

# SLM — Smart Link Mapper for T-BERD®/MTS OTDR Platforms

Eliminate OTDR complexities for simple and fast fiber deployment



Available for Multimode and Single-Mode OTDRs

## Benefits

- **Eliminate OTDR interpretation errors** by providing objective results and immediate diagnostics of problems
- **Evaluate fiber links twice as fast** with instant identification of faults and impairments
- **Simplify data reporting, file sharing, and management** in compliance with industry standards
- **Easily upgrade T-BERD/MTS OTDR platforms** directly in the field to get the benefits of SLM

## Applications

- Installation and commissioning of enterprise, access, and metro networks
- Installation and maintenance of wireless backhaul
- Link characterization of long/xWDM networks
- Troubleshooting of any fiber network

Demand for bandwidth-intensive services such as video streaming, HDTV, and smart-device applications continues to grow rapidly. To address this growth, service providers are scrambling to quickly deploy, expand, and upgrade their broadband access networks—often working with new technicians who have little experience with fiber.

An optical time domain reflectometer (OTDR) is an essential fiber test tool that helps service providers ensure that their fiber network infrastructure is optimized to deliver reliable and robust services. OTDR operation and usability has been simplified over the years; however, it is still considered an advanced instrument to operate and interpreting measurement results can be complex.

In response, JDSU offers SLM, a field-installable software application that removes the complexity from OTDR testing and results interpretation. Using advanced software, SLM analyzes any passive elements, impairments, and faults on optical fiber links and displays each of these in a simple, icon-based map view that is understandable at any skill level.



SLM is compatible with all T-BERD/MTS OTDR platforms<sup>1</sup>

1. T-BERD/MTS-2000, -4000, -6000 (with s/n ≥ 10000), -6000A, -8000 (v2) platforms

# Empower Every Technician to be an Instant OTDR Expert

## OTDR Is an Essential Test Tool but Is Complex to Use

An OTDR provides a full picture of the fiber plant with detailed analysis of the link components—cable attenuation, connectors' loss and reflectance, and splice losses—and shows problems in the link. This test proves the quality of the installation and ensures that an optical link meets required specifications. An OTDR also troubleshoots cabling component problems by locating common causes of failures such as breaks, high loss, and reflective defects and bends. These capabilities are critical to minimize costly network downtime. Despite an OTDR's capability and performance, the ability to read and interpret the information gathered from an OTDR trace can be very challenging.

## Remove Human-Interpretation Errors

**Standard OTDR**

Example of OTDR trace view

**Detailed table of events**

Event	Distance Km	Loss dB	Reflect. dB	Slope dB/km	Section Km	T. Loss dB
1	0.000		~> -56.65	0.000	0.000	0.000
2	0.011	0.000		0.011	0.003	
3	1.033	0.206	-60.86	0.193	1.021	0.200
4	1.950	1.004		0.189	0.918	0.579
5	2.896	0.059		0.185	0.946	1.758
6	3.925	0.185	-60.81	0.192	1.029	2.014
7	4.489	0.206		0.195	0.564	2.309
8	5.792	0.110	-56.23	0.202	1.303	2.774

**OTDR with SLM**

Summary table — all link information at a glance

Link Table			
Laser nm	Link Loss dB	Link Ori dB	Fiber End m
1310 (10ns)	2.854	33.69	5806.24
1550 (30ns)	2.884	36.11	5803.63
1625 (30ns)	4.163	37.15	5802.93

**Alarms**

Distance m	Fault Detected
1950.28	Bend Detected
4488.97	Bad Splice

Event View

Laser nm	Distance m	Loss dB	Reflectance dB
1310	1031.65	0.237	-56.80
1550	1032.58	0.206	-60.86
1625	1032.23	0.200	-71.94

Details of selected element

✔ Connector

Threshold Reflectance : > -35 dB  
Threshold Connector Loss : > 0.50 dB

Toggle between views

SLM analyzes and identifies events of any OTDR trace, new or old. It represents them as simple icons with immediate pass/fail information based on user-defined or IEC/TIA standards thresholds. It explicitly names the type of optical element such as a splice or connector.

OTDR analysis expertise is also required to understand how elements failed. SLM offers immediate diagnostics of faults, which appear in red on the icon-based map view, and provides guidance to fix them.

**Detailed table of events**

Event	Distance Km	Loss dB	Reflect. dB	Slope dB/km	Section Km	T. Loss dB
4	1.950	2.199		0.212	0.917	0.626

**Link Table**

Laser nm	Distance Km	Loss dB	Reflectance dB
1310	1.953	0.068	
1550	1.950	1.004	
1625	1.950	2.199	




**Alarms**

Distance m	Fault Detected
1950	Bend Detected

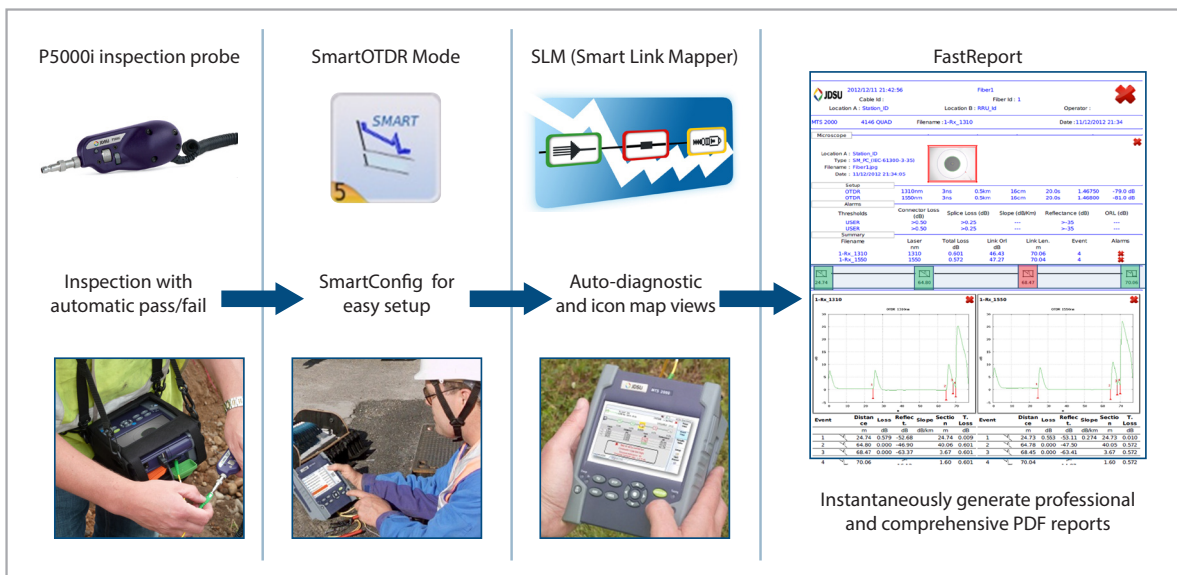
Threshold Bend : Auto

## No OTDR Knowledge Required

Nearly half of all OTDR measurement errors are due to incorrect settings such as range, wavelength, pulse width, or index of refraction (IOR). Technicians who are new to fiber find it challenging to deal with complex instrument setups. JDSU SmartOTDR Mode lets technicians skip this step and go immediately to SLM results. It eliminates manual parameter inputs, thanks to predefined setup configurations (SmartConfig). This leads to consistent and reliable OTDR measurements.

	OTDR Setup	OTDR Results Interpretation
 Standard OTDR	Expert	Expert
 SmartOTDR Mode	Novice	Occasional user
 SLM in SmartOTDR Mode	Novice	Novice

## Most Optimized OTDR Testing Workflow



## Enhance Productivity

### Evaluate Fiber Links Twice as Fast

Testing with an OTDR requires three steps:




1. Setup the OTDR (acquisition parameters, alarms, and file naming).
2. Perform the acquisition.
3. Analyze and interpret results.

### Save on OpEx

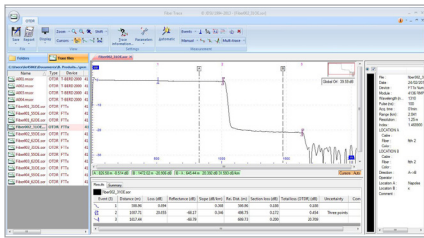
OTDR trace interpretation and correct analysis is a major aspect of fiber optic installation and maintenance. It causes frequent challenges with service providers. Incorrect interpretation can lead to installation and troubleshooting issues, additional truck rolls, and increased OpEx.

### Improve Technician OTDR Skills

SLM and OTDR trace views are just one button apart. Thanks to the direct correlation between selected elements on SLM and events on the OTDR trace, technicians can become more familiar with OTDR trace interpretation. This will increase their expertise over time.

	Setup the OTDR	Perform acquisition	Interpret results
 Standard OTDR		Total testing time	
 SmartOTDR Mode		Total testing time	
 SLM in SmartOTDR Mode		Total testing time	

# SLM — Smart Link Mapper for T-BERD/MTS OTDR Platforms



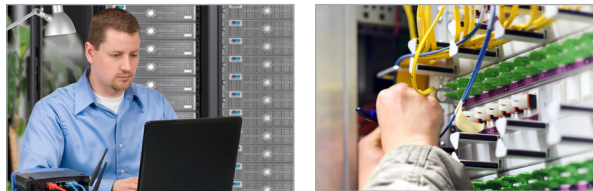
FiberTrace/FiberCable PC software

## Simplify Data Reporting, File Sharing, and Management

While SLM brings speed and simplicity to field technicians, providing an OTDR trace and test report is necessary to prove that fiber has been correctly installed. Operations and maintenance may also need access to the trace. SLM directly correlates with the original OTDR trace, giving you the best of both worlds. You can toggle between SLM and OTDR views and your PDF report can document both.

For more comprehensive analysis, results can be stored in different formats:

- .sor (Telcordia industry standard), readable by any OTDR platform<sup>1</sup> and PC software
- PDF for fast report generation directly from the device



## Leverage Your Assets/Scale with Your Network Deployment

Extend the life of your assets with SLM:

- Can be installed on any OTDR-supported T-BERD/MTS platform<sup>2</sup>.
- Available for single-mode and multimode OTDRs
- Field-installable license

**JDSU** Site for Automatic Platform software update

You know us because you depend on our technology every day.

T-BERD/MTS-2000 Platform <a href="http://2k.updatemyunit.net">http://2k.updatemyunit.net</a>	T-BERD/MTS-4000 Platform <a href="http://4k.updatemyunit.net">http://4k.updatemyunit.net</a>
T-BERD/MTS-6000 Platform with SN < 10000 <a href="http://www.jdsu.com/...">http://www.jdsu.com/...</a>	T-BERD/MTS-6000 and 6000A Platform with SN ≥ 10000 <a href="http://4k.updatemyunit.net">http://4k.updatemyunit.net</a>
T-BERD/MTS-8000 Platform <a href="http://www.jdsu.com/...">http://www.jdsu.com/...</a>	T-BERD/MTS-8000 V2 Platform <a href="http://8k.updatemyunit.net">http://8k.updatemyunit.net</a>
T-BERD/MTS-5800 Platform <a href="http://5800.updatemyunit.net">http://5800.updatemyunit.net</a>	SmartClass Fiber Products <a href="http://scf.updatemyunit.net">http://scf.updatemyunit.net</a>
Applications Software	

Go to <http://updatemyunit.net> for free T-BERD/MTS firmware upgrades.

## Ordering Information

New Configuration	Description
ESMARTLINK-2K	SLM license key for T-BERD/MTS-2000
ESMARTLINK-4K	SLM license key for T-BERD/MTS-4000
ESMARTLINK-6K	SLM license key for T-BERD/MTS-6000 (s/n ≥ 10000), -6000A
ESMARTLINK-8K	SLM license key for T-BERD/MTS-8000 v2

Upgrades	Description
ESMARTLINK2KUPG	SLM upgrade license key for T-BERD/MTS-2000
ESMARTLINK4KUPG	SLM upgrade license key for T-BERD/MTS-4000
ESMARTLINK6KUPG	SLM upgrade license key for T-BERD/MTS-6000 (s/n ≥ 10000), -6000A
ESMARTLINK8KUPG	SLM upgrade license key for T-BERD/MTS-8000 v2

1. SLM information can only be read with a T-BERD/MTS platform licensed with SLM software.  
 2. T-BERD/MTS-2000, -4000, -6000 (with s/n ≥ 10000), -6000A, -8000 (v2) platforms



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