MTS/T-BERD Platforms

WDM Module

Key Features

- **Compact module weighs only 600 g**
- **Dedicated for the installation and maintenance of amplified DWDM systems**
- **Technology delivers high wavelength accuracy ±10 pm**
- **Shock-proof and vibration-proof module with no moving parts (drop tested at 70 cm!)**
- **Measures channel level, power, and wavelength in the C and L bands**
- **1485 nm to 1640 nm wavelength testing**

Network operators and system installers, who provide quality of service testing, require constant network verification to ensure that the infrastructure and equipment meet performance standards precisely and that they operate reliably.

The JDSU 81WDM plug-in module is designed to meet the sophisticated test requirements of today's and tomorrow's complex DWDM networks. The WDM plug-in module, combined with the MTS/T-BERD platforms, offers a fast, accurate, and cost-effective solution for installation and maintenance testing. All critical network parameters can be verified, including channel wavelength, channel spacing, frequency, power, and optical signal-to-noise ratio (OSNR) of a DWDM system.

The combination of the WDM module with the MTS/T-BERD platforms offers a lightweight, handheld and rugged field instrument suitable for any spectrum analysis or high resolution DWDM measurement requirements.

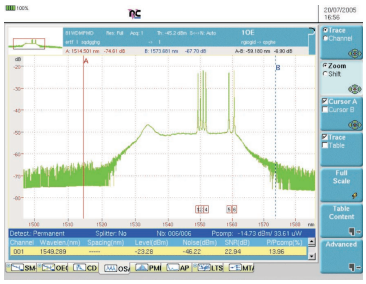

Figure 1: Amplified DWDM system analysis

Figure 2: The Test Auto button simplifies testing

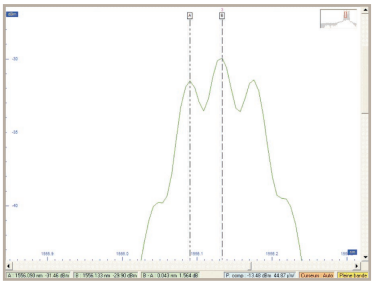

Figure 3: Side-band modulation detection

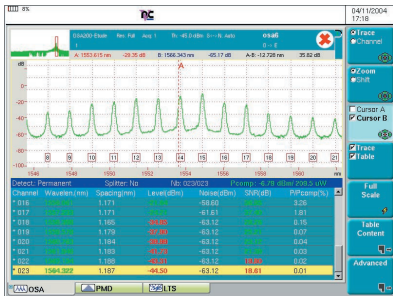

Figure 4: Graphical and tabular results display pass/fail indication and out-of-range values

The most compact and Rugged field solution

The WDM module is the ideal solution for DWDM applications.

Thanks to its innovative technology, the combination with the MTS/T-BERD platforms offer the lightest and most compact portable Optical Spectrum Analyzer in the market. Battery-powered, shockproof and drop tested, the instrument offers a complete reliability in harsh environmental conditions. The 81WDM module is the only WDM analyzer that passes a 70 cm drop test!

C+L DWDM band network coverage

Thanks to its 1485 to 1640 nm band coverage and the optimization of OSNR measurement, the WDM module provides the right solution for amplified DWDM transmission networks testing.

It offers the best (Performances/Cost) ratio on the market in its category.

As such a solution has to be easy and fast to qualify the network or determine the problem, the (Test Auto) mode identifies DWDM channels, selects the appropriate wavelength range and provides auto-scaling and system qualification according to predefined parameters.

One button testing means that technicians need no special training to carry out a DWDM test. This module is suitable for both novice and expert technicians.

The best resolution on the market – Up to 5 GHz channel spacing analysis

Ideal for the detection of side-band modulation on top of DWDM channels such as sub-marine applications or high speed 40 Gb/s transmission systems. It provides the best accuracy on the market (±10 pm).

Powerful Pass/Fail Link Manager

Graphical and tabular display formats can be selected to assist in installation, verification, and troubleshooting (Figure 4). Built-in test functions deliver automatic pass/fail evaluations based on defined alarms according to the DWDM grid configuration, saving time with a quick and intuitive overview of the complete set of results.

Long term monitoring

The WDM module not only offers instantaneous testing but also provides a long term monitoring capability.

Over a given period, a number of acquisition will be performed, providing statistical results (min, max, deviation), which could be correlated to defined channel plan. It allows immediate pinpointing of undesirable variations of any of the DWDM parameters (frequency, Power level, OSNR…).

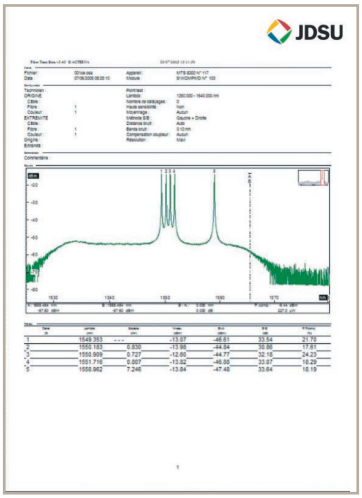

Figure 5: Simultaneous WDM, PMD, and SA report generation

8000 platform

6000 platform

Error-free professional report generation

A complete PC-based software application within a Microsoft Windows environment offers detailed generation of professional WDM reports.

- Proof-of-performance reports with a high degree of customization capabilities
- Out-of-range value summaries
- Complete fiber characterization reports, including OTDR, CD, PMD, and spectral attenuation

Enhanced testing solution

With the scalable design of the MTS/T-BERD platforms, field technicians can quickly and easily plug-in the appropriate test module to perform precise measurement from the outside plant to the central office. The optical test platforms offer a full range of fiber characterization test modules with OTDR, CD, and spectral attenuation measurement, as well as DWDM testing capabilities.

The WDM test module can be combined with additional measurement capabilities in JDSU's optical test platforms so that technicians can fully characterize the fiber network with an all-in-one solution:

- Optical insertion loss
- Optical return loss
- OTDR
- Chromatic dispersion
- Polarization mode dispersion
- Spectral attenuation profile

A complete range of DWDM test solutions

A large portfolio to better match your application and requirements

Product	Application
OSA-30x	DWDM system turn-up, verification and maintenance (including channel isolation for BER testing). Component qualifications (DFB, FP laser, EDFA…). Very high ORR values. Dedicated for Central Office. Overkilled performance for CWDM network.
OSA16x/20x	DWDM/CWDM system turn-up, verification and maintenance (including channel isolation for BER testing). Network element verifications (EDFA…) High ORR values. Dedicated for Central Office.
81WDMPMD	CWDM/DWDM network installation (physical layer testing with PMD and SA). DWDM System verification and maintenance. CWDM system turn-up, verification and maintenance. Medium ORR values. Dedicated for Outside Plant.
81WDM	C+L DWDM maintenance and troubleshooting. Medium ORR values. Dedicated for Outside Plant.

WDM technical specifications

(typical at 25°C)

Wavelength

Range	1485-1640 nm
Sweep time (real time)	1.5 s
Accuracy [a]	± 10 pm
Display Resolution	1 pm
Min. spacing between channels	10 GHz
Optical Bandwidth (FWHM) [b]	30 pm

Power level

Display range	-90 dBm at +30 dBm
Display Resolution	0.01 dB
Measurement range on a channel	-79 dBm at +10 dBm
Noise floor [c]	-86 dBm
Max. admissible power (before signal cut off)	
– total	+20 dBm
-– for one channel	+10 dBm
Accuracy [d]	± 0.5 dB max
Linearity [e]	± 0.2 dB
Flatness [f]	± 0.2 dB
Polarization dependence (PDL)	± 0.15 dB
ORL (Optical Return Loss)	35 dB
ORR (Optical Rejection Ratio) [g]	40 dB at 100 GHz from the carrier 35 dB at 50 GHz from the carrier

a. between 1525 and 1620 nm from -40 dBm to +5 dBm.

b. between 1525 and 1570 nm

c. with averaging at 1550 nm

d. at -30 dBm and 1550 nm, excluding the uncertainty due to the input connector.

e. at 1590 nm from 0 to -40 dBm

f. between 1525 nm - 1620 nm (reference: 1550 nm)

g. from the top of a carrier, in the range 1530 to 1605 nm and at 0 dBm

Ordering information

WDM modules

E81WDM	1485 nm to 1640 nm WDM module

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