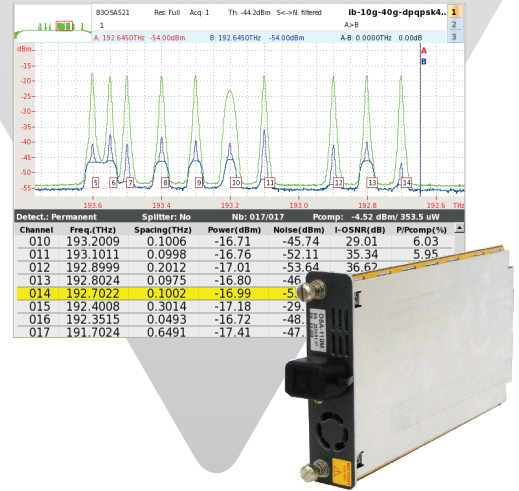




T-BERD[®]/MTS-6000A and -8000 Platforms

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



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

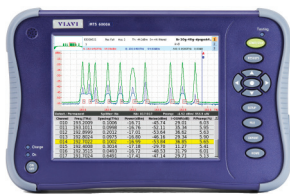
The OSA-110 Series is the next generation of compact Viavi Solutions™ optical spectrum analyzer (OSA) modules with unmatched size, weight, price, and performance, which make it ideal for field use. Housed inside the T-BERD/MTS-6000A series platform, it offers the smallest full-band OSA solution on the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

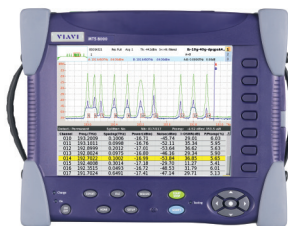
Platform Compatibility

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

Specifications¹

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	up to 1 T
Modulation formats	All formats supported (NRZ/RZ-OOK, DB, PSBT, CSRZ, DPSK, BPSK, QPSK, and PM QPSK)
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	<5 s
C-band	2 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	+5 to +40°C (41 to 104°F)
Storage	-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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