FOH-200XGS-MAX PON TESTER

USER MANUAL

Version: 1.0
Release Date: 2024-7-11

Contents

1 DESCRIPTION

1.1 Overall Introduction

With the popularization of FTTH, the investment in maintaining a large network is increasing. There are historical limitations in the early port resource management of operators, and the accuracy of PON network dummy resources is poor, making it difficult to efficiently support construction / installation / maintenance activities. It is difficult for maintenance personnel to enter households for verification and inspection. In order to solve the resource verification problem, the FOH-200 series PON Tester is a new type instrument for efficient maintenance of FTTH.

The FOH-200 series PON Tester can be connected in series to the PON network for testing without the need for maintenance personnel to enter the user's home. It can obtain information such as the PON ID/Tx Power/ODN Class of OLT, ONU ID/SN/MAC of ONU, uplink and downlink optical power of PON network, ODN Loss, ONU status, etc., helping maintenance personnel quickly confirm the usage status of customer network terminals.

In addition, the FOH-200 series also has functions such as rogue ONU detection and OTDR. FOH-200-MAX version has resource management function, allowing one instrument to perform PON resource verification.

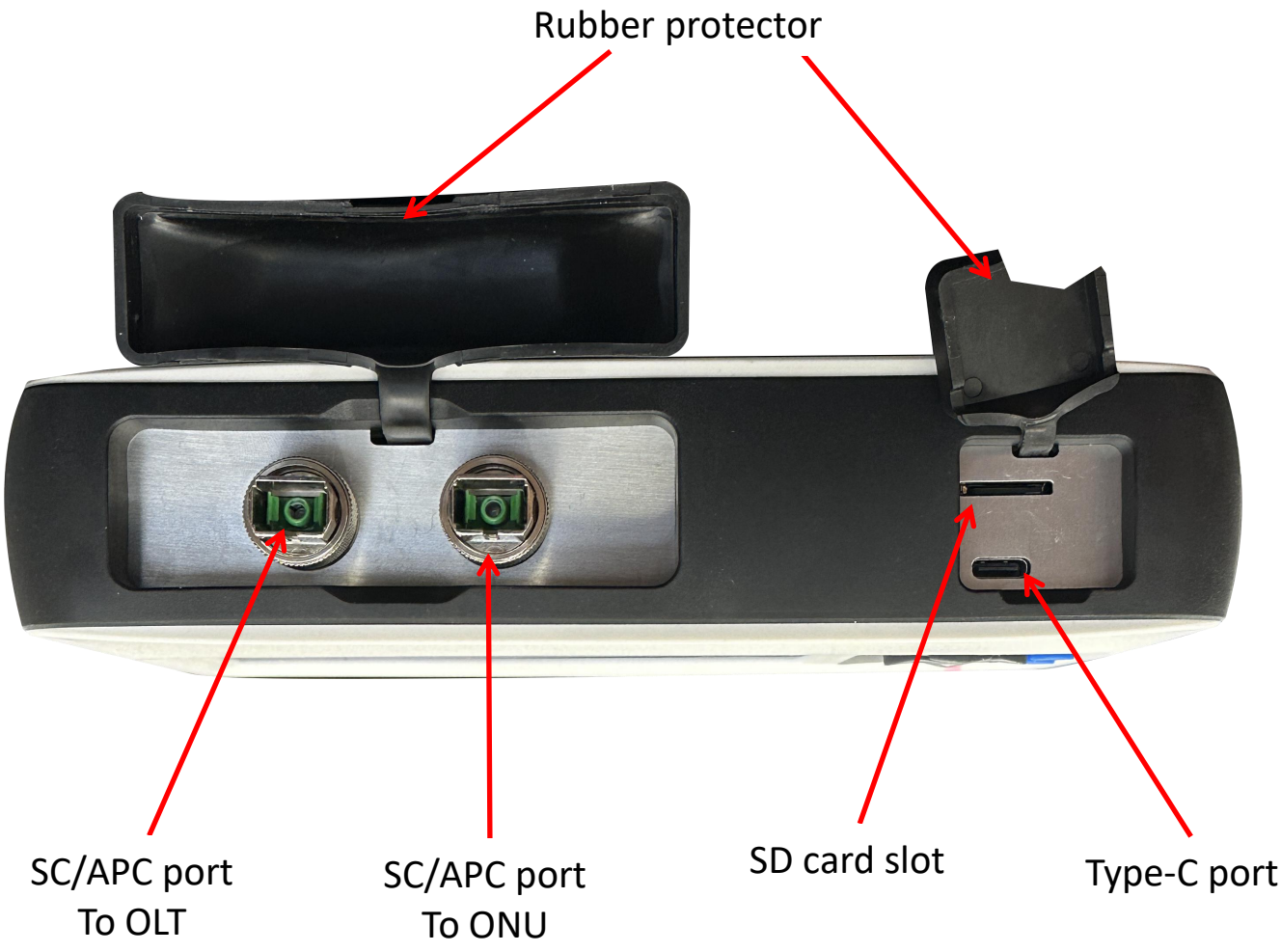
1.2 Appearance and Interface

Size: 190L×140W×40H (mm)

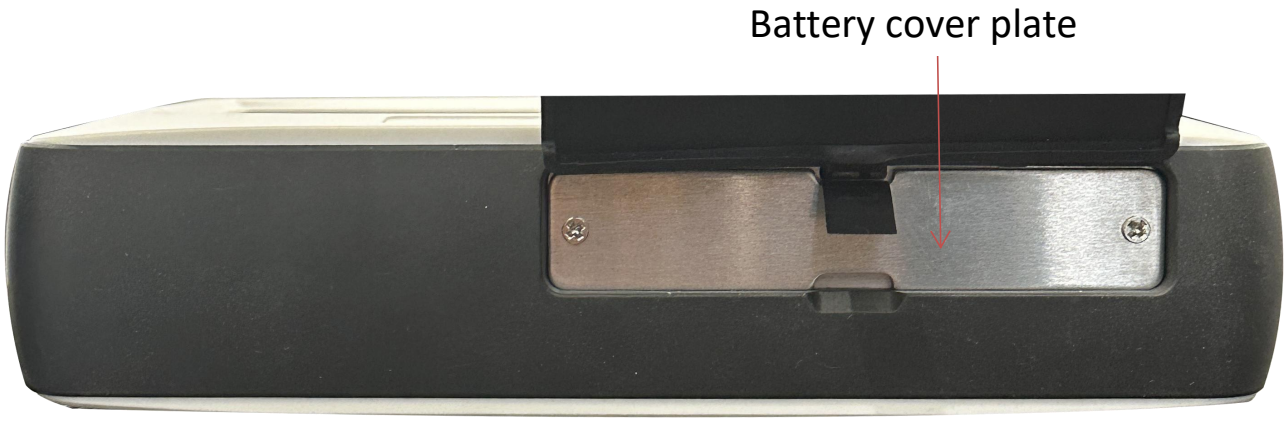
Front View

Support frame

Rear View

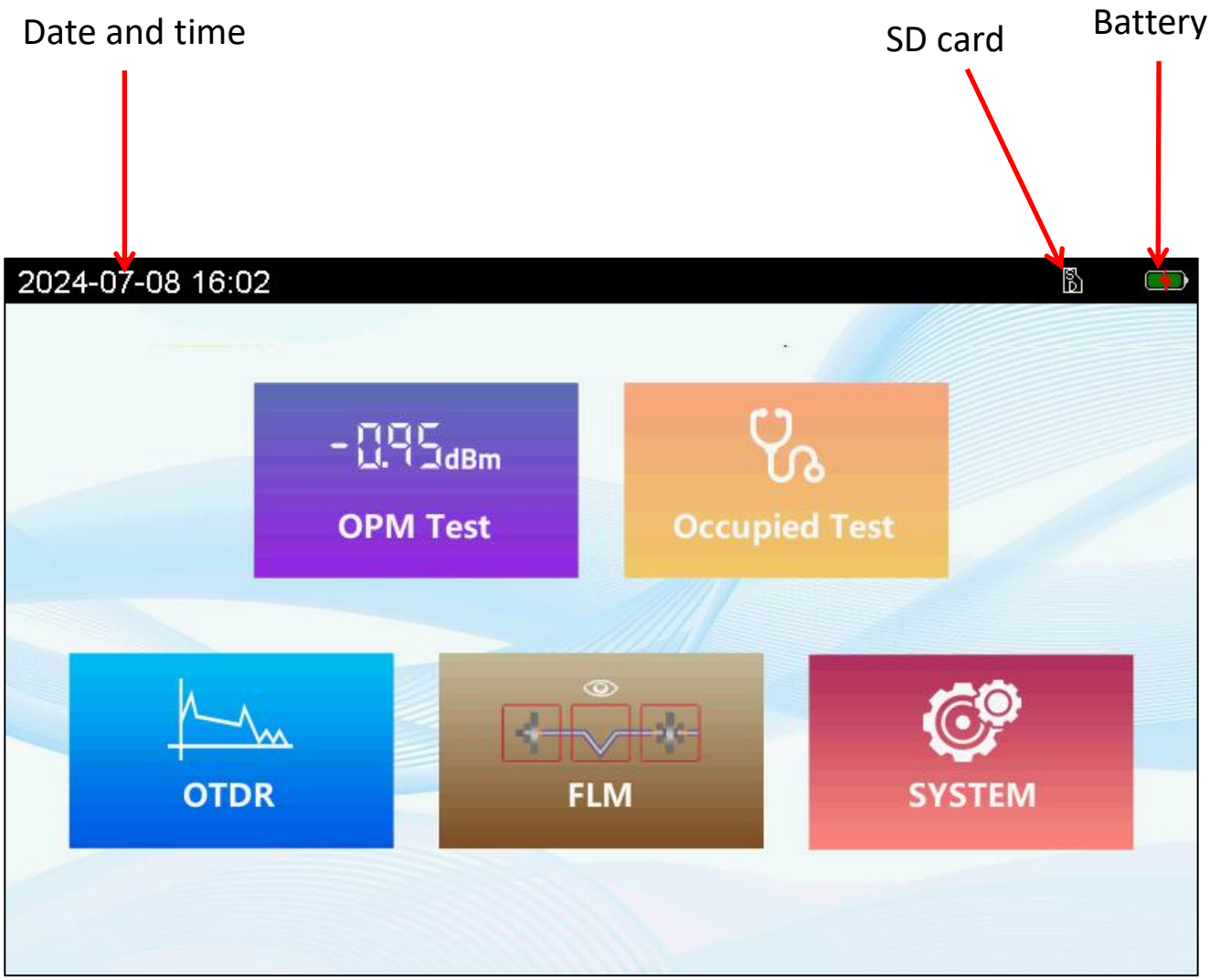


Top View



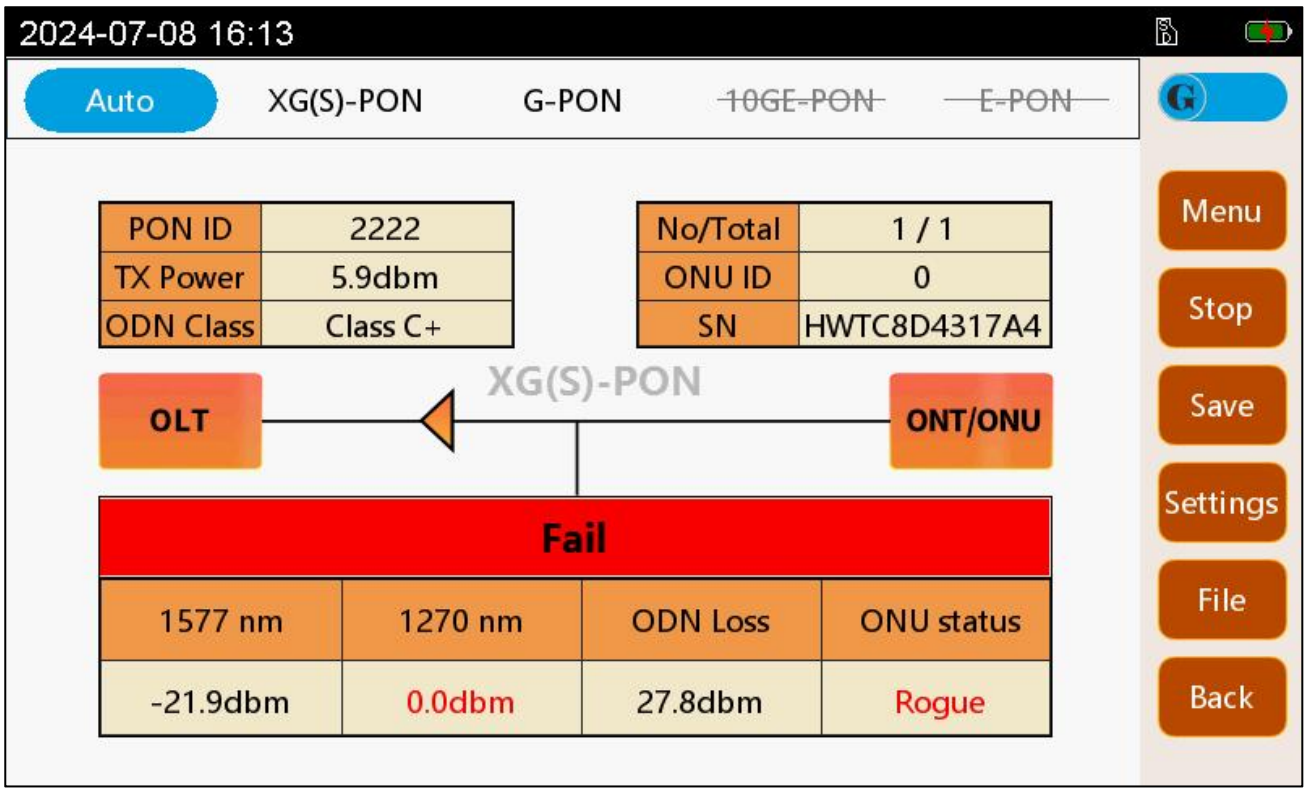
Bottom View

1.3 Main Menu


Date and time
SD card
Battery
2024-07-08 16:02
-0.95dBm
OPM Test
Occupied Test
OTDR
FLM
SYSTEM

2 OPM TEST

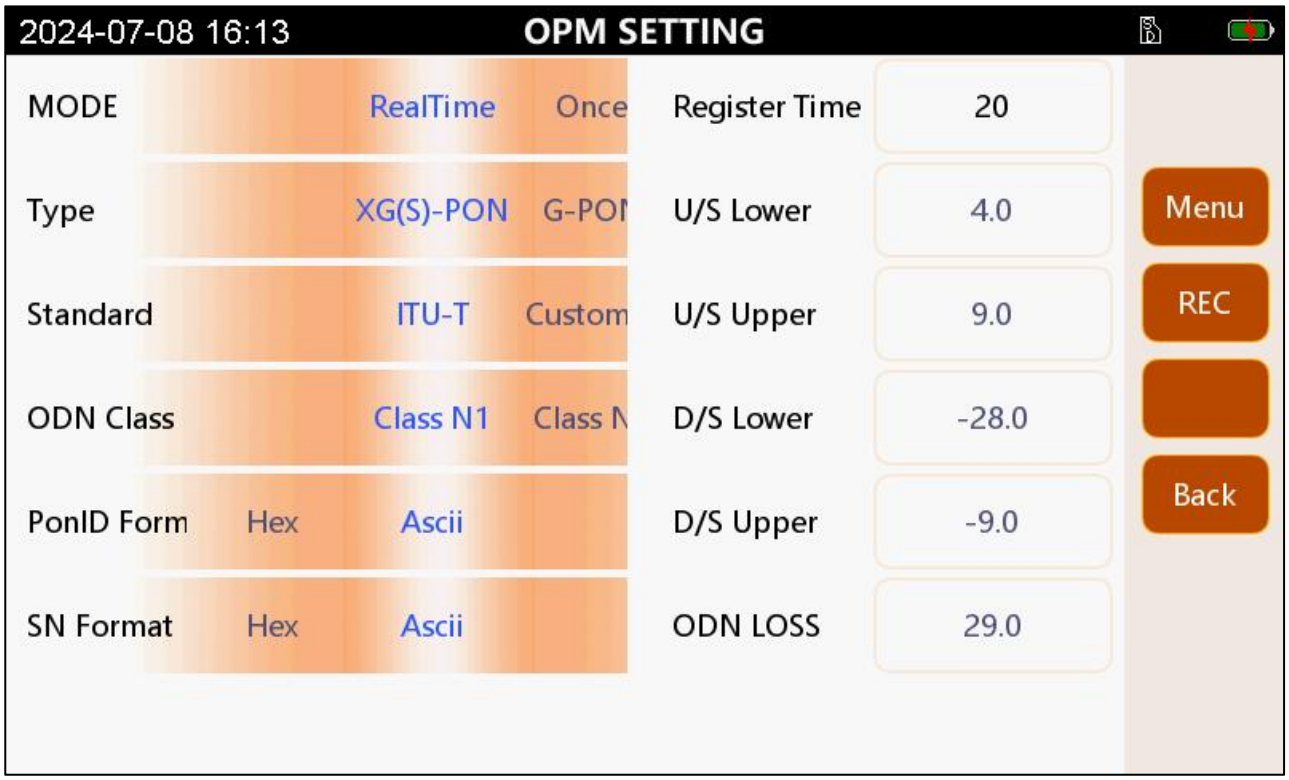
2.1 Test Interface

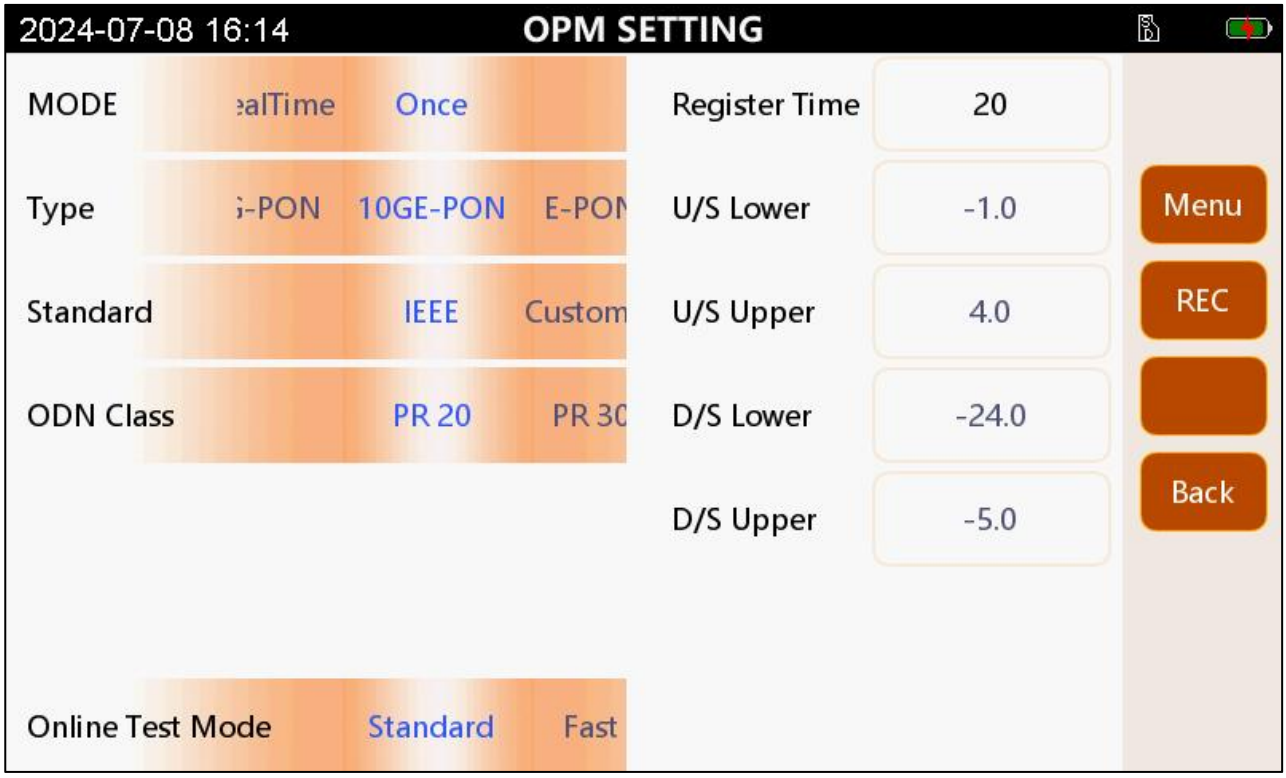


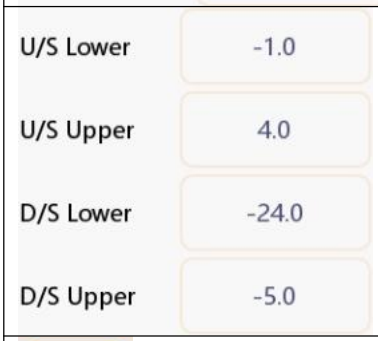
Item	Description
Auto XG(S)-PON G-PON 10GE-PON E-PON	Select the PON mode for current test
PON ID 2222 TX Power 5.9dbm ODN Class Class C+	OLT information, including PON ID, Tx Power, ODN Class
No/Total 1 / 1 ONU ID 0 SN HWTC8D4317A4	ONU information, including No/Total of detected ONUs, ONU ID, SN or MAC
XG(S)-PON OLT ONT/ONU	Test scenario diagram and current PON mode
Fail	Threshold judgment, Pass or Fail
1577 nm 1270 nm ODN Loss -21.9dbm 0.0dbm 27.8dbm	Uplink/Downlink optical power and ODN loss
ONU status Rogue	ONU status, including Active, Rogue, Unregistered, Alien, ONU, NO ONU, Fiber Broken

	G/E switching of PON network mode
	Menu: Back to main menu Start/Stop: Start or stop testing Save: Save current test result Settings: Go to OPM setting menu File: Manage the saved files Back: Return to previous menu

2.2 OPM Setting Interface





Item	Description
	Test mode: RealTime, Once Realtime (Continuous detecting ONU) Once (If detect there is new online ONU, testing will end depending on “Online test mode”)
	PON mode: XG(S)PON, GPON, 10G EPON, EPON
	Threshold standard: ITU-T (G), IEEE (E), Custom
	ODN Class: XG(S)PON: N1, N2, E1, E2, B+, C+ GPON: A, B, B+, C, C+, D 10G EPON: PR20, 30 EPON: PX10, 20
	PON ID format: Hex, Ascii
	SN format: Hex, Ascii
	ONU online test mode (When select “Once” mode): Standard (Waiting for register time to end testing) Fast (End testing after the first ONU gets online)
	Waiting time for ONU to get online
	Uplink and downlink power threshold
	Menu: Back to main menu REC: Recover to the default setting Back: Return to previous menu

2.3 Operation Steps

Step 1: Enter the settings interface and select the test mode, test standard, test thresholds and other parameters.

**Note: We recommend select “Once” test mode and “Fast” mode to reduce your waiting time.

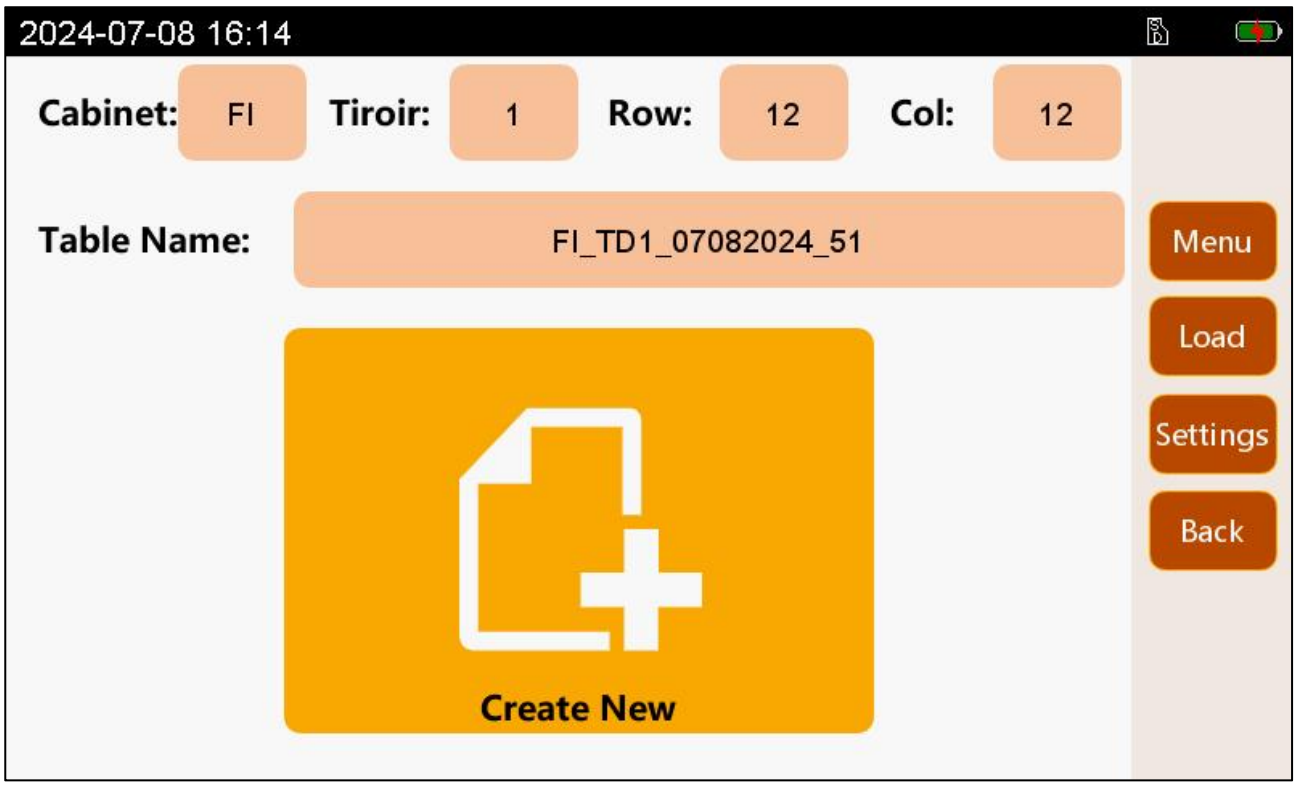
Step 2: Enter test interface and select your PON network mode G/E.

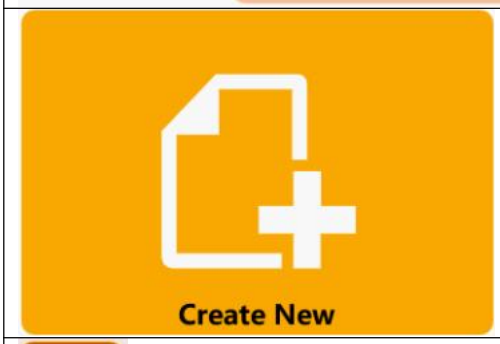
Step 3: Connect the fibers to be tested. Before connecting, please clean the connector end face, pay attention to the OLT/ONU direction and connector type (SC/APC). Then click “Start” to start testing.

Step 4: Wait for the test to end and save test results.

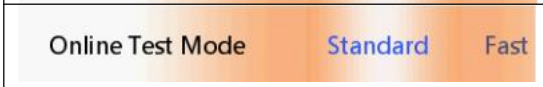
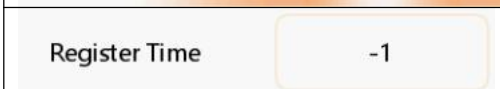
3 OCCUPIED TEST

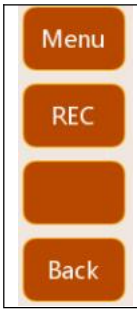
3.1 Create New Test Interface



Item	Description
	Create new test scenario (Cabinet)
	Create new test scenario (Splitter)
	Table name
	Create a new test
	Menu: Back to main menu Load: Load a saved result Settings: Go to setting menu Back: Return to previous menu

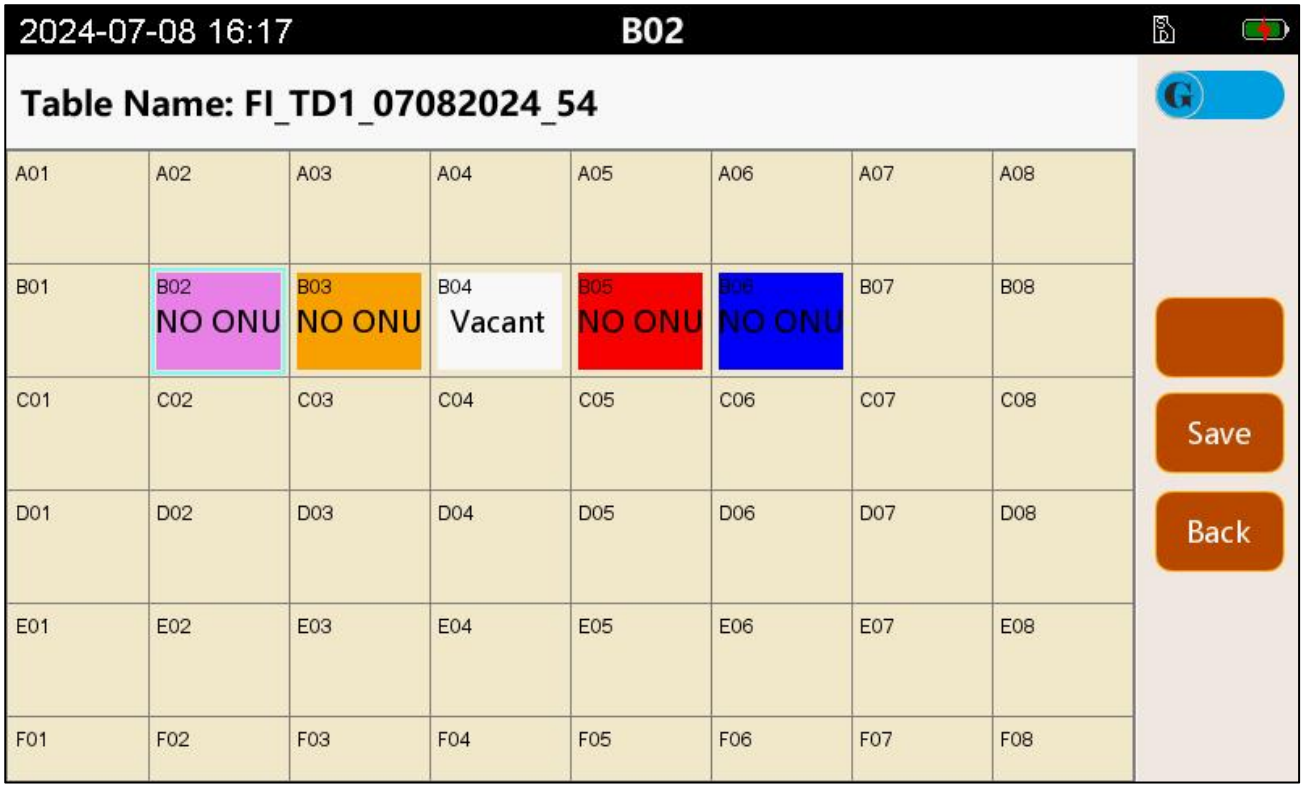
3.2 Settings Interface

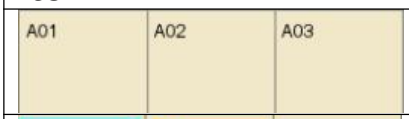
Item	Description
	Check mode: Tiroir, Splitter
	Online test mode: Standard, Fast Standard (Waiting for register time to end testing) Fast (End testing after the first ONU gets online)
	Mark colors (Mark different operators/ISPs)
	SN format: Hex, Ascii
	PON ID format: Hex, Ascii
	Waiting time for ONU to get online (When select “standard” mode, register time for different colors of operators can be set separately)

	Menu: Back to main menu REC: Recover to the default setting Back: Return to previous menu

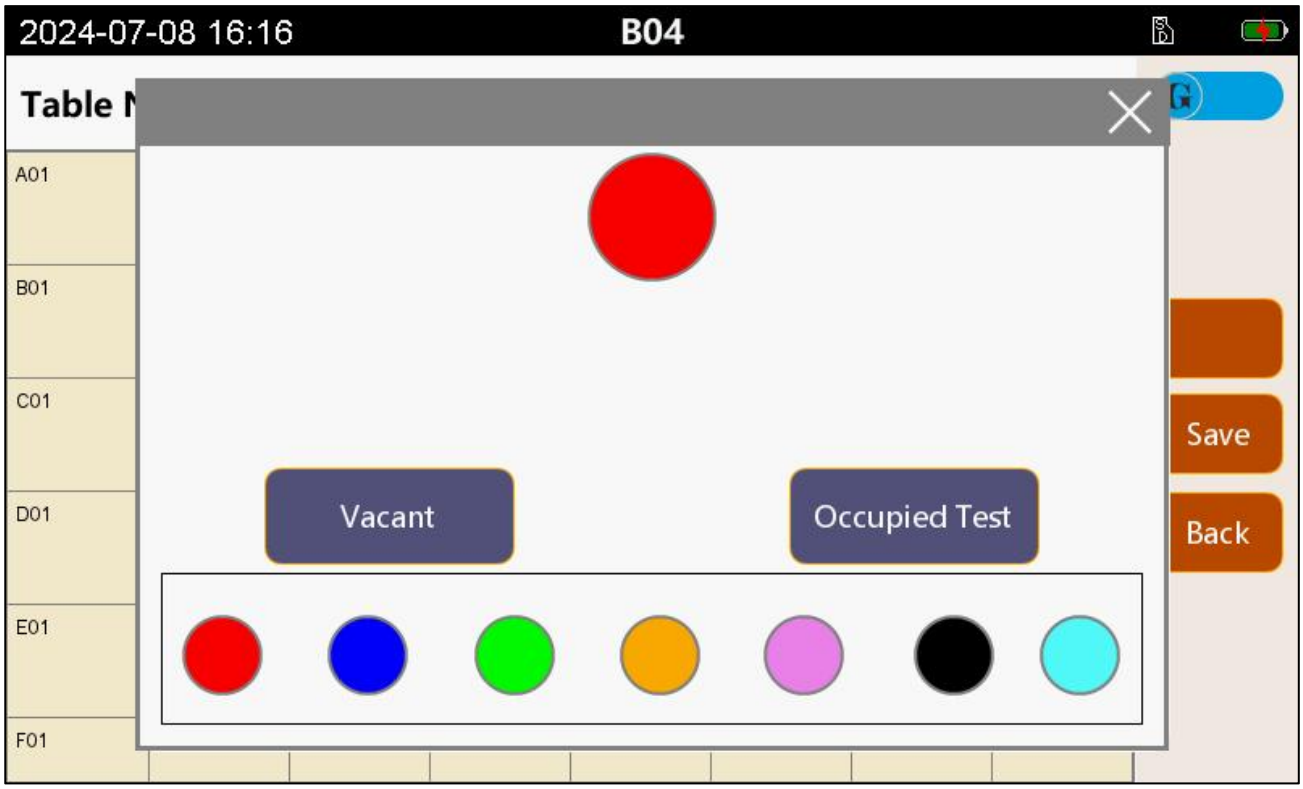
3.3 Test Interface

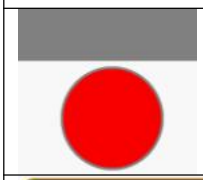
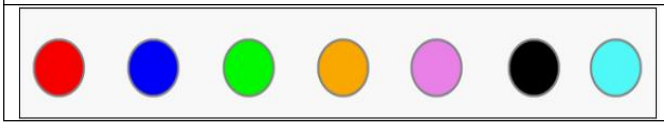
3.3.1 Test Main Interface



Item	Description
	Tiroir port or splitter port to be tested, double click to enter.
	Tiroir port or splitter port status after testing. The color represents the corresponding operator, while the white represents vacant. Port status, including Active, Unregistered, ONU, NO ONU, Fiber Broken, Rogue, Alien, etc. Double click to check the test details.
	G/E switching of PON network mode
	Save: Save current test result Back: Return to previous menu

3.3.2 Test Sub Interface



Item	Description
	Current selected color
	Vacant mark
	Test the current port The instrument will check if there's online ONU first. (i) If there's online ONU, it will show its status and information. (ii) If there's no online ONU, it will perform OTDR test to detect if there's an offline ONU or NO ONU.
	Available colors for different operators

3.4 Operation Steps

Step 1: Enter the settings interface and select Check Mode, Online Test Mode, Register Time and other parameters.

**Note: We recommend select “Fast” mode to reduce your waiting time.

Step 2: Create a new test and set the layout of your Tiroir or splitter. Then rename and create the test file.

Step 3: Enter test interface and select your PON network mode G/E. Double click to select the Tiroir port or splitter port to be tested.

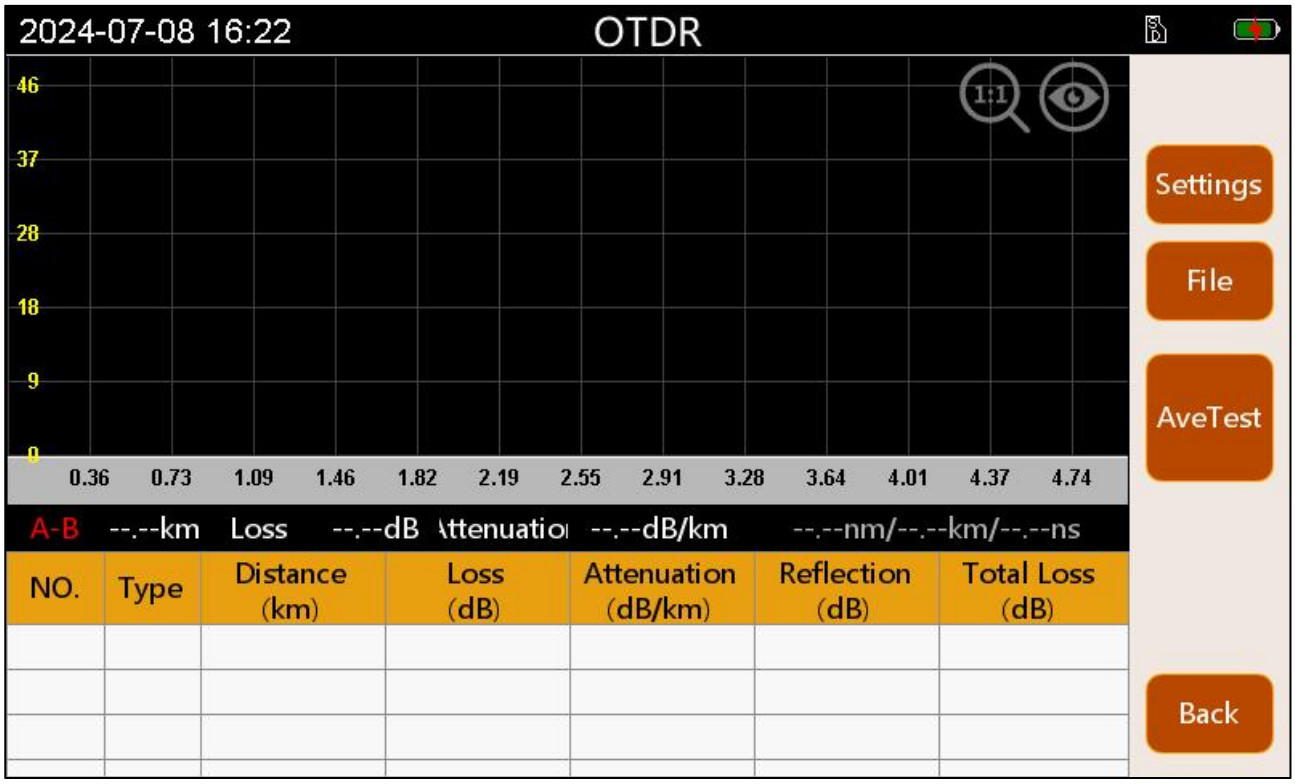
Step 4: Connect the fibers to be tested. Before connecting, please clean the connector end face, pay attention to the OLT/ONU direction and connector type (SC/APC).

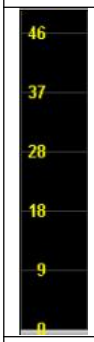
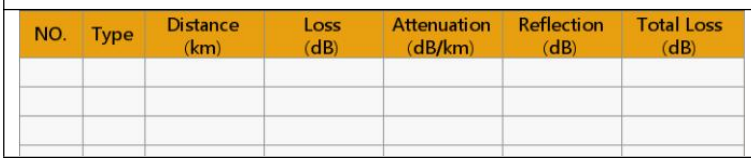
Step 5: Select the corresponding operator color and click "Occupied Test" to start testing. If the port is vacant, click “Vacant” to mark.

Step 6: Wait for the test to end and continue with the next Tiroir port or splitter port test. After all tests are completed, save the test results.

4 OTDR

4.1 Test Interface



Item	Description
	Y-axis, unit: dB
	X-axis, unit: km or m
	1:1 restore trace icon When the OTDR trace is enlarged and moved, click to restore it.
	Hide icon Hide the A/B marker and the trace thumbnail.
	Event table and list items

	Settings: Go to OTDR setting menu File: Manage the saved files AveTest: Perform OTDR average test Back: Return to previous menu

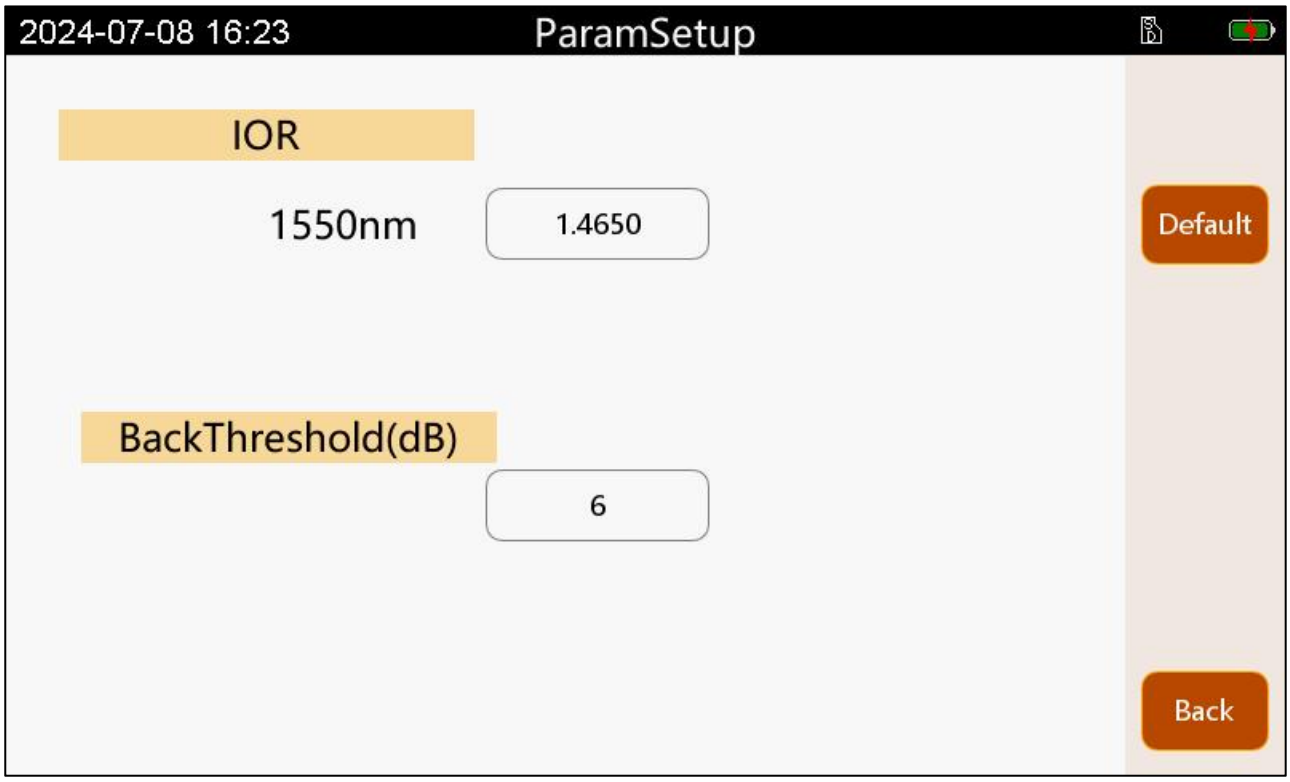
4.2 OTDR Settings Interface

4.2.1 BaseSetup

Item	Description
Auto Mode OFF OPEN	Auto Mode on or off **Auto mode**: the equipment will automatically set the most appropriate parameters for the current measurement, and the value of measurement range and pulse width selection cannot be modified. **Manual mode**: the range and pulse width selection can be set manually.
Test Wavelength 1550nm	Test Wavelength 1550nm or 1650nm depending on OTDR model
Test Range 500m 1km	Test Range 500m, 1km, 2km, 5km, 10km, 20km, 40km, 80km, 120km
Pulse Width 3ns 5ns	Pulse Width 3ns, 5ns, 10ns, 30ns, 50ns, 100ns, 275ns, 500ns, 1us, 2us, 5us, 10us
Test Mode Ave Real	Test Mode **Ave: average test** Average test mode will display the OTDR trace composed of the average values of the measured values over a period of time. **Real: Realtime test** Continuously test the fiber until click to stop testing
Test Time(s) 15s 30s 60s	Test Time(s) 5s, 10s, 15s, 30s, 60s, 120s, 180s
Resolution Normal High	Resolution Normal: Standard sampling points

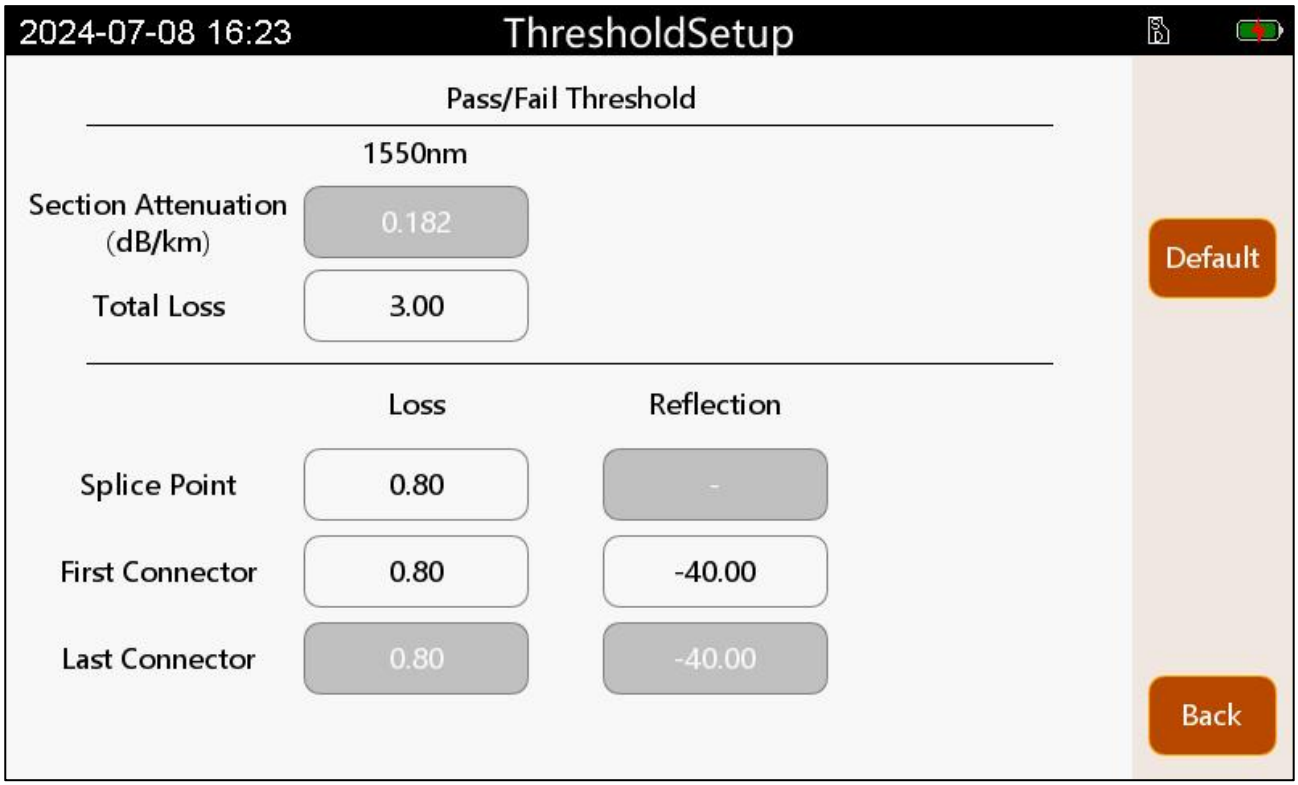
	High: More sampling points than normal mode
	Param Setup: Go to ParamSetup menu Threshold Setup: Go to ThresholdSetup menu AveTest: Perform OTDR average test Back: Return to previous menu

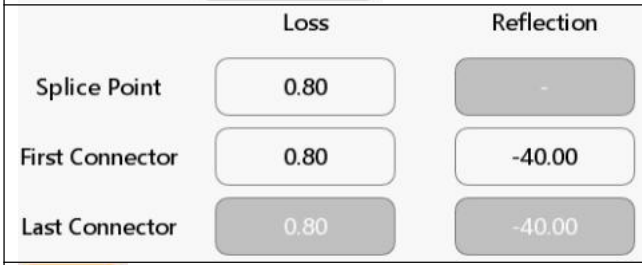
4.2.2 ParamSetup



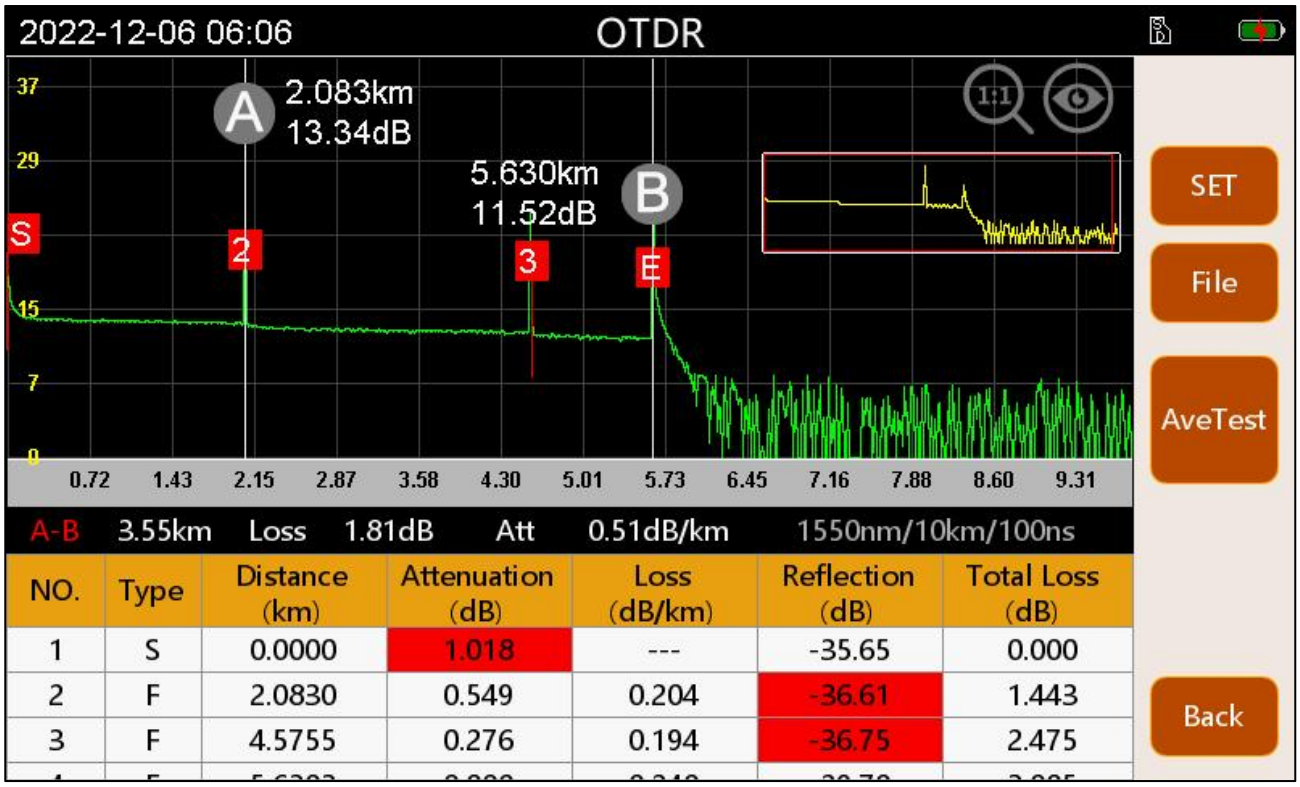
Item	Description
	IOR setting **IOR (Index Of Refraction):** This parameter of fiber is usually kept as default, random modification will affect the test distance.
	BackThreshold setting When the loss value of an event exceeds this threshold, this event will be considered as the fiber end.
	Restore to default

4.2.3 ThresholdSetup



Item	Description
	Gray bar means it's system default cannot be set
	Total Loss threshold
	Loss and Reflection threshold of event
	Restore to default

4.3 OTDR Trace Interface



Item	Description
A 2.083km 13.34dB	A/B marker and its information
A-B 3.55km Loss 1.81dB Att 0.51dB/km	Relative information of A/B markers
1550nm/10km/100ns	Current OTDR test parameters
Type S F F	Event type S: Start event F: Attenuation or reflection event E: End event G: Ghost event
1.018	Threshold judgment result, red indicates Fail

4.4 Operation Steps

Step 1: Connect the fiber to ONU port of instrumnet. Before connecting, please clean the connector end face, pay attention to the connector type (SC/APC).

Step 2: Enter OTDR settings interface and set OTDR test parameters.

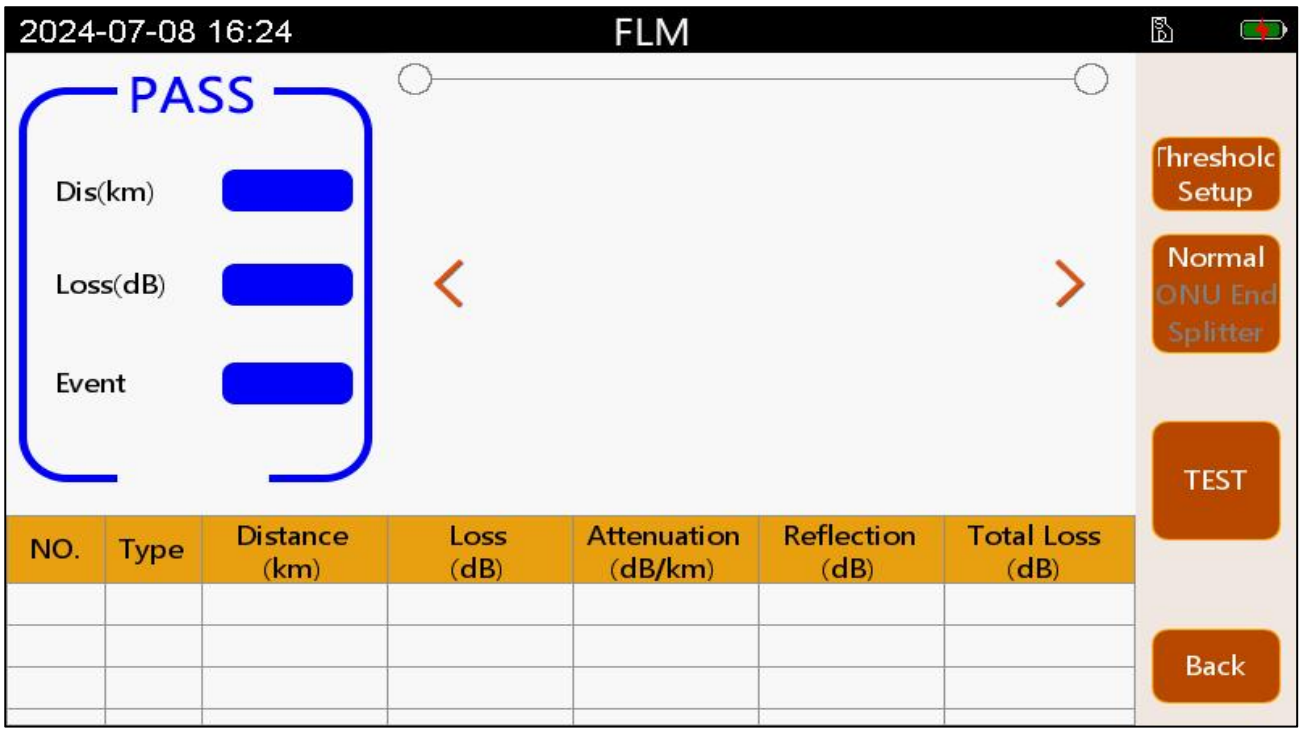
Step 3: After the setup is complete, click to start testing.

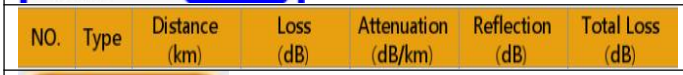
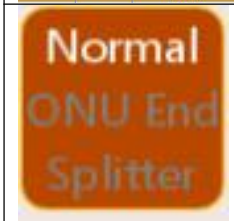
Step 4: After test is completed, check OTDR trace and event table.

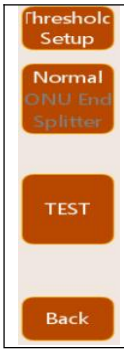
Step 5: Save test results.

5 FLM

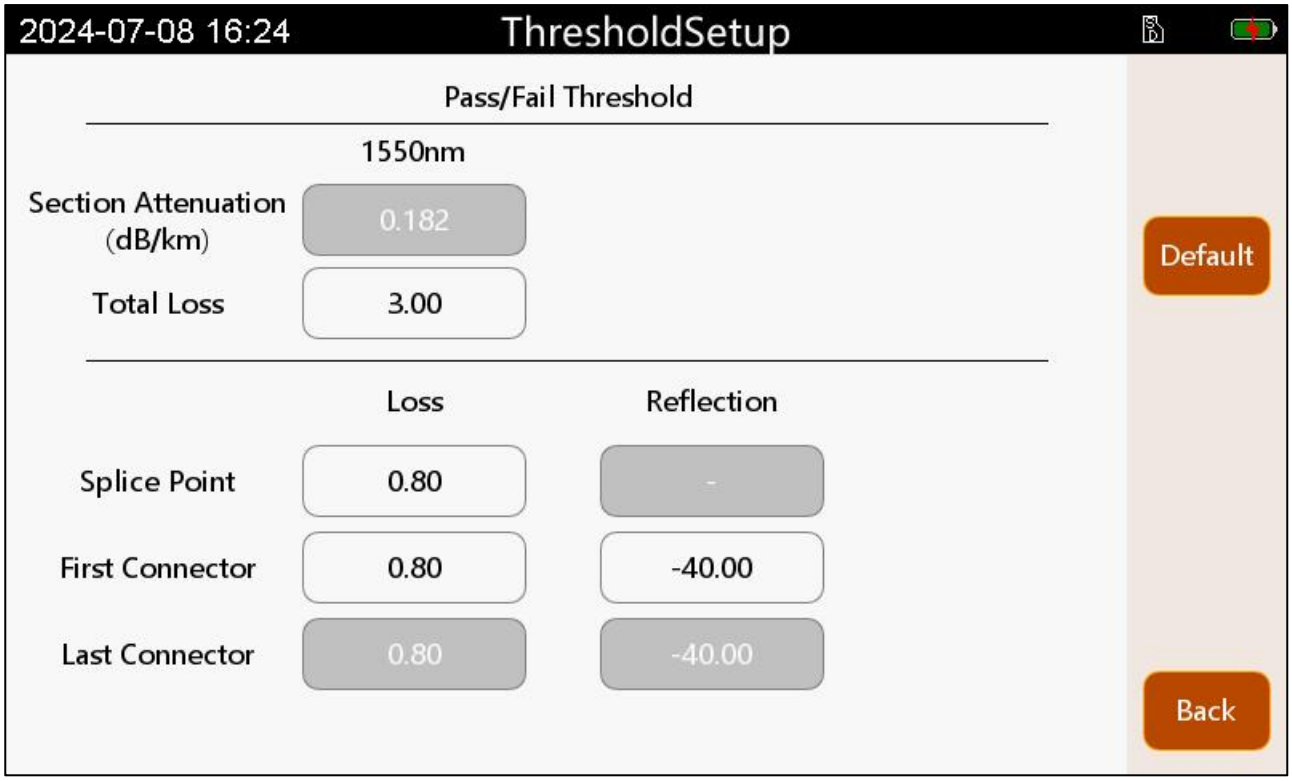
5.1 Test Interface

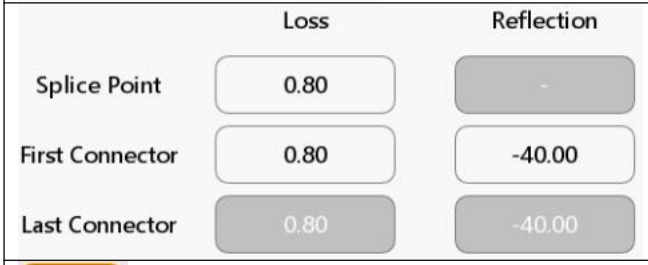


Item	Description
	Threshold judgment Pass/Fail
	Overview information, including total distance, total loss and number of events
	Event table
	Test mode Normal: Normal fiber link map function ONU End: Splitter→ONU end (Test from splitter to ONU, whether the ONU is connected well with the fiber can be tested in this mode). Splitter: ONU end → Splitter (Test from ONU to splitter, whether the splitter is connected well with the fiber can be tested in this mode).

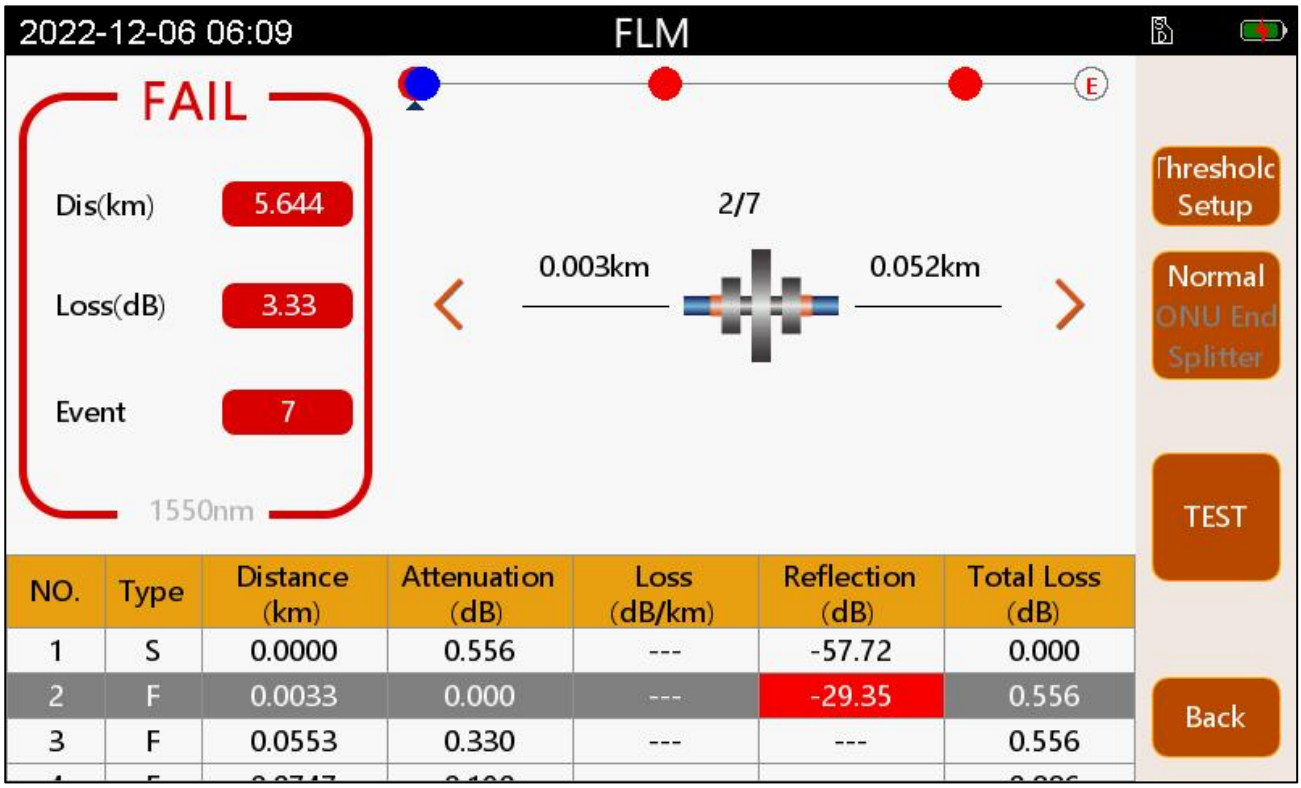
	Threshold Setup: Go to ThresholdSetup menu Normal/ONU End/Splitter: Switch the test mode Test: Perform FLM test Back: Return to previous menu

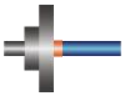
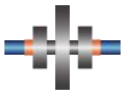
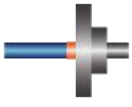
5.2 ThresholdSetup

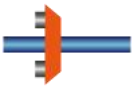


Item	Description
	Gray bar means it's system default cannot be set
	Total Loss threshold
	Loss and Reflection threshold of event
	Restore to default

5.3 FLM Result Interface



Item	Description
-29.35	Threshold judgment result, red indicates Fail
Type S F F	Event type S: Start event F: Attenuation or reflection event E: End event G: Ghost event
	Start connector
	Connector
	Splice point
	Macrobend
	End connector

	Splitter
	ONU

5.4 Operation Steps

Step 1: Connect the fiber to ONU port of instrumnet. Before connecting, please clean the connector end face, pay attention to the connector type (SC/APC).

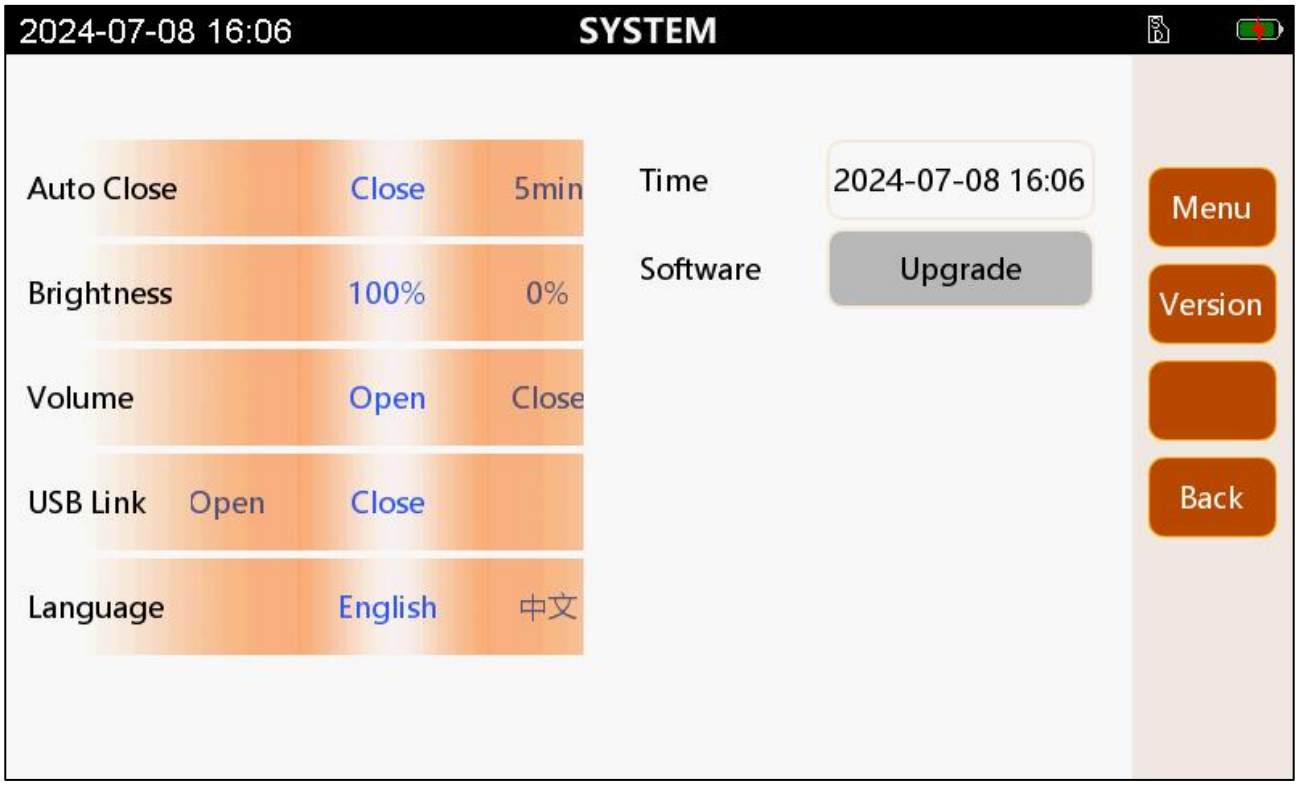
Step 2: Enter ThresholdSetup interface and set the Pass/Fail thresholds.

Step 3: Enter FLM test interface and select test mode, then click TEST to start testing.

Step 4: After test is completed, check the link map and event table.

6 SYSTEM

6.1 System Setup



Item	Description
Auto Close Close 5min	Auto Close Close/5min/10min/30min
Brightness 100% 0%	Brightness 100%/0%/25%/50%/75%
Volume Open Close	Volume
USB Link Open Close	USB Link When enabling USB Link, you can connect the instrument to PC with a USB cable to transfer files.
Language English 中文	Language
Time 2024-07-08 16:06	Time
Software Upgrade	Software Upgrade
Version	Version

---------- The End ----------