OLT Optical Power Meter series

Users' Manual

Summary

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OLT optical power meter series adopt WDM detector, single chip processor for control, use 2.8-inch color LCD. The body shape is novel, the design meets the requirements of human body function, which is beautiful and durable. Optical Power Meter and Visible Fault Location adopt embedded detector and laser，which can be well protected.

OLT OPM、RJ45 Sequence and flashlight are standard configuration. RJ45 Tracking, Visible Fault Location and Bluetooth are optional. They are mainly used for OLT downlink wavelength 1490nm, 1550nm, 1577nm 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.

Note:① the functions of the instrument are different due to different models；
②Due to the need of design improvement, the contents are subject to change without notice.
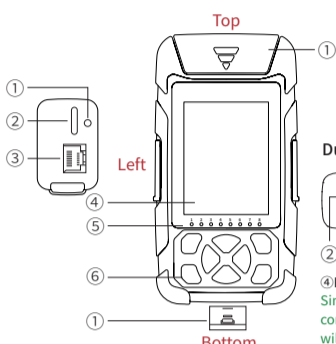
Ports

Left

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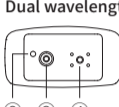④LCD screen
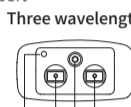⑤Sequence indicator
⑥Function keys

Bottom

①Remote module

Top

①
Top

①Dust cover
②Flashlight
③VFL port
④OLT OPM port

Dual wavelengths

④Port: Single end test, connected to OLT, will interrupt the user's use

Three wavelengths

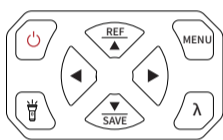④Port: Serial connection test, without interrupting the user's use
4-1 Connected to ONT
4-2 Connected to OLT

Keys

Function keys description：

⏻ : ①Short press to power on, long press to power off
②After power on, short press to turn on or off the automatic shutdown function

🔦 : ①Short press to turn the flashlight on or off
②Long press to turn on the red light, short press again to 1Hz, 2Hz flashing or turned off

REF/▲ (Up key)、▼/SAVE (Down key) : Toggle items to be set
◄ (Left key)、► (Right key) : Adjust the item's value

MENU：Toggle the different function modules

λ：Toggle the different wavelengths

Icons

According to different functions and specific operations, the corresponding icon will appear in the interface of this series of instruments. 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 automatically shut down

⇅ **Data transmission,** through the data line connected to the computer, copy the internal data of the instrument

✳ **Bluetooth,** turn on Bluetooth to connect to mobile phone

12:30 Time, display the local time

💾 **Save completed,** indicating that the test results have been saved

🔦 **Flashlight,** turn on the flashlight LED light

🔴 **VFL,** turn on the red light

🔋 **Battery,** indicating battery capacity

OLT WDM

Short press the ▲ key to switch between dBm, dB, mW. Press and hold the ▲ key to set the current 3 (or 2) power values as the reference power of the current reference power group (10 reference power groups in total). Long press ▼ to save the current 3 (or 2) power values. Short press ◄ or ► to adjust the threshold group. Short press the MENU key to switch to the next function interface.

Calibration:

Press◄or►at the same time to enter the user calibration mode, and the blue font "CAL: 0.00dB" is displayed. Press λ key to select the wavelength, short press ▲ and ▼key to adjust value, adjust step is 0.05dB. Short press the MENU key to exit without saving, long press and hold ◄ or ► to save and exit.
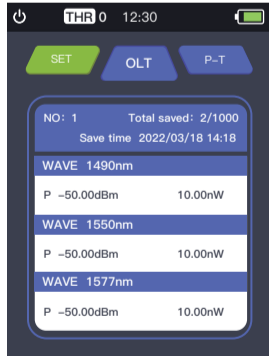

OLT WDM Save View

View the saved records：

Short press ▼ to enter the saved records view interface, and then short press again to exit.
Short press ◄ or ► key to adjust the current entry.
Long press λ to display "DEL ALL? Y/N", press ◄ or ► to select "Y" or "N", and short press λ to confirm. Y means delete all, N means not delete.

Warning:
Delete all, please be careful!

OLT THR&REF Settings

Threshold (THR) and reference power (REF) settings:

Long press the MENU key to enter and exit the THR and REF setting interface.

Short press the ▲ and ▼keys to select the value to be adjusted, and then the threshold group, 1490/1550/1577 current threshold group value, reference power group, 1490/1550/1577 current reference group value.

When threshold group and reference group are selected, press ◄ and ► to adjust the group number.

When other group values are selected, press λ to enter the bit setting mode. Press the ▲ and ▼ keys to adjust the selected bit. Press λ to exit .

OLT P-T

Power monitoring settings:

Long press the MENU key to enter and exit the monitoring setting interface.

Sampling interval: Measurement interval of OLT monitoring interface, 0.4s, 1s, 5s, 10s, 30s, 60s.

Upload function: connected to the computer through a data line. After this function is turned on, the OLT monitoring interface sends power data to the upper computer once for each point measured. (It shall be used with the upper computer software)

OPM：It is used for power test and insertion loss test 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 power, and the save icon will be displayed at the top for 1s, and then disappear; short press to view the saved results.
λ：Press to switch wavelength
◄：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：

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

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.

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.

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

RJ45 Cable Tracking：After this function is started, touch the tested cable with the cable finder, and hear the continuous "didi" sound, which is the target cable.
This equipment can withstand voltage and prevent burning, and it can be used for line searching directly. 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.
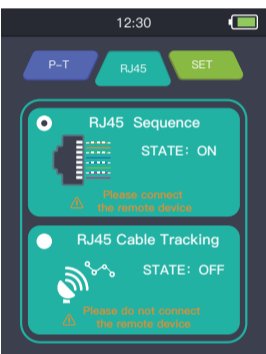
System settings: set the relevant information of this machine.
AUTO OFF: set the automatic shutdown time, optional 10 minutes / 30 minutes / 1 hour.
Language: Chinese, English optional.
Time: press the left and right buttons to switch the date and time, press the left and right buttons to move the setting item, and press the λ Enter or exit edit mode.
Bluetooth (optional) : turn Bluetooth on or off.
Restore factory settings: Press λ to pop up "Y/N?" Press the left and right keys to switch Y (yes) or N (no) and press λ again to confirm the operation.
Up and down keys: select the item to be set.
Left and right buttons: adjust the value of the set item.

OLT OPM				OPM	
Wave range	1490nm	1550nm	1577nm	Wave range	800~1700nm
Connector	FC/SC (Serial connection/termination)			Connector	Universal joint FC/SC/ST/LC
Power range	-50~+12dBm	-50~+25dBm	-50~+25dBm	Detector type	InGaAs
Uncertainty	0.5dB			Power range	-50~+26dBm
Display resolution	0.01dB			Uncertainty	±5%
Threshold group	10 group			Standard wave	850/980/1300/1310/1490/1550/1625/1650nm
Reference group	10 group			Display resolution	Linear display:0.1% Logarithmic display:0.001/0.01/0.1dB
Save data	1000 items			Identified frequency	270Hz、330Hz、1kHz、2kHz
				Save data	1000 items

Note: Dual wave has the function of ordinary optical power meter, while three wave has no function of ordinary optical power meter.

Visual Fault Location (optional)		Others	
Wavelength	650±30nm	Display	2.8inch color LCD, 240×320
Output power	10mW	Power Supply	Rechargeable Li-battery, 2200mAh
Mode	CW/1Hz/2Hz		
Connector	Universal joint FC/SC/ST	Wireless interface	Bluetooth (optional)
RJ45 Cable Sequence		Automatic shutdown time	10min/30min/1 hour
Test Range	≤300m	Battery duration	≥12h
RJ45 Cable Tracking (optional)		Operating temperature	-10°C~+50°C
Test Range	≤300m	Storage temperature	-40°C~+70°C
Tracking mode	Digital tracking	Relative humidity	0~95% No condensation
Live/line to line search	Support	Weight	About 235g
		Dimensions	140mm×32mm×73mm

Note: Bluetooth, RJ45 line finding and VFL are optional.

Clean connectors
The optical output interfaces must be kept clean during use. When the test result is not accurate, first consider cleaning the connector.
When cleaning, be sure to turn off OPM and VFL function. Wipe the connection end face with a swab wetted with alcohol.
At the same time, please cover the dust cap after using the instrument, and keep the dust-proof clean at the same time.

Instrument screen cleaning
When using, do not click on the LCD with sharp objects, or the derivative 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.