pB100A4

QUAD CHANNEL BIT-ERROR-RATE TESTER

Please note that this model has been discontinued. For more information, visit EXFO.com

Ideal for CFP2, CFP4, QSFP24 and QSFP28 testing in R&D and production stages, the pB100A4 can also be used as a pseudorandom binary sequence (PRBS) generator and checker during customer presentations and tradeshows.

SPEC SHEET

KEY FEATURES

Four-lane rate support for:

Pattern generation and checking at 9.83 to 11.8 Gbit/s and from 24 Gbit/s to 30 Gbit/s

Preset: 100GBASE-R4 at 25.78125 Gbit/s, OTL4 at 27.95 Gbit/s and 128G Fibre Channel at 28.05 Gbit/s rate settings

PRBS 7, 9, 15, 23 and 31; SSPR, CID and 128-bit user patterns

Separate error counts on 0 and 1 errors

Integrated precision frequency synthesizer

Individual channel configuration

Windows-based GUI and API interface to PC and error logs

Includes K-connectorized high-speed I/O cables

Compact and low-power design

OPTIONAL

Receiver eye monitoring

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TRANSCEIVER TESTING

The emerging CFP2, CFP4, QSFP24 and QSFP28 markets–including transceiver optical subassembly and receiver optical subassembly–require precise and cost-effective testing. The pB100A4 is ideal for generating and checking a variety of bit patterns. This allows for easy adjustment and validation of transceivers. The solution's high-quality output eyes, attached high-speed I/O cables, as well as graphical user interface (GUI) and application-programming interface (API) interfaces, enable widespread adoption at a very competitive price.

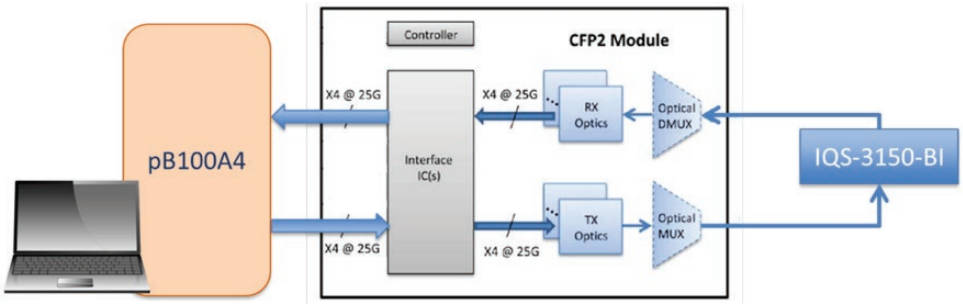

Figure 1. Typical setup for CFP2 testing

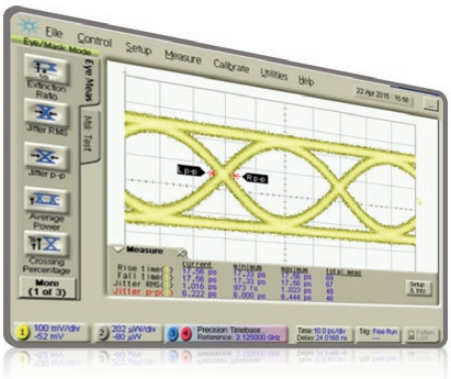

Figure 2. Example of an eye diagram at one of the outputs of the pB100A4

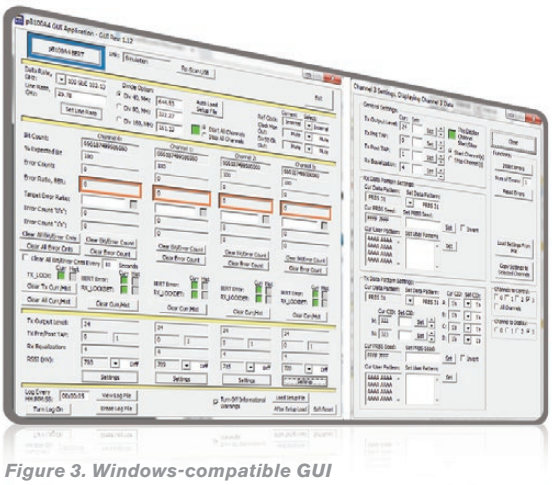

Figure 3. Windows-compatible GUI

EASY INTEGRATION INTO AUTOMATED TEST SYSTEMS

In addition to the Windows-compatible GUI provided, the pB100A4 can easily be integrated into an automated testing environment for production using the API interface.

MULTI-UNIT SYNCHRONIZATION AND CONTROL

For applications such as active cable testing, it may be worthwhile to support up to 12 channels, all synchronized. This can easily be done by daisy-chaining up to 4 pB100A4 units, which can all be controlled from a single application.

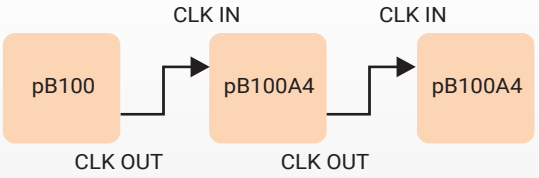

Figure 4. 3 pB100A4 connected to support 12 channel BERT

TECHNICAL SPECIFICATIONS

Transmitter	
Data rate (Gbit/s)	9.93 to 11.8 and/or 24 to 30 depending on option selected
Amplitude	1000 mV (at 28 Gbit/s)
Tr/Tf (typical)	12 ps [a]
Jitter (telecom)	Maximum: 0.08 (Ui_{pp}, 10 MHz to 200 MHz, one-minute duration, SSPR pattern and emphasis off)
Jitter (Ethernet mode)	Maximum: 0.28 (Ui_{pp}, SSPR pattern, no emphasis, 10 MHz to 0.75 x T, where T is the symbol rate, BER 10 to12) threshold
Impedance (typical)	50/100 Ω, SE/differential
Error insertion	Minimum: 1 Maximum: 512
Receiver	
Data rate (Gbit/s)	9.93 to 11.8 and/or 24 to 30 depending on the option selected
Sensitivity	40 mV, differential
Rx compensation (dB peaking at 15 GHz)	Minimum: 0 Maximum: 7
Rx impedance (typical)	50/100 Ω, SE/differential
Lowest BER (typical)	5×10^{-2}
Clock options	
Clock outputs	Line rates: 1/8, 1/16, 1/32, 1/40, 1/80, 1/160 Single-ended: typical 300 mV
Clock inputs	Line rates: 1/8, 1/16, 1/32, 1/40, 1/80, 1/160 Differential: minimum: 400 mV maximum: 1200 mV

GENERAL SPECIFICATIONS

Size (H x W x D)	178 mm x 127 mm x 508 mm (7 in x 5 in x 2 in)
Available cable length	~ 280 mm (11 in)
Weight	0.9 kg (2 lb)
Temperature	0 °C to 40 °C (32 °F to 104 °F)
Relative humidity	0 % to 80 % non-condensing at 40 °C
DC input	5 V, 4 A (maximum)
Power dissipation (typical)	15 W
Connectors	2.92 mm K-connector for signal I/O SMA for clocks
Compliance	RoHS, CE

PATTERNS

PRBS	2^7-1
	2^9-1
	2^{15}-1
	2^{23}-1
	2^{31}-1
Other	Square
	SSPR
	CID
	128-bit user-defined

Note

a. For low-frequency square-wave test pattern of eight ones followed by eight zeros. Maximum main tap; no emphasis.

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ORDERING INFORMATION

pB100A4-XX-XX-XX

Rates
10 = Quad 9.93 to 11.8 Gbit/s
25 = Quad 24 to 30 Gbit/s
10-25 = Quad 9.93 to 11.8 Gbit/s and Quad 24 to 30 Gbit/s

Software options
00 = Without software options
EYE = Enables receiver eye contour quality monitoring

Connectors
K12 = 12-inch pigtail with 2.92 mm male K-type connector
KF12 = 12-inch pigtail with 2.92 mm male K-type connector, with 16 female-female connector screws
K24 = 24-inch pigtail with 2.92 mm male K-type connector
KF24 = 24-inch pigtail with 2.92 mm male K-type connector, with 16 female-female connector screws
185F24 = 24-inch pigtail with 1.85 nm female connectors

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