MTS-8000 Tester

Optical Time Domain Reflectometer

Key Features

- **Field installable single slot plug-in module for the MTS-8000**
- **Impressive speed and high performance testing (up to 128,000 acquisition points with 0.1 s real time sweep)**
- **Shortest event dead zone of 1 m, highest dynamic range of 44 dB at 1550 nm**
- **Automatic and advanced functions for maximum user flexibility**
- **Complete fiber characterization solution combining chromatic dispersion, polarization mode dispersion, and spectral attenuation testing capability in the MTS-8000 test platform**
- **Powerful report generation facilities using FiberTrace and FiberCable PC software**

The optical time domain reflectometer (OTDR) is at the core of fiber optic characterization. Allowing measurement of fiber link attenuation, attenuation coefficient, reflection, splice/connector loss, and point of error, all as part of the fiber distance function

OTDR advanced optical modules for fiber characterization

The JDSU OTDR module range is the industry's fastest, offering the highest performance solution of any OTDR field instrument on the market.

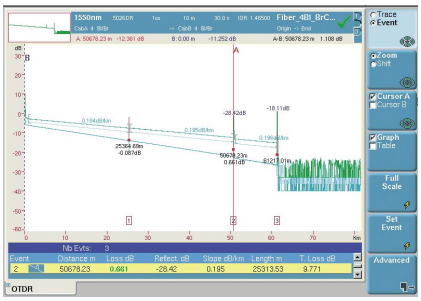
The module's automation and rapid testing features offer impressive time savings for companies involved in commissioning and locating faults in optical fiber networks.

A wide range of field-interchangeable OTDR modules, including medium haul (DR), long haul (HD), and very long haul (VHD) testing capabilities, at any wavelength between 1310/1480/1550/1625 nm.

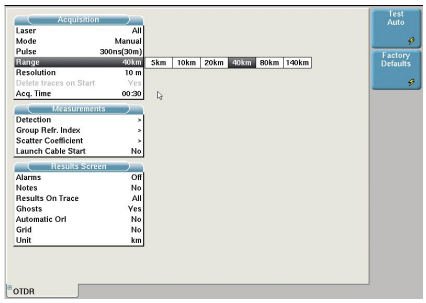
To enhance the modularity among the platforms, all MTS-5000 modules can be inserted into the MTS-8000 test platform.

With the MTS-8000's scalable design, companies can match their testing solutions of their unique network environments by purchasing only the features needed. This platform maximizes scalability, manageability, price/performance, and flexibility. As optical network technology changes, companies can easily upgrade the MTS-8000. This eliminates the need to purchase a new test set when testing more than one technology, and it reduces training time and costs. The combination of the OTDR module with the MTS-8000 test platform offers a lightweight, handheld, and rugged field instrument suitable for any OTDR measurement requirements.

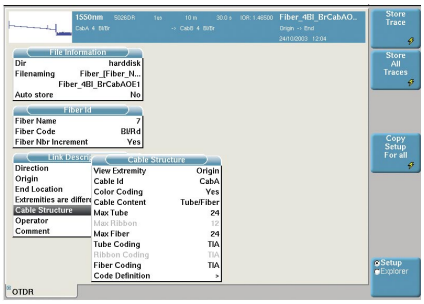
The powerful communication capability of the MTS-8000 test platform offers users the ability to remotely control the unit, send data directly to the office, or access the data via internet.



3 wavelength OTDR trace display



OTDR test setup



Advanced cable information for metro networks

Rugged field solution

Housed in the field dedicated MTS-8000 test platform, OTDR measurements can be performed in OSP, CO, and harsh environmental conditions. A portable, battery-powered instrument, shock-proof and drop tested for complete reliability in the field.

Connection checks with VFL and fiber microscope options

Serving as a complementary tool for physical layer testing during installation and maintenance, the VFL and video inspection scope checks the quality of the front connector and visually locates faults on the fiber jumpers.

Built-in talk set allowing communication along the fiber with data transfer capability

The MTS-8000 test platform offers a built-in talk set option allowing to communicate between both ends of the fiber while the tests are running. In addition to this function users can send orders or transfer results to the product at the other end for immediate comparison or remote control. Providing a permanent and cost effective solution to communicate where mobiles or telephone lines are not available. The data transfer function allows immediate far end results, performing bi-directional OTDR analysis saving a huge amount of transport time.

Enhanced testing time

Full dynamic range reached in less than 30 seconds measurement time, allows greater productivity in the field and faster return on investment with the reduction of measurement costs.

Easy to use solution from single to multiple measurement tests

An intuitive user interface, including predefined functions, for direct and easy access to the OTDR setup and results reading. One button testing means that technicians need no special training to carry out OTDR tests, suitable for novice and expert technicians. This allows the improvement of field productivity with error risk reduction due to repetitive tasks.

Detailed and dedicated cable manager from basic to complex link configurations

According to the link configuration and the cable structure, the user defines and stores information allowing archiving at both ends of the cable with all details including identification, color coding, and fiber numbers. Given the complexity of metro and access networks resulting from rerouting, cable structure can be different at each end, increasing difficulty in documenting both end measurements. With the extended cable management capability, the user saves both end information with each measurement, offering detailed and exact cable documentation. Making easy to manage the data in order to generate cable reports.

OTDR Bellcore/Telcordia trace format

Complies with GR-196-CORE issue 2 OTDR data standard revision 1.0/1.1/2.0. Also fully compatible with a universal format to exchange files and to export to other tools.

Powerful Pass/Fail link manager

Ability to summarize OTDR results for a complete cable commissioning with pass/fail alarm. Saves time with a quick and intuitive overview of the complete set of results with fiber link and fiber cable management, and provides direct cable report generation.

FiberCable software solution

A PC-based software range, within a true Windows™ environment, offers complete and detailed generation of professional acceptance reports with bi-directional OTDR results.

Specifications

MTS-8000 BASE (typical at 25°C)

Display

	TFT color, 10'4 inches, LCD 800 × 600
	TFT color, 10'4 inches, LCD 800 × 600, High visibility
	Touchscreen TFT color, 10'4 inches, LCD 800 × 600, High visibility

Storage

Internal memory	16 MB
Hard disk (optional)	min 20 GB
Floppy disk drive (optional)	3.5 inches, MSDOS compatible
CD read/write (optional)	

Input/output interfaces

RS232C, 2 × USB, VGA RJ11 modem (optional), R45 Ethernet,

Power supply, battery

Battery type	standard removable Li-Ion batteries
Operation time	up to 16 OTDR hours with two batteries and standard display, Telcordia GR-196-CORE
Internal charger	yes
Charging time	<3 hours per battery
Trickle charge	yes
DC input	19 to 25 V
Power supply, AC/DC adapter	Input 100 to 240 V, 50 to 60 Hz, 1.8 A, output 19 V DC/3.1 A

Size (w × h × d)

Mainframe only (with back plate)	320 × 265 × 55 mm/ 11.6 × 10.4 × 2.1 inches
Mainframe + 1 plug-in module + Battery pack	260 × 320 × 116 mm/ 10.24 × 12.6 × 4.5 inches

Weight

Mainframe only (with back plate)	2.9 kg/6.39 lbs
Mainframe + 1 plug-in module + Battery pack (with one battery)	5.4 kg/11.9 lbs

Optical interfaces (optional)

Power meter

Power level	+10 to –55 dBm,
Calibrated wavelengths	850, 1310, 1550 nm
Connector type	universal push/pull

Talk set

Wavelength	1550 nm ± 20 nm
Dynamic range	>45 dB
Function	With data/file transfer,
Laser safety	Class 1 laser,
Connector type	Field interchangeable

VFL

Wavelength	635 nm ± 15 nm
Output power level	<1 mW
Laser safety	Class 2 laser,
Connector type	Universal push/pull

CW light source

Wavelengths (selection)	1310/1550/1625 nm
Output power level	-3.5 dBm
Spectral width	<5 nm
Stability in 15 min	± 0.02 dB
Stability in 8 hours	± 0.2 dB
Laser Safety	Class 1 laser
Connector type	Field interchangeable

Video inspection scope

Magnify	250× or 400×, through USB port

Environmental specifications

Temperature range

Operating on mains (no options)	–20 °C to +50 °C (–4 °F to 122 °F)
Operating, all options	0 °C to +4 °C (32 °F to 104 °F)
Storage	–20 °C to +60 °C (–4 °F to 140 °F)
Humidity	95% without condensing
EMI/ESD	CE compliant

OTDR plug-in

(Typical at 25 °C)

OTDR characteristics

Distance units	kilometers, feet and miles
Group index range	1.30000 to 1.70000 nm in 0.00001 steps
Number of data points	Up to 128 000
Distance measurements	Automatic or dual cursor
Display span	From 2.6 m up to maximum range (380 km for HD and VHD modules)
Display resolution	1 cm
Cursor resolution	From 1 cm
Sampling resolution	From 4 cm
Accuracy	± 1 m ± sampling resolution ± 1.10^{-5} × distance (excluding group index uncertainties)
Attenuation measurement	Automatic, manual, 2-point, 5-point and LSA
Display span	From 1.25 dB to 55 dB
Display resolution	0.001 dB
Cursor resolution	From 0.001 dB
Accuracy	± 0.05 dB ± 0.05 dB/dB
Threshold	0.01 to 5.99 dB in 0.01 dB step
Reflectance/ORL measurements	Automatic or manual
Display resolution	0.01 dB
Threshold	-11 to -99 dB in 1 dB step
Storage	Bellcore/Telcordia compatible Version 1.1 and Version 2.0

OTDR plug-in technical specifications (typical at 25 °C)

Fully compatible with the MTS-5000 and MTS-8000 OTDR plug-ins

	High performance multimode MM 850/1300 nm ± 20 nm	Short range singlemode SR 1310/1550 nm ± 20 nm	Medium range singlemode DR 1310/1550 nm ± 20 nm	Long range singlemode HD 1310/1550/1625 nm ± 20 nm ± 10 nm for 1625 nm	Very long range singlemode VHD 1310/1550/1625 nm ± 20 nm ± 10 nm for 1625 nm
Central wavelength[1]					
Laser safety class (21 CFR)	Class 1	Class 1	Class 1	Class 1	Class 1
Pulse width	3 ns to 200 ns	10 ns to 10 µs	5 ns to 10 µs	10 ns to 20 µs	10 ns to 20 µs
Distance range	Up to 80 km	Up to 260 km	Up to 260 km	Up to 380 km	Up to 380 km
RMS dynamic range[2]	25 dB/23 dB	35 dB/33 dB	37 dB/35 dB	42 dB/40 dB/40 dB	44 dB/44 dB/44 dB
Event dead zone[3]	1.5 m	3 m	1 m	3 m	3 m
Attenuation dead zone[4]	5 m	15 m	8 m	15 m	20 m

(1) Central wavelength: Laser at 25 °C and measured at 10 µs for singlemode and 50 ns for multimode.

(2) RMS dynamic range: 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) Event dead zone: Measured at ± 1.5 dB down form the peak of an unsaturated reflective event.

(4) Attenuation dead zone: Measured at ± 0.5 dB from the linear regression using a FC/PC type reflectance.

Ordering information

Base instrument options

EM8000bt	MTS-8000 platform with battery pack
E8100	2-slot receptacle
E80HVCol	High visibility TFT color display
E80HVTCol	High visibility touchscreen TFT color display
E80Hdisk	Hard disk drive
E80FD	Extractable floppy disk drive
E80CDRW	Extractable R/W CD-ROM drive
E80MDM	Built-in PSTN modem
E80VFL	VFL with UPP connector
E80TS	Optical talk set
E80PM	Optical power meter with UPP connector (2.5 mm provided as standard)
E8036LTSTS	Optical loss test set with talk set 1310/1550/1625 nm

Main accessories

E80keyB	External keyboard
E80LiIon	Additional Li-Lon rechargeable battery
E80Scase1	Wrap around soft carrying case for MTS-8000 and 2 plug-ins receptacle configuration
E80Scase2	Soft carrying case for long configuration
E80Scase3	Soft carrying case for MTS-8000 and 2-slot receptacle, or transport or OSA-160/200 module
E80Hcase	Hard transit case for long configuration
C80Hcase5	Hard carrying case for MTS-8000 and 2-slot receptacle, or transport or OSA-160/200 module

Application software

EOFS100	Optical FiberTrace software (for post-analysis)
EOFS200	Optical FiberCable software (for cable acceptance report generation)

Universal optical connectors

EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN, EUNIPCLC,
EUNIAPCFC,
EUNIAPCSC, EUNIAPCST, EUNIAPCDIN, EUNIAPCLC

For more information on test adapters, cables and fiber optic couplers, see the separate datasheet "JDSU fiber optic test adapters and cables"

OTDR Module – singlemode

E8126SR	Short range 1310/1550 nm
E8126DR	Medium range/high resolution 1310/1550 nm
E8126HD	Long range 1310/1550 nm
E8127HD	Long range 1625 nm
E8136HD	Long range 1310/1550/1625 nm
E8126VHD	Very long range 1310/15550 nm
E8127VHD	Very long range 1625 nm
E8129VHD	Very long range 1550/16265 nm

OTDR Module – multimode

E8123MM	High resolution 850/1300 nm

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