

OptoBERT™ OPB-X150

14 Gbps Bit-Error-Rate Tester (BERT)



Overview

The OPTELLENT OptoBERT™ OPBX150 is a cost-effective easy-to-use 14G bit-error-ratio tester (BERT) for testing components and systems in R&D and manufacturing environments. The OPBX150 incorporates an internal reference clock, a pattern generator, clock recovery circuits, and a BER analyzer, in one compact module that provides both electrical and optical interfaces at data rates up to 14.025 Gb/s. The OPBX150 is offered with an RS-232 or USB interface and a standard 2-year warranty.

An intuitive Graphical User Interface enables easy point-and-click operation. Software drivers are available for incorporating the OptoBERT into test automation suites using programs like LabVIEW, VisualBASIC, HP VEE.

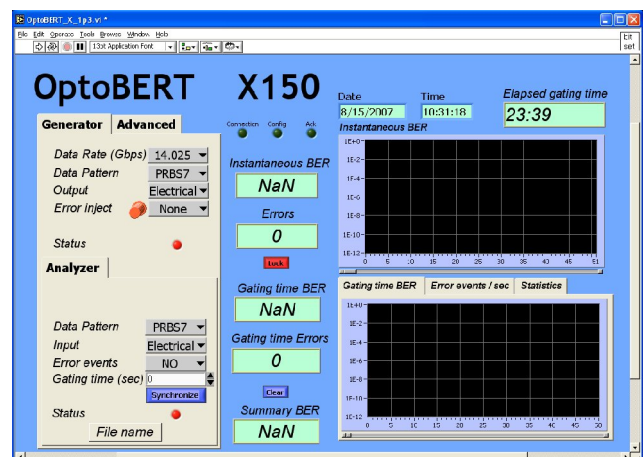
BER test data from the OptoBERT are output directly into a spreadsheet file without any programming.

Applications

- ▶ Testing of optical transceiver modules (SFP+, XFP), transponders, linecards, and subsystems
- ▶ Testing of opto-electronic components and devices (TOSA, ROSA, lasers, etc...)
- ▶ Testing of Gb/s ICs, PCBs, electronic modules, subsystems, and systems
- ▶ Serial bus and high-speed backplane design
- ▶ Production and compliance testing

Key Features

- ▶ **Integrated Generator and Analyzer**
- ▶ **Internal Reference Frequency**
- ▶ **Differential Data and Clock Interfaces**
- ▶ **Multiple Patterns: PRBS, Stress, and User-defined**
- ▶ **Intuitive GUI and Automated Test Report**
- ▶ **Easy-to-Use, Compact and Cost-Efficient**
- ▶ **2-year Warranty**



Pattern Generator

Parameter	Min	Typ	Max	Units
Data Output (Electrical)				
Output Type	Differential			
Output Format	NRZ			
Termination	AC-Coupled			
Data Patterns	<ul style="list-style-type: none"> • PRBS: 2⁷-1, 2⁹-1, 2¹¹-1, 2¹⁵-1, 2²³-1, 2³¹-1; 101010...pattern • Pre-defined: K28.5, CJPAT, CRPAT (Optional) • User-defined: 128 bits to 50000 bits (Optional) 			
Data Rates (Using the internal clock source)	<ul style="list-style-type: none"> • Preset: 16GFC (14.025 Gbps), (11.317 Gbps), (11.096 Gbps), G.709 (10.709 Gbps), 10GFC (10.519 Gbps), 10GbE (10.3125Gbps), (10.00 Gbps), OC-192 (9.95328 Gbps) • Custom Preset: Special Data rates requested by customers (Optional) 			
Data Rate Range	8		14.5	Gbps
Extended Data Rate Range	4		7.25	Gbps
Frequency Accuracy			± 50	ppm
Output Amplitude (peak-to-peak)	400		800	mV _{p-p}
Data Rise Time, (20 – 80%)		17		ps
Data Fall Time, (20 – 80%)		17		ps
Data Output RMS Jitter		1.6		ps
Error Injection	Single error; 10 ⁻⁷ , 10 ⁻⁸ , 10 ⁻⁹			
Connector	50Ω SMA Female			
Clock Output				
Output Type	Differential			
Termination	AC- Coupled			
Output Amplitude (peak-to-peak)			300	mV _{p-p}
Connector	50Ω SMA Female			
Trigger Output				
Output Amplitude	300			mV _{p-p}
Division ratio		1/16		
Output Type	Single-ended, AC-coupled			
Connector	50Ω SMA Female			

Error Analyzer

Parameter	Min	Typ.	Max	Units
Data Input (Electrical)				
Input Type	Single-ended or Differential			
Termination	AC-Coupled			
Data Patterns	<ul style="list-style-type: none"> • PRBS: 2⁷-1, 2⁹-1, 2¹¹-1, 2¹⁵-1, 2²³-1, 2³¹-1; 101010...pattern • Pre-defined: K28.5, CJPAT, CRPAT (Optional) • User-defined: 128 bits to 50000 bits (Optional) 			
Data Rates (Using the internal clock source)	<ul style="list-style-type: none"> • Preset: 16GFC (14.025 Gbps), (11.317 Gbps), (11.096 Gbps), G.709 (10.709 Gbps), 10GFC (10.519 Gbps), 10GbE (10.3125Gbps), (10.00 Gbps), OC-192 (9.95328 Gbps) • Custom Preset: Special Data rates requested by customers (Optional) 			
Data Rate Range	8		14.5	Gbps
Extended Data Rate Range	4		7.25	Gbps
Data Input	100		1000	mV p-p
Clocking Mode	External input			
Pattern Synchronization	Automatic			
Connector	50Ω SMA Female			
Clock Input				
Input Type	Differential			
Termination	AC-Coupled			
Input Amplitude (peak-to-peak)	200			mV p-p
Connector	50Ω SMA Female			

System & General Specifications

PARAMETER	MIN	MAX	UNIT
Chassis Electrical Voltage	100	240	VAC
Current Drain at Normal Voltage		2.5	A
Operating Temperature Range	5	45	°C
Storage Temperature Range	-40	70	°C
Dimensions (L x W x H)	300 x 240 x 98 12 x 9.5 x 4		mm ³ inch ³
PC Interface	RS232 / USB		
Standard Warranty	2 years		

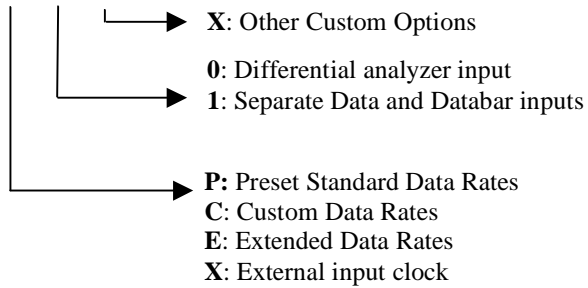
Software

The OptoBERT™ OPBX150 software runs on Windows 98/2000/NT/XP and VISTA over USB or RS-232 serial interface via an RJ-45 Connector provided on the front panel.

Software drivers are available for incorporating the OptoBERT into test automation suites using programs like C++, LabVIEW, VisualBASIC, and Agilent VEE.

Ordering Information

OPBX150-X-X-X



Accessories Included

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