

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

OFI Multifunction Loss Test Module



Key Features

- One-button automated testing, including continuity check, bidirectional insertion loss and return loss, length measurement, and file storage in a fraction of seconds
- Intuitive and user friendly interface for error-free referencing and measuring
- Fiber link characterization functionality determines infrastructure suitability for transport, metro, access, and FTTx/PON networks
- All-in one cable and/or fiber results with Pass/Fail indication and color coding information

Applications

- Fiber link characterization with 3-wavelength configuration (1310/1550/1625 nm)
- FTTx/PON testing with 3-wavelength configuration (1310/1490/1550 nm)
- Master-master operation; leave one unit in standby while performing the test with the other OFI unit (OFI module or OFI-2000)

Compliance

- ITU-T G.983.3 and G.650.3

Versatile Optical Test Module

Test solutions must be cost-effective, increase productivity, and reduce the number and complexity of test instruments carried in the field. JDSU developed the OFI module for the T-BERD/MTS-6000, 6000A, and 8000 platforms to address these issues. Configurable at the time of order, this module uses intuitive test functions and simple Pass/Fail displays to enhance productivity and reduce the burden of training. Technicians can easily process cables with high fiber counts as well as quickly generate professional proof-of-performance reports using the JDSU report-generation software.

Multitest Platforms

The scalable design of the T-BERD/MTS-6000, 6000A, and 8000 platforms lets field technicians quickly and easily plug in the multifunction loss test module and perform precise measurements in the outside plant all the way to the central office. The T-BERD/MTS platforms also include a full range of optical time domain reflectometry (OTDR), polarization mode dispersion (PMD), chromatic dispersion, spectral attenuation, and dense wave division multiplexing (DWDM) test modules.



T-BERD/MTS-8000



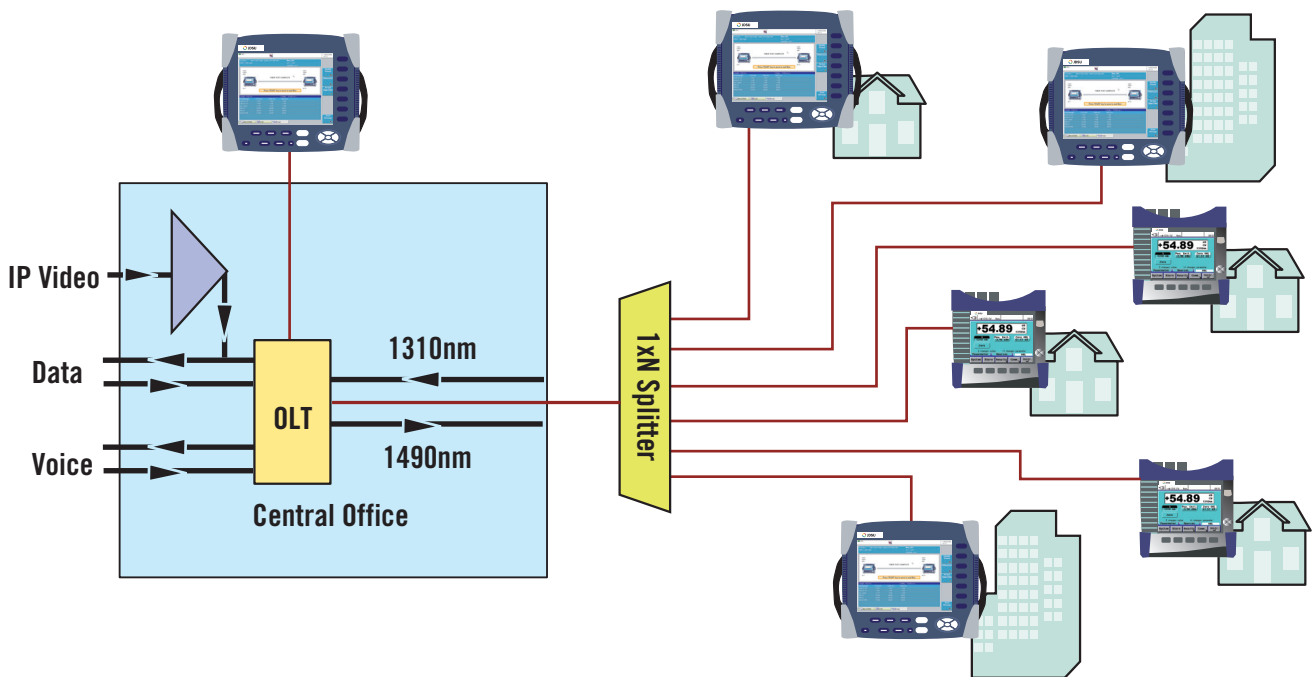
T-BERD/MTS-6000

Best in Class for FTTx Testing and High Fiber-count Cables

The automated test functions of the OFI module combined with an intuitive user interface help fiber installers and technicians save time and reduce costs while operating in the field.

- Automated bidirectional loss test set for continuity check, fiber loss, return loss and length
- Testing at Telecom wavelengths 1310, 1550, and 1625 nm
- Testing at various fiber (FTTx)/passive optical (PON) network wavelengths 1310, 1490, and 1550 nm
- Accurate optical return loss (ORL) measurements on a very short span such as FTTx

Housed in the T-BERD/MTS optical test mainframe, the OFI module is easily set up for referencing insertion loss and ORL measurements using an on-screen step-by-step guide. The OFI module has an integrated precise standalone power meter to enhance referencing and improve insertion loss measurement accuracy. In addition, the instrument can be operated in continuous light source mode for fiber identification or unidirectional loss measurement.



Improve Productivity and Efficiency in the Field

The OFI module includes several features to improve productivity and reduce the time it takes to test cables with high fiber counts. Users are guided through the test setup and with a single key press can test, display, and record measurements on each instrument at both ends of the link.

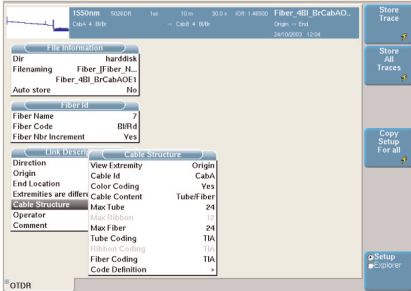
The OFI module's advanced design enables users to:

- Cut down testing time drastically: Evaluate fiber continuity, loss, ORL and length and get all results on both test ends within 15 seconds/fiber.
- Store complete test results in both test units and generate on-site reports (master-master system).
- Replicate stored test results between the near-end and remote unit to ensure integrity of data.
- Minimize handling errors with the Pass/Fail indicator. In a quick snapshot both end technicians can identify incorrect results.

The screenshots illustrate the following features:

- Referencing with graphical user interface:** Shows a setup screen with a diagram of two test units connected by a fiber link. A typical expected value of -5.5 dBm is displayed.
- Multi-acquisition using the OFI mode:** Shows a screen with a 'TESTING FIBER' label and a 'FIBER 1' section. A 'FIBER TEST COMPLETE' message is visible between the units.
- View results in one table with Pass/Fail indicator:** Shows a detailed results table for 'fiber_001' with columns for Length, Wavelength, Loss, and ORL. A 'Pass/Fail' indicator is present.
- Ready to test next fiber!:** Shows a screen with a 'Next Fiber to Test' section containing a table of fiber details:

Cable Id	CABLE FIBER	CABLE001
Fiber Id	FIBER	
Fiber Number	S	
Fiber Code	SI	



Extended Cable Management and Documentation

Users define and store information on the link configuration and cable structure. This information includes all the details such as identification, color coding, and fiber numbers, which can be archived and made available to each OFI at both ends of the cable. For example:

- Color coding management TIA/EIA is either standard or user definable. The unit will automatically decode the fiber number and help users identify fibers.
- Relevant cable test information is consolidated into one table.
- Fiber is identified by number and color code.
- Loss alarm thresholds (loss, return loss, lengths) are generated.

With the layout of cable results, the user can rapidly identify missing records and/or “fail” values.

Insertion loss table

Test

Origin location: Dest location:

Fiber ID	Core	Loss (dB) min			Loss (dB) max		
		O-D	E-D	Average	O-D	E-D	Average
P000001	B1 B1	-2.88	-2.87	-2.88	-1.82	-1.76	-1.80
P000002	B1 D1	-2.88	-2.88	-2.88	-1.82	-1.76	-1.80
P000003	B1 D1	-2.87	-2.85	-2.86	-1.82	-1.76	-1.80
P000004	B1 D1	-2.88	-2.85	-2.86	-1.82	-1.76	-1.80
P000005	B1 D1	-2.87	-2.82	-2.84	-1.83	-1.77	-1.79
P000006	B1 D1	-2.87	-2.85	-2.86	-1.83	-1.76	-1.80
P000007	B1 B1	-2.87	-2.88	-2.88	-1.82	-1.76	-1.80
P000008	B1 B1	-2.88	-2.82	-2.85	-1.83	-1.76	-1.81
P000009	B1 D1	-2.88	-2.88	-2.87	-1.82	-1.77	-1.79
P000010	B1 B1	-2.88	-2.87	-2.87	-1.83	-1.76	-1.80
P000011	B1 B1	-2.88	-2.85	-2.86	-1.82	-1.77	-1.80
P000012	B1 B1	-2.88	-2.83	-2.85	-1.83	-1.77	-1.80
P000013	D1 B1	-2.88	-2.88	-2.87	-1.81	-1.76	-1.79
P000014	D1 D1	-2.88	-2.83	-2.84	-1.82	-1.76	-1.80
P000015	D1 D1	-2.88	-2.85	-2.87	-1.82	-1.76	-1.80
P000016	D1 D1	-2.88	-2.85	-2.86	-1.81	-1.76	-1.79
P000017	D1 D1	-2.88	-2.84	-2.86	-1.83	-1.76	-1.81
P000018	D1 B1	-2.88	-2.84	-2.86	-1.81	-1.77	-1.79
P000019	D1 B1	-2.88	-2.82	-2.84	-1.81	-1.76	-1.79
P000020	D1 B1	-2.88	-2.85	-2.86	-1.81	-1.76	-1.80
P000021	D1 B1	-2.88	-2.85	-2.84	-1.78	-1.81	-1.80
P000022	D1 B1	-2.88	-2.84	-2.86	-1.77	-1.80	-1.79
P000023	D1 B1	-2.88	-2.82	-2.83	-1.80	-1.80	-1.80
P000024	D1 B1	-2.87	-2.83	-2.85	-1.84	-1.76	-1.81
P000025	D1 B1	-2.88	-2.82	-2.85	-1.84	-1.76	-1.80
P000026	D1 D1	-2.87	-2.81	-2.84	-1.81	-1.76	-1.80
P000027	D1 D1	-2.87	-2.81	-2.84	-1.81	-1.76	-1.80
P000028	D1 B1	-2.82	-2.81	-2.81	-1.84	-1.77	-1.80
P000029	D1 B1	-2.84	-2.82	-2.83	-1.83	-1.77	-1.80
P000030	D1 B1	-2.87	-2.82	-2.84	-1.84	-1.76	-1.80
P000031	D1 B1	-2.82	-2.86	-2.84	-1.82	-1.76	-1.79
P000032	D1 B1	-2.82	-2.81	-2.81	-1.84	-1.76	-1.79

Example of test report

Error-free Professional Reports

Complete PC-based software within a true Windows environment enables the generation of detailed, professional insertion loss, return loss, and length reports. In addition, the OFI module provides:

- Proof-of-performance reports with the ability to customize high-level job information.
- Dedicated tables for each test result (loss, ORL, length).
- Out-of-range values summary.
- Results comparisons between the different wavelengths to sort out bends and constraints.
- Integration of insertion loss, ORL, and length measurements into complete fiber characterization.



MTS/T-BERD 8000 Platform with OTDR and OFI Modules

Enhanced Testing Solution

With the addition of the OFI module to the T-BERD/MTS platforms, technicians can fully characterize the fiber network with an all-in-one solution for measuring:

- Insertion loss
- Return loss
- OTDR
- Chromatic dispersion
- PMD
- Attenuation profile

Compatible with the Standalone OFI-2000

The OFI multifunction loss test module can be used at one end and a JDSU OFI-2000 Multifunction Loss Test Set at the other end to perform continuity check, bidirectional loss, return loss and length measurements. Communication between both products can then be enabled through the optical talk set or via the Short Message System.



OFI-2000 Multifunction Loss Test Set

Specifications

81xxOFIx Module General Technical (Typical at 25°C)

Weight	0.6 kg (1.1 lb)
Dimensions (W x H x D)	213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in)

Optical interfaces

Applicable fiber	SMF 9/125 μ m
Interchangeable optical connectors	FC, SC, DIN, etc...

Bidirectional Test Set (Typical at 25°C)

Does apply to the 812xOFI modules.

To ensure optimal use (bidirectional measurement and communication), two units are required.

Source function (also valid for source mode)

Laser type	Class 1 laser
Wavelength at 25°C	1310 \pm 20 nm, 1490 \pm 3 nm, 1550 \pm 30 nm, 1625 \pm 5 nm
Spectral bandwidth	5 nm maximum
Output level into 9/125 μ m fiber (CW mode)	-3.5 dBm
Modulated output average level	3 dB less

Level stability

Short term 15 min (T = \pm 0.3 K)	\pm 0.02 dB
Long term 8 hours (T = \pm 3 K)	\pm 0.2 dB
Modulation frequencies	Continuous wave, 270 Hz, 330 Hz, 1 kHz, 2 kHz

TWINtest and auto- λ	All wavelength activated one after the other
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Loss test set function

Dynamic range	60 dB
Accuracy ¹	Loop back \pm 0.25 dB, side-by-side \pm 0.15 dB
Result resolution	0.01 dB

Optical return loss (also valid for manual ORL)

ORL measurement display range	Up to 65 dB (Limited to front-end connector, APC recommended)
Accuracy	\pm 0.5 dB

Length function

Distance Accuracy	L < 3 km: \pm 50 m, 3 km < L < 200 km : \pm 1.5%
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¹ After 15 minutes warm-up

Standalone power meter

Wavelength range (adjustable per 1 nm)	800-1650 nm
Selectable wavelength	850/980/1300/1310/1420/1450/1480/1490/1510/ 1550/1625 nm and one user-defined

Auto- λ detection (incl. TWINtest)	850/1310/1490/1550/1625 nm
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Modulation detection	270 Hz, 330 Hz, 1 kHz, 2 kHz
Display resolution	0.01 dB

Power level Standard High

Dynamic range	+10 to -60 dBm	+26 to -55 dBm
Accuracy	\pm 0.2 dB	\pm 0.25 dB
(1310nm, -20dBm)		
Detector type	Ge	filtered InGaAs, 2 mm

Ordering information

OFI Module

1310/1550 nm OFI plug-in module-standard power	E81260F11
1310/1550 nm OFI plug-in module-high power	E81260F12
1310/1550/1625 nm OFI plug-in module-standard power	E81360F11
1310/1550/1625 nm OFI plug-in module-high power	E81360F12
1310/1490/1550 nm OFI plug-in module-standard power	E81320F11
1310/1490/1550 nm OFI plug-in module-high power	E81320F12

OFI Module option

ORL option for OFI plug-in module with mandrel	E810FIORL
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Application software

Optical Fiber Trace Software for post-analysis	E0FS100
Optical Fiber Cable Software Cable for Acceptance report generation	E0FS200

Universal Optical connectors

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

For more information on test adapters, cables, and fiber optic couplers, please refer to the separate datasheet entitled JDSU Fiber Optic Test Adapters and Cables.

Test & Measurement Regional Sales

NORTH AMERICA TEL: 1 866 228 3762 FAX: +1 301 353 9216	LATIN AMERICA TEL: +1 954 688 5660 FAX: +1 954 345 4668	ASIA PACIFIC TEL: +852 2892 0990 FAX: +852 2892 0770	EMEA TEL: +49 7121 86 2222 FAX: +49 7121 86 1222	www.jdsu.com/test
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