Quick Fact Sheet

Agilent 4 – 17 Gb/s BERT Solution for InfiniBand FDR

Fast, compact, and affordable BER testing

Testing InfiniBand FDR communications links requires equipment capable of 14 Gb/s and accurate characterization to strict tolerances. Only a few solutions for BER testing at this rate are available today. Until now, those few have been extremely expensive. This often results in multiple designers needing to share the one serial BERT in the lab, delaying their characterization and development schedule.

The Agilent Technologies N4960A serial BERT 17 Gb/s is an affordable alternative for users working at data rates up to 17 Gb/s. The solution is compact, allowing it to be easily transported throughout the lab. But with its low price, a fraction of competing stressed BERTs, you can afford to put one on each bench.

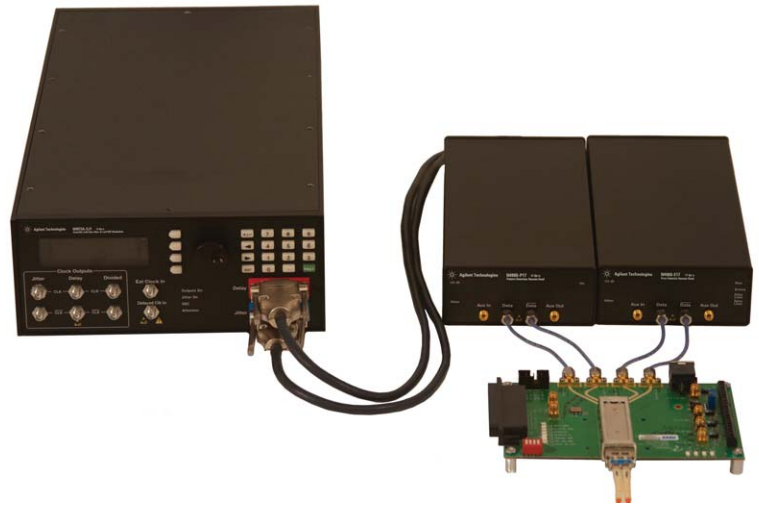

Figure 1. For InfiniBand FDR including TOSA, ROSA, and transceiver testing

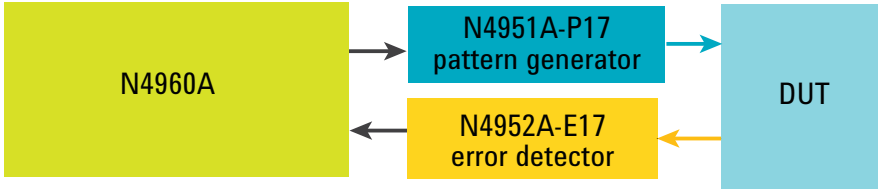

Figure 2. Typical configuration

Components – InfiniBand FDR

Product number	Description
N4960A-CJ0 17B BERT (SSB17)	Serial BERT 17 Gb/s
For special applications the system components are available individually	
N4960A-CJ0 (SSB16000)	Stressed serial BERT controller
N4951A-P17 (PG17)	17 Gb/s pattern generator remote head
N4952A-E17 (ED17)	17 Gb/s error detector remote head

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Integrated 17 Gb/s operation

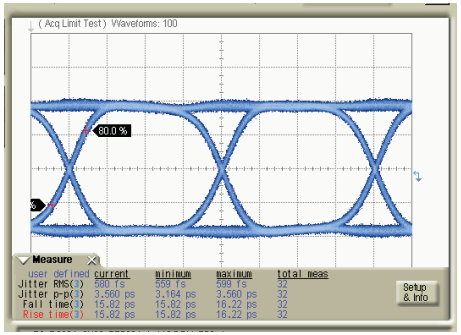

Figure 3. Typical eye at 14 Gb/s

The N4951A-P17 (PG17) pattern generator and N4952A-E17 (ED17) error detector remote heads operate from 4 to 17 Gb/s in a single band with no gaps or missing data rates. They generate and test full rate patterns directly without the need for external multiplexers and delay matching often used in other modular BERT systems.

The signal fidelity in the eye is outstanding, owing to the use of custom-designed and built output amplifiers. Output parameters of amplitude, offset, and termination voltage are user settable.

Integrated analysis software

Support for both models of the N4960A (SSB16000) is included in the N4980A multi-instrument BERT software (Signal Integrity Studio). The base software provides an intuitive user interface. It also provides single or multi-channel BER measurement capability with an unlimited number of channels.

Figure 4. N4980A multi-instrument BERT software

For more information on Agilent amplifiers, please visit **www.agilent.com/find/N4960A**

5991-0698EN

Accurate, repeatable jitter tolerance

The N4960A-CJ0 (SSB16000) contains an accurately calibrated sinusoidal jitter source capable of high deviation at low frequencies, and lower deviation at frequencies up through 200 MHz. The optional JTOL measurement package in the N4980A multi-instrument BERT software (Signal Integrity Studio) performs all the set-up and control, and with an intuitive "point and click" template editor.

Figure 5. N4960A serial BERT 17 Gb/s

Compact architecture

The N4960A-CJ0/N4960A-CJ1 serial BERT controller (SSB16000/SSB16000J) is a platform that forms the basis of the stressed serial BERT. Based on our high performance N4972A clock synthesizer 16 GHz (SCS16000), the N4960A-CJ0/N4960A-CJ1 serial BERT controller (SSB16000/SSB16000J) adds the precision timing and control required for the remote pattern generator and error detector heads.

The concept of remote heads, first introduced in the N4965A multi-channel BERT 12.5 Gb/s (PCB12500), puts the pattern generation and error detection near the device under test, eliminating long cables which degrade the signal. This is especially important at 17 Gb/s.

Programmable patterns

Figure 6. Programmable patterns window

All of the standard patterns used for InfiniBand FDR are built in. For special pattern requirements, programmable patterns up to 8 Mb in length can be easily created with powerful editing tools in the N4980A multi-instrument BERT software (Signal Integrity Studio) and uploaded into the N4960A-CJ0/N4960A-CJ1 (SSB16000/SSB16000J) serial BERT controller.

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