

## MTS-5100 Optical Time Domain Reflectometer (OTDR) for installation and maintenance of fiber networks



### Key Features

- Wide range of OTDR and OLTS modules covering every application with two fast field interchangeable slots for modules
- The ONLY platform highly visible in bright sunlight, this NEW high visibility screen option means the MTS-5100 can be used in any lighting condition
- From LAN (1.5 m event dead zone) to very long haul applications (44 dB dynamic range)
- High performance testing (up to 128,000 acquisition points with 0.1 s real-time sweep)
- Maximum portability (3.5 kg) and up to 16 hours battery operation (Telcordia GR196)
- A complete range of PC software to enhance your OTDR reporting capabilities reducing cable acceptance reporting by up to 70%

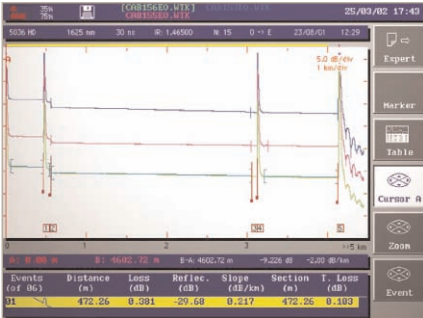
### Advanced modular tester for high precision FTTx testing

The unique JDSU MTS-5100 is a fiber tester with a range of plug-in modules providing a comprehensive, integrated solution for OTDR and power meters with talk set option testing in one field-rugged instrument. Powerful, easy to use and highly cost-effective, MTS-5100 is designed to push the boundaries of field test productivity for network installers, operators and maintenance teams.

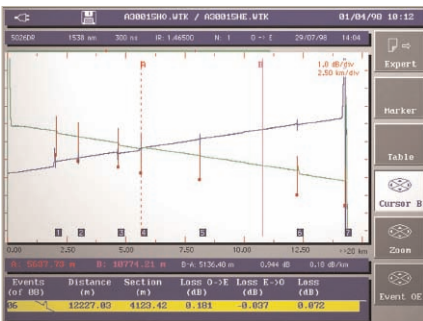
A wide range of field-interchangeable modules are available for the MTS-5100 platform, including OTDRs for multimode (MM), very short haul/FTTx (VSR), short range (SR), medium haul (DR), long haul (HD), very long haul (VHD), and 1625 nm, visual fault locator, and a range of light sources and power meters with talk set option.

JDSU's optical time domain reflectometer (OTDR) and loss test (LTS) plug-in modules are compact, yet powerful additions to the MTS-5100 family of testers.

The MTS-5100 offers the industry's fastest, highest performance solutions of any OTDR field instrument on the market. Both the OTDR and LTS modules deliver high accuracy, cost effective, reliable testing for the installation and maintenance of FTTx networks.



Multiple wavelength display with a single press of a button



Bidirectional trace and table

## The MTS-5100 OTDR is the fastest, most reliable and accurate OTDR on the market.

Together, the module's automation and rapid testing features offer impressive time savings for companies involved in commissioning and locating faults in FTTx networks.

### Maximizing field productivity

The most important prerequisites for testing in the field are ease-of-use and speed of acquisition. The OTDR module ensures maximum test productivity by providing one-button, automated operation for all of its critical test routines and a very high data acquisition speed of 40 dB in seconds.

### Delivering the industry's highest performance OTDR

The MTS-5100 OTDR module is the fastest and most accurate OTDR to-date. It offers a dynamic range of up to 44 dB at 1550 nm and boasts a 0.1 second sweep time. As part of the MTS-5100, the OTDR module has a test capability of more than 200 km and can measure up to 128,000 separate data points with 4 cm sampling resolution. The product's short deadzone enables the user to differentiate events down to 1 meter.

### Optimized functions for in-depth analysis/operation

The OTDR's bidirectional analysis capability enables true splice loss measurement with both end traces. Its multiple trace management feature greatly assists the process of proactively managing fiber problems and helps compare different current and stored measurements for in-depth analysis. A powerful macro function enables users to perform a series of tests without ongoing user intervention.

### Suitable for every skill level

Whatever the user's skill level, the OTDR module and MTS-5100 instrument combination can rise to the challenge. Direct access keys ensure that users can access all the instrument's sophisticated features via a highly intuitive interface and by a comprehensive set up and results screen. The OTDR module delivers complete trace analysis, with a direct link between trace and table.

### Enhanced reporting power

Powerful instruments require powerful reporting tools. The OTDR and loss test set come with the most complete analysis and reporting software.

The package supports direct Ethernet transfer to a PC running JDSU's OFS 100 Optical Fiber Trace Software or OFS-200 Optical Fiber Cable Software. This enables users to perform automatic multiple trace analysis and print out cable test results in batches, for fast generation of dedicated acceptance reports.

**Technical specifications**

**Base unit (typical at 25 °C)**

**Display**

Passive color, 7.8 inches	LCD 640 x 480
Active TFT color, 8.4 inches	LCD 640 x 480

**Languages**

English, French, German, Spanish, Portuguese, Italian, Chinese, Taiwanese, Russian, Korean, Japanese, Turkish

**Weight**

MTS-5100	3.5 kg (7.7 lb) including 1 module and 1 battery
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**Size**

MTS-5100	300 x 235 x 90 mm 11.8 x 9.25 x 3.5 in
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**Input/Output**

MTS-5100	RS-232-C, Centronics interface, external keyboard (optional), Ethernet interface (optional)
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**Power supply**

AC or internal removable NiMH batteries

Operation time	up to 16 hours with 2 batteries (Bellcore GR-196)
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Internal charger Yes (external charger available)

Charging time	< 3 hours per battery
DC input	11 to 14 V

**AC adapter**

MTS-5100	Input 100-250 V, 50-60 Hz, 1.6 A, Output 12 V DC / 4.2 A
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Results display	dBm, dB, nW, $\mu$ W, mW
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**Temperature range**

Operating AC Power	(no options) -20 °C to 50 °C (-4 °F to +122 °F)
Operating with all options	0 °C to 40 °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 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 data points

**Distance measurements**

Automatic or dual cursor

Display span	From 2.6 m up to maximum range (380 km for HD and VHD modules)
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Display resolution	1 cm
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Cursor resolution	From 1 cm
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Sampling resolution	From 4 cm
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Accuracy	$\pm 1 \text{ m} \pm \text{sampling resolution}$ $\pm 1.10^{-5} \times \text{distance}$ (excluding group index uncertainties)
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**Attenuation measurement**

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

Display span	From 1.25 dB to 55 dB
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Display resolution	0.001 dB
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Cursor resolution	From 0.001 dB
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Accuracy	$\pm 0.05 \text{ dB} \pm 0.05 \text{ dB/dB}$
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Threshold	0.01 to 5.99 dB in 0.01 dB step
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**Reflectance/ORL measurements**

Automatic or manual

Display resolution	0.01 dB
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Threshold	-11 to -99 dB in 1 dB step
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Storage	Bellcore/Telcordia compatible Version 1.1 and Version 2.0
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Internal memory	400 traces typical in internal memory
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Floppy disk drive	3.5 inches, MS DOS compatible (optional)
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**OTDR module technical specifications (typical at 25°C)**

Feature	Description					
	Multimode modules MM	Very short range modules VSR	Short range modules SRe	Medium range modules DR	Long range modules HD	Very long range modules VHD
Central wavelength <sup>(1)</sup>	850/1300 nm ± 20 nm	1310/1550 nm ± 20 nm	1310/1550 nm ± 20 nm	1310/1550 nm ± 20 nm	1310/1550/1625 nm ± 20 nm	1310/1550/1625 nm ± 20 nm
Laser safety class (21 CFR)	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1
Pulse width	3 ns to 200 ns	10 ns to 10 µs	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 260 km	Up to 380 km	Up to 380 km
RMS dynamic range <sup>(2)</sup>	25 dB/23 dB	31 dB/29 dB	34 dB/32 dB	37 dB/35 dB	42 dB/40 dB/40 dB	44 dB/44 dB/44 dB
Event dead zone <sup>(3)</sup>	1.5 m	3 m	3 m	1 m	4 m	6 m
Attenuation dead zone <sup>(4)</sup>	5 m	25 m	25 m	8 m	15 m	20 m
VFL option for OTDR module	635 nm ± 15 nm Class 2, 21 CFR	635 nm ± 15 nm Class 2, 21 CFR	635 nm ± 15 nm Class 2, 21 CFR	635 nm ± 15 nm Class 2, 21 CFR	635 nm ± 15 nm Class 2, 21 CFR	635 nm ± 15 nm Class 2, 21 CFR

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

<sup>(2)</sup> 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.

<sup>(3)</sup> Event dead zone: Measured at ± 1.5 dB down from the peak of an unsaturated reflective event.

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

**LTS module technical specifications (typical at 25°C)**

Feature	Power meter
	Multimode modules MM
Type of sensor	InGaAs
Spectral range	From 800 to 1650 nm in 1 nm step
Calibrated wavelength	850 nm, 1310 nm, 1550 nm
Accuracy	± 0.2 dB
Resolution	0.01 dBm/0.01 nW
Measurement range	+5 dBm to -65 dBm at 850 nm +5 dBm to -70 dBm at 1310/1550 nm +25 dBm to -50 dBm at 1310/1550 nm with adapter/attenuator
Results display	dBm, dB, nW, µW, mW
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification

Features	Singlemode light source	Multimode light source
Calibrated wavelength	1300/1550 nm ± 30 nm	850 nm ± 30 nm      1300 nm ± 30 nm
Spectral width	<5 nm	50 nm      150 nm
Stability (1 hour)	± 0.05 dB	± 0.05 dB
Stability (24 hours)	± 0.15 dB	± 0.15 dB
Calibrated output power	0 dBm	-17 (850), -19 (1300) or -18/20 dBm
Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification

Feature	Dynamic range
Talk Set option	35 dB

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**Ordering information**


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**Base instrument options**

Base unit with floppy disk drive and color display	E5100OTDR
Base unit with floppy disk and high visibility screen	E5100OTDRH
Hard disk drive	E5000Hdisk
Ethernet option	E5000Eth

**Main OTDR modules**
*(single and dual wavelength versions available)*

Multimode 850/1300 nm Module	E5023 MM
Singlemode 1310/1550 nm Module	E5026 VSR
Short Range Singlemode 1310/1550 nm Module	E5026 SRe
Medium Range/High Resolution Singlemode 1310/1550 nm Module	E5026 DR
Long Range Singlemode 1310/1550 nm Module	E5026 HD
Long Range Singlemode 1625 nm Module	E5027 HD
Long Range Singlemode 1310/1550/1625 nm Module	E5036 HD
Very Long Range 44 dB 1310/1550 nm Module	E5026 VHD
Very Long Range 44 dB 1625 nm Module	E5027 VHD
Very Long Range 44 dB 1550/1625 nm Module	E5029 VHD
VFL Option for OTDR module	E502X VUPP

**Main LTS modules**
*(single and dual wavelength versions available)*

Power Meter, 800-1650 nm	E50600
Combined singlemode or multimode light source and Power Meter	E506X0
Combined singlemode light source and Power Meter with Talk Set	E506X1

**Application software**

Optical Fiber Trace Software: PC Analysis Software under Windows	E0FS100
Optical Fiber Cable Software: PC Cable Acceptance Software under Windows	E0FS200

**Main accessories**

RS232 Null modem cable for MTS-5100	ERS2325K
RS232 to USB cable for file transfer to PC	ERS232USB
External keyboard	E5000Keyb
Additional rechargeable battery	E5001
Soft carrying case	E5004
Hard transit case	E5005
Cigarette lighter power adapter	E5006

**Optical connectors**

Universal single and multimode PC connectors	EULCAD, EUNIPCFC, EUNIPCCL, EUNIPCSC, EUNIPCST, EUNIPCIN
Universal single mode APC connectors	EUNIAPCFC, EUNIAPCSC, EUNIAPCST, EUNIAPCIN
Universal adapters for OTDRs	UFCAD, USCAD, USTAD UDINAD
Universal adapters for power meters	UFCAD, USCAD, USTAD UDINAD

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