-SL byte. J2: J2 byte. Z6: Z6 byte. Z7: Z7 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:CAPT1:VT2:POH? V5 → #H04
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present NaN (section 1.6.1) is returned.

11.5.22 SONet:STATus:RX<Pt>:CAPTure:VT15:POH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:VT15:POH:TRACe?
Description	This query returns VT1.5 path overhead trace (J2) for the latest captured frames. 64 new frames are captured every second.
Parameter	<Pt> = Port number
Response	<J2_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:VT15:POH:TRAC? → "Message_Test_J2"
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present, an empty string is returned.

11.5.23 SONet:STATus:RX<Pt>:CAPTure<Frame>:VT15:POH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:VT15:POH? <POH-byte>
Description	This query returns the VT1.5 path overhead bytes from the selected frame. 64 new frames are captured every second.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <POH-byte> = <CHARACTER PROGRAM DATA> V5: V5-SL byte. J2: J2 byte. Z6: Z6 byte. Z7: Z7 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:CAPT1:VT15:POH? V5 → #H04
Note	If one of the alarms LOS, LOF, UNEQP or UNEQV is present NaN (section 1.6.1) is returned.

11.5.24 SONet:STATus:RX<Pt>:CAPTure:STS1:STS1:POH:TRACe?

Syntax	SONet:STATus:RX<Pt>:CAPTure:STS1:STS1:POH:TRACe?
Description	This query returns the STS1 path overhead trace (J1) for the latest captured frames. 64 new frames are captured every second.
Parameters	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	SON:STAT:RX1:CAPT:STS1:STS1:POH:TRAC? → "Message_Test_J1"
Note	If one of the alarms LOS, LOF, UNEQP or LOPP is present, an empty string is returned.

11.5.25 SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:STS1:POH?

Syntax	SONet:STATus:RX<Pt>:CAPTure<Frame>:STS1:STS1:POH? <POH-byte>
Description	This query returns the STS1 path overhead bytes from the selected frame. 256 new frames are captured every second.
Parameters	<Pt> = Port number
	<Frame> = Frame number (1-64)
	<POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. Z3: Z3 byte. Z4: Z4 byte. Z5: Z5 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	SON:STAT:RX1:CAPT1:STS1:STS1:POH? H4 → #HFF
Note	If one of the alarms LOS, LOF, UNEQP or LOPP is present NaN (section 1.6.1) is returned.

11.6 APS

11.6.1 SONet:APS:START

Syntax	SONet:APS:START
Description	This command starts the APS (Automatic Protection Switching).
Parameter	None.
Response	None.
Example	SON:APS:STAR
Note	

11.6.2 SONet:APS:STOP

Syntax	SONet:APS:STOP
Description	This command stops the APS (Automatic Protection Switching) command.
Parameter	None.
Response	None.
Example	SON:APS:STOP
Note	

11.6.3 SONet:APS:RX<Pt>:PINterpret?

Syntax	SONet:APS:RX<Pt>:PINterpret?
Description	This query returns the protocol interpretation.
Parameter	<Pt> = Port number
Response	<interpretation> = <STRING RESPONSE DATA>
Example	SON:APS:RX1:PINT? → "00:00:19 Number 0 Time: 0.000ms ----- k1: Signal degrade (protection) Destination Node (K1) 2 k2: Short Source Node (K2) 7"
Note	

11.6.4 SONet:APS:RX<Pt>:NUMBER?

Syntax	SONet:APS:RX<Pt>:NUMBER?
Description	This query returns the number of times an APS Protocol event has occurred.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:NUMB? → 17
Note	

11.6.5 SONet:APS:RX<Pt>:ATIME?

Syntax	SONet:APS:RX<Pt>:ATIME?
Description	This query returns the average time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:ATIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

11.6.6 SONet:APS:RX<Pt>:MTIME?

Syntax	SONet:APS:RX<Pt>:MTIME?
Description	This query returns the maximum time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
	<limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	SON:APS:RX1:MTIM? → 29.17,0
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

11.6.7 SONet:APS:RX<Pt>:LTIME?

Syntax	SONet:APS:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:LTIM? → 29.17
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

11.6.8 SONet:APS:RX<Pt>:CTIME?

Syntax	SONet:APS:RX<Pt>:CTIME?
Description	This query returns the current time of the reference event occurrences. Unit: ms.
Parameter	<Pt> = Port number
Response	<current> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:CTIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 99999.999 ms.

11.6.9 SONet:APS:RX<Pt>:EVENT

Syntax	SONet:APS:RX<Pt>:EVENT <event>
Description	This command sets the Time Reference event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> LOS = Loss of signal LOF = Loss of frame OOF = Out of frame AISL = MS alarm indication signal RDIL = MS remote defect indicator APSS = APS switch-over AISP = AU alarm indication signal LOPP = AU loss of pointer TIMP = HP trace identifier mismatch PLMP = HP payload label mismatch UNEQP = HP unequipped LOMV = TU loss of multiframe AISV = TU alarm indication signal LOPV = TU loss of pointer TIMV = LP trace identifier mismatch PLMV = LP payload label mismatch UNEQV = LP unequipped A1A2 = Frame alignment word error B1 = B1 checksum byte error B2 = B2 checksum byte error REIL = MS remote error indication B3 = B3 checksum byte error V5 = B3 checksum of the low-order path PERRor = Pattern error ANYERROR = Any errors <i>DEFault = LOS</i>
Response	None.
Example	SON:APS:RX1:EVEN LOF
Note	

Syntax	SONet:APS:RX<Pt>:EVENT?
Description	This query returns the time reference event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	SON:APS:RX1:EVEN? → LOF
Note	

11.6.10 SONet:APS:RX<Pt>:MLIMit

Syntax	SONet:APS:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 10000.000, DEFault = 50.000</i>
Response	None.
Example	SON:APS:RX1:MLIM 50.000
Note	

Syntax	SONet:APS:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:MLIM? → 50.000
Note	

11.6.11 SONet:APS:RX<Pt>:PERiod

Syntax	SONet:APS:RX<Pt>:PERiod <period>
Description	This command sets the error free period.
Parameters	<Pt> = Port number <period> = <CHARACTER PROGRAM DATA> 1,10,20,30,40,50,60,70,80,90,100 Unit ms <i>DEFault = 1</i>
Response	None
Example	SON:APS:RX1:PER 1
Note	

Syntax	SONet:APS:RX<Pt>:PERiod?
Description	This query returns the error free period.
Parameter	<Pt> = Port number
Response	<period> = <CHARACTER PROGRAM DATA>
Example	SON:APS:RX1:PER? → 1
Note	

11.6.12 SONet:APS:RX<Pt>:CONFig

Syntax	SONet:APS:RX<Pt>:CONFig <protection>,<path>
Description	This command sets the protection type and the path or architecture.
Parameters	<Pt> = Port number <protection> = <CHARACTER PROGRAM DATA> RING = Ring protection LINEar = Linear <i>DEFault = RING</i> <path> = <CHARACTER PROGRAM DATA> Ring Path: SHRT = Short path LONG = Long path <i>DEFault = SHRT</i> Linear Architecture: 1P1 = 1+1 Architecture 1N = 1:n Architecture
Response	None.
Example	SON:APS:RX1:CONF RING,SHRT
Notes	

Syntax	SONet:APS:RX<Pt>:CONFig?
Description	This query returns the protection type and the path or architecture.
Parameter	<Pt> = Port number
Response	<protection> = <CHARACTER RESPONSE DATA> <path> = <CHARACTER PROGRAM DATA>
Example	SON:APS:RX1:CONF? → RING,SHRT
Note	

11.6.13 SONet:APS:RX<Pt>:RTYPE

Syntax	SONet:APS:RX<Pt>:RTYPE <type>
Description	This command sets the request type for the transmitter.
Parameter	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> Ring Request Types: for SONet:APS:RX<Pt>:CONFig? → RING,.... RLOP = Lockout of protection (span) RFSS = Forced switch (span) RFSR = Forced switch (ring) RSFS = Signal fail (span) RSFR = Signal fail (ring) RSDP = Signal degrade (protection) RSDS = Signal degrade (span) RSDR = Signal degrade (ring) RMSS = Manual switch (span) RMSR = Manual switch (ring) RWTR = Wait to restore REXS = Exercise (span) REXR = Exercise (ring) RRRS = Reverse request (span) RRRR = Reverse request (ring) RNRQ = No request <i>DEFault = RLOP</i> Linear Request Types: for SDH:APS:RX<Pt>:CONFig? → LIN,.... LLOP = Lockout of protection LFSW = Forced switch LSFH = Signal fail (high priority) LSFL = Signal fail (low priority) LSDH = Signal degrade (high priority) LSDL = Signal degrade (low priority) LMSW = Manual switch (ring) LWTR = Wait to restore LEXC = Exercise LRRQ = Reverse request LDNR = Do not revert LNRQ = No request <i>DEFault = LLOP</i>
Response	None.
Example	SON:APS:RX1:RTYP RLOP
Notes	Use the SONet:APS:RX<Pt>:APPLy command to apply the request to the transmitter.

Syntax	SONet:APS:RX<Pt>:RTYPE?
Description	This query returns the request type for the transmitter.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	SON:APS:RX1:RTYP? → RLOP
Note	

11.6.14 SONet:APS:RX<Pt>:K1

Syntax	SONet:APS:RX<Pt>:K1 <value>
Description	This command sets the destination node/source channel (K1).
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault = 0</i>
Response	None.
Example	SON:APS:RX1:K1 3
Notes	Cannot be changed if the SONet:APS:CONFig command is set to LIN, 1P1. Changes to SONet:APS:CONFig will reset this value to 0.

Syntax	SONet:APS:RX<Pt>:K1?
Description	This query returns the destination node/source channel (K1).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:K1? → 3
Note	

11.6.15 SONet:APS:RX<Pt>:K2

Syntax	SONet:APS:RX<Pt>:K2 <value>
Description	This command sets the source node/bridged channel (K2).
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault = 0</i>
Response	None.
Example	SON:APS:RX1:K2 3
Notes	Cannot be changed if the SONet:APS:CONFig command is set to LIN, 1P1. Changes to SONet:APS:CONFig will reset this value to 0.

Syntax	SONet:APS:RX<Pt>:K2?
Description	This query returns the source node/bridged channel (K2).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:APS:RX1:K2? → 3
Note	

11.6.16 SONet:APS:RX<Pt>:APPLy

Syntax	SONet:APS:RX<Pt>:APPLy
Description	This command applies the K1/K2 request setup to the transmitter.
Parameter	<Pt> = Port number
Response	None.
Example	SON:APS:RX1:APPL
Notes	

11.7 Tributary Scan

11.7.1 SONet:TSCan:STARt

Syntax	SONet:TSCan:STARt
Description	This command starts the tributary scan test.
Parameter	None.
Response	None.
Example	SON:TSC:STAR
Note	It is possible to run only one test or measurement at a time. The SONET interface must be active for at least one of the receivers.

11.7.2 SONet:TSCan:STOP

Syntax	SONet:TSCan:STOP
Description	This command stops the tributary scan test.
Parameter	None.
Response	None.
Example	SON:TSC:STOP
Note	

11.7.3 SONet:TSCan:RX<Pt>:NHOCContainer?

Syntax	SONet:TSCan:RX<Pt>:NHOCContainer?
Description	This query returns the number of High-order containers (STS3/STS1)
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TSC:RX1:NHOC? → 4
Note	If '0' is returned, no High-order containers were found. To get more information, use the SONet:TSCan:RX<Pt>:MUX? query.

11.7.4 SONet:TSCan:RX<Pt>:GHOCContainer?

Syntax	SONet:TSCan:RX<Pt>:GHOCContainer?
Description	This query returns the state of High-order containers (STS3/STS1)
Parameter	<Pt> = Port number
Response	({<value>,+}) = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that STS3 #1 is the first on the list. 0 = No alarms or errors. 1 = Alarms or errors present.
Example	SON:TSC:RX1:GHOC? → (0,0,1,0)
Note	If there is one or more results, the last ",," is always removed.

11.7.5 SONet:TSCan:RX<Pt>:SHOCContainer

Syntax	SONet:TSCan:RX<Pt>:SHOCContainer <STS>
Description	This command sets the High-order container (STS3/STS1) for scanning.
Parameters	<Pt> = Port number <STS> = High-order container number <i>MINimum=1, MAXimum=768</i>
Response	None.
Example	SON:TSC:RX1:SHOC 2
Note	

11.7.6 SONet:TSCan:RX<Pt>:SHOCContainer?

Syntax	SONet:TSCan:RX<Pt>:SHOCContainer?
Description	This query returns the High-order container (STS3/STS1) set for scanning.
Parameter	<Pt> = Port number
Response	<STS> = High-order container number
Example	SON:TSC:RX1:SHOC? → 2
Note	

11.7.7 SONet:TSCan:RX<Pt>:DHOCContainer?

Syntax	SONet:TSCan:RX<Pt>:DHOCContainer? <STS3/STS1>
Description	This query returns the detailed alarm and error information from a High-order container (STS3/STS1).
Parameters	<Pt> = Port number <VC4> = High-order container number <i>MINimum=1, MAXimum=768</i>
Response	<selected>, = <STRING RESPONSE DATA>. {RXn} _□ {High-order}, separated by one space character. RXn = RX1 or RX2 High-order = STS3#0 ... STS3#64 or STS1#0 ... STS1#192 ({<alarmerrors>,*}) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SON:TSC:RX1:DHOC? 1 → "RX1 STS3#1",("B1","A1A2")
Note	If there is one or more responses, the last ", " is always removed.

11.7.8 SONet:TSCan:RX<Pt>:NLOCContainer?

Syntax	SONet:TSCan:RX<Pt>:NLOCContainer?
Description	This query returns the number of Low-order containers (STS1/VT2/VT1.5).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:TSC:RX1:NLOC? → 3
Note	

11.7.9 SONet:TSCan:RX<Pt>:GLOCContainer?

Syntax	SONet:TSCan:RX<Pt>:GLOCContainer?
Description	This query returns the state of Low-order containers (STS1/VT2/VT1.5).
Parameter	<Pt> = Port number
Response	({<value>,*}) = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that STS3 #1 is the first in the list. 0 = No alarms or errors. 1 = Alarms or errors present.
Example	SON:TSC:RX1:GLOC? → (0,1,1)
Note	If there is one or more responses, the last ", " is always removed.

11.7.10 SONet:TSCan:RX<Pt>:DLOCContainer?

Syntax	SONet:TSCan:RX<Pt>:DLOCContainer? <STS1/VT2/VT15>
Description	This query returns the detailed alarm and error information from a Low-order container (STS1/VT2/VT1.5).
Parameters	<Pt> = Port number <STS1/VT2/VT15> = Low-order container number <i>MINimum=1, MAXimum=84</i>
Response	<selected>, = <STRING RESPONSE DATA>. {RXn} _□ {High-order}:{Low-order}, First separated by one space character and next with a colon char. RXn = RX1 or RX2 High-order = STS3#0 ... STS3#64 or STS1#0 ... STS1#192 Low-order = STS1#1 ... STS1#3 or VT2#1 ... VT2#63 or VT1.5#1 ... VT1.5#84 ({<alarmerrors>,*}) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SON:TSC:RX1:DLOC? 1 → "RX1 STS3#1:STS1#1",("B1","A1A2")
Notes	To select the High-order container, use the SONet:TSCan:RX<rx>:SHOCContainer command. If there is one or more responses, the last ", " is always removed.

11.7.11 SONet:TSCan:RX<Pt>:DMUX?

Syntax	SONet:TSCan:RX<Pt>:DMUX?
Description	This query returns the detailed alarm and error information from the MUX.
Parameter	<Pt> = Port number
Response	<selected> = <STRING RESPONSE DATA>. {Rx} MUX
	({<alarmerrors>, }*) = <STRING RESPONSE DATA> List of alarms and errors.
Example	SON:TSC:RX1:DMUX? → "Rx1 MUX", ("LOS", "LOF", "OOF")
Notes	This query is only available when no High-order containers are present. To determine if MUX is available, use the SONet:TSCan:RX<Pt>:NHOCContainer? query. If there is one or more responses, the last ", " is always removed.

11.8 RTD

This section document commands for the Round Trip Delay application.
Commands for general RTD settings are described in section 17.1 on page 953.

11.8.1 SONet:RTD:RX<Pt>:MLIMit

Syntax	SONet:RTD:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: us.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0, MAXimum = 10000000.0, DEFault = MAXimum</i>
Response	None.
Example	SON:RTD:RX1:MLIM 0.0
Note	

Syntax	SONet:RTD:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:RTD:RX1:MLIM? → 0.0
Note	

11.8.2 SONet:RTD:RX<Pt>:NUMBer?

Syntax	SONet:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	SON:RTD:RX1:NUMB? → 2
Note	

11.8.3 SONet:RTD:RX<Pt>:ATIMe?

Syntax	SONet:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

11.8.4 SONet:RTD:RX<Pt>:MTIMe?

Syntax	SONet:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	SON:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

11.8.5 SONet:RTD:RX<Pt>:LTIME?

Syntax	SONet:RTD:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:RTD:RX1:LTIME? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

11.8.6 SONet:RTD:RX<Pt>:CTIME?

Syntax	SONet:RTD:RX<Pt>:CTIME?
Description	This query returns the current time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	SON:RTD:RX1:CTIME? → 1.0
Note	The maximum measurable time will be responded if the result exceeds 99999999.9 us.

Chapter 12

Ethernet

By default, the Ethernet settings cannot be changed during a measurement. Use `ETH:PORT<Pt>:SETT:ACIS` to change this behavior (see section 12.7.13).

12.1 Port Setup

12.1.1 ETHernet:PORT<Pt>:ITYPE

Syntax	ETHernet:PORT<Pt>:ITYPE <interface>
Description	This command sets the interface type.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> ELECtrical: Electrical interface (10/100/1000 Mbps) SFP: SFP optical interface (100/1000 Mbps) SFPP: SFP+ optical interface (10 Gbps) SFP28: SFP28 optical interface (25 Gbps) QSFP: QSFP optical interface (40 Gbps) QSFP28: QSFP28 optical interface (100 Gbps) CXP: CXP optical interface (100 Gbps) CFP: CFP optical interface (40/100 Gbps) CFP2: CFP2 optical interface (100 Gbps) CFP4: CFP4 optical interface (100 Gbps) QSFP28ADpt: CFP2-QSFP28 Adaptor interface (100 Gbps) OPTical: Obsolete. For CMA 3000 backward compatibility only. Same as SFP. 10Gbps: Obsolete. For CMA 3000 backward compatibility only. Same as SFPP. <i>DEFault = ELECtrical</i>
Response	None.
Example	ETH:PORT1:ITYP ELEC
Notes	

Syntax	ETHernet:PORT<Pt>:ITYPE?
Description	This query returns the interface type.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:ITYP? → ELEC
Note	

12.1.2 EThernet:PORT<Pt>:MODE

Syntax	EThernet:PORT<Pt>:MODE <mode>
Description	The command sets the port mode
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Port off ANEGotiate: Port ON in auto negotiation mode FORCed: Port ON in forced mode <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:MODE ANEG
Note	ANEGotiate does not apply to the 10Gbps interface.

Syntax	EThernet:PORT<Pt>:MODE?
Description	This query returns the port mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:MODE? → ANEG
Note	

12.1.3 EThernet:PORT<Pt>:ANEGotiate

Syntax	EThernet:PORT<Pt>:ANEGotiate <speedduplex>
Description	This command sets the speed(s) and duplex to auto negotiate for electrical interface.
Parameters	<Pt> = Port number ({<speedduplex>} + {,}*) = <EXPRESSION PROGRAM DATA> 10MH: 10Mbps half duplex 10MF: 10Mbps full duplex 100MH: 100Mbps half duplex 100MF: 100Mbps full duplex 1GF: 1Gbps full duplex
Response	None.
Example	ETH:PORT1:ANEG (10MH,100MF)
Note	

Syntax	EThernet:PORT<Pt>:ANEGotiate?
Description	This query returns the auto negotiation speed(s) and duplex for electrical interface.
Parameter	<Pt> = Port number
Response	{(<speedduplex>),}* = <EXPRESSION RESPONSE DATA> <speedduplex> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:ANEG? → (10MH,100MF)
Note	

12.1.4 EThernet:PORT<Pt>:FMODE

Syntax	EThernet:PORT<Pt>:FMODE <mode>
Description	This command set the speed/duplex in forced mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> 10MH: 10Mbps half duplex 10MF: 10Mbps full duplex 100MH: 100Mbps half duplex 100MF: 100Mbps full duplex 1GF: 1Gbps full duplex 10GF: 10Gbps full duplex 25GF: 25Gbps full duplex 40GF: 40Gbps full duplex 100GF: 100bps full duplex <i>DEFault = 10MH</i>
Response	None.
Example	ETH:PORT1:FMODE 100MF
Note	

Syntax	EThernet:PORT<Pt>:FMODE?
Description	This query returns forced mode speed/duplex.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:FMODE? → 100MF
Note	

12.1.5 EThernet:PORT<Pt>:CMODE

Syntax	EThernet:PORT<Pt>:CMODE <mode>
Description	This command sets the 1000Mbps clock mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> MASTer: Master PMASTer: Prefer master SLAVE: Slave PSLAVE: Prefer slave <i>DEFault = PMASTer</i>
Response	None.
Example	ETH:PORT1:CMODE MAST
Note	

Syntax	EThernet:PORT<Pt>:CMODE?
Description	This query returns the 1000Mbps clock mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CMODE? → SLAV
Note	

12.1.6 EThernet:PORT<Pt>:MDICrossover

Syntax	EThernet:PORT<Pt>:MDICrossover <mode>
Description	This command sets the MDI Crossover mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> AUTO MDI MDIX <i>DEFault = AUTO</i>
Response	None.
Example	ETH:PORT1:MDIC AUTO
Note	

Syntax	EThernet:PORT<Pt>:MDICrossover?
Description	This query returns the MDI Crossover mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:MDIC? → AUTO
Note	

12.1.7 EThernet:PORT<Pt>:TIMing:SOURce

Syntax	EThernet:PORT<Pt>:TIMing:SOURce <source>
Description	This command set the transmitter timing source.
Parameter	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal clock. EXTernal: External input clock (2MHz/E1(SETS)/T1(BITS)). GPS: GPS signal. RX: Received clock. PTP: PTP(IEEE 1588v2) recovered clock. <i>DEFault = INTernal</i>
Response	None.
Response	None.
Example	ETH:PORT1:TIM:SOUR INT
Note	

Syntax	EThernet:PORT<Pt>:TIMing:SOURce?
Description	This query returns the transmitter timing source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TIM:SOUR? → INT
Note	

12.1.8 EThernet:PORT<Pt>:PFRames

Syntax	EThernet:PORT<Pt>:PFRames <respond>
Description	This command enable or disable respond to PAUSE frames.
Parameters	<Pt> = Port number <respond> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PFR ON
Note	

Syntax	ETHernet:PORT<Pt>:PFRames?
Description	This query returns the state of respond to PAUSE frames.
Parameter	<Pt> = Port number
Response	<respond> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PFR? → 1
Note	

12.1.9 ETHernet:PORT<Pt>:FEC

Syntax	ETHernet:PORT<Pt>:FEC <mode>
Description	The command sets the FEC mode
Parameters	<Pt> = Port number <mode> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:FEC ON
Note	This command can be used on MU110013A. This command can be used when interface type is CFP2 or QSFP28 Adpt..

Syntax	ETHernet:PORT<Pt>:FEC?
Description	This query returns the FEC mode.
Parameter	<Pt> = Port number
Response	<respond> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:FEC? → 1
Note	This command can be used on MU110013A. This command can be used when interface type is CFP2 or QSFP28 Adpt..

12.2 WAN

12.2.1 EThernet:PORT<Pt>:WAN[:ENABle]

Syntax	EThernet:PORT<Pt>:WAN[:ENABle] <enable>
Description	This command enables or disables the WAN layer of the 10Gbps interface.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:WAN ON
Note	This command can be used on V2.00 or later.

Syntax	EThernet:PORT<Pt>:WAN[:ENABle]?
Description	This query returns whether or not WAN is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:WAN? → 1
Note	This command can be used on V2.00 or later.

12.2.2 EThernet:PORT<Pt>:WAN:TERMinology

Syntax	EThernet:PORT<Pt>:WAN:TERMinology <terminology>
Description	This command sets the WAN terminology.
Parameters	<Pt> = Port number <terminology> = <CHARACTER PROGRAM DATA> SONet: SONET terminology SDH: SDH terminology <i>DEFault = SONet</i>
Response	None.
Example	ETH:PORT1:WAN:TERM SON
Note	This command can be used on V2.00 or later.

Syntax	EThernet:PORT<Pt>:WAN:TERMinology?
Description	This query returns the WAN terminology.
Parameter	<Pt> = Port number
Response	<terminology> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:WAN:TERM? → SON
Note	This command can be used on V2.00 or later.

12.2.3 EThernet:PORT<Pt>:WAN:SOH:DEFault

Syntax	EThernet:PORT<Pt>:WAN:SOH:DEFault
Description	This command sets all WAN section overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:WAN:SOH:DEF
Note	This command can be used on V2.00 or later.

12.2.4 ETHernet:PORT<Pt>:WAN:SOH:TRACe

Syntax	ETHernet:PORT<Pt>:WAN:SOH:TRACe <string>[,<idlechar>]
Description	This command sets the WAN section overhead trace (J0) to the specified string.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> This quoted string is used as section trace string. <idlechar> = <NUMERIC PROGRAM DATA> <i>DEFault</i> = #H20
Response	None.
Example	ETH:PORT1:WAN:SOH:TRAC "Anritsu Network Master",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated. This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:WAN:SOH:TRACe?
Description	This query returns the WAN section overhead trace string and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA> <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:WAN:SOH:TRAC? → "Anritsu Network Master",#H20
Note	This command can be used on V2.00 or later.

12.2.5 ETHernet:PORT<Pt>:WAN:SOH:TRACe:CRC

Syntax	ETHernet:PORT<Pt>:WAN:SOH:TRACe:CRC <mode>
Description	This command sets the SOH trace (J0) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: CRC OFF ON : CRC ON <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT1:WAN:SOH:TRAC:CRC ON
Note	

Syntax	ETHernet:PORT<Pt>:WAN:SOH:TRACe:CRC?
Description	This query returns the mode of the SOH trace (J0) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:WAN:SOH:TRAC:CRC? → ON
Note	

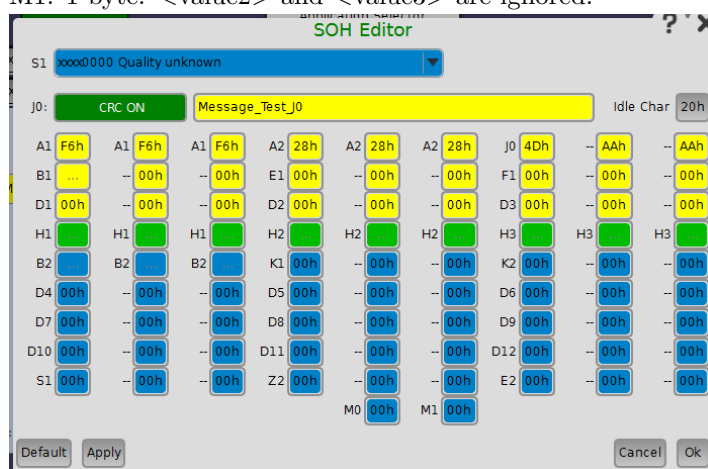
12.2.6 ETHernet:PORT<Pt>:WAN:SOH

Syntax	ETHernet:PORT<Pt>:WAN:SOH <SOH-byte>,<value1>[,<value2>[,<value3>]]
Description	This command sets the value of the specified bytes in the WAN section overhead.
Parameters	<Pt> = Port number <SOH-byte> = <CHARACTER PROGRAM DATA> A1: 3 bytes. A2: 3 bytes. J0: 3 bytes. Note: The defined trace string will be disabled. B1: 2 bytes. <value3> is ignored. E1: 3 bytes. F1: 3 bytes. D1: 3 bytes. D2: 3 bytes. D3: 3 bytes.

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K1: 3 bytes.
 K2: 3 bytes.
 D4: 3 bytes.
 D5: 3 bytes.
 D6: 3 bytes.
 D7: 3 bytes.
 D8: 3 bytes.
 D9: 3 bytes.
 D10: 3 bytes.
 D11: 3 bytes.
 D12: 3 bytes.
 S1: 3 bytes.
 Z2: 3 bytes.
 E2: 3 bytes.
 M0: 1 byte. <value2> and <value3> are ignored.
 M1: 1 byte. <value2> and <value3> are ignored.



<value1> = <NUMERIC PROGRAM DATA>

<value2> = <NUMERIC PROGRAM DATA>

<value3> = <NUMERIC PROGRAM DATA>

MINimum = #H00, *MAXimum* = #HFF

Response	None.
Examples	ETH:PORT1:WAN:SOH A1,#H00,#H00,#H00 ETH:PORT1:WAN:SOH D7,#HFD,#H20,#H1A ETH:PORT1:WAN:SOH B1,#H04,#H05 ETH:PORT1:WAN:SOH M1,#H00
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:WAN:SOH? <SOH-byte>
Description	This query returns the value of the specified bytes in the WAN section overhead.
Parameters	<Pt> = Port number <SOH-byte> = <CHARACTER PROGRAM DATA>
Response	<value1> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value2> = <HEXADECIMAL NUMERIC RESPONSE DATA> [,<value3> = <HEXADECIMAL NUMERIC RESPONSE DATA>]]
Examples	ETH:PORT1:WAN:SOH? A1 → #H00,#H00,#H00 ETH:PORT1:WAN:SOH? D7 → #HFD,#H20,#H1A ETH:PORT1:WAN:SOH? B1 → #H04,#H05 ETH:PORT1:WAN:SOH? M1 → #H00
Note	This command can be used on V2.00 or later.

12.2.7 ETHernet:PORT<Pt>:WAN:POH:DEFault

Syntax	ETHernet:PORT<Pt>:WAN:POH:DEFault
Description	This command sets all WAN path overhead bytes to their default value.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:WAN:POH:DEF
Note	This command can be used on V2.00 or later.

12.2.8 ETHernet:PORT<Pt>:WAN:POH:TRACe

Syntax	ETHernet:PORT<Pt>:WAN:POH:TRACe <string>[,<idlechar>]
Description	This command sets the WAN path trace (J1) to the specified string and it's idle char.
Parameters	<Pt> = Port number <string> = <STRING PROGRAM DATA> This quoted string is used as section trace string. <idlechar> = <NUMERIC PROGRAM DATA> DEFault = #H20
Response	None.
Example	ETH:PORT1:WAN:POH:TRAC "Anritsu Network Master",#H20
Note	If the entered trace string is more than 15 characters long, the string will be truncated. This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:WAN:POH:TRACe?
Description	This query returns the WAN path trace string and idle char.
Parameter	<Pt> = Port number
Response	<string> = <STRING RESPONSE DATA> <idlechar> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:WAN:POH:TRAC? → "Anritsu Network Master",#H20
Note	This command can be used on V2.00 or later.

12.2.9 ETHernet:PORT<Pt>:WAN:POH:TRACe:CRC

Syntax	ETHernet:PORT<Pt>:WAN:POH:TRACe:CRC <mode>
Description	This command sets the POH trace (J0) CRC mode (OFF/ON).
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: CRC OFF ON : CRC ON DEFault = ON
Response	None.
Example	ETH:PORT1:WAN:POH:TRAC:CRC ON
Note	

Syntax	ETHernet:PORT<Pt>:WAN:POH:TRACe:CRC?
Description	This query returns the mode of the POH trace (J0) CRC.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:WAN:POH:TRAC:CRC? → ON
Note	

12.2.10 EThernet:PORT<Pt>:WAN:POH

Syntax	EThernet:PORT<Pt>:WAN:POH <POH-byte>,<value>
Description	This command sets the value of the specified byte in the WAN path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA> C2: C2 byte. G1: G1 byte. F2: Z1 / F2 byte. H4: Z2 / H4 byte. F3: Z3 / F3 byte. K3: Z4 / K3 byte. N1: Z5 / N1 byte. <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 0, <i>MAXimum</i> = 255
Response	None.
Example	ETH:PORT1:WAN:POH C2,0
Note	This command can be used on V2.00 or later.

Syntax	EThernet:PORT<Pt>:WAN:POH? <POH-byte>
Description	This query returns the value of the specified byte in the WAN path overhead.
Parameters	<Pt> = Port number <POH-byte> = <CHARACTER PROGRAM DATA>
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Examples	ETH:PORT1:WAN:POH? C2 → #H0 ETH:PORT1:WAN:POH? H4 → #HFF
Note	This command can be used on V2.00 or later.

12.3 Reflector

12.3.1 ETHernet:PORT<Pt>:REFLector:SWAP[:ENABle]

Syntax	ETHernet:PORT<Pt>:REFLector:SWAP[:ENABle] <enable>
Description	This command sets the Swap Parameter Enable.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT1:REFL:SWAP ON
Note	

Syntax	ETHernet:PORT<Pt>:REFLector:SWAP[:ENABle]?
Description	This query returns the Swap Parameter Enable.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:REFL:SWAP? → 1
Note	

12.3.2 ETHernet:PORT<Pt>:REFLector:SSMac

Syntax	ETHernet:PORT<Pt>:REFLector:SSMac <enable>
Description	This command enables/disables swapping of specific MAC addresses when the port is in reflector mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	ETH:PORT1:REFL:SSM ON
Note	

Syntax	ETHernet:PORT<Pt>:REFLector:SSMac?
Description	This query returns whether or not swapping of specific MAC addresses is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:REFL:SSM? → 1
Note	

12.3.3 ETHernet:PORT<Pt>:REFLector:SMAC

Syntax	ETHernet:PORT<Pt>:REFLector:SMAC <address>
Description	This command sets the specific MAC address to swap when MAC address swapping is enabled.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:REFL:SMAC "00-50-C2-35-D2-EF"
Note	

Syntax	ETHernet:PORT<Pt>:REFLector:SMAC?
Description	This query returns the specific MAC address to swap.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:REFL:SMAC? → "00-50-C2-35-D2-EF"
Note	

12.3.4 EThernet:PORT<Pt>:REFlector:IPSWap

Syntax	EThernet:PORT<Pt>:REFlector:IPSWap <enable>
Description	This command enables/disables the IP address swap mode when the port is in reflector mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:REFL:IPSW ON
Note	

Syntax	EThernet:PORT<Pt>:REFlector:IPSWap?
Description	This query returns the IP address swap mode.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:REFL:IPSW? → 1
Note	

12.3.5 EThernet:PORT<Pt>:REFlector:PSWap

Syntax	EThernet:PORT<Pt>:REFlector:PSWap <enable>
Description	This command enables/disables swapping of port numbers in UDP and TCP frames when the port is in reflector mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:REFL:PSW ON
Note	

Syntax	EThernet:PORT<Pt>:REFlector:PSWap?
Description	This query returns whether or not port swapping is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:REFL:PSW? → 1
Note	

12.3.6 EThernet:PORT<Pt>:REFlector:ATCP

Syntax	EThernet:PORT<Pt>:REFlector:ATCP <enable>
Description	This command enables/disables ACK on TCP frames when the port is in reflector mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:REFL:ATCP ON
Note	

Syntax	EThernet:PORT<Pt>:REFlector:ATCP?
Description	This query returns whether or not ACK on TCP frames is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:REFL:ATCP? → 1
Note	

12.4 PCS

12.4.1 EThernet:PORT<Pt>:PCS:MMAPIng:LANE

Syntax	EThernet:PORT<Pt>:PCS:MMAPIng:LANE <value>
Description	This command sets the PCS lane marker assignment.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of the value of the lane marker. 40G: 0 to 3 100G: 0 to 19
Response	None.
Example	ETH:PORT1:PCS:MMAPIng:LANE (1,3,0,2) ETH:PORT1:PCS:MMAPIng:LANE (0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19)
Note	This command can be used on 40/100G.

Syntax	EThernet:PORT<Pt>:PCS:MMAPIng:LANE?
Description	This query returns the PCS lane marker assignment.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	ETH:PORT1:PCS:MMAPIng:LANE? → (0,1,2,3) → (0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19)
Note	This command can be used on 40/100G.

12.5 Traffic

BERT, RFC-6349, Ping, and Traceroute applications use stream number one only. Setting other streams has no effect in these applications.

12.5.1 EThernet:TRAFfic:GENerator:STARt

Syntax	EThernet:TRAFfic:GENerator:STARt
Description	This command starts the traffic generator.
Parameter	None.
Response	None.
Example	ETH:TRAF:GEN:STAR
Note	This command applies to all ports.

12.5.2 EThernet:PORT<Pt>:TRAFfic:GENerator:STARt

Syntax	EThernet:PORT<Pt>:TRAFfic:GENerator:STARt
Description	This command starts the traffic generator.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:TRAF:GEN:STAR
Note	This command requires that the Port is enabled (EThernet:PORT<Pt>:MODE).

12.5.3 EThernet:TRAFfic:GENerator:STOP

Syntax	EThernet:TRAFfic:GENerator:STOP
Description	This command stops the traffic generator.
Parameter	None.
Response	None.
Example	ETH:TRAF:GEN:STOP
Note	This command applies to all ports.

12.5.4 EThernet:PORT<Pt>:TRAFfic:GENerator:STOP

Syntax	EThernet:PORT<Pt>:TRAFfic:GENerator:STOP
Description	This command stops the traffic generator.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:TRAF:GEN:STOP
Note	

12.5.5 EThernet:PORT<Pt>:TRAFfic:GENerator:STATus?

Syntax	EThernet:PORT<Pt>:TRAFfic:GENerator:STATus?
Description	This query returns the current status of the traffic generator.
Parameter	<Pt> = Port number
Response	<stat> = <NR1 NUMERIC RESPONSE DATA> 0: Traffic generator inactive 1: Traffic generator active
Example	ETH:PORT1:TRAF:GEN:STAT? → 1
Note	

12.5.6 EThernet:PORT<Pt>:TRAFfic:DMODE

Syntax	EThernet:PORT<Pt>:TRAFfic:DMODE <mode>
Description	This command sets the duration mode for the traffic generator.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> CONTInuous: Continuous FRAMes: Frames SECOnds: Seconds <i>DEFault = CONTInuous</i>
Response	None.
Example	ETH:PORT1:TRAF:DMOD CONT
Note	

Syntax	EThernet:PORT<Pt>:TRAFfic:DMODE?
Description	This query returns the duration mode for the traffic generator.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:DMOD? → SEC
Note	

12.5.7 ETHernet:PORT<Pt>:TRAFfic:DURation

Syntax	ETHernet:PORT<Pt>:TRAFfic:DURation <duration>
Description	This command sets the duration for the traffic generator.
Parameters	<Pt> = Port number <duration> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2000000000, DEFault = 5</i>
Response	None.
Example	ETH:PORT1:TRAF:DUR 1
Note	Unit for this command can be either [frames] or [seconds] depending on DMODe.

Syntax	ETHernet:PORT<Pt>:TRAFfic:DURation?
Description	This query returns the duration for the traffic generator.
Parameter	<Pt> = Port number
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:DUR? → 1
Note	

12.5.8 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:TXMode

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:TXMode <mode>
Description	This command sets the transmitting mode.
Parameters	<Pt> = Port number <St> = Stream number (1-16) <mode> = <CHARACTER PROGRAM DATA> NORMal: BURSt: Burst transmitting <i>DEFault = NORMal</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:TXM BURS
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:TXMode?
Description	This query returns the transmitting mode.
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:TXM? → BURS
Note	

12.5.9 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile <profile>
Description	This command sets the stream Line Load Profile.
Parameters	<Pt> = Port number <St> = Stream number (1-16) <profile> = <CHARACTER PROGRAM DATA> CONStant: Constant line load profile RAMP: Ramp line load profile <i>DEFault = CONStant</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:PROF CONS
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile?
Description	This query returns the stream Line Load Profile.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:PROF? → RAMP
Note	

12.5.10 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp[:MODE]

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp[:MODE] <enable>
Description	This command enables/disables milliseconds ramp.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:PROF:MRAM ON
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp[:MODE]?
Description	This query returns if milliseconds ramp is enabled/disabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:PROF:MRAM? → 0
Note	

12.5.11 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad[:CONStant]

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad[:CONStant] <load>
Description	This command sets the stream Line Load in constant mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000¹, DEFault=100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS, IFG. Default = PCT</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL 10.0000
Notes	The minimum possible line load is 0.0008PCT. The maximum combined line load for all 16 streams is 100PCT. ¹ The maximum allowed Line Load varies depending on the stream frame size. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad[:CONStant]? [<suffix>]
Description	This query returns the stream Line Load is constant mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second IFG: Inter Frame Gap <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL? → 10.0000
Note	

12.5.12 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP[:MODE]

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP[:MODE] <mode>
Description	This command sets the ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mode> = <CHARACTER PROGRAM DATA> KEEPend: Maintain line load level at ramp end INVert: Invert ramp REPeat: Repeat ramp <i>DEFault = KEEPend</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:RAMP KEEP
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP[:MODE]?
Description	This query returns the ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:RAMP? → INV
Note	

12.5.13 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STARt

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STARt <load>
Description	This command sets the stream initial line load in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000¹, DEFault=0.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS, IFG. Default = PCT</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:STAR 10.0000
Notes	The minimum possible line load is 0.0008PCT.
	The maximum combined line load for all 16 streams are 100PCT.
	¹ The maximum allowed Line Load varies depending on the stream frame size. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STARt? [<suffix>]
Description	This query returns the stream initial line load in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second IFG: Inter Frame Gap <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:STAR? → 10.0000
Note	

12.5.14 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:END

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:END <load>
Description	This command sets the stream end line load in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000¹, DEFault=0.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS, IFG. Default = PCT</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:END 10.0000
Notes	The minimum possible line load is 0.0008PCT.
	The maximum combined line load for all 16 streams are 100PCT. ¹ The maximum allowed Line Load varies depending on the stream frame size. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:END? [<suffix>]
Description	This query returns the stream end line load in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second IFG: Inter Frame Gap <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:END? → 10.0000
Note	

12.5.15 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STEP

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STEP <load>
Description	This command sets the stream line load step size, in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000¹, DEFault=1.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS, IFG. Default = PCT</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:STEP 10.0000
Notes	The minimum possible line load is 0.0008PCT.
	¹ The maximum allowed Line Load varies depending on the stream frame size. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:STEP? [<suffix>]
Description	This query returns the stream line load step size, in ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second IFG: Inter Frame Gap <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:STEP? → 10.0000
Note	

12.5.16 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:DURation

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:DURation <dur>
Description	This command sets the stream step line load duration in ramp mode. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<dur> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 3600, DEFault = 10</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:DUR 10
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:RAMP:DURation?
Description	This query returns the stream step line load duration in ramp mode. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<load> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:RAMP:DUR? → 10
Note	

12.5.17 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp:DURation

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp:DURation <dur>
Description	This command sets the stream step line load duration in milliseconds ramp mode. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<dur> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.001, MAXimum = 3.000, DEFault = 0.001</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:LL:PROF:MRAM:DUR 1.000
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:LLoad:PROFile:MRAMp:DURation?
Description	This query returns the stream step line load duration in milliseconds ramp mode. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<load> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:LL:PROF:MRAM:DUR? → 1.000
Note	

12.5.18 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:PROFile

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:PROFile <profile>
Description	This command sets the stream frame size profile.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<profile> = <CHARACTER PROGRAM DATA> CONStant: Constant frame size STEPped: Stepped frame size profile RANDom: Random frame size profile BINCrement: 1 byte increment <i>DEFault = CONStant</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:FSIZ:PROF CONS
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:PROFile?
Description	This query returns the stream frame size profile.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:FSIZ:PROF? → RAND
Note	

12.5.19 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe[:START]

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe[:START] <size>
Description	This command sets start frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:FSIZ 120
Notes	This is used as the frame size for the Constant profile and start frame size for the Stepped and Random profiles.
	¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe[:START]?
Description	This query returns the start frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:FSIZ? → 100
Note	

12.5.20 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:END

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:END <size>
Description	This command sets end frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:FSIZ:END 320
Notes	This is used as the end frame size for the Stepped and Random profiles.
	¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:END?
Description	This query returns the end frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:FSIZ:END? → 320
Note	

12.5.21 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:STEP

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:STEP <size>
Description	This command sets step frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:FSIZ:STEP 100
Notes	This is used as the step frame size for the Stepped profile.

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:STEP?
Description	This query returns the step frame size. Unit: Bytes
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:FSIZ:STEP? → 100
Note	

12.5.22 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:DURation

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:DURation <duration>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 3600, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:FSIZ:DUR 5
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:FSIZe:DURation?
Description	This query returns the step duration. Unit: Seconds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:FSIZ:DUR? → 10
Note	

12.5.23 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:PROFile

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:PROFile <profile>
Description	This command sets the stream profile.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<profile> = <CHARACTER PROGRAM DATA> DATA: Data VIDeo: Video VOICe: Voice <i>DEFault</i> = <i>DATA</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:PROF VID
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:PROFile?
Description	This query returns the stream profile.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:PROF? → VID
Note	

12.5.24 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VIDeo

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VIDeo <codec>
Description	This command sets the stream encoding video codec.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<codec> = <CHARACTER PROGRAM DATA> SDMPEG2: SDTV (MPEG2) HDMPEG2: HDTV (MPEG2) HDMPEG4: HDTV (MPEG4) <i>DEFault</i> = <i>SDMPEG2</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:ENC:VID HDMPEG2
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VIDeo?
Description	This query returns the stream encoding video codec.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<codec> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:ENC:VID? → HDMPEG2
Note	

12.5.25 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VOICe

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VOICe <codec>
Description	This command sets the stream encoding voice codec.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<codec> = <CHARACTER PROGRAM DATA> G711: VoIP G.711 G7231: VoIP G.723.1 G729: VoIP G.729 <i>DEFault = G711</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:ENC:VOIC G7231
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:ENCoding:VOICe?
Description	This query returns the stream encoding voice codec.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<codec> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:ENC:VOIC? → G7231
Note	

12.5.26 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:NCHannels

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:NCHannels <channel>
Description	This command sets the number of channels.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<channel> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 100000, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:NCH 3
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:NCHannels?
Description	This query returns the number of channels.
Parameter	<Pt> = Port number
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:NCH? → 3
Note	

12.5.27 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:MODE

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:MODE <mode>
Description	This command sets the burst mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mode> = <CHARACTER PROGRAM DATA> OFF : OFF CONStant : constant RAMP : ramp <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:MOD RAMP
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:MODE?
Description	This query returns the burst mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:MOD? → RAMP
Note	

12.5.28 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:MODE

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:MODE <enable>
Description	This command enables/disables number of burst mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:NBUR:MOD ON
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:MODE?
Description	This query returns if number of burst mode is enabled/disabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:NBUR:MOD? → 0
Note	

12.5.29 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:BNUmber

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:BNUmber <number>
Description	This command sets the number of burst .
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<number> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 65535, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:NBUR:BNUM 100
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:NBURst:BNUmber?
Description	This query returns the number of burst.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:NBUR:BNUM? → 100
Note	

12.5.30 EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy[:DUTY]

Syntax	EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy[:DUTY] <duty>, <period>
Description	This command sets the burst configuration. Duty is prior than period . Period Unit: Milliseconds
Parameters	<Pt> = Port number <St> = Stream number (1-16) <duty> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00000, MAXimum = 100.00000, DEFault = 0.00000</i> <period> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00001, MAXimum = 5000.0000, DEFault = 1.0000</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:PDUT 100.0000, 1.0000
Note	

12.5.31 EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy:PERiod

Syntax	EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PDUTy:PERiod <duty>, <period>
Description	This command sets the burst configuration. Period is prior than duty. Period Unit: Milliseconds
Parameters	<Pt> = Port number <St> = Stream number (1-16) <duty> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00000, MAXimum = 100.00000, DEFault = 0.00000</i> <period> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00001, MAXimum = 5000.0000, DEFault = 1.0000</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:PDUT:PER 100.0000, 1.0000
Note	

12.5.32 EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:DUTY?

Syntax	EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:DUTY?
Description	This query returns the duty percentage.
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<duty> = <NUMERIC PROGRAM DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:DUTY? → 100.00000
Note	

12.5.33 EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PERiod?

Syntax	EThernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:PERiod?
Description	This query returns the period milliseconds.
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<period> = <NUMERIC PROGRAM DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:PER? → 1.00000
Note	

12.5.34 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BLENgth

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BLENgth <length>[,<suffix>]
Description	This command sets the burst length of constant.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 8.0000, MAXimum = 919117647.0000, DEFault = 1.0000</i> <suffix> = <CHARACTER PROGRAM DATA> FRAMes : number of frames BYTes : bytes MSEConds : milli seconds <i>DEFault = FRAMes</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:BLEN 10
Notes	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BLENgth? [<suffix>]
Description	This query returns the burst length of constant.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> FRAMes: number of frames BYTes: bytes MSEConds: milli seconds <i>DEFault = FRAMes</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:BLEN? → 10
Note	

12.5.35 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BGAP

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BGAP <length>[,<suffix>]
Description	This command sets the inter burst gap of constant.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 128 bytes, MAXimum = 62500000000 bytes, DEFault = 1024 bytes</i> <suffix> = <CHARACTER PROGRAM DATA> BYTes : bytes MSEConds : milli seconds <i>DEFault = BYTes</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:BGAP 10
Notes	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:CONStant:BGAP? [<suffix>]
Description	This query returns the inter burst gap of constant.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> BYTes: bytes MSEConds: milli seconds <i>DEFault = BYTes</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:CONS:BGAP? → 10
Note	

12.5.36 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:RMODE

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:RMODE <mode>
Description	This command sets the burst ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mode> = <CHARACTER PROGRAM DATA> KEEPend : keep end REPeat : repeat DEFault = KEEPend
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:RMOD KEEP
Note	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:RMODE?
Description	This query returns the burst ramp mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:RMOD? → KEEP
Note	

12.5.37 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:STARt

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:STARt <length>[,<suffix>]
Description	This command sets the burst ramp start length of ramp.
Parameters	<Pt> = Port number
	<length> = <NUMERIC PROGRAM DATA> MINimum = 8.0000, MAXimum = 919117647.0000, DEFault = 1.0000
	<suffix> = <CHARACTER PROGRAM DATA> FRAMES : number of frames BYTes : bytes MSEConds : milli seconds DEFault = FRAMES
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BLen:STAR 10
Notes	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:STARt? [<suffix>]
Description	This query returns the burst ramp end length of ramp.
Parameters	<Pt> = Port number
	<suffix> = <CHARACTER PROGRAM DATA> FRAMES: number of frames BYTes: bytes MSEConds: milli seconds DEFault = FRAMES
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BLen:STAR? → 10
Note	

12.5.38 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:END

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:END <length>[,<suffix>]
Description	This command sets the burst ramp end length of ramp.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 8.0000, MAXimum = 919117647.0000, DEFault = 1.0000</i> <suffix> = <CHARACTER PROGRAM DATA> FRAMes : number of frames BYTes : bytes MSEConds : seconds <i>DEFault = FRAMes</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BLen:END 10
Notes	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BLENght:END? [<suffix>]
Description	This query returns the burst ramp start length of ramp.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> FRAMes: number of frames BYTes: bytes MSEConds: milli seconds <i>DEFault = FRAMes</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BLen:END? → 10
Note	

12.5.39 ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BGAP

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BGAP <length>[,<suffix>]
Description	This command sets the inter burst gap of ramp.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 128 bytes, MAXimum = 62500000000 bytes, DEFault = 1024 bytes</i> <suffix> = <CHARACTER PROGRAM DATA> BYTes : bytes MSEConds : milli seconds <i>DEFault = BYTes</i>
Response	None.
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BGAP 10
Notes	

Syntax	ETHernet:PORT<Pt>:TRAFfic:STReam<St>:BURSt:RAMP:BGAP? [<suffix>]
Description	This query returns the inter burst gap of ramp.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> BYTes: bytes MSEConds: milli seconds <i>DEFault = BYTes</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:TRAF:STR1:BURS:RAMP:BGAP? → 10
Note	

12.6 Frame Content

12.6.1 ETHernet:PORT<Pt>:STReam<St>:FRAMed

Syntax	ETHernet:PORT<Pt>:STReam<St>:FRAMed <enable>
Description	This command enables/disables framed Ethernet.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT1:STR1:FRAM OFF
Note	BER is the only allowed protocol when framed Ethernet is OFF (unframed).

Syntax	ETHernet:PORT<Pt>:STReam<St>:FRAMed?
Description	This query returns if framed Ethernet is enabled/disabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:FRAM? → 0
Note	

12.6.2 ETHernet:PORT<Pt>:STReam<St>:MAC:SOURce

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:SOURce <address>
Description	This command sets the MAC source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:STR1:MAC:SOUR "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:SOURce?
Description	This query returns the MAC source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:SOUR? → "00-50-C2-35-D2-EF"
Note	

12.6.3 ETHernet:PORT<Pt>:STReam<St>:MAC:DESTination

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:DESTination <address>
Description	This command sets the MAC destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:STR1:MAC:DEST "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:DESTination?
Description	This query returns the MAC destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:DEST? → "00-50-C2-35-D2-EF"
Note	

12.6.4 ETHernet:PORT<Pt>:STReam<St>:MAC:ARP

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ARP <enable>
Description	This command enables/disables use of ARP to resolve destination MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MAC:ARP ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ARP?
Description	This query returns whether or not ARP is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:ARP? → 1
Note	

12.6.5 ETHernet:PORT<Pt>:STReam<St>:MAC:ARP:LKUP

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ARP:LKUP
Description	This command execute ARP. this command valid only when IPv4 is selected on layer3.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	None.
Example	ETH:PORT1:STR1:MAC:ARP:LKUP
Note	

12.6.6 ETHernet:PORT<Pt>:STReam<St>:MAC:ARP:RESult?

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ARP:RESult?
Description	This query returns the ARP condition. this command valid only when IPv4 is selected on layer3.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<status> = <CHARACTER RESPONSE DATA> SUCCESS: ARP lookup succeeded. TIMEOUT: ARP lookup timed out.
Example	ETH:PORT1:STR1:MAC:ARP:RES? → SUCCESS
Note	

12.6.7 ETHernet:PORT<Pt>:STReam<St>:MAC:NDP

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:NDP <enable>
Description	This command enables/disables use of NDP to resolve destination MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MAC:NDP ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:NDP?
Description	This query returns whether or not NDP is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:NDP? → 1
Note	

12.6.8 ETHernet:PORT<Pt>:STReam<St>:MAC:NDP:LKUP

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:NDP:LKUP
Description	This command execute NDP. this command valid only when IPv6 is selected on layer3.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	None.
Example	ETH:PORT1:STR1:MAC:NDP:LKUP
Note	

12.6.9 ETHernet:PORT<Pt>:STReam<St>:MAC:NDP:RESult?

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:NDP:RESult?
Description	This query returns the NDP condition. this command valid only when IPv6 is selected on layer3.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<status> = <CHARACTER RESPONSE DATA> SUCCESS: ARP lookup succeeded. TIMEOUT: ARP lookup timed out.
Example	ETH:PORT1:STR1:MAC:NDP:RES? → SUCCESS
Note	

12.6.10 ETHernet:PORT<Pt>:STReam<St>:MAC:BROadcast

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:BROadcast <percentage>
Description	This command sets the percentage of stream packets that will be transmitted as broadcast packets.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<percentage> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0, MAXimum=100.0, DEFault=0.0</i>
Response	None.
Example	ETH:PORT1:STR1:MAC:BRO 10.0
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:BROadcast?
Description	This query returns the stream broadcast percentage.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<percentage> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:BR0? → 10.5
Note	

12.6.11 ETHernet:PORT<Pt>:STReam<St>:MAC:DEFault

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:DEFault <enable>
Description	This command enables/disables use of default source MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MAC:DEF ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:DEFault?
Description	This query returns if the default source MAC address is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:DEF? → 1
Note	

12.6.12 ETHernet:PORT<Pt>:STReam<St>:MAC:ETYPe

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ETYPe <type>
Description	This command sets MAC level Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<type> = <NUMERIC PROGRAM DATA> Acceptable values: #H8100 #H88A8 #H9100 #H9200
Response	None.
Example	ETH:PORT1:STR1:MAC:ETYP #H8100
Note	This command can only be used when MPLS is disabled and VLAN is enabled. When IPv4 and IPv6 is disabled this level is set by :MAC:L3EType command (see section 12.6.13).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:ETYPe?
Description	This query returns MAC level Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:ETYP? → #H8100
Note	This command can only be used when MPLS is disabled and VLAN is enabled.

12.6.13 ETHernet:PORT<Pt>:STReam<St>:MAC:L3EType

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:L3EType <type>
Description	This command sets the Ethertype for layer three when no protocol is defined for this layer.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<type> = <NUMERIC PROGRAM DATA> <i>MINimum=1501, MAXimum=65535, DEFault=1501</i>
Response	None.
Example	ETH:PORT1:STR1:MAC:L3ET #H0800
Note	This command can only be used when IPv4 or IPv6 is disabled. When VLAN is enabled this level is set by :MAC:ETYPe command (see section 12.6.12).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MAC:L3EType?
Description	This query returns the Ethertype for layer three when no protocol is defined for this layer.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MAC:L3ET? → #0800
Note	This command can only be used when IPv4 or IPv6 is disabled.

12.6.14 ETHernet:PORT<Pt>:STReam<St>:MPLS[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS[:ENABLE] <enable>
Description	This command enables/disables MPLS.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS[:ENABLE]?
Description	This query returns the state of MPLS.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS? → 1
Note	

12.6.15 ETHernet:PORT<Pt>:STReam<St>:MPLS:LCount

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LCount <levels>
Description	This command sets the number of active MPLS levels.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:LC 2
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LCOUNT?
Description	This query returns the number of active MPLS levels.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:LC? → 2
Note	

12.6.16 ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:LABel

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:LABel <label>
Description	This command sets the MPLS label.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N ¹)
	<label> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1048575, DEFault=0</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:LEV1:LAB 1048575
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:LABel?
Description	This query returns the MPLS label.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N)
Response	<label> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:LEV1:LAB? → 1048575
Note	

12.6.17 ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:EBITs

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:EBITs <value>
Description	This command sets the MPLS experimental bits.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N ¹)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:LEV1:EBIT 5
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:EBITs?
Description	This query returns the MPLS experimental bits.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:LEV1:EBIT? → 5
Note	

12.6.18 ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:TTL

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:TTL <value>
Description	This command sets the MPLS time to live.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N ¹)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=32</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:LEV1:TTL 32
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:LEVel<Lv>:TTL?
Description	This query returns the MPLS time to live.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:LEV1:TTL? → 32
Note	

12.6.19 ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet[:ENABLE] <enable>
Description	This command enables/disables Ethernet over MPLS
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:ETH ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet[:ENABLE]?
Description	This query returns the state of Ethernet over MPLS.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:ETH? → 1
Note	

12.6.20 ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:AINCrement

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:AINCrement <enable>
Description	This command enables/disables EoMPLS auto increment of sequence numbers.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MPLS:ETH:AINC ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:AINCrement?
Description	This query returns the state of EoMPLS auto increment of sequence numbers.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:ETH:AINC? → 1
Note	

12.6.21 ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:SMAC

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:SMAC <address>
Description	This command sets EoMPLS source MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:STR1:MPLS:ETH:SMAC "66-60-C2-35-D3-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:SMAC?
Description	This query returns the EoMPLS source MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:ETH:SMAC? → "66-60-C2-35-D3-EF"
Note	

12.6.22 ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:DMAC

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:DMAC <address>
Description	This command sets the EoMPLS destination MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:STR1:MPLS:ETH:DMAC "66-60-C2-35-D3-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:DMAC?
Description	This query returns the EoMPLS destination MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:ETH:DMAC? → "66-60-C2-35-D3-EF"
Note	

12.6.23 ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:ETYPe

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:ETYPe <type>
Description	This command sets the EoMPLS Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<type> = <NUMERIC PROGRAM DATA>
	Acceptable values: #H8100 #H88A8 #H9100 #H9200
Response	None.
Example	ETH:PORT1:STR1:MPLS:ETH:ETYP #H8100
Note	This command can only be used when MPLS and VLAN are enabled.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MPLS:ETHernet:ETYPe?
Description	This query returns the EoMPLS Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MPLS:ETH:ETYP? → #H8100
Note	

12.6.24 ETHernet:PORT<Pt>:STReam<St>:MIM[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM[:ENABLE] <enable>
Description	This command enables/disables MiM.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	DEFault=OFF
Response	None.
Example	ETH:PORT1:STR1:MIM ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM[:ENABLE]?
Description	This query returns whether or not MiM is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM? → 1
Note	

12.6.25 ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:DEI

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:DEI <enable>
Description	This command sets the B-TAG DEI bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	DEFault=OFF
Response	None.
Example	ETH:PORT1:STR1:MIM:BTAG:DEI ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:DEI?
Description	This query returns the B-TAG DEI bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:BTAG:DEI? → 1
Note	

12.6.26 ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:Priority

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:Priority <priority>
Description	This command sets the B-TAG Priority (PCP).
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<priority> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:BTAG:PR 7
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:Priority?
Description	This query returns the B-TAG Priority (PCP).
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:BTAG:PR? → 7
Note	

12.6.27 ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:VID

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:VID <vid>
Description	This command sets the B-TAG Backbone VLAN ID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<vid> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:BTAG:VID 1024
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:BTAG:VID?
Description	This query returns the B-TAG Backbone VLAN ID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<vid> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:BTAG:VID? → 1024
Note	

12.6.28 ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:UCA

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:UCA <enable>
Description	This command sets the I-TAG UCA bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:ITAG:UCA ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:UCA?
Description	This query returns the I-TAG UCA bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ITAG:UCA? → 1
Note	

12.6.29 ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:DEI

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:DEI <enable>
Description	This command sets the I-TAG DEI bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:ITAG:DEI ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:DEI?
Description	This query returns the I-TAG DEI bit.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ITAG:DEI? → 1
Note	

12.6.30 ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:Priority

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:Priority <priority>
Description	This command sets the I-TAG Priority (PCP).
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<priority> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:ITAG:PR 7
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:Priority?
Description	This query returns the I-TAG Priority (PCP).
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ITAG:PR? → 7
Note	

12.6.31 ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:SID

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:SID <sid>
Description	This command sets the I-TAG SID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<sid> = <NUMERIC PROGRAM DATA>
	<i>MINimum = 0, MAXimum = 16777215, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:MIM:ITAG:SID 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ITAG:SID?
Description	This query returns the I-TAG SID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<sid> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ITAG:SID? → 1
Note	

12.6.32 ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:SMAC

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:SMAC <address>
Description	This command sets the encapsulated customer source MAC address.
Parameters	<Pt> = Port number
	<address> = <STRING PROGRAM DATA>
	MAC address
Response	None.
Example	ETH:PORT1:STR1:MIM:ETH:SMAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:SMAC?
Description	This query returns the encapsulated customer source MAC address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ETH:SMAC? → "00-50-C2-35-D2-EF"
Note	

12.6.33 ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:DMAC

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:DMAC <address>
Description	This command sets the encapsulated customer destination MAC address.
Parameters	<Pt> = Port number
	<address> = <STRING PROGRAM DATA>
	MAC address
Response	None.
Example	ETH:PORT1:STR1:MIM:ETH:DMAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:DMAC?
Description	This query returns the encapsulated customer destination MAC address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ETH:DMAC? → "00-50-C2-35-D2-EF"
Note	

12.6.34 ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:ETYPe

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:ETYPe <type>
Description	This command sets the encapsulated customer Ethernet Type.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<type> = <NUMERIC PROGRAM DATA> Acceptable values: #H8100 #H88A8 #H9100 #H9200
Response	None.
Example	ETH:PORT1:STR1:MIM:ETH:ETYP #H8100
Note	This command can only be used when MiM and VLAN is enabled. When IPv4 and IPv6 is disabled this level is set by :MAC:L3EType command (see section 12.6.13).

Syntax	ETHernet:PORT<Pt>:STReam<St>:MIM:ETHernet:ETYPe?
Description	This query returns the encapsulated customer Ethernet Type.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:MIM:ETH:ETYP? → #H8100
Note	

12.6.35 ETHernet:PORT<Pt>:STReam<St>:VLAN[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN[:ENABle] <enable>
Description	This command enables/disables VLAN.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:VLAN ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN[:ENABle]?
Description	This query returns whether or not VLAN is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<boolean> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:VLAN? → 1
Note	

12.6.36 ETHernet:PORT<Pt>:STReam<St>:VLAN:LCOUNT

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LCOUNT <levels>
Description	This command sets the number of active VLAN levels.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:PORT1:STR1:VLAN:LC 2
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LCOUNT?
Description	This query returns the number of active VLAN levels.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VLAN:LC? → 2
Note	

12.6.37 ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ID <number>
Description	This command sets the VLAN ID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N ¹)
	<number> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4095, DEFault=0</i>
Response	None.
Example	ETH:PORT1:STR1:VLAN:LEV1:ID 1024
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ID?
Description	This query returns the VLAN ID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VLAN:LEV1:ID? → 1024
Note	

12.6.38 ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI <enable>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N ¹)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:VLAN:LEV1:CFI ON

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Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). ² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ³ This command is as same as <code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI</code> .
Syntax	<code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI?</code>
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<code><Pt></code> = Port number <code><St></code> = Stream number (1-16) <code><Lv></code> = VLAN level (1-N)
Response	<code><enable></code> = <BOOLEAN RESPONSE DATA>
Example	<code>ETH:PORT1:STR1:VLAN:LEV1:CFI? → 1</code>
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ² This command is as same as <code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI?</code> .

12.6.39 ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI

Syntax	<code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI <enable></code>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<code><Pt></code> = Port number <code><St></code> = Stream number (1-16) <code><Lv></code> = VLAN level (1-N ¹) <code><enable></code> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	<code>ETH:PORT1:STR1:VLAN:LEV1:DEI ON</code>
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). ² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ³ This command is as same as <code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI</code> .

Syntax	<code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:DEI?</code>
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<code><Pt></code> = Port number <code><St></code> = Stream number (1-16) <code><Lv></code> = VLAN level (1-N)
Response	<code><enable></code> = <BOOLEAN RESPONSE DATA>
Example	<code>ETH:PORT1:STR1:VLAN:LEV1:DEI? → 1</code>
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ² This command is as same as <code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:CFI?</code> .

12.6.40 ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:PRiority

Syntax	<code>ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:PRiority <priority></code>
Description	This command sets the VLAN priority.
Parameters	<code><Pt></code> = Port number <code><St></code> = Stream number (1-16) <code><Lv></code> = VLAN level (1-N ¹) <code><priority></code> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	<code>ETH:PORT1:STR1:VLAN:LEV1:PR 7</code>
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:PRiority?
Description	This query returns the VLAN priority.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N)
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VLAN:LEV1:PR? → 7
Note	

12.6.41 ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ETYPe

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ETYPe <type>
Description	This command sets the VLAN Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N) ¹
	<type> = <NUMERIC PROGRAM DATA> Acceptable values: #H8100 #H88A8 #H9100 #H9200 <i>DEFault=#H8100</i>
Response	None.
Example	ETH:PORT1:STR1:VLAN:LEV1:ETYP #H8100
Notes	¹ It is only possible to use this command for levels (1-M), where M is the number of active VLAN Levels minus one (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). It is not possible to use this command for VLAN level N as Ethertype because: - When IPv4 or IPv6 is enabled this level is automatically set according to the selected higher-level protocol. - When IPv4 and IPv6 is disabled this level is set by :MAC:L3EType command (see section 12.6.13). MAC level Ethertype is set by :MAC:ETYPe command (see section 12.6.12).

Syntax	ETHernet:PORT<Pt>:STReam<St>:VLAN:LEVel<Lv>:ETYPe?
Description	This query returns the VLAN Ethertype.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<Lv> = VLAN level (1-N) ¹
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VLAN:LEV1:ETYP? → #H8100
Note	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97).

12.6.42 ETHernet:PORT<Pt>:STReam<St>:LLC[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:LLC[:ENABle] <enable>
Description	This command enables/disables LLC1 (logical link control type 1).
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:LLC ON
Note	Disabling LLC will automatically also disable SNAP.

Syntax	ETHernet:PORT<Pt>:STReam<St>:LLC[:ENABLE]?
Description	This query returns whether or not LLC1 is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:LLC? → 1
Note	

12.6.43 ETHernet:PORT<Pt>:STReam<St>:SNAP[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:SNAP[:ENABLE] <enable>
Description	This command enables/disables SNAP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	DEFault = OFF
Response	None.
Example	ETH:PORT1:STR1:SNAP ON
Note	Enabling SNAP will automatically also enable LLC.

Syntax	ETHernet:PORT<Pt>:STReam<St>:SNAP[:ENABLE]?
Description	This query returns whether or not SNAP is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:SNAP? → 1
Note	

12.6.44 ETHernet:PORT<Pt>:STReam<St>:L2Custom[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:L2Custom[:ENABLE] <enable>
Description	This command enables/disables L2Custom.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	DEFault = OFF
Response	None.
Example	ETH:PORT1:STR1:L2C ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:L2Custom[:ENABLE]?
Description	This query returns whether or not L2Custom is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<boolean> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:L2C? → 1
Note	

12.6.45 ETHernet:PORT<Pt>:STReam<St>:IPV4[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4[:ENABle] <enable>
Description	This command enables/disables IPv4.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT1:STR1:IPV4 ON
Note	Enabling of this parameter will disable IPv6

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4[:ENABle]?
Description	This query returns whether or not IPv4 is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4? → 1
Note	

12.6.46 ETHernet:PORT<Pt>:STReam<St>:IPV4:SOURce

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:SOURce <address>
Description	This command sets the IPv4 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:IPV4:SOUR "172.29.2.36"
Note	Only the character '.' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:SOURce?
Description	This query returns the IPv4 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:SOUR? → "172.29.2.36"
Note	

12.6.47 ETHernet:PORT<Pt>:STReam<St>:IPV4:DESTination

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:DESTination <address>
Description	This command sets the IPv4 destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:IPV4:DEST "172.29.2.36"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:DESTination?
Description	This query returns the IPv4 destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:DEST? → "172.29.2.36"
Note	

12.6.48 ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway[:ENABLE] <enable>
Description	This command enables/disables use of the IPv4 gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:GAT ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway[:ENABLE]?
Description	This query returns whether or not the IPv4 gateway is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:GAT? → 1
Note	

12.6.49 ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway:ADDRess

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway:ADDRess <address>
Description	This command sets the IPv4 default gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:IPV4:GAT:ADDR "172.29.2.36"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:GATeway:ADDRess?
Description	This query returns the IPv4 default gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:GAT:ADDR? → "172.29.2.36"
Note	

12.6.50 ETHernet:PORT<Pt>:STReam<St>:IPV4:NETMask

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:NETMask <mask>
Description	This command sets the IPv4 netmask.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mask> = <STRING PROGRAM DATA> IPv4 netmask
Response	None.
Example	ETH:PORT1:STR1:IPV4:NETM "255.255.255.0"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:NETMask?
Description	This query returns the IPv4 netmask.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:NETM? → "255.255.255.0"
Note	

12.6.51 ETHernet:PORT<Pt>:STReam<St>:IPV4:HOST

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:HOST <host>
Description	This command sets the IPv4 destination host name which is used in case DNS is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<host> = <STRING PROGRAM DATA> Host name (max. 255 characters)
Response	None.
Example	ETH:PORT1:STR1:IPV4:HOST "www.anritsu.com"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:HOST?
Description	This query return the IPv4 destination host name.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<host> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:HOST? → "www.anritsu.com"
Note	

12.6.52 ETHernet:PORT<Pt>:STReam<St>:IPV4:TTL

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:TTL <value>
Description	This command sets the IPv4 time to live.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=32</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:TTL 32
Note	This command sets the same storage parameter within the instrument as the IPv6 command <code>ETHernet:PORT<Pt>:STReam<St>:IPV6:HLIMit</code> (see section 12.6.74).

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:TTL?
Description	This query returns the IPv4 time to live.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:TTL? → 32
Note	

12.6.53 ETHernet:PORT<Pt>:STReam<St>:IPV4:TOS

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:TOS <value>
Description	This command sets the IPv4 DSCP/TOS byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV4:TOS #HFF ETH:PORT1:STR1:IPV4:TOS 128
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:TOS?
Description	This query returns the IPv4 DSCP/TOS byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:TOS? → 255
Note	

12.6.54 ETHernet:PORT<Pt>:STReam<St>:IPV4:IDENtifier

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IDENtifier <value>
Description	This command sets the IPv4 identifier field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535, DEFault=43981</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV4:IDEN #HABCD ETH:PORT1:STR1:IPV4:IDEN 12345
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IDENtifier?
Description	This query returns the IPv4 identifier field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IDEN? → 43981
Note	

12.6.55 ETHernet:PORT<Pt>:STReam<St>:IPV4:AINCrement

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:AINCrement <enable>
Description	This command enables/disables auto increment of the IPv4 identifier field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:AINC OFF
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:AINCrement?
Description	This query returns whether or not auto increment of the IPv4 identifier field is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:AINC? → 0
Note	

12.6.56 ETHernet:PORT<Pt>:STReam<St>:IPV4:MF

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:MF <boolean>
Description	This command sets/clears the IPv4 more fragments flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<boolean> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:MF 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:MF?
Description	This query returns the IPv4 more fragments flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<boolean> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:MF? → 1
Note	

12.6.57 ETHernet:PORT<Pt>:STReam<St>:IPV4:DF

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:DF <boolean>
Description	This command sets/clears the IPv4 don't fragment flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<boolean> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:DF 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:DF?
Description	This query returns the IPv4 don't fragment flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<boolean> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:DF? → 1
Note	

12.6.58 ETHernet:PORT<Pt>:STReam<St>:IPV4:RES

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:RES <boolean>
Description	This command sets/clears the IPv4 reserved flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<boolean> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:RES 0
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:RES?
Description	This query returns the IPv4 reserved flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<boolean> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:RES? → 0
Note	

12.6.59 ETHernet:PORT<Pt>:STReam<St>:IPV4:PROTocol

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:PROTocol <value>
Description	This command sets the IPv4 protocol byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=253</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV4:PROT #HFD ETH:PORT1:STR1:IPV4:PROT 17
Notes	This command sets the same storage parameter within the instrument as the IPv6 command ETHernet:PORT<Pt>:STReam<St>:IPV6:NHeader (see section 12.6.73). In case UDP or TCP is enabled, the value set by this command is not used. Instead values 17 (UDP) or 6 (TCP) are automatically inserted in the IPv4 header.

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:PROTocol?
Description	This query returns the IPv4 protocol byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:PROT? → 6
Note	

12.6.60 ETHernet:PORT<Pt>:STReam<St>:IPV4:TLENgth?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:TLENgth?
Description	This query returns the Total Length field in the IP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:TLEN? → 62
Note	

12.6.61 ETHernet:PORT<Pt>:STReam<St>:IPV4:CHECksum?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:CHECksum?
Description	This query returns the checksum field in the IP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<checksum> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:CHEC? → #HA2E3
Note	

12.6.62 ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP[:ENABle] <enable>
Description	This command enables/disables use of the IPv4 IGMP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:IGMP ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP[:ENABle]?
Description	This query returns whether or not the IPv4 IGMP is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IGMP? → 1
Note	

12.6.63 ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:VERSion

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:VERSion <version>
Description	This command sets the IGMP version.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<version> = <CHARACTER PROGRAM DATA> V1: IGMPv1 V2: IGMPv2 V3: IGMPv3 <i>DEFault = V2</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:IGMP:VERS V1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:VERSion?
Description	This query returns the IGMP version.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<version> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IGMP:VERS? → V2
Note	

12.6.64 ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:GRoup[:ADDRess]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:GRoup[:ADDRess] <address>
Description	This command sets the IPv4 IGMP group address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:IPV4:IGMP:GR0 "239.1.1.5"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:GRoup[:ADDRess]?
Description	This query returns the IPv4 IGMP group address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IGMP:GR0? → "239.1.1.5"
Note	

12.6.65 ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce[:ENABle] <enable>
Description	This command enables/disables use of the IPv4 IGMPv3 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV4:IGMP:SOUR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce[:ENABle]?
Description	This query returns whether or not the IPv4 IGMPv3 source is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IGMP:SOUR? → 1
Note	

12.6.66 ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce:ADDReSS

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce:ADDReSS <address>
Description	This command sets the IPv4 IGMPv3 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:IPV4:IGMP:SOUR:ADDR "192.168.1.5"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV4:IGMP:SOURce:ADDReSS?
Description	This query returns the IPv4 IGMPv3 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV4:IGMP:SOUR:ADDR? → "192.168.1.5"
Note	

12.6.67 ETHernet:PORT<Pt>:STReam<St>:DNS[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS[:ENABle] <enable>
Description	This command enables/disables DNS.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:DNS ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS[:ENABle]?
Description	This query returns whether or not DNS is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:DNS? → 1
Note	

12.6.68 ETHernet:PORT<Pt>:STReam<St>:DNS:PRIMary

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS:PRIMary <address>
Description	This command sets primary DNS sever address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:DNS:PRIM "172.29.2.36"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS:PRIMary?
Description	This query returns the primary DNS server address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:DNS:PRIM? → "172.29.2.36"
Note	

12.6.69 ETHernet:PORT<Pt>:STReam<St>:DNS:SECondary

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS:SECondary <address>
Description	This command sets secondary DNS sever address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:STR1:DNS:SEC "172.29.2.37"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DNS:SECondary?
Description	This query returns the secondary DNS server address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:DNS:SEC? → "172.29.2.37"
Note	

12.6.70 ETHernet:PORT<Pt>:STReam<St>:IPV6[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6[:ENABle] <enable>
Description	This command enables/disables IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV6 ON
Note	Enabling of this parameter will disable IPv4

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6[:ENABle]?
Description	This query returns whether or not IPv6 is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6? → 1
Note	

12.6.71 ETHernet:PORT<Pt>:STReam<St>:IPV6:TCLass

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:TCLass <value>
Description	This command sets the IPv6 traffic class byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV6:TCL #HFF
	ETH:PORT1:STR1:IPV6:TCL 128
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:TCLass?
Description	This query returns the IPv6 traffic class byte.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:TCL? → 255
Note	

12.6.72 ETHernet:PORT<Pt>:STReam<St>:IPV6:FLABel

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:FLABel <value>
Description	This command sets the IPv6 flow label field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1048575, DEFault=0</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV6:FLAB #HFFFFFF
	ETH:PORT1:STR1:IPV6:FLAB 1024
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:FLABel?
Description	This query returns the IPv6 flow label field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:FLAB? → 1024
Note	

12.6.73 ETHernet:PORT<Pt>:STReam<St>:IPV6:NHeader

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:NHeader <value>
Description	This command sets the IPv6 next header field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=253</i>
Response	None.
Examples	ETH:PORT1:STR1:IPV6:NH #HFF
	ETH:PORT1:STR1:IPV6:NH 128
Notes	This command sets the same storage parameter within the instrument as the IPv4 command ETHernet:PORT<Pt>:STReam<St>:IPV4:PRoToCol (see section 12.6.59). In case UDP or TCP is enabled, the value set by this command is not used. Instead values 17 (UDP) or 6 (TCP) are automatically inserted in the IPv6 header.

Syntax	ETHERnet:PORT<Pt>:STReam<St>:IPV6:NHeader?
Description	This query returns the IPv6 next header field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:NH? → 233
Note	

12.6.74 ETHERnet:PORT<Pt>:STReam<St>:IPV6:HLIMit

Syntax	ETHERnet:PORT<Pt>:STReam<St>:IPV6:HLIMit <value>
Description	This command sets the IPv6 hop limit field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=32</i>
Response	None.
Example	ETH:PORT1:STR1:IPV6:HLIM 32
Note	This command sets the same storage parameter within the instrument as the IPv4 command ETHERnet:PORT<Pt>:STReam<St>:IPV4:TTL (see section 12.6.52).

Syntax	ETHERnet:PORT<Pt>:STReam<St>:IPV6:HLIMit?
Description	This query returns the IPv6 hop limit field.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:HLIM? → 32
Note	

12.6.75 ETHERnet:PORT<Pt>:STReam<St>:IPV6:SOURce

Syntax	ETHERnet:PORT<Pt>:STReam<St>:IPV6:SOURce <address>
Description	This command sets the IPv6 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:STR1:IPV6:SOUR "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:IPV6:SOURce?
Description	This query returns the IPv6 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SOUR? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.6.76 ETHernet:PORT<Pt>:STReam<St>:IPV6:DESTination

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:DESTination <address>
Description	This command sets the IPv6 destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:STR1:IPV6:DEST "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:DESTination?
Description	This query returns the IPv6 destination address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:DEST? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.6.77 ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway[:ENABLE] <enable>
Description	This command enables/disables use of the IPv6 gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV6:GAT ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway[:ENABLE]?
Description	This query returns whether or not the IPv6 gateway is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:GAT? → 1
Note	

12.6.78 ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway:ADDRess

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway:ADDRess <address>
Description	This command sets the IPv6 default gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:STR1:IPV6:GAT:ADDR "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:GATeway:ADDRes?
Description	This query returns the IPv6 default gateway.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:GAT:ADDR? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.6.79 ETHernet:PORT<Pt>:STReam<St>:IPV6:PREFix

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:PREFix <mask>
Description	This command sets the IPv6 prefix mask.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mask> = <STRING PROGRAM DATA> IPv6 prefix mask
Response	None.
Example	ETH:PORT1:STR1:IPV6:PREF "FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:0000"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:PREFix?
Description	This query returns the IPv6 prefix mask.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:PREF? → "FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:0000"
Note	

12.6.80 ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig <mode>
Description	This command sets the address configuration mode for IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mode> = <CHARACTER PROGRAM DATA> MANual: Manual SLEsS: Stateless DEFault = SLEsS
Response	None.
Example	ETH:PORT1:STR1:IPV6:ADDR SLES
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig?
Description	This query returns the address configuration mode for IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:ADDR? → SLES
Note	

12.6.81 ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig:RESult?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:ADDRconfig:RESult?
Description	This query returns the result of address config for IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<result> = <CHARACTER RESPONSE DATA> SUCCESS: Address configuration succeeded. TIMEOUT: Address configuration timed out.
Example	ETH:PORT1:STR1:IPV6:ADDR:RES? → TIMEOUT
Note	

12.6.82 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID <id>
Description	This command sets the interface ID for IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<id> = <STRING PROGRAM DATA> The interface ID string must consist of 16 hexadecimal digits.
Response	None.
Example	ETH:PORT1:STR1:IPV6:SLES:IID "00-00-00-00-00-00-00-00"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID?
Description	This query returns the address configuration mode for IPv6.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<mode> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:IID? → "00-00-00-00-00-00-00-00"
Note	

12.6.83 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID:AUTO

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID:AUTO <enable>
Description	This command enables/disables Interface ID.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV6:SLES:IID:AUTO ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLESs:IID:AUTO?
Description	This query returns whether or not Interface ID is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:IID:AUTO? → 1
Note	

12.6.84 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:LINKlocal?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:LINKlocal?
Description	This query returns the link local address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:LINK? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.6.85 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:RAFLag?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:RAFLag?
Description	This query returns the stateless RA flags.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<flags> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:RAFL? → "0x00"
Note	

12.6.86 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:SRCMac?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:SRCMac?
Description	This query returns the stateless source MAC address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:SRCM? → "00-00-00-00-00-00"
Note	

12.6.87 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:PREFIX?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:PREFIX?
Description	This query returns the stateless prefix.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<prefix> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:PREFIX? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.6.88 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:PRFLag?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:PRFLag?
Description	This query returns the stateless prefix flags.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<flags> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:PRFL? → "0x00"
Note	

12.6.89 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:LTIMe?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:LTIMe?
Description	This query returns the stateless life time.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<time> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:SLES:LTIM? → "Fri Jan 8 14:24:44 2010"
Note	

12.6.90 ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:RENew

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:SLEs:RENew
Description	This command execute Stateless address configuration. This command valid only when IpV6 is selected on layer3.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	None.
Example	ETH:PORT1:STR1:IPV6:SLES:REN
Note	

12.6.91 ETHernet:PORT<Pt>:STReam<St>:IPV6:PLENgtH?

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:PLENgtH?
Description	This query returns the Payload Length field in the IP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:PLEN? → 62
Note	

12.6.92 ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD[:ENABle] <enable>
Description	This command enables/disables use of the IPv6 MLD.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	<i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:IPV6:MLD ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD[:ENABle]?
Description	This query returns whether or not the IPv6 MLD is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:MLD? → 1
Note	

12.6.93 ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:VERSion

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:VERSion <version>
Description	This command sets the MLD version.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<version> = <CHARACTER PROGRAM DATA> V1: MLDv1 V2: MLDv2 <i>DEFault</i> = V1
Response	None.
Example	ETH:PORT1:STR1:IPV6:MLD:VERS V1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:VERSion?
Description	This query returns the MLD version.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<version> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:MLD:VERS? → V1
Note	

12.6.94 ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:GROup[:ADDRESS]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:GROup[:ADDRESS] <address>
Description	This command sets the IPv6 MLD group address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:STR1:IPV6:MLD:GRO "FF05:0000:0000:0000:0000:0000:0000:0333"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:GROup[:ADDRESS]?
Description	This query returns the IPv6 MLD group address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:MLD:GRO? → "FF05:0000:0000:0000:0000:0000:0000:0333"
Note	

12.6.95 ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce[:ENABLE] <enable>
Description	This command enables/disables use of the IPv6 MLDv2 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	ETH:PORT1:STR1:IPV6:MLD:SOUR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce[:ENABle]?
Description	This query returns whether or not the IPv6 MLDv2 source is used.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:MLD:SOUR? → 1
Note	

12.6.96 ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce:ADDRess

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce:ADDRess <address>
Description	This command sets the IPv6 MLDv2 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:STR1:IPV6:MLD:SOUR:ADDR "2001:0001:0001:0001:0000:0000:0000:0005"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:IPV6:MLD:SOURce:ADDRess?
Description	This query returns the IPv6 MLDv2 source address.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:IPV6:MLD:SOUR:ADDR? → "2001:0001:0001:0001:0000:0000:0000:0005"
Note	

12.6.97 ETHernet:PORT<Pt>:STReam<St>:L3Custom[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:L3Custom[:ENABle] <enable>
Description	This command enables/disables Layer3 CUSTOM.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:L3C ON
Note	Enabling of this parameter will disable IPv4 and IPv6

Syntax	ETHernet:PORT<Pt>:STReam<St>:L3Custom[:ENABle]?
Description	This query returns whether or not Layer3 CUSTOM is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:L3C? → 1
Note	

12.6.98 ETHernet:PORT<Pt>:STReam<St>:DHCP[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP[:ENABle] <enable>
Description	This command enables/disables DHCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:DHCP ON
Note	When DHCP is enabled a new DHCP discover message is transmitted. Use the query ETH:PORT1:STR1:DHCP:LET? (see section 12.6.102) to check if lease is obtained.

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP[:ENABle]?
Description	This query returns whether or not DHCP is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:DHCP? → 1
Note	

12.6.99 ETHernet:PORT<Pt>:STReam<St>:DHCP:RENew

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:RENew <enable>
Description	This command enables/disables renewal of DHCP lease when link is reestablished.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:DHCP:REN ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:RENew?
Description	This query returns whether or not DHCP lease is renewed when link reestablished.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:DHCP:REN? → 1
Note	

12.6.100 ETHernet:PORT<Pt>:STReam<St>:DHCP:DNS

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:DNS <enable>
Description	This command enables/disables whether DNS server info should be obtained through DHCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:DHCP:DNS ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:DNS?
Description	This query returns whether or not DNS server info is obtained through DHCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:DHCP:DNS? → 1
Note	

12.6.101 ETHernet:PORT<Pt>:STReam<St>:DHCP:GATeway

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:GATeway <enable>
Description	This command enables/disables whether gateway setup should be obtained through DHCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:DHCP:GAT ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:GATeway?
Description	This query returns whether or not gateway setup is obtained through DHCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:DHCP:GAT? → 1
Note	

12.6.102 ETHernet:PORT<Pt>:STReam<St>:DHCP:LETime?

Syntax	ETHernet:PORT<Pt>:STReam<St>:DHCP:LETime?
Description	This query returns the current DHCP lease expire time.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<time> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:DHCP:LET? → "Fri Jan 8 14:24:44 2010"
Note	"N/A" is returned if DHCP is disabled or a lease has not been obtained .

12.6.103 ETHernet:PORT<Pt>:STReam<St>:UDP[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP[:ENABLE] <enable>
Description	This command enables/disables UDP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:UDP ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP[:ENABLE]?
Description	This query returns whether or not UDP is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP? → 1
Note	

12.6.104 ETHernet:PORT<Pt>:STReam<St>:UDP:SPORt

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:SPORt <value>
Description	This command sets the UDP source port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:UDP:SPOR 22
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:SPORt?
Description	This query returns the UDP source port
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP:SPOR? → 22
Note	

12.6.105 ETHernet:PORT<Pt>:STReam<St>:UDP:DPORT

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:DPORT <value>
Description	This command sets the UDP destination port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:UDP:DPOR 22
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:DPORT?
Description	This query returns the UDP destination port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP:DPOR? → 22
Note	

12.6.106 ETHernet:PORT<Pt>:STReam<St>:UDP:LENGth?

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:LENGth?
Description	This query returns the Length field in the UDP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP:LENG? → 62
Note	

12.6.107 ETHernet:PORT<Pt>:STReam<St>:UDP:CNULl

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:CNULl <enable>
Description	This command enables/disables forcing of the UDP header checksum to null.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:UDP:CNUL ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:CNUL?
Description	This query returns whether or not forcing of UDP checksum to null is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP:CNUL? → 1
Note	

12.6.108 ETHernet:PORT<Pt>:STReam<St>:UDP:CHECKsum?

Syntax	ETHernet:PORT<Pt>:STReam<St>:UDP:CHECKsum?
Description	This query returns the checksum field in the UDP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<checksum> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:UDP:CHEC? → #HA2E3
Note	

12.6.109 ETHernet:PORT<Pt>:STReam<St>:TCP[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP[:ENABLE] <enable>
Description	This command enables/disables TCP.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP[:ENABLE]?
Description	This query returns whether or not TCP is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP? → 1
Note	

12.6.110 ETHernet:PORT<Pt>:STReam<St>:TCP:ACONnect

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:ACONnect <enable>
Description	This command enables/disables automatic TCP connect.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:ACON ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:ACONnect?
Description	This query returns whether or not automatic TCP connect is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:ACON? → 1
Note	

12.6.111 ETHernet:PORT<Pt>:STReam<St>:TCP:LMODe

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:LMODe <enable>
Description	This command enables/disables TCP listen mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:LMODe ON
Note	Requires ACONnect to be enabled.

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:LMODe?
Description	This query returns whether or not TCP listen mode is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:LMODe? → 1
Note	

12.6.112 ETHernet:PORT<Pt>:STReam<St>:TCP:SPORt

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:SPORt <value>
Description	This command sets the TCP source port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:SPOR 22
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:SPORt?
Description	This query returns the TCP source port
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:SPOR? → 22
Note	

12.6.113 ETHernet:PORT<Pt>:STReam<St>:TCP:DPORT

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:DPORT <value>
Description	This command sets the TCP destination port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:DPOR 22
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:DPORT?
Description	This query returns the TCP destination port.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:DPOR? → 22
Note	

12.6.114 ETHernet:PORT<Pt>:STReam<St>:TCP:SEQUence

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:SEQUence <value>
Description	This command sets the TCP sequence number.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4294967295, DEFault=0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:SEQ 123456
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:SEQUence?
Description	This query returns the TCP sequence number.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:SEQ? → 123456
Note	

12.6.115 ETHernet:PORT<Pt>:STReam<St>:TCP:AINCrement

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:AINCrement <enable>
Description	This command enables/disables auto increment of the TCP sequence number.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:AINC ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:AINCrement?
Description	This query returns whether or not auto increment of the TCP sequence number is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:AINC? → 1
Note	

12.6.116 ETHernet:PORT<Pt>:STReam<St>:TCP:ACKnowledge

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:ACKnowledge <value>
Description	This command sets the TCP acknowledgment number.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:ACKN 123456
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:ACKnowledge?
Description	This query returns the TCP acknowledgment number.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:ACKN? → 123456
Note	

12.6.117 ETHernet:PORT<Pt>:STReam<St>:TCP:REServed

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:REServed <value>
Description	This command sets the TCP reserved value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 63, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:RES 10
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:REServed?
Description	This query returns the TCP reserved value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:RES? → 10
Note	

12.6.118 ETHernet:PORT<Pt>:STReam<St>:TCP:FCWR

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FCWR <enable>
Description	This command enables/disables the TCP CWR flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FCWR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FCWR?
Description	This query returns the TCP CWR flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FCWR? → 1
Note	

12.6.119 ETHernet:PORT<Pt>:STReam<St>:TCP:FECE

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FECE <enable>
Description	This command enables/disables the TCP ECE flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FECE ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FECE?
Description	This query returns the TCP ECE flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FECE? → 1
Note	

12.6.120 EThernet:PORT<Pt>:STream<St>:TCP:FURG

Syntax	EThernet:PORT<Pt>:STream<St>:TCP:FURG <enable>
Description	This command enables/disables the TCP URG flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FURG ON
Note	

Syntax	EThernet:PORT<Pt>:STream<St>:TCP:FURG?
Description	This query returns the TCP URG flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FURG? → 1
Note	

12.6.121 EThernet:PORT<Pt>:STream<St>:TCP:FAck

Syntax	EThernet:PORT<Pt>:STream<St>:TCP:FAck <enable>
Description	This command enables/disables the TCP ACK flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FAck ON
Note	

Syntax	EThernet:PORT<Pt>:STream<St>:TCP:FAck?
Description	This query returns the TCP ACK flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FAck? → 1
Note	

12.6.122 EThernet:PORT<Pt>:STream<St>:TCP:FPSH

Syntax	EThernet:PORT<Pt>:STream<St>:TCP:FPSH <enable>
Description	This command enables/disables the TCP PSH flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FPSH ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FPSH?
Description	This query returns the TCP PSH flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FPSH? → 1
Note	

12.6.123 ETHernet:PORT<Pt>:STReam<St>:TCP:FRST

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FRST <enable>
Description	This command enables/disables the TCP RST flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	<i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FRST ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FRST?
Description	This query returns the TCP RST flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FRST? → 1
Note	

12.6.124 ETHernet:PORT<Pt>:STReam<St>:TCP:FSYN

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FSYN <enable>
Description	This command enables/disables the TCP SYN flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA>
	<i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FSYN ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FSYN?
Description	This query returns the TCP SYN flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FSYN? → 1
Note	

12.6.125 ETHernet:PORT<Pt>:STReam<St>:TCP:FFIN

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FFIN <enable>
Description	This command enables/disables the TCP FIN flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:FFIN ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:FFIN?
Description	This query returns the TCP FIN flag.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:FFIN? → 1
Note	

12.6.126 ETHernet:PORT<Pt>:STReam<St>:TCP:WINDow

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:WINDow <value>
Description	This command sets the TCP window size.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:WIND 1000
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:WINDow?
Description	This query returns the TCP window size.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:WIND? → 1000
Note	

12.6.127 ETHernet:PORT<Pt>:STReam<St>:TCP:UPointer

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:UPointer <value>
Description	This command sets the TCP urgent pointer.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:TCP:UP0 1000
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:UPOinter?
Description	This query returns the TCP urgent pointer.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:UP0? → 1000
Note	

12.6.128 ETHernet:PORT<Pt>:STReam<St>:TCP:CHECKsum?

Syntax	ETHernet:PORT<Pt>:STReam<St>:TCP:CHECKsum?
Description	This query returns the checksum field in the TCP header.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<length> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:TCP:CHEC? → #HA2E3
Note	

12.6.129 ETHernet:PORT<Pt>:STReam1:BER:UTGenerator

Syntax	ETHernet:PORT<Pt>:STReam1:BER:UTGenerator <enable>
Description	This command enables/disables automatic start of the transmitter when running a BER measurement.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:BER:UTG ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:UTGenerator?
Description	This query return if the transmitter automatically starts when running a BER measurement.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:UTG? → 1
Note	

12.6.130 ETHernet:PORT<Pt>:STReam1:BER:SEQuence

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SEQuence <enable>
Description	This command enables/disables sequence checking when using unframed Ethernet.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:STR1:BER:SEQ ON
Note	This is only valid when FRAMed is OFF.

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SEQuence?
Description	This query returns if sequence checking is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SEQ? → 1
Note	

12.6.131 ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled]

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled] <enable>
Description	This command enables/disables Service Disruption Measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:BER:SDM ON
Note	This is only valid when FRAMed is ON.

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled]?
Description	This query returns if Service Disruption Measurement is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SDM? → 1
Note	

12.6.132 ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:DTYPe

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:DTYPe <type>
Description	This command sets the Disruption Type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> PACK: Packet LOS: Loss of Signal
Response	None.
Example	ETH:PORT1:STR1:BER:SDM:DTYP PACK
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:DTYPe?
Description	This query returns the Disruption Type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SDM:DTYP? → PACK
Note	

12.6.133 ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MLIMit

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MLIMit <value>
Description	This command sets the Max Limit. Unit: Microseconds.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 5000000, DEFault = 50000</i>
Response	None.
Example	ETH:PORT1:STR1:BER:SDM:MLIM 10
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MLIMit?
Description	This query returns the Max Limit. Unit: Microseconds.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SDM:MLIM? → 10
Note	

12.6.134 ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MDISruption

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MDISruption <value>
Description	This command sets the Min Disruption Frames.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 5000, DEFault = 10</i>
Response	None.
Example	ETH:PORT1:STR1:BER:SDM:MDIS 5
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:MDISruption?
Description	This query return the Min Disruption Frames.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SDM:MDIS? → 5
Note	

12.6.135 ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:EFPeriod

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:EFPeriod <value>
Description	This command sets the LOS Error Free Period. Unit: Milliseconds
Parameters	<Pt> = Port number <value> = <NR1 NUMERIC RESPONSE DATA> <i>MINimum = 0.1, MAXimum = 1000.0, DEFault = 10.0</i>
Response	None.
Example	ETH:PORT1:STR1:BER:SDM:EFP 5.0
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:SDMeasure:EFPeriod?
Description	This query return the LOS Error Free Period. Unit: Milliseconds
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:SDM:EFP? → 5.0
Note	

12.6.136 ETHernet:PORT<Pt>:STReam1:BER:STHResholds[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam1:BER:STHResholds[:ENABLE] <enable>
Description	This command enables/disables BER Sequence error thresholds.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:STR1:BER:STHR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:STHResholds[:ENABLE]?
Description	This query returns whether or not BER Sequence error thresholds are enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:STR1:BER:STHR? → 1
Note	

12.6.137 ETHernet:PORT<Pt>:STReam1:BER:STHResholds:VALue

Syntax	ETHernet:PORT<Pt>:STReam1:BER:STHResholds:VALue <value>
Description	This command sets the Sequence errors threshold value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:BER:STHR:VAL 100
Note	

Syntax	ETHernet:PORT<Pt>:STReam1:BER:STHResholds:VALue?
Description	This query returns the Sequence errors threshold value.
Parameters	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:BER:STHR:VAL? → 10
Note	

12.6.138 ETHernet:PORT<Pt>:STReam<St>:PAYLoad

Syntax	ETHernet:PORT<Pt>:STReam<St>:PAYLoad <pattern>
Description	This command sets stream payload pattern
Parameters	<Pt> = Port number <St> = Stream number (1-16) <pattern> = <CHARACTER PROGRAM DATA> FOX: 'Fox' pattern 5555: 'All-5s' pattern PRBS9: PRBS9 sequence PRBS11: PRBS11 sequence PRBS15: PRBS15 sequence PRBS20: PRBS20 sequence PRBS23: PRBS23 sequence PRBS29: PRBS29 sequence PRBS31: PRBS31 sequence HFTest: HF test pattern CRPAT: Compliant random Pattern JTPAT: Jitter tolerance pattern SPAT: Supply noise test sequence USER32BIT: 32 bit user defined pattern. USER16BIT: Obsolete. For CMA 3000 backward compatibility only. Same as USER32BIT. <i>DEFault = PRBS23</i>
Response	None.
Example	ETH:PORT1:STR1:PAYL FOX
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:PAYLoad?
Description	This query returns the stream payload pattern
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:PAYL? → SPAT
Note	

12.6.139 ETHernet:PORT<Pt>:STReam<St>:UP16

Syntax	ETHernet:PORT<Pt>:STReam<St>:UP16 <pattern>
Description	This command sets the 16 bit user pattern.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<pattern> = <STRING PROGRAM DATA> Valid characters: '0' and '1' The string must consist of 1 to 16 characters.
Response	None.
Example	ETH:PORT1:STR1:UP16 "101101"
Note	This command is for backward compatibility only, and a query command is not available. Actually the new 32 bit user pattern is set by this command.

12.6.140 ETHernet:PORT<Pt>:STReam<St>:UP32

Syntax	ETHernet:PORT<Pt>:STReam<St>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PAYLoad is USER32BIT.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Example	ETH:PORT1:STR1:UP32 "01101"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<pattern> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:UP32? → "01101"
Note	

12.6.141 ETHernet:PORT<Pt>:STReam:PCMA

Syntax	ETHernet:PORT<Pt>:STReam:PCMA <enable>
Description	This command set PRBS pattern for CMA 3000 compatibility.
Parameter	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR:PCMA ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam:PCMA?
Description	This query returns whether PRBS pattern for CMA 3000 compatibility.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR:PCMA? → 1
Note	

12.6.142 ETHernet:PORT<Pt>:STReam:CROSPrbs

Syntax	ETHernet:PORT<Pt>:STReam:CROSPrbs <enable>
Description	This command set Enable or Disable cross pattern by Frame by Frame.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR:CROS ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam:CROSPrbs?
Description	This query returns Enable or Disable cross pattern by Frame by Frame.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR:CROS? → 1
Note	

12.6.143 ETHernet:PORT<Pt>:STReam<St>:LATency

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency <enable>
Description	This command enables/disables stream latency measurement.
Parameters	<Pt> = Port number <St> = Stream number (1-16) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:LAT ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency?
Description	This query returns whether or not stream latency measurement is enabled.
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:LAT? → 1
Note	

12.6.144 ETHernet:PORT<Pt>:STReam<St>:JITTer

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer <enable>
Description	This command enables/disables stream jitter measurement.
Parameters	<Pt> = Port number <St> = Stream number (1-16) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:JITT ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer?
Description	This query returns whether or not stream jitter measurement is enabled.
Parameters	<Pt> = Port number <St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:JITT? → 1
Note	

12.6.145 ETHernet:PORT<Pt>:STReam<St>:FLOsS

Syntax	ETHernet:PORT<Pt>:STReam<St>:FLOsS <enable>
Description	This command enables/disables multistream frame loss measurement.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:STR1:FLOS ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:FLOsS?
Description	This query returns whether or not multistream frame loss measurement is enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR1:FLOS? → 1
Note	

12.6.146 ETHernet:PORT<Pt>:STReam<St>:FLOsS:THResholds[:ENABLE]

Syntax	ETHernet:PORT<Pt>:STReam<St>:FLOsS:THResholds[:ENABLE] <enable>
Description	This command enables/disables Frameloss thresholds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:STR1:FLOS:THR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:FLOsS:THResholds[:ENABLE]?
Description	This query returns whether or not Frameloss thresholds are enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:STR1:FLOS:THR? → 1
Note	

12.6.147 ETHernet:PORT<Pt>:STReam<St>:FLOsS:THResholds:MODE

Syntax	ETHernet:PORT<Pt>:STReam<St>:FLOsS:THResholds:MODE <mode>
Description	This command sets the Frameloss thresholds mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<mode> = <NUMERIC PROGRAM DATA>
	COUNT: Count RATE: Rate <i>DEFault=COUNT</i>
Response	None.
Example	ETH:PORT1:STR1:FLOS:THR:MODE COUNT
Note	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:MODE? <mode>
Description	This query returns the Frameloss thresholds mode.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:FLOS:THR:MODE? → COUNT
Note	

12.6.148 ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:COUNT

Syntax	ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:COUNT <value>
Description	This command sets the Frameloss thresholds count value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:FLOS:THR:COUNT 100
Note	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:COUNT?
Description	This query returns the Frameloss thresholds count value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:FLOS:THR:COUNT? → 100
Note	

12.6.149 ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:RATio

Syntax	ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:RATio <ratio>
Description	This command sets the Frameloss thresholds ratio% value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<ratio> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00000, MAXimum = 100.00000, DEFault = 0.00000</i>
Response	None.
Example	ETH:PORT1:STR1:FLOS:THR:RAT 10.00000
Note	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:FLOs:THResholds:RATio?
Description	This query returns the Frameloss thresholds ratio% value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:FLOS:THR:RAT? → 10.00000
Note	

12.6.150 ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds[:ENABle] <enable>
Description	This command enables/disables Latency thresholds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:STR1:LAT:THR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds[:ENABle]?
Description	This query returns whether or not Latency thresholds are enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:STR1:LAT:THR? → 1
Note	

12.6.151 ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds:VALue

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds:VALue <value>
Description	This command sets the Latency thresholds value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 429496729.500, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:LAT:THR:VAL 100.000
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:LATency:THResholds:VALue?
Description	This query returns the level for the Latency thresholds value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:LAT:THR:VAL? → 10.000
Note	

12.6.152 ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds[:ENABle]

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds[:ENABle] <enable>
Description	This command enables/disables Jitter thresholds.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:STR1:JITT:THR ON
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds[:ENABle]?
Description	This query returns whether or not Jitter thresholds are enabled.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:STR1:JITT:THR? → 1
Note	

12.6.153 ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds:VALue

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds:VALue <value>
Description	This command sets the Jitter thresholds value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 429496729.500, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:JITT:THR:VAL 100.00
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:JITTer:THResholds:VALue?
Description	This query returns the Jitter thresholds value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:JITT:THR:VAL? → 10.000
Note	

12.6.154 ETHernet:PORT<Pt>:STReam:TSTamp:CCTimestamp

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:CCTimestamp <version>
Description	This command sets the Latency/Jitter time stamp compatible configuration.
Parameters	<Pt> = Port number
	<version> = <CHARACTER PROGRAM DATA>
	V0906: From V9.06 or later ¹
	V0100: V9.05 or older <i>DEFault = V0906</i>
Response	None.
Example	ETH:PORT1:STR:TST:CCT V0906
Note	¹ Only available on MU100010A or MU100011A.

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:CCTimestamp?
Description	This query returns the Latency/Jitter time stamp compatible configuration.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER PROGRAM DATA>
Example	ETH:PORT1:STR:TST:CCT? → V0906
Note	

12.6.155 ETHernet:PORT<Pt>:STReam:TSTamp:TSRC

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:TSRC <source>
Description	This command sets the time stamp source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Internal GPS: GPS R1PPS: 1PPS(Ext. ref. 10MHz) ¹ RGPS: GPS(Ext. ref. 10MHz) ¹ <i>DEFault = INTernal</i>
Response	None.
Example	ETH:PORT1:STR:TST:TSRC GPS
Note	¹ Only available on MU100011A.

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:TSRC?
Description	This query returns the time stamp source.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER PROGRAM DATA>
Example	ETH:PORT1:STR:TST:TSRC? → GPS
Note	

12.6.156 ETHernet:PORT<Pt>:STReam:TSTamp:GCABle

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:GCABle <delay>
Description	This command sets the delay time of GPS antenna cable length. Unit: nano Seconds.
Parameters	<Pt> = Port number <delay> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1000000000, DEFault=0</i>
Response	None.
Example	ETH:PORT1:STR:TST:GCAB 35
Note	

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:GCABle?
Description	This query returns the delay time of GPS antenna cable length.
Parameter	<Pt> = Port number
Response	<delay> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR:TST:GCAB? → 35
Note	

12.6.157 ETHernet:PORT<Pt>:STReam:TSTamp:SYNC?

Syntax	ETHernet:PORT<Pt>:STReam:TSTamp:SYNC?
Description	This query returns if time stamp source is synchronize with target source.
Parameter	<Pt> = Port number
Response	<sync> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:STR:TST:SYNC? → 1
Note	

12.6.158 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:FIEld

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:FIEld <protocol>
Description	This command sets the variable field protocol.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<protocol> = <CHARACTER PROGRAM DATA> OFF: OFF SMAC: Source MAC Address DMAC: Destination MAC Address VLANx: VLAN ID where x is the VLAN level (1-8) BTAG: B-Tag VID ITAG: I-Tag SID MPLSx: MPLS where x is the MPLS level (1-8) MIMDMAC: MiM Destination MAC Address EMDM: EoMPLS destination MAC Address MIMSMAC: MiM Source MAC Address EMSM: EoMPLS source MAC Address SIV4: Source IPv4 DIV4: Destination IPv4 SIV6: Source IPv6 DIV6: Destination IPv6 CUST: Custom Header PCID: PC_ID (2Byte) SEQID: SEQ_ID (2Byte) PCID4B: PC_ID (4Byte) SEQID4B: SEQ_ID (4Byte) RTCID: RTC_ID RSTID: RST_ID FLOWID: FLOW_ID ODRINFO: Ordering Information MSGHEAD: Message header SUBHEAD: Sub Header <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:FIEL SMAC
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:FIEld?
Description	This query returns the variable field protocol.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<protocol> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:FIEL? → SMAC
Note	

12.6.159 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:TYPE

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:TYPE <type>
Description	This command sets the variable field type.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<type> = <CHARACTER PROGRAM DATA> INCREMENT: Increment DECREMENT: Decrement RANDOM: Random <i>DEFault = INCREMENT</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:TYPE INCREMENT
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:TYPE?
Description	This query returns the variable field type.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:TYPE? → INCREMENT
Note	

12.6.160 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:OFFSet

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:OFFSet <offset>
Description	This command sets the variable field offset.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<offset> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 127, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:OFFS 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:OFFSet?
Description	This query returns the variable field offset.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:OFFS? → 1
Note	

12.6.161 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:LENGth

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:LENGth <length>
Description	This command sets the variable field length.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<length> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 32, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:LENG 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:LENGth?
Description	This query returns the variable field length.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field Number (1-2)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:LENG? → 1
Note	

12.6.162 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STARt

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STARt <start>
Description	This command sets the variable field start value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<start> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:STAR 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STARt?
Description	This query returns the variable field start value.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<start> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:STAR? → 1
Note	

12.6.163 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:END

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:END <end>
Description	This command sets the variable field end value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<end> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:END 10
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:END?
Description	This query returns the variable field end value.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<end> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:END? → 10
Note	

12.6.164 ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STEP

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STEP <step>
Description	This command sets the variable field step value.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
	<step> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2147483648, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STR1:VAR1:STEP 1
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:VARiable<No>:STEP?
Description	This query returns the variable field step value.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
	<No> = Variable field number (1-2)
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:VAR1:STEP? → 1
Note	

12.6.165 ETHernet:PORT<Pt>:STReam<St>:CUSTom:LENGth

Syntax	ETHernet:PORT<Pt>:STReam<St>:CUSTom:LENGth <length>
Description	This command sets the custom header length.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<length> = <NUMERIC PROGRAM DATA> <i>MINimum = 2, MAXimum = 256</i>
Response	None.
Example	ETH:PORT1:STR1:CUST:LENG 2
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:CUSTom:LENGth?
Description	This query returns the custom header length.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:CUST:LENG? → 2
Note	

12.6.166 ETHernet:PORT<Pt>:STReam<St>:CUSTom:DATa

Syntax	ETHernet:PORT<Pt>:STReam<St>:CUSTom:DATa <data>
Description	This command sets the custom header data.
Parameters	<Pt> = Port number
	<St> = Stream number (1-16)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:CUST:DAT "33FF0011"
Note	

Syntax	ETHernet:PORT<Pt>:STReam<St>:CUSTom:DATa?
Description	This query returns the custom header data.
Parameter	<Pt> = Port number
	<St> = Stream number (1-16)
Response	<data> = <STRING PROGRAM DATA>
Example	ETH:PORT1:STR1:CUST:DAT? → "33FF0011"
Note	

12.7 Settings

12.7.1 ETHernet:PORT<Pt>:SETTings:AARP

Syntax	ETHernet:PORT<Pt>:SETTings:AARP <enable>
Description	This command enables/disables answering incoming ARP requests.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:SETT:AARP ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:AARP?
Description	This query returns the state of answering incoming ARP requests.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:AARP? → 1
Note	

12.7.2 ETHernet:PORT<Pt>:SETTings:ANDP

Syntax	ETHernet:PORT<Pt>:SETTings:ANDP <enable>
Description	This command enables/disables answering incoming NDP requests.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:SETT:ANDP ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:ANDP?
Description	This query returns enables/disables answering incoming NDP requests.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:ANDP? → 1
Note	

12.7.3 ETHernet:PORT<Pt>:SETTings:APINg

Syntax	ETHernet:PORT<Pt>:SETTings:APINg <enable>
Description	This command enables/disables answering incoming PING requests.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:SETT:APIN ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:APINg?
Description	This query returns the state of answering incoming PING requests.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:APIN? → 1
Note	

12.7.4 EThernet:PORT<Pt>:SETTings:RLFSignaling

Syntax	EThernet:PORT<Pt>:SETTings:RLFSignaling <enable>
Description	This command enables/disables respond to link fault signaling.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:SETT:RLFS ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:RLFSignaling?
Description	This query returns the state of respond to link fault signaling.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:RLFS? → 1
Note	

12.7.5 EThernet:PORT<Pt>:SETTings:ACMA

Syntax	EThernet:PORT<Pt>:SETTings:ACMA <enable>
Description	This command enables/disables answering incoming Network Master configuration frames.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:SETT:ACMA ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:ACMA?
Description	This query returns the state of answering incoming Network Master configuration frames.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:ACMA? → 1
Note	

12.7.6 EThernet:PORT<Pt>:SETTings:PLENenght

Syntax	EThernet:PORT<Pt>:SETTings:PLENenght <length>
Description	This command sets the expected preamble length at 1Gbps and lower speeds.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 3, <i>MAXimum</i> = 15, <i>DEFault</i> = 8
Response	None.
Example	ETH:PORT1:SETT:PLEN 8
Notes	

Syntax	EThernet:PORT<Pt>:SETTings:PLENenght?
Description	This query returns the expected preamble length at 1Gbps and lower speeds.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SETT:PLEN? → 8
Note	

12.7.7 EThernet:PORT<Pt>:SETTings:IPViolations

Syntax	EThernet:PORT<Pt>:SETTings:IPViolations <enable>
Description	This command sets ignore preamble violations.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:IPV ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:IPViolations?
Description	This query returns ignore preamble violations.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:IPV? → 1
Note	

12.7.8 EThernet:PORT<Pt>:SETTings:ILThreshold

Syntax	EThernet:PORT<Pt>:SETTings:ILThreshold <length>
Description	This command sets the IFG lower threshold.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 8, MAXimum = 27, DEFault = 12</i>
Response	None.
Example	ETH:PORT1:SETT:ILT 12
Note	

Syntax	EThernet:PORT<Pt>:SETTings:ILThreshold?
Description	This query returns the IFG lower threshold.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SETT:ILT? → 12
Note	

12.7.9 EThernet:PORT<Pt>:SETTings:FIViolations

Syntax	EThernet:PORT<Pt>:SETTings:FIViolations <enable>
Description	This command enables/disables filter IFG violations caused by master/slave clock synchronization.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:SETT:FIV ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:FIViolations?
Description	This query returns the state of filter IFG violations caused by master/slave clock synchronization.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:FIV? → 1
Note	

12.7.10 EThernet:PORT<Pt>:SETTings:JFSize

Syntax	EThernet:PORT<Pt>:SETTings:JFSize <length>
Description	This command sets the jumbo frame size upper limit.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 9018</i>
Response	None.
Example	ETH:PORT1:SETT:JFS 9018
Note	

Syntax	EThernet:PORT<Pt>:SETTings:JFSize?
Description	This query returns the jumbo frame size upper limit.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SETT:JFS? → 9018
Note	

12.7.11 EThernet:PORT<Pt>:SETTings:ERFault

Syntax	EThernet:PORT<Pt>:SETTings:ERFault <enable>
Description	This command sets enable remote fault detection in Autonegotiation.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:SETT:ERF ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:ERFault?
Description	This query returns enable remote fault detection in Autonegotiation.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:ERF? → 1
Note	

12.7.12 EThernet:PORT<Pt>:SETTings:FRESults

Syntax	EThernet:PORT<Pt>:SETTings:FRESults <format>
Description	This command sets the format of the results.
Parameters	<Pt> = Port number <format> = <CHARACTER PROGRAM DATA> SI: SI prefix notation ENG: Engineering exponent notation SCI: Scientific exponent notation UNF: Unformatted <i>DEFault = SI</i>
Response	None.
Example	ETH:PORT1:SETT:FRES ENG
Note	This only affects the GUI and reports. This setting applies to all ports.

Syntax	EThernet:PORT<Pt>:SETTings:FRESults?
Description	This query returns the format of the results.
Parameter	<Pt> = Port number
Response	<format> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:SETT:FRES? → ENG
Note	This setting applies to all ports.

12.7.13 ETHernet:PORT<Pt>:SETTings:ACISetup

Syntax	ETHernet:PORT<Pt>:SETTings:ACISetup <enable>
Description	This command enables/disables allow changes to interface setup while measuring.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:ACIS ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:ACISetup?
Description	This query returns the state of allow changes to interface setup while measuring.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:ACIS? → 1
Note	

12.7.14 ETHernet:PORT<Pt>:SETTings:ASTGenerator

Syntax	ETHernet:PORT<Pt>:SETTings:ASTGenerator <enable>
Description	This command enables/disables automatically start the traffic generator when measurement is started.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:ASTG ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:ASTGenerator?
Description	This query returns the state of automatically start the traffic generator when measurement is started.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:ASTG? → 1
Note	

12.7.15 ETHernet:PORT<Pt>:SETTings:BER:OBAMeasuring

Syntax	ETHernet:PORT<Pt>:SETTings:BER:OBAMeasuring <enable>
Description	This command enables/disables only show BER alarms when measuring.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:BER:OBAM ON
Note	This setting applies to all ports.

Syntax	ETHernet:PORT<Pt>:SETTings:BER:OBAMeasuring?
Description	This query returns if BER alarms should only be shown when measuring.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:BER:OBAM? → 1
Note	This setting applies to all ports.

12.7.16 ETHernet:PORT<Pt>:SETTings:BER:IAFFilter

Syntax	ETHernet:PORT<Pt>:SETTings:BER:IAFFilter <enable>
Description	This command enables/disables include addresses in frame filter on receiver.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:SETT:BER:IAFF OFF
Note	This setting applies to all ports.

Syntax	ETHernet:PORT<Pt>:SETTings:BER:IAFFilter?
Description	This query returns if include addresses in frame filter on receiver is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:BER:IAFF? → 0
Note	This setting applies to all ports.

12.7.17 ETHernet:PORT<Pt>:SETTings:BER:CLFrames

Syntax	ETHernet:PORT<Pt>:SETTings:BER:CLFrames <enable>
Description	This command enables/disables count lost frames as pattern errors.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:SETT:BER:CLF ON
Note	This setting applies to all ports.

Syntax	ETHernet:PORT<Pt>:SETTings:BER:CLFrames?
Description	This query return if count lost frames as pattern errors is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:BER:CLF? → 1
Note	This setting applies to all ports.

12.7.18 ETHernet:PORT<Pt>:SETTings:BER:HIDeframeloss

Syntax	ETHernet:PORT<Pt>:SETTings:BER:HIDeframeloss <enable>
Description	This command show/hide Frame loss secs. count.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:SETT:BER:HID ON
Note	This setting applies to all ports.

Syntax	ETHernet:PORT<Pt>:SETTings:BER:HIDeframeloss?
Description	This query return if Frame loss secs. count is show/hide.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:BER:HID? → 1
Note	This setting applies to all ports.

12.7.19 EThernet:PORT<Pt>:SETTings:CINBand[:ENABle]

Syntax	EThernet:PORT<Pt>:SETTings:CINBand[:ENABle] <enable>
Description	This command enables/disables in-band control.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:CINB ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:CINBand[:ENABle]?
Description	This query returns whether or not in-band control is used.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB? → 1
Note	

12.7.20 EThernet:PORT<Pt>:SETTings:CINBand:PASSword[:ENABle]

Syntax	EThernet:PORT<Pt>:SETTings:CINBand:PASSword[:ENABle] <enable>
Description	This command enables/disables password of in-band control.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:PASS ON
Note	

Syntax	EThernet:PORT<Pt>:SETTings:CINBand:PASSword[:ENABle]?
Description	This query returns whether or not password of in-band control is used.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:SETT:CINB:PASS? → 1
Note	

12.7.21 EThernet:PORT<Pt>:SETTings:CINBand:PASSword:VALue

Syntax	EThernet:PORT<Pt>:SETTings:CINBand:PASSword:VALue <value>
Description	This command sets password value of in-band control.
Parameter	<Pt> = Port number <value> = <STRING RESPONSE DATA>
Response	None.
Example	ETH:PORT1:SETT:CINB:PASS:VAL "Anritsu"
Note	

Syntax	EThernet:PORT<Pt>:SETTings:CINBand:PASSword:VALue?
Description	This query returns the password value of in-band control.
Parameter	<Pt> = Port number
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:PASS:VAL? → "Anritsu"
Note	

12.7.22 ETHernet:PORT<Pt>:SETTings:CINBand:MAC:SOURce

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:MAC:SOURce <address>
Description	This command sets the MAC source address of in-band control.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:SETT:CINB:MAC:SOUR "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:MAC:SOURce?
Description	This query returns the MAC source address of in-band control.
Parameters	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:MAC:SOUR? → "00-50-C2-35-D2-EF"
Note	

12.7.23 ETHernet:PORT<Pt>:SETTings:CINBand:MAC:DEFAult

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:MAC:DEFAult <enable>
Description	This command enables/disables use of the default source MAC address of in-band control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFAult = OFF</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:MAC:DEF ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:MAC:DEFAult?
Description	This query returns whether or not the default source MAC address of in-band control is used.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:MAC:DEF? → 1
Note	

12.7.24 ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:SOURce

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:SOURce <address>
Description	This command sets the IPv4 source address of in-band control.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:SETT:CINB:IPV4:SOUR "172.29.2.36"
Note	Only the character '.' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:SOURce?
Description	This query returns the IPv4 source address of in-band control.
Parameters	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:IPV4:SOUR? → "172.29.2.36"
Note	

12.7.25 ETHernet:PORT<Pt>:SETTings:CINBand:DHCP[:ENABle]

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:DHCP[:ENABle] <enable>
Description	This command enables/disables use of DHCP of in-band control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:DHCP ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:DHCP[:ENABle]?
Description	This query returns whether or not DHCP of in-band control is used.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:DHCP? → 1
Note	

12.7.26 ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:NETMask

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:NETMask <mask>
Description	This command sets the IPv4 netmask of in-band control.
Parameters	<Pt> = Port number <mask> = <STRING PROGRAM DATA> IPv4 netmask
Response	None.
Example	ETH:PORT1:SETT:CINB:IPV4:NETM "255.255.255.0"
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:NETMask?
Description	This query returns the IPv4 netmask of in-band control.
Parameters	<Pt> = Port number
Response	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:IPV4:NETM? → "255.255.255.0"
Note	

12.7.27 ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway[:ENABle]

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway[:ENABle] <enable>
Description	This command enables/disables use of the IPv4 gateway of in-band control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:IPV4:GAT ON
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway[:ENABle]?
Description	This query returns whether or not the IPv4 gateway of in-band control is used.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:IPV4:GAT? → 1
Note	

12.7.28 ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway:ADDRess

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway:ADDRess <address>
Description	This command sets the IPv4 default gateway of in-band control.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:SETT:CINB:IPV4:GAT:ADDR "172.29.2.36"
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:IPV4:GATeway:ADDRess?
Description	This query returns the IPv4 default gateway of in-band control.
Parameters	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:IPV4:GAT:ADDR? → "172.29.2.36"
Note	

12.7.29 ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LCOUNT

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LCOUNT <levels>
Description	This command sets the number of active VLAN levels of in-band control.
Parameters	<Pt> = Port number <levels> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=2, DEFault=0</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:VLAN:LC 2
Note	

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LCOUNT?
Description	This query returns the number of active VLAN levels of in-band control.
Parameters	<Pt> = Port number
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:VLAN:LC? → 2
Note	

12.7.30 ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LEVel<Lv>:ID <number>
Description	This command sets the VLAN ID of in-band control.
Parameters	<Pt> = Port number <Lv> = VLAN level (1-N ¹) <number> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4095, DEFault=0</i>
Response	None.
Example	ETH:PORT1:SETT:CINB:VLAN:LEV1:ID 1024
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.7.29). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:SETTings:CINBand:VLAN:LEVel<Lv>:ID?
Description	This query returns the VLAN ID of in-band control.
Parameters	<Pt> = Port number <Lv> = VLAN level (1-N)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SETT:CINB:VLAN:LEV1:ID? → 1024
Note	

12.8 Filter

Generally eight separate filters are available for each port of the instrument. In the following section these filters are identified using the :FILTer<Ft> program mnemonic, where <Ft> = Filter number (1-8).

12.8.1 EThernet:PORT<Pt>:FILTer[:ENABle]

Syntax	EThernet:PORT<Pt>:FILTer[:ENABle] <enable>
Description	This command enables/disables filtering.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:FILT ON
Note	This is the default node for EThernet:PORT<Pt>:FILTer

Syntax	EThernet:PORT<Pt>:FILTer[:ENABle]?
Description	This query returns whether or not filtering is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:FILT? → 1
Note	This is the default node for EThernet:PORT<Pt>:FILTer?

12.8.2 EThernet:PORT<Pt>:FILTer:RESet

Syntax	EThernet:PORT<Pt>:FILTer:RESet
Description	This command resets the filter settings to the default values.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:FILT:RES
Note	Note this does not change EThernet:PORT<Pt>:FILTer[:ENABle]

12.8.3 EThernet:PORT<Pt>:FILTer:ENCapsulation

Syntax	EThernet:PORT<Pt>:FILTer:ENCapsulation <ether-type>, <snap>, <llc>
Description	This command sets the allowed encapsulation types.
Parameters	<Pt> = Port number <ether-type> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i> <snap> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i> <llc> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:FILT:ENC ON, OFF, ON
Notes	Setting all off will disable the encapsulation filter. For the encapsulation filter to be active, at least one of the eight available general filters must be enabled. The general filters are enabled using the EThernet:PORT<Pt>:FILTer:FILTer<Ft>[:ENABle] command (see 12.8.5).

Syntax	ETHernet:PORT<Pt>:FILTer:ENCapsulation?
Description	This query returns the allowed encapsulation types.
Parameter	<Pt> = Port number
Response	<ether-type> = <BOOLEAN RESPONSE DATA>
	<snap> = <BOOLEAN RESPONSE DATA>
	<llc> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:FILT:ENC? → 1, 0, 1
Note	

12.8.4 ETHernet:PORT<Pt>:FILTer:PROTOcols

Syntax	ETHernet:PORT<Pt>:FILTer:PROTOcols <type>,<filter>[,<mask>]
Description	This commands enables/disables protocol type filters and masks.
Parameters	<Pt> = Port number
	<type> = <CHARACTER PROGRAM DATA> DMAC: Destination MAC Address SMAC: Source MAC Address VLANx: VLAN ID where x is the VLAN level (1-8) BTAG: MiM B-Tag ITAG: MiM I-Tag MIMDMAC: MiM Destination MAC Address MIMSMAC: MiM Source MAC Address MPLSx: MPLS where x is the MPLS level (1-8) EMDM: EoMPLS destination MAC Address EMSM: EoMPLS source MAC Address SIV4: Source IPv4 DIV4: Destination IPv4 POFF: Pattern/Offset DPOR: Destination TCP/UDP port SIV6: Source IPv6 HIV6: Hop destination IPv6 FIV6: Final destination IPv6 SPOR: Source TCP/UDP port
	<filter> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
	<mask> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Examples	ETH:PORT1:FILT:PROT MPLS4, ON
	ETH:PORT1:FILT:PROT MPLS4, ON, ON
Note	<mask> can only be enabled if <filter> is enabled.

Syntax	ETHernet:PORT<Pt>:FILTer:PROTOcols? <type>
Description	This query returns if the protocol type filters and masks are enabled/disabled.
Parameters	<Pt> = Port number
	<type> = <CHARACTER PROGRAM DATA>
Response	<filter> = <BOOLEAN RESPONSE DATA>
	<mask> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:FILT:PROT? MPLS4 → 1, 1
Note	

12.8.5 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>[:ENABLE]

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>[:ENABLE] <enable>
Description	This command enables/disables the specific filter.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8) (see 12.8)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1 ON
Note	This is the default node for ETHernet:PORT<Pt>:FILTer:FILTer<Ft>

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>[:ENABLE]?
Description	This query returns whether or not the specific filter is enabled.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:FILT:FILT1? → 1
Note	This is the default node for ETHernet:PORT<Pt>:FILTer:FILTer<Ft>?

12.8.6 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SMAC

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SMAC <filter>[,<mask>]
Description	This command sets the MAC source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:SMAC "00-50-C2-35-D2-EF" ETH:PORT1:FILT:FILT1:SMAC "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SMAC?
Description	This query returns the MAC source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:SMAC? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.7 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DMAC

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DMAC <filter>[,<mask>]
Description	This command sets the MAC destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:DMAC "00-50-C2-35-D2-EF" ETH:PORT1:FILT:FILT1:DMAC "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DMAC?
Description	This query returns the MAC destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:DMAC? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.8 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMSMac

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMSMac <filter>[,<mask>]
Description	This command sets the EoMPLS MAC source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:EMSM "00-50-C2-35-D2-EF"
	ETH:PORT1:FILT:FILT1:EMSM "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMSMac?
Description	This query returns the EoMPLS MAC source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:EMSM? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.9 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMDMac

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMDMac <filter>[,<mask>]
Description	This command sets the EoMPLS MAC destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:EMDM "00-50-C2-35-D2-EF"
	ETH:PORT1:FILT:FILT1:EMDM "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:EMDMac?
Description	This query returns the EoMPLS MAC destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:EMDM? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.10 ETHernet:PORT<Pt>:FILTer:POFFset

Syntax	ETHernet:PORT<Pt>:FILTer:POFFset <offset>
Description	This commands sets the pattern offset for the pattern filter.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 15956, DEFault = 2</i>
Response	None.
Example	ETH:PORT1:FILT:POFF 3
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:POFFset?
Description	This query returns the pattern offset for the pattern filter.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:POFF? → 3
Note	

12.8.11 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:PATtern

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:PATtern <filter>[,<mask>]
Description	This command sets the Pattern filter and mask.
Parameters	<Pt> = Port number <Ft> = Filter number (1-8) <filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = $2^{32} - 1$, DEFault = 0</i> <mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = $2^{32} - 1$, DEFault = 0</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:PATT 170 ETH:PORT1:FILT:FILT1:PATT #HAA, #HFF
Note	If the pattern is shorter than 32 bit it will be padded with '0' until a length of 32 bit is reached. (e.i., "101" becomes "000000000000000000000000000000101")

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:PATtern?
Description	This query returns the Pattern filter and mask.
Parameters	<Pt> = Port number <Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA> <mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:PATT? → 170, 256
Note	

12.8.12 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SPORT

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SPORT <filter>[,<mask>]
Description	This command sets the TCP/UDP source port filter and mask.
Parameters	<Pt> = Port number <Ft> = Filter number (1-8) <filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i> <mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 65535</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:SPOR 81 ETH:PORT1:FILT:FILT1:SPOR 1, 1
Note	

Syntax	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SPORt?
Description	This query returns the TCP/UDP source port filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:SPOR? → 1,1
Note	

12.8.13 ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DPORT

Syntax	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DPORT <filter>[,<mask>]
Description	This command sets the TCP/UDP destination port filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA>
	<i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA>
	<i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:DPOR 81
	ETH:PORT1:FILT:FILT1:DPOR 1,1
Note	

Syntax	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:DPORT?
Description	This query returns the TCP/UDP destination port filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:DPOR? → 1,1
Note	

12.8.14 ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SIV4

Syntax	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SIV4 <filter>[,<mask>]
Description	This command sets the IPv4 source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:SIV4 "192.168.0.1"
	ETH:PORT1:FILT:FILT1:SIV4 "192.168.0.1", "255.255.0.0"
Note	Only the character '.' is accepted as separator.

Syntax	ETHERnet:PORT<Pt>:FILTer:FILTer<Ft>:SIV4?
Description	This query returns the IPv4 source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:SIV4? → "192.168.0.1", "255.255.0.0"
Note	

12.8.15 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DIV4

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DIV4 <filter>[,<mask>]
Description	This command sets the IPv4 destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:DIV4 "192.168.0.1"
	ETH:PORT1:FILT:FILT1:DIV4 "192.168.0.1", "255.255.0.0"
Note	Only the character '.' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:DIV4?
Description	This query returns the IPv4 destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:DIV4? → "192.168.0.1", "255.255.0.0"
Note	

12.8.16 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SIV6

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SIV6 <filter>[,<mask>]
Description	This command sets the IPv6 source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:SIV6 "2002:0000:0000:0000:0000:0000:0000:001F"
	ETH:PORT1:FILT:FILT1:SIV6 "2002:0000:0000:0000:0000:0000:0000:0000",
	"FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	Only the character ':' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:SIV6?
Description	This query returns the IPv6 source filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:SIV6? → "2002:0000:0000:0000:0000:0000:0000:0000", "FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	

12.8.17 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:HIV6

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:HIV6 <filter>[,<mask>]
Description	This command sets the IPv6 hop destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:HIV6 "2002:0000:0000:0000:0000:0000:0000:001F" ETH:PORT1:FILT:FILT1:HIV6 "2002:0000:0000:0000:0000:0000:0000:0000", "FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	Only the character ':' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:HIV6?
Description	This query returns the IPv6 hop destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:HIV6? → "2002:0000:0000:0000:0000:0000:0000:0000", "FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	

12.8.18 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:FIV6

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:FIV6 <filter>[,<mask>]
Description	This command sets the IPv6 final destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:FIV6 "2002:0000:0000:0000:0000:0000:0000:001F" ETH:PORT1:FILT:FILT1:FIV6 "2002:0000:0000:0000:0000:0000:0000:0000", "FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	Only the character ':' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:FIV6?
Description	This query returns the IPv6 final destination filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:FIV6? → "2002:0000:0000:0000:0000:0000:0000:0000", "FFFF:0000:0000:0000:0000:0000:0000:0000"
Note	

12.8.19 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:LABel

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:LABel <filter>[,<mask>]
Description	This command sets the MPLS level filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1048575, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1048575, DEFault = 1048575</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MPLS1:LAB 10
	ETH:PORT1:FILT:FILT1:MPLS1:LAB 10, 10
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:LABel?
Description	This query returns the MPLS level filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MPLS1:LAB? → 10,10
Note	

12.8.20 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:EBITs

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:EBITs <filter>[,<mask>]
Description	This command sets the MPLS experimental bits filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 7</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MPLS1:EBIT 3
	ETH:PORT1:FILT:FILT1:MPLS1:EBIT 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:EBITs?
Description	This query returns the MPLS experimental bits filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MPLS1:EBIT? → 3,1
Note	

12.8.21 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:BOLStack

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:BOLStack <filter>[,<mask>]
Description	This command sets the MPLS bottom of label stack filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MPLS1:BOLS 1
	ETH:PORT1:FILT:FILT1:MPLS1:BOLS 1, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:BOLStack?
Description	This query returns the MPLS bottom of label stack filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MPLS1:BOLS? → 1,1
Note	

12.8.22 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:TTL

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:TTL <filter>[,<mask>]
Description	This command sets the MPLS TTL filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255, DEFault = 255</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MPLS1:TTL 3
	ETH:PORT1:FILT:FILT1:MPLS1:TTL 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MPLS<Lv>:TTL?
Description	This query returns the MPLS TTL filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MPLS1:TTL? → 3,1
Note	

12.8.23 ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:ID

Syntax	ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:ID <filter>[,<mask>]
Description	This command sets the VLAN ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 4095</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:VLAN1:ID 3
	ETH:PORT1:FILT:FILT1:VLAN1:ID 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:ID?
Description	This query returns the VLAN ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:VLAN1:ID? → 3,1
Note	

12.8.24 ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:CFI

Syntax	ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:CFI <filter>[,<mask>]
Description	This command sets the VLAN CFI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:VLAN1:CFI 1
	ETH:PORT1:FILT:FILT1:VLAN1:CFI 1, 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition.
	² This command is as same as ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:DEI.

Syntax	ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:CFI?
Description	This query returns the VLAN CFI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:VLAN1:CFI? → 3,1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition.
	² This command is as same as ETHernet:PORT<Pt>:FILTER:FILTER<Ft>:VLAN<Lv>:DEI?.

12.8.25 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:DEI

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:DEI <filter>[,<mask>]
Description	This command sets the VLAN DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:VLAN1:DEI 1 ETH:PORT1:FILT:FILT1:VLAN1:DEI 1, 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition.
	² This command is as same as ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:CFI.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:DEI?
Description	This query returns the VLAN DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:VLAN1:DEI? → 3,1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition.
	² This command is as same as ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:CFI?.

12.8.26 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:PRiority

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:PRiority <filter>[,<mask>]
Description	This command sets the VLAN priority filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 7</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:VLAN1:PR 3 ETH:PORT1:FILT:FILT1:VLAN1:PR 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:VLAN<Lv>:PRiority?
Description	This query returns the VLAN priority filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<Lv> = Level number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:VLAN1:PR? → 3,1
Note	

12.8.27 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMSMac

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMSMac <filter>[,<mask>]
Description	This command sets the MiM source MAC address filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMSM "00-50-C2-35-D2-EF" ETH:PORT1:FILT:FILT1:MMSM "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMSMac?
Description	This query returns the MiM source MAC address filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMSM? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.28 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMDMac

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMDMac <filter>[,<mask>]
Description	This command sets the MIM destination MAC filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <STRING PROGRAM DATA>
	<mask> = <STRING PROGRAM DATA>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMDM "00-50-C2-35-D2-EF" ETH:PORT1:FILT:FILT1:MMDM "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMDMac?
Description	This query returns the MIM destination MAC filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <STRING RESPONSE DATA>
	<mask> = <STRING RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMDM? → "00-50-C2-35-D2-EF", "FF-FF-FF-FF-FF-FF"
Note	

12.8.29 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:ID

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:ID <filter>[,<mask>]
Description	This command sets the MiM B-Tag VLAN ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 4095</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMBTAG:ID 3 ETH:PORT1:FILT:FILT1:MMBTAG:ID 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:ID?
Description	This query returns the MiM B-Tag VLAN ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMBTAG:ID? → 3,1
Note	

12.8.30 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:PRiority

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:PRiority <filter>[,<mask>]
Description	This command sets the MiM B-Tag Priority (PCP) filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 7</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMBTAG:PR 3
	ETH:PORT1:FILT:FILT1:MMBTAG:PR 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:PRiority?
Description	This query returns the MiM B-Tag Priority (PCP) filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMBTAG:PR? → 3,1
Note	

12.8.31 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:DEI

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:DEI <filter>[,<mask>]
Description	This command sets the MiM B-Tag DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMBTAG:DEI 1
	ETH:PORT1:FILT:FILT1:MMBTAG:DEI 1, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMBTAG:DEI?
Description	This query returns the MiM B-Tag DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMBTAG:DEI? → 1,1
Note	

12.8.32 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:ID

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:ID <filter>[,<mask>]
Description	This command sets the MiM I-Tag Service ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 16777215, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 16777215, DEFault = 16777215</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMITAG:ID 3
	ETH:PORT1:FILT:FILT1:MMITAG:ID 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:ID?
Description	This query returns the MiM I-Tag Service ID filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMITAG:ID? → 3,1
Note	

12.8.33 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:PRiority

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:PRiority <filter>[,<mask>]
Description	This command sets the MiM I-Tag Priority (PCP) filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 7</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMITAG:PR 3
	ETH:PORT1:FILT:FILT1:MMITAG:PR 3, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:PRiority?
Description	This query returns the MiM I-Tag Priority (PCP) filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMITAG:PR? → 3,1
Note	

12.8.34 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:DEI

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:DEI <filter>[,<mask>]
Description	This command sets the MiM I-Tag DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMITAG:DEI 1
	ETH:PORT1:FILT:FILT1:MMITAG:DEI 1, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:DEI?
Description	This query returns the MiM I-Tag DEI filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMITAG:DEI? → 1,1
Note	

12.8.35 ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:UCA

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:UCA <filter>[,<mask>]
Description	This command sets the MiM I-Tag UCA filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
	<filter> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 0</i>
	<mask> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1, DEFault = 1</i>
Response	None.
Examples	ETH:PORT1:FILT:FILT1:MMITAG:UCA 1
	ETH:PORT1:FILT:FILT1:MMITAG:UCA 1, 1
Note	

Syntax	ETHernet:PORT<Pt>:FILTer:FILTer<Ft>:MMITAG:UCA?
Description	This query returns the MiM I-Tag UCA filter and mask.
Parameters	<Pt> = Port number
	<Ft> = Filter number (1-8)
Response	<filter> = <NR1 NUMERIC RESPONSE DATA>
	<mask> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:FILT:FILT1:MMITAG:UCA? → 1,1
Note	

12.9 Thresholds

12.9.1 EThernet:PORT<Pt>:THResholds[:ENABle]

Syntax	EThernet:PORT<Pt>:THResholds[:ENABle] <enable>
Description	This command enables/disables thresholds.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:PORT1:THR ON
Note	This is the default node for EThernet:PORT<Pt>:THResholds

Syntax	EThernet:PORT<Pt>:THResholds[:ENABle]?
Description	This query returns whether or not thresholds are enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	ETH:PORT1:THR? → 1
Note	This is the default node for EThernet:PORT<Pt>:THResholds?

12.9.2 EThernet:PORT<Pt>:THResholds:SElect

Syntax	EThernet:PORT<Pt>:THResholds:SElect <type>, <enable>
Description	This command enables/disables the specific threshold type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> ALL: All thresholds UTIL: Utilization THR: Throughput ERR: Errored frames Measurement thresholds: COL: Collision rate UNI: Unicast frames MULTI: Multicast frames BROAD: Broadcast frames PAUSE: Pause frames FRAG: Fragmented frames UNDER: Undersized frames OVER: Oversized frames FCS: FCS errored frames IFG: IFG violations PRE: Preamble violations DIFF: Difference Tx-Rx DIFFO: Same as DIFF OVRFCSErr: Oversized & FCS Errored frames IPCHKSUM: IP checksum errored frames <i>DEFault = ALL</i> <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:THR:SEL UTIL, ON
Note	Measurement thresholds are only active when a measurement is running.

Syntax	ETHernet:PORT<Pt>:THResholds:SElect? <type>
Description	This query returns whether or not the specific threshold type is enabled.
Parameters	<Pt> = Port number
	<type> = <CHARACTER PROGRAM DATA>
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:THR:SEL? UTIL → 1
Note	

12.9.3 ETHernet:PORT<Pt>:THResholds:VALue

Syntax	ETHernet:PORT<Pt>:THResholds:VALue <type>, <compare>, <value>
Description	This command sets the level for the specific threshold type.
Parameters	<Pt> = Port number
	<type> = <CHARACTER PROGRAM DATA> UTIL: Utilization ¹ THR: Throughput ² ERR: Errored frames Measurement thresholds: COL: Collision rate UNI: Unicast frames MULTI: Multicast frames BROAD: Broadcast frames PAUSE: Pause frames FRAG: Fragmented frames UNDER: Undersized frames OVER: Oversized frames FCS: FCS errored frames IFG: IFG violations PRE: Preamble violations DIFF: Difference Tx-Rx ³ DIFFO: Same as DIFF OVRFCSErr: Oversized & FCS Errored frames IPCHKSUM: IP checksum errored frames
	<compare> = <CHARACTER PROGRAM DATA> GT: Greater than LT: Less than GTEQ: Greater than or equal to LTEQ: Less than or equal to <i>DEFault = LT</i>
	<value> = <NUMERIC PROGRAM DATA> Absolute values: Decimals are rounded. Maximum is 4000000000 Percentage values: Allows one decimal, Maximum is 100.0 <i>DEFault = 0, MINimum = 0</i> <i>Allowed Suffixes = PCT</i>
Response	None.
Example	ETH:PORT1:THR:VAL UTIL, GT, 10.5PCT
Notes	Measurement thresholds are only active when a measurement is running.
	¹ Utilization only supports percentage values.
	² Throughput only supports absolute values, the unit is MBPS, and has one decimal. Maximum = 10000.0
	³ Difference only supports absolute count values.

Syntax	ETHernet:PORT<Pt>:THResholds:VALue? <type>
Description	This query returns the level for the specific threshold type.
Parameters	<Pt> = Port number
	<type> = <CHARACTER PROGRAM DATA>
Response	<compare> = <CHARACTER RESPONSE DATA>
	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:THR:VAL? UTIL → GT, 10.5PCT
Note	

12.10 SyncE

12.10.1 ETHernet:SYNCe:PTHRough:FCAPture

Syntax	ETHernet:SYNCe:PTHRough:FCAPture <enable>
Description	This command enables/disables SyncE frame capture when the ports are in pass-through mode.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SYNC:PTHR:FCAP OFF
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:SYNCe:PTHRough:FCAPture?
Description	This query returns whether or not SyncE frame capture is enabled when the ports are in pass-through mode.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SYNC:PTHR:FCAP? → 0
Note	This command can be used on V2.00 or later.

12.10.2 ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel[:ENABLE]

Syntax	ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel[:ENABLE] <enable>
Description	This command enables/disables modification of quality level in SSM messages.
Parameters	<Pt> = Port number Port number 1 denotes messages passing from port 1 to port 2 Port number 2 denotes messages passing from port 2 to port 1 <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SYNC:PTHR:QLEV OFF
Note	This is the default node for ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel[:ENABLE]?
Description	This query returns whether or not modification of quality level in SSM messages is enabled.
Parameter	<Pt> = Port number Port number 1 denotes messages passing from port 1 to port 2 Port number 2 denotes messages passing from port 2 to port 1
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SYNC:PTHR:QLEV? → 0
Note	This command can be used on V2.00 or later.

12.10.3 ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel:USER

Syntax	ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel:USER <level>
Description	This command sets the quality level to be inserted in SSM messages.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault=0</i>
Response	None.
Example	ETH:PORT1:SYNC:PTHR:QLEV:USER 0
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:SYNCe:PTHRough:QLEVel:USER?
Description	This query returns the quality level to be inserted in SSM messages.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SYNC:PTHR:QLEV:USER? → 0
Note	This command can be used on V2.00 or later.

12.10.4 ETHernet:PORT<Pt>:SYNCe[:ENABLE]

Syntax	ETHernet:PORT<Pt>:SYNCe[:ENABLE] <enable>
Description	This command enables/disables SyncE for the port.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SYNC ON
Note	This is the default node for ETHernet:PORT<Pt>:SYNCe

Syntax	ETHernet:PORT<Pt>:SYNCe[:ENABLE]?
Description	This query returns whether or not SyncE is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SYNC? → 1
Note	

12.10.5 ETHernet:PORT<Pt>:SYNCe:MODE

Syntax	ETHernet:PORT<Pt>:SYNCe:MODE <mode>
Description	This command set the SyncE operation mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> MONitor : Non-synchronous/Monitor-only mode SYNChronous : Active synchronous mode <i>DEFault = MONitor</i>
Response	None.
Example	ETH:PORT1:SYNC:MODE MON
Note	

Syntax	ETHernet:PORT<Pt>:SYNCe:MODE?
Description	This query returns the SyncE operation mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:SYNC:MODE? → SYNC
Note	

12.10.6 ETHernet:PORT<Pt>:SYNCe:FCAPture

Syntax	ETHernet:PORT<Pt>:SYNCe:FCAPture <enable>
Description	This command enables/disables SyncE frame capture.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SYNC:FCAP OFF
Note	

Syntax	ETHernet:PORT<Pt>:SYNCe:FCAPture?
Description	This query returns whether or not SyncE frame capture is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SYNC:FCAP? → 1
Note	

12.10.7 ETHernet:PORT<Pt>:SYNCe:QLEVel

Syntax	ETHernet:PORT<Pt>:SYNCe:QLEVel <qualityLevel>
Description	This command sets the quality level of the transmitter clock.
Parameters	<Pt> = Port number <qualityLevel> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=15, DEFault=0</i>
Response	None.
Example	ETH:PORT1:SYNC:QLEV 0
Note	

Syntax	ETHernet:PORT<Pt>:SYNCe:QLEVel?
Description	This query returns configured clock quality level.
Parameter	<Pt> = Port number
Response	<qualityLevel> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SYNC:QLEV? → 0
Note	

12.10.8 ETHernet:PORT<Pt>:SYNCe:MAC

Syntax	ETHernet:PORT<Pt>:SYNCe:MAC <address>
Description	This command sets the MAC source address for transmitted ESMC messages.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:SYNC:MAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:SYNCe:MAC?
Description	This query returns the MAC source address for transmitted ESMC messages.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:SYNC:MAC? → "00-50-C2-35-D2-EF"
Note	

12.10.9 ETHernet:PORT<Pt>:SYNCe:MAC:AUTO

Syntax	ETHernet:PORT<Pt>:SYNCe:MAC:AUTO <automatic>
Description	This command enables/disables automatic generation of source MAC address.
Parameters	<Pt> = Port number <automatic> = <CHARACTER PROGRAM DATA> ON: Lock the MAC parameter to the value of default MAC source address. OFF: Unlock the MAC parameter value. <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:SYNC:MAC:AUTO ON
Note	

Syntax	ETHernet:PORT<Pt>:SYNCe:MAC:AUTO?
Description	This query returns whether or not automatic generation of source MAC address is enabled.
Parameter	<Pt> = Port number
Response	<automatic> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:SYNC:MAC:AUTO? → ON
Note	

12.10.10 ETHernet:PORT<Pt>:SYNCe:EFLag

Syntax	ETHernet:PORT<Pt>:SYNCe:EFLag <behavior>
Description	This command set the SyncE Event flag behavior.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> DYNamic : Event flag bit is dynamically set ST0 : Event flag bit is set to 0 ST1 : Event flag bit is set to 1 <i>DEFault = DYNamic</i>
Response	None.
Example	ETH:PORT1:SYNC:EFL DYN
Note	

Syntax	ETHernet:PORT<Pt>:SYNCe:EFLag?
Description	This query returns the SyncE Event flag behavior.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:SYNC:EFL? → DYN
Note	

12.11 Precision Time Protocol - IEEE 1588v2

12.11.1 EThernet:PORT<Pt>:PTP[:ENABLE]

Syntax	EThernet:PORT<Pt>:PTP[:ENABLE] <enable>
Description	This command enables/disables the Precision Time Protocol.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:PTP ON
Note	This is the default node for EThernet:PORT<Pt>:PTP

Syntax	EThernet:PORT<Pt>:PTP[:ENABLE]?
Description	This query returns whether or not the Precision Time Protocol is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP? → 1
Note	

12.11.2 EThernet:PORT<Pt>:PTP:SONLy

Syntax	EThernet:PORT<Pt>:PTP:SONLy <enable>
Description	This command enables/disables slave only clock mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:PTP:SONL ON
Note	

Syntax	EThernet:PORT<Pt>:PTP:SONLy?
Description	This query returns whether or not slave only clock mode is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:SONL? → 1
Note	

12.11.3 EThernet:PORT<Pt>:PTP:CAST

Syntax	EThernet:PORT<Pt>:PTP:CAST <cast>
Description	This command sets the multicast/unicast mode.
Parameters	<Pt> = Port number <cast> = <CHARACTER PROGRAM DATA> MULTicast: Multicast mode UNICast: Unicast mode <i>DEFault</i> = <i>UNICast</i>
Response	None.
Example	ETH:PORT1:PTP:CAST DEF
Note	

Syntax	EThernet:PORT<Pt>:PTP:CAST?
Description	This query returns the multicast/unicast mode.
Parameter	<Pt> = Port number
Response	<cast> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:CAST? → MULT
Note	

12.11.4 EThernet:PORT<Pt>:PTP:UNEGotiate

Syntax	EThernet:PORT<Pt>:PTP:UNEGotiate <enable>
Description	This command enables/disables unicast negotiate mode.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:PTP:UNEG ON
Note	

Syntax	EThernet:PORT<Pt>:PTP:UNEGotiate?
Description	This query returns whether or not unicast negotiate mode is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:UNEG? → 1
Note	

12.11.5 EThernet:PORT<Pt>:PTP:PROFile

Syntax	EThernet:PORT<Pt>:PTP:PROFile <profile>
Description	This command sets the PTP profile.
Parameters	<Pt> = Port number <profile> = <CHARACTER PROGRAM DATA> UDEFined: User Defined G82651: G.8265.1 G82751: G.8275.1 G82752: G.8275.2 SMPTE: SMPTE 2059-2 <i>DEFault</i> = <i>UDEFined</i>
Response	None.
Example	ETH:PORT1:PTP:PROF G82651
Note	

Syntax	EThernet:PORT<Pt>:PTP:PROFile?
Description	This query returns the PTP profile.
Parameter	<Pt> = Port number
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:PROF? → G82651
Note	

12.11.6 EThernet:PORT<Pt>:PTP:DOMain

Syntax	EThernet:PORT<Pt>:PTP:DOMain <domain>
Description	This command sets the PTP domain Id.
Parameters	<Pt> = Port number <domain> = <CHARACTER PROGRAM DATA> DEFault: Default domain for multicast ALT1: Alternate 1 for multicast ALT2: Alternate 2 for multicast ALT3: Alternate 3 for multicast UDEFault: Default domain for unicast 5..255 : Alternative domains
Response	None.
Example	ETH:PORT1:PTP:DOM DEF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:DOMain?
Description	This query returns the PTP domain Id.
Parameter	<Pt> = Port number
Response	<domain> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:DOM? → DEF
Note	

12.11.7 ETHernet:PORT<Pt>:PTP:TPRotocol

Syntax	ETHernet:PORT<Pt>:PTP:TPRotocol <protocol>
Description	This command sets the transport protocol to use for PTP communication.
Parameters	<Pt> = Port number <protocol> = <CHARACTER PROGRAM DATA> IPV4: UDP IPv4 IPV6: UDP IPv6 IEEE: IEEE 802.3 <i>Default = IPV4</i>
Response	None.
Example	ETH:PORT1:PTP:TPR IPV6
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TPRotocol?
Description	This query returns the transport protocol to use for PTP communication.
Parameter	<Pt> = Port number
Response	<protocol> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:TPR? → IPV6
Note	

12.11.8 ETHernet:PORT<Pt>:PTP:MAC[:SOURce]

Syntax	ETHernet:PORT<Pt>:PTP:MAC[:SOURce] <address>
Description	This command sets the PTP MAC source address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:PTP:MAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:PTP:MAC[:SOURce]?
Description	This query returns the PTP MAC source address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:MAC? → "00-50-C2-35-D2-EF"
Note	

12.11.9 ETHernet:PORT<Pt>:PTP:MAC:AUTO

Syntax	ETHernet:PORT<Pt>:PTP:MAC:AUTO <automatic>
Description	This command enables/disables automatic generation of PTP source MAC address.
Parameters	<Pt> = Port number <automatic> = <CHARACTER PROGRAM DATA> ON: Lock the MAC parameter to the value of default MAC source address. OFF: Unlock the MAC parameter value. <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:PTP:MAC:AUTO ON
Note	

Syntax	ETHernet:PORT<Pt>:PTP:MAC:AUTO?
Description	This query returns whether or not automatic generation of PTP source MAC address is enabled.
Parameter	<Pt> = Port number
Response	<automatic> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:MAC:AUTO? → ON
Note	

12.11.10 ETHernet:PORT<Pt>:PTP:MAC:DESTination

Syntax	ETHernet:PORT<Pt>:PTP:MAC:DESTination <address>
Description	This command sets the PTP MAC destination address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:PTP:MAC:DEST "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator. This value is used when ETHernet:PORT<Pt>:PTP:SONLy is enabled and ETHernet:PORT<Pt>:PTP:CAST is set to UNICast.

Syntax	ETHernet:PORT<Pt>:PTP:MAC:DESTination?
Description	This query returns the PTP MAC destination address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:MAC:DEST? → "00-50-C2-35-D2-EF"
Note	

12.11.11 ETHernet:PORT<Pt>:PTP:MAC:SMULticast

Syntax	ETHernet:PORT<Pt>:PTP:MAC:SMULticast <address type>
Description	This command sets multicast destination MAC addresses.
Parameters	<Pt> = Port number <address type> = <CHARACTER PROGRAM DATA> AUTO: Use default multicast addresses. Peer delay multicast address is set according to IEEE1588v2 standard one. NONForwardable: Use only non-forwardable multicast address 01-80-C2-00-00-0E. This parameter should be used for G.8275.1. FORWardable: Use only forwardable multicast address 01-1B-19-00-00-00. This parameter should be used for G.8275.1. <i>DEFault = AUTO</i>
Response	None.
Example	ETH:PORT1:PTP:MAC:SMUL NONF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:MAC:SMULticast?
Description	This query returns multicast destination MAC addresses
Parameter	<Pt> = Port number
Response	<address type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:MAC:SMUL? → FORW
Note	

12.11.12 ETHernet:PORT<Pt>:PTP:MAC:ARP

Syntax	ETHernet:PORT<Pt>:PTP:MAC:ARP
Description	this command execute ARP for IEEE1588v2.
Parameters	<Pt> = Port number
Response	None.
Example	ETH:PORT1:PTP:MAC:ARP
Note	

12.11.13 ETHernet:PORT<Pt>:PTP:MAC:ARP:RESult?

Syntax	ETHernet:PORT<Pt>:PTP:MAC:ARP:RESult?
Description	This query returns that ARP lookup succeeded or arp lookup timed out.
Parameters	<Pt> = Port number
Response	<result> = <CHARACTER RESPONSE DATA> SUCCESS: ARP lookup succeeded. TIMEOUT: ARP lookup timed out.
Example	ETH:PORT1:PTP:MAC:ARP:RES? → SUCCESS
Note	

12.11.14 ETHernet:PORT<Pt>:PTP:MAC:NDP

Syntax	ETHernet:PORT<Pt>:PTP:MAC:NDP
Description	This command execute NDP for PTP
Parameters	<Pt> = Port number
Response	None.
Example	ETH:PORT1:PTP:MAC:NDP
Note	

12.11.15 ETHernet:PORT<Pt>:PTP:MAC:NDP:RESult?

Syntax	ETHernet:PORT<Pt>:PTP:MAC:NDP:RESult?
Description	This query returns that NDP lookup succeeded or NDP lookup timed out.
Parameters	<Pt> = Port number
Response	<result> = <CHARACTER RESPONSE DATA> SUCCESS: NDP lookup succeeded. TIMEOUT: NDP lookup timed out.
Example	ETH:PORT1:PTP:MAC:NDP:RES? → SUCCESS
Note	

12.11.16 ETHernet:PORT<Pt>:PTP:PTYPE

Syntax	ETHernet:PORT<Pt>:PTP:PTYPE <payload type>
Description	This command sets payload type for IPv6 header.
Parameters	<Pt> = Port number <payload type> = <CHARACTER PROGRAM DATA> AUTO: IPv6 Payload length is set by auto. NULL: IPv6 Payload length is set 0. <i>DEFault = AUTO</i>
Response	None.
Example	ETH:PORT1:PTP:PTYP NULL
Note	

Syntax	ETHernet:PORT<Pt>:PTP:PTYPE?
Description	This query returns payload type for IPv6 header.
Parameter	<Pt> = Port number
Response	<address type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:PTYP? → NULL
Note	

12.11.17 ETHernet:PORT<Pt>:PTP:EXT

Syntax	ETHernet:PORT<Pt>:PTP:EXT <enable>
Description	This command enables/disables the extended IPv6 header.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:EXT ON
Notes	

Syntax	ETHernet:PORT<Pt>:PTP:EXT?
Description	This query returns the extended IPv6 header is enables or disables .
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:EXT? → 1
Note	

12.11.18 ETHernet:PORT<Pt>:PTP:EXT:TYPE

Syntax	ETHernet:PORT<Pt>:PTP:EXT:TYPE <type>
Description	This command sets the type of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> HOP: Hop-by-Hop Options ROUTing: Routing(Type 0) DESTination: Destination Options
Response	None.
Example	ETH:PORT1:PTP:EXT:TYPE HOP
Note	

Syntax	ETHernet:PORT<Pt>:PTP:EXT:TYPE?
Description	This query returns the type of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:EXT:TYPE? → HOP
Note	

12.11.19 ETHernet:PORT<Pt>:PTP:EXT:LENGth

Syntax	ETHernet:PORT<Pt>:PTP:EXT:LENGth <length>
Description	This command sets the length of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=6, MAXimum=254, DEFault=6</i>
Response	None.
Example	ETH:PORT1:PTP:EXT:LENG 6
Note	

Syntax	ETHernet:PORT<Pt>:PTP:EXT:LENGth?
Description	This query returns the length of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:EXT:LENG? → 0
Note	

12.11.20 ETHernet:PORT<Pt>:PTP:EXT:DATA

Syntax	ETHernet:PORT<Pt>:PTP:EXT:DATA <data>
Description	This command sets the data of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameters	<Pt> = Port number <data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:PTP:EXT:DATA "0123456789AB"
Note	

Syntax	ETHernet:PORT<Pt>:PTP:EXT:DATA?
Description	This query returns the data of extension header for PTP. This command is only valid when IPv6 is selected on layer3.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:EXT:DATA? → "0123456789AB"
Note	

12.11.21 ETHernet:PORT<Pt>:PTP:IP:IPV4:SOURce

Syntax	ETHernet:PORT<Pt>:PTP:IP:IPV4:SOURce <address>
Description	This command sets the PTP IPv4 source address.
Parameters	<Pt> = Port number
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:PTP:IP:IPV4:SOUR "172.29.2.36"
Note	Only the character '.' is accepted as separator. This value is used when ETHernet:PORT<Pt>:PTP:TPRotocol is set to IPV4

Syntax	ETHernet:PORT<Pt>:PTP:IP:IPV4:SOURce?
Description	This query returns the PTP IPv4 source address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:IPV4:SOUR? → "172.29.2.36"
Note	

12.11.22 ETHernet:PORT<Pt>:PTP:IP:IPV4:DESTination

Syntax	ETHernet:PORT<Pt>:PTP:IP:IPV4:DESTination <address>
Description	This command sets the PTP IPv4 destination address. Used in unicast slave mode.
Parameters	<Pt> = Port number
	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:PORT1:PTP:IP:IPV4:DEST "172.29.2.36"
Note	Only the character '.' is accepted as separator. This value is used when ETHernet:PORT<Pt>:PTP:SONLy is enabled and ETHernet:PORT<Pt>:PTP:TPRotocol is set to IPV4 and ETHernet:PORT<Pt>:PTP:CAST is set to UNICast.

Syntax	ETHernet:PORT<Pt>:PTP:IP:IPV4:DESTination?
Description	This query returns the PTP IPv4 destination address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:IPV4:DEST? → "172.29.2.36"
Note	

12.11.23 ETHernet:PORT<Pt>:PTP:IPV4:IGMP[:ENABLE]

Syntax	ETHernet:PORT<Pt>:PTP:IPV4:IGMP[:ENABLE] <enable>
Description	This command enables/disables use of the PTP IGMP.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:IPV4:IGMP ON
Note	

Syntax	ETHernet:PORT<Pt>:PTP:IPV4:IGMP[:ENABLE]?
Description	This query returns whether or not the PTP IGMP is used.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV4:IGMP? → 1
Note	

12.11.24 EThernet:PORT<Pt>:PTP:IPV4:IGMP:VERSion

Syntax	EThernet:PORT<Pt>:PTP:IPV4:IGMP:VERSion <version>
Description	This command sets the PTP IGMP version.
Parameters	<Pt> = Port number <version> = <CHARACTER PROGRAM DATA> V1: IGMPv1 V2: IGMPv2 V3: IGMPv3 DEFault = V2
Response	None.
Example	ETH:PORT1:PTP:IPV4:IGMP:VERS V1
Note	

Syntax	EThernet:PORT<Pt>:PTP:IPV4:IGMP:VERSion?
Description	This query returns the PTP IGMP version.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV4:IGMP:VERS? → V2
Note	

12.11.25 EThernet:PORT<Pt>:PTP:IP:IPV6:SOURce

Syntax	EThernet:PORT<Pt>:PTP:IP:IPV6:SOURce <address>
Description	This command sets the PTP IPv6 source address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:PTP:IP:IPV6:SOUR "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	This value is used when EThernet:PORT<Pt>:PTP:TPRotocol is set to IPV6

Syntax	EThernet:PORT<Pt>:PTP:IP:IPV6:SOURce?
Description	This query returns the PTP IPv6 source address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:IPV6:SOUR? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.11.26 EThernet:PORT<Pt>:PTP:IP:IPV6:DESTination

Syntax	EThernet:PORT<Pt>:PTP:IP:IPV6:DESTination <address>
Description	This command sets the PTP IPv6 destination address. Used in unicast slave mode.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> IPv6 address
Response	None.
Example	ETH:PORT1:PTP:IP:IPV6:DEST "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	This value is used when EThernet:PORT<Pt>:PTP:SONLy is enabled and EThernet:PORT<Pt>:PTP:TPRotocol is set to IPV6 and EThernet:PORT<Pt>:PTP:CAST is set to UNICast.

Syntax	EThernet:PORT<Pt>:PTP:IP:IPV6:DESTination?
Description	This query returns the PTP IPv6 destination address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:IPV6:DEST? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.11.27 ETHernet:PORT<Pt>:PTP:IPV6:ADDRconfig

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:ADDRconfig <mode>
Description	This command sets the PTP address configuration mode for IPv6.
Parameters	<Pt> = Port number <St> = Stream number (1-16) <mode> = <CHARACTER PROGRAM DATA> MANual: Manual SLEsS: Stateless DEFault = SLEsS
Response	None.
Example	ETH:PORT1:PTP:IPV6:ADDR SLES
Note	

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:ADDRconfig?
Description	This query returns the PTP address configuration mode for IPv6.
Parameters	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:ADDR? → SLES
Note	

12.11.28 ETHernet:PORT<Pt>:PTP:IPV6:ADDRconfig:RESult?

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:ADDRconfig:RESult?
Description	This query returns the PTP result of address config for IPv6.
Parameters	<Pt> = Port number
Response	<result> = <CHARACTER RESPONSE DATA> SUCCESS: Address configuration succeeded. TIMEOUT: Address configuration timed out.
Example	ETH:PORT1:PTP:IPV6:ADDR:RES? → TIMEOUT
Note	

12.11.29 ETHernet:PORT<Pt>:PTP:IPV6:SLEsS:IID

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:SLEsS:IID <mode>
Description	This command sets the PTP interface ID for IPv6.
Parameters	<Pt> = Port number <id> = <STRING PROGRAM DATA> The interface ID string must consist of 16 hexadecimal digits.
Response	None.
Example	ETH:PORT1:PTP:IPV6:SLES:IID "00-00-00-00-00-00-00-00"
Note	

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:SLEsS:IID?
Description	This query returns the PTP address configuration mode for IPv6.
Parameters	<Pt> = Port number
Response	<mode> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLES:IID? → "00-00-00-00-00-00-00-00"
Note	

12.11.30 EThernet:PORT<Pt>:PTP:IPV6:SLEs:IID:AUTO

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:IID:AUTO <enable>
Description	This command enables/disables Interface ID for PTP.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:PORT1:PTP:IPV6:SLEs:IID:AUTO ON
Note	

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:IID:AUTO?
Description	This query returns whether or not Interface ID for PTP is enabled.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:IID:AUTO? → 1
Note	

12.11.31 EThernet:PORT<Pt>:PTP:IPV6:SLEs:LINKlocal?

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:LINKlocal?
Description	This query returns the PTP link local address.
Parameters	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:LINK? → "1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0"
Note	

12.11.32 EThernet:PORT<Pt>:PTP:IPV6:SLEs:RAFLag?

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:RAFLag?
Description	This query returns the PTP stateless RA flags.
Parameters	<Pt> = Port number
Response	<flags> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:RAFL? → "0x00"
Note	

12.11.33 EThernet:PORT<Pt>:PTP:IPV6:SLEs:SRCMac?

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:SRCMac?
Description	This query returns the PTP stateless source MAC address.
Parameters	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:SRCL? → "00-00-00-00-00-00"
Note	

12.11.34 EThernet:PORT<Pt>:PTP:IPV6:SLEs:PREFfix?

Syntax	EThernet:PORT<Pt>:PTP:IPV6:SLEs:PREFfix?
Description	This query returns the PTP stateless prefix.
Parameters	<Pt> = Port number
Response	<prefix> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:PREF? → "1234:5678:9ABC:DEF0"
Note	

12.11.35 ETHernet:PORT<Pt>:PTP:IPV6:SLEs:PRFLag?

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:PRFLag?
Description	This query returns the PTP stateless prefix flags.
Parameters	<Pt> = Port number
Response	<flags> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:PRFL? → "0x00"
Note	

12.11.36 ETHernet:PORT<Pt>:PTP:IPV6:SLEs:LTIMe?

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:LTIMe?
Description	This query returns the PTP stateless life time.
Parameters	<Pt> = Port number
Response	<time> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:SLEs:LTIM? → "Fri Jan 8 14:24:44 2010"
Note	

12.11.37 ETHernet:PORT<Pt>:PTP:IPV6:SLEs:RENew

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:SLEs:RENew
Description	This command execute PTP stateless address configuration. This command valid only when IPv6 is selected on layer3.
Parameters	<Pt> = Port number
Response	None.
Example	ETH:PORT1:PTP:IPV6:SLEs:REN
Note	

12.11.38 ETHernet:PORT<Pt>:PTP:IPV6:MLD[:ENABle]

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:MLD[:ENABle] <enable>
Description	This command enables/disables use of the PTP MLD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:IPV6:MLD ON
Note	

Syntax	ETHernet:PORT<Pt>:PTP:IPV6:MLD[:ENABle]?
Description	This query returns whether or not the PTP MLD is used.
Parameters	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:MLD? → 1
Note	

12.11.39 EThernet:PORT<Pt>:PTP:IPV6:MLD:VERSion

Syntax	EThernet:PORT<Pt>:PTP:IPV6:MLD:VERSion <version>
Description	This command sets the PTP MLD version.
Parameters	<Pt> = Port number <version> = <CHARACTER PROGRAM DATA> V1: MLDv1 V2: MLDv2 <i>DEFault</i> = V1
Response	None.
Example	ETH:PORT1:PTP:IPV6:MLD:VERS V1
Note	

Syntax	EThernet:PORT<Pt>:PTP:IPV6:MLD:VERSion?
Description	This query returns the PTP MLD version.
Parameters	<Pt> = Port number
Response	<version> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:IPV6:MLD:VERS? → V2
Note	

12.11.40 EThernet:PORT<Pt>:PTP:IP:DSCP:EVENT

Syntax	EThernet:PORT<Pt>:PTP:IP:DSCP:EVENT <value>
Description	This command sets the DSCP value to use for PTP event messages.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =63, <i>DEFault</i> =0
Response	None.
Example	ETH:PORT1:PTP:IP:DSCP:EVEN 0
Note	This value is used when EThernet:PORT<Pt>:PTP:TPRotocol is set to IPV4 or IPV6.

Syntax	EThernet:PORT<Pt>:PTP:IP:DSCP:EVENT?
Description	This query returns the DSCP value to use for PTP event messages.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:DSCP:EVEN? → 0
Note	

12.11.41 EThernet:PORT<Pt>:PTP:IP:DSCP:NORMal

Syntax	EThernet:PORT<Pt>:PTP:IP:DSCP:NORMal <value>
Description	This command sets the DSCP value to use for normal PTP messages (not PTP events).
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =63, <i>DEFault</i> =0
Response	None.
Example	ETH:PORT1:PTP:IP:DSCP:NORM 0
Note	This value is used when EThernet:PORT<Pt>:PTP:TPRotocol is set to IPV4 or IPV6.

Syntax	EThernet:PORT<Pt>:PTP:IP:DSCP:NORMal?
Description	This query returns the DSCP value to use for normal PTP messages (not PTP events).
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:IP:DSCP:NORM? → 0
Note	

12.11.42 ETHernet:PORT<Pt>:PTP:TUNNeling

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling <tunneling>
Description	This command sets the tunneling mode to use for PTP communication.
Parameters	<Pt> = Port number <tunneling> = <CHARACTER PROGRAM DATA> NONE: No tunneling VLAN: VLAN MPLS: MPLS <i>DEFAult = NONE</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN NONE
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling?
Description	This query returns the tunneling protocol to use for PTP communication.
Parameter	<Pt> = Port number
Response	<tunneling> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN? → NONE
Note	

12.11.43 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LCount

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LCount <levels>
Description	This command sets the number of active VLAN levels.
Parameters	<Pt> = Port number <levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFAult=1</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LC 2
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LCount?
Description	This query returns the number of active VLAN levels.
Parameter	<Pt> = Port number
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LC? → 2
Note	

12.11.44 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ID <number>
Description	This command sets the VLAN ID.
Parameters	<Pt> = Port number <Lv> = VLAN level (1-N ¹) <number> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4095, DEFAult=0</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:ID 1024
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ID?
Description	This query returns the VLAN ID.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:ID? → 1024
Note	

12.11.45 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI <enable>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:CFI 1
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). ² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ³ This command is as same as ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI.

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI?
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:CFI? → 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ² This command is as same as ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI?

12.11.46 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI <enable>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:DEI 1
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). ² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ³ This command is as same as ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI.

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:DEI?
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:DEI? → 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition. ² This command is as same as ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:CFI?

12.11.47 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:PRiority

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:PRiority <priority>
Description	This command sets the VLAN priority.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<priority> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:PR 7
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:PRiority?
Description	This query returns the VLAN priority.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:PR? → 7
Note	

12.11.48 ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ETYPe

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ETYPe <type>
Description	This command sets the VLAN Ethertype.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N) ¹
	<type> = <NUMERIC PROGRAM DATA>
	Acceptable values: #H8100 #H88A8 #H9100 #H9200 <i>DEFault=#H8100</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:ETYP #H8100
Notes	¹ It is only possible to use this command for levels (1-M), where M is the number of active VLAN Levels minus one(see section 12.32.97). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). It is not possible to use this command for VLAN level N as Ethertype because this level is automatically set according to the selected higher-level protocol.

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:VLAN:LEVel<Lv>:ETYPe?
Description	This query returns the VLAN Ethertype.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:VLAN:LEV1:ETYP? → #H86DD
Note	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.32.97).

12.11.49 ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LCount

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LCount <levels>
Description	This command sets the number of active MPLS levels.
Parameters	<Pt> = Port number <levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:MPLS:LC 2
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LCount?
Description	This query returns the number of active MPLS levels.
Parameter	<Pt> = Port number
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:MPLS:LC? → 2
Note	

12.11.50 ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:LABel

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:LABel <label>
Description	This command sets the MPLS label.
Parameters	<Pt> = Port number <Lv> = MPLS level (1-N ¹) <label> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1048575, DEFault=0</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:LAB 1048575
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:LABel?
Description	This query returns the MPLS label.
Parameters	<Pt> = Port number <Lv> = MPLS level (1-N)
Response	<label> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:LAB? → 1048575
Note	

12.11.51 ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:EBITs

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:EBITs <value>
Description	This command sets the MPLS experimental bits.
Parameters	<Pt> = Port number <Lv> = MPLS level (1-N ¹) <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:EBIT 5
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:EBITs?
Description	This query returns the MPLS experimental bits.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:EBIT? → 5
Note	

12.11.52 ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:TTL

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:TTL <value>
Description	This command sets the MPLS time to live.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N ¹)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=32</i>
Response	None.
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:TTL 32
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels (see section 12.32.81). Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:PTP:TUNNeling:MPLS:LEVel<Lv>:TTL?
Description	This query returns the MPLS time to live.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TUNN:MPLS:LEV1:TTL? → 32
Note	

12.11.53 ETHernet:PORT<Pt>:PTP:FCAPture

Syntax	ETHernet:PORT<Pt>:PTP:FCAPture <enable>
Description	This command enables/disables PTP frame capture.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FCAP OFF
Note	Only frames for the configured domain ID will be captured.

Syntax	ETHernet:PORT<Pt>:PTP:FCAPture?
Description	This query returns whether or not PTP frame capture is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FCAP? → 1
Note	

12.11.54 ETHernet:PORT<Pt>:PTP:FCAPture:DIRecotry

Syntax	ETHernet:PORT<Pt>:PTP:FCAPture:DIRecotry <directory>
Description	This command sets the PTP frame capture directory.
Parameters	<Pt> = Port number
	<directory> = <CHARACTER PROGRAM DATA>
Response	None.
Example	ETH:PORT1:PTP:FCAP:DIR "pcapdir"
Note	Only frames for the configured domain ID will be captured.

Syntax	ETHernet:PORT<Pt>:PTP:FCAPture:DIRectory?
Description	This query returns the PTP frame capture directory.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FCAP:DIR? → "Internal/pcapdir"
Note	There must be a connected application server for this command to be recognized as a legal command.
	The application server must be in the idle state.
	Directory must be selected to the Internal/ directory or a sub-directory hereof.
	When a USB storage device is mounted, files can stored via the Usb/ directory.
	If the USB storage is not accessible, directory will be "Internal/" even if "Usb/" is selected.

12.11.55 ETHernet:PORT<Pt>:PTP:ELOG

Syntax	ETHernet:PORT<Pt>:PTP:ELOG <enable>
Description	This command enables/disables Extended logging in the IEEE 1588 clock log. All received and transmitted PTP messages will be logged.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA>
	<i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:PORT1:PTP:ELOG OFF
Note	Only frames for the configured domain ID will be captured.

Syntax	ETHernet:PORT<Pt>:PTP:ELOG?
Description	This query returns whether or not Extended logging in the IEEE 1588 clock log is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:ELOG? → 1
Note	

12.11.56 ETHernet:PORT<Pt>:PTP:SMODE

Syntax	ETHernet:PORT<Pt>:PTP:SMODE <mode>
Description	This command sets the PTP step mode.
Parameters	<Pt> = Port number
	<mode> = <CHARACTER PROGRAM DATA>
	ONE: One step mode TWO: Two step mode
	<i>DEFault</i> = <i>ONE</i>
Response	None.
Example	ETH:PORT1:PTP:SMOD ON
Note	<mode> = ONE forces ETHernet:PORT<Pt>:PTP:DMEchanism to RRESPonse

Syntax	ETHernet:PORT<Pt>:PTP:SMODE?
Description	This query returns the PTP step mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:SMOD? → TW
Note	

12.11.57 ETHernet:PORT<Pt>:PTP:DMEChanism

Syntax	ETHernet:PORT<Pt>:PTP:DMEChanism <mechanism>
Description	This command sets the PTP delay mechanism.
Parameters	<Pt> = Port number <mechanism> = <CHARACTER PROGRAM DATA> RRESponse: Request-Response delay mechanism PEER: Peer delay mechanism <i>DEFault = RRESponse</i>
Response	None.
Example	ETH:PORT1:PTP:DMEC RRES
Note	<mechanism> = PEER forces ETHernet:PORT<Pt>:PTP:SMODE to TWO

Syntax	ETHernet:PORT<Pt>:PTP:DMEChanism?
Description	This query returns the PTP delay mechanism.
Parameter	<Pt> = Port number
Response	<mechanism> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:DMEC? → RRES
Note	

12.11.58 ETHernet:PORT<Pt>:PTP:CLOCK:SOURce

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:SOURce <source>
Description	This command sets the PTP clock source.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> INTernal: Use the internal instrument clock. GPS: Use the attach GPS device for time reference. <i>DEFault = INTernal</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:SOUR INT
Note	

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:SOURce?
Description	This query returns the PTP clock source.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:SOUR? → INT
Note	

12.11.59 ETHernet:PORT<Pt>:PTP:CLOCK:IDENtity

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:IDENtity <id>
Description	This command sets the PTP clock identity.
Parameters	<Pt> = Port number <id> = <STRING PROGRAM DATA> The identity string must consist of 16 hexadecimal digits.
Response	None.
Example	ETH:PORT1:PTP:CLOC:IDEN "00-00-00-00-00-00-00-00"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:IDENtity?
Description	This query returns the PTP clock identity.
Parameter	<Pt> = Port number
Response	<id> = <STRING RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:IDEN? → "00-00-00-00-00-00-00-00"
Note	

12.11.60 ETHernet:PORT<Pt>:PTP:CLOCK:IDENTity:AUTO

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:IDENTity:AUTO <automatic>
Description	This command enables/disables automatic generation of an identity from the PTP source MAC address.
Parameters	<Pt> = Port number <automatic> = <CHARACTER PROGRAM DATA> ON: Lock the identity parameter to the value of the PTP MAC source address. OFF: Unlock the identity parameter value. <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:IDEN:AUTO ON
Note	Auto generation is performed as described in IEEE 1588v2.

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:IDENTity:AUTO?
Description	This query returns whether or not automatic generation of an identity from the PTP source MAC address is enabled.
Parameter	<Pt> = Port number
Response	<automatic> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:IDEN:AUTO? → ON
Note	

12.11.61 ETHernet:PORT<Pt>:PTP:CLOCK:P1

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:P1 <priority>
Description	This command sets the PTP clock "priority 1" priority .
Parameters	<Pt> = Port number <priority> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=255</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:P1 255
Note	

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:P1?
Description	This query returns the PTP clock "priority 1" priority.
Parameter	<Pt> = Port number
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:P1? → 255
Note	

12.11.62 ETHernet:PORT<Pt>:PTP:CLOCK:P2

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:P2 <priority>
Description	This command sets the PTP clock "priority 2" priority .
Parameters	<Pt> = Port number <priority> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=255</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:P2 255
Note	

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:P2?
Description	This query returns the PTP clock "priority 2" priority.
Parameter	<Pt> = Port number
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:P2? → 255
Note	

12.11.63 EThernet:PORT<Pt>:PTP:CLOCK:CLASs

Syntax	EThernet:PORT<Pt>:PTP:CLOCK:CLASs <class>
Description	This command sets the PTP clock class.
Parameters	<Pt> = Port number <class> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=255</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:CLAS 255
Note	

Syntax	EThernet:PORT<Pt>:PTP:CLOCK:CLASs?
Description	This query returns the PTP clock class.
Parameter	<Pt> = Port number
Response	<class> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:CLAS? → 255
Note	

12.11.64 EThernet:PORT<Pt>:PTP:CLOCK:ACCuracy

Syntax	EThernet:PORT<Pt>:PTP:CLOCK:ACCuracy <accuracy>
Description	This command sets the PTP clock accuracy.
Parameters	<Pt> = Port number <accuracy> = <CHARACTER PROGRAM DATA> NS25: 25 nano seconds NS100: 100 nano seconds NS250: 250 nano seconds US1: 1 micro second US2: 2.5 micro seconds US10: 10 micro seconds US25: 25 micro seconds US100: 100 micro seconds US250: 250 micro seconds MS1: 1 milli second MS2: 2.5 milli seconds MS10: 10 milli seconds MS25: 25 milli seconds MS100: 100 milli seconds MS250: 250 milli seconds S1: 1 second S10: 10 seconds PS10: Above 10 seconds UNKNown: Unknown accuracy USER: Use user defined value EPRTC: T-GM connected to a ePRTC in locked-mode ¹ CPRTC: T-GM connected to a PRTC in locked-mode ¹ NPRTC: T-GM not connected to a PRTC in locked-mode, or T-BC ¹ <i>DEFault = UNKNown</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:ACC UNKN
Note	¹ Only available when the Profile is G.8275.1 or G.8275.2.

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy?
Description	This query returns the PTP clock accuracy.
Parameter	<Pt> = Port number
Response	<accuracy> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:ACC? → UNKN
Note	

12.11.65 ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy:USER

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy:USER <value>
Description	This command sets the user defined PTP clock accuracy.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=254</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:ACC:USER 0
Note	This value is used when ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy is set to USER.

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:ACCuracy:USER?
Description	This query returns the user defined PTP clock accuracy.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:ACC:USER? → 254
Note	

12.11.66 ETHernet:PORT<Pt>:PTP:CLOCK:TSource

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:TSource <source>
Description	This command sets the PTP clock time source value.
Parameters	<Pt> = Port number <source> = <CHARACTER PROGRAM DATA> ATOMic: Atomicclock GPS: GPS clock TRADio: Terrestrial Radio PTP: PTP clock NTP: NTP clock HSET: Hand set OTHer: Other IOSCillator: Internal Oscillator SARB: SMPTE (ARB) SLOCal: SMPTE (Local) USER: Use user defined value <i>DEFault = IOSCillator</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:TSC IOSC
Note	

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:TSource?
Description	This query returns the PTP clock time source value.
Parameter	<Pt> = Port number
Response	<source> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:TSC? → IOSC
Note	

12.11.67 ETHernet:PORT<Pt>:PTP:CLOCK:TSOource:USER

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:TSOource:USER <value>
Description	This command sets the user defined PTP clock time source value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=160</i>
Response	None.
Example	ETH:PORT1:PTP:CLOC:TSO:USER 255
Note	This value is used when ETHernet:PORT<Pt>:PTP:CLOCK:TSOource is set to USER.

Syntax	ETHernet:PORT<Pt>:PTP:CLOCK:TSOource:USER?
Description	This query returns the user defined PTP clock time source value.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:CLOC:TSO:USER? → 255
Note	

12.11.68 ETHernet:PORT<Pt>:PTP:TIMing:AINTerval

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:AINTerval <interval>
Description	This command sets the PTP timing announce interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> FS8: 1/8 second FS4: 1/4 second FS2: 1/2 second S05: 1/2 second (for backward compatibility only) S1: 1 second S2: 2 seconds S4: 4 seconds S8: 8 seconds S16: 16 seconds S32: 32 seconds <i>DEFault = S2</i>
Response	None.
Example	ETH:PORT1:PTP:TIM: AINT S2
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:AINTerval?
Description	This query returns the PTP timing announce interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM: AINT? → S1
Note	

12.11.69 ETHernet:PORT<Pt>:PTP:TIMing:ATIMEout

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:ATIMEout <intervals>
Description	This command sets the PTP timing announce timeout value. Unit: number of announce intervals.
Parameters	<Pt> = Port number <intervals> = <NUMERIC PROGRAM DATA> <i>MINimum=2, MAXimum=255, DEFault=3</i>
Response	None.
Example	ETH:PORT1:PTP:TIM: ATIM 3
Note	The actual timeout period will be ATIMEout multiplied by AINTerval

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:ATIMeout?
Description	This query returns the PTP timing announce timeout value. Unit: number of announce intervals.
Parameter	<Pt> = Port number
Response	<intervals> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:ATIM? → 3
Note	

12.11.70 ETHernet:PORT<Pt>:PTP:TIMing:UOFFset

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:UOFFset <offset>
Description	This command sets the nominal offset between UTC time and PTP/TAI time. The value is used for conversion and comparison of UTC and PTP/TAI time.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-32768, MAXimum=32767, DEFault=35</i>
Response	None.
Example	ETH:PORT1:PTP:TIM:UOFF 35
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:UOFFset?
Description	This query returns the nominal offset between UTC time and PTP/TAI time.
Parameter	<Pt> = Port number
Response	<offset> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:UOFF? → 34
Note	

12.11.71 ETHernet:PORT<Pt>:PTP:TIMing:SINTerval

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:SINTerval <interval>
Description	This command sets the PTP timing sync interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> FS128: 1/128 second FS64: 1/64 second FS32: 1/32 second FS16: 1/16 second FS8: 1/8 second FS4: 1/4 second FS2: 1/2 second S05: 1/2 second (for backward compatibility only) S1: 1 second S2: 2 seconds S4: 4 seconds S8: 8 seconds S16: 16 seconds S32: 32 seconds <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:PTP:TIM:SINT S1
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:SINterval?
Description	This query returns the PTP timing sync interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:SINT? → S1
Note	

12.11.72 ETHernet:PORT<Pt>:PTP:TIMing:DRINterval

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:DRINterval <interval>
Description	This command sets the PTP timing delay request interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> FS128: 1/128 second FS64: 1/64 second FS32: 1/32 second FS16: 1/16 second FS8: 1/8 second FS4: 1/4 second FS2: 1/2 second S05: 1/2 second (for backward compatibility only) S1: 1 second S2: 2 seconds S4: 4 seconds S8: 8 seconds S16: 16 seconds S32: 32 seconds DISabled: Use one-way-operation. (Disable delay requests/response) DEFault = S1
Response	None.
Example	ETH:PORT1:PTP:TIM:DRIN S1
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:DRINterval?
Description	This query returns the PTP timing delay request interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:DRIN? → S1
Note	

12.11.73 ETHernet:PORT<Pt>:PTP:TIMing:UDURation

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:UDURation <timeout>
Description	This command sets the PTP timing unicast duration. Unit: Seconds.
Parameters	<Pt> = Port number <timeout> = <NUMERIC PROGRAM DATA> MINimum = 60, MAXimum = 1000, DEFault = 300
Response	None.
Example	ETH:PORT1:PTP:TIM:UDUR 300
Note	

Syntax	ETHernet:PORT<Pt>:PTP:TIMing:UDURation?
Description	This query returns the PTP timing unicast duration.
Parameter	<Pt> = Port number
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:UDUR? → 300
Note	

12.11.74 EThernet:PORT<Pt>:PTP:TIMing:GCABle

Syntax	EThernet:PORT<Pt>:PTP:TIMing:GCABle <delay>
Description	This command sets the delay time of GPS antenna cable length. Unit: nano Seconds.
Parameters	<Pt> = Port number <delay> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1000000000, DEFault=0</i>
Response	None.
Example	ETH:PORT1:PTP:TIM:GCAB 35
Note	

Syntax	EThernet:PORT<Pt>:PTP:TIMing:GCABle?
Description	This query returns the delay time of GPS antenna cable length.
Parameter	<Pt> = Port number
Response	<delay> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:TIM:GCAB? → 35
Note	

12.11.75 EThernet:PORT<Pt>:PTP:FFIeld?

Syntax	EThernet:PORT<Pt>:PTP:FFIeld?
Description	This query returns the flagField.
Parameter	<Pt> = Port number
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI? → #H0000
Note	

12.11.76 EThernet:PORT<Pt>:PTP:FFIeld:AMFLag

Syntax	EThernet:PORT<Pt>:PTP:FFIeld:AMFLag <enable>
Description	This command sets the alternateMasterFlag of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:AMFL OFF
Note	

Syntax	EThernet:PORT<Pt>:PTP:FFIeld:AMFLag?
Description	This query returns the alternateMasterFlag of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:AMFL? → 0
Note	

12.11.77 EThernet:PORT<Pt>:PTP:FFIeld:L61

Syntax	EThernet:PORT<Pt>:PTP:FFIeld:L61 <enable>
Description	This command sets the leap61 of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:L61 OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:L61?
Description	This query returns the leap61 of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:L61? → 0
Note	

12.11.78 ETHernet:PORT<Pt>:PTP:FFIeld:L59

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:L59 <enable>
Description	This command sets the leap59 of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:L59 OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:L59?
Description	This query returns the leap59 of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:L59? → 0
Note	

12.11.79 ETHernet:PORT<Pt>:PTP:FFIeld:CUOValid

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:CUOValid <enable>
Description	This command sets the currentUtcOffsetValid of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:CUOV OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:CUOValid?
Description	This query returns the currentUtcOffsetValid of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:CUOV? → 0
Note	

12.11.80 ETHernet:PORT<Pt>:PTP:FFIeld:PTIMescale

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:PTIMescale <enable>
Description	This command sets the ptpTimescale of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:PTIM OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:PTIMescale?
Description	This query returns the ptpTimescale of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:PTIM? → 0
Note	

12.11.81 ETHernet:PORT<Pt>:PTP:FFIeld:TTRaceable

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:TTRaceable <enable>
Description	This command sets the timeTraceable of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:TTR OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:TTRaceable?
Description	This query returns the timeTraceable of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:TTR? → 0
Note	

12.11.82 ETHernet:PORT<Pt>:PTP:FFIeld:FTRaceable

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:FTRaceable <enable>
Description	This command sets the frequencyTraceable of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:FTR OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:FTRaceable?
Description	This query returns the frequencyTraceable of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:FTR? → 0
Note	

12.11.83 ETHernet:PORT<Pt>:PTP:FFIeld:SUNCertain

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:SUNCertain <enable>
Description	This command sets the synchronizationUncertain of flagField.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:FFI:SUNC OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:FFIeld:SUNCertain?
Description	This query returns the synchronizationUncertain of flagField.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:FFI:SUNC? → 0
Note	

12.11.84 ETHernet:PORT<Pt>:PTP:POPTions:IRTLv

Syntax	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv <enable>
Description	This command sets the PTP profile options INTERFACE RATE TLV.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:PTP:POPT:IRTL OFF
Note	

Syntax	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv?
Description	This query returns the PTP profile options INTERFACE RATE TLV.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:PTP:POPT:IRTL? → 0
Note	

12.11.85 ETHernet:PORT<Pt>:PTP:POPTions:IRTLv:SPEed

Syntax	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv:SPEed <speed>
Description	This command sets the PTP profile options INTERFACE RATE TLV Speed.
Parameters	<Pt> = Port number <speed> = <CHARACTER PROGRAM DATA> 10M: 10Mbps 100M: 100Mbps 1G: 1Gbps 10G: 10Gbps 25G: 25Gbps 40G: 40Gbps 100G: 100Gbps <i>DEFault = 10M</i>
Response	None.
Example	ETH:PORT1:PTP:POPT:IRTL:SPE 10G
Note	

Syntax	ETHernet:PORT<Pt>:PTP:POPTions:IRTLv:SPEed?
Description	This query returns the PTP profile options INTERFACE RATE TLV Speed.
Parameter	<Pt> = Port number
Response	<speed> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:PTP:POPT:IRTL:SPE? → 10G
Note	

12.11.86 ETHernet:PORT<Pt>:PTP:LOG?

Syntax	ETHernet:PORT<Pt>:PTP:LOG?
Description	This query returns a lists of logged PTP events.
Parameter	<Pt> = Port number
Response	<log> = <STRING RESPONSE DATA>
Example	<pre> ETH:PORT1:PTP:LOG? → " 10:25:26.729 IEEE1588v2 ENABLED 10:25:26.729 Wall Clock: 10:26:00.000099450 10:25:26.740 Master: 0050FFFE235D2E:0 10:25:26.740 Master: cls:255 acc:254 var:4d2c 10:25:26.740 Master: prio1:255 prio2:255 10:25:26.740 Clock State: LISTENING " </pre>
Note	If the list is empty an execution error will be reported.

12.12 Follow

12.12.1 ETHernet:FOLLow:TRAFfic

Syntax	ETHernet:FOLLow:TRAFfic <enable>
Description	This command sets traffic setup in Test-"Generator" for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:TRAF ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:TRAFfic?
Description	This query returns whether or not traffic setup in Test-"Generator" for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:TRAF? → 1
Note	This command is compatible with CMA3000.

12.12.2 ETHernet:FOLLow:STReam<St>

Syntax	ETHernet:FOLLow:STReam<St> <enable>
Description	This command sets setup in "Stream - Profile" and "Stream - Measurement" for PORT2 stream <St> to follow PORT1 stream <St>.
Parameters	<St> = Stream number (1-16) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:STR2 ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:STReam<St>?
Description	This query returns whether or not setup in "Stream - Profile" and "Stream - Measurement" for PORT2 stream <St> follows PORT1 stream <St>.
Parameter	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:STR1? → 0
Note	This command is compatible with CMA3000.

12.12.3 ETHernet:FOLLow:GATeway<St>

Syntax	ETHernet:FOLLow:GATeway<St> <enable>
Description	This command sets gateway setup for PORT2 stream <St> to follow PORT1 stream <St>.
Parameters	<St> = Stream number (1-16) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:GAT1 OFF
Note	This will only have an effect if ETHernet:FOLLow:STReam<St> is enabled. This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:GATeway<St>?
Description	This query returns whether or not gateway setup for PORT2 stream <St> follows PORT1 stream <St>.
Parameter	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:GAT1? → 0
Note	This command is compatible with CMA3000.

12.12.4 ETHernet:FOLLow:SETTings

Syntax	ETHernet:FOLLow:SETTings <enable>
Description	This command sets settings setup (Incoming Frames, Receiver Setup, In-band Setup, and Miscellaneous) in SETUP screen for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:SETT ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:SETTings?
Description	This query returns whether or not settings setup (Incoming Frames, Receiver Setup, In-band Setup, and Miscellaneous) in SETUP screen for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:SETT? → 1
Note	This command is compatible with CMA3000.

12.12.5 ETHernet:FOLLow:FILTer

Syntax	ETHernet:FOLLow:FILTer <enable>
Description	This command sets filter setup for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:FILT OFF
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:FILTer?
Description	This query returns whether or not filter setup for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:FILT? → 0
Note	This command is compatible with CMA3000.

12.12.6 ETHernet:FOLLow:THResholds

Syntax	ETHernet:FOLLow:THResholds <enable>
Description	This command sets threshold setup for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:FOLL:THR ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:THResholds?
Description	This query returns whether or not threshold setup for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:THR? → 1
Note	This command is compatible with CMA3000.

12.12.7 ETHernet:FOLLow:SYNCe

Syntax	ETHernet:FOLLow:SYNCe <enable>
Description	This command sets SyncE setup for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:FOLL:SYNC ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:SYNCe?
Description	This query returns whether or not SyncE setup for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:SYNC? → 1
Note	This command is compatible with CMA3000.

12.12.8 ETHernet:FOLLow:PTP

Syntax	ETHernet:FOLLow:PTP <enable>
Description	This command sets Precision Time Protocol setup for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:FOLL:PTP ON
Note	This command is compatible with CMA3000.

Syntax	ETHernet:FOLLow:PTP?
Description	This query returns whether or not Precision Time Protocol setup for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:FOLL:PTP? → 1
Note	This command is compatible with CMA3000.

12.12.9 ETHernet:PORT<Pt>:FOLLow:TRAFfic

Syntax	ETHernet:PORT<Pt>:FOLLow:TRAFfic <enable>
Description	This command sets traffic setup in Test-”Generator” for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT2:FOLL:TRAF ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:TRAFfic?
Description	This query returns whether or not traffic setup in Test-”Generator” for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:TRAF? → 1
Note	

12.12.10 ETHernet:PORT<Pt>:FOLLow:STReam<St>

Syntax	ETHernet:PORT<Pt>:FOLLow:STReam<St> <enable>
Description	This command sets setup in ”Stream - Profile” and ”Stream - Measurement” for port <Pt> stream <St> to follow PORT1 stream <St>.
Parameter	<Pt> = Port number (2-4)
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT2:FOLL:STR1 ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:STReam<St>?
Description	This query returns whether or not stream setup in ”Stream - Profile” and ”Stream - Measurement” for port <Pt> stream <St> follows PORT1 stream <St>.
Parameter	<Pt> = Port number (2-4)
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:STR1? → 1
Note	

12.12.11 ETHernet:PORT<Pt>:FOLLow:GATeway<St>

Syntax	ETHernet:PORT<Pt>:FOLLow:GATeway<St> <enable>
Description	This command sets gateway setup for port <Pt> stream <St> to follow PORT1 stream <St>.
Parameter	<Pt> = Port number (2-4)
	<St> = Stream number (1-16)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:PORT2:FOLL:GAT1 OFF
Note	This will only have an effect if ETH:PORT<Pt>:FOLLow:STReam<St> is enabled.

Syntax	ETHernet:PORT<Pt>:FOLLow:GATeway<St>?
Description	This query returns whether or not gateway setup for port <Pt> stream <St> follows PORT1 stream <St>.
Parameter	<Pt> = Port number (2-4)
	<St> = Stream number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:GAT1? → 0
Note	

12.12.12 ETHernet:PORT<Pt>:FOLLow:SETTings

Syntax	ETHernet:PORT<Pt>:FOLLow:SETTings <enable>
Description	This command sets settings setup (Incoming Frames, Receiver Setup, In-band Setup, and Miscellaneous) for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:SETT ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:SETTings?
Description	This query returns whether or not settings setup (Incoming Frames, Receiver Setup, In-band Setup, and Miscellaneous) for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:SETT? → 1
Note	

12.12.13 ETHernet:PORT<Pt>:FOLLow:FILTer

Syntax	ETHernet:PORT<Pt>:FOLLow:FILTer <enable>
Description	This command sets filter setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:FILT OFF
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:FILTer?
Description	This query returns whether or not filter setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:FILT? → 0
Note	

12.12.14 ETHernet:PORT<Pt>:FOLLow:THResholds

Syntax	ETHernet:PORT<Pt>:FOLLow:THResholds <enable>
Description	This command sets threshold setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:THR ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:THResholds?
Description	This query returns whether or not threshold setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:THR? → 1
Note	

12.12.15 ETHernet:PORT<Pt>:FOLLow:SYNCe

Syntax	ETHernet:PORT<Pt>:FOLLow:SYNCe <enable>
Description	This command sets SyncE setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:SYNC ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:SYNCe?
Description	This query returns whether or not SyncE setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:SYNC? → 1
Note	

12.12.16 ETHernet:PORT<Pt>:FOLLow:PTP

Syntax	ETHernet:PORT<Pt>:FOLLow:PTP <enable>
Description	This command sets Precision Time Protocol (IEEE 1588v2) setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:PTP ON
Note	

Syntax	ETHernet:PORT<Pt>:FOLLow:PTP?
Description	This query returns whether or not Precision Time Protocol (IEEE 1588v2) setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:PTP? → 1
Note	

12.12.17 ETHernet:PORT<Pt>:FOLLow:WAN

Syntax	ETHernet:PORT<Pt>:FOLLow:WAN <enable>
Description	This command sets WAN setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:PORT2:FOLL:WAN ON
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:FOLLow:WAN?
Description	This query returns whether or not WAN setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT2:FOLL:WAN? → 1
Note	This command can be used on V2.00 or later.

12.13 Stimuli

12.13.1 ETHernet:PORT<Pt>:STIMuli:ALARm

Syntax	ETHernet:PORT<Pt>:STIMuli:ALARm <alarm>
Description	This command sets the stimuli alarm state.
Parameters	<Pt> = Port number <alarm> = <CHARACTER PROGRAM DATA> NONE: No alarm LINK: No link REM: Remote fault LF: Local fault ¹ <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:STIM:ALAR LINK
Note	¹ Requires 10G as the active interface.

Syntax	ETHernet:PORT<Pt>:STIMuli:ALARm?
Description	This query returns the stimuli alarm state.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:ALAR? → LINK
Note	

12.13.2 ETHernet:PORT<Pt>:STIMuli:ERRor

Syntax	ETHernet:PORT<Pt>:STIMuli:ERRor <error>
Description	This command sets the stimuli error/violation type.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> NONE: No error IFG: IFG ¹ FCS: FCS PRE: Preamble PAUS: PAUSE frames IPCS: Wrong IP checksum FRAG: Fragmented IP L4CS: Wrong layer 4 checksum PRBS: PRBS bit error BSEQ: BER sequence error SYMB: Error symbol / Invalid 10G block ² FSymb: FEC symbol error <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:STIM:ERR L4CS
Note	¹ Not available when 10Gbps is enabled. ² When 10G is enabled, invalid 10G blocks are inserted instead of error symbols.

Syntax	ETHernet:PORT<Pt>:STIMuli:ERRor?
Description	This query returns the stimuli error/violation type.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:ERR? → L4CS
Note	

12.13.3 ETHernet:PORT<Pt>:STIMuli:EINSerTion

Syntax	ETHernet:PORT<Pt>:STIMuli:EINSerTion <mode>
Description	This command sets the stimuli error insertion mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Stimuli disabled MANual B1: Burst every 1 second B10: Burst every 10 seconds BE2: Burst · 1E-02 BE3: Burst · 1E-03 BE4: Burst · 1E-04 BE5: Burst · 1E-05 BE6: Burst · 1E-06 BE7: Burst · 1E-07 DEFault = OFF
Response	None.
Example	ETH:PORT1:STIM:EINS MAN
Note	If insertion is set to MANual, errors are inserted with SYST:STIM:INS. See section 2.3.22. BE2-BE7 can only be used with PRBS bit error.

Syntax	ETHernet:PORT<Pt>:STIMuli:EINSerTion?
Description	This query returns the stimuli error insertion mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:EINS? → MAN
Note	

12.13.4 ETHernet:PORT<Pt>:STIMuli:EBLength

Syntax	ETHernet:PORT<Pt>:STIMuli:EBLength <length>
Description	This command sets the error burst length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> MINimum = 1¹, MAXimum = 65535¹, DEFault = 1¹
Response	None.
Example	ETH:PORT1:STIM:EBL 128
Note	¹ The following error types have other MINimum, MAXimum and DEFault values. IFG: MINimum = 2, MAXimum = 100, DEFault = 2 FRAG: MINimum = 2, MAXimum = 5, DEFault = 2 PRBS: MINimum = 1, MAXimum = 255, DEFault = 1 BSEQ: MINimum = 2, MAXimum = 2, DEFault = 2

Syntax	ETHernet:PORT<Pt>:STIMuli:EBLength?
Description	This query returns the error burst length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:EBL? → 128
Note	

12.13.5 ETHernet:PORT<Pt>:STIMuli:FEC:ERRor:LANE

Syntax	ETHernet:PORT<Pt>:STIMuli:FEC:ERRor:LANE <content>
Description	This command sets the lane number.
Parameters	<Pt> = Port number <content> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B1111, DEFault=#B0000</i>
Response	None.
Example	ETH:PORT1:STIM:FEC:ERR:LANE #B1001 This command add error into lane 0 and 3.
Note	This command can be used on 100G(on MU110013A CFP2 or QSFP28 Adpt.)

Syntax	ETHernet:PORT<Pt>:STIMuli:FEC:ERRor:LANE?
Description	This query returns the lane number.
Parameter	<Pt> = Port number
Response	<content> = <BINARY NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:FEC:ERR:LANE? → #B0000
Note	This command can be used on 100G(on MU110013A CFP2 or QSFP28 Adpt.)

12.13.6 ETHernet:PORT<Pt>:STIMuli:WAN:ALARm

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:ALARm <alarm>
Description	This command sets the WAN stimuli alarm state.
Parameters	<Pt> = Port number <alarm> = <CHARACTER PROGRAM DATA> NONE: No alarm LOS: Loss of signal LOF: Loss of frame OOF: Out of frame STIM: Section/Mux section trace identifier mismatch LAIS: Line/Mux section - alarm indication signal LRDI: Line/Mux section - remote defect indicator PAIS: Path/Administrative unit - alarm indication signal PLOP: Path/Administrative unit - loss of pointer PTIM: Path/High-order path - trace identifier mismatch PPLM: Path/High-order path - payload label mismatch PUNEQ: Path/High-order path - unequipped PRDI: Path enhanced/High-order path - remote defect indicator LCD: Loss of code-group delineation <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:STIM:WAN:ALAR LOS
Note	¹ Only available when the WAN terminology is SONET. This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:ALARm?
Description	This query returns the WAN stimuli alarm state.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:WAN:ALAR? → LOS
Note	This command can be used on V2.00 or later.

12.13.7 ETHernet:PORT<Pt>:STIMuli:WAN:ERRor

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:ERRor <error>
Description	This command sets the WAN stimuli error/violation type.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> NONE: No error A1A2: Frame alignment word B1: B1 checksum byte B2: B2 checksum byte LREI: Line/Multiplex section - remote error indication B3: B3 checksum byte PREI: Path/High-order path - remote error indication <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:STIM:WAN:ERR B1
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:ERRor?
Description	This query returns the WAN stimuli error/violation type.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:WAN:ERR? → B1
Note	This command can be used on V2.00 or later.

12.13.8 ETHernet:PORT<Pt>:STIMuli:WAN:EINSection

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:EINSection <mode>
Description	This command sets the WAN stimuli error insertion mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Stimuli disabled MANual <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STIM:WAN:EINS MAN
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:EINSection?
Description	This query returns the WAN stimuli error insertion mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:WAN:EINS? → MAN
Note	This command can be used on V2.00 or later.

12.13.9 ETHernet:PORT<Pt>:STIMuli:WAN:EBLength

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:EBLength <length>
Description	This command sets the WAN stimuli error burst length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 8000, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STIM:WAN:EBL 128
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:STIMuli:WAN:EBLength?
Description	This query returns the WAN stimuli error burst length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:WAN:EBL? → 128
Note	This command can be used on V2.00 or later.

12.13.10 ETHernet:PORT<Pt>:STIMuli:DEViation

Syntax	ETHernet:PORT<Pt>:STIMuli:DEViation <deviation>
Description	This command sets the amount of deviation to apply to the transmitted Ethernet signal. Unit: ppm.
Parameters	<Pt> = Port number <deviation> = <NUMERIC PROGRAM DATA> MT1000A: <i>MINimum</i> =-100, <i>MAXimum</i> =100, <i>DEFault</i> =0 MT1100A: <i>MINimum</i> =-200.0, <i>MAXimum</i> =200.0, <i>DEFault</i> = 0
Response	None.
Example	ETH:PORT1:STIM:DEV 0
Note	

Syntax	ETHernet:PORT<Pt>:STIMuli:DEViation?
Description	This query returns the amount of deviation to apply to the transmitted Ethernet signal.
Parameter	<Pt> = Port number
Response	MT1000A: <deviation> = <NR1 NUMERIC RESPONSE DATA> MT1100A: <deviation> = <NR2 NUMERIC RESPONSE DATA>
Example	MT1000A: ETH:PORT1:STIM:DEV? → 0 MT1100A: ETH:PORT1:STIM:DEV? → 0.0
Note	

12.13.11 ETHernet:PORT<Pt>:STIMuli:PCS:ALARm

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ALARm <alarm>
Description	This command sets the stimuli alarm state.
Parameters	<Pt> = Port number <alarm> = <CHARACTER PROGRAM DATA> NONE: No alarm HIBER: High BER <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:ALAR HIBER
Note	¹ Requires 10G as the active interface. This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ALARm?
Description	This query returns the stimuli alarm state.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:ALAR? → HIBER
Note	This command can be used on 10/40/100G.

12.13.12 ETHernet:PORT<Pt>:STIMuli:PCS:ERRor

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERRor <error>
Description	This command sets the stimuli error/violation type.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> NONE: No error INVBT00: INVBT2D: INVBT33: INVBT66: INVSH00: INVSH11: INVMARKER: BIP: <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:ERR NONE
Note	This command can be used on 10/40/100G. INVMARKER and BIP cannot be used on 10G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERRor?
Description	This query returns the stimuli error/violation type.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:ERR? → NONE
Note	This command can be used on 10/40/100G.

12.13.13 ETHernet:PORT<Pt>:STIMuli:PCS:ERRor:LANE

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERRor:LANE <content>
Description	This command sets the lane number.
Parameters	<Pt> = Port number <content> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000000000000000000, MAXimum=#B111111111111111111, DE-Fault=#B1000000000000000000</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:ERR:LANE #B1001000001 This command add error into lane 0, 3 and 9.
Note	This command can be used on 40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERRor:LANE?
Description	This query returns the lane number.
Parameter	<Pt> = Port number
Response	<content> = <BINARY NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:ERR:LANE? → #B10010000010000000000
Note	This command can be used on 40/100G.

12.13.14 ETHernet:PORT<Pt>:STIMuli:PCS:EINSection

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EINSection <error>
Description	This command sets the PCS error insertion mode.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> OFF: Stimuli disabled MANual BURSt RATE ALTerNate ALL <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:EINS MAN
Note	This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EINSection?
Description	This query returns the PCS stimuli insertion mode.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:EINS? → MAN
Note	This command can be used on 10/40/100G.

12.13.15 ETHernet:PORT<Pt>:STIMuli:PCS:EBLength

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EBLength <length>
Description	This command sets the PCS stimuli error burst length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 256, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:EBL 128
Note	This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EBLength?
Description	This query returns the PCS stimuli error burst length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:EBL? → 128
Note	This command can be used on 10/40/100G.

12.13.16 ETHernet:PORT<Pt>:STIMuli:PCS:ERATe

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERATe <rate>
Description	This command sets the PCS stimuli error rate.
Parameters	<Pt> = Port number <rate> = <NUMERIC PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STIM:PCS:ERAT 1E-8
Note	This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ERATe?
Description	This query returns the PCS stimuli error rate.
Parameter	<Pt> = Port number
Response	<rate> = <NR3 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:ERAT? → 1E-8
Note	This command can be used on 10/40/100G.

12.13.17 ETHernet:PORT<Pt>:STIMuli:PCS:EELength

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EELength <length>
Description	This command sets the PCS stimuli alternate error length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 256, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:EEL 128
Note	This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:EELength?
Description	This query returns the PCS stimuli alternate error length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:EEL? → 128
Note	This command can be used on 10/40/100G.

12.13.18 ETHernet:PORT<Pt>:STIMuli:PCS:ENLength

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ENLength <length>
Description	This command sets the PCS stimuli alternate normal length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 312500000, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:ENL 128
Note	This command can be used on 10/40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:ENLength?
Description	This query returns the PCS stimuli alternate normal length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:ENL? → 128
Note	This command can be used on 10/40/100G.

12.13.19 ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:BIT

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:BIT <bit>
Description	This command sets the PCS stimuli skew bit.
Parameters	<Pt> = Port number <bit> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 8448, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:SKEW:BIT 128
Note	This command can be used on 40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:BIT?
Description	This query returns the PCS stimuli skew bit.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:SKEW:BIT? → 128
Note	This command can be used on 40/100G.

12.13.20 ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:TYPE

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:TYPE <error>
Description	This command sets the PCS stimuli skew type.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> TXLANE: PCS stimuli skew type Tx lane PHYLANE: PCS stimuli skew type physical lane <i>DEFault = TXLANE</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:SKEW:TYPE PHYLANE
Note	This command can be used on 40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:TYPE?
Description	This query returns the PCS stimuli skew type.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:SKEW:TYPE? → PHYLANE
Note	This command can be used on 40/100G.

12.13.21 ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:LANE

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:LANE <content>
Description	This command sets the PCS stimuli skew lane number.
Parameters	<Pt> = Port number <content> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000000000000000000, MAXimum=#B1111111111111111111, DEFault=#B1000000000000000000</i>
Response	None.
Example	ETH:PORT1:STIM:PCS:SKEW:LANE #B1001000001 This command add error into lane 0, 3 and 9.
Note	This command can be used on 40/100G.

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:LANE?
Description	This query returns the PCS stimuli skew lane number.
Parameter	<Pt> = Port number
Response	<content> = <BINARY NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:SKEW:LANE? → #B10010000010000000000
Note	This command can be used on 40/100G.

12.13.22 ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:NS?

Syntax	ETHernet:PORT<Pt>:STIMuli:PCS:SKEW:NS?
Description	This query returns the PCS stimuli skew(ns).
Parameter	<Pt> = Port number
Response	<content> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STIM:PCS:SKEW:NS? → 819.2
Note	This command can be used on 40/100G.

12.14 Result

12.14.1 EThernet:PORT<Pt>:IFETch?

Syntax	EThernet:PORT<Pt>:IFETch? <parameter>
Description	This query fetches an Ethernet interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Performance UTIL: Utilization. Response: <Min%>,<Max%>,<Avg%> THR: Throughput (bps). Response: <Min>,<Max>,<Avg> FRAT: Frame rate (fps). Response: <Min>,<Max>,<Avg> DEV: Deviation(ppm). Response: <Min>,<Max>,<Avg> Frame Stat TFR: Total frames. Response: <Count>,<Ratio> TGFR: Total good frames. Response: <Count>,<Ratio> UFR: Unicast frames. Response: <Count>,<Ratio> MFR: Multicast frames. Response: <Count>,<Ratio> BFR: Broadcast frames. Response: <Count>,<Ratio> PFR: Pause frames. Response: <Count>,<Ratio> MPLS Frame Stat MPFR: MPLS frames. Response: <Count>,<Ratio> MLM: MPLS level max. Response: <Count> MLMIN: MPLS level min. Response: <Count> EMFR: EoMPLS frames. Response: <Count>,<Ratio> LMPLS<Lv>: Last received MPLS Label, Priority and TTL. <Lv> = MPLS level. Response: <label>,<priority>,<TTL> VLAN Frame Stat VFR: VLAN frames. Response: <Count>,<Ratio> VLM: VLAN level max. Response: <Count> VLMIN: VLAN level min. Response: <Count> LVLAN<Lv>: Last received VLAN ID and priority. <Lv> = VLAN level. Response: <id>,<priority> MiM Frame Stat MIMFR: MiM frames. Response: <Count>,<Ratio> LBTAG: Last received B-TAG VLAN ID and priority Response: <id>,<priority> LITAG: Last received I-TAG service ID and priority Response: <id>,<priority> Frame Alarms & Errors TEFR: Total errored frames. Response: <Count>,<Ratio> FFR: Fragmented frames. Response: <Count>,<Ratio> UNFR: Undersized frames. Response: <Count>,<Ratio> OVFR: Oversized frames. Response: <Count>,<Ratio> FEFR: FCS errored frames. Response: <Count>,<Ratio> ESFR: Error symbol frames. Response: <Count>,<Ratio> OVRFCSErr: Oversized & FCS errored frames. Response: <Count>,<Ratio> IPCHKSUM: IP checksum errored frames. Response: <Count>,<Ratio> I10GB: Invalid 10G Blocks². Response: <Count>,<Ratio> COLL: Collisions. Response: <Count>,<Ratio> PV: Preamble violations. Response: <Count>,<Ratio> IV: IFG violations. Response: <Count>,<Ratio> LF: 10/40/100G Local Faults. Response: <Count>

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10GLF: Obsolete. For CMA 3000 backward compatibility only. Same as LF.
 RF: 10/40/100G Remote Faults. Response: <Count>
 10GRF: Obsolete. For CMA 3000 backward compatibility only. Same as RF.

Frame difference

TFRD: Total frames difference (Tx-Rx<ref-port>)³.
 Response: <Count>

Burst Stat

BUFR: Bursted frames. Response: <Count>,<Ratio>
 NOB: Number of bursts. Response: <Count>
 AVGB: Average burst size. Response: <Count>,<Bytes>
 MAXB: Maximum burst size. Response: <Count>,<Bytes>
 MINB: Minimum burst size. Response: <Count>,<Bytes>

Size Distribution (Rx)

R46: 46-63⁴. Response: <Count>,<Ratio>
 R64: 64-127. Response: <Count>,<Ratio>
 R128: 128-255. Response: <Count>,<Ratio>
 R256: 256-511. Response: <Count>,<Ratio>
 R512: 512-1023. Response: <Count>,<Ratio>
 R1024: 1024-1518. Response: <Count>,<Ratio>
 RJUM: Jumbo frames. Response: <Count>,<Ratio>
 FSIZ: Frame size (bytes). Response: <Min>,<Max>,<Avg>

Transmit Stat(Tx)

TTFR: Total frames. Response: <Count>
 TTGB: Total good bytes (bytes). Response: <Count>
 TUFR: Unicast frames. Response: <Count>
 TMFR: Multicast frames. Response: <Count>
 TBFR: Broadcast frames. Response: <Count>
 TFE: FCS errors. Response: <Count>
 TTE: Total errors. Response: <Count>
 T46: 46-63⁴. Response: <Count>
 T64: 64-127. Response: <Count>
 T128: 128-255. Response: <Count>
 T256: 256-511. Response: <Count>
 T512: 512-1023. Response: <Count>
 T1024: 1024-1518. Response: <Count>
 TJUM: Jumbo frames. Response: <Count>

Transmit Stat(Rx)

RTGB: Total good bytes (bytes). Response: <Count>
 Each parameter of the following items is described on **Frame Stat**.

- Total frames. → TFR
- Unicast frames. → UFR
- Multicast frames. → MFR
- Broadcast frames. → BFR

Each parameter of the following items is described on **Frame Alarms & Errors**.

- Total errored. → TEF
- FCS errored. → FEF

Each parameter of the following items is described on **Size Distribution(Rx)**.

- 46-63. → R46
- 64-127. → R64
- 128-255. → R128
- 256-511. → R256
- 512-1023. → R512

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- 1024-1518. → R1024

- Jumbo frames. → RJUM

Multistream Transmit Stat

STFx: Stream x frames. Response: <CountTx>,<CountRx>

STBx: Stream x bytes (bytes). Response: <CountTx>,<CountRx>

x = Stream number (1-16)

Multistream Throughput Stat

SFPSx: Stream x frames per second (fps). Response: <CountTx>,<CountRx>

SBPSx: Stream x bits per seconds (bps). Response: <CountTx>,<CountRx>

x = Stream number (1-16)

Multistream Frame Loss

SFLx: Stream x frame loss. Response: <Count>,<Ratio>

x = Stream number (1-16)

Multistream Latency/JitterSLx: Latency (μ s). Response: <Min>,<Max>,<Avg>SJx: Jitter (μ s). Response: <Min>,<Max>,<Avg>

x = Stream number (1-16)

BER - Alarms & Errors

LOS: Loss of signal. Response: <Count>,<Ratio>

NLS: No link Seconds. Response: <Count>,<Ratio>

RFS: Remote fault seconds. Response: <Count>,<Ratio>

BPBC: Pattern bit count. Response: <Count>

BPE: Pattern errors. Response: <Count>,<Ratio>

PSA: PRBS Sync Alarm.⁶ Response: <Count>

BSE: Sequence errors. Response: <Count>

BSSL: Sequence sync. Lost. Response: <Count>

BFL: Frame loss. Response: <Count>

BFLS: Frame loss seconds. Response: <Count>

SDMD: Maximum disruption. Response: <Microseconds>

SDAD: Average disruption. Response: <Microseconds>,<Count>

MES: M.2100 ES. Response: <Seconds>,<Ratio>

MSES: M.2100 SES. Response: <Seconds>,<Ratio>

MALS: M.2100 ALS. Response: <Seconds>,<Ratio>

MUAT: M.2100 UAT. Response: <Seconds>,<Ratio>

MAVT: M.2100 AVT. Response: <Seconds>,<Ratio>

MEFS: M.2100 EFS. Response: <Seconds>,<Ratio>

TDL: Throughput Data Layer (bps). Response: <Min>,<Max>,<Avg>

TNL: Throughput Network Layer (bps). Response: <Min>,<Max>,<Avg>

TLL: Throughput Link Layer (bps). Response: <Min>,<Max>,<Avg>

TPPL: Throughput Physical Layer without Preamble (bps).

Response: <Min>,<Max>,<Avg>

TPL: Throughput Physical Layer (bps). Response: <Min>,<Max>,<Avg>

TUL: Throughput Utilization Layer (bps). Response: <Min>,<Max>,<Avg>

WAN - Alarms

WLOS: Loss of signal. Response: <Seconds>,<Ratio>

WLOF: Loss of frame. Response: <Seconds>,<Ratio>

WSEF: WSEF/OOF -Severely errored frame/Out of frame. Response: <Seconds>,<Ratio>

WSTIM: Section/Mux section - Trace identifier mismatch. Response: <Seconds>,<Ratio>

WLAIS: Line/Mux section - alarm indication signal. Response: <Seconds>,<Ratio>

WLRDI: Line/Mux section - remote defect indicator. Response: <Seconds>,<Ratio>

WPAIS: Path/Administrative unit - alarm indication signal.

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Response: <Seconds>,<Ratio>
 WPLOP: Path/Administrative unit - loss of pointer. Response: <Seconds>,<Ratio>
 WPTIM: Path/High-order path - trace Identifier mismatch.
 Response: <Seconds>,<Ratio>
 WPPLM: Path/High-order path - payload label mismatch. Response: <Seconds>,<Ratio>
 WPUNEQ: Path/High-order path - unequipped. Response: <Seconds>,<Ratio>
 WPRDI: Path/High-order path - remote defect indication.
 Response: <Seconds>,<Ratio>
 WPLCD: Loss of code-group delineation. Response: <Seconds>,<Ratio>

WAN - Errors
 WA1A2: Response: <Count>,<Ratio>
 WB1: Response: <Count>,<Ratio>
 WB2: Response: <Count>,<Ratio>
 WLREI: Line/Mux section - remote error indication. Response: <Count>,<Ratio>
 WB3: Response: <Count>,<Ratio>
 WPREI: Path/High-order path - remote error indication. Response: <Count>,<Ratio>

WAN - Mux quality
 WMFES: Mux forward ES. Response: <Count>,<Ratio>
 WMFSES: Mux forward SES. Response: <Count>,<Ratio>
 WMFUNAV: Mux forward UNAV. Response: <Count>,<Ratio>
 WMBES: Mux backward ES. Response: <Count>,<Ratio>
 WMBSES: Mux backward SES. Response: <Count>,<Ratio>
 WMBUNAV: Mux backward UNAV Response: <Count>,<Ratio>

WAN - SPE quality
 WSFES: SPE forward ES. Response: <Count>,<Ratio>
 WSFSES: SPE forward SES. Response: <Count>,<Ratio>
 WSFUNAV: SPE forward UNAV. Response: <Count>,<Ratio>
 WSBES: SPE backward ES. Response: <Count>,<Ratio>
 WSBSES: SPE backward SES. Response: <Count>,<Ratio>
 WSBUNAV: SPE backward UNAV Response: <Count>,<Ratio>

SyncE - Synchronous Ethernet
 QLD: Quality level distribution. Response: A percentage value for each of the 16 QLs
 <Count>,...
 QLR: Quality level reports. Response: <Count>,<Rate>
 QLU: Quality level unavailable time (SSF). Response: <Seconds>,<Ratio>
 QLT: Quality level transmission count. Response: <Count>,<Ratio>

IEEE1588v2 PTP - Precision Time Protocol
 PAC: Announce count. Response: <CountTx>,<CountRx>
 PSC: Sync count. Response: <CountTx>,<CountRx>
 PFUC: Follow up count. Response: <CountTx>,<CountRx>
 PDRC: Delay request count. Response: <CountTx>,<CountRx>
 PDRESC: Delay response count. Response: <CountTx>,<CountRx>
 PPDRC: Peer delay request count. Response: <CountTx>,<CountRx>
 PPDRESC: Peer delay response count. Response: <CountTx>,<CountRx>
 PPDFC: Peer delay follow-up count. Response: <CountTx>,<CountRx>
 SIGN: Signalling messages count. Response: <CountTx>,<CountRx>
 MGM: Management messages count. Response: <CountTx>,<CountRx>
 PO: Offset. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>
 PAO: Absolute offset. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>
 POD: Offset deviation. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>
 POV: Offset variance. Unit: (seconds)². Response: <Min>,<Max>,<Avg>
 PMPD: Mean path delay. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>

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PPMPD: Peer mean path delay. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>
 PPDV: Path delay variation. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>
 PSIRCC: Signalling INTERFACE RATE TLV changed count. Response: <Count>
 PICST: IEEE Clock State Transitions. Response: <Count>
 PISTE: IEEE State Transition Events. Response: <Count>
 PIF: IEEE Faults. Response: <Count>
 PICGC: IEEE Changes in Grandmaster Clock. Response: <Count>
 PGW: GPS vs Wall clock. Unit: Nano seconds. Response: <Min>,<Max>,<Avg>

OAM 802.ah

OINF: Information count. Response: <CountTx>,<CountRx>
 OEVENT: Event count. Response: <CountTx>,<CountRx>
 OVREQ: Variable Request count. Response: <CountTx>,<CountRx>
 OVRES: Variable response count. Response: <CountTx>,<CountRx>
 OLBACK: Loopback count. Response: <CountTx>,<CountRx>
 ODUP: Duplicate count. Response: <CountTx>,<CountRx>
 OUNS: Unsupported count. Response: <CountTx>,<CountRx>
 OORG: Organization count. Response: <CountTx>,<CountRx>

OAM 802.ag and Y.1731

OCCM: CCM count. Response: <CountTx>,<CountRx>
 OLBM: LBM count. Response: <CountTx>,<CountRx>
 OLBR: LBR count. Response: <CountTx>,<CountRx>
 OLTM: LTM count. Response: <CountTx>,<CountRx>
 OLTR: LTR count. Response: <CountTx>,<CountRx>
 OOTH: Other count. Response: <CountTx>,<CountRx>
 OTOT: Total count. Response: <CountTx>,<CountRx>

Sync Test

BRATE: Bitrate⁵. Unit: bps. Response: <Count>
 BRATED: Bitrate difference⁵. Unit: ppb. Response: <Count>
 PHASE: Phase error result⁵. Unit: Nano seconds. Response: <Seconds>
 PHASEAVG: Average phase error result⁵. Unit: Nano seconds. Response: <Seconds>
 PHASEMIN: Minimum phase error result⁵. Unit: Nano seconds. Response: <Seconds>
 PHASEMAX: Maximum phase error result⁵. Unit: Nano seconds. Response: <Seconds>
 FILTERED: Filtered TE result⁵. Unit: Nano seconds. Response: <Seconds>
 FILTEREDAVG: Average filtered TE result⁵. Unit: Nano seconds. Response: <Seconds>
 FILTEREDMIN: Minimum filtered TE result⁵. Unit: Nano seconds. Response: <Seconds>
 FILTEREDMAX: Maximum filtered TE result⁵. Unit: Nano seconds. Response: <Seconds>
 PPS: 1PPS deviation result⁵. Unit: Nano seconds. Response: <Seconds>
 PPSAVG: Average 1PPS deviation average result⁵. Unit: Nano seconds. Response: <Seconds>
 PPSMIN: Minimum 1PPS deviation result⁵. Unit: Nano seconds. Response: <Seconds>
 PPSMAX: Maximum 1PPS deviation result⁵. Unit: Nano seconds. Response: <Seconds>
 SYNCAVG: Average sync message transmission time⁵. Unit: Nano seconds. Response: <Seconds>
 SYNCMIN: Minimum sync message transmission time⁵. Unit: Nano seconds. Response: <Seconds>
 SYNCMAX: Maximum sync message transmission time⁵. Unit: Nano seconds. Response: <Seconds>
 FOLLOWAVG: Average followup message transmission time⁵. Unit: Nano seconds. Response: <Seconds>
 FOLLOWMIN: Minimum followup message transmission time⁵. Unit: Nano seconds. Response: <Seconds>
 FOLLOWMAX: Maximum followup message transmission time⁵. Unit: Nano seconds. Response: <Seconds>

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	DELAYAVG: Average delay request Message transmission time⁵. Unit: Nano seconds. Response: <Seconds> DELAYMIN: Minimum delay request Message transmission time⁵. Unit: Nano seconds. Response: <Seconds> DELAYMAX: Maximum delay request Message transmission time⁵. Unit: Nano seconds. Response: <Seconds> CTE: cTE result⁵. Unit: Nano seconds. Response: <Seconds> DTE: dTE result⁵. Unit: Nano seconds. Response: <Seconds> MAXTE: Maximum TE result⁵. Unit: Nano seconds. Response: <Seconds> CTE1: cTE1 result⁵. Unit: Nano seconds. Response: <Seconds> CTE4: cTE4 result⁵. Unit: Nano seconds. Response: <Seconds> MAXTE1: Max—TE1— result⁵. Unit: Nano seconds. Response: <Seconds> MAXTE4: Max—TE4— result⁵. Unit: Nano seconds. Response: <Seconds> TERR: Terr result⁵. Unit: Nano seconds. Response: <Seconds> TERRABSMAX: Absolute maximum Terr result⁵. Unit: Nano seconds. Response: <Seconds> TERRMIN: Minimum Terr result⁵. Unit: Nano seconds. Response: <Seconds> TERRMAX: Maximum Terr result⁵. Unit: Nano seconds. Response: <Seconds> PCS Alarms & Errors ISH: Invalid Sync Header. Response: <Lane>⁷,<Total> IAM: Invalid Alignment Marker. Response: <Lane>⁷,<Total> BIP: BIP Error. (bit) Response: <Lane>⁷,<Total> IBLOCK: Invalid Block. Response: <Count> HBER: High BER. Response: <Count>,<Ratio> PCS Status SHLOCK: Sync header Lock.(LOBL) 0: No Alarm, 1: Alarm. <Lane>⁷ AMLOCK: Align Marker Lock.(LOAML) 0: No Alarm, 1: Alarm. <Lane>⁷ MMAP: Marker Map. <Lane>⁷ RSKEW: Relative Skew. Unit: Nano seconds. <Lane>⁷ ALIGN: Alignment Status.(LOA) <Lane>⁷ FEC Errors FECCORCW: FEC Corrected Codewords. Response: <Count> FECUCORCW: FEC Uncorrected Codewords. Response: <Count> FECSYMERR: FEC Symbol errors. Response: <Count> FECSYMERRRATE: FEC Symbol errors rate. Response: <Count> FECLOFA: Loss of Alignment. Response: <Count> FECMMAP: FEC Lane Marker. <Lane>⁷ Conditions LOSTEXTREF: External reference 10MHz clock. Response: <Count>,<Ratio> LOSTREF1PPS: External 1PPS . Response: <Count>,<Ratio> LOSTGPS: GPS. Response: <Count>,<Ratio>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Examples	ETH:PORT1:IFET? (TGFR) → (6400,0.853) ETH:PORT1:IFET? (UFR,BFR) → (251923,0.900),(27992,0.100)
Notes	This command fetches the results from the interval selected using the MEASurement:SEtup:SElect command (see section 18.2.2). ¹ Results are only available when the WAN terminology is SONET. ² Results are only available at 10G. ³ <ref-port> is set with the command ETH:PORT1:TFRD:PSEL

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- ⁴ Result are only available at MPLS/IP over OTN.
⁵ Result are only available on the Sync Test application.
⁶ Result are only available when cross pattern by Frame by Frame is available.
⁷ <Lane> show the results of each lane.
Example: 10GBE → (0), 40GBE → (0,0,0,0)
If the requested result is not available, NaN (section 1.6.1) is returned.
If there is one or more results, the last ", " is always removed.

12.14.2 ETHernet:PORT<Pt>:TFETch?

Syntax	ETHernet:PORT<Pt>:TFETch? <parameter>
Description	This query fetches thresholds for a Ethernet interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> Performance UTIL: Utilization. THR: Throughput. Frame Stat UFR: Unicast frames. MFR: Multicast frames. BFR: Broadcast frames. PFR: Pause frames. FFR: Fragmented frames. UNFR: Undersized frames. OVFR: Oversized frames. FEFR: FCS errored frames. OVRFCSEERR: Oversized & FCS errored frames. IPCHKSUM: IP checksum errored frames. COLL: Collisions. PV: Preamble violations. IV: IFG violations. TEFR: Total errored frames. Transmit Stat TFRD: Total frames difference (Tx-Rx<ref-port>)¹. BER - Alarms & Errors BPE: Pattern errors. BSE: Sequence errors. SDMD: Maximum disruption. Multistream Frame Loss SFLx: Stream x frame loss. x = Stream number (1-16) Multistream Latency/Jitter SLx: Latency (μs). SJx: Jitter (μs). x = Stream number (1-16) Sync Test PHASE: 1PPS phase error². FILTERED: Filtered TE². PPS: 1PPS deviation². SYNC: Sync message transmission time². FOLLOW: Followup message transmission time². DELAY: Delay request message transmission time².
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List <result> = <NR1 NUMERIC RESPONSE DATA> 0: Pass 1: Fail
Example	ETH:PORT1:TFET? (TEFR,UTIL,TFRD) → (1),(1),(1,0)

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Note	This query fetches from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2). ¹ <ref-port> is set with the command ETH:PORT1:TFRD:PSEL ² Result are only available on the Sync Test application.
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12.14.3 ETHernet:PORT<Pt>:TFRDiffrence:PSELection

Syntax	ETHernet:PORT<Pt>:TFRDiffrence:PSELection <port>
Description	This command sets the Rx port number for total frames difference.
Parameters	<Pt> = Port number <port> = <CHARACTER PROGRAM DATA> PORTx: Rx port number x
Response	None.
Example	ETH:PORT1:TFRD:PSEL PORT1
Note	

Syntax	ETHernet:PORT<Pt>:TFRDiffrence:PSELection?
Description	This query returns the Rx port number for total frames difference.
Parameter	<Pt> = Port number
Response	<port> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:TFRD:PSEL? → PORT1
Note	

12.15 Status

12.15.1 ETHernet:STATus:PORT<Pt>:AESummary[:EVENT]?

Syntax	ETHernet:STATus:PORT<Pt>:AESummary[:EVENT]?
Description	This query returns the Ethernet alarms and errors summary event register. The content of this event register is summarized in DB6 of the STATus:INterface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 (4) = WAN physical and Line/Mux alarm summary ¹ DB4 (8) = WAN path/High-order alarm summary ¹ DB5 (16) = WAN error summary ¹ DB6 (32) = PCS alarm summary ² DB7 (64) = PCS error summary ² DB8 (128) = Sync Test alarm summary ³ DB9 (256) = FEC error summary ⁴ DB10 - DB16 = NOT USED
Example	ETH:STAT:PORT1:AES? → 1
Note	¹ WAN errors/alarms are only valid if WAN is enabled. ² PCS errors/alarms are only available at 40/100G. ³ Sync Test alarms are only valid if the Sync Test application. ⁴ FEC errors are only available at 100G(on MU110013A CFP2 or QSFP28 Adpt.).

12.15.2 ETHernet:STATus:PORT<Pt>:AESummary:CONDition?

Syntax	ETHernet:STATus:PORT<Pt>:AESummary:CONDition?
Description	This query returns the Ethernet alarms and errors summary condition register. DB1/DB3/DB4/DB6/DB8 is summary of ETHernet:STATus:PORT<Pt>:ALARm<section>[:EVENT]? DB2/DB5/DB7/DB9 is summary of ETHernet:STATus:PORT<Pt>:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as ETHernet:STATus:PORT<Pt>:AESummary[:EVENT]?
Example	ETH:STAT:PORT1:AES:COND? → 1
Note	

12.15.3 ETHernet:STATus:PORT<Pt>:ALARm<section>[:EVENT]?

Syntax	ETHernet:STATus:PORT<Pt>:ALARm<section>[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1/DB3/DB4/DB6/DB8 of the ETHernet:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Ethernet(1), WAN Physical and Line/Mux(2), WAN Path/High-order(3), PCS(4), or Sync Test(5)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = No link DB2 (2) = Remote fault DB3 (4) = Threshold(s) exceeded DB4 (8) = BER alarms ¹ DB5 (16) = Loss of signal DB6 - DB8 = NOT USED

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	DB9 (256) = SyncE Timeout alarm DB10 (512) = PTP Synchronization Timeout alarm DB11 (1024) = Timing Source alarm DB12 - DB16 = NOT USED <section> = 2: ² DB1 (1) = Loss of signal DB2 (2) = Loss of frame DB3 (4) = Severely errored frame/Out of frame DB4 (8) = Section/Mux section - trace identifier mismatch DB5 (16) = Line/Mux section - alarm indication signal DB6 (32) = Line/Mux section - remote defect indicator DB7 - DB16 = NOT USED <section> = 3: ² DB1 (1) = Path/Administrative unit - alarm indication signal DB2 (2) = Path/Administrative unit - loss of pointer DB3 (4) = Path/High-order path - trace Identifier mismatch DB4 (8) = Path/High-order path - payload label mismatch DB5 (16) = Path/High-order path - unequipped DB6 (32) = Path/High-order path - remote defect indication DB7 (64) = Path - enhanced remote defect indication payload ³ DB8 (128) = Path - enhanced remote defect indication server ³ DB9 (256) = Path - enhanced remote defect indication connectivity ³ DB10 (512) = Loss of code-group delineation DB11 (1024) = Loss of signal synchronization DB12 - DB16 = NOT USED <section> = 4: DB1 (1) = High BER DB2 (2) = Alignment Status ⁴ DB3 - DB16 = NOT USED <section> = 5: ⁵ DB1 (1) = Ext.ref. clock DB2 (2) = Ext. ref. 1PPS DB3 (4) = 1PPS DB4 - DB16 = NOT USED
Example	ETH:STAT:PORT1:ALAR1? → 1
Notes	¹ BER Alarms are only valid if BER is enabled. ² WAN Alarms are only valid if WAN is enabled. ³ Only available when the WAN terminology is SONET. ⁴ Only available at 40/100G. ⁵ Only available on Sync Test application.

12.15.4 ETHernet:STATus:PORT<Pt>:ALARm<section>:CONDition?

Syntax	ETHernet:STATus:PORT<Pt>:ALARm<section>:CONDition?
Description	This query returns the alarms condition register.
Parameters	<Pt> = Port number <section> = Ethernet(1) , WAN Physical and Line/Mux(2), WAN Path/High-order(3), PCS(4), or Sync Test(5)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as ETHernet:STATus:PORT<Pt>:ALARm<section>[:EVENTt]?
Example	ETH:STAT:PORT1:ALAR1:COND? → 1
Note	

12.15.5 EThernet:STATus:PORT<Pt>:ERRor<section>[:EVENT]?

Syntax	ETHerNet:STATus:PORT<Pt>:ERRor<section>[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB2/DB5/DB7/DB9 of the ETHerNet:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Ethernet(1), WAN(2), PCS(3) or FEC(4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> <section> = 1: DB1 (1) = Errored frames DB2 (2) = Multistream frame loss ¹ DB3 (4) = Bit errors DB4 - DB16 = NOT USED <section> = 2: ² DB1 (1) = A1A2 DB2 (2) = B1 DB3 (4) = B2 DB4 (8) = Line/Mux section REI DB5 (16) = B3 DB6 (32) = Path/High-order path REI DB7 (64) = STS-192C/AU4-64C positive DB8 (128) = STS-192C/AU4-64C negative DB9 - DB16 = NOT USED <section> = 3: ³ DB1 (1) = Invalid Sync header DB2 (2) = Invalid Align Marker DB3 (4) = Invalid Block DB4 (8) = BIP Error DB5 - DB16 = NOT USED <section> = 4: ⁴ DB1 (1) = LOFA DB2 (2) = FEC Corrected Codewords DB3 (4) = FEC Uncorrected Codewords DB4 (8) = FEC Symbol Errors DB5 (16) = LOFAML DB6 - DB16 = NOT USED
Example	ETH:STAT:PORT1:ERR1? → 1
Notes	¹ Multistream frame loss is only valid when multistream frame loss is enabled and a measurement is running. ² WAN errors are only valid if WAN is enabled. ³ Only available at 40/100G. ⁴ Only available at 100G(on MU110013A CFP2 or QSFP28 Adpt.).

12.15.6 EThernet:STATus:PORT<Pt>:ERRor<section>:CONDition?

Syntax	ETHerNet:STATus:PORT<Pt>:ERRor<section>:CONDition?
Description	This query returns the errors condition register.
Parameters	<Pt> = Port number <section> = Ethernet(1), WAN(2), PCS(3), FEC(4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> Same as ETHerNet:STATus:PORT<Pt>:ERRor<section>[:EVENT]?
Example	ETH:STAT:PORT1:ERR1:COND? → 1
Note	

12.15.7 ETHernet:STATus:PORT<Pt>:LINK?

Syntax	ETHernet:STATus:PORT<Pt>:LINK?
Description	This query returns if there is link.
Parameter	<Pt> = Port number
Response	<link> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:LINK? → 1
Note	

12.15.8 ETHernet:STATus:PORT<Pt>:INTerface?

Syntax	ETHernet:STATus:PORT<Pt>:INTerface?
Description	This query returns the current type of interface.
Parameter	<Pt> = Port number
Response	<interface> = <STRING RESPONSE DATA> "ELECTRICAL" "OPTICAL" "N/A": No link
Example	ETH:STAT:PORT1:INT? → "ELECTRICAL"
Note	

12.15.9 ETHernet:STATus:PORT<Pt>:FRAMes?

Syntax	ETHernet:STATus:PORT<Pt>:FRAMes?
Description	This query returns if frames are present.
Parameter	<Pt> = Port number
Response	<frames> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:FRAM? → 1
Note	

12.15.10 ETHernet:STATus:PORT<Pt>:MPLS?

Syntax	ETHernet:STATus:PORT<Pt>:MPLS?
Description	This query returns if any frames with MPLS and Ethernet over MPLS are present.
Parameter	<Pt> = Port number
Response	<mpls> = <NR1 NUMERIC RESPONSE DATA> <eompls> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:MPLS? → 1,1
Note	

12.15.11 ETHernet:STATus:PORT<Pt>:VLAN?

Syntax	ETHernet:STATus:PORT<Pt>:VLAN?
Description	This query returns if any frames with VLAN are present.
Parameter	<Pt> = Port number
Response	<vlan> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:VLAN? → 1
Note	

12.15.12 EThernet:STATus:PORT<Pt>:SPeet?

Syntax	EThernet:STATus:PORT<Pt>:SPeet?
Description	This query returns the current speed. Unit: Mbps.
Parameter	<Pt> = Port number
Response	<speed> = <NR1 NUMERIC RESPONSE DATA> 0 means no link.
Example	ETH:STAT:PORT1:SP? → 100
Note	

12.15.13 EThernet:STATus:PORT<Pt>:DUPLex?

Syntax	EThernet:STATus:PORT<Pt>:DUPLex?
Description	This query returns the current duplex type.
Parameter	<Pt> = Port number
Response	<duplex> = <STRING RESPONSE DATA> "HDX": half duplex "FDX": full duplex "N/A": No link
Example	ETH:STAT:PORT1:DUPL? → "HDX"
Note	

12.15.14 EThernet:STATus:PORT<Pt>:MDI?

Syntax	EThernet:STATus:PORT<Pt>:MDI?
Description	This query returns the current MDI type.
Parameter	<Pt> = Port number
Response	<mdi> = <STRING RESPONSE DATA> "MDI" "MDIX" "N/A": No link
Example	ETH:STAT:PORT1:MDI? → "MDI"
Note	

12.15.15 EThernet:STATus:PORT<Pt>:L10G?

Syntax	EThernet:STATus:PORT<Pt>:L10G?
Description	Obsolete. For CMA 3000 backward compatibility only. Same as EThernet:STATus:PORT<Pt>:LFS?
Parameter	<Pt> = Port number
Response	<lf> = <BOOLEAN RESPONSE DATA> <rf> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:L10G? → 1, 0
Note	

12.15.16 EThernet:STATus:PORT<Pt>:LFS?

Syntax	EThernet:STATus:PORT<Pt>:LFS?
Description	This query returns if any Local faults or Remote faults are present.
Parameter	<Pt> = Port number
Response	<lf> = <BOOLEAN RESPONSE DATA> <rf> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:LFS? → 1, 0
Note	

12.15.17 EThernet:STaTus:PORT<Pt>:ANComplete?

Syntax	EThernet:STaTus:PORT<Pt>:ANComplete?
Description	This query returns if auto negotiation is completed.
Parameter	<Pt> = Port number
Response	<ancomp> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:ANC? → 1
Note	

12.15.18 EThernet:STaTus:PORT<Pt>:PCAPable?

Syntax	EThernet:STaTus:PORT<Pt>:PCAPable?
Description	This query returns the Link Partner Ability - Pause Capable
Parameter	<Pt> = Port number
Response	<pcable> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:PCAP? → 1
Note	EThernet:STaTus:PORT<Pt>:ANComplete? must be 1 before this query is valid.

12.15.19 EThernet:STaTus:PORT<Pt>:APRequest?

Syntax	EThernet:STaTus:PORT<Pt>:APRequest?
Description	This query returns the Link Partner Abilities - Asymmetric Pause Request
Parameter	<Pt> = Port number
Response	<apreq> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:APR? → 1
Note	EThernet:STaTus:PORT<Pt>:ANComplete? must be 1 before this query is valid.

12.15.20 EThernet:STaTus:PORT<Pt>:RFAult?

Syntax	EThernet:STaTus:PORT<Pt>:RFAult?
Description	This query returns the Link Partner Abilities - Remote Fault
Parameter	<Pt> = Port number
Response	<rfault> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:RFA? → 1
Note	EThernet:STaTus:PORT<Pt>:ANComplete? must be 1 before this query is valid.

12.15.21 EThernet:STaTus:PORT<Pt>:LCLock?

Syntax	EThernet:STaTus:PORT<Pt>:LCLock?
Description	This query returns the local clock status at electrical gigabit connection.
Parameter	<Pt> = Port number
Response	<interface> = <STRING RESPONSE DATA> "Slave" "Master" "Fault" "N/A": No link or not electrical gigabit connection.
Example	ETH:STAT:PORT1:LCL? → "Master"
Notes	EThernet:STaTus:PORT<Pt>:ANComplete? must be 1 before this query is valid.

12.15.22 ETHernet:STATus:PORT<Pt>:SADuplex?

Syntax	ETHernet:STATus:PORT<Pt>:SADuplex?
Description	This query returns the Link partner ability - speed and duplex
Parameter	<Pt> = Port number
Response	{(<sad>),}* = <EXPRESSION RESPONSE DATA> 10MH: 10Mbps half duplex 10MF: 10Mbps full duplex 100MH: 100Mbps half duplex 100MF: 100Mbps full duplex 1GH: 1Gbps half duplex 1GF: 1Gbps full duplex
Example	ETH:STAT:PORT1:SAD? → (10MH,10MF,100MH,100MF)
Note	ETHernet:STATus:PORT<Pt>:ANComplete? must be 1 before this query is valid.

12.15.23 ETHernet:STATus:PORT<Pt>:UTILization?

Syntax	ETHernet:STATus:PORT<Pt>:UTILization?
Description	This query returns the current utilization. Unit: %.
Parameter	<Pt> = Port number
Response	<util> = <NR2 NUMERIC RESPONSE DATA> <threshold> = <BOOLEAN RESPONSE DATA> 1: Threshold exceeded 0: Threshold not exceeded / disabled
Example	ETH:STAT:PORT1:UTIL? → 97.1, 0
Note	

12.15.24 ETHernet:STATus:PORT<Pt>:THRoughput?

Syntax	ETHernet:STATus:PORT<Pt>:THRoughput?
Description	This query returns the current throughput. Unit: bps.
Parameter	<Pt> = Port number
Response	<thr> = <NR2 NUMERIC RESPONSE DATA> <threshold> = <BOOLEAN RESPONSE DATA> 1: Threshold exceeded 0: Threshold not exceeded / disabled
Example	ETH:STAT:PORT1:THR? → 97100000, 0
Note	

12.15.25 ETHernet:STATus:PORT<Pt>:EFRames?

Syntax	ETHernet:STATus:PORT<Pt>:EFRames?
Description	This query returns the current amount of errored frames. Unit: %.
Parameter	<Pt> = Port number
Response	<errored> = <NR2 NUMERIC RESPONSE DATA> <threshold> = <BOOLEAN RESPONSE DATA> 1: Threshold exceeded 0: Threshold not exceeded / disabled
Example	ETH:STAT:PORT1:EFR? → 0.5, 0
Note	

12.15.26 ETHernet:STaTus:PORT<Pt>:PCS:SHLock?

Syntax	ETHernet:STaTus:PORT<Pt>:PCS:SHLock?
Description	This query returns whether or not 40/100G PCS sync header is locked.
Parameter	<Pt> = Port number
Response	<shlock> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:PCS:SHL? → 1
Note	This command can be used on V2.00 or later.

12.15.27 ETHernet:STaTus:PORT<Pt>:PCS:AMLock?

Syntax	ETHernet:STaTus:PORT<Pt>:PCS:AMLock?
Description	This query returns whether or not 40/100G PCS alignment marker is locked.
Parameter	<Pt> = Port number
Response	<shlock> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:PCS:AML? → 1
Note	This command can be used on V2.00 or later.

12.15.28 ETHernet:STaTus:PORT<Pt>:TIMing?

Syntax	ETHernet:STaTus:PORT<Pt>:TIMing?
Description	This query returns the timing status.
Parameter	<Pt> = Port number
Response	<bitRate> = <NR1 NUMERIC RESPONSE DATA> Unit: bps. <bitRateDeviation> = <NR1 NUMERIC RESPONSE DATA> Unit: ppb.
Example	ETH:STAT:PORT1:TIM? → 10000001000,100
Note	

12.15.29 ETHernet:STaTus:PORT<Pt>:TIMing:SOURce?

Syntax	ETHernet:STaTus:PORT<Pt>:TIMing:SOURce?
Description	This query returns the status of the timing source.
Parameter	<Pt> = Port number
Response	<timingSrcProblem> = <BOOLEAN RESPONSE DATA> 1 is returned if the timing signal is absent.
Example	ETH:STAT:PORT1:TIM:SOUR? → 0
Note	

12.15.30 ETHernet:STaTus:PORT<Pt>:SYNCe?

Syntax	ETHernet:STaTus:PORT<Pt>:SYNCe?
Description	This query returns the status of the SyncE.
Parameter	<Pt> = Port number
Response	<qualityLevel> = <NR1 NUMERIC RESPONSE DATA> <qlTimeout> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:SYNC? → 15,0
Note	

12.15.31 EThernet:STaTus:PORT<Pt>:PTP:LCLock?

Syntax	EThernet:STaTus:PORT<Pt>:PTP:LCLock?
Description	This query returns the status of the PTP clock.
Parameter	<Pt> = Port number
Response	<clockState> = <STRING RESPONSE DATA> "INITIALIZING", "FAULTY", "DISABLED", "LISTENING", "PRE_MASTER", "MASTER", "PASSIVE", "UNCALIBRATED" or "SLAVE".
	<offset> = <NR2 NUMERIC RESPONSE DATA> Unit: Seconds.
	<meanPathDelay> = <NR2 NUMERIC RESPONSE DATA> Unit: Seconds.
	<delayAsymmetry> = <NR2 NUMERIC RESPONSE DATA> Unit: Seconds.
Example	ETH:STAT:PORT1:PTP:LCL? → "Listening",0.001002003,0.123456789,0.000000100
Note	

12.15.32 EThernet:STaTus:PORT<Pt>:PTP:WCLock?

Syntax	EThernet:STaTus:PORT<Pt>:PTP:WCLock?
Description	This query returns the status of the PTP wall clock.
Parameter	<Pt> = Port number (1-2)
Response	<dateTime> = <STRING RESPONSE DATA> Format: "YYYY-MM-DDThh:mm:ss"
	<offset> = <NR1 NUMERIC RESPONSE DATA> Offset from UTC time given by an attached GPS receiver. Unit: Nano seconds.
Example	ETH:STAT:PORT1:PTP:WCL? → "2011-09-16T15:16:17",2345
Note	

12.15.33 EThernet:STaTus:PORT<Pt>:PTP:PCLock?

Syntax	EThernet:STaTus:PORT<Pt>:PTP:PCLock?
Description	This query returns the properties of the PTP parent clock.
Parameter	<Pt> = Port number
Response	<parentId> = <STRING RESPONSE DATA>
	<parentPort> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:STAT:PORT1:PTP:PCL? → "00-00-00-00-00-00-00-00",0
Note	

12.15.34 EThernet:STaTus:PORT<Pt>:PTP:GCLock?

Syntax	EThernet:STaTus:PORT<Pt>:PTP:GCLock?
Description	This query returns the properties of the grandmaster clock.
Parameter	<Pt> = Port number
Response	<clockId> = <STRING RESPONSE DATA>
	<class> = <NR1 NUMERIC RESPONSE DATA>
	<accuracy> = <NR1 NUMERIC RESPONSE DATA>
	<logVarianceOffsetAnnounced> = <NR3 NUMERIC RESPONSE DATA>
	<logVarianceOffsetObserved> = <NR3 NUMERIC RESPONSE DATA>
	<priority1> = <NR1 NUMERIC RESPONSE DATA>
	<priority2> = <NR1 NUMERIC RESPONSE DATA>
	<logVarianceOffsetAnnouncedRaw> = <NR1 NUMERIC RESPONSE DATA>
	<stepsRemoved> = <NR1 NUMERIC RESPONSE DATA>
	<timeSource> = <NR1 NUMERIC RESPONSE DATA>
	<utcOffset> = <NR1 NUMERIC RESPONSE DATA>
	<flagField> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:STAT:PORT1:PTP:GCL? → "00-00-00-00-00-00-00-00",255,254,1.23E-16,2.34E-16,255,255,22564,0,160,37,#H0000
Note	

12.15.35 ETHernet:STATus:PORT<Pt>:PTP:FMASters?

Syntax	ETHernet:STATus:PORT<Pt>:PTP:FMASters?
Description	This query returns a list of maximum five foreign masters and their properties.
Parameter	<Pt> = Port number
Response	{(<master>),}* = <EXPRESSION RESPONSE DATA> <master> is split into three separate results (<clockId>,<port>,<announceCount>): <clockId> = <STRING RESPONSE DATA> <port> = <NR1 NUMERIC RESPONSE DATA> <announceCount> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:STAT:PORT1:PTP:FMASters? → ("00-00-00-00-00-00-00-11",111,99), ("00-00-00-00-00-00-00-22",222,88)
Note	If the list is empty an execution error will be reported.

12.15.36 ETHernet:STATus:PORT<Pt>:WAN:CAPTure:SOH:TRACe?

Syntax	ETHernet:STATus:PORT<Pt>:WAN:CAPTure:SOH:TRACe?
Description	This query returns the section overhead trace (J0) for the latest captured frames.
Parameter	<Pt> = Port number
Response	<J0_trace> = <STRING RESPONSE DATA>
Example	ETH:STAT:PORT1:WAN:CAPT:SOH:TRAC? → "Message_Test_J0"
Notes	If one of the alarms LOS or LOF is present, an empty string is returned. New frames are captured every second. This command can be used on V2.00 or later.

12.15.37 ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:SOH?

Syntax	ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:SOH? <SOH-byte>
Description	This query returns the section overhead bytes from the selected frame.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <SOH-byte> = <CHARACTER PROGRAM DATA> A1: Returns 3 bytes. A2: Returns 3 bytes. J0: Returns 3 bytes. B1: Returns 3 bytes. E1: Returns 3 bytes. F1: Returns 3 bytes. D1: Returns 3 bytes. D2: Returns 3 bytes. D3: Returns 3 bytes. H1: Returns 3 bytes. H2: Returns 3 bytes. H3: Returns 3 bytes. B2: Returns 3 bytes. K1: Returns 3 bytes. K2: Returns 3 bytes. D4: Returns 3 bytes. D5: Returns 3 bytes. D6: Returns 3 bytes. D7: Returns 3 bytes. D8: Returns 3 bytes. D9: Returns 3 bytes. D10: Returns 3 bytes. D11: Returns 3 bytes. D12: Returns 3 bytes. S1: Returns 3 bytes.

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	Z2: Returns 3 bytes. E2: Returns 3 bytes. M0: Returns 1 byte. M1: Returns 1 byte.
Response	<byte1>[,<byte2>[,<byte3>]] = <HEXADECIMAL NUMERIC RESPONSE DATA> Refer to <SOH-byte> parameter description above to see how many bytes this command returns.
Examples	ETH:STAT:PORT1:WAN:CAPT64:SOH? A1 → #HF6,#HF6,#HF6 ETH:STAT:PORT1:WAN:CAPT23:SOH? H1 → #H69,#H93,#H93 ETH:STAT:PORT1:WAN:CAPT1:SOH? M1 → #H00
Notes	If one of the alarms LOS or LOF is present NaN (section 1.6.1) is returned. 64 new frames are captured every second. This command can be used on V2.00 or later.

12.15.38 ETHernet:STATus:PORT<Pt>:WAN:CAPTure:POH:TRACe?

Syntax	ETHernet:STATus:PORT<Pt>:WAN:CAPTure:POH:TRACe?
Description	This query returns the VC4 path overhead trace (J1) for the latest captured frames.
Parameter	<Pt> = Port number
Response	<J1_trace> = <STRING RESPONSE DATA>
Example	ETH:STAT:PORT1:WAN:CAPT:POH:TRAC? → "Message_Test_J1"
Notes	If one of the alarms LOS, LOF, UNEQ or LOP is present, an empty string is returned. New frames are captured every second. This command can be used on V2.00 or later.

12.15.39 ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:POH?

Syntax	ETHernet:STATus:PORT<Pt>:WAN:CAPTure<Frame>:POH? <POH-byte>
Description	This query returns the VC4 path overhead bytes from the selected frame.
Parameters	<Pt> = Port number <Frame> = Frame number (1-64) <POH-byte> = <CHARACTER PROGRAM DATA> J1: J1 byte. B3: B3 byte. C2: C2 byte. G1: G1 byte. F2: F2 byte. H4: H4 byte. F3: F3 byte. K3: K3 byte. N1: N1 byte.
Response	<byte> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:STAT:PORT1:WAN:CAPT1:POH? H4 → #HFF
Notes	If one of the alarms LOS, LOF, UNEQ or LOP is present NaN (section 1.6.1) is returned. 64 new frames are captured every second. This command can be used on V2.00 or later.

12.15.40 ETHernet:STaTus:PORT<Pt>:TSRC:R10M?

Syntax	ETHernet:STaTus:PORT<Pt>:TSRC:R10M?
Description	This query returns if external reference 10MHz is available for timestamp source.
Parameter	<Pt> = Port number
Response	<timestamp source availability> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:TSRC:R10M? → 1
Note	This command is available if both of the following conditions are met: - ETHernet:PORT<Pt>:STReam<St>:LATency, ETHernet:PORT<Pt>:STReam<St>:JITTer, or ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled] are enabled. - ETHernet:PORT<Pt>:STReam:TSTamp:TSRC is set to R1PPS or RGPS.

12.15.41 ETHernet:STaTus:PORT<Pt>:TSRC:RPPS?

Syntax	ETHernet:STaTus:PORT<Pt>:TSRC:RPPS?
Description	This query returns if external reference 1PPS is available for timestamp source.
Parameter	<Pt> = Port number
Response	<timestamp source availability> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:TSRC:RPPS? → 1
Note	This command is available if both of the following conditions are met: - ETHernet:PORT<Pt>:STReam<St>:LATency, ETHernet:PORT<Pt>:STReam<St>:JITTer, or ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled] are enabled. - ETHernet:PORT<Pt>:STReam:TSTamp:TSRC is set to R1PPS or RGPS.

12.15.42 ETHernet:STaTus:PORT<Pt>:TSRC:GPS?

Syntax	ETHernet:STaTus:PORT<Pt>:TSRC:GPS?
Description	This query returns if GPS is available for timestamp source.
Parameter	<Pt> = Port number
Response	<timestamp source availability> = <BOOLEAN RESPONSE DATA>
Example	ETH:STAT:PORT1:TSRC:GPS? → 1
Note	This command is available if both of the following conditions are met: - ETHernet:PORT<Pt>:STReam<St>:LATency, ETHernet:PORT<Pt>:STReam<St>:JITTer, or ETHernet:PORT<Pt>:STReam1:BER:SDMeasure[:ENABled] are enabled. - ETHernet:PORT<Pt>:STReam:TSTamp:TSRC is set to GPS or RGPS.

12.16 Ping

12.16.1 ETHernet:PING:STARt

Syntax	ETHernet:PING:STARt
Description	This command starts the Ping test.
Parameter	None.
Response	None.
Example	ETH:PING:STAR
Note	

12.16.2 ETHernet:PING:STOP

Syntax	ETHernet:PING:STOP
Description	This command stops the Ping test.
Parameter	None.
Response	None.
Example	ETH:PING:STOP
Note	

12.16.3 ETHernet:PING:SETup:PORT<Pt>:DMODe

Syntax	ETHernet:PING:SETup:PORT<Pt>:DMODe <mode>
Description	This command sets the test mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> CONTinuous SECOnds REQuests <i>DEFault = REQuests</i>
Response	None.
Example	ETH:PING:SET:PORT1:DMOD SEC
Note	This setting applies to all ports.

Syntax	ETHernet:PING:SETup:PORT<Pt>:DMODe?
Description	This query returns the test mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PING:SET:PORT1:DMOD? → SEC
Note	This setting applies to all ports.

12.16.4 ETHernet:PING:SETup:PORT<Pt>:SDURation

Syntax	ETHernet:PING:SETup:PORT<Pt>:SDURation <seconds>
Description	This command sets the test duration. Unit: Seconds.
Parameters	<Pt> = Port number <seconds> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2000000, DEFault = 30</i>
Response	None.
Example	ETH:PING:SET:PORT1:SDUR 5
Note	DMODe must be set to SECOnds for this command to have effect. This setting applies to all ports.

Syntax	ETHERnet:PING:SETup:PORT<Pt>:SDURation?
Description	This query returns the test duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:SET:PORT1:SDUR? → 5
Note	This setting applies to all ports.

12.16.5 ETHERnet:PING:SETup:PORT<Pt>:RDURation

Syntax	ETHERnet:PING:SETup:PORT<Pt>:RDURation <requests>
Description	This command sets the test duration. Unit: Requests.
Parameters	<Pt> = Port number <requests> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 65000, DEFault = 10</i>
Response	None.
Example	ETH:PING:SET:PORT1:RDUR 5
Note	DMODE must be set to REQuests for this command to have effect. This setting applies to all ports.

Syntax	ETHERnet:PING:SETup:PORT<Pt>:RDURation?
Description	This query returns the test duration. Unit: Requests.
Parameter	<Pt> = Port number
Response	<requests> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:SET:PORT1:RDUR? → 5
Note	This setting applies to all ports.

12.16.6 ETHERnet:PING:SETup:PORT<Pt>:INTERval

Syntax	ETHERnet:PING:SETup:PORT<Pt>:INTERval <interval>
Description	This command sets the requests interval. Unit: Seconds.
Parameters	<Pt> = Port number <interval> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 60, DEFault = 4</i>
Response	None.
Example	ETH:PING:SET:PORT1:INT 5
Note	0 means that request are send as fast as possible. This setting applies to all ports.

Syntax	ETHERnet:PING:SETup:PORT<Pt>:INTERval?
Description	This query returns the requests interval. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:SET:PORT1:INT? → 5
Note	This setting applies to all ports.

12.16.7 ETHERnet:PING:SETup:PORT<Pt>:FSIZE

Syntax	ETHERnet:PING:SETup:PORT<Pt>:FSIZE <size>
Description	This command sets the frame size. Unit: Bytes.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 70</i>
Response	None.
Example	ETH:PING:SET:PORT1:FSIZ 100
Notes	¹ The minimum allowed frame size varies depending on the stream frame setup. This setting applies to all ports.

Syntax	ETHernet:PING:SETup:PORT<Pt>:FSIZe?
Description	This query returns the frame size. Unit: Bytes.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:SET:PORT1:FSIZ? → 100
Note	This setting applies to all ports.

12.16.8 ETHernet:PING:SETup:PORT<Pt>:TOUT

Syntax	ETHernet:PING:SETup:PORT<Pt>:TOUT <timeout>
Description	This command sets the time out value. Unit: Milliseconds.
Parameters	<Pt> = Port number <timeout> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 15000, DEFault = 500</i>
Response	None.
Example	ETH:PING:SET:PORT1:TOUT 100
Note	This setting applies to all ports.

Syntax	ETHernet:PING:SETup:PORT<Pt>:TOUT?
Description	This query returns the time out value. Unit: Milliseconds.
Parameter	<Pt> = Port number
Response	<timeout> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:SET:PORT1:TOUT? → 100
Note	This setting applies to all ports.

12.16.9 ETHernet:PING:RESults:SUMMary?

Syntax	ETHernet:PING:RESults:SUMMary?
Description	This query returns the result summary.
Parameter	None.
Response	<sent> = <NR1 NUMERIC RESPONSE DATA> Number of sent requests. <received> = <NR1 NUMERIC RESPONSE DATA> Number of received responses. <lost> = <NR1 NUMERIC RESPONSE DATA> Number of request time outs.
Example	ETH:PING:RES:SUMM? → 10,7,3
Note	

12.16.10 ETHernet:PING:RESults:RTT?

Syntax	ETHernet:PING:RESults:RTT?
Description	Returns round trip times. Unit: Milliseconds.
Parameter	None.
Response	<min> = <NR2 NUMERIC RESPONSE DATA> Minimum round trip time. <max> = <NR2 NUMERIC RESPONSE DATA> Maximum round trip time. <avg> = <NR2 NUMERIC RESPONSE DATA> Average round trip time.
Example	ETH:PING:RES:RTT? → 0.075,2.913,0.484
Note	

12.16.11 ETHernet:PING:RESults:NREQuests?

Syntax	ETHernet:PING:RESults:NREQuests?
Description	Returns the number of sent requests.
Parameter	None.
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PING:RES:NREQ? → 10
Note	

12.16.12 ETHernet:PING:RESults:SREQuest?

Syntax	ETHernet:PING:RESults:SREQuest? <index>
Description	Returns the result of a single request.
Parameter	{(<index>),}* = <EXPRESSION PROGRAM DATA> Expression format: Numeric List <i>MINimum</i> = 1
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> <result> is split into 2 separate results (<rtt>,<seq-nr>):
	<rtt> = <NR2 NUMERIC RESPONSE DATA> Round trip time. Unit: Milliseconds. NaN (section 1.6.1) means time out.
	<seq-nr> = <NR1 NUMERIC RESPONSE DATA> Request sequence number.
Example	ETH:PING:RES:SREQ? (1,3:5) → (2.913,1),(1.236,3),(3.528,4),(0.879,5)
Notes	Use the NREQuests command above to get the maximum allowed index. Results are returned in the order they are entered in the <index> parameter.

12.17 Traceroute

12.17.1 ETHernet:TRACeroute:STARt

Syntax	ETHernet:TRACeroute:STARt
Description	This command starts the Traceroute test.
Parameter	None.
Response	None.
Example	ETH:TRAC:STAR
Note	

12.17.2 ETHernet:TRACeroute:STOP

Syntax	ETHernet:TRACeroute:STOP
Description	This command stops the Traceroute test.
Parameter	None.
Response	None.
Example	ETH:TRAC:STOP
Note	

12.17.3 ETHernet:TRACeroute:SETup:NATTempts

Syntax	ETHernet:TRACeroute:SETup:NATTempts <attempts>
Description	This command sets the number of attempts.
Parameter	<attempts> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 1000000, DEFault = 3</i>
Response	None.
Example	ETH:TRAC:SET:NATT 5
Note	

Syntax	ETHernet:TRACeroute:SETup:NATTempts?
Description	This query returns the number of attempts.
Parameter	None.
Response	<attempts> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TRAC:SET:NATT? → 5
Note	

12.17.4 ETHernet:TRACeroute:SETup:MNHops

Syntax	ETHernet:TRACeroute:SETup:MNHops <hops>
Description	This command sets the maximum number of hops.
Parameter	<hops> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 255, DEFault = 30</i>
Response	None.
Example	ETH:TRAC:SET:MNH 5
Note	

Syntax	ETHernet:TRACeroute:SETup:MNHops?
Description	This query returns the maximum number of hops.
Parameter	None.
Response	<hops> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TRAC:SET:MNH? → 5
Note	

12.17.5 ETHernet:TRACeroute:SETup:TOUT

Syntax	ETHernet:TRACeroute:SETup:TOUT <timeout>
Description	This command sets the time out value. Unit: Milliseconds.
Parameter	<timeout> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 15000, DEFault = 500</i>
Response	None.
Example	ETH:TRAC:SET:TOUT 100
Note	

Syntax	ETHernet:TRACeroute:SETup:TOUT?
Description	This query returns the time out value. Unit: Milliseconds.
Parameter	None.
Response	<timeout> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TRAC:SET:TOUT? → 100
Note	

12.17.6 ETHernet:TRACeroute:SETup:NTPHosts

Syntax	ETHernet:TRACeroute:SETup:NTPHosts <pings>
Description	This command sets the number of times to ping a host.
Parameter	<pings> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000000, DEFault = 3</i>
Response	None.
Example	ETH:TRAC:SET:NTPH 5
Note	

Syntax	ETHernet:TRACeroute:SETup:NTPHosts?
Description	This query returns the number of times to ping a host.
Parameter	None.
Response	<pings> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TRAC:SET:NTPH? → 5
Note	

12.17.7 ETHernet:TRACeroute:RESults:NHOPs?

Syntax	ETHernet:TRACeroute:RESults:NHOPs?
Description	Returns the number of found hops.
Parameter	None.
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TRAC:RES:NHOP? → 10
Note	

12.17.8 ETHernet:TRACeroute:RESults:HOP?

Syntax	ETHernet:TRACeroute:RESults:HOP? <index>
Description	Returns the result from a single hop.
Parameter	{(<index>),}* = <EXPRESSION PROGRAM DATA> Expression format: Numeric List <i>MINimum = 1</i>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> <result> is split into 5 separate results (<host>,<minrtt>,<maxrtt>,<avgtrt>,<timeouts>): <host> = <STRING RESPONSE DATA> Host IP address. ”(d)” at the end of the string means that this is the destination.

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	"<timeout>" means that an IP address was unattainable. <minrtt> = <NR2 NUMERIC RESPONSE DATA> Minimum Round trip time. Unit: Milliseconds. NaN (section 1.6.1) means no ping replies. <maxrtt> = <NR2 NUMERIC RESPONSE DATA> Maximum Round trip time. Unit: Milliseconds. NaN (section 1.6.1) means no ping replies. <avgrtt> = <NR2 NUMERIC RESPONSE DATA> Average Round trip time. Unit: Milliseconds. NaN (section 1.6.1) means no ping replies. <timeouts> = <NR1 NUMERIC RESPONSE DATA> Number of ping timeouts. NaN (section 1.6.1) means no ping requests sent.
Example	ETH:TRAC:RES:HOP? (1:2) → ("192.168.1.1",0.7888,0.8278,0.8078,0), ("192.168.2.1(d)",0.5263,0.6689,0.591667,0)
Notes	Use NHOPs to get the maximum allowed index. Results are return in the order they are entered in the <index> parameter.

12.18 RFC2544

12.18.1 ETHernet:RFC:STARt

Syntax	ETHernet:RFC:STARt
Description	This command starts the RFC2544 test.
Parameter	None.
Response	None.
Example	ETH:RFC:STAR
Note	

12.18.2 ETHernet:RFC:STOP

Syntax	ETHernet:RFC:STOP
Description	This command stops the RFC2544 test.
Parameter	None.
Response	None.
Example	ETH:RFC:STOP
Note	

12.18.3 ETHernet:RFC:SETup:GENeral:MODE

Syntax	ETHernet:RFC:SETup:GENeral:MODE <mode>
Description	This command sets the RFC2544 test mode.
Parameter	<mode> = <CHARACTER PROGRAM DATA> SRouter: Switch/Router RLatency: Router latency SENetwork: Single ended network E2End: End to end network <i>DEFault = SR</i>
Response	None.
Examples	ETH:RFC:SET:GEN:MODE SR ETH:RFC:SET:GEN:MODE E2E
Note	

Syntax	ETHernet:RFC:SETup:GENeral:MODE?
Description	This query returns the RFC2544 test mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:GEN:MODE? → SEN
Note	

12.18.4 ETHernet:RFC:SETup:GENeral:TSElection

Syntax	ETHernet:RFC:SETup:GENeral:TSElection <test>
Description	This command sets the RFC2544 tests to be executed.
Parameter	({<test>} * {,}*) = <EXPRESSION PROGRAM DATA> THR: Throughput FLOS: Frame loss TAFL: Throughput and Frame loss LAT: Latency BURS: Burst
Response	None.
Example	ETH:RFC:SET:GEN:TSEL (FLOS,LAT,BURS)
Note	THR and/or FLOS can not be selected with TAFL. Setting no parameters will clear the test selection.

Syntax	ETHernet:RFC:SETup:GENeral:TSElection?
Description	This query returns the RFC2544 test that will be executed.
Parameter	None.
Response	{(<test>),}* = <EXPRESSION RESPONSE DATA>
Example	ETH:RFC:SET:GEN:TSEL? → (FLOS,LAT,BUR)
Note	

12.18.5 ETHernet:RFC:SETup:GENeral:E2E:OWAY

Syntax	ETHernet:RFC:SETup:GENeral:E2E:OWAY <enable>
Description	This command sets One Way testing for End to End network test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:GEN:E2E:OWAY ON
Note	

Syntax	ETHernet:RFC:SETup:GENeral:E2E:OWAY?
Description	This query returns the state of End to End One Way testing.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:E2E:OWAY? → 1
Note	

12.18.6 ETHernet:RFC:SETup:GENeral:E2E:ADDRESS

Syntax	ETHernet:RFC:SETup:GENeral:E2E:ADDRESS <enable>
Description	This command enables/disables use of master source addresses for destination on slave side for End to End Network test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:GEN:E2E:ADDR ON
Note	

Syntax	ETHernet:RFC:SETup:GENeral:E2E:ADDRESS?
Description	This query returns whether or not master source addresses are used for destination on slave side.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:E2E:ADDR? → 1
Note	

12.18.7 ETHernet:RFC:SETup:GENeral:E2E:TDIREction

Syntax	ETHernet:RFC:SETup:GENeral:E2E:TDIREction <dir>
Description	This command sets the End to End One Way transmission direction.
Parameter	<dir> = <CHARACTER PROGRAM DATA> MASTer: Master to slave SLAVE: Slave to master <i>DEFault = SLAVE</i>
Response	None.
Example	ETH:RFC:SET:GEN:E2E:TDIR MAST
Note	

Syntax	ETHernet:RFC:SETup:GENeral:E2E:TDIRection?
Description	This query returns the End to End One Way transmission direction.
Parameter	None.
Response	<dir> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:GEN:E2E:TDIR? → MAST
Note	

12.18.8 ETHernet:RFC:SETup:GENeral:E2E:SSTore

Syntax	ETHernet:RFC:SETup:GENeral:E2E:SSTore <enable>
Description	This commands enables/disables storing of results on the slave side for End to End Network test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:GEN:E2E:SST OFF
Note	

Syntax	ETHernet:RFC:SETup:GENeral:E2E:SSTore?
Description	This query returns whether or not results are stored on slave side in End to End Network test.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:E2E:SST? → 0
Note	

12.18.9 ETHernet:RFC:SETup:GENeral:TLFrames

Syntax	ETHernet:RFC:SETup:GENeral:TLFrames <enable>
Description	This command enables/disables transmission of learning frames prior to test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:RFC:SET:GEN:TLF OFF
Note	

Syntax	ETHernet:RFC:SETup:GENeral:TLFrames?
Description	This query returns whether or not learning frames are used.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:TLF? → 0
Note	

12.18.10 ETHernet:RFC:SETup:GENeral:IAFFilter

Syntax	ETHernet:RFC:SETup:GENeral:IAFFilter <enable>
Description	This command selects if addresses should be included in frame filter on receiver.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:RFC:SET:GEN:IAFF OFF
Note	

Syntax	ETHernet:RFC:SETup:GENeral:IAFFilter?
Description	This query returns whether or not addresses are included in frame filter on receiver.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:IAFF? → 0
Note	

12.18.11 ETHernet:RFC:SETup:GENeral:JITTer

Syntax	ETHernet:RFC:SETup:GENeral:JITTer <enable>
Description	This command enables/disables jitter measurement with latency test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:GEN:JITT ON
Note	

Syntax	ETHernet:RFC:SETup:GENeral:JITTer?
Description	This query returns whether or not jitter measurement is enabled with latency test.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:JITT? → 1
Note	

12.18.12 ETHernet:RFC:SETup:GENeral:ACCumulate

Syntax	ETHernet:RFC:SETup:GENeral:ACCumulate <enable>
Description	This command sets if repeated steps should be accumulated.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:RFC:SET:GEN:ACC OFF
Note	

Syntax	ETHernet:RFC:SETup:GENeral:ACCumulate?
Description	This query returns whether or not repeated steps are accumulated.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:GEN:ACC? → 0
Note	

12.18.13 ETHernet:RFC:SETup:GENeral:TCLayer

Syntax	ETHernet:RFC:SETup:GENeral:TCLayer <layer>
Description	This command selects the throughput calculation layer.
Parameter	<layer> = <CHARACTER PROGRAM DATA> UTIL: Utilization PHYP: Physical with preamble PHYS: Physical without preamble LINK: Link NETWork: Network DATA: Data <i>DEFault = PHYS</i>
Response	None.
Example	ETH:RFC:SET:GEN:TCL LINK
Note	

Syntax	ETHernet:RFC:SETup:GENeral:TCLayer?
Description	This query returns the throughput calculation layer.
Parameter	None.
Response	<layer> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:GEN:TCL? → LINK
Note	

12.18.14 ETHernet:RFC:SETup:GENeral:TTYPe

Syntax	ETHernet:RFC:SETup:GENeral:TTYPe <layer>
Description	This command sets the throughput calculation type.
Parameter	<type> = <CHARACTER PROGRAM DATA> AVG: Average MAX: Maximum <i>DEFAULT = MAX</i>
Response	None.
Example	ETH:RFC:SET:GEN:TTYP AVG
Note	

Syntax	ETHernet:RFC:SETup:GENeral:TTYPe?
Description	This query returns the throughput calculation type.
Parameter	None.
Response	<layer> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:GEN:TTYP? → AVG
Note	

12.18.15 ETHernet:RFC:SETup:GENeral:VERCompati

Syntax	ETHernet:RFC:SETup:GENeral:VERCompati <layer>
Description	This command sets the version compatibility for configuration.
Parameter	<type> = <CHARACTER PROGRAM DATA> V0906: V9.06 or older V0907: V9.07 or later <i>DEFAULT = V0907</i>
Response	None.
Example	ETH:RFC:SET:GEN:VERC V0906
Note	

Syntax	ETHernet:RFC:SETup:GENeral:VERCompati?
Description	This query returns the version compatibility value.
Parameter	None.
Response	<layer> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:GEN:VERC? → V0906
Note	

12.19 RFC2544 - Throughput

12.19.1 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:MODE <mode>
Description	This command sets the RFC2544 throughput frame size mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant FLEXible: Flexible DEFault = USER
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:MODE?
Description	This query returns the RFC2544 throughput frame size mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:MODE? → CONS
Note	

12.19.2 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:USER

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:USER {<size>}*
Description	This command sets the RFC2544 throughput user defined frame size(s).
Parameters	<Pt> = Port number ({<size>} * {,}*) = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:USER (64,256,JUMB)
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:USER?
Description	This query returns the RFC2544 throughput user defined frame size(s).
Parameter	<Pt> = Port number
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:USER? → (64,256,JUMB)
Note	

12.19.3 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:JUMBo

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:JUMBo <size>
Description	This command sets the RFC2544 throughput jumbo frame size.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 1582</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:JUMB 6000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:JUMB?
Description	This query returns the RFC2544 throughput jumbo frame size.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:JUMB? → 6000
Note	

12.19.4 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:BEGin <size>
Description	This command sets the RFC2544 throughput begin frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:BEG 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:BEGin?
Description	This query returns the RFC2544 throughput begin frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:BEG? → 128
Note	

12.19.5 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:END <size>
Description	This command sets the RFC2544 throughput end frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:END 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:END?
Description	This query returns the RFC2544 throughput end frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:END? → 128
Note	

12.19.6 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:STEP <size>
Description	This command sets the RFC2544 throughput step frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:STEP 128
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:STEP?
Description	This query returns the RFC2544 throughput step frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:STEP? → 128
Note	

12.19.7 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:CONStant <size>
Description	This command sets the RFC2544 throughput frame size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:CONS 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:CONStant?
Description	This query returns the RFC2544 throughput frame size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:CONS? → 128
Note	

12.19.8 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible:COUNt

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible:COUNt <count>
Description	This command sets the RFC2544 flexible frame count.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=10, DEFault=1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:FLEX:COUN 3
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible:COUNt?
Description	This query returns the RFC2544 flexible frame count.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:FLEX:COUN? → 3
Note	

12.19.9 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible<Count>:SIZE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible<Count>:SIZE <size>
Description	This command sets the RFC2544 flexible frame size.
Parameters	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:FSIZ:FLEX1:SIZE 384
Notes	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:FSIZe:FLEXible<Count>:SIZE?
Description	This query returns the RFC2544 flexible frame size.
Parameter	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:FSIZ:FLEX1:SIZE? → 384
Note	

12.19.10 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STOP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STOP <enable>
Description	This command enables or disables stop on no frame loss at maximum utilization.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:STOP ON
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STOP?
Description	This query return the state of stop on no frame loss at maximum utilization.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:STOP? → 1
Note	

12.19.11 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MINimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MINimum <load>
Description	This command sets the minimum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 1.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:MIN 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MINimum must be smaller or equal to :MAXimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MINimum? [<suffix>]
Description	This query returns the minimum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:MIN? → 10
Note	

12.19.12 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:MAX 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:MAX? → 10
Note	

12.19.13 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STEP <load>
Description	This command sets the step line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0001, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:STEP 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:STEP? [<suffix>]
Description	This query returns the step line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:STEP? → 10
Note	

12.19.14 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASearch[:ENABLE]

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASearch[:ENABLE] <enable>
Description	This command enables or disables the line load Auto Search.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:RFC:SET:PORT1:THR:LL:ASE ON
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASearch[:ENABLE]?
Description	This query returns whether or not the line load Auto Search is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:ASE? → 1
Note	

12.19.15 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASearch:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASearch:MODE <mode>
Description	This command sets the auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMART BINary <i>DEFault = SMART</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:ASE:MODE BIN
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:MODE?
Description	This query returns the auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:ASE:MODE? → BIN
Note	

12.19.16 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution <res>
Description	This command sets the auto search resolution.
Parameters	<Pt> = Port number <res> = <CHARACTER PROGRAM DATA> 01: 0.1% 1: 1% 10: 10% <i>DEFault = 01</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:LL:ASE:RES 10
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution?
Description	This query returns the auto search resolution.
Parameter	<Pt> = Port number
Response	<res> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:LL:ASE:RES? → 10
Note	

12.19.17 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:STEP <step>
Description	This command sets the step duration. Unit: seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 1000000000, DEFault = 10</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:DUR:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds. Unit: seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:DUR:STEP? → 5
Note	

12.19.18 ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:REPeats

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:REPeats <rep>
Description	This command sets the number of repeats.
Parameters	<Pt> = Port number <rep> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000, DEFault = 0</i>
Response	None.
Example	ETH:RFC:SET:PORT1:THR:DUR:REP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:THRoughput:DURation:REPeats?
Description	This query returns the number of repeats.
Parameter	<Pt> = Port number
Response	<rep> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:THR:DUR:REP? → 5
Note	

12.20 RFC2544 - Frame Loss

12.20.1 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:MODE <mode>
Description	This command sets the RFC2544 frame loss frame size mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant FLEXible: Flexible <i>DEFault = USER</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:MODE?
Description	This query returns the RFC2544 frame loss frame size mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:MODE? → CONS
Note	

12.20.2 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:USER

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:USER {<size>}*
Description	This command sets the RFC2544 frame loss user defined frame size(s) for user defined mode.
Parameters	<Pt> = Port number ({<size>} * {,}*) = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:USER (64,256,JUMB)
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:USER?
Description	This query returns the RFC2544 frame loss user defined frame size(s) for user defined mode.
Parameter	<Pt> = Port number
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:USER? → (64,256,JUMB)
Note	

12.20.3 ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:JUMBo

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:JUMBo <size>
Description	This command sets the RFC2544 frame loss jumbo frame size for user defined mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 1582</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:JUMB 6000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:JUMBo?
Description	This query returns the RFC2544 frame loss jumbo frame size for user defined mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:JUMB? → 6000
Note	

12.20.4 ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:BEGin <size>
Description	This command sets the RFC2544 frame loss begin frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:BEG 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:BEGin?
Description	This query returns the RFC2544 frame loss begin frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:BEG? → 128
Note	

12.20.5 ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOsS:FSIZe:END <size>
Description	This command sets the RFC2544 frame loss end frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:FSIZ:END 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:END?
Description	This query returns the RFC2544 frame loss end frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:END? → 128
Note	

12.20.6 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:STEP <size>
Description	This command sets the RFC2544 frame loss step frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:STEP 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:STEP?
Description	This query returns the RFC2544 frame loss step frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:STEP? → 128
Note	

12.20.7 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:CONStant <size>
Description	This command sets the RFC2544 frame loss frame size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:CONS 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:CONStant?
Description	This query returns the RFC2544 frame loss frame size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:CONS? → 128
Note	

12.20.8 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible:COUNT

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible:COUNT <count>
Description	This command sets the RFC2544 flexible frame count.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=10, DEFault=1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:FLEX:COUN 3
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible:COUnT?
Description	This query returns the RFC2544 flexible frame count.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:FLEX:COUn? → 3
Note	

12.20.9 ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible<Count>:SIZE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible<Count>:SIZE <size>
Description	This command sets the RFC2544 frame loss flexible frame size.
Parameters	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:FLEX1:SIZE 384
Notes	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:FSIZe:FLEXible<Count>:SIZE?
Description	This query returns the RFC2544 frame loss flexible frame size.
Parameter	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:FSIZ:FLEX1:SIZE? → 384
Note	

12.20.10 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STOP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STOP <enable>
Description	This command enables or disables stop on no frame loss at maximum utilization.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLos:LL:STOP ON
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STOP?
Description	This query returns the state for stop on no frame loss at maximum utilization.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLos:LL:STOP? → 1
Note	

12.20.11 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MINimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MINimum <load>
Description	This command sets the minimum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 1.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:LL:MIN 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MINimum must be smaller or equal to :MAXimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MINimum? [<suffix>]
Description	This query returns the minimum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:MIN? → 10
Note	

12.20.12 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MAXimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:LL:MAX 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:MAX? → 10
Note	

12.20.13 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STEP <load>
Description	This command sets the step line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0001, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:LL:STEP 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:STEP? [<suffix>]
Description	This query returns the step line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:STEP? → 10
Note	

12.20.14 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch[:ENABLE]

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch[:ENABLE] <enable>
Description	This command enables or disables the line load Auto Search.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:RFC:SET:PORT1:FLOS:LL:ASE ON
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch[:ENABLE]?
Description	This query returns whether or not the line load Auto Search is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:ASE? → 1
Note	

12.20.15 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:MODE <mode>
Description	This command sets the auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMART BINary <i>DEFault = SMART</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:LL:ASE:MODE BIN
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:MODE?
Description	This query returns the auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:ASE:MODE? → BIN
Note	

12.20.16 ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:RESolution

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:RESolution <res>
Description	This command sets the auto search resolution.
Parameters	<Pt> = Port number <res> = <CHARACTER PROGRAM DATA> 01: 0.1% 1: 1% 10: 10% <i>DEFault = 01</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:LL:ASE:RES 10
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:LLoad:ASEarch:RESolution?
Description	This query returns the auto search resolution.
Parameter	<Pt> = Port number
Response	<res> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:LL:ASE:RES? → 10
Note	

12.20.17 ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:STEP <step>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 1000000000, DEFault = 10</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:DUR:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:DUR:STEP? → 5
Note	

12.20.18 ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:REPeats

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:REPeats <rep>
Description	This command sets the number of repeats.
Parameters	<Pt> = Port number <rep> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000, DEFault = 0</i>
Response	None.
Example	ETH:RFC:SET:PORT1:FLOS:DUR:REP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:FLOs:DURation:REPeats?
Description	This query returns the number of repeats.
Parameter	<Pt> = Port number
Response	<rep> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:FLOS:DUR:REP? → 5
Note	

12.21 RFC2544 - Throughput and Frame Loss

12.21.1 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:MODE <mode>
Description	This command sets the RFC2544 throughput and frame loss frame size mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant FLEXible: Flexible DEFault = USER
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:MODE?
Description	This query returns the RFC2544 throughput and frame loss frame size mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:MODE? → CONS
Note	

12.21.2 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:USER

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:USER {<size>}*
Description	This command sets the RFC2544 throughput and frame loss user defined frame size(s) for user defined mode.
Parameters	<Pt> = Port number ({<size>} * {,}*) = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:USER (64,256,JUMB)
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:USER?
Description	This query returns the RFC2544 throughput and frame loss user defined frame size(s) for user defined mode.
Parameter	<Pt> = Port number
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:USER? → (64,256,JUMB)
Note	

12.21.3 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:JUMBo

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:JUMBo <size>
Description	This command sets the RFC2544 throughput and frame loss jumbo frame size for user defined mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 1582</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:JUMB 6000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:JUMBo?
Description	This query returns the RFC2544 throughput and frame loss jumbo frame size for user defined mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:JUMB? → 6000
Note	

12.21.4 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:BEGin <size>
Description	This command sets the RFC2544 throughput and frame loss begin frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:BEG 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:BEGin?
Description	This query returns the RFC2544 throughput and frame loss begin frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:BEG? → 128
Note	

12.21.5 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZE:END <size>
Description	This command sets the RFC2544 throughput and frame loss end frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:END 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:END?
Description	This query returns the RFC2544 throughput and frame loss end frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:END? → 128
Note	

12.21.6 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:STEP <size>
Description	This command sets the RFC2544 step frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:STEP 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:STEP?
Description	This query returns the RFC2544 step frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:STEP? → 128
Note	

12.21.7 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:CONStant <size>
Description	This command sets the RFC2544 frame size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:CONS 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:CONStant?
Description	This query returns the RFC2544 frame size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:CONS? → 128
Note	

12.21.8 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible:COUNt

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible:COUNt <count>
Description	This command sets the RFC2544 flexible frame count.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=10, DEFault=1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:FLEX:COUN 3
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible:COUNT?
Description	This query returns the RFC2544 flexible frame count.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:FLEX:COUN? → 3
Note	

12.21.9 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible<Count>:SIZE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible<Count>:SIZE <size>
Description	This command sets the RFC2544 flexible frame size.
Parameters	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:FLEX1:SIZE 384
Notes	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:FSIZe:FLEXible<Count>:SIZE?
Description	This query returns the RFC2544 throughput flexible frame size.
Parameter	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:FSIZ:FLEX1:SIZE? → 384
Note	

12.21.10 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STOP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STOP <enable>
Description	This command enables or disables stop on no frame loss at maximum utilization.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:STOP ON
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STOP?
Description	This query returns the state for stop on no frame loss at maximum utilization.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:STOP? → 1
Note	

12.21.11 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MINimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MINimum <load>
Description	This command sets the minimum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 1.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:MIN 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MINimum must be smaller or equal to :MAXimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MINimum? [<suffix>]
Description	This query returns the minimum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:MIN? → 10
Note	

12.21.12 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MAXimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:MAX 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:MAX? → 10
Note	

12.21.13 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STEP <load>
Description	This command sets the step line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0001, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:STEP 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:STEP? [<suffix>]
Description	This query returns the step line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:STEP? → 10
Note	

12.21.14 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASearch[:ENABLE]

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASearch[:ENABLE] <enable>
Description	This command enables or disables the line load Auto Search.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	ETH:RFC:SET:PORT1:TAFL:LL:ASE ON
Note	

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASearch[:ENABLE]?
Description	This query returns whether or not the line load Auto Search is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:ASE? → 1
Note	

12.21.15 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:MODE <mode>
Description	This command sets the auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMARt BINary <i>DEFault = SMARt</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:ASE:MODE BIN
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:MODE?
Description	This query returns the auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:ASE:MODE? → BIN
Note	

12.21.16 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:RESolution

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:RESolution <res>
Description	This command sets the auto search resolution.
Parameters	<Pt> = Port number <res> = <CHARACTER PROGRAM DATA> 01: 0.1% 1: 1% 10: 10% <i>DEFault = 01</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:LL:ASE:RES 10
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:LLoad:ASEarch:RESolution?
Description	This query returns the auto search resolution.
Parameter	<Pt> = Port number
Response	<res> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:LL:ASE:RES? → 10
Note	

12.21.17 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:STEP <step>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 1000000000, DEFault = 10</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:DUR:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:DUR:STEP? → 5
Note	

12.21.18 ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:REPeats

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:REPeats <rep>
Description	This command sets the number of repeats.
Parameters	<Pt> = Port number <rep> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000, DEFault = 0</i>
Response	None.
Example	ETH:RFC:SET:PORT1:TAFL:DUR:REP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:TAFLoss:DURation:REPeats?
Description	This query returns the number of repeats.
Parameter	<Pt> = Port number
Response	<rep> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:TAFL:DUR:REP? → 5
Note	

12.22 RFC2544 - Latency

12.22.1 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:MODE <mode>
Description	This command sets the RFC2544 latency frame size mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant FLEXible: Flexible DEFault = USER
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:MODE?
Description	This query returns the RFC2544 latency frame size mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:MODE? → CONS
Note	

12.22.2 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:USER

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:USER {<size>}*
Description	This command sets the RFC2544 latency user defined frame size(s) for user defined mode.
Parameters	<Pt> = Port number {(<size>)* {,}*} = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:USER (64,256,JUMB)
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:USER?
Description	This query returns the RFC2544 latency user defined frame size(s) for user defined mode.
Parameter	<Pt> = Port number
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:USER? → (64,256,JUMB)
Note	

12.22.3 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:JUMBo

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:JUMBo <size>
Description	This command sets the RFC2544 latency the jumbo frame size for user defined mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 1582</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:JUMB 6000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:JUMBo?
Description	This query returns the RFC2544 latency jumbo frame size for user defined mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:JUMB? → 6000
Note	

12.22.4 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:BEGin <size>
Description	This command sets the RFC2544 latency begin frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:BEG 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:BEGin?
Description	This query returns the RFC2544 latency begin frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:BEG? → 128
Note	

12.22.5 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZE:END <size>
Description	This command sets the RFC2544 latency end frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:END 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:END?
Description	This query returns the RFC2544 latency end frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:END? → 128
Note	

12.22.6 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:STEP <size>
Description	This command sets the RFC2544 latency step frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:STEP 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:STEP?
Description	This query returns the RFC2544 latency step frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:STEP? → 128
Note	

12.22.7 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:CONStant <size>
Description	This command sets the RFC2544 latency frame size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 256</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:CONS 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:CONStant?
Description	This query returns the RFC2544 latency frame size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:CONS? → 128
Note	

12.22.8 ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:FLEXible:COUNt

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:FSIZe:FLEXible:COUNt <count>
Description	This command sets the RFC2544 flexible frame count.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=10, DEFault=1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:FLEX:COUN 3
Note	

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:LATency:FSIZe:FLEXible:COUNt?
Description	This query returns the RFC2544 flexible frame count.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:FLEX:COUN? → 3
Note	

12.22.9 ETHernet:RFC:SEtup:PORT<Pt>:LATency:FSIZe:FLEXible<Count>:SIZE

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:LATency:FSIZe:FLEXible<Count>:SIZE <size>
Description	This command sets the RFC2544 flexible frame size.
Parameters	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:FLEX1:SIZE 384
Notes	

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:LATency:FSIZe:FLEXible<Count>:SIZE?
Description	This query returns the RFC2544 flexible frame size.
Parameter	<Pt> = Port number
	<Count> = Flexible frame number (1-10)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:FSIZ:FLEX1:SIZE? → 384
Note	

12.22.10 ETHernet:RFC:SEtup:PORT<Pt>:LATency:LLoad:MINimum

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:LATency:LLoad:MINimum <load>
Description	This command sets the minimum line load percentage.
Parameters	<Pt> = Port number
	<load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 1.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:MIN 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. In Router Latency Mode the maximum allowed line load is 1Mbps. MINimum, MAXimum and DEFault are all in PCT. :MINimum must be smaller or equal to :MAXimum.

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:LATency:LLoad:MINimum? [<suffix>]
Description	This query returns the minimum line load percentage.
Parameters	<Pt> = Port number
	<suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:MIN? → 10
Note	

12.22.11 ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:MAXimum

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:MAX 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. In Router Latency Mode the maximum allowed line load is 1Mbps. MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:MAX? → 10
Note	

12.22.12 ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:STEP <load>
Description	This command sets the step line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0001, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:STEP 10
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. In Router Latency Mode the maximum allowed line load is 1Mbps. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:STEP? [<suffix>]
Description	This query returns the step line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:STEP? → 10
Note	

12.22.13 ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:ONLY

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:ONLY <enable>
Description	This command selects whether or not only to run steps where other test passed.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:ONLY ON
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:ONLY?
Description	This query returns 1 if only steps are run where other test passed.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:ONLY? → 1
Note	

12.22.14 ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:OTEST

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:OTEST <test>
Description	This command selects the other test to follow.
Parameters	<Pt> = Port number <test> = <CHARACTER PROGRAM DATA> THRoughput: Throughput FLOSs: Frame loss TAFLoss: Throughput and frame Loss <i>DEFault</i> = <i>THR</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:OTES FLOS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:OTEST?
Description	This query returns the test followed.
Parameter	<Pt> = Port number
Response	<test> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:OTES? → FLOS
Note	

12.22.15 ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:TLEVel

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:TLEVel <tol>
Description	This command sets the Tolerance level percentage (Utilization multiplier). Unit: percentage.
Parameters	<Pt> = Port number <tol> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =100, <i>DEFault</i> =100
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:LL:TLEV 85
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:LLoad:TLEVel?
Description	This query returns the Tolerance level percentage (Utilization multiplier).
Parameter	<Pt> = Port number
Response	<tol> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:LL:TLEV? → 85
Note	

12.22.16 ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:STEP <step>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 1000000000, DEFault = 10</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:DUR:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:DUR:STEP? → 5
Note	

12.22.17 ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:REPeats

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:REPeats <rep>
Description	This command sets the number of repeats.
Parameters	<Pt> = Port number <rep> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000, DEFault = 0</i>
Response	None.
Example	ETH:RFC:SET:PORT1:LAT:DUR:REP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:LATency:DURation:REPeats?
Description	This query returns the number of repeats.
Parameter	<Pt> = Port number
Response	<rep> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:LAT:DUR:REP? → 5
Note	

12.23 RFC2544 - Burst

12.23.1 ETHernet:RFC:SEtup:PORT<Pt>:BURSt:MODE

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:MODE <mode>
Description	This command sets the RFC2544 burst mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> FPBurst: Based on frame SPBurst: Based on seconds <i>DEFault = FPBurst</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:MODE SPB
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:MODE?
Description	This query returns the RFC2544 burst mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:MODE? → SPB
Note	

12.23.2 ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:MODE

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:MODE <mode>
Description	This command sets the RFC2544 burst frame size mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant FLEXible: Flexible <i>DEFault = USER</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:MODE?
Description	This query returns the RFC2544 burst frame size mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:MODE? → CONS
Note	

12.23.3 ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:USER

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:USER {<size>}*
Description	This command sets the RFC2544 burst user defined frame size(s) for user defined mode.
Parameters	<Pt> = Port number ({<size>} * {,}*) = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes

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	768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:USER (64,256,JUMB)
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:USER?
Description	This query returns the RFC2544 burst user defined frame size(s) for user defined mode.
Parameter	<Pt> = Port number
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:USER? → (64,256,JUMB)
Note	

12.23.4 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:JUMBo

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:JUMBo <size>
Description	This command sets the RFC2544 burst jumbo frame size for user defined mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1519, MAXimum = 16000, DEFault = 1582</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:JUMB 6000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:JUMBo?
Description	This query returns the RFC2544 burst jumbo frame size for user defined mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:JUMB? → 6000
Note	

12.23.5 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:BEGin <size>
Description	This command sets the RFC2544 burst begin frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44¹, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:BEG 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:BEGin?
Description	This query returns the RFC2544 burst begin frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:BEG? → 128
Note	

12.23.6 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:END <size>
Description	This command sets the RFC2544 burst end frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 44 ¹ , <i>MAXimum</i> = 16000, <i>DEFault</i> = 256
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:END 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:END?
Description	This query returns the RFC2544 burst end frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:END? → 128
Note	

12.23.7 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:STEP <size>
Description	This command sets the RFC2544 burst step frame size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 1, <i>MAXimum</i> = 16000, <i>DEFault</i> = 64
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:STEP 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:STEP?
Description	This query returns the RFC2544 burst step frame size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:STEP? → 128
Note	

12.23.8 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FSIZe:CONStant <size>
Description	This command sets the RFC2544 burst frame size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum</i> = 44 ¹ , <i>MAXimum</i> = 16000, <i>DEFault</i> = 256
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:CONS 128
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. ¹ The minimum allowed frame size varies depending on the stream frame setup.

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:CONStant?
Description	This query returns the RFC2544 burst frame size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:CONS? → 128
Note	

12.23.9 ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible:COUNT

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible:COUNT <count>
Description	This command sets the RFC2544 flexible frame count.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=10, DEFault=1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:FLEX:COUN 3
Note	

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible:COUNT?
Description	This query returns the RFC2544 flexible frame count.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:FLEX:COUN? → 3
Note	

12.23.10 ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible<Count>:SIZE

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible<Count>:SIZE <size>
Description	This command sets the RFC2544 flexible frame size.
Parameters	<Pt> = Port number <Count> = Flexible frame number (1-10) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 44, MAXimum = 16000, DEFault = 64</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:FLEX1:SIZE 384
Notes	

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:FSIZe:FLEXible<Count>:SIZE?
Description	This query returns the RFC2544 flexible frame size.
Parameter	<Pt> = Port number <Count> = Flexible frame number (1-10)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FSIZ:FLEX1:SIZE? → 384
Note	

12.23.11 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:MODE <mode>
Description	This command sets the RFC2544 frames per burst mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> STEPped: Stepped CONStant: Constant DEFault = STEPped
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:MODE CONS
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:MODE?
Description	This query returns the RFC2544 frames per burst mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:MODE? → CONS
Note	

12.23.12 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:BEGin

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:BEGin <size>
Description	This command sets the RFC2544 burst begin size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> MINimum = 1, MAXimum = 300000000, DEFault = 100
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:BEG 10
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:BEGin?
Description	This query returns the RFC2544 burst begin size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:BEG? → 10
Note	

12.23.13 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:END

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:END <size>
Description	This command sets the RFC2544 burst end size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> MINimum = 1, MAXimum = 300000000, DEFault = 2000
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:END 20
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:END?
Description	This query returns the RFC2544 burst end size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:END? → 20
Note	

12.23.14 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STEP <size>
Description	This command sets the RFC2544 burst step size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 300000000, DEFault = 100</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STEP?
Description	This query returns the RFC2544 burst step size.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:STEP? → 5
Note	

12.23.15 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:CONStant

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:CONStant <size>
Description	This command sets the RFC2544 burst size for constant mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 300000000, DEFault = 2000</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:CONS 500
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:CONStant?
Description	This query returns the RFC2544 burst size for constant mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:CONS? → 500
Note	

12.23.16 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STOP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STOP <enable>
Description	This command enables or disables stop on no frame loss at maximum burst size.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:STOP ON
Note	This setting is used in Switch/Router and Single ended network mode.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:STOP?
Description	This query returns whether or not stop on no frame loss at maximum burst size is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:STOP? → 1
Note	

12.23.17 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch[:ENABle]

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch[:ENABle] <enable>
Description	This command enables/disables frames per burst auto search.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE ON
Note	This setting is used in Switch/Router and Single ended network mode. In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch[:ENABle]?
Description	This query returns whether or not frames per burst auto search is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE? → 0
Note	

12.23.18 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE <mode>
Description	This command sets the frames per burst auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMARt: Smart search BINary: Binary search <i>DEFault = SMARt</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE:MODE SMAR
Note	This setting is used when ETH:RFC:SET:PORT1:BURS:FPB:ASE is enabled.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE?
Description	This query returns the frames per burst auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE:MODE? → SMAR,BIN
Note	

12.23.19 ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution <resolution>
Description	This command sets the frames per burst auto search resolution.
Parameters	<Pt> = Port number <resolution> = <CHARACTER PROGRAM DATA> PM1: 1 per mille (0.1%) PM10: 10 per mille (1.0%) PM100: 100 per mille (10.0%) <i>DEFault = PM1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE:RES PM10
Note	This setting is used when ETH:RFC:SET:PORT1:BURS:FPB:ASE is enabled.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution?
Description	This query returns the frames per burst auto search resolution.
Parameter	<Pt> = Port number
Response	<resolution> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:FPB:ASE:RES? → PM10
Note	

12.23.20 ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:SEConds

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:SEConds <seconds>
Description	This command sets the seconds per burst (Burst length).
Parameters	<Pt> = Port number <seconds> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.001, MAXimum = 8.000, DEFault = 1.000</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:SPB:SEC 2.000
Notes	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:SEConds?
Description	This query returns the seconds per burst (Burst length).
Parameter	<Pt> = Port number
Response	<seconds> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:SPB:SEC? → 10
Note	

12.23.21 ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:MODE

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:MODE <mode>
Description	This command sets the seconds per burst auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMART: Smart search BINary: Binary search <i>DEFault = SMART</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:SPB:ASE:MODE SMAR
Note	This setting is used when ETH:RFC:SET:PORT1:BURS:SPB:ASE is enabled.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:MODE?
Description	This query returns the seconds per burst auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:SPB:ASE:MODE? → SMAR,BIN
Note	

12.23.22 ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:RESolution

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:RESolution <resolution>
Description	This command sets the seconds per burst auto search resolution.
Parameters	<Pt> = Port number <resolution> = <CHARACTER PROGRAM DATA> PM01: 0.1 per mille (0.01%) PM1: 1 per mille (0.1%) PM10: 10 per mille (1.0%) PM100: 100 per mille (10.0%) <i>DEFault = PM1</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:SPB:ASE:RES PM10
Note	This setting is used when ETH:RFC:SET:PORT1:BURS:SPB:ASE is enabled.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:SPBurst:ASEarch:RESolution?
Description	This query returns the seconds per burst auto search resolution.
Parameter	<Pt> = Port number
Response	<resolution> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:SPB:ASE:RES? → PM10
Note	

12.23.23 ETHernet:RFC:SETup:PORT<Pt>:BURSt:DURation:STEP

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:DURation:STEP <step>
Description	This command sets the RFC2544 burst step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 1000000000, DEFault = 10</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:DUR:STEP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SETup:PORT<Pt>:BURSt:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:DUR:STEP? → 5
Note	

12.23.24 EThernet:RFC:SEtup:PORT<Pt>:BURSt:DURation:REPeats

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:DURation:REPeats <rep>
Description	This command sets the number of repeats.
Parameters	<Pt> = Port number <rep> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000, DEFault = 0</i>
Response	None.
Example	ETH:RFC:SET:PORT1:BURS:DUR:REP 5
Note	In Switch/Router mode PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	ETHernet:RFC:SEtup:PORT<Pt>:BURSt:DURation:REPeats?
Description	This query returns the number of repeats.
Parameter	<Pt> = Port number
Response	<rep> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:SET:PORT1:BURS:DUR:REP? → 5
Note	

12.24 RFC2544 - Result

12.24.1 ETHernet:RFC:RESult:TEST

Syntax	ETHernet:RFC:RESult:TEST <test>
Description	This command selects the test to fetch results from.
Parameter	<test> = <CHARACTER PROGRAM DATA> LATency: Latency test THROughput: Throughput test FLOs: Frame loss test TAFLoss: Throughput and frame loss test BURSt: Burst test <i>DEFault = LATency</i>
Response	None.
Example	ETH:RFC:RES:TEST LAT
Note	This setting is not stored as part of a settings- or result file.

Syntax	ETHernet:RFC:RESult:TEST?
Description	This query returns the selected test to fetch results from.
Parameter	None.
Response	<test> = <CHARACTER RESPONSE DATA>
Example	ETH:RFC:RES:TEST? → LAT
Note	

12.24.2 ETHernet:RFC:RESult:PORT<Pt>:NSTep?

Syntax	ETHernet:RFC:RESult:PORT<Pt>:NSTep? <dir>
Description	This query returns the number of steps for a given port/direction for the selected test type.
Parameters	<Pt> = Port number <dir> = <CHARACTER PROGRAM DATA> TX = Transmitter TXR = Transmitter Remote (only E2E test mode) RX = Receiver RXR = Receiver Remote (only E2E test mode) <i>DEFault = TX</i>
Response	<steps> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:RES:PORT1:NST? RX → 6
Note	Can only be used while a RFC test is in memory.

12.24.3 ETHernet:RFC:RESult:PORT<Pt>:SElect

Syntax	ETHernet:RFC:RESult:PORT<Pt>:SElect <dir>, <step>
Description	This command selects the direction and step to fetch results from.
Parameters	<Pt> = Port number <dir> = <CHARACTER PROGRAM DATA> TX = Transmitter TXR = Transmitter Remote (only E2E test mode) RX = Receiver RXR = Receiver Remote (only E2E test mode) <i>DEFault = TX</i> <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, DEFault = 1</i>
Response	None.
Example	ETH:RFC:RES:PORT1:SEL TX, 2
Note	Use the ETHernet:RFC:RESult:PORT<Pt>:NSTep? command (see section 12.24.2) to get the number of steps. This setting is not stored as part of a settings- or result file.

Syntax	ETHernet:RFC:RESult:PORT<Pt>:SElect?
Description	This query returns the selected direction and step to fetch results from.
Parameter	<Pt> = Port number
Response	<dir> = <CHARACTER RESPONSE DATA> <step> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:RFC:RES:PORT1:SEL? → TX, 2
Note	

12.24.4 ETHernet:RFC:RESult:PORT<Pt>:FETCh?

Syntax	ETHernet:RFC:RESult:PORT<Pt>:FETCh? <parameters>
Description	This query fetches the RFC2544 results.
Parameters	<Pt> = Port number {(<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Common REP: Repeat. Response: <NR1> STEP: Step. Response: <NR1> TFR: Total frames. Response: <NR1> FSIZ: Frame size. Unit: bytes. Response: <NR1> FRAT: Frame rate¹ (only TX). Unit: fps. Response: <NR1> LL: Line load¹ (only TX). Unit: Mbps². Response: <NR2> LLA: Actual line load¹ (only TX). Unit: Mbps². Response: <NR2> THR: Throughput¹ (only RX). Unit: Mbps². Response: <NR2> UTIL: Utilization¹ (only RX). Unit: %. Response: <NR2> Latency LJIT: Latency/Jitter (Min,Max,Avg) (only RX). Unit: us. Response: <NR2> Throughput FLOS: Frames lost³ (only RX). Response: <NR2> Frame Loss FLOS: Frames lost³ (only RX). Response: <NR2> LRAT: Loss rate³ (only RX). Unit: %. Response: <NR2> Throughput and Frame Loss FLOS: Frames lost³ (only RX). Response: <NR2> LRAT: Loss rate³ (only RX). Unit: %. Response: <NR2> Burst BSIZ: Burst size. Response: <NR1> BSEC: Burst seconds. Response: <NR2> FLOS: Frames lost³ (only RX). Response: <NR2>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field.
Example	ETH:RFC:RES:PORT1:FETC? (REP,FSIZ,LL) → (0), (64), (90.0000)
Notes	This query fetches the result from the test, direction and step selected by the ETHernet:RFC:RESult:TEST command (see section 12.24.1) and ETHernet:RFC:RESult:PORT<Pt>:SElect command (see section 12.24.3). If a requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed. ¹ Not available for Burst Test. ² When running a Router Latency Test the unit is kbps. ³ When Accumulate repeated steps is enabled, see ETHernet:RFC:SETup:GENeral:ACCumulate, three values are returned: (Min,Max,Avg).

12.25 Y.1564 Service Activation Test

12.25.1 ETHernet:SATest:STARt

Syntax	ETHernet:SATest:STARt
Description	This command starts a service activation test (described in ITU-T Y.1564).
Parameter	None.
Response	None.
Example	ETH:SAT:STAR
Note	

12.25.2 ETHernet:SATest:STOP

Syntax	ETHernet:SATest:STOP
Description	This command stops the service activation test.
Parameter	None.
Response	None.
Example	ETH:SAT:STOP
Note	

12.25.3 ETHernet:SATest:SETup:TMODe

Syntax	ETHernet:SATest:SETup:TMODe <mode>
Description	This command sets the service activation test mode.
Parameters	<mode> = <CHARACTER PROGRAM DATA> OWAY: One-way testing RTRip: Round-trip testing <i>DEFault</i> = <i>RTRip</i>
Response	None.
Example	ETH:SAT:SET:TMOD OWA
Note	For round-trip testing the test setup is done using the local-to-remote commands with the ":LTRemote" node, while the test result is retrieved using the remote-to-local commands with the "RTLocal" node.

Syntax	ETHernet:SATest:SETup:TMODe?
Description	This query returns the service activation test mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:TMOD? → OW
Note	

12.25.4 ETHernet:SATest:SETup:OWTest:LTRemote[:ENABle]

Syntax	ETHernet:SATest:SETup:OWTest:LTRemote[:ENABle] <enable>
Description	This command enables/disables the one-way test in the local to remote direction.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:SAT:SET:OWT:LTR ON
Note	

Syntax	ETHernet:SATest:SETup:OWTest:LTRemote[:ENABle]?
Description	This query returns whether or not the local to remote direction is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:OWT:LTR? → 1
Note	

12.25.5 ETHernet:SATest:SETup:OWTest:RTLocal[:ENABle]

Syntax	ETHernet:SATest:SETup:OWTest:RTLocal[:ENABle] <enable>
Description	This command enables/disables the one-way test in the remote to local direction.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:SAT:SET:OWT:RTL ON
Note	

Syntax	ETHernet:SATest:SETup:OWTest:RTLocal[:ENABle]?
Description	This query returns whether or not the remote to local direction is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:OWT:RTL? → 1
Note	

12.25.6 ETHernet:SATest:SETup:OWTest:BSYMMetry

Syntax	ETHernet:SATest:SETup:OWTest:BSYMMetry <symmetry>
Description	This command sets the one-way test bandwidth symmetry.
Parameters	<symmetry> = <CHARACTER PROGRAM DATA> SYMMetric: Symmetric bandwidth ASYMMetric: Asymmetric bandwidth <i>DEFault = SYMMetric</i>
Response	None.
Example	ETH:SAT:SET:OWT:BSYM SYMM
Note	The value is significant only for bi-directional one-way tests (both ETHernet:SATest:SETup:OWTest:RTLocal and ETHernet:SATest:SETup:OWTest:LTRemote are enabled). For bi-directional one-way tests using SYMMetric bandwidth setup, it is the ETHernet:SATest:SETup:SERvice<no>[:LTRemote] node that are used to define the traffic in both directions.

Syntax	ETHernet:SATest:SETup:OWTest:BSYMMetry?
Description	This query returns the bandwidth symmetry parameter.
Parameter	None.
Response	<symmetry> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:OWT:BSYM? → SYMM
Note	

12.25.7 ETHernet:SATest:SETup:OWTest:SYNChronization

Syntax	ETHernet:SATest:SETup:OWTest:SYNChronization <mode>
Description	This command sets the one-way test time synchronization mode.
Parameters	<mode> = <CHARACTER PROGRAM DATA> PRETest: Pre-test synchronization GPS: GPS. <i>DEFault = PRETest</i>
Response	None.
Example	ETH:SAT:SET:OWT:SYNC PRET
Note	

Syntax	ETHernet:SATest:SETup:OWTest:SYNChronization?
Description	This query returns the time synchronization mode.
Parameter	None.
Response	<symmetry> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:OWT:SYNC? → GPS
Note	

12.25.8 ETHernet:SATest:SETup:OWTest:TLSAddresses[:ENABle]

Syntax	ETHernet:SATest:SETup:OWTest:TLSAddresses[:ENABle] <enable>
Description	This command enables/disables transfer of local source addresses to be used as destination addresses on remote side.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:SAT:SET:OWT:TLSA ON
Note	

Syntax	ETHernet:SATest:SETup:OWTest:TLSAddresses[:ENABle]?
Description	This query returns whether or not local source addresses are used as destination addresses on remote side.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:OWT:TLSA? → 1
Note	

12.25.9 ETHernet:SATest:SETup:CCFC

Syntax	ETHernet:SATest:SETup:CCFC <enable>
Description	This command enables/disables compatible configuration frames with CMA3000 and V2.X or older.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:SAT:SET:CCFC ON
Note	

Syntax	ETHernet:SATest:SETup:CCFC?
Description	This query returns the state of compatible configuration frames with CMA3000 and V2.X or older.
Parameter	None
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:CCFC? → 1
Note	

12.25.10 ETHernet:SATest:SETup:CBRate

Syntax	ETHernet:SATest:SETup:CBRate <unit>
Description	This command sets the calculated bit rate base.
Parameters	<unit> = <CHARACTER PROGRAM DATA> IRATe: Information rate ULRate: Utilized line rate <i>DEFault = IRATe</i>
Response	None.
Example	ETH:SAT:SET:CBR IRAT
Note	

Syntax	ETHernet:SAtest:SETup:CBRate?
Description	This query returns the calculated bit rate base.
Parameter	None.
Response	<unit> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:CBR? → IRAT
Note	

12.25.11 ETHernet:SAtest:SETup:SPTDuration

Syntax	ETHernet:SAtest:SETup:SPTDuration <duration>
Description	This command sets the service performance test duration.
Parameters	<duration> = <CHARACTER PROGRAM DATA> 15M: 15 minutes 2H: 2 hours 24H: 24 hours CUSTom: Use the custom value <i>DEFault = CUSTom</i>
Response	None.
Example	ETH:SAT:SET:SPTD 15M
Note	

Syntax	ETHernet:SAtest:SETup:SPTDuration?
Description	This query returns the service performance test duration.
Parameter	None.
Response	<duration> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SPTD? → 15M
Note	

12.25.12 ETHernet:SAtest:SETup:SPTDuration:CDURation

Syntax	ETHernet:SAtest:SETup:SPTDuration:CDURation <hours>,<minutes>,<seconds>
Description	This command sets the service performance test custom duration.
Parameters	<hours> = <NUMERIC PROGRAM DATA> (0-23) <minutes> = <NUMERIC PROGRAM DATA> (0-1439) <seconds> = <NUMERIC PROGRAM DATA> (0-86399)
Response	None.
Example	ETH:SAT:SET:SPTD:CDUR 0,5,0
Note	The performance test custom duration cannot exceed 23 hours, 59 minutes and 59 seconds.

Syntax	ETHernet:SAtest:SETup:SPTDuration:CDURation?
Description	This query returns the service performance test custom duration.
Parameter	None.
Response	<hours> = <NR1 NUMERIC RESPONSE DATA> <minutes> = <NR1 NUMERIC RESPONSE DATA> <seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SPTD:CDUR? → 0,5,0
Note	

12.25.13 ETHernet:SATest:SETup:COFail

Syntax	ETHernet:SATest:SETup:COFail <enable>
Description	This command enables/disables continue on fail. When enabled, all the service configuration tests are performed despite violation of the service acceptance criteria.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:COF OFF
Note	Service performance test is never performed if the service acceptance criteria is exceeded.

Syntax	ETHernet:SATest:SETup:COFail?
Description	This query returns whether or not continue on fail is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:COF? → 0
Note	

12.25.14 ETHernet:SATest:SETup:GENeral:IAFFilter

Syntax	ETHernet:SATest:SETup:GENeral:IAFFilter
Description	This command selects if addresses should be included in frame filter on receiver.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:SAT:SET:GEN:IAFF ON
Note	

Syntax	ETHernet:SATest:SETup:GENeral:IAFFilter?
Description	This query returns addresses should be included in frame filter on receiver.
Parameter	None.
Response	<enable> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:GEN:IAFF? → 1
Note	

12.25.15 ETHernet:SATest:SETup:SERVice<no>[:ENABle]

Syntax	ETHernet:SATest:SETup:SERVice<no>[:ENABle] <enable>
Description	This command enables/disables a service.
Parameters	<no> = Service number (1-8) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:SERV OFF
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:ENABle]?
Description	This query returns whether or not a service is enabled.
Parameter	<no> = Service number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:SERV? → 0
Note	

12.25.16 ETHernet:SATest:SETup:SERVice<no>:NAME

Syntax	ETHernet:SATest:SETup:SERVice<no>:NAME <name>
Description	This command changes the name of a service.
Parameters	<no> = Service number (1-8) <name> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:SAT:SET:SERV1:NAME "Video"
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:NAME?
Description	This query returns the name of a service.
Parameter	<no> = Service number (1-8)
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:NAME? → "Video"
Note	

12.25.17 ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate] <rate>
Description	This command sets the committed information rate for the specified service. Unit: Mbps.
Parameters	<no> = Service number (1-8) <rate> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1 1.12
Note	If set to zero, the CIR test steps are excluded. This value is automatically calculated when the profile is Video or Voice. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]?
Description	This query returns the committed information rate for the specified service.
Parameter	<no> = Service number (1-8)
Response	<rate> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1? → 1.12
Note	

12.25.18 ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate] <rate>
Description	This command sets the committed information rate for the specified service. Unit: Mbps.
Parameters	<no> = Service number (1-8) <rate> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL 1.12
Note	If set to zero, the CIR test steps are excluded. This value is automatically calculated when the profile is Video or Voice. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]?
Description	This query returns the committed information rate for the specified service.
Parameter	<no> = Service number (1-8)
Response	<rate> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL? → 1.12
Note	

12.25.19 ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:PROFile

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:PROFile <profile>
Description	This command sets the stream Profile.
Parameters	<no> = Service number (1-8) <profile> = <CHARACTER PROGRAM DATA> DATA: Data VIDeo: Video VOICe: Voice <i>DEFault = DATA</i>
Response	None.
Example	ETH:SAT:SET:SERV1:PROF VID
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:PROFile?
Description	This query returns the stream Profile.
Parameter	<no> = Service number (1-8)
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:PROF? → VID
Note	

12.25.20 ETHernet:SATest:SETup:SERVice<no>:RTLLocal[:CIRate]:PROFile

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLLocal[:CIRate]:PROFile <profile>
Description	This command sets the stream Profile.
Parameters	<no> = Service number (1-8) <profile> = <CHARACTER PROGRAM DATA> DATA: Data VIDeo: Video VOICe: Voice <i>DEFault = DATA</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:PROF VID
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLLocal[:CIRate]:PROFile?
Description	This query returns the stream Profile.
Parameter	<no> = Service number (1-8)
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:PROF? → VID
Note	

12.25.21 ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:ENCoding:VIDeo

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:ENCoding:VIDeo <encoding>
Description	This command sets the stream Encoding Video.
Parameters	<no> = Service number (1-8) <encoding> = <CHARACTER PROGRAM DATA> SDMPEG2: SDTV (MPEG2) HDMPEG2: HDTV (MPEG2) HDMPEG4: MPEG4 (H.264) SD <i>DEFault = SDMPEG2</i>
Response	None.
Example	ETH:SAT:SET:SERV1:ENC:VID HDMPEG2
Note	

Syntax	ETHerNet:SAtest:SETup:SErvice<no>[:LTRemote][:CIRate]:ENCoding:VIDeo?
Description	This query returns the stream Encoding Video.
Parameter	<no> = Service number (1-8)
Response	<encoding> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:ENC:VID? → HDMPEG2
Note	

12.25.22 ETHerNet:SAtest:SETup:SErvice<no>:RTLocal[:CIRate]:ENCoding:VIDeo

Syntax	ETHerNet:SAtest:SETup:SErvice<no>:RTLocal[:CIRate]:ENCoding:VIDeo <encoding>
Description	This command sets the stream Encoding Video.
Parameters	<no> = Service number (1-8) <encoding> = <CHARACTER PROGRAM DATA> SDMPEG2: SDTV (MPEG2) HDMPEG2: HDTV (MPEG2) HDMPEG4: MPEG4 (H.264) SD <i>DEFault = SDMPEG2</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:ENC:VID HDMPEG2
Note	

Syntax	ETHerNet:SAtest:SETup:SErvice<no>:RTLocal[:CIRate]:ENCoding:VIDeo?
Description	This query returns the stream Encoding Video.
Parameter	<no> = Service number (1-8)
Response	<encoding> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:ENC:VID? → HDMPEG2
Note	

12.25.23 ETHerNet:SAtest:SETup:SErvice<no>[:LTRemote][:CIRate]:ENCoding:VOICe

Syntax	ETHerNet:SAtest:SETup:SErvice<no>[:LTRemote][:CIRate]:ENCoding:VOICe <encoding>
Description	This command sets the stream Encoding Voice.
Parameters	<no> = Service number (1-8) <encoding> = <CHARACTER PROGRAM DATA> G711: VoIP G.711 G7231: VoIP G.723.1 G729: VoIP G.729 <i>DEFault = G711</i>
Response	None.
Example	ETH:SAT:SET:SERV1:ENC:VOIC G7231
Note	

Syntax	ETHerNet:SAtest:SETup:SErvice<no>[:LTRemote][:CIRate]:ENCoding:VOICe?
Description	This query returns the stream Encoding Voice.
Parameter	<no> = Service number (1-8)
Response	<encoding> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:ENC:VOIC? → G7231
Note	

12.25.24 ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:ENCoding:VOICe

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:ENCoding:VOICe <encoding>
Description	This command sets the stream Encoding Voice.
Parameters	<no> = Service number (1-8) <encoding> = <CHARACTER PROGRAM DATA> G711: VoIP G.711 G7231: VoIP G.723.1 G729: VoIP G.729 <i>DEFault = G711</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:ENC:VOIC G7231
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:ENCoding:VOICe?
Description	This query returns the stream Encoding Voice.
Parameter	<no> = Service number (1-8)
Response	<encoding> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:ENC:VOIC? → G7231
Note	

12.25.25 ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:NCHannels

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:NCHannels <channel>
Description	This command sets the number of channels.
Parameters	<no> = Service number (1-8) <channel> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 100000, DEFault = 1</i>
Response	None.
Example	ETH:SAT:SET:SERV1:NCH 3
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote][:CIRate]:NCHannels?
Description	This query returns the number of channels.
Parameter	<no> = Service number (1-8)
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:NCH? → 3
Note	

12.25.26 ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:NCHannels

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:NCHannels <channel>
Description	This command sets the number of channels.
Parameters	<no> = Service number (1-8) <channel> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 100000, DEFault = 1</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:NCH 3
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal[:CIRate]:NCHannels?
Description	This query returns the number of channels.
Parameter	<no> = Service number (1-8)
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:NCH? → 3
Note	

12.25.27 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EIRate

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EIRate <rate>
Description	This command sets the excess information rate for the specified service. Unit: Mbps.
Parameters	<no> = Service number (1-8) <rate> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:EIR 0.10
Note	If set to zero, the CIR test steps are excluded. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EIRate?
Description	This query returns the excess information rate for the specified service.
Parameter	<no> = Service number (1-8)
Response	<rate> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:EIR? → 0.12
Note	

12.25.28 ETHernet:SATest:SETup:SERVice<no>:RTLocal:EIRate

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:EIRate <rate>
Description	This command sets the excess information rate for the specified service. Unit: Mbps.
Parameters	<no> = Service number (1-8) <rate> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:EIR 0.12
Note	If set to zero, the CIR test steps are excluded. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:EIRate?
Description	This query returns the excess information rate for the specified service.
Parameter	<no> = Service number (1-8)
Response	<rate> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:EIR? → 0.12
Note	

12.25.29 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing[:ENABLE]

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing[:ENABLE] <enable>
Description	This command enables/disables the traffic policing test steps.
Parameters	<no> = Service number (1-8) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:SERV1:TPOL OFF
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing[:ENABLE]?
Description	This query returns whether or not traffic policing test is enabled.
Parameter	<no> = Service number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:TPOL? → 0
Note	

12.25.30 ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing[:ENABLE]

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing[:ENABLE] <enable>
Description	This command enables/disables the traffic policing test steps.
Parameters	<no> = Service number (1-8) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:TPOL OFF
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing[:ENABLE]?
Description	This query returns whether or not traffic policing test not is enabled.
Parameter	<no> = Service number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:TPOL? → 0
Note	

12.25.31 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing:MARGin

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing:MARGin <margin>
Description	This command sets the acceptable traffic policing margin. Unit: Mbps.
Parameters	<no> = Service number (1-8) <margin> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:TPOL:MARG 10
Note	The minimum possible margin is 0.01 Mbps for line speeds up to 1Gbps. The minimum possible margin is 0.10 Mbps for 10Gbps line speeds. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:TPOLicing:MARGin?
Description	This query returns the acceptable traffic policing margin.
Parameter	<no> = Service number (1-8)
Response	<margin> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:TPOL:MARG? → 10.15
Note	

12.25.32 ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing:MARGin

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing:MARGin <margin>
Description	This command sets the acceptable traffic policing margin. Unit: Mbps.
Parameters	<no> = Service number (1-8) <margin> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = see note¹, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:TPOL:MARG 10
Note	The minimum possible margin is 0.01 Mbps for line speeds up to 1Gbps. The minimum possible margin is 0.10 Mbps for 10Gbps line speeds. ¹ Maximum value depends on the current frame size setup.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:TPOLicing:MARGin?
Description	This query returns the acceptable traffic policing margin.
Parameter	<no> = Service number (1-8)
Response	<margin> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:TPOL:MARG? → 10.15
Note	

12.25.33 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CBSize

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CBSize <size>
Description	This command sets the committed burst size for the specified service. Unit: Bytes.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CBS 10000
Note	If set to zero, the CBS test is excluded. If set to a value greater than zero but below the MTU size then the MTU size will be applied.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CBSize?
Description	This query returns the committed burst size for the specified service.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CBS? → 10000
Note	

12.25.34 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CBSize

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CBSize <size>
Description	This command sets the committed burst size for the specified service. Unit: Bytes.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CBS 10000
Note	If set to zero, the CBS test is excluded. If set to a value greater than zero but below the MTU size then the MTU size will be applied.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CBSize?
Description	This query returns the committed burst size for the specified service.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CBS? → 10000
Note	

12.25.35 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EBSize

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EBSize <size>
Description	This command sets the excess burst size for the specified service. Unit: Bytes.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:EBS 10000
Note	If set to zero, the EBS test is excluded. If set to a value greater than zero but below the MTU size then the MTU size will be applied.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EBSize?
Description	This query returns the excess burst size for the specified service.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:EBS? → 1
Note	

12.25.36 ETHernet:SATest:SETup:SERVice<no>:RTLocal:EBSize

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:EBSize <size>
Description	This command sets the excess burst size for the specified service. Unit: Bytes.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:EBS 1
Note	If set to zero, the EBS test is excluded. If set to a value greater than zero but below the MTU size then the MTU size will be applied.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:EBSize?
Description	This query returns the excess burst size for the specified service.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:EBS? → 1
Note	

12.25.37 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare[:ENABLE]

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare[:ENABLE] <enable>
Description	This command enables/disables the color awareness of a service.
Parameters	<no> = Service number (1-8) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV OFF
Note	When disabled the color mode is colorblind.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare[:ENABLE]?
Description	This query returns whether or not color awareness of a service service is enabled.
Parameter	<no> = Service number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV? → 0
Note	

12.25.38 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare[:ENABLE]

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare[:ENABLE] <enable>
Description	This command enables/disables the color awareness of a service.
Parameters	<no> = Service number (1-8) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV OFF
Note	When disabled the color mode is colorblind.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare[:ENABLE]?
Description	This query returns whether or not color awareness of a service service is enabled.
Parameter	<no> = Service number (1-8)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV? → 0
Note	

12.25.39 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:CMETHod

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:CMETHod <method>
Description	This command sets the color method for the specified service.
Parameters	<no> = Service number (1-8) <method> = <CHARACTER PROGRAM DATA> DSCP: Differentiated Services Code Point PCP: Priority Code Point <i>DEFault = DSCP</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV:CMET DSCP
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:CMETHod?
Description	This query returns the color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<method> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV:CMET? → DSCP
Note	

12.25.40 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:CMETHod

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:CMETHod <method>
Description	This command sets the color method for the specified service.
Parameters	<no> = Service number (1-8) <method> = <CHARACTER PROGRAM DATA> DSCP: Differentiated Service Code Point PCP: Priority Code Point <i>DEFault = DSCP</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV:CMET DSCP
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:CMETHod?
Description	This query returns the color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<method> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV:CMET? → DSCP
Note	

12.25.41 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:GREen

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:GREen <value>
Description	This command sets the green value for the DSCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 63, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV:DSCP:GRE 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:GREen?
Description	This query returns the green value for the DSCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV:DSCP:GRE? → 1
Note	

12.25.42 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:GREen

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:GREen <value>
Description	This command sets the green value for the DSCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 63, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV:DSCP:GRE 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:GREen?
Description	This query returns the green value for the DSCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV:DSCP:GRE? → 1
Note	

12.25.43 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:YELLow

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:YELLow <value>
Description	This command sets the yellow value for the DSCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 63, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV:DSCP:YELL 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:DSCP:YELLow?
Description	This query returns the yellow value for the DSCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV:DSCP:YELL? → 1
Note	

12.25.44 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:YELLow

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:YELLow <value>
Description	This command sets the yellow value for the DSCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 63, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV:DSCP:YELL 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:DSCP:YELLow?
Description	This query returns the yellow value for the DSCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV:DSCP:YELL? → 1
Note	

12.25.45 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:GREen

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:GREen <value>
Description	This command sets the green value for the PCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV:PCP:GRE 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:GREen?
Description	This query returns the green value for the PCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV:PCP:GRE? → 1
Note	

12.25.46 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:PCP:GREen

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:PCP:GREen <value>
Description	This command sets the green value for the PCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV:PCP:GRE 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CAVare:PCP:GREen?
Description	This query returns the green value for the PCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV:PCP:GRE? → 1
Note	

12.25.47 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:YELLow

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:YELLow <value>
Description	This command sets the yellow value for the PCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CAV:PCP:YELL 1
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CAVare:PCP:YELLow?
Description	This query returns the yellow value for the PCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CAV:PCP:YELL? → 1
Note	

12.25.48 ETHernet:SATest:SETup:SErvice<no>:RTLocal:CAVare:PCP:YELLow

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:CAVare:PCP:YELLow <value>
Description	This command sets the yellow value for the PCP color method for the specified service.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CAV:PCP:YELL 1
Note	

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:CAVare:PCP:YELLow?
Description	This query returns the yellow value for the PCP color method for the specified service.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CAV:PCP:YELL? → 1
Note	

12.25.49 ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:SACRiteria:FTDelay

Syntax	ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:SACRiteria:FTDelay <delay>
Description	This command sets the acceptable frame transfer delay value. Unit: ms.
Parameters	<no> = Service number (1-8) <delay> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 2000.000, DEFault = 0.500</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SACR:FTD 1.100
Note	The precision is three decimals.

Syntax	ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:SACRiteria:FTDelay?
Description	This query returns the acceptable frame transfer delay value.
Parameter	<no> = Service number (1-8)
Response	<delay> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SACR:FTD? → 10.000
Note	

12.25.50 ETHernet:SATest:SETup:SErvice<no>:RTLocal:SACRiteria:FTDelay

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:SACRiteria:FTDelay <delay>
Description	This command sets the acceptable frame transfer delay value. Unit: ms.
Parameters	<no> = Service number (1-8) <delay> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 2000.000, DEFault = 0.500</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:SACR:FTD 10.000
Note	

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:SACRiteria:FTDelay?
Description	This query returns the acceptable frame transfer delay value.
Parameter	<no> = Service number (1-8)
Response	<delay> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:SACR:FTD? → 10.000
Note	

12.25.51 EThernet:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FDVariation

Syntax	ETHerneT:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FDVariation <variation>
Description	This command sets the acceptable frame delay variation value. Unit: ms.
Parameters	<no> = Service number (1-8) <variation> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 2000.000, DEFault = 0.050</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SACR:FDV 20.000
Note	

Syntax	ETHerneT:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FDVariation?
Description	This query returns the acceptable frame delay variation value.
Parameter	<no> = Service number (1-8)
Response	<variation> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SACR:FDV? → 20.000
Note	

12.25.52 EThernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FDVariation

Syntax	ETHerneT:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FDVariation <variation>
Description	This command sets the acceptable frame delay variation value. Unit: ms.
Parameters	<no> = Service number (1-8) <variation> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 2000.000, DEFault = 0.050</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:SACR:FDV 20.000
Note	

Syntax	ETHerneT:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FDVariation?
Description	This query returns the acceptable frame delay variation value.
Parameter	<no> = Service number (1-8)
Response	<variation> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:SACR:FDV? → 20.000
Note	

12.25.53 EThernet:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FLRatio

Syntax	ETHerneT:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FLRatio <ratio>
Description	This command sets the acceptable frame loss ratio.
Parameters	<no> = Service number (1-8) <ratio> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00, MAXimum = 1.00, DEFault = 0.00</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SACR:FLR 0.000015 ETH:SAT:SET:SERV1:SACR:FLR 15e-06
Note	

Syntax	ETHerneT:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:FLRatio?
Description	This query returns the acceptable frame loss ratio.
Parameter	<no> = Service number (1-8)
Response	<ratio> = <NR3 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SACR:FLR? → 1.50e-05
Note	

12.25.54 ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FLRatio

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FLRatio <ratio>
Description	This command sets the acceptable frame loss ratio.
Parameters	<no> = Service number (1-8) <ratio> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00, MAXimum = 1.00, DEFault = 0.00</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:SACR:FLR 0.000015 ETH:SAT:SET:SERV1:RTL:SACR:FLR 15e-06
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:FLRatio?
Description	This query returns the acceptable frame loss ratio.
Parameter	<no> = Service number (1-8)
Response	<ratio> = <NR3 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:SACR:FLR? → 1.50e-05
Note	

12.25.55 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:AVAILability

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:AVAILability <value>
Description	This command sets the acceptable availability. Unit: percentage.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000, DEFault=100.0000</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SACR:AVA 99.0000
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:SACRiteria:AVAILability?
Description	This query returns the acceptable availability.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SACR:AVA? → 99.0000
Note	

12.25.56 ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:AVAILability

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:AVAILability <value>
Description	This command sets the acceptable availability. Unit: percentage.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0000, MAXimum = 100.0000, DEFault = 100.0000</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:SACR:AVA 99.0000
Note	

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:SACRiteria:AVAILability?
Description	This query returns the acceptable availability.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:SACR:AVA? → 99.0000
Note	

12.25.57 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:FSMode

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:FSMode <mode>
Description	This command sets the configured frame size mode.
Parameters	<no> = Service number (1-8) <mode> = <CHARACTER PROGRAM DATA> CONSTant: Fixed frame size ¹ EMIX: A mix of frame sizes ² <i>DEFault = CONSTant</i>
Response	None.
Example	ETH:SAT:SET:SERV1:FSM CONS
Note	¹ Uses the frame size defined by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:FSIZE. ² Uses the frame sizes defined by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EMIX.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:FSMode?
Description	This query returns the configured frame size.
Parameter	<no> = Service number (1-8)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:FSM? → CONS
Note	

12.25.58 ETHernet:SATest:SETup:SERVice<no>:RTLocal:FSMode

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:FSMode <mode>
Description	This command sets the configured frame size mode.
Parameters	<no> = Service number (1-8) <mode> = <CHARACTER PROGRAM DATA> CONSTant: Fixed frame size ¹ EMIX: A mix of frame sizes ² <i>DEFault = CONSTant</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:FSM CONS
Note	¹ Uses the frame size defined by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:FSIZE. ² Uses the frame sizes defined by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:EMIX.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:FSMode?
Description	This query returns the configured frame size.
Parameter	<no> = Service number (1-8)
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:FSM? → CONS
Note	

12.25.59 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CFSize

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CFSize <size>
Description	This command sets the constant frame size.
Parameters	<no> = Service number (1-8) <size> = <CHARACTER PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes

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	1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes MTU: Use the MTU value ¹ USER: Use the user defined value ² <i>DEFault = 512</i>
Response	None.
Example	ETH:SAT:SET:SERV1:CFS 256
Note	¹ The MTU value is modified by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:MTU. ² The user defined value is modified by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:UDFSize.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:CFSsize?
Description	This query returns the constant frame size.
Parameter	<no> = Service number (1-8)
Response	<size> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:CFS? → 256
Note	

12.25.60 ETHernet:SATest:SETup:SERVice<no>:RTLocal:CFSsize

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CFSsize <size>
Description	This command sets the constant frame size.
Parameters	<no> = Service number (1-8) <size> = <CHARACTER PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 1024: 1024 bytes 1280: 1280 bytes 1518: 1518 bytes MTU: Use the MTU value ¹ USER: Use the user defined value ² <i>DEFault = 512</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:CFS 256
Note	¹ The MTU value is modified by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:MTU. ² The user defined value is modified by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:UDFSize.

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:CFSsize?
Description	This query returns the constant frame size.
Parameter	<no> = Service number (1-8)
Response	<size> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:CFS? → 256
Note	

12.25.61 ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EMIX

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EMIX <mix>
Description	This command defines the EMIX sequence.

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Parameters	<code><no></code> = Service number (1-8) <code><mix></code> = <code><STRING PROGRAM DATA></code> This quoted string defines the EMIX sequence by a sequence of the letters 'a'-'h' or 'u'. Specify: 'a' for a 64 bytes frame 'b' for a 128 bytes frame 'c' for a 256 bytes frame 'd' for a 512 bytes frame 'e' for a 1024 bytes frame 'f' for a 1280 bytes frame 'g' for a 1518 bytes frame 'h' for a MTU sized frame ¹ 'u' for a user defined sized frame ² <i>DEFault</i> = "abceg"
Response	None.
Example	ETH:SAT:SET:SERV1:EMIX "ababccdddhu"
Note	Illegal characters are removed from the EMIX string and if the string is more than 16 characters long, the string will be truncated. ¹ The MTU value is modified by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:MTU. ² The user defined value is modified by the command: ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:UDFSize.

Syntax	ETHernet:SATest:SETup:SERVice<no>[:LTRemote]:EMIX?
Description	This query returns the EMIX sequence.
Parameter	<code><no></code> = Service number (1-8)
Response	<code><emix></code> = <code><STRING RESPONSE DATA></code>
Example	ETH:SAT:SET:SERV1:EMIX? → "ababccdddhu"
Note	

12.25.62 ETHernet:SATest:SETup:SERVice<no>:RTLocal:EMIX

Syntax	ETHernet:SATest:SETup:SERVice<no>:RTLocal:EMIX <mix>
Description	This command defines the EMIX sequence.
Parameters	<code><no></code> = Service number (1-8) <code><mix></code> = <code><STRING PROGRAM DATA></code> This quoted string defines the EMIX sequence by a sequence of the letters 'a'-'h' or 'u'. Specify: 'a' for a 64 bytes frame 'b' for a 128 bytes frame 'c' for a 256 bytes frame 'd' for a 512 bytes frame 'e' for a 1024 bytes frame 'f' for a 1280 bytes frame 'g' for a 1518 bytes frame 'h' for a MTU sized frame ¹ 'u' for a user defined sized frame ² <i>DEFault</i> = "abceg"
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:EMIX "ababccdddhu"
Note	Illegal characters are removed from the EMIX string and if the string is more than 16 characters long, the string will be truncated. ¹ The MTU value is modified by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:MTU. ² The user defined value is modified by the command: ETHernet:SATest:SETup:SERVice<no>:RTLocal:UDFSize.

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:EMIX?
Description	This query returns the EMIX sequence.
Parameter	<no> = Service number (1-8)
Response	<emix> = <STRING RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:EMIX? → "ababccdddh"
Note	

12.25.63 ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:MTU

Syntax	ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:MTU <value>
Description	This command sets the MTU value. Unit: bytes.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 1518, MAXimum = 16000, DEFault = 1518</i>
Response	None.
Example	ETH:SAT:SET:SERV1:MTU 10101

Syntax	ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:MTU?
Description	This query returns the MTU value.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:MTU? → 10101
Note	

12.25.64 ETHernet:SATest:SETup:SErvice<no>:RTLocal:MTU

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:MTU <value>
Description	This command sets the MTU value. Unit: bytes.
Parameters	<no> = Service number (1-8) <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 1518, MAXimum = 16000, DEFault = 1518</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:MTU 10101

Syntax	ETHernet:SATest:SETup:SErvice<no>:RTLocal:MTU?
Description	This query returns the MTU value.
Parameter	<no> = Service number (1-8)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:MTU? → 10101
Note	

12.25.65 ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:UDFSize

Syntax	ETHernet:SATest:SETup:SErvice<no>[:LTRemote]:UDFSize <size>
Description	This command sets the user defined frame size.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 46¹, MAXimum = 16000, DEFault = 512</i>
Response	None.
Example	ETH:SAT:SET:SERV1:UDFS 111
Note	¹ The minimum allowed frame size varies depending on the frame content setup.

Syntax	ETHernet:SAtest:SETup:SERVice<no>[:LTRemote]:UDFSize?
Description	This query returns the user defined frame size.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:UDFS? → 111
Note	

12.25.66 ETHernet:SAtest:SETup:SERVice<no>:RTLocal:UDFSize

Syntax	ETHernet:SAtest:SETup:SERVice<no>:RTLocal:UDFSize <size>
Description	This command sets the user defined frame size.
Parameters	<no> = Service number (1-8) <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 46¹, MAXimum = 16000, DEFault = 512</i>
Response	None.
Example	ETH:SAT:SET:SERV1:RTL:UDFS 111
Note	¹ The minimum allowed frame size varies depending on the frame content setup.

Syntax	ETHernet:SAtest:SETup:SERVice<no>:RTLocal:UDFSize?
Description	This query returns the user defined frame size.
Parameter	<no> = Service number (1-8)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:RTL:UDFS? → 111
Note	

12.25.67 ETHernet:SAtest:SETup:SERVice<no>:SCTSteps:SDURATION

Syntax	ETHernet:SAtest:SETup:SERVice<no>:SCTSteps:SDURATION <duration>
Description	This command sets the service configuration test steps duration. Unit: seconds.
Parameters	<no> = Service number (1-8) <duration> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 60, DEFault = 3</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SCTS:SDUR 5
Note	

Syntax	ETHernet:SAtest:SETup:SERVice<no>:SCTSteps:SDURATION?
Description	This query returns the service configuration test steps duration.
Parameter	<no> = Service number (1-8)
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SCTS:SDUR? → 5
Note	

12.25.68 ETHernet:SAtest:SETup:SERVice<no>:SCTSteps:NSTep

Syntax	ETHernet:SAtest:SETup:SERVice<no>:SCTSteps:NSTep <duration>
Description	This command sets the service configuration test number of steps.
Parameters	<no> = Service number (1-8) <steps> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 10, DEFault = 4</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SCTS:NST 2
Note	

Syntax	ETHernet:SAtest:SETup:SErvice<no>:SCTSteps:NSTep?
Description	This query returns the service configuration test number of steps.
Parameter	<no> = Service number (1-8)
Response	<steps> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SCTS:NST? → 2
Note	

12.25.69 ETHernet:SAtest:SETup:SErvice<no>:SCTSteps:SLOPe

Syntax	ETHernet:SAtest:SETup:SErvice<no>:SCTSteps:SLOPe <slope>
Description	This command sets the service configuration test slope.
Parameters	<no> = Service number (1-8) <slope> = <CHARACTER PROGRAM DATA> ASCending: Use an ascending slope (lowest rate first) DESCending: Use a descending slope (CIR rate first) <i>DEFault = ASCending</i>
Response	None.
Example	ETH:SAT:SET:SERV1:SCTS:SLOP ASC
Note	

Syntax	ETHernet:SAtest:SETup:SErvice<no>:SCTSteps:SLOPe?
Description	This query returns the service configuration test slope.
Parameter	<no> = Service number (1-8)
Response	<slope> = <CHARACTER RESPONSE DATA>
Example	ETH:SAT:SET:SERV1:SCTS:SLOP? → ASC
Note	

12.25.70 ETHernet:SATest:RESult:TSYNchronization?

Syntax	ETHernet:SATest:RESult:TSYNchronization?
Description	Returns the status of the timing synchronization during the service activation test period. For one-way testing the signals from the GPS system are needed to achieve the required accuracy of the frame transfer delay measurement.
Parameter	None.
Response	<local-status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the synchronization status on the local side.
	<remote-status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the synchronization status on the remote side.
Example	ETH:SAT:RES:TSYN? → Pass,Fail
Note	

12.25.71 ETHernet:SATest:RESult:SCTest[:LTRemote]?

Syntax	ETHernet:SATest:RESult:SCTest[:LTRemote]?
Description	Returns the overall result of all service configuration tests in the local to remote direction.
Parameter	None.
Response	<status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the status of the test step.
Example	ETH:SAT:RES:SCT? → Pass
Note	

12.25.72 ETHernet:SATest:RESult:SCTest:RTLocal?

Syntax	ETHernet:SATest:RESult:SCTest:RTLocal?
Description	Returns the overall result of all service configuration tests in the remote to local direction.
Parameter	None.
Response	<status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the status of the test step.
Example	ETH:SAT:RES:SCT:RTL? → Pass
Note	

12.25.73 ETHernet:SATest:RESult:SCTest:SERVICE<no>[:LTRemote]:CIRate?

Syntax	ETHernet:SATest:RESult:SCTest:SERVICE<no>[:LTRemote]:CIRate? <step>
Description	Returns the results of the specified step of a service configuration test.
Parameters	<no> = Service number (1-8)
	<step> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 10, DEFault = 1</i>
Response	<status> = <STRING RESPONSE DATA> "Fail" or "Pass" denotes the status of the test step.
	<IR-min> = <NR2 NUMERIC RESPONSE DATA> Minimum information rate. Unit: Mbps.
	<IR-avg> = <NR2 NUMERIC RESPONSE DATA> Average information rate. Unit: Mbps.
	<IR-max> = <NR2 NUMERIC RESPONSE DATA> Maximum information rate. Unit: Mbps.
	<FL-count> = <NR1 NUMERIC RESPONSE DATA> Frame loss. Unit: Frames.
	<FL-rate> = <NR3 NUMERIC RESPONSE DATA> Frame loss ratio.
	<FTD-min> = <NR1 NUMERIC RESPONSE DATA> Minimum frame transfer delay. Unit: ms.
	<FTD-avg> = <NR1 NUMERIC RESPONSE DATA> Average frame transfer delay. Unit: ms.

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	<code><FTD-max> = <NR1 NUMERIC RESPONSE DATA></code> Maximum frame transfer delay. Unit: ms.
	<code><FDV-min> = <NR1 NUMERIC RESPONSE DATA></code> Minimum frame delay variation. Unit: ms.
	<code><FDV-avg> = <NR1 NUMERIC RESPONSE DATA></code> Average frame delay variation. Unit: ms.
	<code><FDV-max> = <NR1 NUMERIC RESPONSE DATA></code> Maximum frame delay variation. Unit: ms.
Example	<code>ETH:SAT:RES:SCT:SERV1:CIR? 1</code> → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.74 ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:CIRate?

Syntax	<code>ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:CIRate? <step></code>
Description	Returns the results of the specified step of a service configuration test.
Parameters	<code><no> = Service number (1-8)</code> <code><step> = <NUMERIC PROGRAM DATA></code> <i>MINimum = 1, MAXimum = 10, DEFault = 1</i>
Response	The same response parameters as for the command: <code>ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate</code>
Example	<code>ETH:SAT:RES:SCT:SERV1:RTL:CIR? 1</code> → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.75 ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:EIRate?

Syntax	<code>ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:EIRate? [<color>]</code>
Description	Returns the results of the specified excess information rate test.
Parameters	<code><no> = Service number (1-8)</code> <code><color> = <CHARACTER PROGRAM DATA></code> GREEN: Green color counters YELLOW: Yellow color counters TOTAL: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTAL</i>
Response	The same response parameters as for the command: <code>ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate</code>
Example	<code>ETH:SAT:RES:SCT:SERV1:EIR? GRE</code> → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.76 ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:EIRate?

Syntax	<code>ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:EIRate? [<color>]</code>
Description	Returns the results of the specified excess information rate test.
Parameters	<code><no> = Service number (1-8)</code> <code><color> = <CHARACTER PROGRAM DATA></code> GREEN: Green color counters YELLOW: Yellow color counters TOTAL: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTAL</i>
Response	The same response parameters as for the command: <code>ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate</code>
Example	<code>ETH:SAT:RES:SCT:SERV1:RTL:EIR? GRE</code> → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.77 ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:TPOLicing?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:TPOLicing? [<color>]
Description	Returns the results of the specified traffic policing test.
Parameters	<no> = Service number (1-8) <color> = <CHARACTER PROGRAM DATA> GREen: Green color counters YELLow: Yellow color counters TOTAl: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTAl</i>
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:TPOL? GRE → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.78 ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:TPOLicing?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:TPOLicing? [<color>]
Description	Returns the results of the specified traffic policing test.
Parameters	<no> = Service number (1-8) <color> = <CHARACTER PROGRAM DATA> GREen: Green color counters YELLow: Yellow color counters TOTAl: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTAl</i>
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:RTL:TPOL? GRE → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.79 ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CBSize?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CBSize?
Description	Returns the results of the committed burst size test.
Parameter	<no> = Service number (1-8)
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:CBS? → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.80 ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:CBSize?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLocal:CBSize?
Description	Returns the results of the committed burst size test.
Parameter	<no> = Service number (1-8)
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:RTL:CBS? → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.81 ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:EBSize?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:EBSize? [<color>]
Description	Returns the results of the excess burst size test.
Parameters	<no> = Service number (1-8) <color> = <CHARACTER PROGRAM DATA> GREen: Green color counters YELLow: Yellow color counters TOTal: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTal</i>
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:EBS? GRE → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.82 ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLcal:EBSize?

Syntax	ETHernet:SATest:RESult:SCTest:SERVice<no>:RTLcal:EBSize? [<color>]
Description	Returns the results of the excess burst size test.
Parameters	<no> = Service number (1-8) <color> = <CHARACTER PROGRAM DATA> GREen: Green color counters YELLow: Yellow color counters TOTal: In color blind mode this is the only result available. Sum of green and yellow color counters when color aware. <i>DEFault = TOTal</i>
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SCTest:SERVice<no>[:LTRemote]:CIRate
Example	ETH:SAT:RES:SCT:SERV1:RTL:EBS? GRE → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3
Note	

12.25.83 ETHernet:SATest:RESult:SPTest[:LTRemote]?

Syntax	ETHernet:SATest:RESult:SPTest[:LTRemote]?
Description	Returns the overall result of all service performance tests in the local to remote direction.
Parameter	None.
Response	<status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the status of the test step.
Example	ETH:SAT:RES:SPT? → Pass
Note	

12.25.84 ETHernet:SATest:RESult:SPTest:RTLocal?

Syntax	ETHernet:SATest:RESult:SPTest:RTLocal?
Description	Returns the overall result of all service performance tests in the remote to local direction.
Parameter	<no> = Service number (1-8)
Response	<status> = <STRING RESPONSE DATA> "Pending" or "Fail" or "Pass" denotes the status of the test step.
Example	ETH:SAT:RES:SPT:RTL? → Pass
Note	

12.25.85 ETHernet:SATest:RESult:SPTest:SERVICE<no>[:LTRemote]?

Syntax	ETHernet:SATest:RESult:SPTest:SERVICE<no>[:LTRemote]?
Description	Returns the results of a service performance test of a service.
Parameter	<no> = Service number (1-8)
Response	<status> = <STRING RESPONSE DATA> "Fail" or "Pass" denotes the status of the test step. <IR-min> = <NR2 NUMERIC RESPONSE DATA> Minimum information rate. Unit: Mbps. <IR-avg> = <NR2 NUMERIC RESPONSE DATA> Average information rate. Unit: Mbps. <IR-max> = <NR2 NUMERIC RESPONSE DATA> Maximum information rate. Unit: Mbps. <FL-count> = <NR1 NUMERIC RESPONSE DATA> Frame loss. Unit: Frames. <FL-rate> = <NR3 NUMERIC RESPONSE DATA> Frame loss ratio. <FTD-min> = <NR1 NUMERIC RESPONSE DATA> Minimum frame transfer delay. Unit: ms. <FTD-avg> = <NR1 NUMERIC RESPONSE DATA> Average frame transfer delay. Unit: ms. <FTD-max> = <NR1 NUMERIC RESPONSE DATA> Maximum frame transfer delay. Unit: ms. <FDV-min> = <NR1 NUMERIC RESPONSE DATA> Minimum frame delay variation. Unit: ms. <FDV-avg> = <NR1 NUMERIC RESPONSE DATA> Average frame delay variation. Unit: ms. <FDV-max> = <NR1 NUMERIC RESPONSE DATA> Maximum frame delay variation. Unit: ms. <Availability> = <NR2 NUMERIC RESPONSE DATA> Availability (link). Unit: percentage. <Unavailable> = <NR1 NUMERIC RESPONSE DATA> Unavailable time. Unit: seconds.
Example	ETH:SAT:RES:SPT:SERV1? → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3,100.00,0
Note	

12.25.86 ETHernet:SATest:RESult:SPTTest:SErvice<no>:RTLocal?

Syntax	ETHernet:SATest:RESult:SPTTest:SErvice<no>:RTLocal?
Description	Returns the results of a service performance test of a service.
Parameter	<no> = Service number (1-8)
Response	The same response parameters as for the command: ETHernet:SATest:RESult:SPTTest:SErvice<no>[:LTRemote]?
Example	ETH:SAT:RES:SPT:SERV1:RTL? → Pass,1.00,2.00,3.00,0,0.00E+00,1,2,3,1,2,3,100.00,0
Note	

12.26 Cable Test

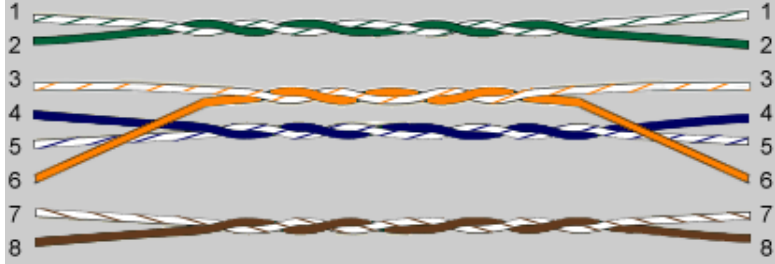
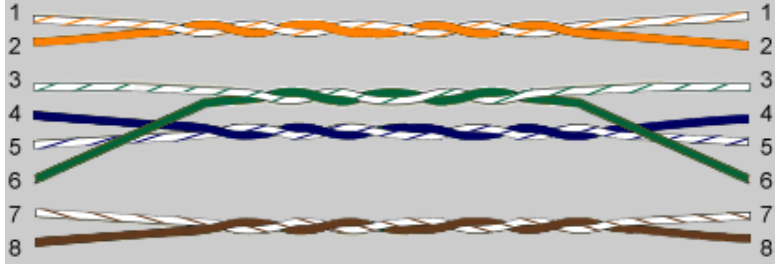
12.26.1 EThernet:CABLe:StARt

Syntax	EThernet:CABLe:StARt
Description	This command starts the cable test.
Parameter	None.
Response	None.
Example	ETH:CABL:STAR
Note	

12.26.2 EThernet:CABLe:StOP

Syntax	EThernet:CABLe:StOP
Description	This command stops the cable test.
Parameter	None.
Response	None.
Example	ETH:CABL:STOP
Note	

12.26.3 EThernet:CABLe:CCStandard

Syntax	EThernet:CABLe:CCStandard <ccs>
Description	This command sets the color coding standard.
Parameter	<port> = <CHARACTER PROGRAM DATA> T568A: CAT5 T568B: CAT5E T568BCAT6: CAT6, CAT6A <i>DEFault = T568A</i>
Response	None.
Example	ETH:CABL:CCS T568B
Notes	T568A:  Pair 1: Pin 4,5 Pair 2: Pin 3,6 Pair 3: Pin 1,2 Pair 4: Pin 7,8 T568B, T568BCAT6:  Pair 1: Pin 4,5

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	Pair 2: Pin 1,2 Pair 3: Pin 3,6 Pair 4: Pin 7,8
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Syntax	ETHernet:CABLe:CCStandard?
Description	This query returns the color coding standard.
Parameter	None.
Response	<ccs> = <CHARACTER RESPONSE DATA>
Example	ETH:CABL:CCS? → T568B
Note	

12.26.4 ETHernet:CABLe:RESults:PAIR<Pr>?

Syntax	ETHernet:CABLe:RESults:PAIR<Pr>?
Description	This query returns the status of a pair.
Parameter	<Pr> = Pair number (1-4)
Response	<status> = <CHARACTER RESPONSE DATA> OK: Pair is ok SHRT: Pair is shorted OPEN: Pair is open FAIL: Pair is fail(Pair Busy/Invalid) NA: Status not available <distance> = <NR2 NUMERIC RESPONSE DATA> Distance to fault. Unit: Meters. If there is no fault it will return 0.0.
Examples	ETH:CABL:RES:PAIR1? → OK,0.0 ETH:CABL:RES:PAIR2? → SHRT,20.6 ETH:CABL:RES:PAIR3? → OPEN,2.4
Note	Results cannot be obtained during testing.

12.27 IP Channel Statistics

12.27.1 EThernet:CStat:STARt

Syntax	EThernet:CStat:STARt
Description	This command starts the IP Channel Statistics test.
Parameter	None.
Response	None.
Example	ETH:CST:STAR
Note	This command will make the PHY reset, which will results in link loss for a couple of seconds. This command can be used on V2.00 or later.

12.27.2 EThernet:CStat:STOP

Syntax	EThernet:CStat:STOP
Description	This command stops the IP Chanel Statistics test.
Parameter	None.
Response	None.
Example	ETH:CST:STOP
Note	This command will make the phy reset, which will results in link loss for a couple of seconds. This command can be used on V2.00 or later.

12.27.3 EThernet:CStat:SETup:FOLLow

Syntax	EThernet:CStat:SETup:FOLLow <enable>
Description	This command enables/disables PORT2 follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:CST:SET:FOLL OFF
Note	This command can be used on V2.00 or later.

Syntax	EThernet:CStat:SETup:FOLLOW?
Description	This query returns whether or not PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:CST:SET:FOLL? → 0
Note	This command can be used on V2.00 or later.

12.27.4 EThernet:CStat:SETup:PORT<Pt>:FOLLow

Syntax	EThernet:CStat:SETup:PORT<Pt>:FOLLow <enable>
Description	This command sets CStat setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:CST:SET:PORT2:FOLL ON
Note	This command can be used on V2.00 or later.

Syntax	EThernet:CStat:SETup:PORT<Pt>:FOLLOW?
Description	This query returns whether or not CStat setup for port <Pt> follows PORT1.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:CST:SET:PORT2:FOLL? → 1
Note	This command can be used on V2.00 or later.

12.27.5 ETHernet:CStat:SETup:PORT<Pt>:CDEFinitions

Syntax	ETHernet:CStat:SETup:PORT<Pt>:CDEFinitions <definitions>
Description	This command sets the active channel definitions.
Parameters	<Pt> = Port number ({<definitions>} + {,})* = <EXPRESSION PROGRAM DATA> SMAC: Source MAC address DMAC: Destination MAC address PINF: Protocol information VLAN: VLAN MPLS: MPLS SIP: Source IP address DIP: Destination IP address IPNH: IP next header SPOR: Source TCP/UDP port DPOR: Destination TCP/UDP port
Response	None.
Example	ETH:CST:SET:PORT1:CDEF (SMAC,SPOR)
Note	Changing the channel definitions while a test is running will reset the results for both ports. This command can be used on V2.00 or later.

Syntax	ETHernet:CStat:SETup:PORT<Pt>:CDEFinitions?
Description	This query returns the active channel definitions.
Parameter	<Pt> = Port number
Response	{(<definition>),}* = <EXPRESSION RESPONSE DATA> <definition> = <CHARACTER RESPONSE DATA>
Example	ETH:CST:SET:PORT1:CDEF? → (SMAC,SPOR)
Note	This command can be used on V2.00 or later.

12.27.6 ETHernet:CStat:SETup:PORT<Pt>:MERGe

Syntax	ETHernet:CStat:SETup:PORT<Pt>:MERGe <definition>
Description	This command sets which channel definition to merge.
Parameters	<Pt> = Port number <definition> = <CHARACTER PROGRAM DATA> SMAC: Source MAC address DMAC: Destination MAC address PINF: Protocol information VLAN: VLAN MPLS: MPLS SIP: Source IP address DIP: Destination IP address IPNH: IP next header SPOR: Source TCP/UDP port DPOR: Destination TCP/UDP port SDMP: Source and destination MAC address pairs OFF: Undo merge. <i>DEFault = OFF</i>
Response	None.
Example	ETH:CST:SET:PORT1:MERG SMAC
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:CStat:SETup:PORT<Pt>:MERGe?
Description	This query returns the currently merged channel definition.
Parameter	<Pt> = Port number
Response	<definition> = <CHARACTER RESPONSE DATA>
Example	ETH:CST:SET:PORT1:MERG? → SMAC
Note	This command can be used on V2.00 or later.

12.27.7 ETHernet:CStat:SEtup:PORT<Pt>:FREsults

Syntax	ETHernet:CStat:SEtup:PORT<Pt>:FREsults <format>
Description	This command sets the format of the IP Channel Statistics test results.
Parameters	<Pt> = Port number <format> = <CHARACTER PROGRAM DATA> UNF: Unformatted SI: SI prefix notation ENG: Engineering exponent notation HEX: Hexadecimal notation <i>DEFault = SI</i>
Response	None.
Example	ETH:CST:SET:PORT1:FRES ENG
Note	This only affects the GUI and reports. This command can be used on V2.00 or later.

Syntax	ETHernet:CStat:SEtup:PORT<Pt>:FREsults?
Description	This query returns the format of the IP Channel Statistics test results.
Parameter	<Pt> = Port number
Response	<format> = <CHARACTER RESPONSE DATA>
Example	ETH:CST:SET:PORT1:FRES? → ENG
Note	This command can be used on V2.00 or later.

12.27.8 ETHernet:CStat:RESults:PORT<Pt>:NCHannels?

Syntax	ETHernet:CStat:RESults:PORT<Pt>:NCHannels?
Description	This query returns the maximum number of channels.
Parameter	<Pt> = Port number
Response	<max> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:CST:RES:PORT1:NCH? → 3
Note	If no channels are available NaN (section 1.6.1) is returned. This command can be used on V2.00 or later.

12.27.9 ETHernet:CStat:RESults:PORT<Pt>:DFRames?

Syntax	ETHernet:CStat:RESults:PORT<Pt>:DFRames?
Description	This query returns the number of discarded frames.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:CST:RES:PORT1:DFR? → 3
Note	On high speed links the Channel Statistics may sometimes discard frames due to overload. When this happens, the number of frames discarded can be read using this command. This command can be used on V2.00 or later.

12.27.10 ETHernet:CStat:RESults:PORT<Pt>:FETCh?

Syntax	ETHernet:CStat:RESults:PORT<Pt>:FETCh? <number>, <parameter>
Description	This query returns Channel Stat results.
Parameters	<Pt> = Port number <number> = <NUMERIC PROGRAM DATA> The channel number from which to fetch results from. <i>MINimum = 1, DEFault = 1</i> ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> Channel Definitions SMAC: Source MAC address DMAC: Destination MAC address

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	PINF: Protocol information VLAN: VLAN MPLS: MPLS SIP: Source IP address DIP: Destination IP address IPNH: IP next header SPOR: Source TCP/UDP port DPOR: Destination TCP/UDP port Frame Statistics FCT: Frame count FRAT: Frame rate BCT: Byte count THR: Throughput OFR: Over Frames UFR: Under Frames Size Distribution Statistics S64: 64-127 S128: 128-255 S256: 256-511 S512: 512-1023 S1024: 1024-1518 S1519: Above 1519 MPLS Statistics MPLSF: MPLS frames MPLSB: MPLS bytes IP Statistics IPP: IP packets IPPR: IP packet rate IPB: IP bytes IPTH: IP throughput IPHB: IP header bytes IPF: IP fragments TTLV: TTL violations IPv4 Statistics IP4P: IPv4 packets IP4PR: IPv4 packet rate IP4B: IPv4 bytes IP4TH: IPv4 Throughput IP4HB: IPv4 header bytes IP4HE: IPv4 header errors IPv6 Statistics IP6P: IPv6 packets IP6PR: IPv6 packet rate IP6B: IPv6 bytes IP6TH: IPv6 throughput IP6HB: IPv6 header bytes TCP Statistics TPAC: TCP packets TBYT: TCP bytes TPR: TCP packet rate
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	TTHR: TCP throughput UDP Statistics UPAC: UDP packets UBYT: UDP bytes UPR: UDP packet rate UTHR: UDP throughput TUEF: TCP/UDP errored frames
Response	{{(<result>, }+), }* = <EXPRESSION RESPONSE DATA> Channel Definitions <result> = <STRING RESPONSE DATA> Statistics <result> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:CST:RES:PORT1:FETC? 1, (SMAC, S64) → ("00-00-91-E2-15-01"), (45)
Note	Use NChannels? to get the maximum channel number. It is not possible to get results from definitions not enabled by the CDEFinitions command. This command can be used on V2.00 or later.

12.27.11 ETHernet:CStat:REsults:RESet

Syntax	ETHernet:CStat:REsults:RESet
Description	This command resets the IP Channel Statistics test.
Parameter	None.
Response	None.
Example	ETH:CST:RES:RES
Note	This command can be used on V2.00 or later.

12.28 Monitor Generator

12.28.1 ETHernet:MONGen:SETup:GENeral:IAFFilter

Syntax	ETHernet:MONGen:SETup:GENeral:IAFFilter
Description	This command selects if addresses should be included in frame filter on receiver.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:MONG:SET:GEN:IAFF ON
Note	

Syntax	ETHernet:MONGen:SETup:GENeral:IAFFilter?
Description	This query returns addresses should be included in frame filter on receiver.
Parameter	None.
Response	<enable> = <CHARACTER RESPONSE DATA>
Example	ETH:MONG:SET:GEN:IAFF? → 1
Note	

12.29 Sync Test

12.29.1 EThernet:SYNTest:SETup:MPERiod

Syntax	EThernet:SYNTest:SETup:MPERiod <period>
Description	This command select the measurement period.
Parameter	<period> = <CHARACTER PROGRAM DATA> DUR100S: 100 seconds DUR1000S: 1000 seconds USERDEFINE: User define
Response	None.
Example	ETH:SYNT:SET:MPER DUR100S
Note	

Syntax	EThernet:SYNTest:SETup:MPERiod?
Description	This query returns the measurement period.
Parameter	None.
Response	<period> = <CHARACTER RESPONSE DATA>
Example	ETH:SYNT:SET:MPER? → DUR100S
Note	

12.29.2 EThernet:SYNTest:SETup:MPERiod:USERdefined

Syntax	EThernet:SYNTest:SETup:MPERiod:USERdefined <period>
Description	This command select the measurement period.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum = 100, MAXimum = 259200, DEFault = 100</i>
Response	None.
Example	ETH:SYNT:SET:MPER:USER 0
Note	This parameter is used only when MPERiod is USERDEFINE.

Syntax	EThernet:SYNTest:SETup:MPERiod:USERdefined?
Description	This query returns the measurement period.
Parameter	None.
Response	<period> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SYNT:SET:MPER:USER? → 0
Note	This parameter is used only when MPERiod is USERDEFINE.

12.29.3 EThernet:SYNTest:SETup:MPERiod:USERdefined:TIME

Syntax	EThernet:SYNTest:SETup:MPERiod:USERdefined:TIME <days>, <hours>, <minutes>, <seconds>
Description	This command select the measurement period.
Parameters	<days> = <NUMERIC PROGRAM DATA> <hours> = <NUMERIC PROGRAM DATA> <minutes> = <NUMERIC PROGRAM DATA> <seconds> = <NUMERIC PROGRAM DATA>
Response	None.
Example	ETH:SYNT:SET:MPER:USER:TIM 0,0,1,40
Note	This parameter is used only when MPERiod is USERDEFINE.

Syntax	ETHernet:SYNTest:SETup:MPERiod:USERdefined:TIME?
Description	This query returns the measurement period.
Parameter	None.
Response	<days> = <NR1 NUMERIC RESPONSE DATA>
	<hours> = <NR1 NUMERIC RESPONSE DATA>
	<minutes> = <NR1 NUMERIC RESPONSE DATA>
	<seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SYNT:SET:MPER:USER:TIM? → 0,0,1,40
Note	This parameter is used only when MPERiod is USERDEFINE.

12.29.4 ETHernet:SYNTest:SETup:PPS:MODE[:ENABLE]

Syntax	ETHernet:SYNTest:SETup:PPS:MODE[:ENABLE] <enable>
Description	This command set the PPS mode.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:SYNT:SET:PPS:MODE ON
Note	

Syntax	ETHernet:SYNTest:SETup:PPS:MODE[:ENABLE]?
Description	This query returns the PPS mode.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SYNT:SET:PPS:MODE? → 0
Note	

12.29.5 ETHernet:SYNTest:SETup:PPS:CABLEcorrection

Syntax	ETHernet:SYNTest:SETup:PPS:CABLEcorrection <correction>
Description	This command set the PPS cable correction.
Parameter	<correction> = <NUMERIC PROGRAM DATA> <i>MINimum = -100000000, MAXimum = 100000000, DEFault = 0</i>
Response	None.
Example	ETH:SYNT:SET:PPS:CABL 0
Note	

Syntax	ETHernet:SYNTest:SETup:PPS:CABLEcorrection?
Description	This query returns the PPS cable correction.
Parameter	None.
Response	<correction> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SYNT:SET:PPS:CABL? → 0
Note	

12.29.6 ETHernet:SYNTest:SETup:PACKet:CABLEcorrection

Syntax	ETHernet:SYNTest:SETup:PACKet:CABLEcorrection <correction>
Description	This command set the Ethernet cable correction.
Parameter	<correction> = <NUMERIC PROGRAM DATA> <i>MINimum = -100000000, MAXimum = 100000000, DEFault = 0</i>
Response	None.
Example	ETH:SYNT:SET:PACK:CABL 0
Note	

Syntax	ETHernet:SYNTest:SETup:PACKet:CABLeCorrection?
Description	This query returns the Ethernet cable correction.
Parameter	None.
Response	<correction> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:SYNT:SET:PACK:CABL? → 0
Note	

12.29.7 ETHernet:THResholds:PPS:PHASe[:ENABle]

Syntax	ETHernet:THResholds:PPS:PHASe[:ENABle] <enable>
Description	This command enables or disables the 1PPS phase error thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:PPS:PHAS OFF
Note	

Syntax	ETHernet:THResholds:PPS:PHASe[:ENABle]?
Description	This query returns whether or not the 1PPS phase error thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:PPS:PHAS? → 0
Note	

12.29.8 ETHernet:THResholds:PPS:PHASe:MINValue

Syntax	ETHernet:THResholds:PPS:PHASe:MINValue <value>
Description	This command set the minimum 1PPS phase error thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:PHAS:MINV 0
Note	

Syntax	ETHernet:THResholds:PPS:PHASe:MINValue?
Description	This query returns the minimum 1PPS phase error thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:PHAS:MINV? → 0
Note	

12.29.9 ETHernet:THResholds:PPS:PHASe:MAXValue

Syntax	ETHernet:THResholds:PPS:PHASe:MAXValue <value>
Description	This command set the maximum 1PPS phase error thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:PHAS:MAXV 0
Note	

Syntax	ETHernet:THResholds:PPS:PHASe:MAXValue?
Description	This query returns the maximum 1PPS phase error thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:PHAS:MAXV? → 0
Note	

12.29.10 ETHernet:THResholds:PPS:FILTered[:ENABle]

Syntax	ETHernet:THResholds:PPS:FILTered[:ENABle] <enable>
Description	This command enables or disables the filtered TE thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:PPS:FILT OFF
Note	

Syntax	ETHernet:THResholds:PPS:FILTered[:ENABle]?
Description	This query returns whether or not the filtered TE thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:PPS:FILT? → 0
Note	

12.29.11 ETHernet:THResholds:PPS:FILTered:MINValue

Syntax	ETHernet:THResholds:PPS:FILTered:MINValue <value>
Description	This command set the minimum filtered TE thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:FILT:MINV 0
Note	

Syntax	ETHernet:THResholds:PPS:FILTered:MINValue?
Description	This query returns the minimum filtered TE thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:FILT:MINV? → 0
Note	

12.29.12 ETHernet:THResholds:PPS:FILTered:MAXValue

Syntax	ETHernet:THResholds:PPS:FILTered:MAXValue <value>
Description	This command set the maximum filtered TE thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:FILT:MAXV 0
Note	

Syntax	ETHernet:THResholds:PPS:FILTered:MAXValue?
Description	This query returns the maximum filtered TE thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:FILT:MAXV? → 0
Note	

12.29.13 ETHernet:THResholds:PPS:DEViation[:ENABle]

Syntax	ETHernet:THResholds:PPS:DEViation[:ENABle] <enable>
Description	This command enables or disables the 1PPS deviation thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:PPS:DEV OFF
Note	

Syntax	ETHernet:THResholds:PPS:DEViation[:ENABle]?
Description	This query returns whether or not the 1PPS deviation thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:PPS:DEV? → 0
Note	

12.29.14 ETHernet:THResholds:PPS:DEViation:MINValue

Syntax	ETHernet:THResholds:PPS:DEViation:MINValue <value>
Description	This command set the minimum 1PPS deviation thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:DEV:MINV 0
Note	

Syntax	ETHernet:THResholds:PPS:DEViation:MINValue?
Description	This query returns the minimum 1PPS deviation thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:DEV:MINV? → 0
Note	

12.29.15 ETHernet:THResholds:PPS:DEViation:MAXValue

Syntax	ETHernet:THResholds:PPS:DEViation:MAXValue <value>
Description	This command set the maximum 1PPS deviation thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1500000000, MAXimum = 1500000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:PPS:DEV:MAXV 0
Note	

Syntax	ETHernet:THResholds:PPS:DEViation:MAXValue?
Description	This query returns the maximum 1PPS deviation thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:PPS:DEV:MAXV? → 0
Note	

12.29.16 ETHernet:THResholds:OWD:SYNC[:ENABle]

Syntax	ETHernet:THResholds:OWD:SYNC[:ENABle] <enable>
Description	This command enables or disables the Sync message one way delay thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:OWD:SYNC OFF
Note	

Syntax	ETHernet:THResholds:OWD:SYNC[:ENABle]?
Description	This query returns whether or not the Sync message one way delay thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:OWD:SYNC? → 0
Note	

12.29.17 ETHernet:THResholds:OWD:SYNC:MINValue

Syntax	ETHernet:THResholds:OWD:SYNC:MINValue <value>
Description	This command set the minimum sync message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:SYNC:MINV 0
Note	

Syntax	ETHernet:THResholds:OWD:SYNC:MINValue?
Description	This query returns the minimum sync message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:SYNC:MINV? → 0
Note	

12.29.18 ETHernet:THResholds:OWD:SYNC:MAXValue

Syntax	ETHernet:THResholds:OWD:SYNC:MAXValue <value>
Description	This command set the maximum sync message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:SYNC:MAXV 0
Note	

Syntax	ETHernet:THResholds:OWD:SYNC:MAXValue?
Description	This query returns the maximum sync message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:SYNC:MAXV? → 0
Note	

12.29.19 ETHernet:THResholds:OWD:FOLLow[:ENABle]

Syntax	ETHernet:THResholds:OWD:FOLLow[:ENABle] <enable>
Description	This command enables or disables the follow up message one way delay thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:OWD:FOLL OFF
Note	

Syntax	ETHernet:THResholds:OWD:FOLLow[:ENABle]?
Description	This query returns whether or not the follow up message one way delay thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:OWD:FOLL? → 0
Note	

12.29.20 ETHernet:THResholds:OWD:FOLLow:MINValue

Syntax	ETHernet:THResholds:OWD:FOLLow:MINValue <value>
Description	This command set the minimum follow up message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:FOLL:MINV 0
Note	

Syntax	ETHernet:THResholds:OWD:FOLLow:MINValue?
Description	This query returns the minimum follow up message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:FOLL:MINV? → 0
Note	

12.29.21 ETHernet:THResholds:OWD:FOLLow:MAXValue

Syntax	ETHernet:THResholds:OWD:FOLLow:MAXValue <value>
Description	This command set the maximum follow up message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:FOLL:MAXV 0
Note	

Syntax	ETHernet:THResholds:OWD:FOLLow:MAXValue?
Description	This query returns the maximum follow up message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:FOLL:MAXV? → 0
Note	

12.29.22 ETHernet:THResholds:OWD:DElay[:ENABle]

Syntax	ETHernet:THResholds:OWD:DElay[:ENABle] <enable>
Description	This command enables or disables the delay request message one way delay thresholds.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:THR:OWD:DEL OFF
Note	

Syntax	ETHernet:THResholds:OWD:DElay[:ENABle]?
Description	This query returns whether or not the delay request message one way delay thresholds enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:THR:OWD:DEL? → 0
Note	

12.29.23 ETHernet:THResholds:OWD:DElay:MINValue

Syntax	ETHernet:THResholds:OWD:DElay:MINValue <value>
Description	This command set the minimum delay request message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:DEL:MINV 0
Note	

Syntax	ETHernet:THResholds:OWD:DElay:MINValue?
Description	This query returns the minimum delay request message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:DEL:MINV? → 0
Note	

12.29.24 ETHernet:THResholds:OWD:DElay:MAXValue

Syntax	ETHernet:THResholds:OWD:DElay:MAXValue <value>
Description	This command set the maximum delay request message one way delay thresholds.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum = -1000000000, MAXimum = 1000000000, DEFault = 0</i>
Response	None.
Example	ETH:THR:OWD:DEL:MAXV 0
Note	

Syntax	ETHernet:THResholds:OWD:DElay:MAXValue?
Description	This query returns the maximum delay request message one way delay thresholds.
Parameter	None.
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:THR:OWD:DEL:MAXV? → 0
Note	

12.29.25 ETHernet:PORT<Pt>:SYNTest:ADVanced:ADAPte[:ENABLE]

Syntax	ETHernet:PORT<Pt>:SYNTest:ADVanced:ADAPte[:ENABLE] <enable>
Description	This command enables/disables add delay a asymmetry factor to PacketTE.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:SYNT:ADV:ADAP ON
Note	

Syntax	ETHernet:PORT<Pt>:SYNTest:ADVanced:ADAPte[:ENABLE]?
Description	This query returns if add delay a asymmetry factor to PacketTE is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:SYNT:ADV:ADAP? → 0
Note	

12.29.26 ETHernet:SYNTest:SETup:ADVanced:FOLLow

Syntax	ETHernet:SYNTest:SETup:ADVanced:FOLLow <enable>
Description	This command sets SyncTest setup advanced for PORT2 to follow PORT1.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:SYNT:SET:ADV:FOLL ON
Note	

Syntax	ETHernet:SYNTest:SETup:ADVanced:FOLLow?
Description	This query returns whether or not SyncTest setup advanced for PORT2 follows PORT1.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:SYNT:SET:ADV:FOLL? → 1
Note	

12.29.27 ETHernet:PORT<Pt>:SYNCtest:RESults:BOUNds?

Syntax	ETHernet:PORT<Pt>:SYNCtest:RESults:BOUNds?
Description	Returns the number of result index lower and upper bounds.
Parameter	<Pt> = Port number
Response	Format: (lower,upper) <lower> = <NR1 NUMERIC RESPONSE DATA> <upper> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:SYNC:RES:BOUN? → (1,50)
Note	

12.29.28 ETHernet:SYNCtest:1PPS:RESults?

Syntax	ETHernet:SYNCtest:1PPS:RESults? <index>
Description	Returns the number of the 1PPS result data(Phase error, Filtered TE, Deviation). Unit: nano Seconds.
Parameter	None. <index> = <NR1 NUMERIC RESPONSE DATA>
Response	{(<result>)}* = <EXPRESSION RESPONSE DATA> Format: (<Phase error result>),(Filtered TE result>),(Deviation result>)
Example	ETH:SYNC:1PPS:RES? 10 → (1.0),(2.0),(3.0)
Note	

12.29.29 ETHernet:PORT<Pt>:SYNCtest:OWD:RESults?

Syntax	ETHernet:PORT<Pt>:SYNCtest:OWD:RESults? <index>
Description	Returns the number of the OWD result data(Sync, Follow up, Delay req.). Unit: nano Seconds.
Parameter	<Pt> = Port number <index> = <NR1 NUMERIC RESPONSE DATA>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: (<Sync result>),(<Follow up result>),(<Delay req. result>) (<Sync result>) = (Sync min,Sync max,Sync avg) (<Follow up result>) = (Follow up min,Follow up max,Follow up avg) (<Delay req. result>) = (Delay req. min,Delay req. max,Delay req. avg)
Example	ETH:PORT1:SYNC:OWD:RES? 10 → (1.0,2.0,3.0),(1.1,2.1,3.1),(1.3,2.3,3.3)
Note	

12.29.30 ETHernet:PORT<Pt>:SYNCtest:TERR:RESults?

Syntax	ETHernet:PORT<Pt>:SYNCtest:TERR:RESults? <index>
Description	Returns the number of the Terr result data(TE1, TE4, Terr). Unit: nano Seconds.
Parameter	<Pt> = Port number <index> = <NR1 NUMERIC RESPONSE DATA>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: (<TE1 result>),(<TE4 result>),(<Terr result>) (<TE1 result>) = (TE1 min,TE1 max,TE1 avg) (<TE4 result>) = (TE4 min,TE4 max,TE4 avg) (<Terr result>) = (Terr min,Terr max,Terr avg)
Example	ETH:PORT1:SYNC:TERR:RES? 10 → (1.0,2.0,3.0),(1.1,2.1,3.1),(1.3,2.3,3.3)
Note	

12.30 Frame Capture**12.30.1 ETHernet:PORT<Pt>:CAPTure:STARt**

Syntax	ETHernet:PORT<Pt>:CAPTure:STARt
Description	This command starts the frame capture.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:CAPT:STAR
Note	This command can be used on V2.00 or later.

12.30.2 ETHernet:PORT<Pt>:CAPTure:STOP

Syntax	ETHernet:PORT<Pt>:CAPTure:STOP
Description	This command stops the frame capture.
Parameter	<Pt> = Port number
Response	None.
Example	ETH:PORT1:CAPT:STOP
Note	This command can be used on V2.00 or later.

12.30.3 ETHernet:PORT<Pt>:CAPTure:STATus?

Syntax	ETHernet:PORT<Pt>:CAPTure:STATus?
Description	This query returns the current status of the frame capture.
Parameter	<Pt> = Port number
Response	<status> = <CHARACTER RESPONSE DATA> IDLE WAITING: Waiting for Trigger CAPTURING FINISHED_CAPTURE SAVING FINISHED_SAVE
Example	ETH:PORT1:CAPT:STAT? → IDLE
Note	This command can be used on V2.00 or later.

12.30.4 ETHernet:PORT<Pt>:CAPTure:BUFSize

Syntax	ETHernet:PORT<Pt>:CAPTure:BUFSize <size>
Description	This command sets the capture buffer size.
Parameters	<Pt> = Port number <size> = <CHARACTER PROGRAM DATA> KB512: 512 KByte MB1: 1 MByte MB2: 2 MByte MB4: 4 MByte MB8: 8 MByte MB16: 16 MByte MB32: 32 MByte MB64: 64 MByte MB128: 128 MByte <i>DEFault = MB1</i>
Response	None.
Example	ETH:PORT1:CAPT:BUFS MB1
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:BUFSize?
Description	This query returns the capture buffer size.
Parameter	<Pt> = Port number
Response	<size> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:BUFS? → MB1
Note	This command can be used on V2.00 or later.

12.30.5 ETHernet:PORT<Pt>:CAPTure:SLICing

Syntax	ETHernet:PORT<Pt>:CAPTure:SLICing <type>
Description	This command sets the frame slicing type.
Parameters	<type> = <CHARACTER PROGRAM DATA> NONE: Whole frame B64: Top 64 Byte B128: Top 128 Byte <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:CAPT:SLIC B64
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:SLICing?
Description	This query returns the frame slicing type.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:SLIC? → B64
Note	This command can be used on V2.00 or later.

12.30.6 ETHernet:PORT<Pt>:CAPTure:ALOCation

Syntax	ETHernet:PORT<Pt>:CAPTure:ALOCation <type>
Description	This command sets the buffer handling allocation type.
Parameters	<type> = <CHARACTER PROGRAM DATA> STOP: Stop when full WRAP: Overwrite <i>DEFault = STOP</i>
Response	None.
Example	ETH:PORT1:CAPT:ALOC WRAP
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:ALOCation?
Description	This query returns the buffer handling allocation type.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:ALOC? → WRAP
Note	This command can be used on V2.00 or later.

12.30.7 ETHernet:PORT<Pt>:CAPTure:TXFRame

Syntax	ETHernet:PORT<Pt>:CAPTure:TXFRame <enable>
Description	This command enables/disables capturing transmitted frames.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:CAPT:TXFR ON
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TXFRame?
Description	This query returns whether or not capturing transmitted frames is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:PORT1:CAPT:TXFR? → 1
Note	This command can be used on V2.00 or later.

12.30.8 ETHernet:PORT<Pt>:CAPTure:TRIGger:TYPE

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:TYPE <type>
Description	This command sets the capture trigger type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> MANual ERRor PATtern: Field match <i>DEFault = MANual</i>
Response	None.
Example	ETH:PORT1:CAPT:TRIG:TYPE MAN
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:TYPE?
Description	This query returns the capture trigger type.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:TRIG:TYPE? → MAN
Note	This command can be used on V2.00 or later.

12.30.9 ETHernet:PORT<Pt>:CAPTure:TRIGger:POSition

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:POSition <position>
Description	This command sets the capture trigger position.
Parameters	<Pt> = Port number <position> = <CHARACTER PROGRAM DATA> TOP MIDDLE <i>DEFault = TOP</i>
Response	None.
Example	ETH:PORT1:CAPT:TRIG:POS MIDDLE
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:POSition?
Description	This query returns the capture trigger position.
Parameter	<Pt> = Port number
Response	<position> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:TRIG:POS? → MIDDLE
Note	This command can be used on V2.00 or later.

12.30.10 ETHernet:PORT<Pt>:CAPTure:TRIGger:ERRor

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:ERRor <type>
Description	This command sets the error type of capture trigger.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> ANY: Any type FRAGMENT: Fragment OVERUNDER: Oversized or undersized OVER: Oversized UNDER: Undersized FCSERR: FCS error OVRFCSErr: Oversized & FCS Error IPCHKSUM: IP checksum error <i>DEFault = ANY</i>
Response	None.
Example	ETH:PORT1:CAPT:TRIG:ERR ANY
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:ERRor?
Description	This query returns the error type of capture trigger.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:TRIG:ERR? → ANY
Note	This command can be used on V2.00 or later.

12.30.11 ETHernet:PORT<Pt>:CAPTure:TRIGger:OFFSet

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:OFFSet <offset>
Description	This command sets the pattern offset for the capture trigger.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 15999, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:CAPT:TRIG:OFFS 12
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:OFFSet?
Description	This query returns the pattern offset for the capture trigger.
Parameter	<Pt> = Port number
Response	<offset> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:CAPT:TRIG:OFFS? → 12
Note	This command can be used on V2.00 or later.

12.30.12 ETHernet:PORT<Pt>:CAPTure:TRIGger:PATtern

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:PATtern <pattern>
Description	This command sets the pattern for the capture trigger.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 32 characters (one byte resolution).
Response	None.
Example	ETH:PORT1:CAPT:TRIG:PATT "0800"
Note	This command can be used on V2.00 or later.

Syntax	ETHernet:PORT<Pt>:CAPTure:TRIGger:PATtern?
Description	This query returns the pattern for the capture trigger.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	ETH:PORT1:CAPT:TRIG:PATT? → "0800"
Note	This command can be used on V2.00 or later.

12.30.13 ETHernet:PORT<Pt>:CAPTure:STORe

Syntax	ETHernet:PORT<Pt>:CAPTure:STORe [<file>]
Description	This command stores the current capture data to a given file on the instrument.
Parameter	<Pt> = Port number <file> = <STRING PROGRAM DATA> The path and name of the file to store the data.
Response	None.
Example	ETH:PORT1:CAPT:STOR "Internal/my-frame-capture.pcap"
Note	This command can be used on V2.00 or later. The application server must be in the idle state. Files must be saved to the Internal/ directory or a sub-directory hereof. When a USB storage device is mounted, files can stored via the Usb/ directory. Default File Path is Internal/.

12.30.14 ETHernet:PORT<Pt>:CAPTure:BUFFer?

Syntax	ETHernet:PORT<Pt>:CAPTure:BUFFer?
Description	This query returns the buffer usage percentage (0-100).
Parameter	<Pt> = Port number
Response	<percentage> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:CAPT:BUFF? → 30
Note	This command can be used on V2.00 or later.

12.31 Discovery

Please refer to Example Scripts for how to create Discovery Test programs (see section [A.8](#)).

12.31.1 EThernet:DISCcovery:SETup:TYPE

Syntax	EThernet:DISCcovery:SETup:TYPE <mode>
Description	This command sets the search mode.
Parameter	<mode> = <CHARACTER RESPONSE DATA> MULTI: Inside local IP network (multicast search) UNI: Any IP address (unicast search) <i>DEFault = MULTI</i>
Response	None.
Example	ETH:DISC:SET:TYPE MULTI
Note	

Syntax	EThernet:DISCcovery:SETup:TYPE?
Description	This query returns the search mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:DISC:SET:TYPE? → MULTI
Note	

12.31.2 EThernet:DISCcovery:SETup:TARGet:COUNT

Syntax	EThernet:DISCcovery:SETup:TARGet:COUNT <number>
Description	This command sets the search range.
Parameters	<number> = <NR1 NUMERIC RESPONSE DATA> <i>MINimum = 1, MAXimum = 255, DEFault = 1</i>
Response	None.
Example	ETH:DISC:SET:TARG:COUN 100
Note	

Syntax	EThernet:DISCcovery:SETup:TARGet:COUNT?
Description	This query returns the search range.
Parameter	None.
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:DISC:SET:TARG:COUN? → 100
Note	

12.31.3 EThernet:DISCcovery:SETup:TARGet:IPV4[:BEGin]

Syntax	EThernet:DISCcovery:SETup:TARGet:IPV4[:BEGin] <address>
Description	This command sets the IP address of the starting point of the search.
Parameter	<address> = <STRING RESPONSE DATA>
Response	None.
Example	ETH:DISC:SET:TARG:IPV4 "172.29.2.36"
Note	

Syntax	EThernet:DISCcovery:SETup:TARGet:IPV4[:BEGin]?
Description	This query returns the IP address of the starting point of the search.
Parameter	None.
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:DISC:SET:TARG:IPV4? → "172.29.2.36"
Note	

12.31.4 ETHernet:DISCcovery:RESults:NREQuest?

Syntax	ETHernet:DISCcovery:RESults:NREQuest?
Description	This query returns the number of detected Network Master.
Parameter	None.
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:DISC:RES:NREQ? → 1
Note	

12.31.5 ETHernet:DISCcovery:RESults:SREQuest?

Syntax	ETHernet:DISCcovery:RESults:SREQuest? <index>
Description	This query returns the result of selected Network Master.
Parameter	<index> = <NR1 NUMERIC RESPONSE DATA> <i>MINimum = 1, DEFault = 1</i>
Response	<result> = <EXPRESSION RESPONSE DATA> Format: String List Items in the list are as follows. Nickname, Board number, Port number, MAC address of in-band control, IP address of in-band control, IPv4 netmask of in-band control, IPv4 gateway of in-band control, IPv4 default gateway address of in-band control, VLAN levels of in-band control, VLAN ID1 of in-band control, VLAN ID2 of in-band control, In-band control TCP port, Controller serial number, Controller type, Module type, Software version, Current application of in-band control, Password lock state of in-band control
Example	ETH:DISC:RES:SREQ? 1 → NetworkMaster,1,1,00-50-C2-35-D2-EF,172.29.2.36,255.255.255.0,1,172.29.2.1,0,0,0,56002,1234567890,MT1000A,MU100010A,7.0,RFC2544,0
Note	

12.31.6 ETHernet:DISCcovery:RESults:SREQuest:DETail?

Syntax	ETHernet:DISCcovery:RESults:SREQuest:DETail? <index>,<parameter>
Description	This query returns the detailed result of selected Network Master.
Parameter	<index> = <NR1 NUMERIC RESPONSE DATA> <i>MINimum = 1, DEFault = 1</i> <parameter> = <STRING RESPONSE DATA> NICN: Nickname BOARD: Board number PORT: Port number MAC: MAC address of in-band control IPV4: IP address of in-band control NMV4: IPv4 netmask of in-band control GWV4E: IPv4 gateway of in-band control GWV4: IPv4 default gateway address of in-band control VLAN: The number of active VLAN levels of in-band control VLAN1: VLAN ID1 of in-band control VLAN2: VLAN ID2 of in-band control TCPPOINT: In-band control TCP port SEID: Controller serial number MODEL: Controller type MODULE: Module type SVER: Software version CAPP: Current application of in-band control LOCK: Password lock state of in-band control
Response	<result> is the following format. NICN: <CHARACTER RESPONSE DATA>

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	BOARD: <NR1 NUMERIC RESPONSE DATA> PORT: <NR1 NUMERIC RESPONSE DATA> MAC: MAC address with no quotes IPV4: IPv4 address with no quotes NMV4: IPv4 netmask with no quotes GWV4E: <BOOLEAN RESPONSE DATA> GWV4: IPv4 address with no quotes VLAN: <NR1 NUMERIC RESPONSE DATA> VLAN1: <NR1 NUMERIC RESPONSE DATA> VLAN2: <NR1 NUMERIC RESPONSE DATA> TCPPORT: <NR1 NUMERIC RESPONSE DATA> SEID: <NR1 NUMERIC RESPONSE DATA> MODEL: MT1000A MODULE: Any string of MU100010A and MU100011A SVER: String of (Major version number).(Minor version number) CAPP: Any string of RFC 2544, RFC 6349, SAT (Y.1564)", BERT, Mon./Gen., Reflector, Channel Stat., Ping, Traceroute, Sync Test, Discovery LOCK: <BOOLEAN RESPONSE DATA>
Example	ETH:DISC:RES:SREQ:DET? 1, (MAC) → 00-50-C2-35-D2-EF
Note	

12.31.7 ETHernet:DISCcovery:RESults:UPDate

Syntax	ETHernet:DISCcovery:RESults:UPDate <index>
Description	This command updates the result.
Parameter	<index> = <NR1 NUMERIC RESPONSE DATA>
Response	None.
Example	ETH:DISC:RES:UPD 1
Note	

12.31.8 ETHernet:DISCcovery:RESults:UPDate:RESult?

Syntax	ETHernet:DISCcovery:RESults:UPDate:RESult?
Description	This query returns the last update condition.
Response	<status> = <CHARACTER RESPONSE DATA> SUCCESS: Update succeeded. TIMEOUT: Update timed out.
Example	ETH:DISC:RES:UPD:RES? → SUCCESS
Note	

12.31.9 ETHernet:DISCcovery:CAPplication[:EXECute]

Syntax	ETHernet:DISCcovery:CAPplication[:EXECute] <index>
Description	This command executes the application change.
Parameter	<index> = <NR1 NUMERIC RESPONSE DATA>
Response	None.
Example	ETH:DISC:CAPP 1
Note	

12.31.10 ETHernet:DISCcovery:CAPplication:PASSword

Syntax	ETHernet:DISCcovery:CAPplication:PASSword <value>
Description	This command sets the password in application change dialog.
Parameter	<value> = <STRING RESPONSE DATA>
Response	None.
Example	ETH:DISC:CAPP:PASS "Anritsu"
Note	

Syntax	ETHernet:DISCcovery:CAPplication:PASSword?
Description	This query returns the password in application change dialog.
Parameter	None.
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:PASS? → "Anritsu"
Note	

12.31.11 ETHernet:DISCcovery:CAPplication:SAPplication

Syntax	ETHernet:DISCcovery:CAPplication:SAPplication <app name>
Description	This command sets the application name to be changed in application change dialog.
Parameter	<value> = <STRING RESPONSE DATA> RFC: Ethernet RFC-2544 test application. SAT: Ethernet Service Activation Test application. RFC6349: Ethernet RFC-6349 test application. REFL: Ethernet reflector application. DISC: Ethernet discovery application. <i>Default = RFC</i>
Response	None.
Example	ETH:DISC:CAPP:SAPP RFC
Note	

Syntax	ETHernet:DISCcovery:CAPplication:SAPplication?
Description	This query returns the application name to be changed in application change dialog.
Parameter	None.
Response	<app name> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:SAPP? → RFC
Note	

12.31.12 ETHernet:DISCcovery:CAPplication:TARGet:MAC:SOURce

Syntax	ETHernet:DISCcovery:CAPplication:TARGet:MAC:SOURce <address>
Description	This command sets the MAC source address in application change dialog.
Parameters	<address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:DISC:CAPP:TARG:MAC:SOUR "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:DISCcovery:CAPplication:TARGet:MAC:SOURce?
Description	This query returns the MAC source address in application change dialog.
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:MAC:SOUR? → "00-50-C2-35-D2-EF"
Note	

12.31.13 ETHernet:DISCcovery:CAPplication:TARGet:IPV4:SOURce

Syntax	ETHernet:DISCcovery:CAPplication:TARGet:IPV4:SOURce <address>
Description	This command sets the IPv4 source address in application change dialog.
Parameters	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:DISC:CAPP:TARG:IPV4:SOUR "172.29.2.36"
Note	Only the character '.' is accepted as separator.

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:SOURce?
Description	This query returns the IPv4 source address in application change dialog.
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:IPV4:SOUR? → "172.29.2.36"
Note	

12.31.14 ETHernet:DISCovery:CAPplication:TARGet:IPV4:DESTination

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:DESTination <address>
Description	This command sets the IPv4 destination address in application change dialog.
Parameters	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:DISC:CAPP:TARG:IPV4:DEST "172.29.2.36"
Note	

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:DESTination?
Description	This query returns the IPv4 destination address in application change dialog.
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:IPV4:DEST? → "172.29.2.36"
Note	

12.31.15 ETHernet:DISCovery:CAPplication:TARGet:IPV4:NETMask

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:NETMask <address>
Description	This command sets the IPv4 netmask in application change dialog.
Parameters	<mask> = <STRING PROGRAM DATA> IPv4 netmask
Response	None.
Example	ETH:DISC:CAPP:TARG:IPV4:NETM "255.255.255.0"
Note	

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:NETMask?
Description	This query returns the IPv4 netmask in application change dialog.
Response	<mask> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:IPV4:NETM? → "255.255.255.0"
Note	

12.31.16 ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway[:ENABle]

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway[:ENABle] <enable>
Description	This command sets the IPv4 gateway in application change dialog.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:DISC:CAPP:TARG:IPV4:GAT ON
Note	

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway[:ENABle]?
Description	This query returns the IPv4 gateway in application change dialog.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:IPV4:GAT? → 1
Note	

12.31.17 ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway:ADDRess

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway:ADDRess <address>
Description	This command sets the IPv4 default gateway in application change dialog.
Parameters	<address> = <STRING PROGRAM DATA> IPv4 address
Response	None.
Example	ETH:DISC:CAPP:TARG:IPV4:GAT:ADDR "172.29.2.36"
Note	

Syntax	ETHernet:DISCovery:CAPplication:TARGet:IPV4:GATeway:ADDRess?
Description	This query returns the IPv4 default gateway in application change dialog.
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:IPV4:GAT:ADDR? → "172.29.2.36"
Note	

12.31.18 ETHernet:DISCovery:CAPplication:TARGet:VLAN:LCount

Syntax	ETHernet:DISCovery:CAPplication:TARGet:VLAN:LCount <levels>
Description	This command sets the number of active VLAN levels in application change dialog.
Parameters	<levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:DISC:CAPP:TARG:VLAN:LC 2
Note	

Syntax	ETHernet:DISCovery:CAPplication:TARGet:VLAN:LCount?
Description	This query returns the number of active VLAN levels in application change dialog.
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:VLAN:LC? → 2
Note	

12.31.19 ETHernet:DISCovery:CAPplication:TARGet:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:DISCovery:CAPplication:TARGet:VLAN:LEVel<Lv>:ID <number>
Description	This command sets the VLAN ID in application change dialog.
Parameter	<Lv> = VLAN level (1-N ¹) <number> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4095, DEFault=0</i>
Response	None.
Example	ETH:DISC:CAPP:TARG:VLAN:LEV1:ID 1024
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels (see section 12.7.29). Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:DISCovery:CAPplication:TARGet:VLAN:LEVel<Lv>:ID?
Description	This query returns the VLAN ID in application change dialog.
Parameter	<Lv> = VLAN level (1-N)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:DISC:CAPP:TARG:VLAN:LEV1:ID? → 1024
Note	

12.31.20 ETHernet:DISCover:CAPplication:IMULti:MAC:SOURce

Syntax	ETHernet:DISCover:CAPplication:IMULti:MAC:SOURce <enable>
Description	This command enables/disables use of the setting to increment MAC source address of all streams.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:DISC:CAPP:IMUL:MAC:SOUR ON
Note	

Syntax	ETHernet:DISCover:CAPplication:IMULti:MAC:SOURce?
Description	This query returns whether or not the setting to increment MAC source address of all streams is used.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	ETH:DISC:CAPP:IMUL:MAC:SOUR? → ON
Note	

12.31.21 ETHernet:DISCover:CAPplication:IMULti:IPV4:SOURce

Syntax	ETHernet:DISCover:CAPplication:IMULti:IPV4:SOURce <enable>
Description	This command enables/disables use of the setting to increment IPv4 source address of all streams.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:DISC:CAPP:IMUL:IPV4:SOUR ON
Note	

Syntax	ETHernet:DISCover:CAPplication:IMULti:IPV4:SOURce?
Description	This query returns whether or not the setting to increment IPv4 source address of all streams is used.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	ETH:DISC:CAPP:IMUL:IPV4:SOUR? → ON
Note	

12.31.22 ETHernet:DISCover:CAPplication:IMULti:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:DISCover:CAPplication:IMULti:VLAN:LEVel<Lv>:ID <enable>
Description	This command enables/disables use of the setting to increment the VLAN ID of all streams.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:DISC:CAPP:IMUL:VLAN:LEV1:ID ON
Note	

Syntax	ETHernet:DISCovery:CAPPLication:IMULTi:VLAN:LEVel<Lv>:ID?
Description	This query returns whether or not the setting to increment the VLAN ID of all streams is used.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	ETH:DISC:CAPP:IMUL:VLAN:LEV1:ID? → ON
Note	

12.32 OAM

The commands in this section is available to all Ethernet applications but the following: Cable Test, Reflector and Pass Through.

Use the general `ETHernet:PORT<Pt>:IFETch?` command to retrieve OAM results.

12.32.1 ETHernet:PORT<Pt>:OAM:PROTOcol

Syntax	ETHernet:PORT<Pt>:OAM:PROTOcol <protocol>
Description	This command sets the OAM protocol to use.
Parameters	<Pt> = Port number <protocol> = <CHARACTER PROGRAM DATA> AH: OAM according to IEEE 802.3ah AG: OAM according to IEEE 802.1AG Y: OAM according to IEEE Y.1731 <i>DEFault = AH</i>
Response	None.
Example	ETH:PORT1:OAM:PROT AH
Note	

Syntax	ETHernet:PORT<Pt>:OAM:PROTOcol?
Description	This query returns the OAM protocol setting.
Parameter	<Pt> = Port number
Response	<protocol> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:PROT? → AH
Note	

12.32.2 ETHernet:PORT<Pt>:OAM:SMAC

Syntax	ETHernet:PORT<Pt>:OAM:SMAC <address>
Description	This command sets the OAM source MAC address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:OAM:SMAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:OAM:SMAC?
Description	This query returns the OAM source MAC address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:SMAC? → "00-50-C2-35-D2-EF"
Note	

12.32.3 ETHernet:PORT<Pt>:OAM:MAC:ETYPe

Syntax	ETHernet:PORT<Pt>:OAM:MAC:ETYPe <type>
Description	This command sets the encapsulated customer Ethernet Type.
Parameters	<Pt> = Port number <type> = <NUMERIC PROGRAM DATA> Acceptable values: #H8100 #H88A8 #H9100 #H9200
Response	None.
Example	ETH:PORT1:OAM:MAC:ETYP #H8100
Note	This setting is used when ETH:PORT1:OAM:VLAN is enabled only.

Syntax	ETHernet:PORT<Pt>:OAM:MAC:ETYPe?
Description	This query returns the encapsulated customer Ethernet Type.
Parameters	<Pt> = Port number
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MAC:ETYP? → #H8100
Note	

12.32.4 ETHernet:PORT<Pt>:OAM:AH:DISCcovery[:ENABLE]

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery[:ENABLE] <enable>
Description	This command enables/disables IEEE 802.3ah protocol activity.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery[:ENABLE]?
Description	This query returns whether or not IEEE 802.3ah protocol activity is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC? → 0
Note	

12.32.5 ETHernet:PORT<Pt>:OAM:AH:DISCcovery:LMODe

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery:LMODe <mode>
Description	This command sets the link mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> PASSive: ACTive: <i>DEFault = PASSive</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC:LMOD PASS
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:LMODE?
Description	This query returns the link mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC:LMOD? → PASS
Note	

12.32.6 ETHernet:PORT<Pt>:OAM:AH:DISCover:VOUI

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:VOUI <value>
Description	This command sets the vendor OUI.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=16777215, DEFault=145</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC:VOUI #H91
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:VOUI?
Description	This query returns the vendor OUI.
Parameter	<Pt> = Port number
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC:VOUI? → 145
Note	

12.32.7 ETHernet:PORT<Pt>:OAM:AH:DISCover:VSInfo

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:VSInfo <value>
Description	This command sets the vendor specific information.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=268435455, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC:VSIN 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:VSInfo?
Description	This query returns the vendor specific information.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC:VSIN? → 1
Note	

12.32.8 ETHernet:PORT<Pt>:OAM:AH:DISCover:UNIDirectional

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCover:UNIDirectional <enable>
Description	This command enables/disables unidirectional operation.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC:UNID OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery:UNIDirectional?
Description	This query returns whether or not unidirectional operation is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC:UNID? → 0
Note	

12.32.9 ETHernet:PORT<Pt>:OAM:AH:DISCcovery:VRETrival

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery:VRETrival <enable>
Description	This command enables/disables variable retrieval.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:DISC:VRET OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:DISCcovery:VRETrival?
Description	This query returns whether or not variable retrieval is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:DISC:VRET? → 0
Note	

12.32.10 ETHernet:PORT<Pt>:OAM:AH:LDEFects:LFAults

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:LFAults <enable>
Description	This command enables/disables detection of local link faults.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:LDEF:LFA OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:LFAults?
Description	This query returns whether or not detection of local link faults is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:LDEF:LFA? → 0
Note	

12.32.11 ETHernet:PORT<Pt>:OAM:AH:LDEFects:DGASp

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:DGASp <enable>
Description	This command enables/disables detection of dying gasp.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:LDEF:DGAS OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:DGASp?
Description	This query returns whether or not detection of dying gasp is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:LDEF:DGAS? → 0
Note	

12.32.12 ETHernet:PORT<Pt>:OAM:AH:LDEFects:CEvent

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:CEvent <enable>
Description	This command enables/disables detection of critical events.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AH:LDEF:CE OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AH:LDEFects:CEvent?
Description	This query returns whether or not detection of critical events is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AH:LDEF:CE? → 0
Note	

12.32.13 ETHernet:PORT<Pt>:OAM:AG[:ENABLE]

Syntax	ETHernet:PORT<Pt>:OAM:AG[:ENABLE] <enable>
Description	This command enables/disables IEEE 802.1ah protocol activity.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:AG OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG[:ENABLE]?
Description	This query returns whether or not IEEE 802.1ah protocol activity is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG? → 0
Note	

12.32.14 ETHernet:PORT<Pt>:OAM:AG:MEPid

Syntax	ETHernet:PORT<Pt>:OAM:AG:MEPid <id>
Description	This command sets the management end point ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:AG:MEP 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:MEPid?
Description	This query returns the management end point ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:MEP? → 1
Note	

12.32.15 ETHernet:PORT<Pt>:OAM:AG:MDLevel

Syntax	ETHernet:PORT<Pt>:OAM:AG:MDLevel <level>
Description	This command sets the maintenance domain level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:AG:MDL 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:MDLevel?
Description	This query returns the maintenance domain level.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:MDL? → 1
Note	

12.32.16 ETHernet:PORT<Pt>:OAM:AG:DOMain

Syntax	ETHernet:PORT<Pt>:OAM:AG:DOMain <name>
Description	This command sets the domain name.
Parameters	<Pt> = Port number <name> = <STRING PROGRAM DATA> Domain name string.
Response	None.
Example	ETH:PORT1:OAM:AG:DOM "Domain"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:DOMain?
Description	This query returns the domain name.
Parameter	<Pt> = Port number
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:DOM? → "Domain"
Note	

12.32.17 ETHernet:PORT<Pt>:OAM:AG:MAIDentifier

Syntax	ETHernet:PORT<Pt>:OAM:AG:MAIDentifier <name>
Description	This command sets the maintenance association identifier.
Parameters	<Pt> = Port number <name> = <STRING PROGRAM DATA> Association string.
Response	None.
Example	ETH:PORT1:OAM:AG:MAID "Anritsu"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:MAIDentifier?
Description	This query returns the maintenance association identifier.
Parameter	<Pt> = Port number
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:MAID? → "Anritsu"
Note	

12.32.18 ETHernet:PORT<Pt>:OAM:AG:CCM:INTerval

Syntax	ETHernet:PORT<Pt>:OAM:AG:CCM:INTerval <interval>
Description	This command sets the continuity check message interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS10: 10 milli seconds MS100: 100 milli seconds S1: 1 second S10: 10 seconds S60: 1 minute S600: 10 minutes <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:AG:CCM:INT S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:CCM:INTerval?
Description	This query returns the continuity check message interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:CCM:INT? → S1
Note	

12.32.19 ETHernet:PORT<Pt>:OAM:AG:LBM:OTLV

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:OTLV <tlv>
Description	This command sets the loop-back message optional TLV type.
Parameters	<Pt> = Port number <tlv> = <CHARACTER PROGRAM DATA> NONE: No TLV DATA: Data TLV TEST: Test TLV <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:OAM:AG:LBM:OTLV NONE
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:OTLV?
Description	This query returns the loop-back message optional TLV type.
Parameter	<Pt> = Port number
Response	<tlv> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LBM:OTLV? → NONE
Note	

12.32.20 ETHernet:PORT<Pt>:OAM:AG:LBM:TLVLength

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:TLVLength <length>
Description	This command sets the loop-back message TLV length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=32, MAXimum=1480, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:AG:LBM:TLVL 60
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:TLVLength?
Description	This query returns the loop-back message TLV length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LBM:TLVL? → 60
Note	

12.32.21 ETHernet:PORT<Pt>:OAM:AG:LBM:DTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:DTLV:VALue <value>
Description	This command sets the data loop-back message TLV value.
Parameters	<Pt> = Port number <value> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:AG:LBM:DTLV:VAL ""
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:DTLV:VALue?
Description	This query returns the data loop-back message TLV value.
Parameter	<Pt> = Port number
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LBM:DTLV:VAL? → ""
Note	

12.32.22 ETHernet:PORT<Pt>:OAM:AG:LBM:TTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:TTLV:VALue <value>
Description	This command sets the loop-back message test TLV value.
Parameters	<Pt> = Port number <value> = <CHARACTER PROGRAM DATA> ZERos: Zeros without CRC-32 ZCRC: Zeros with CRC-32 <i>DEFault = ZERos</i>
Response	None.
Example	ETH:PORT1:OAM:AG:LBM:TTLV:VAL ZER
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LBM:TTLV:VALue?
Description	This query returns the loop-back message test TLV value.
Parameter	<Pt> = Port number
Response	<value> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LBM:TTLV:VAL? → ZER
Note	

12.32.23 ETHernet:PORT<Pt>:OAM:AG:LTM:TTL

Syntax	ETHernet:PORT<Pt>:OAM:AG:LTM:TTL <ttl>
Description	This command sets the link trace message TTL.
Parameters	<Pt> = Port number <ttl> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=65</i>
Response	None.
Example	ETH:PORT1:OAM:AG:LTM:TTL 65
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LTM:TTL?
Description	This query returns the link trace message TTL.
Parameter	<Pt> = Port number
Response	<ttl> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LTM:TTL? → 65
Note	

12.32.24 ETHernet:PORT<Pt>:OAM:AG:LTM:TID

Syntax	ETHernet:PORT<Pt>:OAM:AG:LTM:TID <id>
Description	This command sets the link trace message transmission ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=65535, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:AG:LTM:TID 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:AG:LTM:TID?
Description	This query returns the link trace message transmission ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:AG:LTM:TID? → 1
Note	

12.32.25 ETHernet:PORT<Pt>:OAM:AG:MEPList:ADD

Syntax	ETHernet:PORT<Pt>:OAM:AG:MEPList:ADD <mepId>,<mac>[,<level>[,<association>[,<domain>]]]
Description	This command adds a management end point to the MEP list.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i> <mac> = <STRING PROGRAM DATA> <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i> <association> = <STRING PROGRAM DATA> <domain> = <STRING PROGRAM DATA>
Response	None
Example	ETH:PORT1:OAM:AG:MEPL:ADD 234,"00-00-00-00-00-11"
Note	

12.32.26 ETHernet:PORT<Pt>:OAM:AG:MEPList:DElete[:MEP]

Syntax	ETHernet:PORT<Pt>:OAM:AG:MEPList:DElete[:MEP] <mepId>
Description	This command deletes a management end point from the MEP list.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None
Example	ETH:PORT1:OAM:AG:MEPL:DEL 234
Note	

12.32.27 ETHernet:PORT<Pt>:OAM:AG:MEPList:CATalog?

Syntax	ETHernet:PORT<Pt>:OAM:AG:MEPList:CATalog?
Description	This query returns the items on the management end point list.
Parameter	<Pt> = Port number
Response	{(<endPoint>),}* = <EXPRESSION RESPONSE DATA> <endPoint> is split into five separate results: (<mepId>,<mac>,<level>,<association>,<domain>)
Example	ETH:PORT1:OAM:AG:MEPL:CAT? → (234,00-00-00-00-00-11,1,Association-A,Domain1), (345,00-00-00-00-00-22,1,Association-B,Domain2)
Note	If the list is empty an execution error will be reported.

12.32.28 ETHernet:PORT<Pt>:OAM:Y[:ENABle]

Syntax	ETHernet:PORT<Pt>:OAM:Y[:ENABle] <enable>
Description	This command enables/disables Y.1731 protocol activity.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:Y OFF
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y[:ENABle]?
Description	This query returns whether or not Y.1731 protocol activity is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y? → 0
Note	

12.32.29 ETHernet:PORT<Pt>:OAM:Y:MEPid

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEPid <id>
Description	This command sets the management end point ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:MEP 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEPid?
Description	This query returns the management end point ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:MEP? → 1
Note	

12.32.30 ETHernet:PORT<Pt>:OAM:Y:MEGid

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEGid <id>
Description	This command sets the MEG ID.
Parameters	<Pt> = Port number <id> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:MEG "A"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEGid?
Description	This query returns the MEG ID.
Parameter	<Pt> = Port number
Response	<id> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:MEG? → "A"
Note	

12.32.31 ETHernet:PORT<Pt>:OAM:Y:MEGLevel

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEGLevel <level>
Description	This command sets the MEG level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:MEGL 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:MEGLevel?
Description	This query returns the MEG level.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:MEGL? → 1
Note	

12.32.32 EThernet:PORT<Pt>:OAM:Y:CCM:INterval

Syntax	EThernet:PORT<Pt>:OAM:Y:CCM:INterval <interval>
Description	This command sets the continuity check messages interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS10: 10 milli seconds MS100: 100 milli seconds S1: 1 second S10: 10 seconds S60: 1 minute S600: 10 minutes <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:CCM:INT S1
Note	

Syntax	EThernet:PORT<Pt>:OAM:Y:CCM:INterval?
Description	This query returns the continuity check messages interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:CCM:INT? → S1
Note	

12.32.33 EThernet:PORT<Pt>:OAM:Y:LBM:OTLV

Syntax	EThernet:PORT<Pt>:OAM:Y:LBM:OTLV <tlv>
Description	This command sets the loop-back message optional TLV type.
Parameters	<Pt> = Port number <tlv> = <CHARACTER PROGRAM DATA> NONE: No TLV DATA: Data TLV TEST: Test TLV <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LBM:OTLV NON
Note	

Syntax	EThernet:PORT<Pt>:OAM:Y:LBM:OTLV?
Description	This query returns the loop-back message optional TLV type.
Parameter	<Pt> = Port number
Response	<tlv> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LBM:OTLV? → NON
Note	

12.32.34 EThernet:PORT<Pt>:OAM:Y:LBM:TLVLength

Syntax	EThernet:PORT<Pt>:OAM:Y:LBM:TLVLength <length>
Description	This command sets the loop-back message TLV length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=32, MAXimum=1480, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LBM:TLVL 60
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LBM:TLVLength?
Description	This query returns the loop-back message TLV length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LBM:TLVL? → 60
Note	

12.32.35 ETHernet:PORT<Pt>:OAM:Y:LBM:DTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:Y:LBM:DTLV:VALue <value>
Description	This command sets the loop-back message data TLV value.
Parameters	<Pt> = Port number <value> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:LBM:DTLV:VAL ""
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LBM:DTLV:VALue?
Description	This query returns the loop-back message data TLV value.
Parameter	<Pt> = Port number
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LBM:DTLV:VAL? → ""
Note	

12.32.36 ETHernet:PORT<Pt>:OAM:Y:LBM:TTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:Y:LBM:TTLV:VALue <value>
Description	This command sets the loop-back message test TLV value.
Parameters	<Pt> = Port number <value> = <CHARACTER PROGRAM DATA> ZERos: Zeros without CRC-32 ZCRC: Zeros with CRC-32 <i>DEFault = ZERos</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LBM:TTLV:VAL ZER
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LBM:TTLV:VALue?
Description	This query returns the loop-back message test TLV value.
Parameter	<Pt> = Port number
Response	<value> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LBM:TTLV:VAL? → ZER
Note	

12.32.37 ETHernet:PORT<Pt>:OAM:Y:LTM:TTL

Syntax	ETHernet:PORT<Pt>:OAM:Y:LTM:TTL <ttl>
Description	This command sets the link trace message TTL.
Parameters	<Pt> = Port number <ttl> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=255, DEFault=65</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LTM:TTL 65
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LTM:TTL?
Description	This query returns the link trace message TTL.
Parameter	<Pt> = Port number
Response	<tll> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LTM:TTL? → 65
Note	

12.32.38 ETHernet:PORT<Pt>:OAM:Y:LTM:TID

Syntax	ETHernet:PORT<Pt>:OAM:Y:LTM:TID <id>
Description	This command sets the link trace message transaction ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=65535, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LTM:TID 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LTM:TID?
Description	This query returns the link trace message transaction ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LTM:TID? → 1
Note	

12.32.39 ETHernet:PORT<Pt>:OAM:Y:TST:FTSend

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:FTSend <count>
Description	This command sets the number of test frames to send.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=100, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:TST:FTS 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:FTSend?
Description	This query returns the number of test frames to send.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:TST:FTS? → 1
Note	

12.32.40 ETHernet:PORT<Pt>:OAM:Y:TST:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:RATE <interval>
Description	This command sets the test rate.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS100: 100 milli seconds S1: 1 second S10: 10 seconds <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:TST:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:RATE?
Description	This query returns the test rate.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:TST:RATE? → S1
Note	

12.32.41 ETHernet:PORT<Pt>:OAM:Y:TST:OTLV

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:OTLV <tlv>
Description	This command sets the test optional TLV type.
Parameters	<Pt> = Port number <tlv> = <CHARACTER PROGRAM DATA> NONE: No TLV TEST: Test TLV <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:OAM:Y:TST:OTLV NONE
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:OTLV?
Description	This query returns the test optional TLV type.
Parameter	<Pt> = Port number
Response	<tlv> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:TST:OTLV? → NONE
Note	

12.32.42 ETHernet:PORT<Pt>:OAM:Y:TST:TLVLength

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:TLVLength <length>
Description	This command sets the test TLV length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=32, MAXimum=1480, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:Y:TST:TLVL 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:TLVLength?
Description	This query returns the test TLV length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:TST:TLVL? → 0
Note	

12.32.43 ETHernet:PORT<Pt>:OAM:Y:TST:TTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:TTLV:VALue <value>
Description	This command sets the test TLV value.
Parameters	<Pt> = Port number <value> = <CHARACTER PROGRAM DATA> ZERos: Zeros without CRC-32 ZCRC: Zeros with CRC-32 <i>DEFault = ZERos</i>
Response	None.
Example	ETH:PORT1:OAM:Y:TST:TTLV:VAL ZER
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:TST:TTLV:VALue?
Description	This query returns the test TLV value.
Parameter	<Pt> = Port number
Response	<value> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:TST:TTLV:VAL? → ZER
Note	

12.32.44 ETHernet:PORT<Pt>:OAM:Y:MCC:OUI

Syntax	ETHernet:PORT<Pt>:OAM:Y:MCC:OUI <value>
Description	This command sets the MCC OUI.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=16777215, DEFault=145</i>
Response	None.
Example	ETH:PORT1:OAM:Y:MCC:OUI #H91
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:MCC:OUI?
Description	This query returns the MCC OUI.
Parameter	<Pt> = Port number
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:MCC:OUI? → 145
Note	

12.32.45 ETHernet:PORT<Pt>:OAM:Y:MCC:DATA

Syntax	ETHernet:PORT<Pt>:OAM:Y:MCC:DATA <pattern>
Description	This command sets the MCC data.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:MCC:DATA "12345AB"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:MCC:DATA?
Description	This query returns the MCC data.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:MCC:DATA? → "12345AB"
Note	

12.32.46 ETHernet:PORT<Pt>:OAM:Y:LCK:CMEG

Syntax	ETHernet:PORT<Pt>:OAM:Y:LCK:CMEG <level>
Description	This command sets the lock condition client MEG level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LCK:CMEG 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LCK:CMEG?
Description	This query returns the lock condition client MEG level
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LCK:CMEG? → 0
Note	

12.32.47 ETHernet:PORT<Pt>:OAM:Y:LCK:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:LCK:RATE <rate>
Description	This command sets the lock condition rate.
Parameters	<Pt> = Port number <rate> = <CHARACTER PROGRAM DATA> S1: 1 second S60: 1 minute <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LCK:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LCK:RATE?
Description	This query returns the lock condition rate.
Parameter	<Pt> = Port number
Response	<rate> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LCK:RATE? → S1
Note	

12.32.48 ETHernet:PORT<Pt>:OAM:Y:AIS:CMEG

Syntax	ETHernet:PORT<Pt>:OAM:Y:AIS:CMEG <level>
Description	This command sets the alarm indication signal client MEG level.
Parameters	<Pt> = Port number <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:Y:AIS:CMEG 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:AIS:CMEG?
Description	This query returns the alarm indication signal client MEG level.
Parameter	<Pt> = Port number
Response	<level> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:AIS:CMEG? → 0
Note	

12.32.49 ETHernet:PORT<Pt>:OAM:Y:AIS:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:AIS:RATE <rate>
Description	This command sets the alarm indication signal rate.
Parameters	<Pt> = Port number <rate> = <CHARACTER PROGRAM DATA> S1: 1 second S60: 1 minute <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:AIS:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:AIS:RATE?
Description	This query returns the alarm indication signal rate.
Parameter	<Pt> = Port number
Response	<rate> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:AIS:RATE? → S1
Note	

12.32.50 ETHernet:PORT<Pt>:OAM:Y:DMONe:TYPE

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:TYPE <mode>
Description	This command sets the one-way delay measurement mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ODEMAND: On-demand mode PROactive: Proactive mode <i>DEFAULT = PROactive</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:TYPE PRO
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:TYPE?
Description	This query returns the one-way delay measurement mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:TYPE? → PR
Note	

12.32.51 ETHernet:PORT<Pt>:OAM:Y:DMONe:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:RATE <interval>
Description	This command sets the one-way delay measurement rate.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS100: 100 milli seconds S1: 1 second S10: 10 seconds <i>DEFAULT = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:RATE?
Description	This query returns the one-way delay measurement rate.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:RATE? → S1
Note	

12.32.52 ETHernet:PORT<Pt>:OAM:Y:DMONe:FTSend

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:FTSend <count>
Description	This command sets the number of one-way delay measurement frames to send.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=1000, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:FTS 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:FTSend?
Description	This query returns the number of one-way delay measurement frames to send.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:FTS? → 1
Note	

12.32.53 ETHernet:PORT<Pt>:OAM:Y:DMONe:OTLV

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:OTLV <tlv>
Description	This command sets the one-way delay measurement optional TLV type.
Parameters	<Pt> = Port number <tlv> = <CHARACTER PROGRAM DATA> NONE: No TLV DATA: Data TLV TEST: Test TLV <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:OTLV NONE
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:OTLV?
Description	This query returns the one-way delay measurement optional TLV type.
Parameter	<Pt> = Port number
Response	<tlv> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:OTLV? → NONE
Note	

12.32.54 ETHernet:PORT<Pt>:OAM:Y:DMONe:TLVLength

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:TLVLength <length>
Description	This command sets the one-way delay measurement TLV length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=32, MAXimum=1480, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:TLVL 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMONe:TLVLength?
Description	This query returns the one-way delay measurement TLV length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:TLVL? → 0
Note	

12.32.55 EThernet:PORT<Pt>:OAM:Y:DMONe:DTLV:VALue

Syntax	EThernet:PORT<Pt>:OAM:Y:DMONe:DTLV:VALue <value>
Description	This command sets the data TLV value.
Parameters	<Pt> = Port number <value> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:DTLV:VAL ""
Note	

Syntax	EThernet:PORT<Pt>:OAM:Y:DMONe:DTLV:VALue?
Description	This query returns the data TLV value.
Parameter	<Pt> = Port number
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:DTLV:VAL? → ""
Note	

12.32.56 EThernet:PORT<Pt>:OAM:Y:DMONe:TTLV:VALue

Syntax	EThernet:PORT<Pt>:OAM:Y:DMONe:TTLV:VALue <value>
Description	This command sets the test TLV value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=500, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMON:TTLV:VAL 1
Note	

Syntax	EThernet:PORT<Pt>:OAM:Y:DMONe:TTLV:VALue?
Description	This query returns the test TLV value.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMON:TTLV:VAL? → 1
Note	

12.32.57 EThernet:PORT<Pt>:OAM:Y:DMM:TYPE

Syntax	EThernet:PORT<Pt>:OAM:Y:DMM:TYPE <mode>
Description	This command sets the delay measurement message type.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ODEMand: On-demand mode PROactive: Proactive mode <i>DEFault = PROactive</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:TYPE PRO
Note	

Syntax	EThernet:PORT<Pt>:OAM:Y:DMM:TYPE?
Description	This query returns the delay measurement message type.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:TYPE? → PR
Note	

12.32.58 ETHernet:PORT<Pt>:OAM:Y:DMM:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:RATE <interval>
Description	This command sets the delay measurement message rate.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS100: 100 milli seconds S1: 1 second S10: 10 seconds <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:RATE?
Description	This query returns the delay measurement message rate.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:RATE? → S1
Note	

12.32.59 ETHernet:PORT<Pt>:OAM:Y:DMM:FTSend

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:FTSend <count>
Description	This command sets the number of delay measurement message frames to send.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=1000, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:FTS 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:FTSend?
Description	This query returns the number of delay measurement message frames to send.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:FTS? → 1
Note	

12.32.60 ETHernet:PORT<Pt>:OAM:Y:DMM:FVTHreshold

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:FVTHreshold <count>
Description	This command sets the delay measurement message frame variation threshold.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:FVTH 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:FVTHreshold?
Description	This query returns the frame variation.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:FVTH? → 0
Note	

12.32.61 ETHernet:PORT<Pt>:OAM:Y:DMM:OTLV

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:OTLV <tlv>
Description	This command sets the delay measurement message optional TLV type.
Parameters	<Pt> = Port number <tlv> = <CHARACTER PROGRAM DATA> NONE: No TLV DATA: Data TLV TEST: Test TLV <i>DEFault = NONE</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:OTLV NONE
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:OTLV?
Description	This query returns the delay measurement message optional TLV type.
Parameter	<Pt> = Port number
Response	<tlv> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:OTLV? → NONE
Note	

12.32.62 ETHernet:PORT<Pt>:OAM:Y:DMM:TLVLength

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:TLVLength <length>
Description	This command sets the delay measurement message TLV length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> <i>MINimum=32, MAXimum=1480, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:TLVL 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:TLVLength?
Description	This query returns the delay measurement message TLV length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:TLVL? → 0
Note	

12.32.63 ETHernet:PORT<Pt>:OAM:Y:DMM:DTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:DTLV:VALue <value>
Description	This command sets the delay measurement message data TLV value.
Parameters	<Pt> = Port number <value> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:DTLV:VAL ""
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:DTLV:VALue?
Description	This query returns the delay measurement message data TLV value.
Parameter	<Pt> = Port number
Response	<value> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:DTLV:VAL? → ""
Note	

12.32.64 ETHernet:PORT<Pt>:OAM:Y:DMM:TTLV:VALue

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:TTLV:VALue <value>
Description	This command sets the delay measurement message test TLV value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=500, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:DMM:TTLV:VAL 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:DMM:TTLV:VALue?
Description	This query returns the delay measurement message test TLV value.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:DMM:TTLV:VAL? → 1
Note	

12.32.65 ETHernet:PORT<Pt>:OAM:Y:LMM:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:RATE <interval>
Description	This command sets the loss measurement message interval length.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS100: 100 milli seconds S1: 1 second S10: 10 seconds <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LMM:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:RATE?
Description	This query returns the loss measurement message interval length.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LMM:RATE? → S1
Note	

12.32.66 ETHernet:PORT<Pt>:OAM:Y:LMM:FTSend

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:FTSend <count>
Description	This command sets the number of loss measurement message frames to send.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=1000, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LMM:FTS 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:FTSend?
Description	This query returns the number of loss measurement message frames to send.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LMM:FTS? → 1
Note	

12.32.67 ETHernet:PORT<Pt>:OAM:Y:LMM:FLTHreshold

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:FLTHreshold <threshold>
Description	This command sets the loss measurement message frame loss threshold.
Parameters	<Pt> = Port number <threshold> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=5, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:Y:LMM:FLTH 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:LMM:FLTHreshold?
Description	This query returns the loss measurement message frame loss threshold.
Parameter	<Pt> = Port number
Response	<threshold> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:LMM:FLTH? → 0
Note	

12.32.68 ETHernet:PORT<Pt>:OAM:Y:SLM:RATE

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:RATE <interval>
Description	This command sets the synthetic loss measurement rate.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> MS100: 100 milli seconds S1: 1 second S10: 10 seconds <i>DEFault = S1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:SLM:RATE S1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:RATE?
Description	This query returns the synthetic loss measurement rate.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:SLM:RATE? → S1
Note	

12.32.69 ETHernet:PORT<Pt>:OAM:Y:SLM:FTSend

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:FTSend <count>
Description	This command sets the number of synthetic loss measurement frames to send.
Parameters	<Pt> = Port number <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=1000, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:Y:SLM:FTS 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:FTSend?
Description	This query returns the number of synthetic loss measurement frames to send.
Parameter	<Pt> = Port number
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:SLM:FTS? → 1
Note	

12.32.70 ETHernet:PORT<Pt>:OAM:Y:SLM:FLTHreshold

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:FLTHreshold <threshold>
Description	This command sets the synthetic loss measurement frame loss threshold.
Parameters	<Pt> = Port number <threshold> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=5, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:Y:SLM:FLTH 0
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:SLM:FLTHreshold?
Description	This query returns the frame loss threshold.
Parameter	<Pt> = Port number
Response	<threshold> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:SLM:FLTH? → 0
Note	

12.32.71 ETHernet:PORT<Pt>:OAM:Y:EXM:DATA

Syntax	ETHernet:PORT<Pt>:OAM:Y:EXM:DATA <pattern>
Description	This command sets the experimental message data.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:EXM:DATA "12345AB"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:EXM:DATA?
Description	This query returns the experimental message data.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:EXM:DATA? → "12345AB"
Note	

12.32.72 ETHernet:PORT<Pt>:OAM:Y:VSM:DATA

Syntax	ETHernet:PORT<Pt>:OAM:Y:VSM:DATA <pattern>
Description	This command sets the vendor specific message data.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:OAM:Y:VSM:DATA "12345AB"
Note	

Syntax	ETHernet:PORT<Pt>:OAM:Y:VSM:DATA?
Description	This query returns the vendor specific message data.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:Y:VSM:DATA? → "12345AB"
Note	

12.32.73 EThernet:PORT<Pt>:OAM:Y:MEPList:ADD

Syntax	EThernet:PORT<Pt>:OAM:Y:MEPList:ADD <mepId>,<mac>[,<level>[,<megId>]]
Description	This command adds a management end point to the MEP list.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i> <mac> = <STRING PROGRAM DATA> <level> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i> <association> = <STRING PROGRAM DATA> <domain> = <STRING PROGRAM DATA>
Response	None
Example	ETH:PORT1:OAM:Y:MEPL:ADD 234,"00-00-00-00-00-11"
Note	

12.32.74 EThernet:PORT<Pt>:OAM:Y:MEPList:DELeTe[:MEP]

Syntax	EThernet:PORT<Pt>:OAM:Y:MEPList:DELeTe[:MEP] <mepId>
Description	This command deletes a management end point from the MEP list.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None
Example	ETH:PORT1:OAM:Y:MEPL:DEL 234
Note	

12.32.75 EThernet:PORT<Pt>:OAM:Y:MEPList:CATalog?

Syntax	EThernet:PORT<Pt>:OAM:Y:MEPList:CATalog?
Description	This query returns the items on the management end point list.
Parameter	<Pt> = Port number
Response	{(<endPoint>),}* = <EXPRESSION RESPONSE DATA> <endPoint> is split into five separate results: (<mepId>,<mac>,<level>,<association>,<domain>)
Example	ETH:PORT1:OAM:Y:MEPL:CAT? → (234,00-00-00-00-00-11,1,Association-A,Domain1), (345,00-00-00-00-00-22,1,Association-B,Domain2)
Note	If the list is empty an execution error will be reported.

12.32.76 EThernet:PORT<Pt>:OAM:DISCcovery:TYPE

Syntax	EThernet:PORT<Pt>:OAM:DISCcovery:TYPE <mode>
Description	This command sets the discovery type.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> CCM: LBM: <i>DEFault = CCM</i>
Response	None.
Example	ETH:PORT1:OAM:DISC:TYPE CCM
Note	This setting applies to the 802.1ag and Y.1731 protocols.

Syntax	ETHernet:PORT<Pt>:OAM:DISCcovery:TYPE?
Description	This query returns the discovery type.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:DISC:TYPE? → CCM
Note	

12.32.77 ETHernet:PORT<Pt>:OAM:DISCcovery:INTerval

Syntax	ETHernet:PORT<Pt>:OAM:DISCcovery:INTerval <interval>
Description	This command sets the discovery interval.
Parameters	<Pt> = Port number <interval> = <CHARACTER PROGRAM DATA> S5: 5 seconds S15: 15 seconds S60: 1 minute <i>DEFault = S5</i>
Response	None.
Example	ETH:PORT1:OAM:DISC:INT S5
Note	This setting applies to the 802.1ag and Y.1731 protocols.

Syntax	ETHernet:PORT<Pt>:OAM:DISCcovery:INTerval?
Description	This query returns the discovery interval.
Parameter	<Pt> = Port number
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:DISC:INT? → S5
Note	

12.32.78 ETHernet:PORT<Pt>:OAM:DISCcovery:DMAX

Syntax	ETHernet:PORT<Pt>:OAM:DISCcovery:DMAX <value>
Description	This command sets the maximum number of devices to discover.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=32, DEFault=10</i>
Response	None.
Example	ETH:PORT1:OAM:DISC:DMAX 1
Note	This setting applies to the 802.1ag and Y.1731 protocols.

Syntax	ETHernet:PORT<Pt>:OAM:DISCcovery:DMAX?
Description	This query returns the maximum number of devices to discover.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:DISC:DMAX? → 1
Note	

12.32.79 EThernet:PORT<Pt>:OAM:DIScovery:CATalog?

Syntax	EThernet:PORT<Pt>:OAM:DIScovery:CATalog?
Description	This query returns the list of discovered OAM MEPs.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Response	{(<endPoint>),}* = <EXPRESSION RESPONSE DATA> <endPoint> is split into five separate results: (<mepId>,<mac>,<level>,<associationOrMeg>,<domain>)
Example	ETH:PORT1:OAM:DISC:CAT? → (234,00-00-00-00-00-11,1,Association-A,Domain1), (345,00-00-00-00-00-22,1,Association-B,Domain2)
Note	The <domain> string is not returned when Y.1731 is active. The time for this command to return can extend to the value in the ETH:PORT1:OAM:DISC:INT setting.

12.32.80 EThernet:PORT<Pt>:OAM:MPLS[:ENABLE]

Syntax	EThernet:PORT<Pt>:OAM:MPLS[:ENABLE] <enable>
Description	This command enables/disables MPLS.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS ON
Note	

Syntax	EThernet:PORT<Pt>:OAM:MPLS[:ENABLE]?
Description	This query returns the state of MPLS.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS? → 1
Note	

12.32.81 EThernet:PORT<Pt>:OAM:MPLS:LCOunt

Syntax	EThernet:PORT<Pt>:OAM:MPLS:LCOunt <levels>
Description	This command sets the number of active MPLS levels.
Parameters	<Pt> = Port number <levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS:LCO 2
Note	

Syntax	EThernet:PORT<Pt>:OAM:MPLS:LCOunt?
Description	This query returns the number of active MPLS levels.
Parameters	<Pt> = Port number
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS:LCO? → 2
Note	

12.32.82 ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:LABel

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:LABel <label>
Description	This command sets the MPLS label.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N ¹)
	<label> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1048575, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS:LEV1:LAB 1048575
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels. Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:LABel?
Description	This query returns the MPLS label.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N)
Response	<label> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS:LEV1:LAB? → 1048575
Note	

12.32.83 ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TCLass

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TCLass <value>
Description	This command sets the MPLS traffic class.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N ¹)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS:LEV1:TCL 5
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels. Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TCLass?
Description	This query returns the MPLS traffic class.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS:LEV1:TCL? → 5
Note	

12.32.84 ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TTL

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TTL <value>
Description	This command sets the MPLS time to live.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N ¹)
	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=32</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS:LEV1:TTL 32
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active MPLS Levels. Level 1 corresponds to the level at the top of the label stack and N is the level at the bottom of the stack (bottom of stack flag set).

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:LEVel<Lv>:TTL?
Description	This query returns the MPLS time to live.
Parameters	<Pt> = Port number
	<Lv> = MPLS level (1-N)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS:LEV1:TTL? → 32
Note	

12.32.85 ETHernet:PORT<Pt>:OAM:MPLS:TPRofile[:ENABle]

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:TPRofile[:ENABle] <enable>
Description	This command enables/disables MPLS transport profile.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MPLS:TPR ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MPLS:TPRofile[:ENABle]?
Description	This query returns the state of MPLS transport profile.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MPLS:TPR? → 1
Note	

12.32.86 ETHernet:PORT<Pt>:OAM:MIM[:ENABle]

Syntax	ETHernet:PORT<Pt>:OAM:MIM[:ENABle] <enable>
Description	This command enables/disables MAC in MAC (alias PBB).
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MIM ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM[:ENABle]?
Description	This query returns whether or not MAC in MAC is enabled.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM? → 1
Note	

12.32.87 ETHernet:PORT<Pt>:OAM:MIM:BTAG:DEI

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:DEI <enable>
Description	This command sets the B-TAG DEI bit.
Parameters	<Pt> = Port number
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:BTAG:DEI ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:DEI?
Description	This query returns the B-TAG DEI bit.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:BTAG:DEI? → 1
Note	

12.32.88 ETHernet:PORT<Pt>:OAM:MIM:BTAG:PRiority

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:PRiority <priority>
Description	This command sets the B-TAG Priority (PCP).
Parameters	<Pt> = Port number <priority> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:BTAG:PRI 7
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:PRiority?
Description	This query returns the B-TAG Priority (PCP).
Parameters	<Pt> = Port number
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:BTAG:PRI? → 7
Note	

12.32.89 ETHernet:PORT<Pt>:OAM:MIM:BTAG:VID

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:VID <vid>
Description	This command sets the B-TAG Backbone VLAN ID.
Parameters	<Pt> = Port number <vid> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4095, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:BTAG:VID 1024
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:BTAG:VID?
Description	This query returns the B-TAG Backbone VLAN ID.
Parameters	<Pt> = Port number
Response	<vid> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:BTAG:VID? → 1024
Note	

12.32.90 ETHernet:PORT<Pt>:OAM:MIM:ITAG:UCA

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:UCA <enable>
Description	This command sets the I-TAG UCA bit.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:ITAG:UCA ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:UCA?
Description	This query returns the I-TAG UCA bit.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:ITAG:UCA? → 1
Note	

12.32.91 ETHernet:PORT<Pt>:OAM:MIM:ITAG:DEI

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:DEI <enable>
Description	This command sets the I-TAG DEI bit.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault=OFF</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:ITAG:DEI ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:DEI?
Description	This query returns the I-TAG DEI bit.
Parameters	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:ITAG:DEI? → 1
Note	

12.32.92 ETHernet:PORT<Pt>:OAM:MIM:ITAG:PRIority

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:PRIority <priority>
Description	This command sets the I-TAG Priority (PCP).
Parameters	<Pt> = Port number <priority> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 7, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:ITAG:PRI 7
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:PRIority?
Description	This query returns the I-TAG Priority (PCP).
Parameters	<Pt> = Port number
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:ITAG:PRI? → 7
Note	

12.32.93 ETHernet:PORT<Pt>:OAM:MIM:ITAG:SID

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:SID <sid>
Description	This command sets the I-TAG SID.
Parameters	<Pt> = Port number <sid> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 16777215, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:OAM:MIM:ITAG:SID 1
Note	

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ITAG:SID?
Description	This query returns the I-TAG SID.
Parameters	<Pt> = Port number
Response	<sid> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:ITAG:SID? → 1
Note	

12.32.94 ETHernet:PORT<Pt>:OAM:MIM:SMAC

Syntax	ETHernet:PORT<Pt>:OAM:MIM:SMAC <address>
Description	This command sets the MAC in MAC source MAC address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:OAM:MIM:SMAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:OAM:MIM:SMAC?
Description	This query returns the MAC in MAC source MAC address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:SMAC? → "00-50-C2-35-D2-EF"
Note	

12.32.95 ETHernet:PORT<Pt>:OAM:MIM:ETHernet:DMAC

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ETHernet:DMAC <address>
Description	This command sets the MAC in MAC destination MAC address.
Parameters	<Pt> = Port number <address> = <STRING PROGRAM DATA> MAC address
Response	None.
Example	ETH:PORT1:OAM:MIM:ETH:DMAC "00-50-C2-35-D2-EF"
Note	Only the character '-' is accepted as separator.

Syntax	ETHernet:PORT<Pt>:OAM:MIM:ETHernet:DMAC?
Description	This query returns the MAC in MAC destination MAC address.
Parameter	<Pt> = Port number
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:MIM:ETH:DMAC? → "00-50-C2-35-D2-EF"
Note	

12.32.96 ETHernet:PORT<Pt>:OAM:VLAN[:ENABLE]

Syntax	ETHernet:PORT<Pt>:OAM:VLAN[:ENABLE] <enable>
Description	This command enables/disables VLAN.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN ON
Note	

Syntax	ETHernet:PORT<Pt>:OAM:VLAN[:ENABLE]?
Description	This query returns whether or not VLAN is enabled.
Parameters	<Pt> = Port number
Response	<boolean> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN? → 1
Note	

12.32.97 ETHernet:PORT<Pt>:OAM:VLAN:LCOunt

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LCOunt <levels>
Description	This command sets the number of active VLAN levels.
Parameters	<Pt> = Port number <levels> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8, DEFault=1</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LCO 2
Note	

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LCOunt?
Description	This query returns the number of active VLAN levels.
Parameters	<Pt> = Port number
Response	<levels> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LCO? → 2
Note	

12.32.98 ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ID

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ID <number>
Description	This command sets the VLAN ID.
Parameters	<Pt> = Port number <Lv> = VLAN level (1-N ¹) <number> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4095, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LEV1:ID 1024
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels. Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ID?
Description	This query returns the VLAN ID.
Parameters	<Pt> = Port number <Lv> = VLAN level (1-N)
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LEV1:ID? → 1024
Note	

12.32.99 ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI <enable>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LEV1:CFI ON
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels. Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).
	² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition
	³ This command is as same as ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI?
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LEV1:CFI? → 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition
	² This command is as same as ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI?

12.32.100 ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI <enable>
Description	This command enables/disables the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LEV1:DEI ON
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels. Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).
	² CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition
	³ This command is as same as ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:DEI?
Description	This query returns the state of the VLAN canonical format indicator.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LEV1:DEI? → 1
Note	¹ CFI bit in the VLAN tag was renamed to 'DEI' in IEEE802.1Q 2014 edition
	² This command is as same as ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:CFI?

12.32.101 ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:PRIority

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:PRIority <priority>
Description	This command sets the VLAN priority.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
	<priority> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=7, DEFault=0</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LEV1:PRI 7
Notes	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels. Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame).

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:PRIority?
Description	This query returns the VLAN priority.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N)
Response	<priority> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LEV1:PRI? → 7
Note	

12.32.102 ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ETYPe

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ETYPe <type>
Description	This command sets the VLAN Ethertype.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N) ¹
	<type> = <NUMERIC PROGRAM DATA>
	Acceptable values: #H8100 #H88A8 #H9100 #H9200 <i>DEFault=#H8100</i>
Response	None.
Example	ETH:PORT1:OAM:VLAN:LEV1:ETYP #H8100
Notes	¹ It is only possible to use this command for levels (1-M), where M is the number of active VLAN Levels minus one. Level 1 corresponds to the outer tag (closest to the Ethernet header) and N is the inner tag (closest to the payload portion of the frame). It is not possible to use this command for VLAN level N because Ethertype at this level is automatically set. MAC level Ethertype is set by :ETH:PORT1:OAM:MAC:ETYPe command.

Syntax	ETHernet:PORT<Pt>:OAM:VLAN:LEVel<Lv>:ETYPe?
Description	This query returns the OAM VLAN Ethertype.
Parameters	<Pt> = Port number
	<Lv> = VLAN level (1-N ¹)
Response	<type> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:VLAN:LEV1:ETYP? → #H8100
Note	¹ It is only possible to use this command for levels 1-N, where N is the number of active VLAN Levels.

12.32.103 ETHernet:PORT<Pt>:OAM:OUTPut:ULBM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:ULBM <mepId>
Description	This command activates OAM unicast loop-back message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:ULBM 10
Note	Only used when 802.ag or Y.1731 is active.

12.32.104 ETHernet:PORT<Pt>:OAM:OUTPut:MLBM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:MLBM <mepId>
Description	This command activates OAM multicast loop-back message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:MLBM 10
Note	Only used when 802.ag or Y.1731 is active.

12.32.105 ETHernet:PORT<Pt>:OAM:OUTPut:LTM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LTM <mepId>
Description	This command activates the link trace message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:LTM 10
Note	Only used when 802.ag or Y.1731 is active.

12.32.106 ETHernet:PORT<Pt>:OAM:OUTPut:MCC

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:MCC <mepId>
Description	This command activates the MCC event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:MCC 10
Note	Only used when Y.1731 is active.

12.32.107 ETHernet:PORT<Pt>:OAM:OUTPut:EXM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:EXM <mepId>
Description	This command activates the experimental OAM message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:EXM
Note	Only used when Y.1731 is active.

12.32.108 ETHernet:PORT<Pt>:OAM:OUTPut:VSM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:VSM <mepId>
Description	This command activates the vendor specific OAM message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:VSM 10
Note	Only used when Y.1731 is active.

12.32.109 ETHernet:PORT<Pt>:OAM:OUTPut:TST

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:TST <mepId>
Description	This command activates the OAM test event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:TST 10
Note	Only used when Y.1731 is active.

12.32.110 ETHernet:PORT<Pt>:OAM:OUTPut:LMM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LMM <mepId>
Description	This command activates the loss measurement message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:LMM 10
Note	Only used when Y.1731 is active.

12.32.111 ETHernet:PORT<Pt>:OAM:OUTPut:SLM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:SLM <mepId>
Description	This command activates the synthetic loss measurement event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:SLM 10
Note	Only used when Y.1731 is active.

12.32.112 ETHernet:PORT<Pt>:OAM:OUTPut:DMONe

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:DMONe <mepId>
Description	This command activates the one-way delay measurement event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:DMON 10
Note	Only used when Y.1731 is active.

12.32.113 ETHernet:PORT<Pt>:OAM:OUTPut:DMM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:DMM <mepId>
Description	This command activates the delay measurement message event.
Parameters	<Pt> = Port number <mepId> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=8191</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:DMM 10
Note	Only used when Y.1731 is active.

12.32.114 ETHernet:PORT<Pt>:OAM:OUTPut:CCM

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:CCM <enable>
Description	This command enables/disables continuity check messages.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:CCM OFF
Note	Only used when 802.ag or Y.1731 is active.

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:CCM?
Description	This query returns whether or not continuity check messages are enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:OUTP:CCM? → 0
Note	

12.32.115 ETHernet:PORT<Pt>:OAM:OUTPut:AIS

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:AIS <enable>
Description	This command enables/disables AIS alarm.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:AIS OFF
Note	Only used when Y.1731 is active.

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:AIS?
Description	This query returns whether or not AIS alarm is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:OUTP:AIS? → 0
Note	

12.32.116 ETHernet:PORT<Pt>:OAM:OUTPut:LCK

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LCK <enable>
Description	This command enables/disables lock condition.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:LCK OFF
Note	Only used when Y.1731 is active.

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LCK?
Description	This query returns whether or not lock condition is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:OUTP:LCK? → 0
Note	

12.32.117 ETHernet:PORT<Pt>:OAM:OUTPut:LOOP

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LOOP <enable>
Description	This command enables/disables 802.3ah loop.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:PORT1:OAM:OUTP:LOOP OFF
Note	Only used when 802.3ah is active.

Syntax	ETHernet:PORT<Pt>:OAM:OUTPut:LOOP?
Description	This query returns whether or not 802.3ah loop is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:OUTP:LOOP? → 0
Note	

12.32.118 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MODE?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MODE?
Description	This query returns the remote mode string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:MODE? → "N/A"
Note	

12.32.119 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:PARSer?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:PARSer?
Description	This query returns the remote parser string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:PARS? → "N/A"
Note	

12.32.120 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MUXer?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MUXer?
Description	This query returns the remote muxer string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:MUX? → "N/A"
Note	

12.32.121 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:OUI?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:OUI?
Description	This query returns the remote OUI string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:OUI? → "N/A"
Note	

12.32.122 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:VSI?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:VSI?
Description	This query returns the remote VSI string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:VSI? → "N/A"
Note	

12.32.123 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:UNIDirectional?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:UNIDirectional?
Description	This query returns the remote unidirectional support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:UNID? → "N/A"
Note	

12.32.124 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:LEVents?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:LEVents?
Description	This query returns the remote link events support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:LEV? → "Supported"
Note	

12.32.125 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:LBACk?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:LBACk?
Description	This query returns the remote loop-back support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:LBAC? → "Unsupported"
Note	

12.32.126 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:VRETrieval?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:VRETrieval?
Description	This query returns the remote variable retrieval support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:VRET? → "N/A"
Note	

12.32.127 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:REVisIon?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:REVisIon?
Description	This query returns the remote revision number.
Parameter	<Pt> = Port number
Response	<NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:REV? → 0
Note	

12.32.128 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MAC?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MAC?
Description	This query returns the remote MAC address.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:MAC? → "N/A"
Note	

12.32.129 ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MPDU?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:REMOte:MPDU?
Description	This query returns the remote maximum PDU size.
Parameter	<Pt> = Port number
Response	<NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:REM:MPDU? → 0
Note	

12.32.130 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MODE?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MODE?
Description	This query returns the local mode string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:MODE? → "N/A"
Note	

12.32.131 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:PARSer?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:PARSer?
Description	This query returns the local parser string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:PARS? → "N/A"
Note	

12.32.132 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MUXer?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MUXer?
Description	This query returns the local muxer string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:MUX? → "N/A"
Note	

12.32.133 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:UNIDirectional?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:UNIDirectional?
Description	This query returns the local unidirectional support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:UNID? → "N/A"
Note	

12.32.134 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:LEVents?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:LEVents?
Description	This query returns the local link events support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:LEV? → "Supported"
Note	

12.32.135 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:LBACk?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:LBACk?
Description	This query returns the local loop-back support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:LBAC? → "Unsupported"
Note	

12.32.136 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:VRETrieval?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:VRETrieval?
Description	This query returns the local variable retrieval support status.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:VRET? → "N/A"
Note	

12.32.137 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:REVisIon?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:REVisIon?
Description	This query returns the local revision number.
Parameter	<Pt> = Port number
Response	<NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:REV? → 0
Note	

12.32.138 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MPDU?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:MPDU?
Description	This query returns the local maximum PDU size.
Parameter	<Pt> = Port number
Response	<NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:MPDU? → 0
Note	

12.32.139 ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:STATe?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:LOCal:STATe?
Description	This query returns the local state string.
Parameter	<Pt> = Port number
Response	<STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:LOC:STAT? → "N/A"
Note	

12.32.140 ETHernet:PORT<Pt>:OAM:STATus:AH:VARiable:REQuest

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:VARiable:REQuest <variable>
Description	This command requests the specified variable from the remote side.
Parameters	<Pt> = Port number <variable> = <CHARACTER PROGRAM DATA> TUCodes: Tx Unsupported codes RUCodes: Rx Unsupported codes TINformation: Tx Information RINformation: Rx Information TUEVent: Tx Unique Event RUEVent: Rx Unique Event TDEVent: Tx Duplicate Event RDEVent: Rx Duplicate Event TLBControl: Tx Loop-back control RLBControl: Rx Loop-back control TVREQuest: Tx Variable request RVREQuest: Rx Variable request TVResponse: Tx Variable response RVResponse: Rx Variable response TOSpecific: Tx Organizational specific ROSPecific: Rx Organizational specific LSYConfig: Local errored symbol config LSYevent: Local errored symbol event LFConfig: Local errored frame config LFEvent: Local errored frame event LPConfig: Local errored period config LPEvent: Local errored period event LSConfig: Local errored seconds config LSEvent: Local errored seconds event RSYevent: Remote errored symbol event RFEvent: Remote errored frame event RPEvent: Remote errored period event RSEvent: Remote errored seconds event FLOerror: Frames lost to OAM error <i>DEFault = TUC</i>
Response	None.
Example	ETH:PORT1:OAM:STAT:AH:VAR:REQ TUC
Note	The requested parameter is fetched with the command ETH:PORT1:OAM:STAT:AH:VAR:RESP? I may take a few seconds before the response is obtainable.

12.32.141 ETHernet:PORT<Pt>:OAM:STATus:AH:VARiable:RESPonse?

Syntax	ETHernet:PORT<Pt>:OAM:STATus:AH:VARiable:RESPonse?
Description	This command fetches the latest variable response from the remote side.
Parameters	<Pt> = Port number
Response	<variable> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:OAM:STAT:AH:VAR:RESP? → "Unsupported Codes Tx : 0"
Note	

12.32.142 ETHernet:PORT<Pt>:OAM:LOG?

Syntax	ETHernet:PORT<Pt>:OAM:LOG?
Description	This query returns a lists of logged OAM events.
Parameter	<Pt> = Port number
Response	<log> = <STRING RESPONSE DATA>
Example	ETH:PORT1:OAM:LOG? → "16:15:54 LTM transaction ID 1 passed 16:16:01 MCC message sent "
Note	

12.33 TCP Throughput Test - RFC-6349

The SCPI commands in this section are available in the following application:

- TP-RFC6349-ETH: Ethernet RFC-6349 test application.

This applications supports one port only.

12.33.1 ETHernet:TTTest:SETup:TCPPort

Syntax	ETHernet:TTTest:SETup:TCPPort <port>
Description	This command sets the TCP port number.
Parameter	<port> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535, DEFault=5001</i>
Response	None.
Example	ETH:TTT:SET:TCPP 5001
Note	

Syntax	ETHernet:TTTest:SETup:TCPPort?
Description	This query returns the TCP port number.
Parameter	None.
Response	<port> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TCPP? → 5001
Note	

12.33.2 ETHernet:TTTest:SETup:FATSequence

Syntax	ETHernet:TTTest:SETup:FATSequence <enable>
Description	This command enables/disables full auto test sequence.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:FATS OFF
Note	

Syntax	ETHernet:TTTest:SETup:FATSequence?
Description	This query returns whether or not full auto test sequence is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:FATS? → 0
Note	

12.33.3 ETHernet:TTTest:SETup:CIPerf

Syntax	ETHernet:TTTest:SETup:CIPerf <enable>
Description	This command enables/disables connection to iPerf server.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:CIP OFF
Note	

Syntax	ETHernet:TTTest:SETup:CIPerf?
Description	This query returns whether or not connection to iPerf server is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:CIP? → 0
Note	

12.33.4 ETHernet:TTTest:SETup:SLSName

Syntax	ETHernet:TTTest:SETup:SLSName <name>
Description	This command sets the short local site name.
Parameter	<name> = <STRING PROGRAM DATA> The supplied name is truncated to a maximum of 4 characters.
Response	None.
Example	ETH:TTT:SET:SLSN "LOC"
Note	

Syntax	ETHernet:TTTest:SETup:SLSName?
Description	This query returns the short local site name.
Parameter	None.
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:TTT:SET:SLSN? → "LOC"
Note	

12.33.5 ETHernet:TTTest:SETup:LLSName

Syntax	ETHernet:TTTest:SETup:LLSName <name>
Description	This command sets the long local site name.
Parameter	<name> = <STRING PROGRAM DATA> The supplied name is truncated to a maximum of 12 characters.
Response	None.
Example	ETH:TTT:SET:LLSN "LOCAL"
Note	

Syntax	ETHernet:TTTest:SETup:LLSName?
Description	This query returns the long local site name.
Parameter	None.
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:TTT:SET:LLSN? → "LOCAL"
Note	

12.33.6 ETHernet:TTTest:SETup:SRSName

Syntax	ETHernet:TTTest:SETup:SRSName <name>
Description	This command sets the short remote site name.
Parameter	<name> = <STRING PROGRAM DATA> The supplied name is truncated to a maximum of 4 characters.
Response	None.
Example	ETH:TTT:SET:SRSN "S123"
Note	

Syntax	ETHernet:TTTest:SETup:SRSName?
Description	This query returns the short remote site name.
Parameter	None.
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:TTT:SET:SRSN? → "S123"
Note	

12.33.7 ETHernet:TTTest:SETup:LRSName

Syntax	ETHernet:TTTest:SETup:LRSName <name>
Description	This command sets the long remote site name.
Parameter	<name> = <STRING PROGRAM DATA> The supplied name is truncated to a maximum of 12 characters.
Response	None.
Example	ETH:TTT:SET:LRSN "SITE-1-23"
Note	

Syntax	ETHernet:TTTest:SETup:LRSName?
Description	This query returns the long remote site name.
Parameter	None.
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:TTT:SET:LRSN? → "SITE-1-23"
Note	

12.33.8 ETHernet:TTTest:SETup:TDLR

Syntax	ETHernet:TTTest:SETup:TDLR <enable>
Description	This command enables/disables the test direction local to remote.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	ETH:TTT:SET:TDLR ON
Note	

Syntax	ETHernet:TTTest:SETup:TDLR?
Description	This query returns whether or not the test direction local to remote is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TDLR? → 1
Note	

12.33.9 ETHernet:TTTest:SETup:TDRL

Syntax	ETHernet:TTTest:SETup:TDRL <enable>
Description	This command enables/disables the test direction remote to local.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	ETH:TTT:SET:TDRL OFF
Note	

Syntax	ETHernet:TTTest:SETup:TDRL?
Description	This query returns whether or not the test direction remote to local is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TDRL? → 0
Note	

12.33.10 ETHernet:TTTest:SETup:TDSimultaneos

Syntax	ETHernet:TTTest:SETup:TDSimultaneos <enable>
Description	This command enables/disables the test direction both simultaneous.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:TDS OFF
Note	

Syntax	ETHernet:TTTest:SETup:TDSimultaneos?
Description	This query returns whether or not the test direction simultaneous is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TDS? → 0
Note	

12.33.11 ETHernet:TTTest:SETup[:LTRemote]:CIRate

Syntax	ETHernet:TTTest:SETup[:LTRemote]:CIRate <rate>
Description	This command sets the local to remote CIR rate (upstream). Unit: Mbps.
Parameter	<rate> = <NUMERIC PROGRAM DATA> <i>MINimum=0.010, MAXimum=10000, DEFault=1000</i>
Response	None.
Example	ETH:TTT:SET:CIR 1000
Note	

Syntax	ETHernet:TTTest:SETup[:LTRemote]:CIRate?
Description	This query returns the local to remote CIR rate.
Parameter	None.
Response	<rate> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:CIR? → 1000
Note	

12.33.12 ETHernet:TTTest:SETup[:LTRemote]:MTUSize

Syntax	ETHernet:TTTest:SETup[:LTRemote]:MTUSize <size>
Description	This command sets the local to remote MTU size.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=64, MAXimum=15982, DEFault=1500</i>
Response	None.
Example	ETH:TTT:SET:MTUS 1500
Note	This MTU size is used when ETHernet:TTTest:SETup:PMTU:DISCover:ENABle is disabled.

Syntax	ETHernet:TTTest:SETup[:LTRemote]:MTUSize?
Description	This query returns the local to remote MTU size.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MTUS? → 1500
Note	

12.33.13 ETHernet:TTTest:SETup:RTLocal:CIRate

Syntax	ETHernet:TTTest:SETup:RTLocal:CIRate <rate>
Description	This command sets the remote to local CIR rate (downstream). Unit: Mbps.
Parameter	<rate> = <NUMERIC PROGRAM DATA> <i>MINimum=0.010, MAXimum=10000, DEFault=1000</i>
Response	None.
Example	ETH:TTT:SET:RTL:CIR 1000
Note	

Syntax	ETHernet:TTTest:SETup:RTLocal:CIRate?
Description	This query returns the remote to local CIR rate.
Parameter	None.
Response	<rate> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:RTL:CIR? → 1000
Note	

12.33.14 ETHernet:TTTest:SETup:RTLocal:MTUSize

Syntax	ETHernet:TTTest:SETup:RTLocal:MTUSize <size>
Description	This command sets the remote to local MTU size.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=64, MAXimum=15982, DEFault=1500</i>
Response	None.
Example	ETH:TTT:SET:RTL:MTUS 1500
Note	This MTU size is used when ETHernet:TTTest:SETup:PMTU:DISCover:ENABLE is disabled.

Syntax	ETHernet:TTTest:SETup:RTLocal:MTUSize?
Description	This query returns the remote to local MTU size.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:RTL:MTUS? → 1500
Note	

12.33.15 ETHernet:TTTest:SETup:PMTU:DISCover[:ENABLE]

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover[:ENABLE] <enable>
Description	This command enables/disables path MTU discovery.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:PMTU:DISC ON
Note	

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover[:ENABLE]?
Description	This query returns whether or not path MTU discovery is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:PMTU:DISC? → 1
Note	

12.33.16 ETHernet:TTTest:SETup:PMTU:DISCover:MINimum

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover:MINimum <size>
Description	This command sets the path MTU discovery minimum size.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=64, MAXimum=15982, DEFault=512</i>
Response	None.
Example	ETH:TTT:SET:PMTU:DISC:MIN 512
Note	

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover:MINimum?
Description	This query returns the path MTU discovery minimum size.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:PMTU:DISC:MIN? → 512
Note	

12.33.17 ETHernet:TTTest:SETup:PMTU:DISCover:MAXimum

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover:MAXimum <size>
Description	This command sets the path MTU discovery maximum size.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=64, MAXimum=15982, DEFault=1500</i>
Response	None.
Example	ETH:TTT:SET:PMTU:DISC:MAX 1500
Note	

Syntax	ETHernet:TTTest:SETup:PMTU:DISCover:MAXimum?
Description	This query returns the path MTU discovery maximum size.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:PMTU:DISC:MAX? → 1500
Note	

12.33.18 ETHernet:TTTest:SETup:BR TT

Syntax	ETHernet:TTTest:SETup:BR TT <size>
Description	This command sets the baseline RTT. Unit: ms.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=0.001, MAXimum=5000, DEFault=2</i>
Response	None.
Example	ETH:TTT:SET:BR TT 2
Note	This value is used when ETHernet:TTTest:SETup:BR TT:AUTO is disabled.

Syntax	ETHernet:TTTest:SETup:BR TT?
Description	This query returns the baseline RTT.
Parameter	None.
Response	<size> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:BR TT? → 0.020
Note	

12.33.19 ETHernet:TTTest:SETup:BRtt:AUTO

Syntax	ETHernet:TTTest:SETup:BRtt:AUTO <enable>
Description	This command enables/disables a test to determine the baseline RTT.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:BRtt:AUTO ON
Note	

Syntax	ETHernet:TTTest:SETup:BRtt:AUTO?
Description	This query returns whether or not the test to determine the baseline RTT is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:BRtt:AUTO? → 1
Note	

12.33.20 ETHernet:TTTest:SETup:BRtt:AUTO:DURation

Syntax	ETHernet:TTTest:SETup:BRtt:AUTO:DURation <duration>
Description	This command sets the duration of the RTT discovery test. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=5, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:BRtt:AUTO:DUR 10
Note	

Syntax	ETHernet:TTTest:SETup:BRtt:AUTO:DURation?
Description	This query returns the RTT discovery test duration.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:BRtt:AUTO:DUR? → 10
Note	

12.33.21 ETHernet:TTTest:SETup:WSTTest[:ENABle]

Syntax	ETHernet:TTTest:SETup:WSTTest[:ENABle] <enable>
Description	This command enables/disables the window scan and throughput test.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:WSTT ON
Note	

Syntax	ETHernet:TTTest:SETup:WSTTest[:ENABle]?
Description	This query returns whether or not the window scan and throughput test is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:WSTT? → 1
Note	

12.33.22 ETHernet:TTTest:SETup:WSTTest:MODE

Syntax	ETHernet:TTTest:SETup:WSTTest:MODE <mode>
Description	This command sets the window scan and throughput test mode.
Parameter	<mode> = <CHARACTER PROGRAM DATA> AUTO: Scans the window size in four predefined steps. EXPert: Scans the window size in a number of user defined steps. <i>DEFault = AUTO</i>
Response	None.
Example	ETH:TTT:SET:WSTT:MODE AUTO
Note	

Syntax	ETHernet:TTTest:SETup:WSTTest:MODE?
Description	This query returns the window scan and throughput test mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	ETH:TTT:SET:WSTT:MODE? → AUTO
Note	

12.33.23 ETHernet:TTTest:SETup:WSCan[:LTRemote]:SDURation

Syntax	ETHernet:TTTest:SETup:WSCan[:LTRemote]:SDURation <duration>
Description	This command sets the window scan step duration in the local to remote direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:WSC:SDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:WSCan[:LTRemote]:SDURation?
Description	This query returns the window scan step duration in the local to remote direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:SDUR? → 10
Note	

12.33.24 ETHernet:TTTest:SETup:WSCan[:LTRemote]:AMODE:MWSize

Syntax	ETHernet:TTTest:SETup:WSCan[:LTRemote]:AMODE:MWSize <size>
Description	This command sets the auto mode max window size in the local to remote direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=16384, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:WSC:AMOD:MWS 65535
Note	

Syntax	ETHernet:TTTest:SETup:WSCan[:LTRemote]:AMODE:MWSize?
Description	This query returns the auto mode max window size in the local to remote direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:AMOD:MWS? → 65535
Note	

12.33.25 ETHernet:TTTest:SETup:WSCan:RTLocal:SDURation

Syntax	ETHernet:TTTest:SETup:WSCan:RTLocal:SDURation <duration>
Description	This command sets the window scan step duration. in the remote to local direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:WSC:RTL:SDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:RTLocal:SDURation?
Description	This query returns the window scan step duration in the remote to local direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:RTL:SDUR? → 10
Note	

12.33.26 ETHernet:TTTest:SETup:WSCan:RTLocal:AMODE:MWSize

Syntax	ETHernet:TTTest:SETup:WSCan:RTLocal:AMODE:MWSize <size>
Description	This command sets the auto mode max window size in the remote to local direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=16384, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:WSC:RTL:AMOD:MWS 65535
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:RTLocal:AMODE:MWSize?
Description	This query returns the auto mode max window size in the remote to local direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:RTL:AMOD:MWS? → 65535
Note	

12.33.27 ETHernet:TTTest:SETup:WSCan:AMODE[:LTRemote]:STEP<no>[:ENABLE]

Syntax	ETHernet:TTTest:SETup:WSCan:AMODE[:LTRemote]:STEP<no>[:ENABLE] <enable>
Description	This command enables/disables the auto mode steps in the local to remote direction.
Parameters	<no> = Step number (1-3) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:WSC:AMOD:STEP1 ON
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:AMODE[:LTRemote]:STEP<no>[:ENABLE]?
Description	This query returns whether or not the auto mode step is enabled in the local to remote direction.
Parameter	<no> = Step number (1-3)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:WSC:AMOD:STEP1? → 1
Note	

12.33.28 ETHernet:TTTest:SETup:WSCan:AMODE:RTL:STEP<no>[:ENABLE]

Syntax	ETHernet:TTTest:SETup:WSCan:AMODE:RTL:STEP<no>[:ENABLE] <enable>
Description	This command enables/disables the auto mode steps in the remote to local direction.
Parameters	<no> = Step number (1-3) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:TTT:SET:WSC:AMOD:RTL:STEP1 ON
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:AMODE:RTL:STEP<no>[:ENABLE]?
Description	This query returns whether or not the auto mode step is enabled in the remote to local direction.
Parameter	<no> = Step number (1-3)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:WSC:AMOD:RTL:STEP1? → 1
Note	

12.33.29 ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>[:ENABLE]

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>[:ENABLE] <enable>
Description	This command enables/disables the expert mode steps in the local to remote direction.
Parameters	<no> = Step number (1-5) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:STEP1 ON
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>[:ENABLE]?
Description	This query returns whether or not the expert mode step is enabled in the local to remote direction.
Parameter	<no> = Step number (1-5)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:STEP1? → 1
Note	

12.33.30 ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:WSIZE

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:WSIZE <size>
Description	This command sets the expert mode step window size in the local to remote direction.
Parameters	<no> = Step number (1-5) <size> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =8, <i>MAXimum</i> =8388607, <i>DEFault</i> =65535
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:STEP1:WSIZ 65535
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:WSIZE?
Description	This query returns the expert mode step window size in the local to remote direction.
Parameter	<no> = Step number (1-5)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:STEP1:WSIZ? → 65535
Note	

12.33.31 EThernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no> CONNectiOns

Syntax	EThernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:CONNectiOns <count>
Description	This command sets the expert mode step connections count in the local to remote direction.
Parameters	<no> = Step number (1-5) <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=16, DEFault=1</i>
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:STEP1:CONN 1
Note	

Syntax	EThernet:TTTest:SETup:WSCan:EMODE[:LTRemote]:STEP<no>:CONNectiOns?
Description	This query returns the expert mode step connections count in the local to remote direction.
Parameter	<no> = Step number (1-5)
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:STEP1:CONN? → 1
Note	

12.33.32 EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>[:ENABLE]

Syntax	EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>[:ENABLE] <enable>
Description	This command enables/disables the expert mode steps in the remote to local direction.
Parameters	<no> = Step number (1-5) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1 ON
Note	

Syntax	EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>[:ENABLE]?
Description	This query returns whether or not the expert mode step is enabled in the remote to local direction.
Parameter	<no> = Step number (1-5)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1? → 1
Note	

12.33.33 EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:WSIZe

Syntax	EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:WSIZe <size>
Description	This command sets the expert mode step window size in the remote to local direction.
Parameters	<no> = Step number (1-5) <size> = <NUMERIC PROGRAM DATA> <i>MINimum=8, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1:WSIZ 65535
Note	

Syntax	EThernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:WSIZe?
Description	This query returns the expert mode step window size in the remote to local direction.
Parameter	<no> = Step number (1-5)
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1:WSIZ? → 65535
Note	

12.33.34 ETHernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:CONNections

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:CONNections <count>
Description	This command sets the expert mode step connections count in the remote to local direction.
Parameters	<no> = Step number (1-5) <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=16, DEFault=1</i>
Response	None.
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1:CONN 1
Note	

Syntax	ETHernet:TTTest:SETup:WSCan:EMODE:RTLocal:STEP<no>:CONNections?
Description	This query returns the expert mode step connections count in the remote to local direction.
Parameter	<no> = Step number (1-5)
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:WSC:EMOD:RTL:STEP1:CONN? → 1
Note	

12.33.35 ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold[:ENABle]

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold[:ENABle] <enable>
Description	This command enables/disables throughput test threshold in the local to remote direction.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:TTESt:THR ON
Note	

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold[:ENABle]?
Description	This query returns whether or not throughput test threshold is enabled in the local to remote direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:THR? → 1
Note	

12.33.36 ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold:PERCentage

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold:PERCentage <pct>
Description	This command sets the throughput test threshold value in the local to remote direction. Unit: percentage.
Parameter	<pct> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100.00, DEFault=95</i>
Response	None.
Example	ETH:TTT:SET:TTESt:THR:PERC 95
Note	

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:THReshold:PERCentage?
Description	This query returns the throughput test threshold value in the local to remote direction.
Parameter	None.
Response	<pct> = <NR2 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:THR:PERC? → 95.00
Note	

12.33.37 ETHernet:TTTest:SETup:TTESt[:LTRemote]:SDURation

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:SDURation <duration>
Description	This command sets the throughput test step duration in the local to remote direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:TTEs:SDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:TTESt[:LTRemote]:SDURation?
Description	This query returns the throughput test step duration in the local to remote direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTEs:SDUR? → 10
Note	

12.33.38 ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold[:ENABle]

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold[:ENABle] <enable>
Description	This query returns whether or not throughput test threshold is enabled in the remote to local direction.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:TTEs:RTL:THR ON
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold[:ENABle]?
Description	This query returns whether or not throughput test threshold is enabled in the remote to local direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TTEs:RTL:THR? → 1
Note	

12.33.39 ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold:PERCentage

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold:PERCentage <pct>
Description	This command sets the throughput test threshold value in the remote to local direction. Unit: percentage.
Parameter	<pct> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100.00, DEFault=95</i>
Response	None.
Example	ETH:TTT:SET:TTEs:RTL:THR:PERC 95
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:THReshold:PERCentage?
Description	This query returns the throughput test threshold value in the remote to local direction.
Parameter	None.
Response	<pct> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTEs:RTL:THR:PERC? → 95
Note	

12.33.40 ETHernet:TTTest:SETup:TTESt:RTLocal:SDURation

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:SDURation <duration>
Description	This command sets the throughput test step duration in the remote to local direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:TTESt:RTL:SDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:RTLocal:SDURation?
Description	This query returns the throughput test step duration in the remote to local direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:RTL:SDUR? → 10
Note	

12.33.41 ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote][:ENABLE]

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote][:ENABLE] <enable>
Description	This command enables/disables expert mode throughput test in the local to remote direction.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD ON
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote][:ENABLE]?
Description	This query returns whether or not expert mode throughput test is enabled in the local to remote direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD? → 1
Note	

12.33.42 ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:WSIZE

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:WSIZE <size>
Description	This command sets the expert mode throughput test window size in the local to remote direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=8, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD:WSIZ 65535
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:WSIZE?
Description	This query returns the expert mode throughput test window size in the local to remote direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD:WSIZ? → 65535
Note	

12.33.43 ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:CONNections

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:CONNections <count>
Description	This command sets the expert mode throughput test connection count in the local to remote direction.
Parameter	<count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=16, DEFault=1</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD:CONN 1
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE[:LTRemote]:CONNections?
Description	This query returns the expert mode throughput test connection count in the local to remote direction.
Parameter	None.
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD:CONN? → 1
Note	

12.33.44 ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal[:ENABLE]

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal[:ENABLE] <enable>
Description	This command enables/disables expert mode throughput test in the remote to local direction.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD:RTL ON
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal[:ENABLE]?
Description	This query returns whether or not expert mode throughput test is enabled in the remote to local direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD:RTL? → 1
Note	

12.33.45 ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:WSIZE

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:WSIZE <size>
Description	This command sets the expert mode throughput test window size in the remote to local direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=8, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD:RTL:WSIZ 65535
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:WSIZE?
Description	This query returns the expert mode throughput test window size in the remote to local direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD:RTL:WSIZ? → 65535
Note	

12.33.46 ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:CONNections

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:CONNections <count>
Description	This command sets the expert mode throughput test connection count in the remote to local direction.
Parameter	<count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=16, DEFault=1</i>
Response	None.
Example	ETH:TTT:SET:TTESt:EMOD:RTL:CONN 1
Note	

Syntax	ETHernet:TTTest:SETup:TTESt:EMODE:RTLocal:CONNections?
Description	This query returns the expert mode throughput test connection count in the remote to local direction.
Parameter	None.
Response	<count> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:TTESt:EMOD:RTL:CONN? → 1
Note	

12.33.47 ETHernet:TTTest:SETup:MSERvice[:ENABLE]

Syntax	ETHernet:TTTest:SETup:MSERvice[:ENABLE] <enable>
Description	This command enables/disables multi service.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:MSER OFF
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice[:ENABLE]?
Description	This query returns whether or not multi service is enabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:MSER? → 0
Note	

12.33.48 ETHernet:TTTest:SETup:MSERvice[:LTRemote]:TDURation

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:TDURation <duration>
Description	This command sets the multi service test duration in the local to remote direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:MSER:TDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:TDURation?
Description	This query returns the multi service test duration in the local to remote direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:TDUR? → 10
Note	

12.33.49 ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE <size>
Description	This command sets the multi service window size in the local to remote direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=8, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:MSER:WSIZ 65535
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE?
Description	This query returns the multi service window size in the local to remote direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:WSIZ? → 65535
Note	This value is used when ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE:AUTO is disabled.

12.33.50 ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE:AUTO

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE:AUTO <enable>
Description	This command enables/disables multi service window size automatic calculation in the local to remote direction. The window size is calculated from the bandwidth delay product (BDP).
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:MSER:WSIZ: AUTO OFF
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice[:LTRemote]:WSIZE:AUTO?
Description	This query returns whether or not multi service window size automatic calculation is enabled in the local to remote direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:MSER:WSIZ: AUTO? → 0
Note	

12.33.51 ETHernet:TTTest:SETup:MSERvice:RTLocal:TDURation

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:TDURation <duration>
Description	This command sets the multi service test duration in the remote to local direction. Unit: seconds.
Parameter	<duration> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=86399, DEFault=10</i>
Response	None.
Example	ETH:TTT:SET:MSER:RTL:TDUR 10
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:TDURation?
Description	This query returns the multi service test duration in the remote to local direction.
Parameter	None.
Response	<duration> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:RTL:TDUR? → 10
Note	

12.33.52 ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE <size>
Description	This command sets the multi service window size in the remote to local direction.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum=8, MAXimum=8388607, DEFault=65535</i>
Response	None.
Example	ETH:TTT:SET:MSER:RTL:WSIZ 65535
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE?
Description	This query returns the multi service window size in the remote to local direction.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:RTL:WSIZ? → 65535
Note	

12.33.53 ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE:AUTO

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE:AUTO <enable>
Description	This command enables/disables multi service window size automatic calculation in the remote to local direction.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:MSER:RTL:WSIZ:AUTO OFF
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:RTLocal:WSIZE:AUTO?
Description	This query returns whether or not multi service window size automatic calculation is enabled in the remote to local direction.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:MSER:RTL:WSIZ:AUTO? → 0
Note	

12.33.54 ETHernet:TTTest:SETup:MSERvice:SERVICE<no>[:ENABLE]

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVICE<no>[:ENABLE] <enable>
Description	This command enables/disables the specified multi service service.
Parameters	<no> = Service number (1-16) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	ETH:TTT:SET:MSER:SERV1 OFF
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVICE<no>[:ENABLE]?
Description	This query returns whether or not a specific multi service service is enabled.
Parameter	<no> = Service number (1-16)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1? → 0
Note	

12.33.55 ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DPORt

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DPORt <no>
Description	This command sets the destination port of a specific service.
Parameters	<no> = Service number (1-16) <no> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535, DEFault=5001</i>
Response	None.
Example	ETH:TTT:SET:MSER:SERV1:DPOR 5001
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DPORt?
Description	This query returns the destination port of a specific service.
Parameter	<no> = Service number (1-16)
Response	<no> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1:DPOR? → 5001
Note	

12.33.56 ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DOT

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DOT <value>
Description	This command sets the DSCP or TOS value of a specific service.
Parameters	<no> = Service number (1-16) <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None.
Example	ETH:TTT:SET:MSER:SERV1:DOT 0
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:DOT?
Description	This query returns the DSCP or TOS value of a specific service.
Parameter	<no> = Service number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1:DOT? → 0
Note	

12.33.57 ETHernet:TTTest:SETup:MSERvice:SERVice<no>:TCLass

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:TCLass <value>
Description	This command sets the IPv6 traffic class value of a specific service.
Parameters	<no> = Service number (1-16) <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None.
Example	ETH:TTT:SET:MSER:SERV1:TCL 0
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:TCLass?
Description	This query returns the IPv6 traffic class value of a specific service.
Parameter	<no> = Service number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1:TCL? → 0
Note	

12.33.58 ETHernet:TTTest:SETup:MSERvice:SERVice<no>:FLABel

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:FLABel <value>
Description	This command sets the IPv6 flow label value of a specific service.
Parameters	<no> = Service number (1-16) <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1048575, DEFault=0</i>
Response	None.
Example	ETH:TTT:SET:MSER:SERV1:FLAB 0
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:FLABel?
Description	This query returns the IPv6 flow label value of a specific service.
Parameter	<no> = Service number (1-16)
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1:FLAB? → 0
Note	

12.33.59 ETHernet:TTTest:SETup:MSERvice:SERVice<no>:NAME

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:NAME <name>
Description	This command sets the name of a specific service.
Parameters	<no> = Service number (1-16) <name> = <STRING PROGRAM DATA> The supplied name is truncated to a maximum of 7 characters.
Response	None.
Example	ETH:TTT:SET:MSER:SERV1:NAME "Video"
Note	

Syntax	ETHernet:TTTest:SETup:MSERvice:SERVice<no>:NAME?
Description	This query returns the name of a specific service.
Parameter	<no> = Service number (1-16)
Response	<name> = <STRING RESPONSE DATA>
Example	ETH:TTT:SET:MSER:SERV1:NAME? → "Video"
Note	

12.33.60 ETHernet:TTTest:REsult:PARameters?

Syntax	ETHernet:TTTest:REsult:PARameters? <direction>
Description	Returns the result of measured parameter values during the test.
Parameter	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLlocal: Results for the remote to local direction. <i>DEFault = LTRemote</i>
Response	<mtu> = <NR1 NUMERIC RESPONSE DATA> MTU value. Unit: Octets.
	<rtt> = <NR2 NUMERIC RESPONSE DATA> RTT. Unit: ms.
	<bdp> = <NR1 NUMERIC RESPONSE DATA> Calculated BDP value.
	<cir0> = <NR1 NUMERIC RESPONSE DATA> Layer 0 CIR. Unit: Bytes.
	<cir4> = <NR1 NUMERIC RESPONSE DATA> Layer 4 CIR. Unit: Bytes.
Example	ETH:TTT:RES:PAR? RTL → 1500,0.005,261,1000000000,949284785
Note	

12.33.61 ETHernet:TTTest:REsult:WSCan?

Syntax	ETHernet:TTTest:REsult:WSCan? <direction>
Description	Returns the results of the window scan in the specified direction.
Parameter	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLlocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step. <i>DEFault = LTRemote</i>
Response	A list of results for all window scans and throughput steps.
	<status> = <STRING RESPONSE DATA> "Pending", "Done", "Pass" or "Fail" denotes the status of the test.
	<window-size> = <NR1 NUMERIC RESPONSE DATA> Window size. Unit: Bytes.
	<connections> = <NR1 NUMERIC RESPONSE DATA> Number of connections.
	<avg-throughput> = <NR1 NUMERIC RESPONSE DATA> Average throughput rate. Unit: bps.
	<ideal-throughput> = <NR1 NUMERIC RESPONSE DATA> Ideal throughput rate. Unit: bps.
	<avg-RTT> = <NR2 NUMERIC RESPONSE DATA> Average RTT. Unit: ms.
	<tcp-eff> = <NR2 NUMERIC RESPONSE DATA> TCP Efficiency. Unit: percentage.
Example	ETH:TTT:RES:WSC? RTL → (Pass,1460,1,419779200,94928478,0.002,100.00)
Note	There are no window scan results for LTRBoth and RTLBoth

12.33.62 ETHernet:TTTest:REsult:THRoughput?

Syntax	ETHernet:TTTest:REsult:THRoughput? <direction>
Description	Returns the results of the throughput test in the specified direction.
Parameter	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction.

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	RTLocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step. <i>DEFault = LTRemote</i>
Response	<> = <NR1 NUMERIC RESPONSE DATA> Average throughput. Unit: bps.
	<> = <NR1 NUMERIC RESPONSE DATA> Ideal throughput. Unit: bps.
	<> = <NR1 NUMERIC RESPONSE DATA> Actual transfer time. Unit: seconds.
	<> = <NR1 NUMERIC RESPONSE DATA> Ideal transfer time. Unit: seconds.
	<> = <NR1 NUMERIC RESPONSE DATA> Transfer time ratio.
	<> = <NR1 NUMERIC RESPONSE DATA> Window size. Unit: bytes.
	<> = <NR1 NUMERIC RESPONSE DATA> Number of services/connections.
	<> = <NR1 NUMERIC RESPONSE DATA> Transmitted bytes. Unit: bytes.
	<> = <NR1 NUMERIC RESPONSE DATA> Retransmitted bytes. Unit: bytes.
	<> = <NR1 NUMERIC RESPONSE DATA> Retransmitted percentage.
	<> = <NR1 NUMERIC RESPONSE DATA> TCP Efficiency. Unit: percentage.
	<> = <NR1 NUMERIC RESPONSE DATA> Baseline RTT. Unit: ms.
	<> = <NR1 NUMERIC RESPONSE DATA> Minimum RTT. Unit: ms.
	<> = <NR1 NUMERIC RESPONSE DATA> Average RTT. Unit: ms.
	<> = <NR1 NUMERIC RESPONSE DATA> Maximum RTT. Unit: ms.
	<> = <NR1 NUMERIC RESPONSE DATA> Buffer delay. Unit: percentage.
Example	ETH:TTT:RES:THR? RTL → 4197792000,949284785,10.00,44.22,0.23,1460,1, 5247240000,0,0.00,100.00,0.002,0.002,0.002,0.002,0.00
Note	

12.33.63 ETHernet:TTTest:RESult:THRoughput:EXPort

Syntax	ETHernet:TTTest:RESult:THRoughput:EXPort <direction> <file> [<delimiter>]
Description	This command writes the data of the throughput graph to the specified file in a CSV format. The file can be written to the internal disk or to a connected USB memory device. The specified delimiter is used as field delimiter. Lines are terminated with CR-LF (0x0d,0x10).
Parameters	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step.
	<file> = <STRING PROGRAM DATA> The path and name of the file to store the data.
	<delimiter> = <CHARACTER PROGRAM DATA> COMMa: Use ',' as field separator. SEMicolon: Use ';' as field separator.

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	TABulator: Use a tabulator character (0x09) as field separator. <i>DEFault = COMMa</i>
Response	None.
Example	ETH:TTT:RES:THR:EXP RTL,"Internal/graph-data.csv",TAB
Note	Files must be saved to the Internal/ directory or a sub-directory hereof. When a USB storage device is mounted, files are stored via the Usb/ directory.

12.33.64 ETHernet:TTTest:RESult:MSERvice?

Syntax	ETHernet:TTTest:RESult:MSERvice? <direction>
Description	Returns the results of all multi service services in the specified direction.
Parameter	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLLocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step. <i>DEFault = LTRemote</i>
Response	A list of results for all services. <min-RTT> = <NR2 NUMERIC RESPONSE DATA> Minimum RTT. Unit: ms. <avg-RTT> = <NR2 NUMERIC RESPONSE DATA> Average RTT. Unit: ms. <max-RTT> = <NR2 NUMERIC RESPONSE DATA> Maximum RTT. Unit: ms. <avg-throughput> = <NR1 NUMERIC RESPONSE DATA> Average throughput rate. Unit: bps. <tcp-eff> = <NR2 NUMERIC RESPONSE DATA> TCP efficiency. Unit: percentage.
Example	ETH:TTT:RES:MSER? RTL → (0.010,0.020,0,050,10100,50.00),(0.010,0.020,0,040,20200,100.00)
Note	

12.33.65 ETHernet:TTTest:RESult:MSERvice:TOTal?

Syntax	ETHernet:TTTest:RESult:MSERvice:TOTal? <direction>
Description	Returns the result totals of all multi service services in the specified direction.
Parameter	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLLocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step. <i>DEFault = LTRemote</i>
Response	A list results for all services. <min-RTT> = <NR2 NUMERIC RESPONSE DATA> Minimum RTT. Unit: ms. <avg-RTT> = <NR2 NUMERIC RESPONSE DATA> Average RTT. Unit: ms. <max-RTT> = <NR2 NUMERIC RESPONSE DATA> Maximum RTT. Unit: ms. <avg-throughput> = <NR1 NUMERIC RESPONSE DATA> Average throughput rate. Unit: bps. <tcp-eff> = <NR2 NUMERIC RESPONSE DATA> TCP efficiency. Unit: percentage.
Example	ETH:TTT:RES:MSER:TOT? RTL → (0.010,0.020,0,050,1.100,50.00),(0.010,0.020,0,040,2.200,100.00)
Note	

12.33.66 ETHernet:TTTest:RESult:MSERvice:EXPort

Syntax	ETHernet:TTTest:RESult:MSERvice:EXPort <direction> <file> [<delimiter>]
Description	This command writes the data of the multi service throughput graph to the specified file in a CSV format. The file can be written to the internal disk or to a connected USB memory device. The specified delimiter is used as field delimiter. Lines are terminated with CR-LF (0x0d,0x10).
Parameters	<direction> = <CHARACTER PROGRAM DATA> LTRemote: Results for the local to remote direction. RTLLocal: Results for the remote to local direction. LTRBoth: Results for the local to remote direction in the simultaneous test step. RTLBoth: Results for the remote to local direction in the simultaneous test step.
	<file> = <STRING PROGRAM DATA> The path and name of the file to store the data.
	<delimiter> = <CHARACTER PROGRAM DATA> COMMa: Use ',' as field separator. SEMicolon: Use ';' as field separator. TABulator: Use a tabulator character (0x09) as field separator. <i>DEFault = COMMa</i>
Response	None.
Example	ETH:TTT:RES:MSER:EXP RTL,"Internal/graph-data.csv",TAB
Note	Files must be saved to the Internal/ directory or a sub-directory hereof.
	When a USB storage device is mounted, files are stored via the Usb/ directory.

Chapter 13

eCPRI/RoE BERT

Almost all eCPRI/RoE BERT SCPI commands are same as Ethernet commands. This chapter only describes the differences from Ethernet. For the other commands, please refer to Ethernet.(see Chapter 12).

13.1 Port Setup

For detail of the SCPI command, please refer to Ethernet.(see section 12.1).

13.1.1 ETHernet:PORT<Pt>:DPIDeference

Syntax	ETHernet:PORT<Pt>:DPIDeference <interface>
Description	This command sets the dual port interface constraint.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> 10G10G : Port1=10M-10G : Port2=10M-10G 10G25G : Port1=10M-10G : Port2=25G 25G10G : Port1=25G : Port2=10M-10G 25G25G : Port1=25G : Port2=25G <i>DEFault = 25G25G</i>
Response	None.
Example	ETH:PORT1:DPIC 10G10G
Note	This command can be used on eCPRI/RoE application with "25G eCPRI/RoE Dual Ability".

Syntax	ETHernet:PORT<Pt>:DPIDeference?
Description	This query returns the dual port interface constraint.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:DPIC? → 10G10G
Note	

13.2 PCS

For detail of the SCPI command, please refer to Ethernet.(see section 12.4).

13.3 Traffic

RoE BERT application uses stream number one only. Setting other streams has no effect in these applications. For detail of the SCPI command, please refer to Ethernet.(see section 12.5).

13.4 Settings

For detail of the SCPI command, please refer to Ethernet.(see section 12.7).

13.5 Thresholds

For detail of the SCPI command, please refer to Ethernet.(see section [12.9](#)).

13.6 SyncE

For detail of the SCPI command, please refer to Ethernet.(see section [12.10](#)).

13.7 Precision Time Protocol - IEEE 1588v2

For detail of the SCPI command, please refer to Ethernet.(see section [12.11](#)).

13.8 Follow

For detail of the SCPI command, please refer to Ethernet.(see section [12.12](#)).

13.9 Stimuli

For detail of the SCPI command, please refer to Ethernet.(see section [12.13](#)).

13.10 Result

For detail of the SCPI command, please refer to Ethernet.(see section [12.14](#)).

13.11 Status

For detail of the SCPI command, please refer to Ethernet.(see section [12.15](#)).

13.12 Frame Content

This section only describes the differences from Ethernet. For the other commands, please refer to Ethernet.(see section 12.6).

13.12.1 ETHernet:PORT<Pt>:STReam<St>:RFRame

Syntax	ETHernet:PORT<Pt>:STReam<St>:RFRame <mode>
Description	This command sets the Radio frame type.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<mode> = <CHARACTER PROGRAM DATA> ECPRI: eCPRI IEEE1914: IEEE 1914.3 <i>Default = ECPRI</i>
Response	None.
Example	ETH:PORT1:STR1:RFR ECPRI
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:RFRame?
Description	This command sets the Radio frame type
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	ETH:PORT1:STR1:RFR? → ECPRI
Note	

13.12.2 ETHernet:PORT<Pt>:STReam<St>:ECPri:MESSage

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:MESSage <message>
Description	This command sets the Message type of eCPRI.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<message> = <CHARACTER PROGRAM DATA> IQD: IQ Data BITS: Bit Sequence RTCD: Real-Time Control Data GDT: Generic Data Transfer RMA: Remote Memory Access OWDM: One-way Delay Measurement RRST: Remote Reset EVIN: Event Indication UDEF: User Defined
Response	None.
Example	ETH:PORT1:STR1:ECPR:MESS IQD
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:MESSage? <message>
Description	This query returns the Message type of eCPRI.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<message> = <CHARACTER PROGRAM DATA>
Example	ETH:PORT1:STR1:ECPR:MESS? → IQD
Note	

13.12.3 ETHernet:PORT<Pt>:STReam<St>:ECPRI:MVAL

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:MVAL <message>
Description	This command sets the Message type value of eCPRI.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<message> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:ECPR:MVAL 0
Notes	This command valid in Message Type is User defined.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:MVAL? <message>
Description	This query returns the Message type value of eCPRI.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<message> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:MVAL? → 0
Note	

13.12.4 ETHernet:PORT<Pt>:STReam<St>:ECPRI:LENGth

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:LENGth? <length>
Description	This query returns the Payload length of eCPRI.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:LENG? → 64
Note	

13.12.5 ETHernet:PORT<Pt>:STReam<St>:ECPRI:IQData:PCID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:IQData:PCID <data>
Description	This command sets the PC_ID of IQ Data.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:IQD:PCID "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:IQData:PCID? <data>
Description	This query returns the PC_ID of IQ Data.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:IQD:PCID? → 0000
Note	2Byte hex data.

13.12.6 ETHernet:PORT<Pt>:STReam<St>:ECPri:IQData:SEQId

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:IQData:SEQId <data>
Description	This command sets the SEQ_ID of IQ Data.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:IQD:SEQI "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:IQData:SEQId? <data>
Description	This query returns the SEQ_ID of IQ Data.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:IQD:SEQI? → 0000
Note	2Byte hex data.

13.12.7 ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:PCID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:PCID <data>
Description	This command sets the PC_ID of Bit Sequence.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:BITS:PCID "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:PCID? <data>
Description	This query returns the PC_ID of Bit Sequence.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:BITS:PCID? → 0000
Note	2Byte hex data.

13.12.8 ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:SEQId

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:SEQId <data>
Description	This command sets the SEQ_ID of Bit Sequence.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:BITS:SEQI "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:BITSeq:SEQId? <data>
Description	This query returns the SEQ_ID of Bit Sequence.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:BITS:SEQI? → 0000
Note	2Byte hex data.

13.12.9 ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:PCID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:PCID <data>
Description	This command sets the RTC_ID of Real-Time Control Data.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RTCD:PCID "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:PCID? <data>
Description	This query returns the RTC_ID of Real-Time Control Data.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RTCD:PCID? → 0000
Note	2Byte hex data.

13.12.10 ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:SEQId

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:SEQId <data>
Description	This command sets the SEQ_ID of Real-Time Control Data.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RTCD:SEQI "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:RTCDData:SEQId? <data>
Description	This query returns the SEQ_ID of Real-Time Control Data.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RTCD:SEQI? → 0000
Note	2Byte hex data.

13.12.11 ETHernet:PORT<Pt>:STReam<St>:ECPRI:GDTRans:PCID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:GDTRans:PCID <data>
Description	This command sets the PC_ID of Generic Data Transfer.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:GDTR:PCID "00000000"
Notes	4Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPRI:GDTRans:PCID? <data>
Description	This query returns the PC_ID of Generic Data Transfer.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:GDTR:PCID? → 00000000
Note	4Byte hex data.

13.12.12 ETHernet:PORT<Pt>:STReam<St>:ECPri:GDTRans:SEQId

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:GDTRans:SEQId <data>
Description	This command sets the SEQ_ID of Generic Data Transfer.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:GDTR:SEQI "00000000"
Notes	4Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:GDTRans:SEQId? <data>
Description	This query returns the SEQ_ID of Generic Data Transfer.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:GDTR:SEQI? → 00000000
Note	4Byte hex data.

13.12.13 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ACID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ACID <data>
Description	This command sets the Remote Memory Access ID of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:ACID "00"
Notes	1Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ACID? <data>
Description	This query returns the Remote Memory Access ID of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:ACID? → 00
Note	1Byte hex data.

13.12.14 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RW

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RW <data>
Description	This command sets the Read/Write of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 15, DEFault = 0</i>
	0: Read 1: Write 2: Write No Resp Others: Reserved
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:RW 0
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RW? <data>
Description	This query returns the Read/Write of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <BINARY NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:RW? → #B0
Note	

13.12.15 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RRESp

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RRESp <data>
Description	This command sets the Req/Resp of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 15, DEFault = 0</i>
	0: Request 1: Response 2: Failure Others: Reserved
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:RRES 0
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:RRESp? <data>
Description	This query returns the Req/Resp of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <BINARY NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:RRES? → #B0
Note	

13.12.16 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ELID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ELID <data>
Description	This command sets the Element ID of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:ELID "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ELID? <data>
Description	This query returns the Element ID of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:ELID? → 0000
Note	2Byte hex data.

13.12.17 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ADDRess

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ADDRess <address>
Description	This command sets the Address of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<address> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:ADDR "000000000000"
Notes	6Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:ADDRess? <address>
Description	This query returns the Address of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<address> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:ADDR? → 000000000000
Note	6Byte hex data.

13.12.18 ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:LENGth

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:LENGth <length>
Description	This command sets the Length of Remote Memory Access
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<length> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 65535, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RMAC:LENG 64
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RMACess:LENGth? <length>
Description	This query returns the Length of Remote Memory Access
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RMAC:LENG? → 64
Note	

13.12.19 ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:MESId

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:MESId <data>
Description	This command sets the Measurement ID of One-Way Delay Measurement
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:OWDM:MESI "00"
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:MESId? <data>
Description	This query returns the Measurement ID of One-Way Delay Measurement
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:OWDM:MESI? → 00
Note	

13.12.20 ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:ACTType

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:ACTType <data>
Description	This command sets the Action Type of One-Way Delay Measurement
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 255, DEFault = 0</i> 0: Request 1: Request with Follow_Up 2: Response 3: Remote Request 4: Remote Request with Follow_Up 5: Follow_Up Others: Reserved
Response	None.
Example	ETH:PORT1:STR1:ECPR:OWDM:ACTT 0
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:ACTType? <data>
Description	This query returns the Action Type of One-Way Delay Measurement
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:OWDM:ACTT? → #H0
Note	

13.12.21 ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:TSTamp

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:TSTamp <data>
Description	This command sets the TimeStamp of One-Way Delay Measurement
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:OWDM:TST "00000000000000000000"
Notes	10Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:TSTamp? <data>
Description	This query returns the TimeStamp of One-Way Delay Measurement
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:OWDM:TST? → 00000000000000000000
Note	10Byte hex data.

13.12.22 ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:CVALue

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:CVALue <data>
Description	This command sets the Compensation Value of One-Way Delay Measurement
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:OWDM:CVAL "0000000000000000"
Notes	8Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:OWDMeas:CVALue? <data>
Description	This query returns the Compensation Value of One-Way Delay Measurement
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:OWDM:CVAL? → 0000000000000000
Note	8Byte hex data.

13.12.23 ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:REID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:REID <data>
Description	This command sets the Reset ID of Remote Reset
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:RRES:REID "0000"
Notes	2Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:REID? <data>
Description	This query returns the Reset ID of Remote Reset
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RRES:REID? → 0000
Note	2Byte hex data.

13.12.24 ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:COption

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:COption <data>
Description	This command sets the Reset Code Op of Remote Reset
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <NUMERIC PROGRAM DATA>
	MINimum = 0, MAXimum = 255, DEFault = 0 1: Remote reset request 2: Remote reset response Others: Reserved
Response	None.
Example	ETH:PORT1:STR1:ECPR:RRES:COP 0
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:RRESet:COption? <data>
Description	This query returns the Reset Code Op of Remote Reset
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:RRES:COP? → #H0
Note	

13.12.25 ETHernet:PORT<Pt>:STReam<St>:ECPri:CDATa

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CDATa <data>
Description	This command sets the Custom pattern data.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:CDAT "00001122"
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CDATa? <data>
Description	This query returns the Custom pattern data.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:CDAT? → 00001122
Note	

13.12.26 ETHernet:PORT<Pt>:STReam<St>:ECPri:CLENgth

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CLENgth <length>
Description	This command sets the Custom pattern length.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 256, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STR1:ECPR:CLEN 4
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CLENgth? <length>
Description	This query returns the Custom pattern length.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ECPR:CLEN? → 4
Note	

13.12.27 ETHernet:PORT<Pt>:STReam<St>:ECPri:CENable

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CENable <enable>
Description	This command sets the Enable of Custom pattern.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ECPR:CEN ON
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ECPri:CENable? <enable>
Description	This query returns the Enable of Custom pattern.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	ETH:PORT1:STR1:ECPR:CEN? → 1
Note	

13.12.28 ETHernet:PORT<Pt>:STReam<St>:ROE:SUBType

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:SUBType <subtype>
Description	This command sets the Sub type of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<subtype> = <CHARACTER PROGRAM DATA>
	CONT: Control Sub type SAD: Structure-agnostic data sub type SACD: Structure-aware CPRI data sub type SCMC: Slow C&M CORI data sub type NTDD: Native time domain data sub type NFDD: Native frequency domain data sub type NPD: Native PRACH data sub type UDEF: User Defined
Response	None.
Example	ETH:PORT1:STR1:ROE:SUBT CONT
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:SUBType? <subtype>
Description	This query returns the Sub type of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<subtype> = <CHARACTER PROGRAM DATA>
Example	ETH:PORT1:STR1:ROE:SUBT? → CONT
Note	

13.12.29 ETHernet:PORT<Pt>:STReam<St>:ROE:SVALue

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:SVALue <subtype>
Description	This command sets the Sub type value of IEEE 1914.4.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<subtype> = <NUMERIC PROGRAM DATA>
	<i>MINimum = 0, MAXimum = 255, DEFault = 0</i>
Response	None.
Example	ETH:PORT1:STR1:ROE:SVAL 0
Notes	This command valid in Message Type is User defined.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:SVALue? <subtype>
Description	This query returns the Sub type value of IEEE 1914.4.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<subtype> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:SVAL? → 0
Note	

13.12.30 ETHernet:PORT<Pt>:STReam<St>:ROE:FLID

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:FLID <data>
Description	This command sets the Flow type of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ROE:FLID "00"
Notes	1Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:FLID? <data>
Description	This query returns the Flow type of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:FLID? → 00
Note	1Byte hex data.

13.12.31 ETHernet:PORT<Pt>:STReam<St>:ROE:LENGth

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:LENGth? <length>
Description	This query returns the Payload length of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:LENG? → 64
Note	

13.12.32 ETHernet:PORT<Pt>:STReam<St>:ROE:OINFo

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:OINFo <data>
Description	This command sets the Ordering information of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ROE:OINF "00000000"
Notes	4Byte hex data.

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:OINFo? <data>
Description	This query returns the Ordering information of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:OINF? → 00000000
Note	4Byte hex data.

13.12.33 ETHernet:PORT<Pt>:STReam<St>:ROE:CONTRol:OPCode

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:CONTRol:OPCode <data>
Description	This command sets the OpCode of Control sub type.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <NUMERIC PROGRAM DATA> MINimum = 0, MAXimum = 255, DEFault = 0
	#H00: RoE OAM TLV write #H01: CtrlAxC words #H02: VSD #H03: Timing control packet #H80: RoE OAM TLV read Others: Reserved
Response	None.
Example	ETH:PORT1:STR1:ROE:CONT:OPC #H0
Notes	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CONTRol:OPCode? <data>
Description	This query returns the OpCode of Control sub type.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:CONT:OPC? → #H0
Note	

13.12.34 ETHERnet:PORT<Pt>:STReam<St>:ROE:CDATa

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CDATa <data>
Description	This command sets the Custom pattern data of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<data> = <STRING PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ROE:CDAT "00001122"
Notes	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CDATa? <data>
Description	This query returns the Custom pattern data of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<data> = <STRING RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:CDAT? → 00001122
Note	

13.12.35 ETHERnet:PORT<Pt>:STReam<St>:ROE:CLENgth

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CLENgth <length>
Description	This command sets the Custom pattern length of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<length> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 256, DEFault = 1</i>
Response	None.
Example	ETH:PORT1:STR1:ROE:CLEN 4
Notes	

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CLENgth? <length>
Description	This query returns the Custom pattern length of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	ETH:PORT1:STR1:ROE:CLEN? → 4
Note	

13.12.36 ETHERnet:PORT<Pt>:STReam<St>:ROE:CENable

Syntax	ETHERnet:PORT<Pt>:STReam<St>:ROE:CENable <enable>
Description	This command sets the Enable of Custom pattern of IEEE 1914.3.
Parameters	<Pt> = Port number
	<St> = Stream number (1)
	<enable> = <BOOLEAN PROGRAM DATA>
Response	None.
Example	ETH:PORT1:STR1:ROE:CEN ON
Notes	

Syntax	ETHernet:PORT<Pt>:STReam<St>:ROE:CENable? <enable>
Description	This query returns the Enable of Custom pattern of IEEE 1914.3.
Parameter	<Pt> = Port number
	<St> = Stream number (1)
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	ETH:PORT1:STR1:ROE:CEN? → 1
Note	

Chapter 14

Fibre Channel

14.1 Port

14.1.1 FCHannel:PORT<Pt>:MODE

Syntax	FCHannel:PORT<Pt>:MODE <mode>
Description	This command sets the port mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Port off FC100: 1Gb/s 100MBytes/s FC200: 2Gb/s 200MBytes/s FC400: 4Gb/s 400MBytes/s FC800: 8Gb/s 800MBytes/s FC1200: 10Gb/s 1200MBytes/s FC1600: 16Gb/s 1600MBytes/s <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:MODE FC100
Note	

Syntax	FCHannel:PORT<Pt>:MODE?
Description	This query returns the port mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:MODE? → FC100
Note	

14.1.2 FCHannel:TX<Pt>:TIMing

Syntax	FCHannel:TX<Pt>:TIMing <timing>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <timing> = <CHARACTER PROGRAM DATA> INTernal: Internal clock EXTernal: External clock GPS: GPS signal RX: Received clock <i>DEFault = INT</i>
Response	None
Example	FCH:TX1:TIM INT
Note	

Syntax	FCHannel:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<timing> = <CHARACTER RESPONSE DATA>
Example	FCH:TX1:TIM? → INT
Note	

14.2 Interface

14.2.1 FCHannel:PORT<Pt>:TOPology

Syntax	FCHannel:PORT<Pt>:TOPology <topology>
Description	This command sets the topology
Parameters	<Pt> = Port number <topology> = <CHARACTER PROGRAM DATA> PTPoint: Point to Point FABRic: Fabric EPORT: E-Port <i>DEFault = PTPoint</i>
Response	None.
Example	FCH:PORT1:TOP FABR
Note	

Syntax	FCHannel:PORT<Pt>:TOPology?
Description	This query returns the topology
Parameter	<Pt> = Port number
Response	<topology> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:TOP? → FABR
Note	

14.2.2 FCHannel:PORT<Pt>:PTP:LOGin

Syntax	FCHannel:PORT<Pt>:PTP:LOGin <enable>
Description	This command enables/disables point to point login
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:PTP:LOG OFF
Note	

Syntax	FCHannel:PORT<Pt>:PTP:LOGin?
Description	This query returns whether or not point to point login is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:PTP:LOG? → 0
Note	

14.2.3 FCHannel:PORT<Pt>:FABRic:LOGin

Syntax	FCHannel:PORT<Pt>:FABRic:LOGin
Description	This command activates the fabric login.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:PORT1:FABR:LOG
Note	

14.2.4 FCHannel:PORT<Pt>:EPORT:ELP

Syntax	FCHannel:PORT<Pt>:EPORT:ELP
Description	This command activates the ELP.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:PORT1:EPORT:ELP
Note	

14.2.5 FCHannel:PORT<Pt>:FCONtrol[:ENABle]

Syntax	FCHannel:PORT<Pt>:FCONtrol[:ENABle] <enable>
Description	This command enables/disables flow control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:FCON OFF
Note	

Syntax	FCHannel:PORT<Pt>:FCONtrol[:ENABle]?
Description	This query returns whether or not flow control is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:FCON? → 0
Note	

14.2.6 FCHannel:PORT<Pt>:FCONtrol:LCRedit

Syntax	FCHannel:PORT<Pt>:FCONtrol:LCRedit <credit>
Description	This command sets the local credit.
Parameters	<Pt> = Port number <credit> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=65535, DEFault=64</i>
Response	None.
Example	FCH:PORT1:FCON:LCR 64
Note	

Syntax	FCHannel:PORT<Pt>:FCONtrol:LCRedit?
Description	This query returns the local credit.
Parameter	<Pt> = Port number
Response	<credit> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:FCON:LCR? → 64
Note	

14.2.7 FCHannel:PORT<Pt>:FCONtrol:RCRedit

Syntax	FCHannel:PORT<Pt>:FCONtrol:RCRedit <credit>
Description	This command sets the remote credit.
Parameters	<Pt> = Port number <credit> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=65535, DEFault=64</i>
Response	None.
Example	FCH:PORT1:FCON:RCR 64
Note	

Syntax	FCHannel:PORT<Pt>:FCONtrol:RCredit?
Description	This query returns the remote credit.
Parameter	<Pt> = Port number
Response	<credit> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:FCON:RCR? → 64
Note	

14.2.8 FCHannel:PORT<Pt>:SOURce:WWN

Syntax	FCHannel:PORT<Pt>:SOURce:WWN <wwn>
Description	This command sets the source port WWN.
Parameters	<Pt> = Port number <wwn> = <STRING PROGRAM DATA> Port WWN
Response	None.
Example	FCH:PORT1:SOUR:WWN "00-00-00-00-00-00-00-00"
Note	Only the character '-' is accepted as separator.

Syntax	FCHannel:PORT<Pt>:SOURce:WWN?
Description	This query returns the source port WWN.
Parameter	<Pt> = Port number
Response	<wwn> = <STRING RESPONSE DATA>
Example	FCH:PORT1:SOUR:WWN? → "00-00-00-00-00-00-00-00"
Note	

14.2.9 FCHannel:PORT<Pt>:SOURce:WWN:DEFAult

Syntax	FCHannel:PORT<Pt>:SOURce:WWN:DEFAult <enable>
Description	This command enables/disables default port WWN.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFAult = ON</i>
Response	None.
Example	FCH:PORT1:SOUR:WWN:DEF ON
Note	

Syntax	FCHannel:PORT<Pt>:SOURce:WWN:DEFAult?
Description	This query returns whether or not default port WWN is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:SOUR:WWN:DEF? → 1
Note	

14.2.10 FCHannel:PORT<Pt>:SOURce:ID

Syntax	FCHannel:PORT<Pt>:SOURce:ID <id>
Description	This command sets the source ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=16777215, DEFAult=0</i>
Response	None.
Example	FCH:PORT1:SOUR:ID 0
Note	

Syntax	FCHannel:PORT<Pt>:SOURce:ID?
Description	This query returns the source ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:SOUR:ID? → 0
Note	

14.2.11 FCHannel:PORT<Pt>:DESTination:WWN

Syntax	FCHannel:PORT<Pt>:DESTination:WWN <wwn>
Description	This command sets the destination port WWN.
Parameters	<Pt> = Port number <wwn> = <STRING PROGRAM DATA> Port WWN
Response	None.
Example	FCH:PORT1:DEST:WWN "00-00-00-00-00-00-00-00"
Note	Only the character '-' is accepted as separator.

Syntax	FCHannel:PORT<Pt>:DESTination:WWN?
Description	This query returns the destination port WWN.
Parameter	<Pt> = Port number
Response	<wwn> = <STRING RESPONSE DATA>
Example	FCH:PORT1:DEST:WWN? → "00-00-00-00-00-00-00-00"
Note	

14.2.12 FCHannel:PORT<Pt>:DESTination:ID

Syntax	FCHannel:PORT<Pt>:DESTination:ID <id>
Description	This command sets the destination ID.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=16777215, DEFault=0</i>
Response	None.
Example	FCH:PORT1:DEST:ID 0
Note	

Syntax	FCHannel:PORT<Pt>:DESTination:ID?
Description	This query returns the destination ID.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:DEST:ID? → 0
Note	

14.2.13 FCHannel:PORT<Pt>:DESTination:LOGin

Syntax	FCHannel:PORT<Pt>:DESTination:LOGin
Description	This command activates port login.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:PORT1:DEST:LOG
Note	

14.3 Frame

14.3.1 FCHannel:PORT<Pt>:FRAME:FRAMing

Syntax	FCHannel:PORT<Pt>:FRAME:FRAMing <type>
Description	This command sets the frame structure.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> FT0: SOF:Data:EOF FT1: SOF:Header:Data:CRC:EOF <i>DEFault = FT1</i>
Response	None.
Example	FCH:PORT1:FRAM:FRAM FT1
Note	

Syntax	FCHannel:PORT<Pt>:FRAME:FRAMing?
Description	This query returns the frame structure.
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:FRAM:FRAM? → FT1
Note	

14.3.2 FCHannel:PORT<Pt>:FRAME:CONTent

Syntax	FCHannel:PORT<Pt>:FRAME:CONTent <content>
Description	This command sets the data content.
Parameters	<Pt> = Port number <content> = <CHARACTER PROGRAM DATA> FOX 5555 PRBS9 PRBS11 PRBS15 PRBS20 PRBS23 PRBS29 PRBS31 BHFTest BCRPat BJTPat BSPat USER32BIT ZERO <i>DEFault = FOX</i>
Response	None.
Example	FCH:PORT1:FRAM:CONT 5555
Note	

Syntax	FCHannel:PORT<Pt>:FRAME:CONTent?
Description	This query returns the data content.
Parameter	<Pt> = Port number
Response	<content> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:FRAM:CONT? → 5555
Note	

14.3.3 FCHannel:PORT<Pt>:FRAMe:UP32

Syntax	FCHannel:PORT<Pt>:FRAMe:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when CONTent is USER32BIT .
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None.
Example	FCH:PORT1:FRAM:UP32 "0110"
Note	

Syntax	FCHannel:PORT<Pt>:FRAMe:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	FCH:PORT1:FRAM:UP32? → "0110"
Note	

14.3.4 FCHannel:PORT<Pt>:FRAMe:HEADer:SID

Syntax	FCHannel:PORT<Pt>:FRAMe:HEADer:SID <id>
Description	This command sets the Seq ID in the frame header.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None.
Example	FCH:PORT1:FRAM:HEAD:SID #HAE FCH:PORT1:FRAM:HEAD:SID 174
Note	

Syntax	FCHannel:PORT<Pt>:FRAMe:HEADer:SID?
Description	This query returns the Seq ID in the frame header.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:FRAM:HEAD:SID? → 174
Note	

14.3.5 FCHannel:PORT<Pt>:FRAMe:HEADer:OID

Syntax	FCHannel:PORT<Pt>:FRAMe:HEADer:OID <id>
Description	This command sets the OX ID in the frame header.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535, DEFault=0</i>
Response	None.
Example	FCH:PORT1:FRAM:HEAD:OID #HAE FCH:PORT1:FRAM:HEAD:OID 174
Note	

Syntax	FCHannel:PORT<Pt>:FRAMe:HEADer:OID?
Description	This query returns the OX ID in the frame header.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:FRAM:HEAD:OID? → 174
Note	

14.3.6 FCHannel:PORT<Pt>:FRAME:HEADer:RID

Syntax	FCHannel:PORT<Pt>:FRAME:HEADer:RID <id>
Description	This command sets the Rx ID in the frame header.
Parameters	<Pt> = Port number <id> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=65535, DEFault=0</i>
Response	None.
Example	FCH:PORT1:FRAM:HEAD:RID #HAE FCH:PORT1:FRAM:HEAD:RID 174
Note	

Syntax	FCHannel:PORT<Pt>:FRAME:HEADer:RID?
Description	This query returns the Rx ID in the frame header.
Parameter	<Pt> = Port number
Response	<id> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:FRAM:HEAD:RID? → 174
Note	

14.4 Generator

14.4.1 FCHannel:PORT<Pt>:TRAFfic:DMODE

Syntax	FCHannel:PORT<Pt>:TRAFfic:DMODE <mode>
Description	This command sets the duration mode for the traffic generator.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> CONTInuous: Continuous FRAMes: Frames SECOnds: Seconds <i>DEFault = CONTInuous</i>
Response	None.
Example	FCH:PORT1:TRAF:DMOD CONT
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:DMODE?
Description	This query returns the duration mode for the traffic generator.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:TRAF:DMOD? → CONT
Note	

14.4.2 FCHannel:PORT<Pt>:TRAFfic:DSECOnds

Syntax	FCHannel:PORT<Pt>:TRAFfic:DSECOnds <seconds>
Description	This command sets the duration for the traffic generator in seconds.
Parameters	<Pt> = Port number <seconds> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=2000000000, DEFault=1</i>
Response	None.
Example	FCH:PORT1:TRAF:DSEC 1
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:DSEConds?
Description	This query returns the duration for the traffic generator in seconds.
Parameter	<Pt> = Port number
Response	<seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:DSEC? → 1
Note	

14.4.3 FCHannel:PORT<Pt>:TRAFfic:DFRames

Syntax	FCHannel:PORT<Pt>:TRAFfic:DFRames <frames>
Description	This command sets the duration for the traffic generator in number of frames.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=2000000000, DEFault=1</i>
Response	None.
Example	FCH:PORT1:TRAF:DFR 1
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:DFRames?
Description	This query returns the duration for the traffic generator in number of frames.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:DFR? → 1
Note	

14.4.4 FCHannel:PORT<Pt>:TRAFfic:ASTGenerator

Syntax	FCHannel:PORT<Pt>:TRAFfic:ASTGenerator <enable>
Description	This command enables/disables automatic start of the transmitter when running a BER measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:TRAF:ASTG OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:ASTGenerator?
Description	This query returns whether or not transmitter automatically starts when running a BER measurement.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:ASTG? → 0
Note	

14.4.5 FCHannel:TRAFfic:GENerator:STARt

Syntax	FCHannel:TRAFfic:GENerator:STARt
Description	This command starts the traffic generator.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:TRAF:GEN:STAR
Note	This command applies to all ports.

14.4.6 FCHannel:TRAFfic:GENerator:STOP

Syntax	FCHannel:TRAFfic:GENerator:STOP
Description	This command stops the traffic generator.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:TRAF:GEN:STOP
Note	This command applies to all ports.

14.4.7 FCHannel:PORT<Pt>:TRAFfic:GENerator:START

Syntax	FCHannel:PORT<Pt>:TRAFfic:GENerator:START
Description	This command starts the traffic generator.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:PORT1:TRAF:GEN:STAR
Note	This command requires that the Port is enabled (FCHannel:PORT<Pt>:MODE).

14.4.8 FCHannel:PORT<Pt>:TRAFfic:GENerator:STOP

Syntax	FCHannel:PORT<Pt>:TRAFfic:GENerator:STOP
Description	This command stops the traffic generator.
Parameters	<Pt> = Port number
Response	None.
Example	FCH:PORT1:TRAF:GEN:STOP
Note	

14.4.9 FCHannel:PORT<Pt>:TRAFfic:GENerator:STATus?

Syntax	FCHannel:PORT<Pt>:TRAFfic:GENerator:STATus?
Description	This query returns the current status of the traffic generator.
Parameter	<Pt> = Port number
Response	<stat> = <BOOLEAN RESPONSE DATA> 0: Traffic generator inactive 1: Traffic generator active
Example	FCH:PORT1:TRAF:GEN:STAT? → 0
Note	

14.5 Stream

14.5.1 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:PROFile

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:PROFile <profile>
Description	This command sets the stream Line Load Profile.
Parameters	<Pt> = Port number <profile> = <CHARACTER PROGRAM DATA> CONStant: Constant line load profile RAMP: Ramp line load profile <i>DEFault = CONStant</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:PROF RAMP
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:PROFile?
Description	This query returns the stream Line Load Profile.
Parameter	<Pt> = Port number
Response	<profile> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:PROF? → RAMP
Note	

14.5.2 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad[:CONStant]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad[:CONStant] <load>
Description	This command sets the stream Line Load in constant mode. Unit: Percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000, DEFault=100.0000</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL 50
Note	The minimum possible line load is 0.0008.

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad[:CONStant]?
Description	This query returns the stream Line Load in constant mode. Unit: Percentage.
Parameter	<Pt> = Port number
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL? → 50
Note	

14.5.3 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP[:MODE]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP[:MODE] <mode>
Description	This command sets the ramp mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> KEEPend: Maintain line load level at ramp end REPeat: Repeat ramp INVert: Invert ramp <i>DEFault = INVert</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:RAMP KEEP
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP[:MODE]?
Description	This query returns the ramp mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:RAMP? → KEEP
Note	

14.5.4 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:StARt

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:StARt <load>
Description	This command sets the stream initial line load in ramp mode. Unit: Percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000, DEFault=0.0000</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:RAMP:STAR 20
Note	The minimum possible line load is 0.0008.

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:STARt?
Description	This query returns the stream initial line load in ramp mode. Unit: Percentage.
Parameter	<Pt> = Port number
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:RAMP:STAR? → 20
Note	

14.5.5 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:END

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:END <load>
Description	This command sets the stream end line load in ramp mode. Unit: Percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000, DEFault=0.0000</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:RAMP:END 50
Note	The minimum possible line load is 0.0008.

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:END?
Description	This query returns the stream end line load in ramp mode. Unit: Percentage.
Parameter	<Pt> = Port number
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:RAMP:END? → 50
Note	

14.5.6 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:STEP

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:STEP <load>
Description	This command sets the stream line load step size, in ramp mode. Unit: Percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum=0.0000, MAXimum=100.0000, DEFault=1.0000</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:RAMP:STEP 2
Note	The minimum possible line load is 0.0008.

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:STEP?
Description	This query returns the stream line load step size, in ramp mode. Unit: Percentage.
Parameter	<Pt> = Port number
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:RAMP:STEP? → 2
Note	

14.5.7 FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:DURation

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:DURation <dur>
Description	This command sets the stream step line load duration in ramp mode. Unit: Seconds.
Parameters	<Pt> = Port number <dur> = <NUMERIC PROGRAM DATA> <i>MINimum=3, MAXimum=3600, DEFault=10</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LL:RAMP:DUR 5
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LLoad:RAMP:DURation?
Description	This query returns the stream step line load duration in ramp mode. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<dur> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LL:RAMP:DUR? → 5
Note	

14.5.8 FCHannel:PORT<Pt>:TRAFfic:STReam:FSIZe

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:FSIZe <dur>
Description	This command sets the frame size. Unit: Bytes
Parameters	<Pt> = Port number <dur> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =8 ¹ , <i>MAXimum</i> =3240, <i>DEFault</i> =8
Response	None.
Example	FCH:PORT1:TRAF:STR:FSIZ 8
Note	The frame size must be a multiple of 4. ¹ The minimum allowed frame size varies depending on the port mode. FC400: <i>MINimum</i> = 64 FC800: <i>MINimum</i> = 256 FC1200: <i>MINimum</i> = 256

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:FSIZe?
Description	This query returns the frame size. Unit: Bytes
Parameter	<Pt> = Port number
Response	<dur> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:FSIZ? → 8
Note	

14.5.9 FCHannel:PORT<Pt>:TRAFfic:STReam:LATency[:ENABle]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency[:ENABle] <enable>
Description	This command enables/disables stream latency measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	FCH:PORT1:TRAF:STR:LAT OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency[:ENABle]?
Description	This query returns whether or not stream latency measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LAT? → 0
Note	

14.5.10 FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds[:ENABle]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds[:ENABle] <enable>
Description	This command enables/disables stream latency threshold.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = OFF
Response	None.
Example	FCH:PORT1:TRAF:STR:LAT:THR OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds[:ENABle]?
Description	This query returns whether or not stream latency threshold is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LAT:THR? → 0
Note	

14.5.11 FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds:VALue

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds:VALue <value>
Description	This command sets the Latency thresholds value. Unit: Microseconds.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=429496729.5, DEFault=0</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:LAT:THR:VAL 10.5
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:LATency:THResholds:VALue?
Description	This query returns the Latency thresholds value. Unit: Microseconds.
Parameter	<Pt> = Port number
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:LAT:THR:VAL? → 10.5
Note	

14.5.12 FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer[:ENABle]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer[:ENABle] <enable>
Description	This command enables/disables stream jitter measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:JITT OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer[:ENABle]?
Description	This query returns whether or not stream jitter measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:JITT? → 0
Note	

14.5.13 FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds[:ENABle]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds[:ENABle] <enable>
Description	This command enables/disables stream jitter threshold.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:JITT:THR OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds[:ENABle]?
Description	This query returns whether or not stream jitter threshold is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:JITT:THR? → 0
Note	

14.5.14 FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds:VALue

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds:VALue <value>
Description	This command sets the stream jitter threshold value. Unit: Microseconds.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=429496792.5, DEFault=0</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:JITT:THR:VAL 10.5
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:JITTer:THResholds:VALue?
Description	This query returns the stream jitter threshold value. Unit: Microseconds.
Parameter	<Pt> = Port number
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:JITT:THR:VAL? → 10.5
Note	

14.5.15 FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure[:ENABle]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure[:ENABle] <enable>
Description	This command enables/disables Service Disruption Measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:BER:SDM OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure[:ENABle]?
Description	This query returns whether or not Service Disruption Measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:BER:SDM? → 0
Note	

14.5.16 FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:MDISruption

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:MDISruption <value>
Description	This command sets the Min Disruption Frames.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 5000, DEFault = 10</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:BER:SDM:MDIS 5
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:MDISruption?
Description	This query return the Min Disruption Frames.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:BER:SDM:MDIS? → 5
Note	

14.5.17 FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds[:ENABLE]

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds[:ENABLE] <enable>
Description	This command enables/disables Service Disruption threshold.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:BER:SDM:THR OFF
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds[:ENABLE]?
Description	This query returns whether or not Service Disruption threshold is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:BER:SDM:THR? → 0
Note	

14.5.18 FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds:VALue

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds:VALue <value>
Description	This command sets the Service Disruption threshold value. Unit: Microseconds.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 5000000, DEFault = 50000</i>
Response	None.
Example	FCH:PORT1:TRAF:STR:BER:SDM:THR:VAL 10
Note	

Syntax	FCHannel:PORT<Pt>:TRAFfic:STReam:BER:SDMeasure:THResholds:VALue?
Description	This query returns the Service Disruption threshold value. Unit: Microseconds.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TRAF:STR:BER:SDM:THR:VAL? → 10
Note	This only applies to Ethernet and Fibre Channel.

14.6 Settings

14.6.1 FCHannel:PORT<Pt>:SETTings:BER:OBAMeasuring

Syntax	FCHannel:PORT<Pt>:SETTings:BER:OBAMeasuring <enable>
Description	This command enables/disables only show BER alarms when measuring.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:SETT:BER:OBAM ON
Note	This setting applies to all ports.

Syntax	FCHannel:PORT<Pt>:SETTings:BER:OBAMeasuring?
Description	This query returns if BER alarms should only be shown when measuring.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:SETT:BER:OBAM? → 1
Note	This setting applies to all ports.

14.6.2 FCHannel:PORT<Pt>:SETTings:BER:IAFFilter

Syntax	FCHannel:PORT<Pt>:SETTings:BER:IAFFilter <enable>
Description	This command enables/disables include addresses in frame filter on receiver.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None.
Example	FCH:PORT1:SETT:BER:IAFF OFF
Note	This setting applies to all ports.

Syntax	FCHannel:PORT<Pt>:SETTings:BER:IAFFilter?
Description	This query returns if include addresses in frame filter on receiver is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:SETT:BER:IAFF? → 0
Note	This setting applies to all ports.

14.6.3 FCHannel:PORT<Pt>:SETTings:BER:CLFrames

Syntax	FCHannel:PORT<Pt>:SETTings:BER:CLFrames <enable>
Description	This command enables/disables count lost frames as pattern errors.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:SETT:BER:CLF ON
Note	This setting applies to all ports.

Syntax	FCHannel:PORT<Pt>:SETTings:BER:CLFrames?
Description	This query return if count lost frames as pattern errors is enabled/disabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:SETT:BER:CLF? → 1
Note	This setting applies to all ports.

14.6.4 FCHannel:PORT<Pt>:SETTings:BER:HIDeframeloss

Syntax	FCHannel:PORT<Pt>:SETTings:BER:HIDeframeloss <enable>
Description	This command show/hide Frame/Pattern loss secs. count.
Parameter	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:SETT:BER:HID ON
Note	This setting applies to all ports.

Syntax	FCHannel:PORT<Pt>:SETTings:BER:HIDeframeloss?
Description	This query return if Frame/Pattern loss secs. count is show/hide.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:SETT:BER:HID? → 1
Note	This setting applies to all ports.

14.7 Thresholds

14.7.1 FCHannel:PORT<Pt>:THResholds[:ENABle]

Syntax	FCHannel:PORT<Pt>:THResholds[:ENABle] <enable>
Description	This command enables/disables thresholds.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:THR OFF
Note	

Syntax	FCHannel:PORT<Pt>:THResholds[:ENABle]?
Description	This query returns whether or not thresholds is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:THR? → 0
Note	

14.7.2 FCHannel:PORT<Pt>:THResholds:SElect

Syntax	FCHannel:PORT<Pt>:THResholds:SElect <type>, <enable>
Description	This command enables/disables the specific threshold type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> ALL: All thresholds UTIL: Utilization THR: Throughput ERR: Errored frames UNDER: Undersized frames OVER: Oversized frames CRC: CRC errored frames IFG: IFG violations SYMBOL: Symbol errors CRD: CRD errors <i>DEFault = ALL</i> <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT1:THR:SEL UTIL, ON
Note	

Syntax	FCHannel:PORT<Pt>:THResholds:SElect? <type>
Description	This query returns whether or not the specific threshold type is enabled.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA>
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT1:THR:SEL? UTIL → 1
Note	

14.7.3 FChannel:PORT<Pt>:THResholds:VALue

Syntax	FChannel:PORT<Pt>:THResholds:VALue <type>, <compare>, <value>
Description	This command sets the level for the specific threshold type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> UTIL: Utilization¹ THR: Throughput² ERR: Errored frames UNDER: Undersized frames OVER: Oversized frames CRC: CRC errored frames IFG: IFG violations SYMBOL: Symbol errors CRD: CRD errors <compare> = <CHARACTER PROGRAM DATA> GT: Greater than LT: Less than GTEQ: Greater than or equal to LTEQ: Less than or equal to <i>DEFault = LT</i> <value> = <NUMERIC PROGRAM DATA> Absolute values: Decimals are rounded. Maximum is 4000000000 Percentage values: Allows one decimal, Maximum is 100.0 <i>DEFault = 0, MINimum = 0</i> <i>Allowed Suffixes = PCT</i>
Response	None.
Example	FCH:PORT1:THR:VAL UTIL, GT, 10.5PCT
Note	¹ Utilization only supports percentage values. ² Throughput only supports absolute values, the unit is MBPS, and has one decimal. Maximum = 10000.0

Syntax	FChannel:PORT<Pt>:THResholds:VALue? <type>
Description	This query returns the level for the specific threshold type.
Parameter	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA>
Response	<compare> = <CHARACTER RESPONSE DATA> <value> = <NR2 NUMERIC RESPONSE DATA> Count or percentage.
Example	FCH:PORT1:THR:VAL? UTIL → GT, 10.5PCT
Note	

14.8 Follow

14.8.1 FChannel:PORT<Pt>:FOLLow:GENerator

Syntax	FChannel:PORT<Pt>:FOLLow:GENerator <enable>
Description	This command enables/disables generator setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT2:FOLL:GEN OFF
Note	

Syntax	FCHannel:PORT<Pt>:FOLLow:GENerator?
Description	This query returns whether or not generator setup for port <Pt> to follow PORT1 is enabled.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT2:FOLL:GEN? → 0
Note	

14.8.2 FCHannel:PORT<Pt>:FOLLow:THResholds

Syntax	FCHannel:PORT<Pt>:FOLLow:THResholds <enable>
Description	This command enables/disables thresholds setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT2:FOLL:THR OFF
Note	

Syntax	FCHannel:PORT<Pt>:FOLLow:THResholds?
Description	This query returns whether or not thresholds setup for port <Pt> to follow PORT1 is enabled.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT2:FOLL:THR? → 0
Note	

14.8.3 FCHannel:PORT<Pt>:FOLLow:FRAMe

Syntax	FCHannel:PORT<Pt>:FOLLow:FRAMe <enable>
Description	This command enables/disables frame setup for port <Pt> to follow PORT1.
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT2:FOLL:FRAM OFF
Note	

Syntax	FCHannel:PORT<Pt>:FOLLow:FRAMe?
Description	This query returns whether or not frame setup for port <Pt> to follow PORT1 is enabled.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT2:FOLL:FRAM? → 0
Note	

14.8.4 FCHannel:PORT<Pt>:FOLLow:STReam

Syntax	FCHannel:PORT<Pt>:FOLLow:STReam <enable>
Description	This command enables/disables stream setup for port <Pt> to follow PORT1
Parameter	<Pt> = Port number (2-4) <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	FCH:PORT2:FOLL:STR OFF
Note	

Syntax	FCHannel:PORT<Pt>:FOLLow:STReam?
Description	This query returns whether or not stream setup for port <Pt> to follow PORT1 is enabled.
Parameter	<Pt> = Port number (2-4)
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	FCH:PORT2:FOLL:STR? → 0
Note	

14.9 Stimuli

14.9.1 FCHannel:PORT<Pt>:STIMuli:ALARm

Syntax	FCHannel:PORT<Pt>:STIMuli:ALARm <alarm>
Description	This command sets the stimuli alarm state.
Parameters	<Pt> = Port number <alarm> = <CHARACTER PROGRAM DATA> NONE: No alarm LRESet: List reset LRResponse: List reset response NOPerational: Not operational OFFLine: Offline <i>DEFault = NONE</i>
Response	None.
Example	FCH:PORT1:STIM:ALAR LRES
Note	

Syntax	FCHannel:PORT<Pt>:STIMuli:ALARm?
Description	This query returns the stimuli alarm state.
Parameter	<Pt> = Port number
Response	<alarm> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:STIM:ALAR? → LRES
Note	

14.9.2 FCHannel:PORT<Pt>:STIMuli:ERRor

Syntax	FCHannel:PORT<Pt>:STIMuli:ERRor <error>
Description	This command sets the stimuli error state.
Parameters	<Pt> = Port number <error> = <CHARACTER PROGRAM DATA> NONE: No error BIT: Bit SYMBol: Symbol RRDY: R_RDY CRC: CRC BLOCK: Block <i>DEFault = NONE</i>
Response	None.
Example	FCH:PORT1:STIM:ERR BIT
Note	

Syntax	FCHannel:PORT<Pt>:STIMuli:ERRor?
Description	This query returns the stimuli error state.
Parameter	<Pt> = Port number
Response	<error> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:STIM:ERR? → BIT
Note	

14.9.3 FCHannel:PORT<Pt>:STIMuli:EINSerTion

Syntax	FCHannel:PORT<Pt>:STIMuli:EINSerTion <mode>
Description	This command sets the stimuli error insertion mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Stimuli disabled MANual B1: Burst every 1 second B10: Burst every 10 seconds BE2: Burst · 1E-02 BE3: Burst · 1E-03 BE4: Burst · 1E-04 BE5: Burst · 1E-05 BE6: Burst · 1E-06 BE7: Burst · 1E-07 DEFault = OFF
Response	None.
Example	FCH:PORT1:STIM:EINS MAN
Note	

Syntax	FCHannel:PORT<Pt>:STIMuli:EINSerTion?
Description	This query returns the stimuli error insertion mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PORT1:STIM:EINS? → MAN
Note	

14.9.4 FCHannel:PORT<Pt>:STIMuli:EBLength

Syntax	FCHannel:PORT<Pt>:STIMuli:EBLength <length>
Description	This command sets the error burst length.
Parameters	<Pt> = Port number <length> = <NUMERIC PROGRAM DATA> MINimum = 1, MAXimum = 4000¹, DEFault = 1
Response	None.
Example	FCH:PORT1:STIM:EBL 128
Note	¹ The following error type have other MAXimum value. RRDY: MAXimum = 500 SYMBOL: MAXimum = 1000 BLOCK: MAXimum = 256

Syntax	FCHannel:PORT<Pt>:STIMuli:EBLength?
Description	This query returns the error burst length.
Parameter	<Pt> = Port number
Response	<length> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:STIM:EBL? → 128
Note	

14.9.5 FCHannel:PORT<Pt>:STIMuli:FOFFset

Syntax	FCHannel:PORT<Pt>:STIMuli:FOFFset <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> MT1000A: <i>MINimum=-100, MAXimum=100, DEFault=0</i> MT1100A: <i>MINimum=-200.0, MAXimum=200.0, DEFault = 0</i>
Response	None
Example	FCH:PORT1:STIM:FOFF 0
Note	The offset is applied to the internal clock source only.

Syntax	FCHannel:PORT<Pt>:STIMuli:FOFFset?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	MT1000A: <offset> = <NR1 NUMERIC RESPONSE DATA> MT1100A: <offset> = <NR2 NUMERIC RESPONSE DATA>
Example	MT1100A: FCH:PORT1:STIM:FOFF? → 0.0
Note	

14.10 Results

14.10.1 FCHannel:PORT<Pt>:IFETch?

Syntax	FCHannel:PORT<Pt>:IFETch? <parameter>
Description	This query fetches an Fibre Channel interval if available.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. BERT BPBC: Pattern bit count. Response: <Count> BPE: Pattern errors. Response: <Count>,<Ratio> BFL: Frame loss. Response: <Count> BFLS: Frame loss seconds. Response: <Count> BPLS: Pattern loss seconds. Response: <Count> BL: Latency (microseconds). Response: <Min>,<Max>,<Avg> BJ: Jitter (microseconds). Response: <Min>,<Max>,<Avg> BSD: Service disruption (microseconds). Response: <Max>,<Avg>,<Count> Reflector RFFRM: Reflected frames. Response: <Count>,<Ratio> RFBYT: Reflected bytes. Response: <Count> NRFFR: Not reflected frames. Response: <Count>,<Ratio> NRFBY: Not reflected bytes. Response: <Count> TOFRM: Total frames. Response: <Count>,<Ratio> TOBYT: Reflected bytes. Response: <Count> Link SER: Symbol errors. Response: <Count> BLER: Block errors. Response: <Count> RRDY: R_RDY. Response: <CountTx>,<CountRx> LR: Link reset. Response: <Count> LRR: Link reset response. Response: <Count> NOS: Not operational seconds. Response: <Count> OLS: Offline seconds. Response: <Count> Frame FRM: Frames. Response: <CountTx>,<CountRx> BYT: Bytes. Response: <CountTx>,<CountRx> IV: IFG violations. Response: <Count>,<Ratio> CRC: CRC errors. Response: <Count>,<Ratio> SEFR: Symbol error frames. Response: <Count>,<Ratio> CRD: CRD errors. Response: <Count>,<Ratio> TER: Terminate errors. Response: <Count>,<Ratio> EFRM: Errored frames. Response: <Count>,<Ratio> RFRM: Reflected frames. Response: <Count>,<Ratio> RBYT: Reflected bytes. Response: <Count> NRFRM: Not reflected frames. Response: <Count>,<Ratio> NRBYT: Not reflected bytes. Response: <Count> TFRM: Total frames. Response: <Count>,<Ratio> TBYT: Total bytes. Response: <Count> NCR: No credit. Response: <Count> Performance LRAT: Line rate (bps). Response: <Min>,<Max>,<Avg> FRAT: Frame rate (fps). Response: <Min>,<Max>,<Avg> UTIL: Utilization. Response: <Min%>,<Max%>,<Avg%> THR: Throughput (bps). Response: <Min>,<Max>,<Avg> Size Distribution UNFR: Undersized frames. Response: <Count>,<Ratio> R28: 28-196. Response: <Count>,<Ratio> R200: 200-396. Response: <Count>,<Ratio>

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	R400: 400-596. Response: <Count>,<Ratio> R600: 600-796. Response: <Count>,<Ratio> R800: 800-996. Response: <Count>,<Ratio> R1000: 1000-1196. Response: <Count>,<Ratio> R1200: 1200-1396. Response: <Count>,<Ratio> R1400: 1400-1596. Response: <Count>,<Ratio> R1600: 1600-1796. Response: <Count>,<Ratio> R1800: 1800-1996. Response: <Count>,<Ratio> R2000: 2000-2196. Response: <Count>,<Ratio> OVFR: Oversized frames. Response: <Count>,<Ratio> FSIZ: Frame size (bytes). Response: <Avg>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Examples	FCH:PORT1:IFET? (UTIL) → (0.0000,50.0000,41.1117) FCH:PORT1:IFET? (BPE,BPLS) → (13944487,0.000979),(104)
Notes	This command fetches the results from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2). If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed.

14.10.2 FCHannel:PORT<Pt>:TFETch?

Syntax	FCHannel:PORT<Pt>:TFETch? <parameter>
Description	This query fetches thresholds for a Fibre Channel interval if available.
Parameters	<Pt> = Port number {(<parameter>)+{,*}} = <EXPRESSION PROGRAM DATA> Frame IV: IFG violations. CRC: CRC errors. SEFR: Symbol error frames. CRD: CRD errors. EFRM: Errored frames Performance UTIL: Utilization (pct). THR: Throughput (bps). Size Distribution UNFR: Undersized frames. OVFR: Oversized frames.
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List <result> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PORT1:TFET? (UTIL,UNFR) → (1),(0)
Note	This query fetches from the interval selected using the MEASurement:SETup:SElect command (see section 18.2.2).

14.11 Status

14.11.1 FCHannel:STATus:PORT<Pt>:AESummary[:EVENT]?

Syntax	FCHannel:STATus:PORT<Pt>:AESummary[:EVENT]?
Description	This query returns the Fibre Channel alarms and errors summary event register. The content of this event register is summarized in DB12 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	FCH:STAT:PORT1:AES? → 1
Note	

14.11.2 FCHannel:STATus:PORT<Pt>:AESummary:CONDition?

Syntax	FCHannel:STATus:PORT<Pt>:AESummary:CONDition?
Description	This query returns the Fibre Channel alarms and errors summary condition register. DB1 is summary of FCHannel:STATus:PORT<Pt>:ALARm[:EVENT]? DB2 is summary of FCHannel:STATus:PORT<Pt>:ERRor[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 (2) = Error summary DB3 - DB16 = NOT USED
Example	FCH:STAT:PORT1:AES:COND? → 2
Note	

14.11.3 FCHannel:STATus:PORT<Pt>:ALARm[:EVENT]?

Syntax	FCHannel:STATus:PORT<Pt>:ALARm[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 of the FCHannel:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Signal Present DB2 (2) = Sync Acquired DB3 (4) = Link DB4 (8) = Fabric Login DB5 (16) = Port Login DB6 (32) = Pattern Sync DB7 (64) = ELP DB8 - DB16 = NOT USED
Example	FCH:STAT:PORT1:ALAR? → 2
Notes	

14.11.4 FCHannel:STATus:PORT<Pt>:ALARm:CONDition?

Syntax	FCHannel:STATus:PORT<Pt>:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Signal Present DB2 (2) = Sync Acquired DB3 (4) = Link DB4 (8) = Fabric Login DB5 (16) = Port Login DB6 (32) = Pattern Sync DB7 (64) = ELP DB8 - DB16 = NOT USED
Example	FCH:STAT:PORT1:ALAR:COND? → 4
Notes	

14.11.5 FCHannel:STATus:PORT<Pt>:ERRor[:EVENT]?

Syntax	FCHannel:STATus:PORT<Pt>:ERRor[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB2 of the FCHannel:STATus:PORT<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern error DB2 (2) = Traffic error DB3 - DB16 = NOT USED
Example	FCH:STAT:PORT1:ERR? → 1
Notes	

14.11.6 FCHannel:STATus:PORT<Pt>:ERRor:CONDition?

Syntax	FCHannel:STATus:PORT<Pt>:ERRor:CONDition?
Description	This query returns the errors condition register.
Parameters	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Pattern error DB2 (2) = Traffic error DB3 - DB16 = NOT USED
Example	FCH:STAT:PORT1:ERR:COND? → 1
Notes	

14.11.7 FCHannel:STATus:PORT<Pt>:SID?

Syntax	FCHannel:STATus:PORT<Pt>:SID?
Description	This query returns the source ID if Login is enabled.
Parameter	<Pt> = Port number
Response	<link> = <HEXADECIMAL NUMERIC RESPONSE DATA _i >
Example	FCH:STAT:PORT1:SID? → #H11
Note	NaN (section 1.6.1) is returned if Login is not enabled or port is off.

14.11.8 FCHannel:STATus:PORT<Pt>:DID?

Syntax	FCHannel:STATus:PORT<Pt>:DID?
Description	This query returns the destination ID if Login is enabled.
Parameter	<Pt> = Port number
Response	<link> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	FCH:STAT:PORT1:DID? → #H22
Note	NaN (section 1.6.1) is returned if Login is not enabled or port is off.

14.11.9 FCHannel:STATus:PORT<Pt>:PDEViation?

Syntax	FCHannel:STATus:PORT<Pt>:PDEViation?
Description	This query returns physical deviation. Units: ppm and bps.
Parameter	<Pt> = Port number
Response	<ppm> = <NR1 NUMERIC RESPONSE DATA>
	<bps> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:STAT:PORT1:PDEV? → 0, 0
Note	

14.12 Performance Test

14.12.1 FCHannel:PERF:STARt

Syntax	FCHannel:PERF:STARt
Description	This command starts the Performance Test measurement.
Parameter	None.
Response	None.
Example	FCH:PERF:STAR
Note	

14.12.2 FCHannel:PERF:STOP

Syntax	FCHannel:PERF:STOP
Description	This command stops the Performance Test measurement.
Parameter	None.
Response	None.
Example	FCH:PERF:STOP
Note	

14.12.3 FCHannel:PERF:SETup:GENeral:MODE

Syntax	FCHannel:PERF:SETup:GENeral:MODE <mode>
Description	This command sets the Performance Test test mode.
Parameter	<mode> = <CHARACTER PROGRAM DATA> PTP: Port-to-Port LOOP: Loopback <i>DEFault</i> = PTP
Response	None.
Examples	FCH:PERF:SET:GEN:MODE PTP FCH:PERF:SET:GEN:MODE LOOP
Note	

Syntax	FCHannel:PERF:SETup:GENeral:MODE?
Description	This query returns the Performance Test test mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:GEN:MODE? → PTP
Note	

14.12.4 FCHannel:PERF:SETup:GENeral:TSElection

Syntax	FCHannel:PERF:SETup:GENeral:TSElection <test>
Description	This command sets the test selection to be executed.
Parameter	({<test>} * {,}*) = <EXPRESSION PROGRAM DATA> THRoughput: Throughput TRPRofile: Traffic Profile LATency: Latency BURSt: Burst CREDit: Credit
Response	None.
Example	FCH:PERF:SET:GEN:TSEL (THR,LAT,BURS)
Note	

Syntax	FCHannel:PERF:SETup:GENeral:TSElection?
Description	This query returns the test selection that will be executed.
Parameter	None.
Response	{(<test>),}* = <EXPRESSION RESPONSE DATA>
Example	FCH:PERF:SET:GEN:TSEL? → (THR,LAT,BURS)
Note	

14.12.5 FCHannel:PERF:SETup:GENeral:TCLayer

Syntax	FCHannel:PERF:SETup:GENeral:TCLayer <layer>
Description	This command selects the throughput calculation layer.
Parameter	<layer> = <CHARACTER PROGRAM DATA> LR: At line rate L1: At frame layer L2: At data layer <i>DEFault</i> = <i>LR</i>
Response	None.
Example	FCH:PERF:SET:GEN:TCL LR
Note	

Syntax	FCHannel:PERF:SETup:GENeral:TCLayer?
Description	This query returns the throughput calculation layer.
Parameter	None.
Response	<layer> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:GEN:TCL? → LR
Note	

14.12.6 FCHannel:PERF:SETup:GENeral:TTYPe

Syntax	FCHannel:PERF:SETup:GENeral:TTYPe <layer>
Description	This command sets the throughput calculation type.
Parameter	<type> = <CHARACTER PROGRAM DATA> AVG: Average MAX: Maximum <i>DEFault</i> = <i>MAX</i>
Response	None.
Example	FCH:PERF:SET:GEN:TTYP AVG
Note	

Syntax	FCHannel:PERF:SETup:GENeral:TTYPe?
Description	This query returns the throughput calculation type.
Parameter	None.
Response	<layer> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:GEN:TTYP? → AVG
Note	

14.12.7 FChannel:PERF:SETup:FSIZe:MODE

Syntax	FChannel:PERF:SETup:FSIZe:MODE <mode>
Description	This command sets the Performance Test frame size mode.
Parameter	None. <mode> = <CHARACTER PROGRAM DATA> USER: User defined STEPped: Stepped CONStant: Constant <i>DEFault = USER</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:MODE CONS
Note	

Syntax	FChannel:PERF:SETup:FSIZe:MODE?
Description	This query returns the Performance Test frame size mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:MODE? → CONS
Note	

14.12.8 FChannel:PERF:SETup:FSIZe:USER

Syntax	FChannel:PERF:SETup:FSIZe:USER {<size>}*
Description	This command sets the Performance Test user defined frame size(s).
Parameter	(({<size>} * {,})* = <EXPRESSION PROGRAM DATA> 64: 64 bytes 128: 128 bytes 256: 256 bytes 512: 512 bytes 768: 768 bytes 1024: 1024 bytes 1280: 1280 bytes 2140: 2140 bytes JUMB: Jumbo frame size use :JUMBo to define.
Response	None.
Example	FCH:PERF:SET:FSIZ:USER (64,256,JUMB)
Note	

Syntax	FChannel:PERF:SETup:FSIZe:USER?
Description	This query returns the Performance Test user defined frame size(s).
Parameter	None.
Response	{(<size>),}* = <EXPRESSION RESPONSE DATA> <size> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:USER? → (64,256,JUMB)
Note	

14.12.9 FChannel:PERF:SETup:FSIZe:JUMBo

Syntax	FChannel:PERF:SETup:FSIZe:JUMBo <size>
Description	This command sets the Performance Test jumbo frame size.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 2168, MAXimum = 3240, DEFault = 2168</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:JUMB 2168
Note	

Syntax	FCHannel:PERF:SETup:FSIZe:JUMBo?
Description	This query returns the Performance Test jumbo frame size.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:JUMB? → 2168
Note	

14.12.10 FCHannel:PERF:SETup:FSIZe:BEGin

Syntax	FCHannel:PERF:SETup:FSIZe:BEGin <size>
Description	This command sets the Performance Test begin frame size for stepped mode.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 40, MAXimum = 3240, DEFault = 64</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:BEG 128
Note	

Syntax	FCHannel:PERF:SETup:FSIZe:BEGin?
Description	This query returns the Performance Test begin frame size for stepped mode.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:BEG? → 128
Note	

14.12.11 FCHannel:PERF:SETup:FSIZe:END

Syntax	FCHannel:PERF:SETup:FSIZe:END <size>
Description	This command sets the Performance Test end frame size for stepped mode.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 40, MAXimum = 3240, DEFault = 2140</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:END 128
Note	

Syntax	FCHannel:PERF:SETup:FSIZe:END?
Description	This query returns the Performance Test end frame size for stepped mode.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:END? → 128
Note	

14.12.12 FCHannel:PERF:SETup:FSIZe:STEP

Syntax	FCHannel:PERF:SETup:FSIZe:STEP <size>
Description	This command sets the Performance Test step frame size for stepped mode.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 3240, DEFault = 256</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:STEP 128
Note	

Syntax	FCHannel:PERF:SETup:FSIZe:STEP?
Description	This query returns the Performance Test step frame size for stepped mode.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:STEP? → 128
Note	

14.12.13 FCHannel:PERF:SETup:FSIZe:CONStant

Syntax	FCHannel:PERF:SETup:FSIZe:CONStant <size>
Description	This command sets the Performance Test frame size for constant mode.
Parameter	<size> = <NUMERIC PROGRAM DATA> <i>MINimum = 40, MAXimum = 3240, DEFault = 2140</i>
Response	None.
Example	FCH:PERF:SET:FSIZ:CONS 128
Note	

Syntax	FCHannel:PERF:SETup:FSIZe:CONStant?
Description	This query returns the Performance Test frame size for constant mode.
Parameter	None.
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:FSIZ:CONS? → 128
Note	

14.12.14 FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	FCH:PERF:SET:PORT1:THR:LL:MAX 10
Notes	MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:THR:LL:MAX? → 10
Note	

14.12.15 FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:MODE

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:MODE <mode>
Description	This command sets the auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMART: Smart search BINary: Binary search <i>DEFault = SMART</i>
Response	None.
Example	FCH:PERF:SET:PORT1:THR:LL:ASE:MODE BIN
Note	

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:MODE?
Description	This query returns the auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:THR:LL:ASE:MODE? → BIN
Note	

14.12.16 FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution <res>
Description	This command sets the auto search resolution.
Parameters	<Pt> = Port number <res> = <CHARACTER PROGRAM DATA> 01: 0.1% 1: 1% 10: 10% <i>DEFault = 01</i>
Response	None.
Example	FCH:PERF:SET:PORT1:THR:LL:ASE:RES 10
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:LLoad:ASEarch:RESolution?
Description	This query returns the auto search resolution.
Parameter	<Pt> = Port number
Response	<res> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:THR:LL:ASE:RES? → 10
Note	

14.12.17 FCHannel:PERF:SETup:PORT<Pt>:THRoughput:DURation:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:DURation:STEP <step>
Description	This command sets the step duration. Unit: seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 100000000, DEFault = 10</i>
Response	None.
Example	FCH:PERF:SET:PORT1:THR:DUR:STEP 5
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:THRoughput:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds. Unit: seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:THR:DUR:STEP? → 5
Note	

14.13 Performance Test - Traffic Profile

14.13.1 FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MINimum

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MINimum <load>
Description	This command sets the minimum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	FCH:PERF:SET:PORT1:PROF:LL:MIN 10
Notes	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MINimum must be smaller or equal to :MAXimum.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MINimum? [<suffix>]
Description	This query returns the minimum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:PROF:LL:MIN? → 10
Note	

14.13.2 FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MAXimum

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MAXimum <load>
Description	This command sets the maximum line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0008, MAXimum = 100.0000, DEFault = 100.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	FCH:PERF:SET:PORT1:PROF:LL:MAX 10
Notes	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT. :MAXimum must be larger or equal to :MINimum.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:MAXimum? [<suffix>]
Description	This query returns the maximum line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:PROF:LL:MAX? → 10
Note	

14.13.3 FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:STEP <load>
Description	This command sets the step line load percentage.
Parameters	<Pt> = Port number <load> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0001, MAXimum = 100.0000, DEFault = 10.0000</i> <i>Allowed suffixes = PCT, MBPS, KBPS. Default = PCT</i>
Response	None.
Example	FCH:PERF:SET:PORT1:PROF:LL:STEP 10
Notes	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test. MINimum, MAXimum and DEFault are all in PCT.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:LLoad:STEP? [<suffix>]
Description	This query returns the step line load percentage.
Parameters	<Pt> = Port number <suffix> = <CHARACTER PROGRAM DATA> PCT: Percent KBPS: Kilo bit per second MBPS: Mega bit per second <i>DEFault = PCT</i>
Response	<load> = <NR2 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:PROF:LL:STEP? → 10
Note	

14.13.4 FCHannel:PERF:SETup:PORT<Pt>:PROFile:DURation:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:DURation:STEP <step>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 100000000, DEFault = 10</i>
Response	None.
Example	FCH:PERF:SET:PORT1:PROF:DUR:STEP 5
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:PROFile:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:PROF:DUR:STEP? → 5
Note	

14.14 Performance Test - Latency

14.14.1 FCHannel:PERF:SETup:PORT<Pt>:LATency:DURation:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:LATency:DURation:STEP <step>
Description	This command sets the step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 100000000, DEFault = 10</i>
Response	None.
Example	FCH:PERF:SET:PORT1:LAT:DUR:STEP 5
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:LATency:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:LAT:DUR:STEP? → 5
Note	

14.15 Performance Test - Burst

14.15.1 FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:MODE

Syntax	FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:MODE <mode>
Description	This command sets the Performance Test frames per burst mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ASEarch: Auto Search STEPped: Stepped <i>DEFault = ASEarch</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:MODE ASE
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:MODE?
Description	This query returns the Performance Test frames per burst mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:MODE? → ASE
Note	

14.15.2 FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:BEGin

Syntax	FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:BEGin <size>
Description	This command sets the Performance Test burst begin size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2000000000, DEFault = 100</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:BEG 10
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:BEGin?
Description	This query returns the Performance Test burst begin size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:BEG? → 10
Note	

14.15.3 FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:END

Syntax	FChannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:END <size>
Description	This command sets the Performance Test burst end size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2000000000, DEFault = 2000</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:END 20
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:END?
Description	This query returns the Performance Test burst end size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:END? → 20
Note	

14.15.4 FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:STEP <size>
Description	This command sets the Performance Test burst step size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 2000000000, DEFault = 100</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:STEP 5
Note	In Port-to-Port test PORT1 setup is used. PORT2 setup can be set but will be ignored during the test.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:STEP?
Description	This query returns the Performance Test burst step size.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:STEP? → 5
Note	

14.15.5 FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE <mode>
Description	This command sets the frames per burst auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMART: Smart search BINary: Binary search <i>DEFault = SMART</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:ASE:MODE SMAR
Note	This setting is used when frames per burst mode is auto search.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:MODE?
Description	This query returns the frames per burst auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:ASE:MODE? → SMAR
Note	

14.15.6 FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution <resolution>
Description	This command sets the frames per burst auto search resolution.
Parameters	<Pt> = Port number <resolution> = <CHARACTER PROGRAM DATA> PM1: 1 per mille (0.1%) PM10: 10 per mille (1.0%) PM100: 100 per mille (10.0%) <i>DEFault = PM1</i>
Response	None.
Example	FCH:PERF:SET:PORT1:BURS:FPB:ASE:RES PM10
Note	This setting is used when frames per burst mode is auto search.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:BURSt:FPBurst:ASEarch:RESolution?
Description	This query returns the frames per burst auto search resolution.
Parameter	<Pt> = Port number
Response	<resolution> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:BURS:FPB:ASE:RES? → PM10
Note	

14.16 Performance Test - Credit

14.16.1 FCHannel:PERF:SETup:PORT<Pt>:CREDit:MODE

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:MODE <mode>
Description	This command sets the Performance Test frames per credit mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> ASEarch: Auto Search STEPped: Stepped DEFault = ASEarch
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:MODE ASE
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:MODE?
Description	This query returns the Performance Test frames per credit mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:MODE? → ASE
Note	

14.16.2 FCHannel:PERF:SETup:PORT<Pt>:CREDit:BEGin

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:BEGin <size>
Description	This command sets the Performance Test credit begin size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> MINimum = 1, MAXimum = 65535, DEFault = 1
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:BEG 10
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:BEGin?
Description	This query returns the Performance Test credit begin size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:BEG? → 10
Note	

14.16.3 FCHannel:PERF:SETup:PORT<Pt>:CREDit:END

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:END <size>
Description	This command sets the Performance Test credit end size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> MINimum = 1, MAXimum = 65535, DEFault = 2000
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:END 20
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:END?
Description	This query returns the Performance Test credit end size for stepped mode.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:END? → 20
Note	

14.16.4 FCHannel:PERF:SETup:PORT<Pt>:CREDit:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:STEP <size>
Description	This command sets the Performance Test credit step size for stepped mode.
Parameters	<Pt> = Port number <size> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 65535, DEFault = 100</i>
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:STEP 5
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:STEP?
Description	This query returns the Performance Test credit step size.
Parameter	<Pt> = Port number
Response	<size> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:STEP? → 5
Note	

14.16.5 FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:MODE

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:MODE <mode>
Description	This command sets the credit auto search mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SMARt: Smart search BINary: Binary search <i>DEFault = BINary</i>
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:ASE:MODE SMAR
Notes	This setting is not available when Port-to-Port test selected. This setting is used when frames per burst mode is auto search.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:MODE?
Description	This query returns the credit auto search mode.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:ASE:MODE? → SMAR
Note	

14.16.6 FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:RESolution

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:RESolution <resolution>
Description	This command sets the credit auto search resolution.
Parameters	<Pt> = Port number <resolution> = <CHARACTER PROGRAM DATA> 1: 1 credits 10: 10 credits 100: 100 credits <i>DEFault = 1</i>
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:ASE:RES 1
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:ASEarch:RESolution?
Description	This query returns the credit auto search resolution.
Parameter	<Pt> = Port number
Response	<resolution> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:ASE:RES? → 1
Note	

14.16.7 FCHannel:PERF:SETup:PORT<Pt>:CREDit:DURation:STEP

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:DURation:STEP <step>
Description	This command sets the Performance Test credit step duration. Unit: Seconds.
Parameters	<Pt> = Port number <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 3, MAXimum = 100000000, DEFault = 10</i>
Response	None.
Example	FCH:PERF:SET:PORT1:CRED:DUR:STEP 5
Note	This setting is not available when Port-to-Port test selected.

Syntax	FCHannel:PERF:SETup:PORT<Pt>:CREDit:DURation:STEP?
Description	This query returns the step duration. Unit: Seconds.
Parameter	<Pt> = Port number
Response	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:SET:PORT1:CRED:DUR:STEP? → 5
Note	

14.17 Performance Test - Result

14.17.1 FCHannel:PERF:RESult:TEST

Syntax	FCHannel:PERF:RESult:TEST <test>
Description	This command selects the test to fetch results from.
Parameter	<test> = <CHARACTER PROGRAM DATA> THRoughput: Throughput test TRPRofile: Traffic Profile LATency: Latency test BURSt: Burst test CREDit: Credit test <i>DEFault = THRoughput</i>
Response	None.
Example	FCH:PERF:RES:TEST LAT
Note	This setting is not stored as part of a settings- or result file.

Syntax	FCHannel:PERF:RESult:TEST?
Description	This query returns the selected test to fetch results from.
Parameter	None.
Response	<test> = <CHARACTER RESPONSE DATA>
Example	FCH:PERF:RES:TEST? → LAT
Note	

14.17.2 FCHannel:PERF:RESult:PORT<Pt>:NSTep?

Syntax	FCHannel:PERF:RESult:PORT<Pt>:NSTep? <dir>
Description	This query returns the number of steps for a given port/direction for the selected test type.
Parameters	<Pt> = Port number <dir> = <CHARACTER PROGRAM DATA> TX = Transmitter RX = Receiver <i>DEFault = TX</i>
Response	<steps> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:RES:PORT1:NST? RX → 6
Note	Can only be used while a Performance test is in memory.

14.17.3 FCHannel:PERF:RESult:PORT<Pt>:SElect

Syntax	FCHannel:PERF:RESult:PORT<Pt>:SElect <dir>, <step>
Description	This command selects the direction and step to fetch results from.
Parameters	<Pt> = Port number <dir> = <CHARACTER PROGRAM DATA> TX = Transmitter RX = Receiver <i>DEFault = TX</i> <step> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, DEFault = 1</i>
Response	None.
Example	FCH:PERF:RES:PORT1:SEL TX, 2
Note	Use the FCHannel:PERF:RESult:PORT<Pt>:NSTep? command (see section 14.17.2) to get the number of steps. This setting is not stored as part of a settings- or result file.

Syntax	FCHannel:PERF:RESult:PORT<Pt>:SElect?
Description	This query returns the selected direction and step to fetch results from.
Parameter	<Pt> = Port number
Response	<dir> = <CHARACTER RESPONSE DATA>
	<step> = <NR1 NUMERIC RESPONSE DATA>
Example	FCH:PERF:RES:PORT1:SEL? → TX, 2
Note	

14.17.4 FCHannel:PERF:RESult:PORT<Pt>:FETCh?

Syntax	FCHannel:PERF:RESult:PORT<Pt>:FETCh? <parameters>
Description	This query fetches the Performance Test results.
Parameters	<Pt> = Port number
	{(<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. Common STEP: Step. Response: <NR1> TFR: Total frames. Response: <NR1> FSIZ: Frame size. Unit: bytes. Response: <NR1> FRAT: Frame rate¹ (only TX). Unit: fps. Response: <NR1> LL: Line load¹ (only TX). Unit: Mbps. Response: <NR2> LLA: Actual line load¹ (only TX). Unit: Mbps. Response: <NR2> THR: Throughput¹ (only RX). Unit: Mbps. Response: <NR2> UTIL: Utilization¹ (only RX). Unit: %. Response: <NR2> Traffic Profile FLOS: Frames lost (only RX). Response: <NR2> LRAT: Loss Rate (only RX). Response: <NR2> Latency LAT: Latency (Min,Max,Avg) (only RX). Unit: us. Response: <NR2> JITT: Jitter (Min,Max,Avg) (only RX). Unit: us. Response: <NR2> Throughput FLOS: Frames lost (only RX). Response: <NR2> Burst BSIZ: Burst size FLOS: Frames lost (only RX). Response: <NR2> BPR: Back Pressure Credit CSIZ: Credit size FLOS: Frames lost (only RX). Response: <NR2>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Expression format: Numeric List Each result is formatted according to the specification in the parameter field.
Example	FCH:PERF:RES:PORT1:FETC? (REP,FSIZ,LL) → (0), (64), (90.0000)
Notes	This query fetches the result from the test, direction and step selected by the FCHannel:PERF:RESult:TEST command (see section 14.17.1) and FCHannel:PERF:RESult:PORT<Pt>:SElect command (see section 14.17.3). If a requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed. ¹ Not available for Burst Test.

Chapter 15

OTN

15.1 Transmitter

15.1.1 OTN:TX<Pt>:INTerface

Syntax	OTN:TX<Pt>:INTerface <mode>
Description	This command sets the used interface of the transmitter.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SFP: SFP/SFP+ optical interface QSFP: QSFP+ optical interface CFP: CFP optical interface CFP2: CFP2 optical interface CFP4: CFP4 optical interface QSFP28ADpt: CFP2-QSFP28 Adaptor interface QSFP28: QSFP28 optical interface <i>DEFault = SFP</i>
Response	None
Example	OTN:TX1:INT SFP
Note	

Syntax	OTN:TX<Pt>:INTerface?
Description	This query returns the used interface.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:INT? → SFP
Note	

15.1.2 OTN:TX<Pt>[:ENABled]

Syntax	OTN:TX<Pt>[:ENABled] <mode>
Description	This command sets the mode of the optical transmitters.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: OFF NORMal: Normal (Optical) THROUGH: Through Rx (pass through mode) OVERwrite: OH Overwrite <i>DEFault = OFF</i>
Response	None
Example	OTN:TX1 OFF
Note	

Syntax	OTN:TX<Pt>[:ENABled]?
Description	This query returns the mode of the optical transmitters.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1? → OFF
Note	

15.1.3 OTN:TX<Pt>:TIMing

Syntax	OTN:TX<Pt>:TIMing <timing>
Description	This command sets the timing source.
Parameters	<Pt> = Port number <timing> = <CHARACTER PROGRAM DATA> INTernal: Internal clock EXTernal: External clock GPS: GPS signal RX: Received clock <i>DEFault = INT</i>
Response	None
Example	OTN:TX1:TIM INT
Note	

Syntax	OTN:TX<Pt>:TIMing?
Description	This query returns the timing source.
Parameter	<Pt> = Port number
Response	<timing> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:TIM? → INT
Note	

15.1.4 OTN:TX<Pt>:MAPPing:CSIGnal

Syntax	OTN:TX<Pt>:MAPPing:CSIGnal <signal>
Description	This command sets the expected client signal structure.
Parameters	<Pt> = Port number <signal> = <CHARACTER PROGRAM DATA> PRBS NUL STM256 STS768 STM64 STS192 STM16 STS48 STM4 STS12 STM1 STS3 STM64S STS192S STM16S STS48S PRBSTRANS NULLTRANS GBE100 GBE40 GBE10

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	GBE ETHERNET FC1200 FC800 FC400 FC200 FC100 10137M 9830M 6144M 4915M 3072M 2457M 1228M 614M MPLS IPV4PDU IPV6PDU <i>DEFault = PRBS</i>
Response	None
Example	OTN:TX2:MAPP:CSIG PRBS
Note	Available for SDH/SONET option: STM256/STS768 STM64/STM64S/STS192/STS192S/STM16/STM16S/STS48/STS48S STM4/STS12/STM1/STS3 PRBSTRANS/NULLTRANS Available for Ethernet option: GBE100/GBE40 GBE10/GBE Available for FC option: FC1200/FC800 FC400/FC200/FC100 Available for CPRI option: 10137M/9830M/6144M/4915M/3072M/2457M/1228M/614M
Syntax	OTN:TX<Pt>:MAPPING:CSIGnal?
Description	This query returns the expected client signal structure.
Parameter	<Pt> = Port number
Response	<signal> = <CHARACTER RESPONSE DATA>
Example	OTN:TX2:MAPP:CSIG? → PRBS
Note	

15.1.5 OTN:TX<Pt>:PATtern

Syntax	OTN:TX<Pt>:PATtern <pattern>
Description	This command sets the pattern type when CSIGNAL is PRBS.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> PRBS9:PRBS9 pattern PRBS11:PRBS11 pattern PRBS15:PRBS15 pattern PRBS20:PRBS20 pattern PRBS23:PRBS23 pattern PRBS29:PRBS29 pattern PRBS31:PRBS31 pattern USER32BIT: User Pattern (32bit) USER2048BIT: User Pattern (2048bit) <i>DEfault = PRBS31</i>
Response	None
Example	OTN:TX2:PATT PRBS31
Note	

Syntax	OTN:TX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	OTN:TX2:PATT? → PRBS31
Note	

15.1.6 OTN:TX<Pt>:PINversion

Syntax	OTN:TX<Pt>:PINversion <inverted>
Description	This command enables or disables PRBS pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEfault = ON</i>
Response	None
Example	OTN:TX1:PINV ON
Note	

Syntax	OTN:TX<Pt>:PINversion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	OTN:TX1:PINV? → 1
Note	

15.1.7 OTN:TX<Pt>:UP32

Syntax	OTN:TX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None
Example	OTN:TX1:UP32 "01101"
Note	

Syntax	OTN:TX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	OTN:TX1:UP32? → "01101"
Note	

15.1.8 OTN:TX<Pt>:UP2K

Syntax	OTN:TX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	OTN:TX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when OTN:TX1:PATT is USER2048BIT

Syntax	OTN:TX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	OTN:TX1:UP2K? → "12DF"
Note	

15.1.9 OTN:TX<Pt>:MAPPING:OUTPutsignal

Syntax	OTN:TX<Pt>:MAPPING:OUTPutsignal <signal>
Description	This command sets OTN output signal.
Parameters	<Pt> = Port number <signal> = <CHARACTER PROGRAM DATA> OTU1 OTU2 OTU2EXTOPU2 OTU1E OTU2E OTU1F OTU2F OTU3 OTU3E1 OTU3E2 OTU4 <i>DEFault = OTU2</i>
Response	None
Example	OTN:TX1:MAPP:OUTP OTU2
Note	

Syntax	OTN:TX<Pt>:MAPPING:OUTPutsignal?
Description	This query returns OTN output signal.
Parameter	<Pt> = Port number
Response	<signal> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:MAPP:OUTP? → OTU2
Note	

15.1.10 OTN:TX<Pt>:FEC

Syntax	OTN:TX<Pt>:FEC <fec>
Description	This command sets OTU FEC control.
Parameters	<Pt> = Port number <fec> = <CHARACTER PROGRAM DATA> NOFec: No forward error correction RS: RS (255,239) <i>DEFault = RS</i>
Response	None
Example	OTN:TX1:FEC RS
Note	

Syntax	OTN:TX<Pt>:FEC?
Description	This query returns OTU FEC control.
Parameter	<Pt> = Port number
Response	<fec> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:FEC? → RS
Note	

15.1.11 OTN:TX<Pt>:MAPPING:MULTIpLexing<stage>

Syntax	OTN:TX<Pt>:MAPPING:MULTIpLexing<stage> <odutype>
Description	This command sets the ODU type of each multiplexing stage.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-3) <odutype> = <CHARACTER PROGRAM DATA> NONE: None ODTU01: ODTU01 ODTU12PT20: ODTU12 (PT=20) ODTU12PT21: ODTU12 (PT=21) ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13PT20: ODTU13 (PT=20) ODTU13PT21: ODTU13 (PT=21) ODTU23PT20: ODTU23 (PT=20) ODTU23PT20EXTOPU2: ODTU23 (PT=20)(Ext. OPU2) ODTU23PT21: ODTU23 (PT=21) ODTU23PT21EXTOPU2: ODTU23 (PT=21)(Ext. OPU2) ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48ODU2: ODTU4.8 (ODU2) ODTU48EXTOPU2: ODTU4.8 (Ext. OPU2) ODTU48ODU2E: ODTU4.8 (ODU2e) ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <i>DEFault = NONE</i>
Response	None
Example	OTN:TX1:MAPP:MULT1 NONE
Note	

Syntax	OTN:TX<Pt>:MAPPING:MULTIpLexing<stage>?
Description	This query returns the ODU type of each multiplexing stage.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-3)
Response	<odutype> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:MAPP:MULT1? → NONE
Note	

15.1.12 OTN:TX<Pt>:MAPPING:LANE

Syntax	OTN:TX<Pt>:MAPPING:LANE <value>
Description	This command sets the LLD lane marker assignment.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List List consist of the value of the lane marker. OTU3: 0 to 3 OTU4: 0 to 19
Response	None.
Example	OTN:TX1:MAPP:LANE (0,1,2,3) OTN:TX1:MAPP:LANE (0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19)
Note	This command can be used on 40/100G

Syntax	OTN:TX<Pt>:MAPPING:LANE?
Description	This query returns the LLD lane marker assignment.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List
Example	OTN:TX1:MAPP:LANE? → (0,1,2,3) → (0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19)
Note	This command can be used on 40/100G

15.1.13 OTN:TX<Pt>:COPY

Syntax	OTN:TX<Pt>:COPY <odutype>,<mode>
Description	This command sets the copy mode of dummy CH.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODTU01 ODTU12 ODTU21 ODTU2TS ODTU13 ODTU23 ODTU31 ODTU3E28 ODTU2E3E1 ODTU3TS ODTU41 ODTU42 ODTU48 ODTU431 ODTU4TS <mode> = <CHARACTER PROGRAM DATA> COPY

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	UNUSe <i>DEFault = COPY</i>
Response	None
Example	OTN:TX1:COPY ODTU01,COPY
Note	

Syntax	OTN:TX<Pt>:COPY? <odutype>
Description	This query returns the copy mode of dummy CH.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODTU01 ODTU12 ODTU21 ODTU2TS ODTU13 ODTU23 ODTU31 ODTU3E28 ODTU2E3E1 ODTU3TS ODTU41 ODTU42 ODTU48 ODTU431 ODTU4TS
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:COPY? ODTU01 → COPY
Note	

15.1.14 OTN:TX<Pt>:CSF

Syntax	OTN:TX<Pt>:CSF <csf>
Description	This command sets the insertion mode of CSF.
Parameters	<Pt> = Port number <csf> = <CHARACTER PROGRAM DATA> GFPT: GFP-T CSF Replacement ETHer: Ethernet Block Replacement <i>DEFault = ETH</i>
Response	None
Example	OTN:TX1:CSF ETH
Note	

Syntax	OTN:TX<Pt>:CSF?
Description	This query returns the insertion mode of CSF.
Parameter	<Pt> = Port number
Response	<csf> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:CSF? → ETH
Note	

15.1.15 OTN:TX<Pt>:FOLLow

Syntax	OTN:TX<Pt>:FOLLow <mode>
Description	This command sets the transmitter setup to follow another setup or not to follow.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> NONE: Do not follow. TX1: Follows setup of the Tx port1. <i>DEFault</i> = <i>NONE</i>
Response	None.
Example	OTN:TX1:FOLL NONE
Note	

Syntax	OTN:TX<Pt>:FOLLow?
Description	This query returns the transmitter setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:TX1:FOLL? → NONE
Note	

15.1.16 OTN:OH:TX<Pt>:OTN:OH

Syntax	OTN:OH:TX<Pt>:OTN:OH <odutype>,<row>,<column>,<data>
Description	This command sets the value of the specified bytes in the OH.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU2E: ODU2e ODU1E: ODU1e ODU2F: ODU2f ODU1F: ODU1f ODUFLEX: ODUFlex ODU3: ODU3 ODU3E1: ODU3e1 ODU3E2: ODU3e2 ODU4: ODU4 ODUC: ODUC <row> = <NUMERIC PROGRAM DATA> OH Row Number (1-4) <column> = <NUMERIC PROGRAM DATA> OH Column Number (1-16) <data> = <NUMERIC PROGRAM DATA> Hexadecimal format Multi frame sequence data. Data length depends on the position of OH. The pattern is padded with zeros until multi frame sequence data length.
Response	None
Example	OTN:OH:TX1:OTN:OH ODU2,3,3,#H1
Note	The parameter error will occur when you specify a position that can not overwrite.

Syntax	OTN:OH:TX<Pt>:OTN:OH? <odutype>,<row>,<column>
Description	This query returns the value of the specified bytes in the OH.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU2E: ODU2e ODU1E: ODU1e ODU2F: ODU2f ODU1F: ODU1f ODUFLEX: ODUFlex ODU3: ODU3 ODU3E1: ODU3e1 ODU3E2: ODU3e2 ODU4: ODU4 ODUC: ODUC <row> = <NUMERIC PROGRAM DATA> OH Row Number (1-4) <column> = <NUMERIC PROGRAM DATA> OH Column Number (1-16)
Response	<data> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	OTN:OH:TX1:OTN:OH? ODU2,3,3 → #1
Note	

15.1.17 OTN:OH:TX<Pt>:OTN:OH:DEFault

Syntax	OTN:OH:TX<Pt>:OTN:OH:DEFault <route>
Description	This command sets all overhead bytes to their default value.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU1E: ODU1e ODU2E: ODU2e ODU1F: ODU1f ODU2F: ODU2f ODUFLEX: ODUFlex ODU3: ODU3 ODU3E1: ODU3e1 ODU3E2: ODU3e2 ODU4: ODU4 ODUC: ODUC
Response	None
Example	OTN:OH:TX1:OTN:OH:DEF ODU2
Note	

15.1.18 OTN:TX<Pt>:TP

Syntax	OTN:TX<Pt>:TP <route>,<tp>
Description	This command sets the TP to be used as the main transmission channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13

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	ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <i>DEFault</i> = <i>ODTU21</i>
	<tp> = <NUMERIC PROGRAM DATA> ODTU01: TP: 1-2 ODTU12(Pt=0x20) TP: 1-4 ODTU12(Pt=0x21) TP: 1-4 ODTU21 TP: 1-8 ODTU2TS TP: 1-8 ODTU13(Pt=0x20) TP: 1-16 ODTU13(Pt=0x21) TP: 1-16 ODTU23(Pt=0x20) TP: 1-4 ODTU23(Pt=0x21) TP: 1-4 ODTU31 TP: 1-32 ODTU3E28 TP: 1-32 ODTU2E3E1 TP: 1-4 ODTU3TS TP: 1-32 ODTU41 TP: 1-80 ODTU42 TP: 1-80 ODTU48 TP: 1-80 ODTU431 TP: 1-80 ODTU4TS TP: 1-80
Response	None
Example	OTN:TX1:TP ODTU01,1
Note	

Syntax	OTN:TX<Pt>:TP? <route>
Description	This query returns the TP to be used as the main transmission channel.
Parameter	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	<tp> = <NUMERIC PROGRAM DATA>
Example	OTN:TX1:TP? ODTU01 → 1
Note	

15.1.19 OTN:TX<Pt>:TS

Syntax	OTN:TX<Pt>:TS <route>,<ts>
Description	This command sets a set of TS(s) to be used as the main transmission channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <i>DEFault</i> = <i>ODTU21</i> (<ts> {,<ts>}) = <EXPRESSION PROGRAM DATA> The format is listed for each parameter.
Response	None
Example	OTN:TX1:TS ODTU12,(1,2)
Note	ODTU01 TS: will become the same value as TP. ODTU12 (PT=0x20) TS: will become the same value as TP. ODTU12 (PT=0x21) TS1: 1-8, TS2: 1-8. Two different TS numbers must be specified. The two values should not overlap. ODTU2.1 TS: 1-8 ODTU2TS TS: 1-8 ODTU13(PT=0x20) TS: will become the same value as TP. ODTU13(PT=0x21) TS: 1-32 ODTU23(PT=0x20) TS: 1-16 ODTU23(PT=0x21) TS: 1-32 ODTU31 TS: 1-32 ODTU3E28 TS: 1-32 ODTU2E3E1 TS: 1-16 ODTU3TS TS: 1-32 ODTU41 TS: 1-80 ODTU42 TS: 1-80 ODTU48 TS: 1-80 ODTU431 TS: 1-80 ODTU4TS TS: 1-80

Syntax	OTN:TX<Pt>:TS? <route>
Description	This command returns a set of TS(s) to be used as the main transmission channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1

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	ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	(<ts> {,<ts>}) = <EXPRESSION RESPONSE DATA> The response format is listed for each parameter.
Example	OTN:TX1:TS? ODTU12 → (1)
Note	

15.1.20 OTN:TX<Pt>:ODUflex:TS

Syntax	OTN:TX<Pt>:ODUflex:TS <ts>
Description	This command sets the size of a TS set to be used in ODUflex.
Parameters	<Pt> = Port number <ts> = <NUMERIC PROGRAM DATA> ODTU2.ts - PRBS/Ethernet: 1-8 ODTUK.ts - FC400: 4 ODTUK.ts - FC800: 7 ODTUK.ts - 3072M: 3 ODTUK.ts - 4915M: 4 ODTUK.ts - 6144M: 5 ODTUK.ts - 9830M: 8 ODTU3.ts - PRBS: 1-32 ODTU4.ts - PRBS: 1-80 ODTU3.ts - Ethernet: 1-32 ODTU4.ts - Ethernet: 1-80 ODTU3.ts - 10137M: 9 ODTU4.ts - 10137M: 8
Response	None
Example	OTN:TX1:ODUF:TS 1

Syntax	OTN:TX<Pt>:ODUflex:TS?
Description	This command returns the size of a TS set to be used in ODUflex.
Parameter	<Pt> = Port number
Response	<ts> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TX1:ODUF:TS? → 1
Note	

15.1.21 OTN:TX<Pt>:ALlocated

Syntax	OTN:TX<Pt>:ALlocated <route>,<allocated>
Description	This command sets the channel allocation.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU1321: ODTU13 (PT=0x21) ODTU2320: ODTU23 (PT=0x20) ODTU2321: ODTU23 (PT=0x21) ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <allocated> = <STRING PROGRAM DATA> "0" : All Allocated "80" : CH1 Unallocated "40" : CH2 Unallocated "20" : CH3 Unallocated "10" : CH4 Unallocated "8" : CH5 Unallocated "4" : CH6 Unallocated "2" : CH7 Unallocated "1" : CH8 Unallocated <i>DEFault = 0</i>
Response	None
Example	OTN:TX1:ALL ODTU12,"0"
Note	

Syntax	OTN:TX<Pt>:ALlocated? <route>
Description	This query returns the channel allocation.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU1321: ODTU13 (PT=0x21) ODTU2320: ODTU23 (PT=0x20) ODTU2321: ODTU23 (PT=0x21) ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	<allocated> = <STRING RESPONSE DATA>
Example	OTN:TX1:ALL? ODTU12 → "0"
Note	

15.1.22 OTN:TX<Pt>:GFP:PTI

Syntax	OTN:TX<Pt>:GFP:PTI <pti>
Description	This command sets GFP-F Payload Type Identifier.
Parameters	<Pt> = Port number <pti> = <NUMERIC PROGRAM DATA> <i>MINimum=#B000, MAXimum=#B111, DEFault=#B000</i>
Response	None
Example	OTN:TX1:GFP:PTI #B000
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:PTI?
Description	This query returns GFP-F Payload Type Identifier.
Parameters	<Pt> = Port number
Response	<pti> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:PTI? → #B000
Note	This command can be used on V2.00 or later

15.1.23 OTN:TX<Pt>:GFP:PFI

Syntax	OTN:TX<Pt>:GFP:PFI <pfi>
Description	This command sets GFP-F Payload Frame check sequence Indicator.
Parameters	<Pt> = Port number <pfi> = <BOOLEAN PROGRAM DATA> <i>DEFault=0</i>
Response	None
Example	OTN:TX1:GFP:PFI 0
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:PFI?
Description	This query returns GFP-F Payload Frame check sequence Indicator.
Parameters	<Pt> = Port number
Response	<pfi> = <BOOLEAN RESPONSE DATA>
Example	OTN:TX1:GFP:PFI? → 0
Note	This command can be used on V2.00 or later

15.1.24 OTN:TX<Pt>:GFP:EXI

Syntax	OTN:TX<Pt>:GFP:EXI <exi>
Description	This command sets GFP-F Extension header Identifier.
Parameters	<Pt> = Port number <exi> = <NUMERIC PROGRAM DATA> <i>MINimum=#B0000, MAXimum=#B0001, DEFault=#B0000</i>
Response	None
Example	OTN:TX1:GFP:EXI #B0000
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:EXI?
Description	This query returns GFP-F Extension header Identifier.
Parameters	<Pt> = Port number
Response	<exi> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:EXI? → #B0000
Note	This command can be used on V2.00 or later

15.1.25 OTN:TX<Pt>:GFP:UPI

Syntax	OTN:TX<Pt>:GFP:UPI <upi>
Description	This command sets GFP-F User Payload Identifier.
Parameters	<Pt> = Port number <upi> = <NUMERIC PROGRAM DATA> <i>MINimum=#B00000000, MAXimum=#B11111111, DEFault=#B00000001</i>
Response	None
Example	OTN:TX1:GFP:UPI #B00000001
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:UPI?
Description	This query returns GFP-F User Payload Identifier.
Parameters	<Pt> = Port number
Response	<upi> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:UPI? → #B00000001
Note	This command can be used on V2.00 or later

15.1.26 OTN:TX<Pt>:GFP:EXTHHeader:CID

Syntax	OTN:TX<Pt>:GFP:EXTHHeader:CID <cid>
Description	This command sets Channel ID of GFP-F extension header.
Parameters	<Pt> = Port number <cid> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None
Example	OTN:TX1:GFP:EXTH:CID 0
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:EXTHHeader:CID?
Description	This query returns Channel ID of GFP-F extension header.
Parameters	<Pt> = Port number
Response	<cid> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:EXTH:CID? → 0
Note	This command can be used on V2.00 or later

15.1.27 OTN:TX<Pt>:GFP:EXTHHeader:SPARe

Syntax	OTN:TX<Pt>:GFP:EXTHHeader:SPARe <spare>
Description	This command sets spare field of GFP-F extension header.
Parameters	<Pt> = Port number <spare> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=255, DEFault=0</i>
Response	None
Example	OTN:TX1:GFP:EXTH:SPAR 0
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:EXTHHeader:SPARe?
Description	This query returns spare field of GFP-F extension header.
Parameters	<Pt> = Port number
Response	<spare> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:EXTH:SPAR? → 0
Note	This command can be used on V2.00 or later

15.1.28 OTN:TX<Pt>:GFP:PTIMes

Syntax	OTN:TX<Pt>:GFP:PTIMes <ptimes>
Description	This command sets GFP-F cHEC Presync Times.
Parameters	<Pt> = Port number <ptimes> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=14, DEFault=1</i>
Response	None
Example	OTN:TX1:GFP:PTIM 1
Note	This command can be used on V2.00 or later

Syntax	OTN:TX<Pt>:GFP:PTIMes?
Description	This query returns GFP-F cHEC Presync Times.
Parameters	<Pt> = Port number
Response	<ptimes> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TX1:GFP:PTIM? → 1
Note	This command can be used on V2.00 or later

15.2 Receiver

15.2.1 OTN:RX<Pt>:INTerface

Syntax	OTN:RX<Pt>:INTerface <mode>
Description	This command sets the used interface or switches off the receiver.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> OFF: Off SFP: SFP / SFP+ optical interface QSFP: QSFP+ optical interface CFP: CFP optical interface CFP2: CFP2 optical interface CFP4: CFP4 optical interface QSFP28ADpt: CFP2-QSFP28 Adaptor interface QSFP28: QSFP28 optical interface <i>DEFault = OFF</i>
Response	None
Example	OTN:RX1:INT OFF
Note	

Syntax	OTN:RX<Pt>:INTerface?
Description	This query returns the mode of the optical receiver.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:INT? → OFF
Note	

15.2.2 OTN:RX<Pt>:MAPPing:CSIGnal

Syntax	OTN:RX<Pt>:MAPPing:CSIGnal <signal>
Description	This command sets the client signal.
Parameters	<Pt> = Port number <signal> = <CHARACTER PROGRAM DATA> PRBS NUL STM256 STS768 STM64 STS192 STM16 STS48 STM4 STS12 STM1 STS3 STM64S STS192S STM16S STS48S PRBSTRANS NULLTRANS GBE100 GBE40 GBE10 GBE ETHERNET

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	FC1200 FC800 FC400 FC200 FC100 10137M 9830M 6144M 4915M 3072M 2457M 1228M 614M MPLS IPV4PDU IPV6PDU <i>DEFault = PRBS</i>
Response	None
Example	OTN:RX1:MAPP:CSIG PRBS
Note	Available for SDH/SONET option: STM256/STS768 STM64/STM64S/STS192/STS192S/STM16/STM16S/STS48/STS48S STM4/STS12/STM1/STS3 PRBSTRANS/NULLTRANS Available for Ethernet option: GBE100/GBE40 GBE10/GBE Available for FC option: FC1200/FC800 FC400/FC200/FC100 Available for CPRI option: 10137M/9830M/6144M/4915M/3072M/2457M/1228M/614M
Syntax	OTN:RX<Pt>:MAPPING:CSIGnal?
Description	This query returns the client signal.
Parameter	<Pt> = Port number
Response	<signal> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:MAPP:CSIG? → PRBS
Note	

15.2.3 OTN:RX<Pt>:PATtern

Syntax	OTN:RX<Pt>:PATtern <pattern>
Description	This command sets the pattern type when CSIGNAL is PRBS.
Parameters	<Pt> = Port number <pattern> = <CHARACTER PROGRAM DATA> PRBS9:PRBS9 pattern PRBS11:PRBS11 pattern PRBS15:PRBS15 pattern PRBS20:PRBS20 pattern PRBS23:PRBS23 pattern PRBS29:PRBS29 pattern PRBS31:PRBS31 pattern USER32BIT: User Pattern (32bit) USER2048BIT: User Pattern (2048bit) <i>DEfault = PRBS31</i>
Response	None
Example	OTN:RX1:PATT PRBS31
Note	

Syntax	OTN:RX<Pt>:PATtern?
Description	This query returns the pattern type.
Parameter	<Pt> = Port number
Response	<pattern> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:PATT? → PRBS31
Note	

15.2.4 OTN:RX<Pt>:PINVersion

Syntax	OTN:RX<Pt>:PINVersion <inverted>
Description	This command enables or disables PRBS pattern inversion.
Parameters	<Pt> = Port number <inverted> = <BOOLEAN PROGRAM DATA> <i>DEfault = ON</i>
Response	None
Example	OTN:RX1:PINV ON
Note	

Syntax	OTN:RX<Pt>:PINVersion?
Description	This query returns the inversion state (enabled/disabled) of the PRBS pattern.
Parameter	<Pt> = Port number
Response	<inverted> = <BOOLEAN RESPONSE DATA>
Example	OTN:RX1:PINV? → 1
Note	

15.2.5 OTN:RX<Pt>:UP32

Syntax	OTN:RX<Pt>:UP32 <pattern>
Description	This command sets the 32 bit wide variable length user defined pattern used when PATtern is USER32BIT.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use binary digits '0' and '1' to describe the pattern. The string must consist of 1 to 32 characters (one bit resolution).
Response	None
Example	OTN:RX1:UP32 "01101"
Note	

Syntax	OTN:RX<Pt>:UP32?
Description	This query returns the 32 bit wide user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	OTN:RX1:UP32? → "01101"
Note	

15.2.6 OTN:RX<Pt>:UP2K

Syntax	OTN:RX<Pt>:UP2K <pattern>
Description	This command sets the 2048 bit wide user defined pattern.
Parameters	<Pt> = Port number <pattern> = <STRING PROGRAM DATA> Use hexadecimal upper or lower case. The string must consist of 2 to 512 characters (one byte resolution).
Response	None.
Example	OTN:RX1:UP2K "12DF"
Notes	The pattern is padded with zeros until it is a multiple of eight bits long. In effect when OTN:RX1:PATT is USER2048BIT

Syntax	OTN:RX<Pt>:UP2K?
Description	This query returns the 2048 bit user defined pattern.
Parameter	<Pt> = Port number
Response	<pattern> = <STRING RESPONSE DATA>
Example	OTN:RX1:UP2K? → "12DF"
Note	

15.2.7 OTN:RX<Pt>:MAPPING:INPutsignal

Syntax	OTN:RX<Pt>:MAPPING:INPutsignal <signal>
Description	This command sets OTN input signal.
Parameters	<Pt> = Port number <signal> = <CHARACTER PROGRAM DATA> OTU1 OTU2 OTU2EXTOPU2 OTU1E OTU2E OTU1F OTU2F OTU3 OTU3E1 OTU3E2 OTU4 <i>DEFault = OTU2</i>
Response	None
Example	OTN:RX1:MAPP:INP OTU2
Note	

Syntax	OTN:RX<Pt>:MAPPING:INPutsignal?
Description	This query returns OTN input signal.
Parameter	<Pt> = Port number
Response	<signal> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:MAPP:INP? → OTU2
Note	

15.2.8 OTN:RX<Pt>:MAPPING:MULTIpLexing<stage>

Syntax	OTN:RX<Pt>:MAPPING:MULTIpLexing<stage> <odutype>
Description	This command sets the ODU type of each multiplexing stage.
Parameters	<Pt> = Port number
	<stage> = Multiplexing stage (1-3)
	<odutype> = <CHARACTER PROGRAM DATA> NONE: None ODTU01: ODTU01 ODTU12PT20: ODTU12 (PT=20) ODTU12PT21: ODTU12 (PT=21) ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13PT20: ODTU13 (PT=20) ODTU13PT21: ODTU13 (PT=21) ODTU23PT20: ODTU23 (PT=20) ODTU23PT20EXTOPU2: ODTU23 (PT=20)(Ext. OPU2) ODTU23PT21: ODTU23 (PT=21) ODTU23PT21EXTOPU2: ODTU23 (PT=21)(Ext. OPU2) ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48ODU2: ODTU4.8 (ODU2) ODTU48EXTOPU2: ODTU4.8 (Ext. OPU2) ODTU48ODU2E: ODTU4.8 (ODU2e) ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <i>DEFault = NONE</i>
Response	None
Example	OTN:RX1:MAPP:MULT1 NONE
Note	

Syntax	OTN:RX<Pt>:MAPPING:MULTIpLexing<stage>?
Description	This query returns the ODU type of each multiplexing stage.
Parameter	<Pt> = Port number
	<stage> = Multiplexing stage (1-3)
Response	<odutype> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:MAPP:MULT1? → NONE
Note	

15.2.9 OTN:RX<Pt>:FEC

Syntax	OTN:RX<Pt>:FEC <fec>
Description	This command sets OTU FEC control.
Parameters	<Pt> = Port number
	<fec> = <CHARACTER PROGRAM DATA> NOFec: No FEC RS: RS(255,239) <i>DEFault = RS</i>
Response	None
Example	OTN:RX1:FEC RS
Note	

Syntax	OTN:RX<Pt>:FEC?
Description	This query returns OTU FEC control.
Parameter	<Pt> = Port number
Response	<fec> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:FEC? → RS
Note	

15.2.10 OTN:RX<Pt>:FOLLow

Syntax	OTN:RX<Pt>:FOLLow <follow>
Description	This command sets the receiver setup to follow another setup or not to follow.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> NONE: Do not follow. TX: Follows setup of the Tx port. RX1: Follows setup of the Rx port1. <i>DEFault = TX</i>
Response	None.
Example	OTN:RX1:FOLL TX
Note	

Syntax	OTN:RX<Pt>:FOLLow?
Description	This query returns the receiver setup to follow another setup or not to follow.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:FOLL? → TX
Note	

15.2.11 OTN:RX<Pt>:TP

Syntax	OTN:RX<Pt>:TP <route>,<tp>
Description	This command sets the TP to be used as the main received channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <tp> = <NUMERIC PROGRAM DATA> ODTU01: TP: 1-2 ODTU12(Pt=0x20) TP: 1-4 ODTU12(Pt=0x21) TP: 1-4 ODTU21: TP: 1-8 ODTU2TS: TP: 1-8 ODTU13(Pt=0x20) TP: 1-16

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	ODTU13(Pt=0x21) TP: 1-16 ODTU23(Pt=0x20) TP: 1-4 ODTU23(Pt=0x21) TP: 1-4 ODTU31 TP: 1-32 ODTU3E28 TP: 1-4 ODTU2E3E1 TP: 1-32 ODTU3TS TP: 1-32 ODTU41 TP: 1-80 ODTU42 TP: 1-80 ODTU48 TP: 1-80 ODTU431 TP: 1-80 ODTU4TS TP: 1-80
Response	None
Example	OTN:RX1:TP ODTU01,1
Note	

Syntax	OTN:RX<Pt>:TP? <route>
Description	This query returns the TP to be used as the main received channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	<tp> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:RX1:TP? ODTU01 → 1
Note	

15.2.12 OTN:RX<Pt>:TS

Syntax	OTN:RX<Pt>:TS <route>,<ts>
Description	This command sets a set of TS(s) to be used as the main received channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1

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	ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts (<ts> {,<ts>}) = <EXPRESSION PROGRAM DATA> The format is listed for each parameter.
Response	None
Example	OTN:RX1:TS ODTU12, (1,2)
Note	ODTU01 TS : 1-2 will become the same value as TP. ODTU12 (PT=0x20) TS : 1-4 will become the same value as TP. ODTU12 (PT=0x21) TS1: 1-8, TS2: 1-8 TS2 must not overlap and TS1. ODTU2.1 TS: 1-8 ODTU2TS TS: 1-8 ODTU13(PT=0x20) TS: will become the same value as TP. ODTU13(PT=0x21) TS: 1-32 ODTU23(PT=0x20) TS: 1-16 ODTU23(PT=0x21) TS: 1-32 ODTU31 TS: 1-32 ODTU3E28 TS: 1-32 ODTU2E3E1 TS: 1-16 ODTU3TS TS: 1-32 ODTU41 TS: 1-80 ODTU42 TS: 1-80 ODTU48 TS: 1-80 ODTU431 TS: 1-80 ODTU4TS TS: 1-80

Syntax	OTN:RX<Pt>:TS? <route>
Description	This command returns a set of TS(s) to be used as the main received channel.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	(<ts> {,<ts>}) = <EXPRESSION RESPONSE DATA> The response format is listed for each parameter.
Example	OTN:RX1:TS? ODTU12 → 1,2
Note	

15.2.13 OTN:RX<Pt>:ODUFlex:TS

Syntax	OTN:RX<Pt>:ODUFlex:TS <ts>
Description	This command sets the size of a TS set to be used in ODUFlex.
Parameters	<Pt> = Port number

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	<ts> = <NUMERIC PROGRAM DATA> ODTU2.ts: PRBS/Ethernet: 1-8 ODTUk.ts: FC400: 4 ODTUk.ts: FC800: 7 ODTUk.ts - 3072M: 3 ODTUk.ts - 4915M: 4 ODTUk.ts - 6144M: 5 ODTUk.ts - 9830M: 8 ODTU3.ts - PRBS: 1-32 ODTU4.ts - PRBS: 1-80 ODTU3.ts - Ethernet: 1-32 ODTU4.ts - Ethernet: 1-80 ODTU3.ts - 10137M: 9 ODTU4.ts - 10137M: 8
Response	None
Example	OTN:RX1:ODUF:TS 1
Note	

Syntax	OTN:RX<Pt>:ODUflex:TS?
Description	This command returns the size of a TS set to be used in ODUflex.
Parameter	<Pt> = Port number
Response	<ts> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:RX1:ODUF:TS? → 1
Note	

15.2.14 OTN:RX<Pt>:TPTS:DETect

Syntax	OTN:RX<Pt>:TPTS:DETect <route>,<mode>
Description	This commands sets the TP and TS detection mode.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts <mode> = <CHARACTER PROGRAM DATA> MANual: Manual TPDetect: Auto Detect TP TSDetect: Auto Detect TS <i>DEFault = MANual</i>
Response	None
Example	OTN:RX1:TPTS:DET ODTU12,MAN
Note	

Syntax	OTN:RX<Pt>:TPTS:DETect? <route>
Description	This query returns the TP and TS detection mode.
Parameters	<Pt> = Port number <route> = <CHARACTER PROGRAM DATA> ODTU01: ODTU01 ODTU12: ODTU12 ODTU21: ODTU2.1 ODTU2TS: ODTU2.ts ODTU13: ODTU13 ODTU23: ODTU23 ODTU31: ODTU3.1 ODTU3E28: ODTU3e2.8 ODTU2E3E1: ODTU2e3e1 ODTU3TS: ODTU3.ts ODTU41: ODTU4.1 ODTU42: ODTU4.2 ODTU48: ODTU4.8 ODTU431: ODTU4.31 ODTU4TS: ODTU4.ts
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:TPTS:DET? ODTU12 → MAN
Note	

15.2.15 OTN:RX<Pt>:MEAS:TTI:DET

Syntax	OTN:RX<Pt>:MEAS:TTI:DET <type>,<detection>
Description	This command sets TTI detection type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SM PM TCM1 TCM2 TCM3 TCM4 TCM5 TCM6 <detection> = <CHARACTER PROGRAM DATA> OFF: OFF SAPI: SAPI DAPI: DAPI SDAPI: SAPI and DAPI ALL: SAPI, DAPI and Operator Code <i>DEFault = OFF</i>
Response	None
Example	OTN:RX1:MEAS:TTI:DET TCM1,SDAPI
Note	

Syntax	OTN:RX<Pt>:MEAS:TTI:DET? <type>
Description	This query returns TTI detection type.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> SM PM TCM1 TCM2 TCM3 TCM4 TCM5 TCM6
Response	<detection> = <CHARACTER RESPONSE DATA>
Example	OTN:RX1:MEAS:TTI:DET? TCM1 → SDAPI
Note	

15.3 Measurement Setup

15.3.1 OTN:TX<Pt>:MEAS:TTI:ENCoding

Syntax	OTN:TX<Pt>:MEAS:TTI:ENCoding <encoding>
Description	This command sets the TTI encoding standard.
Parameters	<Pt> = Port number <encoding> = <CHARACTER PROGRAM DATA> ITUT: ITU-T ANSI: ANSI <i>DEFault = ITUT</i>
Response	None
Example	OTN:TX1:MEAS:TTI:ENC ITUT
Note	

Syntax	OTN:TX<Pt>:MEAS:TTI:ENCoding?
Description	This query returns the TTI encoding standard.
Parameter	<Pt> = Port number
Response	<encoding> = <CHARACTER PROGRAM DATA>
Example	OTN:TX1:MEAS:TTI:ENC? → ITUT
Note	

15.3.2 OTN:RX<Pt>:MEAS:TCM:ENABle

Syntax	OTN:RX<Pt>:MEAS:TCM:ENABle <enable>
Description	This command enables or disables TCM measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = ON</i>
Response	None
Example	OTN:RX1:MEAS:TCM:ENAB ON
Note	

Syntax	OTN:RX<Pt>:MEAS:TCM:ENABle?
Description	This query returns whether or not TCM measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	OTN:RX1:MEAS:TCM:ENAB? → 1
Note	

15.3.3 OTN:RX<Pt>:MEASurement:PLM

Syntax	OTN:RX<Pt>:MEASurement:PLM <enable>
Description	This command enables or disables PLM measurement.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = ON
Response	None
Example	OTN:RX1:MEAS:PLM ON
Note	

Syntax	OTN:RX<Pt>:MEASurement:PLM?
Description	This query returns whether or not PLM measurement is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	OTN:RX1:MEAS:PLM? → 1
Note	

15.3.4 MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:SETup

Syntax	MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:SETup <type>
Description	This command sets the MSIM detection type.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-3) <type> = <CHARACTER PROGRAM DATA> NONE: None TXDATA: Use Tx OH preset PSI data RECEIVED: Use received PSI data <i>DEFault</i> = NONE
Response	None
Example	MEAS:SET:OTN:RX1:MSIM1:SET NONE
Note	

Syntax	MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:SETup?
Description	This query returns the MSIM detection type.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-3)
Response	<type> = <CHARACTER PROGRAM DATA>
Example	MEAS:SET:OTN:RX1:MSIM1:SET? → NONE
Note	

15.3.5 MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:MSIM?

Syntax	MEASurement:SETup:OTN:RX<Pt>:MSIMdetection<stage>:MSIM?
Description	This query returns the expected MSIM detection pattern.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-3)
Response	<value> = <HEXADECIMAL NUMERIC RESPONSE DATA> The MSIM detection pattern varies depending on the :MSIMdetection<stage>:SETup and the ODU type. ODTU01: PSI[2:3] ODTU12(PT20): PSI[2:5] ODTU12(PT21): PSI[2:9] ODTU21: PSI[2:9] ODTU13(PT20): PSI[2:17] ODTU13(PT21): PSI[2:33] ODTU23(PT20): PSI[2:17] ODTU23(PT20): PSI[2:33] ODTU31: PSI[2:33] ODTU3E28: PSI[2:33] ODTU2E3E1: PSI[2:17] ODTU3TS: PSI[2:33] ODTU41: PSI[2:81] ODTU42: PSI[2:81] ODTU48: PSI[2:81] ODTU431: PSI[2:81] ODTU4TS: PSI[2:81]
Example	MEAS:SET:OTN:RX1:MSIM1:MSIM? → 0
Note	

15.3.6 MEASurement:SETup:PERformance:OTN:RX<Pt>:PARAmeter

Syntax	MEASurement:SETup:PERformance:OTN:RX<Pt>:PARAmeter <param>
Description	This command sets the performance parameter for OTN. Enables/Disables the G.8201 or M.2401 performance evaluation.
Parameters	<Pt> = Port number <param> = <CHARACTER PROGRAM DATA> G8201: G.8201 M2401: M.2401/M.2110 <i>Default = M2401</i>
Response	None
Example	MEAS:SET:PERF:OTN:RX1:PAR G8201
Note	

Syntax	MEASurement:SETup:PERformance:OTN:RX<Pt>:PARAmeter?
Description	This query returns the performance parameter for OTN.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:OTN:RX1:PAR? → G8201
Note	

15.3.7 MEASurement:SETup:PERformance:OTN:RX<Pt>:ALLocation

Syntax	MEASurement:SETup:PERformance:OTN:RX<Pt>:ALLocation <path>,<percentage>
Description	This command sets the allocation percentage for M.2401/M.2110.
Parameters	<Pt> = Port number <path> = <CHARACTER PROGRAM DATA> OTU: ODU: TCMi: i = 1 - 6 <i>DEFault = OTU</i> <number> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=100.00</i>
Response	None
Example	MEAS:SET:PERF:OTN:RX1:ALL OTU,0
Note	

Syntax	MEASurement:SETup:PERformance:OTN:RX<Pt>:ALLocation? <path>
Description	This query returns the allocation percentage for M.2401/M.2110.
Parameters	<Pt> = Port number <path> = <CHARACTER RESPONSE DATA>
Response	<percentage> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:OTN:RX1:ALL? OTU → 0.00
Note	

15.3.8 MEASurement:SETup:PERformance:OTN:TPERiod

Syntax	MEASurement:SETup:PERformance:OTN:TPERiod <period>
Description	This command sets the evaluation period for OTN. For M.2401/M.2110.
Parameter	<period> = <CHARACTER PROGRAM DATA> 15M: 15 minutes 1H: 1 hour 2H: 2 hours 24H: 24 hours 7D: 7 days <i>DEFault = 15M</i>
Response	None
Example	MEAS:SET:PERF:OTN:TPER 15M
Note	

Syntax	MEASurement:SETup:PERformance:OTN:TPERiod?
Description	This query returns the evaluation item for OTN. For M.2401/M.2110.
Response	<period> = <CHARACTER RESPONSE DATA> 15M: 15 minutes 1H: 1 hour 2H: 2 hours 24H: 24 hours 7D: 7 days
Example	MEAS:SET:PERF:OTN:TPER? → 15M
Note	

15.3.9 MEASurement:SETup:PERFormance:OTN:RX<Pt>:OBJectives

Syntax	MEASurement:SETup:PERFormance:OTN:RX<Pt>:OBJectives <sesr>,<bber>
Description	This command sets the Performance Objectives.
Parameters	<Pt> = Port number <sesr> = <NUMERIC PROGRAM DATA> 0.01E-8 to 9.99E-1, default is 1.00E-1 <bber> = <NUMERIC PROGRAM DATA> 0.01E-8 to 9.99E-1, default is 1.00E-1
Response	None
Example	MEAS:SET:PERF:OTN:RX1:OBJ 1.00E-1,1.00E-1
Note	

Syntax	MEASurement:SETup:PERFormance:OTN:RX<Pt>:OBJectives?
Description	This query returns the Performance Objectives.
Parameter	<Pt> = Port number
Responses	<sser> = <NR3 NUMERIC RESPONSE DATA> <bber> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:OTN:RX1:OBJ? → 1.00E-1,1.00E-1
Note	

15.4 Result

15.4.1 OTN:RX<Pt>:IFETch?

Syntax	OTN:RX<Pt>:IFETch? <parameter>
Description	This query returns the results of item specified by the parameter.
Parameters	<Pt> = Port number ({<parameter>} + {,}*) = <EXPRESSION PROGRAM DATA> The response format is listed for each parameter. LLD¹ LOFLLD: LOF Lane OOFLLD: OOF FASLLD: FAS LLD MFASLLD: MFAS LLD LLMLLD: LLM LLD LOR: LOR OOR: OOR OLA: OLA MMAP: Marker Map RSKEW: Relative Skew OTU LOS: LOS LOF: LOF LOM: LOM OOF: OOF FAS: FAS OOM: OOM MFAS: MFAS FECC: FEC-Correctable FECU: FEC-Uncorrectable SMTIM: SM-TIM SMBIAE: SM-BIAE SMBDI: SM-BDI SMIAE: SM-IAE SMBIP8: SM-BIP8 SMBEI: SM-BEI AIS: AIS Stage n ODU (n = 0-3) SnLOFLOM: Stage n LOFLOM ² SnOOF: Stage n OOF SnFAS: Stage n FAS SnOOM: Stage n OOM SnMFAS: Stage n MFAS SnAIS: Stage n AIS SnOCI: Stage n OCI SnLCK: Stage n LCK SnPMTIM: Stage n PM-TIM SnPMBDI: Stage n PM-BDI SnPMBIP8: Stage n PM-BIP8 SnPMBEI: Stage n PM-BEI SnPLM: Stage n PLM SnFSF: Stage n FSF SnFSD: Stage n FSD SnBSF: Stage n BSF SnBSD: Stage n BSD

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SnMSIM: Stage n MSIM ² Client AISC: Client-AIS CSF: CSF LSS: LSS PRBSBIT: PRBS Bit Error CFREQ: Client frequency COFFS: Client frequency offset High-order ODU TCM (i = 1-6) TCMiTIM: TCMi-TIM TCMiBIAE: TCMi-BIAE TCMiBDI: TCMi-BDI TCMiIAE: TCMi-IAE TCMiLTC: TCMi-LTC TCMiBIP8: TCMi-BIP8 TCMiBEI: TCMi-BEI Stage n Justification (n = 0-2) SnFREQ: Stage n Frequency deviation SnINC: Stage n Inc SnINC1: Stage n Inc >1 SnINC2: Stage n Inc >2 SnDEC: Stage n Dec SnDEC1: Stage n Dec >1 SnDEC2: Stage n Dec >2 SnINCO: Stage n Inc Over SnDECO: Stage n Dec Over SnCRC8: Stage n CRC8 Error SnCRC5: Stage n CRC5 Error SnCMMIN: Stage n Cm(t) Minimum SnCMMAX: Stage n Cm(t) Maximum SnPJC: Stage n PJC SnPJC2: Stage n 2PJC SnPJC3: Stage n 3PJC SnNJC: Stage n NJC SnNJC2: Stage n 2NJC GFP GTFR: GFP-F Total Frame GIFR: GFP-F Idle Frame GCFR: GFP-F Client Frame GSSF: GFP-F SSF GCMFSIG: GFP-F CMF Loss of Signal GCMFSYNC: GFP-F CMF Loss of Sync GFCS: GFP-F FCS Error GCHECC: GFP-F/T cHEC correctable errors GCHUCU: GFP-F/T cHEC uncorrectable errors GTHECC: GFP-F/T tHEC correctable errors GTHECU: GFP-F/T tHEC uncorrectable errors GEHECC: GFP-F eHEC correctable errors GEHECU: GFP-F eHEC uncorrectable errors GIGFR: GFP-T Invalid GFP Frame GSCRC: GFP-T Superblock CRC Error GCSFSIG: GFP-T CSF Signal GCSFSYNC: GFP-T CSF Sync	
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	GPTI: GFP-F PTI Mismatch GUPI: GFP-F UPI Mismatch GTTFR: GFP-F Tx Total Frame GTIFR: GFP-F Tx Idle Frame GTCFR: GFP-F Tx Client Frame GTCMF: GFP-F Tx CMF OTU Performance NSTAT, FSTAT: Near-end/Far-end Status. Response: <STRING> NSES, FSES: Near-end/Far-end SES. Response: <Count>,<Ratio%> NBBE, FBBE: Near-end/Far-end BBE. Response: <Count>,<Ratio%> NUAS, FUAS: Near-end/Far-end UAS. Response: <Count> Stage n ODU Performance (n = 0-3) SnNSTAT, SnFSTAT, SnBSTAT: Near-end/Far-end/Bidirectional Status. Response: <STRING> SnNSES, SnFSES, SnBSES: Near-end/Far-end/Bidirectional SES. Response: <Count>,<Ratio%> SnNBBE, SnFBBE, SnBBBE: Near-end/Far-end/Bidirectional BBE. Response: <Count>,<Ratio%> SnNUAS, SnFUAS, SnBUAS: Near-end/Far-end/Bidirectional UAS. Response: <Count> High-order ODU TCMi Performance (i = 1-6) TCMiNSTAT, TCMiFSTAT, TCMiBSTAT: Near-end/Far-end/Bidirectional Status. Response: <STRING> TCMiNSES, TCMiFSES, TCMiBSES: Near-end/Far-end/Bidirectional SES. Response: <Count>,<Ratio%> TCMiNBBE, TCMiFBBE, TCMiBBBE: Near-end/Far-end/Bidirectional BBE. Response: <Count>,<Ratio%> TCMiNUAS, TCMiFUAS, TCMiBUAS: Near-end/Far-end/Bidirectional UAS. Response: <Count>
Response	{(<result>),}* = <EXPRESSION RESPONSE DATA> Format: Numeric List Each result is formatted according to the specification in the parameter field. Values that are not relevant or applicable for the current measurement return NaN (section 1.6.1).
Example	OTN:RX1:IFET? (LOS,LOF,00F) → (3,0.00532),(4,0.00709),(5,0.00887)
Notes	This command fetches the results from the interval selected using the MEASurement:SEtup:SElect command (see section 18.2.2). ¹ Results are only available at OTU3/4. ² This parameter is not available at stage 0. If the requested result is not available, NaN (section 1.6.1) is returned. If there is one or more results, the last ", " is always removed.

15.5 Status

15.5.1 OTN:STATus:RX<Pt>:AESummary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:AESummary[:EVENT]?
Description	This query returns the alarms and errors summary event register. The content of this event register is summarized in DB8 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 (16) Alarm section 5 summary DB6 (32) Alarm section 6 summary DB7 (64) Alarm section 7 summary DB8 (128) Alarm section 8 summary DB9 (256) Alarm section 9 summary DB10 (512) Alarm section 10 summary DB11 (1024) Error section 1 summary DB12 (2048) Error section 2 summary DB13 (4096) Error section 3 summary DB14 (8192) Error section 4 summary DB15 (16384) Error section 5 summary DB16 (32768) Error section 6 summary
Example	OTN:STAT:RX1:AES? → 65
Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary[:EVENT]?

15.5.2 OTN:STATus:RX<Pt>:AESummary:CONDition?

Syntax	OTN:STATus:RX<Pt>:AESummary:CONDition?
Description	This query returns alarms and errors summary condition register. DB1-DB10 is summary of OTN:STATus:RX<Pt>:ALARm<section>[:EVENT]? DB11-DB16 is summary of OTN:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 (16) Alarm section 5 summary DB6 (32) Alarm section 6 summary DB7 (64) Alarm section 7 summary DB8 (128) Alarm section 8 summary DB9 (256) Alarm section 9 summary DB10 (512) Alarm section 10 summary DB11 (1024) Error section 1 summary DB12 (2048) Error section 2 summary DB13 (4096) Error section 3 summary DB14 (8192) Error section 4 summary DB15 (16384) Error section 5 summary DB16 (32768) Error section 6 summary
Example	OTN:STAT:RX1:AES:COND? → 1024
Note	

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Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition?
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15.5.3 OTN:STATus:RX<Pt>:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:ALARm<section>[:EVENT]?
Description	This query returns the alarms event register. The content of this register is summarized in DB1 through DB10 of the OTN:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Section number (1-10)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.18
Example	OTN:STAT:RX1:ALAR5? → 92
Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary[:EVENT]? OTN:STATus:RX<Pt>:OTU:ASUMmary[:EVENT]? OTN:STATus:RX<Pt>:SONE:ASUMmary[:EVENT]? OTN:STATus:RX<Pt>:STWO:ASUMmary[:EVENT]? OTN:STATus:RX<Pt>:STHRee:ASUMmary[:EVENT]? OTN:STATus:RX<Pt>:CLient:ASUMmary[:EVENT]? OTN:STATus:RX<Pt>:OTU:ALARm<section>[:EVENT]? OTN:STATus:RX<Pt>:SONE:ALARm<section>[:EVENT]? OTN:STATus:RX<Pt>:STWO:ALARm<section>[:EVENT]? OTN:STATus:RX<Pt>:STHRee:ALARm<section>[:EVENT]? OTN:STATus:RX<Pt>:CLient:ALARm<section>[:EVENT]?

15.5.4 OTN:STATus:RX<Pt>:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:ALARm<section>:CONDition?
Description	This query returns the alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-10)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.18
Example	OTN:STAT:RX1:ALAR5:COND? → 0
Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? OTN:STATus:RX<Pt>:OTU:ASUMmary:CONDition? OTN:STATus:RX<Pt>:SONE:ASUMmary:CONDition? OTN:STATus:RX<Pt>:STWO:ASUMmary:CONDition? OTN:STATus:RX<Pt>:STHRee:ASUMmary:CONDition? OTN:STATus:RX<Pt>:CLient:ASUMmary:CONDition? OTN:STATus:RX<Pt>:OTU:ALARm<section>:CONDition? OTN:STATus:RX<Pt>:SONE:ALARm<section>:CONDition? OTN:STATus:RX<Pt>:STWO:ALARm<section>:CONDition? OTN:STATus:RX<Pt>:STHRee:ALARm<section>:CONDition? OTN:STATus:RX<Pt>:CLient:ALARm<section>:CONDition?

Table 15.18: Alarm Items

OTU/ODU Section	1	2	3	4
DB1 (1)	LOS	TCM1-TIM	TCM5-BDI	Client-AIS
DB2 (2)	OTU-AIS	TCM2-TIM	TCM6-BDI	CSF
DB3 (4)	LOF	TCM3-TIM	TCM1-IAE	LSS
DB4 (8)	OOF	TCM4-TIM	TCM2-IAE	LOF-LLD
DB5 (16)	LOM	TCM5-TIM	TCM3-IAE	OOF-LLD
DB6 (32)	OOM	TCM6-TIM	TCM4-IAE	LOR-LLD
DB7 (64)	SM-TIM	TCM1-BIAE	TCM5-IAE	OOD-LLD
DB8 (128)	SM-BIAE	TCM2-BIAE	TCM6-IAE	Not used
DB9 (256)	SM-BDI	TCM3-BIAE	TCM1-LTC	Not used
DB10 (512)	SM-IAE	TCM4-BIAE	TCM2-LTC	Not used
DB11 (1024)	ODU-AIS	TCM5-BIAE	TCM3-LTC	Not used
DB12 (2048)	ODU-LCK	TCM6-BIAE	TCM4-LTC	Not used
DB13 (4096)	ODU-OCI	TCM1-BDI	TCM5-LTC	Not used
DB14 (8192)	PM-TIM	TCM2-BDI	TCM6-LTC	Not used
DB15 (16384)	PM-BDI	TCM3-BDI	PLM	Not used
DB16 (32768)		TCM4-BDI	MSIM	Not used
Stage 1 Section	5	6	7	
DB1 (1)	LOFLOM	TCM3-BIAE	TCM1-LTC	
DB2 (2)	OOF	TCM4-BIAE	TCM2-LTC	
DB3 (4)	OOM	TCM5-BIAE	TCM3-LTC	
DB4 (8)	ODU-AIS	TCM6-BIAE	TCM4-LTC	
DB5 (16)	ODU-LCK	TCM1-BDI	TCM5-LTC	
DB6 (32)	ODU-OCI	TCM2-BDI	TCM6-LTC	
DB7 (64)	PM-TIM	TCM3-BDI	PLM	
DB8 (128)	PM-BDI	TCM4-BDI	Client-AIS	
DB9 (256)	TCM1-TIM	TCM5-BDI	CSF	
DB10 (512)	TCM2-TIM	TCM6-BDI	MSIM	
DB11 (1024)	TCM3-TIM	TCM1-IAE	Not used	
DB12 (2048)	TCM4-TIM	TCM2-IAE	Not used	
DB13 (4096)	TCM5-TIM	TCM3-IAE	Not used	
DB14 (8192)	TCM6-TIM	TCM4-IAE	Not used	
DB15 (16384)	TCM1-BIAE	TCM5-IAE	Not used	
DB16 (32768)	TCM2-BIAE	TCM6-IAE	Not used	
Stage 2 Section	8	9	10	
DB1 (1)	LOFLOM	TCM3-BIAE	TCM1-LTC	
DB2 (2)	OOF	TCM4-BIAE	TCM2-LTC	
DB3 (4)	OOM	TCM5-BIAE	TCM3-LTC	
DB4 (8)	ODU-AIS	TCM6-BIAE	TCM4-LTC	
DB5 (16)	ODU-LCK	TCM1-BDI	TCM5-LTC	
DB6 (32)	ODU-OCI	TCM2-BDI	TCM6-LTC	
DB7 (64)	PM-TIM	TCM3-BDI	PLM	
DB8 (128)	PM-BDI	TCM4-BDI	Client-AIS	
DB9 (256)	TCM1-TIM	TCM5-BDI	CSF	
DB10 (512)	TCM2-TIM	TCM6-BDI	Not used	
DB11 (1024)	TCM3-TIM	TCM1-IAE	Not used	
DB12 (2048)	TCM4-TIM	TCM2-IAE	Not used	
DB13 (4096)	TCM5-TIM	TCM3-IAE	Not used	
DB14 (8192)	TCM6-TIM	TCM4-IAE	Not used	
DB15 (16384)	TCM1-BIAE	TCM5-IAE	Not used	
DB16 (32768)	TCM2-BIAE	TCM6-IAE	Not used	

15.5.5 OTN:STATus:RX<Pt>:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:ERRor<section>[:EVENT]?
Description	This query returns the errors event register. The content of this register is summarized in DB11 through DB16 of the OTN:STATus:RX<Pt>:AESummary:CONDition register.
Parameters	<Pt> = Port number <section> = Section number (1-6)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.19
Response	
Example	OTN:STAT:RX1:ERR1? → 0
Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary[:EVENT]? OTN:STATus:RX<Pt>:OTU:ESUMmary[:EVENT]? OTN:STATus:RX<Pt>:SONE:ESUMmary[:EVENT]? OTN:STATus:RX<Pt>:STWO:ESUMmary[:EVENT]? OTN:STATus:RX<Pt>:STHRee:ESUMmary[:EVENT]? OTN:STATus:RX<Pt>:CLient:ESUMmary[:EVENT]? OTN:STATus:RX<Pt>:OTU:ERRor<section>[:EVENT]? OTN:STATus:RX<Pt>:SONE:ERRor<section>[:EVENT]? OTN:STATus:RX<Pt>:STWO:ERRor<section>[:EVENT]? OTN:STATus:RX<Pt>:STHRee:ERRor<section>[:EVENT]? OTN:STATus:RX<Pt>:CLient:ERRor<section>[:EVENT]?

15.5.6 OTN:STATus:RX<Pt>:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:ERRor<section>:CONDition?
Description	This query returns the errors condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-6)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.19
Example	OTN:STAT:RX1:ERR1:COND? → 0
Note	This command is for compatibility of V2.xx or V1.xx. Following commands are endorsed on V3.00 or later. OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? OTN:STATus:RX<Pt>:OTU:ESUMmary:CONDition? OTN:STATus:RX<Pt>:SONE:ESUMmary:CONDition? OTN:STATus:RX<Pt>:STWO:ESUMmary:CONDition? OTN:STATus:RX<Pt>:STHRee:ESUMmary:CONDition? OTN:STATus:RX<Pt>:CLient:ESUMmary:CONDition? OTN:STATus:RX<Pt>:OTU:ERRor<section>:CONDition? OTN:STATus:RX<Pt>:SONE:ERRor<section>:CONDition? OTN:STATus:RX<Pt>:STWO:ERRor<section>:CONDition? OTN:STATus:RX<Pt>:STHRee:ERRor<section>:CONDition? OTN:STATus:RX<Pt>:CLient:ERRor<section>:CONDition?

Table 15.19: Error Items

OTU/ODU Section	1	2
DB1 (1)	FAS	TCM3-BEI
DB2 (2)	MFAS	TCM4-BEI
DB3 (4)	SM-BIP8	TCM5-BEI
DB4 (8)	SM-BEI	TCM6-BEI
DB5 (16)	FCE	CRC8 Error
DB6 (32)	FUEB	CRC5 Error
DB7 (64)	PM-BIP8	FAS-LLD
DB8 (128)	PM-BEI	ILA/OLA
DB9 (256)	TCM1-BIP8	MFAS LLD
DB10 (512)	TCM2-BIP8	LLM LLD
DB11 (1024)	TCM3-BIP8	Not used
DB12 (2048)	TCM4-BIP8	Not used
DB13 (4096)	TCM5-BIP8	Not used
DB14 (8192)	TCM6-BIP8	Not used
DB15 (16384)	TCM1-BEI	Not used
DB16 (32768)	TCM2-BEI	Not used
Stage 1 Section	3	4
DB1 (1)	FAS	CRC5 Error
DB2 (2)	PM-BIP8	Not used
DB3 (4)	PM-BEI	Not used
DB4 (8)	TCM1-BIP8	Not used
DB5 (16)	TCM2-BIP8	Not used
DB6 (32)	TCM3-BIP8	Not used
DB7 (64)	TCM4-BIP8	Not used
DB8 (128)	TCM5-BIP8	Not used
DB9 (256)	TCM6-BIP8	Not used
DB10 (512)	TCM1-BEI	Not used
DB11 (1024)	TCM2-BEI	Not used
DB12 (2048)	TCM3-BEI	Not used
DB13 (4096)	TCM4-BEI	Not used
DB14 (8192)	TCM5-BEI	Not used
DB15 (16384)	TCM6-BEI	Not used
DB16 (32768)	CRC8 Error	Not used
Stage 2 Section	5	6
DB1 (1)	FAS	cHEC correctable
DB2 (2)	PM-BIP8	cHEC uncorrectable
DB3 (4)	PM-BEI	tHEC correctable
DB4 (8)	TCM1-BIP8	tHEC uncorrectable
DB5 (16)	TCM2-BIP8	Invalid GFP Frame
DB6 (32)	TCM3-BIP8	Superblock CRC
DB7 (64)	TCM4-BIP8	CSF Signal
DB8 (128)	TCM5-BIP8	CSF Sync
DB9 (256)	TCM6-BIP8	Not used
DB10 (512)	TCM1-BEI	Not used
DB11 (1024)	TCM2-BEI	Not used
DB12 (2048)	TCM3-BEI	Not used
DB13 (4096)	TCM4-BEI	Not used
DB14 (8192)	TCM5-BEI	Not used
DB15 (16384)	TCM6-BEI	Not used
DB16 (32768)	PRBS Bit Error	Not used

15.5.7 OTN:STATus:RX<Pt>:MSTage:AESummary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:MSTage:AESummary[:EVENT]?
Description	This query returns the alarms and errors summary event register. The content of this event register is summarized in DB8 of the STATus:INTERface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) OTU Alarm summary DB2 (2) Stage 1 Alarm summary DB3 (4) Stage 2 Alarm summary DB4 (8) Stage 3 Alarm summary DB5 - DB7 NOT USED DB8 (128) Client Alarm summary DB9 (256) OTU Error summary DB10 (512) Stage 1 Error summary DB11 (1024) Stage 2 Error summary DB12 (2048) Stage 3 Error summary DB13 - DB15 NOT USED DB16 (32768) Client Error summary
Example	OTN:STAT:RX1:MST:AES? → 65
Note	

15.5.8 OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition?

Syntax	OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition?
Description	This query returns alarms and errors summary condition register. DB1 is summary of OTN:STATus:RX<Pt>:OTU:ASUMmary[:EVENT]? DB2 is summary of OTN:STATus:RX<Pt>:SONE:ASUMmary[:EVENT]? DB3 is summary of OTN:STATus:RX<Pt>:STWO:ASUMmary[:EVENT]? DB4 is summary of OTN:STATus:RX<Pt>:STHRee:ASUMmary[:EVENT]? DB8 is summary of OTN:STATus:RX<Pt>:CLient:ASUMmary[:EVENT]? DB9 is summary of OTN:STATus:RX<Pt>:OTU:ESUMmary[:EVENT]? DB10 is summary of OTN:STATus:RX<Pt>:SONE:ESUMmary[:EVENT]? DB11 is summary of OTN:STATus:RX<Pt>:STWO:ESUMmary[:EVENT]? DB12 is summary of OTN:STATus:RX<Pt>:STHRee:ESUMmary[:EVENT]? DB16 is summary of OTN:STATus:RX<Pt>:CLient:ESUMmary[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) OTU Alarm summary DB2 (2) Stage 1 Alarm summary DB3 (4) Stage 2 Alarm summary DB4 (8) Stage 3 Alarm summary DB5 - DB7 NOT USED DB8 (128) Client Alarm summary DB9 (256) OTU Error summary DB10 (512) Stage 1 Error summary DB11 (1024) Stage 2 Error summary DB12 (2048) Stage 3 Error summary DB13 - DB15 NOT USED DB16 (32768) Client Error summary
Example	OTN:STAT:RX1:MST:AES:COND? → 1024
Note	

15.5.9 OTN:STATus:RX<Pt>:OTU:ASUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:OTU:ASUMmary[:EVENT]?
Description	This query returns the OTU alarms summary event register. The content of this register is summarized in DB1 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB8 NOT USED DB9 (256) Alarm section 9 summary DB10 - DB16 NOT USED
Example	OTN:STAT:RX1:OTU:ASUM? → 14
Note	

15.5.10 OTN:STATus:RX<Pt>:OTU:ASUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:OTU:ASUMmary:CONDition?
Description	This query returns OTU alarms summary condition register. DB1-DB4/DB9 is summary of OTN:STATus:RX<Pt>:OTU:ALARm<section>:CONDition?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB8 NOT USED DB9 (256) Alarm section 9 summary DB10 - DB16 NOT USED
Example	OTN:STAT:RX1:OTU:ASUM:COND? → 12
Note	

15.5.11 OTN:STATus:RX<Pt>:OTU:ESUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:OTU:ESUMmary[:EVENT]?
Description	This query returns the OTU errors summary event register. The content of this event register is summarized in DB9 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB8 NOT USED DB9 (256) Error section 9 summary DB10 - DB16 NOT USED
Example	OTN:STAT:RX1:OTU:ESUM? → 14
Note	

15.5.12 OTN:STATus:RX<Pt>:OTU:ESUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:OTU:ESUMmary:CONDition?
Description	This query returns OTU errors summary condition register. DB1/DB2/DB9 is summary of OTN:STATus:RX<Pt>:OTU:ERRor<section>:CONDition?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB8 NOT USED DB9 (256) Error section 9 summary DB10 - DB16 NOT USED
Example	OTN:STAT:RX1:OTU:ESUM:COND? → 12
Note	

15.5.13 OTN:STATus:RX<Pt>:OTU:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:OTU:ALARm<section>[:EVENT]?
Description	This query returns the OTU alarms event register. The content of this register is summarized in DB1-DB4/DB9 of the OTN:STATus:RX<Pt>:OTU:ASUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-4,9)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.20
Example	OTN:STAT:RX1:OTU:ALAR5? → 92
Note	

15.5.14 OTN:STATus:RX<Pt>:OTU:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:OTU:ALARm<section>:CONDition?
Description	This query returns the OTU alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-4,9)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.20
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:OTU:ALAR5:COND? → 0
Note	

Table 15.20: Alarm Items

OTU/ODU Section	1	2	3	4
DB1 (1)	LOS	TCM1-TIM	TCM5-BDI	FSF
DB2 (2)	OTU-AIS	TCM2-TIM	TCM6-BDI	FSD
DB3 (4)	LOF	TCM3-TIM	TCM1-IAE	BSF
DB4 (8)	OOF	TCM4-TIM	TCM2-IAE	BSD
DB5 (16)	LOM	TCM5-TIM	TCM3-IAE	Not used
DB6 (32)	OOM	TCM6-TIM	TCM4-IAE	Not used
DB7 (64)	SM-TIM	TCM1-BIAE	TCM5-IAE	Not used
DB8 (128)	SM-BIAE	TCM2-BIAE	TCM6-IAE	Not used
DB9 (256)	SM-BDI	TCM3-BIAE	TCM1-LTC	Not used
DB10 (512)	SM-IAE	TCM4-BIAE	TCM2-LTC	Not used
DB11 (1024)	ODU-AIS	TCM5-BIAE	TCM3-LTC	Not used
DB12 (2048)	ODU-LCK	TCM6-BIAE	TCM4-LTC	Not used
DB13 (4096)	ODU-OCI	TCM1-BDI	TCM5-LTC	Not used
DB14 (8192)	PM-TIM	TCM2-BDI	TCM6-LTC	Not used
DB15 (16384)	PM-BDI	TCM3-BDI	PLM	Not used
DB16 (32768)	Not used	TCM4-BDI	MSIM	Not used
OTL Section	5-8	9		
DB1 (1)	Not used	ILA/OLA		
DB2 (2)	Not used	LOF-OTL		
DB3 (4)	Not used	OOF-OTL		
DB4 (8)	Not used	LOR-OTL		
DB5 (16)	Not used	OOR-OTL		
DB6 (32)	Not used	Not used		
DB7 (64)	Not used	Not used		
DB8 (128)	Not used	Not used		
DB9 (256)	Not used	Not used		
DB10 (512)	Not used	Not used		
DB11 (1024)	Not used	Not used		
DB12 (2048)	Not used	Not used		
DB13 (4096)	Not used	Not used		
DB14 (8192)	Not used	Not used		
DB15 (16384)	Not used	Not used		
DB16 (32768)	Not used	Not used		

15.5.15 OTN:STATus:RX<Pt>:OTU:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:OTU:ERRor<section>[:EVENT]?
Description	This query returns the OTU errors event register. The content of this register is summarized in DB1/DB2/DB9 of the OTN:STATus:RX<Pt>:OTU:ESUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-2,9)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.21
Response	
Example	OTN:STAT:RX1:OTU:ERR1? → 0
Note	

Table 15.21: Error Items

OTU/ODU Section	1	2
DB1 (1)	FAS	TCM3-BEI
DB2 (2)	MFAS	TCM4-BEI
DB3 (4)	SM-BIP8	TCM5-BEI
DB4 (8)	SM-BEI	TCM6-BEI
DB5 (16)	FEC Correctable	CRC8 Error
DB6 (32)	FEC Uncorrectable	CRC5 Error
DB7 (64)	PM-BIP8	Not used
DB8 (128)	PM-BEI	Not used
DB9 (256)	TCM1-BIP8	Not used
DB10 (512)	TCM2-BIP8	Not used
DB11 (1024)	TCM3-BIP8	Not used
DB12 (2048)	TCM4-BIP8	Not used
DB13 (4096)	TCM5-BIP8	Not used
DB14 (8192)	TCM6-BIP8	Not used
DB15 (16384)	TCM1-BEI	Not used
DB16 (32768)	TCM2-BEI	Not used
OTL Section	3-8	9
DB1 (1)	Not used	FAS-OTL
DB2 (2)	Not used	MFAS-OTL
DB3 (4)	Not used	LLM-OTL
DB4 (8)	Not used	Not used
DB5 (16)	Not used	Not used
DB6 (32)	Not used	Not used
DB7 (64)	Not used	Not used
DB8 (128)	Not used	Not used
DB9 (256)	Not used	Not used
DB10 (512)	Not used	Not used
DB11 (1024)	Not used	Not used
DB12 (2048)	Not used	Not used
DB13 (4096)	Not used	Not used
DB14 (8192)	Not used	Not used
DB15 (16384)	Not used	Not used
DB16 (32768)	Not used	Not used

15.5.16 OTN:STATus:RX<Pt>:OTU:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:OTU:ERRor<section>:CONDition?
Description	This query returns the OTU errors condition register query.
Parameters	<Pt> = Port number
	<section> = Section number (1-2,9)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.21
Example	OTN:STAT:RX1:OTU:ERR1:COND? → 0
Note	

15.5.17 OTN:STATus:RX<Pt>:SONE:ASUMmary[:EVENTt]?

Syntax	OTN:STATus:RX<Pt>:SONE:ASUMmary[:EVENTt]?
Description	This query returns the stage1 ODU alarms summary event register. The content of this event register is summarized in DB2 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:SONE:ASUM? → 6
Note	

15.5.18 OTN:STATus:RX<Pt>:SONE:ASUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:SONE:ASUMmary:CONDition?
Description	This query returns stage1 ODU alarms summary condition register. DB1-DB4 is summary of OTN:STATus:RX<Pt>:SONE:ALARm<section>[:EVENTt]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:SONE:ASUM:COND? → 3
Note	

15.5.19 OTN:STATus:RX<Pt>:SONE:ESUMmary[:EVENTt]?

Syntax	OTN:STATus:RX<Pt>:SONE:ESUMmary[:EVENTt]?
Description	This query returns the stage1 ODU errors summary event register. The content of this event register is summarized in DB10 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:SONE:ESUM? → 6
Note	

15.5.20 OTN:STATus:RX<Pt>:SONE:ESUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:SONE:ESUMmary:CONDition?
Description	This query returns stage1 ODU errors summary condition register. DB1/DB2 is summary of OTN:STATus:RX<Pt>:SONE:ERRor<section>:CONDition?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:SONE:ESUM:COND? → 3
Note	

Table 15.22: Alarm Items

ODU Section	1	2	3	4
DB1 (1)	Not used	Not used	Not used	FSF
DB2 (2)	Not used	Not used	Not used	FSD
DB3 (4)	LOFLOM	Not used	Not used	BSF
DB4 (8)	OOF	Not used	Not used	BSD
DB5 (16)	Not used	Not used	Not used	Not used
DB6 (32)	OOM	Not used	Not used	Not used
DB7 (64)	Not used	Not used	Not used	Not used
DB8 (128)	Not used	Not used	Not used	Not used
DB9 (256)	Not used	Not used	Not used	Not used
DB10 (512)	Not used	Not used	Not used	Not used
DB11 (1024)	ODU-AIS	Not used	Not used	Not used
DB12 (2048)	ODU-LCK	Not used	Not used	Not used
DB13 (4096)	ODU-OCI	Not used	Not used	Not used
DB14 (8192)	PM-TIM	Not used	Not used	Not used
DB15 (16384)	PM-BDI	Not used	PLM	Not used
DB16 (32768)	Not used	Not used	MSIM	Not used

15.5.21 OTN:STATus:RX<Pt>:SONE:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:SONE:ALARm<section>[:EVENT]?
Description	This query returns the stage1 ODU alarms event register. The content of this register is summarized in DB1-DB4 of the OTN:STATus:RX<Pt>:SONE:ASUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Example	OTN:STAT:RX1:SONE:ALAR4? → 1
Note	

15.5.22 OTN:STATus:RX<Pt>:SONE:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:SONE:ALARm<section>:CONDition?
Description	This query returns the stage1 ODU alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:SONE:ALAR5:COND? → 0
Note	

Table 15.23: Error Items

ODU Section	1	2
DB1 (1)	FAS	Not used
DB2 (2)	Not used	Not used
DB3 (4)	Not used	Not used
DB4 (8)	Not used	Not used
DB5 (16)	Not used	CRC8 Error
DB6 (32)	Not used	CRC5 Error
DB7 (64)	PM-BIP8	Not used
DB8 (128)	PM-BEI	Not used
DB9 (256)	Not used	Not used
DB10 (512)	Not used	Not used
DB11 (1024)	Not used	Not used
DB12 (2048)	Not used	Not used
DB13 (4096)	Not used	Not used
DB14 (8192)	Not used	Not used
DB15 (16384)	Not used	Not used
DB16 (32768)	Not used	Not used

15.5.23 OTN:STATus:RX<Pt>:SONE:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:SONE:ERRor<section>[:EVENT]?
Description	This query returns the stage1 ODU errors event register. The content of this register is summarized in DB1/DB2 of the OTN:STATus:RX<Pt>:SONE:ESUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Response	
Example	OTN:STAT:RX1:SONE:ERR1? → 0
Note	

15.5.24 OTN:STATus:RX<Pt>:SONE:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:SONE:ERRor<section>:CONDition?
Description	This query returns the stage1 ODU errors condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Example	OTN:STAT:RX1:SONE:ERR1:COND? → 0
Note	

15.5.25 OTN:STATus:RX<Pt>:STWO:ASUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STWO:ASUMmary[:EVENT]?
Description	This query returns the stage2 ODU alarms summary event register. The content of this event register is summarized in DB3 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:STWO:ASUM? → 6
Note	

15.5.26 OTN:STATus:RX<Pt>:STWO:ASUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:STWO:ASUMmary:CONDition?
Description	This query returns stage2 ODU errors summary condition register. DB1-DB4 is summary of OTN:STATus:RX<Pt>:STWO:ALARm<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:STWO:ASUM:COND? → 3
Note	

15.5.27 OTN:STATus:RX<Pt>:STWO:ESUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STWO:ESUMmary[:EVENT]?
Description	This query returns the stage2 ODU errors summary event register. The content of this event register is summarized in DB11 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:STWO:ESUM? → 6
Note	

15.5.28 OTN:STATus:RX<Pt>:STWO:ESUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:STWO:ESUMmary:CONDition?
Description	This query returns stage2 ODU errors summary condition register. DB1/DB2 is summary of OTN:STATus:RX<Pt>:STWO:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:STWO:ESUM:COND? → 3
Note	

15.5.29 OTN:STATus:RX<Pt>:STWO:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STWO:ALARm<section>[:EVENT]?
Description	This query returns the stage2 ODU alarms event register. The content of this register is summarized in DB1-DB4 OTN:STATus:RX<Pt>:STWO:ASUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Example	OTN:STAT:RX1:STWO:ALAR5? → 92
Note	

15.5.30 OTN:STATus:RX<Pt>:STWO:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:STWO:ALARm<section>:CONDition?
Description	This query returns the stage2 ODU alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:STWO:ALAR5:COND? → 0
Note	

15.5.31 OTN:STATus:RX<Pt>:STWO:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STWO:ERRor<section>[:EVENT]?
Description	This query returns the stage2 ODU errors event register. The content of this register is summarized in DB1/DB2 of the OTN:STATus:RX<Pt>:STWO:ESUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Response	
Example	OTN:STAT:RX1:STWO:ERR1? → 0
Note	

15.5.32 OTN:STATus:RX<Pt>:STWO:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:STWO:ERRor<section>:CONDition?
Description	This query returns the stage2 ODU errors condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Example	OTN:STAT:RX1:STWO:ERR1:COND? → 0
Note	

15.5.33 OTN:STATus:RX<Pt>:STHRee:ASUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STHRee:ASUMmary[:EVENT]?
Description	This query returns the stage3 ODU alarms summary event register. The content of this event register is summarized in DB4 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:STHR:ASUM? → 6
Note	

15.5.34 OTN:STATus:RX<Pt>:STHRee:ASUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:STHRee:ASUMmary:CONDition?
Description	This query returns stage3 ODU alarms summary condition register. DB1-DB4 is summary of OTN:STATus:RX<Pt>:STHRee:ALARm<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 (4) Alarm section 3 summary DB4 (8) Alarm section 4 summary DB5 - DB16 NOT USED
Example	OTN:STAT:RX1:STHR:ASUM:COND? → 3
Note	

15.5.35 OTN:STATus:RX<Pt>:STHRee:ESUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STHRee:ESUMmary[:EVENT]?
Description	This query returns the stage3 ODU errors summary event register. The content of this event register is summarized in DB12 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:STHR:ESUM? → 6
Note	

15.5.36 OTN:STATus:RX<Pt>:STHRee:ESUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:STHRee:ESUMmary:CONDition?
Description	This query returns stage3 ODU errors summary condition register. DB1/DB2 is summary of OTN:STATus:RX<Pt>:STHRee:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:STHR:ESUM:COND? → 3
Note	

15.5.37 OTN:STATus:RX<Pt>:STHRee:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STHRee:ALARm<section>[:EVENT]?
Description	This query returns the stage3 ODU alarms event register. The content of this register is summarized in DB1-DB4 of the OTN:STATus:RX<Pt>:STHRee:ASUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Example	OTN:STAT:RX1:STHR:ALAR5? → 92
Note	

15.5.38 OTN:STATus:RX<Pt>:STHRee:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:STHRee:ALARm<section>:CONDition?
Description	This query returns the stage3 ODU alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-4)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.22
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:STHR:ALAR5:COND? → 0
Note	

15.5.39 OTN:STATus:RX<Pt>:STHRee:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:STHRee:ERRor<section>[:EVENT]?
Description	This query returns the stage3 ODU errors event register. The content of this register is summarized in DB1/DB2 of the OTN:STATus:RX<Pt>:STHRee:ESUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:STHR:ERR1? → 0
Note	

15.5.40 OTN:STATus:RX<Pt>:STHRee:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:STHRee:ERRor<section>:CONDition?
Description	This query returns the stage3 ODU errors condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.23
Example	OTN:STAT:RX1:STHR:ERR1:COND? → 0
Note	

15.5.41 OTN:STATus:RX<Pt>:CLient:ASUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:CLient:ASUMmary[:EVENT]?
Description	This query returns the client alarms summary event register. The content of this event register is summarized in DB8 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 - DB16 NOT USED
Example	OTN:STAT:RX1:CLI:ASUM? → 1
Note	

15.5.42 OTN:STATus:RX<Pt>:CLient:ASUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:CLient:ASUMmary:CONDition?
Description	This query returns client alarms summary condition register. DB1 is summary of OTN:STATus:RX<Pt>:CLient:ALARm<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 - DB16 NOT USED
Example	OTN:STAT:RX1:CLI:ASUM:COND? → 1
Note	

15.5.43 OTN:STATus:RX<Pt>:CLient:ESUMmary[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:CLient:ESUMmary[:EVENT]?
Description	This query returns the client errors summary event register. The content of this event register is summarized in DB16 of the OTN:STATus:RX<Pt>:MSTage:AESummary:CONDition? register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Error section 1 summary DB2 (2) Error section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:CLI:ESUM? → 2
Note	

15.5.44 OTN:STATus:RX<Pt>:CLient:ESUMmary:CONDition?

Syntax	OTN:STATus:RX<Pt>:CLient:ESUMmary:CONDition?
Description	This query returns client errors summary condition register. DB1/DB2 is summary of OTN:STATus:RX<Pt>:CLient:ERRor<section>[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) Alarm section 1 summary DB2 (2) Alarm section 2 summary DB3 - DB16 NOT USED
Example	OTN:STAT:RX1:CLI:ESUM:COND? → 3
Note	

Table 15.24: Alarm Items

Client Section	1
DB1 (1)	Client-AIS
DB2 (2)	CSF
DB3 (4)	LSS
DB4 (8)	Not used
DB5 (16)	Not used
DB6 (32)	Not used
DB7 (64)	Not used
DB8 (128)	Not used
DB9 (256)	Not used
DB10 (512)	Not used
DB11 (1024)	Not used
DB12 (2048)	Not used
DB13 (4096)	Not used
DB14 (8192)	Not used
DB15 (16384)	Not used
DB16 (32768)	Not used

15.5.45 OTN:STATus:RX<Pt>:CLient:ALARm<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:CLient:ALARm<section>[:EVENT]?
Description	This query returns the client alarms event register. The content of this register is summarized in DB1 of the OTN:STATus:RX<Pt>:CLient:ASUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.24
Example	OTN:STAT:RX1:CLI:ALAR1? → 4
Note	

15.5.46 OTN:STATus:RX<Pt>:CLient:ALARm<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:CLient:ALARm<section>:CONDition?
Description	This query returns the client alarms condition register query.
Parameters	<Pt> = Port number <section> = Section number (1)
Response	<register> = <NR1 NUMERIC RESPONSE DATA> See Table 15.24
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:CLI:ALAR5:COND? → 6
Note	

Table 15.25: Error Items

Client Section	1	2
DB1 (1)	PRBS Bit Error	cHEC Correctable
DB2 (2)	Not used	cHEC Uncorrectable
DB3 (4)	Not used	tHEC Correctable
DB4 (8)	Not used	tHEC Uncorrectable
DB5 (16)	Not used	Invalid GFP Frame
DB6 (32)	Not used	Superblock CRC
DB7 (64)	Not used	CSF Signal
DB8 (128)	Not used	CSF Sync
DB9 (256)	Not used	FCS
DB10 (512)	Not used	eHEC Correctable
DB11 (1024)	Not used	eHEC Uncorrectable
DB12 (2048)	Not used	CMF Loss of Sync.
DB13 (4096)	Not used	CMF Loss of Signal
DB14 (8192)	Not used	SSF
DB15 (16384)	Not used	PTI Mismatch
DB16 (32768)	Not used	UPI Mismatch

15.5.47 OTN:STATus:RX<Pt>:CLient:ERRor<section>[:EVENT]?

Syntax	OTN:STATus:RX<Pt>:CLient:ERRor<section>[:EVENT]?
Description	This query returns the client errors event register. The content of this register is summarized in DB1/DB2 of the OTN:STATus:RX<Pt>:CLient:ESUMmary:CONDition? register.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.25
Response	<register>=<NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:CLI:ERR1? → 0
Note	

15.5.48 OTN:STATus:RX<Pt>:CLient:ERRor<section>:CONDition?

Syntax	OTN:STATus:RX<Pt>:CLient:ERRor<section>:CONDition?
Description	This query returns the client errors condition register query.
Parameters	<Pt> = Port number <section> = Section number (1-2)
Response	<register>=<NR1 NUMERIC RESPONSE DATA> See Table 15.25
Example	OTN:STAT:RX1:CLI:ERR1:COND? → 0
Note	

15.5.49 OTN:STATus:RX<Pt>:PSLevel?

Syntax	OTN:STATus:RX<Pt>:PSLevel?
Description	This query returns the physical signal input level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> " <power> dBm" : Min: "< -27 dBm" , Max: "Exceeds Level" "Module not ready" "Unknown module" "No module"
Example	OTN:STAT:RX1:PSL? → "-12 dBm"
Note	

15.5.50 OTN:STATus:TX<Pt>:PSLevel?

Syntax	OTN:STATus:TX<Pt>:PSLevel?
Description	This query returns the physical signal output level. Unit: dBm.
Parameter	<Pt> = Port number
Response	<signallevel> = <STRING RESPONSE DATA> "<power> dBm" : Min: "< -27 dBm" , Max: "Exceeds Level" "Module not ready" "Unknown module" "No module"
Example	OTN:STAT:TX1:PSL? → "-3 dBm"
Note	

15.5.51 OTN:STATus:RX<Pt>:FREQuency?

Syntax	OTN:STATus:RX<Pt>:FREQuency? <unit>
Description	This query returns the physical frequency error.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million HZ = Hz <i>DEFault = PPM</i>
Response	<signalfreq> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:FREQ? PPM → 3
Note	

15.5.52 OTN:STATus:TX<Pt>:FREQuency?

Syntax	OTN:STATus:TX<Pt>:FREQuency? <unit>
Description	This query returns the physical frequency error.
Parameters	<Pt> = Port number <unit> = <CHARACTER PROGRAM DATA> PPM = Parts per million HZ = Hz <i>DEFault = PPM</i>
Response	<signalfreq> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STAT:TX1:FREQ? PPM → 3
Note	

15.5.53 OTN:STATus:RX<Pt>:CAPTure:OH?

Syntax	OTN:STATus:RX<Pt>:CAPTure:OH? <odutype>,<row>,<column>
Description	This query returns the multi frame sequence data of selected position of OH. Data length depends on the selected position of OH.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU2E: ODU2e ODU1E: ODU1e ODU2F: ODU2f ODU1F: ODU1f ODUFLEX: ODUflex ODU3: ODU3 ODU3E1: ODU3e1 ODU3E2: ODU3e2 ODU4: ODU4 ODUC: ODUC <row> = OH row number(1-4) <column> = OH column number (1-16)
Response	<data> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	OTN:STAT:RX1:CAPT:OH? ODU2,2,16 → #H08
Note	When querying the row 4, columns 15 with this command, it always returns PSI[0].

15.6 Stimuli

15.6.1 OTN:STIMuli:TX<Pt>:TYPE

Syntax	OTN:STIMuli:TX<Pt>:TYPE <type>
Description	Choose the type of alarm/error that is inserted by the command SYSTem:STIMuli:INSert.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> AEINsert: Normal alarm/error GMP: GMP error GFP: GFP error FEC: FEC test error LLD: LLD error/alarm ¹ <i>DEFault = AEINsert</i>
Response	None
Example	OTN:STIM:TX1:TYPE AEIN
Note	¹ LLD error/alarm are only available at OTU3/4.

Syntax	OTN:STIMuli:TX<Pt>:TYPE?
Description	
Parameter	<Pt> = Port number
Response	<type> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:TYPE? → AEIN
Note	

15.6.2 OTN:STIMuli:TX<Pt>:AEINsert:LEVel

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:LEVel <odutype>
Description	This command sets the ODU type to insert the error or alarm.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU2E: ODU2e ODU1E: ODU1e ODU2F: ODU2f ODU1F: ODU1f ODUFLEX: ODUFlex ODU3: ODU3 ODU3E1: ODU3e1 ODU3E2: ODU3e2 ODU4: ODU4 ODUC: ODUC <i>DEFault = ODU2</i>
Response	None
Example	OTN:STIM:TX1:AEIN:LEV ODU2
Note	

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:LEVel?
Description	This query returns the ODU type to insert the error or alarm.
Parameter	<Pt> = Port number
Response	<odutype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:LEV? → ODU2
Note	

15.6.3 OTN:STIMuli:TX<Pt>:AEINsert:TYPE

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:TYPE <aerrortype>
Description	This command sets the type to insert alarm/error.
Parameters	<Pt> = Port number <aerrortype> = <CHARACTER PROGRAM DATA> NONE: (None) BITALL: Bit All FAS: OTU-FAS MFAS: MFAS SMBIP8: SM-BIP8 SMBEI: SM-BEI PMBIP8: PM-BIP8 PMBEI: PM-BEI TCMiBIP8: TCMi-BIP8 (i = 1-6) TCMiBEI: TCMi-BEI (i = 1-6) FASODU: ODU-FAS PRBSBIT: PRBS Bit Error OOOF: OTU-OOOF/LOF OOM: OOM/LOM AISOTU: OTU-AIS SMTIM: SM-TIM SMBIAE: SM-BIAE SMBDI: SM-BDI SMIAE: SM-IAE AISODU: ODU-AIS OCI: ODU-OCI LCK: ODU-LCK PMTIM: PM-TIM PMBDI: PM-BDI TCMiTIM: TCMi-TIM (i = 1-6) TCMiBIAE: TCMi-BIAE (i = 1-6) TCMiIAE: TCMi-IAE (i = 1-6) TCMiBDI: TCMi-BDI (i = 1-6) TCMiLTC: TCMi-LTC (i = 1-6) OOFODU: ODU-OOOF/LOF OOMODU: ODU-OOM/LOM AISC: Client-AIS CSF: CSF FSF: FSF FSD: FSD BSF: BSF BSD: BSD LOS: LOS <i>DEFault = NONE</i>
Response	None
Example	OTN:STIM:TX1:AEIN:TYPE OOF
Note	

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:TYPE?
Description	This query returns the alarm/error insertion type.
Parameter	<Pt> = Port number
Response	<aerrortype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:TYPE? → OOF
Note	

15.6.4 OTN:STIMuli:TX<Pt>:AEINsert:INSert

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:INSert <insertion>
Description	This command sets the method to insert alarm/error.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> SINGle BURSt ALTername RATE ALL <i>DEFault = SINGle</i>
Response	None
Example	OTN:STIM:TX1:AEIN:INS SING
Note	If insertion is set to SINGle, errors are inserted with SYST:STIM:INS. See section 2.3.22.

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:INSert?
Description	This query returns the alarm/error insertion method.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:INS? → SING
Note	

15.6.5 OTN:STIMuli:TX<Pt>:AEINsert:BURSt

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:BURSt <frames>
Description	This command sets the alarm/error burst length to generate.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4300000, DEFault=1</i>
Response	None
Example	OTN:STIM:TX1:AEIN:BURS 1
Note	

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:BURSt?
Description	This query returns the alarm/error burst length to generate.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:BURS? → 1
Note	

15.6.6 OTN:STIMuli:TX<Pt>:AEINsert:AERRor

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:AERRor <frames>
Description	This command sets the alternate alarm/error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=4300000, DEFault=0</i>
Response	None
Example	OTN:STIM:TX1:AEIN:AERR 0
Note	

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:AERRor?
Description	This query returns the alternate alarm/error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:AERR? → 0
Note	

15.6.7 OTN:STIMuli:TX<Pt>:AEINsert:NORMal

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:NORMal <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=4300000, DEFault=1</i> <i>DEFault = 1</i>
Response	None
Example	OTN:STIM:TX1:AEIN:NORM 1
Note	

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:NORMal?
Description	This query returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:NORM? → 1
Note	

15.6.8 OTN:STIMuli:TX<Pt>:AEINsert:RATE

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:RATE <rate>
Description	This command sets the rate to insert errors.
Parameters	<Pt> = Port number <rate> = <CHARACTER PROGRAM DATA> R1E2: 1.0E-2 R1E3: 1.0E-3 R1E4: 1.0E-4 R1E5: 1.0E-5 R1E6: 1.0E-6 R1E7: 1.0E-7 R1E8: 1.0E-8 R1E9: 1.0E-9 R1E10: 1.0E-10 <i>DEFault = R1E9</i>
Response	None
Example	OTN:STIM:TX1:AEIN:RATE R1E9
Note	Available when the insertion mode is Rate. Not all error rates are available for all error types.

Syntax	OTN:STIMuli:TX<Pt>:AEINsert:RATE?
Description	This command returns the rate to insert errors.
Parameter	<Pt> = Port number
Response	<rate> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:AEIN:RATE? → R1E9
Note	

15.6.9 OTN:STIMuli:TX<Pt>:JUSTification:LEVel

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:LEVel <odutype>
Description	This command sets the ODU type to adjust the pointer. Only OPuk those are mapped into AMP or BMP are available.
Parameters	<Pt> = Port number <odutype> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU2E: ODU2e ODU3: ODU3 ODU3E1: ODU3e1 <i>DEFault = ODU2</i>
Response	None
Example	OTN:STIM:TX1:JUST:LEV ODU2
Note	

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:LEVel?
Description	This query returns the ODU type to adjust the pointer.
Parameter	<Pt> = Port number
Response	<odutype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:JUST:LEV? → ODU2
Note	

15.6.10 OTN:STIMuli:TX<Pt>:JUSTification:BURSt

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:BURSt <frames>
Description	This command specifies the number of count to move the pointer in the direction over a time.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=100, DEFault=1</i>
Response	None
Example	OTN:STIM:TX1:JUST:BURS 1
Note	

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:BURSt?
Description	This query returns the number of count to move the pointer in the direction over a time.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:JUST:BURS? → 1
Note	

15.6.11 OTN:STIMuli:TX<Pt>:JUSTification:MOVement

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:MOVement <count>
Description	This command sets the OTN pointer movement sequence.
Parameters	<Pt> = Port number <count> = <CHARACTER PROGRAM DATA> POS1: Positive (+1) POS2: Positive (+2) POS3: Positive (+3) NEG1: Negative (-1) NEG2: Negative (-2) <i>DEFault = POS1</i>
Response	None
Example	OTN:STIM:TX1:JUST:MOV POS1
Note	

Syntax	OTN:STIMuli:TX<Pt>:JUSTification:MOVement?
Description	This query returns the OTN pointer movement sequence.
Parameter	<Pt> = Port number
Response	<count> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:JUST:MOV? → POS1
Note	

15.6.12 OTN:STIMuli:TX<Pt>:JMOVE

Syntax	OTN:STIMuli:TX<Pt>:JMOVE
Description	This command moves OTN pointer to instruct pointer.
Parameter	<Pt> = Port number
Response	None
Example	OTN:STIM:TX1:JMOV
Note	

15.6.13 OTN:STIMuli:TX<Pt>:FREQuency:OFFSet

Syntax	OTN:STIMuli:TX<Pt>:FREQuency:OFFSet <offset>
Description	This command sets the frequency offset for the clock source. Unit: ppm.
Parameters	<Pt> = Port number <offset> = <NUMERIC PROGRAM DATA> MT1000A: <i>MINimum=-50, MAXimum=50, DEFault=0</i> MT1100A: <i>MINimum=-200.0, MAXimum=200.0, DEFault = 0.0</i>
Response	None
Example	OTN:STIM:TX1:FREQ:OFFS 0
Note	The offset is applied to the internal clock source only.

Syntax	OTN:STIMuli:TX<Pt>:FREQuency:OFFSet?
Description	This query returns the frequency offset for the clock source. Unit: ppm.
Parameter	<Pt> = Port number
Response	MT1000A: <offset> = <NR1 NUMERIC RESPONSE DATA> MT1100A: <offset> = <NR2 NUMERIC RESPONSE DATA>
Example	MT1000A: OTN:STIM:TX1:FREQ:OFFS? → 0 MT1100A: OTN:STIM:TX1:FREQ:OFFS? → 0.0
Note	

15.6.14 OTN:STIMuli:TX<Pt>:PAYLoad:OFFSet<stage>

Syntax	OTN:STIMuli:TX<Pt>:PAYLoad:OFFSet<stage> <offset>
Description	This command sets the payload offset.
Parameters	<Pt> = Port number <stage> = Multiplexing stage (1-4) <offset> = <NUMERIC PROGRAM DATA> <i>MINimum=-150, MAXimum=150, DEFault=0</i> ODU2/ODU1: -65.6 to 65.6 step 0.1ppm ODTU12: -113.6 to 83.3 step 0.1ppm ODTU01: -131.3 to 65.0 step 0.1ppm ODTUK.xx (GMP): -150.0 to 150.0 step 0.1ppm ODU3: -65.6 to 65.6 step 0.1ppm ODTU23: -95.8 to 101.1 step 0.1ppm ODTU13: -96.3 to 101.3 step 0.1ppm <i>DEFault = 0</i>
Response	None
Example	OTN:STIM:TX1:PAYL:OFFS1 0
Note	This parameter is defined at each multiplexing stage where GMP or AMP is used.

Syntax	OTN:STIMuli:TX<Pt>:PAYLoad:OFFSet<stage>?
Description	This query returns the payload offset.
Parameter	<Pt> = Port number
	<stage> = Multiplexing stage (1-4)
Response	<offset> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:PAYL:OFFS1? → 0
Note	

15.6.15 OTN:STIMuli:TX<Pt>:GMP:AEINsert:LEVel

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:LEVel <stage>
Description	This command sets the multiplexing stage to insert the error. It can be select those have GMP on the current mapping path.
Parameters	<Pt> = Port number
	<stage> = <CHARACTER PROGRAM DATA> ODU2: ODU2 ODU1: ODU1 ODU0: ODU0 ODU3: ODU3 ODU3E2: ODU3e2 ODU4: ODU4 <i>DEFault = ODU2</i>
Response	None
Example	OTN:STIM:TX1:GMP:AEIN:LEV ODU2
Note	

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:LEVel?
Description	This query returns the multiplexing stage to insert the error.
Parameter	<Pt> = Port number
Response	<stage> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:GMP:AEIN:LEV? → ODU2
Note	

15.6.16 OTN:STIMuli:TX<Pt>:GMP:AEINsert:TYPE

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:TYPE <aerrortype>
Description	This command sets the method to insert errors.
Parameters	<Pt> = Port number
	<aerrortype> = <CHARACTER PROGRAM DATA> CRC8: CRC8 Error CRC5: CRC5 Error JC1: Invalid JC1 JC2: Invalid JC2 JC1JC2: Invalid JC1&JC2 <i>DEFault = CRC8</i>
Response	None
Example	OTN:STIM:TX1:GMP:AEIN:TYPE CRC8
Note	

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:TYPE?
Description	This query returns the method to insert errors.
Parameter	<Pt> = Port number
Response	<aerrortype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:GMP:AEIN:TYPE? → CRC8
Note	

15.6.17 OTN:STIMuli:TX<Pt>:GMP:AEINsert:INSert

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:INSert <insertion>
Description	This command sets the stimuli error insertion mode.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> SINGle
Response	None
Example	OTN:STIM:TX1:GMP:AEIN:INS SING
Note	Currently only one insertion mode is available.

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:INSert?
Description	This query returns the stimuli error insertion mode.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:GMP:AEIN:INS? → SING
Note	

15.6.18 OTN:STIMuli:TX<Pt>:GMP:AEINsert:EBITs

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:EBITs <insertion>
Description	This command sets 16-bit value to specify which bits are affected. For some error items, only the lower bits are effective (for example, CRC5 will use lower 5 bits.) UPPER bits of the specified value will be ignored in such a case.
Parameters	<Pt> = Port number <insertion> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000000000000000, <i>MAXimum</i> =#B1111111111111111, <i>DE-Fault</i> =#B1111111111111111
Response	None
Example	OTN:STIM:TX1:GMP:AEIN:EBIT #B1001000001 This command add error into bit 0, 3 and 9.
Note	

Syntax	OTN:STIMuli:TX<Pt>:GMP:AEINsert:EBITs?
Description	This query returns the 16-bit value to specify which bits are affected.
Parameter	<Pt> = Port number
Response	<insertion> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:GMP:AEIN:EBIT? → #B1001000001000000
Note	

15.6.19 OTN:STIMuli:TX<Pt>:GFP:AEINsert:TYPE

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:TYPE <aerrortype>
Description	This command sets the error type of GFP-T and GFP-F.
Parameters	<Pt> = Port number <aerrortype> = <CHARACTER PROGRAM DATA> OFF: Off CHEC: cHEC THEC: tHEC SCRC: Super block CRC (only GFP-T) EHEC: eHEC (only GFP-F) FCSE: FCS error (only GFP-F) CMFSIGNAL: CMF Signal (only GFP-F) CMFSYNC: CMF Sync (only GFP-F) <i>DEFault = OFF</i>
Response	None
Example	OTN:STIM:TX1:GFP:AEIN:TYPE OFF
Note	

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:TYPE?
Description	This query returns the error type of GFP.
Parameter	<Pt> = Port number
Response	<aerrortype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:GFP:AEIN:TYPE? → OFF
Note	

15.6.20 OTN:STIMuli:TX<Pt>:GFP:AEINsert:INSert

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:INSert <insertion>
Description	This command sets the insertion mode of GFP Error.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> SINGle BURSt ALL <i>DEFault = SINGle</i>
Response	None
Example	OTN:STIM:TX1:GFP:AEIN:INS SING
Note	

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:INSert?
Description	This query returns the insertion mode of GFP Error.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:GFP:AEIN:INS? → SING
Note	

15.6.21 OTN:STIMuli:TX<Pt>:GFP:AEINsert:EBITs

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:EBITs <insertion>
Description	This command sets the 16-bit value to specify which bits are affected. For some error items, only the lower bits are effective (for example, CRC5 will use lower 5 bits.) UPPer bits of the specified value will be ignored in such a case.
Parameters	<Pt> = Port number <insertion> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B00000000000000000, <i>MAXimum</i> =#B1111111111111111, <i>DE-Fault</i> =#B1111111111111111
Response	None
Example	OTN:STIM:TX1:GFP:AEIN:EBIT #B1001000001
Note	

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:EBITs?
Description	This query returns the 16-bit value to specify which bits are affected.
Parameter	<Pt> = Port number
Response	<insertion> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:GFP:AEIN:EBIT? → #B1001000001000000
Note	

15.6.22 OTN:STIMuli:TX<Pt>:GFP:AEINsert:BURSt

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:BURSt <frames>
Description	This command sets the alarm/error burst length to generate.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =4300000, <i>DEFault</i> =1
Response	None
Example	OTN:STIM:TX1:GFP:AEIN:BURS 1
Note	

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:BURSt?
Description	This query returns the alarm/error burst length to generate.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:GFP:AEIN:BURS? → 1
Note	

15.6.23 OTN:STIMuli:TX<Pt>:GFP:AEINsert:CMF:INTerval

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:CMF:INTerval <interval>
Description	This command sets the interval time of CMF insertion. Unit: ms.
Parameters	<Pt> = Port number <interval> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =10, <i>MAXimum</i> =2560, <i>DEFault</i> =10
Response	None
Example	OTN:STIM:TX1:GFP:AEIN:CMF:INT 10
Note	

Syntax	OTN:STIMuli:TX<Pt>:GFP:AEINsert:CMF:INTerval?
Description	This query returns the interval time of CMF insertion. Unit: ms.
Parameter	<Pt> = Port number
Response	<interval> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:GFP:AEIN:CMF:INT? → 10
Note	

15.6.24 OTN:STIMuli:TX<Pt>:FEC:AEINsert:TYPE

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:TYPE <aerrortype>
Description	This command sets the error type inserted to FEC.
Parameters	<Pt> = Port number <aerrortype> = <CHARACTER PROGRAM DATA> OFF: Off 0182: 0.182 Poisson UNCORRECT: Uncorreticable Error CORRECT: Correctable Error <i>DEFault = OFF</i>
Response	None
Example	OTN:STIM:TX1:FEC:AEIN:TYPE 0182
Note	

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:TYPE?
Description	This query returns the error type inserted to FEC.
Parameter	<Pt> = Port number
Response	<aerrortype> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:FEC:AEIN:TYPE? → 0182
Note	

15.6.25 OTN:STIMuli:TX<Pt>:FEC:AEINsert:INSert

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:INSert?
Description	This query returns the insertion method of FEC error.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA> SINGle RATE
Example	OTN:STIM:TX1:FEC:AEIN:INS? → RATE
Note	

15.6.26 OTN:STIMuli:TX<Pt>:FEC:AEINsert:RMANtissa

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:RMANtissa <mantissa>
Description	This command sets the magnitude of the rate to insert errors.
Parameters	<Pt> = Port number <mantissa> = <NUMERIC PROGRAM DATA> 0.1-9.9 step 0.1 <i>MINimum=0.1, MAXimum=9.9, DEFault=1.0</i>
Response	None
Example	OTN:STIM:TX1:FEC:AEIN:RMAN 1.0
Note	

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:RMANtissa?
Description	This query returns the magnitude of the rate to insert errors.
Parameter	<Pt> = Port number
Response	<mantissa> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:FEC:AEIN:RMAN? → 1.0
Note	

15.6.27 OTN:STIMuli:TX<Pt>:FEC:AEINsert:REXPnent

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:REXPnent <exponent>
Description	This command sets the exponential value of the rate to insert errors.
Parameters	<Pt> = Port number <exponent> = <CHARACTER PROGRAM DATA> R1E2: 1.0E-2 R1E3: 1.0E-3 R1E4: 1.0E-4 R1E5: 1.0E-5 R1E6: 1.0E-6 R1E7: 1.0E-7 R1E8: 1.0E-8 R1E9: 1.0E-9 R1E10: 1.0E-10 <i>DEFault = R1E9</i>
Response	None
Example	OTN:STIM:TX1:FEC:AEIN:REXP R1E9
Note	

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:REXPnent?
Description	This query returns the exponential value of the rate to insert errors.
Parameter	<Pt> = Port number
Response	<exponent> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:FEC:AEIN:REXP? → R1E9
Note	

15.6.28 OTN:STIMuli:TX<Pt>:FEC:AEINsert:EFAS

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:EFAS <insertion>
Description	This command specifies whether to include the error over the whole frame or exclude FAS fields.
Parameters	<Pt> = Port number <insertion> = <BOOLEAN PROGRAM DATA> ON: Includes FAS OFF: Excludes FAS <i>DEFault = OFF</i>
Response	None
Example	OTN:STIM:TX1:FEC:AEIN:EFAS OFF
Note	Available only when the error item is set to O.182 and the insertion mode is Rate. It takes effect when the rate is greater than or equal to 2.0E-3.

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:EFAS?
Description	This query returns status of FAS fields (to include the error over the whole frame or exclude FAS fields)
Parameter	<Pt> = Port number
Response	<insertion> = <BOOLEAN RESPONSE DATA>
Example	OTN:STIM:TX1:FEC:AEIN:EFAS? → 0
Note	

15.6.29 OTN:STIMuli:TX<Pt>:FEC:AEINsert:SUBRow

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:SUBRow <row>
Description	This command specifies the subrow inserting the alarm or the error.
Parameters	<Pt> = Port number <row> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=16, DEFault=1</i>
Response	None
Example	OTN:STIM:TX1:FEC:AEIN:SUBR 1
Note	

Syntax	OTN:STIMuli:TX<Pt>:FEC:AEINsert:SUBRow?
Description	This query returns the subrow inserting the alarm or the error.
Parameter	<Pt> = Port number
Response	<row> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:FEC:AEIN:SUBR? → 1
Note	

15.6.30 OTN:STIMuli:TX<Pt>:LLD:AEINsert:TYPE

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:TYPE <type>
Description	This command sets the type of LLD alarm/error insertion.
Parameter	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> NONE: No alarm or error ALARM: Insert alarm ERROR: Insert error <i>DEFault = NONE</i>
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:TYPE ALARM
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:TYPE?
Description	This query returns the type of LLD alarm/error insertion.
Parameter	<Pt> = Port number
Response	<row> = <CHARACTER PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:AEIN:TYPE? → ALARM
Note	This command can be used on 40/100G

15.6.31 OTN:STIMuli:TX<Pt>:LLD:AEINsert:ALARm

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ALARm <type>
Description	This command sets the type of the Alarm.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> OOFLLD: OOF/LOF OOR: OOR/LOR <i>DEFault = OOFLLD</i>
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:ALAR OOFLLD
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ALARm?
Description	This query returns the type of the Alarm.
Parameter	<Pt> = Port number
Response	<row> = <CHARACTER PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:AEIN:ALAR? → OOFLLD
Note	This command can be used on 40/100G

15.6.32 OTN:STIMuli:TX<Pt>:LLD:AEINsert:ERRor

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ERRor <type>
Description	This command sets the type of the Error.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> FASLLD: FAS-LLD MFASLLD: MFAS-LLD LLMLLD: LLM-LLD <i>DEFault = FASLLD</i>
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:ERR FASLLD
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:ERRor?
Description	This query returns the type of the Error.
Parameter	<Pt> = Port number
Response	<CHARACTER PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:AEIN:ERR? → FASLLD
Note	This command can be used on 40/100G

15.6.33 OTN:STIMuli:TX<Pt>:LLD:AEINsert:INSert

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:INSert <insertion>
Description	This command sets the mode of the insertion.
Parameters	<Pt> = Port number <insertion> = <CHARACTER PROGRAM DATA> BURSt ALternate ALL <i>DEFault = ALL</i>
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:INS ALL
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:INSert?
Description	This query returns the mode of the insertion.
Parameter	<Pt> = Port number
Response	<insertion> = <CHARACTER RESPONSE DATA>
Example	OTN:STIM:TX1:LLD:AEIN:INS? → ALL
Note	This command can be used on 40/100G

15.6.34 OTN:STIMuli:TX<Pt>:LLD:AEINsert:BURSt

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:BURSt <frames>
Description	This command sets the alarm/error burst length to generate.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> 1 to 215000 step 1
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:BURS 1
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:BURSt?
Description	This query returns the alarm/error burst length to generate.
Parameter	<Pt> = Port number
Response	<NUMERIC PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:AEIN:BURS? → 1
Note	This command can be used on 40/100G

15.6.35 OTN:STIMuli:TX<Pt>:LLD:AEINsert:AERRor

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:AERRor <frames>
Description	This command sets the alternate alarm/error length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> 0 to 215000 step 1
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:AERR 0
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:AERRor?
Description	This query returns the alternate alarm/error length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:LLD:AEIN:AERR? → 0
Note	This command can be used on 40/100G

15.6.36 OTN:STIMuli:TX<Pt>:LLD:AEINsert:NORMal

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:NORMal <frames>
Description	This command sets the alternate normal length.
Parameters	<Pt> = Port number <frames> = <NUMERIC PROGRAM DATA> 1 to 215000 step 1
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:NORM 1
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:NORMal?
Description	This command returns the alternate normal length.
Parameter	<Pt> = Port number
Response	<frames> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:LLD:AEIN:NORM? → 1
Note	This command can be used on 40/100G

15.6.37 OTN:STIMuli:TX<Pt>:LLD:AEINsert:LANE

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:LANE <lane>
Description	This command sets the lane On/Off that bit corresponds lane.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B0000000000000000000, <i>MAXimum</i> =#B11111111111111111111, <i>DE-Fault</i> =#B10000000000000000000
Response	None
Example	OTN:STIM:TX1:LLD:AEIN:LANE #B1001000001 This command add error into lane 0, 3 and 9.
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:AEINsert:LANE?
Description	This command returns the lane On/Off that bit corresponds lane.
Parameter	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:LLD:AEIN:LANE? → #B10010000010000000000
Note	This command can be used on 40/100G

15.6.38 OTN:STIMuli:TX<Pt>:LLD:SKEW:LANE

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:LANE <lane>
Description	This command sets lane On/Off of the Tx Lane.
Parameters	<Pt> = Port number <lane> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =#B0000000000000000000, <i>MAXimum</i> =#B1111111111111111111, <i>DE-Fault</i> =#B10000000000000000000
Response	None
Example	OTN:STIM:TX1:LLD:SKEW:LANE #B1001000001 This command add skew into lane 0, 3 and 9.
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:LANE?
Description	This command returns lane On/Off of the Tx Lane.
Parameter	<Pt> = Port number
Response	<lane> = <BINARY NUMERIC RESPONSE DATA>
Example	OTN:STIM:TX1:LLD:SKEW:LANE? → #B10010000010000000000
Note	This command can be used on 40/100G

15.6.39 OTN:STIMuli:TX<Pt>:LLD:SKEW:BIT

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:BIT <bit>
Description	This command sets the number of skew bit.
Parameters	<Pt> = Port number <bit> = <NUMERIC PROGRAM DATA> 0 to 32000 step 1
Response	None
Example	OTN:STIM:TX1:LLD:SKEW:BIT 0
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:BIT?
Description	This command returns the number of skew bit.
Parameter	<Pt> = Port number
Response	<NUMERIC PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:SKEW:BIT? → 0
Note	This command can be used on 40/100G

15.6.40 OTN:STIMuli:TX<Pt>:LLD:SKEW:TYPE

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:TYPE <type>
Description	This command sets type of the insert lane.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> TXLANE: Tx Lane PHYSICALLANE: Physical Lane <i>DEFault = TXLANE</i>
Response	None
Example	OTN:STIM:TX1:LLD:SKEW:TYPE TXLANE
Note	This command can be used on 40/100G

Syntax	OTN:STIMuli:TX<Pt>:LLD:SKEW:TYPE?
Description	This command returns type of the insert lane.
Parameter	<Pt> = Port number
Response	<CHARACTER PROGRAM DATA>
Example	OTN:STIM:TX1:LLD:SKEW:TYPE? → TXLANE
Note	This command can be used on 40/100G

15.7 Tributary Scan

15.7.1 OTN:TSCan:STARt

Syntax	OTN:TSCan:STARt
Description	This command starts the tributary scan test.
Parameter	None.
Response	None.
Example	OTN:TSC:STAR
Note	

15.7.2 OTN:TSCan:STOP

Syntax	OTN:TSCan:STOP
Description	This command stops the tributary scan test.
Parameter	None.
Response	None.
Example	OTN:TSC:STOP
Note	

15.7.3 OTN:TSCan:RX<Pt>:ODU2:NUMBer?

Syntax	OTN:TSCan:RX<Pt>:ODU2:NUMBer?
Description	This query returns the number of ODU2/ODU2e.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TSC:RX1:ODU2:NUMB? → 1
Note	

15.7.4 OTN:TSCan:RX<Pt>:ODU2:GET?

Syntax	OTN:TSCan:RX<Pt>:ODU2:GET?
Description	This query returns the detailed alarm and error information from a ODU2/ODU2e.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that ODU2 #1 is the rst on the list. 0: No alarms or errors. 1: Alarms or errors present.
Example	OTN:TSC:RX1:ODU2:GET? → 0
Note	

15.7.5 OTN:TSCan:RX<Pt>:ODU2:DETAILED?

Syntax	OTN:TSCan:RX<Pt>:ODU2:DETAILED? <number>
Description	
Parameter	<Pt> = Port number <number> = ODU2 number MINimum=1, MAXimum=1
Response	<selected> = <STRING RESPONSE DAT> RXng {ODU2 Order}, separated by one space character. RXn = RX1 or RX2 ODU2-order = ODU2#1 (<alarmerrors>) = <STRING RESPONSE DATA> List of alarms and errors.
Example	OTN:TSC:RX1:ODU2:DET? 1 → "RX1 OTU2#1", ("PM-BDI", "ODU-AIS")
Note	

15.7.6 OTN:TSCan:RX<Pt>:ODU1:NUMBer?

Syntax	OTN:TSCan:RX<Pt>:ODU1:NUMBer?
Description	Description This query returns the number of ODU1/ODU1e.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TSC:RX1:ODU1:NUMB? → 4
Note	

15.7.7 OTN:TSCan:RX<Pt>:ODU1:GET?

Syntax	OTN:TSCan:RX<Pt>:ODU1:GET?
Description	This query returns the state of ODU1/ODU1e.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that ODU1 #1 is the rst on the list. 0: No alarms or errors. 1: Alarms or errors present.
Example	OTN:TSC:RX1:ODU1:GET? → 1
Note	

15.7.8 OTN:TSCan:RX<Pt>:ODU1:SCANning

Syntax	OTN:TSCan:RX<Pt>:ODU1:SCANning <number>
Description	This command sets the ODU1/ODU1e for scanning.
Parameters	<Pt> = Port number <number> = High Order number MINimum=1, MAXimum=4 <i>MINimum=1, MAXimum=4, DEFault=1</i>
Response	None
Example	OTN:TSC:RX1:ODU1:SCAN 2
Note	

Syntax	OTN:TSCan:RX<Pt>:ODU1:SCANning?
Description	This query returns the ODU1/ODU1e for scanning.
Parameter	<Pt> = Port number
Response	<number>= High Order number (1-4)
Example	OTN:TSC:RX1:ODU1:SCAN? → 2
Note	

15.7.9 OTN:TSCan:RX<Pt>:ODU1:DETAiled?

Syntax	OTN:TSCan:RX<Pt>:ODU1:DETAiled? <number>
Description	This query returns the detailed alarm and error information from a ODU1/ODU1e.
Parameter	<Pt> = Port number <number> = ODU1 number MINimum=1, MAXimum=1
Response	<selected> = <STRING RESPONSE DATA> {RXng {ODU2 Order}, separated by one space character. RXn = RX1 or RX2 ODU2-order = ODU2#1 (<alarmerrors>) = <STRING RESPONSE DATA> List of alarms and errors.
Example	OTN:TSC:RX1:ODU1:DET? 1 → "RX1 OTU1#1",("PM-BDI","ODU-AIS")
Note	

15.7.10 OTN:TSCan:RX<Pt>:ODU0:NUMBer?

Syntax	OTN:TSCan:RX<Pt>:ODU0:NUMBer?
Description	This query returns the number of ODU0.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:TSC:RX1:ODU0:NUMB? → 2
Note	

15.7.11 OTN:TSCan:RX<Pt>:ODU0:GET?

Syntax	OTN:TSCan:RX<Pt>:ODU0:GET?
Description	This query returns the state of ODU0.
Parameter	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA> The values are presented in ascending order, meaning that ODU0 #1 is the rst on the list. 0: No alarms or errors. 1: Alarms or errors present.
Example	OTN:TSC:RX1:ODU0:GET? → (0,1,1,0)
Note	

15.7.12 OTN:TSCan:RX<Pt>:ODU0:DETAILED?

Syntax	OTN:TSCan:RX<Pt>:ODU0:DETAILED? <number>
Description	This query returns the detailed alarm and error information from a ODU0.
Parameter	<Pt> = Port number <number> = ODU0 number MINimum=1, MAXimum=1
Response	<selected> = <STRING RESPONSE DATA> {RXng {ODU0 Order}, separated by one space character. RXn = RX1 or RX2 ODU0-order = ODU0#1 (<alarmerrors>) = <STRING RESPONSE DATA> List of alarms and errors.
Example	OTN:TSC:RX1:ODU0:DET? 1 → "RX1 OTU2#:ODU1#1:ODU0#1", ("PM-BDI", "ODU-AIS")
Note	

15.8 APS

15.8.1 OTN:APS:RX<Pt>:BEVent

Syntax	OTN:APS:RX<Pt>:BEVent <event>
Description	This command sets the time reference begin (start) event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> ANYERROR: Any errors LOS: Loss of Signal OTUAIS: OTU-AIS LOF: Loss of Frame OOF: Out of Frame LOM: LOM OOM: OOM SMBIAE: SM-BIAE SMBDI: SM-BDI SMIAE: SM-IAE ODUAIS: ODU-AIS ODUOCI: ODU-OCI ODULCK: ODU-LCK PMBDI: PM-BDI FAS: FAS MFAS: MFAS SMBIP8: SM-BIP8 SMBEI: SM-BEI PMBIP8: PM-BIP8 PMBEI: PM-BEI PERRor: Pattern error LOFLLD: LOF-OTL OOFLLD: OOF-OTL LORLLD: LOR-OTL OORLLD: OOR-OTL FASLLD: FAS-OTL MFASLLD: MFAS-OTL LLMLLD: LLM-OTL <i>DEFault = LOF</i>
Response	None
Example	OTN:APS:RX1:BEV LOF
Note	

Syntax	OTN:APS:RX<Pt>:BEVent?
Description	This query returns the time reference begin (start) event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	OTN:APS:RX1:BEV? → LOF
Note	

15.8.2 OTN:APS:RX<Pt>:EEVent

Syntax	OTN:APS:RX<Pt>:EEVent <event>
Description	This command sets the time reference end (stop) event.
Parameters	<Pt> = Port number <event> = <CHARACTER PROGRAM DATA> ANYERROR: Any errors LOS: Loss of Signal OTUAIS: OTU-AIS LOF: Loss of Frame OOF: Out of Frame LOM: LOM OOM: OOM SMBIAE: SM-BIAE SMBDI: SM-BDI SMIAE: SM-IAE ODUAIS: ODU-AIS ODUOCI: ODU-OCI ODULCK: ODU-LCK PMBDI: PM-BDI FAS: FAS MFAS: MFAS SMBIP8: SM-BIP8 SMBEI: SM-BEI PMBIP8: PM-BIP8 PMBEI: PM-BEI PERRor: Pattern error LOFLLD: LOF-OTL OOFLLD: OOF-OTL LORLLD: LOR-OTL OORLLD: OOR-OTL FASLLD: FAS-OTL MFASLLD: MFAS-OTL LLMLLD: LLM-OTL <i>DEFault = LOF</i>
Response	None
Example	OTN:APS:RX1:EEV LOF
Note	

Syntax	OTN:APS:RX<Pt>:EEVent?
Description	This query returns the time reference end (stop) event.
Parameter	<Pt> = Port number
Response	<event> = <CHARACTER RESPONSE DATA>
Example	OTN:APS:RX1:EEV? → LOF
Note	

15.8.3 OTN:APS:RX<Pt>:PERiod

Syntax	OTN:APS:RX<Pt>:PERiod <period>
Description	This command sets the period that no error/alarm specified by the end event should not be detected.
Parameters	<Pt> = Port number <period> = <NUMERIC PROGRAM DATA> 1,10,100,200,300,400,500,600,700,800,900,1000 Unit ms <i>DEFault = 1</i>
Response	None
Example	OTN:APS:RX1:PER 1
Note	

Syntax	OTN:APS:RX<Pt>:PERiod?
Description	This query returns the period that no error/alarm specified by the end event should not be detected.
Parameter	<Pt> = Port number
Response	<period> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:PER? → 1
Note	

15.8.4 OTN:APS:RX<Pt>:MLIMit

Syntax	OTN:APS:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: ms.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.000, MAXimum = 10000.000, DEFault = 50.000</i>
Response	None
Example	OTN:APS:RX1:MLIM 50.000
Note	

Syntax	OTN:APS:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:MLIM? → 50.000
Note	

15.8.5 OTN:APS:START

Syntax	OTN:APS:START
Description	This command starts the APS (Automatic Protection Switching) measurement.
Parameter	None
Response	None
Example	OTN:APS:STAR
Note	

15.8.6 OTN:APS:STOP

Syntax	OTN:APS:STOP
Description	This command stops the APS (Automatic Protection Switching) measurement.
Parameter	None
Response	None
Example	OTN:APS:STOP
Note	

15.8.7 OTN:APS:RX<Pt>:NUMBer?

Syntax	OTN:APS:RX<Pt>:NUMBer?
Description	This query returns the number of times has measured.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:NUMB? → 17
Note	

15.8.8 OTN:APS:RX<Pt>:MTIME?

Syntax	OTN:APS:RX<Pt>:MTIME?
Description	This query returns the maximum time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
	<limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	OTN:APS:RX1:MTIM? → 4.000,0
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

15.8.9 OTN:APS:RX<Pt>:LTIME?

Syntax	OTN:APS:RX<Pt>:LTIME?
Description	This query returns the least (minimum) time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:LTIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

15.8.10 OTN:APS:RX<Pt>:ATIME?

Syntax	OTN:APS:RX<Pt>:ATIME?
Description	This query returns the average time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:ATIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 10000 ms.

15.8.11 OTN:APS:RX<Pt>:CTIME?

Syntax	OTN:APS:RX<Pt>:CTIME?
Description	This query returns the current time has measured. Unit: ms.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:APS:RX1:CTIM? → 4.000
Note	The maximum measurable time is 10000 ms. The maximum measurable time will be responded if the result exceeds 99999.999 ms.

15.9 RTD

This section document commands for the Round Trip Delay application.
Commands for general RTD settings are described in section 17.1 on page 953.

15.9.1 OTN:RTD:RX<Pt>:MLIMit

Syntax	OTN:RTD:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit. Unit: us.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0, MAXimum = 10000000.0, DEFault = MAXimum</i>
Response	None.
Example	OTN:RTD:RX1:MLIM 0.0
Note	

Syntax	OTN:RTD:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:RTD:RX1:MLIM? → 0.0
Note	

15.9.2 OTN:RTD:RX<Pt>:NUMBer?

Syntax	OTN:RTD:RX<Pt>:NUMBer?
Description	This query returns the number of the RTD data.
Parameter	<Pt> = Port number
Response	<number> = <NR1 NUMERIC RESPONSE DATA>
Example	OTN:RTD:RX1:NUMB? → 2
Note	

15.9.3 OTN:RTD:RX<Pt>:ATIMe?

Syntax	OTN:RTD:RX<Pt>:ATIMe?
Description	This query returns the average time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<avg> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:RTD:RX1:ATIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

15.9.4 OTN:RTD:RX<Pt>:MTIMe?

Syntax	OTN:RTD:RX<Pt>:MTIMe?
Description	This query returns the maximum time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA> <limit exceeded> = <NR1 NUMERIC RESPONSE DATA> Returns 1, if the reference maximum limit has been exceeded.
Example	OTN:RTD:RX1:MTIM? → 1.0,0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

15.9.5 OTN:RTD:RX<Pt>:LTIMe?

Syntax	OTN:RTD:RX<Pt>:LTIMe?
Description	This query returns the least (minimum) time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:RTD:RX1:LTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds the maximum measurable time.

15.9.6 OTN:RTD:RX<Pt>:CTIMe?

Syntax	OTN:RTD:RX<Pt>:CTIMe?
Description	This query returns the current time of RTD. Unit: us.
Parameter	<Pt> = Port number
Response	<min> = <NR2 NUMERIC RESPONSE DATA>
Example	OTN:RTD:RX1:CTIM? → 1.0
Note	The maximum measurable time will be responded if the result exceeds 99999999.9 us.

Chapter 16

Pluggable Module

16.1 Status

16.1.1 PMODule:STATus:PORT<Pt>:PRESent?

Syntax	PMODule:STATus:PORT<Pt>:PRESent?
Description	This query returns if a pluggable module is present and ready.
Parameter	<Pt> = Port number
Response	<present> = <STRING RESPONSE DATA> "OK": Module is present and ready. "N/A": Port off, module not present or not ready.
Example	PMOD:STAT:PORT1:PRES? → "OK"
Note	

16.1.2 PMODule:STATus:PORT<Pt>:VENDor?

Syntax	PMODule:STATus:PORT<Pt>:VENDor?
Description	This query returns the pluggable module vendor name.
Parameter	<Pt> = Port number
Response	<vendor> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:VEND? → "COMPANY"
Note	

16.1.3 PMODule:STATus:PORT<Pt>:WAVelength?

Syntax	PMODule:STATus:PORT<Pt>:WAVelength?
Description	This query returns the pluggable module laser wavelength.
Parameter	<Pt> = Port number
Response	<wavelength> = <STRING RESPONSE DATA> <wavelength max>,<wavelength min> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:WAV? → "1310 nm" PMOD:STAT:PORT1:WAV? → "1310 nm,1295 nm"
Note	Response format is depende on pluggable module. CFP, CFP2, CFP4: <wavelength max>,<wavelength min> Others: <wavelength>

16.1.4 PMODule:STATus:PORT<Pt>:BRATe?

Syntax	PMODule:STATus:PORT<Pt>:BRATe?
Description	This query returns the pluggable module bit rate.
Parameter	<Pt> = Port number
Response	<bitrate> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:BRAT? → "2500 Mbps"
Note	

16.1.5 PMODule:STATus:PORT<Pt>:COMpliance?

Syntax	PMODule:STATus:PORT<Pt>:COMpliance?
Description	This query returns the pluggable module specification compliance.
Parameter	<Pt> = Port number
Response	<compliance> ,<compliance>* = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:COMP? → "10G Base-LR", "VSR2000-3R2", "VSR2000-3R2F"
Note	

16.1.6 PMODule:STATus:PORT<Pt>:PNUMber?

Syntax	PMODule:STATus:PORT<Pt>:PNUMber?
Description	This query returns the vendor part number.
Parameter	<Pt> = Port number
Response	<partnumber> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:PNUM? → "ABC123"
Note	

16.1.7 PMODule:STATus:PORT<Pt>:REVision?

Syntax	PMODule:STATus:PORT<Pt>:REVision?
Description	This query returns the vendor revision level for part number.
Parameter	<Pt> = Port number
Response	<revision> = <STRING RESPONSE DATA> <MSA version>,<HW version>,<SW version> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:REV? → "1A" PMOD:STAT:PORT1:REV? → "2.0,1.0,1.0"
Note	Response format is depende on pluggable module. CFP, CFP2, CFP4: <MSA version>,<HW version>,<SW version> Others: <revision>

16.1.8 PMODule:STATus:PORT<Pt>:SNUMber?

Syntax	PMODule:STATus:PORT<Pt>:SNUMber?
Description	This query returns the vendor serial number.
Parameter	<Pt> = Port number
Response	<serialnumber> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:SNUM? → "ABC123"
Note	

16.1.9 PMODule:STATus:PORT<Pt>:DATE?

Syntax	PMODule:STATus:PORT<Pt>:DATE?
Description	This query returns the vendor date code.
Parameter	<Pt> = Port number
Response	<date> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:DATE? → "2000-01-01"
Note	

16.1.10 PMODule:STATus:PORT<Pt>:LOT?

Syntax	PMODule:STATus:PORT<Pt>:LOT?
Description	This query returns the vendor specific lot code.
Parameter	<Pt> = Port number
Response	<lot> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:LOT? → ""
Note	

16.1.11 PMODule:STATus:PORT<Pt>:TPOWer?

Syntax	PMODule:STATus:PORT<Pt>:TPOWer?
Description	This query returns the transmitter power.
Parameter	<Pt> = Port number
Response	<total_power>{,<lane_n_power>}* = <STRING RESPONSE DATA> <lane_n_power> will be responded when the optical module has multiple lanes.
Example	PMOD:STAT:PORT1:TPOW? → "-1.00dBm"
Note	

16.1.12 PMODule:STATus:PORT<Pt>:RPOWer?

Syntax	PMODule:STATus:PORT<Pt>:RPOWer?
Description	This query returns the receiver power.
Parameter	<Pt> = Port number
Response	<total_power>{,<lane_n_power>}* = <STRING RESPONSE DATA> <lane_n_power> will be responded when the optical module has multiple lanes.
Example	PMOD:STAT:PORT1:RPOW? → "-40.00dBm"
Note	

16.1.13 PMODule:STATus:PORT<Pt>:STATus?

Syntax	PMODule:STATus:PORT<Pt>:STATus?
Description	This query returns the Status of module.
Parameter	<Pt> = Port number
Response	<status> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:STAT? → "Data Ready"
Note	

16.1.14 PMODule:STATus:PORT<Pt>:GALarm?

Syntax	PMODule:STATus:PORT<Pt>:GALarm?
Description	This query returns the Global Alarm of selected module.
Parameter	<Pt> = Port number
Response	<galarm> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:GAL? → "0"
Note	This command can be used on CFP, CFP2, and CFP4.

16.1.15 PMODule:STATus:PORT<Pt>:PALarm?

Syntax	PMODule:STATus:PORT<Pt>:PALarm?
Description	This query returns the programmable alarm of selected module.
Parameter	<Pt> = Port number
Response	<palarm> = <STRING RESPONSE DATA>
Example	PMOD:STAT:PORT1:PAL? → "0,0,0"
Note	This command can be used on CFP, CFP2, and CFP4.

16.1.16 PMODule:STATus:PORT<Pt>:AESummary[:EVENT]?

Syntax	PMODule:STATus:PORT<Pt>:AESummary[:EVENT]?
Description	This query returns the pluggable module alarms and errors summary event register. The content of this event register is summarized in DB10 of the STATus:INTerface:PORT<Pt>:CONDition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 - DB16 = NOT USED
Example	PMOD:STAT:PORT1:AES? → 1
Note	This command can be used on CFP, CFP2, and CFP4.

16.1.17 PMODule:STATus:PORT<Pt>:AESummary:CONDition?

Syntax	PMODule:STATus:PORT<Pt>:AESummary:CONDition?
Description	This query returns the pluggable module alarms and errors summary condition register. DB1 is summary of PMODule:STATus:PORT<Pt>:ALARm[:EVENT]?
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Alarm summary DB2 - DB16 = NOT USED
Example	PMOD:STAT:PORT1:AES:COND?
Note	This command can be used on CFP, CFP2, and CFP4.

16.1.18 PMODule:STATus:PORT<Pt>:ALARm[:EVENT]?

Syntax	PMODule:STATus:PORT<Pt>:ALARm[:EVENT]?
Description	This query returns the alarms event register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Module is not present DB2 (2) = NOT USED DB3 (4) = Global Alarm DB4 (8) = Programmable alarm 1 DB5 (16) = Programmable alarm 2 DB6 (32) = Programmable alarm 3 DB7 - DB16 = NOT USED
Example	PMOD:STAT:PORT1:ALAR?
Note	This command can be used on CFP, CFP2, and CFP4.

16.1.19 PMODule:STATus:PORT<Pt>:ALARm:CONDition?

Syntax	PMODule:STATus:PORT<Pt>:ALARm:CONDition?
Description	This query returns the alarms condition register.
Parameter	<Pt> = Port number
Response	<register> = <NR1 NUMERIC RESPONSE DATA> DB1 (1) = Module is not present DB2 (2) = NOT USED DB3 (4) = Global Alarm DB4 (8) = Programmable alarm 1 DB5 (16) = Programmable alarm 2 DB6 (32) = Programmable alarm 3 DB7 - DB16 = NOT USED
Example	PMOD:STAT:PORT1:ALAR:COND?
Note	This command can be used on CFP, CFP2, and CFP4.

16.2 MDIO

16.2.1 PMODule:PORT<Pt>:MDIO:WRITe

Syntax	PMODule:PORT<Pt>:MDIO:WRITe <addr>,<data>[,<trans>]
Description	MDIO write access.
Parameters	<Pt> = Port number <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <data> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <trans> = <NUMERIC PROGRAM DATA> 0 : TX 1 : RX <i>DEFault = 0</i>
Example	PMOD:PORT1:MDIO:WRIT #H1234,#HFFFF
Note	This command can be used on V3.00 or later. This command support CFP, CFP2, and CFP4.

16.2.2 PMODule:PORT<Pt>:MDIO:READ?

Syntax	PMODule:PORT<Pt>:MDIO:READ? <addr>[,<trans>]
Description	MDIO read access.
Parameter	<Pt> = Port number <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <trans> = <NUMERIC PROGRAM DATA> 0 : TX 1 : RX <i>DEFault = 0</i>
Response	<register> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	PMOD:PORT1:MDIO:READ? #H1234,0 → #HFFFF
Note	This command can be used on V3.00 or later. This command support CFP, CFP2, and CFP4.

16.3 I2C

16.3.1 PMODule:PORT<Pt>:I2C:WRITe

Syntax	PMODule:PORT<Pt>:I2C:WRITe <page>,<addr>,<data>[,<memory>]
Description	I2C write access.
Parameters	<Pt> = Port number <page> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H00, MAXimum=#HFF, DEFault=#H00</i> <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <data> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <i>DEFault = 0</i> <memory> = <NUMERIC PROGRAM DATA> #HA0 or #HA2 : SFP Memory Address. <i>DEFault = #A0</i>
Example	PMOD:PORT1:I2C:WRIT #H00,12,#HFF
Note	This command can be used on V7.02 or later. This command support SFP, SFP+, SFP28, QSFP+, QSFP28 and QSFP28 Adpt.

16.3.2 PMODule:PORT<Pt>:I2C:READ?

Syntax	PMODule:PORT<Pt>:I2C:READ? <page>,<addr>[,<memory>]
Description	I2C read access.
Parameter	<Pt> = Port number <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <memory> = <NUMERIC PROGRAM DATA> #HA0 or #HA2 : SFP Memory Address. <i>DEFault = #HA0</i>
Response	<register> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	PMOD:PORT1:I2C:READ? #H00,12 → #HFFFF
Note	This command can be used on V7.02 or later. This command support SFP, SFP+, SFP28, QSFP+, QSFP28 and QSFP28 Adpt.

16.4 CFP2-QSFP28 Adaptor

16.4.1 PMODule:PORT<Pt>:MDIO:ADPT:WRITe

Syntax	PMODule:PORT<Pt>:MDIO:ADPT:WRITe <addr>,<data>
Description	MDIO write access in Adapter.
Parameters	<Pt> = Port number <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i> <data> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i>
Example	PMOD:PORT1:MDIO:ADPT:WRIT #H8000,#HFFFF
Note	This command can be used with J1756A CFP2-QSFP28 Adaptor.

16.4.2 PMODule:PORT<Pt>:MDIO:ADPT:READ?

Syntax	PMODule:PORT<Pt>:MDIO:ADPT:READ? <addr>
Description	MDIO read access in Adapter.
Parameter	<Pt> = Port number <addr> = <HEXADECIMAL NUMERIC PROGRAM DATA> <i>MINimum=#H0000, MAXimum=#HFFFF, DEFault=#H0000</i>
Response	<register> = <HEXADECIMAL NUMERIC RESPONSE DATA>
Example	PMOD:PORT1:MDIO:ADPT:READ? #H8000 → #HFFFF
Note	This command can be used with J1756A CFP2-QSFP28 Adaptor.

16.5 Tx reference clock output

16.5.1 PMODule:TOUTput:PORT<Pt>[:ENABLE]

Syntax	PMODule:TOUTput:PORT<Pt>[:ENABLE] <enable>
Description	This command enables/disables Tx reference clock output.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	PMOD:TOUT:PORT1 ON
Note	Tx reference clock output can be enabled only one port on the same module. This command can be used on MT1100A.

Syntax	PMODule:TOUTput:PORT<Pt>[:ENABLE]?
Description	This query returns the state of the Tx reference clock output.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	PMOD:TOUT:PORT1? → 1
Note	This command can be used on MT1100A.

16.5.2 PMODule:TOUTput:PORT<Pt>:FREQuency

Syntax	PMODule:TOUTput:PORT<Pt>:FREQuency <frequency>
Description	This command sets the Tx reference clock output frequency on this module.
Parameters	<Pt> = Port number <frequency> = <CHARACTER PROGRAM DATA> DIV16: 1/16 (Tx clock frequency divided by 16) DIV64: 1/64 (Tx clock frequency divided by 64) <i>DEFault = DIV16</i>
Response	None.
Example	PMOD:TOUT:PORT1:FREQ DIV16
Note	This setting applies to all ports on the same module. This command can be used on MT1100A.

Syntax	PMODule:TOUTput:PORT<Pt>:FREQuency?
Description	This query returns the Tx reference clock output frequency on this module.
Parameter	<Pt> = Port number
Response	<frequency> = <CHARACTER RESPONSE DATA>
Example	PMOD:TOUT:PORT1:FREQ? → DIV16
Note	This command can be used on MT1100A.

16.5.3 PMODule:TOUTput:PORT<Pt>:SYNC:FREQuency

Syntax	PMODule:TOUTput:PORT<Pt>:SYNC:FREQuency <frequency>
Description	This command sets the sync clock output frequency on this module.
Parameters	<Pt> = Port number <frequency> = <CHARACTER PROGRAM DATA> Off DIV8: 1/8 (Sync clock frequency divided by 8) DIV16: 1/16 (Sync clock frequency divided by 64) <i>DEFault = DIV16</i>
Response	None.
Example	PMOD:TOUT:PORT1:SYNC:FREQ DIV8
Note	This command can be used on MU110013A. This command can be used when interface type is CFP2 or QSFP28 Adpt..

Syntax	PMODule:TOUTput:PORT<Pt>:SYNC:FREQuency?
Description	This query returns the sync clock output frequency on this module.
Parameter	<Pt> = Port number
Response	<frequency> = <CHARACTER RESPONSE DATA>
Example	PMOD:TOUT:PORT1:SYNC:FREQ? → DIV8
Note	This command can be used on MU110013A.

16.6 tunable SFP

16.6.1 PMODule:PORT<Pt>:TSFP:CHANnel

Syntax	PMODule:PORT<Pt>:TSFP:CHANnel <channel>
Description	This command sets the channel about tunable SFP.
Parameters	<Pt> = Port number <channel> = <NR1 NUMERIC RESPONSE DATA> <i>MINimum=1, MAXimum=65536, DEFault=1</i>
Example	PMOD:PORT1:TSFP:CHAN 10
Note	This command can be used on V7.03 or later.

16.6.2 PMODule:PORT<Pt>:TSFP:CHANnel?

Syntax	PMODule:PORT<Pt>:TSFP:CHANnel?
Description	This query returns the channel about the tunabel SFP.
Parameter	<Pt> = Port number
Response	<channel> = <NR1 NUMERIC RESPONSE DATA>
Example	PMOD:PORT1:TSFP:CHAN? → 10
Note	This command can be used on V7.03 or later.

16.6.3 PMODule:PORT<Pt>:TSFP:WLENgth

Syntax	PMODule:PORT<Pt>:TSFP:WLENgth <channel>
Description	This command sets the wavelength about the tunable SFP.
Parameters	<Pt> = Port number <channel> = <NR3 NUMERIC RESPONSE DATA> <i>MINimum=1, MAXimum=65536, DEFault=1</i>
Example	PMOD:PORT1:TSFP:WLEN 1556.55
Note	This command can be used on V7.03 or later.

16.6.4 PMODule:PORT<Pt>:TSFP:WLENgth?

Syntax	PMODule:PORT<Pt>:TSFP:WLENgth?
Description	This query returns the wavelength about the tunabel SFP.
Parameter	<Pt> = Port number
Response	<channel> = <NR3 NUMERIC RESPONSE DATA>
Example	PMOD:PORT1:TSFP:WLEN? → 1556.55
Note	This command can be used on V7.03 or later.

16.7 Transceiver settings - CFP2-QSFP28 Adaptor

16.7.1 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN:TRACking <enable>
Description	This command enables or disables the tracking for Tx attenuator.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:Q28A:TX:ATTN:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN:TRACking?
Description	This query returns enables or disables the tracking for Tx attenuator.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:ATTN:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.7.2 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx attenuator .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:Q28A:TX:ATTN (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:ATTN?
Description	This query returns the parameter for Tx attenuator.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:ATTN? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.7.3 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx Pre .
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:Q28A:TX:PRE:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx Pre.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:PRE:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.7.4 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:Q28A:TX:PRE (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:PRE? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.7.5 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST:TRACking <enable>
Description	This command enables or disables the tracking for Tx POST.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:Q28A:TX:POST:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST:TRACking?
Description	This query returns enables or disables the tracking for Tx POST.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:POST:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.7.6 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:Q28A:TX:POST (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:TX:POST? → (0)
Note	This command can be used on V7.05 or later If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.7.7 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EAUTo

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EAUTo <enable>
Description	This command enables or disables the Auto RX equalizer.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:Q28A:RX:EAUT OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EAUTo?
Description	This query returns enables or disables the Auto RX equalizer.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:RX:EAUT? → OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

16.7.8 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer:TRACking <enable>
Description	This command enables or disables the tracking for Rx Equalizer.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:Q28A:RX:EQU:TRAC OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer:TRACking?
Description	This query returns enables or disables tracking for Rx Equalizer.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:RX:EQU:TRAC? → OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

16.7.9 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the Rx equalizer value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:Q28A:RX:EQU (0)
Note	This command can be used on V7.05 or later and valid on MU110013A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:EQUalizer?
Description	This query returns the Rx equalizer value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:Q28A:RX:EQU? → (0)
Note	This command can be used on V7.05 or later and valid on MU110013A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.7.10 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:REStore

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:REStore
Description	This command Restore RX Equalizer.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:Q28A:RX:REST
Note	This command can be used on V7.05 or later.

16.7.11 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:AUTotune

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:RX:AUTotune
Description	This command execute autotune for RX Equalizer.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:Q28A:RX:AUT
Note	This command can be used on V7.05 or later.

16.7.12 PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:Q28Adpt:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:Q28A:DEF
Note	This command can be used on V7.05 or later.

16.8 Transceiver settings - CFP2

16.8.1 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN:TRACking <enable>
Description	This command enables or disables the tracking for Tx attenuator.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP2:TX:ATTN:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN:TRACking?
Description	This query returns enables or disables the tracking for Tx attenuator.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:ATTN:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.8.2 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx attenuator.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP2:TX:ATTN (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:ATTN?
Description	This query returns the parameter for Tx attenuator.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:ATTN? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.8.3 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx Pre.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP2:TX:PRE:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx Pre.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:PRE:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.8.4 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP2:TX:PRE (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:PRE? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.8.5 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST:TRACking <enable>
Description	This command enables or disables the tracking for Tx POST.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP2:TX:POST:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST:TRACking?
Description	This query returns enables or disables the tracking for Tx POST.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:POST:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.8.6 PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP2:TX:POST (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:TX:POST? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.8.7 PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EAUTo

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EAUTo <enable>
Description	This command enables or disables the Auto RX equalizer.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP2:RX:EAUT OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EAUTo?
Description	This query returns enables or disables the Auto RX equalizer.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:RX:EAUT? → OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

16.8.8 PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer:TRACking <enable>
Description	This command enables or disables the tracking for Rx Equalizer.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP2:RX:EQU:TRAC OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer:TRACking?
Description	This query returns enables or disables tracking for Rx Equalizer.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:RX:EQU:TRAC? → OFF
Note	This command can be used on V7.05 or later and valid on MU110013A only.

16.8.9 PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the Rx equalizer value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP2:RX:EQU (0)
Note	This command can be used on V7.05 or later and valid on MU110013A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:EQUalizer?
Description	This query returns the Rx equalizer value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP2:RX:EQU? → (0)
Note	This command can be used on V7.05 or later and valid on MU110013A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.8.10 PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:RESTore

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:RESTore
Description	This command Restore RX Equalizer.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CFP2:RX:REST
Note	This command can be used on V7.05 or later.

16.8.11 PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:AUTotune

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:RX:AUTotune
Description	This command execute autotune for RX Equalizer.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CFP2:RX:AUT
Note	This command can be used on V7.05 or later.

16.8.12 PMODule:PORT<Pt>:TRANsceiver:CFP2:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP2:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CFP2:DEF
Note	This command can be used on V7.05 or later.

16.9 Transceiver settings - CXP

16.9.1 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD:TRACking <enable>
Description	This command enables or disables the tracking for Tx VOD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:TX:VOD:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD:TRACking?
Description	This query returns enables or disables the tracking for Tx attenuator.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:VOD:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.2 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for Tx VOD .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:TX:VOD (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:VOD? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.3 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt:TRACking <enable>
Description	This command enables or disables the tracking for Tx First.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:TX:FIRS:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt:TRACking?
Description	This query returns enables or disables the tracking for Tx First.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:FIRS:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.4 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for Tx VOD .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:TX:FIRS (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:FIRSt?
Description	This query returns the parameter for Tx First.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:FIRS? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.5 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx PRE.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:TX:PRE:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx PRE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:PRE:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.6 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for Tx PRE .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:TX:PRE (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:PRE? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.7 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond:TRACking <enable>
Description	This command enables or disables the tracking for Tx Second.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:TX:SEC:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond:TRACking?
Description	This query returns enables or disables the tracking for Tx Second.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:SEC:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.8 PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for Tx Second .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:TX:SEC (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:TX:SECond?
Description	This query returns the parameter for Tx Second.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:TX:SEC? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.9 PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTRol:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTRol:TRACking <enable>
Description	This command enables or disables the tracking for RX Control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:RX:CONT:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTrol:TRACking?
Description	This query returns enables or disables the tracking for RX Control.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:RX:CONT:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.10 PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTrol

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTrol <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for RX Control .
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:RX:CONT (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:CONTrol?
Description	This query returns the parameter for RX Control.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:RX:CONT? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.11 PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain:TRACking <enable>
Description	This command enables or disables the tracking for RX DC Gain.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CXP:RX:DCG:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain:TRACking?
Description	This query returns enables or disables the tracking for RX DC Gain.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:RX:DCG:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.9.12 PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]
Description	This command set the parameter for RX DC Gain.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CXP:RX:DCG (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:RX:DCGain?
Description	This query returns the parameter for RX DC Gain.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CXP:RX:DCG? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.9.13 PMODule:PORT<Pt>:TRANsceiver:CXP:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:CXP:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CXP:DEF
Note	This command can be used on V7.05 or later.

16.10 Transceiver settings - CFP

16.10.1 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD:TRACking <enable>
Description	This command enables or disables the tracking for Tx VOD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:TX:VOD:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD:TRACking?
Description	This query returns enables or disables the tracking for Tx VOD.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:VOD:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.2 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:TX:VOD (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:VOD? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.3 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt:TRACking <enable>
Description	This command enables or disables the tracking for Tx First.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:TX:FIRS:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt:TRACking?
Description	This query returns enables or disables the tracking for Tx First.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:FIRS:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.4 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:TX:FIRS (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:FIRSt?
Description	This query returns the parameter for Tx First.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:FIRS? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.5 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx PRE.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:TX:PRE:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx PRE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:PRE:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.6 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:TX:PRE (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:PRE? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.7 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond:TRACking <enable>
Description	This command enables or disables the tracking for Tx Second.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:TX:SEC:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond:TRACking?
Description	This query returns enables or disables the tracking for Tx Second.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:SEC:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.8 PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for Tx Second.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:TX:SEC (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:TX:SECond?
Description	This query returns the parameter for Tx Second.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:TX:SEC? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.9 PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol:TRACking <enable>
Description	This command enables or disables the tracking for RX Control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:RX:CONT:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol:TRACking?
Description	This query returns enables or disables the tracking for RX Control.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:RX:CONT:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.10 PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for RX Control.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:RX:CONT (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:CONTRol?
Description	This query returns the parameter for RX Control.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:RX:CONT? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.11 PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain:TRACking <enable>
Description	This command enables or disables the tracking for RX DC Gain.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP:RX:DCG:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain:TRACking?
Description	This query returns enables or disables the tracking for RX DC Gain.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:RX:DCG:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.10.12 PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data> [,<Lane4 Data>,<Lane5 Data>,<Lane6 Data>,<Lane7 Data>,<Lane8 Data>,<Lane9 Data>]]
Description	This command set the parameter for RX DC Gain.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP:RX:DCG (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input 4 or 10 lane. The number of lane depends on the traffic rate.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:RX:DCGain?
Description	This query returns the parameter for RX DC Gain.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP:RX:DCG? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, 4 or 10 lane value will return. The number of lane depends on the traffic rate.

16.10.13 PMODule:PORT<Pt>:TRANsceiver:CFP:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CFP:DEF
Note	This command can be used on V7.05 or later.

16.11 Transceiver settings - QSFP

16.11.1 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD:TRACking <enable>
Description	This command enables or disables the tracking for Tx VOD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:TX:VOD:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD:TRACking?
Description	This query returns enables or disables the tracking for Tx VOD.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:VOD:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.2 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:TX:VOD (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:VOD? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.3 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt:TRACking <enable>
Description	This command enables or disables the tracking for Tx First.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:TX:FIRS:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt:TRACking?
Description	This query returns enables or disables the tracking for Tx First.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:FIRS:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.4 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:TX:FIRS (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:FIRSt?
Description	This query returns the parameter for Tx First.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:FIRS? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.5 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx PRE.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:TX:PRE:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx PRE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:PRE:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.6 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:TX:PRE (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:PRE? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.7 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond:TRACking <enable>
Description	This command enables or disables the tracking for Tx Second.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:TX:SEC:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond:TRACking?
Description	This query returns enables or disables the tracking for Tx Second.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:SEC:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.8 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx Second.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:TX:SEC (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:SECond?
Description	This query returns the parameter for Tx Second.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:SEC? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.9 PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol:TRACking <enable>
Description	This command enables or disables the tracking for RX Control.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:RX:CONT:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol:TRACking?
Description	This query returns enables or disables the tracking for RX Control.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:CONT:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.10 PModule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for RX Control.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:RX:CONT (0)
Note	This command can be used on V7.05 or later. If you set tracking is OFF, you should input all lane. if tracking is ON, you should input only first lane.

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:CONTRol?
Description	This query returns the parameter for RX Control.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:CONT? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.11 PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain:TRACking

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain:TRACking <enable>
Description	This command enables or disables the tracking for RX DC Gain.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:RX:DCG:TRAC OFF
Note	This command can be used on V7.05 or later.

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain:TRACking?
Description	This query returns enables or disables the tracking for RX DC Gain.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:DCG:TRAC? → OFF
Note	This command can be used on V7.05 or later.

16.11.12 PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for RX DC Gain.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:RX:DCG (0)
Note	This command can be used on V7.05 or later. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PModule:PORT<Pt>:TRANsceiver:QSFP:RX:DCGain?
Description	This query returns the parameter for RX DC Gain.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:DCG? → (0)
Note	This command can be used on V7.05 or later. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.13 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST:TRACking <enable>
Description	This command enables or disables the tracking for Tx POST.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:TX:POST:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST:TRACking?
Description	This query returns enables or disables the tracking for Tx POST.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:POST:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.11.14 PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:TX:POST (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:TX:POST? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.15 PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE:TRACking <enable>
Description	This command enables or disables the tracking for Rx Equalizer.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP:RX:DFE:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE:TRACking?
Description	This query returns enables or disables tracking for Rx DFE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:DFE:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.11.16 PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the Rx DFE value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP:RX:DFE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:RX:DFE?
Description	This query returns the Rx DFE value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP:RX:DFE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.11.17 PMODule:PORT<Pt>:TRANsceiver:QSFP:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:QSFP:DEF
Note	This command can be used on V7.05 or later.

16.12 Transceiver settings - SFP28

16.12.1 PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:VOD <Lane0 Data>
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:SFP28:TX:VOD (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:SFP28:TX:VOD? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.12.2 PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:PRE <Lane0 Data>
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:SFP28:TX:PRE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:SFP28:TX:PRE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.12.3 PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:POST <Lane0 Data>
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:SFP28:TX:POST (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:SFP28:TX:POST? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.12.4 PMODule:PORT<Pt>:TRANsceiver:SFP28:RX:DFE

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:RX:DFE <Lane0 Data>
Description	This command set the Rx DFE value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:SFP28:RX:DFE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:RX:DFE?
Description	This query returns the Rx DFE value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:SFP28:RX:DFE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.12.5 PMODule:PORT<Pt>:TRANsceiver:SFP28:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:SFP28:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:SFP28:DEF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.13 Transceiver settings - CFP4

16.13.1 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD:TRACking <enable>
Description	This command enables or disables the tracking for Tx VOD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP4:TX:VOD:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD:TRACking?
Description	This query returns enables or disables the tracking for Tx VOD.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:VOD:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.13.2 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP4:TX:VOD (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:VOD? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.13.3 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx Pre.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP4:TX:PRE:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx Pre.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:PRE:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.13.4 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP4:TX:PRE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:PRE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.13.5 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST:TRACking <enable>
Description	This command enables or disables the tracking for Tx POST.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP4:TX:POST:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST:TRACking?
Description	This query returns enables or disables the tracking for Tx POST.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:POST:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.13.6 PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP4:TX:POST (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:TX:POST? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.13.7 PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE:TRACking <enable>
Description	This command enables or disables the tracking for Rx DFE.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:CFP4:RX:DFE:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE:TRACking?
Description	This query returns enables or disables tracking for Rx DFE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:RX:DFE:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.13.8 PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the Rx DFE value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:CFP4:RX:DFE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:RX:DFE
Description	This query returns the Rx DFE value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:CFP4:RX:DFE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.13.9 PMODule:PORT<Pt>:TRANsceiver:CFP4:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:CFP4:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:CFP4:DEF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.14 Transceiver settings - QSFP28

16.14.1 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD:TRACking <enable>
Description	This command enables or disables the tracking for Tx VOD.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP28:TX:VOD:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD:TRACking?
Description	This query returns enables or disables the tracking for Tx VOD.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:VOD:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.14.2 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx VOD.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP28:TX:VOD (0)
Note	This command can be used on VV8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:VOD?
Description	This query returns the parameter for Tx VOD.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:VOD? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.14.3 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE:TRACking <enable>
Description	This command enables or disables the tracking for Tx Pre.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP28:TX:PRE:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE:TRACking?
Description	This query returns enables or disables the tracking for Tx Pre.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:PRE:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.14.4 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx PRE.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP28:TX:PRE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:PRE?
Description	This query returns the parameter for Tx PRE.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:PRE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.14.5 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST:TRACking <enable>
Description	This command enables or disables the tracking for Tx POST.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP28:TX:POST:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST:TRACking?
Description	This query returns enables or disables the tracking for Tx POST.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:POST:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.14.6 PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the parameter for Tx POST.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP28:TX:POST (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:TX:POST?
Description	This query returns the parameter for Tx POST.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:TX:POST? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.14.7 PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE:TRACking

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE:TRACking <enable>
Description	This command enables or disables the tracking for Rx DFE.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Example	PMOD:PORT1:TRAN:QSFP28:RX:DFE:TRAC OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE:TRACking?
Description	This query returns enables or disables tracking for Rx DFE.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:RX:DFE:TRAC? → OFF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

16.14.8 PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE <Lane0 Data> [,<Lane1 Data>,<Lane2 Data>,<Lane3 Data>]
Description	This command set the Rx DFE value.
Parameters	<Pt> = Port number {(<value>),}* = <EXPRESSION PROGRAM DATA> Format: Numeric List
Example	PMOD:PORT1:TRAN:QSFP28:RX:DFE (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, you should input only first lane. If you set tracking is OFF, you should input all lane.

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:RX:DFE?
Description	This query returns the Rx DFE value.
Parameter	<Pt> = Port number
Response	{(<value>),}* = <EXPRESSION PROGRAM DATA>
Example	PMOD:PORT1:TRAN:QSFP28:RX:DFE? → (0)
Note	This command can be used on V8.00 or later and valid on MU100011A only. If tracking is ON, the first lane value will return. If you set tracking is OFF, all lane value will return.

16.14.9 PMODule:PORT<Pt>:TRANsceiver:QSFP28:DEFault

Syntax	PMODule:PORT<Pt>:TRANsceiver:QSFP28:DEFault
Description	This command Restore default of Transceiver settings.
Parameters	<Pt> = Port number
Example	PMOD:PORT1:TRAN:QSFP28:DEF
Note	This command can be used on V8.00 or later and valid on MU100011A only.

Chapter 17

Common Application Settings

17.1 RTD

The following commands are valid for all Round Trip Delay applications unless otherwise noted.

17.1.1 RTD:MODE

Syntax	RTD:MODE <mode>
Description	This command sets the measurement mode.
Parameters	<mode> = <CHARACTER PROGRAM DATA> SINGle REPeat <i>DEFault = REPeat</i>
Response	None.
Example	RTD:MODE REP
Note	

Syntax	RTD:MODE?
Description	This query returns the measurement mode.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	RTD:MODE? → REP
Note	

17.1.2 RTD:PERiod

Syntax	RTD:PERiod <period>
Description	This command sets the measurement period.
Parameters	<period> = <CHARACTER PROGRAM DATA> MS500: 500 milli seconds SEC1: 1 second SEC2: 2 seconds SEC5: 5 seconds SEC10: 10 seconds <i>DEFault = SEC1</i>
Response	None.
Example	RTD:PER SEC1
Note	

Syntax	RTD:PERiod?
Description	This query returns the measurement period.
Parameter	None.
Response	<period> = <CHARACTER RESPONSE DATA>
Example	RTD:PER? → SEC1
Note	

17.1.3 RTD:IFMDData

Syntax	RTD:IFMDData <ignore>
Description	
Parameters	<ignore> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	RTD:IFMD OFF
Note	

Syntax	RTD:IFMDData?
Description	
Parameter	None.
Response	<ignore> = <BOOLEAN RESPONSE DATA>
Example	RTD:IFMD? → 0
Note	

17.1.4 RTD:PDH:RX<Pt>:MLIMit

Syntax	RTD:PDH:RX<Pt>:MLIMit <max>
Description	This command sets the time reference maximum limit for all PDH interfaces. Unit: us.
Parameters	<Pt> = Port number <max> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.0, MAXimum = 10000000.0, DEFault = MAXimum</i>
Response	None.
Example	RTD:PDH:RX1:MLIM 0.0
Note	This command is not valid for a RTD_OTN application.

Syntax	RTD:PDH:RX<Pt>:MLIMit?
Description	This query returns the time reference maximum limit for all PDH interfaces. Unit: us.
Parameter	<Pt> = Port number
Response	<max> = <NR2 NUMERIC RESPONSE DATA>
Example	RTD:PDH:RX1:MLIM? → 0.0
Note	This command is not valid for a RTD_OTN application.

17.2 Hierarchy

17.2.1 HIERarchy:PORT<Pt>:OTN:TX

Syntax	HIERarchy:PORT<Pt>:OTN:TX <enable>
Description	This command enables or disables the OTN Tx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:OTN:TX ON
Note	

Syntax	HIERarchy:PORT<Pt>:OTN:TX?
Description	This query returns whether or not OTN Tx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:OTN:TX? → 1
Note	

17.2.2 HIERarchy:PORT<Pt>:OTN:RX

Syntax	HIERarchy:PORT<Pt>:OTN:RX <enable>
Description	This command enables or disables the OTN Rx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:OTN:RX ON
Note	

Syntax	HIERarchy:PORT<Pt>:OTN:RX?
Description	This query returns whether or not OTN Rx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:OTN:RX? → 1
Note	

17.2.3 HIERarchy:PORT<Pt>:SDH:TX

Syntax	HIERarchy:PORT<Pt>:SDH:TX <enable>
Description	This command enables or disables the SDH Tx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:SDH:TX ON
Note	

Syntax	HIERarchy:PORT<Pt>:SDH:TX?
Description	This query returns whether or not SDH Tx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:SDH:TX? → 1
Note	

17.2.4 HIERarchy:PORT<Pt>:SDH:RX

Syntax	HIERarchy:PORT<Pt>:SDH:RX <enable>
Description	This command enables or disables the SDH Rx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:SDH:RX ON
Note	

Syntax	HIERarchy:PORT<Pt>:SDH:RX?
Description	This query returns whether or not SDH Rx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:SDH:RX? → 1
Note	

17.2.5 HIERarchy:PORT<Pt>:PDH:TX

Syntax	HIERarchy:PORT<Pt>:PDH:TX <enable>
Description	This command enables or disables the PDH Tx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:PDH:TX ON
Note	

Syntax	HIERarchy:PORT<Pt>:PDH:TX?
Description	This query returns whether or not PDH Tx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:PDH:TX? → 1
Note	

17.2.6 HIERarchy:PORT<Pt>:PDH:RX

Syntax	HIERarchy:PORT<Pt>:PDH:RX <enable>
Description	This command enables or disables the PDH Rx hierarchy.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	HIER:PORT1:PDH:RX ON
Note	

Syntax	HIERarchy:PORT<Pt>:PDH:RX?
Description	This query returns whether or not PDH Rx hierarchy is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Example	HIER:PORT1:PDH:RX? → 1
Note	

Chapter 18

Measurement

18.1 Application, Start and Stop

18.1.1 MEASurement:APPLication?

Syntax	MEASurement:APPLication?
Description	This query returns the application server type.
Parameter	None.
Response	<application> = <CHARACTER RESPONSE DATA> TP-APS-OTN: OTN Automatic Protection Switching application. TP-APS-SDHDPDH: SDH/PDH Automatic Protection Switching application. TP-APS-SDHDPDH-OTN: SDH/PDH over OTN Automatic Protection Switching application. TP-BERT-CPRI: CPRI Bit Error Rate Test application. TP-BERT-CPRI-OTN: CPRI over OTN Bit Error Rate Test application. TP-BERT-ETH: Ethernet Bit Error Rate Test application. TP-BERT-ETH-OTN: Ethernet over OTN Bit Error Rate Test application. TP-BERT-FC: Fibre Channel Bit Error Rate Test application. TP-BERT-FC-OTN: Fibre Channel over OTN Bit Error Rate Test application. TP-BERT-OTN: OTN Bit Error Rate Test application. TP-BERT-SDHDPDH: PDH/SDH Bit Error Rate Test application. TP-BERT-SDHDPDH-OTN: PDH/SDH over OTN Bit Error Rate Test application. TP-BERT-ROE: eCPRI/RoE Bit Error Rate Test application. TP-CABLE-ETH: Ethernet cable test application. TP-CHSTAT-ETH: Ethernet channel statistics application. TP-DISC-ETH: Ethernet discovery application. TP-MONGEN-ETH: Ethernet monitor/generate application. TP-MONGEN-ETH-OTN: Ethernet over OTN monitor/generate application. TP-NOFRAME-DEVICE: No frame device test (Unframed Bit Error Rate Test) application. TP-PASS-CPRI: CPRI pass-through application. TP-PASS-ETH: Ethernet pass-through application. TP-PERF-FC: Fibre Channel performance test application. TP-PERF-FC-OTN: Fibre Channel over OTN performance test application. TP-PING-ETH: Ethernet ICMP ping application. TP-REFL-ETH: Ethernet reflector application. TP-REFL-ETH-OTN: Ethernet over OTN reflector application. TP-REFL-FC: Fibre Channel reflector application. TP-REFL-FC-OTN: Fibre Channel over OTN reflector application. TP-RFC-ETH: Ethernet RFC-2544 test application. TP-RFC-ETH-OTN: Ethernet over OTN RFC-2544 test application. TP-RFC6349-ETH: Ethernet RFC-6349 test application. TP-RTD-OTN: OTN Round Trip Delay test application. TP-RTD-SDHDPDH: SDH/PDH Round Trip Delay test application. TP-RTD-SDHDPDH-OTN: SDH/PDH Round Trip Delay test application. TP-SAT-ETH: Ethernet Service Activation Test application. TP-SAT-ETH-OTN: Ethernet over OTN Service Activation Test application. TP-SYNCTEST-ETH: Ethernet sync test application. TP-TRACE-ETH: Ethernet trace-route application. OTDR-OTDR: Standard OTDR application.
958	OSA-WDM: OSA WDM application.
Example	MEAS:APPL? → TP-BERT-ETH
Note	

18.1.2 MEASurement:STARt

Syntax	MEASurement:STARt
Description	This command starts a measurement. Same as pressing the START button on the GUI.
Parameter	None.
Response	None.
Example	MEAS:STAR
Note	

18.1.3 MEASurement:STOP

Syntax	MEASurement:STOP
Description	This command stops an ongoing measurement. Same as pressing the STOP button on the GUI.
Parameter	None.
Response	None.
Example	MEAS:STOP
Note	

18.2 Setup

18.2.1 MEASurement:SETup:PORT<Pt>:TERMinology

Syntax	MEASurement:SETup:PORT<Pt>:TERMinology <mode>
Description	This command sets the SDH/SONET terminology.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> SONet SDH <i>DEFault = SDH</i>
Response	None.
Example	MEAS:SET:PORT1:TERM SDH
Note	

Syntax	MEASurement:SETup:PORT<Pt>:TERMinology?
Description	This query returns the SDH/SONET terminology.
Parameter	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PORT1:TERM? → SDH
Note	

18.2.2 MEASurement:SETup:SElect

Syntax	MEASurement:SETup:SElect <interval>
Description	This command selects which interval to fetch. After setting this command, the :IFETch on the respective interfaces should be performed.
Parameter	<interval> = <CHARACTER PROGRAM DATA> TOTal: Total CURRent: Current Or the index number of the interval. With the first index number being 0. <i>DEFault = TOTal</i>
Response	None.
Example	MEAS:SET:SEL 5
Note	Use MEAS:INFO:IFIR? and MEAS:INFO:ILAS? to get the minimum and maximum interval number. The MEAS:INFO:IMIN? and MEAS:INFO:IMAX? queries are kept for maintenance purpose. Recommend using MEAS:INFO:IFIR? and MEAS:INFO:ILAS? queries instead of MEAS:INFO:IMIN? and MEAS:INFO:IMAX?, because they return +1 larger value than recommended queries. This setting is not stored as part of a settings- or result file.

Syntax	MEASurement:SETup:SElect?
Description	This query returns the selected interval.
Parameter	None.
Response	<interval> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:SEL? → 5
Note	

18.2.3 MEASurement:SETup:ILENgtH

Syntax	MEASurement:SETup:ILENgtH <length>
Description	This command sets the interval length.
Parameter	<length> = <CHARACTER PROGRAM DATA> 1S: 1 second 2S: 2 seconds 5S: 5 seconds 10S: 10 seconds 15S: 15 seconds 30S: 30 seconds 1M: 1 minute 5M: 5 minutes 10M: 10 minutes 15M: 15 minutes 30M: 30 minutes 1H: 1 hour 2H: 2 hours 4H: 4 hours 6H: 6 hours 12H: 12 hours NONE: No intervals <i>DEFault = 5S</i>
Response	None.
Example	MEAS:SET:ILEN 1S
Note	

Syntax	MEASurement:SETup:ILENgt?
Description	This query returns the interval length.
Parameter	None.
Response	<action> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:ILEN? → 1S
Note	

18.2.4 MEASurement:SETup:STARt

Syntax	MEASurement:SETup:STARt <action>
Description	This command sets how the measurement should start.
Parameter	<action> = <CHARACTER PROGRAM DATA> IMMediate: Start measurement immediate. SAT: Start measurement at a specific time. <i>DEFault = IMMediate</i>
Response	None.
Example	MEAS:SET:STAR SAT
Note	Use the MEASurement:SETup:STAT command to set the specific start time.

Syntax	MEASurement:SETup:STARt?
Description	This query returns how the measurement starts.
Parameter	None.
Response	<action> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:STAR? → SAT
Note	

18.2.5 MEASurement:SETup:STAT

Syntax	MEASurement:SETup:STAT <year>,<month>,<day>,<hour>,<minute>,<second>
Description	This command sets the start time for the MEASurement:SETup:STARt SAT command.
Parameters	<year> = <NUMERIC PROGRAM DATA> <i>MINimum = 1997, MAXimum = 2036</i> <month> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 12</i> <day> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 31</i> <hour> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 23</i> <minute> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i> <second> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i>
Response	None.
Example	MEAS:SET:STAT 2015,7,16,10,11,39
Note	

Syntax	MEASurement:SETup:STAT?
Description	This query returns the start time for the MEASurement:SETup:STARt SAT command
Parameter	None.
Response	<year> = <NR1 NUMERIC RESPONSE DATA>
	<month> = <NR1 NUMERIC RESPONSE DATA>
	<day> = <NR1 NUMERIC RESPONSE DATA>
	<hour> = <NR1 NUMERIC RESPONSE DATA>
	<minute> = <NR1 NUMERIC RESPONSE DATA>
	<second> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:SET:STAT? → 2015,7,16,10,11,39
Note	If the SAT parameter is not set in the MEASurement:SETup:STARt command, this query returns NaN (section 1.6.1).

18.2.6 MEASurement:SETup:STOP

Syntax	MEASurement:SETup:STOP <action>
Description	This command sets how the measurement should stop.
Parameter	<action> = <CHARACTER PROGRAM DATA> MANual: Manual stop the measurement. SAT: Stop measurement at a specific time. DURation: Stop measurement after a specific duration. <i>DEFAULT = MANual</i>
Response	None.
Example	MEAS:SET:STOP DUR
Note	To set the specific stop time, use the MEASurement:SETup:SPAT command.

Syntax	MEASurement:SETup:STOP?
Description	This query returns how the measurement stops.
Parameter	None.
Response	<action> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:STOP? → DUR
Note	

18.2.7 MEASurement:SETup:SPAT

Syntax	MEASurement:SETup:SPAT <year>,<month>,<day>,<hour>,<minute>,<second>
Description	This command sets the stop time for the MEASurement:SETup:STOP SAT command
Parameters	<year> = <NUMERIC PROGRAM DATA> <i>MINimum = 1997, MAXimum = 2036</i>
	<month> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 12</i>
	<day> = <NUMERIC PROGRAM DATA> <i>MINimum = 1, MAXimum = 31</i>
	<hour> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 23</i>
	<minute> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i>
	<second> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 59</i>
Response	None.
Example	MEAS:SET:SPAT 2015,7,16,10,12,39
Note	

Syntax	MEASurement:SETup:SPAT?
Description	This query returns the stop time for the MEASurement:SETup:STOP SAT command
Parameter	None.
Response	<year> = <NR1 NUMERIC RESPONSE DATA> <month> = <NR1 NUMERIC RESPONSE DATA> <day> = <NR1 NUMERIC RESPONSE DATA> <hour> = <NR1 NUMERIC RESPONSE DATA> <minute> = <NR1 NUMERIC RESPONSE DATA> <second> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:SET:SPAT? → 2015,7,16,10,12,39
Note	If the SAT parameter is not set in the MEASurement:SETup:STOP command, this query returns NaN (section 1.6.1).

18.2.8 MEASurement:SETup:SDURation

Syntax	MEASurement:SETup:SDURation <days>,<hours>,<minutes>,<seconds>
Description	This command sets the duration time for the MEASurement:SETup:STOP DUR command.
Parameters	<days> = <NUMERIC PROGRAM DATA> <hours> = <NUMERIC PROGRAM DATA> <minutes> = <NUMERIC PROGRAM DATA> <seconds> = <NUMERIC PROGRAM DATA>
Response	None.
Example	MEAS:SET:SDUR 16,0,0,0
Note	

Syntax	MEASurement:SETup:SDURation?
Description	This query return the duration time for the MEASurement:SETup:STOP DUR command
Parameter	None.
Response	<days> = <NR1 NUMERIC RESPONSE DATA> <hours> = <NR1 NUMERIC RESPONSE DATA> <minutes> = <NR1 NUMERIC RESPONSE DATA> <seconds> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:SET:SDUR? → 16,0,0,0
Note	If not defined or the DUR parameter is not set in the MEASurement:SETup:STOP command, this query returns NaN (section 1.6.1).

18.2.9 MEASurement:SETup:MALLocation

Syntax	MEASurement:SETup:MALLocation <mode>
Description	This command sets the memory allocation.
Parameter	<mode> = <CHARACTER PROGRAM DATA> CONTinuous: When storage space runs out old intervals will be overwritten. ALL: Uses all available storage space and then stops the measurement. <i>DEFault = CONTinuous</i>
Response	None.
Example	MEAS:SET:MALL CONT
Note	

Syntax	MEASurement:SETup:MALLocation?
Description	This query returns the type of memory allocation.
Parameter	None.
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:MALL? → CONT
Note	

18.2.10 MEASurement:SETup:PERformance:TMBPs:PARameter

Syntax	MEASurement:SETup:PERformance:TMBPs:PARameter <param>
Description	This command sets the performance parameter for 2 Mbps and V-Series.
Parameter	<param> = <CHARACTER PROGRAM DATA> G821: G.821 G826: G.826 M2100: M.2100 G821E: G.821 (expired revision) <i>DEFault = M2100</i>
Response	None.
Example	MEAS:SET:PERF:TMBP:PAR G826
Note	

Syntax	MEASurement:SETup:PERformance:TMBPs:PARameter?
Description	This query returns the performance parameter for 2 Mbps and V-Series.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:TMBP:PAR? → G826
Note	

18.2.11 MEASurement:SETup:PERformance:T1:PARameter

Syntax	MEASurement:SETup:PERformance:T1:PARameter <param>
Description	This command sets the performance parameter for 2 Mbps and V-Series.
Parameter	<param> = <CHARACTER PROGRAM DATA> G821: G.821 G826: G.826 M2100: M.2100 G821E: G.821 (expired revision) <i>DEFault = M2100</i>
Response	None.
Example	MEAS:SET:PERF:T1:PAR G826
Note	

Syntax	MEASurement:SETup:PERformance:T1:PARameter?
Description	This query returns the performance parameter for 2 Mbps and V-Series.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:T1:PAR? → G826
Note	

18.2.12 MEASurement:SETup:PERformance:E3:PARameter

Syntax	MEASurement:SETup:PERformance:E3:PARameter <param>
Description	This command sets the performance parameter for E3.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 M2100: M.2100 <i>DEFault = M2100</i>
Response	None.
Example	MEAS:SET:PERF:E3:PAR M2100
Note	

Syntax	MEASurement:SETup:PERformance:E3:PARAmeter?
Description	This query returns the performance parameter for E3.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:E3:PAR? → M2100
Note	

18.2.13 MEASurement:SETup:PERformance:T3:PARAmeter

Syntax	MEASurement:SETup:PERformance:T3:PARAmeter <param>
Description	This command sets the performance parameter for E3.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 M2100: M.2100 <i>DEFAULT = M2100</i>
Response	None.
Example	MEAS:SET:PERF:T3:PAR M2100
Note	

Syntax	MEASurement:SETup:PERformance:T3:PARAmeter?
Description	This query returns the performance parameter for E3.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:T3:PAR? → M2100
Note	

18.2.14 MEASurement:SETup:PERformance:E4:PARAmeter

Syntax	MEASurement:SETup:PERformance:E4:PARAmeter <param>
Description	This command sets the performance parameter for E4.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 M2100: M.2100 <i>DEFAULT = M2100</i>
Response	None.
Example	MEAS:SET:PERF:E4:PAR M2100
Note	

Syntax	MEASurement:SETup:PERformance:E4:PARAmeter?
Description	This query returns the performance parameter for E4.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:E4:PAR? → M2100
Note	

18.2.15 MEASurement:SETup:PERformance:SDH:PARAmeter

Syntax	MEASurement:SETup:PERformance:SDH:PARAmeter <param>
Description	This command sets the performance parameter for SDH.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 G828: G.828+G.829 M2101: M.2101.1(M.2100) <i>DEFAULT = M2101</i>
Response	None.
Example	MEAS:SET:PERF:SDH:PAR M2101
Note	

Syntax	MEASurement:SETup:PERformance:SDH:PARAmeter?
Description	This query returns the performance parameter for SDH.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:PAR? → M2101
Note	

18.2.16 MEASurement:SETup:PERformance:SDH:MUX

Syntax	MEASurement:SETup:PERformance:SDH:MUX <value>
Description	This command sets the MUX allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SDH:MUX 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SDH:MUX?
Description	This query returns the MUX allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:MUX? → 10.00
Note	

18.2.17 MEASurement:SETup:PERformance:SDH:VC4

Syntax	MEASurement:SETup:PERformance:SDH:VC4 <value>
Description	This command sets the VC4 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SDH:VC4 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SDH:VC4?
Description	This query returns the VC4 Allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:VC4? → 10.00
Note	

18.2.18 MEASurement:SETup:PERformance:SDH:VC3

Syntax	MEASurement:SETup:PERformance:SDH:VC3 <value>
Description	This command sets the VC3 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SDH:VC3 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SDH:VC3?
Description	This query returns the VC3 allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:VC3? → 10.00
Note	

18.2.19 MEASurement:SETup:PERformance:SDH:VC12

Syntax	MEASurement:SETup:PERformance:SDH:VC12 <value>
Description	This command sets the VC12 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SDH:VC12 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SDH:VC12?
Description	This query returns the VC12 allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:VC12? → 10.00
Note	

18.2.20 MEASurement:SETup:PERformance:SDH:TPERiod

Syntax	MEASurement:SETup:PERformance:SDH:TPERiod <period>
Description	This command sets the evaluation item for SDH.
Parameter	<period> = <CHARACTER PROGRAM DATA> 15M: 15 minutes 1H: 1 hour 2H: 2 hours 24H: 24 hours 7D: 7 days <i>DEFault = 15M</i>
Response	None.
Example	MEAS:SET:PERF:SDH:TPER 1H
Note	Only valid when the SDH performance parameter is M.2101.1.

Syntax	MEASurement:SETup:PERformance:SDH:TPERiod?
Description	This query returns the evaluation item for SDH.
Parameter	None.
Response	<period> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:SDH:TPER? → 1H
Note	

18.2.21 MEASurement:SETup:PERformance:SONet:PARameter

Syntax	MEASurement:SETup:PERformance:SONet:PARameter <param>
Description	This command sets the performance parameter for SDH.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 G828: G.828+G.829 M2101: M.2101.1(M.2100) <i>DEFault = M2101</i>
Response	None.
Example	MEAS:SET:PERF:SON:PAR M2101
Note	

Syntax	MEASurement:SETup:PERformance:SONet:PARameter?
Description	This query returns the performance parameter for SONET.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:SON:PAR? → M2101
Note	

18.2.22 MEASurement:SETup:PERformance:SONet:MUX

Syntax	MEASurement:SETup:PERformance:SONet:MUX <value>
Description	This command sets the MUX allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SON:MUX 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SONet:MUX?
Description	This query returns the MUX allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SON:MUX? → 10.00
Note	

18.2.23 MEASurement:SETup:PERformance:SONet:STS3

Syntax	MEASurement:SETup:PERformance:SONet:STS3 <value>
Description	This command sets the STS3 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SON:STS3 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SONet:STS3?
Description	This query returns the STS3 Allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SON:STS3? → 10.00
Note	

18.2.24 MEASurement:SETup:PERformance:SONet:STS1

Syntax	MEASurement:SETup:PERformance:SONet:STS1 <value>
Description	This command sets the STS1 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SON:STS1 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SONet:STS1?
Description	This query returns the STS1 allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SON:STS1? → 10.00
Note	

18.2.25 MEASurement:SETup:PERformance:SONet:VT2

Syntax	MEASurement:SETup:PERformance:SONet:VT2 <value>
Description	This command sets the VC12 allocation in percentage.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:PERF:SON:VT2 10.00
Note	

Syntax	MEASurement:SETup:PERformance:SONet:VT2?
Description	This query returns the VT2 allocation in percentage.
Parameter	None.
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:PERF:SON:VT2? → 10.00
Note	

18.2.26 MEASurement:SETup:PERformance:SONet:TPERiod

Syntax	MEASurement:SETup:PERformance:SONet:TPERiod <period>
Description	This command sets the evaluation item for SONET.
Parameter	<period> = <CHARACTER PROGRAM DATA> 15M: 15 minutes 1H: 1 hour 2H: 2 hours 24H: 24 hours 7D: 7 days <i>DEFault = 15M</i>
Response	None.
Example	MEAS:SET:PERF:SON:TPER 1H
Note	Only valid when the SDH performance parameter is M.2101.1.

Syntax	MEASurement:SETup:PERformance:SONet:TPERiod?
Description	This query returns the evaluation item for SONET.
Parameter	None.
Response	<period> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:SON:TPER? → 1H
Note	

18.2.27 MEASurement:SETup:PERformance:WAN:PARameter

Syntax	MEASurement:SETup:PERformance:WAN:PARameter <param>
Description	This command sets the performance parameter for 10G WAN.
Parameter	<param> = <CHARACTER PROGRAM DATA> G826: G.826 G828: G.828+G.829 M2101: M.2101.1(M.2100) <i>DEFault = G826</i>
Response	None.
Example	MEAS:SET:PERF:WAN:PAR M2101
Note	This command can be used on V2.00 or later.

Syntax	MEASurement:SETup:PERformance:WAN:PARameter?
Description	This query returns the performance parameter for 10G WAN.
Parameter	None.
Response	<param> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:PERF:WAN:PAR? → M2101
Note	This command can be used on V2.00 or later.

18.2.28 MEASurement:SETup:EVALuation:RX<Pt>[:ENABLE]

Syntax	MEASurement:SETup:EVALuation:RX<Pt>[:ENABLE] <enable>
Description	This command enables/disables the transport evaluation.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Examples	MEAS:SET:EVAL:RX ON
Note	

Syntax	MEASurement:SETup:EVALuation:RX<Pt>[:ENABLE]?
Description	This query returns whether or not the transport evaluation is enabled.
Parameter	<Pt> = Port number
Response	<enable> = <NR1 NUMERIC RESPONSE DATA>
Examples	MEAS:SET:EVAL:RX? → 1
Note	

18.2.29 MEASurement:SETup:EVALuation:RX<Pt>:INTerface

Syntax	MEASurement:SETup:EVALuation:RX<Pt>:INTerface <interface>
Description	This command sets the transport evaluation interface type.
Parameters	<Pt> = Port number <interface> = <CHARACTER PROGRAM DATA> E1 E3 DS1 DS3 E4 SDH OTN CPRI The selectable interface type varies depending on the interface configuration.
Response	None.
Example	MEAS:SET:EVAL:RX:INT SDH
Note	

Syntax	MEASurement:SETup:EVALuation:RX<Pt>:INTerface?
Description	This query returns the transport evaluation interface type.
Parameter	<Pt> = Port number
Response	<interface> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:RX:INT? → SDH
Note	

18.2.30 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM <item>
Description	This commands sets the evaluation item for CPRI.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any Alarm or Error ALARm: Alarm ERRor: Error <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM ANY
Note	None.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM?
Description	This query returns the evaluation item for CPRI.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM? → ANY
Note	

18.2.31 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ALARm

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ALARm <item>
Description	This commands sets the evaluation alarm item for CPRI.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> SLOS: Optical Loss of signal OPL: SLOS LOS: Loss of Signal LOF: Loss of Frame PSL: PSL L1LOS: Remote LOS L1LOF: Remote LOF RAI: RAI SDI: SDI <i>DEFault = SLOS</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM:ALAR SLOS
Note	None.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ALARm?
Description	This query returns the evaluation alarm item for CPRI.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM:ALAR? → LOS
Note	

18.2.32 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ERRor

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ERRor <item>
Description	This commands sets the evaluation errors item for CPRI.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> LCV: LCV SHV: SHV K307: K30.7 PATT: Pattern Error <i>DEFault = LCV</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM:ERR LCV
Note	None.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:ITEM:ERRor?
Description	This query returns the evaluation errors item for CPRI.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:ITEM:ERR? → LCV
Note	

18.2.33 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:TYPE <type>
Description	This commands sets the evaluation type for CPRI.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:TYPE CNT
Note	None.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:TYPE?
Description	This query returns the evaluation type for CPRI.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:TYPE? → CNT
Note	

18.2.34 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:PASS <value>
Description	This command sets the count for the CPRI PASS limit. <Pt> = Port number
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT, ESCount or SESCount. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:PASS?
Description	This query returns the count for the CPRI PASS limit.
Parameter	<Pt> = Port number
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:CNT:PASS? → 10
Note	

18.2.35 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:FAIL <value>
Description	This command sets the count for the CPRI fail limit.
Parameter	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT, ESCount or SESCount. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:CNT:FAIL?
Description	This query returns the count for the CPRI fail limit.
Parameter	<Pt> = Port number
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:CNT:FAIL? → 10
Note	

18.2.36 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the CPRI pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:RAT:PASS 0.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:PASS?
Description	This query returns the ratio for the CPRI pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:RAT:PASS? → 1.00E-01
Note	

18.2.37 MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the CPRI fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:CPRI:PORT1:RAT:FAIL 0.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:CPRI:PORT<Pt>:RATio:FAIL?
Description	This query returns the ratio for the CPRI fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:CPRI:PORT1:RAT:FAIL? → 1.00E-01
Note	

18.2.38 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for 2 Mbps.
Parameter	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm PATTern: Payload Pattern FAS: FAS CRC: CRC-4 EBIT: E-bit <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:ITEM PATT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:ITEM?
Description	This query the evaluation item for 2 Mbps.
Parameter	None.
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:ITEM? → PATT
Note	

18.2.39 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for 2 Mbps.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Error Count RATio: Error Ratio EPCT: Error percentage ESCount: ES error count ESRatio: ES error ratio ESPCt: ES error percentage SESCOunt: SES error count SESPct: SES error percentage HRPct: HR% HRPBis: HR% BIS <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:TYPE ERAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:TYPE?
Description	This query returns the evaluation type for 2 Mbps.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:TYPE? → ERAT
Note	

18.2.40 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the 2Mbps pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT, ESCount or SESCOunt. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the 2Mbps pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:CNT:PASS? → 10
Note	

18.2.41 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the 2Mbps fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT, ESCount or SESCOunt. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the 2Mbps fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:CNT:FAIL? → 10
Note	

18.2.42 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the 2Mbps pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio or ESRatio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the 2Mbps pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.43 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the 2Mbps fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio or ESRatio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the 2Mbps fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.44 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:PASS

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:PASS <value>
Description	This command sets the percentage for the 2 Mbps pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:PCT:PASS 10
Note	This setting applies when :TYPE is EPCT, ESPct or SESPct. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:PASS?
Description	This query returns the percentage for the 2 Mbps pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:PCT:PASS? → 10
Note	

18.2.45 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:FAIL

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:FAIL <value>
Description	This command sets the percentage for the 2 Mbps fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:PCT:FAIL 10
Note	This setting applies when :TYPE is EPCT, ESPct or SESPct. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:PCT:FAIL?
Description	This query returns the percentage for the 2 Mbps fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:PCT:FAIL? → 10
Note	

18.2.46 MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:HREference

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:HREference <percent>
Description	This command sets the HR%.
Parameter	<Pt> = Port number <percent> = <NUMERIC PROGRAM DATA> <i>MINimum=0.00, MAXimum=100.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:TMBP:RX1:HREF 10.00
Note	This setting applies when :TYPE is HRPct or HRPBis. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:TMBPs:RX<Pt>:HREference?
Description	This query return the HR%.
Parameter	None.
Response	<percent> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:TMBP:RX1:HREF? → 10.00
Note	

18.2.47 MEASurement:SETup:EVALuation:E3:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for E3.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm NSIGnal: No signal AIS: Alarm Indication Signal NFRame: No frame DISTant: Distant NSYNc: No sync FASWords: FAS words FASBits: FAS bits CODE: Code PATtern: Pattern PSLips: Pattern slips BLOCK: Block <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:ITEM NSIG
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:ITEM?
Description	This query returns the evaluation item for E3.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:ITEM? → NSIG
Note	

18.2.48 MEASurement:SETup:EVALuation:E3:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for E3.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:TYPE RAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:TYPE?
Description	This query returns the evaluation type for E3.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:TYPE? → RAT
Note	

18.2.49 MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the E3 pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the E3 pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:CNT:PASS? → 10
Note	

18.2.50 MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the E3 fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the E3 fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:CNT:FAIL? → 10
Note	

18.2.51 MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the E3 pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the E3 pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.52 MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the E3 fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E3:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E3:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the E3 fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E3:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.53 MEASurement:SETup:EVALuation:E4:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for E4.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm NSIGnal: No signal AIS: Alarm Indication Signal NFRame: No frame DISTant: Distant NSYNc: No sync FASWords: FAS words FASBits: FAS bits CODE: Code PATtern: Pattern PSLips: Pattern slips PBLock: Pattern block FBLock: Frame block <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:ITEM NSIG
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:ITEM?
Description	This query returns the evaluation item for E4.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:ITEM? → NSIG
Note	

18.2.54 MEASurement:SETup:EVALuation:E4:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for E4.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault</i> = CNT
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:TYPE RAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:TYPE?
Description	This query returns the evaluation type for E4.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:TYPE? → RAT
Note	

18.2.55 MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the E4 pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =100000, <i>DEFault</i> =0
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the E4 pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:CNT:PASS? → 10
Note	

18.2.56 MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the E4 fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum</i> =0, <i>MAXimum</i> =100000, <i>DEFault</i> =0
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the E4 fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:CNT:FAIL? → 10
Note	

18.2.57 MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the E4 pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the E4 pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.58 MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the E4 fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:E4:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:E4:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the E4 fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:E4:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.59 MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for SDH.
Parameter	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm ALARm: An alarm defined by MEAS:SET:EVAL:SDH:RX<Pt>:ITEM:ALAR ERRor: An error defined by MEAS:SET:EVAL:SDH:RX<Pt>:ITEM:ERR <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:ITEM ALAR
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM?
Description	This query the evaluation item for 2 Mbps.
Parameter	None.
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:ITEM? → PATT
Note	

18.2.60 MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ALARm

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ALARm <item>
Description	This commands sets the evaluation item for SDH.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> LOS: LOS LOF: LOF OOF: OOF MSAIS: MS-AIS MSRDI: MS-RDI AUAIS: AU-AIS AULOP: AU-LOP HPTIM: HP-TIM HPPLM: HP-PLM HPUNEQ: HP-UNEQ HPRDI: HP-RDI TUAIS: TU-AIS TULOP: TU-LOP TULOM: TU-LOM LPTIM: LP-TIM LPUNEQ: LP-UNEQ LPRDI: LP-RDI LSS: LSS LPPLM: LP-PLM TCUNEQ: TC-UNEQ TCLTC: TC-LTC TCTIM: TC-TIM TCAIS: TC-AIS TCRDI: TC-RDI TCODI: TC-ODI GAIS: G-AIS <i>DEFault = LOS</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:ITEM:ALAR LOS
Note	This setting applies when :ITEM is ALARm. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ALARm?
Description	This query returns the evaluation item for SDH.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:ITEM:ALAR? → LOS
Note	

18.2.61 MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ERRor

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ERRor <item>
Description	This commands sets the evaluation item for SDH.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> A1A2: A1A2 B1: B1-BIP B2: B2-BIP MSREI: MS-REI B3: B3-BIP HPREI: HP-REI V5LP: V5/LP-B3 LPREI: LP-REI TUNDF: TU-NDF AUNDF: AU-NDF APS: Switch APS TUMN: TU-MVT-Negative TUMP: TU-MVT-Positive AUMN: AU-MVT-Negative AUMP: AU-MVT-Positive TCIEC: TC-IEC TCBIP: TC-BIP-2 TCREI: TC-REI TCOEI: TC-OEI <i>DEFault = A1A2</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:ITEM:ERR A1A2
Note	This setting applies when :ITEM is ERRor. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:ITEM:ERRor?
Description	This query returns the evaluation item for SDH.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:ITEM:ERR? → A1A2
Note	

18.2.62 MEASurement:SETup:EVALuation:SDH:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for SDH.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:TYPE RAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:TYPE?
Description	This query returns the evaluation type for SDH.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:TYPE? → RAT
Note	

18.2.63 MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the SDH pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the SDH pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:CNT:PASS? → 10
Note	

18.2.64 MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the SDH fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the SDH fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:CNT:FAIL? → 10
Note	

18.2.65 MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the SDH pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the SDH pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.66 MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the SDH fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SDH:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SDH:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the SDH fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SDH:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.67 MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for SDH.
Parameter	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm ALARm: An alarm defined by MEAS:SET:EVAL:SON:RX<Pt>:ITEM:ALAR ERRor: An error defined by MEAS:SET:EVAL:SON:RX<Pt>:ITEM:ERR <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:ITEM ALAR
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM?
Description	This query the evaluation item for 2 Mbps.
Parameter	None.
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:ITEM? → PATT
Note	

18.2.68 MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ALARm

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ALARm <item>
Description	This commands sets the evaluation item for SDH.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> LOS: LOS LOF: LOF OOF: OOF AIISL: MS-AIS RDIL: MS-RDI AISP: AU-AIS LOPP: AU-LOP TIMP: HP-TIM PLMP: HP-PLM UNEQP: HP-UNEQ RDIP: HP-RDI AISV: TU-AIS LOPV: TU-LOP LOMV: TU-LOM TIMV: LP-TIM UNEQV: LP-UNEQ RDIV: LP-RDI LSS: LSS PLMV: LP-PLM TCUNEQ: TC-UNEQ TCLTC: TC-LTC TCTIM: TC-TIM TCAIS: TC-AIS TCRDI: TC-RDI TCODI: TC-ODI GAIS: G-AIS <i>Default = LOS</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:ITEM:ALAR LOS
Note	This setting applies when :ITEM is ALARm. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ALARm?
Description	This query returns the evaluation item for SDH.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:ITEM:ALAR? → LOS
Note	

18.2.69 MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ERRor

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ERRor <item>
Description	This commands sets the evaluation item for SDH.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> A1A2: A1A2 B1: B1-BIP B2: B2-BIP REIL: MS-REI B3: B3-BIP REIP: HP-REI V5LP: V5/LP-B3 REIV: LP-REI VTNDF: TU-NDF STSNDF: AU-NDF APS: Switch APS TUMN: TU-MVT-Negative TUMP: TU-MVT-Positive AUMN: AU-MVT-Negative AUMP: AU-MVT-Positive TCIEC: TC-IEC TCBIP: TC-BIP-2 TCRI: TC-REI TCOEI: TC-OEI <i>DEFault = A1A2</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:ITEM:ERR A1A2
Note	This setting applies when :ITEM is ERRor. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:ITEM:ERRor?
Description	This query returns the evaluation item for SDH.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:ITEM:ERR? → A1A2
Note	

18.2.70 MEASurement:SETup:EVALuation:SONet:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for SDH.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:TYPE RAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:TYPE?
Description	This query returns the evaluation type for SDH.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:TYPE? → RAT
Note	

18.2.71 MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the SDH pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the SDH pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:CNT:PASS? → 10
Note	

18.2.72 MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the SDH fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the SDH fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:CNT:FAIL? → 10
Note	

18.2.73 MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the SDH pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the SDH pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.74 MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the SDH fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:SON:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:SONet:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the SDH fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:SON:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.75 MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM <item>
Description	This command sets the evaluation item for OTN.
Parameter	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> ANY: Any error or alarm AL1: An alarm at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ALAR AL2: An alarm at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ALAR AL3: An alarm at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ALAR EL1: An error at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ERR EL2: An error at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ERR EL3: An error at level 1 defined by MEAS:SET:EVAL:OTN:RX<Pt>:ITEM:ERR <i>DEFault = ANY</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:ITEM PATT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM?
Description	This query the evaluation item for 2 Mbps.
Parameter	None.
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:ITEM? → PATT
Note	

18.2.76 MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ALARm

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ALARm <item>
Description	This commands sets the evaluation item for OTN.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> LOS: LOS OTU AIS: OTU-AIS LOF: LOF LOFLOM: LOFLOM OOF: OOF LOM: LOM OOM: OOM

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...continued from previous page

	SMTIM: SM-TIM SMBIAE: SM-BIAE SMBDI: SM-BDI SMIAE: SM-IAE ODUAIS: ODU-AIS ODULCK: ODU-LCK ODUOCI: ODU-OCI PMTIM: PM-TIM PMBDI: PM-BDI TCM1TIM: TCM1-TIM TCM1BIAE: TCM1-BIAE TCM1BDI: TCM1-BDI TCM1IAE: TCM1-IAE TCM1LTC: TCM1-LTC TCM2TIM: TCM2-TIM TCM2BIAE: TCM2-BIAE TCM2BDI: TCM2-BDI TCM2IAE: TCM2-IAE TCM2LTC: TCM2-LTC TCM3TIM: TCM3-TIM TCM3BIAE: TCM3-BIAE TCM3BDI: TCM3-BDI TCM3IAE: TCM3-IAE TCM3LTC: TCM3-LTC TCM4TIM: TCM4-TIM TCM4BIAE: TCM4-BIAE TCM4BDI: TCM4-BDI TCM4IAE: TCM4-IAE TCM4LTC: TCM4-LTC TCM5TIM: TCM5-TIM TCM5BIAE: TCM5-BIAE TCM5BDI: TCM5-BDI TCM5IAE: TCM5-IAE TCM5LTC: TCM5-LTC TCM6TIM: TCM6-TIM TCM6BIAE: TCM6-BIAE TCM6BDI: TCM6-BDI TCM6IAE: TCM6-IAE TCM6LTC: TCM6-LTC PLM: PLM MSIM: MSIM AISC: CI-AIS CSF: CSF LSS: LSS <i>DEFault = LOS</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:ITEM:ALAR LOS
Note	This setting applies when :ITEM is AL1, AL2 or AL3. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ALARm?
Description	This query returns the evaluation item for OTN.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:ITEM:ALAR? → LOS
Note	

18.2.77 MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ERRor

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ERRor <item>
Description	This commands sets the evaluation item for OTN.
Parameters	<Pt> = Port number <item> = <CHARACTER PROGRAM DATA> FAS: FAS MFAS: MFAS SMBIP: SM-BIP8 SMBEI: SM-BEI FCE: FCE FUEB: FUEB PMBIP: PM-BIP8 PMBEI: PM-BEI TCM1BIP: TCM1-BIP8 TCM1BEI: TCM1-BEI TCM2BIP: TCM2-BIP8 TCM2BEI: TCM2-BEI TCM3BIP: TCM3-BIP8 TCM3BEI: TCM3-BEI TCM4BIP: TCM4-BIP8 TCM4BEI: TCM4-BEI TCM5BIP: TCM5-BIP8 TCM5BEI: TCM5-BEI TCM6BIP: TCM6-BIP8 TCM6BEI: TCM6-BEI CHECCO: ECTABLE CHECUNCO: cHEC-UNCORRECTABLE THECCOR: tHEC-CORRECTABLE THECUNCO: tHEC-UNCORRECTABLE IGFPPFRAME: INVALID-GFP-FRAME SBLOCKCRC: SUPERBLOCK-CRC CSFSIGNAL: CSF-SIGNAL CSFSYNC: CSF-SYNC CRC8: CRC8 CRC5: CRC5 FCS: FCS <i>DEFault = FAS</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:ITEM:ERR FAS
Note	This setting applies when :ITEM is EL1, EL2 or EL3. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:ITEM:ERRor?
Description	This query returns the evaluation item for OTN.
Parameter	<Pt> = Port number
Response	<item> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:ITEM:ERR? → LOS
Note	

18.2.78 MEASurement:SETup:EVALuation:OTN:RX<Pt>:TYPE

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:TYPE <type>
Description	This command sets the evaluation type for OTN.
Parameters	<Pt> = Port number <type> = <CHARACTER PROGRAM DATA> CNT: Count RATio: Ratio <i>DEFault = CNT</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:TYPE RAT
Note	Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:TYPE?
Description	This query returns the evaluation type for OTN.
Parameter	None.
Response	<type> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:TYPE? → RAT
Note	

18.2.79 MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:PASS

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:PASS <value>
Description	This command sets the error count for the OTN pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:CNT:PASS 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:PASS?
Description	This query returns the error count for the OTN pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:CNT:PASS? → 10
Note	

18.2.80 MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:FAIL

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:FAIL <value>
Description	This command sets the error count for the OTN fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=100000, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:CNT:FAIL 10
Note	This setting applies when :TYPE is CNT. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:CNT:FAIL?
Description	This query returns the error count for the OTN fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:CNT:FAIL? → 10
Note	

18.2.81 MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:PASS

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:PASS <value>
Description	This command sets the ratio for the OTN pass limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:RAT:PASS 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:PASS?
Description	This query returns the ratio for the OTN pass limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:RAT:PASS? → 1.00E-01
Note	

18.2.82 MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:FAIL

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:FAIL <value>
Description	This command sets the ratio for the OTN fail limit.
Parameter	<value> = <NUMERIC PROGRAM DATA> <i>MINimum=0, MAXimum=1.00, DEFault=0</i>
Response	None.
Example	MEAS:SET:EVAL:OTN:RX1:RAT:FAIL 10.00
Note	This setting applies when :TYPE is RATio. Command is valid for BERT applications only.

Syntax	MEASurement:SETup:EVALuation:OTN:RX<Pt>:RATio:FAIL?
Description	This query returns the ratio for the OTN fail limit.
Parameter	None.
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:OTN:RX1:RAT:FAIL? → 1.00E-01
Note	

18.2.83 MEASurement:SETup:EVALuation:BER:OBAMeasuring

Syntax	MEASurement:SETup:EVALuation:BER:OBAMeasuring <enable>
Description	This command enables/disables only show BER alarms when measuring.
Parameters	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	MEAS:SET:EVAL:BER:OBAM ON
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

Syntax	MEASurement:SETup:EVALuation:BER:OBAMeasuring?
Description	This query returns if BER alarms should only be shown when measuring.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:OBAM? → 1
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

18.2.84 MEASurement:SETup:EVALuation:BER:IAFFilter

Syntax	MEASurement:SETup:EVALuation:BER:IAFFilter <enable>
Description	This command enables/disables include addresses in frame filter on receiver.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>ON</i>
Response	None.
Example	MEAS:SET:EVAL:BER:IAFF OFF
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

Syntax	MEASurement:SETup:EVALuation:BER:IAFFilter?
Description	This query returns if include addresses in frame filter on receiver is enabled/disabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:IAFF? → 0
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

18.2.85 MEASurement:SETup:EVALuation:BER:CLFrames

Syntax	MEASurement:SETup:EVALuation:BER:CLFrames <enable>
Description	This command enables/disables count lost frames as pattern errors.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Example	MEAS:SET:EVAL:BER:CLF ON
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

Syntax	MEASurement:SETup:EVALuation:BER:CLFrames?
Description	This query return if count lost frames as pattern errors is enabled/disabled.
Parameter	None.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:CLF? → 1
Note	This setting applies to all ports. This only applies to Ethernet and Fibre Channel.

18.2.86 MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds[:ENABLE]

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds[:ENABLE] <enable>
Description	This command enables/disables BER Pattern error thresholds.
Parameters	<Pt> = Port number <enable> = <BOOLEAN PROGRAM DATA> <i>DEFault</i> = <i>OFF</i>
Response	None.
Examples	MEAS:SET:EVAL:BER:PORT1:PTHR ON
Note	

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds[:ENABLE]?
Description	This query returns whether or not Pattern error thresholds are enabled.
Parameter	<Pt> = Port number
Response	<enable> = <BOOLEAN RESPONSE DATA>
Examples	MEAS:SET:EVAL:BER:PORT1:PTHR? → 1
Note	

18.2.87 MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:MODE

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:MODE <mode>
Description	This command sets the Pattern errors threshold mode.
Parameters	<Pt> = Port number <mode> = <CHARACTER PROGRAM DATA> COUNT: Count RATE: Rate PERCENT: Rate Percent <i>DEFault = COUNT</i>
Response	None.
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:MODE COUNT
Note	

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:MODE?
Description	This query return the Pattern errors threshold mode.
Parameters	<Pt> = Port number
Response	<mode> = <CHARACTER RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:MODE? COUNT
Note	

18.2.88 MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:COUNt

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:COUNt <value>
Description	This command sets the Pattern errors threshold count value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0, MAXimum = 4294967295, DEFault = 0</i>
Response	None.
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:COUN 100
Note	

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:COUNt?
Description	This query return the Pattern errors threshold count value.
Parameters	<Pt> = Port number
Response	<value> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:COUN? → 100
Note	

18.2.89 MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:RATio

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:RATio <ratio>
Description	This command sets the Pattern errors threshold ratio value.
Parameters	<Pt> = Port number <ratio> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00, MAXimum = 1.00, DEFault = 0.00</i>
Response	None.
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:RAT 1.50E-01
Note	

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:RATio?
Description	This query return the Pattern errors threshold ratio value.
Parameters	<Pt> = Port number
Response	<value> = <NR3 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:RAT? → 1.50E-01
Note	

18.2.90 MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:PERCent

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:PERCent <value>
Description	This command sets the Pattern errors threshold percentage value.
Parameters	<Pt> = Port number <value> = <NUMERIC PROGRAM DATA> <i>MINimum = 0.00000, MAXimum = 100.00000, DEFault = 0.00000</i>
Response	None.
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:PERC 10.00000
Note	

Syntax	MEASurement:SETup:EVALuation:BER:PORT<Pt>:PTHResholds:PERCent?
Description	This query return the Pattern errors threshold percentage value.
Parameters	<Pt> = Port number
Response	<value> = <NR2 NUMERIC RESPONSE DATA>
Example	MEAS:SET:EVAL:BER:PORT1:PTHR:PERC? → 10.00000
Note	

18.2.91 MEASurement:SETup:POINtermovement:SDH:MODE

Syntax	MEASurement:SETup:POINtermovement:SDH:MODE <enable>
Description	This command enables/disables pointer movement measurement.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	MEAS:SET:POIN:SDH:MODE ON
Note	This setting applies to all ports.

Syntax	MEASurement:SETup:POINtermovement:SDH:MODE?
Description	This query return if pointer movement is enabled/disabled.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	MEAS:SET:POIN:SDH:MODE? → 1
Note	This setting applies to all ports.

18.2.92 MEASurement:SETup:POINtermovement:SONet:MODE

Syntax	MEASurement:SETup:POINtermovement:SONet:MODE <enable>
Description	This command enables/disables pointer movement measurement.
Parameter	<enable> = <BOOLEAN PROGRAM DATA> <i>DEFault = OFF</i>
Response	None.
Example	MEAS:SET:POIN:SON:MODE ON
Note	This setting applies to all ports.

Syntax	MEASurement:SETup:POINtermovement:SONet:MODE?
Description	This query return if pointer movement is enabled/disabled.
Response	<enable> = <BOOLEAN RESPONSE DATA>
Example	MEAS:SET:POIN:SON:MODE? → 1
Note	This setting applies to all ports.

18.3 Information

18.3.1 MEASurement:INFO:TBEGin?

Syntax	MEASurement:INFO:TBEGin?
Description	This query returns the start time of the measurement.
Parameter	None.
Response	<datetime> = <STRING RESPONSE DATA> Format: YYYY-MM-DD HH:MM:SS
Example	MEAS:INFO:TBEG? → "2014-07-17 11:26:11"
Note	Only possible if a measurement is in the memory.

18.3.2 MEASurement:INFO:TEND?

Syntax	MEASurement:INFO:TEND?
Description	This query returns the stop time of the measurement.
Parameter	None.
Response	<datetime> = <STRING RESPONSE DATA> Format: YYYY-MM-DD HH:MM:SS
Example	MEAS:INFO:TEND? → "2014-07-17 11:26:21"
Note	Only possible if a measurement is in the memory and a measurement is not running.

18.3.3 MEASurement:INFO:MDURation?

Syntax	MEASurement:INFO:MDURation?
Description	This query returns the measurement duration.
Parameter	None.
Response	<duration> = <STRING RESPONSE DATA> Format: DD-HH:MM:SS
Example	MEAS:INFO:MDUR? → "01-00:03:23"
Note	Only possible if a measurement is in the memory.

18.3.4 MEASurement:INFO:STATus<Pt>?

Syntax	MEASurement:INFO:STATus<Pt>?
Description	This query returns the alarm/error status of all active interfaces and the state of the evaluation limits.
Parameter	<Pt> = Port number
Response	<status> = <STRING RESPONSE DATA> "No Trouble" "Alarms" "Errors" "Alarms and Errors" "N/A": Data not available <state> = <STRING RESPONSE DATA> "Disabled / Not Supported" "Below Limits" "Within Limits" "Exceed Limits" "N/A": Data not available
Example	MEAS:INFO:STAT1? → "Errors","Within Limits"
Note	Only possible if a measurement is in the memory.

18.3.5 MEASurement:INFO:IMIN?

Syntax	MEASurement:INFO:IMIN?
Description	This query returns the value by adding +1 to minimum index of statistics intervals.
Parameter	None
Response	<intervalindex> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:INFO:IMIN? → 1
Note	If no intervals are available the NaN (section 1.6.1) is returned. This query is kept for maintenance purpose. Please see MEAS:SET:SEL for details.

18.3.6 MEASurement:INFO:IMAX?

Syntax	MEASurement:INFO:IMAX?
Description	This query returns the value by adding +1 to maximum index of statistics intervals.
Parameter	None
Response	<intervalindex> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:INFO:IMAX? → 16
Note	If no intervals are available the NaN (section 1.6.1) is returned. This query is kept for maintenance purpose. Please see MEAS:SET:SEL for details.

18.3.7 MEASurement:INFO:IFIRst?

Syntax	MEASurement:INFO:IFIRst?
Description	This query returns the minimum index of statistics intervals.
Parameter	None
Response	<intervalindex> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:INFO:IFIR? → 0
Note	If no intervals are available the NaN (section 1.6.1) is returned.

18.3.8 MEASurement:INFO:ILASt?

Syntax	MEASurement:INFO:ILASt?
Description	This query returns the maximum index of statistics intervals.
Parameter	None
Response	<intervalindex> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:INFO:ILAS? → 15
Note	If no intervals are available the NaN (section 1.6.1) is returned.

18.4 Event Log

18.4.1 MEASurement:ELOG:MINimum?

Syntax	MEASurement:ELOG:MINimum?
Description	This query returns the first index present in the event log.
Parameter	None
Response	<index> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:ELOG:MIN? → 1
Note	

18.4.2 MEASurement:ELOG:MAXimum?

Syntax	MEASurement:ELOG:MAXimum?
Description	This query returns the last or the latest index present in the event log.
Parameter	None
Response	<index> = <NR1 NUMERIC RESPONSE DATA>
Example	MEAS:ELOG:MAX? → 321
Note	

18.4.3 MEASurement:ELOG:FETCh?

Syntax	MEASurement:ELOG:FETCh? [<index>[,<count>]]
Description	This query returns a number of log entries starting from the specified index.
Parameters	<index> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=64000, DEFault=1</i> <count> = <NUMERIC PROGRAM DATA> <i>MINimum=1, MAXimum=400, DEFault=20</i>
Response	The result is returned as a list of result items. A result item has the format: (<index>,<dateTime>,<portNo>,<type>,<source>,<description>,<countDuration>) The <portNo> field is '0' when the event is not related to a specific port. The <countDuration> is an error counter for errors and a duration in seconds for alarms.
Example	MEAS:ELOG:FETCh? → (1,"2015-01-09 16:20:45",0,"Test","SYST","Started",0), (2,"2015-01-09 16:20:47",1,"Error","ETH","Pattern errors",5), (3,"2015-01-09 16:20:50",0,"Test","SYST","Stopped",0)
Note	The Cable Test and the No Frame (MT1100A) applications have no event log feature.

18.4.4 MEASurement:ELOG:FETCh:NEXt?

Syntax	MEASurement:ELOG:FETCh:NEXt?
Description	This query returns a number of log entries starting from where the previous :FETCh or :FETCh:NEXt stopped.
Parameters	None
Response	The response is similar to the response of the MEASurement:ELOG:FETCh? command.
Example	MEAS:ELOG:FETCh:NEXt? 1
Note	

18.4.5 MEASurement:ELOG:EXPort

Syntax	MEASurement:ELOG:EXPort <file> [<delimiter>]
Description	This command writes the complete event log to the specified file in a CSV format. The file can be written to the internal disk or to a connected USB memory device. The specified delimiter is used as field delimiter. Lines are terminated with CR-LF (0x0d,0x10).
Parameters	<file> = <STRING PROGRAM DATA> The path and name of the file to store the data. <delimiter> = <CHARACTER PROGRAM DATA> COMMA: Use ',' as field separator. SEMICOLON: Use ';' as field separator. TABulator: Use a tabulator character (0x09) as field separator. <i>DEFault = COMMA</i>
Response	None.
Example	MEAS:ELOG:EXPort "Internal/my-log-data.csv"
Note	Files must be saved to the Internal/ directory or a sub-directory hereof. When a USB storage device is mounted, files are stored via the Usb/ directory.

18.5 Result

18.5.1 MEASurement:RESult:SUMMARY?

Syntax	MEASurement:RESult:SUMMARY?
Description	This query returns the measurement result.
Response	<result> = <CHARACTER RESPONSE DATA> Pass Trouble Warning N/A
Example	MEAS:RES:SUMM? → Pass
Note	

18.5.2 MEASurement:RESult:SUMMARY:STATistics:PORT<Pt>?

Syntax	MEASurement:RESult:SUMMARY:STATistics:PORT<Pt>?
Description	This query returns the measurement result of statistics.
Response	<result> = <CHARACTER RESPONSE DATA> Pass Trouble Warning N/A
Example	MEAS:RES:SUMM:STAT:PORT1? → PASS
Note	

Appendix A

Example Scripts

This chapter shows various example scripts for all interfaces which are remote controllable.

A.1 Hints

To ensure that the instrument always start from a well defined state, it is in general a good idea to begin all scripts with the following command. It will terminate all application servers (virtual instruments).

```
*RST
```

A.2 2 Mbps BERT

This example runs a BER test. It requires an unbalanced cable to be connected from TX1 to RX1. It configures TX1 and sets RX1 to follow TX1. TX2 and RX2 are switched off. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-4}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last query is `TMBP:RX1:IFET? (PATT) → (1024,0.0001)`

```
*RST
INST:STAR TP-BERT-SDHPDH,1-PORT1

TMBP:TX1 ON
TMBP:TX1:CONN UNB; DINS OFF; CSO INT; FOFF 0; CODE HDB3; PCMF ON; CRC4 ON
TMBP:TX1:SAB #B11111,#B11111,#B11111,#B11111
TMBP:TX1:PATT PRBS11; PINV OFF; PTSL (1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16)
TMBP:TX1:UTSL #B01010101
TMBP:TX1:CAS OFF

TMBP:RX1:ENAB ON; FOLL TX

TMBP:STIM:TX1:ERR PATT; EINS B04; EBL 1
SYST:WAIT:DUR 3

MEAS:SET:ILEN 5S; STAR IMM; STOP DUR; SDUR 0,0,0,10
MEAS:STAR
SYST:WAIT:IDLE

MEAS:SET:SEL TOT
TMBP:RX1:IFET? (PATT)
MEAS:SET:SEL 0
TMBP:RX1:IFET? (PATT)
MEAS:SET:SEL 1
TMBP:RX1:IFET? (PATT)

SYST:ERR?
INST:TERM
```

A.3 2 Mbps Status & Stimuli

This example demonstrates status and stimuli. It requires 2mbps interface and a loopback cable from TX1 to RX1. The functionality is as following:

- reset to factory default, enable device dependent status and clear status
- setup interface and read status
- clear status, set AIS alarm and read status
- clear status, insert one pattern error and read status

Input script	→	Output
<pre> *RST INST:STAR TP-BERT-SDHPDH,1-PORT1 STAT:PRES STAT:PORT:ENAB 1-PORT1,1; PTR 1-PORT1,1; NTR 1-PORT1,0 TMBP:TX1 ON; RX1 ON TMBP:RX1:FOLL TX SYST:WAIT:DUR 3 *CLS *STB?; STAT:PORT:EVEN? 1-PORT1; COND? 1-PORT1 STAT:INT:PORT1:EVEN?; COND? TMBP:STAT:RX1:AES:EVEN?; COND? TMBP:STAT:RX1:ALAR:EVEN?; COND? TMBP:STIM:TX1:ALAR AIS SYST:WAIT:DUR 2 *STB?; STAT:PORT:EVEN? 1-PORT1; COND? 1-PORT1 STAT:INT:PORT1:EVEN?; COND? TMBP:STAT:RX1:AES:EVEN?; COND? TMBP:STAT:RX1:ALAR:EVEN?; COND? TMBP:STIM:TX1:ALAR NAL SYST:WAIT:DUR 2 *CLS TMBP:STIM:TX1:EINS MAN; EBL 1; ERR PATT SYST:STIM:INS SYST:WAIT:DUR 3 STAT:INT:PORT1:EVEN?; COND? TMBP:STAT:RX1:AES:EVEN?; COND? TMBP:STAT:RX1:ERR:EVEN?; COND? SYST:ERR? INST:TERM </pre>		<pre> 0;0;0 0;0 0;0 0;0 1;1;1 1;1 1;1 64;64 1;1 2;2 2;0 0,"No error" </pre>

A.4 E3 BERT

This example runs a BER test. It requires a cable to be connected from TX1 to RX1. It configures TX1 and sets RX1 to follow TX1. TX2 and RX2 are switched off. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-3}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last query is `TMBP:RX1:IFET? (PATT) → (343680,0.001)`

```
*RST
INST:STAR TP-BERT-SDHPDH,1-PORT1

*CLS
STAT:PRES

E3:TX1:ENAB ON
E3:TX1:CSO INT
E3:TX1:FOFF 0
E3:TX1:PCMF OFF
E3:TX1:PATT PRBS11
E3:TX1:PINV ON

E3:RX1:ENAB ON
E3:RX1:FOLL TX

E3:STIM:TX1:ERR PATT
E3:STIM:TX1:EINS B03
E3:STIM:TX1:EBL 1

MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10
MEAS:STAR

SYST:WAIT:IDLE

MEAS:SET:SEL TOT
E3:RX1:IFET? (PATT)
```

A.5 E4 BERT

This example runs a BER test. It requires a cable to be connected from TX1 to RX1. It configures TX1 and sets RX1 to follow TX. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-3}$. A Statistics measurement is set to run for 11 seconds and it finally reads the measured pattern errors and pattern slips from the total interval.

The expected execution of the last two queries are `E4:RX<Rx>:IFET? (PATT) → (1392640,0.001)`

```
*RST
INST:STAR TP-BERT-SDHPDH,1-PORT1,1-PORT2
```

```
*CLS
STAT:PRES
```

```
E4:TX:ENAB ON
E4:TX:CSO INT
E4:TX:FOFF 0
E4:TX:PCMF OFF
E4:TX:PATT PRBS11
E4:TX:PINV ON
```

```
E4:RX1:ENAB ON
E4:RX1:FOLL TX
```

```
E4:RX2:ENAB ON
E4:RX2:FOLL TX
```

```
E4:STIM:TX:ERR PATT
E4:STIM:TX:EINS B03
E4:STIM:TX:EBL 1
```

```
MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 11
MEAS:STAR
```

```
SYST:WAIT:IDLE
```

```
MEAS:SET:SEL TOT
E4:RX1:IFET? (PATT,PSL)
E4:RX2:IFET? (PATT,PSL)
```

```
SYST:ERR?
INST:TERM
```

A.6 SDH BERT

This example runs a BER test. It requires a cable to be connected from TX1 to RX1. It configures TX1 and sets RX1 to follow TX. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-7}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last two queries are `SDH:RX<Rx>:IFET? (ERRPRBS) → (150,1E-07)`

```
*RST
INST:STAR TP-BERT-SDHPDH,1-PORT1,1-PORT2

SDH:TX:ELEC NORM

SDH:RX1:INT ELEC
SDH:RX1:FOLL TX

SDH:RX2:INT ELEC
SDH:RX2:FOLL TX

SDH:STIM:TX:ERR PRBS
SDH:STIM:TX:EINS B07
SDH:STIM:TX:EBL 1

MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10
MEAS:STAR

SYST:WAIT:IDLE

MEAS:SET:SEL TOT
SDH:RX1:IFET? (ERRPRBS)
SDH:RX2:IFET? (ERRPRBS)

SYST:ERR?
INST:TERM
```

A.7 Ethernet BERT

This example runs a BER test. It requires a cable from Port 1 to Port 2 (PORT1 to PORT2). It configures PORT1 and set PORT2 to follow PORT1. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-7}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last two queries are approximately `ETH:PORT<Pt>:IFET? (BPE) → (20,1E-07)`.

```
*RST
INST:STAR TP-BERT-ETH,1-PORT1,1-PORT2

ETH:PORT1:MODE ANEG
ETH:PORT2:MODE ANEG
ETH:PORT1:ANEG (100MF)
ETH:PORT2:ANEG (100MF)
SYST:WAIT:DUR 4

ETH:FOLL:STR ON
ETH:FOLL:TRAF ON

ETH:PORT1:STR1:PAYL PRBS11

ETH:PORT1:TRAF:DMOD CONT
ETH:PORT1:TRAF:STR1:LL:PROF CONS
ETH:PORT1:TRAF:STR1:LL 100 PCT

ETH:PORT1:STIM:ERR PRBS
ETH:PORT2:STIM:ERR PRBS
ETH:PORT1:STIM:EINS BE7
ETH:PORT2:STIM:EINS BE7

MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10

ETH:PORT1:TRAF:GEN:STAR
ETH:PORT2:TRAF:GEN:STAR
SYST:WAIT:DUR 2

MEAS:STAR
SYST:WAIT:IDLE

ETH:PORT1:TRAF:GEN:STOP
ETH:PORT2:TRAF:GEN:STOP

MEAS:SET:SEL TOT
ETH:PORT1:IFET? (BPE)
ETH:PORT2:IFET? (BPE)

SYST:ERR?
INST:TERM
```


A.8 Ethernet Discovery

This section describes how to create Discovery Test programs. To discover the Network Masters, it is necessary to enable the Allow In-band control function of the application running on the target Network Master(s).

1. Specify the search type and perform a measurement.

```
ETH:DISC:SET:TYPE MULTI
MEAS:STAR
SYST:WAIT:IDLE
```

2. Query the number of the Network Masters discovered over a network.

```
ETH:DISC:RES:NREQ?
```

3. Query the detailed information about the Network Master where you want to switch the application. For example, the following command queries the name of the Network Master No.1.

```
ETH:DISC:RES:SREQ:DET? 1,(NICN)
```

4. Specify the application to be switched and its settings on the Application Change function. For example, the following commands specify RFC2544 as the application to be switched, and specify the each setting required for the measurement.

```
ETH:DISC:CAPP:SAPP RFC
ETH:DISC:CAPP:TARG:MAC:SOUR "00-50-C2-35-D2-EF"
ETH:DISC:CAPP:TARG:IPV4:SOUR "172.29.2.36"
ETH:DISC:CAPP:TARG:IPV4:DEST "172.29.2.37"
```

5. Apply the specified application to the target Network Master. For example, the following command applies the specified application to the Network Master No.1.

```
ETH:DISC:CAPP 1
```

6. Update the specified settings to the target Network Master, and query the result of updating repeatedly until SUCCESS is returned. For example, the following commands update information about the Network Master No.1 and query the result of updating.

```
ETH:DISC:RES:UPD 1
ETH:DISC:RES:UPD:RES?
```

7. Confirm whether the application has switched to the specified one. For example, the following command queries the application name of the Network Master No.1.

```
ETH:DISC:RES:SREQ:DET? 1,(CAPP)
```

A.9 Fibre Channel BERT

This example runs a BER test. It requires a cable from PORT1 to PORT2. It configures PORT1 and set PORT2 to follow PORT1. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-7}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last two queries are approximately `FCH:PORT<Pt>:IFET? (PERR) → (567,1E-07)`.

```
*RST
INST:STAR TP-BERT-FC,1-PORT1,1-PORT2

FCH:PORT1:MODE FC400
FCH:PORT2:MODE FC400

FCH:PORT1:TOP PTP; :FCH:PORT1:PTP:LOG ON
FCH:PORT2:TOP PTP; :FCH:PORT2:PTP:LOG ON
FCH:PORT1:DEST:LOG
SYST:WAIT:DUR 2

FCH:PORT2:FOLL:FRAM 1
FCH:PORT1:FRAM:FRAM FT1
FCH:PORT1:FRAM:CONT PRBS23

FCH:PORT2:FOLL:GEN 1; STR 1
FCH:PORT1:TRAF:STR:LL 50.0

FCH:PORT1:STIM:ERR BIT; EINS BE7; EBL 1
FCH:PORT2:STIM:ERR BIT; EINS BE7; EBL 1

FCH:TRAF:GEN:STAR
SYST:WAIT:DUR 2

MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10
MEAS:STAR

SYST:WAIT:IDLE

MEAS:SET:SEL TOT
FCH:PORT1:IFET? (BPE)
FCH:PORT2:IFET? (BPE)

SYST:ERR?

INST:TERM
```

A.10 OTN BERT

This example runs a BER test. It requires a cable to be connected from TX1 to RX1. It configures TX1 and sets RX1 to follow TX. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-7}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last two queries are OTN:RX<Rx>:IFET? (PRBSBIT) → (9995,1E-07)

```
*RST
INST:STAR TP-BERT-OTN,1-PORT1,1-PORT2
```

```
OTN:TX1:ENAB NORM
OTN:TX1:MAPP:OUTP OTU2
OTN:TX1:MAPP:CSIG PRBS
```

```
OTN:TX2:FOLL TX1
```

```
OTN:RX1:INT SFP
OTN:RX1:FOLL TX
```

```
OTN:RX2:INT SFP
OTN:RX2:FOLL TX
```

```
OTN:STIM:TX1:TYPE AEIN
OTN:STIM:TX1:AEIN:LEV ODU2
OTN:STIM:TX1:AEIN:TYPE PRBSBIT
OTN:STIM:TX1:AEIN:INS RATE
OTN:STIM:TX1:AEIN:RATE R1E7
```

```
OTN:STIM:TX2:TYPE AEIN
OTN:STIM:TX2:AEIN:LEV ODU2
OTN:STIM:TX2:AEIN:TYPE PRBSBIT
OTN:STIM:TX2:AEIN:INS RATE
OTN:STIM:TX2:AEIN:RATE R1E7
```

```
MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10
MEAS:STAR
```

```
SYST:WAIT:IDLE
```

```
MEAS:SET:SEL TOT
OTN:RX1:IFET? (PRBSBIT)
OTN:RX2:IFET? (PRBSBIT)
```

```
SYST:ERR?
INST:TERM
```

A.11 CPRI BERT

This example runs a BER test. It requires a cable from PORT1 to PORT2. It configures PORT1 and set PORT2 to follow PORT1. Stimuli is set to generate pattern errors with a rate of $1 \cdot 10^{-4}$. A Statistics measurement is set to run for 10 seconds and it finally reads the measured pattern errors from the total interval.

The expected execution of the last two queries are approximately `CPRI:PORT<Pt>:IFET? (PE) → (7372800,0.0001)`.

```
*RST
INST:STAR TP-BERT-CPRI,1-PORT1,1-PORT2

CPRI:PORT1:MODE NORM
CPRI:PORT2:MODE NORM

CPRI:PORT1:LRAT 9830M
CPRI:PORT2:LRAT 9830M

CPRI:PORT1:CONT LINK
CPRI:PORT2:CONT LINK
SYST:WAIT:DUR 2

CPRI:PORT2:SET:FOLL ON
CPRI:PORT1:PATT PRBS15

CPRI:PORT1:STIM:ERR PE; EINS B04
CPRI:PORT2:STIM:ERR PE; EINS B04

MEAS:SET:ILEN 5S
MEAS:SET:STAR IMM
MEAS:SET:STOP DUR
MEAS:SET:SDUR 0, 0, 0, 10
MEAS:STAR

SYST:WAIT:IDLE

MEAS:SET:SEL TOT
CPRI:PORT1:IFET? (PE)
CPRI:PORT2:IFET? (PE)

SYST:ERR?

INST:TERM
```

Abbreviations

AISL	Line Alarm Indication Signal
AISP	STS Path Alarm Indication Signal
AISV	Virtual Tributary Alarm Indication Signal
ALS	Alarm Seconds
AMI	Alternate Mark Inversion
APS	Automatic Protection Switching
ARP	Address Resolution Protocol
AU	Administrative Unit
AU-AIS	Administrative Unit Alarm Indication Signal
AU-LOP	Administrative Unit Loss Of Pointer
AU-NDF	Administrative Unit New Data Flag
AVT	Available Time
B-TAG	Backbone VLAN tag
B8ZS	Bipolar 8-zero substitution (<i>code with a maximum of 7 consecutive zeroes</i>)
BBE	Background Block Error
BDP	Bandwidth Delay Product
BER	Bit Error Ratio
BERT	Bit Error Rate Test
BIS	Bringing Into Service
BPV	Bipolar Violation
C-bits	Bit stuffing control bits
CAS	Channel Associated Signaling
CCM	Continuity Check Message
CRC	Cyclic Redundancy Check
DEI	Drop Eligible Indicator
DM1	One-way delay measurement
DMM	Delay Measurement Message
DNS	Domain Name System
DSCP	Differentiated Services Code Point
EFS	Error Free Seconds

EoMPLS	Ethernet over MPLS
ES	Errored Second
ESF	Extended superframe
ESMC	Ethernet Synchronization Messaging Channel
EXM	Experimental OAM Message
EXZ	Excessive Zeroes
F-bits	Framing bits
FDL	Facility Data Link
fps	frames per second
fps	frames per second
HDB3	High Density Bipolar 3 (<i>code with a maximum of 3 consecutive zeroes</i>)
HP	High-order Path
HP-PLM	High-order Path Payload Label Mismatch
HP-RDI	High-order Path Remote Defect Indicator
HP-REI	High-order Path Remote Error Indication
HP-TIM	High-order Path Trace Identifier Mismatch
HP-UNEQ	High-order Path Unequipped
HR	Hypothetical Reference allocation
IEEE	Institute of Electrical and Electronic Engineers
IFG	InterFrame Gap
ILA	In-Lane Alignment
IP	Internet Protocol
ISDN	Integrated Services Digital Network
LAN	Local Area Network
LAN	Local Area Network
LBM	Loop-back Message
LBR	Loop-back Response
LFS	Link Fault Signaling
LMM	Loss Measurement Message
LMP	Link Management Protocol
LOF	Loss Of Frame
LOMV	Virtual Tributary Loss Of Multiframe
LOPP	STS Path Loss Of Pointer
LOPV	Virtual Tributary Loss Of Pointer
LOR	Loss Of Recovery
LOS	Loss Of Signal

LP	Low-order Path
LP-PLM	Low-order Path Payload Label Mismatch
LP-RDI	Low-order Path Remote Defect Indicator
LP-REI	Low-order Path Remote Error Indication
LP-TIM	Low-order Path Trace Identifier Mismatch
LP-UNEQ	Low-order Path Unequipped
LSS	Loss of Signal Synchronization
LTM	Link Trace Message
MAC	Media Access Control
Mbps	Mega bit per second
MCC	Maintenance Communications Channel
ME	Maintenance Entity
MEG	Maintenance Entity Group
MEP	Management End Point
MF	Multi Frame
MFAS	Multi Frame Alignment Signal
MiM	MAC-in-MAC
MPLS	Multiprotocol Label Switching
MS	Multiplex Section
MS-AIS	Multiplex Section Alarm Indication Signal
MS-RDI	Multiplex Section Remote Defect Indication
MS-REI	Multiplex Section Remote Error Indication
MSS	Maximum Segment Size
MTU	Maximum Transmission Unit
MUX	Multiplex
NDF	New Data Flag
NFAS	Non Frame Alignment Signal
NTP	Network Time Protocol
OAM	Operation, Administration and Maintenance
OC-N	Optical Carrier at level N (N = 1, 3, 12, 24, 48, 192 or 768)
OLA	Out of Lane Alignment
OOF	Out Of Frame
OOR	Out Of Recovery
OUI	Organizationally Unique Identifier
P-bits	Parity bits
PBB	Provider Backbone Bridges, known as MAC-in-MAC (MiM)

PCP	Priority Code Point
PDH	Plesiochronous Digital Hierarchy
PLMP	High-order Path Payload Label Mismatch
PLMV	Low-order Path Payload Label Mismatch
POH	Path Overhead
ppb	parts per billion
PRBS	Pseudo Random Binary Sequence
QL	Quality Level
QRSS	Quasi Random Signal Source
RAI	Remote Alarm Indication
RDI	Remote Defect Indication
RDIL	Line Remote Defect Indication
RDIP	High-order Path Remote Defect Indicator
RDIV	Low-order Path Remote Defect Indicator
REI	Remote Error Indication
REIL	Line Remote Error Indication
REIP	STS Path Remote Error Indication
REIV	Virtual Tributary Remote Error Indication
RPM	Real-time Performance Monitoring
RTT	Round-Trip Time
Rx	Receiver
SDH	Synchronous Digital Hierarchy
SES	Severely Errored Second
SF	Superframe
SID	Backbone Service Instance Identifier
SLM	Synthetic (frame-) Loss Measurement
SOH	Section Overhead
SONET	Synchronous Optical NETwork
SSF	Server Signal Fail
STAT	Status
STL	Synchronous Transport Lane
STM	Synchronous Transport Module
STS	Synchronous Transport Signal
TAI	Time, Atomic International
TC	Tandem Connection
TC-AIS	Tandem Connection Alarm Indication Signal

TC-BIP2	Tandem Connection Bit Interleaved Parity-2
TC-IEC	Tandem Connection Incoming Error Count
TC-LTC	Tandem Connection Loss of Tandem Connection
TC-ODI	Tandem Connection Outgoing Defect Indicator
TC-OEI	Tandem Connection Outgoing Error Indication
TC-RDI	Tandem Connection Remote Defect Indicator
TC-REI	Tandem Connection Remote Error Indication
TC-TIM	Tandem Connection Trace Identifier Mismatch
TC-UNEQ	Tandem Connection Unequipped
TCM	Tandem Connection Monitoring
TCP	Transmission Control Protocol
TIM	Trace Identifier Mismatch
TIMP	High-order Path Trace Identifier Mismatch
TIMV	Low-order Path Trace Identifier Mismatch
TLV	Type, Length, Value encoding
TOH	Transport Overhead
TP	Tributary Port
TRAU	Transcoder and Rate Adaptation Unit
TS	Tributary Slot
TTL	Time To Live (hop limit)
TU	Tributary Unit
TU-AIS	Tributary Unit Alarm Indication Signal
TU-LOM	Tributary Unit Loss Of Multiframe
TU-LOP	Tributary Unit Loss Of Pointer
TU-NDF	Tributary Unit New Data Flag
TUG	Tributary Unit Group
Tx	Transmitter
UAT	Unavailable Time
UCA	Use Customer Address
UDP	User Datagram Protocol
UNAV	Unavailable
UNEQP	High-order Path Unequipped
UNEQV	Low-order Path Unequipped
UTC	Universal Time Coordinated
VC	Virtual Container
VLAN	Virtual Local Area Network

VSM	Vendor Specific OAM Message
VT	Virtual Tributary
WAN	Wide Area Network
WWN	Worldwide Name