Optical Network Tester

User Manual

PREFACE

Thank you very much for buying and using S2108 series optical network tester. This manual mainly contains the commonly used operating safety instructions, basic interface and operation introduction, as well as common troubleshooting guidelines and other information. In order to facilitate your use, before operating this instrument, please read the contents of this manual carefully and follow the instructions in the book correctly.
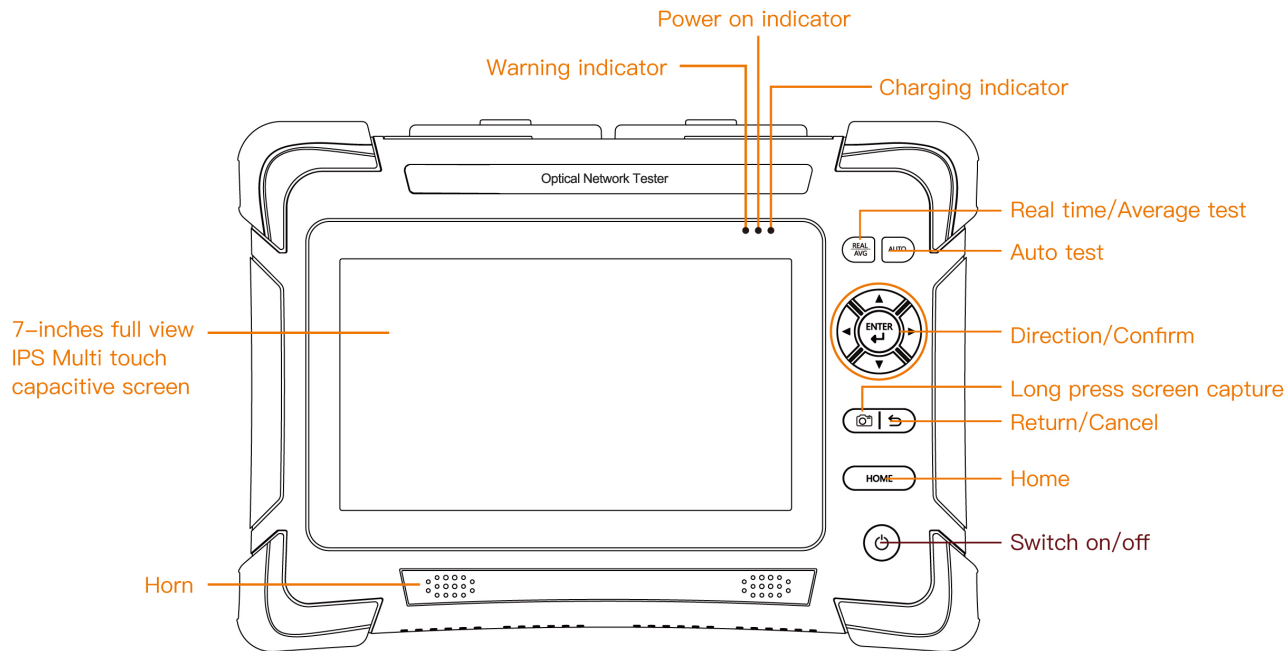
This manual is limited to use in conjunction with this instrument. No unit or individual may alter, copy or disseminate the contents of this manual for commercial purposes without the authorization of the Company.

The contents of this manual are subject to change without prior notice. If you have any questions, please call the supplier. We will do our best to provide you with the best service.
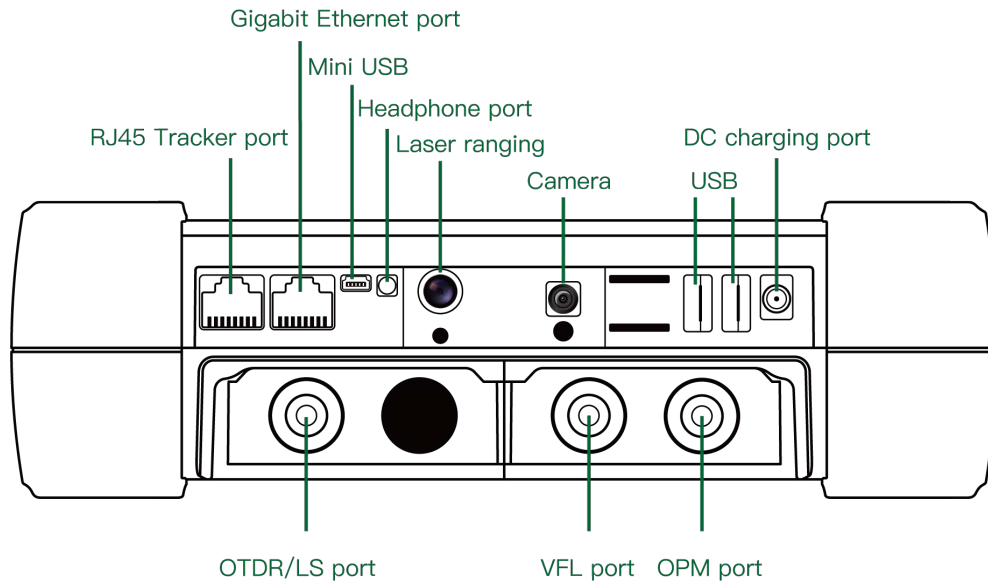
S2108 series optical network tester is the first smart and high precision optical test instrument with cloud wireless transmission, intellignet cloud platform and other functions. S2108 series integrates 18 standard functional modules internally, including OTDR, Intellignet optical network map iONM, LS, VFL, OPM, Optical end face detection, Multi-core measurement, Optical loss test, File management, Data wireless transmission, RJ45 cable tracker, Laser ranging, Remote assistance, One-key repair, Camera, Bluetooth, WiFi, GPS&BDS (on developing).

S2108 series has 0.8m event blind zone, maximum 45dB dynamic range, 1650nm online test (50dB isolation), 8G storage which can store 200,000 curves. It adopts 7 inch capacitive touch screen, supports multi-point touch. Compared to previous versions, it supports smart cloud platform, iONM, Multi-core measurement, Bluetooth. WIFI, 4G LTE SIM and GPS (on developing), and test data can be uploaded to the cloud wirelessly. PDF reports can be generated on the device and transmit them to the mobile terminal via WiFi & Bluetooth. S2108 series supports multi-tasks simultaneous operation, and VFL, OPM, LS functions can run in the background.

OTDR Interface,function introduction

Power on indicator

Warning indicator

Charging indicator

Optical Network Tester

Real time/Average test

Auto test

7-inches full view
IPS Multi touch
capacitive screen

ENTER

Direction/Confirm

Long press screen capture

Return/Cancel

HOME

Home

Switch on/off

Horn

OTDR Interface,function introduction

Gigabit Ethernet port
Mini USB
Headphone port
Laser ranging
RJ45 Tracker port
Camera
DC charging port
USB

OTDR/LS port
VFL port
OPM port

- Mini USB connection：Connect the computer for data export, or connect the power bank to charge the device
- USB connection：Accessing USB flash disk to export data, used as a power bank function to charge other devices
- DC charging port：Charging voltage range 12V~19V

OTDR Interface,function introduction

Background function open status display

Time and date

GPS positioning

4G

Bluetooth

Wifi

Fiber–iot

Charge indicator

Battery power display

USB connection

2020/06/26 20:04:14

OTDR
iONM
Laser Source
OPM
VFL

Multi–Fiber
Endface Inspector
Laster–ranging
RJ45 Tracker
Camera

Remote–Help
Fast Repair
Cloud
File–Brows
System

Location

ber ification

About
Monitor

Note: the main page is a sliding page, and the second page appears on the left

OTDR Interface,function introduction

Multi task simultaneous operation

Curve thumbnail

File name:
Wave: Range: Pulse

15:23
2020/11/24
24%

Multi task area

Curve full screen

Event map

OPM VFL LS

OPM
1310nm -70.00 dBm
-70.00dBm   10.00dBm

AUTO
One button auto test

File Operate
File operation
Preview / wireless upload to cloud

VFL
650 nm
OFF   CW

Save File
File save
Support Chinese and English input

Fast Save
One click save
Convenient and quick

LS
1310 nm
OFF   CW

Advanced Settings
Advanced setting
High end setting function

Report
Generating reports
Generate PDF report on device side

Optical fiber characteristic setting

Pass/Fail Settings

Measure Settings

Analysis/Save Settings

(km) 0   0.2   0.4   0.6

Quick Settings   Event list   Waveform Analysis

OTDR Settings

1550nm
Wave

1.25km
Range

50ns
Pluse

5s
Time

Average test
Real-time

HOME
Home
Return to the main interface
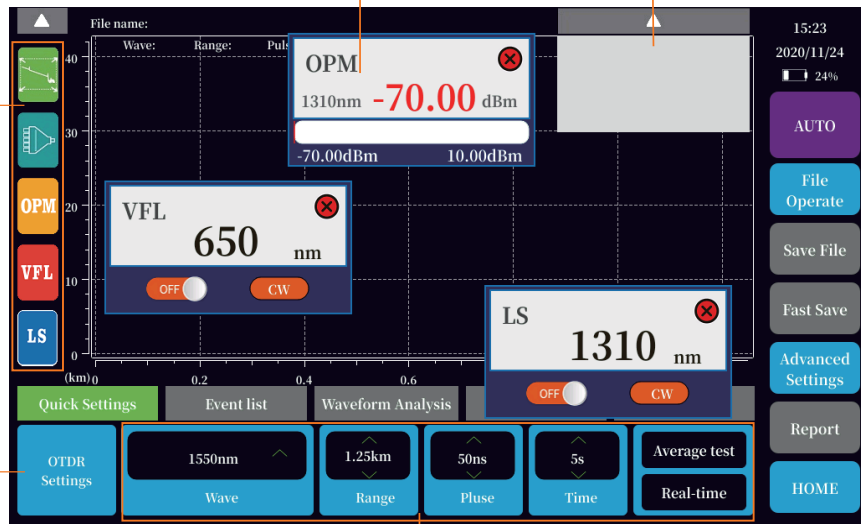
Quick setting, no need to stop to modify conditions, convenient and fast

iONM Interface,function introduction

Through multi wavelength and multi pulse width combination test technology, the accurate analysis of various events is realized.

Graphic display type

More intuitive and accurate
Observe event information

List display

Type
Position length
loss
Reflect
Attenuation
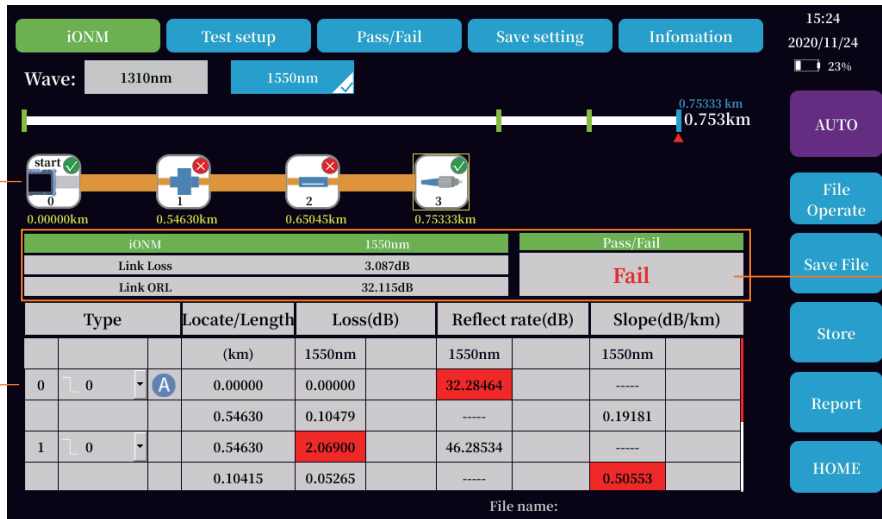
Pass/Fail

Link–loss
Link ORL

Multi core measurement

The purpose of multi–core measurement to help customers manage and maintain multi–core optical cable data, Through the establishment of the project, to help customers more intuitive Manage and maintain fiber optic data. From the core matrix, the state of all the cores can be seen intuitively, Including whether it has been tested, does the test pass. Each fiber core contains OTDR data, optical fiber end face data, optical power data and test field pictures
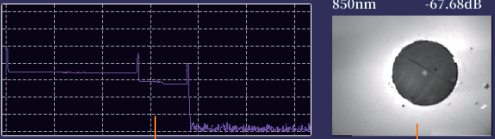
Core matrix

Measurement information

New project
Open project
Project property
Pictures of the scene
Core operation
Open file
Home

Waveform Preview   End face detection

Project name:yu

	1	2	3	4	5	6	7	8	
pre page	9	10	11	12	13	14	15	16	next page
	17	18	19	20	21	22	23	24	
	25	26	27	28	29	30	31	32	
	33	34	35	36	37	38	39	40	

17:48
2020/11/24
55%

New
Open
Attribute
Scene Picture
Fiber Operate
Open file
HOME

Current core:19

Wave1: 1310nm
Wave2: 1550nm

Range:1.25 km
Pulse: 50ns

850nm   -67.68dB
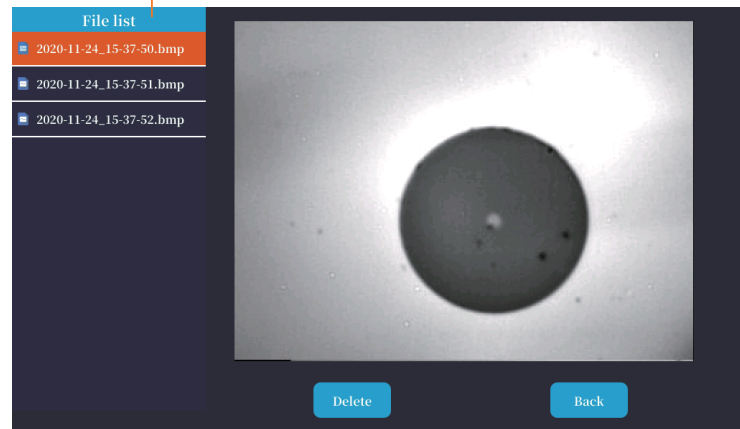
Optical fiber end face detection
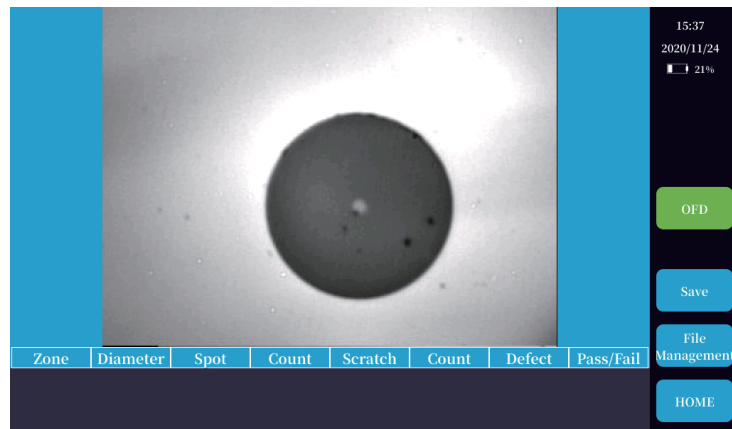
Save and view the optical fiber end face image
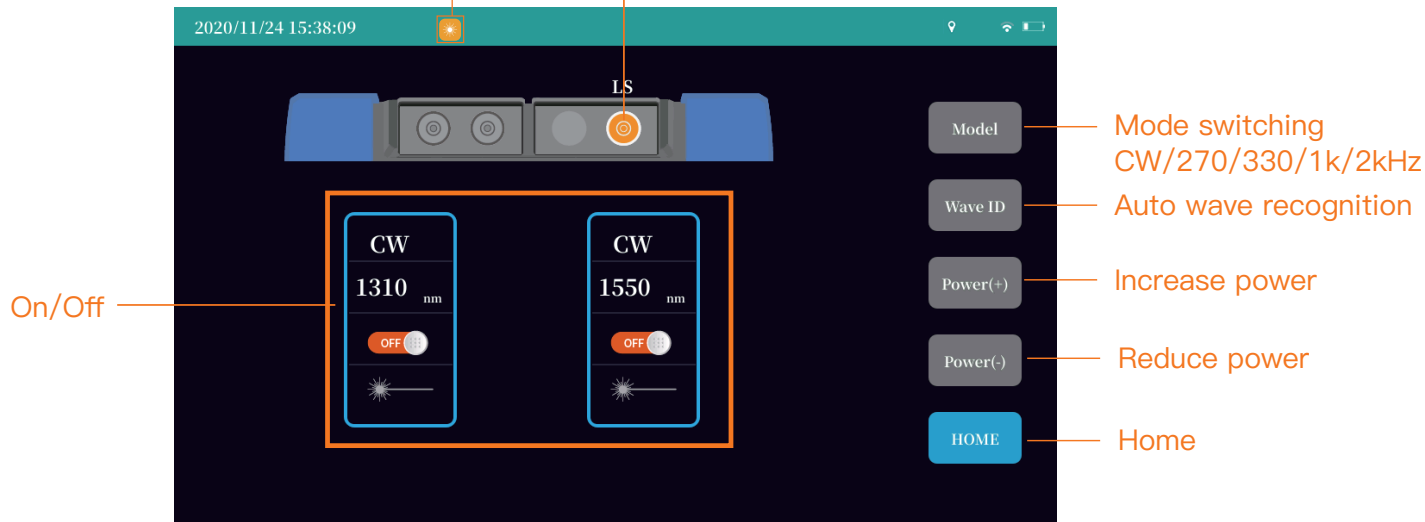
The core diameter of single-mode fiber is about 9um, It's thinner than human hair, If the end face is polluted, it will cause great connection loss, this leads to unstable communication state. It has great influence on the confidence of OTDR test results, therefore, the end face of optical fiber is tested, and cleaning is very necessary

Laser Source

Background prompt of Laser Sourceon state

LS port location

2020/11/24 15:38:09

LS

On/Off

CW
1310 nm
OFF

CW
1550 nm
OFF

Model — Mode switching CW/270/330/1k/2kHz

Wave ID — Auto wave recognition

Power(+) — Increase power

Power(-) — Reduce power

HOME — Home

- Power adjustable stable laser source
- Output CW/270Hz/330Hz/1kHz/2kHz mode
- Support automatic wavelength recognition function, wavelength ID mode,
  Combined with optical power meter module of series equipment for automatic wavelength identification
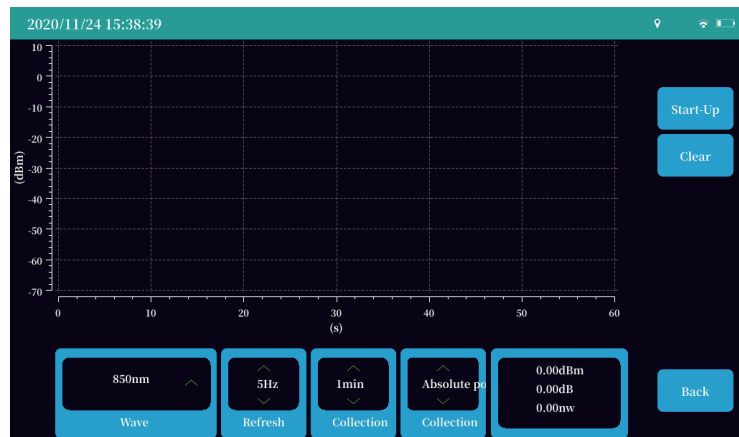
Optical power meter

OPM port location

OPM data acquisition interface

Measurement information

- Support frequency identification function
- Support pass / fail threshold setting
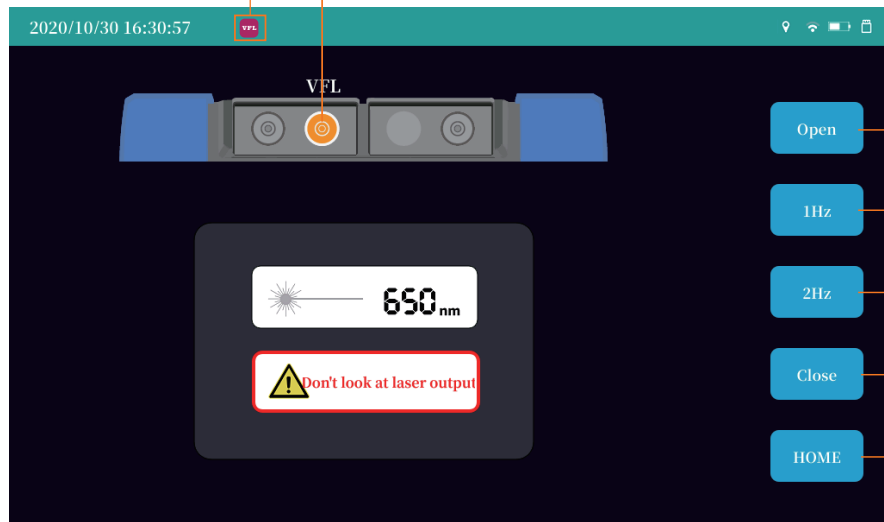- Support Tone Detect function, namely frequency identification function

- User calibration
- Data acquisition
- Automatic wavelength recognition

Visual fault location

Background prompt of VFL state

VFL port location

2020/10/30 16:30:57   VFL

VFL

650 nm

⚠ Don't look at laser output

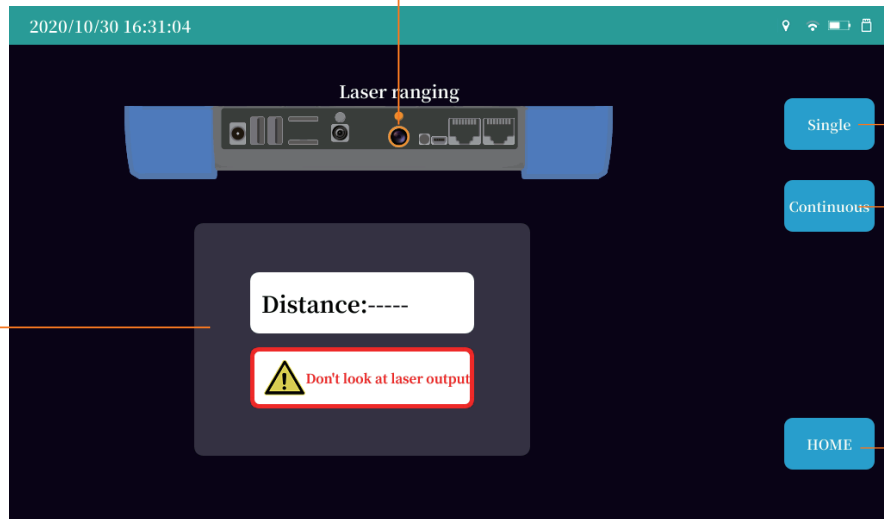|	
Open	VFL always bright
1Hz	VFL 1Hz twinkle
2Hz	VFL 2Hz twinkle
Close	Close VFL
HOME	Home

○ Fault location and identification for short distance optical fiber

Laster ranging

Laser ranging interface：

Please do not look directly at the laser emission port to avoid damage

2020/10/30 16:31:04

Laser ranging

Single — Single measurement
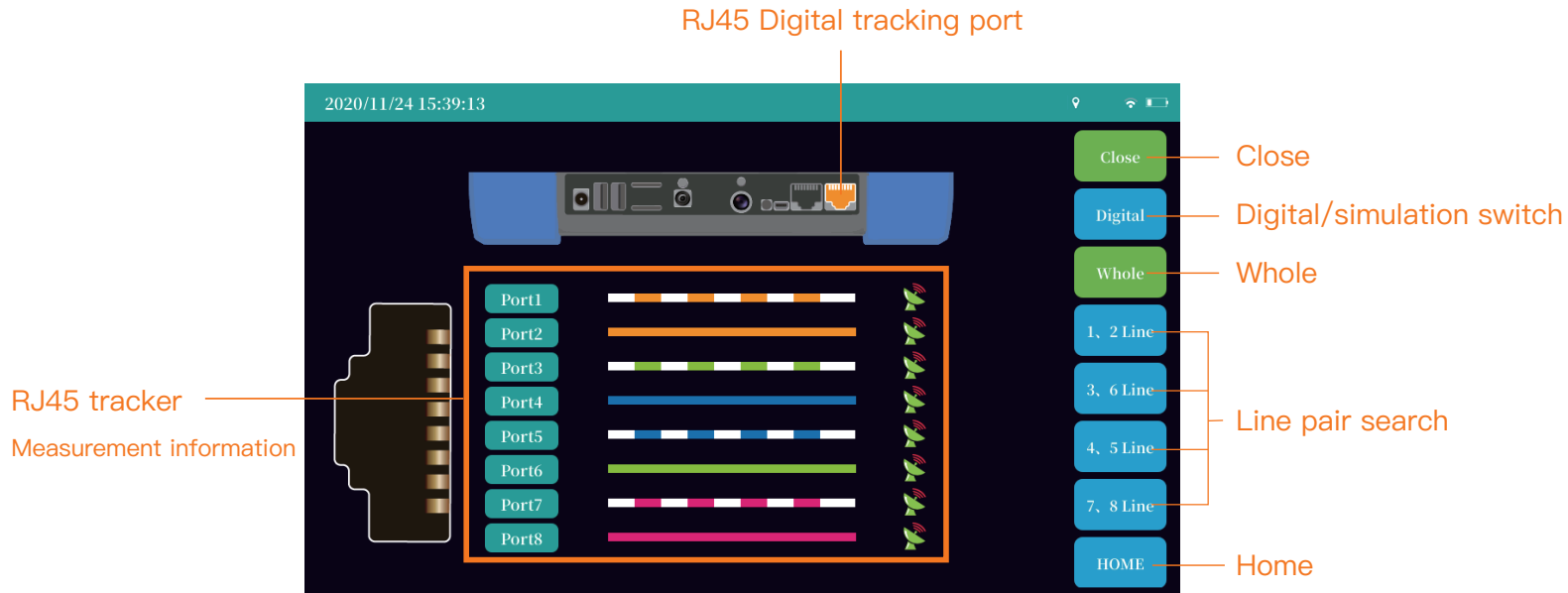
Continuous — Continuous measurement

Measurement information

Distance:-----

⚠ Don't look at laser output

HOME — Home

◉ Length measurement for optical cable laying and broadband installation

RJ45 tracker

RJ45 Digital tracking port

2020/11/24 15:39:13

Close — Close

Digital — Digital/simulation switch

Whole — Whole

1, 2 Line
3, 6 Line — Line pair search
4, 5 Line
7, 8 Line

HOME — Home

RJ45 tracker
Measurement information

Port1
Port2
Port3
Port4
Port5
Port6
Port7
Port8

- RJ45 digital radar tracking function can be used for digital line finding of network line, telephone line and other cables

Camera

2020/11/24 15:39:30
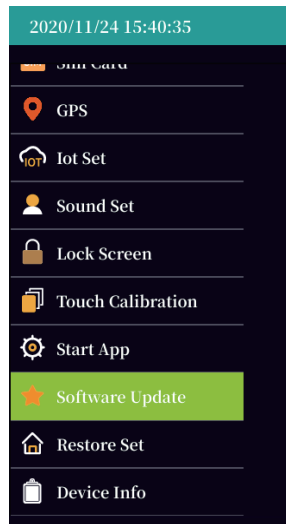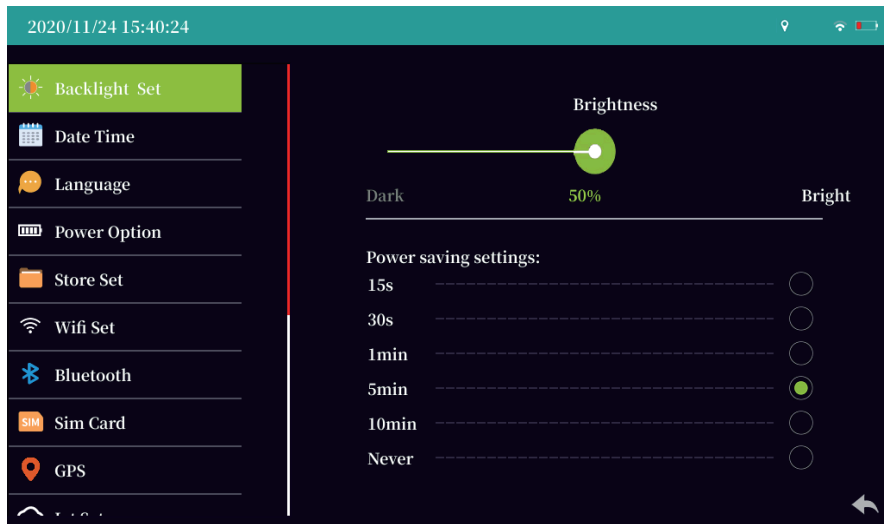
Photo — Photograph

Library — Picture library

HOME — Home

Photo display area
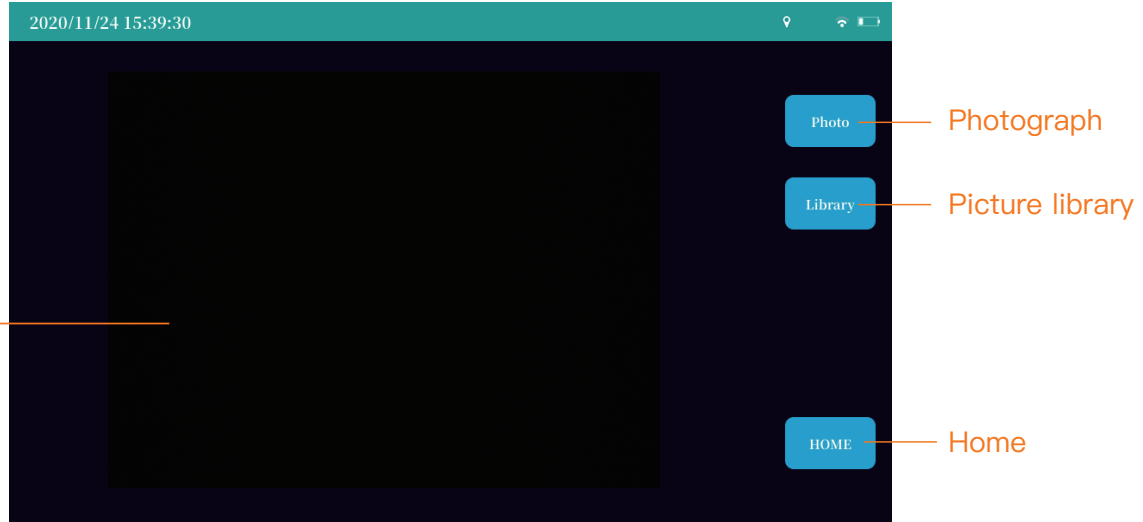
◉ Take pictures of the test site and link them to the OTDR test data

File brows

File information

Back to shortcut key

Create directory

Search

File type	

File name   Size   Type   Modify date

Local (38MB/6.6GB)

OTDR
iONM
Multi-Fiber
End Face Dete···
Screenshot
Picture

2020-11-20	floder	1980-01-01 00:00
2020-11-23	floder	1980-01-01 00:00
2020-11-24	floder	1970-01-20 01:07
default	floder	2020-11-20 17:30
qqqq	floder	1980-01-01 00:00

Open — Open file
Copy — Copy file
Cut — Cut file
Cancel — Cancel
Delete — Delete
Rename — Rename
Deselect All — Select all files
Upload to cloud — File upload to cloud
Bluetooth — Bluetooth transmission
HOME — Home

- Browse device files
- Export files through USB flash disk
- File add delete move rename
- File upload to cloud platform

System settings

Screen 1

2020/11/24 15:40:24

- ☀ Backlight Set
- 📅 Date Time
- 💬 Language
- ▦ Power Option
- 📁 Store Set
- 📶 Wifi Set
- ✳ Bluetooth
- SIM Sim Card
- 📍 GPS

Brightness

Dark   50%   Bright

Power saving settings:

- 15s ○
- 30s ○
- 1min ○
- 5min ●
- 10min ○
- Never ○

Screen 2

2020/11/24 15:40:35

- Sim Card
- 📍 GPS
- ☁ Iot Set
- 👤 Sound Set
- 🔒 Lock Screen
- ▦ Touch Calibration
- ⚙ Start App
- ⭐ Software Update
- ⌂ Restore Set
- 📋 Device Info

Software upgrade

2020/11/24 15:40:35

- GPS
- Iot Set
- Sound Set
- Lock Screen
- Touch Calibration
- Start App
- **Software Update**
- Restore Set
- Device Info

Current Version:V-1.1.3

U-Disk   Remote

- Insert the U disk of storage upgrade software to upgrade the system
- Connect WiFi remote upgrade

Fiber−iot OTDR advanced simulation tools
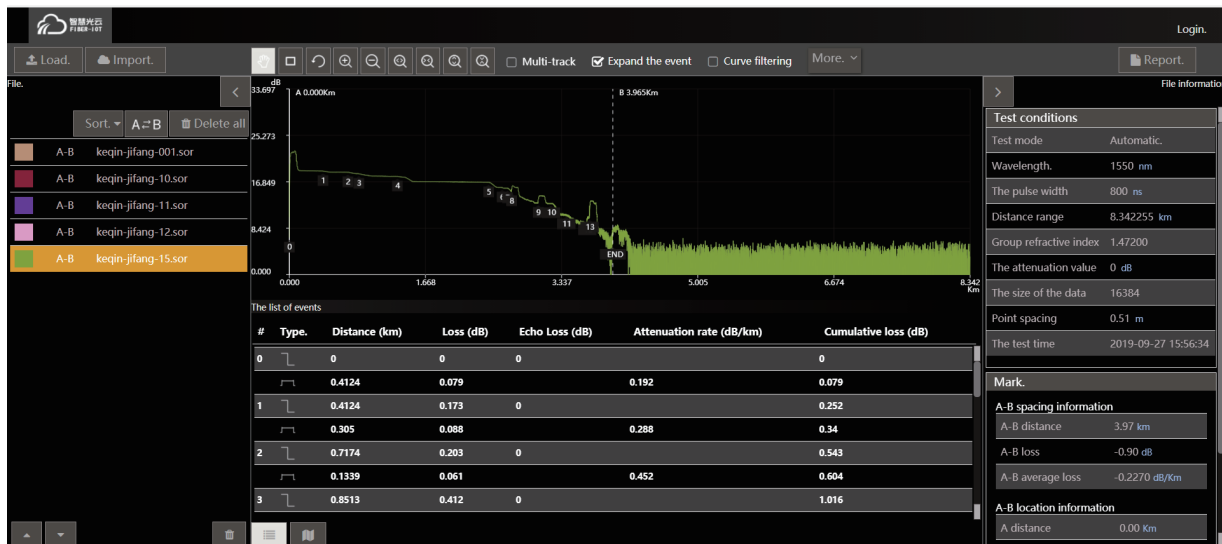
- You can log in directly fiber−iot web or Scan QR code, Imagine the advanced simula−tion tool of OTDR, view OTDR data and generate reports
  Fiber−iot web: www.fiber−iot.com/tools/index.action

Fiber–iot OTDR advanced simulation tools

- OTDR data can be viewed through cloud analysis, and generate reports. Powerful OTDR data report generator using smart cloud, add event map, annotation, on–site test photos, optical fiber end face photos and other detailed information in the report

Common problems and Solutions

Fault description	Cause of failure	Solutions
OTDR cannot start normally.	The battery is dead.	Charge the battery and observe the charging indicator. If the red light is displayed, continue charging. Otherwise, contact the supplier.
OTDR cannot be charged normally.	Charging conditions are not met.	Charge the instrument at 0℃~ 50℃.
	Battery or internal circuit problem.	Contact the supplier to replace the battery.
Normal curve cannot be measured.	OTDR parameters are not set correctly.	Reset the correct test parameters.
	Fiber output end face is polluted.	Clean OTDR output end face.
	Output connector of OTDR is damaged.	Connect OTDR output connector.
	Optical output connector mismatch.	Replace the matched connector.
The noise of test curve is big and the waveform is not smooth.	The connector is not connected properly.	Re connect the appropriate output interface.
	The pulse width setting is too small.	Increase the test pulse width.
Saturation (flat top) appeared in the front of the test curve.	The pulse width is too large.	Decrease test pulse width parameter.
The reflection peak at the beginning of the test curve decreased slowly. There is a tailing phenomenon.	Fiber output end face is polluted.	Clean OTDR output end face.
	Fiber output end face is polluted.	Replace OTDR output connector.
	Optical output connector mismatch.	Replace the matched connector.
The reflection peak at the end of the fiber cannot be measured.	The test range is too small.	Increase test range value.
	The pulse width is too small.	Increase test pulse width parameter.
False positive in curve analysis.	Event threshold setting is too small.	Increase the pulse and the event threshold value.
The tested fiber length is not accurate.	OTDR parameters are not set correctly.	Reset the appropriate parameters.
	The refractive index is not set accurately.	Reset fiber index.
The slope of optical fiber is not accurate.	The front and tail of the test curve is too long.	Clean OTDR output end face.
	Improper setting of cursor position.	Reset cursor point position.