



## *Enabling Australia's Field Technicians to build, troubleshoot and maintain better communications networks.*



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# **FREECALL 1800 680 680**

# 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

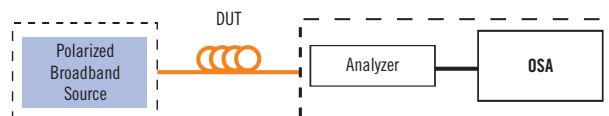
The combination of the PMD Analyzer with a MTS/T-BERD platform offers a lightweight, handheld and rugged field instrument suitable for any PMD measurement requirements. As well as the various measurement needs, flexibility and scalability of the instrument, enable easy evolution towards additional measurements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

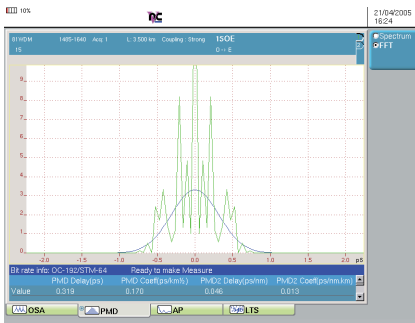
The PMD test module is based on the Fixed Analyzer method standardized by ITU-T G.650.2, IEC 60793-1-48 and EIA/TIA 455 FOTP 113.

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

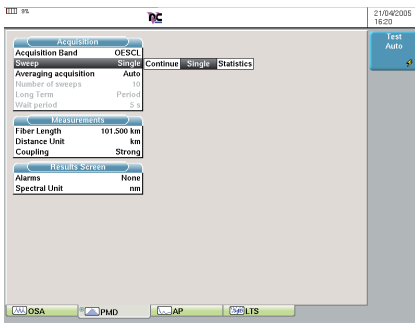
2



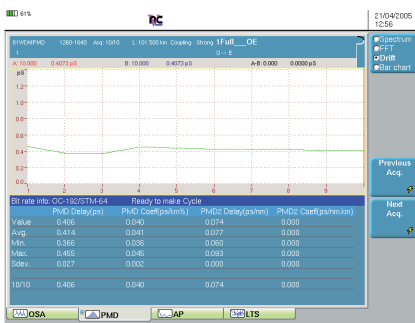
PMD results including first and second order values with FFT display



OBS-55



Simple test configuration menu



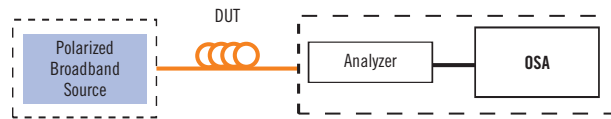
Long term analysis with drift curve display

**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 productivity 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 Coefficient, 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**

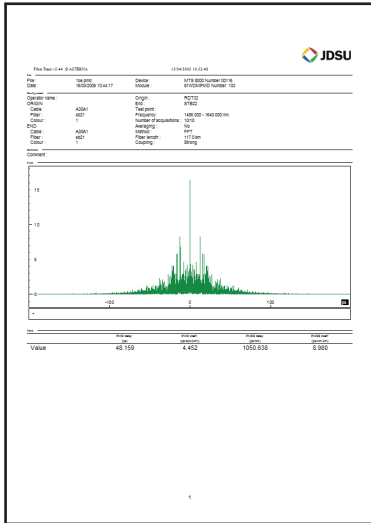
The PMD module offers complete statistical analysis and long term monitoring capabilities.

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.

3



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

**Technical specifications**
**PMD test module**

|  |   |
|--|---|
| Dynamic range                              | 45 dB   |
| DGD measurement range <sup>(1)</sup>       | 0.08 to 60 ps                                   |
| DGD absolute uncertainty <sup>(2, 3)</sup> | ± 0.02 ps<br>± 2% PMD                           |
| DGD repeatability <sup>(2, 3)</sup>        | ± 0.025 ps                                      |
| Measurement time <sup>(4)</sup>            | 6 s,<br>independent of PMD value                |
| Applicable fiber                           | SMF 9/125 µm                                    |
| Interchangeable optical connectors         | FC, SC, DIN, etc.                               |
| <b>Size</b> (w × h × d)                    | 21.3 × 12.4 × 3.2 cm<br>(8.38 × 4.88 × 1.26 in) |
| <b>Weight</b>                              | 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 81WDMPPMD 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<br>100 to 250 V, 50/60 Hz |
| Operating temperature         | -10 to + 55 °C                                  |
| <b>Dimensions</b> (w × h × d) | 95 × 60 × 195 mm<br>(3.74 × 2.36 × 7.67 inches) |
| <b>Weight</b>                 | 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. |

|                               |  |
|-------------------------------|--|
| <b>Dimensions</b> (w × h × d) | 213 × 124 × 32 mm<br>(8.38 × 4.88 × 1.26 in) |
|-------------------------------|--|

|               |                |
|---------------|----------------|
| <b>Weight</b> | 500 g (1.1 lb) |
|---------------|----------------|

**Ordering information**
**PMD module**

|            |  |
|------------|--|
| E81PMD     | PMD test module (1485-1640 nm)   |
| E81WDMPPMD | 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)  |

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