envision : ensure Anritsu

Linear Equalizers

J1621A Passive Equalizer 3 dB, J1622A Passive Equalizer 6 dB For 25 to 28 Gbit/s High-Speed Serial Transmissions

MP1800A Series Signal Quality Analyzer

The rapid growth of cloud computing services has seen explosive increases in data center traffic, resulting in the introduction of new high-speed communications standards, such as 100GBASE-SR4, 100GBASE-KR4, etc., to increase internal processing and interconnect speeds of networking equipment. However, increasing network equipment speeds generally comes at a price of increased power consumption. Data center managers and network equipment manufacturers are challenged with how to increase speeds while keeping power consumption to a minimum. This challenge is driving the trend towards the adoption of lower PHY I/O voltages and multi-level modulation schemes with smaller voltage differences between logic levels.

When using printed-circuits boards, copper cable and Active Optical Cables (AOC) as transmission media, there is a growing need for measurement instrumentation with greater sensitivity to help resolve and troubleshoot these low level, high speed signals. This is especially important at the far end of the transmission path where transmission media losses and distortion result in smaller eye openings.

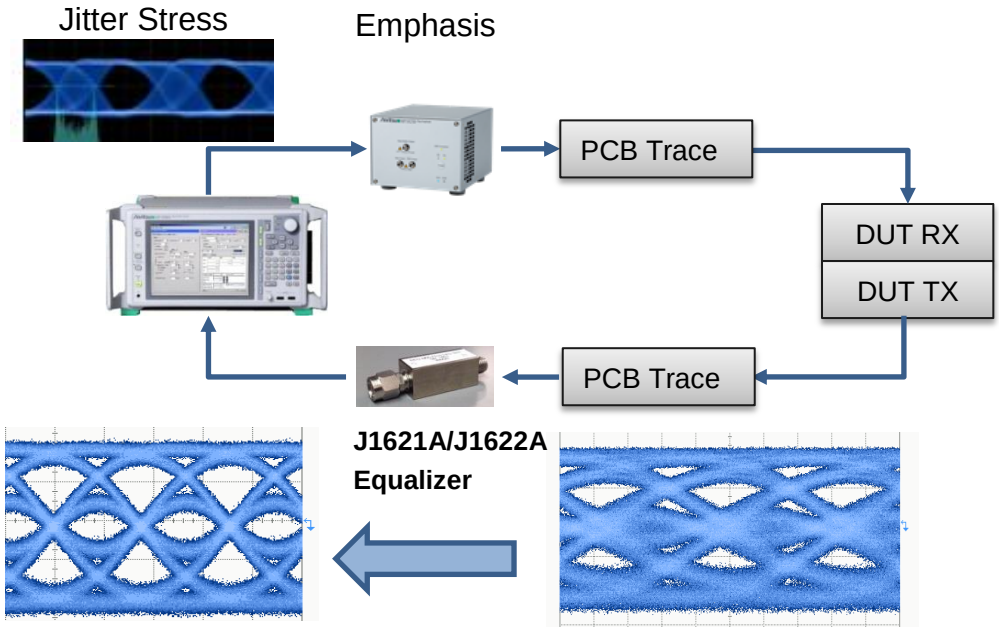
The J1621A and J1622A are Passive Linear Equalizers used to help remedy the impact of high frequency transmission line distortion. They can be connected to the Error Detector in order to compensate PCB trace loss and improve EYE opening. In combination with the MP1800 bit error rate tester (BERT) MU183040B/MU183041B high sensitivity error detectors, these equalizers enable BER and jitter tolerance testing of PHY devices with low EYE openings.

Target Applications

- ✓ SERDES, CDR: CEI-25G, CEI-28G
- ✓ High-Speed Backplanes and Cables: 100GbE (100GBASE-KR4, CR4)
- ✓ AOC (Active Optical Cables): InfiniBand™ EDR (26G)
- ✓ Optical Transceiver Module: CFP/CFP2/CFP4, QSFP/QSFP28 for 32G Fibre Channel, 100GbE (100GBASE-SR4, LR4, ER4), OTU4 (28G x 4)

Features

- ✓ Compensate for PCB trace losses and improve EYE Opening
- ✓ Direct connection to BERT
- ✓ 3 dB and 6 dB equalization

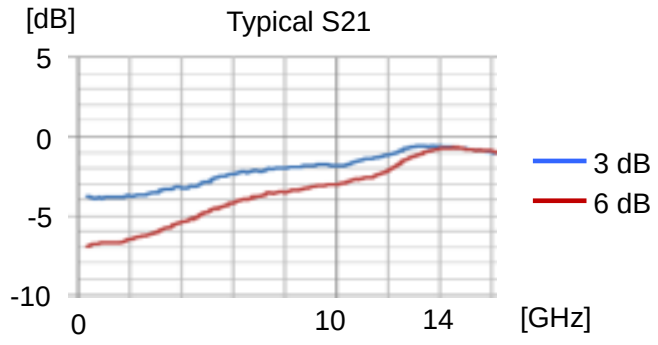


■ Specifications (Preliminary)

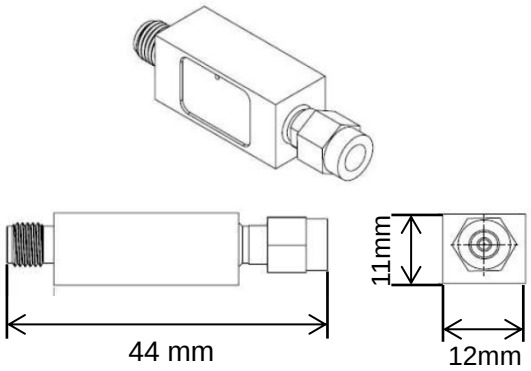
J1621A Passive Equalizer 3 dB, J1622A Passive Equalizer 6 dB

Item	Specifications	Notes
Frequency Range	DC to 14.0 GHz	Up to 25 to 28 Gbit/s
Slope	3.0 ±0.5 dB (J1621A) 6.0 ±0.5 dB (J1622A)	Target attenuation factor
Insertion Loss	1.2 dB max. (J1621A) 1.4 dB max. (J1622A)	At 14 GHz
Return Loss	12 dB min.	
Connector	SMA	
Impedance	50 ohms	
Dimensions	44(W) x 12(H) x 11(D) mm	

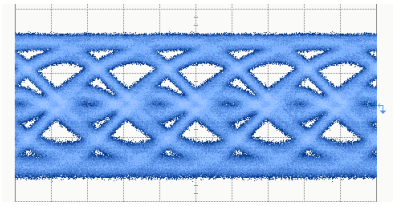
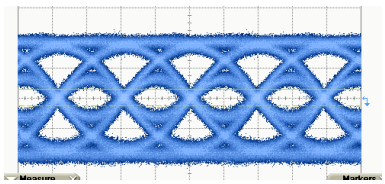
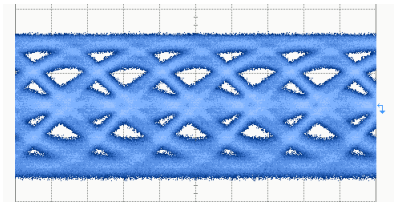
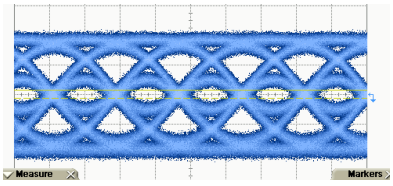
■ Typical S21 Characteristics



■External View



■ Typical Waveforms

Bit Rate	Before Equalization	After Equalization
25.78 Gbit/s		
28.1 Gbit/s		

■ Ordering Information

Model Number	Name
J1621A	Passive Equalizer 3 dB
J1622A	Passive Equalizer 6 dB

ANRITSU CORPORATION
http://www.anritsu.com
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555

No. MP1800A_28GEQ-Leaflet-E-L-1-(1.00) 2014-10 MG