

DESCRIPTION

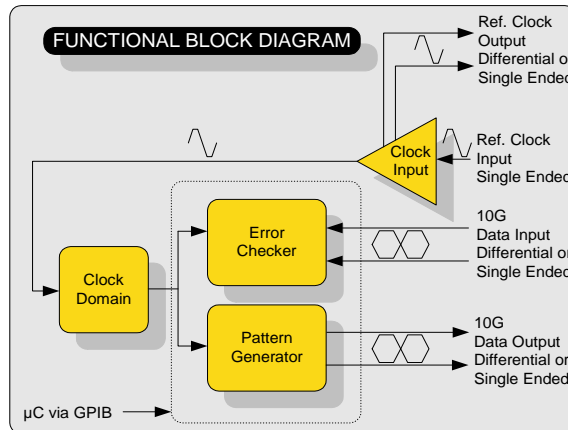
EBERT is a Bit Error Rate Test module that plugs in to the *XBERT* and *ParalleX™* Chassis. EBERT-5 can generate and receive electrical data from 8.5 Gb/s up to 11.3 Gb/s (options are available to extend this range). Optionally the EBERT-5 module can operate in the 5G range. User programmable PRBS patterns can be changed via an easy to use GUI. A pattern trigger output provides an electrical trigger synchronous with the pattern for use with an oscilloscope or other test equipment. Front panel indicators give immediate status for Tx and Rx Data.



ELECTRICAL BERT MODULE PN L-6001-EBERT-5

KEY FEATURES

- Data Rates 8.5 to 11.3 Gbps. (standard)
- Option 112: 8.0 to 11.3Gbps
- Option 114: additional 4.25 to 5.65Gbps mode
- Opt 112 & 114 can be combined to give 4.0 to 5.65Gbps
- Option 124: 8.5 to 12.5Gbps
- Option 133: 8.5 to 11.3Gbps and 4.25 to 6.25Gbps
- Differential Electrical Pattern Generator (SMA Connector)
- Differential Electrical Error Detector (SMA Connector)
- Output crossing adjustable from 20% to 80%
- Variable data output level from 1 to 3V
- PRBS: 7, 9, 10, 11, 15, 21, 23, 31
- User-Pattern: 8Bit - 8Kbyte
- Clock-Pattern: $\frac{1}{1}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$
- Additional: K28.0-K28.7, CJPAT, SSPS-64 and others
- Data output polarity swap and Data input polarity swap
- BER detection: 0.5 to $< 10E-15$
- Single error and error rate injection: 1 E-3 to 1E-15
- Data log Gating-time: up to 5000h
- Reference Clock Input (single ended) and Output (diff)
- LabView™ drivers available
- Small size: width 50.8mm (2")



XBERT PLATFORM: LETS YOU START SMALL AND GROW BIG



XBERT is a low-cost, modular Bit Error Rate Test Platform used for verification and test of 10Gb/s and above optical and electrical chip, sub assembly and system designs. *ParalleX™* allows users to perform several BER tests at once using a single clock source. The system is ideal for developers desiring to run simultaneous BER tests on parallel interfaces or multiple independent interfaces. *XBERT* and *ParalleX™* are scalable so users can start off with a single channel and add modules to grow the system. Manufacturers can realize great savings by taking advantage of the *XBERT* and *ParalleX™* system's scalability to perform parallel testing in volume production environments.

Electrical BERT Module PN L-6001-EBERT-5

KEY PERFORMANCE PARAMETERS

PARAMETER	SYMBOL	Min	Max	UNIT	NOTE
Data Rate	DR	8.5 (8.0)	11.3	Gbps	Standard mode 8.0 Gbps Opt112
		4.3 (4.0)	5.65	Gbps	Option 114 4.0 Gbps Opt112
Data Formats		NRZ			
PRBS Pattern		7, 9, 10, 11, 15, 21, 23, 31			
User-Defined Pattern		8	65536	Bit	Note 4
Data Output Signal Channel P or N (single ended)	D _{OutP/N}	1	3	V _{pp}	Others available on request
Data Output Rise and Fall time	t _r / t _f	Typical	23	ps	20% - 80%
Output Jitter	J _{rms}	Typical	1.5	ps	Note 5
Crossing	Cr	20	80	%	Adjustable
Differential Output Impedance	Z _{ODiff}	90	110	Ω	
Data Output Termination		AC - coupled			
Measurable Bit Error Rate	BER	<10E-15	0.5		Note 1
Data Input Signal Channel P or N	D _{InP/N}	100	1000	mV _{pp}	Single ended
Differential Data Input signal (D _{InDiff} =D _{InP} -D _{InN})	D _{InDiff}	200	2000	mV _{pp}	Note 2
Differential Input Impedance	Z _{InDiff}	90	110	Ω	
Data Input Termination		AC - coupled			
Reference Clock Input Frequency	P _{ref}	531.25	707.35	MHz	Opt112 500MHz min
Reference Clock Input Impedance	Z _{Ref}	45	55	Ω	
Reference Clock Input Termination		AC - coupled			
Sync Signal	Sync	550	1100	mV _{pp}	Note 3
Operating Temperature	T _{OP}	0	40	°C	Ambient temp.

Note:

- 1 BER of better than 10E-15 can only be achieved if the min input voltage level is applied
 - 2 Minimum input voltage to guarantee error free detection (BER < 10⁻¹⁵)
 - 3 Default function is pattern trigger. Other functions like pulse per error byte are possible. For more detailed information contact Luceo Technologies
 - 4 Pattern input from 8 to 128 bit in 8 bit steps and from 128 to 65536 bit in 128 bit steps. Preset patterns eg K28.5, CJPAT etc are available on request
 - 5 Measured at: duty cycle 50%, PRBS31, DR= 11.3Gbps, output voltage= 2V, BER= 1E-12
- Opt112 This option extends the operating data rate for the EBERT-5 down to 8.0Gbps
 Opt114 This option is for the additional '5G mode' that covers 4.3 to 5.7Gbps. In combination with Opt112, the lower data rate is moved to 4.0Gbps

ELECTRICAL EYE-DIAGRAM Duty cycle 50%, PRBS31, DR=11.3Gbps. output voltage=2.5V

