

800 GbE 53-Gbaud PAM4 x 8-Lane FEC Test

Signal Quality Analyzer-R	MP1900A
PAM4 BERT	MU196020A/MU196040B
Jitter Tolerance Test	MX183000A-PL001
DUT Error Counts Import	MX183000A-PL031

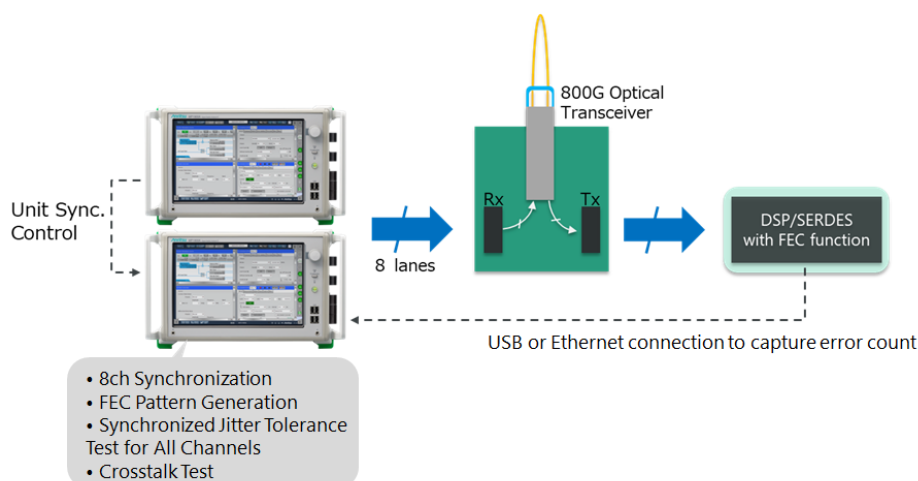
800 GbE standards are being examined to implement large-capacity Beyond 400G transfers. Additionally, multichannel optical transceivers and DSP are being actively tested to both standardize 400 GbE electrical interfaces (400GAUI-4, 53-Gbaud PAM4 x 4 lanes), and deploy 800 GbE (53-Gbaud PAM4 x 8 lanes).

The 800 GbE and 400 GbE standards using high-speed PAM4 technology are premised on using FEC to assure transmission quality. In addition to conventional bit-error-rate measurements, these evaluations use stress tests to measure FEC capability by inputting a jittered and ISI-stressed test signal to the DUT receiver.

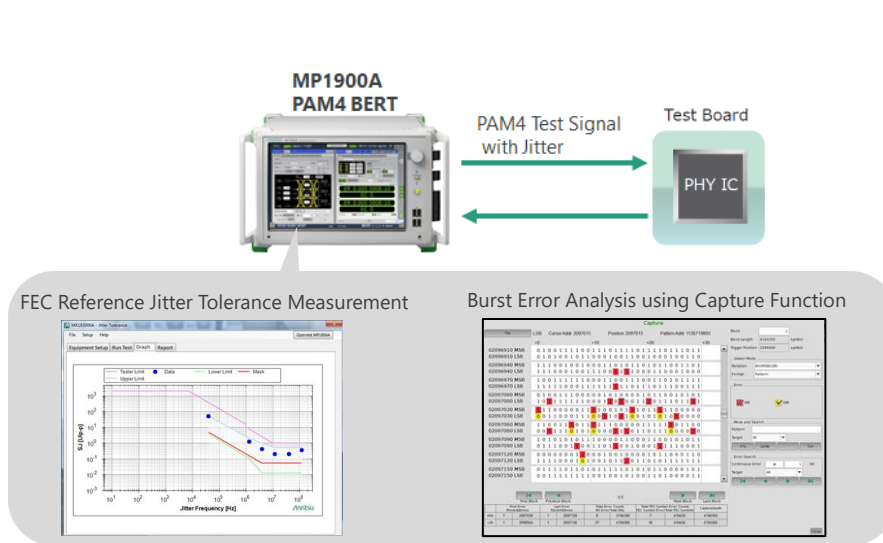
The Signal Quality Analyzer-R MP1900A PAM4 BERT series is a BER tester for both generating 400 GbE and 800 GbE 53-Gbaud PAM4 FEC patterns and measuring FEC-based jitter tolerance. With high-quality wideband performance to evaluate high-speed PAM4, it supports more-accurate 8ch DUT tests to help implement 800 GbE.

[Target Applications] 50 GbE, 100 GbE, 200 GbE, 400 GbE, 800 GbE, IEEE 802.3ck, 802.3bs, 802.3cd, Optical Transceivers, DSP, SERDES, CDR

800 GbE 53-Gbaud PAM4 x 8-Lane Optical Transceiver Electrical Evaluation Example



53-Gbaud PAM4 Bit Error/FEC Symbol Error Measurement and Jitter Tolerance Measurement



Recommended Equipment List

	Name	53-Gbaud PAM4 8ch	53-Gbaud PAM4 4ch	53-Gbaud PAM4 1 ch/FEC Analysis
Main Unit	MP1900A Signal Quality Analyzer-R	2	1	1
Synthesizer	MU181000B 12.5GHz 4Port Synthesizer	1	1	1
Jitter	MU181500B Jitter Modulation Source	2	1	1
PPG	MU196020A PAM4 PPG	8	4	1
	MU196020A-002 58G baud	8	4	1
	MU196020A-011 4Tap Emphasis	8	4	1
	MU196020A-030 Data Delay	8	4	-
	MU196020A-042 FEC Pattern Generation	8	4	1
	MU196020A-050 Inter-Module Synchronization	8	4	-
ED	MU196040B PAM4 ED	-	-	1
	MU196040B-002 58G baud	-	-	1
	MU196040B-011 Equalizer	-	-	1
	MU196040B-021 29G Clock Recovery	-	-	1
	MU196040B-023 58G Clock Recovery Extension	-	-	1
	MU196040B-041 SER Measurement	-	-	1
Software	MU196040B-042 FEC Analysis	-	-	1
	MX183000A-PL001 Jitter Tolerance Test	1	1	1
Cables and Components	MX183000A-PL031 DUT Error Counts Import	1	1	-
	J1789A Electrical Length Specified Coaxial Cable (0.4 m, V-connector, DUT Tx to ED)	-	-	2
	J1790A Electrical Length Specified Coaxial Cable (0.8 m, V-connector, PPG to DUT Rx)	16	8	2
	J1748A Power Splitter	4	2	-
	J1728A Electrical Length Specified Coaxial Cable (0.4 m, K-connector)	12	6	-
	J1741A Electrical Length Specified Coaxial Cable (0.8 m, K-connector)	2	-	-
	J1625A Coaxial Cable 1 m, SMA	2	-	-