

10Gb/s Serial Bit Error Rate Tester

10Gb/s BERT with optional SFP+/XFP Module Slot

SeBERT-100 Series

Key Features

- Bit rates from 9.95 ~ 11.32 Gb/s
- PRBS 2^7-1 , $2^{23}-1$, $2^{31}-1$, and 64bit definable
- Pre-emphasis output signal functionality
- SFP+/XFP module slot option available
- Computer control via USB
- Cost effective solution for production



SeBERT-100 is an integrated Pseudo-random Bit Sequence (PRBS) generator, and Bit Error Detector with internal clock recovery circuit. The SeBERT-100E is an electrical model whilst the SeBERT-100S and SeBERT-100X are models with built-in device module slot for SFP+ and XFP transceivers, respectively. The PPRBS outputs optical NRZ waveform with bit rate within 9.95~11.32 Gbps, with settable data pattern of 2^7-1 , $2^{23}-1$, $2^{31}-1$ and a fixed 64-bit user-defined pattern. The instrument is controlled by external computer via a USB port, with full software support, drivers and programming guide for automation.

Applications

- Optical components and fiber link testing for SONET OC192/ SDH-STM 64, 10 Gigabit Ethernet (10 GbE) applications.
- Low cost TX/RX device inspection line
- Data transmission experiments

Functional Diagram

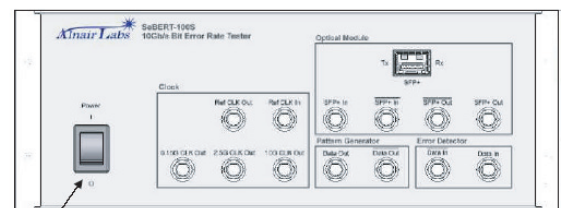
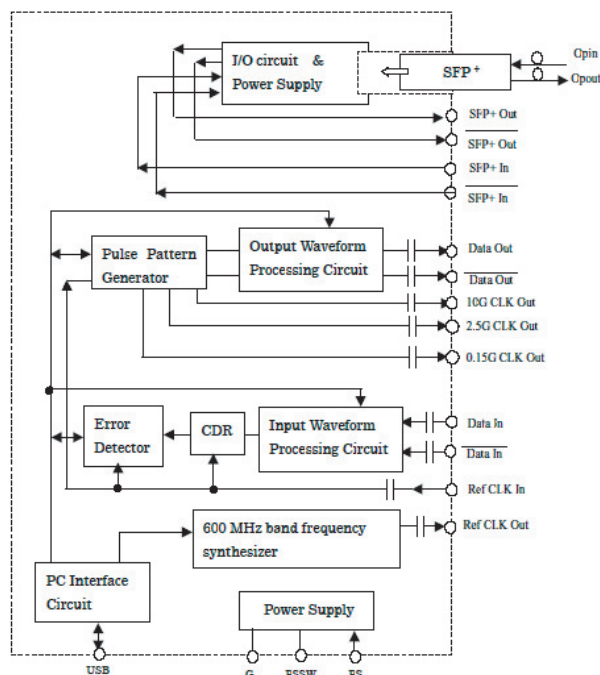


Fig.1 Front view

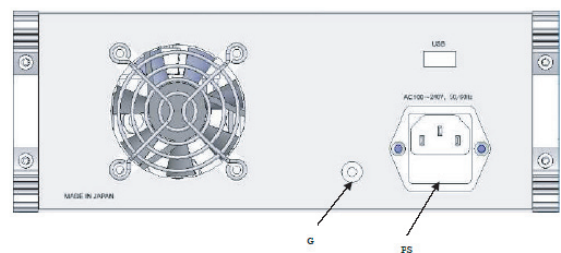


Fig.2 Rear view

Specifications

Category	Parameter	Specification			Unit
		Min.	Typ.	Max.	
Pattern Generator (Data Out, DataOut)	Data rate(DR)	9.95328		11.320	Gb/s
	Output signal level	300		500	mVpp
	Pre-emphasis		32		step
	Data patterns	PRBS:2 ⁷ -1, 2 ²³ -1, 2 ³¹ -1, 64 user-defined			bit
	Data format, Mark density	NRZ, 0.5			
Error Detector (Data In, Data In)	Input signal level	30		700	mVpp
	Internal gain		128		step
	Equalization		32		step
	Detection threshold	-64	0	+64	mV
	Signal inversion function		Yes		
Ref. Clock In	Input voltage	315	600	1000	mVpp
	Frequency ¹ (DR/16)	622.0		707.5	MHz
Ref. Clock Out	Output power	-3		+3	dBm
	Frequency(variable)	622.0		707.5	MHz
10G Clock Out	Output voltage		200		mVpp
	Frequency	9.95328		11.320	GHz
2.5G Clock Out	Output power	-8	-4		dBm
	Frequency	2.4883		2.8300	GHz
150M Clock Out	Output power	220	350		mVpp
	Frequency	155.52		176.88	MHz
Power	Power supply voltage	85		260	Vac
Ambient	Operating Temperature	5	25	40	
	Humidity (non-condensing)			80	%RH
Physical	Dimensions (W x H x D)	236 x 88 x 405			mm
	Weight	5			kg

Note: The specifications are subjected to change without prior notice. Please contact Alnair Labs for more details.

1. Frequency deviation of +/- 150ppm.

Typical Performance

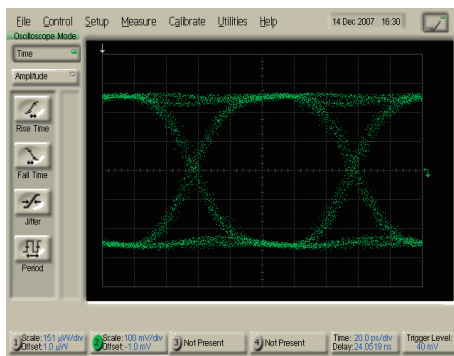


Fig. 1 Electrical eye-diagram at 10Gb/s

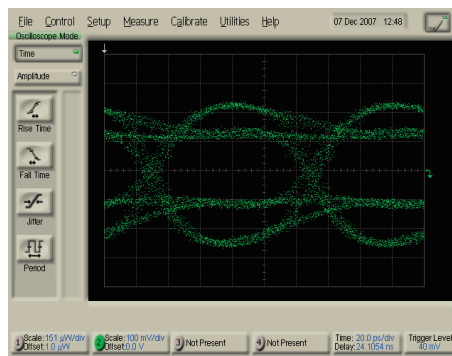


Fig. 2 Signal with pre-emphasis.

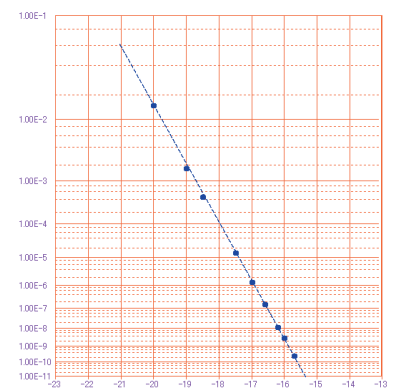


Fig. 3 Measured BER plot with an XFP module.

Ordering Information

SeBERT-100E	10Gb/s BERT standard electrical model
SeBERT-100S	10Gb/s BERT with SFP+ module slot
SeBERT-100X	10Gb/s BERT with XFP module slot