

## FHO5000 Series OTDR

### Description

FHO5000 series OTDR is specially designed for tough outdoor jobs. IP65 protection level, lightweight, easy operation, low-reflection LCD and more than 12 hours working period make it perfect in field testing. Meanwhile, optional PCB board with water-proof coating helps FHO5000 series OTDR get better protection performance.

### Features

- Integrated design, smart and rugged
- IP65 protection level, outdoor enhanced
- 7-inch anti-reflection LCD screen
- PON online test module (1625/1650nm) is optional
- MMF test module (850/1300nm) is optional
- Support multi-language display and input
- Support remote control via LAN
- FLM—More intelligent algorithms to characterize the optical fiber line

### Main functions

#### FLM (fiber link measurement)

**FLM Test (Fiber Link Measurement), also known as "Optical Eye", uses multiple pulse width acquisitions and advanced algorithms to quickly characterize the fiber under test and display the optical events applying intuitive symbols.**

#### Multi-mode OTDR

Besides standard single-mode (1310/1550nm), FHO5000 series OTDR supports multi-mode (850/1300nm) test mode for option to analyze the multi-mode fiber network.

#### VFL (visual fault locator)

The VFL, available as an standard module in FHO5000 series OTDR, offers built-in 650nm visual fault location on a FC/UPC connector.

#### PON ONLINE TEST

FHO5000 series OTDR uses 1625/1650nm wavelength to scan and analyze the access point, and proceed online testing with optical filter and will not disturb the service.



Part Number	Description
FHO5000	OTDR

### Applications

- FTTX PON network testing
- CATV network testing
- Access network testing
- LAN network testing
- Metro network testing
- Lab and Factory testing
- Live fiber troubleshooting

#### OPM ( power meter)

FHO5000 series OTDR comes with optional built-in power meters that let technicians easily verify the presence of a signal.

#### LS (laser source)

FHO5000 series OTDR comes with optional built-in laser source through OTDR1 Port that let technicians easily verify the total loss of the local network with a power meter.

#### FM (fiber microscope)

The optional fiber inspection probe facilitates the Inspect before the connection. FHO5000 series OTDR offers this capability through a USB port connection, which allows quick and easy inspection of connector end faces for contamination and also enables it capture and store the image.

## Specification

General	
<b>Dimension</b>	253×168×73.6mm 1.5kg(battery included)
<b>Display</b>	7-inch TFT-LCD with LED backlight (touch screen function is optional)
<b>Interface</b>	1×RJ45 port, 3×USB port(USB2.0, Type A USB×2, Type B USB×1)
<b>Power Supply</b>	10V(dc), 100V(ac) to 240V(ac), 50~60Hz
<b>Battery</b>	7.4V(dc)/4.4Ah lithium battery (with air traffic certification) Operating Time: 12 hours①, Telcordia GR-196-CORE Charging time: <4 hours (power off)
<b>Power Saving</b>	Backlight off: Disable/1 to 99minutes Auto shutdown: Disable/1 to 99minutes
<b>DataStorage</b>	Internal memory: 16GB (about 160,000 groups of curves)
<b>Language</b>	User selectable (English, Simplified Chinese, Traditional Chinese, French, Korean, Russian, Spanish and Portuguese -contact us for availability of others)
<b>Environmental Conditions</b>	Operating temperature and humidity: -10℃~+50℃, ≤95% (non-condensation) Storage temperature and humidity: -20℃~+75℃, ≤95% (non-condensation) Proof: IP65(IEC 60529)
<b>Accessories</b>	Standard: Main unit, power adapter, Lithium battery, FC adapter, USB cord, User guide, CD disk, carrying case Optional: SC/UPC adapter, ST/UPC adapter, LC/UPC adapter, Bare fiber adapter

## Technical parameter

Type②	Testing wavelength (MM:±20nm, SM:±10nm)	Dynamic range(dB)③	Event/Attenuation dead-zone(m)④
FHO5000-M21	850/1300	19/21	1.5/8
FHO5000-MD21	850/1300	19/21	1.5/8
	1310/1550	35/33	1.5/8
FHO5000-MD22	850/1300	19/21	1.5/8
	1310/1550	40/38	1.75/11
FHO5000-D26	1310/1550	26/24	1.5/8
FHO5000-D35	1310/1550	35/33	1.5/8
FHO5000-D40	1310/1550	40/38	1.75/11
FHO5000-D43	1310/1550	43/41	2/14
FHO5000-D45	1310/1550	45/43	2/14
FHO5000-T40F	1310/1550/1625	40/38/38	1.75/11
FHO5000-T43F	1310/1550/1625	43/41/41	2/14
FHO5000-TC35F	1310/1550/1650	35/33/31	1.5/8
FHO5000-TP35	1310/1490/1550	35/33/33	1.5/8
FHO5000-P26	1650	26	1.5/8
FHO5000-P38	1650	38	1.5/8

Test parameter	
<b>Pulse Width</b>	Single mode: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs, 20μs Multi mode: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs
<b>Distance Range</b>	Single mode: 100m, 500m, 2km, 5km, 10km, 20km, 40km, 80km, 120km, 160km, 240km Multi mode: 500m, 2km, 5km, 10km, 20km, 40km
<b>Sampling Resolution</b>	Minimum 5cm
<b>Sampling Point</b>	Maximum 128,000 points
<b>Linearity</b>	≤0.05dB/dB
<b>Scale Indication</b>	X axis: 4m~70m/div, Y axis: Minimum 0.09dB/div
<b>Distance Resolution</b>	0.01m
<b>Distance Accuracy</b>	$\pm(1m + \text{measuring distance} \times 3 \times 10^{-5} + \text{sampling resolution})$ (excluding IOR uncertainty)
<b>Reflectance Accuracy</b>	Single mode: ±2dB, multi mode: ±4dB
<b>IOR Setting</b>	1.4000~1.7000, 0.0001 step
<b>Units</b>	km, miles, feet
<b>OTDR Trace Format</b>	Telcordia universal, SOR, issue 2 (SR-4731) OTDR: User selectable automatic or manual set-up
<b>Testing Modes</b>	Visual fault locator: Visible red light for fiber identification and troubleshooting Light source: Stabilized Light Source (CW, 270Hz, 1kHz, 2kHz output) Field microscope probe
<b>Fiber Event Analysis</b>	Auto or manual operation, displayed in table format User defined PASS/FAIL thresholds: -Reflective and non-reflective events: 0.01 to 1.99dB (0.01dB steps) -Reflective: 0.01 to 32dB (0.01dB steps) -Fiber end/break: 3 to 20dB (1dB steps)
<b>Other Functions</b>	Real time sweep: 1Hz Averaging modes: Timed (1 to 3600 sec.) Live Fiber detection: Verifies presence communication light in optical fiber Trace overlay and comparison

#### VFL Module (Visual Fault Locator, as standard function)

<b>Wavelength(±20nm)</b>	650nm
<b>Power</b>	10mW, CLASS III B
<b>Range</b>	12km
<b>Connector</b>	FC/UPC
<b>Launching Mode</b>	CW/2Hz

#### PM Module (Power Meter, as optional function)

<b>Wavelength Range</b>	800~1700nm
<b>Calibrated Wavelength(±10nm)</b>	850/1300/1310/1490/1550/1625/1650nm
<b>Test Range</b>	TypeA: -65~+5dBm (standard); TypeB: -40~+23dBm (optional)
<b>Resolution</b>	0.01dB
<b>Accuracy</b>	±0.35dB±1nW
<b>Modulation identification</b>	270/1k/2k Hz, $P_{\text{input}} \geq -40\text{dBm}$
<b>Connector</b>	FC/UPC

### LS Module (Laser Source, as optional function)

<b>Working wavelength(±10nm)</b>	1310/1550/1625/1650nm⑤
<b>Output power</b>	Adjustable -25 ~ 0dBm
<b>Accuracy</b>	±0.5dB
<b>Connector</b>	FC/UPC

### FM Module (Fiber Microscope, as optional function)

<b>Magnification</b>	400X
<b>Resolution</b>	1.0μm
<b>View of Field</b>	0.40×0.31mm
<b>Storage/working Condition</b>	-18℃~35℃
<b>Dimension</b>	235×95×30mm
<b>Sensor</b>	1/3 inch 2 million of pixel
<b>Weight</b>	150g
<b>USB</b>	1.1/2.0
<b>Adapter⑥</b>	Standard: SC-PC-F (For SC/PC adapter); FC-PC-F (For FC/PC adapter) LC-PC-F (For LC/PC adapter); 2.5PC-M (For 2.5mm connector, SC/PC, FC/PC, ST/PC)

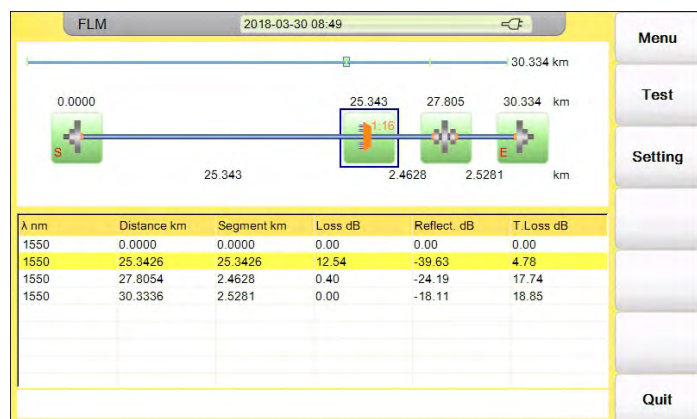
### FLM Module (Fiber Link Measurement, as optional function)

**More intelligent OTDR testing**

**Multiple pulse width acquisitions**

**Advanced algorithms**

**Iconic display of events on the line**



## Notes

- ① Typical, backlight off, sweeping halted at 25°C, 12 hours typical continuous testing.
- ② Model T40F/T43F/TC35F and P26/P38 are integrated with optical filter, which allow them to test PON network online (by using 1625/1650nm wavelength) and will not interrupt the fiber signal.
- ③ Dynamic range is measured with maximum pulse width, averaging time is 3 minutes, SNR=1; The level difference between the RMS noise level and the level where near end back-scattering occurs.
- ④ Event dead zone is measured with pulse width of 3ns; attenuation dead zone is measured with pulse width of 5ns.
- ⑤ 1310/1550/1650nm laser source uses OTDR1 port, and 1625nm or 850/1300nm uses OTDR2 port.
- ⑥ For more adapters, please contact us.

## Ordering Information

FHO5000-XX-XX-XX-XX-XX-XX-XX-XX

## Model

- M** 850/1300nm  
**MD** 850/1300/1310/1550nm  
**D** 1310/1550nm  
**T** 1310/1550/1625nm  
**TC** 1310/1550/1650nm  
**TP** 1310/1490/1550nm  
**P** 1650nm

## Dynamic Range

- 21** 19/21dB for Model M or  
 19/21/35/33dB for Model MD  
**22** 19/21/40/38dB for Model MD  
**26** 26/24dB for Model D  
**35** 35/33dB for Model D or  
 35/33/33 for Model TP  
**40** 40/38dB for Model D  
**43** 43/41dB for Model D  
**45** 45/43dB for Model D  
**35F** 35/33/31dB for Model TC with filter  
**40F** 40/38/38dB for Model T with filter  
**43F** 43/41/41dB for Model T with filter  
**P26** 26dB for Model P with filter  
**P38** 38dB for Model P with filter

## Laser Source

- /** Without laser source  
**LS** With laser source

## Connector

- /** FC/UPC(default)  
**SC** SC/UPC  
**ST** ST/UPC

## Fiber Link Measurement

- /** Without fiber link measurement  
**FLM** With fiber link measurement

## Fiber Microscope

- /** Without fiber microscope  
**FM** With fiber microscope

## Touch Screen

- /** Without touchscreen  
**TS** With touchscreen

## Power Meter

- /** Without power meter  
**PMA** With power meter TYPE A  
**PMB** With power meter TYPE B

## Optional Item

## OTDR box

