

FTB-5240S

NETWORK TESTING—OPTICAL



Compact OSA for current and next-generation networks

- Truly portable spectral characterization for DWDM network commissioning
- In-band OSNR measurement for 40 Gbit/s and ROADM deployments
- Automated channel discovery feature for easy setup and measurement
- Over 90 dB dynamic range per scan

Platform compatibility

- FTB-200 Compact Platform
- FTB-500 Platform



Next-Generation Network Assessment



Choice without Compromise

The all-new FTB-5240S Optical Spectrum Analyzer (OSA) module covers your DWDM applications and all channel spacings, from 50 GHz DWDM to CWDM. This is what we call “no-compromise performance”, whatever your network specificities and testing requirements.



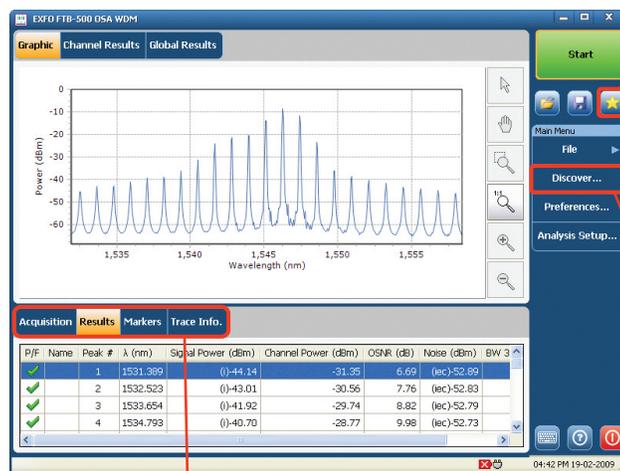
Nimble OSA Meets the Supertech Platforms

The FTB-5240S OSA test module, housed in either the FTB-200 Compact Platform or the FTB-500 Platform, is purpose-built for fast and accurate dense wavelength-division multiplexing (DWDM) network commissioning and high-speed networking—up to 40 Gbit/s.

Housing the FTB-5240S in the FTB-200 platform makes it the smallest, high-performance, portable solution for spectral characterization of next-generation networks on the market. When equipped with in-band optical-signal-to-noise-ratio (OSNR) measurement capabilities in the FTB-500 platform, this versatile OSA can also be combined with the FTB-8140 Transport Blazer 40/43 Gigabit SONET/SDH/OTN Test Module to create a unique reconfigurable optical add/drop multiplexer (ROADM), plain old telephone service (POTS) and 40 Gbit/s test solution.

Quicker Setups—Easier Testing

The application software has been designed to optimize all testing operations—boosting productivity.



Favorites button (star icon) enables direct access to your defined list—right in the field



Discover button replaces any setup, ensuring automatic channel discovery and identification and intelligent analysis



Setups and test configurations can easily be defined and stored in the instrument

Ready for Next-Generation Network Challenges

Faster is Always Better

Testing speed is critical, which is why EXFO's FTB-5240S OSA housed in the FTB-500 Platform, will achieve a scan and display the results in approximately one second—that's fast enough for highly efficient amplifier adjustments on the go.

Get the Clear Picture

Most OSAs offer hardware-based resolution bandwidth options through variable slit sizes. However, in addition to decreasing the robustness of the instrument, such an approach lacks flexibility since the quality of the data is only as good as the acquisition resolution. EXFO's FTB-5240S OSA has fixed bandwidth; the acquired data is always top resolution, but the software enables to integrate data with variable resolution—providing extra flexibility without compromising on specifications and data quality.

Sharp In-Band OSNR Measurement—No Extra Hardware Needed

Thanks to its flexible and innovative patent-pending analysis method, EXFO's FTB-5240S-P delivers highly accurate OSNR measurements for systems where noise fluctuates from channel to channel. The IEC subsystem test procedure 61280-2-9 recommendation defines OSNR measurement as “the difference in power between the peak power and the noise at half the distance between the peaks”. However, in ROADM or 40 Gbit/s systems, this method may lead to incorrect results.

The built-in polarization diversity detection of EXFO's OSAs, combined with a polarization controller, enables you to achieve accurate OSNR measurements of a ROADM system, without having to add external hardware. By nature the signal is polarized; however, noise—by definition—is not organized, therefore it is not polarized. In EXFO's OSAs, the power versus the wavelength on two polarization axes is measured; thereby discriminating between the polarized and non-polarized power and isolating the noise from the signal. Furthermore, the FTB-5240S offers:

- Multiple scans, changing the polarization state between them and using the data to determine the OSNR in-band for each channel
- New modulation schemes, such as non-return-to-zero (NRZ), duo binary, differential phase-shift keying (DPSK), quadrature phase shift keying (QPSK), which present large line widths and often display multiple peaks. In-depth analysis ensures the correct identification and signal measurement of each carrier
- Simultaneous testing of the physical and transport or datacom layers when combined with other EXFO modules in the FTB-500 Platform



The FTB-500 Platform

The result of over 10 years of proven leadership in multimodular test platforms, the FTB-500 delivers a whole new spectrum of network testing possibilities, a whole new testing paradigm: more advanced applications, faster setups, test cycles and reporting, wireless communication and reporting, and universal compatibility with all EXFO FTB modules, past, present and future. Designed for network experts, this high-end, highly evolutive platform enables true next-generation network testing.

SPECIFICATIONS ^a (Preliminary)

Spectral Measurement	FTB-5240S
Wavelength range (nm)	1250 to 1650
Resolution bandwidth FWHM ^{b, c} (nm)	0.065 ^d
Wavelength uncertainty ^{e, d} (nm)	±0.05 ±0.010 ^{d, f}
Wavelength repeatability ^g (nm)	±0.003
Wavelength linearity ^{c, d} (nm)	±0.01
Amplitude Measurement	FTB-5240S
Dynamic range ^c (dBm)	18° to -75 ^h
Power uncertainty ⁱ (dB)	±0.5
Optical rejection ratio 1550 nm (dBc)	
at 25 GHz (±0.2 nm)	35 (40 typical)
at 50 GHz (±0.4 nm)	45 (50 typical)
PDR at 1550 nm ^d (dB)	±0.08
Scanning time (s)	<1.5 ⁱ
ORL (dB)	≥40
Power repeatability (dB)	±0.03 ^h
In-Band OSNR Measurement	FTB-5240S-P
OSNR dynamic range ^{d, k} (dB)	>40
Measurement uncertainty ^d (dB)	±0.5
Scanning time (min) ^d	<1
Platform	FTB-200 FTB-500

Notes

- All specifications are for a temperature of 23 °C ±2 °C with a FC/UPC connector unless otherwise specified, after warmup.
- Full width at half maximum.
- From 1520 to 1610 nm.
- Typical.
- User calibration may be required.
- After user calibration in the same test session within 10 nm from each calibration point.
- Over 1 minute in Real mode.
- With averaging.
- At 1550 nm, -10 dBm input.
- 35 nm span, full resolution, multiple-peak analysis in FTB-500.
- For optical noise level > -60 dBm.

GENERAL SPECIFICATIONS

Temperature	operating	0 °C to 40 °C	(32 °F to 104 °F)
	storage	-20 °C to 50 °C	(-4 °F to 120 °F)
Relative humidity	0 % to 95 % non-condensing		
Connectors	EI (EXFO UPC Universal Interface)		
	EA (EXFO APC Universal Interface)		
Size (H x W x D) (module)	96 mm x 51 mm x 260 mm	(3 3/4 in x 2 in x 10 1/4 in)	
Weight (module)	1.5 kg	(3.3 lb)	

ORDERING INFORMATION

FTB-5240S-XX-XX-XX

Model ■

FTB-5240S = Optical spectrum analyzer
FTB-5240S-P = Optical spectrum analyzer with polarization controller

Software option ^a ■

00 = Without software option
InB = With in-band OSNR software

Example: FTB-5240S-P-InB-EI-EUI-89

* EXFO Universal Interface is protected by US patent 6,612,750.

Connector * ■

EI-EUI-28 = UPC/DIN 47256
EI-EUI-76 = UPC/HMS-10/AG
EI-EUI-89 = UPC/FC narrow key
EI-EUI-90 = UPC/ST
EI-EUI-91 = UPC/SC
EI-EUI-95 = UPC/E-2000
EA-EUI-28 = APC/DIN 47256
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000

Note

a. Available with FTB-5240S-P only.

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