Measu-
rement
Devices

Data Sheet

VIAVI

T-BERD/MTS-6000A and –8000 Platforms

OSA-110M/110H/110R Compact Full-Band OSAs

Test xWDM Networks with a Compact, Full-Band Optical Spectrum Analyzer

The OSA-110 Series is the next generation of compact VIAVI Solutions™ optical spectrum analyzer (OSA) modules with unmatched size, weight, price, and performance, which make it ideal for field use. Housed inside the T-BERD/MTS-6000A series platform, it offers the smallest full-band OSA solution on the market.

The OSA-110 Series is suitable for all optical coarse wavelength division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) networks down to 33 GHz channel spacing. In addition to standard features provided by the OSA-110M, the OSA-110H integrates a high-power measurement capability, making it the ideal tool for cable operators. The OSA-110R includes the well-known VIAVI in-band measurement technique to measure the true OSNR in ROADM-based networks and in 40 G systems with overlapping spectra.

The combination of high optical resolution with full-band measurement capability makes the OSA-110 Series ideal for testing power, wavelength, OSNR, and drift during provisioning, maintenance, and upgrades of WDM systems.

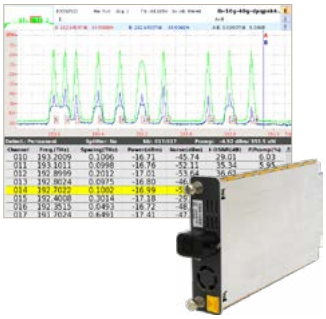
Platform Compatibility

T-BERD/MTS-6000A

Modular platform for fiber and multiple-services testing

T-BERD/MTS-8000 (V2)

Scalable platform for multiple-layer and multiple-protocol testing



Key Benefits

- Improved field operation with the smallest and lightest full-band OSA available
- Suitable for all CWDM and DWDM applications down to 33 GHz channel spacing
- One-touch test with automatic pass/fail analysis
- Future-proof signal analysis for 40/100 G testing and new modulation formats
- In-band OSNR measurements in ROADM and 40 G networks

Key Features

- Full-band measurement range from 1250 to 1650 nm
- Built-in wavelength calibration guarantees ±0.05 nm wavelength accuracy
- High-power version accommodates power levels up to +30 dBm
- In-band version to measure true OSNR in ROADM and 40 G networks

Applications

- Deploying and maintaining DWDM metro and core networks
- Installing and maintaining CWDM systems in CATV, access, and mobile backhaul
- Verifying high-speed 40/100 G interfaces
- Provisioning and troubleshooting ROADM networks

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Specifications[1]

Modes	
Analysis	WDM, drift, DFB, OO-OSNR, in-band OSNR (OSA-110R only)
Display	Graph, WDM table, graph and table
WDM Measurement	
Channel spacing	33 to 200 GHz, CWDM
Max no. of channels	256
Data signals	No data rate limit, all data rates supported
Modulation formats	All formats supported
Spectral Measurement	
Wavelength range	1250 to 1650 nm
Abs. wavelength accuracy[2, 3]	± 0.05 nm
Wavelength reference	Internal
Wavelength repeatability[2, 4]	±0.01 nm
Resolution bandwidth (FWHM)[2]	0.1 nm
Readout resolution	0.001 nm
Scanning time (including WDM analysis)	
Full band C-band	<5 s 1 s
Measurement samples	111,000
Power Measurement	
Absolute accuracy[2, 8]	±0.6 dB
Readout resolution	0.01 dB
Flatness[2, 8]	±0.3 dB
PDL[2]	±0.2 dB
Power Measurement (OSA-110M/OSA-110R)	
Dynamic range per channel[5]	–60 to +15 dBm
Total safe power	+23 dBm
Linearity[2, 6]	±0.1 dB
Power Measurement (OSA-110H)	
Dynamic range per channel[5]	–50 to +25 dBm
Total safe power	+30 dBm
Linearity[2, 7]	±0.1 dB
Optical Measurement	
Optical rejection ratio (ORR)[2]	
At ± 0.2 nm (for 50 GHz channel spacing)	35 dBc
At ± 0.4 nm (for 100 GHz channel spacing)	40 dBc
OSNR accuracy[9]	±0.6 dB
OSNR range	>30 dB
In-Band OSNR (OSA-110R)	
I-OSNR dynamic range	up to >25 dB
PMD tolerance[10]	up to 10 ps
Data signals[11]	up to 40 G

General	
Optical port	universal SM-PC, universal SM-APC
Connectors	FC, SC, ST, LC, DIN
ORL	>35 dB
Size (module)	122 x 235 x 26 mm (4.8 x 9.3 x 1.0 in)
Weight (module)	0.6 kg (1.3 lb)
Temperature	
Operating Storage	+5 to +40°C (41 to 104°F) –20 to +60°C (–4 to 140°F)
Relative humidity	0 to 95% noncondensing

1. Unless otherwise specified, all specifications are based on a temperature of 23°C ±2°C with an FC/PC connector, after warm-up.
2. Typical for 1520 to 1565 nm at 18 to 23°C.
3. Recommended period for recalibration is 2 years.
4. In 5 consecutive scans.
5. From 1520 nm to 1610 nm.
6. Signal power from –45 dBm to +10 dBm.
7. Signal power from –35 dBm to +20 dBm.
8. At –10 dBm including PDL.
9. Typical value with equal channel power for OSNR up to 25 dB and signal >–30 dBm for OSA-110M/R and >–20 dBm for OSA-110H.
10. For data rates up to 10 G.
11. Except for pol-mux and polarization scrambled signals.

Ordering Information

Description	Part Number
OSA Modules	
OSA-110M, PC version	2304/91.02
OSA-110M, APC version	2304/91.12
OSA-110H, high-power PC version	2304/91.03
OSA-110H, high-power APC version	2304/91.13
OSA-110R, in-band OSNR PC version	2304/91.04
OSA-110R, in-band OSNR APC version	2304/91.14
Application Software for Report Generation	
FiberTrace2 reporting software	EOFS100
FiberCable 2 reporting software	EOFS200

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VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

For more Information: go to viavisolutions.com/viavicareplan

Features

*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration
BronzeCare	Technician Efficiency	Premium	✓	✓	✓		
SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓

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