

SSF-TKITP-500 SSF™ Pro Fiber Test Kit

Manual



OPTICAL FIBER TEST KIT

WARNING

To avoid the risk of serious eye damage, do not look into the laser at any time.

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HANDHELD OPTICAL LIGHT SOURCE

This handheld optical light source is controlled by a chip microprocessor and displayed by 2.8 inches color LCD. Constructed using advanced thermoplastic molding technology for improved durability. It supports both SM/MM light source output wave ID and TWINS mode output. The output power is adjustable. Stable Laser Source, RJ45 Sequence and flashlight are standard configuration. RJ45 Tracking, Laser Ranging, and Bluetooth are optional. They are mainly used for continuous optical signal power measurement, optical fiber link loss test and optical fiber line on-off test. They are widely used in optical cable construction and maintenance, optical fiber communication, optical cable sensing, optical CATV and other fields.

Features

- Includes carrying case & strap
- Tests both multimode and single mode fibers
- Wavelengths of 850, 1300, 1310, and 1550 nm
- Wave ID – auto wavelength identification
- Storage of up to 1000 test records
- Included PC Software and USB cable
- 2.8" Color LCD screen with ambient light detection
- Built-in LED Flashlight
- Built-in VFL with 2.5 mm to 1.5 mm adapter included
- Built-in RJ45 sequencer
- Included AC power supplies
- Auto shut-off function
- Rechargeable lithium ion battery

Accessories

- (1) Operation Manual
- (1) 5.0 V Power Supply
- (1) USB-C Charging Cable
- (1) Carrying Case & Strap

OPTICAL FIBER TEST KIT
Handheld Optical Light Source

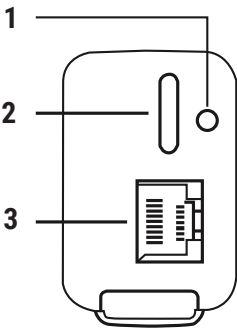
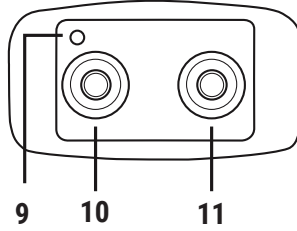
Specifications

Model	Optical Light Source	
Operating wavelength (nm)	850/1300±20 nm	1310/1490/1550±20 nm
Applicable fiber	SM, MM	
Laser type	FP-LD	
Maximum output power (dBm)	≤-5 dBm	
Adjustable step size (dBm)	0.1 dB/1 dB	
Stability (dB, 15min, 20°C)	±0.2 dB/15min (After preheating for 15 minutes)	
Modulation (Hz)	CW, 270, 330,1K, 2K	
Fiber port	、	
RJ45 cable sequence Testing range	≤300 m	
Display	2.8 inch color LCD , 240x320	
Power supply	Rechargeable Li-battery , 2200 mAh	
Automatic shutdown time	10min/30min/1 hour	
Battery operating time	≥12 hours	
Operation temperature	-10 °C - +50 °C	
Storage temperature	-40 °C - +70 °C	
Relative humidity	0-95% No condensation	
Dimensions (mm) / Weight	140 mm x 32 mm x 73 mm / 235 g	

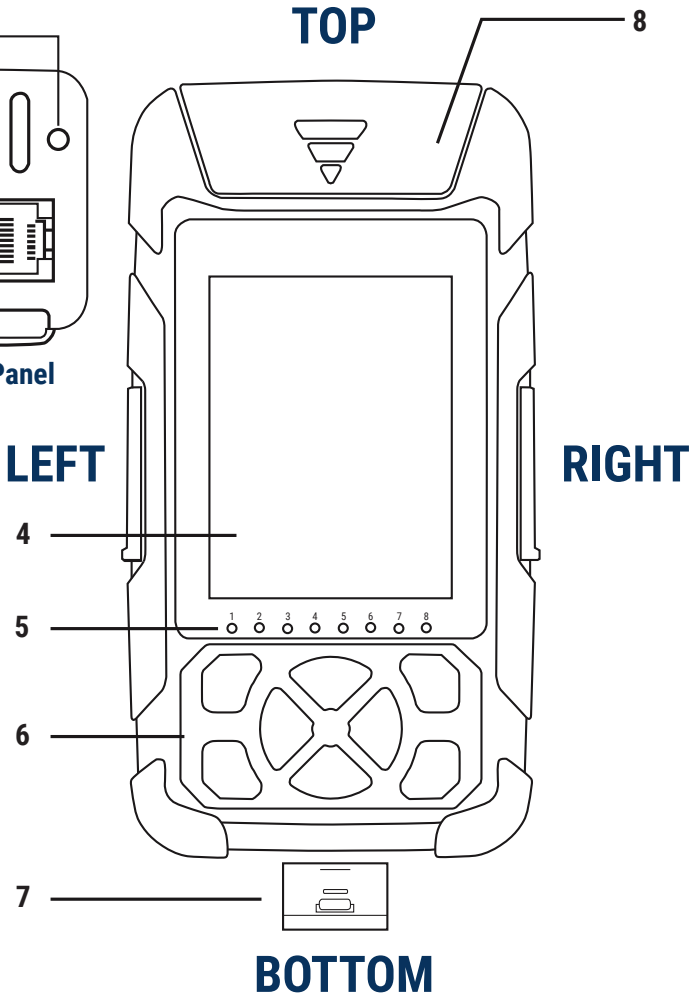
OPTICAL FIBER TEST KIT
Handheld Optical Light Source

Ports

(SM or MM)



Left Panel



OPTICAL FIBER TEST KIT
Handheld Optical Light Source

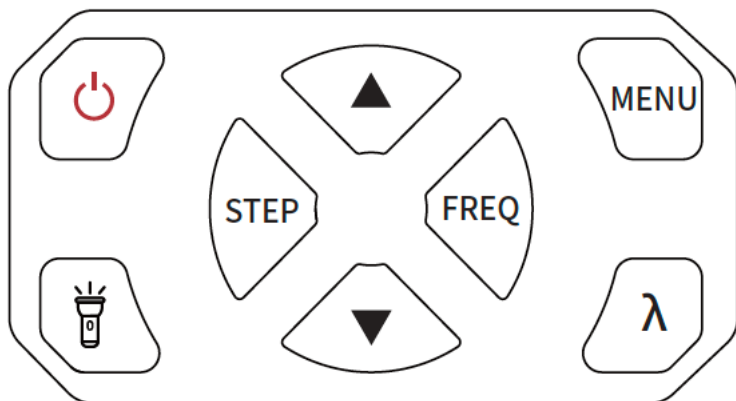
Ports

LEFT	
1	Charging indicator
2	TypeC port
3	RJ45 sequencer port
4	LCD screen
5	Sequence indicators
6	Function keys

BOTTOM	
7	RJ45 Remote Sequence Module

TOP	
8	Dust Cover
9	LED Flashlight
10	MM laser source port
11	SM laser source port

Function Keys



Power On/Off: Short press to turn the unit on or off.

Auto Shut-Off Selection: After power is on, short press this key to turn the auto shut-off function on or off.



Flashlight: Short press to turn the flashlight on or off.
Long press to turn VFL on or off.



Selection keys (up & down): Toggle items to be set



Selection keys (left & right): Adjust an item's value



Menu: Toggle the different function modules



Wavelength: Toggle the different wavelengths

OPTICAL FIBER TEST KIT

Handheld Optical Light Source

Icons

According to different functions and specific operations, the corresponding icon will appear on the screen. When an icon appears, it means that the corresponding function has been opened or the corresponding operation has been completed.

The main icons of the instrument are as follows:



Automatic Shutdown: in the set time without any operation the instrument will automatically shut down



Data Transmission: data is being transmitted through the data line connected to the computer, copying the internal data of the instrument



Bluetooth: Not Supported



Save Completed: indicates that the test results have been saved



Flashlight: indicates the LED flashlight is turned on

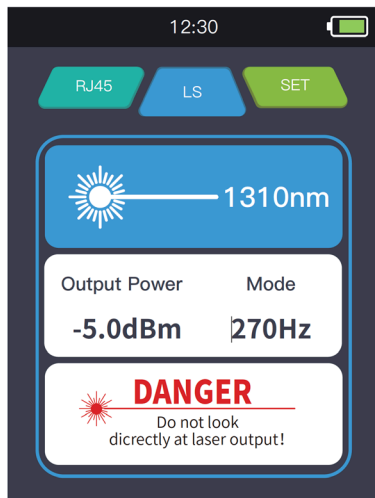
12:30

Time: displays local time



Battery: indicates current batter capacity

Light Source



Light source: used for telecommunication, CATV, LAN cable parameter test; The insertion loss, isolation and return loss of optical passive components are tested; Wavelength responsivity test of detector.



Press this button to switch the output wavelength. When the wavelength is selected the laser source is turned on by default.



Adjust the step to 0.1 dB or 1 dB.



Adjust the output power, the range is -5.0 dBm to -11.0 dBm.



After the laser source is turned on, switch CW (continuous), modulation 270/330/1k/2 kHz, ID, twins mode.

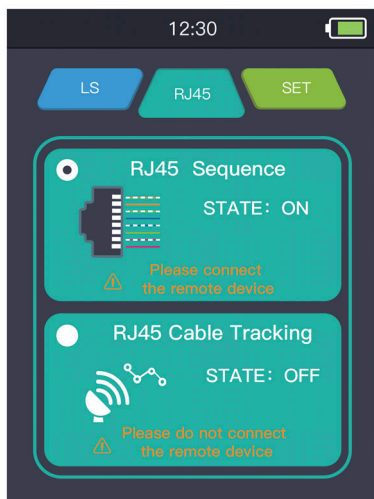


Used for wavelength identification with OPM ID function.



After turned on, the LS emits 1310&1550 nm alternately, and the OPM automatically identifies and tests the power of 1310 nm and 1550 nm alternately.

RJ45 Sequence & Tracking



RJ45 Sequence: When testing, please use the remote module at the bottom of the instrument

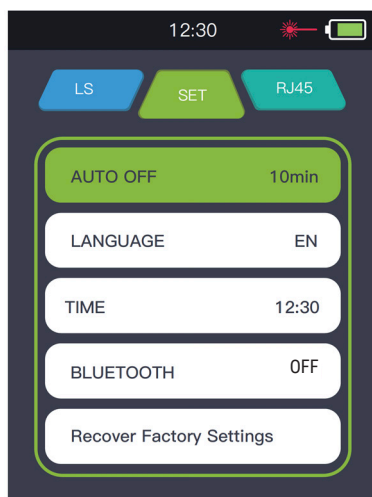
RJ45 Cable Tracking: Once this function is turned on, touch the tested cable with the cable finder. You will then hear a continuous beeping sound which indicates the target cable.

This equipment can be used for line searching directly and can withstand voltage and prevent burning. Ethernet switches, routers, and other weak current equipment with DC voltage less than 60 V.



Use the up & down arrows to switch between RJ45 sequence test and cable tracking test. After selection is made, the function is turned on by default

System Settings



System Settings: set the relevant information of this machine

Up and down keys: Select the item to be set

Left and right keys: Adjust the value of the item set

Auto-Off: set the automatic shutdown time; options are 10 minutes, 30 minutes, or 1 hour.

Language: Set the language for this machine; options are English or Chinese

Time: Press the left and right buttons to switch the date and time, press the left and right buttons to switch between fields, and press the λ to confirm and exit edit mode.

Restore factory settings: Press λ until "Y/N?" appears on the display screen. Press the left and right keys to select either Y (yes) or N (no) and press λ again to confirm the operation.

Maintenance and Troubleshooting

Connectors

The optical output interfaces must be kept clean during use and you should always clean connectors prior to testing.

Small amounts of dust on the connector will affect the accuracy of the measurement.

To clean the connector, first turn off the LS function. Moisten a cotton swab with isopropyl alcohol, insert the cotton swab in the connector, and slightly rotate the cotton swab. Always dry using a second dry cotton swab.

LCD Screen

To prevent damage, do not click on the LCD with sharp objects, or the LCD screen may be damaged.

When cleaning, clean the LCD screen with microfiber cloth. Do not wipe the LCD screen with organic solvent, otherwise it may damage the LCD screen.

Troubleshooting

Issue	Possible Reason	Solution
Faint screen display	Low battery power	Charge or replace the battery.
Unit fails to turn on	Low battery power or battery inserted incorrectly	(A) Replace the battery (B) Re-insert the battery
Optical power is not stable after when light source turned on		Allow a 15 minute warm-up period

Warning

1. Ensure the connector is clean before testing.
2. Only use the supplied adapter.
3. Do not look into the laser when unit is on.
4. Charge the batteries before use. Do not charge in unit.
5. Cover laser with dust-proof cap when not in operation.
6. Clean the optical port of the power meter regularly.

Warranty

Caution: Do not attempt to repair as doing so will void warranty.
This Optical Power Meter is covered by an 18 month warranty.

1. We warrant that this power meter will be free from defects in material and workmanship for 18 months. Should the device fail at any time during this warranty period, we will, at our sole discretion, replace and repair or refund the purchase price of the product. The worth of the repair or replacement will not be higher than purchasing price of this unit.
2. If device issues cannot be solved by the troubleshooting methods, please contact us or the local distributor directly.
3. We will repair or replace the unit free of charge in case of defects in production, workmanship or material. This warranty only applies to the unit under normal operation without any damage or misuse/abuse.
4. The shipping costs incurred by repair or replacement for the unit under warranty will be shared by both parties.

HANDHELD OPTICAL POWER METER

The SSF-TK1TP-500 Power Meter adopts a 1mm large photosensitive surface detector. It's 2.8-inch color LCD screen allows for ease of use. The design and layout both provide functionality and durability for use in the field. It includes a built-in VFL (Visible Fault Locator) as well as an LED flashlight and RJ45 tracker/sequencer.

The SSF-TK1TP-500 Power meter measures optical signal power, optical fiber link loss, and optical fiber line on-off test. The LSPM test kit can be utilized for all optical cable installations and maintenance to certify optical loss measurements of installed fiber optic cable.

Features

- Wave ID: auto wavelength identification & switching
- Frequency ID: auto frequency identification
- Manual and automatic (ambient light sensing) backlight control modes
- Storage of up to 1000 data records, downloadable via USB cable
- Mini USB port for downloading and saving testing records
- Adjustable/storable reference power level
- User self-calibration function
- Auto shutdown function
- Up to 200 hours battery life

Accessories

- (1) Operation Manual
- (1) USB Cable
- (1) AC Power Supply Adapter
- (1) 1.25mm & 2.5mm One Click Cleaners

OPTICAL FIBER TEST KIT
Handheld Optical Power Meter

Specifications

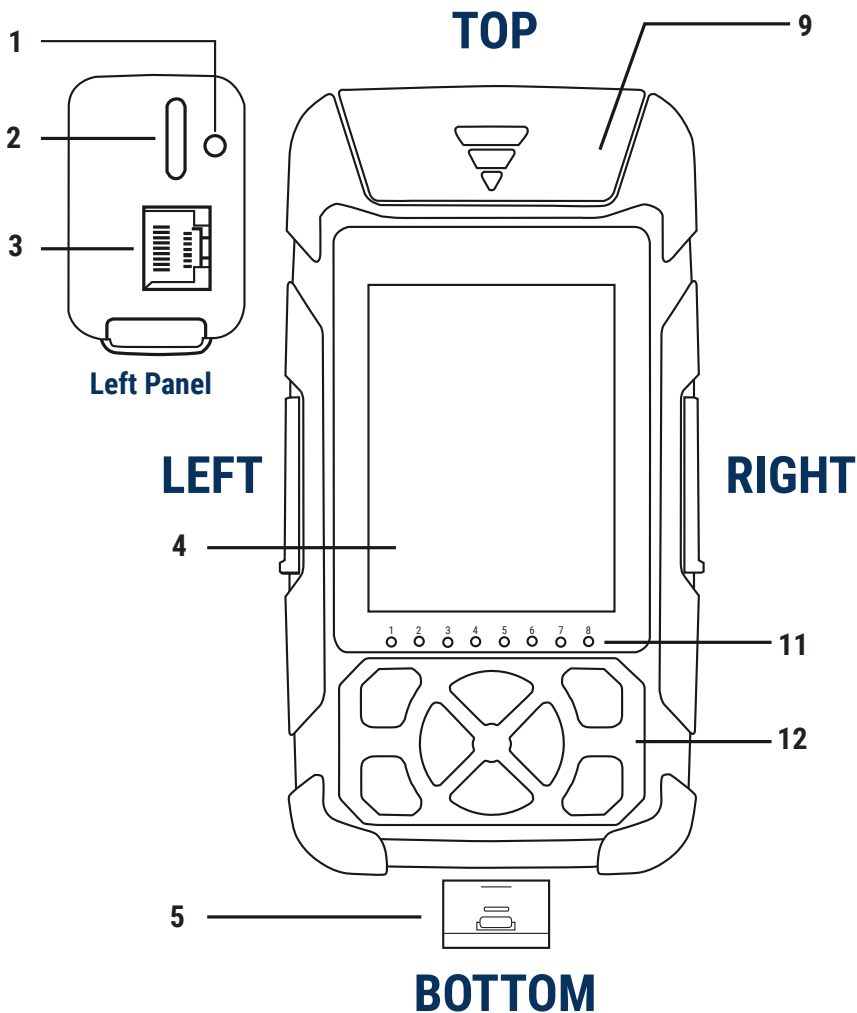
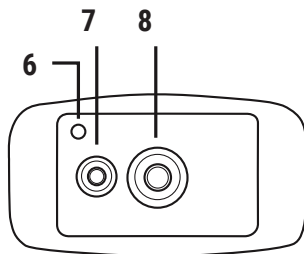
Optical Power Meter		
Wave Range	800 ~ 1700 nm	800 ~ 1700 nm
Connector	Universal joint FC/SC/ST	
Detector Type	InGaAs	
Power Range	-70~+10 dBm	-50~+26 dBm
Uncertainty	±5%	
Standard Wave	850/980/1300/1310/1490/1550/1625/1650 nm	
Custom Wave	50	
Display Resolution	Linear Display: 0.1% Logarithmic Display: 0.001/0.01/0.1 dBm	
Identified Frequency	270 Hz, 330 Hz, 1 kHz, 2 kHz	
Storage	1000 items	

Visual Fault Locator	
Wavelength	650±30 nm
Output Power	10 mW
Mode	CW/1Hz/2Hz
Connector	Universal joint FC/SC/ST
RJ45 Cable Sequence	
Test Range	≤300 m
RJ45 Cable Tracking	
Test Range	≤300 m
Tracking Mode	Digital tracking
Live/line to line search	Support

Other	
Display	2.8in color LCD, 240x320
Power Supply	Rechargeable Li- battery, 2200 mAh
Wireless Interface	Bluetooth (not supported)
Automatic Shutdown Time	10min/30min/1hr
Battery Duration	≥12hr
Operating Temperature	-10 °C ~ +50 °C
Storage Temperature	-40 °C ~ +70 °C
Relative Humidity	0-95% No condensation
Weight	235g
Dimensions	140 mm x 32 mm x 73 mm

OPTICAL FIBER TEST KIT
Handheld Optical Power Meter

Ports



OPTICAL FIBER TEST KIT
Handheld Optical Power Meter

Ports

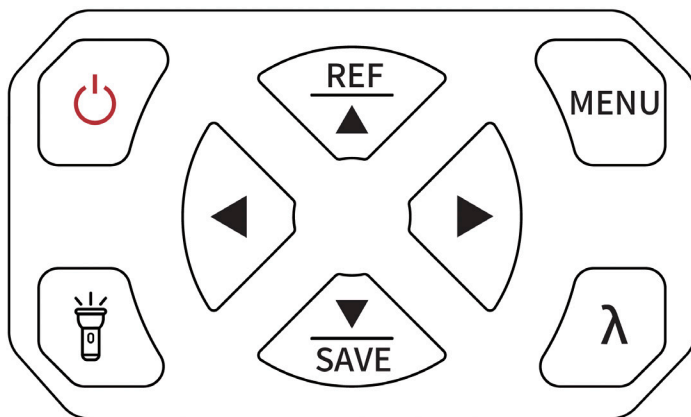
LEFT	
1	Charging indicator
2	USB-C port
3	RJ45 tracking port
4	LCD screen

BOTTOM	
5	RJ45 tracking remote module

TOP	
6	LED Flashlight
7	VFL port
8	OPM port
9	Dust cover

RIGHT	
11	RJ45 sequencing indicator
12	Function keys

Function Keys



Power On/Off: Short press to turn the unit on or off.

Auto Shut-Off Selection: After power is on, short press this key to turn the auto shut-off function on or off.



Flashlight: Short press to turn the flashlight on or off



Selection keys (up & down): Toggle items to be set



Selection keys (left & right): Adjust an item's value

MENU

Menu: Toggle the different function modules



Wavelength: Toggle the different wavelengths

Screen Icons

According to different functions and specific operations, the corresponding icon will appear on the screen. When an icon appears, it means that the corresponding function has been opened or the corresponding operation has been completed.

The primary icons of the power meter are:



Automatic Shutdown: in the set time without any operation the instrument will automatically shut down



Data Transmission: data is being transmitted through the data line connected to the computer, copying the internal data of the instrument



Bluetooth: Not Supported



Save Completed: indicates that the power meter test results have been saved



Flashlight: indicates the LED flashlight is turned on

12:30

Time: displays local time



VFL: Visual fault locator status



Battery: indicates current battery charge level

Operating the Optical Power Meter



OPM: It is used for power test and optical insertion loss testing of all kinds of equipment and optoelectronic components. The test results can be saved and viewed.

REF/▲ Set the current power as the reference value.

▼/SAVE Long press to save the current test results, and the save icon will be displayed at the top for 1s, and then disappear; short press to view the saved results.



Short press to switch wavelength, including custom wavelength. Long press to enter the user defined wavelength setting interface.



Short press to clear the starting Pmax and Pmin values. The Pmax and Pmin values will be calculated from the short press of this key.

The units of Absolute Power, Relative Power and Linear Power are dBm,dB,mW/nW. The conversion relationship is as follows:

$$P_{\text{Abs Power}} = 10 \lg P_{\text{Lin Power}} / 1 \text{mW} \quad P_{\text{Rel Power}} = P_{\text{Abs Power}} - P_{\text{Ref Power}}$$

Operating the Optical Power Meter

TOTAL: 1000

NO.: 0 2021/03/18 14:18

WAVE	1270nm	P	-00.00dBm
	CW		1.00mW

NO.: 1 2021/03/18 14:15

WAVE	1310nm	P	+03.01dBm
	CW		2.00mW

NO.: 2 2021/03/18 14:12

WAVE	1577nm	P	+04.77dBm
	CW		3.00mW

User Defined Wavelength:

In OPM interface, long press λ to enter the user defined wavelength interface. Press the up and down keys to adjust the items, up to 50; Short press λ to enter or exit the edit mode, left and right key to adjust the number of digits, up and down key to adjust the value, the value range is 800 nm~1700 nm. Short press the MENU to delete the current wavelength. Long press λ to save and exit.

CUSTOM WAVE

1. 1270nm

2. 1577nm

3. 1625nm

4. 890nm

⋮ ⋮

View the saved results:

Three records are displayed meanwhile. Press the left and right keys to switch the page, 0 ~ 2 in a page, 3 ~ 5 in a page, push back in turn. Long press λ to display "DEL ALL Y/N?" Press the left and right keys to select "Y" (yes) or "N" (no); Select "Y" and press λ to confirm the deletion. At this time, all the saved data will be deleted.

OPM Settings:

Long press MENU to enter or exit the setting mode.

Threshold: If the power test result is less than the threshold, it is judged as "FAIL", otherwise it is judged as "PASS".

Resolution: power display resolution, 0.1, 0.01, and 0.001.

Refresh rate: refresh speed of power value display.

Dark current clear: select and press λ Key clear, remove circuit noise, test more accurate.

OPM Settings

1.THRESHOLD -50.000dBm

2.WAVE ID < OFF >

3.RESOLUTION < 0.01 >

4.REFRESH <200ms>

5.CLEAR DARKCURRENT ✓

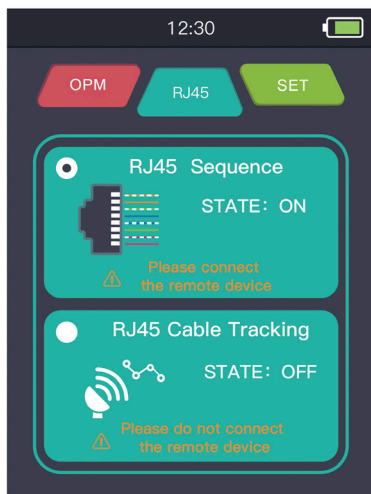
Calibration mode:

Press the left and right keys simultaneously for 1s to enter or exit the user calibration mode: press the up and down keys to adjust the calibration value in 0.5dB step, the adjustment range is -6dB ~ + 6dB, press λ to switch the wave. Press MENU to exit without saving.

CAL MODE

0.75dB

RJ45 Sequence & Tracking



RJ45 Sequence:

When testing, please use the RJ45 remote module at the bottom of the OPM.

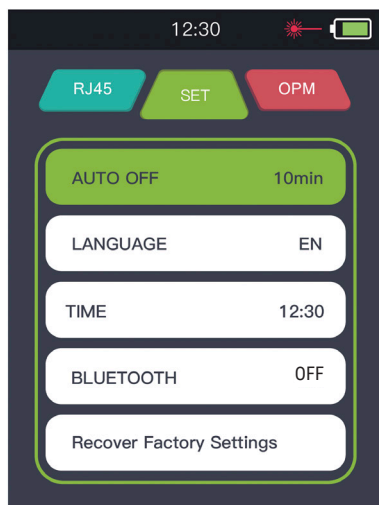
RJ45 Cable Tracking:

After this function is started, touch the cable under test with the cable finder, a continuous “didi” sound, identifies the target cable. This equipment can withstand voltage and can be used for line searching directly on items such as Ethernet switches, routers and other weak current equipment with DC voltage less than 60V.



Switch between RJ45 sequence test and cable tracking test. After selection, the function is turned on by default.

System Settings



System Settings: set the relevant information of this machine

Up and down keys: Select the item to be set

Left and right keys: Adjust the value of the item set

Auto-Off: set the automatic shutdown time; options are 10 minutes, 30 minutes, or 1 hour.

Language: Set language; options are English or Chinese

Time: Press the left and right buttons to switch the date and time, press the left and right buttons to switch between fields, and press the λ to confirm and exit edit mode.

Restore factory settings: Press λ until "Y/N?" appears on the display screen. Press the left and right keys to select either Y (yes) or N (no) and press λ again to confirm the operation.

Maintenance and Trouble Shooting

Connectors

The optical interfaces must be kept clean during use; not cleaning invalidates any test readings. Small amounts of dust on any connector or this equipment will affect the accuracy of the measurement.

Clean connectors prior to mating with this equipment with included one-click type cleaners. For cleaning of the OPM or OLS, swab type cleaners should be obtained combined with isopropyl alcohol, insert the cotton swab in the connector, and slightly rotate the cotton swab. Always dry using a second dry cotton swab.

LCD Screen

To prevent damage, do not click on the LCD with sharp objects, or the LCD screen may be damaged.

When cleaning, clean the LCD screen with soft paper. Do not wipe the LCD screen with organic solvent, otherwise it may damage the LCD screen.

Troubleshooting

Issue	Possible Reason	Solution
Faint screen display	Low battery power	Charge or replace the battery.
Unit fails to turn on	Low battery power or battery inserted incorrectly	(A) Replace the battery (B) Re-insert the battery
Optical power is not stable after when light source turned on		Allow a 15 minute warm-up period

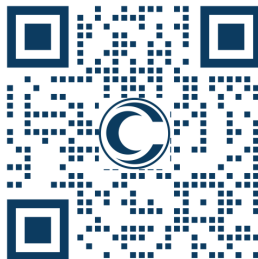
Warning

1. Ensure the connector is clean before testing.
2. Only use the supplied adapter.
3. Do not look into the laser when unit is on.
4. Charge the batteries before use.
5. Cover laser with dust-proof cap when not in operation.
6. Clean the optical port of the power meter regularly.

Warranty

Caution: Do not attempt to repair as doing so will void warranty.
This Optical Power Meter is covered by an 18 month warranty.

1. We warrant that this power meter will be free from defects in material and workmanship for 18 months. Should the device fail at any time during this warranty period, we will, at our sole discretion, replace and repair or refund the purchase price of the product. The compensation for any repair or replacement will not be higher than purchasing price of this unit.
2. We will repair or replace the unit free of charge in case of defects in production, workmanship or material. This warranty only applies to the unit under normal operation without any damage or misuse/abuse.
3. The shipping costs incurred by repair or replacement for the unit under warranty will be shared by both parties.



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