



User's Guide to the FHO3000L Mini OTDR



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Functional Modules

Auto OTDR

Auto OTDR: It only needs to set the wavelength and measurement time, and other parameters are automatically selected by the instrument to complete the test.

Attention: Please do not make online test except online wavelengths!

Expert OTDR

Expert OTDR: The test results are more accurate by selecting the appropriate measurement parameters in the expert mode. You can zoom in on the curve to see the details of each event.

- The curve and event list are displayed at once.
- Link results are summarized to a list.
- Switch to event icon display mode.
- Save current curve file quickly.
- Enter parameter setting interface.

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Test range: Range setting is based on the actual length of the optical fiber to select the corresponding predefined range, usually required to be set to about twice the length of the measured optical fiber.

Pulse width: The larger the pulse width, the stronger the optical power injected into the optical fiber, the stronger the backscattering signal of the optical fiber is, and the farther the effective detection distance of the OTDR can be. However, the large pulse width will cause saturation of the initial reflection signal and a large blind area.

IOR: Provided by optical cable or fiber manufacturer. It is the key parameter for calculating the distance, and can not be set arbitrarily.

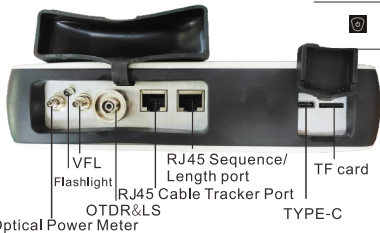
Test time: The longer the test time is, the better the signal-to-noise ratio of the signal is improved, and the more accurate the test result is.



Buttons and Interfaces



AUTO	Automatic testing: Only automatic OTDR, expert OTDR and optical link test functions are available
REAL/AVG	Real-time / Average test: The last test mode is selected by default, otherwise the average test is defaulted, only the expert OTDR interface is available
ESC	Return: Applicable to all interfaces
OK	Confirm
SETUP	Set up: Only automatic OTDR, expert OTDR, and optical link test functions are available
FILE	Only automatic OTDR, expert OTDR, optical link test, and main interface functions are available
VFL	Turn on/1Hz/2Hz/turn off
HOME	Back to main interface
CURSOR	Select the current A, B, and AB cursor
	Move the cursor
	Zoom curve
	Turn the flashlight on / off
	Screenshot: After the screenshot is completed, it will be automatically saved according to the date of the screenshot, in the format bmp
	Long press for 2s to turn on, long press for 2s to prompt to shut down, long press for 4s to shut down directly



Threshold/Criterion

Event loss threshold: Set the loss threshold of connection point, fusion point or macro bend in the link that can be tested, between 0.2~30dB, and the default value is 0.2dB. Events larger than the set threshold will be listed in the event table, or those will be ignored.

Reflection threshold: Set the return loss threshold of the link reflection events that can be tested, ranging from 10dB to 60dB, and 40dB by default.

End threshold: set end loss at the end of the link that can be tested, ranging from 1~30dB, 10dB by default.

Eligibility criteria: Set the judgment value for the average loss of connection/fusion/bending/link. If it is less than the value, it is judged as "PASS", otherwise it is "FAIL".

OTDR-Curve

In the event list:

- NO.: the order of the current event
- Type: the type of the current event
- Distance: the location of the current event
- Segment: the distance between the previous event and the current event

Loss: the loss of the current event
Total loss: the loss from the starting point to the current event
Slope: the loss per kilometer from the starting point to the current event
Reflection: the return loss of the current event

Event Map

The function is fully one key automatic test, and the information such as the length of the optical fiber link to be measured, the type of the joint and the position of the breakpoint are displayed graphically, and the results are clear and easy to understand.

- The starting point of the link, after the guiding fiber is added to the front
- Drop event, representing fusion point
- Rising event, caused by the inconsistency of refractive index of two sections of fiber
- Connector, square flange, SC, LC etc
- Optical fiber macro bending
- Optical fiber splitter
- End of link

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OTDR-File Management

After the measurement, press [save] to save the file, enter the file name, and press [enter] to save the file. You can also press [Fastsave] to save the file. The file is saved in a folder named the same day's date.
Optical fiber code ID: the optical fiber number and code set when the line is initially laid;
Location A: Link start point location
Location B: Link termination point location
Direction: Optical fiber test direction, from A to B, from B to A;
Operator: enter the name of the tester.

Naming Type		File naming
File name	otdr	① + ④
Autosave	Yes	① + ② + ④
Fiber ID		① + ② + ③ + ④
Location A		
Location B		
Direction		① File name ② Wavelength ③ Pulse Width ④ Fiber ID
Operator		Back

File operation

All the test curves are saved in the standard SD card of the instrument. Press [File] to enter the file operation interface. You can open, delete and rename files.

Device Catalog	File List	76 Files	Select all
Storage Card	No.	File name	Date
20200421	1	20200421-1310OTDR.bmp	2020-04-21 13:18
20200521	2	OTDR-1550-5000res-003.scr	2020-04-21 13:25
20200702	3	OTDR-1550-5000res-002.scr	2020-04-21 13:27
20200929	4	OTDR-1550-5000res-003.scr	2020-04-21 13:32
	5	OTDR-1550-2000res-003.scr	2020-04-21 14:42
	6	OTDR-1550-2000res-002.scr	2020-04-21 14:58
	7	OTDR-1550-2000res-003.scr	2020-04-21 15:26
	8	OTDR-1550-5000res-003.scr	2020-04-23 16:32
	9	OTDR-1550-5000res-002.scr	2020-04-23 16:45
	10	OTDR-1550-5000res-003.scr	2020-04-23 16:55
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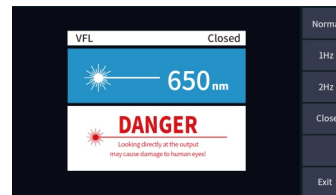
OPM

It is used for signal power test and insertion loss test of various equipment and photoelectric components. It can identify and measure the power of 270/330/1k/2kHz frequency laser
Reference: set the current power as the reference
Calibration: enter the calibration mode.
Threshold: set the threshold value of power measurement. If it exceeds the threshold value, it will be marked in red; if it is lower than the threshold value, it will be marked green.



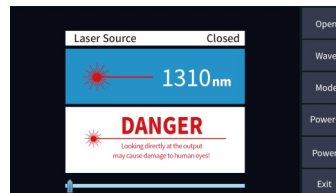
VFL

The visible light (red light) is injected into the optical fiber, and the position of optical fiber fault point can be easily and accurately determined by observing the light leakage position on the tested fiber. It is suitable for the detection of bare optical fiber, optical fiber jumper and other optical fiber which can leak red light, and the near end fault point and high loss section caused by micro bending.



Laser Source

It can output laser with the same wavelength as OTDR function, which can be used to test the parameters of telecommunication, CATV and LAN optical cables, test the insertion loss, isolation and return loss of optical passive components, and test the wavelength responsivity of detector.
Mode: switch laser source frequency, CW, 270Hz, 330Hz, 1kHz and 2kHz
Power +: increase the output power
Power -: reduce the output power



RJ45 Sequence/Length

Cable sequence: When testing, please connect to the remote module.
Direct connection test: during the test, the indicator lights of the host and remote device flash from 1 to 8 one by one.
Interleaved wire connection test: during the test, the indicators at the remote test end will flash one by one in the order of 3, 6, 1, 4, 5, 2, 7, 8.
Cable length test: test the length of network cable.
Calibration: input the overall calibration factor of network cable length. Display length = last result × calibration factor.
Network cable standard: T568A/T568B, the color order of network cable is different according to different standards.

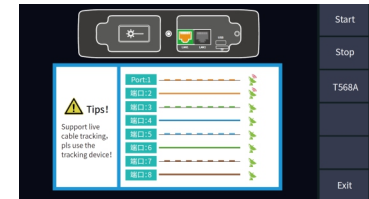
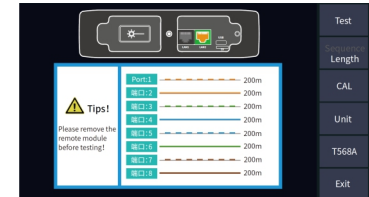
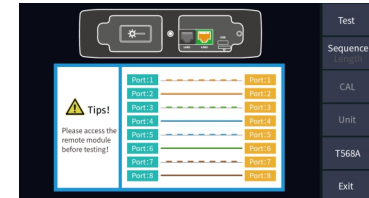
Attention The port is designated as the port on the right side of the OTDR displayed in yellow color. Please connect correctly or it may cause damage to the equipment!

Warning Please cut off the electricity before test!

RJ45 Digital Tracker

After the cable tracking function is started, touch the cable under test with the tracker, and when hear the sound of continuous "drip drop", the target cable is found.
The equipment is pressure resistant, and can be directly tested online. Weak current equipment with DC voltage less than 60V such as ethernet switch and router.
Test: turn on RJ45 cable tracking function.
The line finding mode of this machine is digital radar type, which has strong anti-jamming ability. According to the target distance and proximity, the frequency of prompt tone is different.

Attention The cable tracking port is designated as the port on the left side of the OTDR displayed in yellow. Please connect correctly or it may cause damage to the equipment!



Optical Loss Test

It is used to test the insertion loss of optical passive devices.

The OLT steps are as follows:

- 1) Connect LS and OPM optical port with standard jumper, press[Open], after power is stable, press[Reference];
- 2) The standard jumper is used to connect the test piece to the optical port of LS and OPM, press [Open], 'Rel.Pow' is the insertion loss of the DUT .



Attentions

Battery: the battery is a special polymer lithium battery, the charging voltage is 5V/2A, and the charging temperature range is 0°C ~ 50°C. When the ambient temperature is too high, the charging will automatically terminate. The battery should be charged every one month to avoid long storage time and failure of battery due to self discharge. The temperature range of battery during long-term storage is: -40 °C ~ 50 °C.

Please use the special adapter attached with the instrument box and use the external power supply in strict accordance with the specifications, otherwise the equipment may be damaged.

End Face Cleaning: Before testing, clean the end face of the tested fiber joint with alcohol cotton.
LCD screen: the display of this instrument is 5 inch color LCD. In order to maintain good viewing effect, please keep the LCD screen clean. When cleaning, wipe the LCD screen with soft fabric.