

# PON Optical Power Meter

## USER'S GUIDE

**English**



## WARNING

You are cautioned that changes or modifications not expressly approved in this document could void your authority to operate this equipment.

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

## NOTE

As the laser is harmful to the eyes, do not attempt to disassemble the cabinet or see the laser directly.



## Precautions for Use

### Use batteries

This device can use disposable alkaline battery or rechargeable battery, cannot use different style or different capacitance batteries. Only charge the rechargeable batteries.

### Avoiding condensation problems

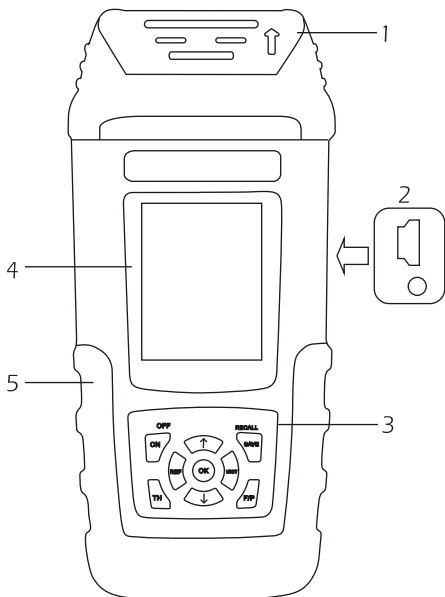
As much as possible, avoid sudden temperature changes. Do not attempt to use the drive immediately after moving it from a cold to a warm location. If room temperature suddenly raising, stop to use, and take out the battery, until 1 hour later.

### Storage

When long time no use, must take out the battery to avoid destroying the device.

---

## Description



---

1-Dust Cover

---

2-5V Charging port,by Micro USB or charger

---

3-Key Area

---

4-Display Screen

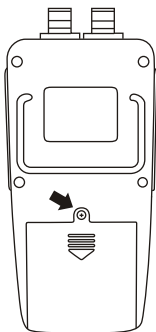
---

5-Shockproof Cover

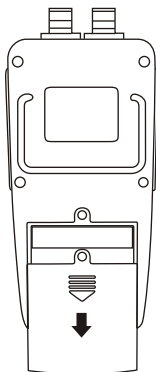
---

---

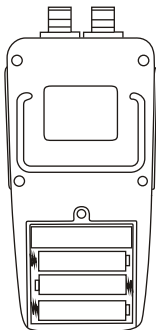
## Installing the battery



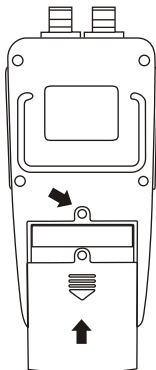
1. Unscrew the battery cover



2. Remove the battery cover

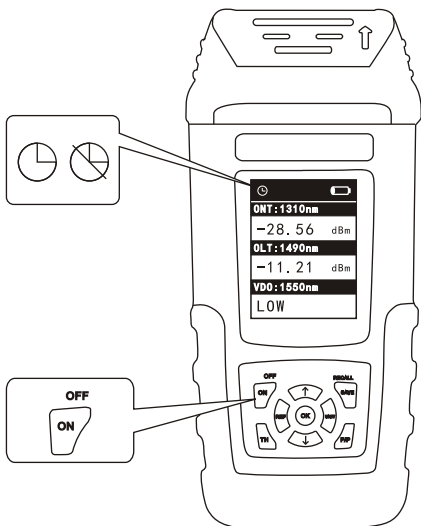





3. Install the battery correctly



4. Screw the battery cover

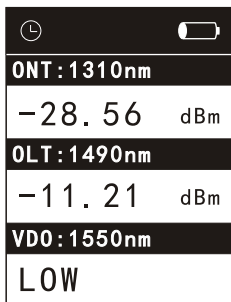
## On/Off



Press "  "to turn on/off the device . After 10 minutes no key pressed,it will auto power off.if cancel this function, Press "  " for 2 seconds,the LCD will show "  ", it means already canceled.

---

## PON Power Meter

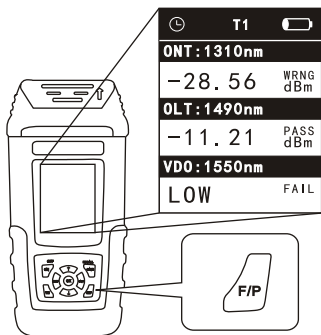


After entering PON power meter function, it will show a testing interface on the screen. PON power meter can measure PON network uplink signal 1310nm, downlink data signal 1490nm and downlink video signal 1550nm.


It will show three channels real measured power at the same time, "LOW" means input fiber signal is too low,

"HI" means input fiber signal is too high; each channel test range please refers to detailed specifications.

## PON Power Meter - Quick Judgement

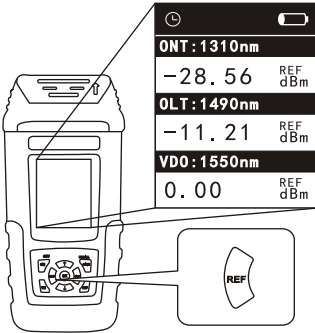


Quick judgment mode is a comparison between actual measured data and pre-setting threshold, so that the device can quickly judge whether the network meets the communication requirement or not. (Threshold setting is described in the following chapters)


Press "  ", if the device can satisfy the line designed power index, there will show "PASS" on screen, which means pass. If the real tested power exceeds the designed warning power, there will show "WRNG". If the signal exceeds the designed max or min power, there will show "FAIL", which means the signal is small and the line is fail.



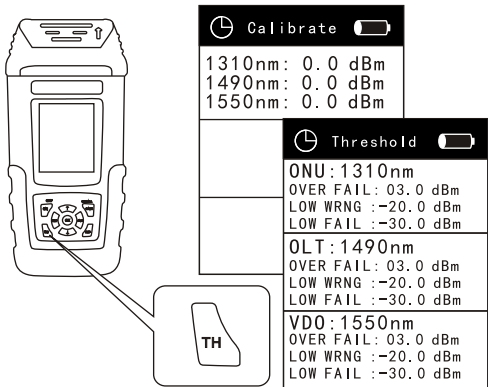
## PON Power Meter - Reference Setting




Setting reference is usually used before measuring the real network. It can wipe off the attenuation value which is not counted in the actual loss. Or it can be used in comparing with the pre-setting standard power.

Button "  " is used to setting or checking out the reference value. Press it shortly, the screen will show reference value and a pre-setting dBm value. Press it Long for two seconds or more, the device will save the current measured value to cover original reference value. At the same time, after "REF" sign will flash three times on the screen, it will show the dB value. And three wavelengths will be set simultaneously.

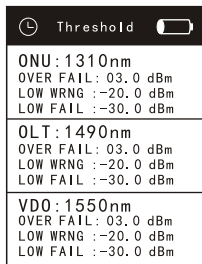
# PON Power Meter - Threshold Setting and Calibration




The reason to set threshold is quickly detect whether the line can be used or not. The offset value is set to calibrate the regular attenuation or deviation between standard value and measured value.




Short press button "  ", it will enter threshold setting menu. Press again, it will enter into calibration menu.

## PON Power Meter - Threshold Setting







After entering threshold setting menu, the cursor will default stay on the threshold number. Firstly, you should choose the threshold number which you need to set or modify, through pressing "  ".

The device can set 10 groups of threshold number. When start quick judgment mode, it will show the current referring threshold number on the top of the display screen in the form of "Tx".

When finish choosing threshold number, you can set corresponding parameters through button "  ", "  ", and "  ".

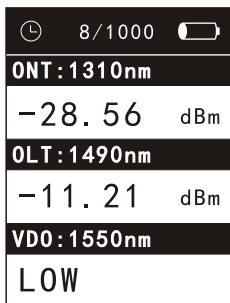
Each channel has three parameters. For example, 1310nm includes parameters as followed:

<div>ONU : 1310nm OVER FAIL : 03.0 dBm LOW WRNG : -20.0 dBm LOW FAIL : -30.0 dBm</div>	Set Wavelengths
	Upper limit (Over this power cannot communicate)
	Lower limit warning (Close to non-communication)
	Lower limit (Below this power cannot communicate)




When the cursor move to the corresponding parameter, press button "  ", it can move to each value. Press button "  " and "  " to modify value, then press "  " until the whole data change to cursor, which means modified successfully.


After setting, through press "  " exit to the test interface.


## PON Power Meter - Data Storage



The data storage is used to record the important data, which can be used to analysis after measuring.



Under test interface, press "  "can show the saved historical data, Press button "  "and "  "to browse records and show the current data number on the top of the screen.


Press the button "  "for two seconds under current interface, the number will show on the upper left of the screen and store the current measured data(by dBm value). The device can store 1000 records at most. The data number will plus 1 automatically. If storage full, the device will cover the first record automatically.

Press "  "again, exit to test interface.

---

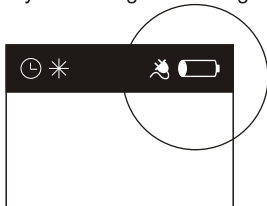
## PON Power Meter- Display Unit

	
<b>ONT: 1310nm</b>	
100.10	uW
<b>OLT: 1490nm</b>	
400.33	uW
<b>VDO: 1550nm</b>	
210.62	uW






The measured data will be display in dBm value or dB or mW/uW/nW value,Through pressing "  ",can switch display unit.

---

## Battery Detecting and Charging



### Five levels indication of power detection

-  Represents the remaining 80%---100% electricity
-  Represents the remaining 60%---80% electricity
-  Represents the remaining 40%---60% electricity
-  Represents the remaining 20%---40% electricity
-  Represents the remaining electricity less than 20%

After connecting the USB charger, the charging icon shows on the screen. If it has rechargeable battery in device, it starts to charge.

It is not allowed to use non-rechargeable battery; otherwise it might lead to leakage, even burning.

When the remaining electricity is less than 20%, you should promptly shut down the device and charge it. Long time under voltage will shorten the battery lifetime. When the charging is finished, the battery remaining indicator will stop flashing. Now, The battery has finished the fast recharge and can be used directly. If continue to charge, this process should not more than 24 hours. Then device can still be used while charging.

## Detail parameters

1310nm uplink test	
Spectrum passband	1260nm~1360nm
Measure range	-40dBm~+10dBm
Max.permitted input power	15dBm
Isolation (for 1490/1550nm)	>40dB
Accurate of burst signal	Deviation $< \pm 0.5\text{dB}$ @-10dBm
1490nm downlink test	
Spectrum passband	1480nm~1500nm
Measure range	-50dBm~+10dBm
Max. Permitted input power	15dBm
Isolation (for 1310nm)	>40dB
Isolation (for 1550nm)	>40dB
1550nm downlink test	
Spectrum passband	1530nm~1570nm
Measure range	-50dBm~+25dBm
Max. permitted input power	25dBm
Isolation (for 1310nm)	>40dB
Isolation (for 1490nm)	>40dB
Other parameters	
Optical fiber type	SM 9/125um
Optical fiber connector	SC/PC or customized
Accurate	$\pm 0.2\text{dB}$ / $\pm 0.5\text{dB}$ (burst mode)
Linearity	0.1dB
Inserting loss	<1.5dB
Applicable batteries	AA x 3 or AC/DC adapter
Battery lifetime	>20H
Charging function	Included
Auto power off	Included
Operation temperature	-10~+60℃
Storage temperature	-20~+70℃
Relative humidity	<95%No condensation
Weight	350g
Size	42mm*90mm*195mm