Pattern Generator Module

PN L-6001-EPG10-x

DESCRIPTION

EPG10-x is an Electrical Pattern Generator module that plugs into the *XBERT* and *ParalleX*™ Chassis. EPG10-x can generate electrical data from 8.5 Gb/s up to 11.3 Gb/s (options are available to extend this range). Optionally the EPG10-x 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 Data.

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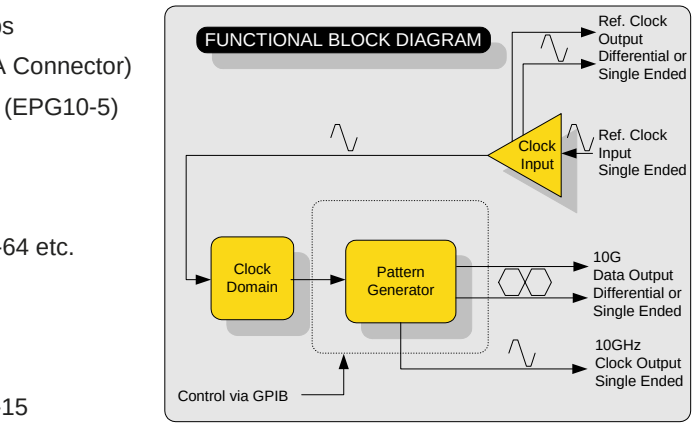
KEY FEATURES

- Data Rates 9.9 to 11.3Gbps (EPG10-3 standard)
- Option: additional 4.9 to 5.7Gbps mode
- Data Rates 8.5 to 11.3 Gbps (EPG10-5 standard)
- Option: 8.0 to 11.3Gbps
- Option: additional 4.25 to 5.65Gbps mode
- Options can be combined to give 4.0 to 5.65Gbps
- Option: 8.5 to 12.5Gbps
- Option: 8.5 to 11.3Gbps and 4.25 to 6.25Gbps
- Differential Electrical Pattern Generator (SMA Connector)
- Output crossing adjustable from 20% to 80% (EPG10-5)
- Variable data output level (EPG10-5)
- PRBS: 7, 9, 10, 11, 15, 21, 23, 31
  User-Pattern: 8Bit - 8Kbyte
  Additional: K28.0-K28.7, CJPAT, SSPS-64 etc.
- Pre-emphasis (EPG10-3)
- 10GHz clock output (EPG10-3)
- Data output polarity swap
- Single error and error rate injection: E-3 to E-15
- 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.

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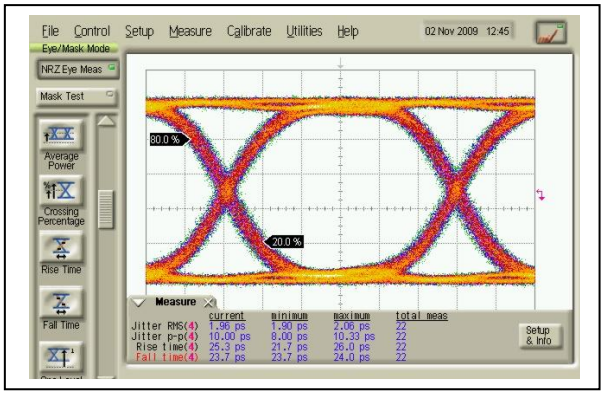
KEY PERFORMANCE PARAMETERS

PARAMETER	SYMBOL	Min	Max	UNIT	NOTE
Data Rate EPG10-5	DR	8.5 (8.0)	11.3	Gbps	Standard mode 8.0 Gbps Opt113
		4.3 (4.0)	5.65	Gbps	Option 115 4.0 Gbps Opt113
Data Rate EPG10-3	DR	9.5	11.5	Gbps	Standard mode. Additionally by
		4.9	5.7	Gbps	Option 110
Data Formats			NRZ		
PRBS Pattern		7, 9, 10, 11, 15, 21, 23, 31			
User-Defined Pattern		8	65536	Bit	Note 2
Data Output Signal Channel P or N (single ended)	$D_{OutP/N}$	1 0.4	3 0.6	V_{pp}	EPG10-5 EPG10-3
Data Output Rise and Fall time	t_r / t_f	Typical	23	ps	20% - 80%
Output Jitter	J_{rms}	Typical	1.5	ps	Note 3
Crossing	Cr	20	80	%	Adjustable EPG10-5
Differential Output Impedance	Z_{ODiff}	90	110	Ω	
Data Output Termination		AC - coupled			
Reference Clock Input Frequency	P_{ref}	531.25 622.08	707.35 707.5	MHz	EPG10-5 EPG10-3
Reference Clock Input Impedance	Z_{Ref}	45	55	Ω	
Reference Clock Input Termination		AC - coupled			
Sync Signal	Sync	550	1100	mV	Note 1
Operating Temperature	T_{OP}	0	40	°C	Ambient temp.

Note:

1	Default function is pattern trigger. Other functions like pulse per error byte are possible. For more detailed information contact Luceo Technologies
2	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
3	Measured at: cross point 50%, PRBS31, DR = 11.3Gbps (output voltage= 3V, EPG10-5)
Opt113	This option extends the operating data rate for the EPG10-5 down to 8.0Gbps
Opt115	This option is for the additional '5G mode' for the EPG10-5 that covers 4.3 to 5.7Gbps. In combination with Opt113, the lower data rate is moved to 4.0Gbps
Opt110	This option is for the additional '5G mode' for the EPG10-3 that covers 4.9 to 5.7Gbps.



ELECTRICAL EYE-DIAGRAM EPG10-5
Duty cycle 50%, PRBS31, DR=11.3Gbps, output voltage=2.5V

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