
FOH-200XGS-MAX PON TESTER

USER MANUAL



Version: 1.0
Release Date: 2024-7-11

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1 DESCRIPTION

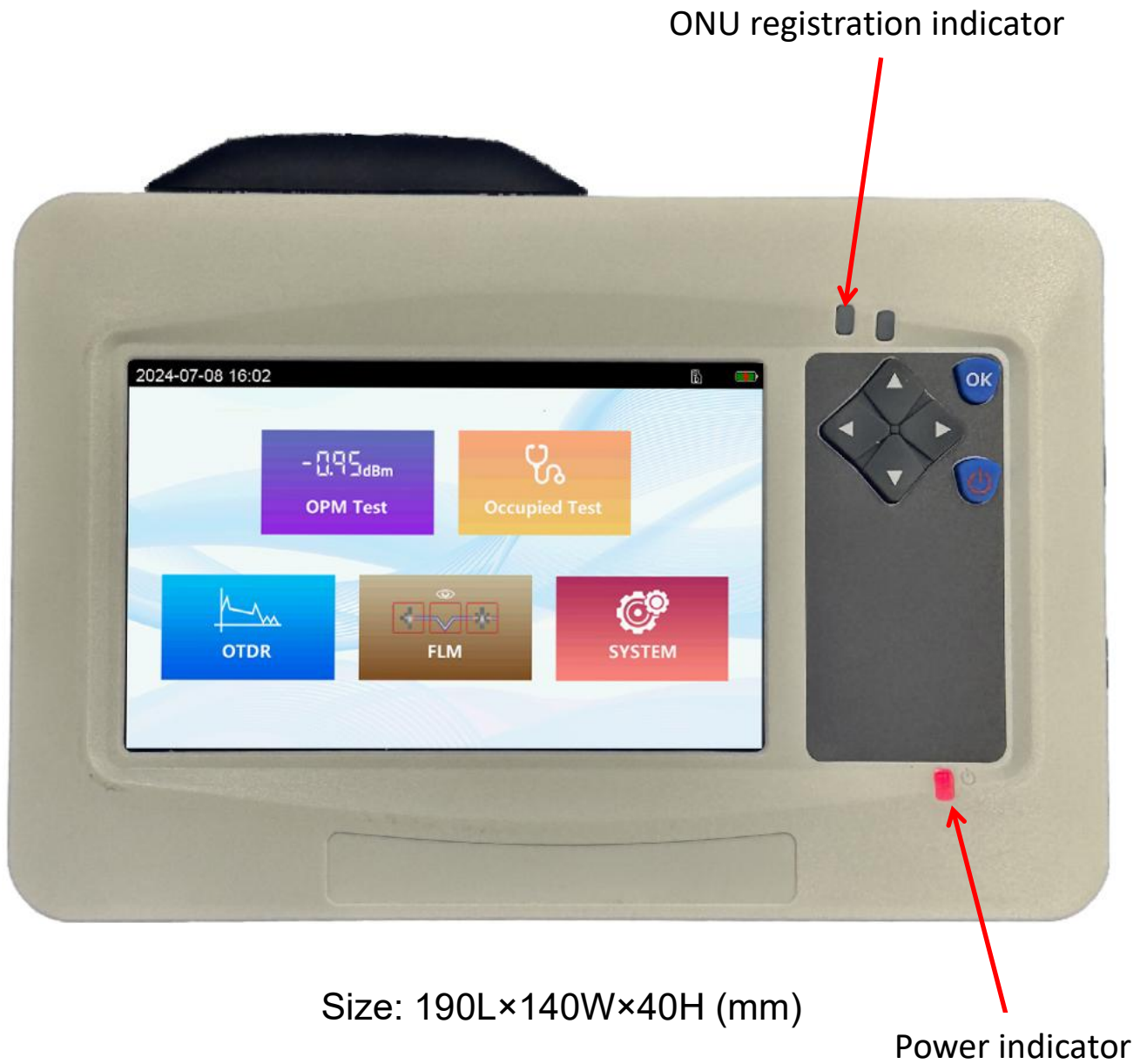
1.1 Overall Introduction

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

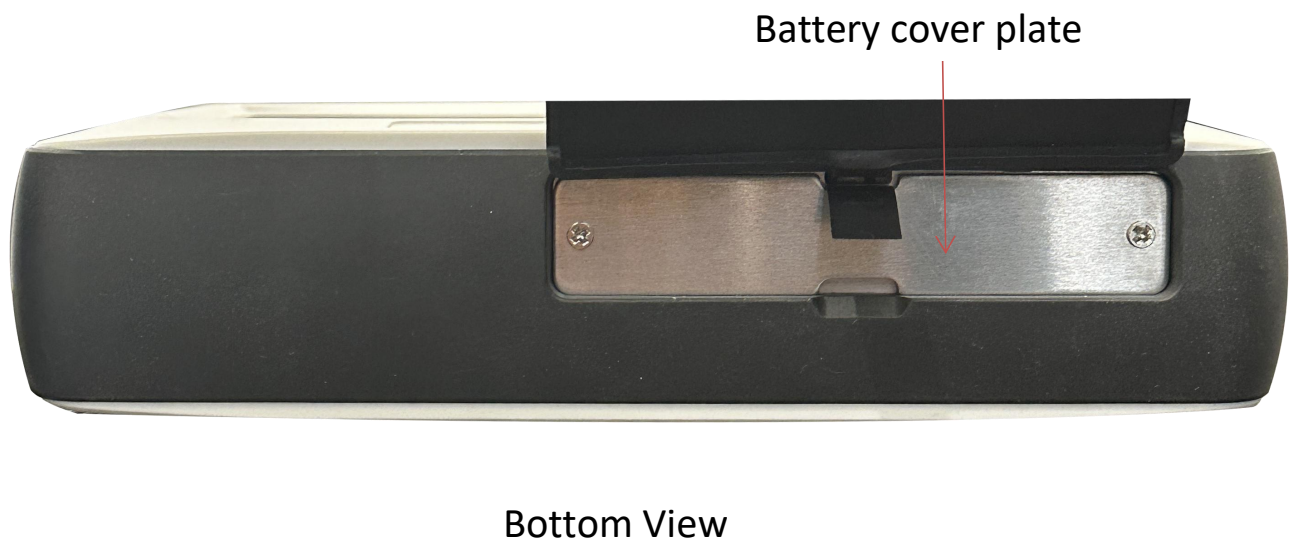
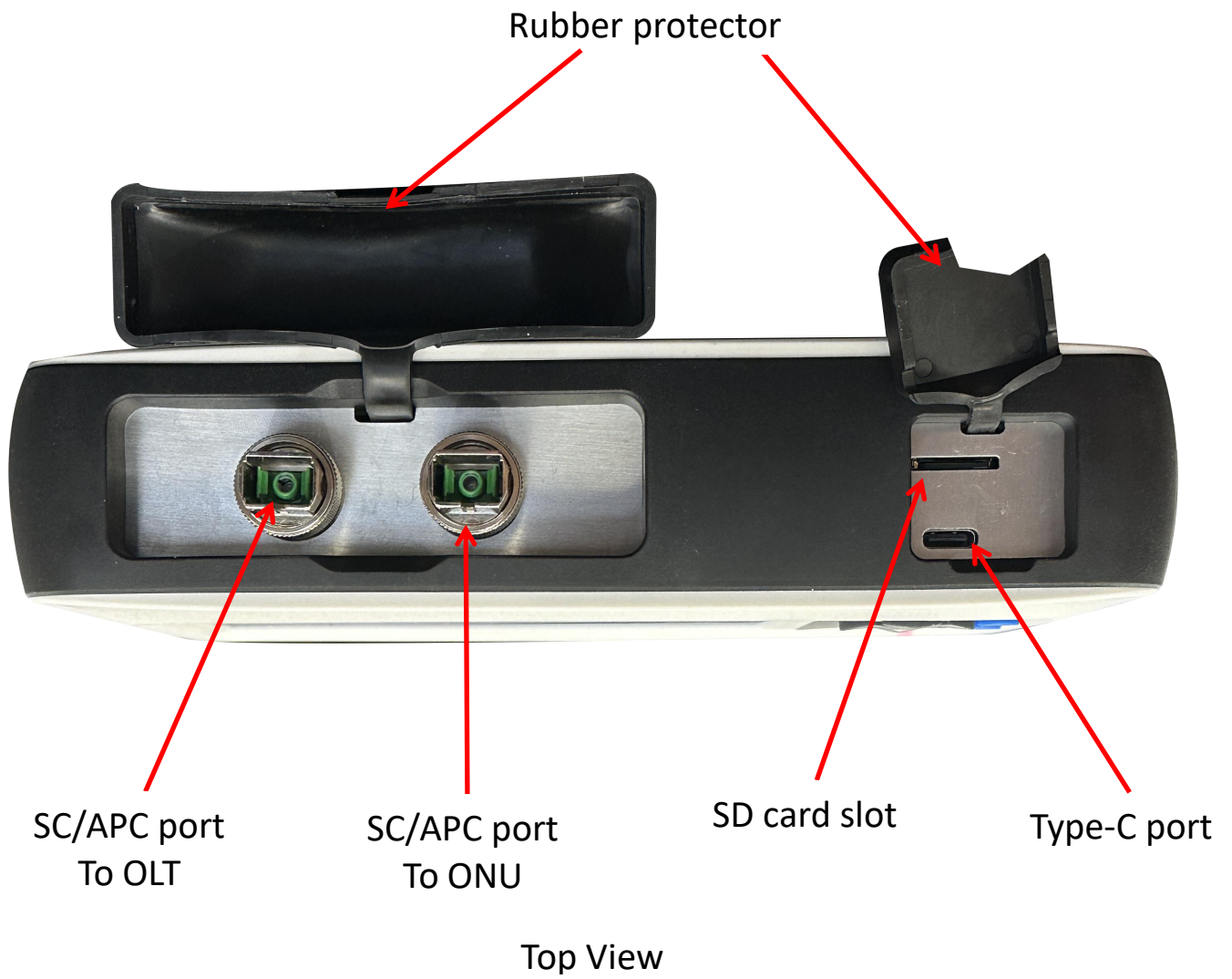


Front View

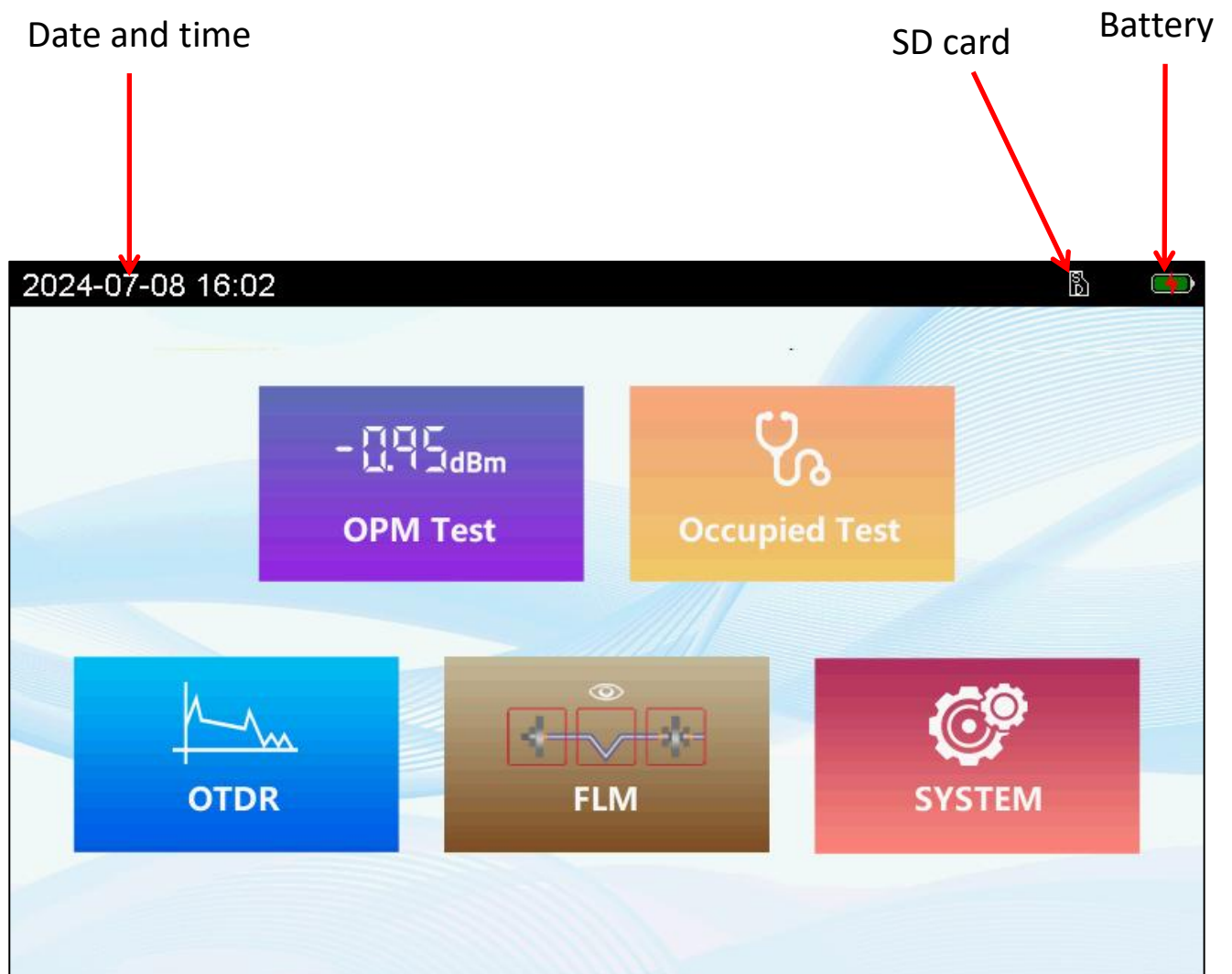


Support frame

Rear View



1.3 Main Menu



2 OPM TEST

2.1 Test Interface

2024-07-08 16:13

Auto

XG(S)-PON

G-PON

10GE-PON

E-PON

PON ID

2222

TX Power

5.9dbm

ODN Class

Class C+

No/Total

1 / 1

ONU ID

0

SN

HWTC8D4317A4

OLT

XG(S)-PON

ONT/ONU

Fail

1577 nm

1270 nm

ODN Loss

ONU status

-21.9dbm

0.0dbm

27.8dbm

Rogue

Menu

Stop

Save

Settings

File

Back

Item	Description
AutoXG(S)-PONG-PON10GE-PONE-PON	Select the PON mode for current test
PON ID2222 TX Power5.9dbm ODN ClassClass C+	OLT information, including PON ID, Tx Power, ODN Class
No/Total1 / 1 ONU ID0 SNHWTC8D4317A4	ONU information, including No/Total of detected ONUs, ONU ID, SN or MAC
OLT XG(S)-PON ONT/ONU	Test scenario diagram and current PON mode
Fail	Threshold judgment, Pass or Fail
1577 nm1270 nmODN Loss -21.9dbm0.0dbm27.8dbm	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 Stop Save Settings File Back		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

2024-07-08 16:13

OPM SETTING

MODE

RealTime

Once

Register Time

20

Type

XG(S)-PON

G-PON

U/S Lower

4.0

Menu

Standard

ITU-T

Custom

U/S Upper

9.0

REC

ODN Class

Class N1

Class N

D/S Lower

-28.0

PonID Form

Hex

Ascii

D/S Upper

-9.0

Back

SN Format

Hex

Ascii

ODN LOSS

29.0

2024-07-08 16:14

OPM SETTING

MODE

RealTime

Once

Register Time

20

Type

G-PON

10GE-PON

E-PON

U/S Lower

-1.0

Menu

Standard

IEEE

Custom

U/S Upper

4.0

REC

ODN Class

PR 20

PR 30

D/S Lower

-24.0

D/S Upper

-5.0

Back

Online Test Mode

Standard

Fast

Item	Description		
MODE RealTime Once	Test mode: RealTime, Once Realtime (Continuous detecting ONU) Once (If detect there is new online ONU, testing will end depending on "Online test mode")		
Type XG(S)-PON G-PON	PON mode: XG(S)PON, GPON, 10G EPON, EPON		
Standard ITU-T Custom	Threshold standard: ITU-T (G), IEEE (E), Custom		
ODN Class Class N1 Class N2	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		
PonID Form Hex Ascii	PON ID format: Hex, Ascii		
SN Format Hex Ascii	SN format: Hex, Ascii		
Online Test Mode Standard Fast	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)		
Register Time 20	Waiting time for ONU to get online		
U/S Lower -1.0 U/S Upper 4.0 D/S Lower -24.0 D/S Upper -5.0	Uplink and downlink power threshold		
Menu REC Back	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

2024-07-08 16:14

Cabinet: FI

Tiroir: 1

Row: 12

Col: 12

Table Name: FI_TD1_07082024_51



Create New

Menu

Load

Settings

Back

2024-07-08 16:15

Splitter 1:4 1:8

Table Name: 1x4_07082024_53



Create New

Menu

Load

Settings

Back

Item					Description		
Cabinet:	FI	Tiroir:	1	Row: 12	Col: 12	Create new test scenario (Cabinet)	
Splitter						1:4 1:8	Create new test scenario (Splitter)
Table Name:	FI_TD1_07082024_51					Table name	
 Create New						Create a new test	
Menu Load Settings Back						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 Splitte	Check mode: Tiroir, Splitter
Online Test Mode Standard Fast	Online test mode: Standard, Fast Standard (Waiting for register time to end testing) Fast (End testing after the first ONU gets online)
Color Red Blue G	Mark colors (Mark different operators/ISPs)
SN Format Hex Ascii	SN format: Hex, Ascii
PonID Form Hex Ascii	PON ID format: Hex, Ascii
Register Time -1	Waiting time for ONU to get online (When select “standard” mode, register time for different colors of operators can be set separately)

Menu REC Back	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

2024-07-08 16:17

B02



Table Name: FI_TD1_07082024_54



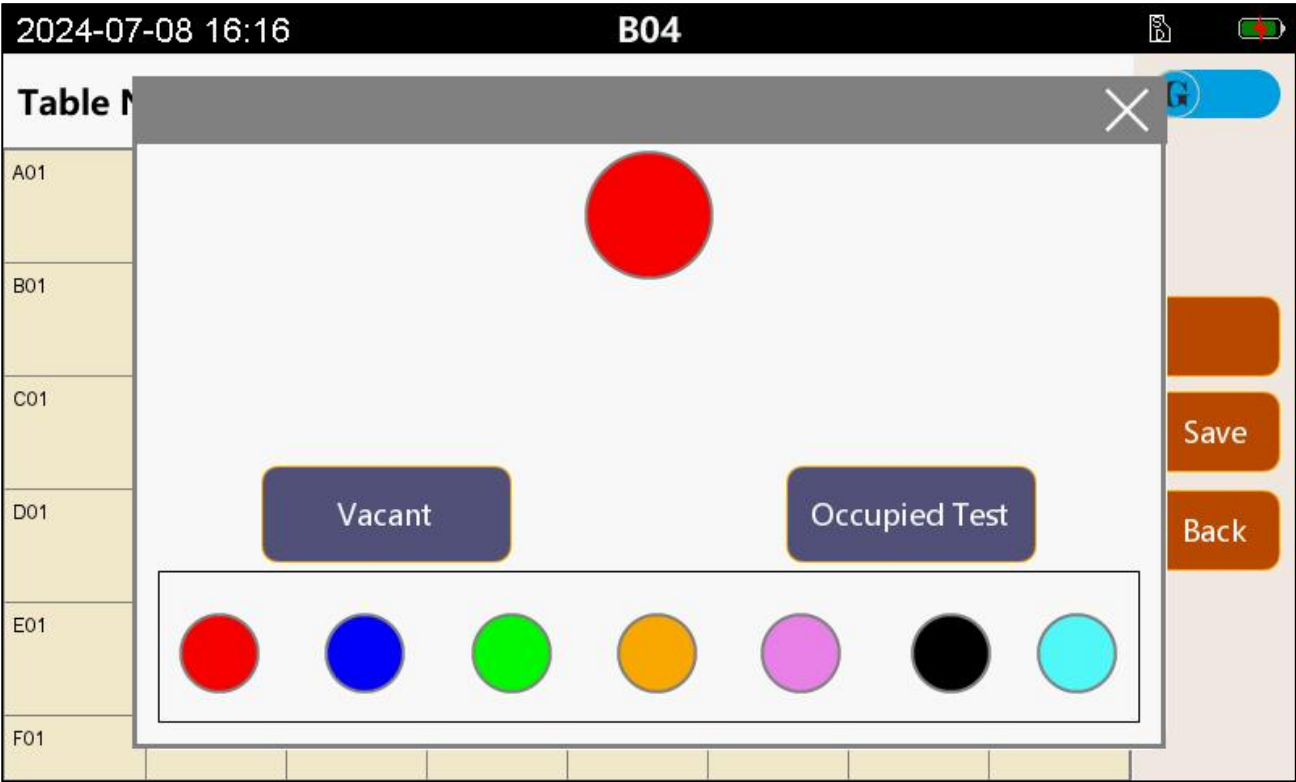
A01	A02	A03	A04	A05	A06	A07	A08
B01	B02 NO ONU	B03 NO ONU	B04 Vacant	B05 NO ONU	B06 NO ONU	B07	B08
C01	C02	C03	C04	C05	C06	C07	C08
D01	D02	D03	D04	D05	D06	D07	D08
E01	E02	E03	E04	E05	E06	E07	E08
F01	F02	F03	F04	F05	F06	F07	F08

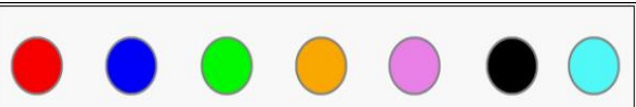
Save

Back

Item	Description
A01A02A03	Tiroir port or splitter port to be tested, double click to enter.
B02 NO ONU B03 NO ONU B04 Vacant	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 Back	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.

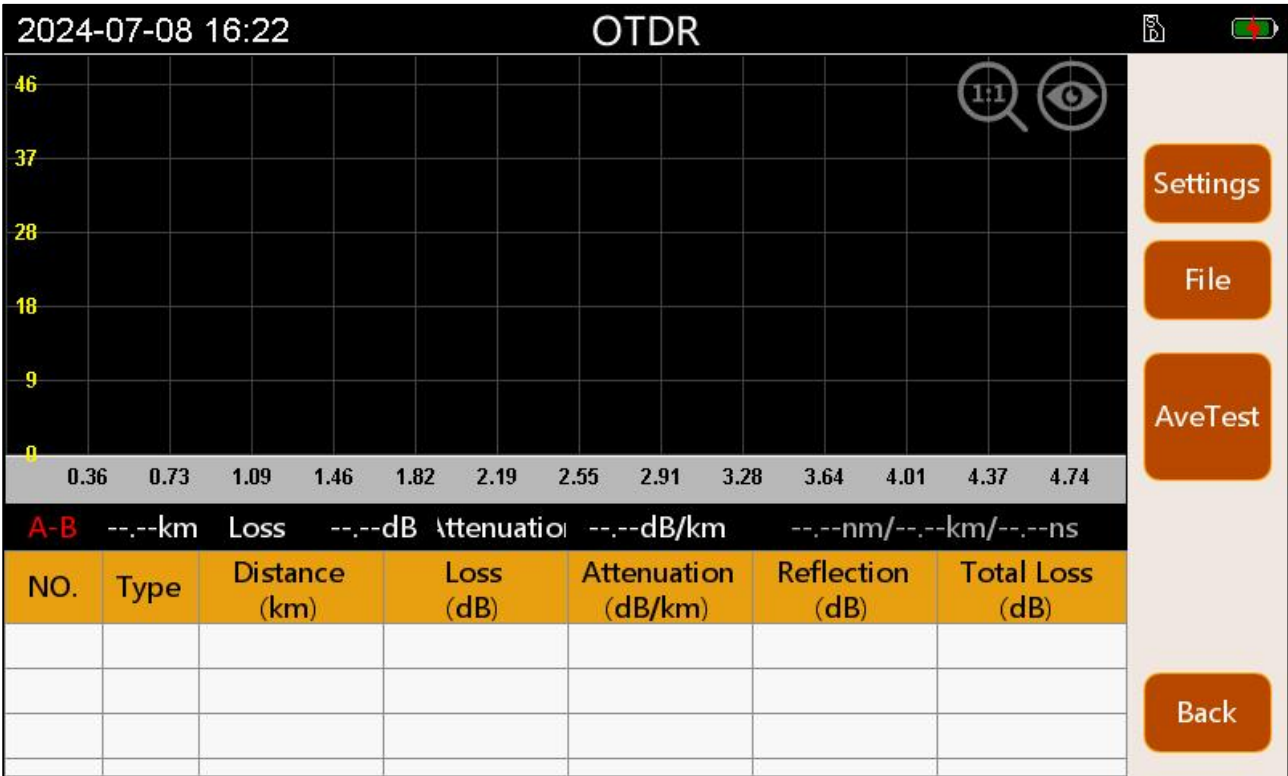
Step 4: Connect the fibers to be tested. Before connecting, please clean the connector end face, pay attention to the OLT/ONU direction and connector type (SC/APC).

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.																												
<table><tr><th>NO.</th><th>Type</th><th>Distance (km)</th><th>Loss (dB)</th><th>Attenuation (dB/km)</th><th>Reflection (dB)</th><th>Total Loss (dB)</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	NO.	Type	Distance (km)	Loss (dB)	Attenuation (dB/km)	Reflection (dB)	Total Loss (dB)																						Event table and list items
NO.	Type	Distance (km)	Loss (dB)	Attenuation (dB/km)	Reflection (dB)	Total Loss (dB)																							

Settings File AveTest Back	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

2024-07-08 16:22

BaseSetup



Auto Mode	OFF	OPEN	
Test Wavelength	1550nm		
Test Range	500m	1km	
Pulse Width	3ns	5ns	
Test Mode	Ave	Real	
Test Time(s)	15s	30s	60s
Resolution	Normal	High	

Param Setup

Threshold Setup

AveTest

Back

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 Threshold Setup AveTest Back	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

2024-07-08 16:23

ParamSetup

IOR

1550nm

1.4650

Default

BackThreshold(dB)

6

Back

Item	Description
IOR 1550nm 1.4650	IOR setting IOR (Index Of Refraction): This parameter of fiber is usually kept as default, random modification will affect the test distance.
BackThreshold(dB) 6	BackThreshold setting When the loss value of an event exceeds this threshold, this event will be considered as the fiber end.
Default	Restore to default

4.2.3 ThresholdSetup

2024-07-08 16:23

ThresholdSetup

Pass/Fail Threshold

1550nm

Section Attenuation (dB/km)

0.182

Total Loss

3.00

Loss

Reflection

Splice Point

0.80

-

First Connector

0.80

-40.00

Last Connector

0.80

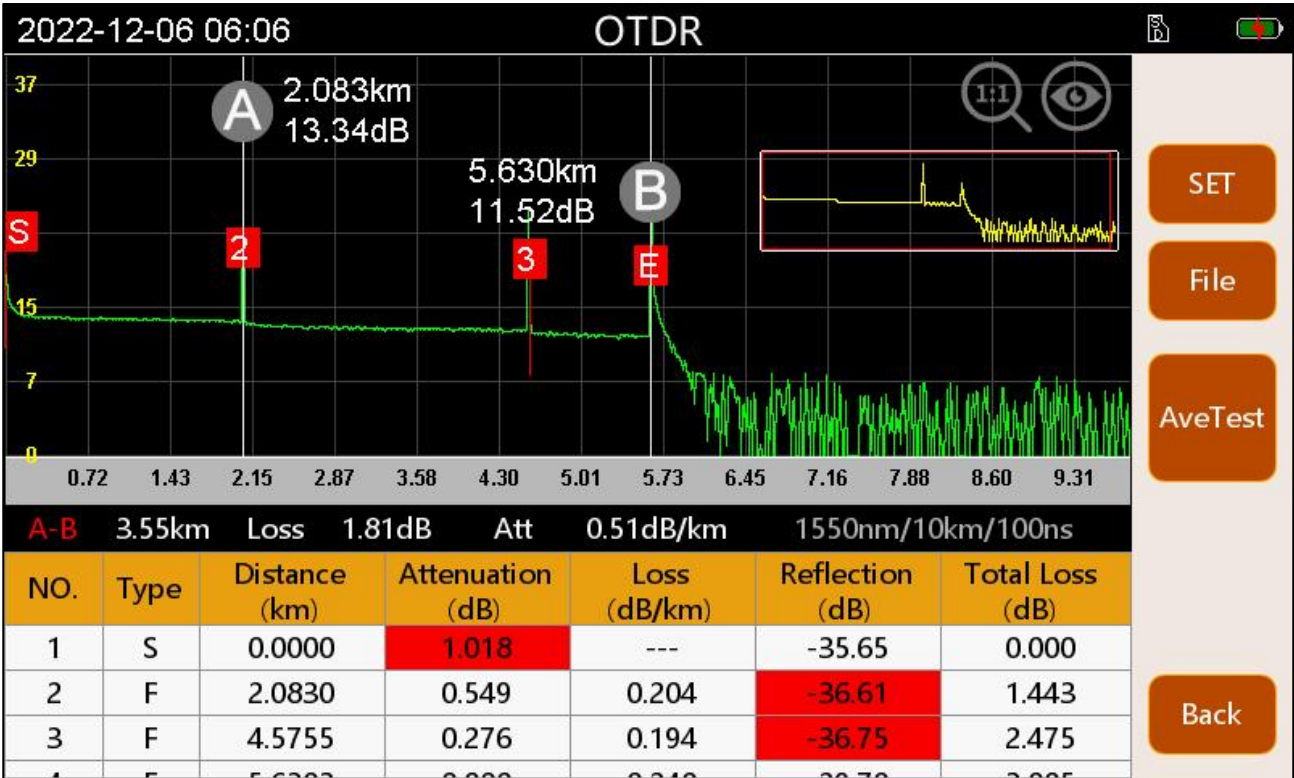
-40.00

Default

Back

Item		Description
Section Attenuation (dB/km)	0.182	Gray bar means it's system default cannot be set
Total Loss	3.00	Total Loss threshold
Loss	Reflection	Loss and Reflection threshold of event
Splice Point	0.80	
First Connector	0.80	
Last Connector	0.80	
Default		Restore to default

4.3 OTDR Trace Interface



Item	Description
 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	Event type
S	S: Start event
F	F: Attenuation or reflection event
F	E: End event
F	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

2024-07-08 16:24

FLM

PASS

Dis(km)

Loss(dB)

Event

<

>

Threshold Setup

Normal ONU End Splitter

TEST

Back

NO.	Type	Distance (km)	Loss (dB)	Attenuation (dB/km)	Reflection (dB)	Total Loss (dB)

Item	Description																												
PASS	Threshold judgment Pass/Fail																												
Dis(km) Loss(dB) Event	Overview information, including total distance, total loss and number of events																												
<table><tr><th>NO.</th><th>Type</th><th>Distance (km)</th><th>Loss (dB)</th><th>Attenuation (dB/km)</th><th>Reflection (dB)</th><th>Total Loss (dB)</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	NO.	Type	Distance (km)	Loss (dB)	Attenuation (dB/km)	Reflection (dB)	Total Loss (dB)																						Event table
NO.	Type	Distance (km)	Loss (dB)	Attenuation (dB/km)	Reflection (dB)	Total Loss (dB)																							
Normal ONU End Splitter	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 Normal ONU End Splitter TEST Back	Threshold Setup: Go to ThresholdSetup menu Normal/ONU End/Splitter: Switch the test mode Test: Perform FLM test Back: Return to previous menu
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5.2 ThresholdSetup

2024-07-08 16:24

ThresholdSetup

Pass/Fail Threshold

1550nm

Section Attenuation (dB/km)

0.182

Total Loss

3.00

Loss

Reflection

Splice Point

0.80

-

First Connector

0.80

-40.00

Last Connector

0.80

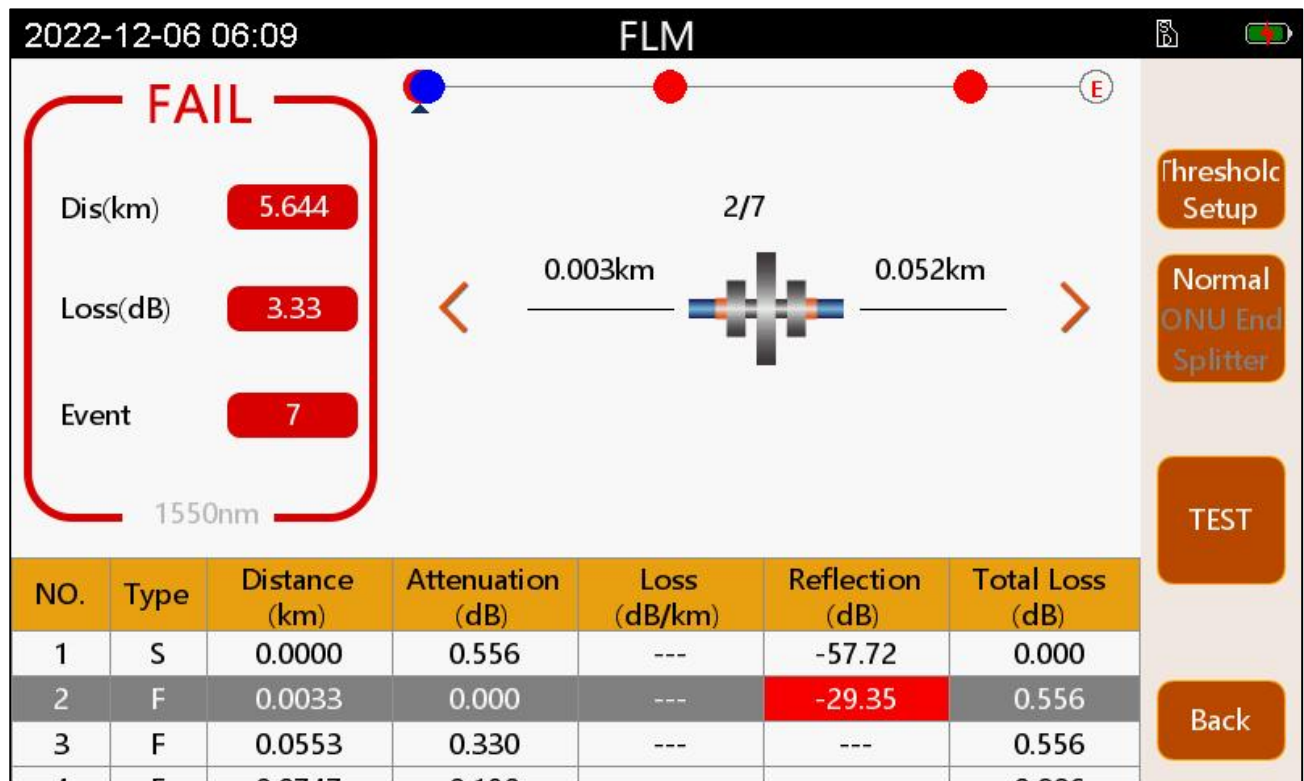
-40.00

Default

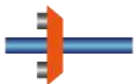
Back

Item	Description
Section Attenuation (dB/km) 0.182	Gray bar means it's system default cannot be set
Total Loss 3.00	Total Loss threshold
Loss Reflection Splice Point 0.80 - First Connector 0.80 -40.00 Last Connector 0.80 -40.00	Loss and Reflection threshold of event
Default	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).

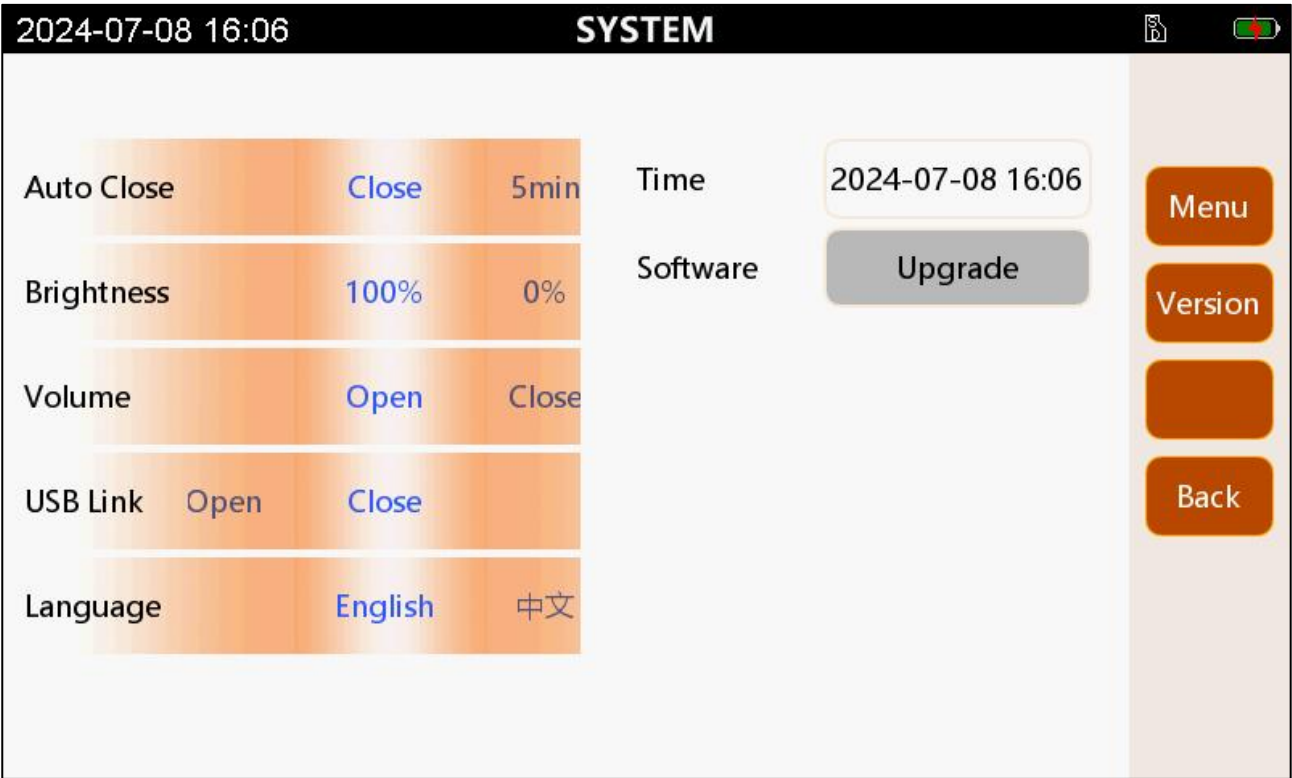
Step 2: Enter ThresholdSetup interface and set the Pass/Fail thresholds.

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 -----