

OptoBERT™ OPB4250

4.25Gbps Optical & Electrical Bit-Error-Rate Tester (BERT)



Overview

The OPTELLENT OptoBERT™ OPB4250 is a cost-effective easy-to-use bit-error-rate tester (BERT) for testing Fibre Channel (FC) devices, components, modules and systems in R&D and manufacturing environments as well as field installations of Storage Area Networks (SANs). OPB4250 supports 4GFC, 2GFC and 1GFC. The OPB4250 tester is also ideal for Gigabit Ethernet and Infiniband (2.5G) testing. It incorporates a pattern generator, clock recovery circuits, and a bit-error-ratio analyzer in one compact module that provides optical and electrical interfaces at up to 4.25Gb/s.

An intuitive graphical user interface (GUI) enables easy point-and-click operation. The GUI displays error counts, BER, and related statistics.

The OptoBERT has a recording feature to output the measured BER results into a spreadsheet file without any programming or scripting.

Applications

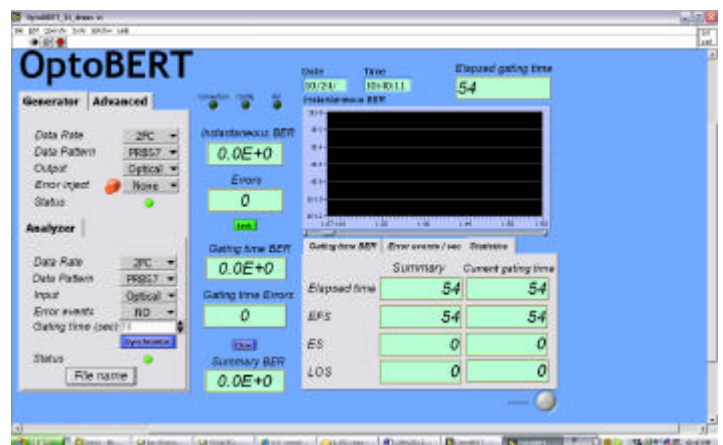
- ▶ Testing of optical and electronic devices, components, modules and systems for 1x, 2x and 4 x Fibre Channel (FC), Gigabit Ethernet and Infiniband
- ▶ IC testing at Fibre Channel rates
- ▶ Installation testing and troubleshooting of Storage Area Networks (SANs)
- ▶ Manufacturing testing of Fibre Channel transceivers, eliminating expensive traditional BER test equipment in production lines

Key Features

- ▶ **Integrated Generator and Analyzer**
- ▶ **Electrical and optical interfaces**
- ▶ **Internal Clock & Data Recovery**
- ▶ **Intuitive Graphical User Interface**
- ▶ **Automated Measurement Report**
- ▶ **Cost-efficient and Easy-to-use**

Software

The OptoBERT™ OPB4250 software runs on Windows 98/2000/NT and XP over RS-232 serial interface via an RJ-45 Connector provided on the front panel. A Serial-to-USB converter can be used if a USB port is available. A software driver is available for incorporating the OptoBERT into test automation suites using programs like C++, LabVIEW, VisualBASIC, and HP VEE.



User Interface

Data Rates

Fibre Channel (1GFC)	1.0625 Gb/s
Gigabit Ethernet	1.25 Gb/s
2 X Fibre Channel (2GFC)	2.125 Gb/s
Infiniband	2.5 Gb/s
4 X Fibre Channel (4GFC)	4.25 Gb/s

Pattern Generator

Specifications

Parameter	Min	Typ	Max	Units
Preset Data Rates	FC (1.0625Gb/s); GbE (1.25Gb/s); 2xFC (2.125Gb/s); Infiniband (2.5Gb/s); 4xFC (4.25Gb/s)			
Data Pattern	Standard: PRBS 2^7-1 , $2^{23}-1$, $2^{31}-1$ Optional: CJPAT, CRPAT, Custom			
Output Type	Differential			
Frequency Accuracy			± 50	ppm
Data Rise Time ¹		70		ps
Data Fall Time ¹		70		ps
Data Output RMS Jitter ¹			5	ps
Data Output Amplitude, (differential) ^{1,2}		1600		mV
Clock Output Amplitude		200		mV
Optical Output Power	-9			dBm
Connector, Electrical	50 Ω SMA, front panel			
Connector, Optical	LC (SFP)			

¹ Measurements based on PRBS 2^7-1 data at 4.25Gb/s.

² Variable output amplitude is available as an option.

Optical Output & Input:

SFP housing is provided as a standard feature. This enables the use of any user-selectable optical SFP transceiver module:

- Single mode and multimode fiber
- At any wavelength option (850nm, 1310nm, 1550nm, etc...)
- DWDM, CWDM, non-WDM
- P-i-n and APD detectors

Error Analyzer

Specifications

Parameter	Min	Typ	Max	Units
Input Type	Single-ended AC coupled			
Preset Data Rates	FC (1.0625Gb/s); GbE (1.25Gb/s); 2xFC (2.125Gb/s); Infiniband (2.5Gb/s); 4xFC (4.25Gb/s)			
Data Pattern	Standard: PRBS 2^7-1 , $2^{23}-1$, $2^{31}-1$ Optional: CJPAT, CRPAT, Custom			
Electrical Sensitivity ¹			100	mV
Electrical Data Input	100		500	mV
Optical Data Input	-14			dBm
Clocking Mode	Built-in clock recovery			
Connector, Electrical	50 Ω SMA, front panel			
Connector, Optical	LC (SFP)			

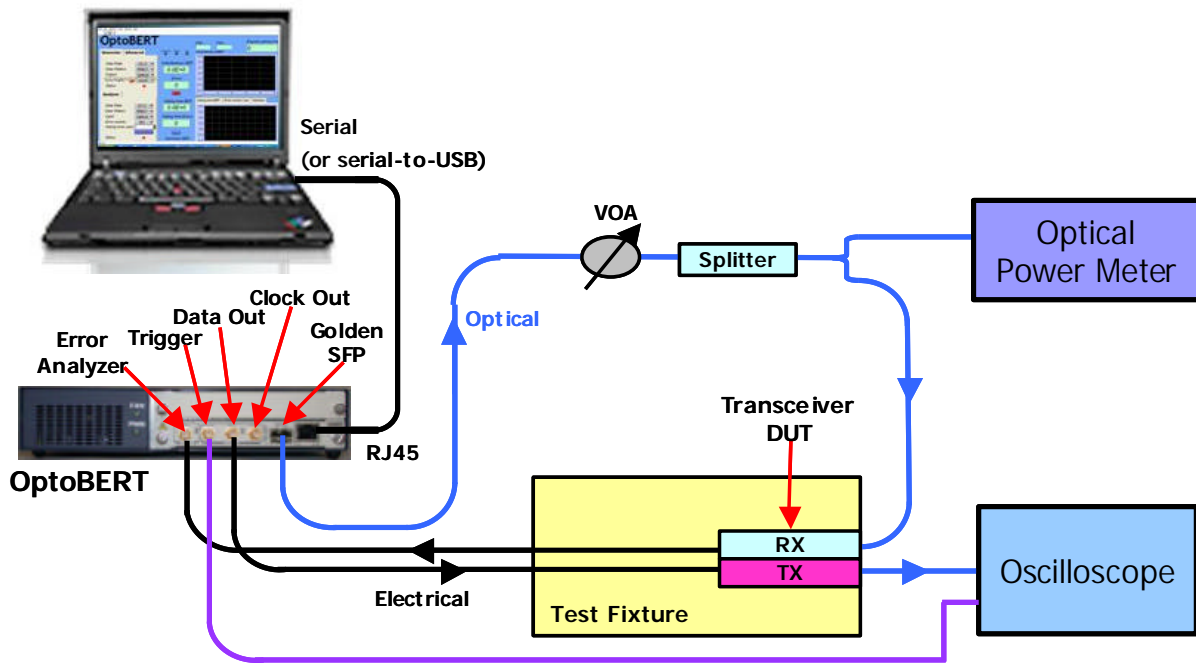
¹ Measurements based on PRBS 2^7-1 data at 4.25 Gb/s.

System / General Specifications

PARAMETER	MIN	MAX	UNIT
Chassis Electrical Voltage	100	240	VAC
Current Drain at Normal Voltage		1.4	A
Operating Temperature Range	5	45	$^{\circ}$ C
Storage Temperature Range	-40	70	$^{\circ}$ C
Dimensions (L x W x H)	273x216x45		mm ³
	10.75x8.5x1.75		inch ³
Optical Interface	Standard SFP housing Minimum number of insertion/deinsertion cycles: 200		
RS 232 PC Interface	RJ-45 connector		
Warranty	2 years		

Manufacturing Test of Transceiver Modules

Example: Rx: Sensitivity measurement
Tx: Output mask test with oscilloscope



Ordering Information

OPB4250 -X-D-X-X

- A:** Variable Output Data Amplitude
- 0:** No Optical Transceiver;
1: Optical Transceiver (SFP) 850nm
2: Optical Transceiver (SFP) 1310nm
3: Optical Transceiver (SFP) 1550nm
- P:** Preset Data Rates
C: Custom Data Rates

Accessories Included

- User Software
- User Manual
- Power cord
- PC Interface cable

Example: OPB4250-P-D-2: 4.25Gb/s OptoBERT; Preset Data Rates, optical transceiver (SFP) at 1310nm

Related Products and Accessories

Part Number	Description
OPG4250	4.25 Gb/s Data Generator
OPB3200	3.2 Gb/s OptoBERT
OPS Series	Multichannel Optical Switch for Single Mode and Multimode Fiber
OPZ1015	Serial-to-USB Converter
OPZ3004	Additional 1 year Warranty

Specifications are subject to change without notice.
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