FHO5000 Series Triple-Proof 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.

Part Number	Description
FHO5000-D32	OTDR, 32/30dB, 1310/1550nm

Features

- Integrated design, smart and rugged
- IP65 protection level, outdoor enhanced
- 7-inch anti-reflection LCD screen
- PON online test module (1625nm) is optional
- MMF test module (850/1300nm) is optional
- Support multi-language display and input

Applications

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

Main functions

Multi-mode OTDR

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

PM (power meter)

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

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.

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.

PON ONLINE TEST

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

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	
Dimension	253×168×73.6mm 1.5kg(battery included)
Display	7 inch TFT-LCD with LED backlight (touch screen function is optional)
Interface	1×RJ45 port, 3×USB port(USB2.0,Type A USB×2, Type B USB×1)
Power Supply	10V(dc), 100V(ac) to 240V(ac), 50~60Hz
Battery	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)
Power Saving	Backlight off: Disable/1 to 99minutes Auto shutdown: Disable/1 to 99minutes
DataStorage	Internal memory: 4GB (about 40,000 groups of curves)
Language	User selectable (English,Simplified Chinese, traditional Chinese, French, Korean, Russian, Spanish and Portuguese -contact us for availability of others)
Environmental Conditions	Operating temperature and humidity: -10℃~+50℃, ≤95% (non-condensation) Storage temperature and humidity: -20℃~+75℃, ≤95% (non-condensation) Proof: IP65(IEC 60529)
Accessories	Standard: Main unit, power adapter, Lithium battery, FC adapter, USB cord, User guide, CD disk, carrying case Optional: SC/ST/LC 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 1310/1550	19/21 35/33	1.5/8 1.5/8
FHO5000-MD22	850/1300 1310/1550	**19/21** 40/38	1.5/8 1.75/11
FHO5000-D26	1310/1550	26/24	1.5/8
FHO5000-D32	1310/1550	32/30	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-T40F	1310/1550/1625	40/38/38	1.75/11
FHO5000-T43F	1310/1550/1625	43/41/41	2/14

Test parameter

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

VFL Module (Visual Fault Locator, as standard function)

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

PM Module (Power Meter, as optional function)

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

LS Module (Laser Source, as optional function)

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

FM Module (Fiber Microscope, as optional function)

Magnification	400X
Resolution	1.0μm
View of Field	0.40×0.31mm
Storage/working Condition	-18℃~35℃
Dimension	235×95×30mm
Sensor	1/3 inch 2 million of pixel
Weight	150g
USB	1.1/2.0
Adapter⑥	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)

Notes

1. Typical, backlight off, sweeping halted at 25℃, 12 hours typical continuous testing.
2. Model T40F/T43F are integrated with optical filter, which allow them to test PON network online (by using 1625nm 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. 1310/1550nm 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

Dynamic Range
- **21** 21dB for Model M and MD
- **22** 22dB for Model MD
- **26** 26dB for Model D
- **32** 32dB for Model D
- **35** 35dB for Model D
- **40** 40dB for Model D
- **43** 43dB for Model D
- **40F** 40dB for Model T with filter
- **43F** 43dB for Model T with filter

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

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

Touch Screen
- **/** Without touchscreen
- **TS** With touchscreen

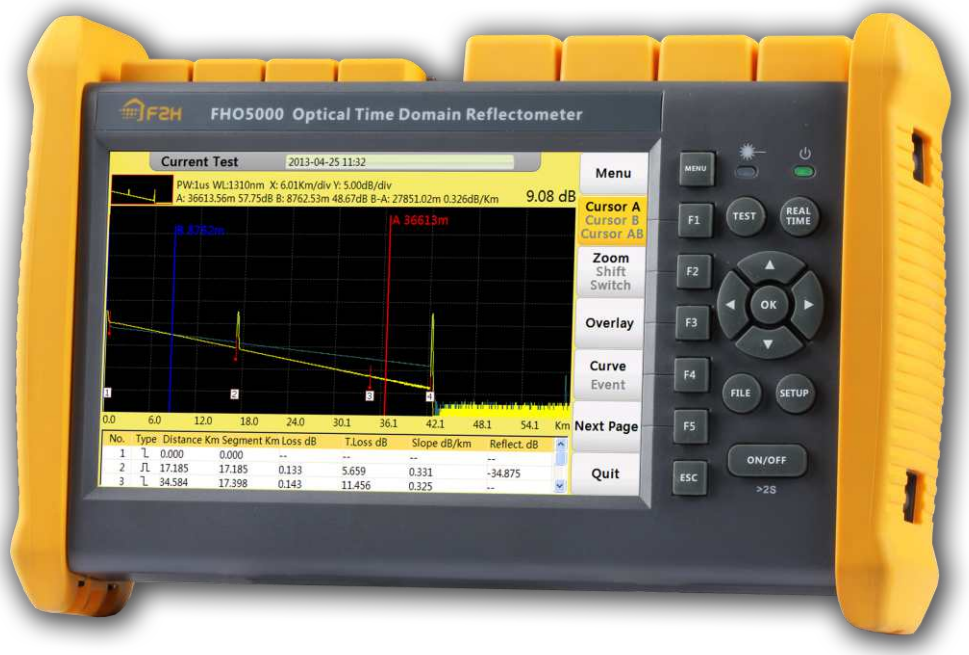
Fiber Microscope
- **/** Without fiber microscope
- **FM** With fiber microscope

Water Proof
- **/** Without water proof
- **WP** With water proof

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

Optical Time Domain Reflectometer (OTDR)

FHO5000 Series



Features

- Integrated design ,smart and rugged.
- Small and light ,easy to carry.
- 1625nm online test module with filter is available as an option for online FTTx/PON detection.
- Multi-measuring mode, simple to use,finish measurement by just one button.
- Realtime measuring function, convenient to monitor the splicing process.
- Internal large power visual laser source for accurate positioning the closer fault point.
- Internal -5dBm stable laser source.
- Optical power meter function is offered as an option.
- Warning function could prevent OTDR module from being damaged by optical signal in fiber.
- Integrated with 2 main USB and one sub USB port, for connecting with external USB memory or PC.
- Integrated with screenshot function.
- PC remote access and control function is available via RJ45 interface or the optional WIFI module.
- Support multi-language display and input,friendly interface,visual keyboard capable.
- Integrated with 4GB internal memory, more than 40,000 groups curve storage.
- Provide data simulation software to process, generate and print report.
- Battery indicator function.
- Long working hours for outdoor operation.

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Optical Time Domain Reflectometer (OTDR) *FHO5000 Series*

Ordering Information

Type	Testing wavelength	Dynamic range	Event/Attenuation dead-zone
FHO5000-D32	1310/1550nm	32/30dB	0.8/4m
FHO5000-D35	1310/1550nm	35/33dB	0.8/4m
FHO5000-D40	1310/1550nm	40/38dB	1/4m
FHO5000-D43	1310/1550nm	43/41dB	1/5m
FHO5000-T40/T40F	1310/1550/1625nm（"F" means with filter）	40/38/38dB	1/4m
FHO5000-T43/T43F	1310/1550/1625nm（"F" means with filter）	43/41/41dB	1/5m

Specification

Pulse width	3ns、5ns、10ns、20ns、50ns、100ns、200ns、500ns、1μs、2μs、5μs、10μs、20μs
Distance range	Dead zone test、500m、2km、5km、10km、20km、40km、80km、120km、160km、240km
Sampling resolution	Minimum 0.25m
Sampling point	Maximum 128,000 points
Linearity	≤0.05dB/dB
Loss threshold	0.01dB
Loss resolution	0.001dB
Distance resolution	0.01m
Distance accuracy	± (1m+measuring distance×3×10^{-5}+sampling resolution)
Internal visual source	10mW, CW/2Hz
Stable laser source	-5dBm
Data storage	40,000 groups of curve
Interface	1×RJ-45 port, 3×USB port (Type A×2, Type B×1)
Display	7 inch TFT-LCD（touch screen function is optional）
Battery	7.4V/4.4Ah lithium battery（with aviation certification）, continuous 6 hours working
Working Temp.	-10℃~+50℃
Storage Temp.	-20℃~+70℃
Humidity	≤95% (non-dew)
Dimension	253×168×73.5mm / 1.5kg (battery included)
Accessories	Main unit, 12V power adapter, Lithium battery, FC adapter, Wrist belt, USB cord, User guide, CD disk, Carrying case
Optional parts	SC, ST, LC adapter, Bare fiber adapter

Front view

Top view

Interface of simulation software

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