FS FOPM-201 Fiber Tester Optical Power Meter User Guide

Fiber Testers
OPTICAL POWER METER
Quick Start Guide
V1.0

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Introduction

The handheld optical power meter is a fiber optic tester with compact size and friendly operation interface. It has a wide range of power measurement and high accuracy. When combine with a light source, it offers a quick and accurate testing solution. The figures below display the product images of the six optical power meters.

FOPM-201/FOPM-202

FOPM-203/FOPM-204

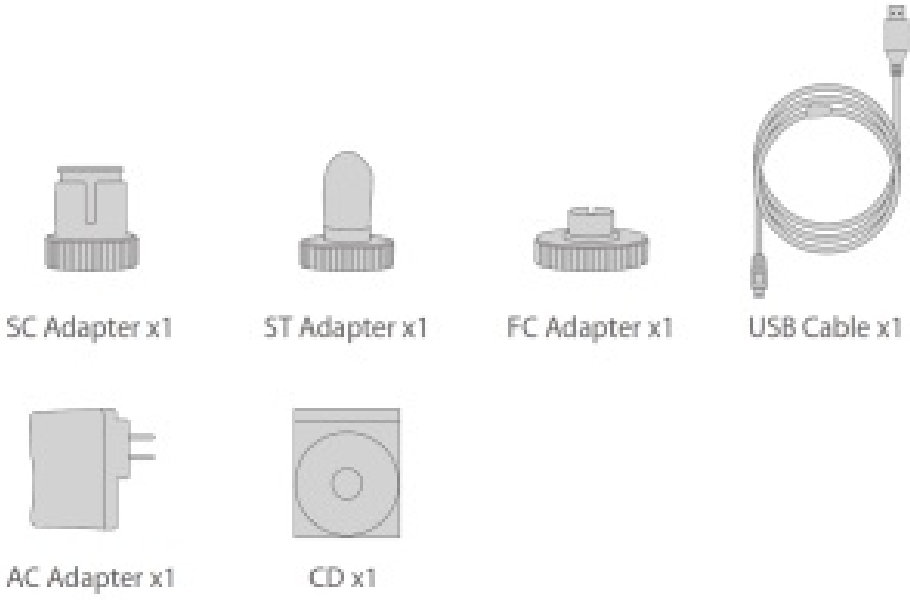
FOPM-205

FOPM-107

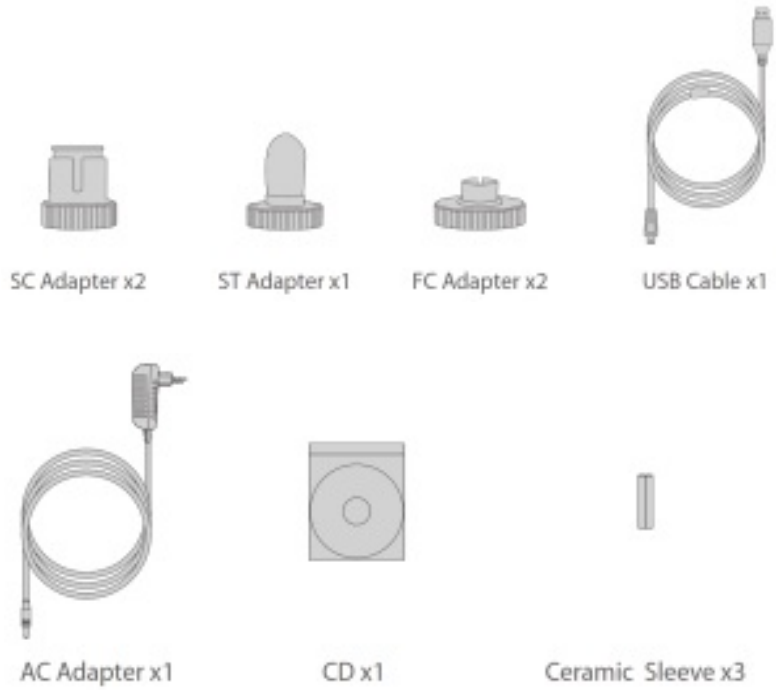
Accessories

FOPM-201/FOPM-202

FOPM-203/FOPM-204



FOPM-205



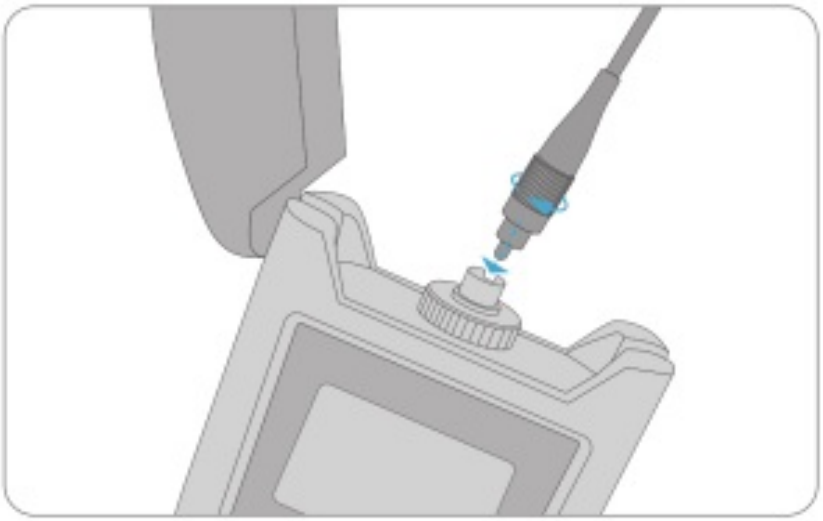
FOPM-10

AC Adapter x1

CD x1

Installing

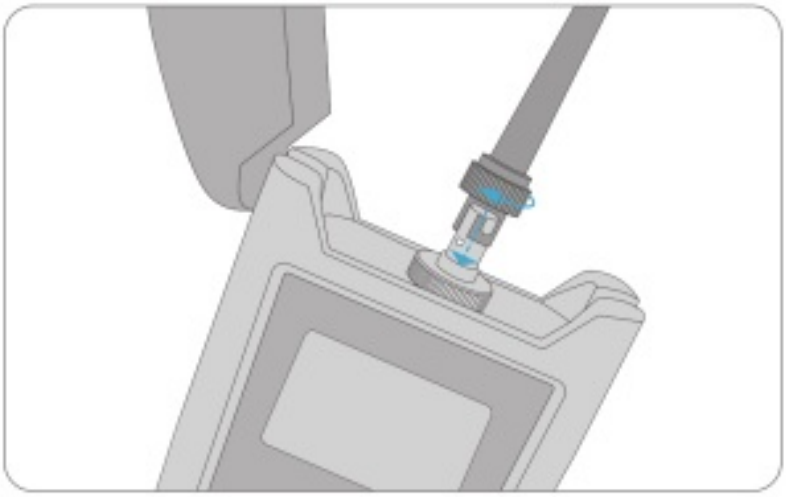
Inserting FC Cables



Install FC fiber cable.

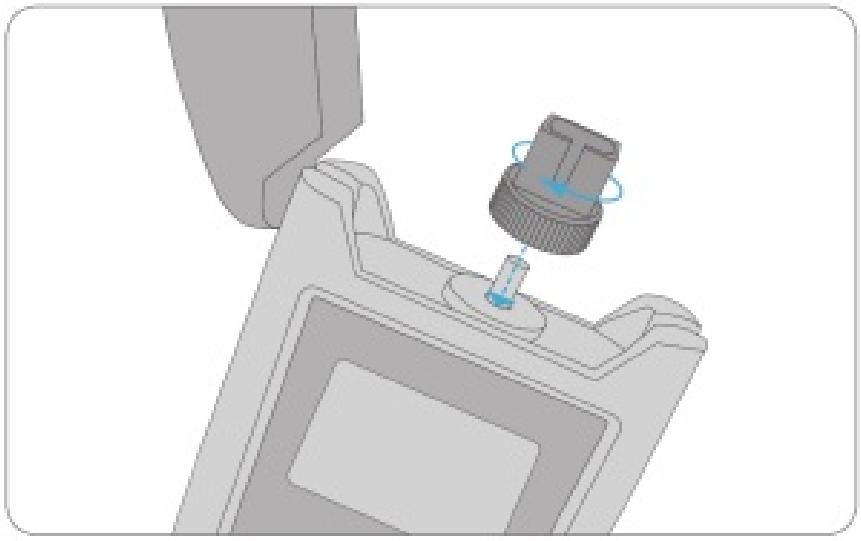
Inserting ST Cables

1. Install ST connector.

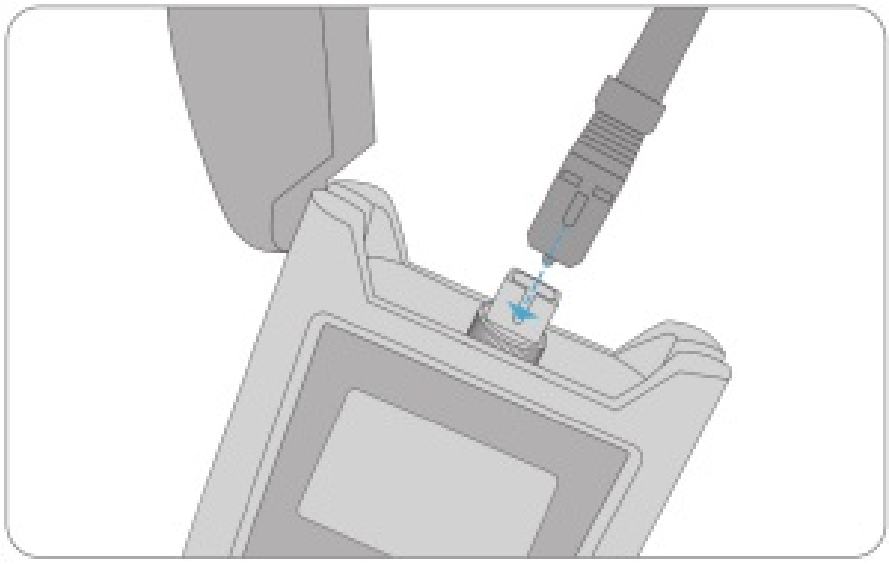


2. Install ST fiber cable.

Inserting SC Cables

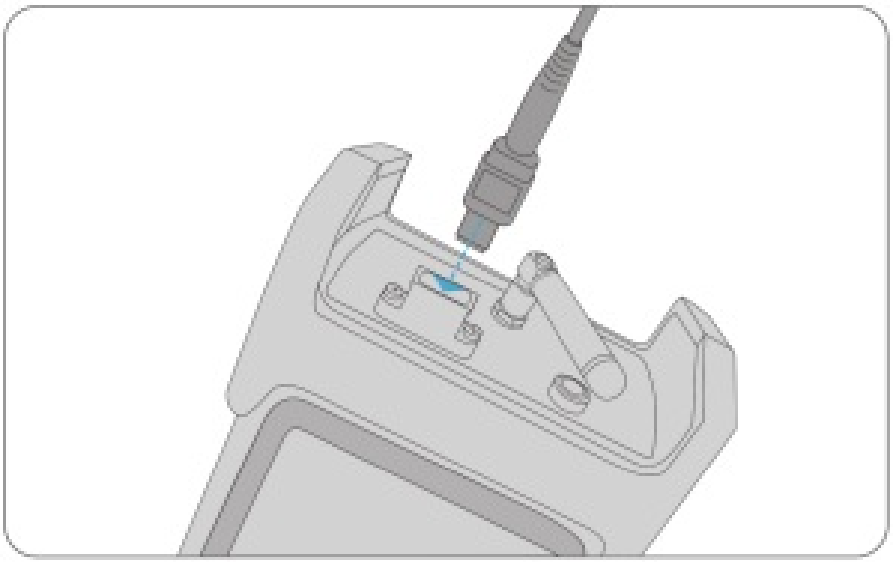


1. Install SC connector.



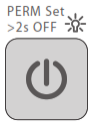
2. Install SC fiber cable.

Inserting MTP Cables



FOPM-201/FOPM-202

Function Introductions

Button	Description
PERM Set >2s OFF 	Power/Backlight Button
 >2s UNIT	Wavelength/Unit Shift Button
 >2s SET	REF Setting Button
GLINT 	VFL Control Button

Operation Instructions

1. **Power On/Off and Auto-off Function**

   Press  button to turn on the instrument. Press it again for 2 seconds or more to turn it off.

   This power meter has a power-saving function. If 10 minutes without any operation, the instrument will automatically shut down. If you need to disable this function, only need to press the  button for 2 seconds when you turn on the instrument till it displays “PERM”.
2. **Backlight Function**

   When the instrument is powered on, short press  button, you can control the backlight function on or off. The backlight function supports you to use the power meter at night or darker occasions.
3. **Wavelengths**

   According to the project, we need to measure optical signals of different wavelengths.

   Then we need to select a corresponding wavelength to measure the optical power. If the wavelength needs to be measured does not match with the wavelength we select

   on the optical power meter, it will lead to the measuring values meaningless. Press  button, the instrument will change wavelength, and display.

   FOPM-201/FOPM-202 optical power meter calibration measured wavelengths are: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm.
4. **Unit**

    button can be used to change the display unit of the measurement data to meet the different requirement. When press this button for 2 seconds, the display will

   successively show the dBm value or mW/uW value. The numeric relationship between mW value and dBm value is: 10lg (mW) = (dBm).
5. **Reference**

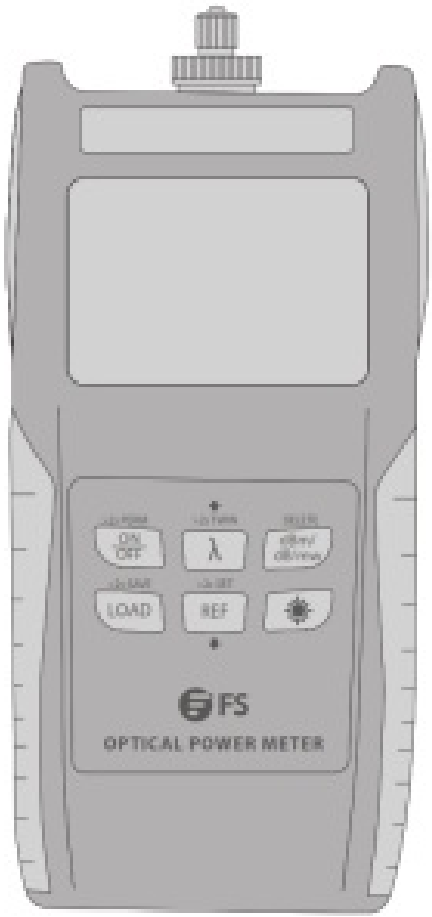
REF button is used to set or check the reference value. Short press this button, the display will show “REF” and the dBm value saved as reference value. When long press for 2 seconds or more, the instrument will save the current dBm value as a new reference REF value. Meanwhile the “REF” sign will flash 3 times on the display. After that the display will show the dB value. Each wavelength can set its reference value.

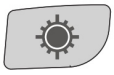
6. **Visual Fault Locator Function (Optional)**

   When power meter with visual fault locator, you can short press the VFL button to control VFL status (on, glint, or off).

FOPM-203/FOPM-204

Function Introductions



Button	Description
>2s PERM 	Power Button
	Wavelength Shift Button
	Unit Shift Button
>2s SAVE 	Value Storage Button
>2s SET 	REF Setting Button
	Backlight Control Button

Operation Instructions

1. Power On/Off and Auto-off Function

   Press  button briefly. The instrument powers on, and backlight switches on.

   Press  button briefly again. The instrument powers off, and backlight switches off.

 **NOTE:** Auto-off function

1. The instrument will power off automatically if 10 minutes without any operation.

   While in the power-on state, press  button for about 2 seconds to turn off the “Auto-off” function.
2. Set Wavelength and Activate Auto-wavelength Recognition (TWIN)

   Press  button repeatedly until the desired wavelength is displayed. You can select from six possible wavelengths: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm. The instrument defaults to the wavelength which the user set in the last test. When used with the FOLS-203 and FOLS-204 optical light source, the wavelength will shift automatically according to the output wavelength of the light source. Long press  button to activate the auto-wavelength recognition and the “TWIN” will show on the LCD. Short press  button to close the “TWIN”.
3. **Switch Measurement Mode**

   There are 3 measurement modes you can choose by pressing the  button repeatedly, dB, dBm and mW.
4. **Set Reference Level**

(1) Press 

button to display the stored reference level for the current wavelength and a sign of “REF” will be displayed on the screen to indicate that it is a reference value. The displayed value only lasts 1 second.

(2) Press and hold 

button over 2 seconds to store the presently measured value as the new reference level for the current wavelength. During the process, the “REF” sign flashes twice on the screen and buzzer sound is heard. Once the new reference level is set, the instrument switches to the dB measurement mode. The displayed value only lasts 1 second.

5. **Switch Backlight of LCD On/ Off**

   Press  button. Backlight switches on.

   Press  button again. Backlight switches off.

6. **Frequency Detecting**

   If the tested wavelength is carrying a tone of 270Hz, 1kHz, or 2kHz, the respective frequency indicates on the screen.

7. **Overflow of Measured Power Value**

   If the measured power value is too high, the LCD screen will display “HI”.

   If the measured power value is too low, the LCD screen will display “LO”.

8. **Storage of Current Test Value**

   Press 

button over 2 seconds, the “SAVE” flashes on the screen once with the sounds of the buzzer. It indicates the setting is finished. It will display the stored value and the serial number of the storage. Then, the power meter will return to the test state automatically.

9. **Check the Storage Records**

   Press 

button, it will display the latest record.

   Press 

button, it will browse the forward records.

   Press 

button, it will browse the afterward records.

   Press 

and  button, it will delete all the records.

Button	Description
⏻	Power Button
MODE	Test Mode Button
SAVE	Storage Button
MENU	Menu Mode Shift Button
dBm/dB	Unit Shift Button
REF/SEL	REF Setting Button

Operation Instructions

1. **Power On/Off and Auto-off Function**

   Press ⏻ button to turn on the instrument. It will automatically go to test menu. In test menu, short press ⏻ button (less than 2 seconds) to activate or deactivate the auto-off function. The auto-off function means the instrument will shut down automatically if the instrument has not been operated for a certain period of time. The time period can be set and the default is 10 minutes.

2. **Test Mode Switch**

   In the test menu, press MODE button to switch between normal test mode and P/F test mode.

   (1) Normal Test Mode

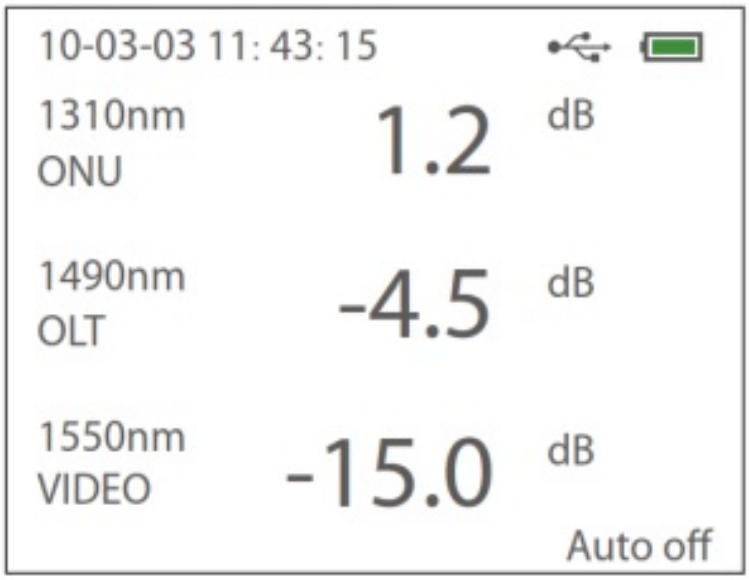
   Normal test mode means do not setup threshold value but display optical power directly. In this mode, the LED

indicators will not light. The results are displayed in 2

units: dB and dBm, using dBm/dB button to switch. See Fig. 1.

Unit dBm is to display the actual power.

Unit dB is to display a power value relative to a reference value. In this mode, reference value needs to be preset correctly.



(2) P/F Test Mode

P/F test mode means the measured light power comparing to a preset threshold value to determine if the measured light power meets user's requirement or not. LCD will display the optical power and current state. The LED indicators below the LCD display will also change color to match the current state of measured light. This test mode is very useful in some special cases required. See Fig. 2.

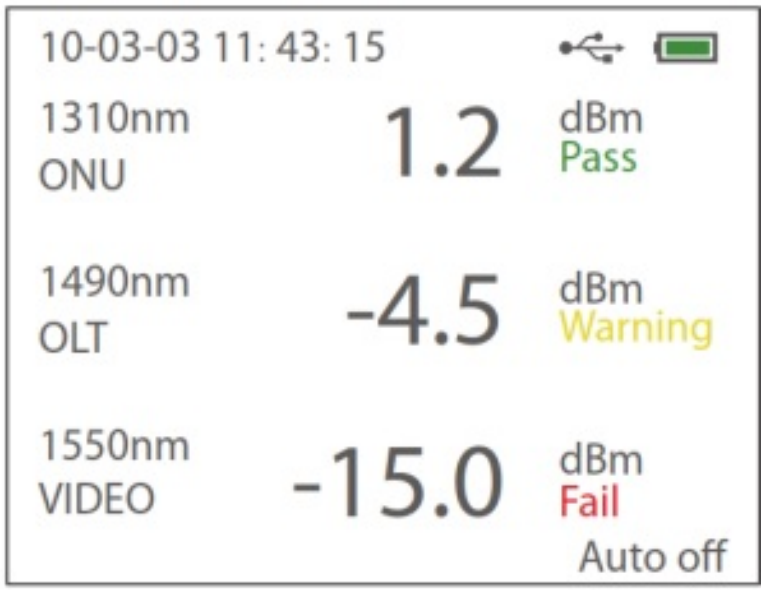


Fig.2 P/F Test Mode Menu

3. Threshold Setup

The user can set up the value. The steps are as following: In the menu mode, select the second "Threshold Setup" enters to threshold setup menu. See Fig. 3.

In this menu, left side displays wavelength and right side displays threshold value. Top line indicates system information (date and time) and bottom line indicates the information of threshold including threshold symbol, threshold number and name. In this menu, short press Threshold button (less than 2 seconds) to switch the wavelength among 1310nm, 1490nm and 1550nm. Press ▲ (MODE) button to view the previous record, ▼ (

MODE) button to view the next record, button to validate the current threshold value. After the above operation, all P/F mode test results will base on this threshold value. dBm/dB REF/SEL

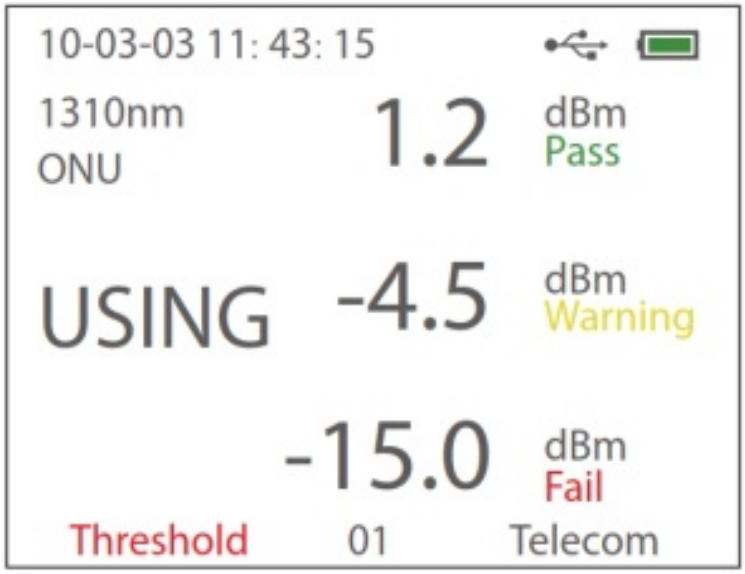


Fig.3 Threshold Setup Menu

NOTE: The threshold value can only be preset by PC software. See PC software section for detail. After finishing the setup, press button (less than 2 seconds) to exit the setup menu.

4. Time Setup

In the menu mode, select the forth “Time Setup” enters to time setup menu. See Fig. 4.

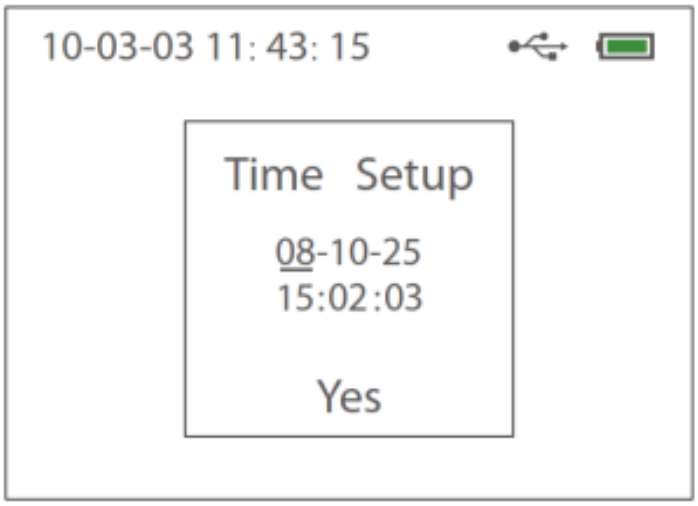


Fig.4 Time Setup Menu

In the time setup menu, the SAVE button becomes arrow button – using it to move cursor. When the cursor moves to a number, the user can use ▲ button to increase the value and ▼ button to decrease the value. When the cursor moves to “ Yes” and press SAVE button for more than 2 seconds, the “ Yes” will flash, means the instrument accepts the time change. During the time setup, the user can press SAVE button (less than 2

seconds) to exit time menu and back to the test menu, then the system time setup remains unchanged. SAVE REF/SEL MENU

5. Unit Switch

When the instrument is in normal test mode, press dBm/dB button can switch the unit between dBm and dB. Here, the unit dBm is the actual power and unit dB is a power value relative to reference value. Refer to the next section about “Reference Value Setup”. When the instrument is in the P/F test mode, pressing dBm/dB button will automatically exit P/F test mode and switch to normal test mode. Its unit will be in dB. dBm/dB dBm/dB.

6. Reference Value Setup

In the test menu, press REF/SEL button for more than 2 seconds, then the LCD will display “REF” in red (see Fig. 5). This means the instrument chooses the current light power as the reference value. The test results afterward are the values after comparing to this REF/SEL reference value. Now, the unit will be in dB and LED below the LCD display will not light.

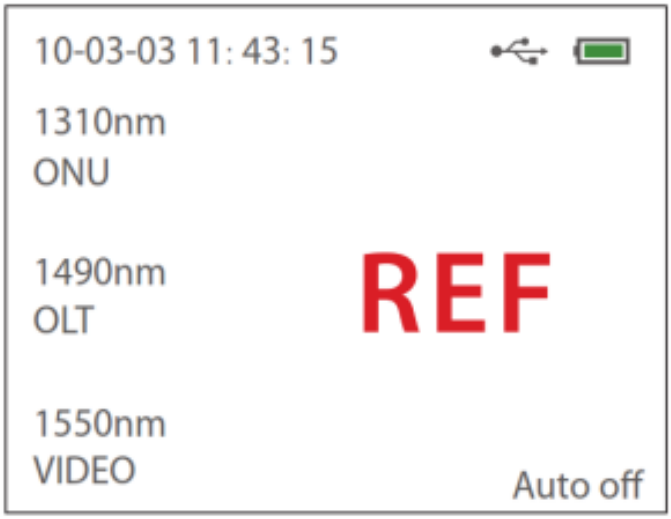


Fig.5 REF Value Setup Menu

In the test menu, short press REF/SEL button (less than 2 seconds), then current reference value will appear on LCD display. See Fig. 6.

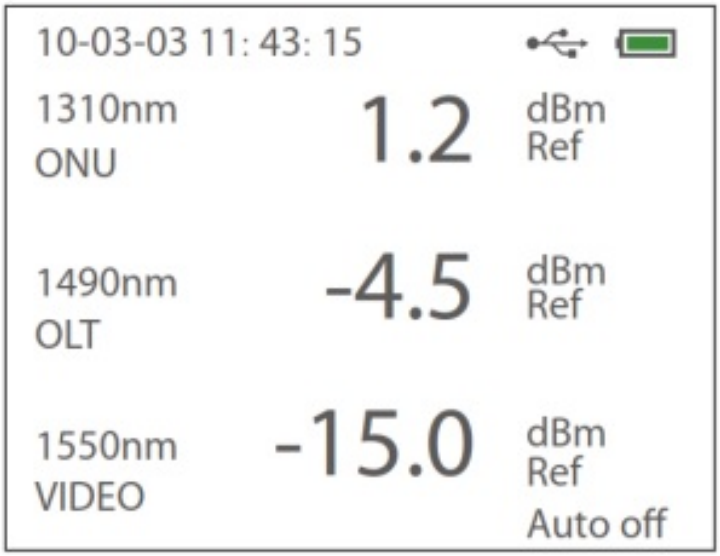
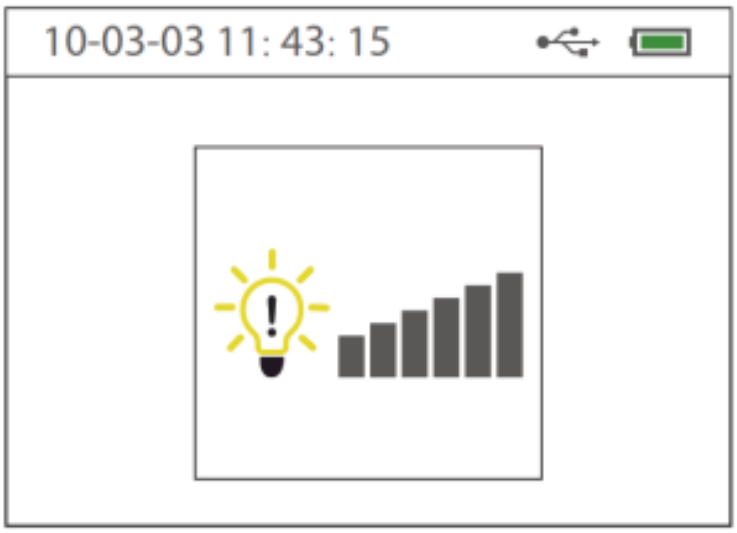


Fig.6 View REF Value Menu

Backlight Setup

In the menu mode, select the third “Backlit Setup” enters to backlight setup menu. See Fig. 7.



In this menu, press ▲ (dBm/dB) button to brighten the backlight and ▼ (dBm/dB) button to weaken the backlight. After completing the setup, press MENU button (less than 2 seconds) to save the setting, exit and back to the menu mode. Press MENU button twice to exit and back to the main mode.

8. Description of Memory Record Function

Description of Interface:

At the main interface, it shows the current recording number on the left bottom of the page.

Displaying: num: xxxx (xxxx means the current recording number, the maximum number up to 1000 pieces). As you may refer to the Fig. 8, it means there are 24 pieces of test recording inside.

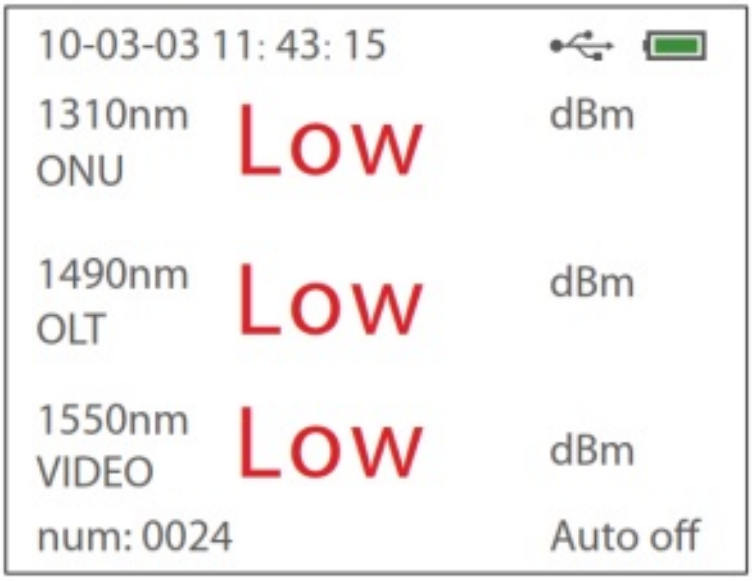


Fig.8

Press MODE button for longer than 3 seconds to save the current testing value, as you may refer to the Fig. 9, the recording number automatically adds 1 when the interface shows “SAVE”.

Fig.9

At the “record view” interface (refer to Fig. 10), the characters on top of the horizon line are”total number of recording” and “wavelength” (from left to right). The characters
under horizon line are “the number of recording” and the optical power value in accordance with the corresponding wavelengths.

In the menu mode, select the first “record view”, and press REF/SEL button to enter the “record view” interface, refer to Fig. 10 for this interface.

At the “record view” interface, you may see the main menu on the bottom of the page, they are (from left to right):
◀ ▶ ◀◀ ▶▶ ESC X RST
There is an underline when you selected the menu (the “ESC” has been chosen in Fig.10), press “Threshold” shortly to move the underline from left to right , after the underline moved to your ideal menu, press REF/SEL shortly to execute it.

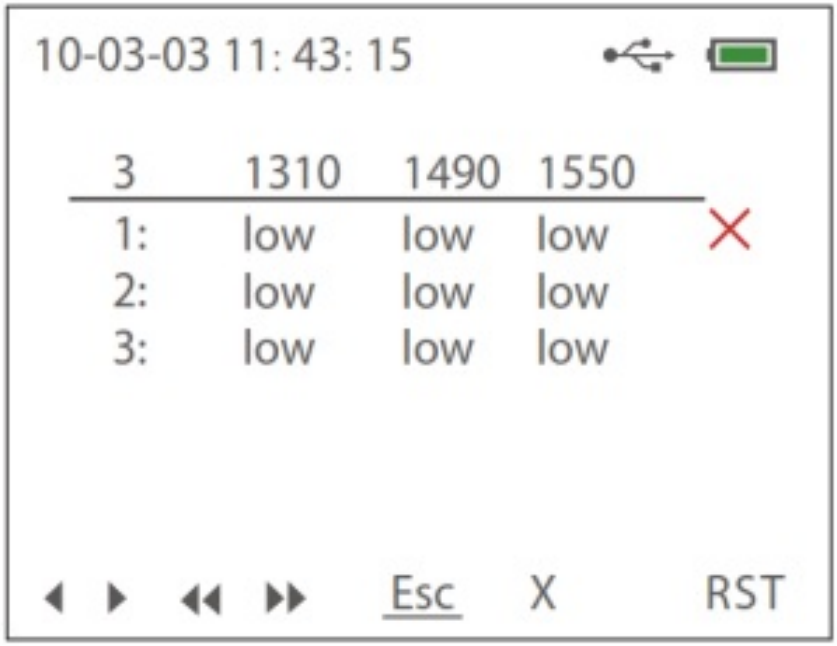


Fig.10

Description of every individual menu:
◄ : Page up to the last 10 recording
► : Page down to the next 10 recording
◄◄ : Page up to the last 100 recording
►► : Page down to the next 100 recording

ESC: Exit the “record view” interface (same as press )
X: Select one or more than one recording to delete
RST: Reset the recording memory, this operation is not reversible and it’ll take 5 seconds to complete with power supply can not be disconnected, otherwise it may damage the
chip of tester.

At the “record view” interface, press 

button to move “X” upward one step, press 

button to move “X” downward one step. In Fig. 10, the interface explains that
dBm/dB there are totally 3 testing results inside, “low” means the saving power value is lower than the value of the threshold setting. In Fig. 11, “high” means the saving power value is higher than the value of the threshold setting. The digital means the power value of corresponding wavelength.

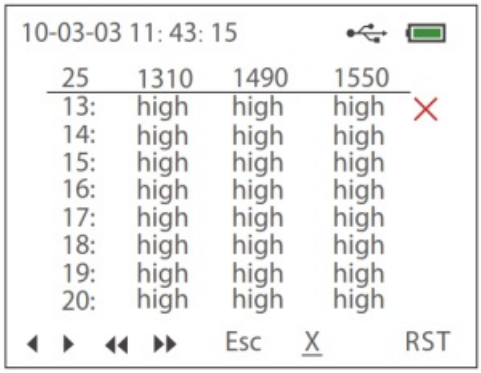


Fig.11

FOPM-107

Button	Description
	Power Button
	Wavelength Shift and Up Button
	Menu Mode Shift Button
	Left Button
	Confirmation Button
	Right Button
	Function Switch Shortcut Button
	Unit Shift Button
	REF Setting Button

Operation Instructions

1. MPO Mode

(1) Insert Loss Test

Press Menu button to enter the main menu as shown in Fig. 1.

Press λ / Units button to select mode and press Enter to enter. Select MPO mode and press Enter to confirm, and then select line order. After entering, select the type to be tested (such as A-Type).

Press λ / Units button to select the Threshold setting. The λ, Units, ◀ and ▶ buttons could adjust the threshold, as shown in Fig. 2.

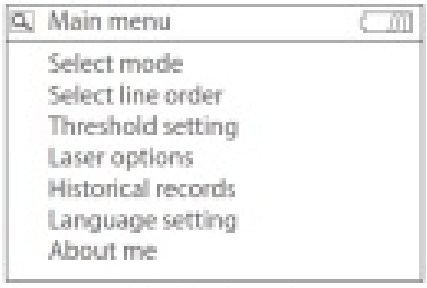


Fig. 1 Main Menu

Fig. 2 Threshold Settings

(2) MPO Line Sequence Test

When the type of MPO jumper under test is unknown, press button to switch to the line sequence test function, and press Enter button to test the line sequence. The obtained line sequence will be automatically modified in the MPO test. The test results are displayed in the area after Type. If communication is interrupted, it will prompt: link timeout!

NOTE: please confirm that works on MPO light source interface, not menu or other interface when testing line sequence.

2. OPM Mode

This mode has two main functions, multi-channel power meter (as shown in Fig. 3) and single-channel power (as shown in Fig. 4).

Multichannel optical power meter: it is equivalent to a 12-channel optical power meter, which supports the selection and release of a single channel or all channels. The wavelength of individual channels can be edited when selected, and the global operation of all channels can be carried out when all channels are selected.

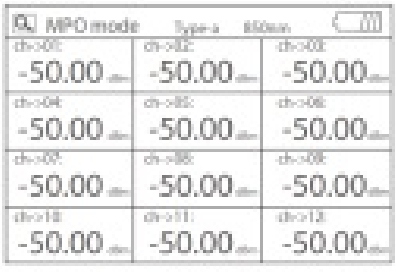


Fig. 3 Multi-channel Power Meter

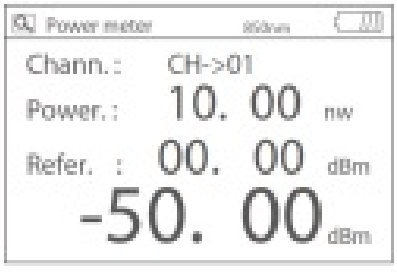


Fig. 4 Single-channel Power Meter

Maintenance

(1) The interface is sensitive, please carefully plug in and pull out the adapter.
(2) Please cover the dust-proof cap when it is not in operation.
(3) Choose the correct fiber connector before testing.
(4) Take out the batteries when not in use.

(5) Please disconnect the AC adapter/charger once you finish using.
(6) Please keep all optical connectors and surface free from oil, dirt or other contamination to ensure proper operation.
(7) Keep regular cleanings on optical port of an optical power meter with cotton swabs.
(8) To ensure the measurement accuracy, please send the instrument to FS for calibration once a year.

Online Resources

Download: **https://www.fs.com/download.html**
Help Center: **https://www.fs.com/service/help_center.html**
Contact Us: **https://www.fs.com/contact_us.html**

Product Warranty

FS ensures our customers that any damage or faulty items due to our workmanship, we will offer a free return within 30 Days from the day you receive your goods.

Warranty: All Optical Power Meters enjoy 1 year limited warranty against defect in materials or workmanship. For more details about warranty, please check at **https://www.fs.com/policies/warranty.html**

Return: If you want to return item(s), information on how to return can be found at **https://www.fs.com/policies/day_return_policy.html**

Q.C. PASSED

Documents / Resources

	**FS FOPM-201 Fiber Tester Optical Power Meter** [pdf] User Guide FOPM-201, FOPM-202, FOPM-203, FOPM-204, FOPM-205, FOPM-107, Fiber Tester Optical Power Meter