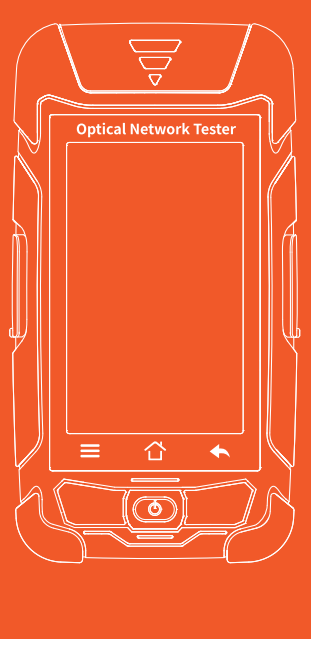



# Optical Network Tester

USER'S 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! Except for 1625nm/1650nm, all the others are non-on-line test wavelength, it will cause damage to the internal devices of the instrument if it is used forcibly! 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 0℃~50℃. 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.

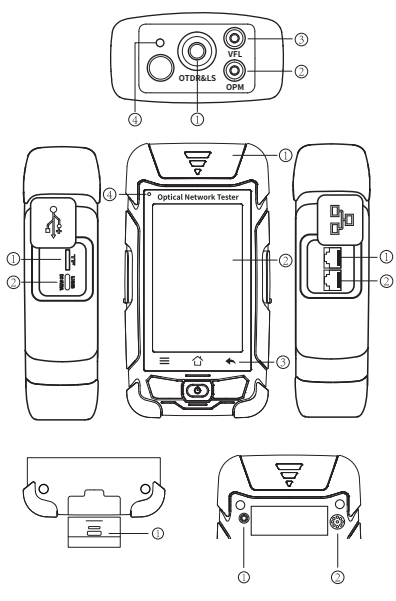
**Fiber End Face Cleaning:** Before testing, clean the end face of the tested optical fiber joint with alcohol cotton.

**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.

## Brief






### Top view

① OTDR/LS port
② OPM port
③ VFL port
④ Laser ranging port

### Main view

① Dust Cover
② 4.3 inch Color LCD
③ Function Keys
④ LED Charging indicator

### Left side

① TF Card Port
② Type C USB

### Right side

① RJ45 Tracker port
② RJ45 Sequence port

### Bottom view

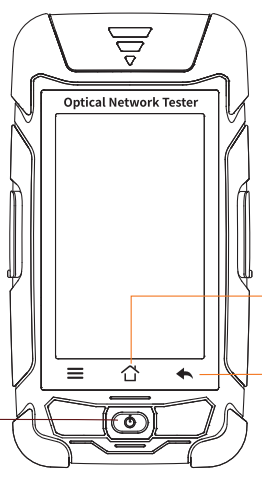
① RJ45 Remote tester

### Back view

① Flashlight
② Loudspeaker

## Functional Keys






**ON/OFF key**
Short press to start, long press to prompt to shut down;
In other interface, short press to back to the main menu.

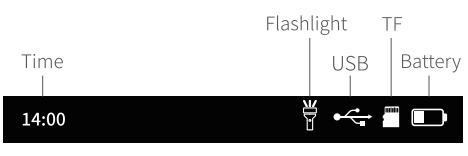
**Home key**
Short press to return to the main interface

**Return key**
Return to the previous menu

## Main Interface



Turn on the instrument, enter the main menu, there are 11 function modules, touch the icon to enter the corresponding function interface.

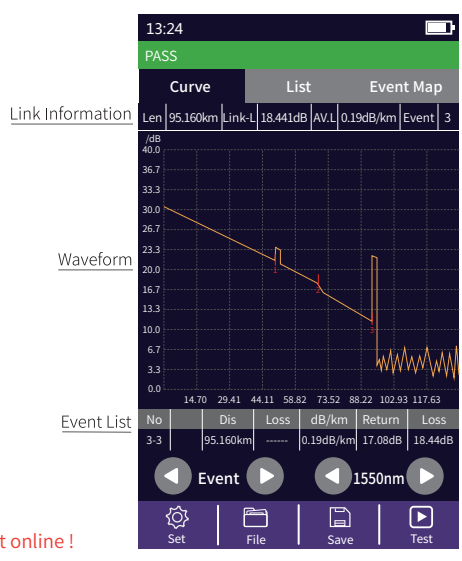




## Auto OTDR



**Auto OTDR:** only need to set the wavelength, other parameters are automatically selected.
**Set:** enter "Test setting" / "Pass/Fail" setting interface
Test settings: set the wave, IOR and test time
Pass / Fail settings:
Avg. Loss Thre. : set the threshold of the average link loss
Event Loss Thre. : set the loss threshold of events in the link. If it is greater than this threshold, it will be judged as fail, otherwise it will be pass.
**File:** open the saved curve data
**Save:** the file is saved in the folder with the name of the same day
**Test:** start OTDR automatic test

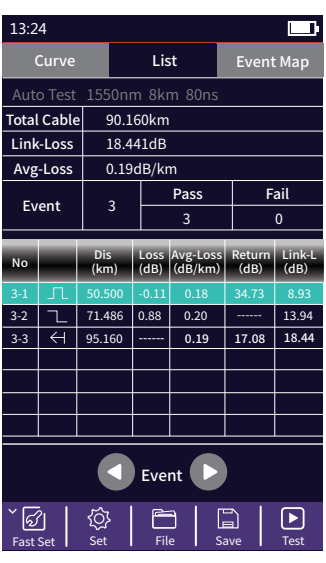



**Attention** Besides 1625/1650nm, pls don't test online !

## OTDR-Setting menu



**List:** the test results are displayed in the form of a list.
**Cable length:** the total length of the link
**Link-Loss:** the total loss of the link
**Avg-Loss:** the average loss of the link
**Event:** the total number of events, passed numbers, failed numbers
**In the event list:**
**NO.:** the order of the current event
**Type:** the type of the current event
**Dis:** the distance of the current event
**Loss:** the loss value of the current event
**Avg-Loss:** the average loss value from the start to the current event
**RL:** the return loss value of the current event point
Link-L: the total loss from the start to the current event point



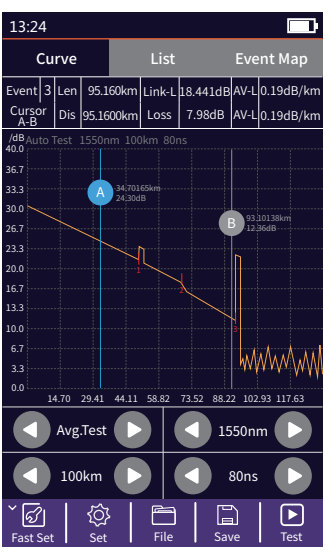

## Expert OTDR



**Expert OTDR:** set parameters such as wavelength, range and pulse width.
**FastSet:** quickly set the test parameters of OTDR
**Measurement mode:** OTDR scanning event mode, AutoTest/RealTest/Avg.Test
**Wavelength:** select the test wavelength of OTDR
**Test range:** usually choose about 2 times of the length of the optical fiber to be tested
**Test pulse width:** 3ns ~ 20000ns optional, different range, the optional pulse width is different

### There are five types of events:

Reflective event
Non-reflective event
Reflective event
Fiber splitter
Fiber end

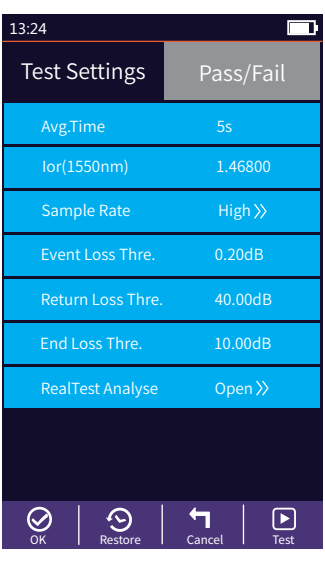



## OTDR Setting



**Set:** Avg.Time and IOR are the same as those in Auto OTDR.
**Sample Rate:** Standard: test with standard accuracy
High: test in high precision mode, the test time will be extended
**Event Loss Thre.:** set the loss threshold of connection point, fusion point in the link that can be tested, between 0.2dB ~ 30dB, and the default value is 0.2dB. Loss value larger than the setting value will be listed in the event list, or it will be ignored.
**Return Loss Thre.:** set the return loss threshold of the link reflection events that can be tested, ranging from 10dB to 60dB, the default value is 40dB.
**End Loss Thre.:** set the loss threshold at the end of link that can be tested, ranging from 1dB to 30dB, the default value is 10dB.
**RealTest Analyse:** turn on or off the automatic analysis

**OK:** save the set parameters
**Restore:** restore factory settings



## OTDR-File Save

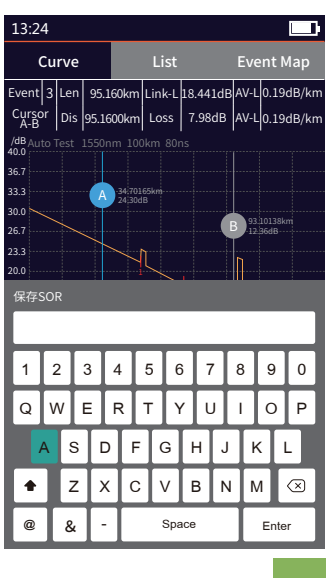


**OTDR-File Save**

Press the【**Save**】key to save file after test complete, pop up the keyboard, enter the name of the file, and press Enter to save the file. If the automatic save (otdr) function is turned on in "System Settings", it will be saved automatically after the test complete without manual operation.

**Auto-save function**

Enter the system settings, open the auto-saving function, the instrument will automatically save the test files after the average or auto-test.



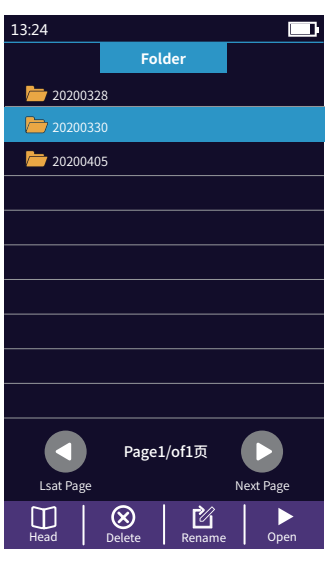

## OTDR-File Operation



**OTDR-File Operation**

Press【**File**】to enter the file list.

**Head:** back to the first page
**Delete:** delete the current file or folder
**Rename:** change the name of the current file or folder
**Open:** open the selected file or folder

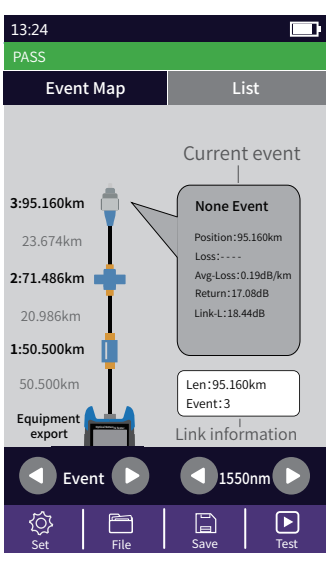



## iLOM(Event Map)



The function can be tested automatically by one key, and the information of the length of the link, the type of event point and the position of breakpoint can be displayed in a graphical form. The result is clear an easy to understand.

- The starting point
- start — The starting point of the link added leading optical fiber in the front
- Descending events, mostly melting points
- Rising event, caused by the inconsistency of refractive index of fiber at both ends
- Connector, such FC/SC/LC connectors
- Optical fiber macro bending
- Optical splitter
- End of the link




**Attention** Besides 1625/1650nm, pls don't test online !

## OPM



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.

**Wave:** switch the working wavelength
**Reference:** set current power as reference power
**CAL:** enter the user calibration mode and calibrate with the standard light source

**TWINS:** identify the wavelength and frequency of the tested laser source. This function is used with the twins function of the local laser source
-50~+26dBm: received power>-10dBm
-70~+6dBm: received power>-30dBm

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

$P_{Abs.}=10\lg P_{Lin.}/1mW$

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


## VFL

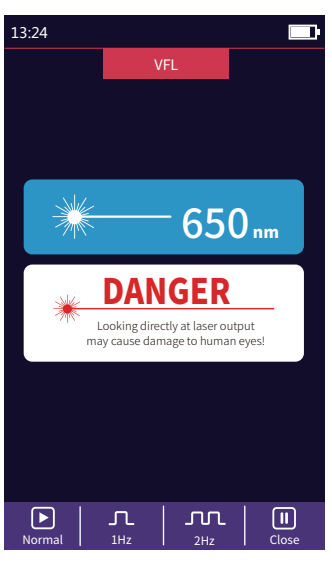


Visible red light (650 nm) is injected into the optical fiber, and the position of the optical fiber fault point can be judged conveniently and accurately by observing the leakage position on the measured fiber. It is suitable for the detection of bare optical fibers, jumpers and other high loss sections caused by near-end faults and micro-bending of optical fibers and cables which can leak red light.

**Normal:** turn on red light, continuous light
**1Hz:** red light source flashes once in 1 second
**2Hz:** red light source flashes twice in 1 second
**Close:** turning off red light

**Warning**

Looking directly at laser output may cause damage to human eyes!




## Laser Source

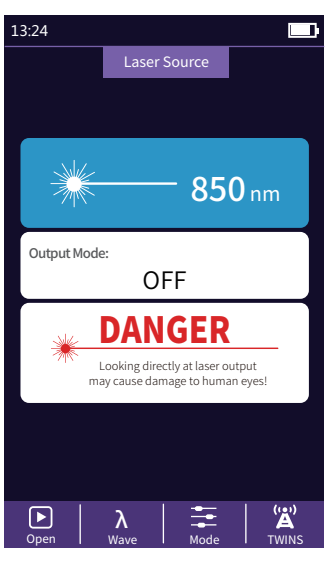


The wavelength of stabilized laser source is the same as OTDR wavelength. It is used to measure the parameters of telecommunication, CATV, LAN cable, insertion loss, isolation loss and echo loss of optical passive devices, and wavelength responsiveness of detectors.

**Open:** turn on the laser source
**Wave:** switch the wavelength, the output wavelength is consistent with OTDR
**Mode:** switch the modulation frequency of light source, CW/270/330/1000/2000Hz
**TWINS:** enter the paired output mode. This function is used with the twins function of the local optical power meter

**Warning**

Looking directly at laser output may cause damage to human eyes!




## RJ45 Tracking



**Rj45 Line Tracker**

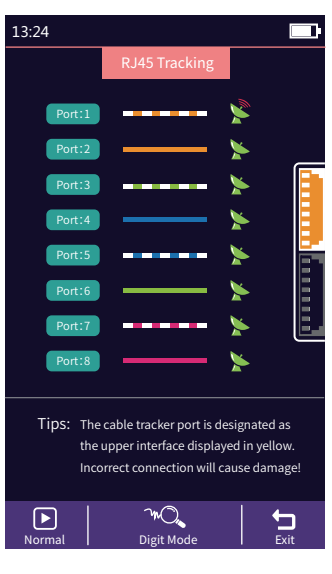
Used for Rj45 cable length testing and wire tracker. After the line-finding function is activated, the cable being searched is touched by the distal end of the line-searching, and the sound of continuous "drops and drops" heard.

The equipment can withstand voltage and prevent burning, and can be directly charged for line finding. Ethernet switch, router and other weak current equipment with DC voltage less than 60V.

**Normal:** open the RJ45 cable tracking function
**Analog Mode/Digital Mode:** different route tracking methods
Standard : Digital cable tracker

**Attention**

The cable tracker port is designated as the upper interface displayed in yellow. Incorrect connection will cause damage!




## RJ45 Sequence



RJ45 line sequence measurement.

**Measure the sequence of 8-core wires inside the network cable. Please connect to the remote module when measuring.**

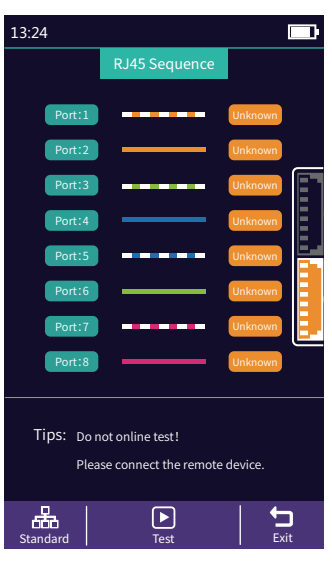
**Standard:** select different network cable standards
**Test:** start cable sequence test
**Exit:** exit the cable sequence test and return to the main interface

**Warning**

Please do not test online!

**Attention**

The cable sequence port is designated as the lower interface displayed in yellow. Incorrect connection will cause damage!




## RJ45 Length



**RJ45 Length test:Test the length of the network cable.**

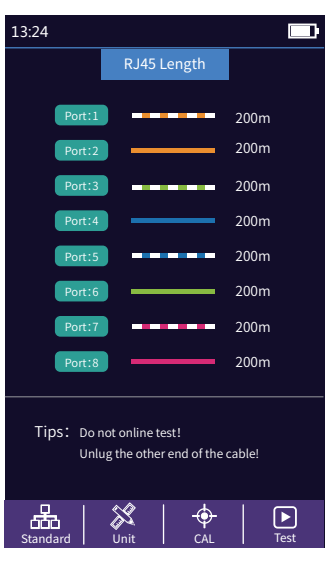
**Standard:** select different cable standards
Unit: switch different units
**CAL:** adjust the test result according to the actual length, and display length = last test result × correction
**Test:** start cable length test

**Warning**

Please do not test online!

**Attention**

The cable length port is designated as the lower interface displayed in yellow. Incorrect connection will cause damage!



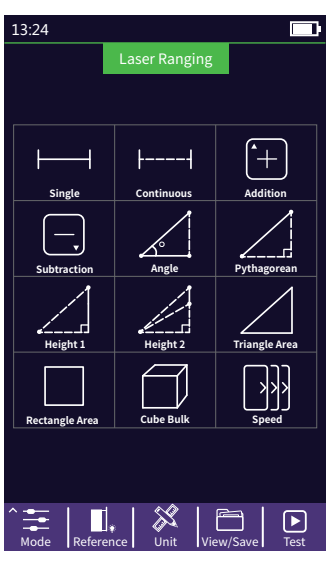

## Laser Ranging



**Laser Range:** the maximum test distance is 40 meters
**Mode:**single/Continuous/Additio/Subtraction/Angle/Pythagorean/Height1/Height2/Triangle area/Rectangular area/Volume/Speed measurement
The solid line in the measurement mode icon is the parameter to be tested

**Reference plane:** select a different reference plane
— Starting from the bottom of the instrument, the test length includes the length of the instrument;
— Starting from the laser emission port of the instrument, the test length does not include the length of the instrument;
— Use as laser pen

**Unit:** switch units, with m and ft options
**View / save:** save the current test results and view the saved test results
**Test:** start length test




## System settings



**Auto OFF:** Set auto shutdown time
**Backlight brightness:** Setting backlight brightness
**Sound:** turn the touch tone on or off
**Flashlight:** turn the flashlight on or off
**Date & Time:** set the instrument time and date
**Language:** displays the native language type
**Auto Save:** automatically save the curve file after opening
**USB connection:** connect to the computer after opening and transfer data
**Restore factory settings:** restore default parameter values
**Upgrade:** software upgrade
**Version information:** view local information and alarm records