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**

<table>
<thead>
<tr>
<th>T-BERD/MTS-6000A</th>
<th>T-BERD/MTS-8000 (V2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modular platform for fiber and multiple-services testing</td>
<td>Scalable platform for multiple-layer and multiple-protocol testing</td>
</tr>
</tbody>
</table>

**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
Specifications

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
± 0.05 nm
Wavelength reference
Internal
Wavelength repeatability
± 0.01 nm
Resolution bandwidth (FWHM)
0.1 nm
Readout resolution
0.001 nm

Scanning time (including WDM analysis)
Full band
< 5 s
C-band
1 s
Measurement samples
111,000

Power Measurement
Absolute accuracy
± 0.6 dB
Readout resolution
0.01 dB
Flatness
± 0.3 dB
PDL
± 0.2 dB

Power Measurement (OSA-110M/OSA-110R)
Dynamic range per channel
−60 to +15 dBm
Total safe power
+23 dBm
Linearity
± 0.1 dB

Power Measurement (OSA-110H)
Dynamic range per channel
−50 to +25 dBm
Total safe power
+30 dBm
Linearity
± 0.1 dB

Optical Measurement
Optical rejection ratio (ORR)
At ± 0.2 nm (for 50 GHz channel spacing)
35 dBc
At ± 0.4 nm (for 100 GHz channel spacing)
40 dBc
OSNR accuracy
± 0.6 dB
OSNR range
> 30 dB

In-Band OSNR (OSA-110R)
I-OSNR dynamic range
up to > 25 dB
PMD tolerance
up to 10 ps
Data signals
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

Ordering Information

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

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.
**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](http://viavisolutions.com/viavicareplan)

### Features

*5-year plans only*

<table>
<thead>
<tr>
<th>Plan</th>
<th>Objective</th>
<th>Technical Assistance</th>
<th>Factory Repair</th>
<th>Priority Service</th>
<th>Self-paced Training</th>
<th>5 Year Battery and Bag Coverage</th>
<th>Factory Calibration</th>
<th>Accessory Coverage</th>
<th>Express Loaner</th>
</tr>
</thead>
<tbody>
<tr>
<td>BronzeCare</td>
<td>Technician Efficiency</td>
<td>Premium</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SilverCare</td>
<td>Maintenance &amp; Measurement Accuracy</td>
<td>Premium</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaxCare</td>
<td>High Availability</td>
<td>Premium</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>