



T-BERD[®]/MTS-6000A and -8000 Platforms

8100-Series CWDM OTDR EVO Modules

The Viavi Solutions CWDM module, part of the 8100-Series OTDR EVO family can connect anywhere on the fiber to characterize CWDM networks for commissioning, network upgrades, and troubleshooting with the insurance of workflow optimization and accurate fiber-link fingerprinting.

The optical performance of the CWDM module, combined with the T-BERD/MTS platform's suite of testing features, ensures that testing jobs are performed right the first time to successfully deploy and maintain metro- and mobile-backhaul networks.

Testing features include:

- Automatic multitest configuration
- Summary results table with pass/fail analysis
- Linear trace interpretation with SLM (optional)
- Fast-Report — onboard report generation

Platform Compatibility

T-BERD/MTS-6000A



Compact multilayer platform for network installation and maintenance

T-BERD/MTS-8000 (V2)



Scalable platform for multiple-layer and multiple-protocol testing

Key Benefits

- Characterize fiber links with exact CWDM wavelengths per ITU-T G.694.2
- Test through CWDM multiplexers, optical add/drop multiplexers (OADM), and demultiplexers with central wavelength control
- Troubleshoot live networks with in-service testing feature
- Verify end-to-end continuity using the continuous wave source
- Eliminate OTDR interpretation errors with Smart Link Mapper (SLM) without compromising on test time

Key Features

- Optimized dynamic range to test through mux, OADM, and demux
- Headend/central-office testing with sequenced short acquisition
- Integrated continuous-wave light source with modulation capability
- Instantaneous traffic detection
- Central wavelength control for accurate mux/demux loss measurement

Applications

- Test any CWDM network configuration
- Qualify fiber links during CWDM installation
- Wavelength provisioning—test new wavelength routes without disrupting traffic on active channels
- In-service troubleshooting—pinpoint the nature of a fault and its exact location

Specifications (Typical at 25°C)

| General | |
|-----------------------------|--|
| Weight | approx. 500 g (1.1 lb) |
| Dimensions (W x H x D) | 213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in) |
| Laser safety class (21 CFR) | Class 1 |
| Distance units | Kilometer, meter, feet, and miles |
| Group index range | 1.30000 to 1.70000 in 0.00001 steps |
| Number of data points | Up to 256,000 data points |
| Storage | Bellcore/Telcordia compatible Version 1.1 and Version 2.0 |
| Distance Measurements | |
| Mode | Automatic or dual cursor |
| Display range | From 0.5 to 320 km |
| Display resolution | 1 cm |
| Cursor resolution | From 1 cm |
| Sampling resolution | From 4 cm |
| Accuracy | $\pm 0.75 \text{ m} \pm \text{sampling resolution} \pm 110^{-5} * \text{x distance}$ (excluding group index uncertainties) |

| Attenuation Measurements | |
|------------------------------|--|
| Mode | Automatic, manual, 2-point, 5-point, and LSA |
| Display range | 1.25 to 55 dB |
| Display resolution | 0.001 dB |
| Cursor resolution | From 0.001 dB |
| Linearity | $\pm 0.03 \text{ dB/dB}$ |
| Threshold | 0.01 to 5.99 dB in 0.01 dB steps |
| Reflectance/ORL Measurements | |
| Mode | Automatic or manual |
| Reflectance accuracy | $\pm 2 \text{ dB}$ |
| Display resolution | 0.01 dB |
| Threshold | -11 to -99 dB in 1 dB steps |

| OTDR Modules | 8100 CWDM1E | 8100 CWDM2E | 8100 CWDM3E | 8100 CWDM4E | 8100 CWDM5E |
|---|--|--|------------------------------|--|--|
| Wavelength ¹ | 1551/1571/1591/1611 $\pm 3 \text{ nm}$ | 1471/1491/1511/1531 $\pm 3 \text{ nm}$ | 1431/1451 $\pm 3 \text{ nm}$ | 1351/1371/1391/1411 $\pm 3 \text{ nm}$ | 1271/1291/1311/1331 $\pm 3 \text{ nm}$ |
| Dynamic range ² | 42 dB | 42 dB | 42 dB | 42 dB | 42 dB |
| Pulse width | 3 ns to 20 μs | 3 ns to 20 μs | 3 ns to 20 μs | 3 ns to 20 μs | 3 ns to 20 μs |
| Event dead zone ³ | 0.8 m | 0.8 m | 0.8 m | 0.8 m | 0.8 m |
| Attenuation dead zone ⁴ | 4.5 m | 4.5 m | 4.5 m | 4.5 m | 4.5 m |
| Continuous wave light source Wavelengths Output power Stability Operating modes ⁵ | All listed above 0 dBm < $\pm 0.1 \text{ dB}$ at 25°C, over 1 hour CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz | | | | |
| Automatic traffic detection | Yes | | | | |

*Time-based controller/clock accuracy

1. Measured at 10 μs
2. The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level after 3 minutes averaging using the largest pulse width
3. Measured at $\pm 1.5 \text{ dB}$ down from the peak of an unsaturated reflective event using the shortest pulse width
4. Measured at $\pm 0.5 \text{ dB}$ from the linear regression using a FC/PC reflectance and using the shortest pulse width
5. Subtract 3 dB when used in modulation mode (270/330/1k/2k Hz)

Ordering Information

| Description | Part Number |
|--|-----------------|
| 8100-Series CWDM OTDR EVO Modules | |
| CWDM OTDR 1551/1571/1591/1611 nm | E8140OTDRCWDM1E |
| CWDM OTDR 1471/1491/1511/1531 nm | E8140OTDRCWDM2E |
| CWDM OTDR 1431/1451 nm | E8120CWDMOTDR3E |
| CWDM OTDR 1351/1371/1391/1411 nm | E8140CWDMOTDR4E |
| CWDM OTDR 1271/1281/1311/1331 nm | E8140CWDMOTDR5E |

| Description | Part Number |
|---|--|
| Interchangeable Optical Connectors | |
| Straight connectors | EUNIPCF, EUNIPCSC, EUNIPCST, EUNIPCDIN, EUNIPCLC |
| 8° angled connectors | EUNIAPCF, EUNIAPCSC, EUNIAPCDIN, ENIAPCLC |

For more information about the T-BERD/MTS-6000A and -8000 test platforms, refer to their respective data sheets.



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