# T-BERD®/MTS-6000, -6000A, and -8000 Platforms

## CWDM OTDR Modules




**Key Features**

- **First CWDM-OTDR solution on the market**
- **Flexible solution: the number of wavelengths evolve with your system**
- **Test through CWDM and demultiplexer**
- **High resolution and dynamic range enable optimized trace for any test scenario**

### Applications

- Test short- and medium-haul CWDM network applications
- Perform fiber qualification during installation
- Perform wavelength provisioning
- Perform in-service troubleshooting

The coarse wavelength division multiplexer (CWDM) solution complements the existing range of optical time domain reflectometer (OTDR) modules within the T-BERD/MTS family and further enables users to rapidly, reliably, and cost-effectively deploy network services with one convenient package.

The CWDM OTDR solution was developed to help cable operators, dark fiber providers, and telecommunications service providers characterize, maintain, and troubleshoot CWDM fiber networks more comprehensively than ever before.



T-BERD/MTS-8000



T-BERD/MTS-6000

# A suite of high performance test modules

The JDSU series of four-wavelength CWDM OTDR modules is compatible with the T-BERD/MTS-6000 and T-BERD/MTS-8000 platforms. This range of modules offers high flexibility that enables the test equipment to evolve with CWDM networks—technicians can begin with a single four-wavelength module and add another wavelength set as the CWDM system expands, as shown in Figure 1.

The high performance of the modules, with the right compromise between resolution and dynamic range, enables the technician to test the CWDM network from any available access point.

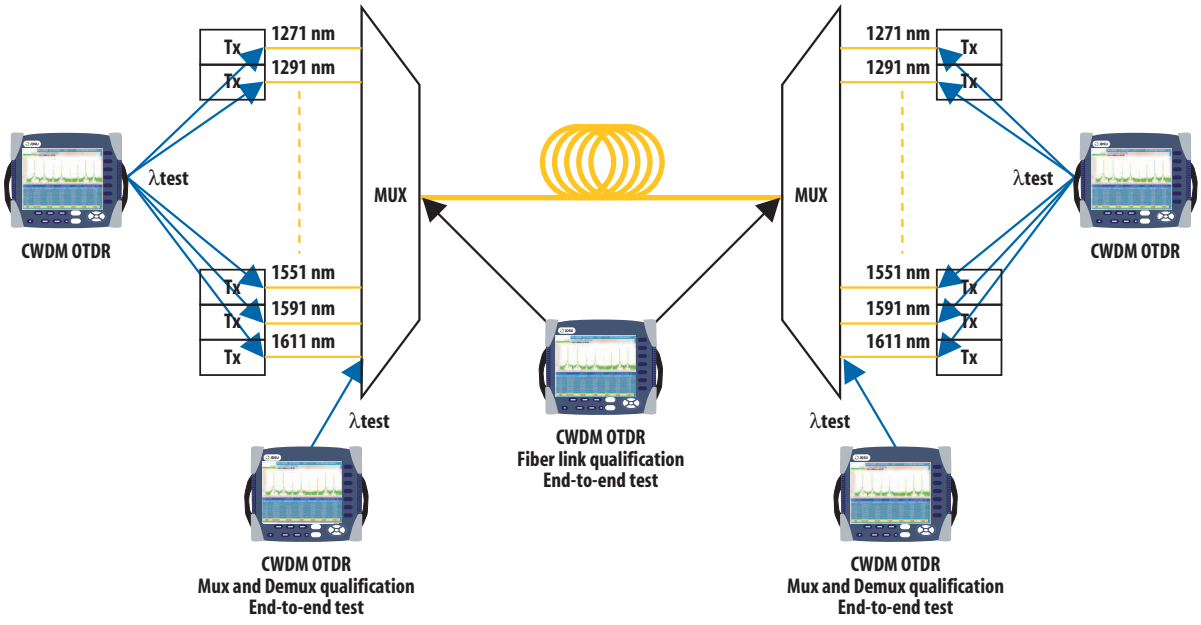



Figure 1 Evolution of a CWDM network

– Test through multiplexer and demultiplexer
– Patchcord and jumper analysis thanks to its high resolution with short dead zones
– Dedicated dynamic range for Metro applications enabling optimized trace for any test scenario
  - End-to-end test through multiplexer and demultiplexer
  - Characterization of the fiber plant

## Wavelength provisioning

With the JDSU CWDM OTDR, users can test new wavelength routes not yet in use without disrupting communications traffic on active wavelengths, as Figure 2 shows. This in-service capability increases technician productivity and helps reduce installation costs.

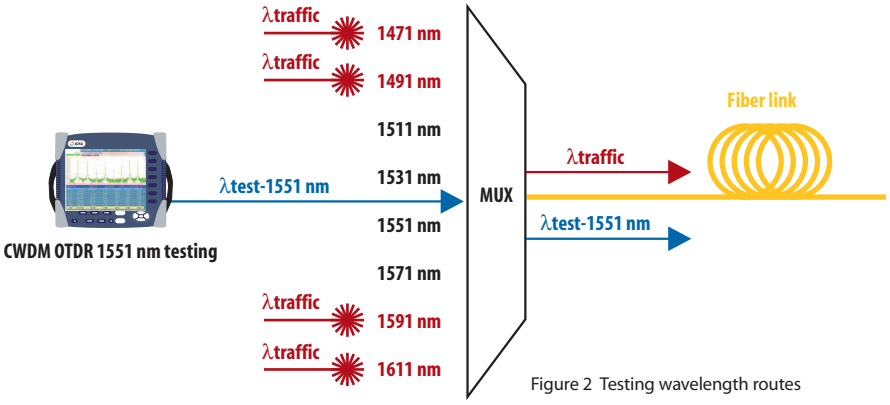



Figure 2 Testing wavelength routes

– Exact CWDM wavelength selection
– In-service testing

## CWDM channel troubleshooting

Regardless of the wavelength, as soon as a transmission failure occurs, the CWDM OTDR allows the technician to immediately connect to the network and test the complete fiber route in order to pinpoint the nature of the fault and its exact location, as Figure 3 shows.

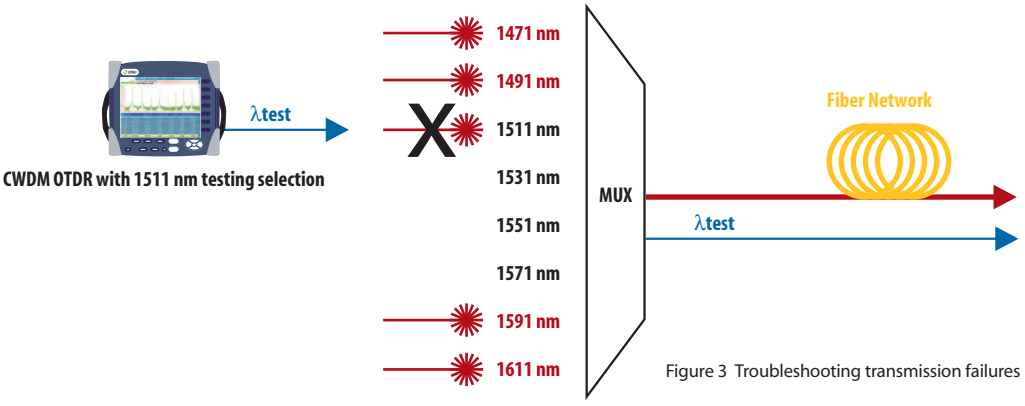



Figure 3 Troubleshooting transmission failures

– Easy wavelength selection
– In-service testing
– Fast acquisition time with fault locator function
– Precise fault pinpointing
– Immediate traffic detection function in case of incorrect port connection

## Typical specifications at 25°C

### Optical interfaces

| | |
|---|---|
| Applicable fiber | SMF 9/125 µm |
| Interchangeable optical connectors | FC, SC, DIN |

### Physical

| | |
|---|---|
| Weight | 600 g (1.1 lbs) |
| Size | 213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in) |

### OTDR Optical performance

| | |
|---|---|
| Central wavelength(1) | 1271/1291/1311/1331/1471/1491/1511/1531/1551/1571/1591/1611 nm ±4 nm |
| Laser safety class (21 CFR) | Class 1M |
| Pulsewidth | 3 ns to 20 µs |
| RMS dynamic range(2) | 42 dB(3) |
| Event dead zone(4) | 0.8 m |
| Attenuation dead zone(5) | 6 m |

(1) Laser at 25°C and measured at 10 µs. Other wavelengths are available.
(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.
(3) Except at 1591 nm: 41.5 dB; and 1611 nm: 41 dB
(4) Measured at ±1.5 dB down from the peak of an unsaturated reflective event.
(5) Measured at ±0.5 dB from the linear regression using a FC/PC type reflectance.

## Technical characteristics

| | |
|---|---|
| Distance units | Kilometers, feet, and miles |
| Group index range | 1.30000 to 1.70000 in 0.00001 steps |
| Number of data points | Up to 128,000 data points |
| Distance measurement | Automatic or dual cursor |
| Display range | 2.6 m to 200 km |
| Cursor resolution | 1 cm |
| Sampling resolution | 4 cm |
| Accuracy | ±1 m ±sampling resolution ±1.10$^{-5}$ x distance (Excluding group index uncertainties) |

### Attenuation measurement

***Automatic, manual, 2-point, 5-point, and LSA***

| | |
|---|---|
| Display range | 1.25 to 55 dB |
| Display resolution | 0.001 dB |
| Cursor resolution | 0.001 dB |
| Linearity | ±0.03 dB/dB |
| Threshold | 0.01 to 5.99 dB in 0.01 dB steps |

### Reflectance/ORL measurements

| | |
|---|---|
| Reflectance accuracy | ±2 dB |
| Display resolution | 0.01 dB |
| Threshold | -11 to -99 dB in 1 dB steps |

### Storage

Bellcore/Telcordia compatible Version1.1 and Version 2.0

## Ordering information

### OTDR Modules

| | |
|---|---|
| CWDM OTDR 1551/1571/1591/1611 nm | E81400TDRCWDM1 |
| CWDM OTDR 1471/1491/1511/1531 nm | E81400TDRCWDM2 |
| CWDM OTDR 1271/1291/1311/1331 nm | E81400TDRCWDM5 |

***Universal optical connectors***

| | |
|---|---|
| Straight connectors | EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN, EUNIPCLC |
| 8° angled connectors | EUNIAPCFC, EUNIAPCSC, EUNIAPCST, EUNIAPCDIN, EUNIAPCLC |

For more information on the T-BERD/MTS-6000, -6000A, and -8000 test platforms, test modules, adapters, cables, and fiber optic couplers, refer to the separate data sheets and brochures.

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