

# Linear Equalizer

Passive Equalizer 6 dB (V connector) J1646A  
 For 56 Gbit/s High Speed Serial Transmission  
 Signal Quality Analyzer MP1800A Series



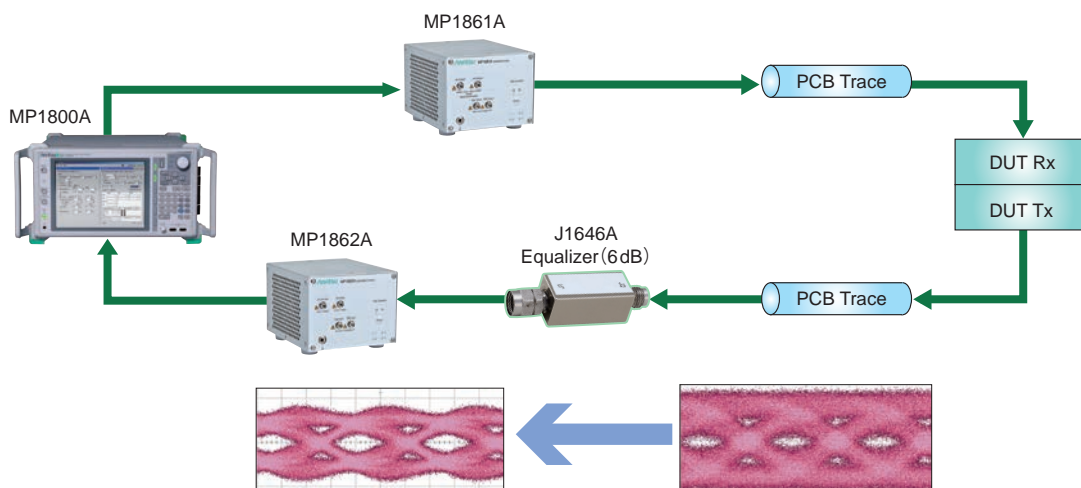
Traffic at data centers is increasing explosively due to the spread of cloud computing services. Consequently, both increasing the processing speeds of servers and network equipment and adoption of new high-speed-interface standards, such as OIF CEI-56G and 400 GbE CDAUI, to increase communications speeds between equipment are being investigated. The key issue is how to increase speeds while cutting power consumption, so data centers are tending to reduce the I/O voltages of PHY devices, which requires high-sensitivity measuring instruments capable of accurate measurements. Additionally, there are problems with closed Eye Openings caused by losses in the transmission media, such as traces on printed circuit boards, coaxial cables, and active optical cables (AOC) using Silicon Photonics technology. The Passive Equalizer 6 dB (V connector) J1646 is a passive linear equalizer; inserting it upstream of the 56G/64G bit/s DEMUX MP1862A compensates for transmission path losses to recover the Eye Opening and support Stressed Jitter Tolerance tests of PHY devices with a closed Eye Opening.

**Target Applications**

- SERDES, CDR Chips: CEI-56G
- High-Speed Backplanes and Cables: 400 GbE (CDAUI)
- AOC (Active Optical Cables): InfiniBand™ HDR (50G)
- Optical Transceiver Modules: CDFP Module (400 GbE)

**Features**

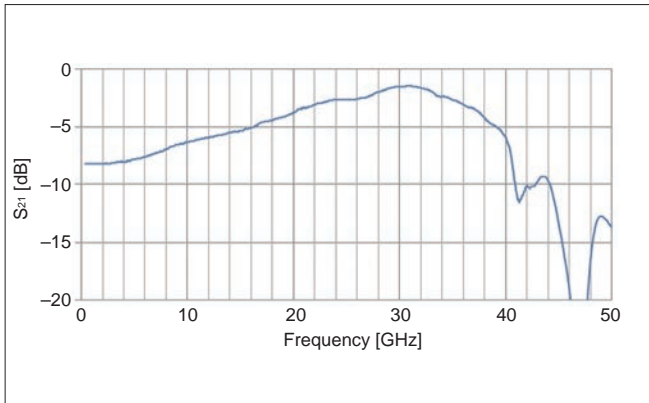
- Corrects closed Eye Opening caused by transmission path losses
- Compact and lightweight for direct connection to MP1862A
- Supports 56-Gbit/s band (6-dB correction at 28 GHz peak frequency)



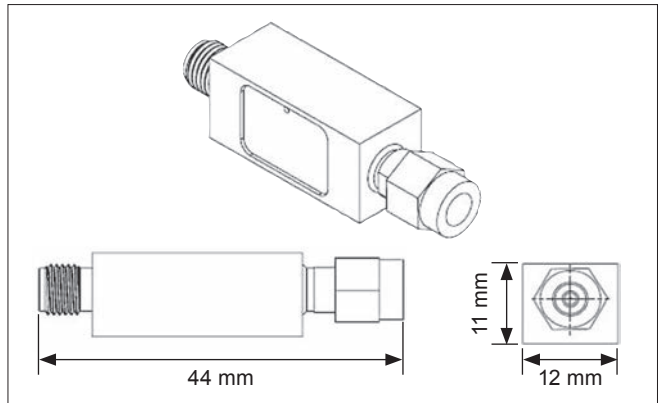
## ■ Typical Specifications

Frequency Range	DC to 28.0 GHz (39.8 Gbit/s to 57.8 Gbit/s)
Slope	6.0 ±1.0 dB (target attenuation factor)
Insertion Loss	2.8 dB (max. at 28 GHz)
Return Loss	11 dB (min.)
Connector	V connector
Impedance	50Ω
Dimensions	44 (W) × 12 (H) × 11 (D) mm

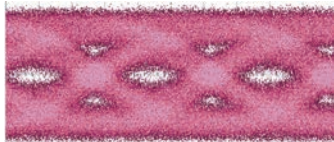
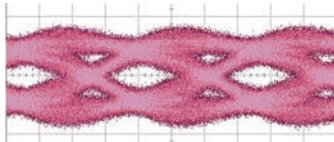
## ■ Typical S<sub>21</sub> Characteristics



## ■ External Appearance



## ■ Typical Waveform Characteristics

Bit Rate	Waveform Before Equalizer	Waveform After Equalizer (6 dB)
56.2 Gbit/s	 * 70mV/div	 * 50mV/div

## ■ Ordering Information

Model	Name
J1646A	Passive Equalizer 6 dB (V connector)