

# OptoBERT™ OPB-100G

## 4-Channel 32 Gbps Bit-Error-Rate Tester (BERT)



### Overview

The OptoBERT™ OPB-100G is the industry's most compact, cost-effective, easy-to-use 4-channel 32 Gbps electrical bit-error-ratio tester (BERT) for testing components, cables and systems in R&D and manufacturing environments. The OPB-BERT-100G incorporates four pattern generators, four BER analyzers, internal reference clocks, and clock recovery circuits in one compact module to simultaneously test four channels at data rates up to 32 Gb/s. The OPB-100G has input equalization algorithms to counteract signal degradation through input cables.

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.

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

### Applications

- Testing of optical transceiver modules (QSFP+, CFPx, CXP), transponders, line-cards, and subsystems
- Testing of active optical cables, RF cables
- 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 backplanes
- Source for 100 Gb/s test platforms

### Key Features

- ▶ **Four integrated Generators and BER Analyzers in one compact unit**
- ▶ **Internal Reference Clock and External Reference Clock**
- ▶ **Supports NRZ signals**
- ▶ **Data Output Pre-emphasis Control**
- ▶ **Multiple Patterns: PRBS, User-defined**
- ▶ **Autonomous input equalization**
- ▶ **Easy-to-Use, Compact and Cost-Efficient**

### Preset Data Rates

9.8304	9.95328	10.1376	10.3125
10.709225	11.049107	11.095727	11.270089
11.317642	14.025	20.625	24.33024
25	25.78125	26.5625	27.95249325
28.05	28.2	30	32Gbps

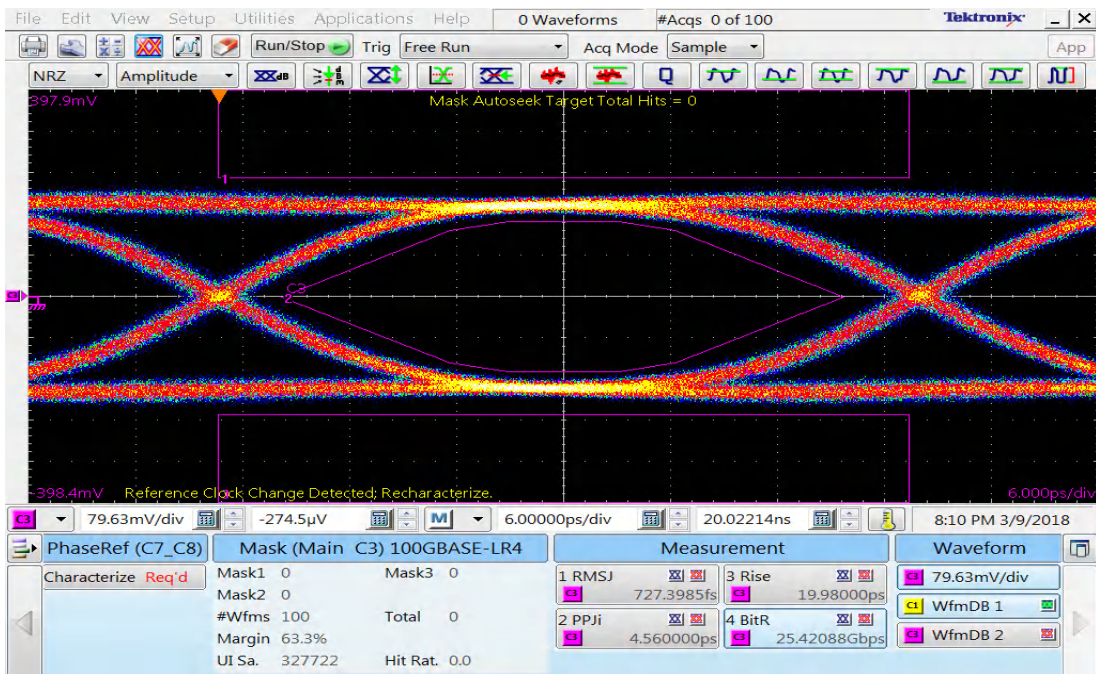
### Data Rates for communication standards

Datacom Standard	Data Rate
100 G Ethernet	25.78 Gbps
100G OTU4	27.95 Gbps
32G Fiber Channel	28.05 Gbps
HPC	25 Gbps
Datacenter	25 Gbps
SFP28 Ethernet	25 Gbps
5G wireless application	24.33Gbps

## Electrical Specifications

PARAMETER	Symbol	MIN	TYP	Max	UNITS	NOTE
Data Rate	DR		25.78		Gbps	
No. of channels			4			
PRBS Pattern 2 <sup>N</sup> -1		7/9/15/23/31				
Signal Termination	AC-Coupled					
Data Output Amplitude	V <sub>out</sub>		600		mV	Differential
Data Output Resistance	R <sub>dout</sub>	85	100	115	Ω	Differential
Data Output Jitter Rms	J <sub>rms</sub>		<750		fs	
Data Output Jitter P-P	J <sub>p-p</sub>		5		ps	
Data input Resistance	R <sub>din</sub>	85	100	115	Ω	Differential
Data input Sensitivity			75		mV	
Trigger output Frequency	f <sub>trigger</sub>		3.2225		Gbps	Data rate/8
Clk output Frequency	f <sub>clkout</sub>		322.5		Mbps	Data rate/80
External clk Input Duty Cycle	CK_DC	40		60	%	optional
External clk Input Amplitude	CK_V <sub>in</sub>	600		1600	mV	optional
Equalizer	CTLE & DFE					
Synchronization	Automatically on level and phase					
Connector	2.92 mm RF					

## NRZ Output @ 25.78Gbps



## Software Interface

## System Specifications

PARAMETER	MIN	MAX	UNIT
Chassis Electrical Voltage	100	240	VAC
Operating Temperature Range	10	50	°C
Storage Temperature Range	-40	70	°C
Dimensions (L x W x H)	350 x 340 x 86		mm <sup>3</sup>
	13.8x 13.4 x 3.4		inch <sup>3</sup>
PC Interface	USB/RS-232		

## Ordering information

Model Number	Description	Data Rate Range
OPB-100G-I	4 CHs TX & 4 CHs RX	9.8 to 32 Gbps
OPB-100G-II	8 CHs TX & 4 CHs RX	9.8 to 32 Gbps

Contact Optellent Sales for your custom needs