



# JONARD TOOLS®

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## **XGS-1577 PASSIVE OPTICAL NETWORK POWER METER FOR XGSPON/XGPON/BPON/EPON/GPON INSTRUCTION MANUAL**

## **XGS-1577 Passive Optical Network Power Meter Manual**

The XGS-1577 XGSPON Meter is a high-performance testing tool designed for accurate and simultaneous measurements of upstream and downstream PON wavelengths in optical networks. With support for 1270 nm and 1310 nm upstream wavelengths, and 1490 nm, 1550 nm, and 1577 nm downstream wavelengths, this meter is ideal for EPON, BPON, GPON, XG-PON, and XGS-PON installations and maintenance.

### **This Product Includes:**

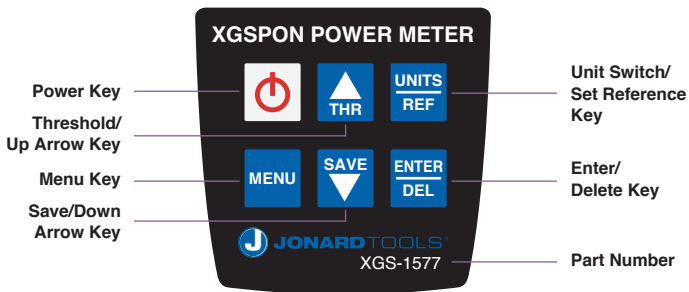
- XGPON Power Meter
- Instruction Manual
- (3) AA Batteries (required for operation)
- (2) Cleaning Swabs
- (2) FC/APC Adapters
- (2) SC/APC Adapters
- Hard Carrying Case

## Specifications

MODEL	XGS-1577 PASSIVE OPTICAL NETWORK POWER METER
Network Types	XGSPON/XGPON/BPON/EPON/GPON
Connector Types	SC/APC, FC/APC
Upstream Wavelengths	1270±10 nm, 1310±20 nm
Downstream Wavelengths	1490±10 nm, 1550±10 nm, 1577±6 nm
Upstream Range	+13 ~ -50 dBm @ 1490 nm, +25 ~ -50 dBm @ 1550 nm, +10 ~ -50 dBm @ 1577 nm
Downstream Range	+13 ~ -40 dBm @ 1270/1310 nm
Insertion Loss	≤1.5 dB
Uncertainty	≤0.5 dB
Data Storage	1000 entries
PC Interface	USB-C
Auto-Off	Off, 10 min, 20 min, 30 min
Batteries	(3) 1.5V AA
Battery Life <sup>1</sup>	<90 hours

1. The continuous working time is related to the brightness of the color screen backlight. The higher the brightness adjustment, the shorter the working time.

## Key Functions



**Power Key:** Power the device on or off.

**Threshold/Up Arrow Key:** Press this key to switch between the different set thresholds. While in the Menu, press this key to move up.

**Menu Key:** Press to open the Menu. Here you can change the Auto Off, Backlight, Threshold, Date, and Time settings, as well as view the stored data. Press this key to return to the main screen while viewing saved data.

**Save/Down Arrow Key:** Press this key to Save the current data displayed on screen. While in the Menu, press this key to move down.

**Unit Switch/Set Reference Key:** Press to switch between different Units of Measure or set a Reference Value.

**Enter/Delete Key:** Press this key to Delete the saved files while viewing them from the Menu.

## Screen Display

You can change the screen display to correspond to the different PON networks being tested.

🔌	📄 0001	2024-09-20 09:00	THR: 01	🔌
1310	nm ONT	LOW	dBm	Pass
1490	nm OLT	LOW	dBm	Fail
1270	nm ONT	LOW	dBm	Warn
1577	nm OLT	LOW	dBm	Warn
1550	nm VID	LOW	dBm	Warn

XG/XGSPON - 5 Wavelength Interface

🔌	📄 0001	2024-09-20 09:00	THR: 01	🔌
1310	nm ONT	LOW	dBm	Pass
1490	nm OLT	LOW	dBm	Fail
1550	nm VID	LOW	dBm	Warn

EPON/BPON/GPON – 3 Wavelength Interface



### XG/XGSPON – 2 Wavelength Interface

**PASS, WARN, FAIL:** The judgment status of the three test results is consistent with the absolute power measured (**Green, Yellow, Red**). The test power will be displayed in **green** when the measured power is within the specified threshold range, **red** when the test power is higher than the upper or lower limit of the specified threshold, and **yellow** when it is close to passing the upper or lower threshold.

For example, if the below threshold is used:

PON	ONT:1310nm			OLT:1490nm			VIDEO:1550nm		
Name	Pass	Warn	Fail	Pass	Warn	Fail	Pass	Warn	Fail
THR02	+3dBm	-20dBm	-30dBm	+3dBm	-20dBm	-30dBm	+3dBm	-20dBm	-30dBm

If the measured power value at 1310 nm is -10 dBm, it is within the +3 dBm ~ -10 dBm threshold and will display **Pass**. This means that the optical path is normal.

If the measured power value at 1310 nm is -25 dBm, it will be between the -20 dBm ~ -30 dBm threshold and will display **Warn**. This means the optical path may have issues but can be used.

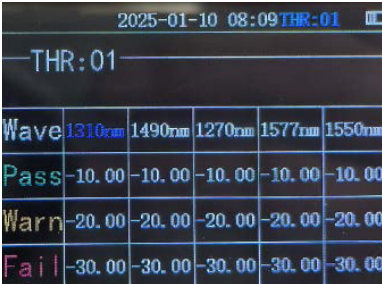
If the measured power value at 1310 nm is -35 dBm or +4 dBm, it will be outside the +3 dBm ~ -30 dBm threshold and will display **Fail**. This means the light intensity in the optical path is either too strong or too weak and cannot be used.

The example on the previous page also applies to the 1490 nm and 1550 nm wavelength tests as well.

## Threshold Settings Interface


Short press  to select a preset threshold group.

Long press  to enter the Threshold Settings Interface.



2025-01-10 08:09 THR:01					
THR:01					
Wave	1310nm	1490nm	1270nm	1577nm	1550nm
Pass	-10.00	-10.00	-10.00	-10.00	-10.00
Warn	-20.00	-20.00	-20.00	-20.00	-20.00
Fail	-30.00	-30.00	-30.00	-30.00	-30.00


Press  to select the Wavelength, then press  and the  and  keys to edit the values.

Press the  button again to save each Threshold after editing.



Hold  to go back to the previous Value to be edited.

Press  to save and exit the Threshold Settings Interface.

## Data Saving, Viewing, and Deletion

 001 : This icon shows the current record, save data 001. This icon will flash white when saving data, will be **yellow** while it's being viewed, and will flash **red** when it is deleted.

**Save:** While testing a cable, press  to save all data displayed onscreen.

**View:** Press  to enter the Menu and select "Data View" by pressing the  key. Entry 0001 (in yellow) should be displayed onscreen. Press the Up or Down Arrow Keys to navigate the saved entries.

You can also view saved data quickly by holding .

**Delete:** While viewing data, press the  to delete the saved entry. Press  again to delete or press Menu to cancel the deletion.

**Exit:** Press the  key to exit from the saved data to the main screen.

## Menu Settings

Press  to switch between XGPON-5, XGPON-2, PON-3, and the Settings menu.

Select one of the settings using  or  and press  to enter the setting.

Use the arrow keys to adjust the setting, and press  when done.


Press  to exit the Menu to the main screen after changing the settings.

**NOTE:** The automatic off settings can be changed from OFF to 10 min, 20 min, or 30 min.



## XGS/XG/E/B/GPON Power Meter Testing

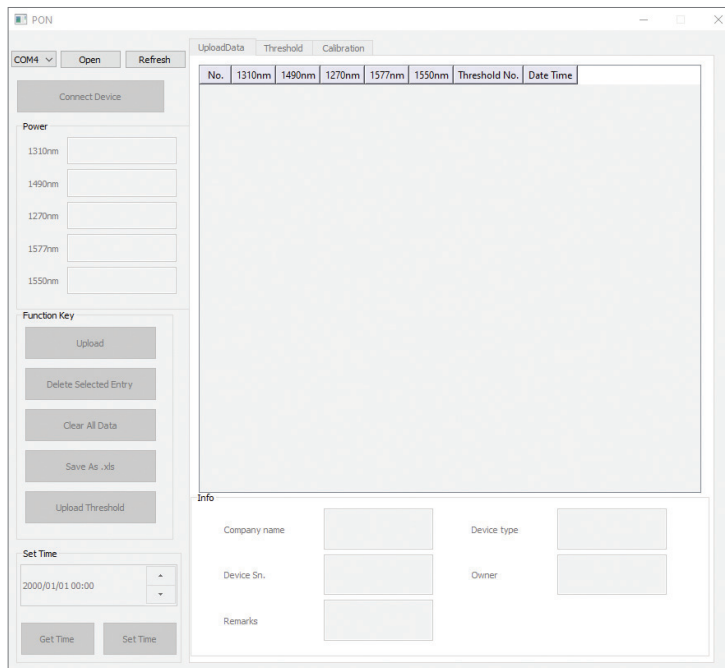
This PON Power Meter can simultaneously measure the PON network upstream signals of 1310 nm and 1270 nm, as well as downstream data signals of 1490 nm and 1577 nm, and descending output video signals of 1550 nm. After powering the device on while not connected, the optical channels will display “Low”. Before using the meter, ensure you have selected the correct Threshold via the Options Menu before proceeding. If you have not set any thresholds yet, the default ones will be used.

1. Before connecting the fiber cables to be tested, ensure they are cleaned well using fiber cleaning fluid for optimal test results.
2. Choose the appropriate adapter heads (FC or SC), connect them to the PON Meter, and connect the corresponding fiber optic cables into them.
3. Power ON the PON Meter via the Power button and it will display the output power for each wavelength being used.
4. While in this test interface, press  to save the data.

## Computer Software Instructions

Download and install the PON software from the Jonard Tools website.

1. After installation, simply open the "PON Software.exe" file to start the software.
2. Power on the XGS-1577 PON Power Meter and connect it to the PC via USB-C cable.
3. On the left-hand side, select the appropriate COM that the PON Meter is connected to and click the "Connect" button. Typically, this will be COM3 or COM4.



The screenshot shows the PON software interface. On the left, there is a sidebar with a dropdown menu set to 'COM4', 'Open' and 'Refresh' buttons, a 'Connect Device' button, and a 'Power' section with input fields for 1310nm, 1490nm, 1270nm, 1577nm, and 1550nm. Below this is a 'Function Key' section with buttons for 'Upload', 'Delete Selected Entry', 'Clear All Data', 'Save As .xls', and 'Upload Threshold'. At the bottom left is a 'Set Time' section with a date/time input (2000/01/01 00:00) and 'Get Time' and 'Set Time' buttons. The main area has tabs for 'UploadData', 'Threshold', and 'Calibration'. The 'UploadData' tab is active, showing a table with columns: No., 1310nm, 1490nm, 1270nm, 1577nm, 1550nm, Threshold No., and Date Time. The table is currently empty. Below the table is an 'Info' section with input fields for 'Company name', 'Device type', 'Device Sn.', 'Owner', and 'Remarks'.

## Uploading Data

1. To upload data using the PON software, first click once on the “Upload” button in the left-hand toolbar.
2. The data should appear in text form under the “UploadData” tab, like so:

The screenshot shows the PON software interface. On the left is a toolbar with buttons for 'Connect Device', 'Power' (with input fields for 1310nm, 1490nm, 1270nm, 1577nm, and 1550nm), 'Function Key' (with 'Upload', 'Delete Selected Entry', 'Clear All Data', 'Save As .xls', and 'Upload Threshold'), and 'Set Time' (with a date/time field and 'Get Time'/'Set Time' buttons). The main area has tabs for 'UploadData', 'Threshold', and 'Calibration'. The 'UploadData' tab is active, displaying a table with 13 rows of data. Below the table is an 'Info' section with fields for 'Company name', 'Device type', 'Device Sn.', 'Owner', and 'Remarks'.

No.	1310nm	1490nm	1270nm	1577nm	1550nm	Threshold No.	Date Time
1	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
2	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
3	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
4	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
5	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
6	-37.88dBm	-50dBm	-40dBm	-50dBm	-50dBm	4	2025-01-16 09:24
7	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	1	2025-01-16 14:49
8	-38.17dBm	-50dBm	-37.04dBm	-50dBm	-50dBm	2	2025-02-11 01:59
9	-40dBm	-50dBm	-40dBm	-50dBm	-50dBm	2	2025-02-11 01:59
10	-40dBm	-46.26dBm	-40dBm	-46.59dBm	-5.49dBm	2	2025-02-28 05:11
11	-40dBm	-50dBm	-40dBm	-50dBm	-35.99dBm	2	2025-02-28 05:11
12	-5.34dBm	-50dBm	-40dBm	-50dBm	-50dBm	2	2025-02-28 05:11
13	-40dBm	-50dBm	-40dBm	-50dBm	-47.54dBm	2	2025-02-28 05:11

Info

Company name:  Device type:

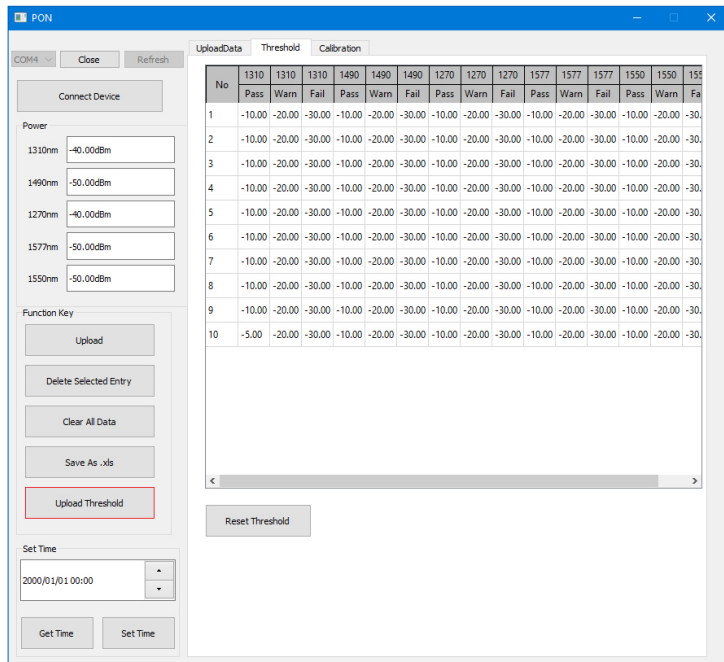
Device Sn.:  Owner:

Remarks:

3. To save this test data in .xls format, simply click on the “Save as .xls” button in the left-hand toolbar.
4. You can also clear all data (delete from device) or delete the selected data by clicking their respective buttons.

## Uploading Thresholds

- To set or upload thresholds, first click on the “Upload Threshold” button and the following chart will appear:



COM4 Close Refresh

Connect Device

Power

1310nm -40.00dBm

1490nm -50.00dBm

1270nm -40.00dBm

1577nm -50.00dBm

1550nm -50.00dBm

Function Key

Upload

Delete Selected Entry

Clear All Data

Save As .xls

Upload Threshold

Set Time

2000/01/01 00:00

Get Time Set Time

Threshold

No	1310 Pass	1310 Warn	1310 Fail	1490 Pass	1490 Warn	1490 Fail	1270 Pass	1270 Warn	1270 Fail	1577 Pass	1577 Warn	1577 Fail	1550 Pass	1550 Warn	1550 Fail
1	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
2	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
3	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
4	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
5	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
6	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
7	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
8	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
9	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00
10	-5.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00	-10.00	-20.00	-30.00

Reset Threshold

## Calibration

You can Calibrate individual wavelengths by selecting the “Calibration” tab on top. To do so:

1. Connect the XGS-1577 to a light source and select the corresponding wavelength.
2. Fill in the standard power value in the blank space on the right and click “Calibration” to complete the calibration for that wavelength.

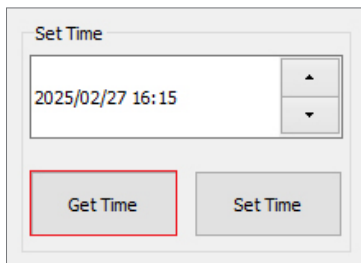
The screenshot shows the 'PON' software window with the 'Calibration' tab selected. The interface includes a top bar with 'COM4', 'Close', and 'Refresh' buttons. Below this is a 'Connect Device' button. The 'Power' section contains input fields for wavelengths 1310nm, 1490nm, 1270nm, 1577nm, and 1550nm, each with a value of -50.00dBm. The 'Function Key' section has buttons for 'Upload', 'Delete Selected Entry', 'Clear All Data', 'Save As .xls', and 'Upload Threshold'. The 'Set Time' section shows a date/time field set to '2000/01/01 00:00' with 'Get Time' and 'Set Time' buttons. The main 'PON Calibration' table lists the same wavelengths with a '-10' value and a 'Calibration' button for each.

PON Calibration		
1310nm	-10	Calibration
1490nm	-10	Calibration
1270nm	-10	Calibration
1577nm	-10	Calibration
1550nm	-10	Calibration

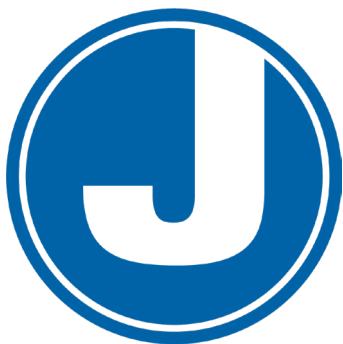
3. After calibrating, disconnect the device and remove it from the PC.

## Set Time

You can set the time to the time on your computer by clicking the “Get Time” and then “Set Time” buttons.



## NOTES:



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