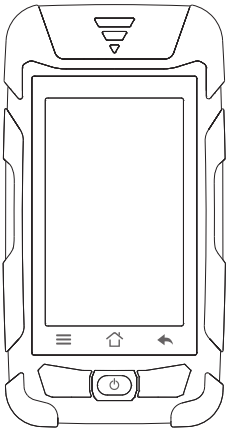
Resource

Verification Device

Operating Manual



Warning

When using this instrument, please do not look directly at the optical interface or the end of the optical fiber with your eyes, avoid eye damage! Any change or modification not explicitly permitted in this manual will deprive you of the right to operate the equipment. To reduce the risk of fire or electric shock, do not expose the equipment to thunderstorm or humid environment. In order to prevent electric shock, do not open the shell, it must be repaired by the qualified personnel designated by the manufacturer.

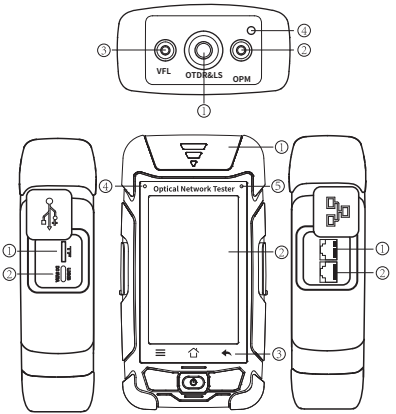
Attention

Battery: The battery in the machine is a special lithium-ion polymer battery. The charging voltage is 5V, and the charging temperature ranges from -5℃~45℃ . When the ambient temperature is too high, the charging will automatically terminate. The instrument battery should be charged every one month to avoid battery failure due to self-discharge after long time storage. The temperature range of the battery during long-term storage is -20℃～45℃.
Please use the special AC adapter attached to this instrument and use the external power supply strictly according to the specifications, otherwise the equipment may be damaged.

Fiber End Face Cleaning: Before testing, clean the end face of the tested optical fiber joint with alcohol cotton.

LCD screen: The display of this series of instruments is **4.3** inch color LCD. In order to maintain good viewing effect, please keep the LCD screen clean and clean. When cleaning, the LCD screen can be cleaned by wiping with soft fabric.

Due to the need of design improvement, the contents are subject to change without notice.



Top

① OTDR/LS Optical Interface
② OPM Interface
③ VFL Interface
④ Flashlight

Front View

① Dust Cover
② 4.3-Inch Color LCD
③ Function Keys
④ LED Status Indicator Light
⑤ LED Charging Indicator Light

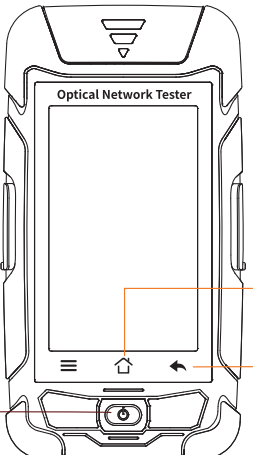
Left

① TF (Micro SD) card slot
② Type-C USB
(Charging/connecting computer to copy data)

Right

① Line Sequence, Line Finding Interface
② Line Length, Ping Interface

Functional Keys

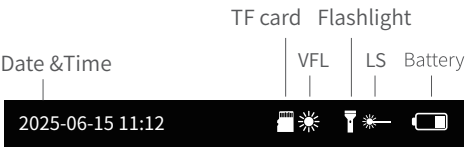


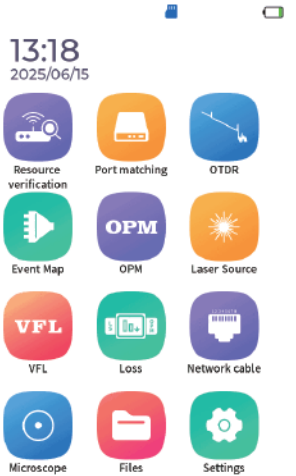
On/Off key
Short press to turn on, long press prompts to turn off;
Short press to control flashlight

Home key
Short press to return to the main menu interface

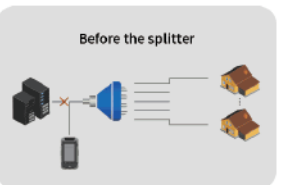
Exit button
Return to the previous menu level

Enter the main menu after power on, there are 12 function modules. Press the function icon to enter the corresponding function interface.





Select the testing location



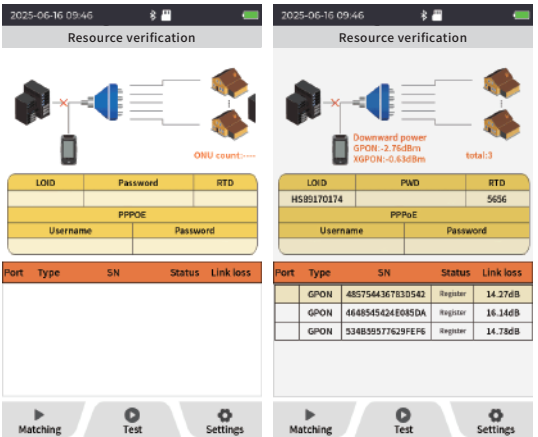
Click on XGPON resource verification to enter and select the testing location

Before splitter: Multiple ONUs (up to 128 supported) can be tested simultaneously, and all downstream ONUs information can be obtained at once.

After the splitter (resource inventory) test: Only test a single ONU, and automatically enter the inventory function when shaking hands with the ONU fails.

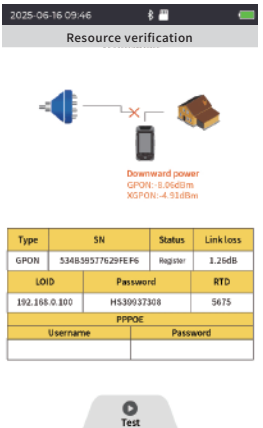
There are a total number of ONUs and information about each ONU in the one click test link: ONU type PPPOE account password, current test (GPON, XGPON, XGSpoon), VSSN, LOID, location to each ONU link loss and distance.

Maximum support for 128 ONUs tests: XGSPON: 48, XGPON: 48, GPON: 32. After the test is completed, you can enter the port pairing mode. The machine will compare the information of each ONU in the real-time test link, and the changing ONU will be marked when plugging and unplugging the optical fiber on the ONU side.

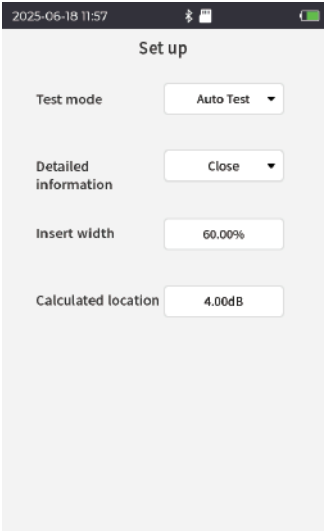


Conduct detailed testing on individual ONU information to obtain the optical modem type, VSSN, LOID, PPPOE account, and password. When the machine cannot establish a connection with the ONU, it automatically enters the inventory function to determine whether the ONU is connected but not powered on.

Note: Fiber optic connectors for FC/UPC

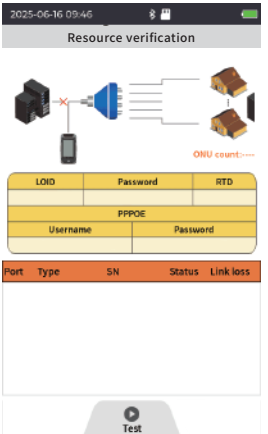


Test mode: The current test mode can be selected (automatic or manual selection of test location).
Details information: Whether to obtain detailed information of each ONU (LOID, PPPOE account, etc.) during testing.
Insert width: Set the percentage of widening used to determine when the optical modem is not powered on.



Port Matching

After activation, the instrument will perform real-time testing on all ONU information in the current link and display it in a list format. The results of each real-time test will be compared, and any abnormal data will be highlighted in red for processing. By plugging and unplugging the optical fibers at each port after the splitter, and observing the changes in the plugging list each time, it can be determined that each ONU corresponds to a port and releases redundant resources.



Measurement parameter settings: Select the test wavelength, range, pulse width, and time parameters in sequence.

Mode switching: real-time testing, average testing, and automatic testing mode switching.

Working wavelength: Select the testing wavelength for OTDR

Test range: Typically, about twice the length of the fiber being tested is selected.

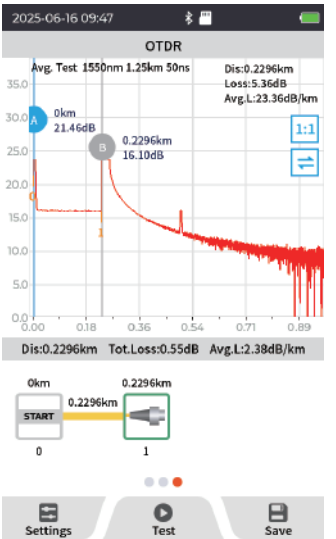
Test pulse width: 5ns~20000ns optional, with different ranges and selectable pulse widths.

Curve Operation

Curve scaling and dragging: touch screen gesture operation

Restore initial curve: double-click the screen.

Move cursor: Drag A or B.



There are five types of events:

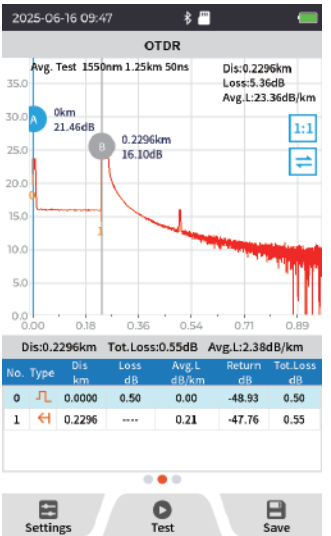
Reflective event

Down event

Gain event

Fiber end

List: Measurement results are displayed in a list format
Distance: The length of the link between the current AB cursor
Loss: The loss of the link between the current AB cursor
Slope: The average loss of the link between the current AB cursor
In the event list:
Serial number: The order of the current event
Type: The type of the current event point
Distance: The location of the current event point
Loss: The loss value at the current event point
Slope: Loss value per kilometer from the starting point to the current event point
Reflection: Return loss value of the current event point
Total loss: the cumulative loss value from the starting point to the current event point

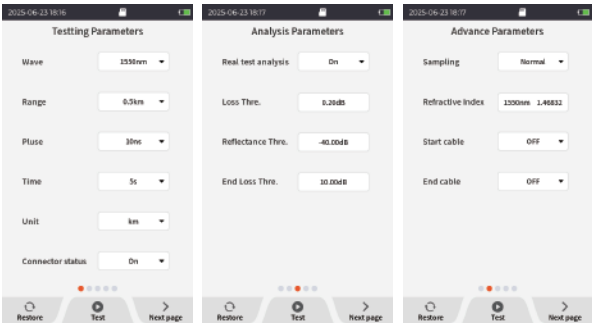


Testting parameters settings

Set the refractive index, measurement unit, and sampling mode for the test wavelength The testing units include kilometers (km), miles (mi), and thousand feet (kft)Sampling modes: regular, fast, and high-precision modes, with high-precision mode requiring longer time but more accurate testing.

Analyze parameters

Event loss threshold: Set the loss threshold for the connection points, fusion points, or macro bends in the link that can be tested, between 0.1dB and 9.99dB, with a default of 0.2dB. Events greater than the set threshold will be listed in the event table, while events smaller than the event threshold will be ignored.



Reflection threshold: Set the return loss threshold for detectable link reflection events, between -99.99dB and -1dB, with a default of -40dB.

End threshold: Set the loss value at the end of the link that can be tested, between 1dB and 99.99dB, with a default of 10dB.

Qualification criteria

Pass/Fail is used to set the Pass/Tail function parameters, which can be used to set the threshold for determining bending loss, fusion loss, and connection loss at different wavelengths

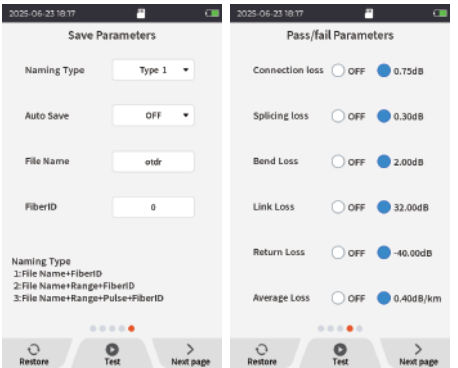
Connection loss: used to set the threshold for determining the connection joint loss. If the threshold is exceeded, it is considered that the connection joint loss is too large and does not pass the judgment.

Welding loss: used to set the threshold for determining the position loss of the welding point. If the threshold is exceeded, it is considered that the welding point loss is too large and does not pass the judgment.

Bending loss: used to set the threshold for determining the passing bending loss. If the threshold is exceeded, it is considered that the bending point loss is too large and does not pass the judgment.

Link loss: used to set the threshold for determining the overall link loss. If the threshold is exceeded, it is considered that the entire link loss is too high and does not pass the judgment.

Average loss: used to set the threshold for determining the average loss of the link. If the threshold is exceeded, it is considered that the average loss of the link is too high and does not pass the judgment.



Auto Save: After opening, the test is completed and the curve is automatically saved.

Fiber Number: Set the serial number of the currently tested fiber.

Save Settings

Naming convention:

Brief: The file name is "file name prefix (default" otdr ") - serial number", and the serial numbers increase sequentially.

Details: The file name is prefixed with "file name - range - pulse width - serial number", and the serial number increases sequentially.

File Name: Set the prefix of the saved file name.

This function is completely one click automatic testing, displaying the length, connector type, breakpoint position and other information of the measured optical fiber link in a graphical form, with clear and easy to understand results.

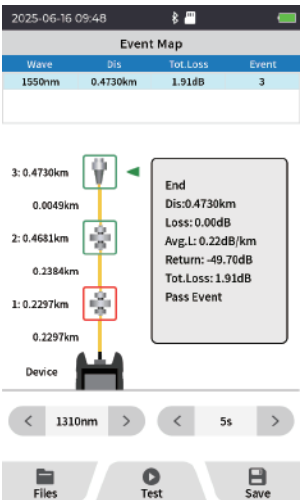
Starting point of the link

Downward events, mostly involving fusion points

Connectors, square flange, SC, ST, LC connectors, etc

Fiber optic macro bending, high loss bending point

End of link



The function is used to test the power of optical signal and insertion loss of various devices and optoelectronic components. It can identify and measure the frequency of 270/330/1000/2000Hz optical signal.

Switching wavelength division: Switching between ordinary optical power meter and wavelength division optical power meter.

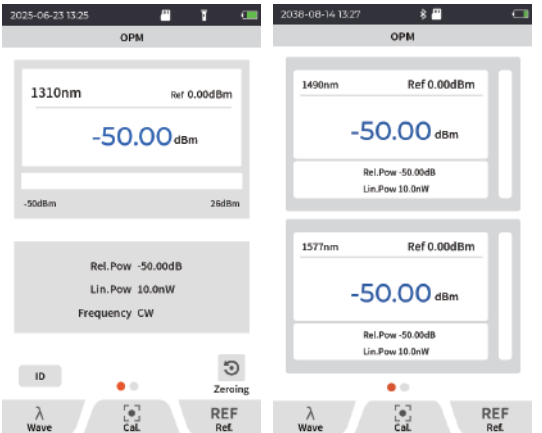
Reference: Set the current power as the reference power.

Wavelength: Select wavelength.

Absolute power, relative power and linear power are converted as follows:

$P=10\lg P/1mW$

$P_{Rel}=P_{Abs}-P_{Ref}$

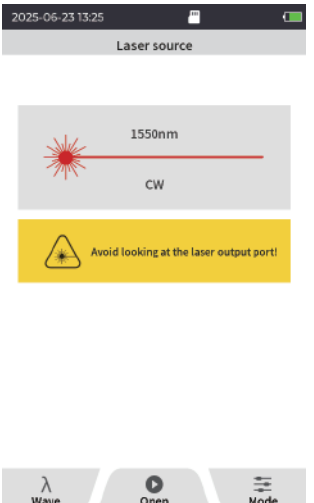


LS for short, Can output laser with the same wavelength as OTDR function, which is invisible light, Used for testing parameters of telecommunications, Cable TV, and LAN optical cables; Insertion loss, isolation, and return loss testing of optical passive components; Detector wavelength responsivity testing, etc.

There are five working modes of the light source: CW, 270Hz, 330Hz, 1kHz, and 2kHz.

: Turn on the light source

: Turn off the light source



WARNING

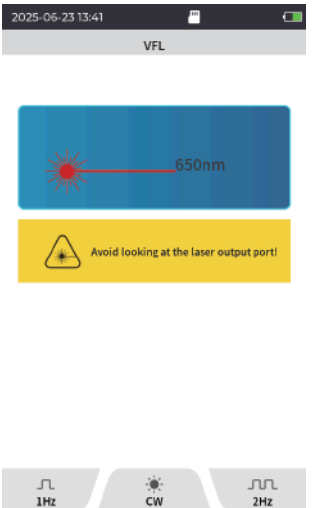
Avoid looking directly at the laser output port, as the laser can cause damage to the retina of the human eye!

Injecting visible red light (650nm) into the optical fiber and observing the leakage position on the measured fiber can conveniently and accurately determine the location of the fiber fault point. Suitable for detecting near end fault points and high loss sections caused by micro bends in bare optical fibers, fiber jumpers, and other optical fibers and cables that can leak red light.

CW: Turn on/off the red light source

1Hz: Red light source flashes once every second

2Hz: Red light source flashes twice per second



WARNING

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Used to test the insertion loss value of optical passive components.

The steps for measuring optical loss are as follows:

1) First, connect the LS and OPM optical interfaces with a standard jumper, press【 Open 】, and after the power stabilizes, press【 Refer 】;

2) Use standard jumpers to connect the tested component to the LS and OPM optical interfaces, press【 Open 】, and the Relative Power will be the insertion loss of the tested component.

End face inspection can achieve real-time monitoring of the cleanliness of fiber optic joints.

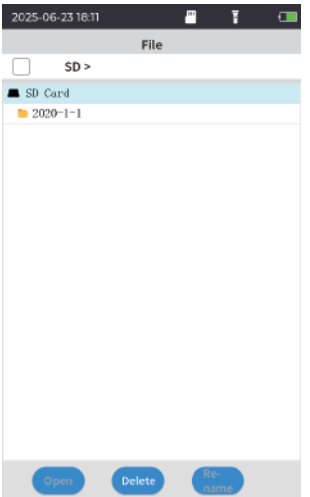
Step 1: Connect the end face detection probe to the Type-C interface;

Step 2: Click to start;

Step 3: Connect the tested fiber and check the cleanliness of the tested end face in real time.

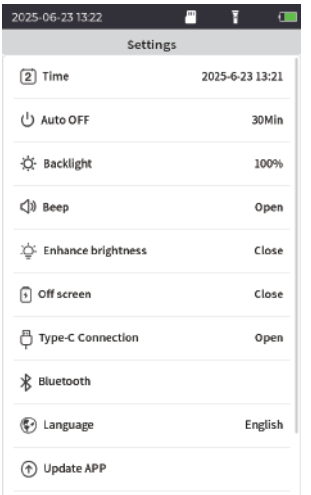
File operation

All test curves are saved in the TF card of the instrument. Press【File】to enter the file operation interface, where you can open and delete files.



Set automatic shutdown, backlight brightness, time, language and other information.

Time: Set instrument time
Auto OFF: 5/15/30/60 minutes/off
Backlight: 0/20/40/60/80/100%
Beep: Open/Close
Enhance brightness: Open/Close
Off screen: 10/30/120/300/600s/Close
Type-C connection: Open/Close
Bluetooth: Click to enter the Bluetooth settings interface
Language: Set the native language type
Update APP: Local software update
Restore factory: Restore all default parameter values in the system settings
About : View local information and alarm records



Resource verification device