

OptoBERT™ OPB1250

1.25Gbps Compact Bit-Error-Rate Tester



Overview

The OPTELLENT OptoBERT™ OPB1250 is a cost-effective easy-to-use bit-error-rate (BER) measurement system for testing components and systems in R&D and manufacturing environments as well as field installations. It incorporates a pattern generator, clock recovery circuits, and a bit-error-ratio analyzer in one compact module that provides both electrical and optical interfaces at data rates up to 1.25Gb/s. The OptoBERT integrated system eliminates the need for additional interface modules to test devices.

An intuitive graphical user interface (GUI) enables easy point-and-click operation. The GUI displays error counts, BER, and features a unique error-events display for measuring events such as signal interruption due to optical switching.

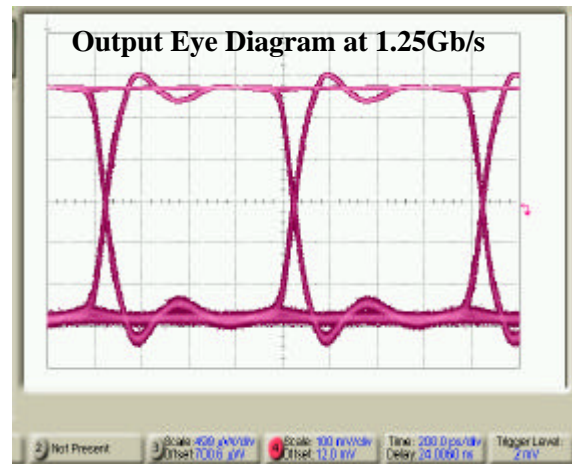
The OptoBERT has a recording feature to output the measured BER results into a spreadsheet file without any programming or scripting.

Applications

- ▶ Production testing of optical transceivers, diplexers/triplexers, and subsystems
- ▶ Production testing of Opto-electronic components and devices (TOSA, ROSA, lasers, etc...)
- ▶ Production testing of Gb/s ICs, electronic modules, subsystems, and systems
- ▶ Product development and qualification testing
- ▶ Installation testing and troubleshooting in optical transport networks

Key Features

- ▶ Integrated Generator and Analyzer
- ▶ Easy-to-use and Cost-efficient
- ▶ Intuitive Graphical User Interface
- ▶ Automated Measurement Report
- ▶ Unique Error Events Display
- ▶ Electrical and optical interfaces



Data Rates

OC-3	155.52 Mb/s
OC-12	622.08 Mb/s
Fibre Channel	1.0625 Gb/s
Gigabit Ethernet	1.25 Gb/s

Supported Patterns:

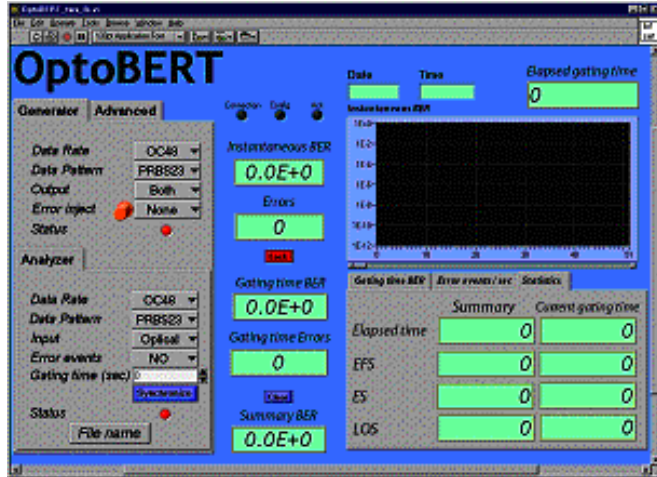
- PRBS 2⁷-1, PRBS 2²³-1
- NRZ 101010...
- User defined (Optional)

Software

The OptoBERT™ OPB1250 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 software driver is available for incorporating the OptoBERT into test automation suites using programs like C++, LabVIEW, VisualBASIC, and HP VEE.

User Interface



Pattern Generator

Error Injection:

10^{-7} , 10^{-8} , 10^{-9} , single error injection

Specifications

Generator Output				
Parameter	Min	Typ	Max	Units
Output type	Single-ended or Differential (Optional)			
Data rate	155.52		1250	Mb/s
Frequency accuracy			± 50	ppm
Output amplitude, single ended (1)	500	550	750	mV
Data rise time (2)		130	160	ps
Data fall time (2)		130	160	ps
Data output RMS jitter (2)		4.5	6.0	ps
Clock output amplitude		200		mV
Connector, Electrical	50 Ω SMA, front panel			
Connector, Optical	LC (SFP)			

Trigger Output				
Parameter	Min	Typ	Max	Units
Output amplitude	400			mV
Output type	Single-ended, AC-coupled			
Connector	50 Ω SMA, front panel			

(1) Larger output signal amplitudes up to 1800mV are available as an option

(2) Measurements based on PRBS23 data at 2488.32 Mb/s (OC-48).

Error Analyzer

Specifications

Parameter	Min	Typ	Max	Units
Input type	Single-ended AC coupled			
Electrical sensitivity (1)			50	mV
Electrical data input	50		1000	mV
Clocking mode	Built-in clock recovery			
Pattern Synchronization	Automatic			
Connector, Electrical	50 Ω SMA, front panel			
Connector, Optical	SFP LC (SFP)			

(1): Measurements based on PRBS2²³-1 data at 1.25Gb/s.

System Specifications

PARAMETER	MIN	MAX	UNIT
Chassis Electrical Voltage	100	240	VAC
Current Drain at Normal Voltage		1.4	A
Operating Temperature Range	5	40	°C
Storage Temperature Range	-40	70	°C
Dimensions (L x W x H)	273x216x45		mm ³
	10.75x8.5x1.75		inch ³
Safety	UL, IEC-61010-1		
EMC	EN55011, EN61000-3-2, EN61000-3-3, BS EN61326		
RS 232 PC Interface	RJ-45 connector		

Optical Output:

SFP housing is provided as a standard feature

SFP transceiver is optional

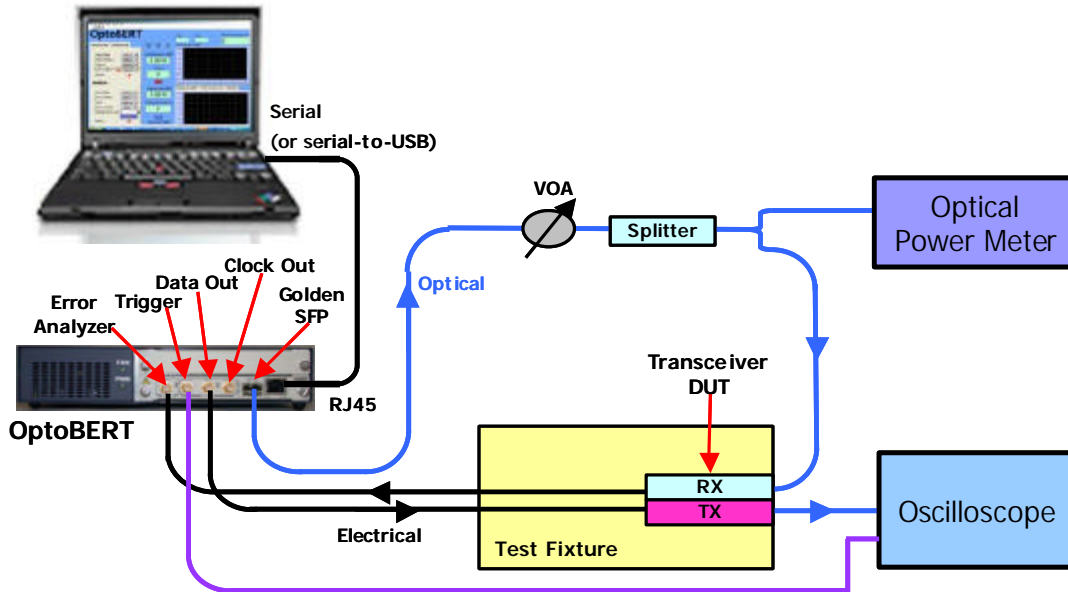
Wavelength options: 850nm, 1310nm, 1550nm

Manufacturing Test of Transceiver Modules

Example:

Rx: Sensitivity measurement

Tx: Output mask test with oscilloscope



Ordering Information

OPB1250-X-X-X-X

- X: other Custom Options
- 0: No Optical Transceiver;
1: Optical Transceiver (SFP) 850nm
2: Optical Transceiver (SFP) 1310nm
3: Optical Transceiver (SFP) 1550nm
- S: Single-ended Electrical Output
D: Differential Output
- P: Preset Data Rates
C: Custom Data Rates

Example: OPB1250-P-S-0: 1.25Gb/s OptoBERT, Preset data rates, Single-ended electrical output, No optical transceiver