

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.

SPEC SHEET

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

EXFO

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. With its dynamic range up to 80 dB range and 400 μ 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.

* Protected by US patent 7,167,655.

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 μ 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.

REMOTE HIGH-POWER TESTING MADE EASY



Ultra-High-Power Capability

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

Maximum flexibility for an optimized solution

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

- › The FTBx-1750-02X-XX models, which use GeX front panel detectors, allow users to measure input power up to +21 dBm.
- › The FTBx-1750-031-XX models, which use InGaAs front panels detectors, provide an impressive -85 dBm sensitivity.
- › The FTBx-1750-ISP-XX is a single-channel power meter module with a front panel integrated cavity providing wide numerical aperture, which allows for measurements of up to 36 fibers when used with the FOA-392B adapter at maximum input power of +25 dBm.
- › The OHS-1700-UH** Optical Head 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

SPECIFICATIONS ^a (FTBx-1750/OHS-1700 SERIES)		
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) ^{b, c}	8 to -87 (9 to -90)	37 to -55
Uncertainty	$\pm(5\% + 2\text{ pW})$ ^{c, d}	$\pm(4\% + 3\text{ nW})$ ^{c, e}
Polarization-dependent responsivity (dB) ^f	± 0.015 typical	± 0.008 (0 dBm to -50 dBm) typical
Linearity ^g	± 0.015 dB (5 dBm to -55 dBm)	± 0.11 dB (35 dBm to 30 dBm) ± 0.05 dB (30 dBm to 5 dBm) ± 0.015 dB (5 dBm to -22 dBm)
Power resolution (dB) ^c	0.001 (8 dBm to -55 dBm)	0.001 (37 dBm to -25 dBm)
Wavelength resolution (nm)	0.01	0.01
Stabilization time (ms) (typical)	0.4	0.3
Sampling rate (sample/s/channel)	up to 5208	
Trigger input voltage (Vdc)	0-5 (TTL - type)	0-5 (TTL-type) ^h
Analog output voltage (Vdc) (typical)	0-5	—
Fiber type (μm)	5/125 to 62.5/125	

SPECIFICATIONS ^a		
Model	FTBx-1750-02X-1/2/4	FTBx-1750-ISP-1
Number of detectors	1/2/4	1
Detector type	GeX	InGaAs and integrating cavity
Detector size	3 mm	9 mm input aperture
Wavelength range (nm)	800 to 1650	800 to 1700
Power range (dBm) (typical)	(21 to -45)	25 to -57
Uncertainty	$\pm(5\% + 32\text{ nW})$	$\pm(5\% + 2\text{ nW})$
Uniformity (dB) ^{c, i, j}	—	± 0.05
Polarization-dependent responsivity (dB) ^f	—	± 0.08
Linearity ^g	—	± 0.015 dB (10 dBm to -38 dBm)
Power resolution (dB) ^c	—	0.001 (25 dBm to -25 dBm)
Wavelength resolution (nm)	0.01	0.01
Stabilization time (ms)	1.0	0.4
Sampling rate (sample/s/channel)	up to 5208	up to 5208
Trigger input voltage (Vdc)	0-5 (TTL - type)	0-5 (TTL - type)
Analog output voltage (Vdc) (typical)	0-5	0-5
Fiber type (μm)	5/125 to 62.5/125	5/125 to 62.5/125

Notes

- a. Unless otherwise specified, all specifications are valid at 1550 nm, 23 °C \pm 1 °C, after 20-minute warm-up.
b. From 18 °C to 28 °C.
c. Averaging time of 1 s, after nulling.
d. 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.
e. 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.
f. At 23 °C \pm 3 °C, constant wavelength (1550 nm), constant power and with an FC non-angled connector.
g. At constant temperature in the 0 °C to 40 °C range; nulling required.
h. Available on FTBx-1750-OHS module.
i. At 23 °C \pm 1 °C with an FOA-392B and with a MTP FC non-angled connector up to 36 fibers.
j. Uniformity is calculated from "(Max-Min)/2"

GENERAL SPECIFICATIONS				
	FTBx-1750-031-1/2/4 FTBx-1750-02X-1/2/4	FTBx-1750-OHS-1/2	FTBx-1750-ISP-1	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)	25 mm x 159 mm x 175 mm (1 in x 6 1/4 in x 6 7/8 in)	50 mm x 159 mm x 175 mm (2 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)
Weight	0.35 kg (0.8 lb)	0.35 kg (0.8 lb)	0.64 kg (1.4 lb)	0.5 kg (1.1 lb)
Temperature Operating ^a 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)	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	1/2	1	1
Relative humidity ^b	0% to 80% non-condensing	0% to 80% non-condensing	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			

Note

a. For optical power > 35 dBm, maximum operating temperature is 30 °C. With the FOA-396, maximum operating temperature is 25 °C.

b. From 0 °C to 40 °C.

ORDERING INFORMATION

Power meter module

FTBx-1750-XX-XX-XX

Detector type ■

00 = No detector, to be used with OHS-1715-UP
 02X = 3 mm GeX detector
 031 = 1 mm InGaAs detector
 ISP = 9 mm integrating cavity with 1 mm InGaAs detector

Number of channels ■

1 = One channel
 2 = Two channels^a
 4 = Four channels^b

Connector adapter^c

FOA-302B = MT (8-12 fibers) ultra-low-reflection connector adapter^d
 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-330 = LC duplex ultra-low-reflection connector adapter^d
 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-392B = MTP (12 fibers) ultra-low-reflection connector adapter^d
 FOA-397 = LX.5 ultra-low-reflection
 FOA-398 = LC ultra-low-reflection
 FOA-399 = MU ultra-low-reflection
 FOA-3000 = Adapter for BFA-3000 base fiber adapter^d
 FOA-8100 = Adapter for keysight 8100Bx base fiber adapter^d
 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-302B = MT (8-12 fibers) ultra-low-reflection 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-330 = LC duplex ultra-low-reflection connector adapter
 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-392B = MTP (12 fibers) ultra-low-reflection connector adapter
 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-3000 = Adapter for BFA-3000 base fiber adapter
 FOA-8100 = Adapter for keysight 8100Bx base fiber adapter
 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 ISP models.
 b. Not available for FTBx-1750-ISP and FTBx-1750-OHS.
 c. Not applicable to OHS models.
 d. Available for FTBx-1750-ISP-1 only.

OPTIONAL ACCESSORIES

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