



T-BERD/MTS-6000A and 8000 Platforms

Fiber Optics Test Modules and Applications

February 2016

Viavi Compact & Scalable Test Platforms

T-BERD/MTS-6000A Platform

Compact Solution / Single Module



- One-slot compact modular test set supporting optical networks physical and services layer testing.
- Test applications :
 - Connector inspection & analysis
 - OTDR/IL/ORL
 - Dispersion (CD/PMD)
 - **Compact** Full Band OSA, **High Res.** OSA & ROADM OSA
 - Multiple services (10G Ethernet, FiberChannel, CPRI, TDM/PDH/SDH/SONET, and OTN)

T-BERD/MTS-8000 Platform

Scalable Solution / Multiple Modules



- Scalable platform with practically unlimited modularity supporting multiple layers and protocols testing of high-speed optical networks
- Test applications :
 - Connector inspection & analysis
 - OTDR/IL/ORL
 - Dispersion (CD/PMD and **In-service PMD**)
 - **High Perf** Full Band OSA, High Res. OSA & ROADM OSA
 - Multiple services (10GE)
 - **40/100 GE Transport**

T-BERD/MTS-6000A vs T-BERD/MTS-8000

T-BERD/MTS-6000A Platform



Display

- **8"** touchscreen display

Modularity

- Slot for 1 module

Standard Electrical Interfaces

- **2** USB 2.0 ports + 1 mini USB port
- 1G RJ-45 Ethernet + **1 port RS422 & GPS**

Mainframe Options

- Visual Fault Locator (VFL)
- Power Meter
- Talkset
- Hardisk

Optional Wireless Interfaces

- Wifi (for connectivity)
- Bluetooth (for connectivity)

T-BERD/MTS 8000 Platform



- **10.4"** touchscreen display

- **Scalable** – unlimited modularity

- **3** USB 2.0 ports + 1 mini USB port
- 1G RJ-45 Ethernet port

- Visual Fault Locator (VFL)
- Power Meter
- Talkset
- Hardisk

- Wifi (for connectivity)
- Bluetooth (for connectivity)

Modularity and Scalability



Networked Test Instruments

Cloud storage: compatible with a wide range of cloud servers (WebDAV service providers). It allows instant sharing of measurement reports.

SmartAccess Anywhere (SAA): quickly resolves field issues in real time. It connects to the cloud and opens a tunnel, so that a technical assistant can virtually access and operate the unit from anywhere.

StrataSync: cloud-based solution that provides asset, configuration, and test data management and, ensures all instruments have the latest software and options installed.



SmartAccessAnywhere App enables

- workforce support in real time
- remote control of SmartOTDR
- SmartOTDR test files and reports transfer
- SmartOTDR firmware upgrade

■ A free Windows and Android App

<http://smartaccess.updatemyunit.net/>



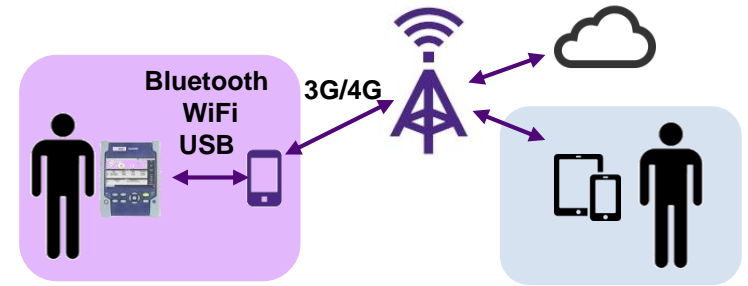
SmartAccess
Anywhere



Manage test data efficiently with wireless connectivity

In the field, connect a Smartphone or Tablet to your T-BERD/MTS Platform (using WiFi, Bluetooth or USB 2.0) and access 3G/4G network.

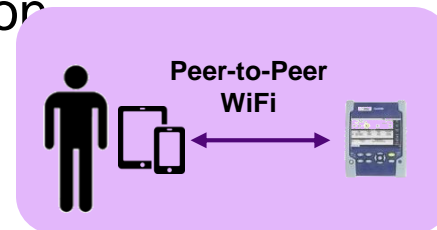
Benefits: Run tests, generate reports, upload them to the Cloud or e-mail/text them immediately



Simplified Access in Confined Environments

In confined or challenging environment, connect a Smart phone or tablet to your T-BERD/MTS Platform (using Peer-to-Peer/Ad Hoc WiFi) and utilize mobile device features for intuitive operation

Benefits: Easily operate, run tests and access test reports from a smartphone/tablet

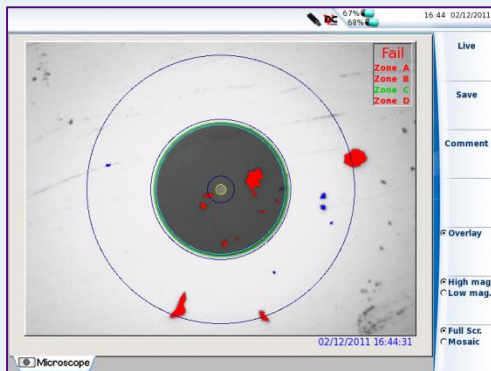


Fiber Test Modules & Applications for T-BERD/MTS-6000A/-8000 Platforms

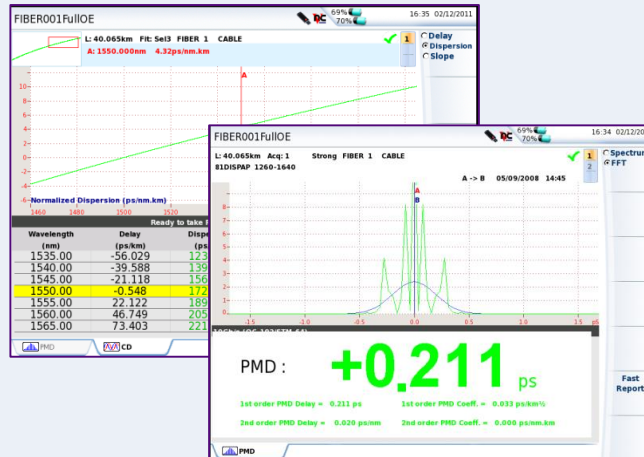
T-BERD/MTS-6000 & T-BERD/MTS-8000

T-BERD/MTS-8000 ONLY

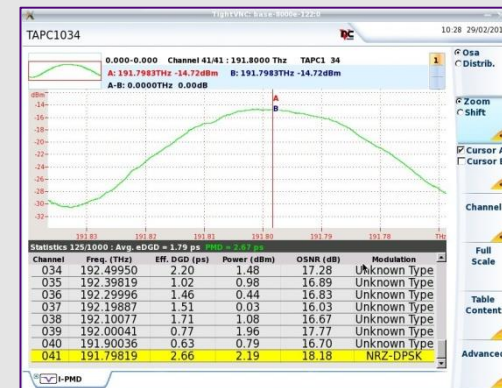
FIBER INSPECTION



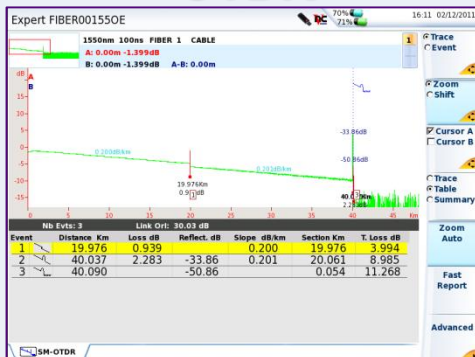
DISPERSION (CD & PMD)



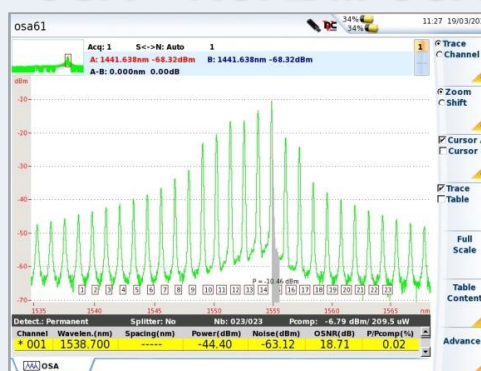
IN-SERVICE PMD



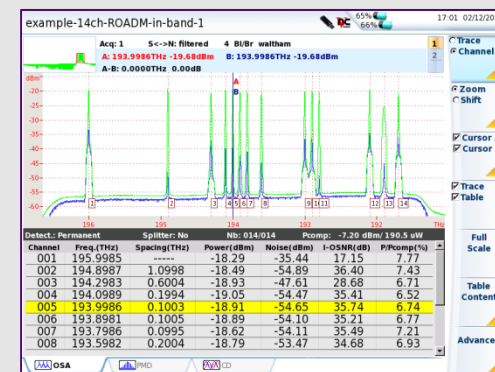
OTDR



OSA + ROADM OSA



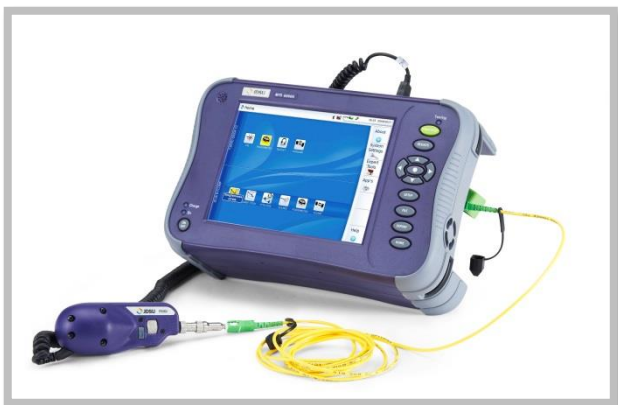
HIGH PERF OSA



Fiber End-face Inspection & Analysis Overview

P5000i Digital Analysis Microscope

- Connects to the mainframe via a USB 2.0 port connection
- Enables inspection of both the bulkhead and patchcord sides of fiber interconnects
- Automated, certified to IEC standards Pass/Fail analysis in less than 5 seconds
- On-board PDF report generation



JDSU 17/02/2010 10:33

JDS Uniphase

Operator	John Doe	FAIL
Probe	FBP-P5000 serial 4002684414	
Test date	17/02/2010 10:30	
Fiber ID	1	
Profile	IEC_SM-APC	

Inspection summary

Zone	Diameter		Defects		Scratches	
	Inner	Outer	Result	Count	Result	Count
Zone A	0	25	PASS	0	PASS	0
Zone B	25	120	FAIL	4	PASS	0
Zone C	130	250	FAIL	20	PASS	0

Low magnification **High magnification**

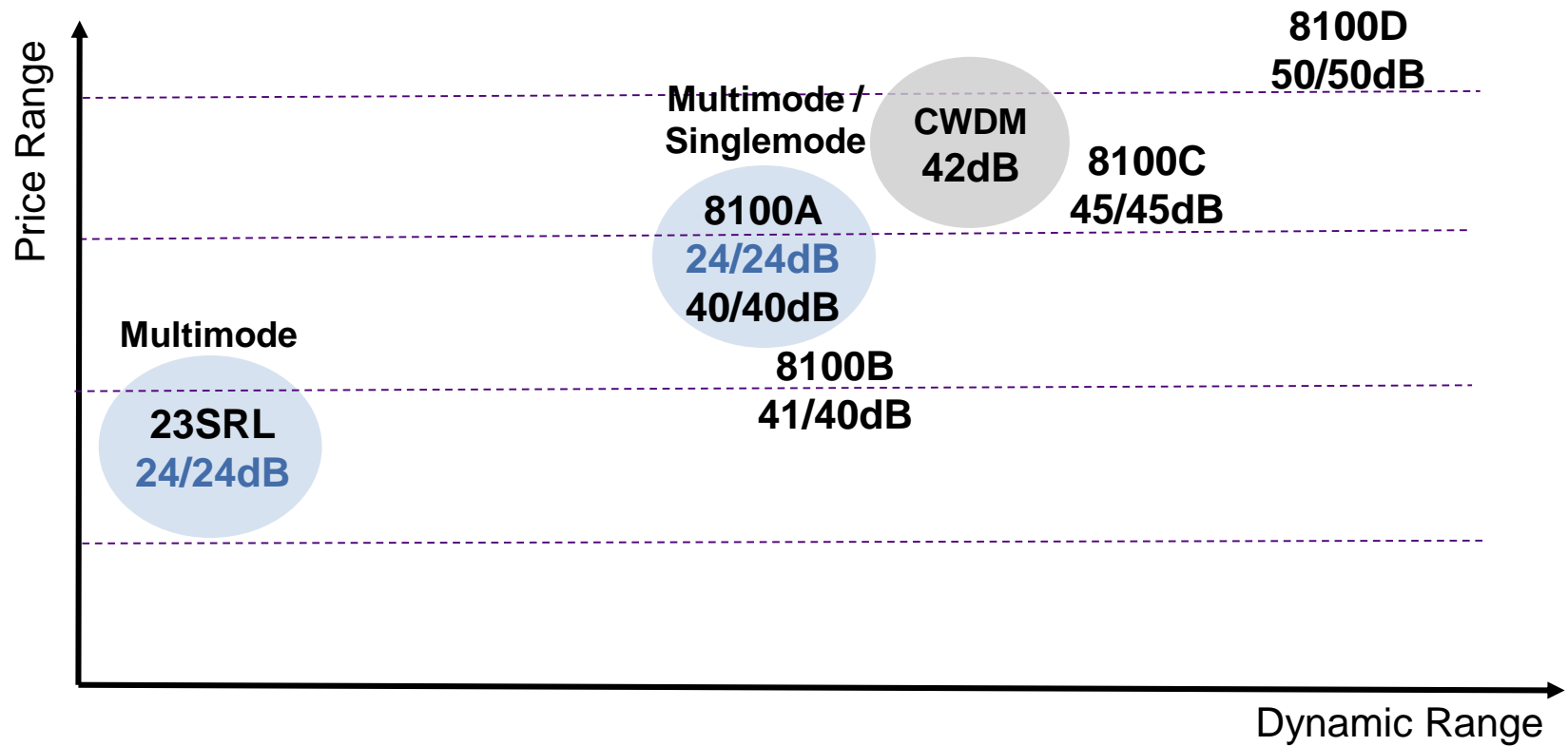
OTDR Modules Overview

- Up to 50 dB dynamic range and 256,000 acquisition points
- 25/60cm Event Dead Zone and 2m Attenuation Dead Zone
- Integrated CW light source and broadband power meter on OTDR port (except 8100A)
- PON optimized to test up to 1x128 splitter (8100C, 8100D)
- Combined singlemode/multimode version (8100A)
- Single-/Dual-/Tri-wavelength versions with 1310, 1383, 1490,1550,1625, and 1650nm
- Single connector port for 1310, 1550 and in-service 1650nm wavelength



	Multimode Singlemode	Singlemode			
Type	8100A	8100B	8100C	8100D	CWDM
Wavelengths	850/ 1300/ 1310/ 1550nm	1310/ 1550/ 1625/ 1650nm	1310/ 1490/ 1550/ 1625/ 1650nm	1310/1550nm	From 1271 to 1611nm
Applications	- MM: Data Center & Enterprise networks -SM: Metro & FTTH networks	- Medium Range distances - Test through up to 1/64 splitter on PON networks	-Long Range distances -Test through up to 1/128 splitter on PON networks	- Ultra Long Range distances	-CWDM networks installation & troubleshooting

8100-Series OTDR Family

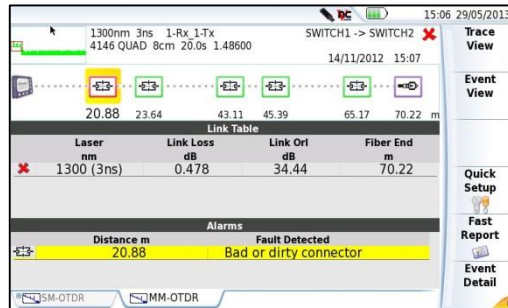


Smart Link Mapper Family

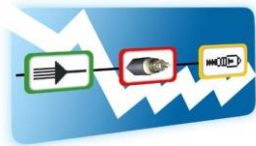
SLM



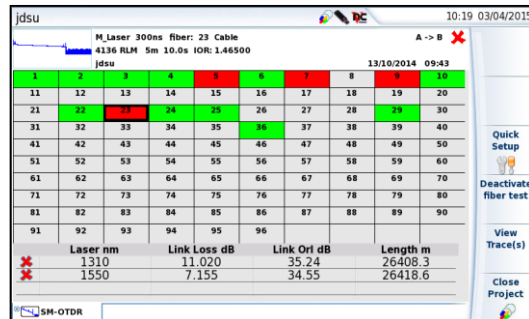
Displays OTDR results in a simple, icon-based map view (SmartLink), providing a clear diagnostic of detected issues



Cable-SLM



Provides a high-level view when commissioning optical fiber cables



FTTA-SLM



- Dedicated & simple setup menus
- Specific acquisition and OTDR analysis
- Detection and identification of FTTA network elements along the fiber link

FTTH-SLM



- Dedicated & simple setup menus
- Automatic identification of PON splitter types
- Special acquisition at short and long pulsewidths to detect all events before and after the splitter(s)
- Pass/fail thresholds per PON standards

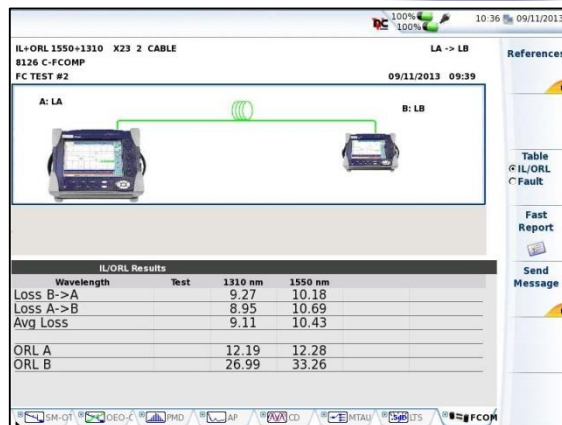
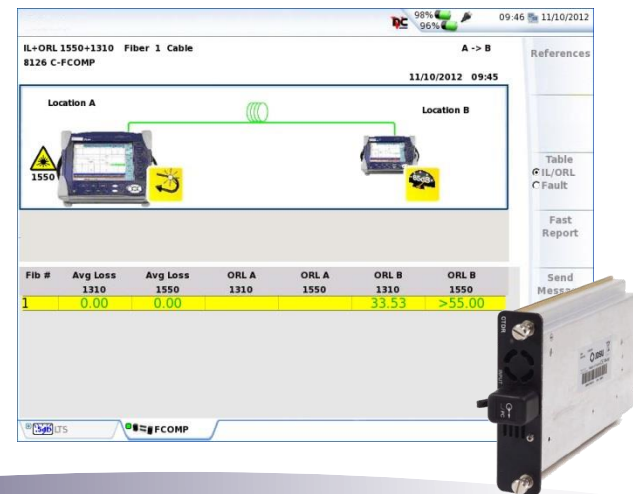
Enterprise- SLM



- Dedicated & simple setup menus
- Identification of specific elements (ex: cassette) along the fiber link
- Pass/fail thresholds and labeling schemes per DataCenter/ Enterprise standards

FiberComplete™ Modules Overview

- Combined bi-directional OTDR, Insertion Loss (IL) and Return Loss (ORL) measurement capability
- One connection, one-touch automated measurements
- Immediate troubleshooting with Intelligent FaultFinder
- Available with 8100B (42/42/40dB) and 8100C (45/45/44dB) OTDR performance



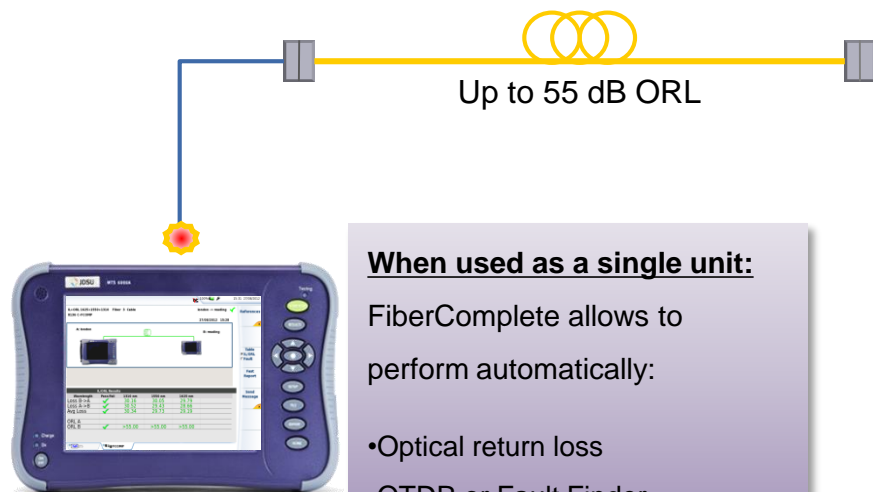
Bi-directional IL/ORL



Bi-directional OTDR



FiberComplete™ Modules Overview

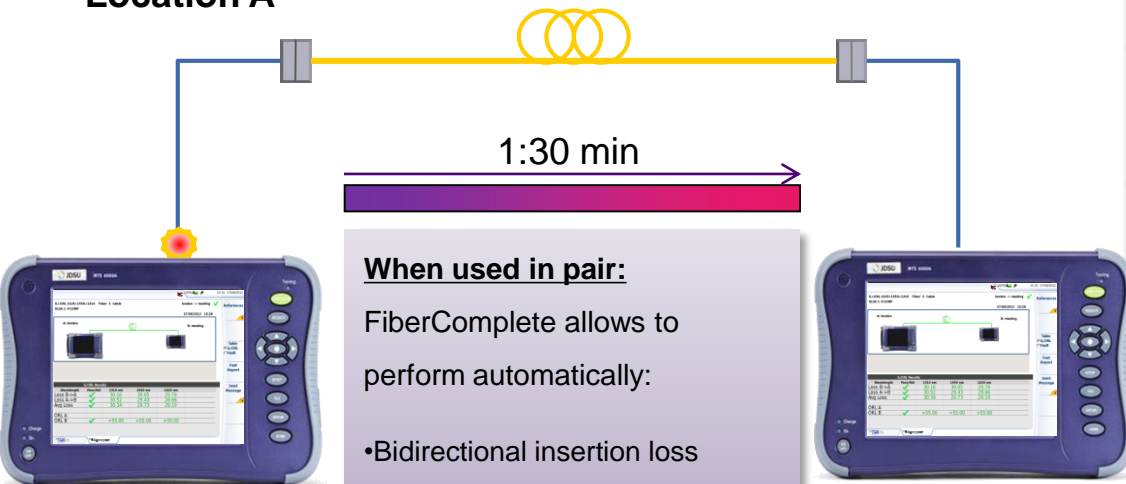


When used as a single unit:

FiberComplete allows to perform automatically:

- Optical return loss
- OTDR or Fault Finder

Location A



When used in pair:

FiberComplete allows to perform automatically:

- Bidirectional insertion loss
- Bidirectional optical return loss
- Distance
- Bidirectional OTDR

Location A

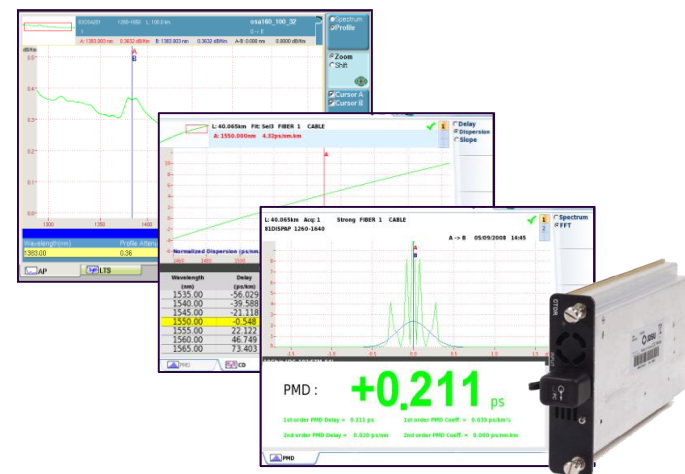
Location B

■ FiberComplete:

- Reduce the number of tools to be purchased/carried
➔ All-in-one
- Minimize testing time
➔ Cuts down testing time by 40%
- Increase efficiency and reliability ➔ Automated process
- Reduce training expenses
➔ Drives best practices

Dispersion (CD/PMD) Module Overview

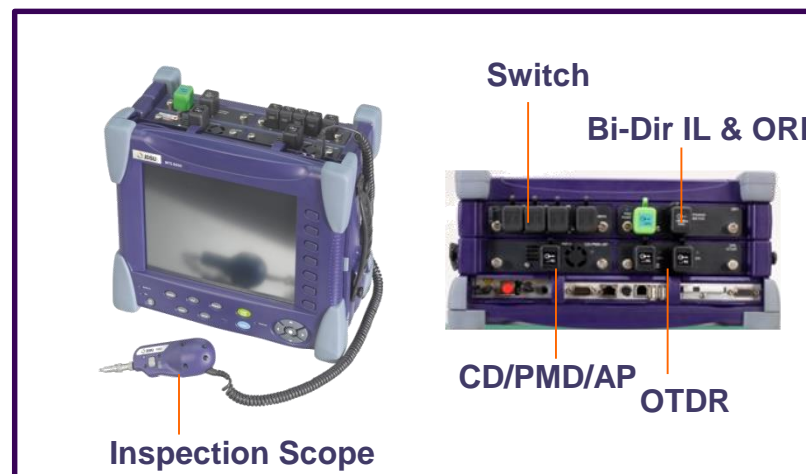
- Compact and portable field dispersion tester
- Complete and accurate dispersion (CD & PMD) measurement in less than 1 minute
- Test any network configuration in any environment (with or without in-line transmission elements)



Lightest, smallest and fastest dispersion analyzer on the market



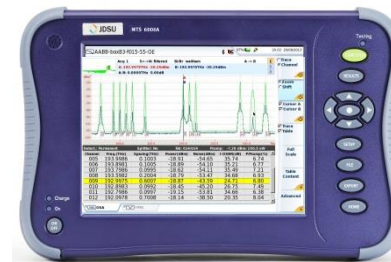
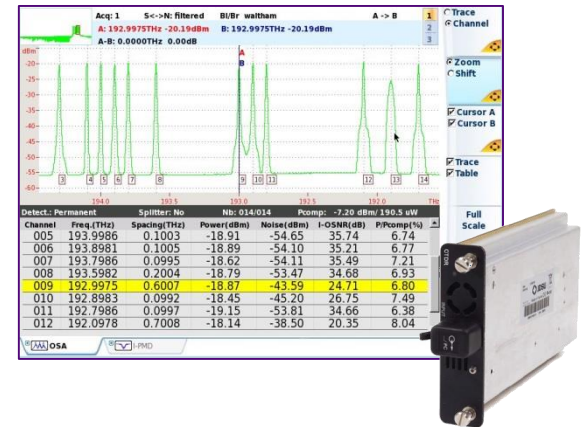
The only FULLY AUTOMATED link characterization solution on the market



OSA-110M/110H/110R Module Overview

Compact, Full Band & ROADM

- Most portable full band OSA (smallest & lightest)
- Economical OSA solution
 - Covers CWDM and DWDM systems up to 50GHz channel spacing
- Good optical resolution (0,1nm)
- Future-proof signal analysis for 40/100G testing and new modulation format
- High Power Measurement capability (CATV application) with OSA-110H
- In-band OSNR measurement in ROADM networks and in 40G networks with tight channel spacing with OSA-110R version



The OSA-110M/-110H/-110R modules are compatible with the T-BERD/ MTS-6000A and T-BERD/ MTS-8000 Platforms

OSA-500/-500M/-501M Modules Overview

High Perf. and Full Band

OSA-500/-500M/-501M Modules

- High Resolution Full Band OSA
 - Covers CWDM and DWDM systems up to 25GHz channel spacing
 - Optical resolution : 0,038nm
- Isolate a single channel out of a DWDM spectrum for further analysis with OSA-501M version.
- Save money with no wavelength recalibration required over lifetime
- Future-proof signal analysis for 40/100G testing and new modulation format

The OSA-500/500M/-501M modules are compatible with the T-BERD/ MTS-8000 Platform

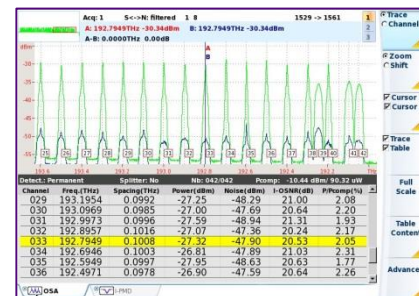


OSA-500R/500RS Modules Overview

High Perf, Full Band and ROADM

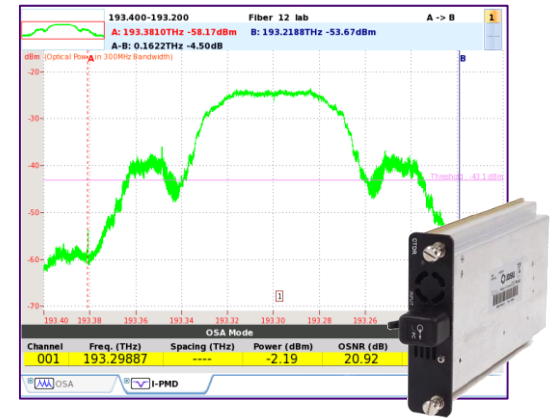
- Ultra High Resolution Full Band OSA
 - Covers CWDM and DWDM systems up to 25GHz channel spacing
 - Optical resolution : 0,038nm
- Measure the true OSNR in ROADM networks and in 40G networks with tight channel spacing with OSA-500R version
- Fast in Band OSNR Testing with OSA-500RS
- Save money with no wavelength recalibration required over lifetime
- Future-proof signal analysis for 40/100G testing and new modulation format

The OSA-500R/500RS modules are compatible with the T-BERD/MTS 8000 Platform

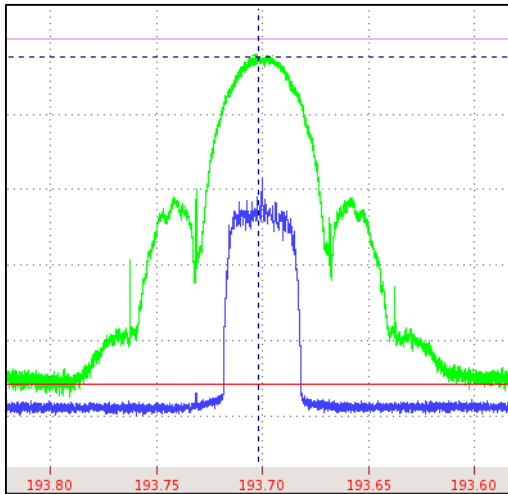


High-Resolution Optical Spectrum Analyzer for 100G / 400 G

- Sub-GHz resolution bandwidth (300 MHz / 3pm) to precisely qualify central frequency and width
- Measure tight spacing in fix or flex DWDM transmission grid
- Analyze “Nyquist” WDM signals and new super-channels (400 G)
- Lab performance in a field tester



Conventional Signal



Nyquist-Filtered Signal

Densely Spaced Nyquist Signals

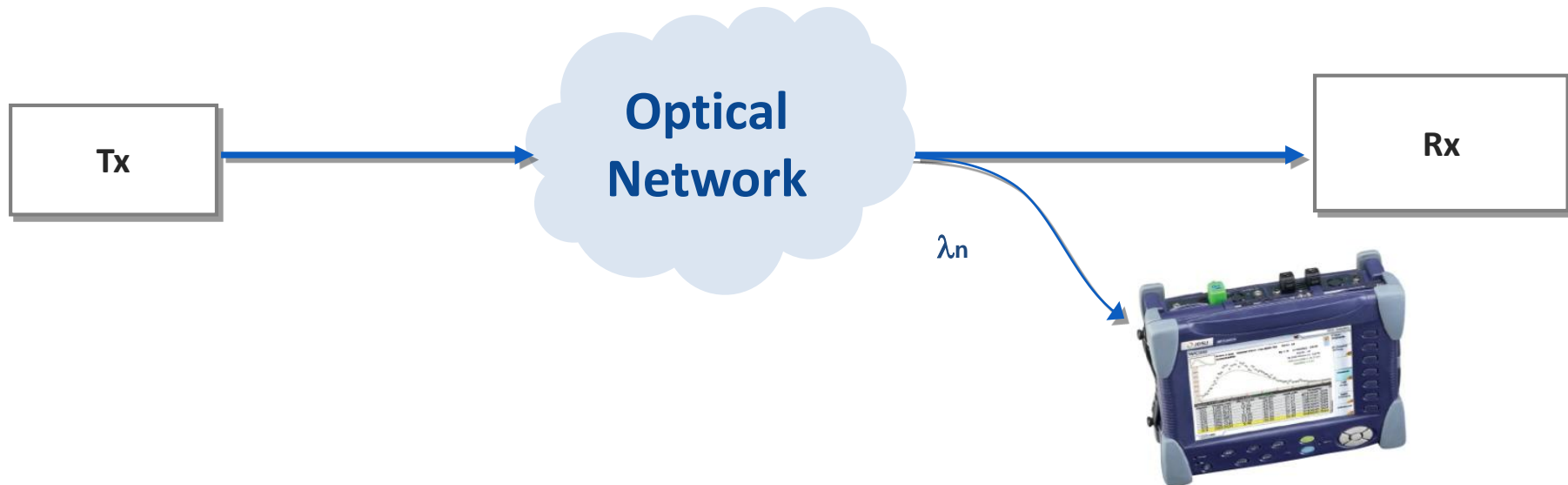
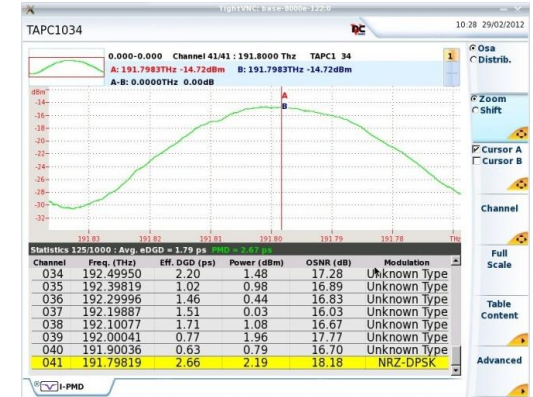


50-GHz Spaced Nyquist Signals



I-PMD™ Test Solution Overview

- Viavi I-PMD analyzer is the industry's **FIRST & ONLY** solution to troubleshoot faulty DWDM channels and qualify fiber networks for future upgrade plans without **TURNING THE NETWORK DOWN**.
- I-PMD combines a PMD analyzer, an In-band OSA and a high resolution OSA in one solution
- I-PMD is a point solution. No additional transmitter / No source is required



FiberTrace 2 & FiberCable 2 Reporting Software

- Post-Processing Software for Fast and Efficient Viewing, Edition, Analysis and Reporting of Optical Fiber Test Data.



Fiber ID	Delay (ps)	Delay (ps)	Delay (ps)	Delay (ps)
1	0.142	0.000	0.000	0.000
2	0.090	0.000	0.000	0.000
3	0.140	0.000	0.000	0.000
4	0.140	0.000	0.000	0.000
5	0.140	0.000	0.000	0.000
6	0.140	0.000	0.000	0.000
7	0.140	0.000	0.000	0.000
8	0.140	0.000	0.000	0.000
9	0.140	0.000	0.000	0.000
10	0.140	0.000	0.000	0.000

Fiber ID	Dispersion (ps/nm)	Dispersion (ps/nm)	Dispersion (ps/nm)	Dispersion (ps/nm)
1	1112.0	0.000	0.000	0.000
2	1112.0	0.000	0.000	0.000
3	1112.0	0.000	0.000	0.000
4	1112.0	0.000	0.000	0.000
5	1112.0	0.000	0.000	0.000
6	1112.0	0.000	0.000	0.000
7	1112.0	0.000	0.000	0.000
8	1112.0	0.000	0.000	0.000
9	1112.0	0.000	0.000	0.000
10	1112.0	0.000	0.000	0.000

Fiber ID	Attenuation (dB)	Attenuation (dB)	Attenuation (dB)	Attenuation (dB)
1	1.40	1.40	1.40	1.40
2	1.40	1.40	1.40	1.40
3	1.40	1.40	1.40	1.40
4	1.40	1.40	1.40	1.40
5	1.40	1.40	1.40	1.40
6	1.40	1.40	1.40	1.40
7	1.40	1.40	1.40	1.40
8	1.40	1.40	1.40	1.40
9	1.40	1.40	1.40	1.40
10	1.40	1.40	1.40	1.40

- One Powerful Tool – Two Versions:

✓ FiberTrace:

- View, edit, analyze and print in a professional format Viavi IL, ORL, FiberComplete, OTDR, CD, PMD, AP, OSA, I-PMD optical test results



Cable Acceptance/
Fiber Charac.
Reporting



✓ FiberCable:

- Provides in addition the capability to generate high fiber counts cable OTDR acceptance reports and Fiber Characterization reports combining various test results in a single document.

T-BERD/MTS Family, the one you know



VLAVI