

FHO3100 Product Manual



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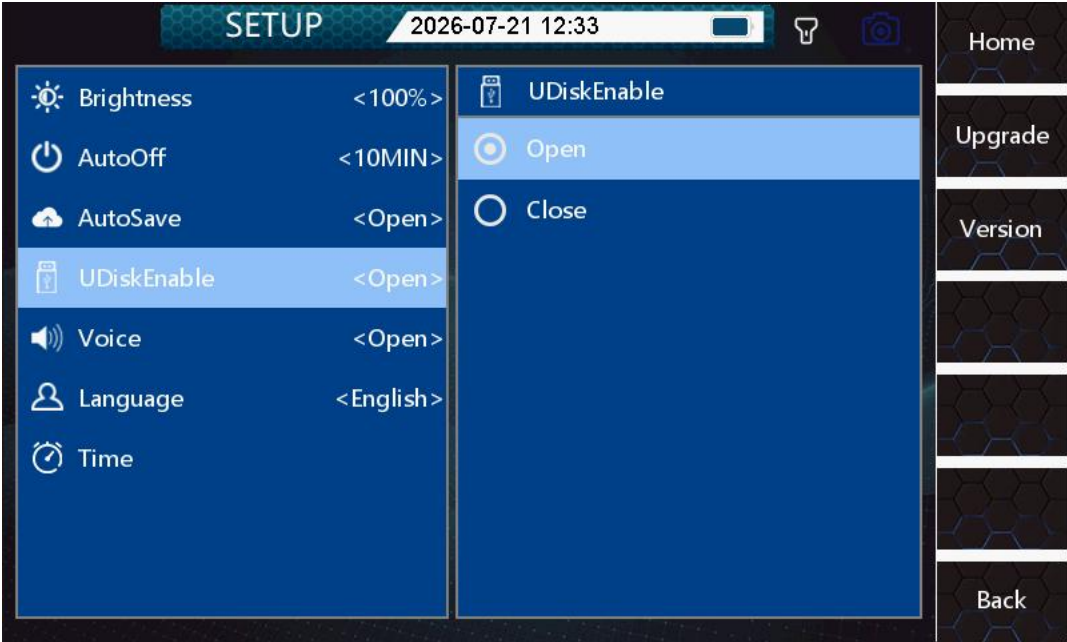
1. Product Introduction

Appearance

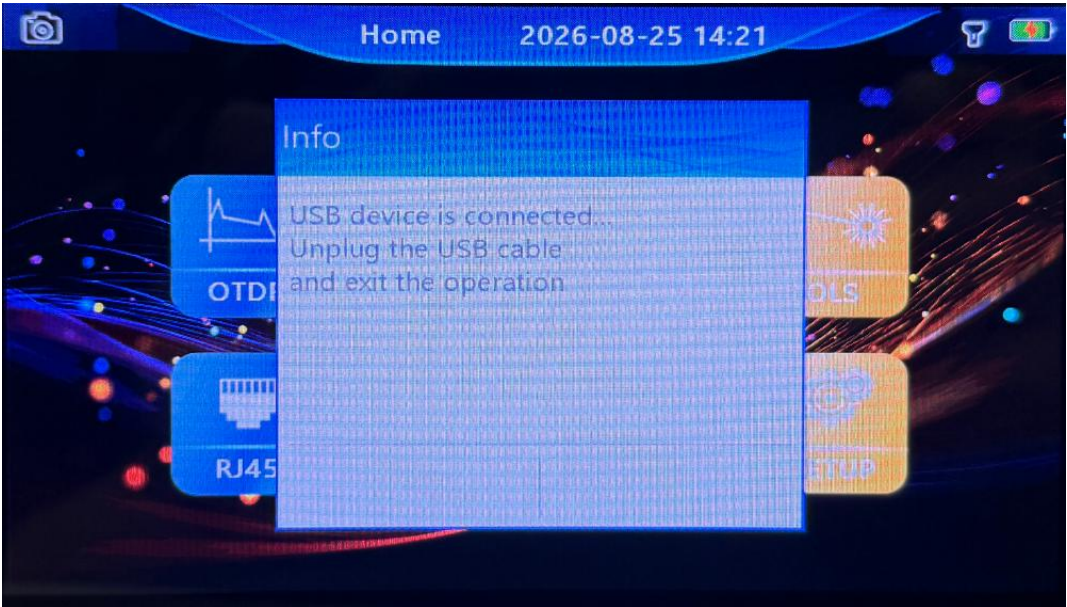


2. File Upload

2.1 Turn on the OTDR and enable the [USB Disk mode] in the SETUP.



2.2 Connect the OTDR to a computer using a Type-C data cable.



2.3 There are three folders in the OTDR, then you can send sor files or sceenshots to PC.

	组织	新建	打开	选择	
> U 盘 (E:) >					
名称				修改日期	类型
UPDATE				2026/4/8 16:32	文件夹
OTDRDATA				2025/12/8 14:46	文件夹
DATA				2026/4/13 9:29	文件夹

[OTDRDATA]: Saved sor files

组织	新建	打开	选择
可移动磁盘 (E:) > OTDRDATA >			
名称	修改日期	类型	大小
2026_3_26	2026/3/26 8:46	文件夹	
2026_8_12	2026/8/12 10:06	文件夹	
2026_8_14	2026/8/14 11:11	文件夹	
2026_8_19	2026/8/19 14:29	文件夹	
2026_8_21	2026/8/21 15:53	文件夹	
2026_8_24	2026/8/24 10:04	文件夹	

名称	修改日期	类型	大小
F_1310_30m_10k_160640_34	2026/8/21 16:06	SOR 文件	20 KB
F_1310_50m_2k_164157_40	2026/8/21 16:41	SOR 文件	9 KB
F_1550_10m_2k_163832_36	2026/8/21 16:38	SOR 文件	9 KB
F_1550_10m_2k_163908_37	2026/8/21 16:39	SOR 文件	9 KB
F_1550_10m_2k_164039_38	2026/8/21 16:40	SOR 文件	9 KB
F_1550_30m_2k_155401_32	2026/8/21 15:54	SOR 文件	9 KB
F_1550_30m_5k_155308_31	2026/8/21 15:53	SOR 文件	11 KB
F_1550_30m_5k_155644_33	2026/8/21 15:56	SOR 文件	11 KB
F_1550_30m_10k_160703_35	2026/8/21 16:07	SOR 文件	20 KB
F_1550_50m_2k_164122_39	2026/8/21 16:41	SOR 文件	9 KB
F_1550_50m_2k_164220_41	2026/8/21 16:42	SOR 文件	9 KB

[DATA]: Saved screenshot pictures

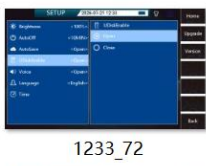
U 盘 (E:) > DATA > SCREENSHOT > 2026_7_21



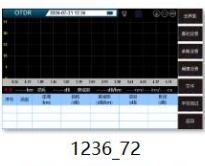
1233_70



1233_71



1233_72



1236_72



1236_73



1237_74



1239_74



1245_75



1246_76



1246_77



1249_78

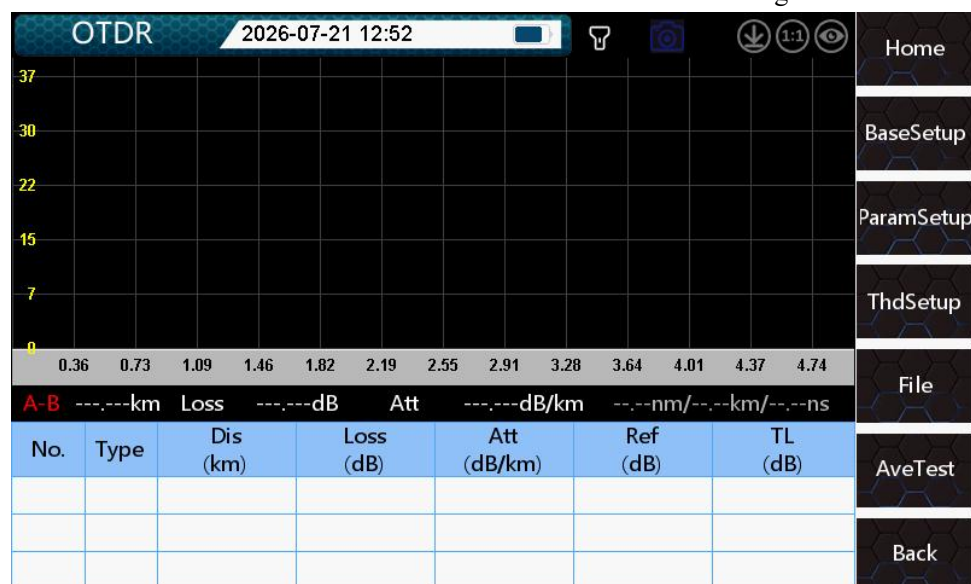


1250_79

3, OTDR function

3.1 OTDR Testing Interface

Click the OTDR module in the main menu to access the OTDR testing interface.



Icon	Function
	1:1 Recovery curve When the OTDR curve is zoomed in or moved, click to restore the curve to its initial position.
	Hidden Button Hide cursor A/B and curve thumbnail
	Save Button Manually save the test sor file
	Wavelength switching Under 1310/1550nm testing, switch between 1310nm and 1550nm wavelengths curve
	Flashlight Turn on/off the flashlight.
	Screenshot button Press to take a screenshot of the current screen
File	File management Enter the file management interface and view historical test data
AveTest	Average test Click to perform an OTDR average test.
RealTest	Real-time testing Click to perform an OTDR real-time test

3.2 OTDR Parameter Configuration

Click the **[BaseSetup]** button to access the OTDR Test Basic Settings interface.



[Auto Mode ON]



[Auto Mode OFF]

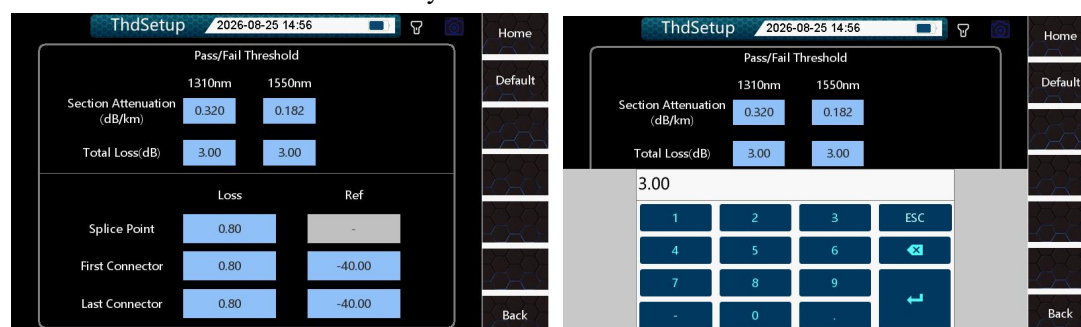
Item	Description
Auto	Test Mode: Auto Mode or Manual Mode Auto Mode: The device will automatically set the parameters, measurement range, and pulse width to the values best suited for the current measurement; these values cannot be modified. Manual mode: Allows for manual configuration of the measurement range and pulse width selection.

Wavelength	According to OTDR model
Range	SM: 100m,500m, 1km, 2km, 5km, 10km, 20km, 40km, 80km, 120km, 240km MM: 500m, 1km, 2km, 5km, 10km, 20km, 40km
Pulse width	SM: 3ns, 5ns, 10ns, 30ns, 50ns, 100ns, 275ns, 500ns, 1us, 2us, 5us, 10us, 20us MM: 3ns, 5ns, 10ns, 30ns, 50ns, 100ns, 275ns, 500ns, 1us
Mode	Average Test: The Average Test mode displays an OTDR curve composed of the average values of measurements taken over a specified period. Real-time testing: Continuously tests the optical fiber link and monitors it in real time until the user clicks "Stop Test".
Time	In the average testing mode, the longer the test duration, the better the signal-to-noise ratio and the more accurate the test results will be. Users should choose the test duration appropriately. Test duration options: 5s,10s,15s,30s,60s,120s,180s
Resolution	Standard: Standard sampling points High: More sampling points, more suitable for short fiber link test

3.3 Threshold Setup

Click the [ThdSetup] button to access the OTDR threshold settings interface.

In this interface, users can define pass/fail thresholds for test results. The measurement results will analyze total loss, attenuation slope, fusion loss, connector loss/reflection, and display the pass/fail status for each item. Users can modify the threshold for each item.

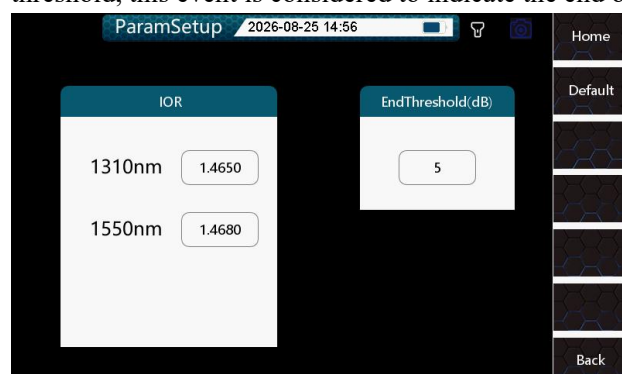


3.4 Parameter Setup

Click the [ParamSetup] button to access the OTDR Parameter Settings interface.

[IOR]: The refractive index parameter for optical cables is typically set to its default value; incorrect modification of this parameter can affect the distance measurement accuracy of the optical cable.

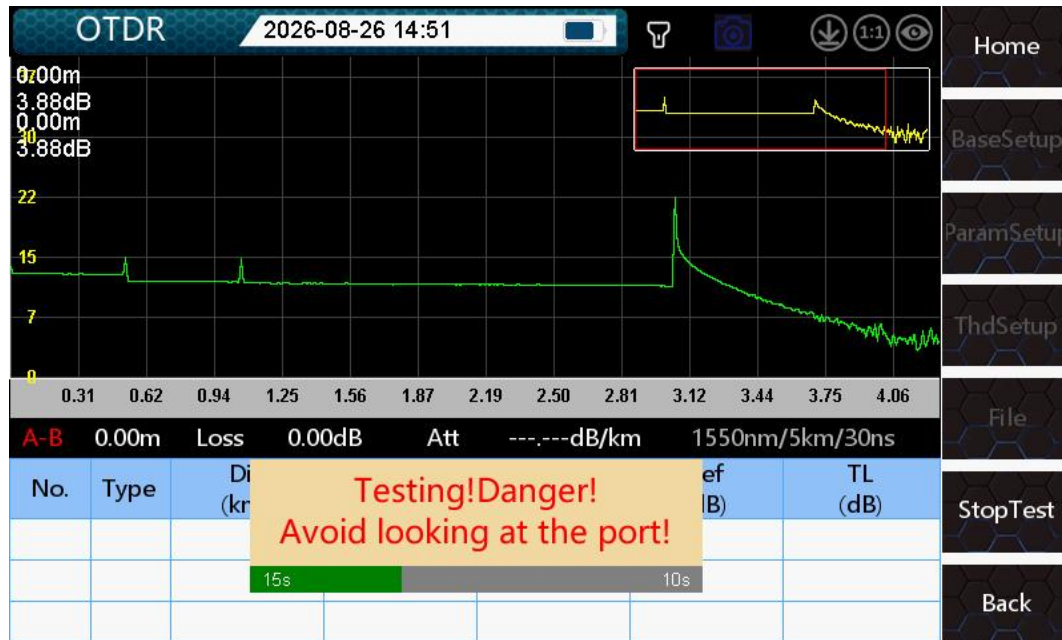
[End Threshold (dB)]: When the event's attenuation value exceeds the predefined end-of-fiber threshold, this event is considered to indicate the end of the optical fiber.



3.5 Perform OTDR test

3.5.1 OTDR Average Test

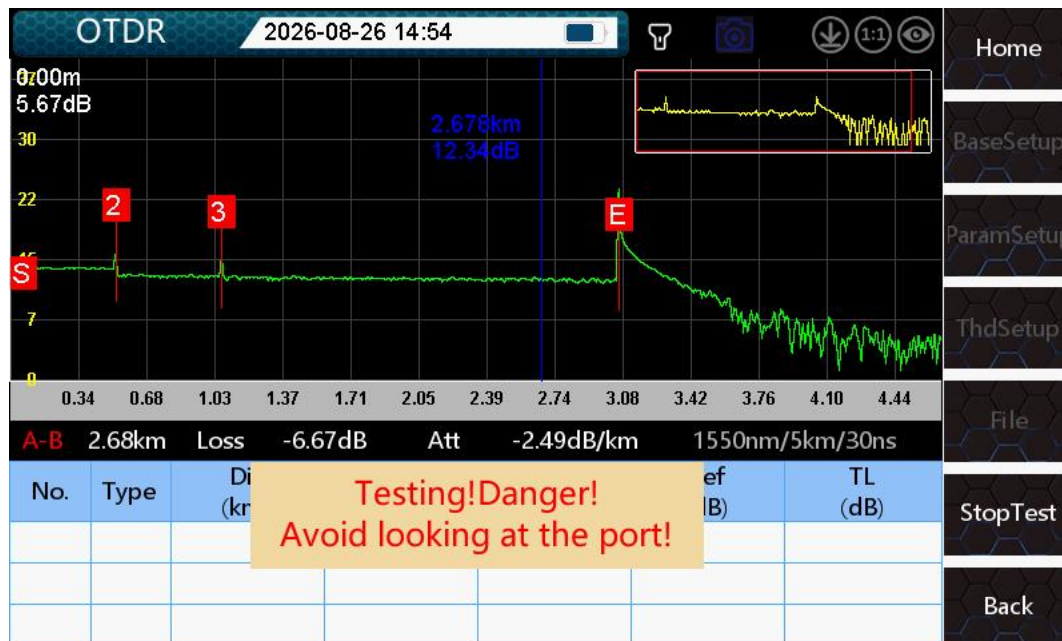
In the test settings, select the **[Average]** test mode, then click the "Average Test" button to enter the Average Test interface; the average test will then be performed according to the specified test duration.



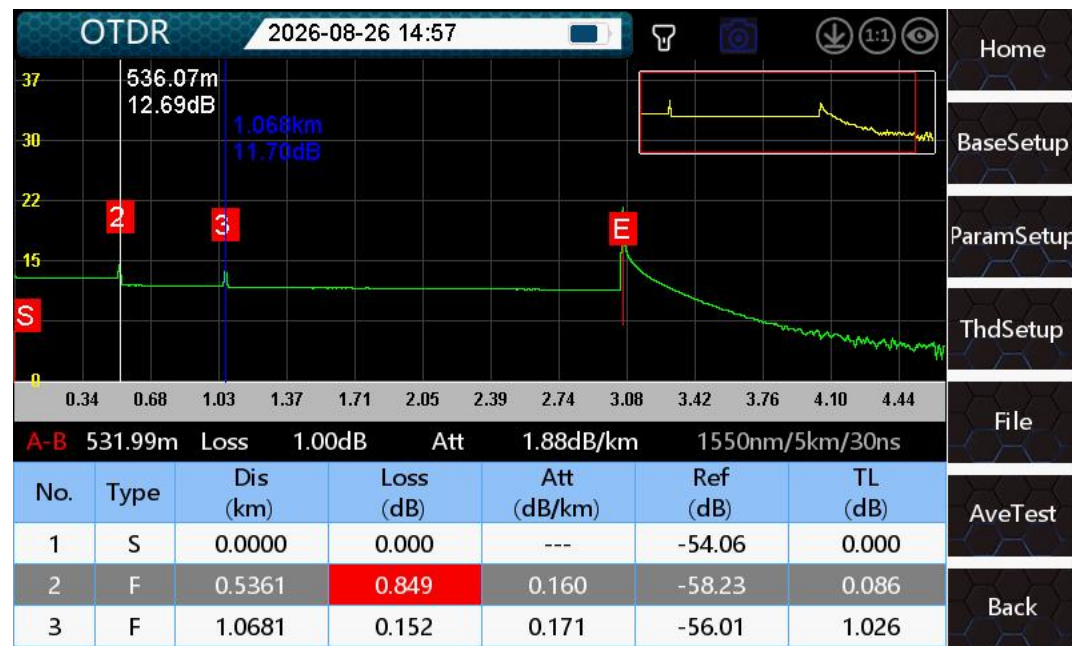
3.5.2 OTDR Real-Time Testing

In the test settings, select the **[Real-Time]** test mode, then click the "Real-Time Test" button to access the real-time test interface.

At this point, the OTDR emits continuous pulsed light for real-time fiber optic testing.



3.5.3 OTDR Test Results Interpretation



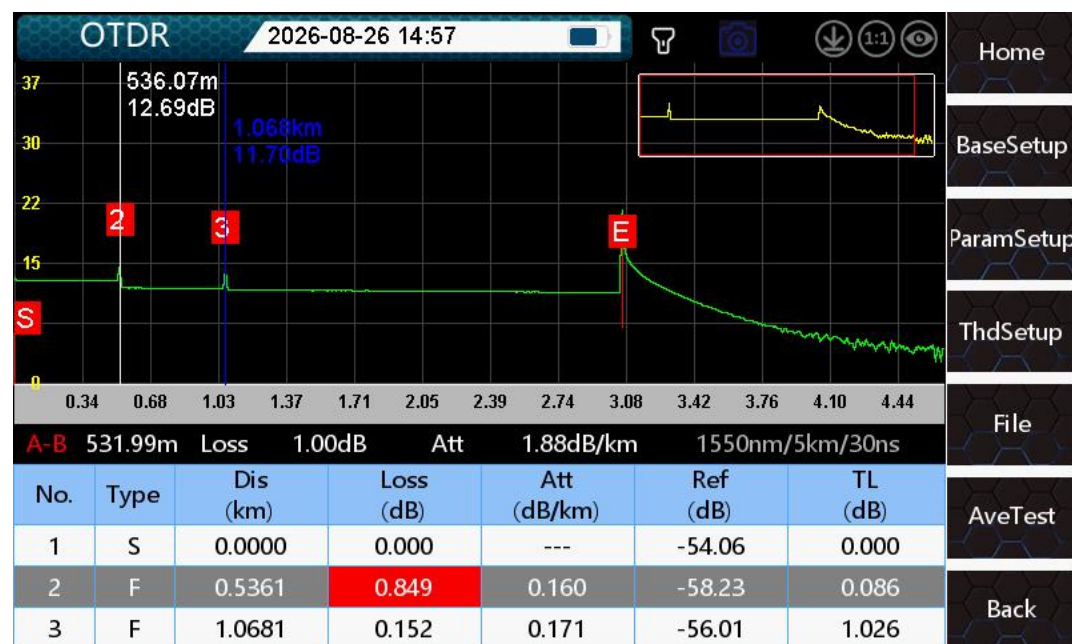
No	Item	Description
1	No	Event number
2	Type	Optical Fiber Event Types S: Start point F: Reflection event or Non-reflection event E: End point G: Ghost event G(Ghost event) is caused by strong reflection; in fact, this event point does not exist in the optical fiber line.
3	Distance (km)	The distance from the event location to the start point
4	loss(dB)	The loss value for this single event (dB) The insertion loss of the start and end points cannot be tested
5	Attenuation (dB/km)	The ratio of the attenuation value (dB) between the current event point and the previous event point to the distance (km) reflects the attenuation rate of the fiber segment.
6	Reflection(dB)	The event reflection value
7	Total loss (dB)	Cumulative loss from the event point to the start point

3.6 OTDR Curve Operation

3.6.1 OTDR Curve Marker

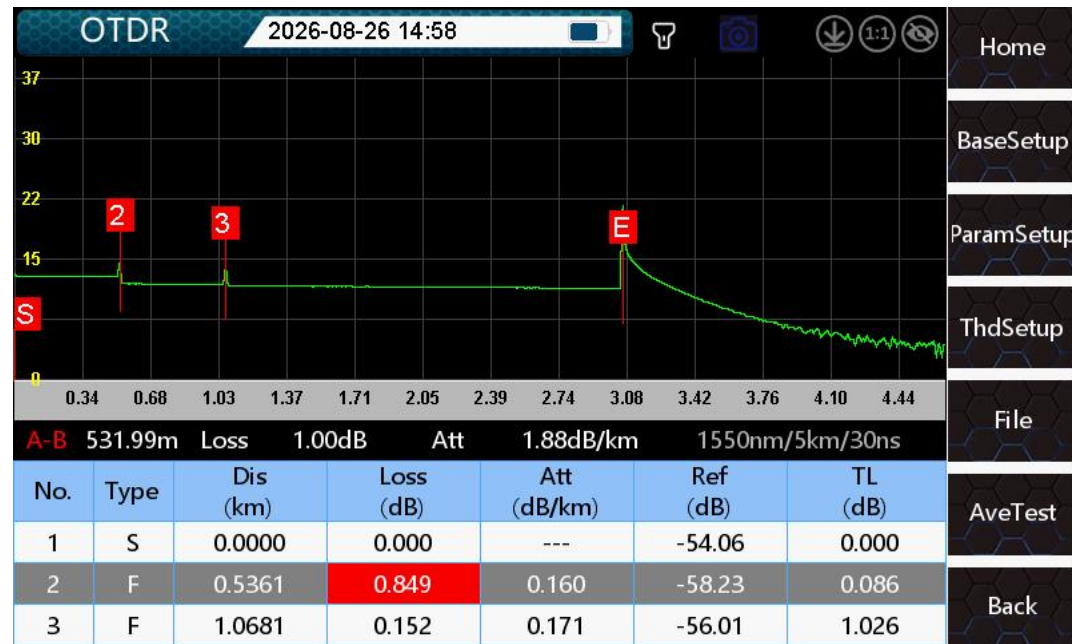
Marker A and B, can be moved to check the fiber optic quality between them (marker A is always positioned to the left of marker B).

When you click on a specific event in the Click Events list, marker A will automatically move to the position of that event on the curve.



3.6.2 Hidden cursor A/B and curve thumbnail

Click the **[Hide]** button to hide Cursors A and B as well as the curve thumbnail; click again to display them.



3.6.3 Curve Scaling and Moving

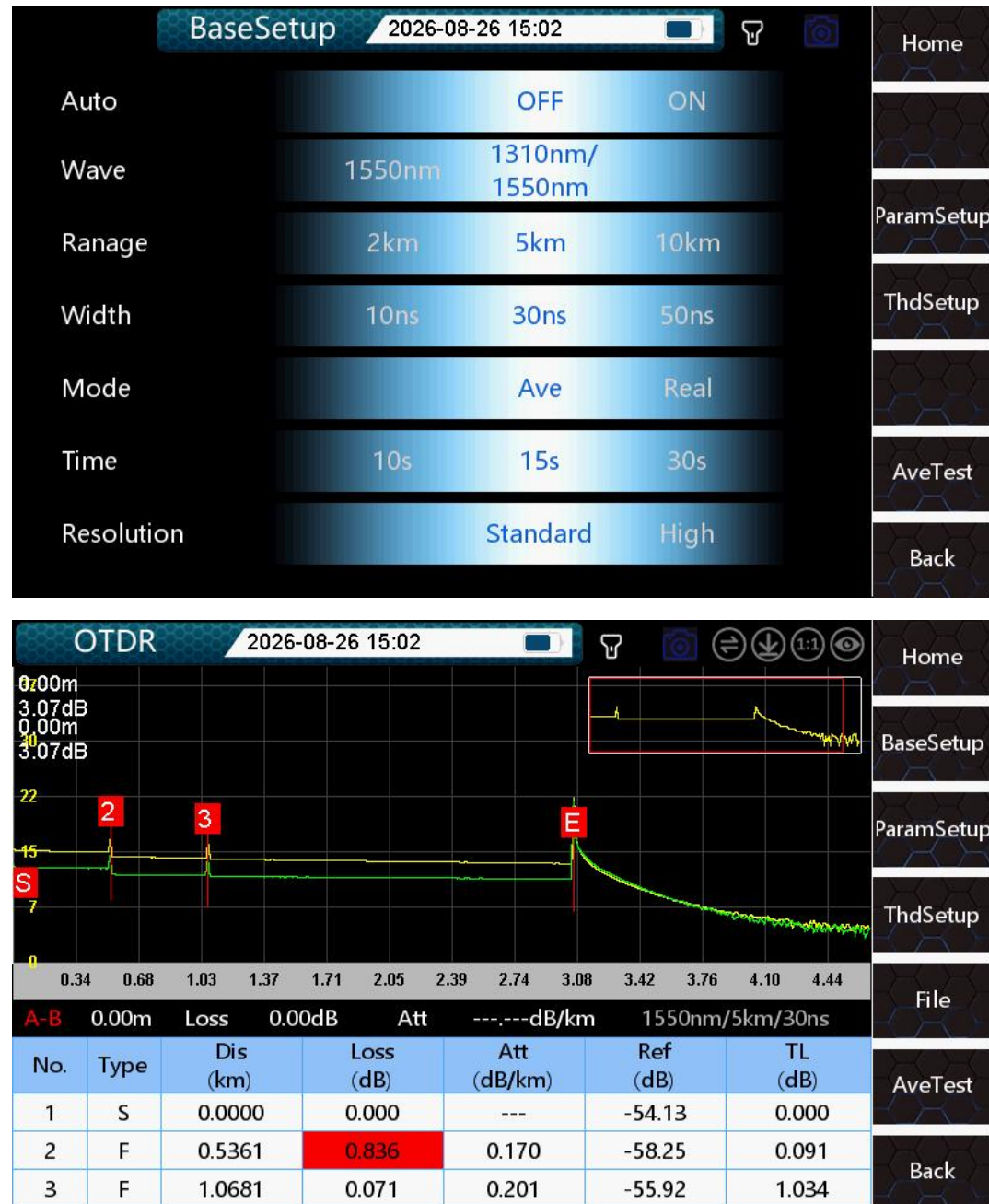
Supports multi-touch gestures to move, zooming in and out OTDR curve.

Click the "1:1" button to restore the OTDR curve.



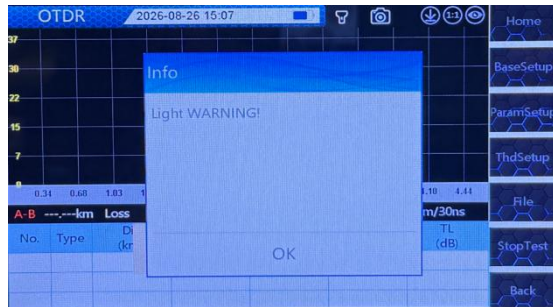
3.7 1310nm/1550nm dual wavelength test

In the OTDR basic settings, the 1310nm/1550nm dual wavelength testing option can be selected. Click the wavelength switching button to switch the curve between 1310nm and 1550nm.



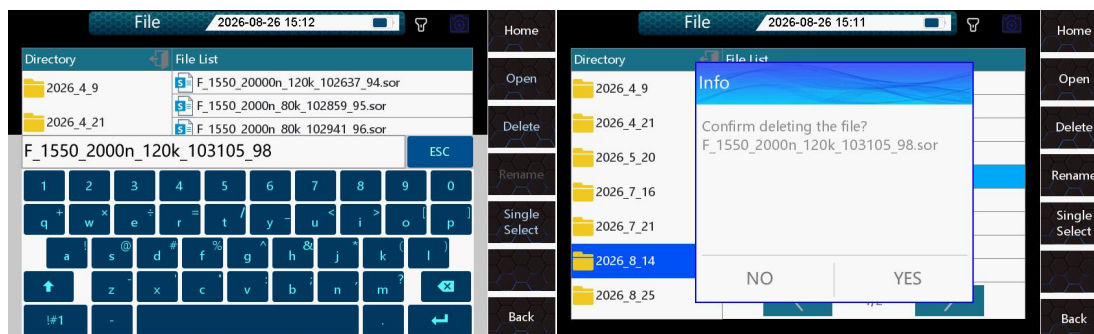
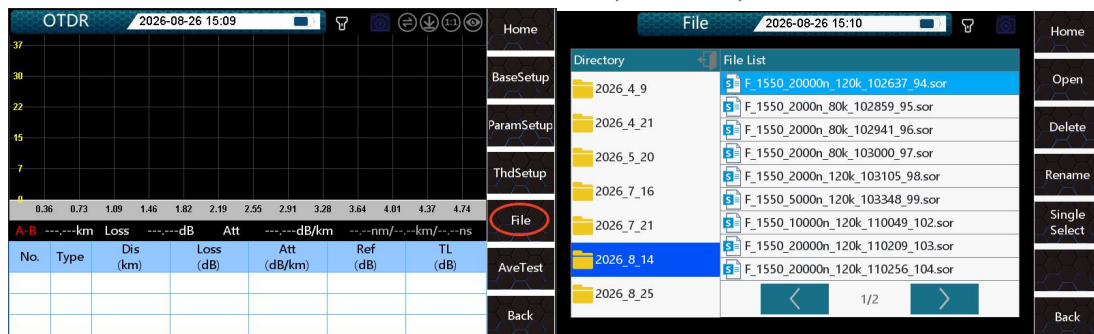
3.8 Light Warning

The FHO3100 regular model does not support live fiber test. If there is an optical signal in the measured fiber, an optical alarm [Light WARNING] will be prompted. OTDR Measurement needs to be stopped immediately



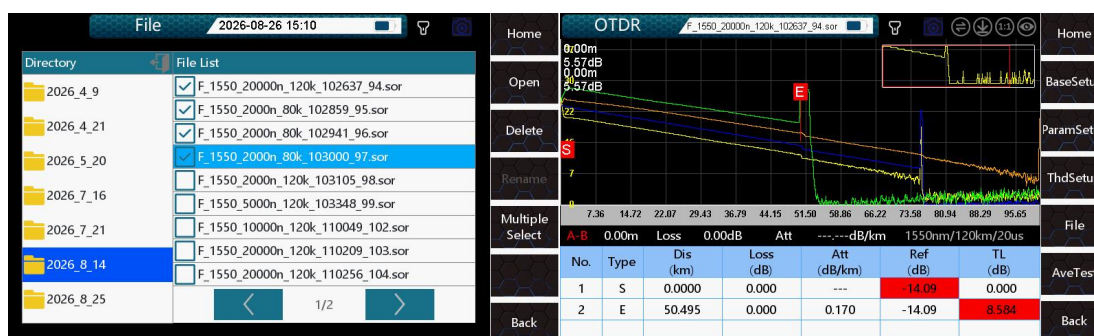
3.9 OTDR Document Management

Click the [File] button to access the SOR file management interface. If auto-save is enabled, SOR files will be saved in a folder named after the test date; otherwise, the test files will not be saved.



Rename the SOR file

Delete the SOR file



Maximum 4 sor files can be selected and display on the same time

4. VFL Red Light Source Function

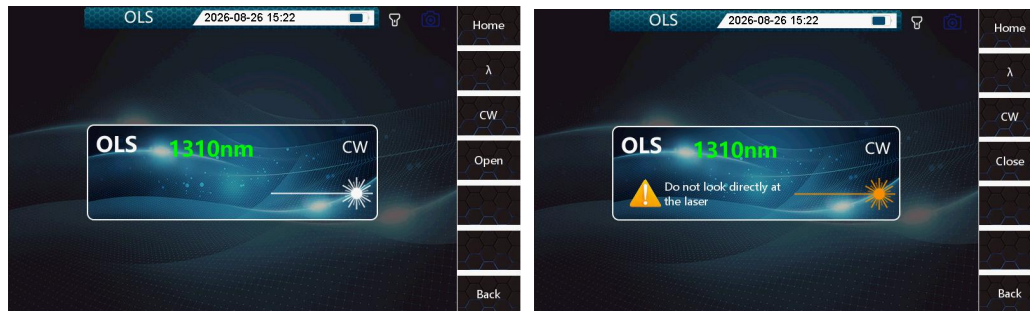
The VFL function supports an output power of 10mW, CW mode, and 1Hz/2 Hz flashing mode.



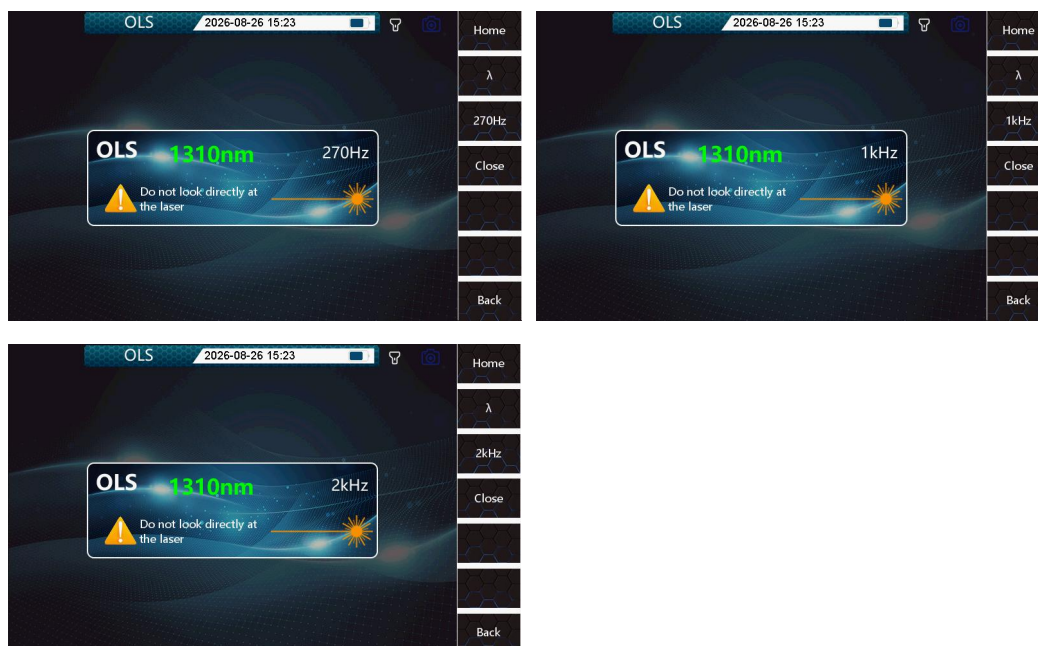
5. Stable Light Source Function

The stable wavelength is the same as the OTDR wavelength.

Output mode supports CW/270 Hz/1 kHz/2 kHz



Modulated wave frequency output

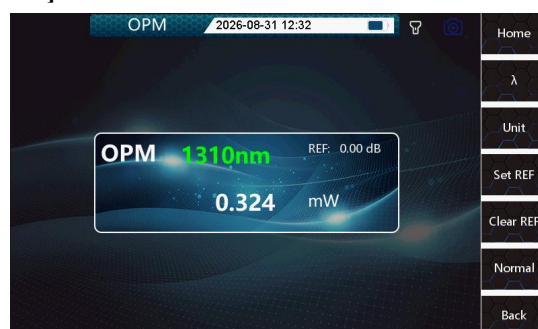


6. Optical power meter function

The FHO3100 supports optical power meter function

Calibration wavelength support: 850/1300/1310/1490/1550/1625/1650 nm

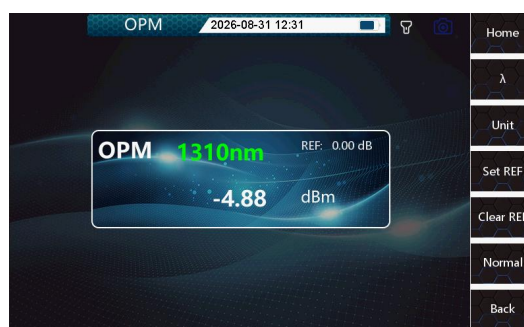
Support switch display unit between [dBm] and [mW]



FHO3100 Support optical power deviation correction. Press [Normal] button to enter the [Calibration] interface. If the measured value is larger than the actual value, a “-” value can be filled in the correction value, such as [-0.5dB]



Fill in correction value



Before filling in the value



After filling in the value

Click [Set REF] to set the current optical power level as reference, click [Clear REF] to clear the current reference value. After setting REF value, the relative power value will be displayed.



7. FLM(Fiber link map) function

Click the [FLM] button to access the fiber link map function.

The FLM function only requires selecting the measurement wavelength and does not require setting other measurement parameters.

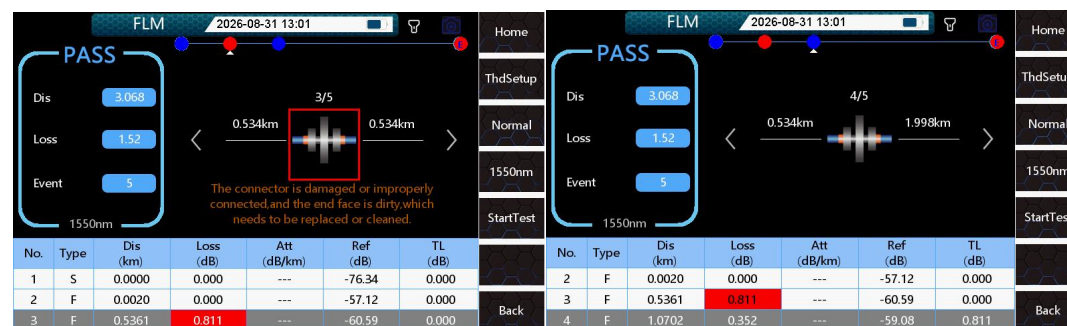
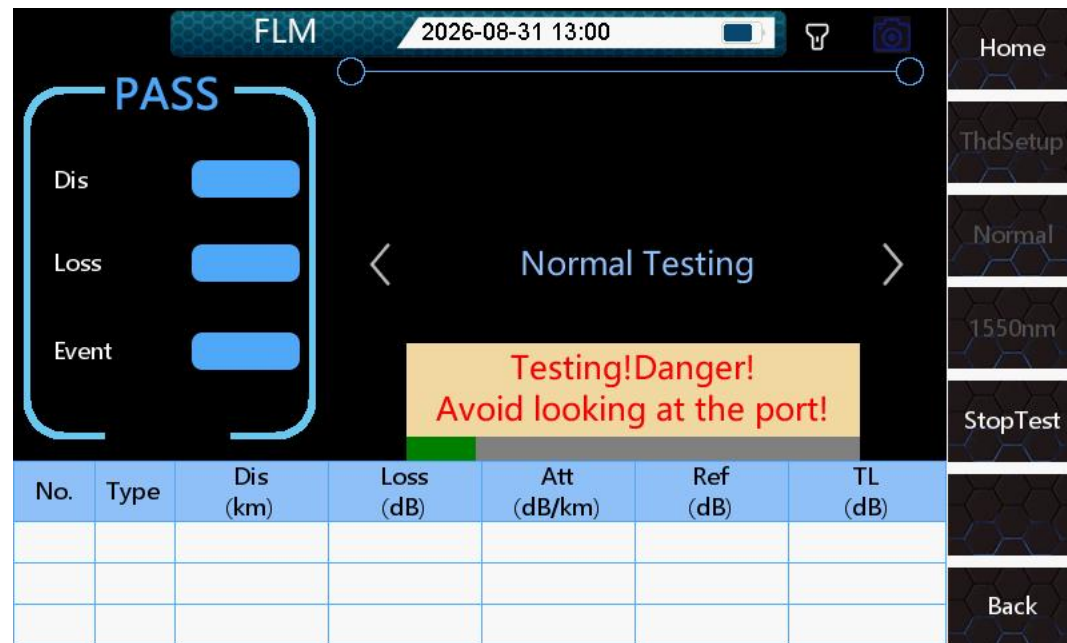
No.	Type	Dis (km)	Loss (dB)	Att (dB/km)	Ref (dB)	TL (dB)

Click on threshold settings to set the threshold for pass/fail. Events that exceed the threshold will be highlighted in red. If the total loss exceeds the threshold, the overall measurement result will be displayed as a failure

	1310nm	1550nm
Section Attenuation (dB/km)	0.320	0.182
Total Loss(dB)	3.00	3.00

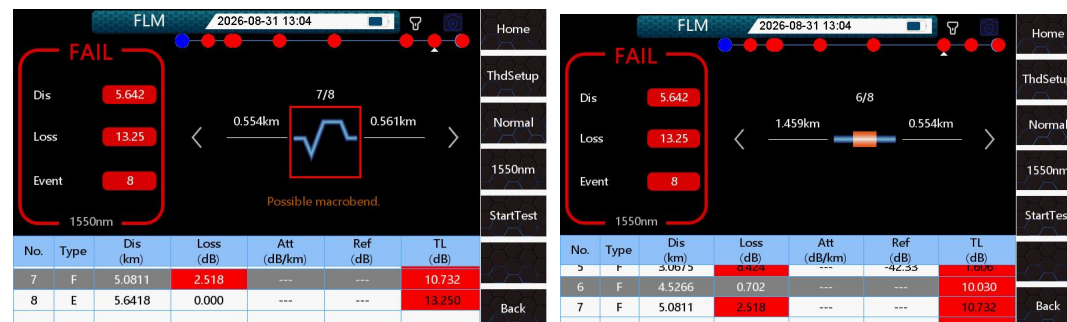
	Loss	Ref
Splice Point	0.80	-
First Connector	0.80	-40.00
Last Connector	0.80	-40.00

Click [StartTest] to start the FLM test. The test results will be displayed through visual icons, which are more intuitive and easy to understand.



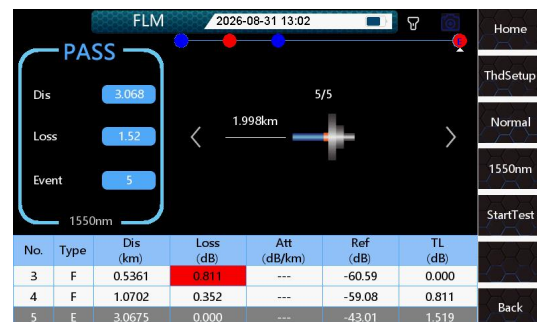
Bad connector

Good connector



Possible Macrobend

Fusion splice point



Fiber end

If the [total loss] exceeds the threshold, the overall measurement result will be displayed as a failure.



8. OLTS (Optical loss test set)function

FHO3100 supports simultaneous operation of light source and power meter, and connects the light source port and power meter interface of the instrument to achieve measurement of attenuation of optical fibers and fiber optic devices.

Click [Open] to turn on the laser source function.



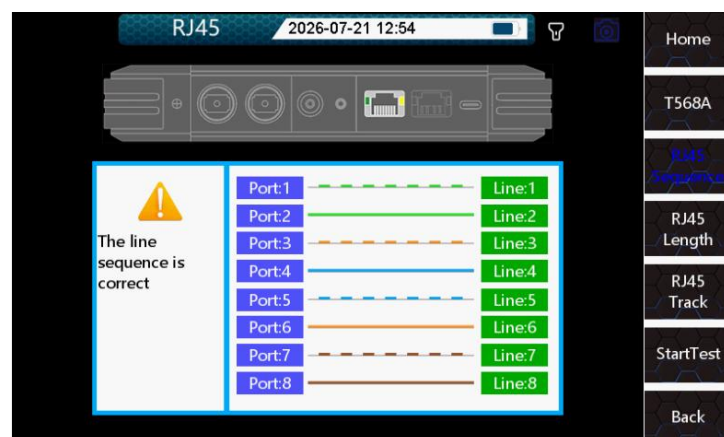
9. RJ45 cable test function

In RJ45 testing, it includes RJ45 line sequence, length and track function

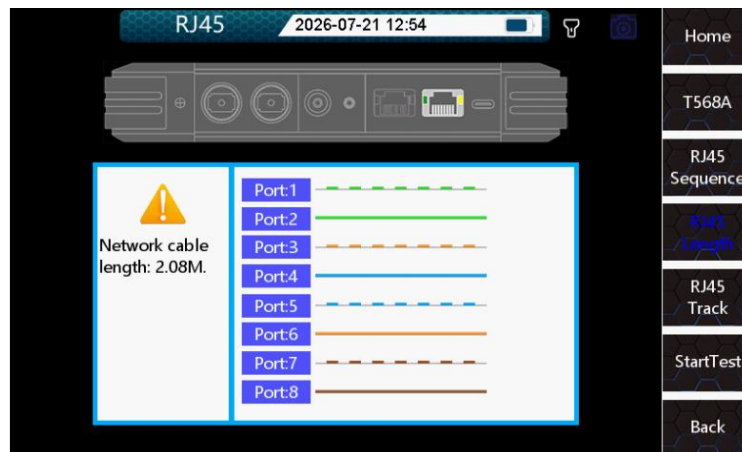
Please pay attention to the selection of the top RJ45 port and the test prompts on the screen before testing.

RJ45 sequence test need connect a RJ45 remote module and RJ45 track need a optional tracking tool.

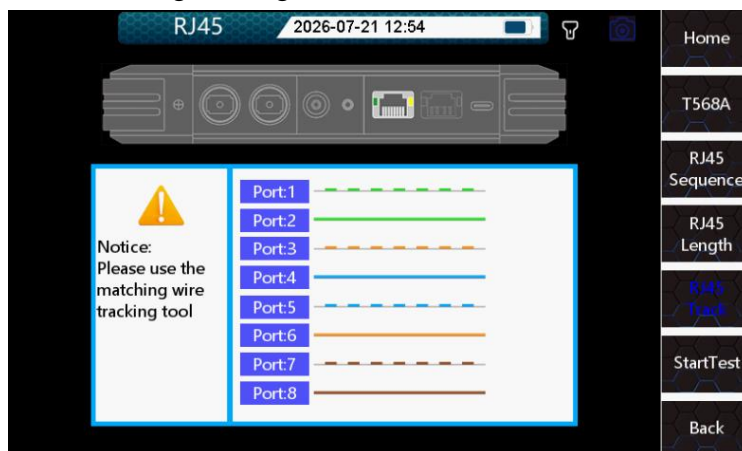
Attention: POE Ethernet cable testing is not supported!



RJ45 line sequence testing



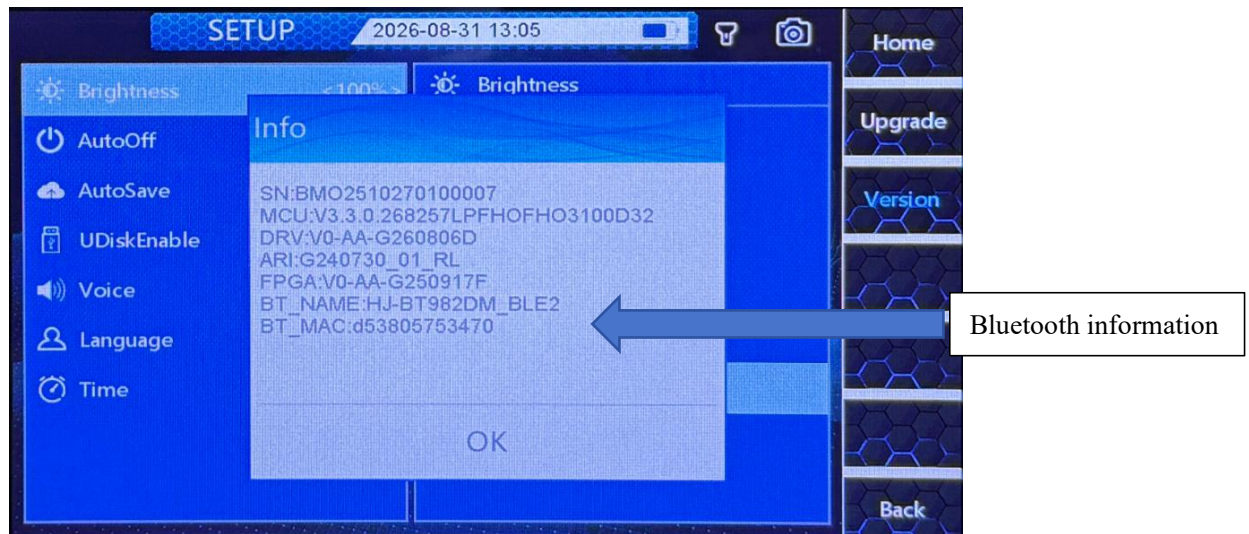
RJ45 cable length testing



RJ45 cable tracking(optional function)

10. Bluetooth Connection and APP

Some models support Bluetooth and phone app functions, which can be used to control OTDR for testing and check SOR files inside the machine through the app.



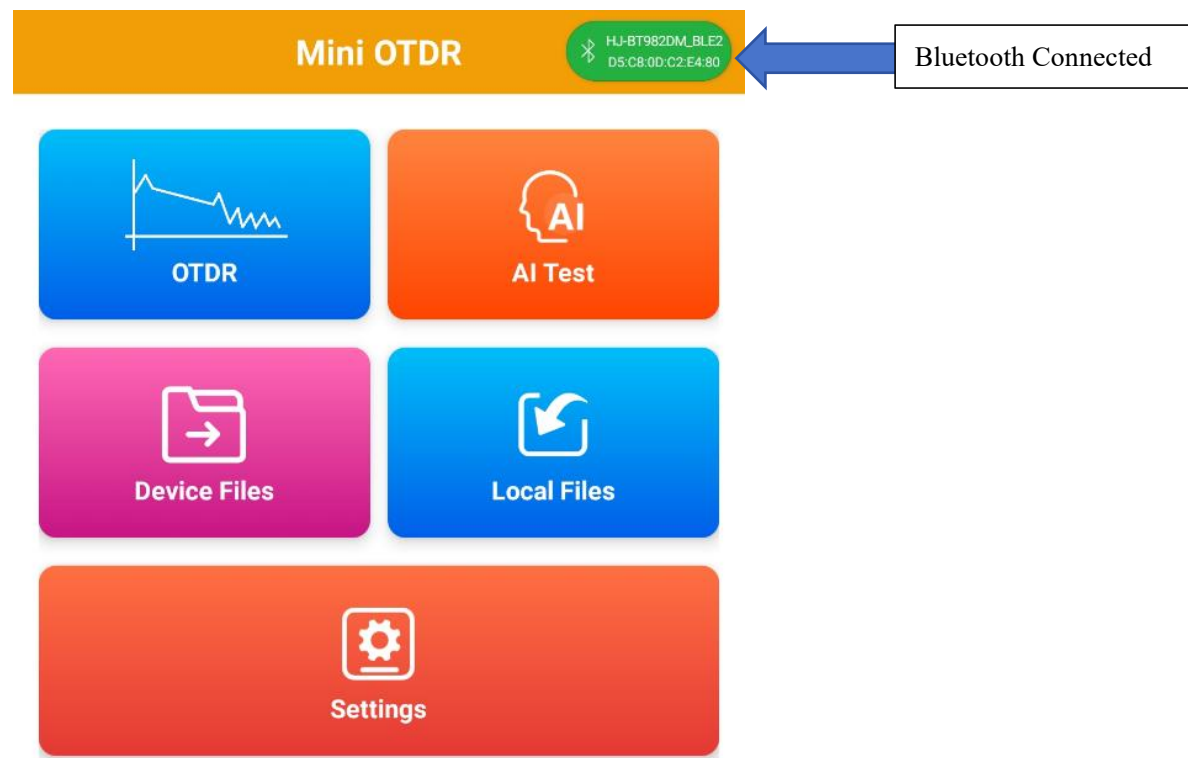
- IOS Phone: Apple Store Search **Grandway**



- Android Phone: Scan the QR code to download APP



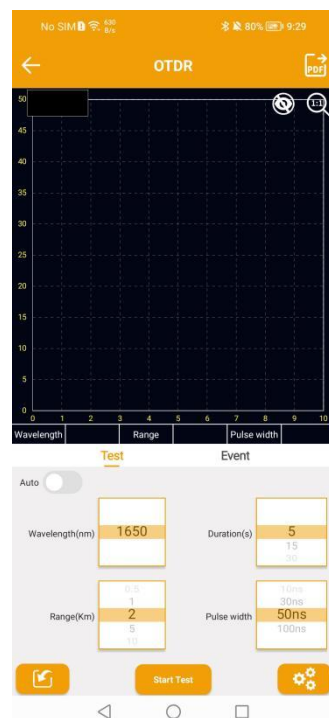
Click **【Connect Bluetooth】** and find the device bluetooth MAC address to connect.



When the app is connected to the instrument, it will automatically detect the model of the device.

The following functions can be performed on the app:

- 1: OTDR control testing, including automatic testing and manual testing
- 2: FLM (Fiber link map) testing
- 3: Check the historical test sor files in OTDR, which can be opened with multiple curves and generate test PDF reports



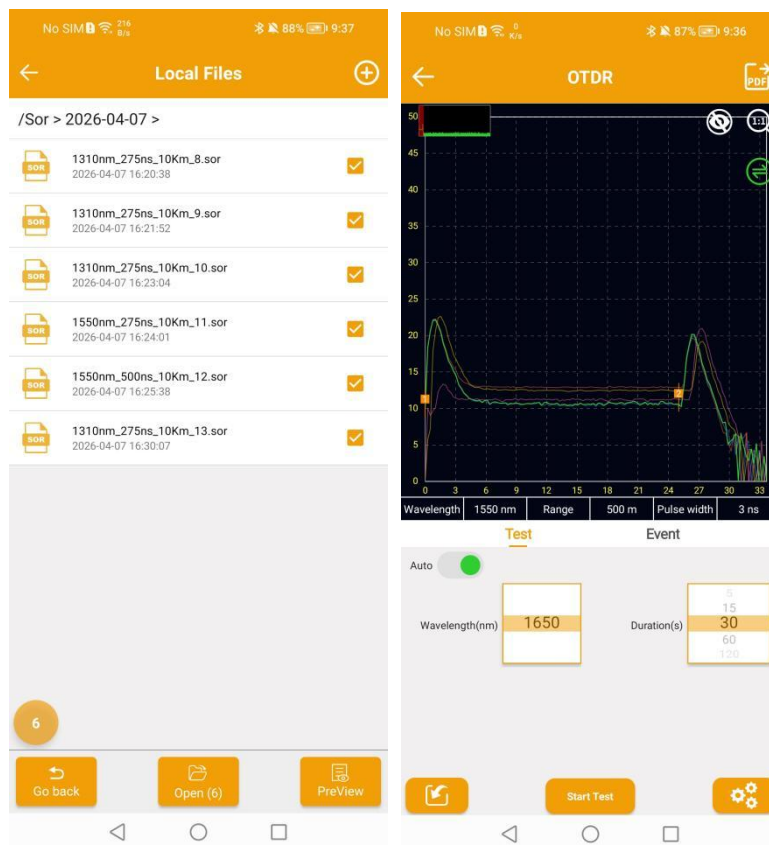
OTDR Test Setup



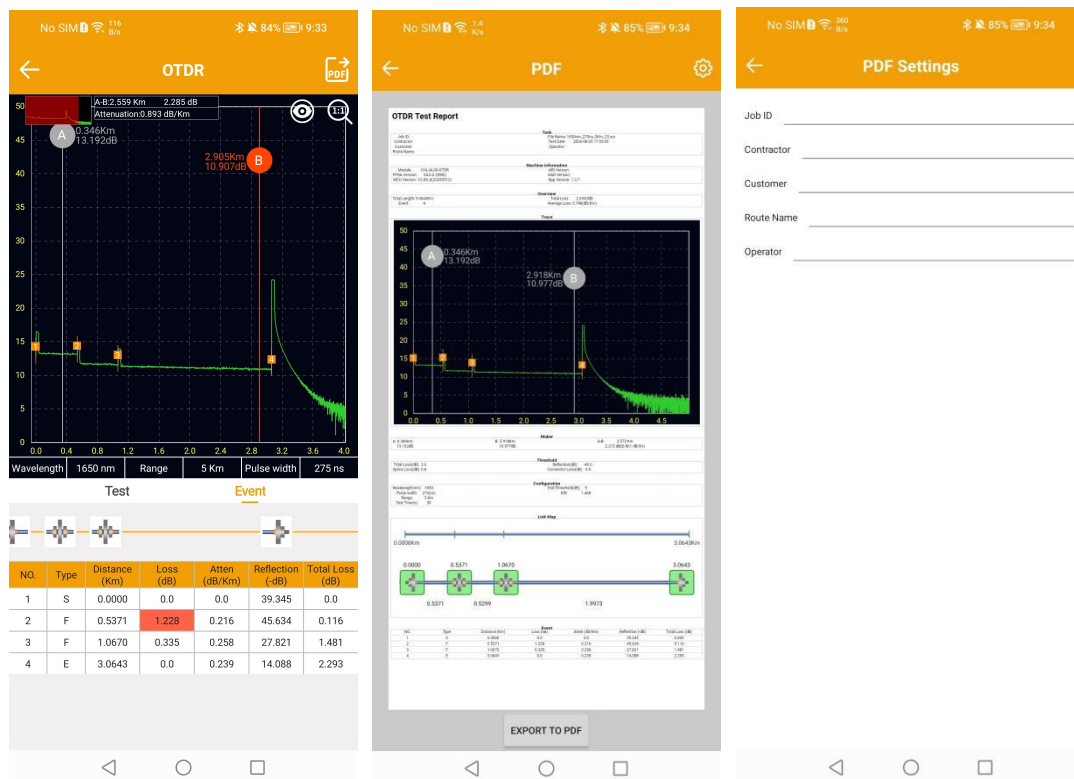
OTDR Test Interface



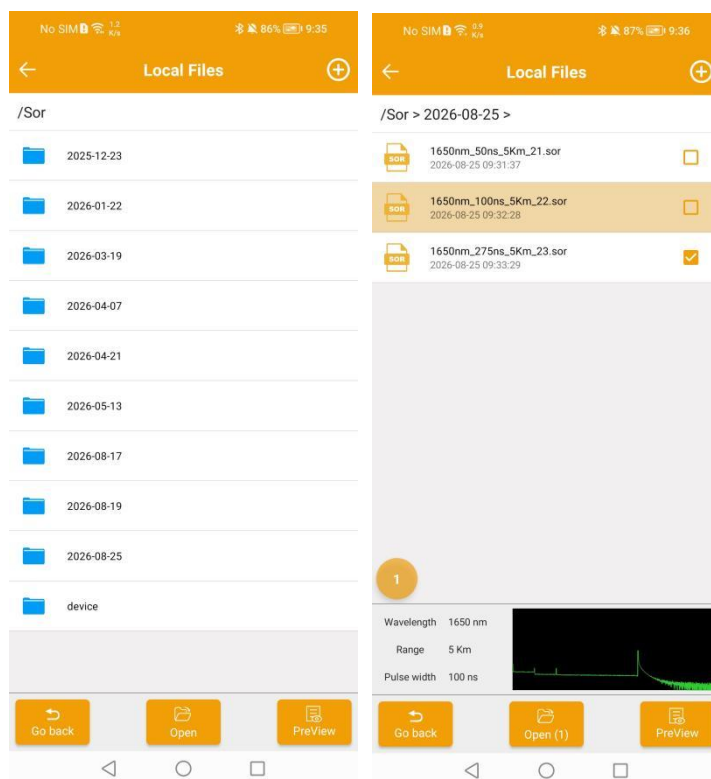
FLM Test Interface on app



Simultaneously select multiple curves and display analysis on the same screen



Click on the PDF icon in the upper right corner to generate a PDF report

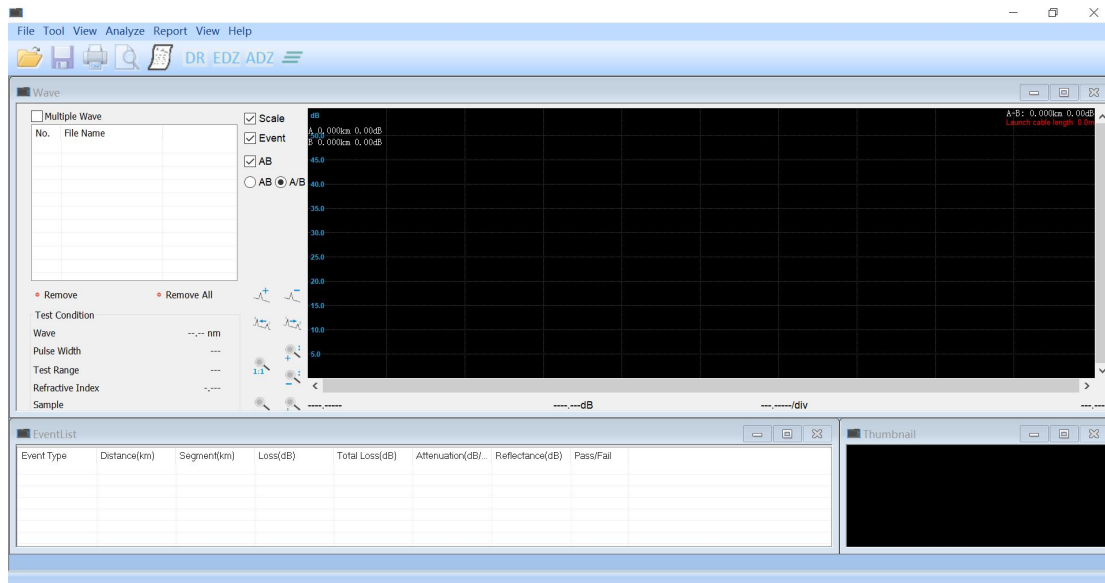
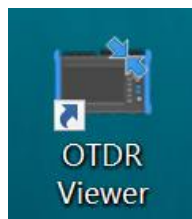


View Device SOR files through the mobile app

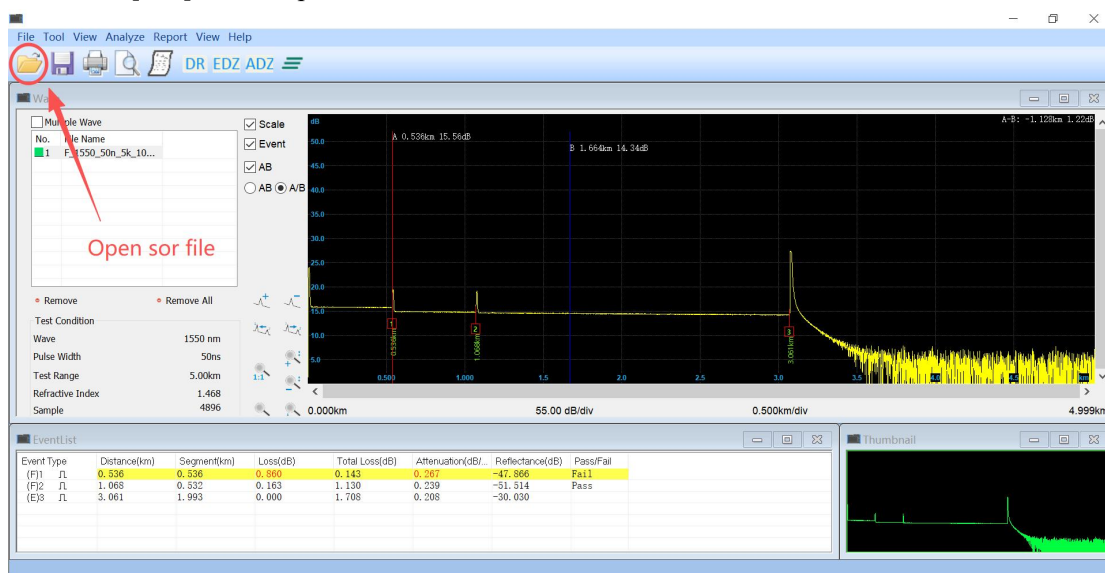
11. PC Software OTDRviewer

11.1 Open the PC software OTDRviewer

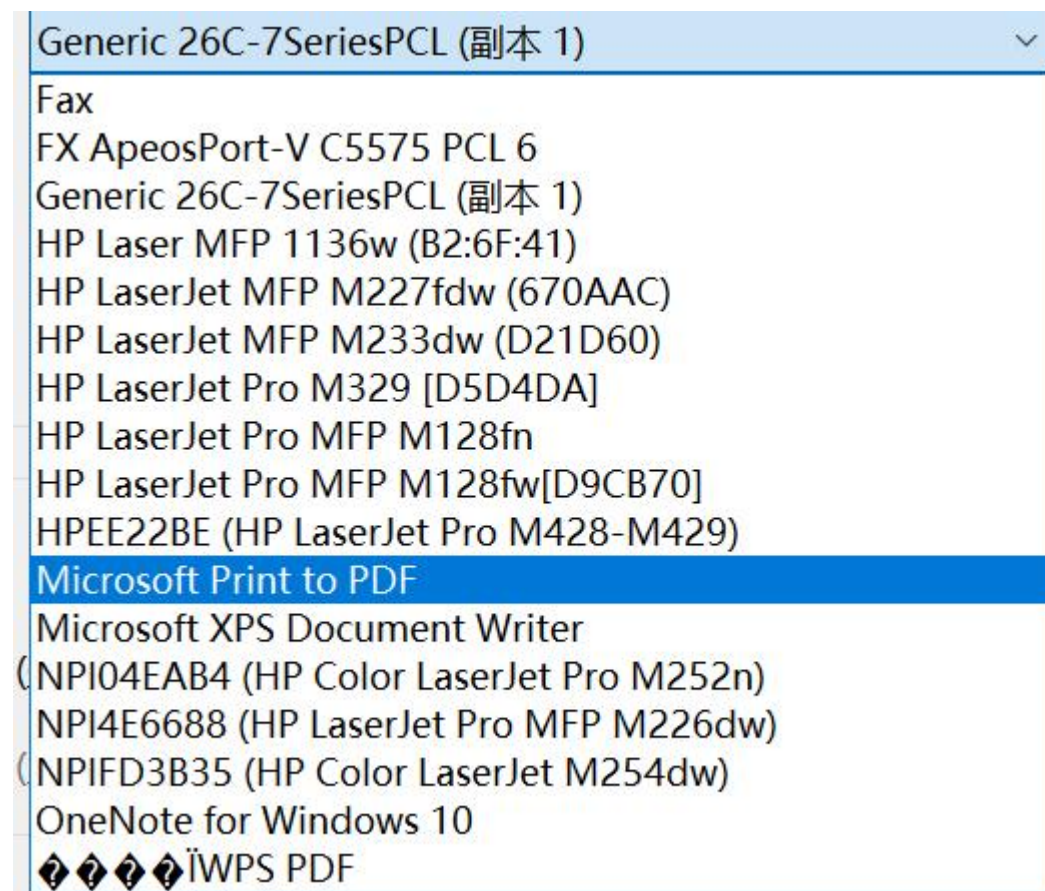
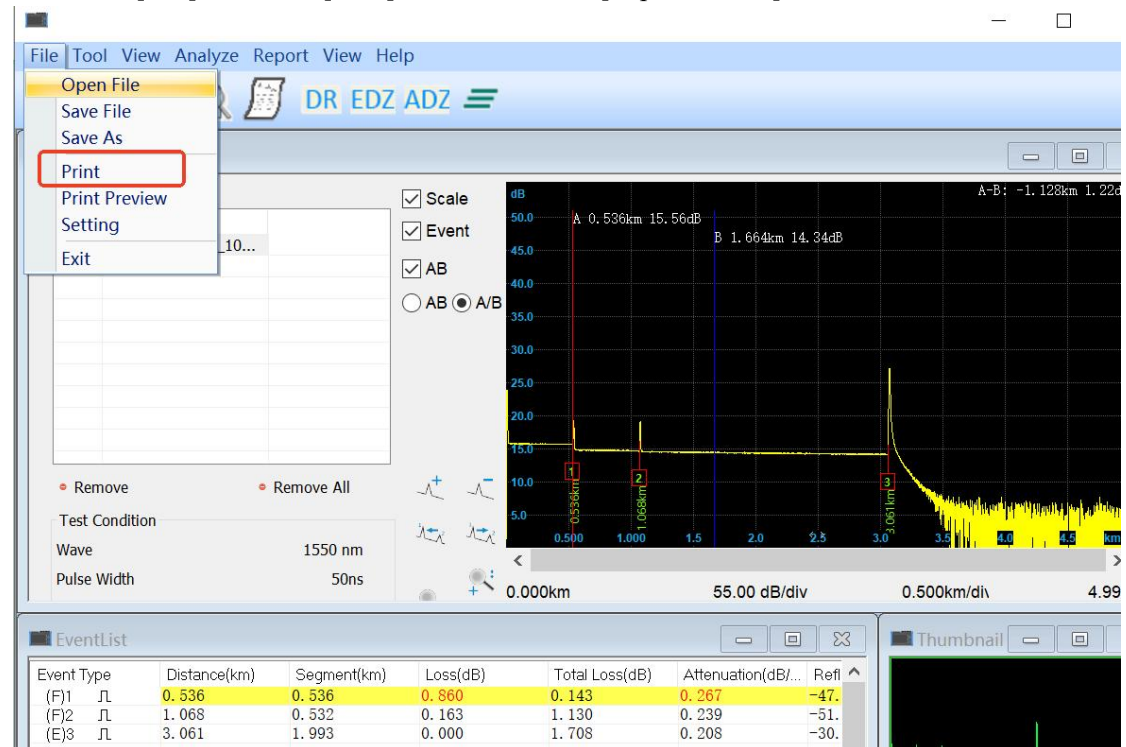
<https://www.grandwaytelecom.com/En/Skippower/downloadFile/id/23.html>



11.2 Click [File] icon to open sor file.



11.3 Click [File] and select [Print] button and select [Export to PDF]



11.4 OTDR Report Sample by OTDRviewer

OTDR REPORT

2026-09-04 13:51:30

Job

Job ID : File : F_1550_50n_5k_102312_47.sor
Contractor: Date : 2026-08-24 10:23:13
Customer : SupParams Operator: Grandway

Overview

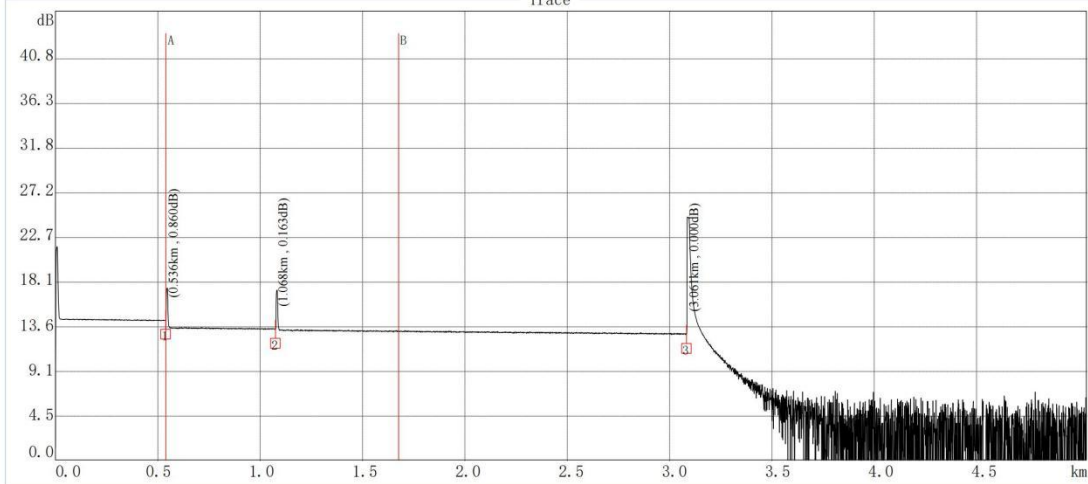
Total Fiber Length(km): 3.061
Total Fiber Loss(dB): 1.708
Average Loss(dB/km): 0.558
ORL(dB): 30.030

Configuration

Wavelength(nm)	: 1550	Loss threshold(dB)	: Auto	Origin		End	
Pulse(ns)	: 50	Reflectance threshold(dB)	: Auto	Location:	ROOMA	Location:	ROOMB
Range(m)	: 4999	End of fiber threshold	: Auto	Cable	: 144	Cable	: 144
Average Time(s)	: 15	Refractive Index	: 1.468	Fiber	: 1	Fiber	: 1
Backscatter coeff(dB)	: -81.000	Sampling Resolution(m)	: 1.021	Color	: BLUE	Color	: BLUE

Comment

Trace



A: 0.536km 15.56dB B: 1.664km 14.34dB A-B: -1.128km 1.22dB | -1.082dB/km

Joint Loss dB : 0.200 Reflection. dB: -40.0 Cumul. Loss dB: 10.000
Connector Loss dB: 0.800 Slope dB/km : 0.252 Threshold

Event							Pass/Fail
Event Type	Distance (km)	Segment (km)	Loss (dB)	Total Loss (dB)	Attenuation (dB/km)	Reflectance (dB)	
1Reflect (F)	0.536	0.536	0.860	0.143	0.267	-47.866	Fail
2Reflect (F)	1.068	0.532	0.163	1.130	0.239	-51.514	Pass
3Reflect (E)	3.061	1.993	0.000	1.708	0.208	-30.030	

Prepared By: _____

Verified By: _____

Approved By: _____

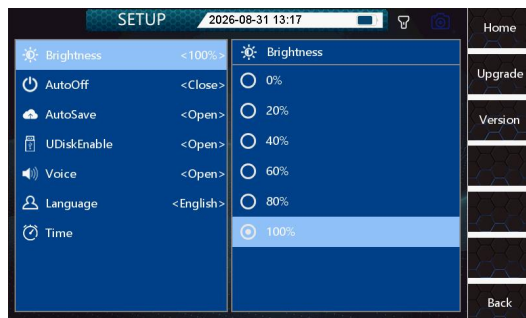
12. System Settings

Click the "System Settings" button to access the OTDR machine settings.

In the Settings menu, users can adjust screen brightness, the Auto Shutdown time(Off/5 minutes/10 minutes/30 minutes/60 minutes), language, device voice, Auto Save, USB disk, time, and software upgrade.

System information is also displayed at the bottom of the System Settings menu.

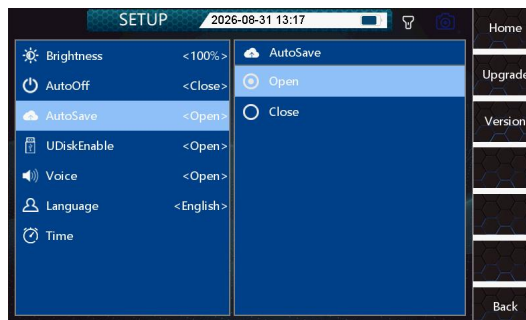
[Brightness Setup]



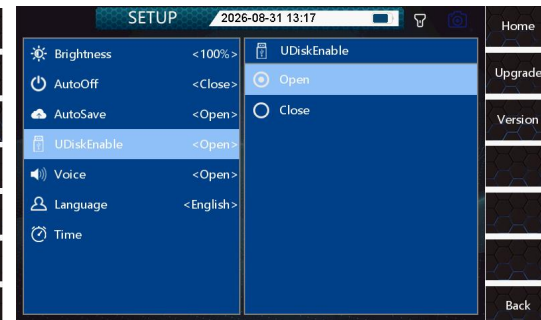
[AutoOff Setup]



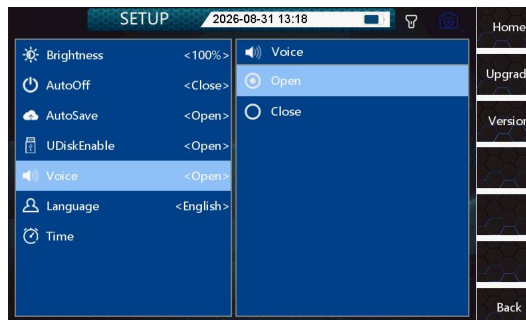
[AutoSave Setup]



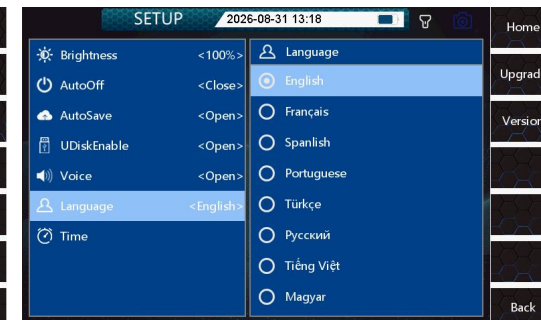
[UDiskEnable Setup]



[Voice Setup]



[Language Setup]

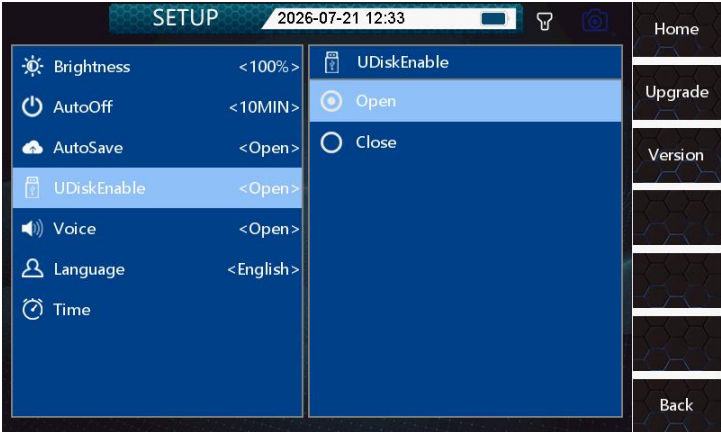


[Time Setup]

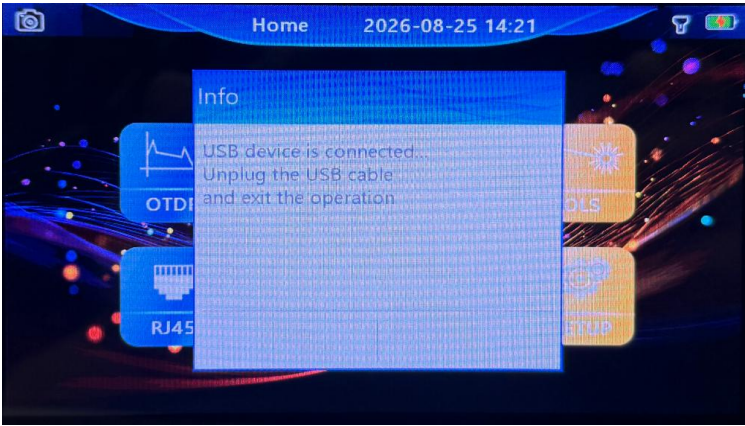


13. Software Upgrade

13.1 Turn on the OTDR and enable the [USB Disk mode] in the SETUP.



13.2 Connect the OTDR to a computer using a Type-C data cable.



13.3 Copy the upgrade file to the [UPDATE] folder to replace the old files.

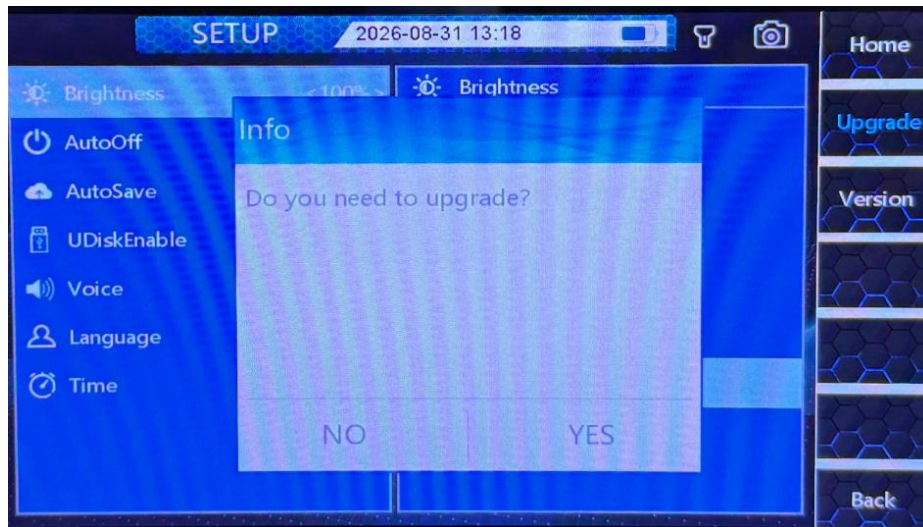
U 盘 (E:)

名称	修改日期	类型	大小
 OTDRDATA	2098/1/1 0:01	文件夹	
 UPDATE	2024/5/25 8:52	文件夹	

U 盘 (E:) > UPDATE

名称	修改日期	类型	大小
 RW_m_const	2024/6/21 9:47	文件	5,926 KB
 ER_IROM1	2024/6/21 9:47	文件	2,327 KB

13.4 Unplug the USB cable from the computer, connect the power supply, and press the Upgrade button to update the device. Upon completion of the upgrade, the OTDR will automatically shut down.



Note: The machine comes pre-installed with the latest software; therefore, a software upgrade is generally not required. If you need a software upgrade, please contact the manufacturer.

14. Precautions for use

- Be sure to use the original adapter for charging, with a specification of 5V/2A. Do not use fast charging for charging.
- Before OTDR testing, please clean the OTDR and fiber end face.
- Please do not disassemble the machine by yourself.
- Conventional OTDR models, please do not perform OTDR testing when there is an optical signal in the line.
- After use, please close the dust cover.
- Please store the OTDR in a dry and ventilated place. Regularly charge and discharge the equipment to maintain battery performance.