MTS/T-BERD PLATFORMS

Polarization Mode Dispersion Module

Key Features

- **Fixed analyzer method standardized by ITU-T, IEC and TIA/EIA**
- **Only table drop tested PMD testing solution in the market**
- **Fast measurement time – from just six seconds**
- **Measurement through multiple Erbium Doped Fiber Amplifiers (EDFAs).**
- **Unique compact and cost effective single-slot module for possible combined PMD, OSA and Spectral Attenuation (SA) testing**

Advanced optical module for the JDSU MTS/T-BERD platforms

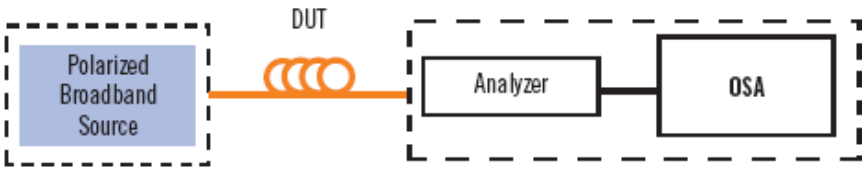
The combination of the PMD Analyzer with a MTS/T-BERD platform offers a lightweight, handheld and rugged field instrument suitable for any PMD measurement requirements. As well as the various measurement needs, flexibility and scalability of the instrument, enable easy evolution towards additional measurements capability and functionality enhancement.

The instrument can be used for outside (OSP) or inside plant (CO) environments. The intuitive user interface offers easy access for novice technicians with advanced analysis capabilities for expert users.

A standardized solution

The PMD test module is based on the Fixed Analyzer method standardized by ITU-T G.650.2, IEC 60793-1-48 and EIA/TIA 455 FOTP 113.

From the spectrum, the intensity modulation mean period is measured. The fixed analyzer response is shifted to the time domain by taking the Fourier Transform of the power fluctuations with wavelength, the mean DGD value is determined from the Gaussian curve (for fiber links with strong mode coupling).



Fixed Analyzer method Principle

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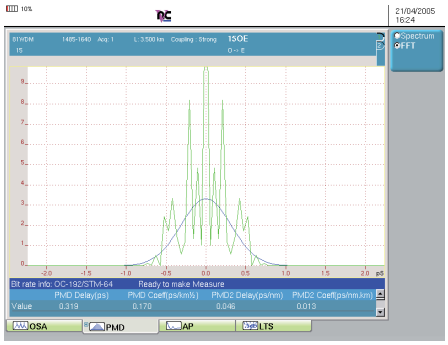
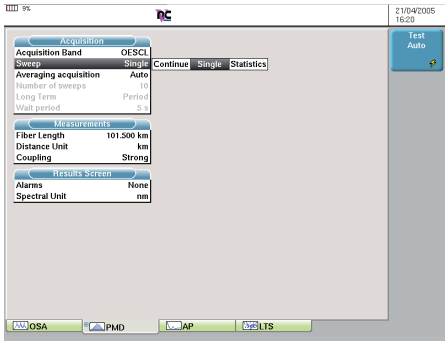
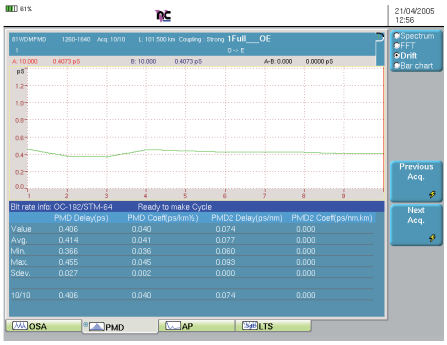


PMD results including first and second order values with FFT display

OBS-55



Simple test configuration menu



Long term analysis with drift curve display

Efficient field solution

- Less than 6 seconds measurement time whatever the PMD value, the PMD test solution is the fastest one in the market. It allows greater pro ductivity in the field.

High-performance measurement

- With its Differential Group Delay (DGD) measurement range, from 80 fs to 60 ps and its high dynamic range of 45 dB, the PMD solution allows to characterizing any fiber optic link.
- Automatic calculation of the second order PMD Delay and PMD Coef ficient, providing information for future very high speed transmission systems such as 40 Gbps.
- Test Through multiple EDFA: The MTS/T-BERD platforms offer ultra long haul amplified system testing capability with in-line Erbium Doped Fiber Amplifiers.

PMD test configuration through amplified link

Broadband light source

- Optimized for field PMD applications, the hand held OBS-55 broadband source offers a long battery life with up to 6 hours, and permanent light activation capability. It is the mandatory tool for high performance and high dynamic range PMD test.
- A broadband source module can be plugged into the MTS/T-BERD platform, offering an all-in-one solution for the remote product (addition to OTDR, for example) and increasing the dynamic range to 47 dB.

Easiest to use

PMD delay, coefficient, and second order calculation are provided automatically at the press of the start key.

One button testing means technicians need no special training to carry out a PMD test. JDSU's solution is suitable for novice and expert technicians.

Long-term PMD analysis

The PMD module offers complete statistical analysis and long term monitoring capabilities.

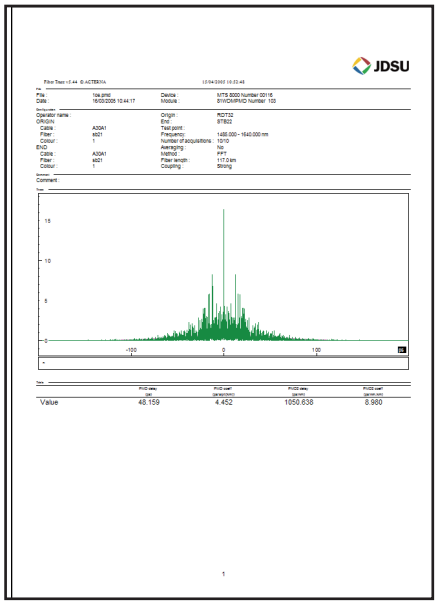
A series of measurements over a defined period of time allows PMD variation measurements to be calculated. The measurement data is stored automatically, and can be viewed as a histogram or a drift curve.

A powerful link manager

PMD results are directly compared to defined thresholds, and Pass/Fail alarms provide immediate information, saving time with quick and intuitive checks of the complete bunch of tests.

MTS/T-BERD PLATFORMS

Polarization Mode Dispersion Module



Customized and professional reporting software

8000 platform

6000 platform

Multiple functions in one module

The 81PMD test plug-in is the only solution combining multiple test functions in one. PMD, DWDM and spectral attenuation (SA) test capabilities are all available, offering the lightest, smallest and best price/performance solution for the verification of DWDM system before upgrade.

Error-free professional report generation

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

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Technical specifications

PMD test module

Dynamic range	45 dB
DGD measurement range (1)	0.08 to 60 ps
DGD absolute uncertainty (2, 3)	± 0.02 ps ± 2% PMD
DGD repeatability (2, 3)	± 0.025 ps
Measurement time (4)	6 s, independent of PMD value
Applicable fiber	SMF 9/125 µm
Interchangeable optical connectors	FC, SC, DIN, etc.
Size (w × h × d)	21.3 × 12.4 × 3.2 cm (8.38 × 4.88 × 1.26 in)
Weight	500 g (1.1 lbs)

(1) Up to 150 ps in weak mode coupling

(2) Weak mode coupling, between 0.1 ps and 60 ps DGD range.

(3) NPL standard traceable

(4) without averaging, 12 s with 81WDMPMD module

Handheld broadband source

Optical specifications

Applicable fiber	SMF 9/125 µm
Interchangeable optical connectors	FC, SC, DIN, etc…
Peak power at 1550nm	>0 dBm
Spectral density:	-42 dBm/0.1 nm
Wavelength range:	1520 nm to 1620 nm

General specifications

Battery operation	4 rechargeable NiMH batteries
Operating time	5 h
Power supply	AC/DC adapter/charger 100 to 250 V, 50/60 Hz
Operating temperature	-10 to + 55 °C
Dimensions (w × h × d)	95 × 60 × 195 mm (3.74 × 2.36 × 7.67 inches)

Weight 500 g

Broadband source module

Wavelength range

BBS1	1485 to 1640 nm
BBS2	1260 to 1640 nm

Optical interfaces

Applicable fiber	SMF 9/125 µm
Interchangeable optical connectors	FC, SC, DIN, etc.
Dimensions (w × h × d)	213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in)
Weight	500 g (1.1 lb)

Ordering information

PMD module

E81PMD	PMD test module (1485-1640 nm)
E81WDMPMD	PMD test module + Spectral Analysis + Spectral Attenuation (1260 to 1640 nm)
2279/31	Hand Held Broadband source
E81BBS1	Broadband Source module
E81BBS2	Broadband Source module (full band)