

# FTB-5230S/-OCA

## OPTICAL SPECTRUM ANALYZER AND OPTICAL CHANNEL ANALYZER



Flexible optical spectrum analyzer for DWDM, CWDM and hybrid network testing and an optical channel analyzer for a wide range of WDM applications

### KEY FEATURES

#### Optical Spectrum Analyzer (FTB-5230S)

Entry-level optical spectrum analyzer for a variety of field applications

Lower cost of ownership

Intuitive user interface

Portable

Large 10-inch display on FTB-2 Platform

#### Optical Channel Analyzer (FTB-5230S-OCA)

Optimized for power and wavelength measurements

Easy-to-use via built-in configurations

Ideal for cable operators

Perfect for CFP power measurement

Future-proof: upgradable to a full FTB-5230S OSA via software key

Housed in either the compact FTB-2, FTB-2 Pro, FTB-200 or FTB-500 platform

### PLATFORM COMPATIBILITY



Platform  
FTB-500



Platform  
FTB-2 or FTB-2 Pro

## NEW FTB-5230S OSA: FLEXIBLE AND EASY TO USE

The FTB-5230S is an entry-level optical spectrum analyzer that is ideal for a variety of field applications, including DWDM and CWDM network commissioning and troubleshooting. It includes all the typical OSA capabilities:

- › Power and wavelength measurements
- › WDM and drift mode
- › OSNR testing according to IEC 61280-2-9 (interpolation method)
- › Offline post-processing

Users can quickly learn to operate the FTB-5230S because it features an intuitive Windows XP-based interface. The FTB-5230S can also handle a lot of power, up to 23 dBm per channel, ideal for modern cable operator networks.

## NEW FTB-5230S-OCA: AN ATTRACTIVE OSA ALTERNATIVE

The FTB-5230S-OCA (optical channel analyzer)<sup>a</sup> is a perfect compromise between an OSA and a channel analyzer. Integrating the best of both product types, this tool offers the most important spectrum analysis capabilities (power and central wavelength measurements), as well as high-power measurements up to 23 dBm per channel, for the price of an advanced channel analyzer. Designed for simplicity in the field, it keeps settings to a minimum. It has also been optimized for a number of multi-wavelength applications (DWDM, CWDM, DWDM over CWDM and CFP power measurements).

## THE OPTICAL CHANNEL ANALYZER: A CABLE OPERATOR'S BEST FRIEND

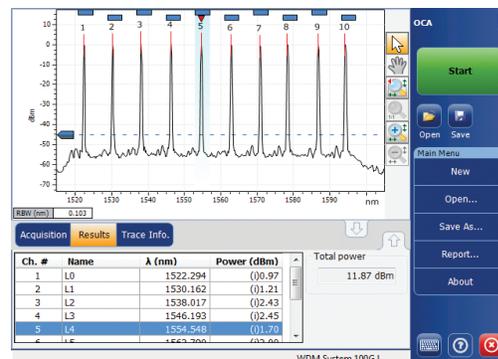
Cable operators are not just rolling out CWDM and DWDM, they are deploying hybrid networks, where DWDM wavelengths are overlaid onto CWDM wavelengths. Until now, cable operators either had to rely on OSAs to perform the spectral analysis of these hybrid networks, a pricier option, or on a combination CWDM/DWDM channel analyzer, an inconvenient and cumbersome option. With EXFO's new optical channel analyzer, operators can address all these applications in a single product.

## CFP POWER MEASUREMENT WITH THE OCA

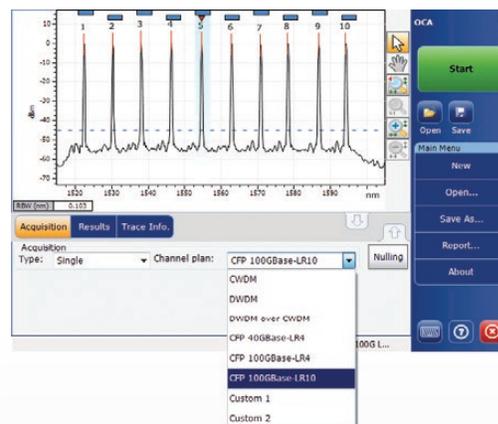
100 GigE deployments are rapidly becoming commonplace, triggering a transition from 10G and lower rate service (SFP/SFP+/XFP) to 40G/100G using CFPs (C form-factor pluggables). This is in turn leading to multi-wavelength client-side communications instead of single-wavelength transmissions. Since CFPs have longer reaches (up to 10 km for LR4), meeting the loss budget is more challenging than ever before. Moreover, CFP lasers are aging and need to be replaced. All these trends are calling for CFP power measurements at the network element, where the client-side signals are converted to line-side signals. The OCA is the ideal solution for this because it features built-in configurations for 40GBase-LR4 and 100GBase-LR4/LR10 CFPs, ensuring quick and reliable power measurements at the touch of a button.

## LARGE DISPLAY ON THE FTB-2 PLATFORM

The FTB-5240S OSA test module can be housed in either the FTB-500, FTB-2, FTB-2 Pro or the FTB-200 v2 platforms. The FTB-2 Pro is the most compact, high-speed deployment and multiservice testing solution to deliver all the tools needed for maximum field efficiency on the market today. The platform boasts a 10-inch, high-resolution, widescreen display that clearly shows the details of complex multichannel DWDM traces acquired with the OSA. It operates on the latest Microsoft Windows 8.1 Pro OS, and is EXFO Connect compatible, our automated, centralized, cloud-based asset and test data management application.



*FTB-5230S-OCA Optical Channel Analyzer displays channel power and wavelength, and total power*



*FTB-5230S-OCA Optical Channel Analyzer features built-in configurations for easier operation*

### Note

a. Offline analysis on PC and OSNR measurements based on the IEC method are not included in the FTB-5230S-OCA. Upgrade to the FTB-5230S for these two capabilities.

## SPECIFICATIONS <sup>a</sup>

### SPECTRAL MEASUREMENT

Wavelength range (nm)	1250 to 1650
Wavelength uncertainty (nm) <sup>b</sup>	±0.05 ±0.02 <sup>c, d</sup>
Reference	Internal <sup>e</sup>
Resolution bandwidth (FWHM) <sup>f</sup> (nm)	≤ 0.10 <sup>b, d</sup>
Wavelength repeatability 2σ (nm)	±0.005 <sup>g</sup>
Analysis modes	WDM and drift (FTB-5230S) / Optical Channel Analyzer mode (FTB-5230S-OCA)

### POWER MEASUREMENT

Dynamic range (dBm) (per channel) <sup>b</sup>	-65 <sup>d</sup> to 23 dB
Maximum total safe power (dBm)	29
Absolute power uncertainty (dB) <sup>h</sup>	±0.6 (0.4 typical)
Power repeatability 2σ (dB) <sup>d, g</sup>	±0.1

### OPTICAL MEASUREMENT

Optical rejection ratio at 1550 nm (dB) at 0.2 nm (25 GHz) at 0.4 nm (50 GHz)	31 (35 typical) 40 (45 typical)
Channel spacing	33 to 200 GHz CWDM
PDL at 1550 nm (dB)	±0.1 <sup>d</sup>
ORL (dB)	>37
Measurement time (s) <sup>d, i</sup> (includes scanning, analysis and display)	1 (with the FTB-500 Platform)

### GENERAL SPECIFICATIONS

Temperature	operating storage	0 °C to 40 °C (32 °F to 104 °F) -20 °C to 50 °C (-4 °F to 120 °F)
Connectors		EI (EXFO UPC Universal Interface) EA (EXFO APC Universal Interface)
Size (H x W x D)	FTB-5230S module	96 mm x 51 mm x 260 mm (3 3/4 in x 2 in x 10 1/4 in)
Weight	FTB-5230S module	1.5 kg (3.3 lb)

### UPGRADES

WDM: enables upgrade from FTB-5230S-OCA to FTB-5230S (software option)

### LASER SAFETY

21 CFR 1040.10 AND IEC 60825-1  
CLASS 1 LASER PRODUCT

## ORDERING INFORMATION

## FTB-5230S-XX-XX

## Model

FTB-5230S = Optical Spectrum Analyzer  
 FTB-5230S-OCA = Optical Channel Analyzer

## Connector adapter

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  
 EI-EUI-98 = UPC/LC  
 EA-EUI-28 = APC/DIN 47256  
 EA-EUI-89 = APC/FC narrow key  
 EA-EUI-91 = APC/SC  
 EA-EUI-95 = APC/E-2000  
 EA-EUI-98 = APC/LC

Example: FTB-5230S-OCA-EI-EUI-89

## Notes

- All specifications are for a temperature of 23 °C ± 2 °C with an FC/UPC connector unless otherwise specified, after warm-up.
- From 1520 to 1600 nm.
- For FTB-5230S only. After user calibration in the same test session within 10 nm from each calibration point.
- Typical.
- Integrated and wavelength-independent self-adjustment.
- Full width at half maximum.
- Over one minute in continuous acquisition mode.
- At 1550 nm, -10 dBm input.
- 40 nm span.

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