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VIAVI Solutions 5G

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

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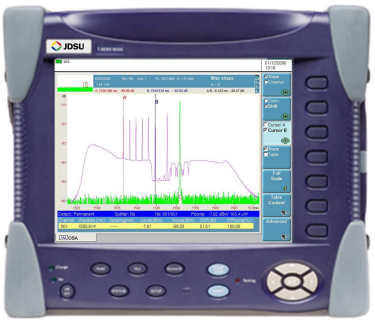
PRELIMINARY DATASHEET

MTS/T-BERD 8000 Platform

Optical Spectrum Analyzer Modules



MTS/T-BERD 8000 Platform

Applications

- Provisioning and maintenance of ROADM networks
- Commissioning of DWDM systems
- Maintenance and trouble shooting of DWDM systems
- Installation and maintenance of CWDM networks
- Spectral testing of optical components

Key Features

- New optical design for field applications 50% reduction in size and weight
- OSA-320 for true OSNR measurements in ROADM networks
- Full spectral range of 1250 to 1650 nm for DWDM and CWDM testing
- Outstanding wavelength accuracy with a lifetime guarantee based on an internal reference
- Future-proof signal analysis for data rates of 40/100G, and next-generation modulation formats
- Channel drop function for single channel isolation and tunable filter applications.

Full-band, high-performance Optical Spectrum Analyzers for testing optical systems and components

Targeted at providing advanced test solutions, the OSA-180, OSA-500, and OSA-501 are the next generation of JDSUs DWDM analyzer modules.

A new monochromator design provides high optical selectivity, and outstanding wavelength accuracy at significantly reduced size and weight offering the best field solution for testing DWDM and CWDM networks during installation, maintenance and trouble shooting.

The OSA-320 is an in-band DWDM analyzer with a new technique to measure the true OSNR inside the transmission channel of a ROADM based network.

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PRELIMINARY DATASHEET

Preliminary technical specifications (typical at 25 °C)

Full-band DWDM analyzer OSA-180

Modes

Operating modes	WDM, DFB, EDFA testing
Display modes	Graph (trace + overview); WDM table and graph + table

Spectral measurement ranges

Wavelength range	1250 to 1650 nm
Measurement samples	120,000
No. of optical channels	512
Wavelength calibration (1)	internal, on-line
Wavelength accuracy (2)	typ ±30 pm
Readout resolution	1 pm
Resolution bandwidth FWHM (3)	typ. 70 pm

Power measurement ranges

Dynamic range (4)	–65 to +23 dBm
Noise floor RMS (3) (with averaging)	–65 dBm
Absolute accuracy(3, 5)	typ ±0.5 dB
Linearity (6)	± 0.05 dB
Readout resolution	0.01 dB
Scanning time (1250 to 1650 nm) (7)	<5 s

Optical rejection ratio (ORR) (3)

at ±25 GHz (±0.2 nm)	typ 35 dBc
at ±50 GHz (±0.4 nm)	typ 45 dBc
PDL (3)	± 0.2 dB
Flatness (3)	± 0.25 dB

Optical ports (physical contact interfaces)

Input port	SM
Interface	Universal connectors
Optical return loss	>35 dB
Total safe power	+23 dBm

High performance DWDM analyzer OSA-500, OSA-501

Modes

Operating modes	WDM, DFB, EDFA testing
Display modes	Graph (trace + overview); WDM table and graph + table

Spectral measurement ranges

Wavelength range	1250 to 1650 nm
Measurement samples	120,000
No. of optical channels	512
Wavelength calibration (1)	internal, online
Wavelength accuracy (2) typ.	typ ±20 pm
Readout resolution	1 pm
Resolution bandwidth FWHM (3)	typ. 40 pm

Power measurement ranges

Dynamic range (4)	–75 to +23 dBm
Noise floor RMS (with averaging) (3)	–75 dBm
Absolute accuracy(3, 5)	typ± 0.4 dB
Linearity (6)	± 0.05 dB
Readout resolution	0.01 dB
Scanning time (1250 to 1650 nm) (7)	<5 s

Optical rejection ratio (ORR) (3)

at ±25 GHz (±0.2 nm)	typ. >40 dBc
at ±50 GHz (±0.4 nm)	typ.>45 dBc
PDL (3)	± 0.2 dB
Flatness (3)	± 0.25dB

Channel drop option (OSA-501)

Wavelength range	1250 to 1650 nm
Data rates	up to 12.5 Gb/s
Spectral filter bandwidth	typ. 175 pm
Insertion loss	typ. <10 dB
Tracking mode	auto wavelength control

Optical ports (physical contact interfaces)

Input port	SM
Output port (drop port)	
OSA-501	SM
Interface	universal
Optical return loss	>35 dB
Total safe power	+23 dBm

In-band DWDM analyzer OSA-320

Modes

Operating modes	In-band OSNR, WDM DFB, EDFA testing
Display modes	Graph (trace/overview) WDM table and graph + table

Spectral measurement ranges

Wavelength range	1250 to 1650 nm
Measurement samples	40,000
No. of optical channels	512
Wavelength calibration(1)	internal, online.
Wavelength accuracy (2)	typ. ± 10 pm
Readout resolution	1 pm
Resolution bandwidth FWHM (3)	typ. 60 pm

Power measurement ranges

Dynamic range (4)	–70 to +20 dBm
Noise floor RMS (with averaging) (3)	–70 dBm
Absolute accuracy(3, 5)	± 0.6 dB
Linearity (6)	± 0.05 dB
Readout resolution	0.01 dB
Scanning time (1250 to 1650 nm) (7)	1.5 s

Optical rejection ratio (ORR) (3)

at ± 25 GHz (± 0.2 nm)	typ. 45 dBc
at ± 50 GHz (± 0.4 nm)	typ. 48 dBc
PDL (3)	± 0.2 dB

In-band OSNR measurement mode

OSNR dynamic range	up to >30 dB
PMD tolerance (9)	up to 50 ps
Measurement accuracy(10)	typ ± 0.5 dB
Data signals	up to 100 Gbps
Measurement time(11)	<2 min

Optical ports (physical contact interfaces)

Input port	SM
Interface	universal
Optical return loss	>35 dB
Total safe power	+20 dBm

(1) Built-in, physical constant wavelength calibrator, needs no re-calibration
(2) At 1550 nm at 23 °C
(3) 1520 to 1565 nm at 18 to 28 °C
(4) Max. power per channel +15 dBm, total power +23 dBm
(5) At –15 dBm
(6) –45 dBm to +10 dBm, at 23 °C
(7) WDM mode full span 400 nm, incl. WDM table analysis
(9) For data rates up to 10 Gbps
(10) For data rates ≥ 40 Gbps, typically ± 1 dB
(11) Fast mode, independent of no. of channels

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PRELIMINARY DATASHEET

General specifications

Temperature

Operating	+5 to +50°C 41 to 122°F
Storage	-20 to +60°C -4 to 140°F

Weight (OSA-180/500/501)

module only	2.1kg / 4.4lbs

Size (OSA-180/500/501)

module only	50x250x305 mm 20x98x120 in

OSA Selection Guide

A comprehensive portfolio to better match your application requirements.

Product	Applications
OSA-320	• ROADM system turn-up, verification and maintenance • Measurement of true in-band OSNR in ROADM based networks
OSA-500	• DWDM system turn-up, verification, and maintenance • Component qualification (DFB, FP, LED, or EDFA) • Very high ORR values
OSA-501	• DWDM maintenance and trouble shooting • Tunable filter version with channel isolator for BER testing
OSA-180	• DWDM/CWDM system turn-up, verification, and maintenance • Network element verification (EDFA) • High ORR values

Ordering information

Full band and high-Performance DWDM analyzers

2281/91.18	OSA-180
2281/91.51	OSA-500 high performance
2281/91.52	OSA-501 high perf. w. drop

In-band DWDM analyzer for ROADM networks

2281/91.34	OSA-320 in-band DWDM analyzer

Optical connectors

Standard single mode	FC/PC, SC, ST, DIN, LC

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