MT8852B
Bluetooth Test Set
Remote Programming Manual

Seventh Edition

- For safety and warning information, please read this manual before attempting to use the equipment.
- Additional safety and warning information is provided within the MT8852B *Bluetooth* Test Set Operation Manual. Please also refer to it before using the equipment.
- Keep this manual with the equipment.

ANRITSU CORPORATION

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Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Ensure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following symbols may be used on all Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in this manual.

Symbols Used in Manuals

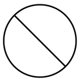
 **DANGER** This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.

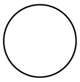
 **WARNING** This indicates a hazardous procedure that could result in serious injury or death if not performed properly.

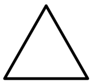
 **CAUTION** This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

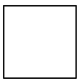
Safety Symbols Used on Equipment and in Manuals

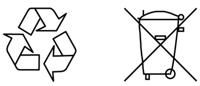
The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Ensure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.

 This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.

 This indicates a compulsory safety precaution. The required operation is indicated symbolically in or near the circle.

 This indicates a warning or caution. The contents are indicated symbolically in or near the triangle.

 This indicates a note. The contents are described in the box.

 These indicate that the marked part should be recycled.

MT8852B
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Notes On Export Management

This product and its manuals may require an Export License/ Approval by the Government of the product's country of origin for re-export from your country.
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When you dispose of export-controlled items, the products/ manuals need to be broken/shredded so as not to be unlawfully used for military purpose.

Table of Contents

Chapter 13—Test Limit Variables

Chapter 14—Running and Aborting Code

Chapter 15—Reading Test Results Data

Chapter 16—BLE Measurement

Chapter 17—Auxiliary Commands

Appendix A—Supported Features Format

Appendix B—GPIB PC Card Set-up

Appendix C—Script Default Settings

Chapter 1 — General Information

1-1 About this Manual

This manual provides instructions on the remote operation of the following model types:

- MT8852B *Bluetooth* Test Set (with EDR and Audio)
- MT8852B-040 *Bluetooth* Test Set (without EDR or Audio)
- MT8852B-041 *Bluetooth* Test Set (without EDR but with Audio)
- MT8852B-042 *Bluetooth* Test Set (with EDR but without Audio
- MT8852B-043 *Bluetooth* Test Set for Low Energy tests only (without EDR or Audio)

Explanations in this manual apply equally to all of the above model types unless otherwise stated.

Comments on this Manual

Every effort has been made to ensure that this manual is thorough, easy to use, and free from errors. However, to ensure continued improvement, we would welcome your comments on this, or any other Anritsu document.

Please contact us at the address below if you have any comments, good or bad, find any errors or omissions, or have any suggestions on how our documentation could be improved further.

Bluetooth.support@anritsu.com

Your comments will be logged and reviewed, and whenever possible, will be reflected in a subsequent release of the document.

Software Versions

This manual provides details of the remote operation of the following software versions:

- MT8852B: 5.00.020(N)
- MT8852B-040: 5.00.020(N)
- MT8852B-041: 5.00.020(N)
- MT8852B-042: 5.00.020(N)
- MT8852B-043: 5.00.020(N)

Some of the features documented in this manual may not be available to users of earlier software releases. Check the version of software you are using by following the procedure below.

1. Power up the unit and press Config.
2. Select "MT8852B" and press Sel.
3. Select "Identity" and press Sel.
4. Check the number that displays to the right of "Version".

Notification of Software Release

The MT8852B software is periodically updated as new features are added to meet market demands. To receive automatic notification of software releases, send a blank e-mail with the subject heading of "MT8852B Software Notification Request" to *Bluetooth*.support@anritsu.com. You will receive an e-mail when new software is available to download.

Associated Documentation

In addition to this manual, the following document is also available on the Product CD shipped with the MT8852B *Bluetooth* Test Set.

Table 1-1. Associated Documentation

Part number	Document
W3968AE	MT8852B *Bluetooth* Test Set Operation Manual

The above document is in PDF format and can be viewed using Adobe Reader™ , a freeware program that can be downloaded from http://www.adobe.com/.

Conventions

The following conventions have been adopted in this manual.

Table 1-2. Notation Conventions

Item	Convention
MT8852B	Unless otherwise stated, the name “MT8852B” is used generically throughout this manual to refer to all model types of the MT8852B *Bluetooth* Test Set. Refer to the table on the following page for details of model types.
EUT	The Bluetooth enabled device being tested is referred to as the EUT (Equipment Under Test).
Config	The five hard keys (Run, Loop/Stop, Script, Config, and Preset) are depicted using an image of the key in question.
Sel	The keys on the numeric keypad are depicted using an image of the key in question.
[Setup]	The names of soft keys appearing on the front panel are enclosed in square brackets.
“Output Power”	Test appearing on the display is enclosed in quotation marks when used in a body of text. Items with quotation marks are selected by pressing Sel.
Config > “MT8852B”	A chevron (>) is used to indicate that the user should select the items or keys in sequential order.
[Log Capture]	The names of software windows and dialogs are enclosed in square brackets.

1-2 Command Format

The commands are presented in a structured manner as shown below.

Set command format	For each command, the command name and syntax are detailed. For example: `COMMAND<ws>[<param1>,<param2>,<paramN>]` Each of the allowable values for the command argument(s) is described.
Remarks	An expanded description of the command, how to use it, and programming hints or restrictions.
Example	An example of the command in use.
Query command format	The command used when requesting a response from the MT8852B.
Response	The command string returned from the MT8852B.
Example	An example of a response from the MT8852B.

Chapter 2 — GPIB Overview

The MT8852B *Bluetooth* Test Set can be operated remotely through a General Purpose Interface Bus (GPIB) connection to a host computer. The MT8852B conforms to the IEEE488.1 and IEEE488.2 standards.

2-1 Requirements when using GPIB

A GPIB card, cable, and the associated control software are required to communicate with the MT8852B over the GPIB bus.

2-2 Syntax

The following rules must be adhered to when sending GPIB commands to the instrument.

1. An ASCII space must be present between the command mnemonic and the first parameter.
2. All subsequent parameters must be separated by commas (,).
3. Multiple commands may be sent on the same line, but each must be separated by a semicolon (;).

The conventions used are detailed in the table below.

Table 2-1. GPIB Syntax Rules

Item	Meaning
< >	The parameters or characters within the angled brackets must be present. Throughout this document the angled brackets are employed merely as a convention to help users interpret the commands. They must not be included in the command string when issuing commands over GPIB.
ws	White space character.
[ ]	Optional parameters. Do not include the square brackets in the command string.
,	Parameter separator. All GPIB commands having more than one parameter must use the comma (,) separator between each parameter.
;	Message unit terminator. A GPIB command message can be made up of a number of command units separated by the semicolon, as seen in the following example. COMMAND param1a,param1b;COMMAND2 param2a The mnemonics and all the parameters can use either upper or lower case characters unless specified otherwise.

2-3 Termination

All commands sent over the GPIB interface to the MT8852B must be terminated with either (or both) of the following:

End Of String (EOS): The '\n' or 0x0A character.

End Of message Indicator (EOI): A hardware line on the GPIB interface bus.

2-4 Suffixes

Parameters containing floating-point values can use the E-0x convention or a suffix multiplier. The GPIB unit conventions specified by the IEEE have been implemented for the suffix units and multipliers. The suffix unit is always allowed but is not required and is shown in brackets where appropriate.

The following table lists the numeric suffixes for the MT8852B *Bluetooth* Test Set. Suffix units are optional and can be omitted.

Table 2-2. Suffix Multipliers and Units

Suffix Multipliers		Suffix Units	
Definition	**Mnemonic**	**Definition**	**Mnemonic**
1E18	EX	Decibels	DB
1E15	PE	dB ref to 1 mW	DBM
1E12	T	dB ref to 1 mV	DBMV
1E9	G	dB ref to 1 μV	DBUV
1E6	MA	Percent	PCT
1E3	K	Seconds	SEC
1E-3	M	Seconds	S
1E-6	U	Volts	V
1E-9	N	Watts	W
1E-12	P	Hertz	HZ
1E-15	F	Kilo Hertz	KHZ
1E-18	A	Megahertz	MHZ

For example 10 microseconds can be represented in any of the following formats: -

a. Straight value format 0.000010

b. With the E format 10E-6

c. Suffix multiplier format 10U

2-5 GPIB 488.2 Registers

The following diagram shows the GPIB event and status registers. The meaning of each bit is described below.

Status Byte Register and Service Request Enable Register

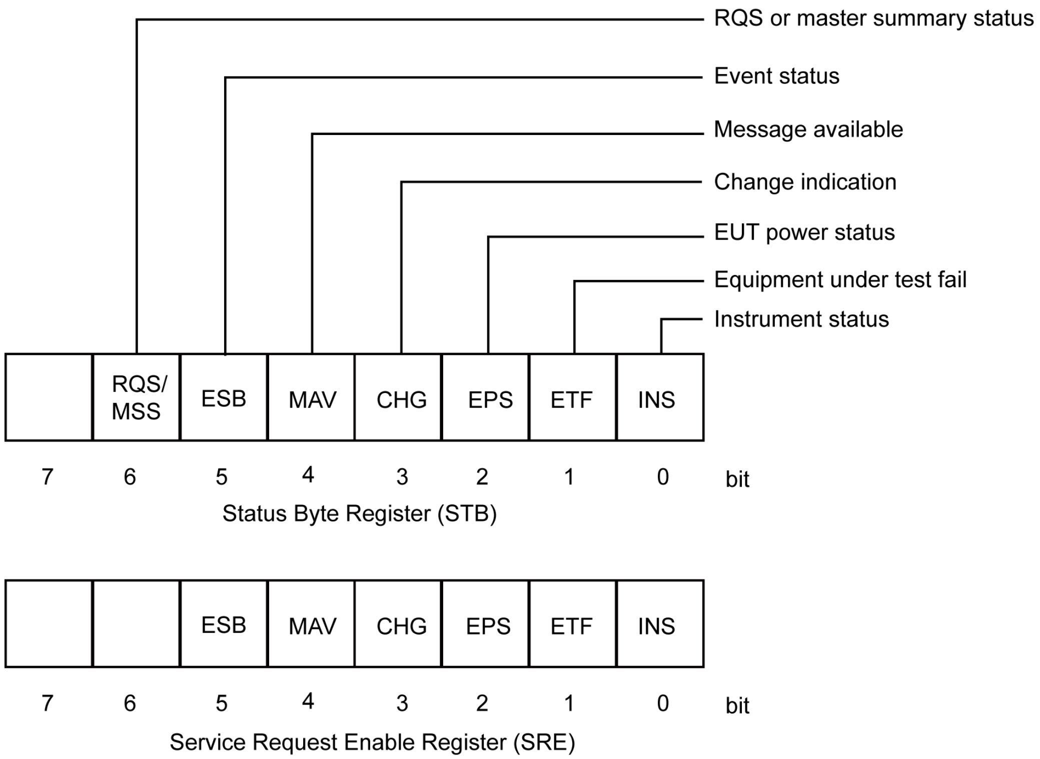

Figure 2-1. Status Byte and Service Request Enable Registers

Table 2-3. STB and SRE Bit Definitions

RQS/MSS	When the Status byte is read via a Serial Poll operation this bit is RQS (Request Service). When the Status byte is read via the *STB? Command this bit is MSS (Master Summary Status). This bit has no function in the Service Request Enable Register. (Request service) This bit is set when one of the other bits in the status byte is set and the corresponding bit in the Service Request Enable Register (SRE) has been set. When this bit is set an SRQ is indicated over the GPIB interface. The SRQ is cleared by a serial poll, the status byte returned to the controller and the bit that caused the SRQ is cleared. (Master Summary Status) This bit is the inclusive OR of the bitwise combination (excluding bit 6) of the Status Byte register and the Service Request Enable register. Note that the *STB? Command does not alter the Status byte, nor will it clear an SRQ.

Table 2-4.

ESB	(Event status bit) When a bit is set in the event register and the corresponding bit has been set in the event status enable register (ESE) the ESB bit in the status register is set.
MAV	(Message available) This bit is always set when there is data available to be read out from the output buffer and it is cleared when the output buffer is empty.
CHG	(Change indication) This bit is cleared at power ON initialisation, following a serial poll, or upon sending the *CLS command. This bit is set when one of the change bits has been set and the corresponding bit in the change status enable (CHE) register has been set.
EPS	(EUT Power Status) This bit is cleared at power ON initialisation or upon sending the *CLS command. This bit is set when the EUT power matches the maximum or minimum power. Use the status command to read whether max or min was reached.
ETF	(Equipment Test Fail) This bit is cleared at power ON initialisation or upon sending *CLS. This bit is set to indicate a test failure if the following conditions apply: One of the tests has failed (the instrument will set the appropriate bit in the ETF or EETF registers) and the appropriate bit within the ETE or EETE registers has been enabled by the user prior to running the test. See definitions of the ETF, EETF, ETE, EETE in this manual for more details.
INS	(Instrument status) This bit is cleared on initialisation and when the *CLS command has been sent. This bit is set when one of the instrument status bits has been set and the corresponding bit in the instrument status enable (INE) register has been set.

Note	The Status Byte register is read via a Serial Poll or with the *STB? Command. It cannot be written to directly by the user. The Service Request Enable Register is written to with the *SRE command and read with the *SRE? Command. It is cleared by *CLS.

Standard Event Status Register and Standard Event Status Enable Register

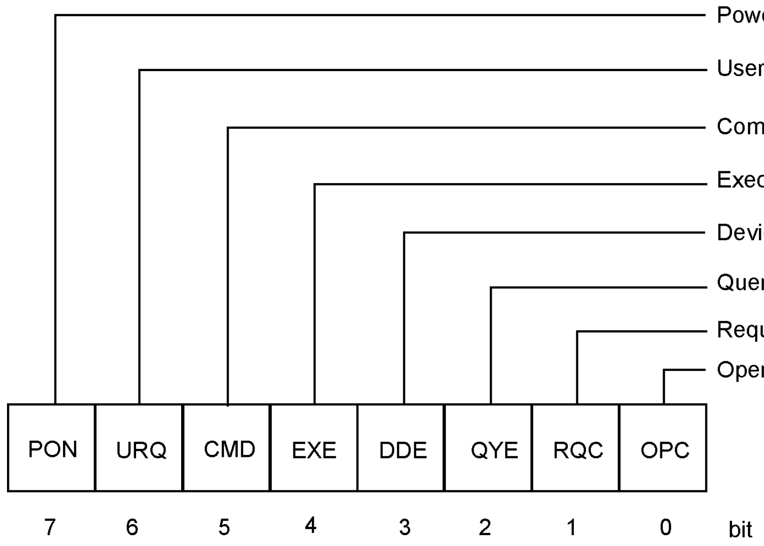

Figure 2-2. Standard Event Status and Standard Event Status Enable Registers

Table 2-5. ESR and ESE Bit Definitions

PON	Power On bit. This bit is set on power up of the device only and cleared if the instrument is reset or receives a *CLS command. This bit only indicates that a power on has occurred.
URQ	User request
CMD	Command error. Received an unrecognized command.
EXE	Execution error. Could not execute a command. For example, a parameter is out of the allowable range.
DDE	Device Dependent Error. The specific error can be found by using the ERRLST command.
QYE	Query Error
RQC	Request Control. GPIB controllers only.
OPC	Operation Complete. When a program message that includes the *OPC command has been completed and the GPIB interface is idle with any responses read out of the output buffer this bit is set. For example, if the last command in a configuration sequence is *OPC, the OPC bit in the event status register is set when that configuration list has been completed.

Note	The Standard Event Status Register is read with the *ESR? Command. Reading the ESR clears it. The Standard Events Status Enable Register is written to with the *ESE command and read with the *ESE? command. Both registers are cleared by *CLS.

EUT Fail Register and Fail Enable Register

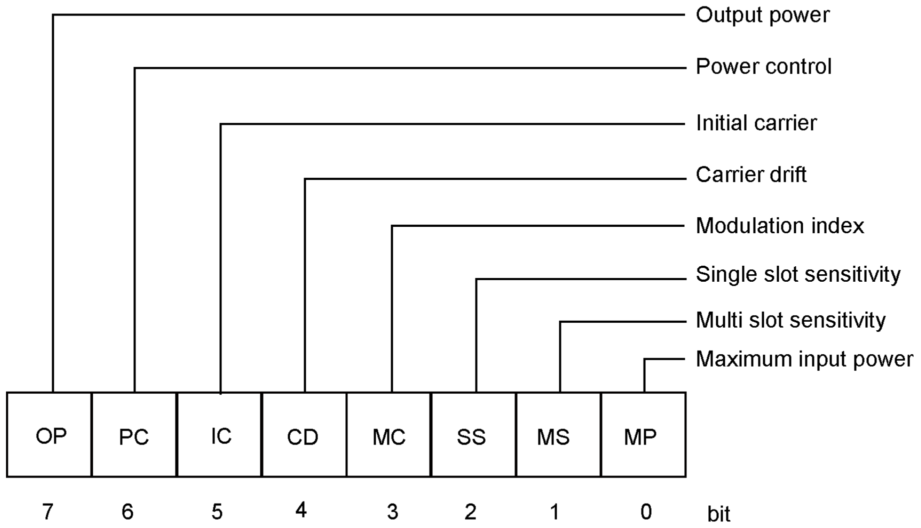

Figure 2-3. UET Fail and Fail Enable Registers

This EUT register is cleared on the start of a test or script. When a test completes, if it has failed the test limit parameters enabled to give a fail result the corresponding bit in this register is set. These events can be programmed to provide an SRQ by setting the corresponding bit(s) in the Equipment Under Test Fail Enable Register (ETE).

Table 2-6. ETF and ETE Bit Definitions

OP	Output power test fail bit. This bit indicates that the output power test failed the limit criteria set.
PC	Power control test fail bit. This bit indicates that the power control test failed the limit criteria set.
IC	Initial carrier test fail bit. This bit indicates that the initial carrier test failed the limit criteria set.
CD	Carrier drift test fail bit. This bit indicates that the carrier drift test failed the limit criteria set.
MC	Modulation index test fail bit. This bit indicates that the modulation index test failed the limit criteria set.
SS	Single slot sensitivity test fail bit. This bit indicates that the single slot sensitivity test failed the limit criteria set.
MS	Multi slot sensitivity test fail bit. This bit indicates that the multi slot sensitivity test failed the limit criteria set.
MP	Maximum input power test fail bit. This bit indicates that the maximum input power sensitivity test failed the limit criteria set.

Note The EUT Fail register is read with the *ETF?.

Instrument Status Register and Instrument Status Enable Register

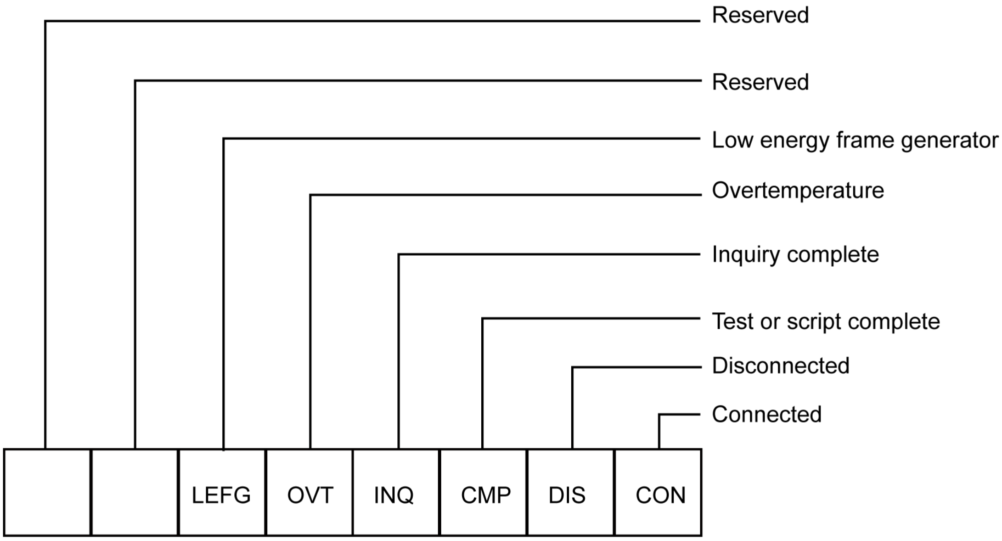

Figure 2-4. Instrument Status and Instrument Status Enable Registers

The INS register displays the present status of the instrument and can be used to provide SRQs for test or script completion and the connection status of the instrument by setting the corresponding bits in the INE register.

Table 2-7. INS and INE Bit Definitions

LEFG	BLE Frame generator counter stopped. This bit is set when the BLE Frame generator has sent the defined number of packets to the EUT.
OVT	Instrument Over temperature Warning.
INQ	EUT Address Inquiry complete.
CMP	Script or test completion. This bit is cleared when a test or script has started and is set on its completion or termination.
DIS	Disconnect. This bit is cleared when a connection has been made and set when disconnected.
CON	Connection. This bit is set when a connection has been made and cleared when the connection no longer exists.

Note	A Device Dependant Error (DDE in the ESR register) will indicate if an error occurred, causing the test or script to be aborted. The ERRLST command can be used to get the cause of the termination.

The INS register is read with the *INS? Command. It cannot be cleared by reading it or by the *CLS command. The INE register is written to by the *INE command and read by the *INE? Command. It is cleared by *CLS.

Change Register and Change Enable Register

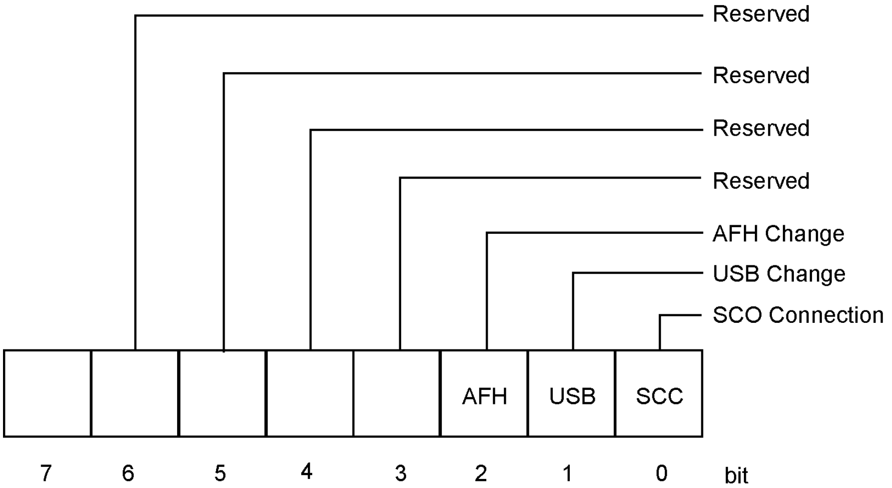

Figure 2-5. Change and Change Enable Registers

The CHG register indicates when a change of state has occurred in the instrument, and can be used to provide SRQs by setting the corresponding bits in the CHE register.

The CHG register is read with the *CHG? command. It is cleared by reading it or with the *CLS command.

The CHE register is written to with the *CHE command and read by the *CHE? command. It is cleared by the *CLS command.

Table 2-8. CHG and CHE Bit Definitions

SCC	This bit is set to indicate when a SCO status has changed. Use the "STATUS" command to retrieve the present SCO status. (MT8852B and MT8852B-041 only)
USB	This bit is set to indicate when a USB attached status has changed. Use the "STATUS" command to retrieve the present USB status. (MT8852B and MT8852B-041 only)
AFH	This bit is set to indicate that a change has occurred to the channel map. Use "AFHCFG? ACM" to retrieve the present state of the map.

EDR EUT Fail Register and EDR EUT Fail Enable Register (MT8852B and MT8852B-042 only)

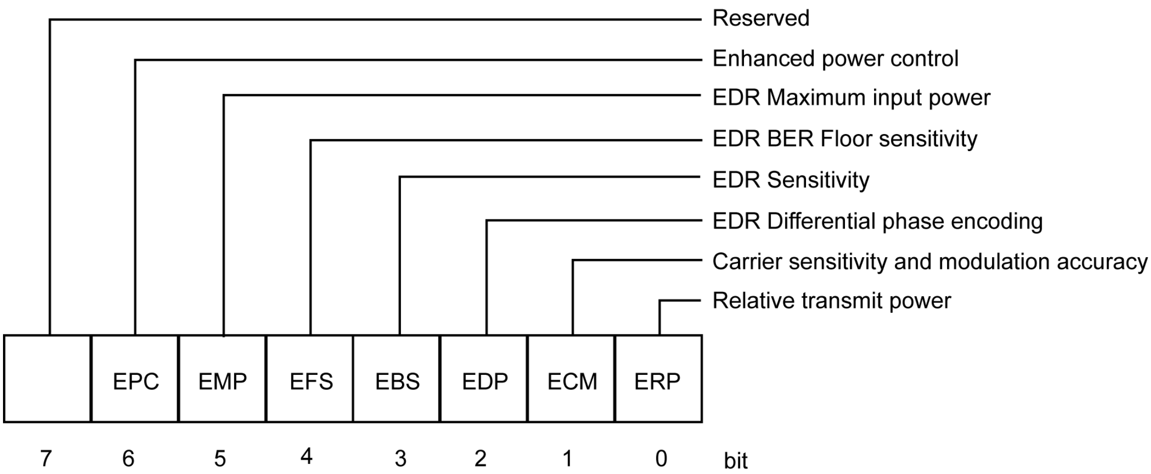

Figure 2-6. EDR EUT Fail and EDR EUT Fail Enable Registers

The EDR EETF Test Fail register is cleared at the start of a test or script. If an EDR test fails any of the test limits applied, the appropriate bit within the EETF register is set (e.g. if the EDR Sensitivity test fails, the EBS bit is set to '1'). To program the GPIB to provide an SRQ event upon failure of any of the EDR tests, the appropriate bit(s) must be set within the EDR EETE Fail Enable register.

Table 2-9. EETF and EETE Bit Definitions

EPC	Enhanced Power Control test fail bit. This bit indicates whether or not the test failed the limits criteria set.
EMP	EDR Maximum Input Power test fail bit. This bit indicates whether or not the test failed the limits criteria set.
EFS	EDR Floor Sensitivity test fail bit. This bit indicates whether or not the test failed the limits criteria set.
EBS	EDR Sensitivity test fail bit. This bit indicates whether or not the test failed the limits criteria set.
EDP	EDR Differential Phase Encoding test fail bit. This bit indicates whether or not the test failed the limits criteria set.
ECM	EDR Carrier Frequency Stability and Modulation Accuracy fail bit. This bit indicates whether or not the test failed the limits criteria set.
ERP	EDR Relative Transmit Power. This bit indicates whether or not the test failed the limits criteria set.

Note	The EDR EUT Fail register is read with the *EETF? query.

2nd EDR EUT Fail Register and 2nd EDR EUT Fail Enable Register (MT8852B and MT8852B-042 Only)

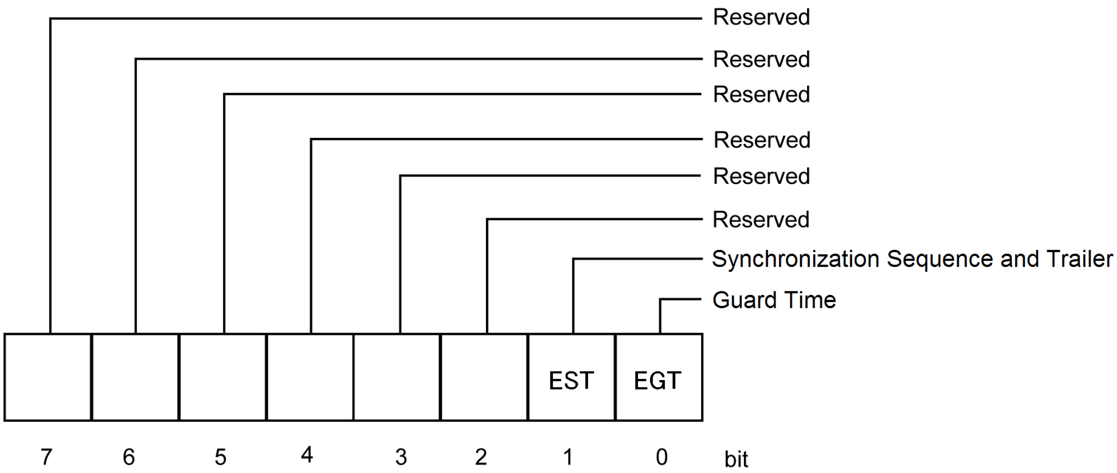

Figure 2-7. 2nd EDR EUT Fail and 2nd EDR EUT Fail Enable Registers

Except the test targets, the 2nd EDR EETF Test Fail register and the 2nd EDR EETE Fail Enable register are same as the EDR EETF Test Fail register and the EDR EETE Fail Enable register.

Table 2-10. 2nd EETF and 2nd EETE Bit Definitions

EGT	EDR Guard Time test fail bit. This bit indicates whether or not the test failed the limits criteria set.
EST	EDR Synchronization Sequence and Trailer test fail bit. This bit indicates whether or not the test failed the limits criteria set.

Note The 2nd EDR EUT Fail register is read with the *EETF2? Query.

BLE EUT Fail Register and BLE EUT Fail Enable Register (MT8852B-043 and units with option 27 only)

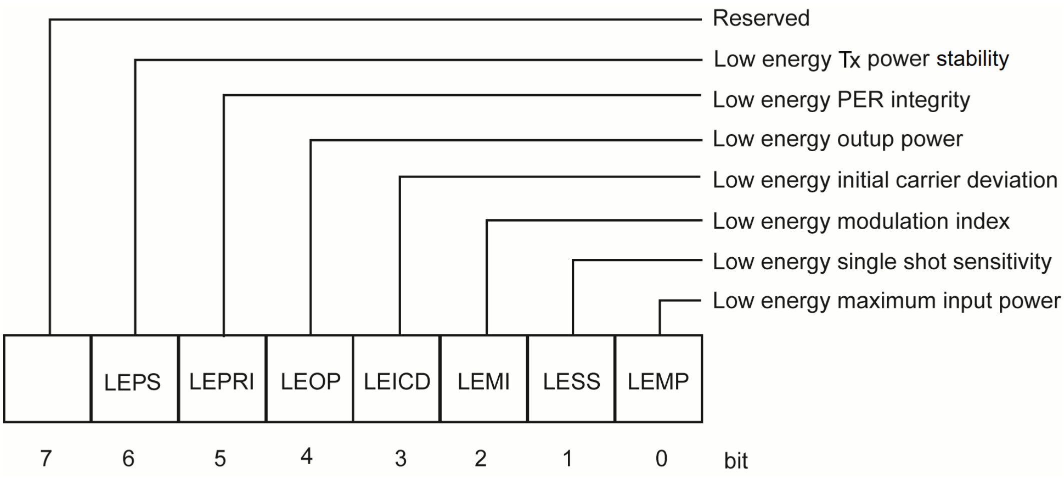

Figure 2-8.

The BLE LEETF Test Fail register is cleared at the start of a test or script. If a BLE test fails any of the test limits applied, the appropriate bit within the LEETF register is set (e.g., if the BLE Sensitivity test fails, the LESS bit is set to '1'). To program the GPIB to provide an SRQ event upon failure of any of the BLE tests, the appropriate bit(s) must be set within the BLE LEETE Fail Enable register.

Table 2-11. LEETF and LEETE Bit Definitions

LEPRI	PER integrity test fail bit. This bit indicates that the PER integrity test failed the limit criteria set.
LEOP	Output power test fail bit. This bit indicates that the output power test failed the limit criteria set.
LEICD	Initial carrier test fail bit. This bit indicates that the initial carrier test failed the limit criteria set.
LEMI	Modulation index test fail bit. This bit indicates that the modulation index test failed the limit criteria set
LESS	Single slot sensitivity test fail bit. This bit indicates that the single slot sensitivity test failed the limit criteria set
LEMP	Maximum input power test fail bit. This bit indicates that the maximum input power sensitivity test failed the limit criteria set
LEPS	Tx power stability test fail bit. This bit indicates that the Tx power stability test failed the limit criteria set

Note	The EUT Fail register is read with the *LEETF? query.

2-6 GPIB over RS232

Version 1.1 or above of the control software supports the use of RS232 in addition to GPIB commands. Use the RS232 connector on the rear panel of the unit.

Hardware handshake CTS and RTS lines are used to control the flow of data in and out of the tester and must be available in the cable as hardware handshaking is always enabled. The RS232 cable used between the COM port on the PC and the connector on the rear of the MT8852B must be of a Null Modem type such as that supplied with the MT8852B itself.

The DTR and DSR lines are connected together within the tester.

The MT8852B *Bluetooth* test set's serial connector pin-outs are:

Table 2-12. Serial Connector Pin Outputs

Pin	Signal
1	NOT USED
2	Rx Data
3	Tx Data
4	DTR handshake signal
5	Signal ground
6	DSR handshake signal
7	RTS handshake signal
8	CTS handshake signal
9	NOT USED

The serial interface baud rate can be set using the MT8852B "System Interfaces" menu under the **Config** menu. Available baud rates are; 1200, 2400, 4800, 9600 (default), 19200, 38400, 57600, and 115200. The other RS232 parameters are predefined as 8 bits, no parity and 1 stop bit and cannot be changed.

Commands are entered in the same manner as the GPIB interface, conforming to the GPIB command format. All GPIB commands are supported. There are some additional commands, specific to the serial interface that are prefixed with an exclamation mark (!). All GPIB type commands and command strings should be terminated with a new line character (0A hex). The special serial mode commands do NOT require a termination character.

Requested data is returned in the same format as GPIB, but with a preceding 'R' and a terminating new line character.

SRQs are available, and are output as an SRQ message 'S' followed by a terminating new line character. When the SRQ message has been received, an "!SPL" command (equivalent to the GPIB serial poll) can be issued. The tester will respond with the serial poll data message, which is a single character, proceeded by 'P' and terminated by a new line character.

A device clear message !DCL can be sent to clear the tester input and output message queues, and terminate any GPIB or serial actions pending.

2-7 Summary of RS232 Commands

Table 2-13. Mnemonic Definitions

Mnemonic	Meaning	Comments
!DCL	Device clear	Clear all queues and terminates any pending actions.
!SPL	Serial poll	Clears SRQ cause and returns the status byte.
P	Response to serial poll	Status byte
R	Return of requested data	

Chapter 3 — IEEE 488.2 Mandatory and Register Commands

This chapter provides details of the event register and mandatory commands. The commands are listed in alphabetical order as shown below.

*CHE (Change Enable Register)

The bits in the Change Enable Register are the same as those in the Change Register. The two registers are bitwise AND'ed to determine whether to set the CHG bit in the Status Register.

Set command format	`*CHE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. See the explanation in chapter 2 for a description of the bits in the Change and Change Enable registers.
Example	To enable bit 0 (SCO Connection) `*CHE 1`

Query command format	`*CHE?`
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*CHE? Does not clear the Change Enable register. Use *CHE 0 or *CLS for this purpose.

*CHG (Change Register)

Returns the current state of the Change Register (CHG).

Query command format	`*CHG?`
Response	<val> <val> is a decimal representation of the binary value of the Change Register.
Example	A return value of 1 indicates that bit 0 (SCO Connection) is set.
Remarks	See the explanation in chapter 3 for bit definitions of the Change Register. *CHG? Does not clear the Change Register.

*CLS (Clear GPIB Status Bytes)

Set command format	`*CLS`
Remarks	Clears all the GPIB status data structures, including the Event Status Register and Status Register, except for the MAV bit. *CLS does not clear the Output Queue.

*EETE (EDR EUT Fail Enable Register) (MT8852B and MT8852B-042 only)

The bits in the EDR EUT Fail Enable Register are the same as those in the EDR EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ event.

Set command format	`*EETE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EDR EUT Fail and EDR EUT Fail Enable registers.

Examples	To enable bit 3 (EDR Sensitivity)
	`*EETE 8`
	To enable bit 5 (EDR Maximum Input Power)
	`*EETE 32`
	`To enable both bits`
	`*EETE 40`

Query command format	`*EETE?` <val> decimal representation of an 8 bit binary mask.
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*EETE? Does not clear the EUT Fail Enable register. Use *EETE 0 or *CLS for this purpose.

*EETE2 (2nd EDR EUT Fail Enable Register) (MT8852B and MT8852B-042 only)

The bits in the 2nd EDR EUT Fail Enable Register are the same as those in the 2nd EDR EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ event.

Set command format	`*EETE2<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EDR EUT Fail and 2nd EDR EUT Fail Enable registers.

Examples	To enable bit 0 (Guard Time)
	`*EETE2 1`
	To enable bit 1 (Synchronization Sequence and Trailer)
	`*EETE2 2`
	`To enable both bits`
	`*EETE2 3`

Query command format	`*EETE2?` <val> decimal representation of an 8 bit binary mask.
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*EETE2? Does not clear the EUT Fail Enable register. Use *EETE2 0 or *CLS for this purpose.

*EETF (EDR EUT Fail Register Query) (MT8852B and MT8852B-042 only)

Returns the current state of the EDR EUT Fail Register (EETF).

Query command format	`*EETF?`
Response	<val>
	<val> is a decimal representation of the binary value of the EDR EUT Fail Register.
Example	A return value of 9 indicates that bit 0 (EDR Relative Transmit Power) and bit 3 (EDR Sensitivity) are set.
Remarks	See chapter 2 for bit definitions of the EDR EUT Fail Register.
	*EETF? Clears the EDR EUT Fail Register.

*EETF2 (2nd EDR EUT Fail Register Query) (MT8852B and MT8852B-042 only)

Returns the current state of the 2nd EDR EUT Fail Register (EETF2).

Query command format	`*EETF2?`
Response	<val>
	<val> is a decimal representation of the binary value of the 2nd EDR EUT Fail Register.
Example	A return value of 3 indicates that bit 0 (Guard Time) and bit 1 (Synchronization Sequence and Trailer) are set.
Remarks	See chapter 2 for bit definitions of the 2nd EDR EUT Fail Register.
	*EETF2? Clears the 2nd EDR EUT Fail Register.

*ESE (Standard Event Status Enable)

The bits in the Standard Event Status Enable Register are the same as those in the Standard Event Status Register. The two registers are bitwise AND'ed to determine which standard event(s) will generate a SRQ.

Set command format	`*ESE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the Standard Event Status and Standard Event Status Enable registers.

Examples:-	To enable bit 4 (Execution Error)
	`*ESE 16`
	To enable bit 5 (Command Error)
	`*ESE 32`
	To enable both bits
	`*ESE 48`

Query command format	`*ESE?`
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*ESE? Does not clear the Standard Event Status Enable register. Use *ESE 0 or *CLS for this purpose.

*ESR (Standard Event Status Register Query)

Returns the current state of the Standard Event Register (ESR).

Query command format	`*ESR?`
Response	<val> <val> is a decimal representation of the binary value of the Standard Event Status Register.
Example	A return value of 5 indicates that bits 0 (Operation Complete) and 2 (Query Error) are set.
Remarks	See chapter 2 for bit definitions of the Standard Event Status Register. *ESR? Clears the Standard Event Status Register.

*ETE (EUT Fail Enable Register)

The bits in the EUT Fail Enable Register are the same as those in the EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ.

Set command format	`*ETE<ws><val>` <val> decimal representation of an 8 bit binary mask
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 3 of this manual for a description of the bits in the EUT Fail and EUT Fail Enable registers.

Examples	To enable bit 4 (Carrier Drift)
	`*ETE 16`
	To enable bit 5 (Initial Carrier)
	`*ETE 32`
	To enable both bits
	`*ETE 48`

Query command format	`*ETE?` <val>decimal representation of an 8 bit binary mask
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*ETE? Does not clear the EUT Fail Enable register. Use *ETE 0 or *CLS for this purpose.

*ETF (EUT Fail Register Query)

Returns the current state of the EUT Fail Register (ETF).

Query command format	`*ETF?`
Response	<val> <val> is a decimal representation of the binary value of the EUT Fail Register.
Example	A return value of 5 indicates that bits 0 (Maximum Input Power) and 2 (Single Slot Sensitivity) are set.
Remarks	See chapter 2 for bit definitions of the EUT Fail Register. *ETF? Clears the EUT Fail Register.

*IDN (Identification Query)

Query command format	`*IDN?` (alternatively OI can be used)
Response	A string is returned containing the manufacturer's name, the model number, the serial number, and the software revision. Commas separate the items.
Example	`ANRITSU,MT8852B,00801001,4.16.000`
Remarks	The operation of this command is identical to SYSCFG? IDENT see chapter 5 for details.

*INE (Instrument Status Enable Register)

The bits in the Instrument Status Enable Register are the same as those in the Instrument Status Register. The two registers are bitwise AND'ed to determine which condition(s) will generate a SRQ.

Set command format	`*INE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the Instrument Status and Instrument Status Enable registers.

Example	To enable bit 3 (Inquiry Complete)
	`*INE 8`
	To enable bit 2 (Test or Script Complete)
	`*INE 4`
	To enable both bits
	`*INE 12`

Query command format	`*INE?`
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*INE? Does not clear the Instrument Status Enable register. Use *INE 0 or *CLS for this purpose.

*INS (Instrument Status Register Query)

Returns the current state of the Instrument Status Register (INS).

Query command format	`*INS?`
Response	<val> <val> is a decimal representation of the binary value of the Instrument Status Register.
Example	A return value of 5 indicates that bits 0 (Connected) and 2 (Test or Script Complete) are set.
Remarks	See chapter 2 for bit definitions of the Instrument Status Register. *INS? Does not clear the Instrument Status Register.

*LEETE (BLE EUT Fail Enable Register) (Option 27 and MT8852B-043 only)

The bits in the BLE EUT Fail Enable Register are the same as those in the BLE EUT Fail Register. The two registers are bitwise AND'ed to determine which failed test(s) will generate a SRQ event.

Set command format	`*LEETE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the BLE EUT Fail and BLE EUT Fail Enable registers.
Examples	To enable bit 2 (BLE Modulation index) *LEETE 4 To enable bit 0 (BLE Maximum Input Power) *LEETE 1 To enable both bits *LEETE 5
Query command format	`LEETE?` <val> decimal representation of an 8 bit binary mask
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*LEETE? Does not clear the EUT Fail Enable register. Use *LEETE 0 or *CLS for this purpose.

*LEETF (BLE EUT Fail Register Query) (Option 27 and MT8852B-043 only)

Returns the current state of the BLE EUT Fail Register (LEETF).

Command format	`*LEETF?`
Response	<val> <val> is a decimal representation of the binary value of the BLE EUT Fail Register.
Example	A return value of 5 indicates that bit 0 (BLE Modulation Index) and bit 2 (BLE Maximum Input Sensitivity) are set.
Remarks	See chapter 2 for bit definitions of the BLE EUT Fail Register. *LEETF? Clears the BLE EUT Fail Register.

*OPC (Operation Completed Indication)

These commands generate indications when all pending operations are completed. An operation is complete when all input messages processed and all responses have been written into the GPIB Output queue.

Set command format	`*OPC`
Example	`OPMD SCRIPT;SCPTSEL 3; *OPC`
Remarks	The OPC bit is set in the ESR when the OPMD and SCPTSEL commands have been completed.

Query command format	`*OPC?`
Example	`OPMD SCRIPT;SCPTSEL 3; *OPC?`
Remarks	An ASCII ‘1’ is placed in the Output queue when the OPMD and SCPTSEL commands have been completed.

*RST (Instrument Reset)

Resets the MT8852B to its default state.

Set command format	`*RST`
Remarks	The GPIB Address is not changed and the GPIB Status registers and Input/Output queues are not cleared. The effect of this command is the same as pressing the PRESET key on the front panel.

*SRE (Service Request Enable Register)

The bits in the Service Request Enable Register (SRE) are the same as those in the Status Byte Register (STB) except for bit 6, which is not used in the SRE. With the exception of bit 6 the two registers are bitwise AND'ed to determine which condition(s) will generate a SRQ.

Set command format	`*SRE<ws><val>` <val> decimal representation of an 8 bit binary mask.
Remarks	<val> is the sum of the binary weights of each of the bits to be enabled. Refer to chapter 2 of this manual for a description of the bits in the Status Byte and Service Request Enable registers. Note that bit 6 should never be set.

Examples	To enable bit 4 (Message Available)
	`*SRE 16`
	To enable bit 2 (Internal Error)
	`*SRE 4`
	To enable both bits
	`*SRE 20`

Query command format	`*SRE?`
Response	<val> <val> is a decimal representation of the 8 bit mask as defined above.
Remarks	*SRE? Does not clear the Instrument Status Enable register. Use *SRE 0 or *CLS for this purpose. Bit 6 will never be set.

*STB (Status Byte Register Query)

Returns the current state of the Status Byte Register (STB) with the RQS bit replaced by the MSS bit (bit 6).

Query command format	`*STB?`
Response	<val> <val> is a decimal representation of the binary value of the Instrument Status Register.
Example	A return value of 70 indicates that bits 1 (EUT Fail), 2 (Internal Error Bit), and bit 6 (Master Summary Status) are set.
Remarks	See chapter 2 for bit definitions of the Status Byte Register. *STB? Does not clear the Instrument Status Register.

*TST (Self Test Query)

Invokes an instrument Self-Test cycle and places the results in the Output Queue

Query command format	`*TST?`
Response	`"ALL TESTS PASSED"`
	`"SELFTEST FAILED"`
Remarks	This command differs from STERR in that it invokes a Self-Test before returning the results.

*WAI (Wait to Continue)

This mandatory IEE488.2 command is decoded but produces no action because the Overlapping Commands feature is not implemented on the MT8852B.

Set command format	`*WAI`

Chapter 4 — General GPIB Commands

BOOTSTATUS? (Startup Self Test Status Request)

Query Command format	BOOTSTATUS?
Remarks	On startup the instrument performs a self test. If the self test fails, a warning screen is displayed indicating the cause. This command returns the status of the instrument during power up.

0	Passed self test. Instrument running.
1	Startup running self test.
–1	Self test FAILED.

During the startup procedure all commands except STERR, BOOTSTATUS?, CONT and GPIB 488.2 event and status commands will produce a GPIB execution error. STERR will return the self test results.

Related Commands	STERR, CONT

CONT (Continue After Self Test)

Set command format	CONT
Remarks	This command will allow the system to continue the startup sequence if there are self test failures other than DSP errors.
Related Commands	STERR, BOOTSTATUS?

ERRLST (Error List)

This command reads out and clears the recorded error states latch. The error states latch records an error occurring and retains the error states until the instrument is reset, the power is cycled, or the error states latch is read using this command. The errors are indicated via the DDE bit of the event register (ESR).

Set command format	`ERRLST`
Response	ABCCDDEFGHIIJKK!LLLLLLL!MMMMMMM!NNNNNNN!OOOOOOO!

A	CONNECTION ALREADY EXISTS	0	No previous connection
		1	Connection already exists
B	EUT TEST MODE STATE	0	EUT Test Mode enabled
		1	EUT Test Mode not enabled
CC	EUT HCI ERROR	00	OK
		XX	2 digit hexadecimal error code (EUT controlled via RS232 interface)
DD	INTERNAL HCI ERROR	00	OK
		XX	2 digit hexadecimal error code
E	INTERNAL SYNC ERROR	0	OK
		1	Internal HCI synchronization error
F	EUT SYNC ERROR	0	OK
		1	EUT HCI synchronization error (control via RS232)
G	EUT HARDWARE ERROR	0	OK
		1	EUT Reported HCI Hardware error message
H	REQUEST FAILED	0	OK
		1	Request failed (system busy)
II	DSP STATUS	00	OK
		01	Searching channel
		02	Searching sync word
		03	Incorrect packet length
		04	No payload
		05	Auto ranging
		06	Incorrect packet
		07	Incorrect packet type
		08	Over range
		09	Under range

		10	Invalid payload
		11	Error finding start of packet using power profile
		12	Error locating P0/GFSK sync word
		13	Location of P0/GFSK sync word exceeds allowed limits
		14	Error locating EDR sync word
		15	Location of EDR sync word exceeds allowed limits
		16	Error decoding the packet type field
		17	Modulation mode of PI/4-DQPSK or 8DPSK not specified
		18	Specified (pi/4-DQPSK) modulation mode does not agree with detected packet type
		19	Specified (8DPSK) modulation mode does not agree with detected packet type
		20	Invalid packet type decoded
		21	Unknown packet type decoded
		22	Expected and measured packet lengths do not match
		23	Insufficient blocks in packet for measurement

Note Setting of the DSP status code will not set the DDE bit of the event register.

J	EUT BT ADDRESS	0	OK
		1	No EUT *Bluetooth* Address set (in Manual mode)
KK	HCI COMM STATUS	00	OK
		01	Unknown HCI command
		02	No connection
		03	Hardware failure
		04	Paging timeout
		05	Connection timeout
		06	Unsupported feature parameter
		07	Connection ended by user
		08	Low resource connection ended
		09	Power Off connection ended
		10	Local host connection ended
		11	Unsupported remote feature

	12	Role change not allowed
	13	LMP response timeout
	14	IQ modem DAC saturation
LLLLLLL	Internal core error text (variable length)	
MMMMMMM	EUT core error text (variable length)	
NNNNNNN	Last GPIB command that caused a Command error (variable length)	
OOOOOOO	Last GPIB command that caused a Execution error (variable length)	

EUTINIT (*Bluetooth* Peripheral Mode)

This command puts the MT8852B into *Bluetooth* Peripheral mode. It is the equivalent to:

Config .> “System Features” > “Connection Control” > “Make me an EUT”.

Set command format	`EUTINIT`
Remarks	To return the MT8852B to normal (Central) mode, use *RST.

EUTMAXPWR (Send EUT to Max Power Control)

This command enables or disables the setting of an EUT to maximum power at the start of a test even if the EUT reports that it supports power control.

Set command format	`EUTMAXPWR<ws><script><,><state>` <script> 1 to 10 <state> ON or OFF
Example	Example to set to OFF `EUTMAXPWR 3,OFF`
Query command format	`EUTMAXPWR?<ws><script>`
Response	If script 4 was OFF then response would be: `EUTMAXPWR 4,OFF`

LECTETIME (Set the CTE time)

This command sets the CTE time for Bluetooth low energy (BLE) tests with CTE.

Set command format	`LECTETIME<ws><script number><,><value>` <script number> 3 to 10 <value> 2 to 20 (Default 2)
Example	To set the CTE time to 20, the command would be: `LECTETIME 3,20`

Query command format	`LECTETIME?<ws><script number>` <script number> 1 to 10
Response	The response is the CTE time.
Example	To request the CTE time for BLE tests in script 7, the command would be: `LECTETIME? 7`
Response	If the CTE time has previously been set to 18 `LECTETIME 7,18`

LECTETIMEMODE (Set the CTE time mode)

This command sets the CTE time mode for Bluetooth low energy (BLE) tests with CTE.

Set command format	`LECTETIMEMODE<ws><script number><,><value>` <script number> 3 to 10 <value> AUTO (Default) or MANUAL
Example	To set the CTE time mode to AUTO, the command would be: `LECTETIMEMODE 3,AUTO`
Remarks	AUTO - In this mode the MT8852B will request the CTE time from the EUT. If the EUT address source is BLE2WIRE/USBBLE2WIRE or if the EUT responds to the HCI command with an error, the CTE time (LECTETIME) will be set to the default value, 20. MANUAL - In this mode the CTE time can be set between 2 and 20 using LECTETIME.

Query command format	`LECTETIMEMODE?<ws><script number>` <script number> 1 to 10
Response	The response is the CTE time mode.
Example	To request the CTE time mode for BLE tests in script 7, the command would be: `LECTETIMEMODE? 7`
Response	If the mode has previously been set to MAUAL `LECTETIMEMODE 7,MANUAL`

LEPKTLEN (Set the BLE data packet length)

This command sets the data packet length for Bluetooth low energy (BLE) tests.

Set command format	`LEPKTLEN<ws><script number><,><packet length>` <script number> 1 to 10 <packet length> 2 to 255 bytes (Default 37)
Example	To set the packet length to 45 bytes, the command would be: `LEPKTLEN 1,45`
Query command format	`LEPKTLEN?<ws><script number>` <script number> 1 to 10
Response	The response is the packet length.
Example	To request the packet length for BLE tests in script 5, the command would be: `LEPKTLEN? 5`
Response	If the length has previously been set to 45 `LEPTKLEN 5,45`

LEPKTMODE (Set the BLE data packet mode)

This command sets the data mode for the Bluetooth low energy (BLE) tests.

Set command format	`LEPKTMODE<ws><script number><,><mode>` <script number> 1 to 10 <mode> AUTO or MANUAL (default)
Example	To set the packet mode to AUTO, the command would be: `LEPKTMODE 1,AUTO`
Remarks	AUTO - In this mode the MT8852B will request the maximum data length from the EUT. If the EUT address source is BLE2WIRE/USBBLE2WIRE or if the EUT responds to the HCL command with an error, the data length will be set to the default value, 37. MANUAL - In this mode the data length can be set between 2 and 255 bytes using LEPKTLEN.
Query command format	`LEPKTMODE?<ws><script number>` <script number> 1 to 10
Example	To request the packet mode for BLE tests in script 5, the command would be: `LEPKTMODE? 5`

Response	If the mode had previously been set to AUTO `LEPKTMODE 5,AUTO`

LKPASS (Update Lock/Unlock Password)

This command enables the operator to change the script lock password. The password is a number between 1 and 65535. All spaces are removed.

Set command format	`LKPASS<ws><old password><,><new password>` <old password> Present lock/unlock password <new password> New lock/unlock password
Example	To change the present password “1234” to “6543”, the command would be: `LKPASS 1234,6543`

LOCK (Script Lock)

This command locks a script so that it cannot be altered unless it is unlocked with the unlock command. The enquiry version of this command will return TRUE or FALSE indicating whether a script has been locked.

Set command format	`LOCK<ws><script number><,><password>` <script number> 3 to 9 <password> The lock/unlock password. Default is “1234”.
Example	Lock script 4 `LOCK 4,1234`
Query command format	`LOCK?<ws><script number>` <script number> 1 to 9
Response	The response is just a TRUE or FALSE.
Example	To request the status of script 5 the command would be: `LOCK? 5`
Response	If script 5 is locked `TRUE`

OPMD (Operation Mode)

This command configures the operation mode of the instrument.

Set command format	`OPMD<ws><operation mode>{<,><test>}`	
	<operation mode>	
	SCRIPT	script mode
	STEST	single test mode
	SIGGEN	signal generator mode
	ESIGGEN	EDR signal generator mode
	LESIGGEN	BLE signal generator mode
	CWMEAS	CW measurement mode
	ECWMEAS	EDR CW measurement mode
	Selected script test <test>	
	OP	Output power
	PC	Power control
	EPC	Enhanced power control
	MI	Modulation Index
	IC	Initial carrier
	CD	Carrier drift
	SS	Single slot sensitivity
	MS	Multi slot sensitivity
	MP	Max input power
	ERP	EDR Relative transmit power test (MT8852B and MT8852B-042 only)
	ECM	EDR Carrier frequency stability and modulation accuracy test (MT8852B and MT8852B-042 only)
	EDP	EDR Differential phase encoding test (MT8852B and MT8852B-042 only)
	EBS	EDR Sensitivity test (MT8852B and MT8852B-042 only)
	EFS	EDR Floor sensitivity test (MT8852B and MT8852B-042 only)
	EMP	EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
	EGT	EDR Guard Time (MT8852B and MT8852B-042 only)
	EST	EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)

	LEOP	BLE Output power (option 27 and MT8852B-043 only)
	LEICD	BLE Carrier frequency offset and drift (option 27 and MT8852B-043 only)
	LEMI	BLE Modulation characteristics (option 27 and MT8852B-043 only)
	LESS	BLE Receiver sensitivity (option 27 and MT8852B-043 only)
	LEPRI	BLE PER report integrity test (option 27 and MT8852B-043 only)
	LEMP	BLE Max input signal level (option 27 and MT8852B-043 only)
	LEPS	BLE Tx power stability (option 37 only)

Remarks

<test> is applicable only when the operation mode is set to STEST. Changing from SIGGEN, ESIGGEN, or LESIGGEN modes to any of the other modes will cause a reset of the internal *Bluetooth* core.

Note that in single test mode, only the test that has been selected can be configured. An execution error is returned if an attempt is made to configure any other tests.

Example 1

Set to script mode.

```
OPMD SCRIPT
```

Example 2

Set to single test mode, with the initial carrier test selected

```
OPMD STEST,IC
```

Example 3

Set to single test mode, with the EDR differential phase encoding test selected.

```
OPMD STEST,EDP
```

Query command format

```
OPMD?
```

Response

Response is in the form of the command to set that state.

Example

If the operation mode is single test mode with the power control test selected the command would be:

```
OPMD?
```

Response

```
OPMD STEST,PC
```

OPTSTATUS? (Option Status)

Query command format	`OPTSTATUS?`	
Remarks	This command returns the options enabled.	
Response	`OPTSTATUS,<num_opts>{,<options>,...}`	
	<num_opts>	0 to 7 (five options available at present)
		Number of enabled options that follow.
	<options>	Comma separated list of enabled options
	15	AFH (Adaptive frequency hopping) support
	17	Allows IQ data output for EDR measurements
	25	EDR Measurements support
	27	BLE Measurements support
	29	BLE Measurements only
	34	BLE Data Length Extension support
	35	BLE 2LE support
	36	BLE BLR support
	37	BLE AoA/AoD support
	70	Platform Enhanced option
Example	If option 15 is the only option enabled the response would be.	
Response	`OPTSTATUS,1,15`	

SCPTCFG (Configure Script)

This command is used to select which tests are run as part of a script. All scripts and their tests are independent.

Set command format	`SCPTCFG<ws><script number><,><test><,><state>`	
	<script number> 3 to 10 <test>	
	OP	Output power
	PC	Power control
	MI	Modulation Index
	IC	Initial carrier
	CD	Carrier drift
	SS	Single slot sensitivity
	MS	Multi slot sensitivity
	MP	Max input power
	ERP	EDR Relative transmit power test (MT8852B and MT8852B-042 only).

ECM	EDR Carrier frequency stability and modulation accuracy test (MT8852B and MT8852B-042 only).
EDP	EDR Differential phase encoding test (MT8852B and MT8852B-042 only)
EBS	EDR Sensitivity test (MT8852B and MT8852B-042 only)
EFS	EDR floor sensitivity test (MT8852B and MT8852B-042 only)
EMP	EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
EGT	EDR Guard Time (MT8852B and MT8852B-042 only)
EST	EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)
EPC	Enhanced power control
LEOP	BLE Output power (option 27 and MT8852B-043 only)
LEMI	BLE Modulation index (option 27 and MT8852B-043 only)
LEICD	BLE Initial carrier (option 27 and MT8852B-043 only)
LESS	BLE Single shot sensitivity (option 27 and MT8852B-043 only)
LEMP	BLE Max input power (option 27 and MT8852B-043 only)
LEPRI	BLE Max input power (option 27 and MT8852B-043 only)
LEPS	BLE Tx power stability (option 37 only)
STDTSTS	To set the status of all the basic rate tests in this script at once. (MT8852B and MT8852B-042 only)
EDRTSTS	To set the status of all the EDR tests in this script at once. (MT8852B and MT8852B-042 only)
BLETSTS	To set the status of all the BLE tests in this script at once. (option 27 and MT8852B-043 only)
PCTSTS	Turns on or off both power control tests when the EPC option is installed.
ALLTSTS	To set the status of all tests in this script at once

	<state>	ON | OFF
Remarks	All ten scripts can be read but only 3 to 10 can be set.	
Example	To select the output power test in script 4 the command would be:	
	`SCPTCFG 4,OP,ON`	

Query command format

`SCPTCFG?<ws><script number>[,<ext-code>]`

<script number> 1 to 10

<ext-code>
0 or omitted : standard (except EGT, EST, and LEPS)
1 : with EGT and EST (except LEPS)
2 : with EGT and EST and LEPS

Response

The response is a list of ON or OFF for each test in the following order separated by commas.

- Output power
- Power control
- Modulation Index
- Initial carrier
- Carrier drift
- Single slot sensitivity
- Multi slot sensitivity
- Max input power
- EDR Relative Transmit Power test (MT8852B and MT8852B-042 only)
- EDR Carrier Frequency stability and Modulation accuracy test (MT8852B and MT8852B-042 only)
- EDR Differential Phase Encoding test (MT8852B and MT8852B-042 only)
- EDR Sensitivity test (MT8852B and MT8852B-042 only)
- EDR BER Floor Sensitivity test (MT8852B and MT8852B-042 only)
- EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
- EDR Guard Time (MT8852B and MT8852B-042 only)
- EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)
- Enhanced power control
- BLE Output power (option 27 or MT8852B-043 only)
- BLE Modulation Index (option 27 or MT8852B-043 only)
- BLE Carrier and drift (option 27 or MT8852B-043 only)
- BLE sensitivity (option 27 or MT8852B-043 only)
- BLE Max input power (option 27 or MT8852B-043 only)
- BLE PER integrity (option 27 or MT8852B-043 only)
- BLE TX power stability (option 37 only)

Example	To read the configuration of script 5 where all tests are selected except power control and the BLE tests, the command would be: `SCPTCFG? 5`
Response	`ON,OFF,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,` `OFF,OFF,OFF,OFF,OFF,OFF`
Example	To read the configuration of script 4 where all tests are selected except power control and the BLE tests with extension code '1', the command would be: `SCPTCFG? 4,1`
Response	`ON,OFF,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,O` `FF,OFF,OFF,OFF,OFF,OFF`

SCPTNM (Set Script Name)

Set or request the script name. The Anritsu predefined scripts names cannot be set.

Set command format	`SCPTNM<ws><script number><,><script name>` <script number> 3 to 10 <script name> Script name using up to 9 characters.
Remarks	If more than 9 characters are used the name is terminated at the 9th character. The names of scripts 1 and 2 cannot be modified. If the script number is set to 1 or 2 an execution error is output.
Example	To set the name of script 4 to "ENG TEST1" the command would be: `SCPTNM 4,ENG TEST1`
Query command format	`SCPTNM?<ws><script number>` <script number> 1 to 10 All ten scripts can be read but only 3 to 10 can be set.
Response	Response is in the form of the command to set that state.
Example	If the script 5 name is "ENG TEST X" the command would be: `SCPTNM? 5`
Response	`SCPTNM 5,ENG TEST X`

SCPTRST (Reset Script)

This command resets a script to its default values.

Set command format	SCPTRST<ws><script number>
	<script number> 1 to 10 | ‘ALL’
Remarks	‘ALL’ resets all 10 test scripts at once.
Example 1	Reset script 3.
	SCPTRST 3
Example 2	Reset all scripts
	SCPTRST ALL

SCPTSEL (Select Script)

Set or request the selected script to be executed. If this command is sent when in single test mode, the selected test is executed.

Set command format	SCPTSEL<ws><script number>
	<script number> 1 to 10
Example	SCPTSEL 1
Query command format	SCPTSEL?
	Response is in the form of the command to set that state.
Example	If the script selected was 5 the response would be:
Response	SCPTSEL 5

SCPTTSTGP (Set Test Group State) (MT8852B and MT8852B-042 only)

This command is used to select which groups of tests are run as part of a script. The states of all the tests in the selected group are affected by this command, e.g., turning off a group will turn off all tests within that group.

Set command format	SCPTTSTGP<ws><script number><,><testgroup><,> <state>	
	<test group>	
	STDTSTS	To set the status of all the basic rate tests in this script at once.
	EDRTSTS	To set the status of all the EDR tests in this script at once.
	BLETSTS	To set the status of all the BLE tests in this script at once.
	ALLTSTS	To set the status of all tests in this script at once.
	<state>	ON | OFF

Example	To select the standard tests in script 4 the command would be:
	`SCPTTSTGP 4,STDTSTS,ON`
Query command format	This command outputs the test group states of this script.
	`SCPTTSTGP?<ws><script number>`
	<script number> 1 to 10
Response	The response is a list of ON or OFF for each test group (Basic rate, EDR, and low energy tests) separated by commas.
Example	To read the configuration of script 5 where basic rate tests are selected but the EDR and BLE tests are not:
	`SCPTTSTGP? 5`
Response	`SCPTTSTGP 5,ON,OFF,OFF`

SCRIPTMODE (Script Mode)

This command determines how the tests within the specified script are run.

Set command format	`SCRIPTMODE<ws><script number><,><mode>`
	<script number> 3 to 10
	<mode>
	STANDARD
	NULLPKT
	SINGLEPAYLOAD
Example	Set the Script Mode for script 3 to NULL Packet
	`SCRIPTMODE 3,NULLPKT`
Query command format	`SCRIPTMODE?<ws><script number>`
	<script number> 1 to 10
Response	The response is in the form of the command to set that state.
Example	If the script mode for script 9 is set to standard the command would be:
	`SCRIPTMODE? 9`
	Will produce the response:
	`SCRIPTMODE 9,STANDARD`

STATUS (Status Command)

This command requests the instrument measurement status. It can be sent any time. If it is sent while a script is running, it provides information about the measurement that is currently in progress. .

Set command format		`STATUS`

Response		`ABCCDDEFGHIJKLM`
		The response is extended depending on the value of characters `"DD"`:
		`ABCCDDEFGHIJKLMNNN (when "DD" is "EX")`
		`ABCCDDEFGHIJKLMOOOOO (when "DD" is "LE")`

A	0	Script mode
	1	Single test mode
	2	Basic Rate Signal generator mode (GFSK)
	3	CW Measurement mode
	4	AFH measurement
	5	EDR Signal generator mode (MT8852B and MT8852B-042 only)
	6	EDR CW Measurement mode (MT8852B and MT8852B-042 only)
	7	BLE Signal generator mode (Option 27 only and MT8852B-043 only)
B	0	Not in single remote test state
	1	In single remote test state
CC	Script number selected: 1 to 10	
DD	Test selected :	
	OP	Output power test
	PC	Power control test
	EP	Enhanced power control test
	MI	Modulation characteristics test
	IC	Initial carrier test
	CD	Carrier drift test
	SS	Single slot sensitivity test
	MS	Multi slot sensitivity test
	MP	Maximum input power sensitivity test
	EX	Extended EDR tests (see string ‘NNN’ for selected EDR test) (MT8852B and MT8852B-042 only)
	LE	Extended BLE tests (see string 'OOO' for selected BLE test) (MT8852B-043 and units with option 27 only)
E	0	Not connected
	1	Connected

F	Receiver Range: 1 to 6 | A = Auto
G	10 MHz reference source:
	0 Internal
	1 External
H	EUT power state:
	0 EUT at minimum power
	1 EUT at intermediate power
	2 EUT at maximum power
I	SCO Channel 1:
	0 Disconnected
	1 Connected
J	SCO Channel 2:
	0 Disconnected
	1 Connected
K	SCO Channel 3:
	0 Disconnected
	1 Connected
L	EUT test mode:
	0 EUT in normal mode
	1 EUT in test mode
M	USB Connection status:
	1 USB device attached
	2 USB device removed
	3 Non *Bluetooth* USB device attached
NNN	EDR Test selected:
	ERP EDR Relative transmit power test (MT8852B and MT8852B-042 only)
	ECM EDR Carrier frequency stability and modulation accuracy test (MT8852B and MT8852B-042 only)
	EDP EDR Differential phase encoding test (MT8852B and MT8852B-042 only)
	EBS EDR Sensitivity test (MT8852B and MT8852B-042 only)
	EFS EDR floor sensitivity test (MT8852B and MT8852B-042 only)
	EMP EDR Maximum Input Power test (MT8852B and MT8852B-042 only)
	EGT EDR Guard Time (MT8852B and MT8852B-042 only)
	EST EDR Synchronization Sequence and Trailer (MT8852B and MT8852B-042 only)

OOO	BLE Test selected: (Models with option 27 only)	
	LEPR	BLE PER report integrity
	LEOP	BLE Output power test
	LEMI	BLE Modulation characteristics test
	LECD	BLE Carrier frequency offset and drift test
	LESS	BLE Receiver sensitivity test
	LEMP	BLE Maximum input signal level test
	The following can appear with option 37:	
	LEPS	BLE Tx power stability

STERR (Request POST or *TST? Results)

This command returns the results of the most recent Self-Test. It does not initiate a Self-Test itself.

Set command format	`STERR`
Response	Where the Self-Test has completed without failures the response is the following string:- `ALL TESTS PASSED` Where the Self-Test has failed, the response is a list of those items which have failed. If there is more than one item they are separated by commas.
Example	`ARMBOOT,VOLRAM 10FFF0F,DSPIF` Indicates the Self-Test failed with ARM Boot checksum, Volatile RAM, and DSP interface errors. A list of self test items is shown in the table below.
Related Commands	`BOOTSTATUS?, CONT, *TST`

Self Test Items

The following is a list of all Self-Test items. For more information see the MT8852B Service Manual.

Self test item	Meaning
FLASHCSUM	Flash Code checksum error.
CALCSUM	Calibration Data checksum error.
PERSONCSUM	Personality checksum error.
ARMBOOT	ARM Boot checksum error.
ARMCD	ARM Code checksum error.
FPGACSUM	Virtex FPGA checksum error.

ARMBT	ARM BT checksum error.
ARMDSP	ARM DSP checksum error.
ARMSPARTAN	ARM SPARTAN checksum error.
VOLRAM<ws><A><BBBBBB>	Volatile RAM. <A> indicates the type of test that failed and <BBBBBB> is the list of addresses where the test failed.
NONVOLRAM	Non-Volatile RAM
DPRAM<ws><A><BBBBBB>	CPU Dual Port RAM. <A> indicates the type of test that failed and <BBBBBB> is the list of addresses where the test failed.
DPRAMIF<ws><A><BBBBBB>	IF Dual Port RAM. <A> indicates the type of test that failed and <BBBBBB> is the list of addresses where the test failed.
DSPRAM<ws><A><B><CCCCC>	<A> indicates the type of test that failed, <B> indicates the type of RAM where the failure occurred and <CCCCC> is the list of addresses where the test failed.
DSPIF	DSP Interface error.
UART<ws><A><BB>	<A> indicates the type of test that failed and <BB> is the address on which the failure occurred.
HCIDPRAM<ws><A><BBBBBB>	ARM ←→ CPU Dual Port RAM. <A> indicates the type of test that failed and <BBBBBB> is the list of addresses where the test failed.
ARMST<ws><A>	ARM Self Test. <A> indicates the result of the self test
ARMHS	ARM handshake jumpers.
DISPLAY	Display interface communication error.
KBD	Keyboard interface communication error.
DSPERR<ws><AAAA>	DSP Startup Error. <AAAA> indicates at which stage the error occurred.
NORFPCB	RF PCB communication error.
NOTCALED	No Calibration Data found.
NOEDRREFPWR	Invalid EDR reference power table.
NOEDRIQCAL	Invalid EDR IQ modulator correction tables.
VIRTEX<ws><AAAA>	Virtex loading error. <AAAA> indicates at which stage the error occurred.
SPARTAN<ws><AAAA>	Spartan loading error. <AAAA> indicates at which stage the error occurred.
ARMINIT	ARM initialization error.
TEMPWARN	Over temperature warning.

TSTPAUSE (Test Pause)

This command specifies whether a Test Pause LMP test control is used between changes in a test control format.

Set command format	`TSTPAUSE<ws><script number><,><state>`
	<script number> 1 to 10
	<state> ON or OFF
Example	Turn Test Pause on for script 3.
	`TSTPAUSE 3,ON`
Query command format	`TSTPAUSE?<ws><script number>`
	<script number> 1 to 10
Response	The response is in the form of the command to set that state.
Example	If Test Pause is turned off for script 5 then the command would be:
	`TSTPAUSE? 5`
	Will produce the response
	`TSTPAUSE 5,OFF`

TXPWR (Transmitter Power Level)

This command sets the default transmitter power level for a script. It is the power level at which the connection and any inquiry are made. Individual tests within the script may modify the power level for their own purposes but the level is returned to the script default on completion of the test. If a connection already exists then executing a TXPWR command will have immediate effect. For this reason do not use TXPWR whilst a test is in progress.

Set command format	`TXPWR<ws><script number><,><power level>`
	<script number> 1 to 10
	<power Level> 0.0 to –90.0 (dBm, in 0.1 dB steps)
Remarks	The default transmitter power level can be set for all ten scripts.
Example	To set the default transmitter power level of script 3 to –10dBm.
	`TXPWR 3,-10.0`
Query command format	`TXPWR?<ws><script number>`
	<script number> 1 to 10
Response	The response is in the form of the command to set that power level.
Example	If the transmitter power level for script 6 is –25.3 dBm then the command would be:
	`TXPWR? 6`
Response	`TXPWR 6,-25.3`

UNLOCK (Script Unlock)

This command will unlock a locked script so that it can be altered. If the unlock failed, an execution error is indicated

Set command format	`UNLOCK<ws><script number><,><password>` <script number> 3 to 10 <password> The lock/unlock password. Default is “1234”.
Example	To unlock script 4 the command would be: `UNLOCK 4,1234`

Chapter 5 — System Configuration

This chapter provides details of the system configuration command and the associated parameters. The commands are listed in alphabetical order as detailed below.

SYSCFG (Set or Query System Configuration)

Set command format	`SYSCFG<ws><config selection>[<,><parameters>……]`

<config selection>

• AUTH	(See sub-commands)	Authentication settings
• BNCOUTPUT	Set | Query	Rear panel output
• BTADDR	Query	Tester *Bluetooth* address
• CONFIG	(See sub-commands)	Tester configuration
• DISPSOUND	(See sub-commands)	Tester display and sound control
• EUTADDR	Set | Query	EUT address
• EUTFEAT	Query	EUT supported features
• EUTHANDSHAKE	Set | Query	EUT handshaking
• EUTNAME	Query	EUT user friendly name request
• EUTRS232	Set | Query	EUT RS232 HCI set up
• EUTSRCE	Set | Query	EUT address source
• HWINFO	Query	Hardware information
• IDENT	Query	Tester identity
• INQSET	(See sub-commands)	Inquiry set up
• PAGSET	(See sub-commands)	Page scan and timeout
• SCPTSET	(See sub-commands)	Script set up
• USBADAPTOR	(See sub-commands)	USB Adaptor set up
• VERDATE	Query	Tester firmware date and time stamp
• VERNUM	Query	Tester firmware version numbers

Query command format	`SYSCFG?<ws><config selection>[<,><parameters>……]`

AUTH (Authentication Settings)

This command supports the following settings:

PINCODE	Set | Query	Pin Code setup
PINLEN	Set | Query	Pin Code Length setup
STATE	Set | Query	Enable Connection Authentication

PINCODE (PIN Code)

This command sets the PIN Code

Set command format	`SYSCFG<ws>AUTH,PINCODE,<Variable>`
	<Variable> numeric value of PIN
Example	`SYSCFG AUTH,PINCODE,0000`
Query command format	`SYSCFG?<ws>AUTH,PINCODE`
Example	`SYSCFG? AUTH,PINCODE`
Response	`SYSCFG AUTH,PINCODE,0000`

PINLEN (PIN Code Length)

This command sets the PIN Length

Set command format	`SYSCFG<ws>AUTH,PINLEN,<Variable>`
	<Variable> Integer 1 to 16
Example	`SYSCFG AUTH,PINLEN,4`
Query command format	`SYSCFG?<ws>AUTH,PINLEN`
Example	`SYSCFG? AUTH, PINLEN`
Response	`SYSCFG AUTH,PINLEN,4`

STATE (Connection Authentication Enable)

This command enables/disables the connection authentication.

Set command format	`SYSCFG<ws><AUTH><,><STATE>,<Variable>`
	<Variable>
	ON Enable Connection Authentication
	OFF Disable Connection Authentication
Example	`SYSCFG AUTH,STATE,ON`

Query command format	`SYSCFG?<ws>AUTH,STATE`
Example	`SYSCFG? AUTH,STATE`
Response	`SYSCFG AUTH,STATE,ON`

BNCOUTPUT (Rear Panel Output)

This command defines the output directed to the rear panel BNC outputs.

The allowable selections are restricted as follows:

- Output 1 cannot be RXON and Output 2 cannot be TXON.
- If Output 1 is TXON, output 2 can be any value.
- If Output 2 is RXON, output 1 can be any value.
- Otherwise Output 1 and Output 2 must be set to the same value.

Set command format	`SYSCFG<ws>BNCOUTPUT<,><output 1><,><output 2>` <output> TXON (output 1 only) RXON (output 2 only) TXDATA (Sig Gen Mode only) RXDATA CORRFIRED
Example	To set the rear panel output to Tx ON on output 1 and Correlator fired on Output 2, the command would be: `SYSCFG BNCOUTPUT,TXON,CORRFIRED`

Query command format	`SYSCFG?<ws>BNCOUTPUT`
Response	The information is returned in the order: <OUTPUT 1>,<OUTPUT 2>
Example	If the information is as follows, the response would be: Output 1 – Tx on Output 2 – Rx on
Response	`SYSCFG BNCOUTPUT,TXON,RXON`

BTADDR (Tester *Bluetooth* Address)

This command allows the operator to read the MT8852B *Bluetooth* address.

Query command format	`SYSCFG?<ws>BTADDR`
Example	`SYSCFG? BTADDR`
Response	Example, if the BT address is 0x000123ABCDEF, the response would be: `000123ABCDEF`

CONFIG (Tester Configuration)

Under this system configuration section the following parameters can be controlled:

FILTER	Set | Query	Measurement filter bandwidth setting
GPIB	Set | Query	Tester GPIB address
LKTIMO	Set | Query	Tester's link timeout setting
MODINDEX	Set | Query	Tester modulation index set up
NPMODE	Set | Query	Measurements done on POLL/NULL sequence
RANGE	Set | Query	Tester measurement power range hold
RS232	Set | Query	Tester RS232 baud rate
RSMODE	Set | Query	Tester rear panel RS232 mode

FILTER (Filter Setting)

This command is used to change the measurement bandwidth when performing the frequency receiver tests (Initial Carrier, Carrier Drift and Modulation Index). The default measurement bandwidth is set to 1.3 MHz, but this can be changed to 2 MHz.

Set command format	`SYSCFG<ws>CONFIG,FILTER,<type>` where `<type>` is 2MHZ or 1.3MHZ
Example	Set the measurement bandwidth to 2MHZ: `SYSCFG CONFIG,FILTER,2MHZ`
Query command format	`SYSCFG?<ws>CONFIG,FILTER`
Example	`SYSCFG? CONFIG,FILTER`
Response	`SYSCFG CONFIG,FILTER,2MHZ`

GPIB (Tester GPIB Address)

Set command format	`SYSCFG<ws>CONFIG<,>GPIB<,><address>`
	<address> 1 to 30 (Default 27)
Remarks	If the GPIB address is changed, any further GPIB communication must be performed to the new GPIB address.
Example	To set the GPIB address to 5 the command would be:
	`SYSCFG CONFIG,GPIB,5`
Query command format	`SYSCFG?<ws>CONFIG<,>GPIB`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,GPIB`
	If the GPIB address is 6 the response would be:
	`SYSCFG CONFIG,GPIB,6`

LKTIMO (Link Timeout Setting)

This command sets the amount of time the unit waits after loosing a (*Bluetooth*) link before abandoning the connection. This command is used before a link is made.

Set command format	`SYSCFG<ws>CONFIG<,>LKTIMO<,><timeout>`
Timeout	1 to 40 seconds. Default is 10. (Integers only)
Example	To set the link supervision timeout to 25 seconds:
	`SYSCFG CONFIG,LKTIMO,25`
Query command format	`SYSCFG?<ws>CONFIG<,>LKTIMO`
Response	The response is in the form of the command to set that value
Example	If the timeout value is 15 seconds the response would be
	`SYSCFG CONFIG,LKTIMO,15`

MODINDEX (Mod Index Setting)

The MT8852B default setting for the modulation index of the communication channel is 0.32. This command allows this value to be changed.

Set command format	`SYSCFG<ws>CONFIG<,>MODINDEX<,><setting>` <setting> 0.25 to 0.50
Example	To set the mod index to 0.38 the command would be: `SYSCFG CONFIG,MODINDEX,0.38`
Query command format	`SYSCFG? CONFIG,MODINDEX`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,MODINDEX`
Response	If the Mod index was set to 0.32 then the response would be: `SYSCFG CONFIG,MODINDEX,0.32`

NPMODE (Poll/Null Measurement Mode)

This command has been maintained to ensure compatibility with software version 1.00. It should not be used in any of the new test programs and ideally should be replaced in existing test programs with the SCRIPTMODE command detailed in chapter 4 of this manual.

This command allows the MT8852B to make measurements on the POLL/NULL sequence used to maintain the *Bluetooth* link rather than using Test mode. This allows some measurements to be carried out even if test mode has not been fully implemented.

This command puts every script into NULL Packet mode. Refer to the SCRIPTMODE command description.

Set command format	`SYSCFG<ws>CONFIG<,>NPMODE<,><setting>` <setting> ON: Sets scripts 3 to 10 to NULL packet mode. OFF: Sets scripts 3 to 10 to standard mode.
Example	To set the null packet measurement mode to ON the command would be: `SYSCFG CONFIG,NPMODE,ON`
Query command format	`SYSCFG?<ws>CONFIG<,>NPMODE`
Remarks	If scripts 3 to 10 are all in NULL packet mode, this will return ON.
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,NPMODE`
Response	If the null packet measurement mode was OFF the response would be: `SYSCFG CONFIG,NPMODE,OFF`

RANGE (Tester Measurement System Power Range)

This command allows the power range of the measurement system to be controlled if required. There are six power ranges plus auto ranging which is the default.

Set command format	`SYSCFG<ws>CONFIG<,>RANGE<,><setting>`
	<setting>
	0 Auto ranging
	1 +22 to +7 dBm
	2 +9 to –3 dBm
	3 +5 to –7 dBm
	4 –4 to –16 dBm
	5 –12 to –26 dBm
	6 –24 to –35 dBm
	AUTO Auto ranging
Example	To set the range to auto the command would be:
	`SYSCFG CONFIG,RANGE,AUTO`
Query command format	`SYSCFG?<ws>CONFIG<,>RANGE`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,RANGE`
Response	If the range was held at range 1 then the response would be:
	`SYSCFG CONFIG,RANGE,1`

RS232 (Tester Communication RS232 Baud Rate)

Set command format	`SYSCFG<ws>CONFIG<,>RS232<,><baud rate>` <baud rate> 1200 2400 4800 9600 19200 38400 57600
Example	To set the baud rate to 19200 the command would be: `SYSCFG CONFIG,RS232,19200`
Query command format	`SYSCFG?<ws>CONFIG<,>RS232`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,RS232`
Response	If the baud rate is 38400 the response would be: `SYSCFG CONFIG,RS232,38400`

RSMODE (Tester Rear Panel RS232 Mode)

This command sets the rear panel RS232 into one of the following modes:

EXTCOM	The connector can be used for GPIB type control and communication.
EXTHCI	The connector is used to send HCI commands directly to the *Bluetooth* core. In this mode the standalone MT8852B cannot communicate to the internal *Bluetooth* core. In this mode the baud rate is 57600.

Set command format	`SYSCFG<ws>CONFIG<,>RSMODE<,><mode>` <mode> EXTCOM EXTHCI Note: All GPIB commands are disabled if RS232 mode is set to EXTHCI.
Example	To set the connector to be used for GPIB commands the command would be: `SYSCFG CONFIG,RSMODE,EXTCOM`
Query command format	`SYSCFG?<ws>CONFIG<,>RSMODE`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? CONFIG,RSMODE`
Response	If the mode is EXTHCI the response would be: `SYSCFG CONFIG,RSMODE,EXTHCI`

DISPSOUND (Tester Display and Sound Control)

This command configures the following sub-command group:

CONTRAST	Set | Query	Front panel display contrast
ENTRY	Set | Query	Error beep on illegal entry
FOLTST	Set | Query	Follow test mode
KEY	Set | Query	Keyboard tactile feedback
TEXT	Set | Query	User text string
TEXTS	Set | Query	User text display state

CONTRAST (Front Panel Display Contrast)

This command allows the contrast of the MT8852B LCD contrast to be altered.

Set command format	`SYSCFG<ws>DISPSOUND<,>CONTRAST<,><contrast>` <contrast> 1 to 10 UP for increment by one DOWN for decrement by one
Example	To set the contrast to 8 the command would be: `SYSCFG DISPSOUND,CONTRAST,8`
Query command format	`SYSCFG?<ws>DISPSOUND<,>CONTRAST`
Response	The response is returned in the form of the command to set that state
Example	`SYSCFG? DISPSOUND<,>CONTRAST`
Response	If contrast was 5 the response would be: `SYSCFG DISPSOUND,CONTRAST,5`

ENTRY (Error Beep on Illegal Entry)

This command sets the instrument to make an audible beep when an illegal entry is made from the front panel.

Set command format	`SYSCFG<ws>DISPSOUND<,>ENTRY<,><state>` <state> ON or OFF
Example	To set the entry error beep on the command would be: `SYSCFG DISPSOUND,ENTRY,ON`
Query command format	`SYSCFG?<ws>DISPSOUND<,>ENTRY`
Response	The response is returned in the form of the command to set that state
Example	`SYSCFG? DISPSOUND,ENTRY`
Response	If the state was OFF the response would be: `SYSCFG DISPSOUND,ENTRY,OFF`

FOLTST (Follow Test Mode)

This command is used to set the follow test display mode.

Set command format	`SYSCFG<ws>DISPSOUND<,>FOLTST<,><mode>` <mode> OFF = the current results page displays SUM = the summary results page displays EXT = the extended results page displays.
Example	To set the follow test mode to Summary, the command would be: `SYSCFG DISPSOUND,FOLTST,SUM`
Query command format	`SYSCFG?<ws>DISPSOUND<,>FOLTST`
Response	`OFF, SUM, EXT`
Example	`SYSCFG? DISPSOUND,FOLTST`
Response	If the follow test mode is Extended: `SYSCFG DISPSOUND,FOLTST,EXT`

KEY (Tactile Feedback Control ‘Key Click’)

This command controls the key click from the front panel keypad.

Set command format	`SYSCFG<ws>DISPSOUND<,>KEY<,><state>` <state> ON or OFF
Example	To turn on the key click the command would be: `SYSCFG DISPSOUND,KEY,ON`
Query command format	`SYSCFG?<ws>DISPSOUND<,>KEY`
Response	The response is returned in the form of the command to set that state
Example	`SYSCFG? DISPSOUND,KEY`
Response	If key click is OFF the response would be: `SYSCFG DISPSOUND,KEY,OFF`

TEXT (User Text String)

Set command format	`SYSCFG<ws>DISPSOUND<,>TEXT<,><text>` <text> Up to ASCII 20 characters.
Remarks	Defines the text string that is displayed using the TEXTS command.
Example	To set the text string to *Bluetooth* the command would be: `SYSCFG DISPSOUND,TEXT,Bluetooth`
Query command format	`SYSCFG?<ws> DISPSOUND<,>TEXT`
Response	The response is returned in the form of the command to set that state
Example	`SYSCFG? DISPSOUND,TEXT`
Response	If the text was *Bluetooth* the response would be: `SYSCFG DISPSOUND,TEXT,Bluetooth`

TEXTS (User Text Display State)

Set command format	`SYSCFG<ws>DISPSOUND<,>TEXTS<,><state>` <state> ON or OFF
Example	To set the user text display state to ON, the command would be: `SYSCFG DISPSOUND,TEXTS,ON`
Query command format	`SYSCFG?<ws>DISPSOUND<,>TEXTS`
Response	The response is returned in the form of the command to set that state
Example	`SYSCFG? DISPSOUND,TEXTS`
Response	If the state was OFF the response would be: `SYSCFG DISPSOUND,TEXTS,OFF`

EUTADDR (EUT Address)

This command is used to set the EUT address when the EUT address source is set to manual. If the source is not set to manual the command is ignored and an execution error given.

The query command is used to request the EUT address. The present value is returned, which could be the power up initialisation value of zeros. The only indication of a valid BT address is after a connection has been made.

Set command format	`SYSCFG<ws>EUTADDR<,><address>` <address> 6 byte hexadecimal string containing the address.
Example	If the *Bluetooth* address is 0x000123ABCDEF the command would be: `SYSCFG EUTADDR,000123ABCDEF`
Query command format	`SYSCFG? EUTADDR`
Response	6 byte (12 character address) i.e. 000123ABCDEF
Example	`SYSCFG? EUTADDR`
Response	If the address is 000123ABCDEF `000123ABCDEF`

EUTFEAT (EUT supported features)

This section allows the operator to read the supported features of the EUT.

Query command format	`SYSCFG?<ws>EUTFEAT`
Response	The response is a 16-character string representation of a hexadecimal number containing the features information coded in the form specified in the *Bluetooth* HCI specification. Example: `000018187805FFFF`

EUTHANDSHAKE (EUT RS232 handshake setting)

This command is used to set the EUT RS232 handshake mode..

Set command format	`SYSCFG<ws>EUTHANDSHAKE<,><handshake mode>`	
	<handshake mode>	
	NONE	
	RTS/CTS	
Remarks	NONE:	Handshaking is disabled.
	RTS/CTS:	Request to send / clear to send hardware handshaking is enabled.
Example	To set the EUT handshake mode to RTS/CTS the command would be:	
	`SYSCFG EUTHANDSHAKE,RTS/CTS`	
Query command format	`SYSCFG?<ws>EUTHANDSHAKE`	
Response	The response is returned in the form of the command to set that state.	
Example	`SYSCFG? EUTHANDSHAKE`	
Response	If the handshake is disabled the response would be:	
	`SYSCFG EUTHANDSHAKE,NONE`	

EUTLEFEAT (EUT supported features for Low energy)

This section allows the operator to read the Low energy supported features of the EUT.

Query command format	`SYSCFG?<ws>EUTLEFEAT`
Response	The response is a 16-character string representation of a hexadecimal number containing the features information coded in the form specified in the *Bluetooth* HCI specification for Low energy.
	Example: `0000000000000120`

EUTNAME (EUT User Friendly Name Request)

This command returns the user-friendly name of the EUT if it is available. When a test or script is run the standard connection procedure requests the user-friendly name. If the connection has been made using the auxiliary commands the auxiliary user friendly name command can be used to read the user-friendly name.

Set command format	`SYSCFG?<ws>EUTNAME`
Response	The user friendly name is returned as a text string of up to 248 characters.
Example	`SYSCFG? EUTNAME`
Response	The user friendly name is returned as a text string of up to 248 characters. If no user-friendly name is available, the string “not available” is returned.

EUTRS232 (EUT RS232 HCI Set Up)

This section allows the operator to set the baud rate of the HCI RS232 connection to the EUT.

Set command format	`SYSCFG<ws>EUTRS232<,><baud rate>` <baud rate> 1200 2400 4800 9600 19200 38400 57600 115200 230400 460800
Remarks	The RS232 HCI link does not at present support the *Bluetooth* RS232 protocol negotiation and compression or handshaking.
Example	To set the baud rate to 9600 the command would be: `SYSCFG EUTRS232,9600`

Query command format	`SYSCFG?<ws>EUTRS232`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? EUTRS232`
Response	For baud rate set to 19200 the response would be: `SYSCFG EUTRS232,19200`

EUTSRCE (EUT Address Source)

Set command format	`SYSCFG<ws>EUTSRCE<,><source>`	
	<source>	
	MANUAL	
	RS232	
	INQUIRY	
	USB	
	BLE2WIRE	
	USBADAPTOR	
	USBBLE2WIRE	
Remarks	This command is used to set the source of the EUT address.	
	MANUAL	The address of the EUT is entered via the front panel or GPIB.
	RS232	The EUT address is acquired via the RS232 HCI link and the EUT is initialised for tests.
	INQUIRY	The EUT *Bluetooth* address is obtained by performing an inquiry. If the EUT address source is set to inquiry, a GPIB Run command will produce an execution error if the number of responses is set to greater than “1”.
	USB	The EUT address is acquired via the USB HCI link and the EUT is initialised for tests.
	BLE2WIRE	The BLE2WIRE link is used to initialize the EUT for tests.
	USBADAPTOR	The EUT address is acquired via the USB-Serial link and the EUT is initialised for tests
	USBBLE2WIRE	The EUT address is acquired via the USB-BLE2-Wire link and the EUT is initialised for tests.
Example	To set the EUT address source to MANUAL the command would be:	
	`SYSCFG EUTSRCE,MANUAL`	
Query command format	`SYSCFG?<ws>EUTSRCE`	
Response	Response is in the form of the command to set that state.	
Example	If the EUT address source was manual the response would be:	
	`SYSCFG? EUTSRCE`	
Response	`SYSCFG EUTSRCE,MANUAL`	

HWINFO (Hardware information)

This command returns the RF PCB serial number and revision and the Control PCB serial number and revision.

Query command format	`SYSCFG?<ws>HWINFO`
Response	The information is returned in the order:
	`<RF PCB ser no.>,<RF PCB rev>,`
	`<control PCB ser no.>,<control PCB rev>`
Example	If the information is as follows, the response would be:
	RF PCB serial number: `01090021`
	RF PCB revision:
	`4`
	Control PCB serial number:
	`07020011`
	Control PCB revision:
	`3`
Response	`SYSCFG HWINFO,01090021,4,07020011,3`

IDENT (Tester Identity)

This command allows the operator to read the identity, serial number and firmware version number of the Anritsu *Bluetooth* test set. The response is the same as the standard '*IDN?' command.

Query command format	`SYSCFG?<ws>IDENT`
Response	A string is returned containing the manufacturer's name, the model number, the serial number (10 digits), and the software revision. Commas separate the items.
	`ANRITSU,MT8852B,00801001,4.16.000`

INQSET (Inquiry Set Up)

This command configures the inquiry. The inquiry continues until the maximum number of responses has been reached or the maximum period of time has expired. The inquiry can also be terminated by the inquiry stop auxiliary command. The sub parameters are:

NAME	Set | Query	User-friendly EUT name control
RNUM	Set | Query	Number of responses before inquiry termination
TIMEOUT	Set | Query	Max period over which the inquiry is done

NAME (Common Name During Inquiry)

This parameter controls whether the user-friendly name is requested for each of the inquired devices after and inquiry has ended.

Set command format	`SYSCFG<ws>INQSET<,>NAME<,><state>` <state> ON or OFF
Example	To request the user friendly name after the inquiry the command would be: `SYSCFG INQSET,NAME,ON`
Query command format	`SYSCFG?<ws>INQSET<,>NAME`
Example	`SYSCFG? INQSET,NAME`
Response	If this state was set off the response would be: `SYSCFG INQSET,NAME,OFF`

RNUM (Number of Response)

The inquiry can be configured to stop after a maximum number of responses. The command parameters used to set this value.

Set command format	`SYSCFG<ws>INQSET<,>RNUM<,><value>` <value> 1 to 50
Example	To set the maximum number of responses to 12 the command would be: `SYSCFG INQSET,RNUM,12`
Query command format	`SYSCFG?<ws><INQSET<,>RNUM`
Example	`SYSCFG? INQSET,RNUM`
Response	If the maximum number of responses set was 3 the response would be: `SYSCFG INQSET,RNUM,3`

TIMEOUT (Maximum Inquiry Time)

The inquiry can be configured to stop after a maximum period of time. The command parameters used to set this value.

Set command format	SYSCFG<ws>INQSET<,>TIMEOUT<,><value> <value> 5 to 60 (timeout in seconds)
Example	To set the inquiry time to approximately 12 seconds, the command would be: SYSCFG INQSET,TIMEOUT,12
Query command format	SYSCFG?<ws>INQSET<,>TIMEOUT
Example	SYSCFG? INQSET,TIMEOUT
Response	If the maximum timeout was set to 5 the response would be: SYSCFG INQSET,TIMEOUT,5

PAGSET (Page Setting)

This command configures the following group:

EUTPSRM	Set | Query	EUT Page Scan Repetition Mode
PAGETO	Set | Query	Set | Query Page Timeout Setting

EUTPSRM (EUT Page Scan Repetition Mode)

This command is used to set the EUT page scan repetition mode.

Set command format	`SYSCFG<ws>PAGSET,EUTPSRM<,><psrm>` <psrm> R0 R1 R2
Example	To set the page scan repetition mode to R1, the command would be: `SYSCFG PAGSET,EUTPSRM,R1`
Query command format	`SYSCFG?<ws>PAGSET,EUTPSRM`
Response	R0, R1, R2
Example	`SYSCFG? PAGSET,EUTPSRM`
Response	If the page scan repetition mode is R1 `SYSCFG PAGSET,EUTPSRM,R1`

PAGETO (Page Timeout Setting)

This command changes the page timeout used for making a connection. When requesting a test run or a connection, the MT8852B makes two connection attempts. The time set here is the total paging time for both attempts.

Set command format	`SYSCFG<ws>PAGSET,PAGETO<,><time>` <time> 2 to 30 seconds (Integers only)
Query command format	`SYSCFG?<ws>PAGSET,PAGETO`
Response	The response is in the form of the command to set that value.
Example	If the page timeout value is 10 seconds the response would be: `SYSCFG PAGSET,PAGETO,10`

SCPTSET (Script Set Up)

This command group allows the set up of the action of the loop run command and the form in which frequencies are displayed and reported over GPIB.

LOOPCNT	Set | Query	Loop test/script a defined number of times
LPCONT	Set | Query	Loop test/script continuously
LPSTFAIL	Set | Query	Loop test/script stop on fail
FRQDISP	Set | Query	Frequency display mode

LOOPCNT (Test Loop Count)

When running a test or script in loop mode this command allows the test or script to run a number of times rather than continuously. When this loop continuous is ON the loop count does not apply.

Set command format	`SYSCFG<ws>SCPTSET<,>LOOPCNT<,><value>` <value> 2 to 100 (10 default)
Example	To set the loop count to 50 the command would be: `SYSCFG SCPTSET,LOOPCNT,50`
Query command format	`SYSCFG?<ws>SCPTSET,LOOPCNT`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? SCPTSET,LOOPCNT`
Response	If the loop count value is 7 the response would be: `SYSCFG SCPTSET,LOOPCNT,7`

LPCONT (Loop Test/Script Continuously)

When running a test or script in loop mode this command allows the test or script to run continuously. When this is ON the loop count will not apply.

Set command format	`SYSCFG<ws>SCPTSET<,>LPCONT<,><state>` <state> ON or OFF
Example	To set the loop continuously to ON the command would be: `SYSCFG SCPTSET,LPCONT,ON`
Query command format	`SYSCFG?<ws>SCPTSET,LPCONT`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? SCPTSET,LPCONT`
Response	If the loop continuous state was OFF the response would be: `SYSCFG SCPTSET,LPCONT,OFF`

LPSTFAIL (Loop test/script stop on fail)

When running a test or script in loop mode this command allows the testing to stop on a test failing.

Set command format	`SYSCFG<ws>SCPTSET<,>LPSTFAIL<,><state>` <state> ON or OFF
Example	To set the stop on fail to ON the command would be: `SYSCFG SCPTSET,LPSTFAIL,ON`
Query command format	`SYSCFG?<ws>SCPTSET,LPSTFAIL`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? SCPTSET,LPSTFAIL`
Response	If the stop on fail was OFF the response would be: `SYSCFG SCPTSET,LPSTFAIL,OFF`

FRQDISP (Frequency Display Mode)

This command sets the way that the *Bluetooth* channels are reported and displayed between the frequency and the channel number. Channel 0 = 2402 MHz and channel 78 =2480 MHz.

Set command format	`SYSCFG<ws>SCPTSET<,>FRQDISP<,><state>` <state> FREQ Display frequency CHAN Channel number
Example	To set the frequency display mode to frequency the command would be: `SYSCFG SCPTSET,FRQDISP,FREQ`
Query command format	`SYSCFG?<ws>SCPTSET,FRQDISP`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? SCPTSET,FRQDISP`
Response	If the frequency display mode is channel number the response would be: `SYSCFG SCPTSET,FRQDISP,CHAN`

USBADAPTOR (Adaptor Set Up)

This command group allows the set up of the USB port adaptor.

NUMPORTS	Query	Query the number of ports on the USB->RS232 adaptor.
PORT	Set | Query	Set or query the port in use on the USB->RS232 adaptor.

NUMPORTS (Number of USB Adaptor Ports)

Query command format	`SYSCFG?<ws>USBADAPTOR<,>NUMPORTS`
Example	If the number of ports was 4, the response would be: `4`

PORT (USB Adaptor Port)

Set command format	`SYSCFG<ws>USBADAPTOR<,>PORT<,><port>` <port> A, B, C, D
Example	To set the port to A, the command would be: `SYSCFG USBADAPTOR,PORT,A`
Query command format	`SYSCFG?<ws>USBADAPTOR,PORT`
Response	The response is returned in the form of the command to set that state.
Example	`SYSCFG? USBADAPTOR,PORT`
Response	If the port was set to port A, the response would be: `SYSCFG USBADAPTOR,PORT,A`

VERDATE (Tester Firmware Version and Date Stamp)

This command returns the version and date stamp information for all the modules within the Anritsu *Bluetooth* test set.

Set command format	`SYSCFG?<ws>VERDATE`
Response format	`SYSCFG?<ws>VERDATE,<Bbbootstamp><,><Bbarmstamp><,><BBFPGAstamp><,><RFFPGAstamp><,><DSPversion>` <Bbbootstamp> Base Band boot code date and time stamp <Bbarmstamp> Base Band ARM code date and time stamp <BBFPGAstamp> Base Band FPGA date and time stamp <RFFPGAstamp> RF FPGA date and time stamp <DSPversion> DSP software version number
Response example	`SYSCFG VERDATE,03/10/2005 15:50:22,11/01/2010 10:05:34,30/09/2009 10:39:46,01/09/2006 16:10:08,1.05.032`

VERNUM (Tester Firmware Version Numbers)

This command returns the version numbers for all the modules within the Anritsu *Bluetooth* test set.

Query command format	`SYSCFG?<ws>VERNUM`
Response format	`SYSCFG?<ws>VERNUM,<Bbbootstamp><,><Bbarmstamp><,><BBFPGAstamp><,><RFFPGAstamp><,><DSPversion>` <Bbbootstamp> N/A <Bbarmstamp> Base Band ARM code version number <BBFPGAstamp> Base Band FPGA version number <RFFPGAstamp> RF FPGA version number <DSPversion> DSP software version number
Response example	`SYSCFG VERNUM,N/A,0.01.017,cfc210bc,01.03,1.05.032`

Chapter 6 — SCO Configuration

This chapter provides details of the SCO configuration command and the associated parameters. SCO connections are used to carry audio data. A SCO connection can only be set up when an ACL connection has been made between the two units. The commands are listed in alphabetical order as detailed below.

SCOCFG (Set SCO Configuration)

Command format `SCOCFG<ws><config selection>[<,><parameters>……]`

<config selection>

AIRCODE	Set | Query	SCO air code format
BITPOSN	Set | Query	SCO bit position
INPUTCODE	Set | Query	SCO input code format
INPUTDATA	Set | Query	SCO input data format
LBMODE	Set | Query	Loopback mode
PKTTYPE	Set | Query	SCO packet type
SAMPSIZE	Set | Query	SCO sample size
TONEGEN	Set | Query	SCO tone generator

AIRCODE (SCO Air Code Format)

Set command format	`SCOCFG<ws>AIRCODE<,><format>`
	<format>
	CVSD
	ULAW
	ALAW
Remarks	This command is used to set the format to be used over air for the SCO connection. Both ends of the SCO link must use the same air code format.
	The value will also be used for the EUT if the MT8852B is controlling an EUT via the front panel connection.
	The command is only allowed when there is an ACL connection but no SCO connection.
Query command format	`SCOCFG?<ws>AIRCODE`
Response	Response is in the form of the command to set that state.
Example	If the air code format is CVSD the response would be:
Response	`SCOCFG AIRCODE,CVSD`

BITPOSN (SCO Linear PCM Bit Position)

Set command format	`SCOCFG<ws>BITPOSN<,><posn>`
	<posn> 0 to 7
Remarks	This command is used to set the bit offset position for linear PCM input. The PCM bit position is the number of bit positions that the MSB of the sample is away from starting MSB (only for Linear PCM).
	The value is only used by the MT8852B when it is controlling an EUT via the front panel connection.
	The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).
Query command format	`SCOCFG?<ws>BITPOSN`
Response	Response is in the form of the command to set that state.
Example	If the bit position is set to 0, the response would be:
Response	`SCOCFG BITPOSN,0`

INPUTCODE (SCO Input Coding Format)

Set command format	`SCOCFG<ws>INPUTCODE<,><format>` <format> LINEAR ULAW ALAW
Remarks	This command is used to set the input coding format for the audio connection. The value is only used by the MT8852B when it is controlling an EUT via the front panel connection. The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).
Query command format	`SCOCFG?<ws>INPUTCODE`
Response	Response is in the form of the command to set that state.
Example	If the input coding format is set to ULAW, the response would be:
Response	`SCOCFG INPUTCODE,ULAW`

INPUTDATA (SCO Input Data Format)

Set command format	`SCOCFG<ws>INPUTDATA<,><format>` <format> 1SCOMP 2SCOMP SIGNMAG
Remarks	This command is used to set the input data format for the audio connection to either 1's compliment, 2's compliment or sign magnitude. The value is only used by the MT8852B when it is controlling an EUT via the front panel connection. The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).
Query command format	`SCOCFG?<ws>INPUTDATA`
Response	Response is in the form of the command to set that state.
Example	If the input data format is set to sign magnitude, the response would be:
Response	`SCOCFG INPUTDATA,SIGNMAG`

LBMODE (Loopback Mode)

Set command format	`SCOCFG<ws>LBMODE<,><status>` <status> ON OFF
Remarks	This command is used to set the unit into remote loopback mode. In this mode all data received over air (including SCO data) is looped back and sent back out over air. The command is only allowed when there is an ACL connection but no SCO connection.
Query command format	`SCOCFG?<ws>LBMODE`
Response	Response is in the form of the command to set that state.
Example	If the unit is in loopback mode, the response would be:
Response	`SCOCFG LBMODE,ON`

PKTTYPE (SCO Packet Type)

Set command format	`SCOCFG<ws>PKTTYPE<,><type>` <type> HV1 HV2 HV3
Remarks	This command is used to set the SCO packet type. Only one packet type can be selected. Note: The packet type selected restricts the number of SCO connections available, as follows: Pkt. Type — Max connections available HV1 — 1 HV2 — 2 HV3 — 3 The command is only allowed when there is an ACL connection but no SCO connection.
Query command format	`SCOCFG?<ws>PKTTYPE`
Response	Response is in the form of the command to set that state.
Example	If the packet type is set to HV3, the response would be:
Response	`SCOCFG PKTTYPE,HV3`

SAMPSIZE (SCO Input Sample Size)

Set command format	`SCOCFG<ws>SAMPSIZE<,><size>` <size> 8 BIT 16 BIT
Remarks	This command is used to set the input sample size for the audio connection to either 8 bit or 16 bit. The value is only used by the MT8852B when it is controlling an EUT via the front panel connection. The command can only be used when there is an ACL connection (and if the EUT is controlled via the front panel, no SCO connection).
Query command format	`SCOCFG?<ws>SAMPSIZE`
Response	Response is in the form of the command to set that state.
Example	If the input sample size is set to 16 bit, the response would be:
Response	`SCOCFG SAMPSIZE,16BIT`

TONEGEN (SCO Tone Generator)

Set command format	`SCOCFG<ws>TONEGEN<,><state>` <state> ON OFF
Remarks	This command is used to turn the SCO tone generator on and off. It is only allowed when there is an ACL and a SCO connection.
Query command format	`SCOCFG?<ws>TONEGEN`
Response	Response is in the form of the command to set that state.
Example	If the tone generator is on, the response would be:
Response	`SCOCFG TONEGEN,ON`

Chapter 7 — SCO Connections

This chapter provides details of the SCO connect and disconnect commands. A SCO connection can only be created when an ACL connection already exists between the two units.

The following list is an example GPIB command sequence to create a SCO connection:

```
CONNECT

GETEUTFEAT

[SCOCFG … ]

SCOCONN 1
```

SCOCONN (SCO Connect)

Set command format	`SCOCONN<ws><channel>` <channel> 1 to 3
Remarks	This command is used to create a SCO connection on the specified channel. When the connection has been completed the SCC bit in the CHG register is set. The current state of the SCO connections can be obtained by using the STATUS command.

SCODISC (SCO Disconnect)

Set command format	`SCODISC<ws><channel>` <channel> 1 to 3
Remarks	This command is used to terminate a SCO connection on the specified channel. When the disconnection has been completed the SCC bit in the CHG register is set. The current state of the SCO connections can be obtained by using the STATUS command.

Chapter 8 — AFH Measurement

This chapter provides details of the Adaptive Frequency Hopping (AFH) configuration commands and associated parameters. AFH is a method used to improve the transmission quality by preventing hopping to channels that are being used by an interfering signal. The commands in this chapter are listed in alphabetical order as detailed below.

AFHCFG (Set AFH Configuration)

Command format AFHCFG<ws><config selection>[<,><parameters>…]

<config selection>

ACM	Query	Read the MT8852B Active Channel Map.
AFH	Set | Query	AFH on/off control.
DISPLAY	Set | Query	Control the display of Channel or FER page.
EUTRPT	Set | Query	EUT reporting (on / off)
EUTRRATE	Set | Query	EUT reporting rate.
FER	Query	Read the EUT Frame Error Rate
MINCHAN	Set | Query	Minimum number of active channels.
MPLAM	Set	MT8852A/52B Pseudo Local Assessment Map.
SCALE	Set | Query	Chart recorder display scale setting

ACM (Read Active Channel Map)

Query command format	`AFHCFG?<ws>ACM`
Response	Response is a hexadecimal representation of the active channel map.
Example	If all channels are in use, the response would be:
Response	`AFHCFG? ACM ffffffffffffffff7f`

AFH (AFH on / off)

Set command format	`AFHCFG<ws>AFH<,><state>` <state> ON or OFF
Remarks	This command enables AFH on the current connection.
Query command format	`AFHCFG?<ws>AFH?`
Response	The response is in the form of the command to set the current state.
Example	If AFH is enabled, the response would be:
Response	`AFHCFG AFH,ON`

DISPLAY (Display Channel Utilization or FER Page)

Set command format	`AFHCFG<ws>DISPLAY<,><screen>` <screen> CHVST or FERVST
Remarks	This command is used to select either the channel use versus time or the FER versus time display.
Query command format	`AFHCFG?<ws>DISPLAY`
Response	Response is in the form of the command to set that state.
Example	If the current display was FER versus time, the response would be:
Response	`AFHCFG DISPLAY,FERVST`

EUTRPT (EUT Reporting on / off)

Set command format	AFHCFG<ws>EUTRPT<,><state> <state> ON or OFF
Remarks	This command is used to enable or disable EUT reporting.
Query command format	AFHCFG?<ws>EUTRPT
Response	Response is in the form of the command to set that state.
Example	If EUT reporting was on, the response would be:
Response	AFHCFG EUTRPT,ON

EUTRRATE (EUT Reporting Rate)

Set command format	AFHCFG<ws>EUTRRATE<,><rate> <rate> 1 to 30
Remarks	This command is used to set the rate, in seconds, at which the EUT generates local assessment reports.
Query command format	AFHCFG?<ws>EUTRRATE
Response	Response is in the form of the command to set that state.
Example	If the EUT reporting rate was 1s, the response would be:
Response	AFHCFG EUTRRATE,1

FER (Read Frame Error Rate)

Query command format	AFHCFG?<ws>FER
Response	Response is the current Frame Error Rate.
Example	AFHCFG? FER
Response	If the FER is 3.16%, the response would be:AFHCFG FER,3.16

MINCHAN (Minimum number of active channels)

Set command format	AFHCFG<ws>MINCHAN<,><No.Channels> <No. Channels> 1 to 20
Remarks	This command is used to set the minimum number of channels that may remain as active in the Active Channel Map as a result of changes to the MPLAM or SLAM.
Query command format	AFHCFG?<ws>MINCHAN
Response	Response is in the form of the command to set that state.
Example	If the minimum active channels parameter is set to its default of 20, the response would be:
Response	AFHCFG MINCHAN,20

MPLAM (Set MT8852B Pseudo Local Assessment Map)

Set command format	AFHCFG<ws>MPLAM<,><map> <map> All disabled: 00000000000000000000 All enabled: FFFFFFFFFFFFFFFFFF7F Lower 32 enabled, rest disabled: FFFFFFFF000000000000
Remarks	This command is used to set the channel map. The channel map is represented by a string of 20 hexadecimal digits that define 10 bytes. The first channel, (channel 0) corresponds to bit 0 of the first byte and the last channel (channel 78) by bit 6 of the tenth byte. A “1” in each bit position means that the channel is available for use; “0” means that it is masked.

SCALE

Set command format	`AFHCFG<ws>SCALE<,><scale factor>` <scale factor> 10 20 50 100
Remarks	This command sets the scale value used for the “chart recorder” display when measuring channel utilisation or FER.
Query command format	`AFHCFG?<ws>SCALE`
Response	The response is in the form of the command to set the current state.
Example	If scale is set to 20 then the response would be:
Response	`AFHCFG SCALE,20`

Chapter 9 — Signal Generator Mode and CW Measurement

The MT8852B can be used to generate fixed data patterns at calibrated levels. The instrument can be placed into signal generator mode by using the OPMD command or sending the SIGGEN or ESIGGEN commands.

Basic Rate Signal Generator Mode

Use this command to generate Basic Data rate signals.

Set command format	`SIGGEN<ws><pattern><,><channel mode><,><chan><,><freq><,><mod index><,><pwr><,><rfstate>`	
	<pattern>	DATACW DATA10101010 DATA11110000 DATAPRBS9 DATAPRBS15
	<channel mode>	CHAN | FREQ
	<chan>	–10 to 98 (2392 MHz to 2500 MHz)
	<freq>	2392e6 to 2500e6
	<mod index>	0.25 to 0.40
	<pwr>	0 to –90 dBm
	<rfstate>	ON or OFF

Examples	To set up the MT8852B to output a 101010101 data stream on channel 3 with 0.26 mod index at a power level of –20 dBm and to turn the RF output ON, use following command:
	`SIGGEN DATA10101010,CHAN,3,0.26,-20,ON`
	To set up the MT8852B to output a 101010101 data stream on frequency 2400 MHz with 0.24 mod index at a power level of –20 dBm and to turn the RF output ON, use following command:
	`SIGGEN DATA10101010,FREQ,2400e6,0.24,-20,ON`	

Remarks	SIGGEN is used to configure the Signal Generator function. To enter and exit the Signal Generator mode use OPMD and OPMD?	
Query command format	`SIGGEN?`	
Response	The response is returned in the form of the command to set that state	
Example	`SIGGEN DATA10101010,CHAN,3,0.32,-20,ON`	

BLE Signal Generator Mode

(Option 27 and MT8852B-043 only)

Use this command to generate *Bluetooth* low energy (BLE) modulation schemes.

Set command format

```
LESIGGEN<ws><syncword><,><pattern><,><spacing><,>
<channel><,><NumPkts><,><TxPwr><,><Dirty><,><AltCrcStat
e><,><state>
```

<syncword>	32 bit hexadecimal value. (BLE default: 71764129)
<pattern>	10101010, 11110000, PRBS9
<spacing>	1µs steps, default is 625 for 625 µs spacing (625 to 65535)
<channel>	*Bluetooth* low energy channels 0 to 39 (in MHz only)
<NumPkts>	0 = continuous 1 - 65535 = Fixed number of packets to be sent
<TxPwr>	Transmitted power level 0.0 to –90.0
<Dirty>	ON or OFF When ON, the packet generator uses the dirty table from the selected script LESS test.
<AltCrcState>	ON or OFF When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.
<state>	START, STOP

Example

To set up the instrument to output a GFSK Bluetooth low energy packet with a PRBS9 data stream on channel 0 continuously at –20.0 dBm with dirty parameters applied and the CRC always correct, use the following command:

```
LESIGGEN 71764129,PRBS9,625,2402,0,-20.0,ON,OFF,START
```

Remarks

LESIGGEN is used to configure the Signal Generator function. To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.

See also LESIGGENX, which supports Data Length Extension and LEPKTGEN, which supports Data Length Extension and Bluetooth 5 (2LE and BLR packets).

Query Command format

```
LESIGGEN?
```

Response

If the instrument configuration is as in example above, the response will be:-

```
LESIGGEN 71764129,PRBS9,625,2402,0,-20.0,ON,OFF,START
```

BLE Extended Signal Generator Mode (Supports Data Length Extension) (Option 34 only)

Use this command to generate *Bluetooth* low energy (BLE) modulation schemes.

Set command format	`LESIGGENX<ws><syncword><,><pattern><,><spacing><,><channel><,><NumPkts><,><TxPwr><,><Dirty><,><AltCRCState><,><PacketLen><,><state>`

<syncword>	32 bit hexadecimal value. (BLE default: 71764129)
<pattern>	10101010, 11110000, PRBS9
<spacing>	1 µs steps, default is 625 for 625 µs spacing (625 to 65535)
<channel>	*Bluetooth* low energy channels 0 to 39 (in MHz only)
<NumPkts>	0 = continuous 1 - 65535 = Fixed number of packets to be sent
<TxPwr>	Transmitted power level 0.0 to –90.0
<Dirty>	ON or OFF When ON, the packet generator uses the dirty table from the selected script LESS test.
<AltCrcState>	ON or OFF When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.
<PacketLen>	2 to 255 bytes
<state>	START, STOP

Example

To set up the instrument to output a GFSK Bluetooth low energy packet with a PRBS9 data stream on channel 0 continuously with a spacing of 625 µs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, use the following command:

```
LESIGGENX 71764129,PRBS9,625,2402,0,-10.0,OFF,OFF,37,START
```

Remarks

LESIGGENX extends the LESIGGEN function to support Data Length Extension and is only available when Option 34 is installed. An additional parameter allows the data length to be set.

To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.

Query Command format

```
LESIGGENX?
```

Response

If the instrument configuration is as in example above, the response will be:-

```
LESIGGENX 71764129,PRBS9,625,2402,0,-10.0,OFF,OFF,37,START
```

BLE Extended Signal Generator Mode (Supports Bluetooth 5 - 2LE and BLR) (Options 35 and 36 only)

Use this command to generate *Bluetooth* low energy (BLE) modulation schemes.

Set command format

```
LEPKTGEN<ws><syncword><,><pattern><,><spacing><,>
<channel><,><NumPkts><,><TxPwr><,><Dirty><,>
<AltCRCState><,><PacketLen><PktType<,><state>
```

<syncword>	32 bit hexadecimal value. (BLE default: 71764129)
<pattern>	10101010, 11110000, PRBS9, 11111111, 00000000, ONES, ZEROS. Note: ONES is equivalent to 11111111 and ZEROS is equivalent to 00000000. These patterns are intended for use when generating BLR packets.
<spacing>	1 µs steps, default is 625 for 625 µs spacing (625 to 65535)
<channel>	*Bluetooth* low energy channels 0 to 39 (in MHz only)
<NumPkts>	0 = continuous 1 - 65535 = Fixed number of packets to be sent
<TxPwr>	Transmitted power level 0.0 to –90.0 dBm
<Dirty>	ON or OFF When ON, the packet generator uses the dirty table from the selected script LESS test.
<AltCrcState>	ON or OFF When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.
<PacketLen>	2 to 255 bytes
<PktType>	BLE, 2LE, LR8, LR2
<state>	START, STOP

Example

To set up the instrument to output a 2LE Bluetooth low energy packet with a PRBS9 data stream on channel 10 continuously with a spacing of 625 µs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, use the following command:

```
LEPKTGEN 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF,37,
2LE,START
```

Remarks	LEPKTGEN extends the LESIGGENX to include support for Bluetooth 5 (2LE and BLR). It is only available when Option 35 (2LE) and / or Option 36 (BLR) is installed. An additional parameter allows the packet type to be set. To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.
Query command format	`LEPKTGEN?`
Response	If the instrument configuration is as in example above, the response will be: `LEPKTGEN 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF,37, 2LE,START`

BLE Extended Signal Generator Mode (Supports Bluetooth 5.1 - Constant Tone Extension)

(Options 37 only)

Use this command to generate *Bluetooth* low energy (BLE) modulation schemes.

Set command format

```
LEPKTGENX<ws><syncword><,><pattern><,><spacing><,>
<channel><,><NumPkts><,><TxPwr><,><Dirty><,>
<AltCRCState><,><PacketLen><,><PktType><,><CTE><,><CTE
type><,><CTE time><,><state>
```

<syncword>	32 bit hexadecimal value. (BLE default: 71764129)
<pattern>	10101010, 11110000, PRBS9, 11111111, 00000000, ONES, ZEROS. Note: ONES is equivalent to 11111111 and ZEROS is equivalent to 00000000. These patterns are intended for use when generating BLR packets.
<spacing>	1 µs steps, default is 625 for 625 µs spacing (625 to 65535)
<channel>	*Bluetooth* low energy channels 0 to 39 (in MHz only)
<NumPkts>	0 = continuous 1 - 65535 = Fixed number of packets to be sent
<TxPwr>	Transmitted power level 0.0 to –90.0 dBm
<Dirty>	ON or OFF When ON, the packet generator uses the dirty table from the selected script LESS test.
<AltCrcState>	ON or OFF When ON, packets are generated with alternate correct and incorrect CRC. The first packet transmitted has correct CRC.
<PacketLen>	2 to 255 bytes
<PktType>	BLE, 2LE, LR8, LR2
<CTE>	ON or OFF When ON, the packets are generated with the Constant Tone Extension.
<CTE type>	AOA, AOD1, AOD2. AOA - AoA Constant Tone Extension AOD1 - AoD Constant Tone Extension with 1 µs slots AOD2 - AoD Constant Tone Extension with 2 µs slots
<CTE time>	2 to 20 (1 means 8 µs)
<state>	START, STOP

Example	To set up the instrument to output a 2LE Bluetooth low energy packet with a PRBS9 data stream on channel 10 continuously with a spacing of 625 µs at –10.0 dBm, Dirty off, CRC always correct, and a packet length of 37, and CTE(AoD 2 µs, CTE time is 10), use the following command: `LEPKTGENX 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF, 37,2LE,ON,AOD2,10,START`
Remarks	LEPKTGENX extends the LEPKTGEN to include support for Bluetooth 5.1(Constant Tone Extension). It is only available when Option 37 (BLE AoA/AoD supported) is installed. An additional parameter allows the CTE type and CTE time to be set. To enter or exit the Signal Generator mode use OPMD and OPMD? The BLE signal generator will use a modulation BT of 0.5.
Query command format	`LEPKTGENX?`
Response	If the instrument configuration is as in example above, the response will be: `LEPKTGENX 71764129,PRBS9,625,2422,0,-10.0,OFF,OFF, 37,2LE,ON,AOD2,10,START`

EDR Signal Generator Mode

(MT8852B and MT8852B-042 only)

Use this command to generate Enhanced Data Rate (EDR) modulation schemes.

Set command format	`ESIGGEN<ws><mod_scheme><,><pattern><,><ch_dispmode><,><channel><,><pwr><,><rf_state>`	
	<mod_scheme>	PI4 | 8DPSK
	<pattern>	DATAPRBS9 | DATAPRBS15
	<ch_dispmode>	CHAN | FREQ
	<channel>	–10 to 98 (2392 MHz to 2500 MHz)
	<freq>	2392e6 to 2500e6
	<pwr>	0.0 to –90.0 dBm
	<rfstate>	OFF | ON
Example	To set up the instrument to output PI4 modulation with a PRBS15 data stream on channel 7 at a power level of –40.0 dBm and to turn the RF output ON the use following command: `ESIGGEN PI4,DATAPRBS15,CHAN,7,-40.0,ON`	

Note	Under certain circumstances it may be necessary to send the command string twice.

Remarks	ESIGGEN is used to configure the Signal Generator function. To enter or exit the Signal Generator mode use OPMD and OPMD?
Query command format	`SIGGEN?`
Response	If the instrument configuration is as in example above, the response will be: `ESIGGEN PI4,DATAPRBS15,CHAN,7,-40.0,ON`

CW Measurement Mode

The MT8852B can be used to measure a fixed frequency modulation signal. Power, frequency, and modulation can be measured. The OPMD command can be used to put the MT8852B into CW measurement mode, although using the CWMEAS command to set the measurement parameters will also put the MT8852B into CW measurement mode.

The CWMEAS command is used to set the *Bluetooth* channel/frequency and measurement gate width parameters.

Set command format	`CWMEAS<ws><channel mode><,><channel><,><gate width>` <channel mode> CHAN FREQ <channel> –2 to 98 (2400 MHz to 2500 MHz) <freq> 2392e6 to 2500e6 <gate width> 0.1 ms to 3.0 ms
Example	To set up the MT8852B to measure on channel 92 with a gate width of 3 ms use the following command. `CWMEAS CHAN,92,3e-3`
Remarks	CWMEAS is used to configure CW Measurement mode. To enter and exit CW measurement mode use OPMD and OPMD?
Query command format	`SIGGEN?`
Response	The response is returned in the form of the command to set that state
Example	If set to measure frequency 2494 MHz with a gate width of 3 ms, the response would be: `CWMEAS FREQ,2494e6,3e-3`

The CWRESULT command is used to read the CW measurement result from the MT8852B.

Query command format	`CWRESULT<ws><measurement type>` <measurement type> FREQOFF (frequency offset from the frequency set in CWMEAS) Response <Frequency value in Hz to 2 decimal places> <measurement type> POWER Response <Power value in dBm to 2 decimal places> <measurement type> MOD Response <Positive modulation in Hz to 2 decimal places> <,>< Negative modulation in Hz to 2 decimal places>

EDR CW Measurement Mode (MT8852B and MT8852B-042 only)

The MT8852B can be set up in CW measurement mode to allow calibration of an incoming fixed frequency signal. The instrument will measure power and DEVM for EDR modulation schemes. This mode is intended only for the measurement of continuous non-packetized signals and does not support triggering.

Using the ECWMEAS command will automatically place the instrument into EDR CW measurement mode (no need to send the OPMD command).

Set command format	`ECWMEAS<ws><mod_scheme><,><ch_dispmode><,><channel><,><gate_width>`	
	<mod_scheme>	PI4 | 8DPSK
	<ch_dispmode>	CHAN | FREQ
	<channel>	–2 to 98 (2400 MHz to 2500 MHz)
	<freq>	2392e6 to 2500e6
	<gate width>	0.1 to 3.0 ms

Remarks

ECWMEAS is used to configure EDR CW Measurement mode. The <gate width> parameter specifies the acquisition time over which the test results are calculated.

Using the CWMEAS command will automatically place the instrument into EDR CW measurement mode (no need to send the OPMD command). To exit EDR CW measurement mode use OPMD.

Example

To set up the instrument to measure a 8DPSK signal on channel 78 with a gate width of 3 ms use the following command.

```
ECWMEAS 8DPSK,CHAN,78,3e-3
```

Query command format

```
ECWMEAS?
```

Response

The response string returned for the query is in the identical format as the configuration command string.

Example

If set to measure PI4 at frequency 2494 MHz with a gate width of 3 ms, the response would be:

```
ECWMEAS PI4,FREQ,2494e6,3e-3
```

CWRESULT (CW Measurements Results Output)

This command is used to fetch the measurement results from the MT8852B when configured in CW Measurement mode.

Query command format	`CWRESULT<ws><meas_type>`
	<meas_type> FREQOFF | POWER | MOD
	Where:
	FREQOFF frequency offset from the frequency set in CWMEAS
	POWER signal power in dBm
	MOD <pos_mod>,<neg_mod>
	<pos_mod> positive modulation (Hz)
	<neg_mod> negative modulation (Hz)
Remarks	Returns the requested measurement when the instrument is set to CW measurement mode. An execution error is raised if sending this command when the instrument is not in CW Measurement mode.
Example	If frequency offset was requested the command would be as follows:
	`CWRESULT FREQOFF`
	If the frequency offset was –2.50 kHz, the reply would be as follows:
	`CWRESULT FREQOFF,-2.50e+003`

ECWRESULT (EDR CW Measurements Results Output) (MT8852B and MT8852B-042 only)

This command is used to fetch the measurement results from the MT8852B when configured in EDR CW Measurement mode.

Query command format	`ECWRESULT<ws><meas_type>`
	<meas_type> PKPWR | RMSPWR | PKDEVM | RMSDEVM
	Where:
	PKPWR — Peak power (dBm)
	RMSPWR — RMS power (dBm)
	PKDEVM — Peak Error Vector Measurement
	RMSDEVM — RMS Error Vector Measurement
Remarks	Returns the requested measurement when the instrument is set to EDR CW measurement mode. An execution error is raised if sending this command when the instrument is not in EDR CW Measurement mode.

Chapter 10 — Configuring Tests in Standard Mode

Basic Rate tests (#1)	
Output Power	(RF/TRM/CA/BV-01-C)
Power Control	(RF/TRM/CA/BV-03-C)
Enhanced Power Control	(RF/TRM/CA/BV-14-C)
Initial Carrier Frequency	(RF/TRM/CA/BV-08-C)
Carrier Frequency Drift	(RF/TRM/CA/BV-09-C)
Single Slot Packets Sensitivity	(RF/RCV/CA/BV-01-C)
Multi-slot Packets Sensitivity	(RF/RCV/CA/BV-02-C)
Modulation Index	(RF/TRM/CA/BV-07-C)
Maximum Input Power	(RF/RCV/CA/BV-06-C)
EDR tests (#2)	
EDR Relative Transmit Power	(RF/TRM/CA/BV-10-C)
EDR Carrier Frequency Stability and Modulation Accuracy	(RF/TRM/CA/BV-11-C)
EDR Differential Phase Encoding	(RF/TRM/CA/BV-12-C)
EDR Sensitivity	(RF/RCV/CA/BV-07-C)
EDR BER Floor Sensitivity	(RF/RCV/CA/BV-08-C)
EDR Maximum Input Power	(RF/RCV/CA/BV-10-C)
EDR Guard Time	(RF/TRM/CA/BV-15-C)
EDR Synchronization Sequence and Trailer	(RF/TRM/CA/BV-16-C)
Low Energy tests (#3)	
BLE Output Power	(RF-PHY/TRM/BV-01-C)
BLE Carrier frequency offset and drift, uncoded data at 1 Ms/s	(RF-PHY/TRM/BV-06-C)
BLE Modulation characteristics, uncoded data at 1 Ms/s	(RF-PHY/TRM/BV-05-C)
2LE Carrier frequency offset and drift at 2 Ms/s (#4)	(RF-PHY/TRM/BV-12-C)
2LE Modulation characteristics at 2 Ms/s (#4)	(RF-PHY/TRM/BV-10-C)
BLR Modulation characteristics, LE coded (S=8) (#5)	(RF-PHY/TRM/BV-13-C)
BLR Carrier frequency offset and drift, LE coded (S=8) (#5)	(RF-PHY/TRM/BV-14-C)
BLE Output Power, with Constant Tone Extension	(RF-PHY/TRM/BV-15-C)
BLE Carrier frequency offset and drift at 1 Ms/s, with Constant Tone Extension	(RF-PHY/TRM/BV-16-C)
BLE Carrier frequency offset and drift at 2 Ms/s, with Constant Tone Extension	(RF-PHY/TRM/BV-17-C)

Tx Power Stability, AoD Transmitter at 1 Ms/s with 2 µs Switching Slot (#6)	(RF-PHY/TRM/PS/BV-01-C)
Tx Power Stability, AoD Transmitter at 1 Ms/s with 1 µs Switching Slot (#6)	(RF-PHY/TRM/PS/BV-02-C)
Tx Power Stability, AoD Transmitter at 2 Ms/s with 2 µs Switching Slot (#6)	(RF-PHY/TRM/PS/BV-03-C)
Tx Power Stability, AoD Transmitter at 1 Ms/s with 1 µs Switching Slot (#6)	(RF-PHY/TRM/PS/BV-04-C)
BLE Receiver sensitivity, uncoded data at 1 Ms/s	(RF-PHY/RCV/BV-01-C)
2LE Receiver sensitivity at 2 Ms/s (#4)	(RF-PHY/RCV/BV-08-C)
BLR Receiver sensitivity, LE coded (S=2) (#5)	(RF-PHY/RCV/BV-26-C)
BLR Receiver sensitivity, LE coded (S=8) (#5)	(RF-PHY/RCV/BV-27-C)
BLE PER Report Integrity, uncoded data at 1 Ms/s	(RF-PHY/RCV/BV-07-C)
2LE PER report integrity at 2 Ms/s (#4)	(RF-PHY/RCV/BV-13-C)
BLR PER report integrity, LE coded (S=2) (#5)	(RF-PHY/RCV/BV-30-C)
BLR PER report integrity, LE coded (S=8) (#5)	(RF-PHY/RCV/BV-31-C)
BLE Maximum input signal level, uncoded data at 1 Ms/s	(RF-PHY/RCV/BV-06-C)
2LE Maximum input signal level at 2 Ms/s (#4)	(RF-PHY/RCV/BV-12-C)

(#1) Not available on MT8852B-043.

(#2) MT8852B and MT8852B-042 only.

(#3) MT8852B-043 or models with option 27 only.

(#4) With Option 35.

(#5) With Option 36

(#6) With Option 37

10-1 Basic Rate Tests

Output Power Test Configuration (OPCFG)

The output power test performs power measurements on the EUT transmitted packets using either the loopback test control or the Tx test control. The default is to use the loopback test control. This test can be made with either hopping on or off.

The MT8852B can perform the test using either loopback test controls or Tx test controls. The MT8852B transmits a pseudo random data payload (PRBS 9) of the longest supported type (DH5, DH3 or DH1) or the selected packet type, to the EUT. The EUT loops back the data at its maximum output power and the MT8852B measures the received power. This test is performed while hopping, and the test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

Set command format	`OPCFG<ws><scriptnumber><,><variable><,> [<params>……]`	
	<script number> 3 to 10 <variable>	
	LRXFREQ	Low Rx frequency setting.
	MRXFREQ	Medium Rx frequency setting.
	HRXFREQ	High Rx frequency setting.
	HOPMODE	Use Defined, All, or Any MT8852B custom mode.
	HOPPING	Hopping stages of the test.
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the EUT low frequency Tx value.
	MTXFREQ	Set the EUT medium frequency Tx value.
	HTXFREQ	Set the EUT high frequency Tx value.
	NUMPKTS	Number of packets.
	PKTTYPE	Packet type to use in performing test.
	TSTCTRL	Test control to use in test.
	AVGMXLIM	Average power high limit.
	AVGMNLIM	Average power low limit.
	PEAKLIM	Peak power limit.
	DEFAULT	Set the test to its default settings (set only).
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Example	To set the DEFAULT OPCG the command would be:	
	`OPCFG 3,DEFAULT`	

Query command format	`OPCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	LRXFREQ	Low Rx frequency setting.
	MRXFREQ	Medium Rx frequency setting.
	HRXFREQ	High Rx3 frequency setting.
	HOPMODE	Use Defined, All, or Any MT8852B custom mode.
	HOPPING	Hopping stages of the test.
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the EUT low frequency Tx value.
	MTXFREQ	Set the EUT medium frequency Tx value.
	HTXFREQ	Set the EUT high frequency Tx value.
	NUMPKTS	Number of packets.
	PKTTYPE	Packet type to use in performing test.
	TSTCTRL	Test control to use in test.
	AVGMXLIM	Average power high limit.
	AVGMNLIM	Average power low limit.
	PEAKLIM	Peak power limit.
Response	The response is returned in the form of the command to set that state.	
Example	`OPCFG? 3,PEAKLIM`	
Response	If the value of the OPCFG PEAKLIM was 15, the response would be:	
	`OPCFG 3,PEAKLIM,15`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Power Control Test Configuration (PCCFG)

The power control test performs power measurement cycles on the EUT output, if the EUT supports power control, at each of the defined frequencies (LOW, MEDIUM and HIGH). This measurement is always performed with hopping off. The MT8852B can perform the test using either loopback test control or Tx test control. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits a DH1 (or the operator selected packet type) packet with a pseudo random data payload (PRBS 9). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequency sets relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all the frequencies to be changed.

A power measurement cycle sets the EUT output power to its maximum, steps the power down to the minimum, and then up to the maximum again one step at a time. For each power step a number of data packets are sent to the EUT and looped back to the MT8852B. When the test is performed in Tx test mode only the Tx frequency settings are used since both Rx and Tx frequencies must be the same.

Set command format

`PCCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the EUT low frequency Tx value.
MTXFREQ	Set the EUT medium frequency Tx value.
HTXFREQ	Set the EUT high frequency Tx value.
LRXFREQ	Set the EUT low frequency Rx value.
MRXFREQ	Set the EUT medium frequency Rx value.
HRXFREQ	Set the EUT high frequency Rx value.
NUMCYC	Number of cycles.
PKTTYPE	Packet type to use in performing test.
TSTCTRL	Test control to use in test.
MXSTEPLIM	Set max power step limit.
MNSTEPLIM	Set min power step limit.
NUMPKTS	Set the number of packets measured per step.
MINPWR	Set the minimum power to which the test will go.
PWRDELAY	Set the delay allowed for the EUT to change power levels.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example	To set the DEFAULT PCCFG the command would be: `PCCFG 3,DEFAULT`	
Query command format	`PCCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the EUT low frequency Tx value.
	MTXFREQ	Read the EUT medium frequency Tx value.
	HTXFREQ	Read the EUT high frequency Tx value.
	LRXFREQ	Read the EUT low frequency Rx value.
	MRXFREQ	Read the EUT medium frequency Rx value.
	HRXFREQ	Read the EUT high frequency Rx value.
	NUMCYC	Read the current number of cycles.
	PKTTYPE	Read the packet type to be used in testing.
	TSTCTRL	Read the test control to used in testing.
	MXSTEPLIM	Read the max power step limit.
	MNSTEPLIM	Read the min power step limit.
	NUMPKTS	Read the number of packets measured per step.
	MINPWR	Read the minimum power to which the test will go.
	PWRDELAY	Read the delay allowed for the EUT to change power levels.
Response	The response is returned in the form of the command to set that state.	
Example	`PCCFG? 3,NUMCYC`	
Response	If the value of the PCCFG NUMCYC was 5, the response would be: `PCCFG 3,NUMCYC,5`	

Note Refer to chapter 12 for details of the test parameter variables listed above.

Enhanced Power Control Test Configuration (EPCCFG)

The enhanced power control test performs power measurement cycles on the EUT output at each of the defined frequencies (LOW, MEDIUM and HIGH). This measurement is always performed with hopping off. The MT8852B can perform the test using either loopback test control or Tx test control. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits a DH1 (or the operator selected packet type) packet with a pseudo random data payload (PRBS 9), then a 2-DH1 and then a 3-DH1 packet at the power step levels. These are looped back by the EUT and measured by the MT8582B. The LOW, MEDIUM and HIGH frequency sets relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all the frequencies to be changed.

A power measurement cycle sets the EUT output power to its maximum, steps the power down to the minimum, and then up to the maximum again one step at a time. For each power step a number of data packets are sent to the EUT and looped back to the MT8852B. When the test is performed in Tx test mode only the Tx frequency settings are used since both Rx and Tx frequencies must be the same.

Set command format	`EPCCFG<ws><scriptnumber><,><variable><,> [<params>……]`	
	<script number> 3 to 10 <variable>	
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LRXFREQ	Set the EUT low frequency Rx value.
	MRXFREQ	Set the EUT medium frequency Rx value.
	HRXFREQ	Set the EUT high frequency Rx value.
	LTXFREQ	Set the EUT low frequency Tx value.
	MTXFREQ	Set the EUT medium frequency Tx value.
	HTXFREQ	Set the EUT high frequency Tx value.
	NUMCYC	Number of cycles.
	NUMPKTS	Set the number of packets measured per step.
	PKTTYPE	Packet type to use in performing test.
	DHXPKT	DHx test packet type in use.
	TSTCTRL	Test control to use in test.
	MXSTEPLIM	Set max power step limit.
	MNSTEPLIM	Set min power step limit.
	MXEPCLIM	Set maximum EPC difference limit.
	MXRPTLIM	Set maximum power repeatability limit.
	MINPWR	Set the minimum power to which the test will go.
	DEFAULT	Set the test to its default settings (set only).

Example	To set the DEFAULT EPCCFG the command would be: `EPCCFG 3,DEFAULT`
Query command format	`EPCCFG?<ws><scriptnumber><,><variable>` <script number> 1 to 10 <variable>

LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
LRXFREQ	Read the EUT low frequency Rx value.
MRXFREQ	Read the EUT medium frequency Rx value.
HRXFREQ	Read the EUT high frequency Rx value.
LTXFREQ	Read the EUT low frequency Tx value.
MTXFREQ	Read the EUT medium frequency Tx value.
HTXFREQ	Read the EUT high frequency Tx value.
NUMCYC	Read the current number of cycles.
NUMPKTS	Read the number of packets measured per step.
PKTTYPE	Read the packet type to be used in testing.
DHXPKT	Read the DHx test packet type in use.
TSTCTRL	Read the test control to be used in testing.
MXSTEPLIM	Read the maximum power step limit.
MNSTEPLIM	Read the minimum power step limit.
MXEPCLIM	Read the maximum EPC difference limit.
MXRPTLIM	Read the maximum power repeatability limit.
MINPWR	Read the minimum power to which the test will go.

Response	The response is returned in the form of the command to set that state.
Example	`EPCCFG? 3,NUMCYC`
Response	If the value of the EPCCFG NUMCYC was 5, the response would be: `EPCCFG 3,NUMCYC,5`

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Initial Carrier Test Configuration (ICCFG)

The initial carrier test performs a frequency accuracy test on a DH1 pseudo random data packet. (PRBS 9) This test can be performed using either the loopback test control or the Tx test control. The default is to use the loopback test control. This test can be made with either hopping on or off.

When the measurement is made using Tx mode the MT8852B sets up the EUT so that when the EUT is polled, it transmits a DH1 packet with a pseudo random payload for each of the frequencies selected (LOW, MEDIUM and HIGH).

Set command format

`ICCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

HOPMODE	Use All or ANY MT8852B custom mode.
HOPPING	Hopping stages of the test.
LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the low frequency Tx and Rx value.
MTXFREQ	Set the medium frequency Tx and Rx value.
HTXFREQ	Set the high frequency Tx and Rx value.
LRXFREQ	Set the EUT low frequency Rx value.
MRXFREQ	Set the EUT medium frequency Rx value.
HRXFREQ	Set the EUT high frequency Rx value.
NUMPKTS	Set the number of packets used for each.
TSTCTRL	Test control to use in test.
MXPOSLIM	Set the positive offset limit.
MXNEGLIM	Set the negative offset limit.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT ICCFG the command would be:

```
ICCFG 3,DEFAULT
```

Query command format

`ICCFG?<ws><scriptnumber><,><variable>`

<script number>1 to 10
<variable>

HOPMODE	Read the MT8852B custom mode.
HOPPING	Read the hopping stages of the test.
LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.

	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx and Rx value.
	MTXFREQ	Read the medium frequency Tx and Rx value.
	HTXFREQ	Read the high frequency Tx and Rx value.
	LRXFREQ	Read the EUT low frequency Rx value.
	MRXFREQ	Read the EUT medium frequency Rx value.
	HRXFREQ	Read the EUT high frequency Rx value.
	NUMPKTS	Read the number of packets used.
	TSTCTRL	Read the test control used in testing.
	MXPOSLIM	Read the positive offset limit.
	MXNEGLIM	Read the negative offset limit.
Response	The response is returned in the form of the command to set that state.	
Example	`ICCFG? 3,NUMPKTS`	
Response	If the value of the ICCFG NUMPKTS was 100, the response would be: `ICCFG 3,NUMPKTS,100`	

Note Refer to chapter 12 for details of the test parameter variables listed above.

Carrier Drift Test Configuration (CDCFG)

The carrier drift test performs a frequency drift measurement over the length of the packet received. The test can be carried out for each of the supported packet types with either hopping on or hopping off. This test can be performed using either the loopback test control or the Tx test control. The default is to use the loopback test control.

Set command format	`CDCFG<ws><scriptnumber><,><variable><,> [<params>......]`	
	<script number> 3 to 10 <variable>	
	HOPMODE	Use standard or custom MT8852B custom mode.
	HOPPING	Hopping stages of the test.
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the low frequency Tx and Rx value.
	MTXFREQ	Set the medium frequency Tx and Rx value.
	HTXFREQ	Set the high frequency Tx and Rx value.
	LRXFREQ	Set the EUT low frequency Rx value.
	MRXFREQ	Set the EUT medium frequency Rx value.
	HRXFREQ	Set the EUT high frequency Rx value.
	NUMPKTS	Set the number of packets used.
	PKTSIZE	Set the packet sizes to be used.
	TSTCTRL	Test control to use in test.
	DFT1LIM	Set the 1 slot packet drift limit.
	DFT3LIM	Set the 3 slot packet drift limit.
	DFT5LIM	Set the 5 slot packet drift limit.
	DFTNPLIM	Set the drift limit in NULL packets.
	DFTRATE	Set the drift rate limit.
	DEFAULT	Set the test to its default settings (set only).
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Example	To set the DEFAULT CDCFG the command would be:	
	`CDCFG 3,DEFAULT`	
Query command format	`CDCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	HOPMODE	Read the MT8852B custom mode.
	HOPPING	Read the hopping stages.

	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx and Rx value.
	MTXFREQ	Read the medium frequency Tx and Rx value.
	HTXFREQ	Read the high frequency Tx and Rx value.
	LRXFREQ	Read the EUT low frequency Rx value.
	MRXFREQ	Read the EUT medium frequency Rx value.
	HRXFREQ	Read the EUT high frequency Rx value.
	NUMPKTS	Read the number of packets used.
	PKTSIZE	Read the packet sizes to be used.
	TSTCTRL	Read the test control used in testing.
	DFT1LIM	Read the 1 slot packet drift limit.
	DFT3LIM	Read the 3 slot packet drift limit.
	DFT5LIM	Read the 5 slot packet drift limit.
	DFTNPLIM	Read the drift limit in NULL packets.
	DFTRATE	Read the drift rate limit.
Response	The response is returned in the form of the command to set that state.	
Example	`CDCFG? 3,HOPPING`	
Response	If the value of the CDCFG HOPPING was ON, the response would be:	
	`CDCFG 3,HOPPING,HOPON`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Single Slot Sensitivity Test Configuration (SSCFG)

For a single slot sensitivity measurement the MT8852B transmits DH1 packets with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. If the dirty transmitter parameters are applied, then every 20 ms the MT8852B changes the transmitter parameters as specified in the dirty transmitter table for this test. The EUT loops back the received data and a bit error rate (BER) calculation and frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all the frequencies to be changed.

The MT8852B can also carry out this test with hopping on.

Set command format

`SSCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the low frequency Tx value.
LRXFREQ	Set the low frequency Rx value.
MTXFREQ	Set the medium frequency Tx value.
MRXFREQ	Set the medium frequency Rx value.
HTXFREQ	Set the high frequency Tx value.
HRXFREQ	Set the high frequency Rx value.
HOPPING	Set the Hopping modes used.
NUMPKTS	Set the number of packets used for each.
TXPWR	Set the requested EUT Rx power level.
DIRTYTX	Use dirty parameter table ON/OFF.
DIRTYTAB	Update the dirty table parameters.
DRIFTS	Set the Drift status.
BERLIM	Set overall BER limit.
FERLIM	Set overall FER limit.
PKTCOUNT	Set the method used to count packets.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the SSCFG to on the command would be:

`SSCFG 3,LFREQSEL,ON`

Query command format	`SSCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10	
	<variable>	
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx value.
	LRXFREQ	Read the low frequency Rx value.
	MTXFREQ	Read the medium frequency Tx value.
	MRXFREQ	Read the medium frequency Rx value.
	HTXFREQ	Read the high frequency Tx value.
	HRXFREQ	Read the high frequency Rx value.
	HOPPING	Read the Hopping modes used.
	NUMPKTS	Read the number of packets used.
	TXPWR	Read the requested EUT Rx power level.
	DIRTYTX	Read the dirty parameter table setting.
	DIRTYTAB	Read the dirty table parameters.
	DRIFTS	Read the Drift status.
	BERLIM	Read the overall BER limit.
	FERLIM	Read the overall FER limit.
	PKTCOUNT	Read the method used to count packets.
Response	The response is returned in the form of the command to set that state.	
Example	`SSCFG? 3,LFREQSEL`	
Response	If the value of SSCFG was LFREQSEL, the response would be:	
	`SSCFG 3,LFREQSEL,ON`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Multi Slot Sensitivity Test Configuration (MSCFG)

For a multi slot sensitivity measurement the MT8852B transmits the longest supported packet type as reported by the EUT during link set up with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. If the dirty parameters are enabled then every 20 ms the MT8852B changes the transmitter parameters as specified in the dirty transmitter table for this test. The EUT loops back the received data and a bit error rate (BER) calculation and frame error rate (FER) calculation is performed by the MT8852B test set. This test is performed with hopping off. Measurements are made at each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all the frequencies to be changed.

The MT8852B can also carry out this test with hopping on.

Set command format

`MSCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the low frequency Tx value.
LRXFREQ	Set the low frequency Rx value.
MTXFREQ	Set the medium frequency Tx value.
MRXFREQ	Set the medium frequency Rx value.
HTXFREQ	Set the high frequency Tx value.
HRXFREQ	Set the high frequency Rx value.
HOPPING	Set the Hopping modes used.
NUMPKTS	Set the number of packets used for each.
TXPWR	Set the requested EUT Rx power level.
DIRTYTX	Use dirty parameter table ON/OFF.
DIRTYTAB	Update the dirty table parameters.
DRIFTS	Set the Drift status.
PKTTYPE	Packet type to use in performing test.
BERLIM	Set overall BER limit.
FERLIM	Set overall FER limit.
PKTCOUNT	Set the method used to count packets.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT MSCFG the command would be:

```
MSCFG 3,DEFAULT
```

Query command format	`MSCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx value.
	LRXFREQ	Read the low frequency Rx value.
	MTXFREQ	Read the medium frequency Tx value.
	MRXFREQ	Read the medium frequency Rx value.
	HTXFREQ	Read the high frequency Tx value.
	HRXFREQ	Read the high frequency Rx value.
	HOPPING	Read the hopping modes used.
	NUMPKTS	Read the number of packets used.
	TXPWR	Read the requested EUT Rx power level.
	DIRTYTX	Read the dirty parameter table setting.
	DIRTYTAB	Read the dirty table parameters.
	DRIFTS	Read the Drift status.
	PKTTYPE	Read the packet type used in testing.
	BERLIM	Read the overall BER limit.
	FERLIM	Read the overall FER limit.
	PKTCOUNT	Read the method used to count packets.
Response	The response is returned in the form of the command to set that state.	
Example	`MSCFG? 3,DRIFTS`	
Response	If the value of the MSCFG DRIFTS was ON, the response would be: `MSCFG 3,DRIFTS,ON`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Modulation Index Test Configuration (MICFG)

This test measures the modulation characteristics on the EUT output for each of the frequency ranges selected (LOW, MEDIUM and HIGH). The MT8852B can perform the test using either loopback test controls or Tx test controls. The default form for this test is to use loopback. The following test is described using the default test control.

The MT8852B transmits packets with a 11110000 payload and then packets a 10101010 payload. These packets are looped back by the EUT. These packets are the longest supported packet type as reported by the EUT during link set up (DH1, DH3 or DH5) or the selected packet type.

This test is performed with hopping off, and the test is repeated until the number of packets has been measured on each of the selected frequencies as set in the “Number of packets” field. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* RF test specification. The MT8852B allows all the frequencies to be changed. When the test is performed in Tx test mode EUT transmitter and receiver frequencies must be the same.

Set command format	`MICFG<ws><scriptnumber><,><variable><,> [<params>……]`	
	<script number> 3 to 10 <variable>	
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the low frequency Tx value.
	LRXFREQ	Set the low frequency Rx value.
	MTXFREQ	Set the medium frequency Tx value.
	MRXFREQ	Set the medium frequency Rx value.
	HTXFREQ	Set the high frequency Tx value.
	HRXFREQ	Set the high frequency Rx value.
	NUMPKTS	Set the number of packets used for each.
	PKTTYPE	Packet type to use in performing test.
	TSTCTRL	Test control to use in test.
	F1AVGMIN	Set the f1avg min limit.
	F1AVGMAX	Set the f1avg max limit.
	F2MAXLIM	Set the f2max limit.
	F1F2MAX	Set the f1/f2 avg max limit.
	TOGGLE	Set the payload type.
	DEFAULT	Set the test to its default settings (set only)
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Example	To set the DEFAULT MICFG the command would be:	
	`MICFG 3,DEFAULT`	

Query command format	`MICFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10	
	<variable>	
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx value.
	LRXFREQ	Read the low frequency Rx value.
	MTXFREQ	Read the medium frequency Tx value.
	MRXFREQ	Read the medium frequency Rx value.
	HTXFREQ	Read the high frequency Tx value.
	HRXFREQ	Read the high frequency Rx value.
	NUMPKTS	Read the number of packets used.
	PKTTYPE	Read the packet type used in testing.
	TSTCTRL	Read the test control used in testing.
	F1AVGMIN	Read the f1avg min limit.
	F1AVGMAX	Read the f1avg max limit.
	F2MAXLIM	Read the f2max limit.
	F1F2MAX	Read the f1/f2 avg max limit.
	TOGGLE	Read the payload type.
Response	The response is returned in the form of the command to set that state.	
Example	`MICFG? 3,NUMPKTS`	
Response	If the value of the MICFG NUMPKTS was 10, the response would be:	
	`MICFG 3,NUMPKTS,10`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Input Power Sensitivity Test Configuration (MPCFG)

For the EUT maximum input power test the MT8852B transmits a pseudo random payload (PRBS 9) DH1 data packet to the EUT so that the EUT receives the signal at a power level of -20 dBm. The EUT loops back the received data and bit error rate (BER) and frame error rate (FER) calculations are performed by the MT8852B. The test is repeated for each of the frequency ranges selected (LOW, MEDIUM and HIGH). This test is performed with hopping off. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* RF test specification but the MT8852B allows all the frequencies to be changed.

Set command format

`MPCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the low frequency Tx value.
LRXFREQ	Set the low frequency Rx value.
MTXFREQ	Set the medium frequency Tx value.
MRXFREQ	Set the medium frequency Rx value.
HTXFREQ	Set the high frequency Tx value.
HRXFREQ	Set the high frequency Rx value.
NUMPKTS	Set the number of packets used for each.
TXPWR	Set the requested EUT Rx power level.
BERLIM	Set BER limit.
FERLIM	Set FER limit.
PKTCOUNT	Set the method used to count packets.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT MPCFG the command would be:

`MPCFG 3,DEFAULT`

Query command format

`MPCFG?<ws><scriptnumber><,><variable>`

<script number> 1 to 10
<variable>

LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
LTXFREQ	Read the low frequency Tx value.
LRXFREQ	Read the low frequency Rx value.

MTXFREQ	Read the medium frequency Tx value.
MRXFREQ	Read the medium frequency Rx value.
HTXFREQ	Read the high frequency Tx value.
HRXFREQ	Read the high frequency Rx value.
NUMPKTS	Read the number of packets used.
TXPWR	Read the requested EUT Rx power level.
BERLIM	Read the BER limit.
FERLIM	Read the FER limit.
PKTCOUNT	Read the method used to count packets.

Response The response is returned in the form of the command to set that state.

Example `MPCFG 3,NUMPKTS`

Response If the value of the MPCFG NUMPKTS was 10, the response would be:

`MPCFG 3,NUMPKTS,10`

Note Refer to chapter 12 for details of the test parameter variables listed above.

10-2 Enhanced Data Rate Tests

Relative Transmit Power Test Configuration (ERPCFG)

(MT8852B and MT8852B-042 only)

The EDR relative transmit power measurement ensures that the difference in average transmit power during the frequency modulated [GFSK] and phase modulated [PSK] parts of a packet is within the range specified below.

Pass criteria = (PGFSK - 4dB) < PDPSK < (PGFSK + 1dB)

The test can be performed using either Loopback or Tx mode test controls with hopping on or off. If the EUT supports both π4DQPSK and 8DPSK modulation, then the test must be performed on both modulation formats using the longest support packet type.

The test must be performed with the EUT transmitting at its maximum power, and if the EUT supports power control, also at its minimum transmitter power level. The MT8852B will set the EUT to the Max and Min transmit power automatically if the EUT reports that it supports power control and both Max and Min have been selected in the “EUT power level” entry field.

Set command format

`ERPCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

NUMPKTS	Number of packets.
DHXPKT	DHx test packet type to use.
TSTCTRL	Test control to use in test.
PTXLEV	Set Maximum-Minimum Output Power.
HOPPING	Hopping stages.
HOPMODE	MT8850/52 custom hopping modes.
LRXFREQ	Low Rx frequency.
MRXFREQ	Medium Rx frequency.
HRXFREQ	High Rx frequency.
LTXFREQ	Low Tx frequency.
MTXFREQ	Medium Tx frequency.
HTXFREQ	High Tx frequency.
LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
PDIFFLH	PDPSK to PGFSK difference window upper limit.
PDIFFLL	PDPSK to PGFSK difference window lower limit.
MINCHECK	Minimum sensitivity check.
DEFAULT	Set the test to its default settings (set only).

	<params> Specify either frequency (FREQ) or channel (CHAN).	
Query command format	`ERPCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	NUMPKTS	Read the number of packets.
	DHXPKT	Read the DHx test packet type.
	TSTCTRL	Read the test control used in test.
	PTXLEV	Read the Maximum-Minimum Output Power.
	HOPPING	Read the hopping stages.
	HOPMODE	Read the custom hopping modes.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read the Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings used in test.
	MFREQSEL	Read the medium frequency settings used in test.
	HFREQSEL	Read the high frequency settings used in test.
	PDIFFLH	Read the PDPSK to PGFSK difference window upper limit.
	PDIFFLL	Read the PDPSK to PGFSK difference window lower limit.
	MINCHECK	Read the minimum sensitivity check.
Response	The response is returned in the form of the command to set that state.	

Note Refer to chapter 12 for details of the test parameter variables listed above.

Carrier Frequency Stability and Modulation Test Configuration (ECMCFG) (MT8852B and MT8852B-042 only)

This test verifies the transmitter carrier frequency stability and modulation accuracy.

This test comprises of both a frequency measurement and a Differential Error Vector Magnitude (DEVM) measurement.

The frequency measurements defined are;

- Initial frequency error of the packet header which is GFSK modulated - $_i$ (Pass criteria ±75kHz)
- Block frequency error during 50µs time blocks in the PSK modulated payload - $_0$ (pass criteria ±10kHz)
  This frequency error is measured relative to the Initial frequency error. The MT8852B continues to measure packets until the user selected number of 50µs blocks has been tested, the default being 200 blocks.
- It is also a requirement of the test that the sum of the above 2 tests ($_i$ + $_0$) does not exceed ±75kHz

The modulation measurements defined are;

- RMS DEVM. This is the average DEVM for all the symbols in each 50µs block measured. The result is calculated for each block, and each block must pass the following criteria, 0.20 for all π/4DQPSK blocks and 0.13 for all 8DPSK blocks.
- Peak DEVM. This is the DEVM value of the single symbol in all the blocks measured that has the highest value. The pass criterion is 0.35 for all π/4DQPSK symbols and 0.25 for all 8DPSK symbols.
- 99% DEVM. This is the DEVM value below which 99% of all the symbols measured in all the blocks are present. The pass criterion is 99% of all symbols are 0.30 for all / 4DQPSK symbols, and 99% of all symbols are 0.20 for all 8DPSK symbols.
- The default criteria for this measurement is that the longest supported π/4DQPSK and the longest support 8DPSK packets must both be tested in loopback mode with hopping off.

Set command format	ECMCFG<ws><scriptnumber><,><variable><,> [<params>……]	
	<script number> 3 to 10 <variable>	
	NUMBLKS	Number of blocks to test.
	DHXPKT	DHx test packet type to use.
	TSTCTRL	Test control to use in test.
	HOPPING	Hopping stages.
	HOPMODE	MT8850/52 custom hopping modes.
	LRXFREQ	Low Rx frequency.
	MRXFREQ	Medium Rx frequency.
	HRXFREQ	High Rx frequency.
	LTXFREQ	Low Tx frequency.
	MTXFREQ	Medium Tx frequency.
	HTXFREQ	High Tx frequency.

	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	INITFRQLH	Initial frequency error upper limit value.
	INITFRQLL	Initial frequency error lower limit value.
	FREQERLH	Frequency error upper limit value.
	FREQERLL	Frequency error lower limit value.
	BLKFRQLH	Block frequency error upper limit value.
	BLKFRQLL	Block frequency error lower limit value.
	LRMSDEVM	2Mbps RMS DEVM limit value.
	HRMSDEVM	3Mbps RMS DEVM limit value.
	LPKDEVM	2Mbps peak DEVM limit value.
	HPKDEVM	3Mbps peak DEVM limit value.
	LPCTDEVM	2Mbps 99% packets DEVM limit value.
	HPCTDEVM	3Mbps 99% packets DEVM limit value.
	DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

`ECMCFG?<ws><scriptnumber><,><variable>`

<script number> 1 to 10
<variable>

NUMBLKS	Read the number of blocks to test.
DHXPKT	Read the DHx test packet type used.
TSTCTRL	Read the test control to use in test.
HOPPING	Read the hopping stages.
HOPMODE	Read the custom hopping modes.
LRXFREQ	Read the Low Rx frequency.
MRXFREQ	Read the Medium Rx frequency.
HRXFREQ	Read the High Rx frequency.
LTXFREQ	Read the Low Tx frequency.
MTXFREQ	Read the Medium Tx frequency.
HTXFREQ	Read the High Tx frequency.
LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
INITFRQLH	Read the initial frequency error upper limit value.

	INITFRQLL	Read the initial frequency error lower limit value.
	FREQERLH	Read the frequency error upper limit value.
	FREQERLL	Read the frequency error lower limit value.
	BLKFRQLH	Read the block frequency error upper limit value.
	BLKFRQLL	Read the block frequency error lower limit value.
	LRMSDEVM	Read the 2Mbps RMS DEVM limit value.
	HRMSDEVM	Read the 3Mbps RMS DEVM limit value.
	LPKDEVM	Read the 2Mbps peak DEVM limit value.
	HPKDEVM	Read the 3Mbps peak DEVM limit value.
	LPCTDEVM	Read the 2Mbps 99% packets DEVM limit value.
	HPCTDEVM	Read the 3Mbps 99% packets DEVM limit value.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Differential Phase Encoding Test Configuration (EDPCFG)
(MT8852B and MT8852B-042 only)

In this measurement the EUT transmits a packet with a defined PRBS9 payload. The payload of the received packet is demodulated and compared with the defined ideal packet to give a resultant symbol error rate. The *Bluetooth* 2.0 specification stipulates that zero errors are detected in 99% of 100 packets transmitted.

The *Bluetooth* test specification only requires this test to be performed on 2-DH1 and 3-DH1 packets on channel 0.

Set command format

`EDPCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

NUMPKTS	Number of packets.
DHXPKT	DHx test packet type to use.
HOPPING	Hopping stages .
LTXFREQ	Set Low Tx / Rx frequency.
MTXFREQ	Set Medium Tx / Rx frequency.
HTXFREQ	Set High Tx / Rx frequency.
LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
PCTPKT	Percentage of packets with no errors limit value.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

`EDPCFG?<ws><scriptnumber><,><variable>`

<script number> 1 to 10
<variable>

NUMPKTS	Read the number of packets.
DHXPKT	Read the DHx test packet type to use.
HOPPING	Read the hopping stages.
LTXFREQ	Read the Low Tx / Rx frequency.
MTXFREQ	Read the Medium Tx / Rx frequency.
HTXFREQ	Read the High Tx / Rx frequency.
LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.

	PCTPKT	Read the percentage of packets with no errors limit value.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

EDR Sensitivity Test Configuration (EBSCFG)

(MT8852B and MT8852B-042 only)

The sensitivity test case is to test the EUT receiver sensitivity performance in terms of bit error rate using a non-ideal (dirty) test signal. The test should be performed on the longest supported π/4DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of –70dBm with defined signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has receiver 1,600,000 bits. If the BER measured is 7×10^{-5} the test has passed and the test stops. If the BER is 7×10^{-5} the test continues until the tester has received 16,000,000 bits. If the BER measured is 1×10^{-4} the EUT has passed. This pass criteria applies to each test frequency.

Set command format

`EBSCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

DHXPKT	DHx test packet type to use.
DIRTYTX	Use the dirty table parameters.
DIRTYTAB	Write the dirty table.
DRIFTS	Drift status.
HOPPING	Hopping stages.
PKTCOUNT	Set the method used to count packets.
THBITCNT	Threshold bit count.
TTBITCNT	Total test bit count.
TXPWR	Set the EUT Rx power.
LRXFREQ	Low Rx frequency.
MRXFREQ	Medium Rx frequency.
HRXFREQ	High Rx frequency.
LTXFREQ	Low Tx frequency.
MTXFREQ	Medium Tx frequency.
HTXFREQ	High Tx frequency.
LFREQSEL	Use the low frequency settings in test
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
THERR	Threshold error limit.
TTERR	Total test error limit.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format	`EBSCFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	DHXPKT	Read the DHx test packet type to use.
	DIRTYTX	Read the dirty table parameters.
	DIRTYTAB	Read the dirty table.
	DRIFTS	Read the drift status.
	HOPPING	Read the hopping stages.
	PKTCOUNT	Read the method used to count packets.
	THBITCNT	Read the threshold bit count.
	TTBITCNT	Read the total test bit count.
	TXPWR	Read the EUT Rx power.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read the Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	THERR	Read the threshold error limit.
	TTERR	Read the total test error limit.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

EDR BER Floor Sensitivity Test Configuration (EFSCFG)

(MT8852B and MT8852B-042 only)

The BER floor performance test case is to test whether the EUT receiver sensitivity has low residual BER performance when tested at a level 10dB above its minimum sensitivity. The test should be performed on the longest supported π/4DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of -60dBm with no signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has receiver 8,000,000 bits. If the BER measured is 7 x 10^{-6} the test has passed and the test stops. If the BER is 7 x 10^{-5} the test continues until the tester has received 160,000,000 bits. If the BER measured is 1 x 10^{-5} the EUT has passed. This pass criteria applies to each test frequency.

Set command format	EFSCFG<ws><scriptnumber><,><variable><,> [<params>......]	
	<script number> 3 to 10 <variable>	
	DHXPKT	DHx test packet type to use.
	PKTCOUNT	Set the method used to count packets.
	HOPPING	Hopping stages.
	THBITCNT	Threshold bit count.
	TTBITCNT	Total test bit count.
	TXPWR	Set the EUT Rx power.
	LRXFREQ	Low Rx frequency.
	MRXFREQ	Medium Rx frequency.
	HRXFREQ	High Rx frequency.
	LTXFREQ	Low Tx frequency.
	MTXFREQ	Medium Tx frequency.
	HTXFREQ	High Tx frequency.
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	THERR	Threshold error limit.
	TTERR	Total test error limit.
	DEFAULT	Set the test to its default settings (set only).
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Query command format	EFSCFG?<ws><scriptnumber><,><variable>	
	<script number> 1 to 10 <variable>	

	DHXPKT	Read the DHx test packet type to use.
	PKTCOUNT	Read the method used to count packets.
	HOPPING	Read the hopping stages.
	THBITCNT	Read the threshold bit count.
	TTBITCNT	Read the total test bit count.
	TXPWR	Read the EUT Rx power.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read the Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	THERR	Read the threshold error limit.
	TTERR	Read the total test error limit.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

EDR Maximum Input Power Test Configuration (EMPCFG) (MT8852B and MT8852B-042 only)

The EDR Maximum input level test case is to test whether the EUT receiver sensitivity has low BER performance when tested at a high signal level close to its maximum specified input. The test should be performed on the longest supported π/4DQPSK and 8DPSK packets with frequency hopping off.

The signal source level is set so that the EUT receiver has an input level of –20 dBm with no signal impairments. At each of the test frequencies, the tester transmits packets to the EUT. The EUT loops back the packets to the tester until the tester has receiver 1,600,000 bits. The pass criterion is that the EUT BER shall be 1 x 10^{-3}. This pass criterion applies to each test frequency.

Set command format

`EMPCFG<ws><scriptnumber><,><variable><,> [<params>......]`

<script number> 3 to 10
<variable>

DHXPKT	DHx test packet type to use.
TXPWR	Set the EUT Tx power.
NUMBITS	Number of bits.
HOPPING	Hopping stages.
PKTCOUNT	Set the method used to count packets.
LRXFREQ	Low Rx frequency.
MRXFREQ	Medium Rx frequency.
HRXFREQ	High Rx frequency.
LTXFREQ	Low Tx frequency.
MTXFREQ	Medium Tx frequency.
HTXFREQ	High Tx frequency.
LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
BERLIM	Set overall BER limit.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

`EMPCFG?<ws><scriptnumber><,><variable>`

<script number>1 to 10
<variable>

DHXPKT	Read the DHx test packet type to use.
TXPWR	Read the EUT Tx power.
NUMBITS	Read the number of bits.

	HOPPING	Read the hopping stages.
	PKTCOUNT	Read the method used to count packets.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read the Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	BERLIM	Read the overall BER limit.
Response	The response is returned in the form of the command to set that state.	

Note Refer to chapter 12 for details of the test parameter variables listed above.

EDR Guard Time Test Configuration (EGTCFG)

(MT8852B and MT8852B-042 only)

The EDR guard time measurement ensures that the duration of the guard time between the basic rate packet header and the Enhanced Data Rate synchronization sequence of packets is within the range specified below.

Pass criteria = 4.75 - ε µs < guard time < 5.25 + ε µs
(where ε=0.15 µs as allowed uncertainty)

The test can be performed using either Loopback or Tx mode test controls with hopping off. If the EUT supports both π/4DQPSK and 8DPSK modulation, then the test must be performed on both modulation formats using 2-DH1 and 3-DH1 support packet type.

The test must be performed with the EUT transmitting at its maximum power. The MT8852B will set the EUT to the Max transmit power automatically.

Set command format	`EGTCFG<ws><scriptnumber><,><variable><,> [<params>......]`	
	<script number> 3 to 10 <variable>	
	NUMPKTS	Number of packets.
	DHXPKT	DHx test packet type to use
	TSTCTRL	Test control to use in test.
	LRXFREQ	Set the Low Rx frequency.
	MRXFREQ	Set the Medium Rx frequency.
	HRXFREQ	Set the High Rx frequency.
	LTXFREQ	Set the Low Tx frequency.
	MTXFREQ	Set the Medium Tx frequency.
	HTXFREQ	Set the High Tx frequency.
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	PCTPKT	Percentage of packets with no errors limit value.
	GDTIMELH	Guard time upper limit value.
	GDTIMELL	Guard time lower limit value.
	DEFAULT	Set the test to its default settings (set only).
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Query command format	`EGTCFG?<ws><scriptnumber><,><variable>`	
	<script number>1 to 10 <variable>	

	NUMPKTS	Read the number of packets.
	DHXPKT	Read the DHx test packet type to use
	TSTCTRL	Read the test control to use in test.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read the Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	PCTPKT	Read the percentage of packets with no errors limit value.
	GDTIMELH	Read the guard time upper limit value.
	GDTIMELL	Read the guard time lower limit value.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

EDR Synchronization Sequence and Trailer Test Configuration (ESTCFG) (MT8852B and MT8852B-042 only)

The EDR guard synchronization sequence and trailer measurement ensures zero bit errors in the synchronization sequences and no more than bit error in all the trailer symbols.

The test can be performed using either Loopback or Tx mode test controls with hopping off. If the EUT supports both π/4DQPSK and 8DPSK modulation, then the test must be performed on both modulation formats using 2-DH1 and 3-DH1 support packet type.

The test must be performed with the EUT transmitting at its maximum power. The MT8852B will set the EUT to the Max transmit power automatically.

.

Set command format

`ESTCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

NUMPKTS	Number of packets.
DHXPKT	DHx test packet type to use
TSTCTRL	Test control to use in test.
LRXFREQ	Set the Low Rx frequency.
MRXFREQ	Set the Medium Rx frequency.
HRXFREQ	Set the High Rx frequency.
LTXFREQ	Set the Low Tx frequency.
MTXFREQ	Set the Medium Tx frequency.
HTXFREQ	Set the High Tx frequency.
LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LSYNCBITS	Set the 2Mbps synchronization sequence bits limit value.
HSYNCBITS	Set the 3Mbps synchronization sequence bits limit value.
LTRLBITS	Set the 2Mbps trailer bits limit value.
HTRLBITS	Set the 3Mbps trailer bits limit value.

<params>

Specify either frequency (FREQ) or channel (CHAN).

Query command format

`ESTCFG?<ws><scriptnumber><,><variable>`

<script number>1 to 10
<variable>

NUMPKTS	Read the number of packets.
DHXPKT	Read the DHx test packet type to use

	TSTCTRL	Read the test control to use in test.
	LRXFREQ	Read the Low Rx frequency.
	MRXFREQ	Read the Medium Rx frequency.
	HRXFREQ	Read the High Rx frequency.
	LTXFREQ	Read Low Tx frequency.
	MTXFREQ	Read the Medium Tx frequency.
	HTXFREQ	Read the High Tx frequency.
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LSYNCBITS	Read the 2Mbps synchronization sequence bits limit value.
	HSYNCBITS	Read the 3Mbps synchronization sequence bits limit value.
	LTRLBITS	Read the 2Mbps trailer bits limit value.
	HTRLBITS	Read the 3Mbps trailer bits limit value.
Response	The response is returned in the form of the command to set that state.	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

10-3 Low Energy Tests

(Option 27 and MT8852B-043 only)

BLE Output Power Test Configuration (LEOPCFG)

The output power test performs power measurements on the EUT transmitted packets.

The MT8852B measures the EUT output power at the three frequencies defined on the LOW, MEDIUM and HIGH set up screen. The number of packets measured at each frequency is set by the user in the "Number of packets" field.

The following test description is described using the default test control. The MT8852B sends a BLE Tx Test command to the EUT specifying a BLE reference packet with a PRBS9 payload type to be transmitted back to the MT8852B. The EUT transmits the data at its maximum output power and the MT8852B measures the received power. This test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* low energy RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

Set command format

`LEOPCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the EUT low frequency Tx value.
MTXFREQ	Set the EUT medium frequency Tx value.
HTXFREQ	Set the EUT high frequency Tx value.
LEPKTTYPE	Set the packet type. (Option 35, 36, 37, 62 only.)
NUMPKTS	Number of packets.
AVGMXLIM	Average power high limit.
AVGMNLIM	Average power low limit.
AVGMXCTELIM	Average power high limit for CTE.
AVGMNCTELIM	Average power low limit for CTE.
PEAKLIM	Peak to average power limit.
PEAKCTELIM	Peak to average power limit for CTE.
DEFAULT	Set the test to its default settings (set only).

	<params>
	Specify either frequency (FREQ) or channel (CHAN).
Example	To set the DEFAULT LEOPCG the command would be:
	`LEOPCFG 3,DEFAULT`
Query command format	`LEOPCFG?<ws><scriptnumber><,><variable>`
	<script number> 1 to 10 <variable>

LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
LTXFREQ	Read the EUT low frequency Tx value.
MTXFREQ	Read the EUT medium frequency Tx value.
HTXFREQ	Read the EUT high frequency Tx value.
LEPKTTYPE	Read the packet type used for the test
NUMPKTS	Read the number of packets.
AVGMXLIM	Read the average power high limit.
AVGMNLIM	Read the average power low limit.
AVGMXCTELIM	Read the average power high limit for CTE.
AVGMNCTELIM	Read the average power low limit for CTE.
PEAKLIM	Read the peak power limit.
PEAKCTELIM	Read the peak power limit for CTE.

Response	The response is returned in the form of the command to set that state.
Example	`LEOPCFG? 3,PEAKLIM`
Response	If the value of the LEOPCFG PEAKLIM was 15, the response would be:
	`LEOPCFG 3,PEAKLIM,5`

Note Refer to chapter 12 for details of the test parameter variables listed above.

BLE Carrier Frequency Offset and Drift Test Configuration (LEICDCFG) (Option 27 and MT8852B-043 only)

The carrier drift test performs an initial carrier frequency offset, drift and drift rate measurements.

Note that measurements on 2LE packets require option 35, option 36 is required for BLR and option 37 is required for BLE-CTE and 2LE-CTE.

The MT8852B sends a BLE Tx Test command to the EUT which specifies a BLE reference packet with a 10101010 payload type (11111111 for BLR8) to be transmitted to the MT8852B at each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies are the default frequencies specified in the *Bluetooth* low energy RF test specification. The number of packets of each length measured is set in the “Number of packets” field. The MT8852B allows all the frequencies to be changed. This is the test method described in the *Bluetooth* Low Energy RF Test Specification.

Set command format	`LEICDCFG<ws><scriptnumber><,><variable><,>[<params>......]`	
	<script number> 3 to 10 <variable>	
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the low frequency Tx and Rx value.
	MTXFREQ	Set the medium frequency Tx and Rx value.
	HTXFREQ	Set the high frequency Tx and Rx value.
	LEPKTTYPE	Set the packet type. (Option 35, 36, 37 only.)
	NUMPKTS	Set the number of packets used.
	MXPOSLIM	Set the positive offset limit.
	MXPOSLRLIM	Set the positive offset limit (BLR).
	MXPOSCTELIM	Set the positive offset limit (BLE-CTE).
	MXPOS2CTELIM	Set the positive offset limit (2LE-CTE).
	MXNEGLIM	Set the negative offset limit.
	MXNEGLRLIM	Set the negative offset limit (BLR).
	MXNEGCTELIM	Set the negative offset limit (BLE-CTE).
	MXNEG2CTELIM	Set the negative offset limit (2LE-CTE).
	DFTBLELIM	Set the packet drift limit.
	DFTBLELRLIM	Set the packet drift limit (BLR).

DFTBLECTELIM	Set the packet drift limit (BLE-CTE).
DFTBLE2CTELIM	Set the packet drift limit (2LE-CTE).
INITDFTBLERATE	Set the initial drift rate limit.
INITDFTBLELRRATE	Set the initial drift rate limit (BLR).
INITDFTBLECTERATE	Set the initial drift rate limit (BLE-CTE).
INITDFTBLE2CTERATE	Set the initial drift rate limit (2LE-CTE).
DFTBLERATE	Set the drift rate limit.
DFTBLELRRATE	Set the drift rate limit (BLR).
DFTBLECTERATE	Set the drift rate limit (BLE-CTE).
DFTBLE2CTERATE	Set the drift rate limit (2LE-CTE).
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT LEICDCFG, the command would be:

```
LEICDCFG 3,DEFAULT
```

Query command format

```
LEICDCFG?<ws><scriptnumber><,><variable>
```

<script number> 1 to 10
<variable>

LFREQSEL	Get the low frequency settings in test.
MFREQSEL	Get the medium frequency settings in test.
HFREQSEL	Get the high frequency settings in test.
LTXFREQ	Get the low frequency Tx and Rx value.
MTXFREQ	Get the medium frequency Tx and Rx value.
HTXFREQ	Get the high frequency Tx and Rx value.
LEPKTTYPE	Get the packet type.
NUMPKTS	Get the number of packets used.
MXPOSLIM	Get the positive offset limit.
MXPOSLRLIM	Get the positive offset limit (BLR).
MXPOSCTELIM	Get the positive offset limit (BLE-CTE).
MXPOS2CTELIM	Get the positive offset limit (2LE-CTE).

MXNEGLIM	Get the negative offset limit.
MXNEGLRLIM	Get the negative offset limit (BLR).
MXNEGCTELIM	Get the negative offset limit (BLE-CTE).
MXNEG2CTELIM	Get the negative offset limit (2LE-CTE).
DFTBLELIM	Get the packet drift limit.
DFTBLELRLIM	Get the packet drift limit (BLR).
DFTBLECTELIM	Get the packet drift limit (BLE-CTE).
DFTBLE2CTELIM	Get the packet drift limit (2LE-CTE).
INITDFTBLERATE	Get the initial drift rate limit.
INITDFTBLELRRATE	Get the initial drift rate limit (BLR).
INITDFTBLECTERATE	Get the initial drift rate limit (BLE-CTE).
INITDFTBLE2CTERATE	Get the initial drift rate limit (2LE-CTE).
DFTBLERATE	Get the drift rate limit.
DFTBLELRRATE	Get the drift rate limit (BLR).
DFTBLECTERATE	Get the drift rate limit (BLE-CTE).
DFTBLE2CTERATE	Get the drift rate limit (2LE-CTE).

Response The response is returned in the form of the command to set that state.

Example `LEICDCFG? 3,NUMPKTS`

Response If the value of the LEICDCFG NUMPKTS was 25, the response would be:

`LEICDCFG 3,NUMPKTS,25`

Note	Refer to chapter 12 for details of the test parameter variables listed above.

BLE Modulation Characteristics Test Configuration (LEMICFG)

(Option 27 and MT8852B-043 only)

This test measures the modulation characteristics of the EUT output for each of the frequency ranges selected (LOW, MEDIUM and HIGH).

Note that measurements on 2LE signals requires Option 35 and measurements on BLR signals requires Option 36 or 62.

The MT8852B sends a BLE Tx Test command to the EUT which specifies a BLE reference packet with an 11110000 payload type to be transmitted back to the MT8852B. The MT8852B then instructs the EUT to send packets with alternate ones and zeros (10101010) payload back to the MT8852B. This is repeated at each of the frequencies selected (LOW, MEDIUM and HIGH), for the number of packets specified. In the case of BLR8 signals a 11111111 payload is used. (Measurements on BLR2 signals are not required by the Test Specification and are not supported.)

The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* Low Energy RF test specification. The MT8852B allows all the frequencies to be changed.

Set command format	`LEMICFG<ws><scriptnumber><,><variable><,> [<params>……]`	
	<script number> 3 to 10 <variable>	
	LFREQSEL	Use the low frequency settings in test.
	MFREQSEL	Use the medium frequency settings in test.
	HFREQSEL	Use the high frequency settings in test.
	LTXFREQ	Set the low frequency Tx value.
	MTXFREQ	Set the medium frequency Tx value.
	HTXFREQ	Set the high frequency Tx value.
	LEPKTTYPE	Set the packet type. (Option 35, 36, 62 only.)
	NUMPKTS	Set the number of packets used.
	F1AVGMIN	Set the f1avg min limit.
	F1AVGMAX	Set the f1avg max limit.
	F1AVG2MIN	Set the f1avg 2LE min limit.
	F1AVG2MAX	Set the f1avg 2LE max limit.
	F2MAXLIM	Set the f2max limit.
	F1MAXLIM	Set the f1max (BLR8) limit.
	F2MAX2LIM	Set the f2max (2LE) limit.
	F1F2MAX	Set the f1/f2 avg max limit.

	TOGGLE	Set the payload type.
	DEFAULT	Set the test to its default settings (set only).
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Example	To set the DEFAULT LEMICFG the command would be:	
	`LEMICFG 3,DEFAULT`	
Query command format	`LEMICFG?<ws><scriptnumber><,><variable>`	
	<script number> 1 to 10 <variable>	
	LFREQSEL	Read the low frequency settings in test.
	MFREQSEL	Read the medium frequency settings in test.
	HFREQSEL	Read the high frequency settings in test.
	LTXFREQ	Read the low frequency Tx value.
	MTXFREQ	Read the medium frequency Tx value.
	HTXFREQ	Read the high frequency Tx value.
	LEPKTTYPE	Read the packet type.
	NUMPKTS	Read the number of packets used.
	F1AVGMIN	Read the f1avg min limit.
	F1AVGMAX	Read the f1avg max limit.
	F1AVG2MIN	Read the f1avg 2LE min limit.
	F1AVG2MAX	Read the f1avg 2LE max limit.
	F2MAXLIM	Read the f2max limit.
	F1MAXLIM	Read the f1max (BLR8) limit.
	F2MAX2LIM	Read the f2max (2LE) limit.
	F1F2MAX	Read the f1/f2 avg max limit.
	TOGGLE	Read the payload type.
Response	The response is returned in the form of the command to set that state.	
Example	`LEMICFG? 3,NUMPKTS`	
Response	If the value of the LEMICFG NUMPKTS was 10, the response would be:	
	`LEMICFG 3,NUMPKTS,10`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

BLE Tx Power Stability Test Configuration (LEPSCFG)

(Option 37 only)

This test measures the Tx power stability of the CTE within the EUT transmitted packets.

The MT8852B measures the CTE within the packets at the three frequencies defined on the LOW, MEDIUM and HIGH set up screen. The number of packets measured at each frequency is set by the user in the "Number of packets" field.

The following test description is described using the default test control. The MT8852B sends a BLE Tx Test command to the EUT specifying a BLE packet with CTE to be transmitted back to the MT8852B. The EUT transmits the data at its maximum output power and the MT8852B measures the CTE. This test is repeated until the requested number of packets has been measured on each of the selected frequencies. The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the Bluetooth low energy RF test specification. The MT8852B allows all these frequencies to be changed from their default values.

Set command format

`LEPSCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LTXFREQ	Set the EUT low frequency Tx value.
MTXFREQ	Set the EUT medium frequency Tx value.
HTXFREQ	Set the EUT high frequency Tx value.
LEPKTTYPE	Set the packet type.
NUMPKTS	Set the number of packets.
CTESLOT	Set the CTE slot duration.
NUMANT	Set the number of antenna.
NUMANTMODE	Set the number of antenna mode.
ANTSWPAT	Antenna switching pattern
SWPATLEN	Length of switching pattern
ANTSWLIST	Antenna switching list
REFPWRLIM	Set the reference power ratio limit.
SLOTPWRLIM	Set the slot power ratio limit.
DEFAULT	Set the test to its default settings (set only).

	<params> Specify either frequency (FREQ) or channel (CHAN).
Example	To set the CTE 2 μs slot duration, the command would be: `LEPSCFG 3,CTESLOT,2US,TRUE`
Query command format	`LEPSCFG?<ws><scriptnumber><,><variable>` <script number> 3 to 10 <variable>

LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
LTXFREQ	Read the EUT low frequency Tx value.
MTXFREQ	Read the EUT medium frequency Tx value.
HTXFREQ	Read the EUT high frequency Tx value.
LEPKTTYPE	Read the packet type used for the test
NUMPKTS	Read the number of packets.
CTESLOT	Read the CTE slot duration.
NUMANT	Read the number of antenna.
NUMANTMODE	Read the number of antenna mode.
ANTSWPAT	Antenna switching pattern
SWPATLEN	Length of switching pattern
ANTSWLIST	Antenna switching list
REFPWRLIM	Read the reference power ratio limit.
SLOTPWERLIM	Read the slot power ratio limit.

Response	The response is returned in the form of the command to set that state.
Example	`LEPSCFG? 3,CTESLOT,2US`
Response	If the value of the LEPSCFG CTESLOT 2 μs was true, the response would be: `LEPSCFG 3,LECTESLOT,2US,TRUE`

Note	Refer to chapter 12 for details of the test parameter variables listed above.

BLE Receiver Sensitivity Test Configuration (LESSCFG)

(Option 27 and MT8852B-043 only)

For BLE sensitivity measurement the MT8852B first sends the BLE Rx Test command to the EUT and then transmits BLE reference packets with a pseudo random payload (PRBS 9) to the EUT at a minimum power level. The EUT counts the number of received packets and sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* low energy RF test specification. The MT8852B allows all the frequencies to be changed. This is the test method described in the *Bluetooth* Low Energy RF Test Specification for a sensitivity test.

Set command format

`LESSCFG<ws><scriptnumber><,><variable><,> [<params>……]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LRXFREQ	Set the low frequency Rx value.
MRXFREQ	Set the medium frequency Rx value.
HRXFREQ	Set the high frequency Rx value.
LEPKTTYPE	Set the packet type. (Option 35, 36 only.)
NUMPKTS	Set the number of packets used.
TXPWR	Set the requested EUT Rx power level for BLE and 2LE.
TXPWRLR2	Set the requested EUT Rx power level for BLR2. (Option 36 only.)
TXPWRLR8	Set the requested EUT Rx power level for BLR8. (Option 36 only.)
FERLIM	Set overall FER limit.
FERLIMMODE	Set the BLE PER limit mode: manually, or automatically based on the packet length.
DIRTYTX	Use dirty parameter table ON/OFF.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example	To set the LESSCFG to on the command would be: `LESSCFG 3,LFREQSEL,ON`
Query command format	`LESSCFG?<ws><scriptnumber><,><variable>` <script number> 1 to 10 <variable>

LFREQSEL	Read the low frequency settings in test.
MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
MRXFREQ	Read the medium frequency Rx value.
HTXFREQ	Read the high frequency Tx value.
HRXFREQ	Read the high frequency Rx value.
LEPKTTYPE	Read the packet type.
NUMPKTS	Read the number of packets used.
TXPWR	Read the EUT Rx power level for BLE and 2LE.
TXPWRLR2	Read the EUT Rx power level for BLR2.
TXPWRLR8	Read the EUT Rx power level for BLR8.
FERLIM	Read the overall FER limit.
FERLIMMODE	Read the BLE PER limit mode.

Response	The response is returned in the form of the command to set that state.
Example	`LESCFG? 3,LFREQSEL`
Response	If the value of LESSCFG was LFREQSEL, the response would be: `LESSCFG 3,LFREQSEL,ON`

Note	Refer to chapter 12 for details of the test parameter variables listed above.

BLE PER Report Integrity (LEPRICFG)

(Option 27 and MT8852B-043 only)

The MT8852B sends BLE reference packets with a PRBS9 payload at a power level of -30 dBm and with the CRC value alternating between a valid and invalid value. The EUT counts the number of valid received packets and, at the end of the test, sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated three times (default) at the frequency selected (MEDIUM default). The MEDIUM frequency relates to the default frequencies specified in the *Bluetooth* low energy RF test specification. The MT8852B allows the frequency to be changed.

Set command format

`LEPRICFG<ws><scriptnumber><,><variable><,>[<params>......]`

<script number> 3 to 10
<variable>

MRXFREQ	Set the medium frequency Rx value.
NUMCYC	Set the number or cycles of the test.
LEPKTTYPE	Set the packet type. (Option 35, 36, 62 only.)
NUMPKTS	Number of packets used for each test in fixed mode. Mist be set to an even number.
PKTNUMMODE	The packet number mode.
TXPWR	Set the requested EUT Rx power level.
FERLIMMODE	Set the limit mode: manually, or automatically based on the packet length.
LOWPERLIM	Set the lower PER limit.
HIGHPERLIM	Set the higher PER limit.
DEFAULT	Set the test to its default settings.

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the LEPRICFG to on the command would be:

```
LEPRICFG 3,PKTNUMMODE,RANDOM
```

Query command format

`LEPRICFG?<ws><scriptnumber><,><variable>`

<script number> 1 to 10
<variable>

MRXFREQ	Read the medium frequency Rx value.
NUMCYC	Read the number or cycles of the test.
LEPKTTYPE	Read the packet type.

	NUMPKTS	Read the number of packets used for each test in fixed mode.
	PKTNUMMODE	Read the packet number mode.
	TXPWR	Read the requested EUT Rx power level.
	FERLIMMODE	Read the BLE PER limit mode.
	LOWPERLIM	Read the lower PER limit.
	HIGHPERLIM	Read the higher PER limit
Response	The response is returned in the form of the command to set that state.	
Example	`LEPRICFG? 3,PKTNUMMODE`	
Response	If the value of PKTNUMMODE was FIXED, the response would be: `LEPRICFG 3,PKTNUMMODE,FIXED`	

Note	Refer to chapter 12 for details of the test parameter variables listed above.

BLE Maximum Input Signal Level Test Configuration (LEMPCFG) (Option 27 and MT8852B-043 only)

For the BLE Maximum Input Signal Level measurement the MT8852B first sends the BLE Rx Test command to the EUT and then transmits BLE reference packets with a pseudo random payload (PRBS 9) to the EUT at a high power level. The EUT counts the number of received packets and, at the end of the test, sends this value back to the MT8852B. Frame error rate (FER) calculation is performed by the MT8852B test set. The test is repeated for each of the frequencies selected (LOW, MEDIUM and HIGH). The LOW, MEDIUM and HIGH frequencies relate to the default frequencies specified in the *Bluetooth* low energy RF test specification. The MT8852B allows all the frequencies to be changed.

Set command format

`LEMPCFG<ws><scriptnumber><,><variable><,> [<params>......]`

<script number> 3 to 10
<variable>

LFREQSEL	Use the low frequency settings in test.
MFREQSEL	Use the medium frequency settings in test.
HFREQSEL	Use the high frequency settings in test.
LRXFREQ	Set the low frequency Rx value.
MRXFREQ	Set the medium frequency Rx value.
HRXFREQ	Set the high frequency Rx value.
LEPKTTYPE	Set the packet type. (Option 35, 36, 62 only.)
NUMPKTS	Set the number of packets used for each.
TXPWR	Set the requested EUT Rx power level.
FERLIMMODE	Set the limit mode: manually, or automatically based on the packet length.
FERLIM	Set FER limit.
DEFAULT	Set the test to its default settings (set only).

<params>

Specify either frequency (FREQ) or channel (CHAN).

Example

To set the DEFAULT MPCFG the command would be:

`MSCFG 3,DEFAULT`

Query command format

`LEMPCFG?<ws><scriptnumber><,><variable>`

<script number> 1 to 10
<variable>

LFREQSEL	Read the low frequency settings in test.

MFREQSEL	Read the medium frequency settings in test.
HFREQSEL	Read the high frequency settings in test.
LRXFREQ	Read the low frequency Rx value.
MRXFREQ	Read the medium frequency Rx value.
HRXFREQ	Read the high frequency Rx value.
LEPKTTYPE	Read the packet type.
NUMPKTS	Read the number of packets used.
TXPWR	Read the requested EUT Rx power level.
FERLIMMODE	Read the BLE PER limit mode.
FERLIM	Read the FER limit.

Response The response is returned in the form of the command to set that state.

Example `LEMPCFG 3,NUMPKTS`

Response If the value of the UMPCFG NUMPKTS was 10, the response would be:

`LEMPCFG 3,NUMPKTS,10`

Note	Refer to chapter 12 for details of the test parameter variables listed above.

Chapter 11 — Configuring Tests in Single Payload Mode

11-1 Single Payload Configuration (SPCFG)

This command is used to configure parameters when test scripts are carried out in Single Payload mode (see Operation Manual for more information on this mode). When running a script in this mode, the instrument uses the configuration parameters listed below.

Note that for the tests listed below, the instrument does NOT support measurements on the received packets when in Single Payload mode.

- Receiver sensitivity (BER)
- Receiver Maximum Input Power (BER)
- Power Control
- Any of the eight EDR measurements (MT8852B, MT8852B-042 only)
- Any of the six low energy measurements (option 27 and MT8852B-043 only)

The PKTTYPE parameter allows selection of all EDR packet types, as well as the Basic Rate packets. This is to allow continuous transmission of any packet when using the instrument as an 'interferer' for certain types of tests (e.g. C/I Performance or Blocking Performance tests). All EDR packets looped back to the instrument is discarded (i.e. no measurements is made).

Set command format	`SPCFG<ws><script_num><,><variable><,>[<params>……]`	
	<script_num>	3 to 10
	<variable>	
	TSTCTRL	Test control to use in test
	PAYLOAD	Set the test control payload type
	PKTTYPE	Packet type to use in performing test
	HOPSTATE	Set the hopping modes used
	TXFREQ	Set the Tx frequency value
	RXFREQ	Set the Rx frequency value
	DIRTYTX	Use dirty parameter table ON/OFF
	DEFAULT	Restore the default settings (set only)
	<params>	
	Specify either frequency (FREQ) or channel (CHAN).	
Query command format	`SPCFG?<ws><script number><,><variable>`	

<script_num>	1 to 10
TSTCTRL	Read test control to be used in test
PAYLOAD	Read the test control payload type
PKTTYPE	Read type to use in performing test
HOPSTATE	Read the hopping modes used
TXFREQ	Read the Tx frequency value
RXFREQ	Read the Rx frequency value
DIRTYTX	Read dirty parameter table

Note	Refer to chapter 12 for specific details of frequency related set and request variables.

Chapter 12 — Test Parameter Variables

This section provides details of the non-limit type variables that may be used for all or any of the tests. For ease of referencing, the variables are listed in alphabetical order.

Actual Frequencies Used (LTXFREQ, LRXFREQ, LFREQ, MTXFREQ, MRXFREQ, MFREQ, LRFREQ, HRXFREQ, HFREQ, TXFREQ, RXFREQ)

Use the appropriate parameter to set or query the Low, Medium or High frequencies for the selected test. Confirm in the list for the specific test configuration that the parameter is supported. The following exceptions apply depending on the specific Test or Test Control Mode:

- When in Tx Test Control Mode ONLY, use parameters LFREQ, MFREQ or HFREQ to set both Tx and Rx frequencies (parameters LTXFREQ, MTXFREQ, LRXFREQ can also be used as alternatives).
- The TXFREQ, RXFREQ parameters must be used when the test mode is Single Payload Mode.

Note	The Tx frequencies are the EUT Tx frequencies and the Rx frequencies are the EUT Rx frequencies.

Set command format	`PCCFG<ws><script number><,><freq_select><,><form><,><frequency>[suffix]`
	<script number> 3 to 10
	<freq_select>
	LTXFREQ — Low Tx frequency (also Rx frequency when in Tx Test Control Mode).
	LRXFREQ — Low Rx frequency setting.
	LFREQ — Sets both Tx and Rx low frequencies when in Tx Test Control Mode.
	MTXFREQ — Medium Tx frequency (also Rx frequency when in Tx Test Control Mode).
	MRXFREQ — Medium Rx frequency setting. For the BLE PER integrity test, the frequencies allowed are limited to those defined in the low energy specification.
	MFREQ — Sets both Tx and Rx Medium frequencies when in Tx Test Control Mode.
	HTXFREQ — High Tx frequency (also Rx frequency when in Tx Test Control Mode).
	HRXFREQ — High Rx frequency setting.
	HFREQ — Sets both Tx and Rx high frequencies when in Tx Test Control Mode.
	TXFREQ — Tx frequency setting used in Single Payload Test (SPCFG).
	RXFREQ — Rx frequency setting used in single payload test (SPCFG).
	<form>
	FREQ — The <frequency> data is in the frequency form (i.e. 2400 MHz to 2483 MHz).
	CHAN — The <frequency> data is in the channel number form (i.e. 0 to 78).
	<frequency> — Frequency as a channel number or frequency value (Hz).
Example	Example 1
	To set low Tx frequency to 2434 MHz in script 4 power control test using frequency form the command would be:
	`PCCFG 4,LTXFREQ,FREQ,2434MHz`
	Example 2
	To set low Tx frequency to 2434 MHz in script 4 power control test using channel form the command would be:
	`PCCFG 4,LTXFREQ,CHAN,32`

Query command format	`PCCFG?<ws><script number><,><freq_select><,><form>`	
	<script number> 1 to 10	
	<freq_select>	
	LTXFREQ	Tx frequency (also Rx frequency when in Tx Test Control Mode).
	LRXFREQ	Low Rx frequency setting.
	LFREQ	Tx and Rx low frequencies when in Tx Test Control Mode.
	MTXFREQ	Medium Tx frequency (also Rx frequency when in Tx Test Control Mode).
	MRXFREQ	Medium Rx frequency setting.
	MFREQ	Tx and Rx Medium frequencies when in Tx Test Control Mode.
	HTXFREQ	High Tx frequency (also Rx when in Tx Test Control Mode).
	HRXFREQ	High Rx frequency setting.
	HFREQ	Tx and Rx high frequencies when in Tx Test Control Mode.
	TXFREQ	Tx frequency setting used in Single Payload Test (SPCFG).
	RXFREQ	Rx frequency setting used in single payload test (SPCFG).
	<form>	
	FREQ	The <frequency> data is in the frequency form. i.e. 2402 MHz to 2480 MHz.
	CHAN	The <frequency> data is in the channel number form. i.e. 0 to 78.
Response	The response string returned for the query is in the identical format as the configuration command string.	
Example	Example1:	
	`PCCFG? 7,MRXFREQ,FREQ`	
	Response: If the power control medium Rx frequency in script 7 is 2480 MHz, the response would be:	
	`PCCFG 7,MRXFREQ,FREQ,2480E+006`	
	Example2:	
	`EDPCFG? 7,LTXFREQ,FREQ`	
Response	If the low TX/Rx frequencies are 2402 MHz, the response would be:	
	`EDPCFG 7,LTXFREQ,FREQ,2402E+006`	

ANTSWLIST

This parameter is used to set up the antenna switching list in BLE Tx power stability.

Set command format

```
LEPSCFG <script number>, ANTSWLIST,<antenna ID[0]>[,<antenna ID[1]>,] ... [, <antenna ID[74]>]
```

<script number> 1 to 10

<antenna ID[i] 0 to 255 (default: antenna ID[0]=1, antenna ID[1]=2,..., antenna ID[74]=75)

Example

To set the antenna ID[0] to [9] for the tx power stability in script 3 the commands are:

```
LEPSCFG 3,ANTSWLIST,1,2,3,4,5,6,7,8,9,10
```

Query command format

```
LEPSCFG?<ws><scriptnumber><,> ANTSWLIST
```

<script number> 1 to 10

Response

The response is returned in the form of the command to set that state, the number of antenna IDs are depend on SWPATLEN value.

Example

```
LEPSCFG? 3,ANTSWLIST
```

Response

If the antenna switching list in script3 was default value and SWPATLEN was set to 75, the response would be:

```
LEPSCFG 3,ANTSWLIST,1,2,3,4,5,6,7,8,9,10,11,12,13,14,
15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,
33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,
51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,
69,70,71,72,73,74,75
```

ANTSWPAT

This parameter is used to set up the antenna switching pattern in BLE Tx power stability.

Set command format

```
LEPSCFG<ws><script number><,>ANTSWPAT<,><pattern>
```

<script number> 1 to 10

<pattern> A (default)

B

LIST

Example

To set the antenna switching pattern to A for tx power stability test in script 3, the command would be:

```
LEPSCFG 3,ANTSWPAT,A
```

Query command format

```
LEPSCFG?<ws><scriptnumber><,>ANTSWPAT
```

<script number> 1 to 10

Response

The response is returned in the form of the command to set that state.

Example

```
LEPSCFG? 3,ANTSWPAT
```

Response If the antennas switching pattern in script 3 was A, the response would be:

`LEPSCFG 3,ANTSWPAT,A`

CTESLOT

This parameter is used to set up the CTE slot duration in the BLE packet.

Set command format `LEPSCFG<ws><script number><,>CTESLOT<,><duration><,><value>`

<script number> 3 to 10

<duration> 1US (slot duration 1 μs)

2US (slot duration 2 μs)

<value> TRUE

FALSE

(default value: FALSE on 1US, FALSE on 2US

Example To set the slot duration to 2 μs only for the tx power stability in script 3, the commands are:

`LEPSCFG 3,CTESLOT,1US,FALSE`

`LEPSCFG 3,CTESLOT,2US,TRUE`

Query command format `LEPSCFG?<ws><script number><,>CTESLOT<,><duration>`

<script number> 1 to 10

<duration> 1US (slot duration 1 μs)

2US (slot duration 2 μs)

Response The response is returned in the form of the command to set that state.

Example `LEPSCFG? 7,CTESLOT,1US`

Response If the CTE slot duration of script 7 was 1US is TRUE, the response would be:

`LEPSCFG 7,CTESLOT,1US,TRUE`

DEFAULT

This parameter applies to all tests and will set that test back to its default settings.

Set command format `PCCFG<ws><script number><,>DEFAULT`

<script number> 3 to 10 for set

Example To set the power control test in script 3 to defaults the command would be:

`PCCFG 3,DEFAULT`

DHXPKT (MT8852B and MT8852B-042 only)

This parameter is used to set up the EDR packet type to be used in both the 2 Mbps and the 3 Mbps EDR type packet tests.

Set command format	`ERPCFG<ws><script number><,>DHXPKT<,><data rate><,><packet type>`
	<script number> 3 to 10
	<data rate> 2 | 3 Where: 2 = 2Mbps, 3 = 3Mbps
	<packet type> Parameters depend on <data rate> (see below)
	if <data rate> = 2 :
	<packet type>OFF | LONG | 2DH1 | 2DH3 | 2DH5
	if <data rate> = 3 :
	<packet type>OFF | LONG | 3DH1 | 3DH3 | 3DH5
	LONGUse longest packet type supported by EUT
	OFFDo not do this test stage
Example	To set the ERPCFG test packet type for the 2MB/s part of the test to a 2DH3 for script 4 the command will be:
	`ERPCFG 4,DHXPKT,2,2DH3`
Query command format	`ERPCFG?<ws><script number><,>DHXPKT<,><data rate>`
	<script number> 1 to 10
	<data rate> 2 | 3 Where: 2 = 2Mbps, 3 = 3Mbps
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`ERPCFG? 4,DHXPKT,3`
Response	If the packet type was the longest supported type the response would be:
	`ERPCFG 4,DHXPKT,2,2DH3`

DIRTYTAB

This parameter is used with the EDR sensitivity test, multi-slot sensitivity and single slot sensitivity tests where the dirty parameter table is available. The command allows a single entry or all entries for a parameter to be changed or read within a table. Note that the maximum number of entries for the dirty parameter table is 10 entries for single-slot sensitivity and multi-slot sensitivity tests and 3 entries for EDR sensitivity test.

Set command format

```
SSCFG<ws><scriptnumber><,>DIRTYTAB<,><variable>
<,><entry><,><number>
```

<script number>	3 to 10
<variable>	OFFSET | SYMT | MODINDEX
OFFSET	Set the frequency offset.
SYMT	Set symbol timing value.
MODINDEX	Set the modulation index value (does not apply to EDR sensitivity test).
<entry>	0 | 1 to 10 for single-slot and multi-slot sensitivity tests.
	0 | 1 to 3 for EDR sensitivity test.

Select ‘0’ to set all entries at once. In this case <number> consists of comma separated entries for the whole table.

<number>	Ranges depend on the <variable> parameter (see below)
OFFSET	–75 kHz to +75 kHz
SYMT	–25 ppm to +25 ppm
MODINDEX	0.25 to 0.50 (does not apply to EDR sensitivity test)

Example

Example 1: To set the single slot dirty table offset entry 4 value to –10 kHz in script 4 single slot sensitivity test the command would be:

```
SSCFG 4,DIRTYTAB,OFFSET,4,-10kHz
```

Example 2: To set all the table entries at once of OFFSET the command would be:

```
SSCFG 4,DIRTYTAB,OFFSET,0,-75 KHz,0KHz,15KHz,3kHz,-
20kHz,-10E3,13E3,-4.6E4,1KHz,0
```

Example 3: To set all table entries for script 7 EDR Sensitivity test using OFFSET, the command would be:

```
EBSCFG 7,DIRTYTAB,OFFSET,0,15KHz,3kHz,-20kHz
```

Query command format	`EBSCFG?<ws><script number><,>DIRTYTAB<,><variable><,><entry>`
	<script number> 1 to 10
	<variable> OFFSET | SYMT | MODINDEX
	OFFSET: Set the frequency offset
	SYMT: Set symbol timing value
	MODINDEX: Set the modulation index value (does not apply to EDR sensitivity test)
	<entry> 0 | 1 to 10 for normal data rate
	0 | 1 to 3 for EDR
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	For script 4 EDR sensitivity test dirty table entry 3 as OFFSET, the command would be:
	`EBSCFG? 4,DIRTYTAB,OFFSET,3`
Response	if the offset is 15 kHz, the response would be:
	`EBSCFG 4,DIRTYTAB,OFFSET,3,1.5E+004`

DIRTYTX

This parameter is used to set or read whether the dirty transmitter is applied during the single slot and multi slot sensitivity tests, and single payload test when a payload of PRBS9 is used.

Set command format	`SSCFG<ws><script number><,>DIRTYTX<,><status>`
	<script number> 3 to 10
	<status> ON or OFF
Example	To apply the dirty parameters to the multi slot sensitivity test in script 3 the command would be:
	`MSCFG 3,DIRTYTX,ON`

Query command format	`MSCFG? <ws><script number><,>DIRTYTX`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`MSCFG? 7,DIRTYTX`
Response	If the dirty Tx is not applied to the multi sensitivity test in script 7 the response would be:
	`MSCFG 7,DIRTYTX,OFF`

Frequencies Used (LFREQSEL, MFREQSEL, HFREQSEL)

These parameters are used to select or read whether the low, medium or high frequencies are used when the test is run.

Set command format	`PCCFG<ws><script number><,><selection><,><status>`
	<script number> 3 to 10 <selection> LFREQSEL MFREQSEL HFREQSEL <status> ON or OFF
Example	To set low frequency select in power control test of script 4 to ON the command would be: `PCCFG 4,LFREQSEL,ON`
Query command format	`PCCFG?<ws><script number><,><selection>`
	<script number> 1 to 10 <selection> LFREQSEL MFREQSEL HFREQSEL
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 7,MFREQSEL`
Response	If the medium frequency select of script 7 was OFF the response would be: `PCCFG 7,MFREQSEL,OFF`

DRIFTS

This application turns on or off the application of drift as specified in the RF *Bluetooth* test specification.

Set command format	`SSCFG<ws><script number><,><DRIFTS><status>` <script number> 3 to 10 <status> ON or OFF
Example	To set drift to ON in script 3 single sensitivity test, the command would be: `SSCFG 3,DRIFTS,ON`
Query command format	`SSCFG?<ws><script number><,><DRIFTS>` <script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`SSCFG 3,DRIFTS,ON`

FERLIMMODE

Following the introduction of support for Data Length Extension (DLE) with Option 34, this variable sets the mode for calculating the PER test limit based on the packet payload length. In AUTO mode the limit is calculated automatically. (The default is MANUAL for backwards compatibility.)

Set command format	`LESSCFG<ws><script number><,>FERLIMMODE<,><mode>` <script number> 1 to 10 <mode> MANUAL or AUTO
Example	To set the PER limit mode to manual for the BLE receiver sensitivity test in script 3, the command would be: `LESSCFG 3,FERLIMMODE,MANUAL`
Query command format	`LESSCFG?<ws><script number><,>FERLIMMODE`
Response	The response is returned int the form of the command to set that state.
Example	`LESSCFG? 3,FERLIMMODE`
Response	If script 3 PER test limit mode is AUTO, the response would be: `LESSCFG 3,FERLIMMODE,AUTO`

HOPMODE

When a test is run with hopping on, this parameter is used to set which packets in the hop sequence are used for measurement.

Set command format	`ICCFG<ws><script number><,><HOPMODE><,><mode>`	
	<script number>	3 to 10
	<mode>	DEFINED
		ALL
		ANY
Example	To set hopping mode in script 4 initial carrier test to custom the command would be:	
	`ICCFG 4,HOPMODE,ALL`	
Query command format	`ICCFG?<ws><script number><,><HOPMODE>`	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state.	
Example	`ICCFG? 7,HOPMODE`	
Response	If script 7 initial carrier test hopping mode is ANY, the response would be:	
	`ICCFG 7,HOPMODE,ANY`	

HOPPING

Some of the tests can be done in both hopping ON and hopping OFF states. This parameter is used to set or read in which states the test is done when a test with this parameter is run.

Set command format	`ICCFG<ws><script number><,><HOPPING><,><variable>`	
	<script number> 3 to 10 <variable>	
	HOPON	Test performed with hopping ON.
	HOPOFF	Test performed with hopping OFF.
	HOPBOTH	Test performed with both ON and OFF.
Example	To set hopping on mode in script 4 initial carrier test to ON the command would be:	
	`ICCFG 4,HOPPING,HOPON`	
Query command format	`ICCFG?<ws><script number><,><HOPPING>`	
	<script number> 1 to 10	
Response	The response is returned in the form of the command to set that state.	
Example	`ICCFG? 7,HOPPING`	
Response	If script 7 initial carrier test hopping off is OFF, the response would be:	
	`ICCFG 7,HOPPING,HOPOFF`	

HOPSTATE

The single payload test can be performed in both hopping on and hopping off states. This parameter is used to set or read in which state the single payload test is performed.

Set command format	`SPCFG<ws><script number><,><HOPSTATE><,><variable>`
	<script number> 3 to 10 <variable> On | OFF
	ON — Test performed with hopping ON
	OFF — Test performed with hopping OFF
Example	To set the single payload hopping state to on for script 4:
	`SPCFG 4,HOPSTATE,ON`
Query command format	`SPCFG?<ws><script number><,><HOPSTATE>`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`SPCFG? 4,HOPSTATE`
Response	If script 4 single payload test hop state is on, the response would be:
	`SPCFG 4,HOPSTATE,ON`

LEPKTTYPE

(MT8852B-027 and MT8852B-043 with options 35, 36, 37, 62 only)

This configuration parameter is used to set the Bluetooth Low Energy packet type. It is used with the following BLE test configuration commands: LEOPCFG, LEICDCFG, LEMICFG, LEPSCFG, LESSCFG, LEPRICFG and LEMPCFG. It is also used with the LESCPTCFG command to set the packet type for all of the above test configurations in parallel.

The allowed packet types for each configuration command are shown in the following table. Note that not all supported tests require BLR packets, and where testing on BLR packets is required, most tests specify BLR (S=8). (This is not a limitation of the instrument but a requirement of the Bluetooth Test Specification.)

In the case of LESCPTCFG, the command enables only those packet types that are supported by each test, so it is permissible to set LR2 to TRUE and the command will ensure that this setting is only applied to the LESSCFG (receiver sensitivity) and LEPRICFG (PER report integrity) tests as shown in the table.

Support for 2LE requires option 35, BLR requires either option 36 or 62 and BLE-CTE/2LE-CTE requires option 37.

	BLE **1 Msym/s**	**2LE** **2 Msym/s**	**LR8** **BLR (S=8)**	**LR2** **BLR (S=2)**	**BLECTE** **1 Msym/s** **with CTE**	**2LECTE** **1 Msym/s** **with CTE**
LEOPCFG	YES	YES	YES	NO	YES	YES
LEICDCFG	YES	YES	YES	NO	YES	YES
LEMICFG	YES	YES	YES	NO	NO	NO
LEPSCFG	NO	NO	NO	NO	YES	YES
LESSCFG	YES	YES	YES	YES	NO	NO
LEPRICFG	YES	YES	YES	YES	NO	NO
LEMPCFG	YES	YES	NO	NO	NO	NO
LESCPTCFG	YES	YES	YES	YES	YES	YES

.

Set command format

`LESSCFG<ws><script number><,>LEPKTTYPE<,><type><,><value>`

(Here LESSCFG is used as an example of a command that can take LEPKTTYPE as a parameter.)

<script number> 1 to 10

	<type>	BLE (1 Msym/s)
		2LE (2 Msym/s)
		LR8 (BLR S=8)
		LR2 (BLR S=2)
		BLECTE (1 Msym/s with CTE)
		2LECTE (2 Msym/s with CTE)
	<value>	TRUE
		FALSE
		(Default value: BLE is TRUE on Low energy tests. 2LE, LR8, LR2 and 2LECTE are FALSE on Low energy tests. BLECTE is TRUE on Low energy Tx power stability.)

Example

To set the packet type to LR2 (only) for the single sensitivity test in script 3 the commands are:

```
LESSCFG 3,LEPKTTYPE,LR2,TRUE
LESSCFG 3,LEPKTTYPE,LR8,FALSE
LESSCFG 3,LEPKTTYPE,2LE,FALSE
LESSCFG 3,LEPKTTYPE,BLE,FALSE
```

Query command format

```
LESSCFG?<ws><script number><,>LEPKTTYPE,<type>
```

<script number>	1 to 10
<type>	BLE (1 Msym/s)
	2LE (2 Msym/s)
	LR8 (BLR S=8)
	LR2 (BLR S=2)
	BLECTE (1 Msym/s with CTE)
	2LECTE (2 Msym/s with CTE)

Response

The response is returned in the form of the command to set that state:

Example

```
LESSCFG? 3,LEPKTTYPE,2LE
```

Response

If the 2LE packet type was enabled for the receiver sensitivity test in script 3, the response would be:

```
LESSCFG 3,LEPKTTYPE,2LE,TRUE
```

MINCHECK

(MT8852B and MT8852B-042 only)

This parameter is used in the EDR Relative power test only. If the EUT supports power control and its minimum power is less than the MT8852B measurement receiver sensitivity, this parameter should be set to TRUE.

When this parameter is set to TRUE the EDR Relative power test will set the EUT Tx power to a Tx power based on the Power control test setting “Minimum test power” for the minimum EUT Tx power stage of the EDR relative power test.

Set command format	`ERPCFG<ws><script number><,><MINCHECK><,><value>`	
	<script number>	3 to 10
	<value>	TRUE
		FALSE (Default)
Example	To set the MINCHECK to TRUE for script 3 the command would be:	
	`ERPCFG 3,MINCHECK,TRUE`	
Query command format	`ERPCFG?<ws><script number><,><MINCHECK>`	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state:	
	command to set that state	
Example	`ERPCFG? 3,MINCHECK`	
Response	If script 3 MINCHECK was set to FALSE the response would be:	
	`ERPCFG 3,MINCHECK,FALSE`	

MINPWR

This parameter is used to set or read the required minimum EUT Tx power level the power control test will step to if the EUT has not already reached it's minimum.

Set command format	`PCCFG<ws><script number><,><MINPWR><,><value>[DBM]`
	<script number> 3 to 10
	<value> –40 dBm to 0 dBm
Example	To set the power level to -40 dBm in script 4 the command would be:
	`PCCFG 4,MINPWR,-40`
Query command format	`PCCFG?<ws><script number><,><MINPWR>`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 7,MINPWR`
Response	If script 7 power control test min power level is set to –35 dBm, the response would be:
	`PCCFG 7,MINPWR,-35`

NUMANT

This parameter is used to set up the CTE number of antenna for BLE Tx power stability.

Set command format	`LEPSCFG<ws><script number><,>NUMANT<,><slot><,><number>`
	<script number> 3 to 10
	<number> 2 to 75 (default 2)
Example	To set the number of antenna to 10 in script 3 tx power stability test, the command would be:
	`LEPSCFG 3,NUMANT,10`
Query command format	`LEPSCFG?<ws><scriptnumber><,>NUMANT`
	<script number> 2 to 10
Response	The response is returned in the form of the command to set that state.
Example	`LEPSCFG? 7,NUMANT`
Response	If the Number of antenna in script 7 was 18, the response would be:
	`LEPSCFG 7,NUMANT,18`

NUMANTMODE

This parameter is used to set up the mode for number of antenna in BLE Tx power stability.

In AUTO mode the number of antenna is obtained from EUT. In MANUAL mode the number of antenna can be set using NUMANT.

Set command format	LEPSCFG<ws><script number><,>NUMANTMODE<,><mode>	
	<script number>	3 to 10
	<number>	AUTO or MANUAL (default)
Example	To set the number of antenna mode to manual for BLE Tx power stability test in script 3, the command would be:	
	LEPSCFG 3, NUMANTMODE,MANUAL	
Query command format	LEPSCFG?<ws><scriptnumber><,>NUMANTMODE	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state.	
Example	LEPSCFG? 3, NUMANTMODE	
Response	If the number of antenna mode in script 3 was manual, the response would be:	
	LEPSCFG 3,NUMANTMODE,MANUAL	

NUMBITS (MT8852B and MT8852B-042 only)

This parameter is used to set up the number of bits for the EDR Maximum input power level test.

Set command format	EMPCFG<ws><script number><,>NUMBITS<,><mbits>	
	<script number>	3 to 10
	<mbits>	1.0 to 999.0 Mbits (default = 1.6 Mbits)
Example	To set the EMPCFG test bit count to 1.6 Mbits for script 4 the command will be:	
	EMPCFG 4,NUMBITS,1.6	
Query command format	EMPCFG?<ws><script number><,>NUMBITS	
	<script number>	1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.	
Example	EMPCFG? 7,NUMBITS	
Response	If the threshold bit count is set to 1.6 Mbits the response would be:	
	EMPCFG 7,NUMBITS,1.6E+000	

NUMBLKS (MT8852B and MT8852B-042 only)

This parameter is used to define the number of blocks over which the EDR carrier frequency stability and modulation accuracy test is to be performed.

Set command format	`ECMCFG<ws><script number><,>NUMBLKS<,><num blocks>`
	<script number> 3 to 10
	<num blocks> 1 to 500 (default = 200)
Example	To set the ECMCFG test number of blocks to 200 for script 4 the command will be:
	`ECMCFG 4,NUMBLKS,200`
Query command format	`ECMCFG?<ws><script number><,>NUMBLKS`
	<script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`ECMCFG? 4,NUMBLKS`
	If <num blocks> is set to 200 the response will be:
	`ECMCFG 4,NUMBLKS,200`

NUMCYC

This parameter is used to set or read the number of cycles used in the power control test. Each cycle of the test is as follows. The EUT is set to its maximum power level, stepped down to its minimum power level, and then stepped up to the maximum power again. For the PER integrity test, the number of cycles or runs is limited to a range of 1 to 5 with a default of 3.

Set command format	`PCCFG<ws><script number><,><NUMCYC><,><number>`
	<script number> 3 to 10
	<number> 1 to 1000 (Default 1)
Example	To set the number of cycles to 11 in script 4 power control test the command would be:
	`PCCFG 4,NUMCYC,11`
Query command format	`PCCFG?<ws><script number><,><NUMCYC>`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 7,NUMCYC`
Response	If script 7 power control number of cycles is 2, the response would be:
	`PCCFG 7,NUMCYC,2`

NUMPKTS

This parameter is used to set or read the number of packets that are used for each part of the test. For each of the LOW, MEDIUM and HIGH frequencies selected to be used as part of the test, this is the number of packets measured. For hopping tests this value is used depending on the test and the hopping mode. For the power control test, this is the number of packets measured per step. For the PER integrity test, the number of packets that can be set in FIXED mode must be an even value in the range of 10 to 10000. An error is output if an odd value is specified.

Set command format	`OPCFG<ws><script number><,><NUMPKTS><,><number>`
	<script number> 3 to 10
	<number> 1 to 10000 (Default will depend on the test)
Example	To set the number of packets to 11 in script 4 output power test the command would be:
	`OPCFG 4,NUMPKTS,11`
Query command format	`OPCFG?<ws><script number><,><NUMPKTS>`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`OPCFG? 7,NUMPKTS`
Response	If script 7 output power number of packets is 2, the response would be:
	`OPCFG 7,NUMPKTS,11`

Note	For the BLE PER Integrity test (LEPRICFG), the number of packets must be set to an even value.

PAYLOAD

This sets the payload data for the packet type defined.

Set command format	`SPCFG<ws><script number><,>PAYLOAD<,><payload type>`	
	<script number>	3 to 10
	<payload type>	DATA 10101010
		DATA 11110000
		DATA PRBS9 (default)
Example	To set the payload to PRBS9 for script 4:	
	`SPCFG 4,PAYLOAD,DATAPRBS9`	
Query command format	`SPCFG?<ws><script number><,>PAYLOAD`	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state.	
Example	`SPCFG? 4,PAYLOAD`	
Response	If script 4 single payload test payload type was PRBS9, the response would be:	
	`SPCFG 4,PAYLOAD,DATAPRBS9`	

PKTCOUNT

This parameter is used to configure how the packets are counted during this test. If the packet count is set to transmitted packets the test may not be performed on 1.6 million or greater due to lost packets. If the packet count is set to packets received then the test would be carried out on the 1.6 million or greater bits, but could take longer to complete.

Set command format	`SSCFG<ws><script number><,>PKTCOUNT<,><param>`	
	<script number>	3 to 10
	<param>	Tx (for Transmitted). Default
		Rx (for Received)
Example	To set to received in script 5, the command would be:	
	`SSCFG 5,PKTCOUNT,RX`	
Query command format	`SSCFG? 5,PKTCOUNT`	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state.	

PKTNUMMODE

(Option 27 and MT8852B_043 only)

This parameter configures whether the BLE PER integrity test is run using a fixed or random number of packets. The NUMPKTS parameter is used only to define the number of packets used in the test when the PKTNUMMODE is set to FIXED. When PKTNUMMODE is set to RANDOM the number of packets used in the test is randomly chosen when the test is run.

Set command format	`LEPRICFG<ws><script number><,>PKTNUMMODE<,><type>` <script number> 3 to 10 <type> RANDOM (Default), FIXED
Example	To set the LE PER integrity test packet number mode to FIXED for script 7 the command will be: `LEPRICFG 7,PKTNUMMODE,FIXED`
Query command format	`LEPRICFG?<ws><script number><,>PKTNUMMODE` <script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`LEPRICFG? 7,PKTNUMMODE`
Response	Response: If the packet number type is set to FIXED for script 7 the response would be: `LEPRICFG 7,PKTNUMMODE,FIXED`

PKTSIZE

This parameter is used to set or read the packet sizes used for the carrier drift test. The test can be performed with all or any combination of the DH1, DH3 or DH5 packets depending on which packet types the EUT support.

If the EUT does not support the requested packet size the test will FAIL reporting an execution error.

Set command format

```
CDCFG<ws><script number><,>PKTSIZE<,><variable>
<,><status>
```

<script number> 3 to 10

<variable>

ONESLOT	Test performed with 1 slot packet DH1.
THREESLOT	Test performed with 3 slot packet DH3.
FIVESLOT	Test performed with 5 slot packet DH5.

<status> TRUE or FALSE

Example

To set to use 3 slot packets in carrier drift test script 4 to true the command would be:

```
CDCFG 4,PKTSIZE,THREESLOT,TRUE
```

Query command format

```
CDCFG?<ws><script number><,><PKTSIZE><,><variable>
```

<script number> 1 to 10

<variable>

ONESLOT	Test performed with 1 slot packet DH1.
THREESLOT	Test performed with 3 slot packet DH3.
FIVESLOT	Test performed with 5 slot packet DH5.

Response

The response is returned in the form of the command to set that state.

Example

```
CDCFG? 7,PKTSIZE,FIVESLOT
```

Response

If script 7 carrier drift test five slot packet is false, the response would be:

```
CDCFG 7,PKTSIZE,FIVESLOT,FALSE
```

PKTTYPE

This parameter is used to set or read the packet type used for a test. The valid parameters depended on the test and whether an EUT supports that packet type.

The packet types that can be selected from the <type> list in the command format depend on the selected test and whether the EUT supports that packet type (see table below for supported packets).

Output power:	Longest supported (default), DH5, DH3 or DH1
Power control:	DH1 (default), DH3 or DH5
Modulation characteristics:	Longest supported (default), DH5, DH3 or DH1
Initial carrier:	N/A
Carrier drift:	Inherently selectable in test
Single slot sensitivity:	N/A
Multi slot sensitivity:	Longest supported (default), DH5 or DH3
Maximum input power sensitivity:	N/A
Single payload Basic Data Rate:	DH5, DH3, DH1(default)
Single payload Enhanced Data Rate:	2DH5, 2DH3, 2DH1, 3DH5, 3DH3, 3DH1

Note that EDR packets are transmitted, but no measurements are performed when looped back to the instrument.

Set command format	`OPCFG<ws><script number><,>PKTTYPE <,><type>`
	<script number> 3 to 10 Basic Data Rate, all tests including Single Payload:
	<type> LONG | DH5 | DH3 | DH1
	Enhanced Data Rate (if option enabled), Single Payload only:
	<type> 2DH5 | 2DH3 | 2DH1 | 3DH5 | 3DH3 | 3DH1
Example	To set the packet type for the output power test to always use DH3 in script 4 the command would be: `OPCFG 4,PKTTYPE,DH3`
Query command format	`PCCFG?<ws><script number><,>PKTTYPE`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 7,PKTTYPE`
Response	If script 7 power control test packet type was DH1, the response would be: `PCCFG 7,PKTTYPE,DH1`

PTXLEV (MT8852B and MT8852B-042 only)

This parameter is used to define whether the EDR Relative Transmit power test (ERPCFG) should be carried out at minimum and/or maximum power levels.

Set command format	`ERPCFG<ws><script number><,>PTXLEV<,><pow level>`
	<script number> 3 to 10
	<pow level> MIN | MAX | MINMAX
Example	To set the ERPCFG to perform the test at both minimum and maximum power for script 7 the command will be:
	`ERPCFG 7,PTXLEV,MINMAX`
Query command format	`ERPCFG?<ws><script number><,>PTXLEV`
	<script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`ERPCFG? 4,PTXLEV`
Response	If the power level was set to maximum the command will be:
	`ERPCFG 4,PTXLEV,MAX`

PWRDELAY

This parameter is used to set or read the delay required for the EUT to change the Tx power as requested before measurements are made. *Bluetooth* devices that support power control should have this time specified in the 'Implementation Extra Information for Testing' (IXIT) document.

Set command format	`PCCFG<ws><script number><,><PWRDELAY<,><value>`
	<script number> 3 to 10
	<value> 100 Milliseconds to 100 seconds in seconds
	(1 sec default)
Example	To set the delay to 1 second in script 4, the command would be:
	`PCCFG 4,PWRDELAY,1`
Query command format	`PCCFG?<ws><script number><,>PWRDELAY`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 7,PWRDELAY`
Response	If script 7 delay is set to 5 seconds, the response would be:
	`PCCFG 7,PWRDELAY,5.0e+000`

SWPATLEN

This parameter is used to set up the length of switching pattern in BLE Tx power stability.

Set command format	`LEPSCFG<ws><script number><,>SWPATLEN<,><length>` <script number> 1 to 10 <length>2 to 75 (default: 2)
Example	To set the length of switching pattern to 4 for BLE Tx power stability test in script 3, the command would be: `LEPSCFG 3,SWPATLEN,4`
Query command format	`LEPSCFG?<ws><scriptnumber><,>SWPATLEN` <script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`LEPSCFG? 3,SWPATLEN`
Response	If the number of antenna mode in script 3 was 4, the response would be: `LEPSCFG 3,SWPATLEN,4`

THBITCNT (MT8852B and MT8852B-042 only)

This parameter is used to set up the threshold bit count for the EDR sensitivity tests.

Set command format	`EBSCFG<ws><script number><,>THBITCNT<,><mbits>` <script number> 3 to 10 <mbits> 1.0 to 999.0 Mbits (default = 1.6 Mbits)
Example	To set the EBSCFG test threshold bit count to 1.6 Mbits for script 4 the command will be: `EBSCFG 4,THBITCNT,1.6`
Query command format	`EBSCFG?<ws><script number><,>THBITCNT` <script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`EBSCFG? 7,THBITCNT`
Response	If the threshold bit count is set to 1.6 Mbits the response would be: `EBSCFG 7,THBITCNT,1.6E+000`

TOGGLE

The modulation index test as defined in the RF test spec requires a measurement made on two different payloads per measurement. This increases the time the test takes to complete. To shorten the time taken to perform this test, the MT8852B can change the payload after the requested number of packets have been measured with the first payload, and then measure the requested number of packets with the second payload.

Set command format	`MICFG<ws><scriptnumber>,TOGGLE<mode>`	
	<script number>	3 to 10
	<mode>	ONCE : Changes the payload only once per measurement stage. CONT : Changes the payload per measurement (Default as RF test spec)
Example	To set script 7 for Mod Index test to change the payload type ONCE would be: `MICFG 7,TOGGLE,ONCE`	
Query command format	`MICFG? <scriptnumber>,TOGGLE`	
	<script number>	1 to 10
Response	MICFG <scriptnumber>,TOGGLE, <ONCE | CONT>	
Example	`MICFG 3,TOGGLE,CONT`	

TSTCTRL

This parameter is used to configure the test control type to be applied on a test-by-test basis. All test that support both loopback and Tx mode are listed below with their default value setting.

Output power (OPCFG):	Loop back test control
Power control (PCCFG):	Loop back test control
Enhanced power control (EPCFG)	Loop back test control
Modulation Index (MICFG):	Loop back test control
Initial carrier (ICCFG):	Loop back test control
Carrier drift (CDCFG):	Loop back test control
EDR Relative Transmit Power (ERPCFG) (#1)	Loop back test control
EDR Carrier Frequency & Modulation accuracy (ECMCFG) (#1)	Loop back test control

Set command format	`OPCFG<ws><script number><,>TSTCTRL<,><type>` <script number> 3 to 10 <type> LOOPBACK | TXTEST
Example	To set the power control test type to Tx test for script 4 the command would be: `PCCFG 4,TSTCTRL,TXTEST`
Query command format	`PCCFG?<ws><script number><,>TSTCTRL` <script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`PCCFG? 7,TSTCTRL`
Response	If script 7 power control test control was LOOPBACK, the response would be: `PCCFG 7,TSTCTRL,LOOPBACK`

(#1) (MT8852B and MT8852B-042 only)

TTBITCNT (MT8852B and MT8852B-042 only)

This parameter is used to set up the total bit count for the EDR sensitivity tests.

Set command format	`EFSCFG<ws><script number><,>TTBITCNT<,><total mbits>`
	<script number> 3 to 10
	< total mbits > 1.0 to 999.0 Mbits (default = 16.0 Mbits)
Example	To set the EFSCFG test total bit count to 16.0 Mbits for script 4 the command will be:
	`EBSCFG 4,TTBITCNT,16.0`
Query command format	`EFSCFG?<ws><script number><,>TTBITCNT`
	<script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`EFSCFG? 7,TTBITCNT`
Response	If the threshold bit count is set to 16.0 Mbits the response would be:
	`EFSCFG 7,TTBITCNT,1.6E+001`

TXPWR

This parameter is used to configure the required Tx power level except for BLR2 and BLR8 during the sensitivity tests. When the path loss table and/or fixed offset parameters are enabled, the specified power level is corrected accordingly to minimize connection losses and ensure that the EUT receives at the stated power level.

Set command format	`SSCFG<ws><script number><,><TXPWR<,><value>[dBm]`
	<script number> 3 to 10
	<value> range 0.0 to –90.0 dBm
Example	To set power level to –3.0 dBm in script 4 single slot sensitivity test the command would be:
	`SSCFG 4,TXPWR,-3.0`
Query command format	`SSCFG?<ws><script number><,>TXPWR`
	<script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`SSCFG? 7,TXPWR`
Response	If script 7 single slot sensitivity test has the power level set to -3.0 dBm, the response would be:
	`SSCFG 7,TXPWR,-3.0`

TXPWRLR2

This parameter is used to configure the required Tx power level for BLR2 during the sensitivity tests. When the path loss table and/or fixed offset parameters are enabled, the specified power level is corrected accordingly to minimize connection losses and ensure that the EUT receives at the stated power level.

Set command format	`SSCFG<ws><script number><,><TXPWRLR2<,><value>[dBm]` <script number> 3 to 10 <value> range 0.0 to –90.0 dBm
Example	To set power level to –3.0 dBm in script 4 single slot sensitivity test the command would be: `SSCFG 4,TXPWRLR2,-3.0`
Query command format	`SSCFG?<ws><script number><,>TXPWRLR2` <script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`SSCFG? 7,TXPWRLR2`
Response	If script 7 single slot sensitivity test has the power level set to –3.0 dBm, the response would be: `SSCFG 7,TXPWRLR2,-3.0`

TXPWRLR8

This parameter is used to configure the required Tx power level for BLR8 during the sensitivity tests. When the path loss table and/or fixed offset parameters are enabled, the specified power level is corrected accordingly to minimize connection losses and ensure that the EUT receives at the stated power level.

Set command format	`SSCFG<ws><script number><,><TXPWRLR8<,><value>[dBm]` <script number> 3 to 10 <value> range 0.0 to –90.0 dBm
Example	To set power level to –3.0 dBm in script 4 single slot sensitivity test the command would be: `SSCFG 4,TXPWRLR8,-3.0`
Query command format	`SSCFG?<ws><script number><,>TXPWRLR8` <script number> 1 to 10
Response	The response string returned for the query is in the identical format as the configuration command string.
Example	`SSCFG? 7,TXPWRLR8`

Response

If script 7 single slot sensitivity test has the power level set to –3.0 dBm, the response would be:

```
SSCFG 7,TXPWRLR8,-3.0
```

Chapter 13 — Test Limit Variables

This chapter provides details of the limit variables for each of the tests.

13-1 Output Power Test Limit Commands

AVGMXLIM, AVGMNLIM, PEAKLIM

These parameters are used to set or read the limits used to determine if the average power reading in the output power test passes or fails.

Set command format	`OPCFG<ws><script number><,><parameter><,>`
	`<limit value>[dBm]`
	<script number> 3 to 10
	<parameter> AVGMXLIM
	AVGMNLIM
	PEAKLIM
	<limit value> –80 dBm to +30 dBm (Default +20 dBm)
	AVGMNLIM range is –80dBm to +20dBm
	PEAKLIM default is +23 dBm

Example	To set the average limit in script 3 output power test to 18 dBm the command would be: `OPCFG 3,AVGMNLIM,18`
Query command format	`OPCFG?<ws><script number><,><parameter>` <script number> 1 to 10 <parameter> AVGMXLIM AVGMNLIM PEAKLIM
Response	The response is returned in the form of the command to set that state.
Example	`OPCFG? 7,AVGMXLIM`
Response	If the average high limit in script 7 output power test was 22 the response would be: `OPCFG 7,AVGMXLIM,22`

13-2 Power Control Test Limit Commands

MXSTEPLIM, MNSTEPLIM

These parameters are used in the power control test configuration to set or read the power step limits. If the step sizes are not within these limits the test is reported as failed.

Set command format	`PCCFG<ws><script number><,><selection><,><value>`
	<script number> 3 to 10
	<selection>
	MXSTEPLIM — Maximum power step
	MNSTEPLIM — Minimum power step
	<value> — 1.0 to 10.0 dBm
	step size — 0.1 dBm
Example	To set the max step limit to 3 dBm in script 4 power control test the command would be:
	`PCCFG 4,MXSTEPLIM,3`
Query command format	`PCCFG?<ws><script number><,><selection>`
	<script number> 1 to 10
	<selection>
	MXSTEPLIM — Maximum power step
	MNSTEPLIM — Minimum power step
Response	The response is returned in the form of the command to set that state.
Example	`PCCFG? 4,MXSTEPLIM`
Response	If the max step limit in script 4 power control test is 3 dB the response would be:
	`PCCFG 4,MXSTEPLIM,3`

13-3 Enhanced Power Control Test Limit Commands

MXSTEPLIM, MNSTEPLIM, MXEPCLIM

These parameters are used to setup the upper limit for the difference between the GFSK packet and the GFSK portion of the EDR packets on any increment or decrement. The value must be less than or equal to this limit to pass.

Set command format	`EPCCFG<ws><script number><,>MXEPCLIM<,><up limit>` <script number> 3 to 10 <up limit> 0.0 to 20.0 dB (Default 10.0)
Example	To set the enhanced power control test upper limit to 14.0 dB for script 7 the command will be: `EPCCFG 7,MXEPCLIM,14.0`

Query command format	`EPCCFG?<ws><script number><,>MXEPCLIM` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`EPCCFG? 7,MXEPCLIM`
Response	If the upper limit is set to 12.0 dB for script 7 the response would be: `EPCCFG 7,MXEPCLIM,12.0`

13-4 Initial Carrier Frequency Test Limit Commands

MXPOSLIM, MXNEGLIM

These parameters are used to set or read the maximum positive or negative offset limits for the initial carrier test.

Set command format	ICCFG<ws><script number><,><selection><,><limit value>[kHz]	
	<script number>	3 to 10
	<selection>	
	MXPOSLIM	Maximum positive limit
	MXNEGLIM	Maximum negative limit
	<limit value>	Range –200 to +200 kHz (Default 75 kHz)
Example	To set the maximum positive offset limit to 11 kHz in script 3 the command would be: ICCFG 3,MXPOSLIM,11kHz	
Query command format	ICCFG?<ws><script number><,>MXNEGLIM	
	<script number>	1 to 10
Response	The response is returned in the form of the command to set that state.	
Example	ICCFG? 7,MXNEGLIM	
Response	If the maximum negative offset limit in script 7 is –75 kHz the response would be: ICCFG 7,MXNEGLIM,-7.5E4	

13-5 Carrier Frequency Drift Limit Commands

DFT1LIM, DFT3LIM, DFT5LIM, DFTNPLIM, DFTRATE

These parameters are used to set or read the drift limit values in the carrier drift test. The drift rate if in the units of Hz/50µs.

Set command format

```
CDCFG<ws><script number><,><variable><,><number>
```

<script number> 3 to 10
<variable>

DFT1LIM	Set the 1 slot packet drift limit (range 0.0 to 200 kHz)
DFT3LIM	Set the 3 slot packet drift limit (range 0.0 to 200 kHz)
DFT5LIM	Set the 5 slot packet drift limit (range 0.0 to 200 kHz)
DFTNPLIM	Set the null packet drift limit (range 0.0 to 40.0 kHz, default is 25 kHz
DFTRATE	Set drift rate limit (range 1000 to 90000, default 20000 Hz/50 µs)

<number> Ranges depend on the parameter.

Example

To set the drift limit for 5 slot packets to +/- 70 kHz in script 4 carrier drift test the command would be:

```
CDCFG 4,DFT5LIM,70kHz
```

Query command format

```
CDCFG?<ws><script number><,><variable>
```

<script number> 1 to 10
<variable>

DFT1LIM	Read the 1 slot packet drift limit
DFT3LIM	Read the 3 slot packet drift limit
DFT5LIM	Read the 5 slot packet drift limit
DFTNPLIM	Read the null packet drift limit.
DFTRATE	Read the drift rate limit

Response

The response is returned in the form of the command to set that state.

Example

```
CDCFG? 7,DFT3LIM
```

Response

If script 7 drift limit for 3 slot packets is 55 kHz carrier drift test, the response would be:

```
CDCFG 7,DFT3LIM,55E3
```

13-6 Standard Rate Sensitivity Test Limit Commands

BERLIM, FERLIM

These parameters are used to set or read the BER/FER limit value used in the sensitivity tests.

Set command format	`SSCFG<ws><script number><,>,<parameter><,><number>`	
	<script number>	3 to 10
	<parameter>	BERLIM
		FERLIM
	<number>	Ranges depend on the parameter (unit %)
		0.001 to 100 - FER
		0.001 to 10 - BER
Example	Set the BER limit for script 4 single slot sensitivity test to 0.4% the command would be:	
	`SSCFG 4,BERLIM,0.4`	

Query command format	`SSCFG?<ws><script number><,><parameter>`	
	<script number>	1 to 10
	<parameter>	BERLIM
		FERLIM
Response	The response is returned in the form of the command to set that state.	
Example	`SSCFG? 7,BERLIM`	
Response	If script 7 single slot sensitivity test BER limit is set to 0.2%, the response would be:	
	`SSCFG 7,BERLIM,0.2`	

13-7 Modulation Index Limit Commands

F1AVGMIN, F1AVGMAX, F2MAXLIM, F1F2MAX

These parameters are used to set or read the limit values used in the modulation characteristic test to determine if the test has passed or failed.

Set command format	`MICFG<ws><script number><,><variable><,><number>`	
	<script number> 3 to 10	
	<variable>	
	F1AVGMIN	Set the f1avg min limit
	F1AVGMAX	Set the f1avg max limit
	F2MAXLIM	Set the f2max limit
	F1F2MAX	Set the f1/f2 avg max limit
	<number> Ranges depend on the parameter :	
	F1AVGMIN	Range –200 to +200
	F1AVGMAX	Range –200 to +200
	F2MAXLIM	Range –200 to +200
	F1F2MAX	Range 0.0 to 1.0
Example	Set the f1avg min value to 140 kHz in script 4 modulation index test the command would be:	
	`MICFG 4,F1AVGMIN,140kHz`	
Query command format	`MICFG?<ws><script number><,><variable>`	
	<script number> 1 to 10	
	<variable>	
	F1AVGMIN	Read the f1avg min limit
	F1AVGMAX	Read the f1avg max limit
	F2MAXLIM	Read the f2max limit
	F1F2MAX	Read the f1/f2 avg max limit
Response	The response is returned in the form of the command to set that state.	
Example	`MICFG? 7,F1AVGMAX`	
Response	If script 7 modulation index test f1avg max limit is 200 kHz, the response would be:	
	`MICFG 7,F1AVGMAX,200E3`	

13-8 EDR Relative Transmit Power Limit Commands (MT8852B and MT8852B-042 only)

PDIFFLL, PDIFFLH

PDIFFLL – PDPSK to PGFSK difference window lower limit

This parameter is used to set up the lower limit for the average power difference window for the EDR Relative Power test pass-fail criteria. The pass criteria is defined as:

Pass criteria = (PGFSK - X) < PDPSK < (PGFSK + Y)

Where X and Y have the same meaning as defined in the operation manual. The variables X, Y define the average power difference window in dB, where X is the lower limit and Y is the upper limit. The command PDIFFLL sets the X-value lower limit power. Note that only |X| can be set.

Set command format	`ERPCFG<ws><script number><,>PDIFFLL<,><low limit>[DB]` <script number> 3 to 10 <low limit> 0.0 to 8.0 dB
Example	To set the ERPCFG lower limit to 4.0 dB for script 7 the command will be: `ERPCFG 7,PDIFFLL,4.0`
Query command format	`ERPCFG?<ws><script number><,>PDIFFLL` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ERPCFG? 7,PDIFFLL`
Response	If the lower limit is set to 4.0 dB for script 7 the response would be: `ERPCFG 7,PDIFFLL,4.0E+000`

PDIFFLH – PDPSK to PGFSK difference window upper limit

This parameter is used to set up the upper limit for the average power difference window for the EDR Relative Power test pass-fail criteria. The pass criteria is defined as:

Pass criteria = (PGFSK - X) < PDPSK < (PGFSK + Y)

Where X and Y have the same meaning as defined in the operation manual. The variables X, Y define the average power difference window in dB, where X is the lower limit and Y is the upper limit. The command PDIFFLH sets the Y-value upper limit power. Note that only |Y| can be set.

Set command format	`ERPCFG<ws><script number><,>PDIFFLH<,><up limit>[DB]`
	<script number> 3 to 10
	<up limit> 0.0 to 4.0 dB
Example	To set the ERPCFG upper limit to 1.0 dB for script 7 the command will be:
	`ERPCFG 7,PDIFFLH,1.0`
Query command format	`ERPCFG?<ws><script number><,>PDIFFLH`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ERPCFG? 7,PDIFFLH`
Response	If the upper limit is set to 1.0 dB for script 7 the response would be:
	`ERPCFG 7, PDIFFLH,1.0E+000`

13-9 EDR Carrier Frequency and Accuracy Limit Commands (MT8852B and MT8852B-042 only)

INITFRQLH, INITFRQLL, FREQERLH, FREQERLL, BLKFRQLH, BLKFRQLL, LRMSDEVM, HRMSDEVM, LPKDEVM, HPKDEVM, LPCTDEVM, HPCTDEVM

INITFRQLH - Initial frequency error upper limit value

This parameter is used to set up the initial frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>INITFRQLH<,><up limit>`
	<script number> 3 to 10
	<up limit> –100.0 to +100.0 kHz
Example	To set the ECMCFG initial upper limit to +75.0 kHz for script 7 the command will be:
	`ECMCFG 7,INITFRQLH,75.0KHZ`
Query command format	`ECMCFG?<ws><script number><,>INITFRQLH`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7, INITFRQLH`
Response	If the initial frequency upper limit is set to +75.0 kHz for script 7 the response would be:
	`ECMCFG 7,INITFRQLH,7.5E+004`

INITFRQLL - Initial frequency error lower limit value

This parameter is used to set up the initial frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>INITFRQLL<,><low limit>` <script number> 3 to 10 <low limit> –100.0 to +100.0 kHz
Example	To set the ECMCFG lower limit to -75.0 kHz for script 7 the command will be: `ECMCFG 7,INITFRQLL,-75.0KHZ`
Query command format	`ECMCFG?<ws><script number><,>INITFRQLL` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,INITFRQLL`
Response	If the initial frequency lower limit is set to -75.0 kHz for script 7 the response would be: `ECMCFG 7,INITFRQLL,-7.5E+004`

FREQERLH - Frequency error upper limit value

This parameter is used to set up the frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

Query command format	`ECMCFG?<ws><script number><,>FREQERLH` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,FREQERLH`
Response	If the frequency error upper limit is set to +10.0 kHz for script 7 the response would be: `ECMCFG 7,FREQERLH,1.0E+004`

FREQERLL - Frequency error lower limit value

This parameter is used to set up the frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>FREQERLL<,><low limit>` <script number> 3 to 10 <low limit> –100.0 to +100.0 kHz
Example	To set the ECMCFG lower limit to -10.0 kHz for script 7 the command will be: `ECMCFG 7,FREQERLL,-10.0KHZ`
Query command format	`ECMCFG?<ws><script number><,>FREQERLL` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,FREQERLL`
Response	If the frequency lower limit is set to -10.0 kHz for script 7 the response would be: `ECMCFG 7,FREQERLL,-1.0E+004`

BLKFRQLH - Block frequency error upper limit value

This parameter is used to set up the block frequency error upper limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>BLKFRQLH<,><up limit>` <script number> 3 to 10 <up limit> –100.0 to +100.0 kHz
Example	To set the ECMCFG upper limit to +75.0 kHz for script 7 the command will be: `ECMCFG 7,BLKFRQLH,75.0KHZ`
Query command format	`ECMCFG?<ws><script number><,>BLKFRQLH` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,BLKFRQLH`
Response	If the block frequency error upper limit is set to +75.0 kHz for script 7 the response would be: `ECMCFG 7,BLKFRQLH,7.5E+004`

BLKFRQLL - Block frequency error lower limit value

This parameter is used to set up the block frequency error lower limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>BLKFRQLL<,><low limit>` <script number> 3 to 10 <low limit> –100.0 to +100.0 kHz
Example	To set the ECMCFG lower limit to -75.0 kHz for script 7 the command will be: `ECMCFG 7,BLKFRQLL,-75.0KHZ`
Query command format	`ECMCFG?<ws><script number><,>BLKFRQLL` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,BLKFRQLL`
Response	If the frequency lower limit is set to –75.0 kHz for script 7 the response would be: `ECMCFG 7,BLKFRQLL,-7.5E+004`

LRMSDEVM - 2Mbps RMS DEVM limit value

This parameter is used to set up the 2Mbps RMS DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>LRMSDEVM<,><2mbs limit>` <script number> 3 to 10 <2mbs limit> 0.0 to 1.0
Example	To set the LRMSDEVM limit to 0.2 for script 7 the command will be: `ECMCFG 7,LRMSDEVM,0.2`
Query command format	`ECMCFG?<ws><script number><,>LRMSDEVM` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,LRMSDEVM`
Response	If the 2Mbps RMS DEVM limit is set to 0.2 for script 7 the response would be: `ECMCFG 7,LRMSDEVM,2.0E-001`

HRMSDEVM - 3Mbps RMS DEVM limit value

This parameter is used to set up the 3Mbps RMS DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>HRMSDEVM<,><3mbs limit>`
	<script number> 3 to 10
	<3mbs limit> 0.0 to 1.0
Example	To set the HRMSDEVM limit to 0.13 for script 7 the command will be:
	`ECMCFG 7,HRMSDEVM,0.13`
Query command format	`ECMCFG?<ws><script number><,>HRMSDEVM`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,HRMSDEVM`
Response	If the 3Mbps RMS DEVM limit is set to 0.13 for script 7 the response would be:
	`ECMCFG 7,HRMSDEVM,1.3E-001`

LPKDEVM - 2Mbps Peak DEVM limit value

This parameter is used to set up the 2Mbps Peak DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,> LPKDEVM<,><2mbs limit>`
	<script number> 3 to 10
	<2mbs limit> 0.0 to 1.0
Example	To set the LPKDEVM limit to 0.35 for script 7 the command will be:
	`ECMCFG 7,LPKDEVM,0.35`
Query command format	`ECMCFG?<ws><script number><,>LPKDEVM`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,LPKDEVM`
Response	If the 2Mbps Peak DEVM limit is set to 0.35 for script 7 the response would be:
	`ECMCFG 7,LPKDEVM,3.5E-001`

HPKDEVM - 3Mbps Peak DEVM limit value

This parameter is used to set up the 3Mbps Peak DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>HPKDEVM<,><3mbs limit>` <script number> 3 to 10 <3mbs limit> 0.0 to 1.0
Example	To set the HPKDEVM limit to 0.25 for script 7 the command will be: `ECMCFG 7,HPKDEVM,0.25`
Query command format	`ECMCFG?<ws><script number><,>HPKDEVM` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,HPKDEVM`
Response	If the 3Mbps Peak DEVM limit is set to 0.25 for script 7 the response would be: `ECMCFG 7,HPKDEVM,2.5E-001`

LPCTDEVM - 2Mbps 99% packets DEVM limit value

This parameter is used to set up the 2Mbps 99% packets DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	`ECMCFG<ws><script number><,>LPCTDEVM<,><2mbs limit>` <script number> 3 to 10 <2mbs limit> 0.0 to 1.0
Example	To set the LPCTDEVM limit to 0.30 for script 7 the command will be: `ECMCFG 7,LPCTDEVM,0.30`
Query command format	`ECMCFG?<ws><script number><,>LPCTDEVM` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`ECMCFG? 7,LPCTDEVM`
Response	If the 2Mbps 99% packets DEVM limit is set to 0.30 for script 7 the response would be: `ECMCFG 7,LPCTDEVM,3.0E-001`

HPCTDEVM - 3Mbps 99% packets DEVM limit value

This parameter is used to set up the 3Mbps 99% packets DEVM limit value for the EDR carrier frequency and modulation accuracy test.

Set command format	ECMCFG<ws><script number><,>HPCTDEVM<,><3mbs limit>
	<script number> 3 to 10
	<3mbs limit> 0.0 to 1.0
Example	To set the HPCTDEVM limit to 0.20 for script 7 the command will be:
	ECMCFG 7,HPCTDEVM,0.20
Query command format	ECMCFG?<ws><script number><,>HPCTDEVM
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	ECMCFG? 7,HPCTDEVM
Response	If the 3Mbps 99% packets DEVM limit is set to 0.20 for script 7 the response would be:
	ECMCFG 7,HPCTDEVM,2.0E-001

13-10 EDR Differential Phase Encoding Limit Commands (MT8852B and MT8852B-042 only)

PCTPKT - Percentage of packets with no errors limit value

This parameter is used to set up the percentage limit for the number of packets with no error for the EDR Differential Phase Encoding test (EDP). Note that this applies to both the 2 Mbps & 3 Mbps data rates.

Set command format	`EDPCFG<ws><script number><,>PCTPKT<,><limit value>` <script number> 3 to 10 <limit value> 1 to 99 %
Example	To set the PCTPKT limit to 99% for script 7 the command will be: `EDPCFG 7,PCTPKT,99`
Query command format	`EDPCFG?<ws><script number><,>PCTPKT` <script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`EDPCFG? 7,PCTPKT`
Response	If the percentage of packets in error limit is set to 99.0 for script 7 the response would be: `EDPCFG 7,PCTPKT,9.9E+001`

13-11 EDR Sensitivity and EDR BER Floor Limit Commands (MT8852B and MT8852B-042 only)

THERR, TTERR

THERR - Threshold error limit

This parameter is used to set up the Threshold error limit for the EDR sensitivity test (EBSCFG) and the EDR BER floor sensitivity test (EFSCFG).

Set command format	`EBSCFG<ws><script number><,>THERR<,><trsh limit>`
	<script number> 3 to 10
	For the EDR Sensitivity Test:
	<trsh limit> 1 to 999 (the value selected will be multiplied internally by 1e–05)
	For the EDR BER Floor Sensitivity Test:
	<trsh limit> 1 to 999 (the value selected will be multiplied internally by 1e–6)
Example	To set the EBSCFG sensitivity test THERR limit to 7.0e–05 for script 7 the command will be
	`EBSCFG 7,THERR,7`
	To set the EFSCFG floor sensitivity test THERR limit to 3.0e–06 for script 7 the command will be:
	`EFSCFG 7,THERR,3`
Query command format	`EBSCFG?<ws><script number><,>THERR`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`EBSCFG? 4,THERR`
Response	If the EBSCFG sensitivity test THERR limit is set to 7.0e-05 for script 4 the response would be:
	`EBSCFG 4,THERR,7`

TTERR - Total test error limit

This parameter is used to set up the Total Test error limit for the EDR sensitivity test (EBSCFG) and the EDR BER floor sensitivity test (EFSCFG).

Set command format	`EBSCFG<ws><script number><,>TTERR<,><terr limit>`
	<script number> 3 to 10
	For the EDR Sensitivity Test:
	<terr limit> 1 to 999 (the value selected will be multiplied internally by 1e–04)
	For the EDR BER Floor Sensitivity Test:
	<terr limit> 1 to 999 (the value selected will be multiplied internally by 1e–05)
Example	To set the EDR BER sensitivity test TTERR limit to 1.0e–04 for script 7 the command will be:
	`EBSCFG 7,TTERR,1`
	To set the EDR BER floor sensitivity test TTERR limit to 3.0e–05 for script 7 the command will be:
	`EFSCFG 7,TTERR,3`
Query command format	`EBSCFG?<ws><script number><,>TTERR`
	<script number> 1 to 10
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`EBSCFG? 7,TTERR`
Response	If the EBSCFG sensitivity test TTERR limit is set to 1.0e-04 for script 7 the response would be:
	`EBSCFG 7,TTERR,1`

13-12 EDR Maximum Input Power Limits

(MT8852B and MT8852B-042 only)

This parameter is used to set or read the BER limit value used in the EDR Maximum input power test. Note that different units and ranges apply to the EDR test.

Set command format	`EMPCFG<ws><script number><,><parameter><,><limit>`
	<script number> 3 to 10
	<parameter> BERLIM
	<limit> 1 to 999 (the value selected will be multiplied internally by 1e–03)
Example	To set the EMPCFG maximum input power test BERLIM limit to 1.0e-03 for script 7 the command will be:
	`EMPCFG 7,BERLIM,1`
	To Set the BER limit for script 4 single slot sensitivity test to 0.4% the command would be:
	`SSCFG 4,BERLIM,4`
Query command format	`EMPCFG?<ws><script number><,><parameter>`
	<script number> 1 to 10
	<parameter> BERLIM
Response	The response string returned for the query will be in the identical format as the configuration command string.
Example	`EMPCFG? 7,BERLIM`
Response	If the EMPCFG maximum input power BERLIM is set to 1.0e–03 for script 7 the response would be:
	`EMPCFG 7,BERLIM,3`

13-13 EDR Guard Time Limit Commands

GDTIMELH, GDTIMELL

These parameters are used to set or read the limit values used in the guard time characteristic test to determine if the test has passed or failed.

Set command format	`EGTCFG<ws><script number><,><variable><,><number>`
	<script number> 3 to 10
	<variable>
	GDTIMELH Set the guard time upper limit
	GDTIMELL Set the guard time lower limit
	<number> Ranges depend on the parameter :
	GDTIMELH Range 5.25 to 5.50 µsec (Default 5.25 µsec)
	GDTIMELL Range 4.50 to 4.75 µsec (Default 4.75 µsec)
Example	Set the guard time upper limit to 5.30 µsec in script 3 EDR guard time test the command would be:
	`EGTCFG 3, GDTIMELH, 5.30`
Query command format	`EGTCFG?<ws><script number><,><variable>`
	<script number> 1 to 10
	<variable>
	GDTIMELH Read the guard time upper limit
	GDTIMELL Read the guard time lower limit
Response	The response is returned in the form of the command to set that state.
Example	`EGTCFG? 5,GDTIMELL`
Response	If script 5 guard time test lower limit is 4.80µsec, the response would be:
	`EGTCFG 5, GDTIMELL, 4.80`

13-14 EDR Synchronization Sequence and Trailer Limit Commands

LSYNCBITS, HSYNCBITS, LTRLBITS, HTRLBITS

These parameters are used to set or read the limit values used in the synchronization sequence and trailer test to determine if the test has passed or failed.

Set command format	`ESTCFG<ws><script number><,><variable><,><number>`		
	<script number>	3 to 10	
	<variable>		
	LSYNCBITS		Set the 2Mbps synchronization sequence error bits limit value
	HSYNCBITS		Set the 3Mbps synchronization sequence error bits limit value
	LTRLBITS		Set the 2Mbps trailer error bits limit value
	HTRLBITS		Set the 3Mbps trailer error bits limit value
	<number>	Ranges depend on the parameter :	
	LSYNCBITS		Range 0 to 1 (Default 0)
	HSYNCBITS		Range 0 to 1 (Default 0)
	LTRLBITS		Range 0 to 1 (Default 1)
	HTRLBITS		Range 0 to 1 (Default 1)
Example	Set the 3Mbps trailer error bits limit to 0 in script 4 EDR synchronization sequence and trailer test the command would be:		
	`ESTCFG 4,HTRLBITS,0`		
Query command format	`ESTCFG?<ws><script number><,><variable>`		
	<script number>	1 to 10	
	<variable>		
	LSYNCBITS		Read the 2Mbps synchronization sequence error bits limit value
	HSYNCBITS		Read the 3Mbps synchronization sequence error bits limit value
	LTRLBITS		Read the 2Mbps trailer error bits limit value
	HTRLBITS		Read the 3Mbps trailer error bits limit value
Response	The response is returned in the form of the command to set that state.		
Example	`ESTCFG? 5,LTRLBITS`		
Response	If script 5 synchronization sequence and trailer test 2Mbps trailer limit is 1, the response would be:		
	`ESTCFG 5,LTRLBITS,1`		

13-15 BLE Output Power Test Limit Commands

(MT8852B-043 and option 27 units only)

AVGMXLIM, AVGMNLIM, PEAKLIM, AVGMXCTELIM, AVGMNCTELIM, PEAKCTELIM

These parameters are used to set or read the limits used to determine if the average power reading in the BLE output power test passes or fails.

Set command format	`LEOPCFG<ws><script number><,><parameter><,><limit value>[DBM]`	
	<script number>	3 to 10
	<parameter>	
	AVGMXLIM	Set the average power max limit.
	AVGMNLIM	Set the average power min limit.
	PEAKLIM	Set the peak to average power limit.
	AVGMXCTELIM	Set the average power max limit for CTE.
	AVGMNCTELIM	Set the average power min limit for CTE.
	PEAKCTELIM	Set the peak to average power limit for CTE.
	<limit value>	Ranges depending on the parameter
	AVGMXLIM	Range –80 to +30 dBm (Default +10 dBm)
	AVGMNLIM	Range –80 to +20 dBm (Default –20 dBm)
	PEAKLIM	Range 0.0 to +10.0 dBm (Default +3 dBm)
	AVGMXCTELIM	Range –80 to +30 dBm (Default +20 dBm)
	AVGMNCTELIM	Range –80 to +20 dBm (Default –20 dBm)
	PEAKCTELIM	Range 0.0 to +10.0 dBm (Default +3 dBm)
Example	To set the average limit in script 3 output power test to 18 dBm the command would be: `LEOPCFG 3,AVGMNLIM,18`	

Query command format	`LEOPCFG?<ws><script number><,><parameter>` <script number> 1 to 10 <parameter> AVGMXLIM AVGMNLIM PEAKLIM AVGMXCTELIM AVGMNCTELIM PEAKCTELIM
Response	The response is returned in the form of the command to set that state.
Example	`LEOPCFG? 7,AVGMXLIM`
Response	If the average high limit in script 7 BLE output power test was 22 the response would be: `LEOPCFG 7,AVGMXLIM,22`

13-16 BLE Carrier Frequency Offset and Drift Limit Commands (MT8852B-043 and option 27 units only)

MXPOSLIM, MXPOSLRLIM, MXPOSCTELIM, MXPOS2CTELIM, MXNEGLIM, MXNEGLRLIM, MXNEGCTELIM, MXNEG2CTELIM, DFTBLELIM, DFTBLELRLIM, DFTBLECTELIM, DFTBLE2CTELIM, INITDFTBLERATE, INITDFTBLELRRATE, INITDFTBLECTERATE, INITDFTBLE2CTERATE, DFTBLERATE, DFTBLELRRATE, DFTBLECTERATE, DFTBLE2CTERATE

This parameter is used to set or read the limit values used in the BLE carrier frequency offset and drift test. Note that measurements on 2LE signals require Option 35, measurements on BLR8 signals require Option 36 or 62 and measurements on BLE-CTE/2LE-CTE signals require Option 37.

Set command format

`LEICDCFG<ws><script number><,><variable><,><number>`

<script number> 3 to 10
<variable>

<number> Ranges depend on the parameter

MXPOSLIM	Set the maximum positive frequency offset limit. Range –250 to +250 kHz (Default 150 kHz)
MXPOSLRLIM	Set the maximum positive frequency offset limit - BLR. Range –250 to +250 kHz (Default 150 kHz)
MXPOSCTELIM	Set the maximum positive frequency offset limit - BLE-CTE. Range –250 to +250 kHz (Default 150 kHz)
MXPOS2CTELIM	Set the maximum positive frequency offset limit - 2LE-CTE. Range –250 to +250 kHz (Default 150 kHz)
MXNEGLIM	Set the maximum negative frequency offset limit. Range –250 to +250 kHz (Default 150 kHz)
MXNEGLRLIM	Set the maximum negative frequency offset limit - BLR. Range –250 to +250 kHz (Default 150 kHz)
MXNEGCTELIM	Set the maximum negative frequency offset limit - BLE-CTE. Range –250 to +250 kHz (Default 150 kHz)
MXNEG2CTELIM	Set the maximum negative frequency offset limit - 2LE-CTE. Range –250 to +250 kHz (Default 150 kHz)

DFTBLELIM	Set the packet drift limit. Range 0.0 to 200 kHz (Default 50 kHz)
DFTBLELRLIM	Set the packet drift limit - BLR. Range 0.0 to 200 kHz (Default 50 kHz)
DFTBLECTELIM	Set the packet drift limit - BLE-CTE. Range 0.0 to 200 kHz (Default 50 kHz)
DFTBLE2CTELIM	Set the packet drift limit - 2LE-CTE. Range 0.0 to 200 kHz (Default 50 kHz)
INITDFTBLERATE	Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload). Range 1 to 90 kHz (Default 23 kHz)
INITDFTBLELRRATE	Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - BLR. Range 1 to 90 kHz (Default 19.2 kHz)
INITDFTBLECTERATE	Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - BLE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)
INITDFTBLE2CTERATE	Set the initial drift rate limit (the drift rate between the preamble and the first 10-bit block of the payload) - 2LE-CTE. Range 1 to 90 kHz (Default 13.6 kHz)
DFTBLERATE	Set the drift rate limit. Range 1 to 90 kHz (Default 20000 Hz/50 µs)
DFTBLELRRATE	Set the drift rate limit - BLR. Range 1 to 90 kHz (Default 19.2 kHz)
DFTBLECTERATE	Set the drift rate limit - BLE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)
DFTBLE2CTERATE	Set the drift rate limit - 2LE-CTE. Range 1 to 90 kHz (Default 19.2 kHz)

Example

To set the BLE carrier drift limit to +/– 70 kHz in script 4 the command would be:

```
LEICDCFG 4,DFTBLELIM,70kHz
```

Query command format

```
LEICDCFG?<ws><script number><,><variable>
```

<script number> 1 to 10
<variable>

	MXPOSLIM	Read the maximum positive limit.
	MXPOSLRLIM	Read the maximum positive limit (BLR)
	MXPOSCTELIM	Read the maximum positive limit (BLE-CTE)
	MXPOS2CTELIM	Read the maximum positive limit (2LE-CTE)
	MXNEGLIM	Read the maximum negative offset limit
	MXNEGLRLIM	Read the maximum negative offset limit (BLR)
	MXNEGCTELIM	Read the maximum negative offset limit (BLE-CTE)
	MXNEG2CTELIM	Read the maximum negative offset limit (2LE-CTE)
	DFTBLELIM	Read the packet drift limit
	DFTBLELRLIM	Read the packet drift limit (BLR)
	DFTBLECTELIM	Read the packet drift limit (BLE-CTE)
	DFTBLE2CTELIM	Read the packet drift limit (2LE-CTE)
	INITDFTBLERATE	Read the initial drift rate limit
	INITDFTBLELRRATE	Read the initial drift rate limit (BLR)
	INITDFTBLECTERATE	Read the initial drift rate limit (BLE-CTE)
	INITDFTBLE2CTERATE	Read the initial drift rate limit (2LE-CTE)
	DFTBLERATE	Read the drift rate limit
	DFTBLELRRATE	Read the drift rate limit (BLR)
	DFTBLECTERATE	Read the drift rate limit (BLE-CTE)
	DFTBLE2CTERRATE	Read the drift rate limit (2LE-CTE)

Response The response is returned in the form of the command to set that state.

Example `LEICDCFG? 7,DFTBLELIM`

Response If script 7 BLE drift limit is 55 kHz, the response would be:

`LEICDCFG 7,DFTBLELIM,55E3`

13-17 BLE Modulation Characteristics Limit Commands

(MT8852B-043 and option 27 units only.

2LE requires option 35 and BLR requires option 36)

F1AVGMIN, F1AVGMAX, F1AVG2MIN, F1AVG2MAX, F2MAXLIM, F1MAXLIM, F2MAX2LIM, F1F2MAX

These parameters are used to set or read the limit values used in the BLE modulation characteristic test to determine if the test has passed or failed.

Set command format

`LEMICFG<ws><script number><,><variable><,><number>`

<script number> 3 to 10
<variable>

F1AVGMIN	Set the f1avg min limit (BLE, BLR8)
F1AVGMAX	Set the f1avg max limit (BLE, BLR8)
F1AVG2MIN	Set the f1avg min limit (2LE)
F1AVG2MAX	Set the f1avg max limit (2LE)
F2MAXLIM	Set the f2max limit (BLE)
F1MAXLIM	Set the f1max limit (BLR8)
F2MAX2LIM	Set the f2max limit (2LE)
F1F2MAX	Set the f1/f2 avg max limit

<number> Ranges depend on the parameter :

F1AVGMIN	Range –350 to +350 kHz (Default 225 kHz)
F1AVGMAX	Range –350 to +350 kHz (Default 275 kHz)
F1AVG2MIN	Range –600 to +600 kHz (Default 450 kHz)
F1AVG2MAX	Range –600 to +600 kHz (Default 550 kHz)
F2MAXLIM	Range –300 to +300 kHz (Default 185 kHz)
F1MAXLIM	Range –300 to +300 kHz (Default 185 kHz)
F2MAX2LIM	Range –600 to +600 kHz (Default 370 kHz)
F1F2MAX	Range 0.0 to 1.0

Example	Set the f1avg min value to 140 kHz in script 4 modulation index test the command would be: `LEMICFG 4,F1AVGMIN,140kHz`
Query command format	`LEMICFG?<ws><script number><,><variable>` <script number> 1 to 10 <variable>

F1AVGMIN	Read the f1avg min limit (BLE, BLR8)
F1AVGMAX	Read the f1avg max limit (BLE, BLR8)
F1AVG2MIN	Read the f1avg min limit (2LE)
F1AVG2MAX	Read the f1avg max limit (2LE)
F2MAXLIM	Read the f2max limit (BLE)
F1MAXLIM	Read the f1max limit (BLR8)
F2MAX2LIM	Read the f2max limit (2LE)
F1F2MAX	Read the f1/f2 avg max limit

Response	The response is returned in the form of the command to set that state.
Example	`LEMICFG? 7,F1AVGMAX`
Response	If script 7 modulation index test f1avg max limit is 200 kHz, the response would be: `LEMICFG 7,F1AVGMAX,200E3`

13-18 BLE Tx Power Stability Limit Commands (MT8852B-043 and option 27 units only. CTE requires option 37)

REFPWRLIM, SLOTPWRLIM

These parameters are used to set or read the limit values used in the BLE Tx power stability test to determine if the test has passed or failed.

Set command format	`LEPSCFG<ws><script number><,><variable><,><number>`
	<script number> 3 to 10 <variable>
	REFPWRLIM — Set the reference power ratio limit
	SLOTPWRLIM — Set the slot power ratio limit
	<number> Ranges depend on the parameter :
	REFPWRLIM — 0.01 to 1.00 (Default 0.25)
	SLOTPWRLIM — 0.01 to 1.00 (Default 0.25)
Example	Set the reference power ratio limit value to 0.25 in script 4 Tx power stability test the command would be: `LEPSCFG 4,REFPWRLIM,0.25`
Query command format	`LEPSCFG?<ws><script number><,><variable>`
	<script number> 1 to 10 <variable>
	REFPWRLIM — Read the reference power ratio limit
	SLOTPWRXLIM — Read the slot power ratio limit
Response	The response is returned in the form of the command to set that state.
Example	`LEMPSCFG? 7,REFPWRLIM`
Response	If script 7 Tx power stability test reference power ratio limit is 0.25, the response would be: `LEPSCFG 7,REFPWRLIM,0.25`

13-19 BLE Sensitivity Test and Maximum Input Limit Commands (MT8852B-043 and option 27 units only)

FERLIM

These parameters are used to set or read the FER limit value used in the BLE sensitivity tests.

Set command format	`LESSCFG<ws><script number><,>,<parameter><,><number>`	
	<script number>	3 to 10
	<parameter>	FERLIM
	<number>	Ranges depend on the parameter (unit %)
		0.001 to 100 – FER
Example	Set the FER limit for script 4 single slot sensitivity test to 20.5% the command would be: `LESSCFG 4,FERLIM,20.5`	
Query command format	`LESSCFG?<ws><script number><,><parameter>`	
	<script number>	1 to 10
	<parameter>	FERLIM
Response	The response is returned in the form of the command to set that state.	
Example	`LESSCFG? 7,FERLIM`	
Response	If script 7 single slot sensitivity test FER limit is set to 0.2%, the response would be: `LESSCFG 7,FERLIM,0.2`	

13-20 BLE PER Report Integrity Test Limit Commands (MT8852B-043 and option 27 units only)

LOWPERLIM, HIGHPERLIM

These parameters configure the BLE PER integrity test limits.

Set command format	`LEPRICFG<ws><script number><,>LOWPERLIM<,><limit>`
	<script number> 3 to 10
	<parameter> LOWPERLIM
	<limit> 10.0 to 100.0 %
	Low limit default is 50.0 %
	Higher limit default is 65.4 %
Example	To set the low limit for script 7 to 34.6 the command will be:
	`LEPRICFG 7,LOWPERLIM,34.6`
Query command format	`LEPRICFG?<ws><script number><,> LOWPERLIM`
	<script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`LEPRICFG? 7,LOWPERLIM`
Response	If the high limit is set to 78.8% for script 7 the response would be:
	`LEPRICFG 7,HIGHPERLIM,78.8`

Chapter 14 — Running and Aborting Code

Running Tests (RUN)

This command runs either the test or the script depending on the operation mode. Refer to the operation mode command (OPMD) for details.

Command format	`RUN`

Note	When the EUT mode is set to Inquiry, the number of responses must be 1 or the GPIB RUN command is rejected with an execution error.

Aborting Tests (ABORT)

This command aborts the test or script being run. The test or script stops immediately and does not wait for the end of the test or script.

Command format	`ABORT`

Chapter 15 — Reading Test Results Data

The commands listed in this section request measurement results for the *Bluetooth* tests or scripts that were last run. If measurement results are requested while a script or test is ongoing, an execution error is output via the appropriate GPIB status register.

Measurement results are organised into initial "Summary" results and additional "Extended" results, giving a breakdown of measurements for each of the test stages executed. This chapter details how the Summary and Extended measurement results can be requested over GPIB.

Within the formatted data string returned upon requesting measurement results, a 'Results Valid' flag is used throughout, to indicate whether the actual measurements for a given *Bluetooth* test or test stage are valid. The 'Results Valid' flag is invalidated upon the following conditions:

- When the instrument is powered ON
- At the beginning of a test-run prior to running a *Bluetooth* Test
- Upon receiving a GPIB '*RST' command.

The 'Results Valid' flag is subsequently set depending on the outcome of the *Bluetooth* Test.

The PASS/FAIL indicator flag is used exclusively to indicate whether the measurement results are within the instrument-defined test limits for a given *Bluetooth* Test. To test for a premature ending of a *Bluetooth* test or script, due to any other failure, the DDE bit in the ESR register should be checked.

15-1 Summary Results

Set command format

`ORESULT<ws>SCRIPT<,><ext-code>`

or

`ORESULT<ws>TEST<,><ext-code><,><test>`

<ext-code >

Extension code: 0 to N (N is test dependent). If a test does not support a given extension code the next valid lower code is used (0 = standard).

<test>

OP	Output power (#1)
PC	Power control (#1)
EPC	Enhanced power control (#1)
MI	Modulation index (#1)
IC	Initial carrier (#1)
CD	Carrier drift (#1)
SS	Single slot sensitivity (#1)
MS	Multi slot sensitivity (#1)
MP	Maximum input power (#1)
ERP	EDR Relative transmit power test (#2)
ECM	EDR Carrier frequency stability and accuracy test (#2)
EDP	EDR Differential phase encoding test (#2)
EGT	EDR Guard time test (#2)
EST	EST Synchronization sequence and trailer (#2)
EBS	EDR Sensitivity test (#2)
EFS	EDR Floor sensitivity test (#2)
EMP	EDR Maximum input power test (#2)
LEOP	BLE Output power (#3)
LEOP2M	2LE Output power (#4)
LEOPLR8	BLR8 Output power (#5)
LEOPBLECTE	BLE-CTE Output power (#6)
LEOP2LECTE	2LE-CTE Output power (#7)
LEICD	BLE Carrier frequency offset and drift (#3)
LEICD2M	2LE Carrier frequency offset and drift (#4)
LEICDLR8	BLR8 Carrier frequency offset and drift (#5)
LEICDBLECTE	BLE-CTE Carrier frequency offset and drift (#6)
LEICD2LECTE	2LE-CTE Carrier frequency offset and drift (#7)
LEMI	BLE Modulation characteristics (#3)

LEMI2M	2LE Modulation characteristics (#4)
LEMILR8	BLR8 Modulation characteristics (#5)
LESS	BLE Receiver sensitivity (#3)
LESS2M	2LE Receiver sensitivity (#4)
LESSLR8	BLR8 Receiver sensitivity (#5)
LESSLR2	BLR2 Receiver sensitivity (#5)
LEPRI	BLE PER report integrity (#3)
LEPRI2M	2LE PER report integrity (#4)
LEPRILR8	BLR8 PER report integrity (#5)
LEPRILR2	BLR2 PER report integrity (#5)
LEMP	BLE Max input signal level (#3)
LEMP2M	2LE Max input signal level (#4)
LEPSBLECTE1US	BLE-CTE Tx power stability with 1 µs slots (#6)
LEPS2LECTE1US	2LE-CTE Tx power stability with 1 µs slots (#7)
LEPSBLECTE2US	BLE-CTE Tx power stability with 2 µs slots (#6)
LEPS2LECTE2US	2LE-CTE Tx power stability with 2 µs slots (#7)

(#1)	Not available on MT8852B-043
(#2)	MT8852B and MT8852B-042 only
(#3)	MT8852B-043 and units with option 27 only
(#4)	Units with option 35 only
(#5)	Units with option 36 or 62 only
(#6)	Units with option 37 only
(#7)	Units with option 35 and 37 only

Example

To request the standard results for the Output Power test only, the command would be:

```
ORESULT TEST,0,OP
```

To request the whole script standard results (extension code 0), the command would be:

```
ORESULT SCRIPT,0
```

Notes:

The measurement results for a script include all *Bluetooth* tests supported by the instrument.

The measurement result for a script is a 'fixed length text string. If any test is disabled, the results for that test are invalidated (i.e. the 'Results valid' flag will be set to 'false' and all measurement fields are set to zero).

Output format

See 'Results Output Format' sections for details on Test Results formatting.

15-2 Summary Results Output Format

Set command format

`<Header><ext-code>,<data>`

<Header>

2 to 11 ASCII characters indicating which test the results are for.

OP	Output power (#1)
PC	Power control (#1)
EPC	Enhanced power control (#1)
MI	Modulation index (#1)
IC	Initial carrier (#1)
CD	Carrier drift (#1)
SS	Single slot sensitivity (#1)
MS	Multi slot sensitivity (#1)
MP	Maximum input power (#1)
ERP	EDR Relative transmit power test (#2)
ECM	EDR Carrier frequency stability and accuracy test (#2)
EDP	EDR Differential phase encoding test (#2)
EBS	EDR Sensitivity test (#2)
EFS	EDR Floor sensitivity test (#2)
EMP	EDR Maximum input power test (#2)
EGT	EDR Guard time test (#2)
EST	EDR Synchronization sequence and trailer (#2)
LEOP	BLE Output power (#3)
LEOP2M	2LE Output power (#4)
LEOPLR8	BLR8 Output power (#5)
LEOPBLECTE	BLE-CTE Output power (#6)
LEOP2LECTE	2LE-CTE Output power (#7)
LEICD	BLE Carrier frequency offset and drift (#3)
LEICD2M	2LE Carrier frequency offset and drift (#4)
LEICDLR8	BLR8 Carrier frequency offset and drift (#5)
LEICDBLECTE	BLE-CTE Carrier frequency offset and drift (#6)
LEICD2LECTE	2LE-CTE Carrier frequency offset and drift (#7)
LEMI	BLE Modulation characteristics (#3)
LEMI2M	2LE Modulation characteristics (#4)
LEMILR8	BLR8 Modulation characteristics (#5)
LESS	BLE Receiver sensitivity (#3)

LESS2M	2LE Receiver sensitivity (#4)
LESSLR8	BLR8 Receiver sensitivity (#5)
LESSLR2	BLR2 Single slot sensitivity (#5)
LEPRI	BLE PER report integrity (#3)
LEPRI2M	2LE PER report integrity (#4)
LEPRILR8	BLR8 PER report integrity (#5)
LEPRILR2	BLR2 PER report integrity (#5)
LEMP	BLE Maximum input signal level (#3)
LEMP2M	2LE Maximum input signal level (#4)
LEPSBLECTE1US	BLE-CTE Tx power stability with 1 µs slots (#6)
LEPS2LECTE1US	2LE-CTE Tx power stability with 1 µs slots (#7)
LEPSBLECTE2US	BLE-CTE Tx power stability with 2 µs slots (#6)
LEPS2LECTE2US	2LE-CTE Tx power stability with 2 µs slots (#7)

(#1)	Not available on MT8852B-043
(#2)	MT8852B and MT8852B-042 only
(#3)	MT8852B-043 and units with option 27 only
(#4)	Units with option 35 only
(#5)	Units with option 36 or 62 only
(#6)	Units with option 37 only
(#7)	Units with option 35 and 37 only

<ext-code>

Single byte indicating the extension information code. The extension code is test-related.

0	Extension code for standard results.
1 to N	Extension code for extended measurement results 1 to N, where N is the maximum extension code supported (see individual *Bluetooth* test results formatting in the following pages).

<data>

The data is in ASCII format. Formatting of <data> is *Bluetooth* test dependent.

All <data> elements are comma delimited for clarity.

Example 1

When sending the following command to request the Output Power test results:

```
ORESULT TEST,0,OP
```

The Summary Output Power test results, extension code 0, would be:

```
OP0,<data>
```

Where <data> for this test is formatted as follows:

<results_valid_flag>,<current_packet_average_power>,<max_test_average_power>,<min_test_average_power>,<overall_peak_power>,<pass/fail_flag>

An example of test results for this test will be:

```
OP0,TRUE,1.61,1.94,1.53,2.02,PASS
```

Example 2

When requesting a complete script via the command:

```
ORESULT SCRIPT,0
```

The summary results for the Test Script just executed will be:

```
OP0,<op_data>,PC0,<pc_data>,MI0,<mi_data>,IC0,<ic_data>,
CD0,<cd_data>,SS0,<ss_data>,MS0,<ms_dat>,MP0,<mp_data>,
ERP0,<erp_data>,ECM0,<ecm_data>,EDP0,<edp_data>,
EGT0,<egt_data>,EST0,<est_data>,EBS0,<ebs_data>,
EFS0,<efs_data>,EMP0,<emp_data>,LEOP0,<leop_data>,
LEOPBLECTE0,<leop_data>,LEICD0,<leicd_data>,
LEICDBLECTE0,<leicd_data>,LESS0,<less_data>,
LEMP0,<lemp_data>,LEMI0,<lemi_data>,
LEPRI0,<lepri_data>,EPC0,<epc_data>,LEOP2M0,<leop_data>,
LEOP2LECTE0,<leop_data>,LEICD2M0,<leop_data>,
LEICD2LECTE0,<leop_data>,LESS2M0,<less_data>,
LEMP2M0,<lemp_data>,LEMI2M0,<lemi_data>,
LEPRI2M0,<lepri_data>,LEOPLR80,<leop_data>,
LEICDLR80,<leop_data>,LEMPLR80,<lemp_data>,
LESSLR80,<less_data>,LESSLR20,<less_data>,
LEMPLR20,<lemp_data>,LEMILR80,<lemi_data>,
LEPRILR80, <lepri_data>, LEPRILR20,<lepri_data>,
LEPSBLECTE1US0,<leps_data>,LEPS2LECTE1US0,<leps_data>,
LEPSBLECTE2US0,<leps_data>,LEPS2LECTE2US0,<leps_data>
```

Where each individual test result string is appended to the previous test string by a comma separator.

15-3 Extended Results Data Output

Set command format

XRESULT<ws><test><,><stage>[<,><ext_code>]

<test>

OP	Output power (#1)
PC	Power control (#1)
EPC	Enhanced power control (#1)
MI	Modulation index (#1)
IC	Initial carrier (#1)
CD	Carrier drift (#1)
SS	Single slot sensitivity (#1)
MS	Multi slot sensitivity (#1)
MP	Maximum input power (#1)
ERP	EDR Relative transmit power test (#2)
ECM	EDR Carrier frequency stability and accuracy test (#2)
EDP	EDR Differential phase encoding test (#2)
EGT	EDR Guard time test (#2)
EST	EST Synchronization sequence and trailer (#2)
EBS	EDR Sensitivity test (#2)
EFS	EDR Floor sensitivity test (#2)
EMP	EDR Maximum input power test (#2)
LEOP	BLE Output power (#3)
LEOP2M	2LE Output power (#4)
LEOPLR8	BLR8 Output power (#5)
LEOPBLECTE	BLE-CTE Output power (#6)
LEOP2LECTE	2LE-CTE Output power (#7)
LEICD	BLE Carrier frequency offset and drift (#3)
LEICD2M	2LE Carrier frequency offset and drift (#4)
LEICDLR8	BLR8 Carrier frequency offset and drift (#5)
LEICDBLECTE	BLE-CTE Carrier frequency offset and drift (#6)
LEICD2LECTE	2LE-CTE Carrier frequency offset and drift (#7)
LEMI	BLE Modulation characteristics (#3)
LEMI2M	2LE Modulation characteristics (#4)
LEMILR8	BLR8 Modulation characteristics (#5)
LESS	BLE Receiver sensitivity (#3)
LESS2M	2LE Receiver sensitivity (#4)

LESSLR8	BLR8 Receiver sensitivity (#5)
LESSLR2	BLR2 Receiver sensitivity (#5)
LEPRI	BLE PER report integrity (#3)
LEPRI2M	2LE PER report integrity (#4)
LEPRILR8	BLR8 PER report integrity (#5)
LEPRILR2	BLR2 PER report integrity (#5)
LEMP	BLE Maximum input signal level (#3)
LEMP2M	2LE Maximum input signal level (#4)
LEPSBLECTE1US	BLE-CTE Tx power stability with 1 μs slots (#6)
LEPS2LECTE1US	2LE-CTE Tx power stability with 1 μs slots (#7)
LEPSBLECTE2US	BLE-CTE Tx power stability with 2 μs slots (#6)
LEPS2LECTE2US	2LE-CTE Tx power stability with 2 μs slots (#7)

(#1)	Not available on MT8852B-043
(#2)	MT8852B and MT8852B-042 only
(#3)	MT8852B-043 and units with option 27 only
(#4)	Units with option 35 only
(#5)	Units with option 36 or 62 only
(#6)	Units with option 37 only
(#7)	Units with option 35 and 37 only

<stage>

If <test> = ERP, use the following parameters:

HOPONLMIN	Hopping ON, low frequency, min power
HOPONLMAX	Hopping ON, low frequency, max power
HOPONMMIN	Hopping ON, mid frequency, min power
HOPONMMAX	Hopping ON, mid frequency, max power
HOPONHMIN	Hopping ON, high frequency, min power
HOPONHMAX	Hopping ON, high frequency, max power
HOPONALLMIN	Hopping ON, all channels, min power
HOPONALLMAX	Hopping ON, all channels, max power
HOPONANYMIN	Hopping ON, any channel, min power
HOPONANYMAX	Hopping ON, any channel, max power
HOPOFFLMIN	Hopping OFF, low frequency, min power
HOPOFFLMAX	Hopping OFF, low frequency, max power
HOPOFFMMIN	Hopping OFF, mid frequency, min power
HOPOFFMMAX	Hopping OFF, mid frequency, max power
HOPOFFHMIN	Hopping OFF, high frequency, min power
HOPOFFHMAX	Hopping OFF, high frequency, max power

For any other <test> use the following parameters:

HOPONL	Hopping ON, low frequency
HOPONM	Hopping ON, mid frequency
HOPONH	Hopping ON, high frequency
HOPONALL	Hopping ON, all channels
HOPONANY	Hopping ON, any channel
HOPOFFL	Hopping OFF, low frequency
HOPOFFM	Hopping OFF, mid frequency
HOPOFFH	Hopping OFF, high frequency

[<ext_code>]

The optional extension code field can be used to obtain additional measurements or can be omitted for standard measurements. Note that this field does not apply to all measurements (see measurement results for each *Bluetooth* test over the following pages)

Example

To request the Output Power Hopping ON Low Channel results, the command would be:

```
XRESULT OP,HOPONL
```

To request the extended EDR Relative Power ‘Hopping OFF, Low frequency, Max power’ results with ‘optional’ extension code 2, the command would be:

```
XRESULT ERP,HOPOFFLMAX,2
```

15-4 Extended Results Output Format

Set command format

`<Header>[<ext-code>],<data>`

<Header>

ASCII characters indicating which test the results are for.

XOP	Output power (#1)
XPC	Power control (#1)
XEPC	Enhanced power control (#1)
XMI	Modulation index (#1)
XIC	Initial carrier (#1)
XCD	Carrier drift (#1)
XSS	Single slot sensitivity (#1)
XMS	Multi slot sensitivity (#1)
XMP	Maximum input power (#1)
XERP	EDR Relative transmit power test (#2)
XECM	EDR Carrier frequency stability and accuracy test (#2)
XEDP	EDR Differential phase encoding test (#2)
XEBS	EDR Sensitivity test (#2)
XEFS	EDR Floor sensitivity test (#2)
XEMP	EDR Maximum input power test (#2)
XEGT	EDR Guard time test (#2)
XEST	EDR Synchronization sequence and trailer (#2)
XLEOP	BLE Output power (#3)
XLEOP2M	2LE Output power (#4)
XLEOPLR8	BLR8 Output power (#5)
XLEOPBLECTE	BLE-CTE Output power (#6)
XLEOP2LECTE	2LE-CTE Output power (#7)
XLEICD	BLE Carrier frequency offset and drift (#3)
XLEICD2M	2LE Carrier frequency offset and drift (#4)
XLEICDLR8	BLR8 Carrier frequency offset and drift (#5)
XLEICDBLECTE	BLE-CTE Carrier frequency offset and drift (#6)
XLEICD2LECTE	2LE-CTE Carrier frequency offset and drift (#7)
XLEMI	BLE Modulation characteristics (#3)
XLEMI2M	2LE Modulation characteristics (#4)
XLEMILR8	BLR8 Modulation characteristics (#5)
XLESS	BLE Receiver sensitivity (#3)

XLESS2M	2LE Receiver sensitivity (#4)
XLESSLR8	BLR8 Receiver sensitivity (#5)
XLESSLR2	BLR2 Receiver sensitivity (#5)
XLEPRI	BLE PER report integrity (#3)
XLEPRI2M	2LE PER report integrity (#4)
XLEPRILR8	BLR8 PER report integrity (#5)
XLEPRILR2	BLR2 PER report integrity (#5)
XLEMP	BLE Maximum input signal level (#3)
XLEMP2M	2LE Maximum input signal level (#4)
XLEPSBLECTE1US	BLE-CTE Tx power stability with 1 μs slots (#6)
XLEPS2LECTE1US	2LE-CTE Tx power stability with 1 μs slots (#7)
XLEPSBLECTE2US	BLE-CTE Tx power stability with 2 μs slots (#6)
XLEPS2LECTE2US	2LE-CTE Tx power stability with 2 μs slots (#7)

(#1)	Not available on MT8852B-043
(#2)	MT8852B and MT8852B-042 only
(#3)	MT8852B-043 and units with option 27 only
(#4)	Units with option 35 only
(#5)	Units with option 36 or 62 only
(#6)	Units with option 37 only
(#7)	Units with option 35 and 37 only

[<ext-code>]

Single character which is appended to the header mnemonic, indicating the extension information code. The extension code is *Bluetooth* test related.

0	NA (Does not apply to the Extended results Data Output. No character will be appended to the output mnemonic <Header> field)
1 to N	Extension code for extended measurement results 1 to N, where N is the maximum extension code supported (see individual *Bluetooth* test results formatting over the following pages).

<data>

The data is in ASCII format. Formatting of data is *Bluetooth* test dependent.

All <data> elements are comma delimited for clarity.

Example 1 When sending the following command to request the EDR Relative Power test results:

```
XRESULT ERP,HOPOFFLMAX
```

The formatting for the Extended EDR Relative Power test results is:

```
XERP,HOPOFFLMAX,<default_ext_data>
```

A typical set of test results will be as follows:

```
XERP,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,
-1.36,-1.39,PASS
```

Example 2 When requesting the same test results with extension code 2:

```
XRESULT ERP,HOPOFFLMAX,2
```

The text string received would be:

```
XERP2,HOPOFFLMAX,<default_ext_data>,<ext_code1_data>,<ex
t_code2_data>
```

The extension code measurements for this test are additional absolute power readings (see appropriate section on EDR test results for additional information)

The extension code data is appended to the end of the default data in numerically ascending order, up to the highest extension code requested (in this example ‘2’)

A typical set of test results will be:

```
XERP2,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,
-1.36,-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,
1.84,0.39,0.28,0.33,3.09, 0.10,0.04,0.06,2.74
```

Where the first block of eight readings, following the default readings, is appended by extension code1 and the remaining block by extension code2.

15-5 Basic Rate Tests

(Not MT8852B-043)

Output Power Test Results

Summary Results

Extension Codes	0 Standard
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Packet average power in dBm	e.g. –12.5
Test avg max in dBm	e.g. 11.6
Test avg min in dBm	e.g. 10.4
Test peak power in dBm	e.g. 11.2
Pass/fail result	e.g. PASS | FAIL

Example: `OP0,TRUE,-12.5,11.6,10.4,11.2,PASS`

Extended Results

Valid stages: HOPONL | HOPONM | HOPONH | HOPONALL | HOPONANY, HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	TRUE | FALSE
Test max	floating point	e.g. –0.95
Test min	floating point	e.g. –0.97
Test peak	floating point	e.g. –0.83
Test Average	floating point	e.g. –0.95
Failed	Integer	e.g. 2
Tested	Integer	e.g. 10
State	Text string	PASS | FAIL

Power Control Test Results

Summary Results

Extension Codes	0	Standard
	1	All steps in last cycle

Extension Code: 0

Results valid	e.g. TRUE | FALSE
Average power of last packet (dBm)	e.g. 0.4
Maximum power of all packets (dBm)	e.g. 1.5
Minimum power of all packet (dBm)	e.g. –2.6
Maximum step size (dBm)	e.g. 6.4
Minimum step size (dBm)	e.g. 2.5
Pass/fail state	e.g. PASS | FAIL

Example: `PC0,TRUE,0.4,1.5,-2.6,6.4,2.5,PASS`

Extension Code: 1

If the extension code is 1, the result would appended to the end, each power steps average power for the last cycle. This comprises:

Number of entries - e.g. 5 (Max number of steps kept is 50).

Value in dB for the number of entries

Example:

`PC1,TRUE,0.4,1.5,-2.6,6.4,2.5,PASS,5,-20.8,-16.2,-14.9,-11.0,-5.8`

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	TRUE | FALSE
Max power	floating point	e.g. –1.7
Min power	floating point	e.g. –41.1
Max step	floating point	e.g. 4.0
Min step	floating point	e.g. 2.8
Failed	integer	e.g. 0
Tested	integer	e.g. 26
State	text string	PASS | FAIL

Example: `XPC,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0,26,PASS`

Enhanced Power Control Test Results

Summary Results

Extension Codes	0 Standard 1 All steps in last cycle
Extension Code: 0	
DHx Results valid	e.g. TRUE | FALSE
Maximum power of all DHx packets (dBm)	e.g. 1.5
Minimum power of all DHx packet (dBm)	e.g. –34.6
Maximum DHx step size (dB)	e.g. 6.4
Minimum DHx step size (dB)	e.g. 2.5
DHx Repeat Max diff (dB)	e.g. 0.1
2DHx Results valid	e.g. TRUE | FALSE
Maximum power of all 2DHx packets headers (dBm)	e.g. 1.0
Minimum power of all 2DHx packets headers (dBm)	e.g. –32.5
Maximum 2DHx step size (dB)	e.g. 7.2
Minimum 2DHx step size (dB)	e.g. 3.1
2DHx Repeat Max diff (dB)	e.g. 0.1
Max 2DHx to DHx diff (dB)	e.g. 2.5
3DHx Results valid	e.g. TRUE | FALSE
Maximum power of all 3DHx packets headers (dBm)	e.g. 1.2
Minimum power of all 3Mbps packets headers (dBm)	e.g. –30.4
Maximum 3DHx step size (dB)	e.g. 5.7
Minimum 3DHx step size (dB)	e.g. 5.0
3DHx Repeat Max diff (dB)	e.g. 0.1
Max 3DHx to DHx diff (dB)	e.g. 8.0
Max 2DHx to 3DHx diff (dB)	e.g. 5.0
Pass/fail state	e.g. PASS | FAIL

Example: `EPC0,TRUE,1.5,-34.6,6.4,2.5,0.1,TRUE,1.0,-32.5,7.2,3.1,0.1, 2.5,TRUE,1.2,-30.4,5.7,5.0, 0.1,8.0,5.0,PASS`

Extended Results

Extension Code: 1

If the extension code is 1, the results are appended to the end of each enhanced power step average power for the last cycle of each modulation supported. This comprises:

- Number of entries - e.g. 5 (Max number of steps kept is 150).
- Modulation code, Value in dB for each entry

  0 – GFSK
  1 – 2 Mbps
  2 – 3 Mbps

The GFSK result must always be present. The other modulations are only present within an entry if the packet configured was not OFF.

Example:

```
EPC1,TRUE,1.5,-34.6,6.4,2.5,0.1,TRUE,1.0,-32.5,7.2,3.1,0.1,2.5,TRUE,
1.2,-30.4,5.7,5.0,0.1,8.0,5.0,PASS,225,0,-1.90,1,-1.91,2,-1.91,0,
-4.89,1,-4.90,2,-4.90,0,-7.88,1,-7.89,2,-7.89,0,-10.87,1,-10.89,2,
-10.89,0,-13.85,1,-13.87,2,-13.88,0,-16.86,1,-16.87,2,-16.88,0,
-19.89,1,-19.91,2,-19.91,0,-22.87,1,-22.88,2,-22.89,0,-25.88,1,
-25.92,2,-25.91,0,-28.95,1,-28.96,2,-28.96,0,-31.96,1,-31.95,2,
-31.98,0,-34.95,1,-34.97,2,-34.97,0,-38.03,1,-38.04,2,-38.04,0,
-34.93,1,-34.96,2,-34.96,0,-31.93,1,-31.95,2,-31.95,0,-28.96,1,
-28.97,2,-28.97,0,-25.88,1,-25.90,2,-25.92,0,-22.87,1,-22.89,2,
-22.89,0,-19.89,1,-19.91,2,-19.91,0,-16.86,1,-16.88,2,-16.88,0,
-13.86,1,-13.87,2,-13.88,0,-10.88,1,-10.89,2,-10.89,0,-7.88,1,
-7.89,2,-7.89,0,-4.90,1,-4.91,2,-4.90,0,-1.90,1,-1.91,2,-1.91,0,
-1.88,1,-1.89,2,-1.89,0,-4.87,1,-4.88,2,-4.89,0,-7.86,1,-7.87,2,
-7.87,0,-10.84,1,-10.85,2,-10.86,0,-13.82,1,-13.83,2,-13.84,0,
-16.91,1,-16.91,2,-16.92,0,-19.91,1,-19.92,2,-19.93,0,-22.88,1,
-22.89,2,-22.90,0,-25.89,1,-25.91,2,-25.92,0,-28.75,1,-2
```

Extension Codes	0	GFSK Standard
	1	DPSK absolute power readings
	2	8DPSK absolute power readings
Valid stages:		HOPOFFL | HOPOFFM | HOPOFFH

Extension Code: 0

Results valid	text string	TRUE | FALSE
Max power	floating point	e.g. –1.7
Min power	floating point	e.g. –41.1
Max step	floating point	e.g. 4.0
Min step	floating point	e.g. 2.8
Rpt max Diff	floating point	e.g. 0.0

Rel Diff 2DHx	floating point	e.g. 5.0
Rel Diff 3DHx	floating point	e.g. 4.0
Failed	integer	e.g. 0
Tested	integer	e.g. 26
State	text string	PASS | FAIL

Example: `XEPC,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS`

Extension Code: 1

Results valid	text string	TRUE | FALSE
2DHx Max power	floating point	e.g. –1.7
2DHx Min power	floating point	e.g. –41.1
2DHx Max step	floating point	e.g. 4.0
2DHx Min step	floating point	e.g. 2.8
Rpt max Diff	floating point	e.g. 0.0
Rel Diff DHx	floating point	e.g. 5.0
Rel Diff 3DHx	floating point	e.g. 4.0
Failed	integer	e.g. 0
Tested	integer	e.g. 26
State	text string	PASS | FAIL

Example: `XEPC1,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS`

Extension Code: 2

Results valid	text string	TRUE | FALSE
3Mbps Max power	floating point	e.g. –1.7
3Mbps Min power	floating point	e.g. –41.1
3Mbps Max step	floating point	e.g. 4.0
3Mbps Min step	floating point	e.g. 2.8
Rpt max Diff	floating point	e.g. 0.0
Rel Diff DHx	floating point	e.g. 5.0
Rel Diff 2DHx	floating point	e.g. 4.0
Failed	integer	e.g. 0
Tested	integer	e.g. 26
State	text string	PASS | FAIL

Example: `XEPC2,HOPOFFL,TRUE,-1.7,-41.1,4.0,2.8,0.0,5.0,4.0,0,26,PASS`

Modulation Index Test Results

Summary Results

Extension Codes	0: Standard
	1: F2max % pass rate
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Delta f1 max in Hz	e.g. 22e+003
Delta f1 average in Hz	e.g. 143e+003
Delta f2 max in Hz	e.g. 120e+003
Delta f2 average in Hz	e.g. 119e+003
Delta f2avg/ delta f1avg	e.g. 0.5
Pass/fail result	e.g. PASS | FAIL

Example: `MI0,TRUE,22e+003,143e+003,120e+003,119e+003,0.5,PASS`

Extension Code: 1	
F2max % pass rate	e.g. 98.70%

Example: `MI0,TRUE,22e3,143e3,120e3,119e3,0.5,PASS,98.70`

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	TRUE | FALSE
F1 max	floating point	e.g. 1.368e+005
F1 average	floating point	e.g. 1.551e+005
F2 max	floating point	e.g. 1.304e+005
F2 average	floating point	e.g. 1.585e+005
F2avg/F1avg	floating point	e.g. 8.8E-001
F2 max Failed	integer	e.g. 0
F2 Max count (Total)	integer	e.g. 3
Failed	integer	e.g. 0
Tested	integer	e.g. 20
State	text string	PASS | FAIL

Example:

```
XMI,HOPOFFL,TRUE,1.368e+005,1.551e+005,1.304e-005,1.585e+005,
8.8e-001,0,3,0, 20,PASS
```

Initial Carrier Test Results

Summary Results

Extension Codes	0 Standard
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Frequency offset in Hz	e.g. 12e+003
Test average offset in Hz	e.g. 10.4e+003
Max positive offset in Hz	e.g. 34e+003
Max negative offset in Hz	e.g. -38e+003
Pass/fail result	e.g. PASS | FAIL

Example: `IC0,TRUE,12e3,10.4e3,34e3,-38e3,PASS`

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONALL | HOPONANY | HOPONL | HOPONM | HOPONH

Results valid	text string	TRUE | FALSE
Average offset	floating point value	e.g. 1.81e+004
Max +ve offset	floating point value	e.g. 2.07e+004
Max –ve offset	floating point value	e.g. 1.38e+004
Failed	integer	e.g. 0
Tested	integer	e.g. 10
State	text string	PASS | FAIL

Example: `XIC,HOPOFFL,TRUE,1.81e+004,2.07e+004,1.38e+004,0,10`

Carrier Drift Test Results

Summary Results

Extension Codes	0	Standard
Extension Code: 0		
Drift rate valid	e.g. TRUE | FALSE	
Test drift rate in Hz/50uS	e.g. 24000	
One slot drift valid	e.g. TRUE | FALSE	
One slot packet drift in Hz	e.g. 23e+003	
Three slot drift valid	e.g. TRUE | FALSE	
Three slot packet drift in Hz	e.g. –33e+003	
Five slot drift valid	e.g. FALSE	(Five slot packets not tested)
Five slot packet drift in Hz	e.g. –31e+003	
Pass/fail result	e.g. PASS | FAIL	

Example:

```
CD0,TRUE,24000,TRUE,23e+003,TRUE,-33e+003,FALSE,-31e+003,PASS
```

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONALL | HOPONANY | HOPONL | HOPONM | HOPONH

DH1 results valid	text string	TRUE | FALSE
Max rate DH1	floating point	e.g. 5170
Max drift DH1	integer	e.g. –7e+003
Average drift DH1	integer	e.g. –4e+003
DH1 Failed	integer	e.g. 0
DH1 Tested	integer	e.g. 30
DH1 State	text string	PASS | FAIL
DH3 results valid	text string	TRUE | FALSE
Max rate DH3	integer	e.g. 5170
Max drift DH3	integer	e.g. –7e+003
Average drift DH3	integer	e.g. –4e+003
DH3 Failed	integer	e.g. 0
DH3 Tested	integer	e.g. 30
DH3 State	text string	PASS | FAIL
DH5 results valid	text string	TRUE | FALSE
Max rate DH5	floating point value	e.g. 5170
Max drift DH5	integer	e.g. –7e+003
Average drift DH5	integer	e.g. –4e+003

DH5 Failed	Integer	e.g. 0
DH5 Tested	Integer	e.g. 30
DH5 State	Text "PASS | FAIL"	e.g. PASS

Example:

```
XCD,HOPOFFL,TRUE,5170,-7e+003,-4e+003,0,10,PASS,TRUE,5170,-7e+003,
4e+003,0,10, PASS, TRUE,5170,-7e+003,-4e+003,0,10,PASS
```

Carrier Drift RESULT Output in NULL Packet Mode

The reply to the ORESULT request for the carrier drift test when in NULL Packet mode is as follows:

Null Average Drift valid	e.g. TRUE | FALSE
Null Average Drift value in Hz	e.g. 24e+003
Null Maximum Drift valid	e.g. TRUE | FALSE
Null Maximum Drift value in HZ	e.g. 25e+003
Dummy Entry 1	always FALSE
Dummy Entry 2	always 0.0
Dummy Entry 3	always FALSE
Dummy Entry 4	always 0.0
Pass/Fail result	e.g. PASS | FAIL

Example:

```
CD0,TRUE,24e+003,TRUE,25e+003,FALSE,0.0,FALSE,0.0,PASS
```

Single Slot Sensitivity Test Results

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets errors	
	3: Total Transmitted Packets	
Extension Code: 0		
Results valid	e.g. TRUE | FALSE	
Current BER %	e.g. 0.005	
Overall BER %	e.g. 0.005	
Current FER %	e.g. 0.009	
Overall FER %	e.g. 0.009	
Pass/fail result	e.g. PASS | FAIL	
Extension Code: 1		
Overall CRC frame errors	e.g. 5	Returned packet had a changed CRC
Overall Length frame errors	e.g. 1	Returned packet had a different length
Overall lost packet frame errors	e.g. 10	No packet returned or unrecognisable

Example: `SS1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10`

Extension Code: 2	
Total packets received	e.g. 100
Total bits in error	e.g. 120
Total frames in error	e.g. 10
Extension Code: 3	
Total packets sent	e.g. 100

Extended Results

Note	The following results are applicable to both the single and multi slot sensitivity tests, and also to maximum input power.

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY (Note: HOPONANY is not applicable to Maximum input power)

Results valid	text string	e.g. TRUE | FALSE
Overall BER %	floating point	e.g. 0.019
Overall FER %	floating point	e.g. 0.001
State	text string	e.g. PASS | FAIL
FER CRC	integer	e.g. 4

FER length	integer	e.g. 1
FER lost	integer	e.g. 4
Packets received	integer	e.g. 7404
Bit errors	integer	e.g. 11
Frame errors	integer	e.g. 8
Packets sent	integer	e.g. 7408

Example: `XSS,HOPOFFL,TRUE,0.19,0.001,PASS,4,1,4,7404,11,8,7408`

Multi Slot Sensitivity Test Results

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets errors	
	3: Total Transmitted Packets	
Extension Code: 0		
Results valid	e.g. TRUE | FALSE	
Current BER %	e.g. 0.005	
Overall BER %	e.g. 0.005	
Current FER %	e.g. 0.009	
Overall FER %	e.g. 0.009	
Pass/fail result	e.g. PASS | FAIL	
Extension Code: 1		
Overall CRC FERs	e.g. 5	Returned packet had a changed CRC
Overall Length FERs	e.g. 1	Returned packet had a different length
Overall lost packet FERs	e.g. 10	No packet returned or unrecognisable
Example: `MS1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10`		
Extension Code: 2		
Total packets received	e.g. 100	
Total bits in error	e.g. 120	
Total frames in error	e.g. 10	
Extension Code: 3		
Total packets sent	e.g. 100	

Extended Results

Refer to the extended screens section of the single slot sensitivity test.

Maximum Input Power Test Results

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets errors	
	3: Total Transmitted Packets	
Extension Code: 0		
Results valid	e.g. TRUE | FALSE	
Current BER %	e.g. 0.005	
Overall BER %	e.g. 0.005	
Current FER %	e.g. 0.009	
Overall FER %	e.g. 0.009	
Pass/fail result	e.g. PASS | FAIL	
Extension Code: 1		
Overall CRC FERs	e.g. 5	Returned packet had a changed CRC
Overall Length FERs	e.g. 1	Returned packet had a different length
Overall lost packet FERs	e.g. 10	No packet returned or unrecognisable
Example: `MP1,TRUE,0.005,0.005,0.009,0.009,PASS,5,1,10`		
Extension Code: 2		
Total packets received	e.g. 100	
Total bits in error	e.g. 120	
Total frames in error	e.g. 10	
Extension Code: 3		
Total packets sent	e.g. 100	

Extended Results

Refer to the extended screens section of the single slot sensitivity test.

15-6 EDR Tests

EDR Relative Transmit Power Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard
	1: GFSK absolute power readings
	2: DPSK absolute power readings
	3: EDR packet guard time readings
Extension Code: 0	
2 Mbps DHx results valid	e.g. TRUE | FALSE
Max 2 DHx power difference (dB)	e.g. –1.41
Min 2 DHx power difference (dB)	e.g. –1.37
Avg 2 DHx power difference (dB)	e.g. –1.38
2 Mbps Pass or Fail	e.g. PASS | FAIL
3 Mbps DHx results valid	e.g. TRUE | FALSE
Max 3 Mbps DHx power difference (dB)	e.g. –1.42
Min 3 Mbps DHx power difference (dB)	e.g. –1.36
Avg 3 Mbps DHx power difference (dB)	e.g. –1.40
3 Mbps Pass or fail	e.g. PASS | FAIL

Example: `ERP0,TRUE,-1.41,-1.37,-1.38,PASS,TRUE,-1.42,-1.36,-1.40,PASS`

Extension Code: 1	
Max 2 DHx GFSK absolute power (dBm)	e.g. 1.76
Min 2 DHx GFSK absolute power (dBm)	e.g. 0.86
Avg 2 DHx GFSK absolute power (dBm)	e.g. 1.33
Peak 2 DHx GFSK absolute power (dBm)	e.g. 2.11
Max 3 DHx GFSK absolute power (dBm)	e.g. 1.47
Min 3 DHx GFSK absolute power (dBm)	e.g. 0.94
Avg 3 DHx GFSK absolute power (dBm)	e.g. 1.28
Peak 3 DHx GFSK absolute power (dBm)	e.g. 1.84

Example:

```
ERP1,TRUE,-1.41,-1.37,-1.38,PASS,TRUE,-1.42,-1.36,-1.40,PASS,1.76,
0.86,1.33,2.11, 1.47,0.94,1.28,1.84
```

Extension Code: 2	
Max 2 DHx DPSK absolute power (dBm)	e.g. 0.39
Min 2 DHx DPSK absolute power (dBm)	e.g. –0.54
Avg 2 DHx DPSK absolute power (dBm)	e.g. –0.05
Peak 2 DHx DPSK absolute power (dBm)	e.g. 3.09

Max 3 DHx DPSK absolute power (dBm)	e.g. 0.10
Min 3 DHx DPSK absolute power (dBm)	e.g. –0.46
Avg 3 DHx DPSK absolute power (dBm)	e.g. –0.12
Peak 3 DHx DPSK absolute power (dBm)	e.g. 2.78

Example:

```
ERP2,TRUE,-1.41,-1.37,-1.38,PASS,TRUE,-1.42,-1.36,-1.40,PASS,1.76,
0.86,1.33,2.11, 1.47,0.94,1.28,1.84,0.39,-0.54,-0.05,3.09,0.10,-0.46,
-0.12,2.78
```

Extension Code: 3

Min 2 DHx packet guard time (seconds)	e.g. 4.96e–006
Max 2 DHx packet guard time (seconds)	e.g. 5.01e–006
Min 3 DHx packet guard time (seconds)	e.g. 4.96e–006
Max 3 DHx packet guard time (seconds)	e.g. 5.01e–006

Example:

```
ERP3,TRUE,-1.41,-1.37,-1.38,PASS,TRUE,-1.42,-1.36,-1.40,PASS,1.76,
0.86,1.33,2.11, 1.47,0.94,1.28,1.84,0.39,-0.54,-0.05,3.09,0.10,-0.46,
-0.12,2.78, 4.96e-006,5.01e-006,4.96e-006,5.01e-006
```

Extended Results

The individual stage measurements for the EDR Relative Power test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes	1: GFSK absolute power readings
	2: DPSK absolute power readings
	3: EDR packet guard time readings

Valid stages: HOPOFFLMIN | HOPOFFLMAX | HOPOFFMMIN | HOPOFFMMAX | HOPOFFHMIN | HOPOFFHMAX | HOPONLMIN | HOPONLMAX | HOPONMMIN | HOPONMMAX | HOPONHMIN | HOPONHMAX | HOPONALLMIN | HOPONALLMAX | HOPONANYMIN | HOPONANYMAX

Default Extended Results

2Mbps DHx results valid	e.g. TRUE | FALSE
Max 2 Mbps DHx power difference (dB)	e.g. –1.38
Min 2 Mbps DHx power difference (dB)	e.g. –1.36
Avg 2 Mbps DHx power difference (dB)	e.g. –1.37
2 Mbps Pass or Fail	e.g. PASS | FAIL
3 Mbps DHx results valid	e.g. TRUE | FALSE
Max 3 Mbps DHx power difference (dB)	e.g. –1.40
Min 3 Mbps DHx power difference (dB)	e.g. –1.36
Avg 3 Mbps DHx power difference (dB)	e.g. –1.39

3Mbps Pass or fail	e.g. PASS | FAIL

Example:

```
XERP,HOPOFFLMAX,TRUE,-1.38,-1.36,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,PASS
```

Extension Code: 1

Max 2 DHx GFSK absolute power (dBm)	e.g. 1.76
Min 2 DHx GFSK absolute power (dBm)	e.g. 1.66
Avg 2 DHx GFSK absolute power (dBm)	e.g. 1.71
Peak 2 DHx GFSK absolute power (dBm)	e.g. 2.11
Max 3 DHx GFSK absolute power (dBm)	e.g. 1.47
Min 3 DHx GFSK absolute power (dBm)	e.g. 1.44
Avg 3 DHx GFSK absolute power (dBm)	e.g. 1.46
Peak 3 DHx GFSK absolute power (dBm)	e.g. 1.84

Example:

```
XERP1,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,-
1.39,PASS, 1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84
```

Extension Code: 2

Max 2 DHx DPSK absolute power (dBm)	e.g. 0.39
Min 2 DHx DPSK absolute power (dBm)	e.g. 0.28
Avg 2 DHx DPSK absolute power (dBm)	e.g. 0.33
Peak 2 DHx DPSK absolute power (dBm)	e.g. 3.09
Max 3 DHx DPSK absolute power (dBm)	e.g. 0.10
Min 3 DHx DPSK absolute power (dBm)	e.g. 0.04
Avg 3 DHx DPSK absolute power (dBm)	e.g. 0.06
Peak 3 DHx DPSK absolute power (dBm)	e.g. 2.74

Example:

```
XERP2,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,
-1.39,PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84,0.39,0.28,0.33,
3.09,0.10,0.04,0.06,2.74
```

Extension Code: 3

Min 2 DHx packet guard time (seconds)	e.g. 4.96e-006
Max 2 DHx packet guard time (seconds)	e.g. 4.99e–006
Min 3 DHx packet guard time (seconds)	e.g. 4.96e–006
Max 3 DHx packet guard time (seconds)	e.g. 4.99e–006

Example:

```
XERP3,HOPOFFLMAX,TRUE,-1.38,-1.37,-1.37,PASS,TRUE,-1.40,-1.36,-1.39,
PASS,1.76,1.66,1.71,2.11,1.47,1.44,1.46,1.84,0.39,0.28,0.33,3.09,0.10,
0.04,0.06,2.74, 4.96e-006,4.99e-006,4.96e-006,4.99e-006
```

EDR Carrier Frequency Stability and Modulation Accuracy Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard
Guard times	
Extension Code: 0	
2Mbps results Valid	e.g. TRUE | FALSE
2Mbps RMS EVM	e.g. 0.069
2Mbps PEAK DEVM	e.g. 0.162
2Mbps 99% DEVM	e.g. 100.00
2Mbps Avg RMS DEVM %	e.g. 0.049
2Mbps Initial frequency error (kHz)	e.g. –5.3
2Mbps Frequency error (kHz)	e.g. 1.9
2Mbps Block freq error in (kHz)	e.g. –6.3
2Mbps Pass or Fail	e.g. PASS | FAIL
3Mbps results Valid	e.g. TRUE | FALSE
3Mbps RMS EVM	e.g. 0.063
3Mbps PEAK DEVM	e.g. 0.162
3Mbps 99% DEVM	e.g. 100.00
3Mbps Avg RMS DEVM %	e.g. 0.050
3Mbps Initial frequency error (kHz)	e.g. –5.9
3Mbps Frequency error (kHz)	e.g. –6.5
3Mbps Block freq error (kHz)	e.g. 2.0
3Mbps Pass or Fail	e.g. PASS | FAIL

Example:

```
ECM0,TRUE,0.069,0.162,100.00,0.049,-5.3,1.9,-6.3,
PASS,TRUE,0.063,0.162,100.00,0.050,-5.9,2.0,-6.5,PASS
```

Extension Code: 1	
Min 2 DHx packet guard time (seconds)	e.g. 4.96e–006
Max 2 DHx packet guard time (seconds)	e.g. 5.00e–006
Min 3 DHx packet guard time (seconds)	e.g. 4.95e–006
Max 3 DHx packet guard time (seconds)	e.g. 5.00e–006

Example:

```
EECM1,TRUE,0.069,0.162,100.00,0.049,-5.3,1.9,-6.3,
PASS,TRUE,0.063,0.162,100.00,0.050,-5.9,2.0,-6.5,PASS,4.96e-006,
5.00e-006,4.95e-006,5.00e-006
```

Extended Results

The individual stage measurements for the EDR carrier Frequency Stability & Modulation Accuracy test also includes extension code results. Note that there is no extension code '0', as this only applies to the Summary measurement results.

Extension Codes 1: Guard times

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONL | HOPONM | HOPONH | HOPONALL | HOPONANY

Default Extended Results

2Mbps results Valid	text string	e.g. TRUE | FALSE
2Mbps RMS EVM	floating point	e.g. 0.070
2Mbps PEAK DEVM	floating point	e.g. 0.170
2Mbps 99% DEVM	floating point	e.g. 100.00
2Mbps Avg RMS DEVM %	floating point	e.g. 0.054
2Mbps Initial frequency error (kHz)	floating point	e.g. –5.0
2Mbps Frequency error in (kHz)	floating point	e.g. 1.7
2Mbps Block freq error in (kHz)	floating point	e.g. –6.0
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps results Valid	text string	e.g. TRUE | FALSE
3Mbps RMS EVM	floating point	e.g. 0.064
3Mbps PEAK DEVM	floating point	e.g. 0.160
3Mbps 99% DEVM	floating point	e.g. 100.00
3Mbps Avg RMS DEVM %	floating point	e.g. 0.052
3Mbps Initial frequency error (kHz)	floating point	e.g. –5.2
3Mbps Frequency error (kHz)	floating point	e.g. –5.8
3Mbps Block freq error (kHz)	floating point	e.g. 1.9
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example output:

```
XECM,HOPOFFL,TRUE,0.070,0.170,100.00,0.054,-5.0,1.7,-6.0,
PASS,TRUE,0.064,0.160,100.00,0.052,-5.2,1.9,-5.8,PASS
```

Extension Code: 1

Min 2 DHx packet guard time (seconds)	e.g. 4.96e–006
Max 2 DHx packet guard time (seconds)	e.g. 4.99e–006
Min 3 DHx packet guard time (seconds)	e.g. 4.95e–006
Max 3 DHx packet guard time (seconds)	e.g. 4.99e–006

Example:

```
XECM1,HOPOFFL,TRUE,0.070,0.170,100.00,0.054,-5.0,1.7,-6.0,
PASS,TRUE,0.064,0.160,100.00,0.052,-5.2,1.9,-5.8,PASS,4.96e-006,
4.99e-006,4.95e-006,4.99e-006
```

EDR Differential Phase Encoding Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard	
Frame Error Details		
Extension Code: 0		
2Mbps Results Valid	e.g. TRUE | FALSE	
2Mbps Packets received	e.g. 1000	
2Mbps Packets in error	e.g. 4	
2Mbps % Good Packets	e.g. 99	
2Mbps Pass or Fail	e.g. PASS | FAIL	
3Mbps Results Valid	e.g. TRUE | FALSE	
3Mbps Packets received	e.g. 1000	
3Mbps Packets in error	e.g. 6	
3Mbps %Good Packets	e.g. 99	
3Mbps Pass or Fail	e.g. PASS | FAIL	

Example:

```
EDP0,TRUE,1000,4,99,PASS,TRUE,1000,6,99,PASS
```

Extension Code: 1		
2Mbps Overall CRC FERs	e.g. 2	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 2	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 3	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 3	

Example:

```
EDP1,TRUE,1000,4,99,PASS,TRUE,1000,6,99,PASS,2,0,2,3,0,3
```

Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code '0', as this only applies to the Summary measurement results.

Extension Codes 1: Frame Error Details

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results Valid	text string	e.g. TRUE | FALSE
2Mbps Packets received	integer	e.g. 100
2Mbps Packets in error	integer	e.g. 0

2Mbps Good Packets %	integer	e.g. 100
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps Results Valid	text string	e.g. TRUE | FALSE
3Mbps Packets received	integer	e.g. 100
3Mbps Packets in error	integer	e.g. 2
3Mbps Good Packets %	integer	e.g. 98
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example: `XEDP,HOPOFFL,TRUE,100,0,100,PASS,TRUE,100,2,98,FAIL`

Extension Code: 1

2Mbps Overall CRC FERs	e.g. 0	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 0	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 1	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 1	

Example:

`XEDP1,HOPOFFL,TRUE,100,0,100,PASS,TRUE,100,2,98,FAIL,0,0,0,1,0,1`

EDR Sensitivity Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets errors	
Extension Code: 0		
2Mbps results Valid	e.g. TRUE | FALSE	
2Mbps overall BER	e.g. 0.00e+000	
2Mbps Bits in error	e.g. 0	
2Mbps packets sent	e.g. 900	
2Mbps packets in error	e.g. 0	
2Mbps Pass or Fail	e.g. PASS | FAIL	
3Mbps results Valid	e.g. TRUE | FALSE	
3Mbps overall BER	e.g. 3.89e–006	
3Mbps Bits in error	e.g. 20	
3Mbps packets sent	e.g. 630	
3Mbps packets in error	e.g. 23	
3Mbps Pass or Fail	e.g. PASS | FAIL	

Example: `EBS0,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,PASS`

Extension Code: 1		
2Mbps Overall CRC FERs	e.g. 0	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 0	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 22	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 1	

Example:

```
EBS1,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,
PASS,0,0,0,22,0,1
```

Extension Code: 2	
2Mbps Total packets received	e.g. 900
3Mbps Total packets received	e.g. 629

Example:

```
EBS2,TRUE,0.00e+000,0,900,0,PASS,TRUE,3.89e-006,20,630,23,PASS,
0,0,0,22,0,1,900,629
```

Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code '0', as this only applies to the Summary measurement results.

Extension Codes	1: Frame Error Details
	2: Received Packets

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results valid	text string	e.g. TRUE | FALSE
2Mbps overall BER	floating point	e.g. 0.00e+000
2Mbps Bits in error	integer	e.g. 0
2Mbps packets sent	integer	e.g. 300
2Mbps packets in error	integer	e.g. 0
2Mbps Early Exit valid	text string	e.g. TRUE | FALSE
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps Results valid	text string	e.g. TRUE | FALSE
3Mbps overall BER	floating point	e.g. 5.83e–007
3Mbps Bits in error	integer	e.g. 1
3Mbps packets sent	integer	e.g. 210
3Mbps packets in error	integer	e.g. 2
3Mbps Early Exit valid	text string	e.g. TRUE | FALSE
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example:

```
XEBS,HOPOFFM,TRUE,0.00e+000,0,300,0,TRUE,PASS,TRUE,5.83e-007,1,
210,2,TRUE,PASS
```

Extension Code: 1

2Mbps Overall CRC FERs	e.g. 0	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 0	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 2	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 0	

Example:

```
XEBS1,HOPOFFM,TRUE,0.00e+000,0,300,0,TRUE,PASS,TRUE,5.83e-007,1,
210,2,TRUE,PASS,0,0,0,2,0,0
```

Extension Code: 2

2Mbps Total packets received	e.g. 300
3Mbps Total packets received	e.g. 210

Example:

```
XEBS2,HOPOFFM,TRUE,0.00e+000,0,300,0,TRUE,PASS,TRUE,5.83e-007,
1,210,2,TRUE,PASS,0,0,0,2,0,0,300,210
```

BER Floor Sensitivity Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets errors	
Extension Code: 0		
2Mbps results Valid	e.g. TRUE | FALSE	
2Mbps overall BER	e.g. 0.00e+000	
2Mbps Bits in error	e.g. 0	
2Mbps packets sent	e.g. 4500	
2Mbps packets in error	e.g. 0	
2Mbps Pass or Fail	e.g. PASS | FAIL	
3Mbps results Valid	e.g. TRUE | FALSE	
3Mbps overall BER	e.g. 1.24e–006	
3Mbps Bits in error	e.g. 30	
3Mbps packets sent	e.g. 2970	
3Mbps packets in error	e.g. 29	
3Mbps Pass or Fail	e.g. PASS | FAIL	

Example:

```
EFS0,TRUE,0.00e+000,0,4500,0,PASS,TRUE,1.24e-006,30,2970,29,PASS
```

Extension Code: 1

2Mbps Overall CRC FERs	e.g. 0	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 0	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 28	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 1	

Example:

```
EFS1,TRUE,0.00e+000,0,4500,0,PASS,TRUE,1.24e-006,30,2970,29,PASS,
0,0,0,28,0,1
```

Extension Code: 2

2Mbps Total packets received	e.g. 4500
3Mbps Total packets received	e.g. 2969

Example:

```
EFS2,TRUE,0.00e+000,0,4500,0,PASS,TRUE,1.24e-006,30,2970,29,PASS,
0,0,0,28,0,1,4500,2969
```

Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes	1: Frame Error Details
	2: Received Packets

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results valid	text string	e.g. TRUE | FALSE
2Mbps overall BER	floating point	e.g. 0.00e+000
2Mbps Bits in error	integer	e.g. 0
2Mbps packets sent	integer	e.g. 1500
2Mbps packets in error	integer	e.g. 0
2Mbps Early Exit valid	text string	e.g. TRUE | FALSE
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps Results valid	text string	e.g. TRUE | FALSE
3Mbps overall BER	floating point	e.g. 9.89e–007
3Mbps Bits in error	integer	e.g. 8
3Mbps packets sent	integer	e.g. 990
3Mbps packets in error	integer	e.g. 7
3Mbps Early Exit valid	text string	e.g. TRUE | FALSE
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example:

```
XEFS,HOPOFFM,TRUE,0.00e+000,0,1500,0,TRUE,PASS,TRUE,9.89e-007,8,
990,7,TRUE,PASS
```

Extension Code: 1

2Mbps Overall CRC FERs	e.g. 0	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 0	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 0	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 7	
3Mbps Overall Length FERs	e.g. 0	
3Mbps Overall lost packet FERs	e.g. 0	

Example:

```
XEFS1,HOPOFFM,TRUE,0.00e+000,0,1500,0,TRUE,PASS,TRUE,9.89e-007,8,
990,7,TRUE,PASS,0,0,0,7,0,0
```

Extension Code: 2

2Mbps Total packets received	e.g. 1500
3Mbps Total packets received	e.g. 990

Example:

```
XEFS2,HOPOFFM,TRUE,0.00e+000,0,1500,0,TRUE,PASS,TRUE,9.89e-007,8,
990,7,TRUE,PASS,0,0,0,7,0,0,1500,990
```

Maximum Input Power Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard	
	1: Frame Error Details	
	2: Received Packets	
Extension Code: 0		
2Mbps results Valid	e.g. TRUE | FALSE	
2Mbps overall BER	e.g. 1.01e+000	
2Mbps Bits in error	e.g. 477	
2Mbps packets sent	e.g. 885	
2Mbps packets in error	e.g. 13	
2Mbps Pass or Fail	e.g. PASS | FAIL	
3Mbps results Valid	e.g. TRUE | FALSE	
3Mbps overall BER	e.g. 3.07e–004	
3Mbps Bits in error	e.g. 1403	
3Mbps packets sent	e.g. 588	
3Mbps packets in error	e.g. 32	
3Mbps Pass or Fail	e.g. PASS | FAIL	

Example:

```
EMP0,TRUE,1.01e-004,477,885,13,PASS,TRUE,3.07e-004,1403,588,32,PASS
```

Extension Code: 1		
2Mbps Overall CRC FERs	e.g. 1	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 1	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 12	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 4	
3Mbps Overall Length FERs	e.g. 2	
3Mbps Overall lost packet FERs	e.g. 28	

Example:

```
EMP1,TRUE,1.01e-004,477,885,13,PASS,TRUE,3.07e-004,1403,588,32,
PASS,1,1,12,4,2,28
```

Extension Code: 2	
2Mbps Total packets received	e.g. 873
3Mbps Total packets received	e.g. 560

Example:

```
EMP2,TRUE,1.01e-004,477,885,13,PASS,TRUE,3.07e-004,1403,588,32,
PASS,1,1,12,4,2,28,873,560
```

Extended Results

The individual stage measurements for this test also includes extension code results. Note that there is no extension code ‘0’, as this only applies to the Summary measurement results.

Extension Codes	1: Frame Error Details
	2: Received Packets

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH | HOPONANY

Default Extended Results

2Mbps Results valid	text string	e.g. TRUE | FALSE
2Mbps overall BER	floating point	e.g. 3.10e–004
2Mbps Bits in error	integer	e.g. 477
2Mbps packets sent	integer	e.g. 295
2Mbps packets in error	integer	e.g. 13
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps Results valid	text string	e.g. TRUE | FALSE
3Mbps overall BER	floating point	e.g. 9.35e–004
3Mbps Bits in error	integer	e.g. 1403
2Mbps packets sent	integer	e.g. 196
2Mbps packets in error	integer	e.g. 16
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example:

```
XEMP,HOPOFFM,TRUE,3.10e-004,477,295,13,PASS,TRUE,9.35e-004,
1403,196,16,PASS
```

Extension Code: 1

2Mbps Overall CRC FERs	e.g. 1	Returned packet had a changed CRC
2Mbps Overall Length FERs	e.g. 1	Returned packet had a different length
2Mbps Overall lost packet FERs	e.g. 12	No packet returned or unrecognisable
3Mbps Overall CRC FERs	e.g. 4	
3Mbps Overall Length FERs	e.g. 2	
3Mbps Overall lost packet FERs	e.g. 12	

Example:

```
XEMP1,HOPOFFM,TRUE,3.10e-004,477,295,13,PASS,TRUE,9.35e-004,1403,
196,16,PASS,1,1,12,4,2,12
```

Extension Code: 2

2Mbps Total packets received	e.g. 283
3Mbps Total packets received	e.g. 184

Example:

```
XEMP2,HOPOFFM,TRUE,3.10e-004,477,295,13,PASS,TRUE,9.35e-004,1403,
196,16,PASS,1,1,12,4,2,12,283,184
```

EDR Guard Time Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard
Extension Code: 0	
2Mbps results Valid	e.g. TRUE | FALSE
Max 2 DHx packet guard time (seconds)	e.g. 5.01e–006
Min 2 DHx packet guard time (seconds)	e.g. 4.98e–006
2Mbps packets in error	e.g. 6
2Mbps packets pass %	e.g. 98
2Mbps Pass or Fail	e.g. PASS | FAIL
3Mbps results valid	e.g. TRUE | FALSE
Max 3 DHx packet guard time (seconds)	e.g. 5.00e–006
Min 3 DHx packet guard time (seconds)	e.g. 4.99e–006
3Mbps packets in error	e.g. 13
3Mbps packets pass %	e.g. 96
3Mbps Pass or Fail	e.g. PASS | FAIL

Example:

```
EGT0,TRUE,5.01e-006,4.98e-006,6,98,PASS,TRUE,5.00e-006,4.99e-
006,13,96,PASS
```

Extended Results

Extension Codes 0: Standard

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Extension Code: 0

2Mbps results valid	text string	e.g. TRUE | FALSE
Max 2 DHx packet guard time (seconds)	floating point	e.g. 5.01e–006
Min 2 DHx packet guard time (seconds)	floating point	e.g. 4.98e–006
2Mbps packets in error	integer	e.g. 2
2Mbps packets pass %	integer	e.g. 98
2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps results valid	text string	e.g. TRUE | FALSE
Max 3 DHx packet guard time (seconds)	floating point	e.g. 5.00e–006
Min 3 DHx packet guard time (seconds)	floating point	e.g. 4.99e–006

3Mbps packets in error	integer	e.g. 4
3Mbps packets pass %	integer	e.g. 96
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example:

```
XEGT HOPOFFL,TRUE,5.01e-006,4.98e-006,2,98,PASS,TRUE,5.00e-006,4.99e-
006,4,96,PASS
```

EDR Synchronization Sequence and Trailer Test Results (MT8852B and MT8852B-042 only)

Summary Results

Extension Codes	0: Standard
Extension Code: 0	
2Mbps results Valid	e.g. TRUE | FALSE
2 DHx synchronization sequence bits received	e.g. 3000
2 DHx synchronization sequence bits in error	e.g. 0
2 DHx synchronization sequence bits percent %	e.g. 0
2 DHx trailer bits received	e.g. 600
2 DHx trailer bits in error	e.g. 0
2 DHx trailer bits percent %	e.g. 0
2Mbps Pass or Fail	e.g. PASS | FAIL
3Mbps results valid	e.g. TRUE | FALSE
3 DHx synchronization sequence bits received	e.g. 4500
3 DHx synchronization sequence bits in error	e.g. 0
3 DHx synchronization sequence bits percent %	e.g. 0
3 DHx trailer bits received	e.g. 900
3 DHx trailer bits in error	e.g. 0
3 DHx trailer bits percent %	e.g. 0
3Mbps Pass or Fail	e.g. PASS | FAIL

Example:

```
EST0,TRUE,3000,0,0,600,0,0,PASS,TRUE,4500,0,0,900,0,0,PASS
```

Extended Results

Extension Codes 0: Standard

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Extension Code: 0

2Mbps Results valid	text string	e.g. TRUE | FALSE
2 DHx synchronization sequence bits received	integer	e.g. 1000
2 DHx synchronization sequence bits in error	integer	e.g. 0
2 DHx synchronization sequence bits percent %	integer	e.g. 0
2 DHx trailer bits received	integer	e.g. 200
2 DHx trailer bits in error	integer	e.g. 0
2 DHx trailer bits percent %	integer	e.g. 0

2Mbps Pass or Fail	text string	e.g. PASS | FAIL
3Mbps results valid	text string	e.g. TRUE | FALSE
3 DHx synchronization sequence bits received	integer	e.g. 1500
3 DHx synchronization sequence bits in error	integer	e.g. 0
3 DHx synchronization sequence bits percent %	integer	e.g. 0
3 DHx trailer bits received	integer	e.g. 300
3 DHx trailer bits in error	integer	e.g. 0
3 DHx trailer bits percent %	integer	e.g. 0
3Mbps Pass or Fail	text string	e.g. PASS | FAIL

Example:

```
XEST,HOPOFFL,TRUE,1000,0,0,200,0,0,PASS,TRUE,1500,0,0,300,0,0,PASS
```

15-7 Low Energy Tests

BLE Output Power Test Results

(MT8852B-043 and units with option 27 only)

Summary Results

Extension Codes	0: Standard
Extension Code: 0	
Results valid	e.g. TRUE
Packet average power in dBm	e.g. –3.43
Test avg max in dBm	e.g. –2.40
Test avg min in dBm	e.g. –4.64
Test peak to average power in dBm	e.g. 0.12
Number of failed packets	e.g. 0
Number of tested packets	e.g. 30
Pass/fail result	e.g. PASS

Example:

```
LEOP0,TRUE,-3.43,-2.40,-4.64,0.12,0,30,PASS
```

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	e.g. TRUE
Test avg	floating point	e.g. –4.64
Test max	floating point	e.g. –4.63
Test min	floating point	e.g. –4.64
Test peak to average	floating point	e.g. 0.10
Failed	Integer	e.g. 0
Tested	Integer	e.g. 10
State	Text string	e.g. PASS

Example:

```
XLEOP,HOPOFFL,TRUE,-4.64,-4.63,-4.64,0.10,0,10,PASS
```

BLE Carrier Frequency Offset and Drift Test Results (MT8852B-043 and units with option 27 only)

Summary Results

Extension Codes	0: Standard 1: Include initial drift rate measurement in results
Extension Code: 0	
Drift rate valid	e.g. TRUE | FALSE
Average Fn	e.g. –800
Maximum Positive Fn	e.g. 300
Minimum Negative Fn	e.g. –2300
Drift rate	e.g. –1865
Average drift	e.g. –2000
Maximum drift	e.g. –2000
Packets Failed	e.g. 0
Packets Tested	e.g. 10
Pass/fail result	e.g. PASS | FAIL

Example:

```
LEICD0,TRUE,-800,300,-2300,-1865,-2000,-2000,0,10,PASS
```

Extension Code: 1	
Initial drift rate	e.g. 2000

Example:

```
LEICD1,TRUE,-800,300,-2300,-1865,-2000,-2000,0,10,PASS,2000
```

Extended Results

Extension Codes 1: initial carrier drift

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	TRUE | FALSE
Average Fn	integer	e.g. –800
Maximum Positive Fn	integer	e.g. 300
Maximum Negative Fn	integer	e.g. –2300
Max drift rate	integer	e.g. –1865

Average drift	integer	e.g. –2000
Max drift	integer	e.g. –2000
Failed	integer	e.g. 0
Tested	integer	e.g. 30
State	text string	PASS | FAIL

Example:

```
XLEICD,HOPOFFL,TRUE,-800,300,-2300,1865,-2000,-2000,0,30,PASS
```

Extension code: 1

Initial carrier drift	integer	e.g. –1934

Example:

```
XLEICD1,HOPOFFL,TRUE,-800,300,-2300,1865,-2000,-2000,0,30,PASS,-1934
```

BLE Modulation Characteristics Test Results

(MT8852B-043 and units with option 27 only)

Summary Results (Note variations when measuring BLR8 packets.)

Extension Codes	0: Standard
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Delta f1 max in Hz	e.g. 2.717e+005
Delta f1 average in Hz	e.g. 2.644e+005
Delta f2 max in Hz (Delta f1 max lowest for BLR8)	e.g. 2.086e+005
Delta f2 average in Hz (omitted for BLR8)	e.g. 2.191e+005
Delta f2 avg / delta f1 avg (Omitted for BLR8)	e.g. 0.820
Delta f2 max Failed limit (Delta f1 max Failed limit for BLR8)	e.g. 0
Delta f2 max count (Delta f1 max count for BLR8)	e.g. 8640
Packets failed	e.g. 0
Packets tested	e.g. 30
Pass/fail result	e.g. PASS | FAIL
Delta f2 max % pass rate (Delta f1max % pass rate for BLR8)	e.g. 100.00%

Example:

```
LEMI0,TRUE,2.717e+005,2.644e+005,2.086e+005,2.191e+005,0.820,0,8640,0
,30,PASS,100.00%
```

Extended Results (Note variations when measuring BLR8 packets)

Valid stages	text string	HOPOFFL | HOPOFFM | HOPOFFH
Results valid	text string	TRUE | FALSE
Delta f1 max	floating point	e.g. 2.696e+005
Delta f1 average	floating point	e.g. 2.644e+005
Delta f2 max (Delta f1 max lowest for BLR8)	floating point	e.g. 2.136e+005

Delta f2 average (Omitted for BLR8)	floating point	e.g. 2.253e+005
Delta f2avg / Delta f1avg (Omitted for BLR8)	floating point	e.g. 0.850
Delta f2 max Failed (Delta f1 max failed for BLR8)	integer	e.g. 0
Delta f2 max count (Total) (Delta f1 max count - total - for BLR8)	integer	e.g. 2880
Failed	integer	e.g. 0
Tested	integer	e.g. 20
State	text string	PASS | FAIL
Delta f2 max % pass rate (Delta f1 max % pass rate for BLR8)	floating point	e.g. 100.0%

Example:

```
XLEMI,HOPOFFL,TRUE,2.696e+005,2.644e+005,2.136e+005,2.253e+005,0.850,0,
2880,0,20,PASS,100.00%
```

BLE Tx Power Stability Test Results
(Units with option 37 only)

Summary Results

Extension Codes	0: Standard
	1: All slot results
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Tx reference power	e.g. 0.04
Slot max power	e.g. 0.23
Slot average power	e.g. 0.18
Number of failed packets	e.g. 0
Number of tested packets	e.g. 30
Pass/fail result	e.g. PASS

Example:

```
LEPSBLECTE1US0,TRUE,0.04,0.23,0.11,0,30,PASS
```

Extension Code: 1	
Slot #01 power	e.g. 0.21
Slot #02 power	e.g. 0.01
...	
Slot #74 power (when 1 µs slot duration) or Slot #37 power (when 2 µs slot duration)	e.g. 0.14

Example:

```
LEPSBLECTE1US0,TRUE,0.04,0.23,0.11,0,30,PASS,0.21,0.01,0.23,0.13,0.17
,0.19,0.20,0.23,0.12,0.11,0.19,0.19,0.20,0.21,0.12,0.17,0.00,0.03,0.1
7,0.11,0.18,0.16,0.05,0.18,0.13,0.00,0.05,0.06,0.11,0.03,0.04,0.01,0.
09,0.06,0.12,0.09,0.21,0.19,0.21,0.04,0.20,0.03,0.05,0.06,0.09,0.22,0
.16,0.15,0.13,0.12,0.03,0.08,0.22,0.19,0.16,0.01,0.23,0.13,0.02,0.19,
0.17,0.08,0.18,0.21,0.02,0.17,0.05,0.02,0.16,0.22,0.04,0.12,0.03,0.14
```

Remark

–999.00 is returned when no measurement is performed in the slot powers.

Extended Results

Valid stages	HOPOFFL | HOPOFFM | HOPOFFH
Extension Codes	0: Standard
	1: All slot results

Extension Code: 0

Results valid	e.g. TRUE | FALSE
Tx reference power	e.g. 0.04
Slot max power	e.g. 0.23
Slot average power	e.g. 0.18
Number of failed packets	e.g. 0
Number of tested packets	e.g. 30
Pass/fail result	e.g. PASS

Example:

```
XLEPSBLECTE1US,HOPOFFL,TRUE,0.04,0.23,0.018,0,30,PASS
```

Extension Code: 1

Slot #01 power	e.g. 0.16
Slot #02 power	e.g. 0.14
Slot #74 power (when 1 μs slot duration) or Slot #37 power (when 2 μs slot duration)	e.g. 0.10

Example:

```
XLEPSBLECTE1US1,HOPOFFL,TRUE,0.04,0.23,0.018,0,30,PASS,0.16,0.14,0.11,0
.09,0.21,0.16,0.01,0.03,0.09,0.21,0.22,0.08,0.12,0.20,0.06,0.05,0.17,0.
08,0.08,0.09,0.19,0.10,0.22,0.06,0.16,0.09,0.04,0.20,0.16,0.06,0.19,0.1
6,0.21,0.18,0.19,0.05,0.21,0.22,0.03,0.02,0.19,0.15,0.06,0.17,0.13,0.01
,0.09,0.11,0.03,0.07,0.17,0.08,0.09,0.19,0.17,0.09,0.07,0.05,0.12,0.12,
0.21,0.21,0.17,0.16,0.18,0.19,0.01,0.12,0.15,0.18,0.01,0.22,0.13,0.10
```

Remark

–999.00 is returned when no measurement is performed in the slot powers.

BLE Receiver Sensitivity Test Results
(MT8852B-043 and units with option 27 only)

Summary Results

Extension Codes	0: Standard
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Overall FER %	e.g. 1.6%
Total Frames Counted by DUT	e.g. 1476
Total Frames Sent by Tester	e.g. 1500
Pass/fail result	e.g. PASS | FAIL

Example:

```
LESS0,TRUE,0.016, 1476,1500,PASS
```

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	e.g. TRUE | FALSE
Overall FER %	floating point	e.g. 0.016
Total Frames Counted by DUT	integer	e.g. 1476
Total Frames Sent by Tester	integer	e.g. 1500
Pass/fail result	text	e.g. PASS | FAIL

Example:

```
XLESS,HOPOFFL,TRUE,0.016,1476,1500,PASS
```

BLE PER Report Integrity Test Results
(MT8852B-043 and units with option 27 only)

Extension code	0: Standard	
Extension Code:	0	
Results valid	text string	e.g. TRUE | FALSE
Mode	text string	e.g. RANDOM
Cycles	Integer	e.g. 3

Results are in pairs of Number of packets followed by the PER result. So for 3 cycles the results would be:-

PER results for each run	floating point	e.g. 50.0,
Number of pkts Received	Integer	e.g. 63,
Number of pkts Transmitted	Integer	e.g. 126,
Run state	text string	e.g. PASS
PER results for each run	floating point	e.g. 55.4,
Number of pkts Received	Integer	e.g. 32,
Number of pkts Transmitted	Integer	e.g. 254,
Run state	text string	e.g. PASS
PER results for each run	floating point	e.g. 55.8,
Number of pkts Received	Integer	e.g. 32,
Number of pkts Transmitted	Integer	e.g. 1500,
Run state	text string	e.g. PASS
State	text string	e.g. PASS | FAIL

Example:

```
LEPRI0,TRUE,RANDOM,3,50.0,63,126,PASS,55.4,32,254,PASS,
55.8,32,1500,FAIL,FAIL
```

BLE Maximum Input Signal Level Test Results (MT8852B-043 and units with option 27 only)

Summary Results

Extension Codes	0: Standard
Extension Code: 0	
Results valid	e.g. TRUE | FALSE
Overall FER %	e.g. 1.6%
Total Frames Counted by DUT	e.g. 1476
Total Frames Sent by Tester	e.g. 1500
Pass/fail result	e.g. PASS | FAIL

Example:

```
LEMP0,TRUE,0.016,1476,1500,PASS
```

Extended Results

Valid stages: HOPOFFL | HOPOFFM | HOPOFFH

Results valid	text string	e.g. TRUE | FALSE
Overall FER %	floating point	e.g. 0.016
Total Frames Counted by DUT	integer	e.g. 1476
Total Frames Sent by Tester	integer	e.g. 1500
Pass/fail result	text	e.g. PASS | FAIL

Example:

```
XLEMP0,HOPOFFL,TRUE,0.016,1476,1500,PASS
```

Chapter 16 — BLE Measurement

This chapter provides details of the *Bluetooth* low energy measurement commands and associated parameters. The commands in this chapter are listed in alphabetical order.

ABORTCAP Abort the BLE Measurement Capture

If the MT8852B is unable to measure a BLE packet, the ABORTCAP command can be used to stop the measurement capture.

Set Command format ABORTCAP

CFGBLECAP (Configure BLE Capture)

Set command format	`CFGBLECAP<ws><channel><,><ExtTrig>`	
Remarks	This command configures the MT8852B to receive a BLE test packet on the configured BLE channel.	
	<channel>	BLE RF channel number, range 0 to 39.
	<ExtTrig>	Trigger source for capture:
		RF: Trigger on the received RF signal
		EXT: Trigger on the EXT BNC input
Example	To configure the MT8852B to capture a BLE test packet on BLE RF channel 3 (2406MHz), and to trigger on the received RF, the command would be:	
	`CFGBLECAP 3,RF`	

LESCPTCFG (Configure all measurements in a script in parallel)

LEPKTTYPE

Set command format	`LESCPTCFG<ws><script><,>LEPKTTYPE<,><packet_type><,><state>`
Remarks	This command allows all low energy measurements in a script to be configured in parallel. It is when testing Bluetooth 5 devices because it allows the same combination of packet types to be applied to every measurement in the script. For example “BLE”, “2LE” and “LR8” can be enabled for every measurement in a script using a single command.

<script>	Script number, 1 to 10
<packet_type>	BLE - BLE 1 Msymbol/s. 2LE - 2 Msymbol/s LR8 - LE coded (S=8) LR2 - LE coded (S=2) BLECTE - BLE 1 Msymbol/s with CTE 2LECTE - 2 Msymbol/s with CTE Note that these settings will be applied only to those tests that support them and will be ignored for other cases. For example, LR2 packets are not supported for any of the transmitter tests.
<state>	TRUE or FALSE

Example

To enable testing on the 2LE packet type only for all tests in script 3, use:

```
LESCPTCFG 3, LEPKTTYPE, LR2, FALSE
LESCPTCFG 3, LEPKTTYPE, LR8, FALSE
LESCPTCFG 3, LEPKTTYPE, 2LE, TRUE
LESCPTCFG 3, LEPKTTYPE, BLE, FALSE
LESCPTCFG 3, LEPKTTYPE, BLECTE, FALSE
LESCPTCFG 3, LEPKTTYPE, 2LECTE, FALSE
```

CTESLOT

Set command format	`LESCPTCFG<ws><script><,>CTESLOT<,><duration><,><state>`
Remarks	This command allows all low energy measurements in a script to be configured in parallel. It is when testing Bluetooth 5 devices because it allows the same combination of CTE slot duration to be applied to every measurement in the script.
	<script> — Script number, 3 to 10
	<duration> — 1US (slot duration 1 µs) 2US (slot duration 2 µs)
	<state> — TRUE or FALSE
Example	To enable testing on the 1 µs only for all tests in script 3, use:

```
LESCPTCFG 3, CTESLOT, 1US, TRUE
LESCPTCFG 3, CTESLOT, 2US, FALSE
```

MEASBLECAP (Capture and Make BLE Tx Measurement)

Set command format	`MEASBLECAP<ws><BLEmeas><,><MODType><,><syncword>`
Remarks	This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE Tx test measurement is performed using the limit parameters set in the selected script.

<BLEmeas>

LEOP LEOP2M(#1) LEOPLR8 (#2)	Perform output power measurement on BLE, 2LE or BLR8 packets.
LEICD LEICD2M LEICDLR8	Perform carrier frequency offset and drift measurement on BLE, 2LE or BLR8 packets.
LEMI LEMI2M (#1) LEMILR8 (#2)	Perform modulation characteristics measurements on BLE, 2LE or BLR8 packets.
(#1)	Requires Option 35
(#2)	Requires Option 36 or 62
<MODType>	Modulation measurements performed. Only used when the BLEmeas is set to one of the modulation characteristics measurements. Otherwise set to “NA”.
MOD10101010	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11110000	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11111111	Only allowed when BLEmeas is LEMILR8.
<syncword>	32 bit Hexadecimal value (BLE Default : 71764129)

Example

To configure the MT8852B to capture the BLE test packet and make a LEOP measurement, the command format would be:

```
MEASBLECAP LEOP,NA,71764129
```

MEASBLECAPX (Capture and Make BLE Tx Measurement - Extended)

Set command format	`MEASBLECAPX<ws><BLEmeas><,><MODType><,><syncword><,><PacketLen>`
Remarks	This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE Tx test measurement is performed using the limit parameters set in the selected script.
	This is an extended version of the MEASBLECAP command that allows the packet length to be set.

<BLEmeas>

LEOP LEOP2M(#1) LEOPLR8 (#2)	Perform output power measurement on BLE, 2LE or BLR8 packets.
LEICD LEICD2M LEICDLR8	Perform carrier frequency offset and drift measurement on BLE, 2LE or BLR8 packets.
LEMI LEMI2M (#1) LEMILR8 (#2)	Perform modulation characteristics measurements on BLE, 2LE or BLR8 packets.
(#1)	Requires Option 35
(#2)	Requires Option 36 or 62
<MODType>	Modulation measurements performed. Only used when the BLEmeas is set to one of the modulation characteristics measurements. Otherwise set to “NA”.
MOD10101010	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11110000	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11111111	Only allowed when BLEmeas is LEMILR8.
<syncword>	32 bit Hexadecimal value (BLE Default : 71764129)
<PacketLen>	Packet length. 2 to 255 bytes.

Example

To configure the MT8852B to capture the BLE test packet of length 37 bytes and make a LEOP measurement, the command format would be:

```
MEASBLECAPX LEOP,NA,71764129,37
```

MEASBLECAPX2 (Capture and Make BLE Tx Measurement - Extended for CTE)

Set command format	`MEASBLECAPX2<ws><BLEmeas><,><MODType><,><syncword><,><PacketLen><,><CTEType><,><CTEtime>`
Remarks	This command enables the MT8852B to capture the BLE test packet based on the trigger set up using the CFGBLECAP command. When the packet is captured, the BLE Tx test measurement is performed using the limit parameters set in the selected script. This is an extended version of the MEASBLECAPX command that allows the packet length to be set.

<BLEmeas>

LEOP LEOP2M(#1) LEOPLR8 (#2) LEOPBLECTE(#3) LEOP2LECTE (#4)	Perform output power measurement on BLE, 2LE, BLR8, BLE-CTE, or 2LE-CTE packets.
LEICD LEICD2M LEICDLR8 LEICDBLECTE(#3) LEICD2LECTE (#4)	Perform carrier frequency offset and drift measurement on BLE, 2LE, BLR8, BLE-CTE, or 2LE-CTE packets.
LEMI LEMI2M (#1) LEMILR8 (#2)	Perform modulation characteristics measurements on BLE, 2LE or BLR8 packets.
LEPSBLECTE(#3) LEPS2LECTE (#4)	Perform Tx power stability measurements on BLE-CTE, 2LE-CTE packets.
(#1)	Requires Option 35
(#2)	Requires Option 36 or 62
(#3)	Requires Option 37
(#4)	Requires Option 35 and 37
<MODType>	Modulation measurements performed. Only used when the BLEmeas is set to one of the modulation characteristics measurements. Otherwise set to “NA”.
MOD10101010	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11110000	Only allowed when BLEmeas is LEMI or LEMI2M.
MOD11111111	Only allowed when BLEmeas is LEMILR8.
<syncword>	32 bit Hexadecimal value (BLE Default : 71764129)

	<PacketLen>	Packet length. 2 to 255 bytes. (except Tx power stability measurements) Set to "0" when BLE meas is set to one of the Tx power stability measurements.
	<CTEtype>	
	AOA	Only allowed when BLEmeas is LEOPBLECTE or LEOP2LECTE or LEICDBLECTE or LEICD2LECTE.
	AOD1	Slot duration 1 µs. Only allowed when BLEmeas is LEPSBLECTE or LEPS2LECTE.
	AOD2	Slot duration 2 µs. Only allowed when BLEmeas is LEPSBLECTE or LEPS2LECTE.
	<CTEtime>	2 to 20 (1 means 8 µs)
Remark	<CTEtype> and <CTEtime> is ignored when BLEmeas is LEOP or LEOP2M or LEOPLR8 or LEICD or LEICD2M or LEICDLR8 or LEMI or LEMI2M or LEMILR8.	
Example	To configure the MT8852B to capture the BLE test packet of length 37 bytes and make a LEOPBLECTE measurement, the command format would be:	

```
MEASBLECAPX2 LEOPBLECTE,NA,71764129,37,AOA,20
```

SETBLECAPTYP (Set the capture type to BLE, 2LE or BLR)

Set command format	`SETBLECAPTYP<ws><capture type>`
Remarks	This command configures the MT8852B to capture a low energy packet type.
	<capture type>
	BLE 1 Msym/s uncoded
	2LE 2 Msym/s
	BLR 1 Msym/s coded (S=2 or S=8)
Example	To configure the MT8852B to capture a 2LE test packet, the command format would be:
	`SETBLECAPTYP 2LE`

Example BLE Measurement

An example of the processes required to perform a BLE Tx measurement is given below.

1. Configure the DUT to transmit BLE test packets with the required payload.

Note	The output power test requires a payload of PRBS9. The carrier frequency offset and drift test requires a payload of 10101010 for BLE and 2LE packets, and 11111111 for BLR8 packets. (This test does not apply to BLR2 packets.) The modulation characteristics test requires a payload of 10101010 or 11110000 for BLE and 2LE packets, and 11111111 for BLR8 packets. (This test does not apply to BLR2 packets.)

2. Set the capture type to BLE, 2LE or BLR:

   `SETBLECAPTYP <capture type>`

   <capture type> is BLE or 2LE or BLR

3. Configure the MT8852B range:

   `SYSCFG CONFIG,RANGE,<range>`

4. Configure the MT8852B to capture the BLE test packet on a BLE channel:

   `CFGBLECAP 0,RF`

5. Make sure that the MT8852B is in script mode:

   `OPMD SCRIPT`

6. Configure the MT8852B to capture the test packet and make a BLE measurement as shown in the BLE output power example below:

   `MEASBLECAP LEOP,NA,71764129`

7. Wait for the test to complete by checking the CMP bit of the INS register. This can be polled or an SRQ can be configured.

8. When the test is complete, request the test results as shown in the example below:

   `ORESULT TEST,0,LEOP`

   and read them:

   `LEOP0,TRUE,1.32,1.32,1.32,0.19,0,2,PASS`

Note	If a problem occurs during measurement, the ABORTCAP command can be used to stop the capture.

Chapter 17 — Auxiliary Commands

This chapter provides details of the auxiliary commands allowed over the GPIB interface to help development and demonstrations. The commands are detailed in alphabetical order as shown in the list below.

CONNECT	Set	Connect to EUT address
CONEUTNAME	Set | Query	Read EUT user name on connection
CONNPKT	Set | Query	Connection packet control
CONTIME	Query	Connection time
DISCONNECT	Set	Disconnect from device
EUTRESET	Set	Sends HCI reset to the DUT via the EUT Control port
EUTRMTPWR	Set	Change the state of the EUT Tx power
EUTVENDCMD	Set	Send a vendor-specific command to the EUT
FIXEDOFF	Set | Query	Set fixed offset value
GETEUTFEAT	Query	Obtain the supported features from the EUT
INQCANCEL	Set	Cancel an inquiry
INQRSP?	Query	Obtain the results of an inquiry
INQUIRY	Set	Perform an inquiry
LOOPBACK	Request	Perform a loop back test control sequence
PATHDEL	Set	Delete an entry from a path loss table
PATHEDIT	Set | Query	Add or change entries in a path loss table
PATHOFF	Set | Query	Set path offset mode
PATHRD	Query	Read a complete path loss table and output over GPIB
PATHTBL	Set | Query	Set path offset table
PATHTBLCLR	Set	Clear a path loss table
TESTMODE	Set	Put the EUT into test mode
TSTDELAY	Set | Query	Set test control delay
TXTEST	Set	Perform a Tx test control sequence
WRDTY	Set	Write the dirty parameter settings to the core

CONNECT (Connect to EUT Address)

This command is used to connect to the EUT address listed in the MT8852B.

Set command format	`CONNECT`

This command does not request the EUT features. Do not use this command to make a connection before running a normal test. Only use the RUN command to perform normal testing.

CONEUTNAME (Read EUT User Name on a Connection)

When a test or script is run, the MT8852B first makes a connection to the EUT. During this connection process the EUT features and user friendly name are requested. This command allows the user to turn off this request.

Set command format	`CONEUTNAME<ws><script><,><state>`	
	<script>	1 to 10
	<state>	ON or OFF
Example	To set the requesting the name as OFF:	
	`CONEUTNAME 1,OFF`	
Query command format	`CONEUTNAME? <script>`	
Example	Reply if OFF would be:	
	`CONEUTNAME 2,OFF`	

CONNPKT (Connection packet control)

Set command format	`CONNPKT<ws><packet mask>`	
	<packet mask>	This is a ‘binary string’ where a ‘1’ indicates that the packet type shall be used and a ‘0’ that the packet type wont be used. The order of the packet type is as follows: <DH1><DM1><DH3><DM3><DH5><DM5><2-DH1><3-DH1><2-DH3><3-DH3><2-DH5><3-DH5>
Remarks	This command is used to specify which packet types the Link Manager uses for the ACL connection.	
Example	To turn off all the EDR packet types, the command would be: `CONNPKT 111111000000`	
Query command format	`CONNPKT?`	
Response	If the all the DH5 & DM5 packet types were not allowed, the response would be: `CONNPKT 111100111100`	

CONTIME? (Connection time) (Option 15 required)

Query command format	`CONTIME?`	
Remarks	The MT8852B makes up to two connection attempts when requested to connect to an EUT. This command returns the connection number, and if a connection is present, the time taken in milliseconds (ms) to make the connection. On power on or before a connection has been made, the connection number displays as 0 and is not followed by a time.	
Response	`CONTIME,<number>[,<connection time>]`	
	<number>	Connection number
		no connection
		Connection made on first attempt
		Connection made on second attempt
	<Connection time>	Time taken to make the connection in ms.
Example	If the connection was made on the first attempt and took 1.3 seconds the response would be	
Response	`CONTIME,1,1300`	

DISCONNECT (Disconnect From Device)

This command disconnects any existing ACL connection. If an ACL connection does not exist, an execution error is indicated. This command invalidated the EUT address when it is anything other than manual.

Set command format	`DISCONNECT`

EUTRESET (Send HCI Reset to the DUT)

This command sends an HCI reset to the EUT via the “EUT Control”. port.

Set command format	`EUTRESET`

EUTRMTPWR (Change the State of the EUT Tx Power)

This command is used to alter the state of the EUT Tx power if the EUT supports power control. If no connection is present, if the EUT does not support power control, or if the MT8852B has not got the supported features for the EUT, the command reports an execution error. This command can be used in conjunction with the EUTMAXPWR, set to OFF, to use the output power test to measure the power of each step.

Set command format	`EUTRMTPWR<ws><param>`		
	<param>	`MIN`	Set the EUT to minimum power
		`DEC`	EUT increments its power by one step
		`INC`	EUT decrements its power by one step
		`MAX`	Set the EUT to maximum power

EUTVENDCMD (Send a Vendor-Specific Command to EUT)

Set command format

`EUTVENDCMD<ws><opcode>,<param length>,<param data>`

Remarks

This command writes the defined vendor-specific HCI command to the EUT via the control port on the MT8852B. The vendor-specific event received, or the command-complete event returned for this command, is written into the GPIB output queue.

If a command status event is received with an error status for the vendor-specific command, the event reply is returned with the command status parameter set to a non-zero value.

<opcode>	The HCI vendor-specific command opcode in hexadecimal form, i.e., FCAB
<param length>	Length of the parameter data.
<param data>	Parameter data.

Note: To be consistent with the *Bluetooth* HCI specification, the parameter data is in little-endian format, i.e., the least significant byte is transferred first.

Example

To send a vendor-specific command with the opcode 0xFCAB, with a single byte parameter of 0x03, the command would be:

`EUTVENDCMD FCAB,2,03`

To send a vendor-specific command with the opcode 0xFCAB, with a 2 byte parameter of 0x0312, the command would be:

`EUTVENDCMD FCAB,4,1203`

To send a vendor-specific command with the opcode 0xFCAB, with one 2 byte parameter of 0x0312 and a second single byte parameter of 0x01, the command would be:

`EUTVENDCMD FCAB,6,120301`

Response

The response written to the GPIB output queue on completion of the command is:

`EUTVENDEVENT<ws><status>,<length>,<data>`

<status>	0 - Vendor-specific command completed successfully.
	01-FF - Vendor-specific command completed failed.
	Standard *Bluetooth* HCI error code.
<length>	Length of the data returned. Range 000 to 254.
<data>	The response data.

Example

If the response from a successful vendor-specific command was a vendor-specific event or a command-complete event, and the event was 12 bytes long, the reply would be:

```
EUTVENDEVENT,0,12,0E0501ABFC00
```

If the response from a unsuccessful vendor-specific command was a command status event with a status of 14, the reply would be:

```
EUTVENDEVENT,14,0
```

FIXEDOFF (Set Fixed Offset Value)

This command is used to set or read the fixed path offset value applied during testing when the path offset mode is set to FIXED.

Set command format	`FIXEDOFF<ws><script no><,><value>` <script number> 1 to 10 <value> number of dB (range 0 to -40.0 dB).
Example	To set the fixed offset to 10 dBm in script 4, the command would be: `FIXEDOFF 4,-10.00DB`
Query command format	`FIXEDOFF?<ws><script number>` <script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`FIXEDOFF? 7,`
Response	If script 7 single slot sensitivity test fixed offset was set to -2.3 dBm, the response would be: `FIXEDOFF 7,-2.3`

GETEUTFEAT (Obtain Supported Features from EUT)

This command is used to request the supported features from the EUT regardless of whether or not this information is already available from a previous request or connection. The features are then available to be read over the GPIB using the SYSCFG? EUTFEAT command. If a connection has not already been made, an execution error will be reported

Query command format	`GETEUTFEAT`

Refer to Appendix A for a list of supported features.

INQCANCEL (Cancel an Inquiry)

This command cancels an inquiry operation. The INQ bit in the Instrument Status Register is set. The MAV bit is not set and there is no data in the Output Buffer. Any addresses found during the inquiry before the INQCANCEL command was received is available via the INQRSP? command.

Set command format	`INQCANCEL`

INQRSP? (Obtain the Results of an Inquiry)

This command is used after an INQUIRY or INQCANCEL command to obtain the results of the inquiry.

Query command format	`INQRSP?`
Response	<n><,><response 1><,><response 2><,>…<response n>

where

<n> = number of addresses found by the inquiry (256 max)

and

<response n> = <address><,><length of name><,><name string>

where

<address> = *Bluetooth* address in standard *Bluetooth* format.

<length of name> = Length of User Friendly Name (up to 20 characters).

<name string> = User Friendly Name truncated 20 characters maximum. Contains the string ‘NO NAME’ if there is no User Friendly Name.

INQUIRY (Perform an Inquiry)

This command performs an inquiry based on the internal inquiry parameters already set up within the MT8852B. On completion of the inquiry the INQ bit in the Instrument Status Register (INS) is set. The MAV bit is not set and there is no data in the Output Buffer.

To obtain the results of an inquiry use the INQRSP? Command.

Query command format	`INQUIRY`

LOOPBACK (Perform a Loopback Test Control Sequence)

This command allows a single loopback test control sequence to be requested. The command is rejected with an execution error if an ACL connection does not already exist or if the device the MT8852B is connected to is not already in test mode.

Set command format

```
LOOPBACK<ws><pattern><,><hoptype><,><EUT txchan>
<,> <EUT rxchan><,><pkt><,><datalen><,> <dirtyen><,>
<dirty index><,><dirty window><,><numpkts><,>
<whitening>
```

<pattern>	DATA10101010 DATA11110000 DATAPRBS9
<hoptype>	FIXED: Fixed frequency using the EUT txchan and EUT rxchan settings STANDARD: Use standard hopping scheme of 79 channels
<EUT txchan>	0 to 78
<EUT rxchan>	0 to 78
<pkt>	DH1, DH3, DH5, 2DH1, 2DH3, 2DH5, 3DH1, 3DH3, 3DH5
<datalen>	Size in bytes of the payload to be used in the packet type chosen. DH1 maximum length is 27 bytes DH3 maximum length is 183 bytes DH5 maximum length is 339 bytes 2DH1 maximum length is 54 bytes 2DH3 maximum length is 367 bytes 2DH5 maximum length is 679 bytes 3DH1 maximum length is 83 bytes 3DH3 maximum length is 552 bytes 3DH5 maximum length is 1021 bytes
<dirtyen>	ENABLE or ON DISABLE or OFF The dirty transmitter can only be enabled if a dirty parameter table has been written to the *Bluetooth* core first. This can be done using the WRDTY GPIB command.
<dirtyindex>	0 to 9 The dirty parameter table has 10 entries, the index is the offset from the start of the table from which to use the dirty parameters.
<dirtywindow>	1 to 10 This is the amount of the dirty table to use within the dirty table from the index to the end of the table. The table does not wrap around so if the index is 4 the maximum window is 6.

<numpkts>	0 to 10000 packets 0 means loop back until another test control or a disconnect.
<whitening>	ENABLE or ON DISABLE or OFF

PATHDEL (Delete an Entry from a Path Loss Table)

This command is used to delete an entry from a path loss table. If there is no entry for the given channel number in the table specified, a GPIB execution error is returned.

Set command format

PATHDEL<ws><table><,><form><,><channel>

<table>	1 to 5
<form>	CHAN: The <channel> parameter is in channel form (0 to 78) FREQ: The <channel> parameter is in frequency form (2402MHZ to 2480MHZ)
<channel >	0 to 78 (or 2402MHz to 2480MHz)

PATHEDIT (Add or Change Entries in a Path Loss Table)

This command is used to add or change entries in a path loss table. If the channel number entered already exists, the offset for that channel is updated to the new value. If the channel number does not already exist in the table specified, the new entry is added.

Set command format

PATHEDIT<ws><table><,><form><,><channel><,><offset>

<table>	1 to 5
<form>	CHAN: The <channel> parameter is in channel form (0 to 78) FREQ: The <channel> parameter is in frequency form (2402MHZ to 2480MHZ)
<channel >	0 to 78 (or 2402MHz to 2480MHz)
<offset>	Offset in dBs. Range is 0.0 to –40.0

Example

To set the offset for channel 4 (2406MHz) to –2.3dB in table 3:

```
PATHEDIT 3,CHAN,4,-2.3
```

Query command format

PATHEDIT?<ws><table><,><form><,><channel>

Example

To read the offset for table 3 channel 4 in channel form use:

```
PATHEDIT? 4,CHAN,4
```

Response

Reply would be in the offset –2.3

PATHOFF (Set Path Offset Mode)

This command is used to set up the user path offset mode for the single slot and multi slot sensitivity tests. This is the path loss offset that is added to the transmitted power.

Set command format	PATHOFF<ws><script number><,><mode>	
	<script number>1 to 10 <mode>	
	OFF	Apply no user offsets
	FIXED	Apply the fixed offset value for all channels
	TABLE	Apply the offset table
Example	To set the single slot sensitivity test to use the fixed offset value the command would be:	
	PATHOFF 4,FIXED	
Query command format	PATHOFF?<ws><script number>	
	<script number>1 to 10	
Response	The response is returned in the form of the command to set that state.	
Example	PATHOFF? 7	
Response	If script 7 multi slot sensitivity test path offset was set to use the path offset table, the response would be:	
	PATHOFF 7,TABLE	

PATHRD (Read a Complete Path Loss Table)

This command reads a complete path loss table and outputs it over the GPIB.

Set command format	PATHRD<ws><table><,><form>	
	<table>	1 to 5
	<form>	CHAN: The <channel> parameter is in channel form (0 to 78) FREQ: The <channel> parameter is in frequency form (2402MHZ to 2480MHZ)
Example	To set the offset for channel 4 (2406MHz) to –2.3dB in table 3: PATHEDIT 3,CHAN,4,-2.3	
Output format	<number of entries><,><entry><,><entry>	
	<number of entries>	Number of entry sets that follow. If zero no entries follow
	<entry>	Each entry consists of a channel (or frequency number) followed by a loss: <channel><,><loss>

Example	For `PATHRD 1,CHAN: 2,0,-2.3,4,-14.7` For `PATHRD 1,FREQ: 2,2.402e+009,-2.3,2.406e+009,-14.7`

PATHTBL (Set Path Offset Table)

This command selects which of the PATH offset tables is applied to the script.

Set command format	`PATHTBL<ws><script no><,><table no>` <script number> 1 to 10 <table number> 1 to 5
Example	To select offset table 3 in script 4 the command would be: `PATHTBL 4,3`
Query command format	`PATHTBL?<ws><script number>` <script number> 1 to 10
Response	The response is returned in the form of the command to set that state.
Example	`PATHTBL? 7`
Response	If the offset table for script 7 was 2, the response would be: `PATHTBL 7,2`

PATHTBLCLR (Clear a User Path Table)

This command can be used to clear one of the user path loss tables.

Set command format	`PATHTBLCLR<ws><table number>` <table number> 1 to 5
Example	To clear offset table 3 the command would be: `PATHTBLCLR 3`

TESTMODE (Put the EUT into Test Mode)

This command sets the device the MT8852B is connected to into test mode. The peripheral device must have test mode enabled locally for the command to succeed.

An execution error is output if the command fails.

Set command format	`TESTMODE`

TSTDELAY (Test Control Delay)

Each device reacts to a test control command at a different speed. This command allows a delay to be set up for each script to allow for the time taken to change to the test control parameters. The test control delay is set in number of packets.

Set command format	`TSTDELAY<ws><script number><,><number of packets>` <script number> 1 to 10 <number of packets> 0 to 100 (Default 10).
Example	To set the test control delay of script 1 to 100 packets, use the command: `TSTDELAY 1,100`
Query command format	`TSTDELAY?<ws><number of packets>` <number of packets>0 to 100 (Default 10).
Response	The response is in the form of the command to set that particular state.
Example	If the test control delay of script 3 is 10 packets then the command would be: `TSTDELAY? 3`
Response	The response would be: `TSTDELAY 3,10`

TXTEST (Perform a Tx Test Control Sequence)

This command allows a single Tx test control sequence to be requested. The command is rejected with an execution error if an ACL connection does not already exist (see CONNECT command) or if the device the MT8852B is connected to is not already in test mode (see TESTMODE command).

Set command format	`TXTEST<ws><pattern><,><hoptype><,><txrxchan><,><pkt><,><datalen><,><numpkts>`	
	<pattern>	DATA10101010 DATA11110000 DATAPRBS9
	<hoptype>	FIXED: Fixed frequency using the EUT txchan and EUT rxchan settings. STANDARD: Use standard hopping scheme of 79 channels.
	<txrxchan>	0 to 78 Tx and Rx frequency of the EUT.
	<pkt>	DH1, DH3, DH5, 2DH1, 2DH3, 2DH5, 3DH1, 3DH3, 3DH5
	<datalen>	Size in bytes of the payload to be used in the packet type chosen. DH1 maximum length is 27 bytes DH3 maximum length is 183 bytes DH5 maximum length is 339 bytes 2DH1 maximum length is 54 bytes 2DH3 maximum length is 367 bytes 2DH5 maximum length is 679 bytes 3DH1 maximum length is 83 bytes 3DH3 maximum length is 552 bytes 3DH5 maximum length is 1021 bytes
	<numpkts>	0 to 10000 packets 0 means loop back until another test control or a disconnect

WRDTY (Write the Dirty Parameter Settings to the Core)

This command is used to configure a set of dirty parameters for the LOOPBACK command. The command selects a dirty parameter table from either the multi-slot or single-slot sensitivity tests from any script.

Set command format	`WRDTY<ws><script number><,><test>`	
	<script number >	1 to 10
	<test>	SS: Single slot sensitivity MS: Multi slot sensitivity

Appendix A — Supported Features Format

A-1 EUT Feature Format

This table details the EUT feature format mask as defined in the BT specification. Refer to commands GETEUTFEAT and EUTFEAT for details on how to obtain EUT features information.

Byte	Bit	Supported feature
0	0	3-slot packets
	1	5-slot packets
	2	encryption
	3	slot offset
	4	timing accuracy
	5	switch
	6	hold mode
	7	sniff mode
1	0	park mode
	1	RSSI
	2	channel quality driven data rate
	3	SCO link
	4	HV2 packets
	5	HV3 packets
	6	u-law log
	7	A-law log
2	0	CVSD
	1	paging scheme
	2	power control
	3	Transparent SCO data
	4	Flow control lag (bit 0)
	5	Flow control lag (bit 1)
	6	Flow control lag (bit 2)
	7	Broadcast encryption

3	0	Reserved
	1	EDR ACL 2Mbps mode
	2	EDR ACL 3Mbps mode
	3	Enhanced inquiry scan
	4	Interlaced inquiry scan
	5	Interlaced page scan
	6	RSSI with inquiry results
	7	Extended SCO link (EV3 packets)
4	0	EV4 packets
	1	EV5 packets
	2	Reserved
	3	AFH capable peripheral
	4	AFH classification peripheral
	5	Reserved
	6	Reserved
	7	3-slot EDR ACL packets
5	0	5-slot EDR ACL packets
	1	Reserved
	2	Reserved
	3	AFH capable central
	4	AFH classification central
	5	EDR eSCO 2Mbps mode (MT8852B only)
	6	EDR eSCO 3Mbps mode (MT8852B only)
	7	3-slot EDR eSCO packets (MT8852B only)
6	0	Reserved
7	7	Extended features

Appendix B — GPIB PC Card Set-up

The following GPIB driver configuration setup is recommended for reliable GPIB communication with the MT8852B. The set up is expressed in the terms used by the National Instruments GPIB ISA and PCI cards and drivers for Windows and DOS.

B-1 GPIB Card Settings

The recommended GPIB board settings are as follows:

Table B-1. Recommended GPIB Settings

Terminate read on EOS	NO
Set EOI with EOS on write	YES
Type of compare on EOS	8 bit
Send EOI at end of write	YES
EOS byte	10 (0x0A hexadecimal)
System controller	YES
Assert REN when SC	YES
Enable Auto serial polling	NO
NI card. Cable length for HS488	OFF

B-2 GPIB Device Template

The MT8852B GPIB Default Primary Address is 27. Device templates for the primary address of each device can usually be set up separately. The settings for the device template for the MT8852B are detailed in the table below.

Table B-2. GPIB Device Configuration

Terminate Read on EOS	NO
Set EOI with EOS on Write	YES
Type of Compare on EOS	8-bit
EOS Byte	10 (0x0A hexadecimal)
Send EOI at end of write	YES
Readdressing	YES
Secondary address	NONE

Appendix C — Script Default Settings

C-1 Script 1 Default Settings

Table C-1. Script 1 Default Settings

	Hopping	Hopping test mode	Frequency	Test type	Packet type	Number of packets
Output power	On	Any	—	Loopback	DH1	100
Init carrier	On	Any	—	Loopback	DH1	100
Single sens.	On	Any	—	Loopback	DH1	500
Mod. index	Off	Any	—	Loopback	DH1	10
Rel. Tx power	On	Any	—	Loopback	2-DH1, 3-DH1	10
Carrier & mod.	On	Any	—	Loopback	2 & 3 Mbps	50 blocks
Diff. phase	Off	Defined	L	TX	2 & 3 Mbps	100
EDR sensitivity	On	Any	—	Loopback	2-DH1, 3-DH1	0.3 Mbits
Output power	Off	Defined	L,M,H	—	—	10
Carrier & drift	Off	Defined	L,M,H	—	—	10
Mod. index	Off	Defined	L,M,H	—	—	10
Sensitivity	Off	Defined	L,M,H	—	—	500

C-2 Script 2 Default Settings

Table C-2. Script 2 Default Settings

	Hopping	Hopping test mode	Frequency	Test type	Packet type	Number of packets
Output power	On	Defined	L,M,H	Loopback	Longest	10
Power control	Off	Defined	L,M,H	Loopback	DH1	1
Enhanced pwr cntrl	Off	Defined	L,M,H	Loopback	2DH1, 3DH1	1
Init carrier	On	Defined	L,M,H	Loopback	DH1	10
Carrier & drift	On	Defined	L,M,H	Loopback	1, 3, & 5	10
Single sens.	Off and On	Defined	L,M,H	Loopback	DH1	7408
Multi sens.	Off and On	Defined	L,M,H	Loopback	Longest	590
Mod. index	Off	Defined	L,M,H	Loopback	Longest	10
Max. input	Off	Defined	L,M,H	Loopback	DH1	7408
Rel. Tx power	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	10
Carrier & mod.	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	200 blocks
Diff. phase	Off	Defined	L	TX	2DH1, 3DH1	100
EDR sensitivity	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	1.6 Mbits / 16 Mbits
EDR BER floor	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	8 Mbits / 160 Mbits
EDR max input pwr	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	1.6 Mbits
EDR guard time	Off	Defined	L	Loopback	2DH1, 3DH1	100
EDR sync. & trailer	Off	Defined	L	Loopback	2DH1, 3DH1	50
Output power	Off	Defined	L,M,H	—	—	10
Carrier & drift	Off	Defined	L,M,H	—	—	10
Mod. index	Off	Defined	L,M,H	—	—	10
Tx Power stab	Off	Defined	L,M,H	—	—	10

Table C-2. Script 2 Default Settings

	Hopping	Hopping test mode	Frequency	Test type	Packet type	Number of packets
Sensitivity	Off	Defined	L,M,H	—	—	1500
PER integrity	Off	Defined	M	—	—	Random
Max input pwr	Off	Defined	L,M,H	—	—	1500

C-3 Scripts 3 to 10 Default Settings

Table C-3. Scripts 3 to 10 Default Settings

	Hopping	Hopping test mode	Frequency	Test type	Packet type	Number of packets
Output power	On	Defined	L,M,H	Loopback	Longest	10
Power control	**Off**	**Defined**	L,M,H	Loopback	DH1	1
Enhanced pwr cntrl	**Off**	**Defined**	L,M,H	Loopback	2DH1, 3DH1	1
Init carrier	On	Defined	L,M,H	Loopback	**DH1**	10
Carrier & drift	On	Defined	L,M,H	Loopback	1, 3, & 5	10
Single sens.	Off and On	**Defined**	L,M,H	**Loopback**	**DH1**	7408
Multi sens.	Off and On	**Defined**	L,M,H	**Loopback**	Longest	590
Mod. index	**Off**	**Defined**	L,M,H	Loopback	Longest	10
Max. input	**Off**	**Defined**	L,M,H	**Loopback**	**DH1**	7408
Rel. Tx power	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	10
Carrier & mod.	Off	Defined	L,M,H	Loopback	2, 3 Mbps: Longest	200 blocks
Diff. phase	Off	**Defined**	L	**TX**	2DH1, 3DH1	100
EDR sensitivity	Off	**Defined**	L,M,H	**Loopback**	2, 3 Mbps: Longest	1.6 Mbits / 16 Mbits
EDR BER floor	Off	**Defined**	L,M,H	**Loopback**	2, 3 Mbps: Longest	8 Mbits / 160 Mbits
EDR max input pwr	Off	**Defined**	L,M,H	**Loopback**	2, 3 Mbps: Longest	1.6 Mbits
EDR guard time	**Off**	**Defined**	L	Loopback	2DH1, 3DH1	100
EDR sync. & trailer	**Off**	**Defined**	L	Loopback	2DH1, 3DH1	50
Output power	**Off**	**Defined**	L,M,H	—	—	10
Carrier & drift	**Off**	**Defined**	L,M,H	—	—	10
Mod. index	**Off**	**Defined**	L,M,H	—	—	10
Tx Power stab	**Off**	**Defined**	L,M,H	—	—	10

Table C-3. Scripts 3 to 10 Default Settings

	Hopping	Hopping test mode	Frequency	Test type	Packet type	Number of packets
Sensitivity	**Off**	**Defined**	L,M,H	—	—	1500
PER integrity	**Off**	**Defined**	M	—	—	Random
Max input pwr	**Off**	**Defined**	L,M,H	—	—	1500

Note Items shown in bold are factory set and cannot be changed by the user.

Index

Numerics

A

B

C

D

E

F

G

H

I

U

V

W