



Agilent

N4951B 17/32 Gb/s Pattern Generator Remote Head with E/O Driver

Preliminary Data Sheet



Features

- High voltage for driving transmit VCSELs, TOSAs directly
- Fast rise/fall time
- Integrated amplitude control
- Full data rate pattern generator
- Compatible with the N4960A Serial BERT 17/32 Gb/s

Description

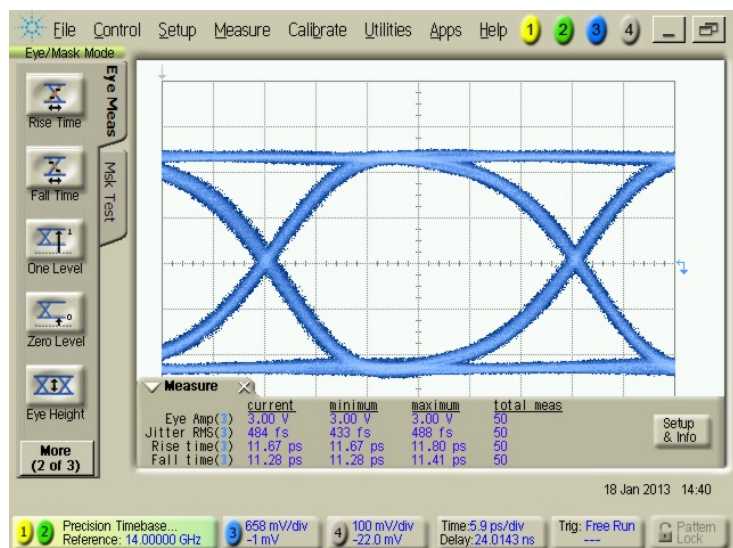
The new N4951B pattern generator adds higher output voltage capability, along with improved rise/fall time and jitter performance. The new heads are available in 17 Gb/s and 32 Gb/s versions. For optical transceiver testing, options -H17 (17 Gb/s), -H32 (32Gb/s) provide the ability to directly drive VCSELs (Vertical Cavity Surface-Emitting Laser), TOSAs (Transmitter Optical Sub-Assembly) and laser modulators without the need for external amplifiers. In addition to eliminating the need for extra signal connections and power supplies, integrating the higher voltage driver inside the pattern generator allows direct amplitude control from the same user interface with the other pattern generator controls. The new pattern generator features improved rise and fall times (12 ps typical) and lower intrinsic jitter which is often required when characterizing receivers in server, line card, backplane, communication IC applications.



N4951B-H17/-H32 Pattern Generator E/O Driver Remote Head Specifications

Configuration	Remote mountable head operates with N4960-CJ0/N4960-CJ1.
Data Rate Range	
N4951B-H32	5 to 32 Gb/s
N4951B-H17	4 to 17 Gb/s
Data Rate Resolution	2 kb/s
Pattern selection	
PRBS (hardware generated)	$2^n - 1$, n = 7, 9, 10, 11, 15, 23, 29, 31, 33, 35, 39, 41, 45, 47, 49, 51
Telecom/Datacom	K28.3, K28.5, K28.7, CJPAT, CJTPAT, CRPAT, JSPAT, JTSPAT
Clock	$\div 2$, $\div 4$, $\div 8$, ..., $\div 64$. $\div 2 = 0101$, $\div 4 = 0011$, ..., $\div 64 = 32$ 0's followed by 32 1's
User	1 bit to 8 Mb.
Pattern Invert	Available for all patterns
Error Injection	Single or uniform rate
Error Injection Rates	10^{-n} , n = 3, 4, 5, 6, 7, 8, 9
Output Configuration	Differential. May be operated single end without unused output terminated into 50 Ω . AC Coupled with internal bias tee.
Output Connectors	Type 2.4 mm female
Output Amplitude	300 mV (p-p) to 3.0 V (p-p), single ended
Offset Voltage Range	-2 V to +2 V. Offset range limited by termination voltage
Termination Voltage Range	-2 V to +2 V. Termination voltage limited by Offset Voltage
Rise Time (20% - 80%)	12 ps typical ¹
Indicators	Ch ID – connected to N4960A channel Atten – error condition occurred and logged in Error Log On – data output on

¹ At 28 Gb/s, $2^{32}-1$ PRBS pattern, 1.5 V (p-p) amplitude



Typical waveform performance at 28 Gb/s



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