

epIQ-BERT-1001

# epIQ-BERT™

## Bit Error Rate Tester

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### SPEC SHEET

Coherent Solutions epIQ-BERT is a 4-channel BER Tester for the design, characterization and production of optical transceivers and opto-electrical components at data rates up to 29Gb/s.

With 4-channels and exceptional signal fidelity, epIQ-BERT is a cost-effective solution for 100Gb/s test systems.



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complexity made simple.

# Features



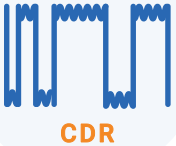
## 4 channel pattern generator and error detector

4-channel simultaneous testing in a compact, cost-effective form factor.



## Internal clock synthesizer

An integrated clock synthesizer for additional convenience and hassle-free operation.



## Built-in clock recovery

4-channel simultaneous testing in a Integrated CDR makes the epIQ-BERT a versatile and easy-to-use instrument. No need for additional clock recovery hardware.



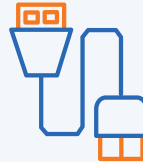
## Programmable de-emphasis processor

Programmable de-emphasis allows you to accurately reproduce the original input signal.



## Simple control with intuitive GUI.

Save time and reduce complexity with epIQ-BERT's easy-to-use GUI. Control all channels and functions from its single panel interface.



## USB or LAN operation

Connect to epIQ-BERT with USB or LAN for simple setup and operation.

# Target Applications

- 100GBASE-ER4, -LR4, -SR4: 4 x 25.781 Gbps
- CEI-28G-VSR: 25 Gbps to 28 Gbps
- Multi-channel BER Tester for 4 x 25 Gbps
- Active optical cable testing
- CFP-2/CFP-4 optical modules
- High speed SerDes characterization



Example of 26 Gbps PRBS data signal generated using the low noise internal clock synthesizer.

# Technical Specifications

<b>PPG Output</b>	<b>epIQ-BERT</b>
Number of channels	4
RF output	Differential
RF connector	2.92 mm breakout cable
Impedance (ohms)	100 between differential
Data coding	NRZ
Data rate (Gbps)	1 to 29
PRBS patterns	2n-1, n= 9, 15 or 31
Output amplitude (mV differential)	Adjustable 200 to 1100
Rise/fall time (20% to 80%)	<15 ps
Intrinsic jitter	<850 fs RMS (typical)
Crossing point adjustment	35%-65%
Programmable de-emphasis	2 Pre Taps, 1 Post Tap
Polarity inversion	Yes

<b>Error Detector</b>	
Number of channels	4
RF input	AC coupled differential
Impedance (ohms)	100 between differential
Data rate (Gbps)	12.3 to 14.5 and 24.6 to 29
PRBS patterns	2n-1, n=9, 15 or 31
Sensitivity (mv)	25
Max input (mv)	1200
Clock source	Independent CDR on each input channel
Polarity inversion	Yes

<b>Clock Output</b>	
RF output	Single ended SMA
Impedance (ohms)	50
Half rate clock	1 to 15 GHz
Intrinsic jitter	< 350 fs RMS (typical)
Output amplitude	200 to 500

### Divided Clock Output

Rf output	Single ended SMA
Impedance (ohms)	50
Frequency	500 MHz to 8 GHz
Intrinsic jitter	< 350 fs RMS (typical)
Output amplitude	500 (typical)
Selectable clock divider	Divide by n with n = 2,4,8, 16

### Clock and Data Recovery

Data rate (Gbps)	12.3 to 14.5 and 24.6 to 29
Loop bandwidth	FC/1667 default tunable 1-15 MHz
External trigger	Yes

### General Specifications

PC connections	USB
DC power	12 V
AC/DC power supply included	100-240 VAC, 50-60 Hz
Dimensions H x W x D	44.3 x 220 x 300 mm   1.8 x 8.7 x 11.8 inch
Weight	~2kg   ~4.4 lbs
Operating temperature range	5°C to 45°C   41°F to 113°F
Storage temperature range	-40°C to 70°C   -40°F to 158°F

SPECS AS AT FEBRUARY 2019



# Ordering Information

BERTEpIQ – 1001



## Product Warranty

This product comes with a 3 year warranty.

## About Coherent Solutions

Coherent Solutions is a world-leader in photonics test and measurement. Our portfolio of benchtop and modular test instruments is rapidly expanding to meet the needs of scientists, engineers and manufacturers around the world. No matter where you are, we'll work with you to solve complex problems with simple, intuitive solutions.

**To find out more, get in touch with us today.**

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