CO-OPM-PONX / Interactive Operating Manual

Best viewed with Adobe Acrobat Reader

040124

1 Introduction

1.1 Description

The next generation CO-OPM-PONX Power Meter is used to measure XGS-PON, E-PON, and RFoG.

1.2 Special Features

- Simultaneously measures XGS-PON, G-PON and RFoG.
- Through-mode capability for measurement of power levels at 1490 / 1550 / 1577nm downstream and 1270 / 1310 / 1610nm upstream.
- Separate VFL for troubleshooting drops.

1.3 Specifications

Power Measurement Range	-40dBm ~ +10dBm min
Linearity	±0.1dB
Pass through insertion Loss	<1.5dB
Optical Connector	SC/APC (other available)
Fiber Type	9/125um, SMF
Display	LCD: 4.4" x 1.9"
Measurement Unit	dB, dBm, mW, uW, nW
Resolution	0.01dB
Power Supply	2,000 mAh Li-Ion battery, 5V 2A charge
Operation Temp.	14° ~ +140° F (-10° ~ +60° C)
Storage Temp.	-13° ~ +158° F (-25° ~ +70° C)
Weight	<1 lb
Dimensions h/w/d	7.6 x 3.7 x 1.7 in 76mm x 177.5mm x 40mm

1.4 Accessories

Description	Quantity
Body	1 ea
Rubber Boot	1 ea
USB Data cable	1 ea
USB Drive (User's Manual)	1 ea
110Vac Power Adapter	1 ea

1.5 Powering

Rechargable Li-Poly 1600 mAh battery

1.6 Meter Care

Do not subject the CO-OPM-PONX to strong impact.
The CO-OPM-PONX is not water resistant or waterproof
Do not disassemble.
Always properly clean the fiber interfaces before taking a measurement.
Always replace the Dust Cap for dust protection.

2 Getting Started

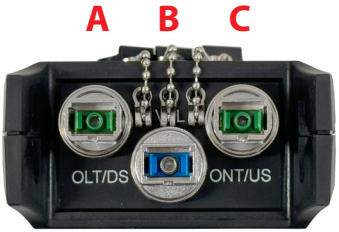
2.1 Explanation of Operating Keys

Key	Function
ON/OFF	Power ON/OFF. Hold for 3 sec to power ON / OFF
💾	Save Measurement
ESC	Cancel Previous request; move to previous menu option
Menu Enter	Menu for meter settings, file delete / Enter value move to next option
dBm /dB /mw	Choose Unit of Measure
▲	Line-Up previous choice
▼	Line down / next choice

NOTICE

- We provide SC/APC Connector for XGPON optical connection.
  Be sure to always use SC/APC Connections.
- Always connect the ONT/ONU/US to UPSTREAM signals (1270, 1310, 1610nm)
  and the OLT/DS video port to DOWNSTREAM signals (1577, 1490, 1550nm)

2.2 Meter Port Assignments



There are 3 connectors on top of the meter.
These are ANGLE POLISH connectors.
ONLY use angle polish connectors on these ports.

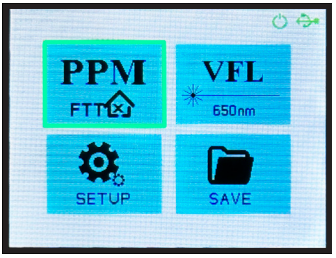
A The **LEFT** port is used to measure the optical power coming DOWNSTREAM from the OLT in the CO/Headend.

B The **MIDDLE** connection is the VFL and is used for trouble shooting a fiber circuit.

C The **RIGHT** Port is used to measure the optical power coming UPSTREAM from the ONT in the customer Premise.

2.3 Menu

Press the menu button to display Menu:

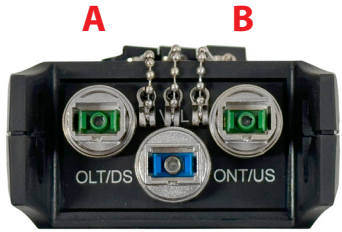


PPM - PON Power Meter Function
VLF - Visible Fault Locator Operation
SETUP - Meter setup: Threshold, Date/Time, Bluetooth
SAVE - Stored file viewing and deleting

Use the ▼▲ keys to choose function

Press Menu Enter to choose option

2.4 PON Power Meter: Measurement

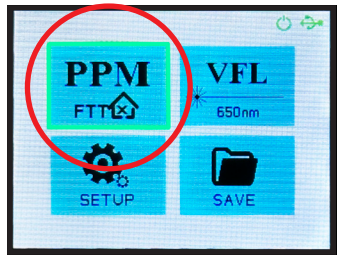


Power measurements can be taken after power up or from the main menu by choosing the PPM Function.

Highlight the PPM icon on the main screen. Press Menu Enter to enter PON Power measurement mode.

A Connect the fiber coming from the CO/Headend (OLT) to the OLT/DS port.

B Connect the fiber coming from the customer premise (ONT) to the ONT/US port.

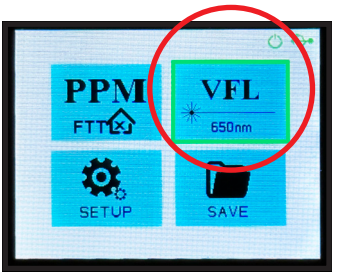


The power levels of the Downstream (OLT) and upstream (ONT) will be displayed.

2.5 Visual Fault Locator: Function (VFL)

Connect the jumper to be tested to the CENTER port (VFL) (top meter center port).

From the main menu, navigate to the VFL icon.



Press Menu Enter to enter VFL Mode.

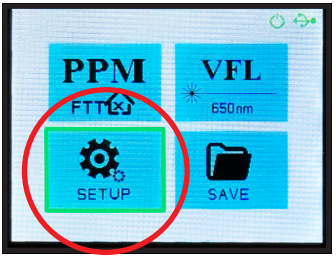
Use ▲ to turn ON the VFL. 0Hz means not blinking.

Use the ▲ again to turn on blinking - 2 time / sec.

Use the ▲ to turn off/on the blinking.
ESC to exit to main menu.

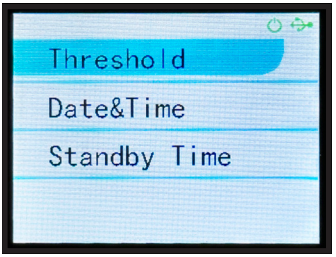
2.6 Meter Setup Function

In the main menu, navigate to the SETUP icon.



Press Menu Enter to enter the setup function.

Options for Threshold, Date/Time, Standby, and Bluetooth will be displayed.



2.6.1 Thresholds

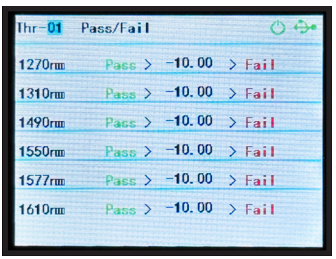
Thresholds are a way to quickly determine if a power measurement is within predetermined limits.

The CO-OPM-PONX is capable of storing 10 sets of thresholds.

To establish threshold limits, use the X to highlight the SET option and hit Menu Enter .

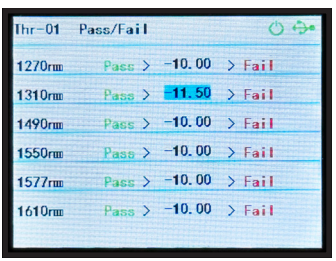
Setting Threshold Limits

After selecting SET in the threshold option, a screen with Threshold number, wavelengths and Pass/Fail threshold will be displayed. The threshold set# will be highlighted in top left corner.



Use ▼▲ to select threshold group (1 to 10) to modify.

Press Menu Enter to adjust individual wavelength pass/fail threshold.

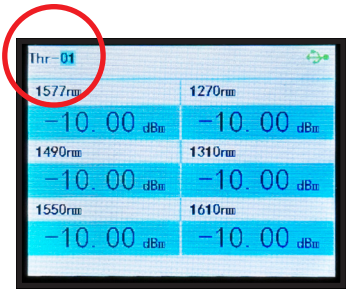


Use the (up/down keys) to adjust the value by .5 up or down.

Press Menu Enter to move to next wavelength. Once the final wavelength has been entered the group (1-10) is saved.

User must press Menu Enter on the last wavelength to SAVE the threshold group.

Selecting Threshold Group



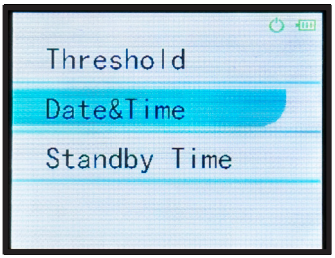
After selecting SELECT in the Threshold option, a screen showing Threshold group and Power Values will be displayed.

Use the ▼▲ to move to different Threshold groups.

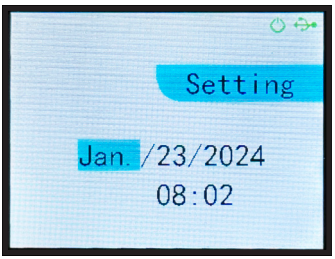
Press Menu Enter to select Threshold group.
The Threshold group will be displayed in the top line of the measurement screen "Thr-01" (image, top left)

2.6.2 Setting Date & Time

In the Setup menu, choose Date & Time.



Press Menu Enter and date & time will appear.



Use the ▼▲ to adjust value of date / time fields.

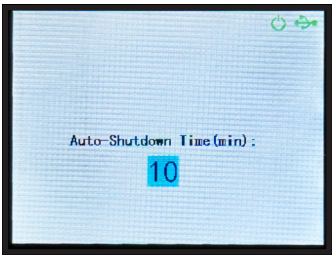
Press Menu Enter when field is accurate.

Press ESC to exit Date/Time screen.

2.6.3 Setting Stand By

(Auto off) time.

Migrate to STANDBY TIME using ▼▲ and press (menu enter).

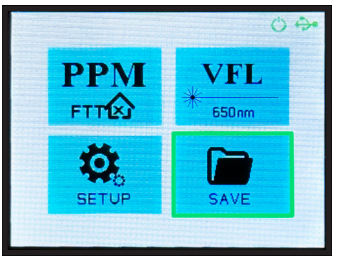


Auto shutdown time is highlighted.
Use ▼▲ to adjust in 5 minute intervals up to 90 min.

Press ESC to exit function.

2.7 Saved Record Review / Delete Function

In the main menu, migrate to the SAVE icon and press Menu Enter .



Options are:

Check Record: review records saved on the meter.

Delete View: Delete a SINGLE measurement.

Delete All: Delete ALL measurements save on the unit.

Using the ▼▲ highlight the desired option.

2.7.1 CHECK / Review Record

If CHECK record is chosen the first saved file will be displayed.

Use ▼▲ to navigate to additional saved measurements.

2.7.2 DELETE / Record

If DELETE View is chosen the first record will be displayed with a TRASH CAN icon at the top.

Press Menu Enter to delete this measurement.

Use ▼▲ to select other files to review and delete.

ESC to exit function.

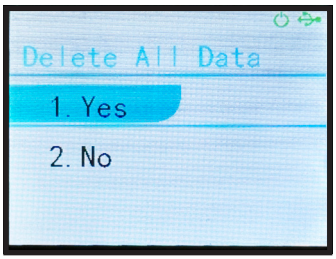
2.7.3 DELETE ALL / Record

If DELETE ALL is chosen the user is asked to confirm this choice.

Press Menu Enter to Delete ALL measurements.

Press ESC to Cancel Delete.

Press ESC to Exit Function.



3 Software

The CO-OPM-PONX meter has a USB port with USB cable, as well as the related driver software. USB cable is used for data upload and self calibration function. For the details of the software functionality, please refer to the software instruction on the USB stick provided.

4 Maintenance

4.1 It is important to keep all optical connectors and surfaces free from oil, dirt or other contaminants to ensure proper operation.

4.2 Use test jumper to avoid damaging interface.

4.3 Use dust cap to protect connector interface from begin scratched or contaminated when Hand-held Power Meter is not in operation.

4.5 Use only appropriate fiber optic cleaning material to clean connector interface.

4.6 Remove batteries if unit will not be used for more than 1 week.

PON Power Meter Parameters - Optical Isolation						
Wavelength	1270nm	1310nm	1490nm	1550nm	1577nm	1610nm
Bandwidth	1260~1260	1300~1320	1460~1500	1540~1560	1570~1581	1600~1620
1270nm	–	>30	>40	>40	>40	>40
1310nm	>30	–	>40	>40	>40	>40
1490nm	>40	>40	–	>35	>40	>40
1550nm	>40	>40	>35	–	>40	>40
1577nm	>40	>40	>40	>30	–	>40
1610nm	>40	>40	>40	>40	>40	–
Test Range	-40~+10	-40~+10	-40~+10	-50~+20	-40~+10	-40~+10
Connector	SC/APC					
Measurement Unit	dBm / dB / mW					
Display Resolution	0.01 dB					
Power Uncertainty	± 0.5 dB					
Linearity	±0.1 dB/10 dB					
Channel Insertion Loss	< 1.5 dB					

Visual Fault Locator	
Output Power	10mW
Connector	2.5mm universal connector + SC
Wavelength	650 ± 10nm
Internal Modulation	CW, 2Hz

General Parameters	
Data Storage	999 items
Off	5-90 min (Adjustable)
Power Supply	2000mAh Rechargeable Lithium Battery
Battety Life Operational	>24h, Standby Time>28h
Power Source	8.4V/1A
Relative Humidity	80%
Working Temperature	-10° - + 60° C
Storrage Temperature	-25° - + 75° C
Product Size	76 mm x 177.5 mm x 40 mm
Weight	0.32 kg