

# FTBx-1750/OHS-1700

HIGH-PERFORMANCE POWER METER AND OPTICAL HEAD SERIES



EXFO | MULTILINK

40G

100G

Fast, accurate, flexible power measurement in a platform-based solution.

## KEY FEATURES

One, two or four detectors on a single module

Ultra-High-Power™ remote head for measurement up to 37 dBm

Continuous sampling rate of up to 5 kHz

User-configurable trigger input and analog output

## RELATED PRODUCTS AND ACCESSORIES



**Rackmount Platform**  
LTB-8



**Variable Attenuator**  
FTBx-3500



**MEMS Optical Switch**  
FTBx-9160

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## GET FAST, HIGH-PERFORMANCE POWER METER MEASUREMENTS

The FTBx-1750/OHS-1700 High-Performance Power Meter and Optical Head Series is EXFO's modular answer to all your power measurement requirements. Designed for the new LTB-8 platform, these power meters deliver speed, accuracy and flexibility in a platform-based solution.



### High-Speed Acquisition with an Extended Range

The FTBx-1750's unique, patented design\* saves time, cuts costs and significantly enhances throughput with its continuous-mode peak-acquisition speed of 5208 acquisitions per second. Its 80 dB range and 300  $\mu$ s stabilization time allows you to simultaneously measure high and low signals on up to four channels. Test more components with a single, small-footprint module, thanks to the FTBx-1750 High-Performance Power Meter's capability of up to four channels.

### Data Acquisition

Perform acquisitions on a single channel, or on several channels simultaneously, and save all results in a file on the FTBx platform or on your network.

### Min/Max Function

This special data acquisition mode lets you track the minimum and maximum values measured on each channel over a defined timespan, allowing for the measurement of a component's PDL or a source's power drift over time.

### Easy-to-Use Interface

The web-based graphical user interface (GUI) allows for the easy configuration of the power meter and simple status monitoring.



### Locally, Remotely or Automated—The Choice is Yours

Control your FTBx-1750 power meter locally using the keyboard, mouse or display, available on the LTB-8, or access the same application remotely via any web browser by accessing your LTB-8 from your network.

The FTBx-1750 can also be easily integrated into an automated test station using the IVI-compliant drivers or available SCPI commands. Remote control is easily performed using Telnet over the built-in LAN port or the GPIB to USB adapter.

## The FTBx-1750—Remote Power/High-Power Measurement

Power, simplicity and flexibility are what you get when you combine up to two OHS-1700 High-Performance Optical Heads with the FTBx-1750 High-Performance Power Meter interface module. This combination\* allows you to move the power measurement sensor to the device under test (DUT) for efficient testing.

Such a design allows a continuous-mode peak acquisition speed of 5208 samples/s over an 80 dB range, while maintaining a 300  $\mu$ s stabilization time. Each optical head is individually calibrated, allowing you to interchange heads on a module or between test stations, without compromising on accuracy.

Choose from two sensing options that deliver performance exceeding even the most demanding R&D and manufacturing requirements:

- › The FTBx-1750-031-XX models, which use InGaAs front panels detectors, provide an impressive  $-85$  dBm sensitivity.
- › The OHS-1700-UH\*\* Optical Head, which comes with an Ultra-High-Power™ detector for safe power measurements up to 37 dBm.

\* Protected by US patent 6,621,067

\*\* Protected by US patent 6,437,861

## REMOTE HIGH-POWER TESTING MADE EASY



### Ultra-High-Power Capability

- › Up to 37 dBm
- ›  $\pm 4\%$  uncertainty (accuracy)
- › First-class linearity

SPECIFICATIONS <sup>a</sup> (FTBx-1750/OHS-1700 SERIES) <small>Optical heads must be operated with the FTBx-1750-OHS or IQS-17X0.</small>		
Model	FTBx-1750-031-1/2/4	OHS-1713-UH
Number of detectors	1/2/4	1
Detector type	InGaAs	InGaAs and integrating cavity
Detector size	1 mm detector	9 mm input aperture
Wavelength range (nm)	800 to 1700	930 to 1660
Power range (dBm) (typical) <sup>b, g</sup>	8 to -85 (9 to -87)	37 to -55
Uncertainty	$\pm(5\% + 3\text{ pW})$ <sup>e, g</sup>	$\pm(4\% + 3\text{ nW})$ <sup>f, g</sup>
Polarization-dependent responsivity (dB) <sup>c</sup>	N/A	(0 dBm to -50 dBm) $\pm 0.008$ typ.
Linearity <sup>d</sup>	$\pm 0.015$ dB (5 dBm to -55 dBm)	$\pm 0.11$ dB (35 dBm to 30 dBm) $\pm 0.05$ dB (30 dBm to 5 dBm) $\pm 0.015$ dB (5 dBm to -22 dBm)
Power resolution (dB) <sup>g</sup>	0.001 (8 dBm to -50 dBm)	0.001 (37 dBm to -25 dBm)
Wavelength resolution (nm)	0.01	0.01
Stabilization time (ms)	0.4	0.3
Sampling rate (sample/s/channel)	up to 5208	
Fiber type ( $\mu\text{m}$ )	5/125 to 62.5/125	

GENERAL SPECIFICATIONS		
	FTBx-1750-OHS-1/2 FTBx-1750-031-1/2/4	OHS-1713-UH
Size (H x W x D)	25 mm x 159 mm x 175 mm (1 in x 6 1/4 in x 6 7/8 in)	42 mm x 79 mm x 190 mm (1 5/8 in x 3 1/8 in x 7 1/2 in)
Temperature Operating <sup>h</sup> Storage	0 °C to 40 °C (32 °F to 104 °F) -40 °C to 70 °C (-40 °F to 158 °F)	0 °C to 40 °C (32 °F to 104 °F) -40 °C to 70 °C (-40 °F to 158 °F)
Number of ports	1/2/4	1
Relative humidity <sup>i</sup>	0% to 80% non-condensing	0% to 80% non-condensing
Remote control	With FTBx-1750: GPIB (IEEE-488.1, IEEE-488.2) and Ethernet.	
Instrument drivers	IVI drivers and SCPI commands.	
Standard accessories	User guide, one fiber-optic adapter per channel, Certificate of Compliance and Certificate of Calibration.	

**Notes**

- At 1550 nm (unless otherwise specified), with an FC angled connector and a warmup time of 20 minutes, followed by an offset nulling.
- From 18 °C to 28 °C.
- At 23 °C  $\pm$  3 °C, constant wavelength (1550 nm), constant power and with an FC non-angled connector.
- At constant temperature in the 0 °C to 40 °C range; nulling required.
- At 23 °C  $\pm$  1 °C with an FOA-322 and an FC non-angled connector, between 1000 nm and 1640 nm. Add 1 % to uncertainty below 1000 nm, and 6 % over 1640 nm.
- At 23 °C  $\pm$  1 °C with an FOA-322 and an FC angled connector, between 1290 nm and 1340 nm, and between 1420 nm and 1640 nm. Add 2% to uncertainty below 1000 nm, 1% between 1370 nm and 1420 nm, and 5 % over 1640 nm. All uncertainties valid on the day of calibration. Wavelength must not be equal to any water absorption line.
- Averaging time of 1 s.
- For optical power of > 35 dBm, maximum operating temperature is 30 °C. With the FOA-396, maximum operating temperature is 25 °C.
- From 0 °C to 40 °C.

## ORDERING INFORMATION

## Power meter module

FTBx-1750-XX-XX-XX

## Detector type

031 = 1 mm InGaAs detector  
 OHS = No detector, to be used with the  
 OHS-1713-UH

## Number of channels

1 = One channel  
 2 = Two channels  
 4 = Four channels<sup>a</sup>

Connector adapter<sup>b</sup>

FOA-316 = SMA 906 ultra-low-reflection  
 FOA-322 = FC ultra-low-reflection: FC (PC/SPC/UPC/APC), NEC-D3  
 FOA-328 = DIN 47256 (LSA) ultra-low-reflection: DIN 47256 (PC/APC)  
 FOA-332 = ST ultra-low-reflection: ST (PC/SPC/UPC)  
 FOA-340 = Diamond HMS-0, HFS-3 (3.5 mm) ultra-low-reflection  
 FOA-354 = SC ultra-low-reflection: SC (PC/SPC/UPC/APC)  
 FOA-376 = FSMA HMS-10/AG, HFS-10/AG ultra-low-reflection  
 FOA-384 = Diamond HMS-10, HFS-13 ultra-low-reflection  
 FOA-397 = LX.5 ultra-low-reflection  
 FOA-398 = LC ultra-low-reflection  
 FOA-399 = MU ultra-low-reflection  
 FOA-U12 = 1.25 mm universal  
 FOA-U25 = 2.5 mm universal

Example: FTBx-1750-031-1-FOA-322

OHS-1713-UH-FOA-XX-XM

## Connector adapter

FOA-316 = SMA 906 ultra-low-reflection  
 FOA-322 = FC ultra-low-reflection: FC (PC/SPC/UPC/APC), NEC-D3  
 FOA-328 = DIN 47256 (LSA) ultra-low-reflection: DIN 47256 (PC/APC)  
 FOA-332 = ST ultra-low-reflection: ST (PC/SPC/UPC)  
 FOA-340 = Diamond HMS-0, HFS-3 (3.5 mm) ultra-low-reflection  
 FOA-354 = SC ultra-low-reflection: SC (PC/SPC/UPC/APC)  
 FOA-376 = FSMA HMS-10/AG, HFS-10/AG ultra-low-reflection  
 FOA-384 = Diamond HMS-10, HFS-13 ultra-low-reflection  
 FOA-396 = E-2000 ultra-low-reflection (PC/APC)  
 FOA-397 = LX.5 ultra-low-reflection  
 FOA-398 = LC ultra-low-reflection  
 FOA-399 = MU ultra-low-reflection  
 FOA-U12 = 1.25 mm universal  
 FOA-U25 = 2.5 mm universal

## Cable

1M = 1 m interface cable (standard)  
 2M = 2 m interface cable

Example: OHS-1713-UH-FOA-322-1M

## Notes

- a. Not available for FTBx-1750-OHS.  
 b. Not applicable to OHS models.

## OPTIONAL ACCESSORIES

- GP-3010B = 1 m interface cable  
 GP-3011B = 2 m interface cable

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