



A RIPLEY® BRAND

UPM100

Optical Power Meter User Guide



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Introduction



The UPM100 Optical Power Meter is an ultra low cost, and compact power meter used for verifying both absolute and relative power across any given fiber. This document will serve as an overview of the major features and functions of the device and will offer tips for trouble shooting common issues in optical networks. If you are looking for a low cost device capable of saving and reporting take a look at the RP460 or UPM100 if you want to use IOS or Android with bluetooth.

Device Overview



USB Port

The UPM100 uses this connection to communicate with an Android, linux , or windows based device.

Save Button

Pressing this button will save a reading when plugged into a windows,android, or linux based device.

Connector Adapter

The UPM100 comes with a universal 2.5 adapter by default, however additional adapters are available and are user replaceable.

Important Safety Information



Read and understand all of the instructions and safety information in this manual before operating this tool.



Laser/LED Hazard

Avoid eye exposure to open fiber connectors and interfaces when working with fiber systems. They may be connected to a live laser source.

Do not look into the output port of a Laser or LED source.

Point fiber endfaces toward non-reflective surfaces to prevent reflection of laser.



Electric Shock Hazard

Pay attention to proper battery polarity. Do not mix battery types or manufacturers.

Do not open the unit with the exception of the battery compartment door.

Use this unit only for its intended purpose as outlined in this document.



Damage to Item Hazard

Do not leave item in direct sunlight or near heat sources, submerge in water, or subject unit to strong impact.

Cover the fiber interface with the flip-cap when not in use.



Do not throw this product away.

Contact your local recycling station to dispose of properly.

Setting Reference

Caution: Invisible LED/Laser Radiation

Please note that wavelengths used by optical laser sources are not visible to the human eye. Do not look directly into any fiber connector that may be live or any companion light source.

Since the light is invisible to the eye, the eye's natural blink reflex is suppressed. This can cause damage to the retina.

To set a reference first connect the UPM100 and companion light source as shown below. Ensure the unit is in dBm and you are reading the correct output power for the laser/LED you are using (Ripley Lasers are calibrated at -5 (or -8 with tone on) and LEDs are calibrated at -22 (or 25 with tone on)). Next connect the UPM100 to a either a windows pc or android device and go to the "OPM" tab/page. once the UPM100 is detected and you can see the live value from the device press the "Set Reference" button while in dbm mode.



Basic Testing

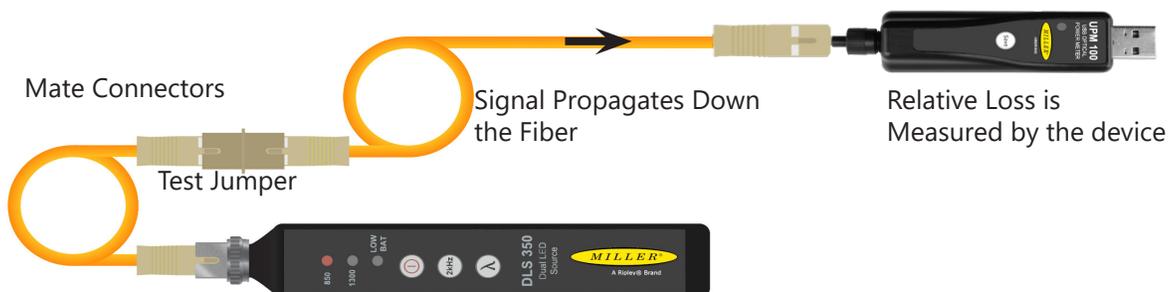
Absolute Measurements

The UPM100 can be used to view the Absolute Power of a fiber by first ensuring the correct wavelength is selected, and that the unit is in dBm, then plugging the fiber into the power meter. The absolute power will be displayed in dBm in the connected software as well as any tone detected.



Relative/ Loss Measurements

The UPM100 can also be used to view relative power, or loss across a fiber. To do this you have to first set a reference as described above and put the unit into dB mode. Next attach the fiber you want to measure inbetween the test jumper, and UPM100 as shown below. This will show the relative loss in dB on the connected software.



Notes

The UPM100 is not a standalone device

The UPM100 is not a standalone Power meter. To set reference, view absolute or relative power, or to save readings requires that you either connect to a windows, linux, or android based device.

Maintenance

Optical Connector Interface

The UPM100 is equipped with a universal connector adapter that is compatible with many popular style connectors. The connector adapter interface should be kept covered and protected from contamination. Care must be taken to avoid objects that may damage the glass surface of the detector mount. If scratches or breaks occur on the surface, please contact Ripley for proper repair and re-calibration.

Integration with Windows InSpec

Plug the UPM100 into a Windows PC running the new InSpec software to save live readings and generate reports

Data Display
Readings from the UPM100 are displayed in this area. Deleted readings do not appear.

OPM Display
All test data from the UPM100 is displayed LIVE in this area.

Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	ALPHA_NA_BLUE_1	None	0.43 dB	1550	Pass	Near
2	ALPHA_NA_BLUE_2	None	0.45 dB	1550	Pass	Near
3	ALPHA_NA_ORANGE_1	None	0.55 dB	1550	Pass	Near
4	ALPHA_NA_ORANGE_2	None	0.84 dB	1550	Pass	Near
5	ALPHA_NA_GREEN_1	None	0.98 dB	1550	Pass	Near
6	ALPHA_NA_GREEN_2	None	1.04 dB	1550	Pass	Near
7	ALPHA_NA_BROWN_1	None	0.52 dB	1550	Pass	Near

0.03

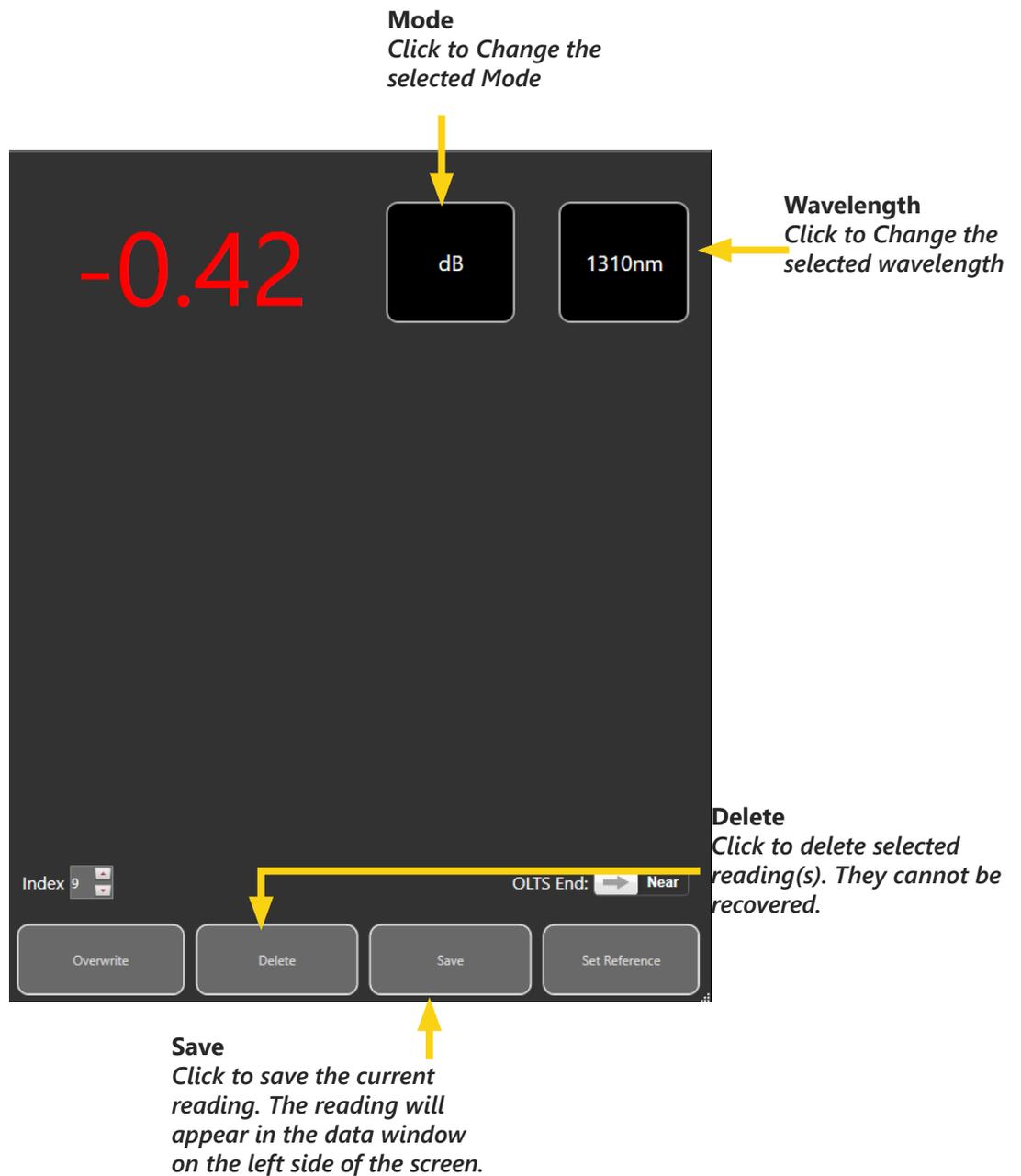
dB 1550nm

Index: 8 OLTS End: Near

Overwrite Delete Save Set Reference

Editing Controls
These buttons allow saving and editing of the data in this window.

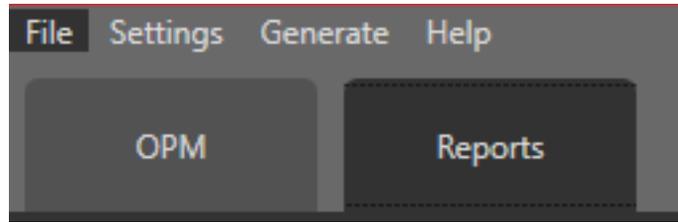
the live information from the UPM100 Main screen is displayed on the right side of the window. you can use the buttons on the bottom of the screen to set reference, and save/delete readings. if you click where "dB" is clicked you can select a different mode. the wavelength is changed the same way.



Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	1	None	-60.02 dBm	1310	Fail	Near
2	2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near
4	4	None	-59.37 dBm	1310	Fail	Near

The left side of the window displays the readings saved to the current project.

The saved data that is saved can be edited for final reporting in the Reports tab.



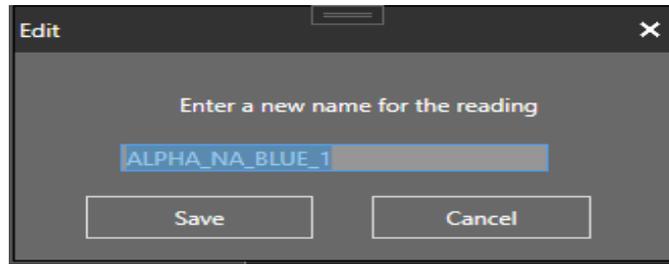
Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	1	None	-60.02 dBm	1310	Fail	Near
2	2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near
4	4	None	-59.37 dBm	1310	Fail	Near
5	5	None	-0.391 dB	310	Fail	Near
6	6	None	-0.371 dB	310	Fail	Near
7	7	None	-0.221 dB	310	Fail	Near
8	8	None	-0.281 dB	310	Fail	Near

Below the table, there are two buttons: 'Edit' and 'Delete'. A yellow arrow points from the 'Edit' button to the text 'Edit Edit multiple readings.' and another yellow arrow points from the 'Delete' button to the text 'Delete Delete selected reading(s)'.

Edit
Edit multiple readings.

Delete
Delete selected reading(s).

Double-click on any one reading to edit the "ID" column for that reading. Or select the reading and click "Edit Selected".



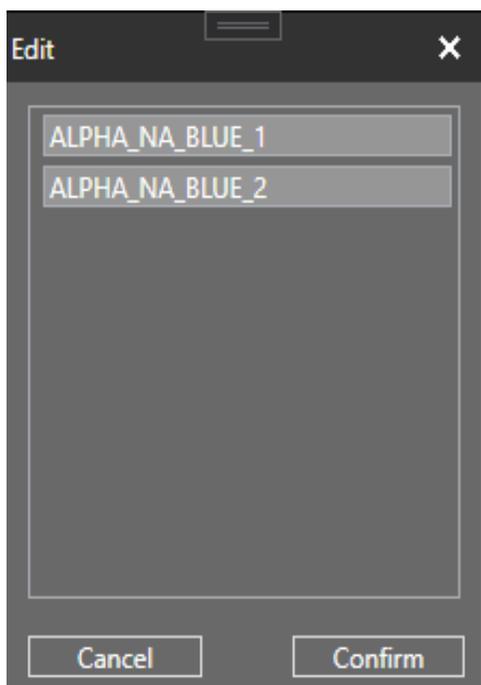
The ID column changes are shown immediately.

Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	test	None	-60.02 dBm	1310	Fail	Near
2	2	None	-58.59 dBm	1310	Fail	Near

Use the CTRL key on the computer keyboard and click multiple readings to select multiple readings for editing. To select a range of readings, click the first reading in the range, hold the Shift key on the computer keyboard, and click the last reading in the range.

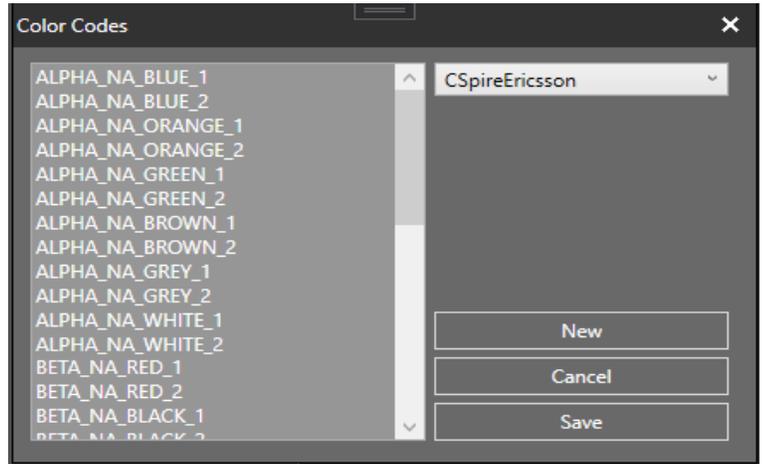
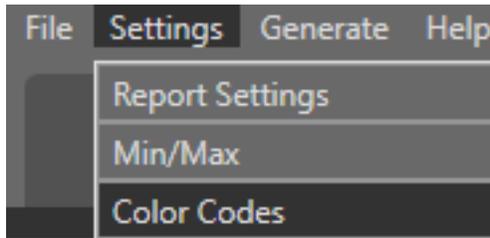
Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	test	None	-60.02 dBm	1310	Fail	Near
2	2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near
4	4	None	-59.37 dBm	1310	Fail	Near
5	5	None	-0.391 dB	310	Fail	Near

With multiple readings selected, click the Edit button to bring up the multi-editor. Edit the information and click "Confirm" to change the ID for multiple items.



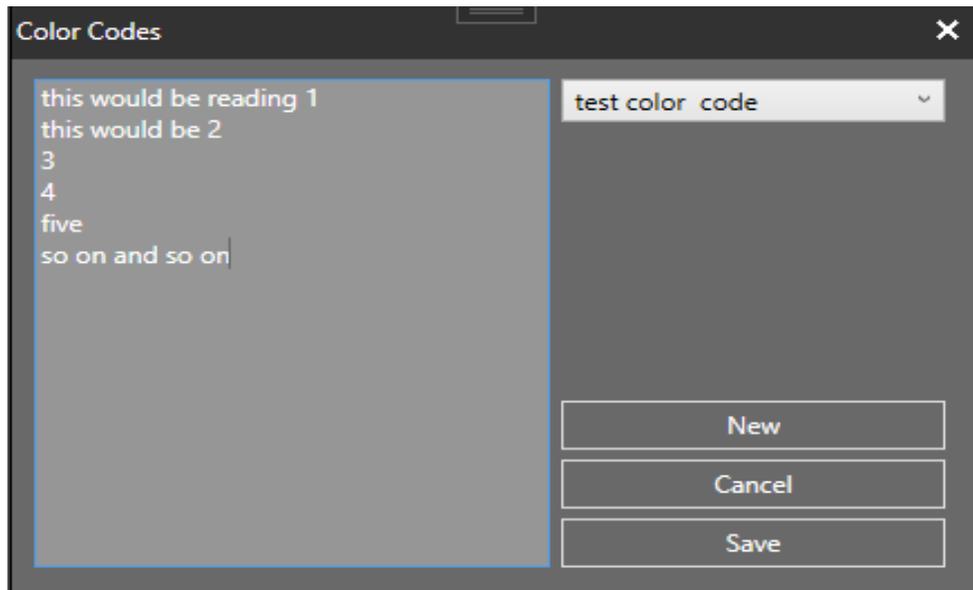
Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	test	None	-60.02 dBm	1310	Fail	Near
2	2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near

To choose or create color codes, click **Settings>Color Codes**.



Click the dropdown box to select from preset color codes, or click "New" to create your own color codes which can be used in the future.

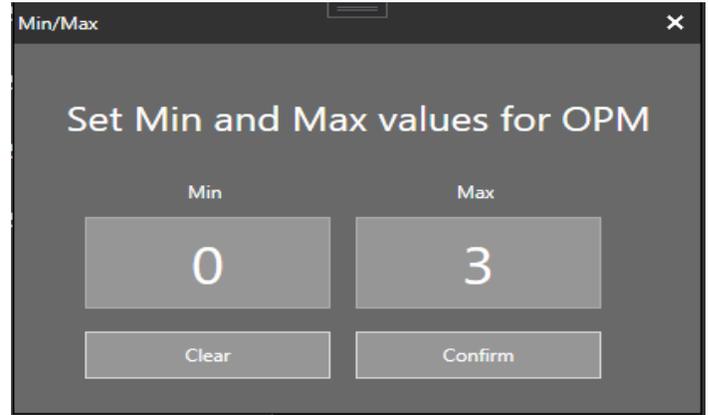
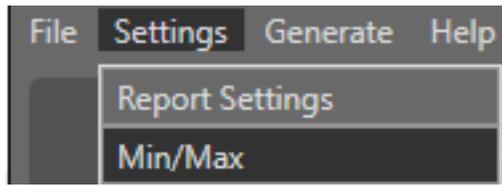
When using a Custom option, enter the color codes in the white space on the left side of the window. Each line represents an indexed location. Click "Save" when finished.



The color codes entered or selected will fill the available readings. For example, the Custom setting has 6 entries, but only 5 readings are saved. Any additional readings are indexed as usual.

Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	This would be reading 1	None	-60.02 dBm	1310	Fail	Near
2	This would be 2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near
4	4	None	-59.37 dBm	1310	Fail	Near
5	Five	None	-0.391 dB	310	Fail	Near
6	So on and So on	None	-0.371 dB	310	Fail	Near
7	7	None	-0.221 dB	310	Fail	Near
8	8	None	-0.281 dB	310	Fail	Near

To change the Pass/Fail column, click **Settings>Min/Max**.



Loss minimum is usually set to 0. A maximum of 3 is standard for most fiber tests. Set Min and Max to any values as needed, then click "Apply".

Index	ID	Tone	Reading	λ	Pass/Fail	Near/Far
1	This would be reading 1	None	-60.02 dBm	1310	Fail	Near
2	This would be 2	None	-58.59 dBm	1310	Fail	Near
3	3	None	-56.3 dBm	1310	Fail	Near
4	4	None	0.24 dB	1310	Pass	Near
5	Five	None	0.24 dB	1310	Pass	Near
6	So on and So on	None	0.24 dB	1310	Pass	Near

Any readings which fall within the Min/Max range provided will be given a PASS designation. Readings that do not fall within the range will be given a FAIL designation.

To change the Report Settings, click **Settings>Report Settings**.

Report Settings

Clear Headers Clear Data Reset To Defaults

Customer Name Contact Name

Testing Company Testers Name

Test Location Comments

Scope Power Meter

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Browse...

Report Type PDF

Use Current Time

Save Exit

All information in the dark and light boxes are editable. The default settings are shown above. Click “Reset to Defaults” to return to this arrangement of information. Enter all info as needed and click Save to have the information appear on reports.

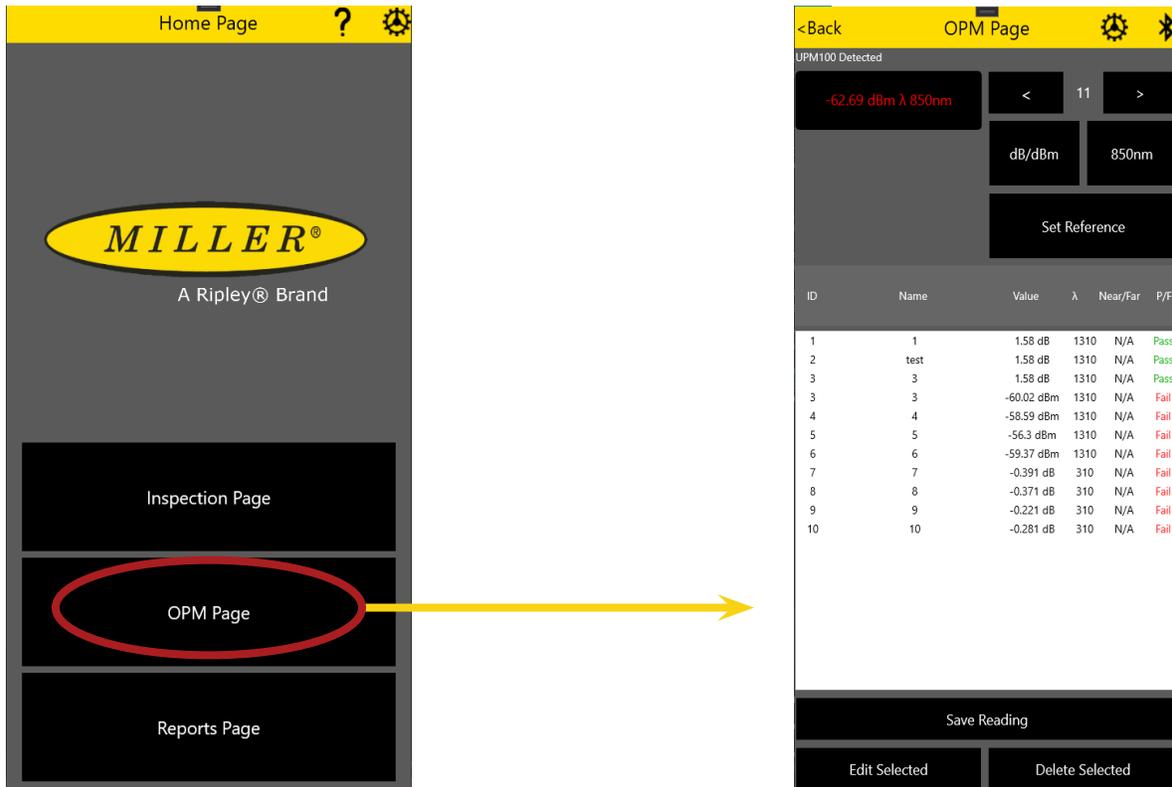
The Ripley Miller logo will appear on reports. Click Browse to choose a different logo to place on the report, if desired.

Changing the selected “Report Type” will change what format the reports are generated as. Currently PDF, HTML, XML, and Excel are supported

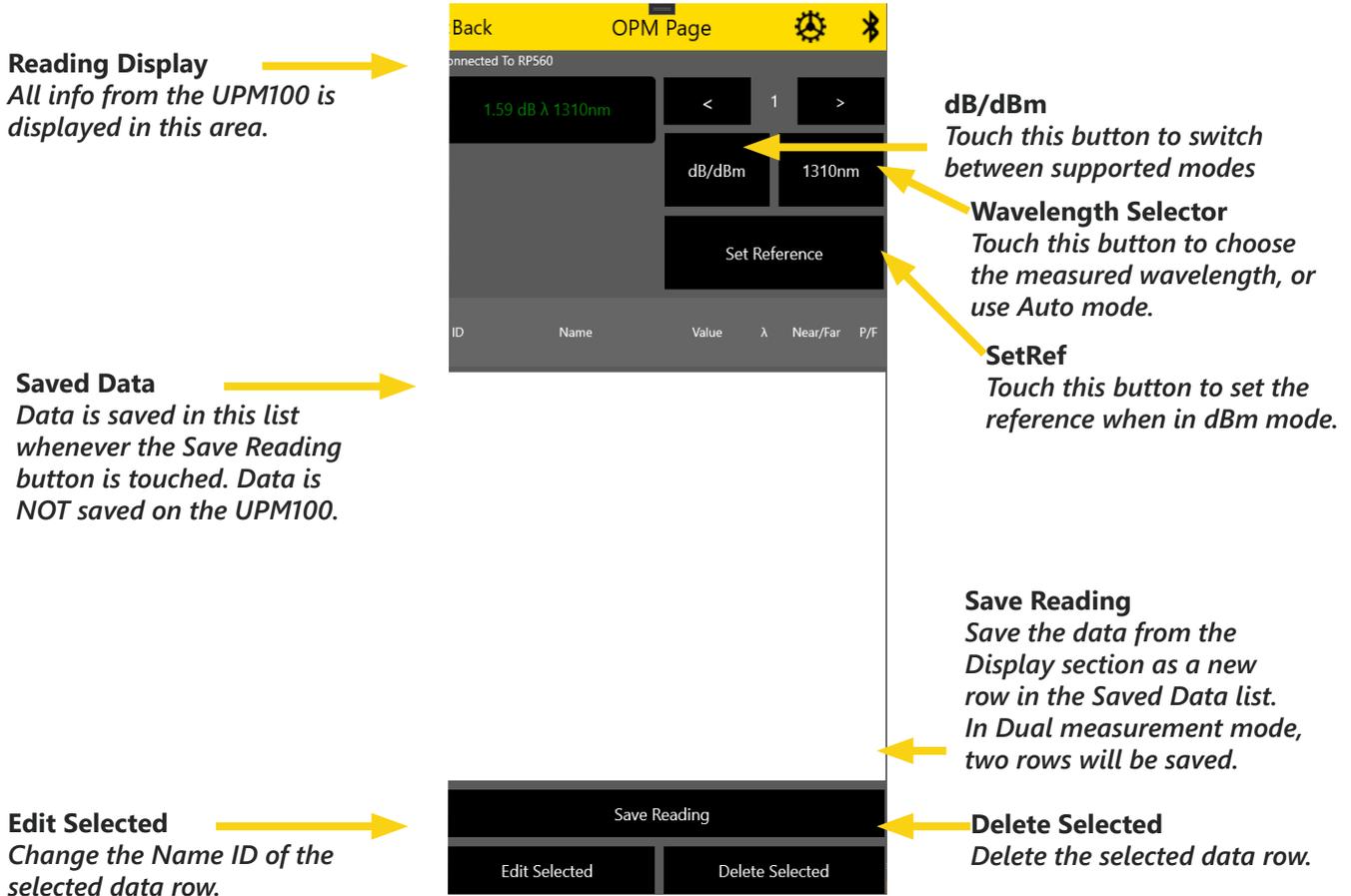
Integration with Android InSpec

Plug the UPM100 into an android based device using an adapter while running the InSpec app will allow you to use the device with that device.

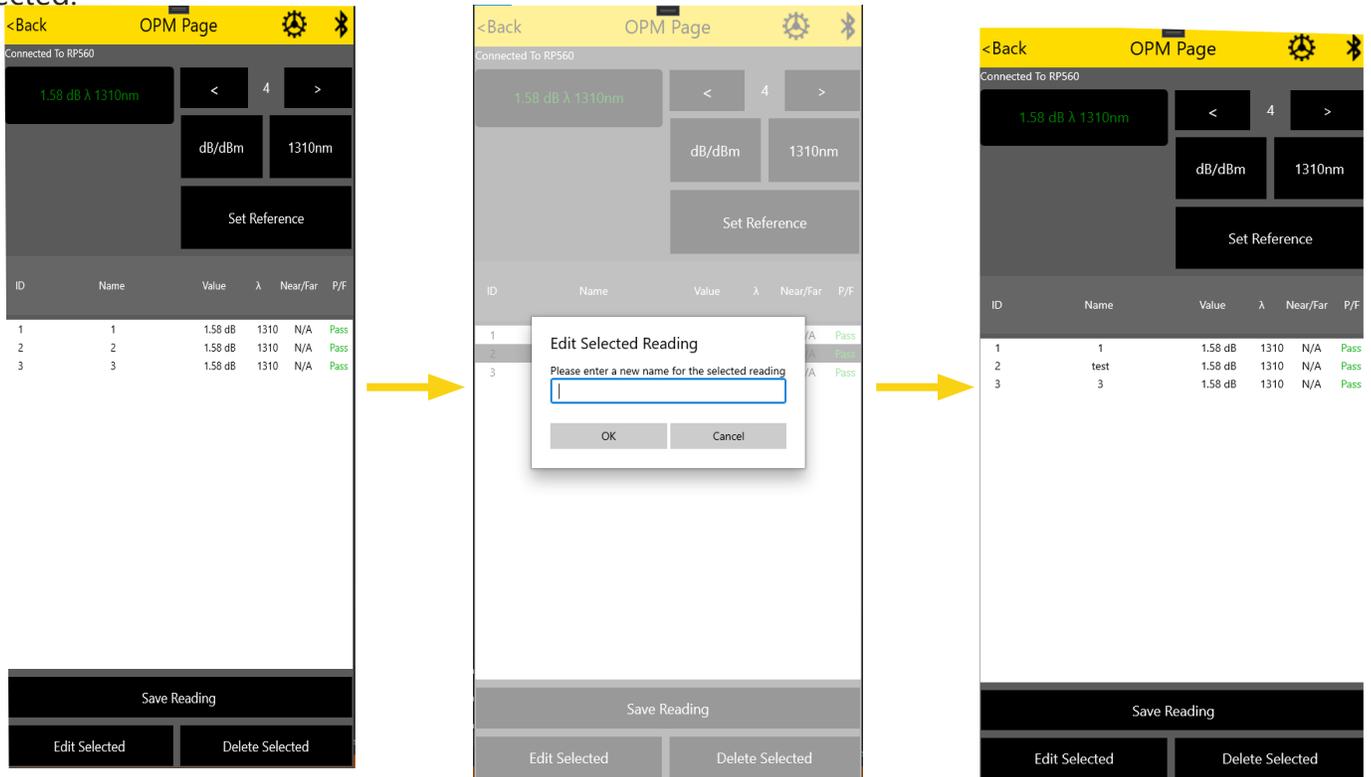
Open the InSpec app on your Android device. Touch the "OPM Page" button to access the OPM page of the app. If the UPM100 is connected it will either detect and begin streaming from the UPM100 or it will request for HID/USB access. This must be granted to use the UPM100. In order to re request permission unplug and replug the UPM100.



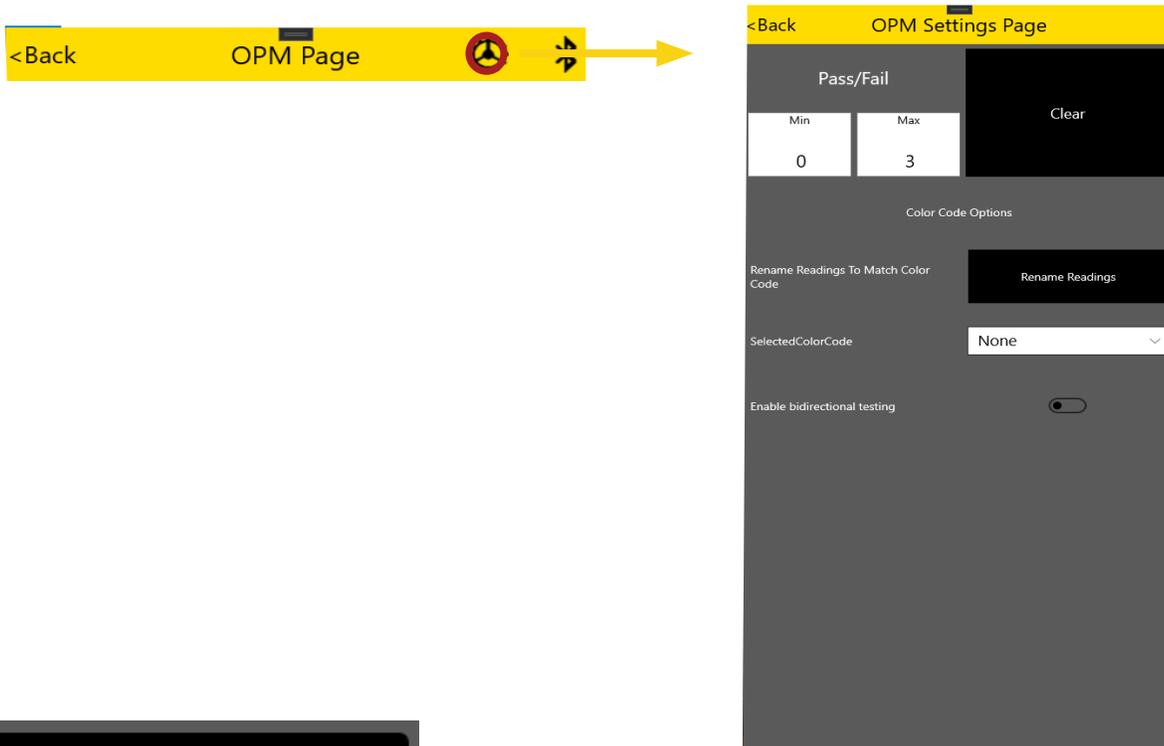
The diagram below shows the features of the main screen of the InSpec app. All data is saved to the App not the UPM100.



Touch a saved reading to select it from the list; it will be highlighted. Touch Edit Selected to edit that reading. Use the onscreen keyboard to enter a new name, then select OK. The new name will appear in the "Name ID" column. Any reading in the list can be deleted by selecting it and touching Delete Selected.



To set PASS/FAIL limits for testing, touch the icon in the top right corner of the screen, and select OPM Settings. The currently-set Min and Max will be displayed. Touch the Set button to set the Min and Max, then touch Confirm. If no values are set, PASS/FAIL is disabled.

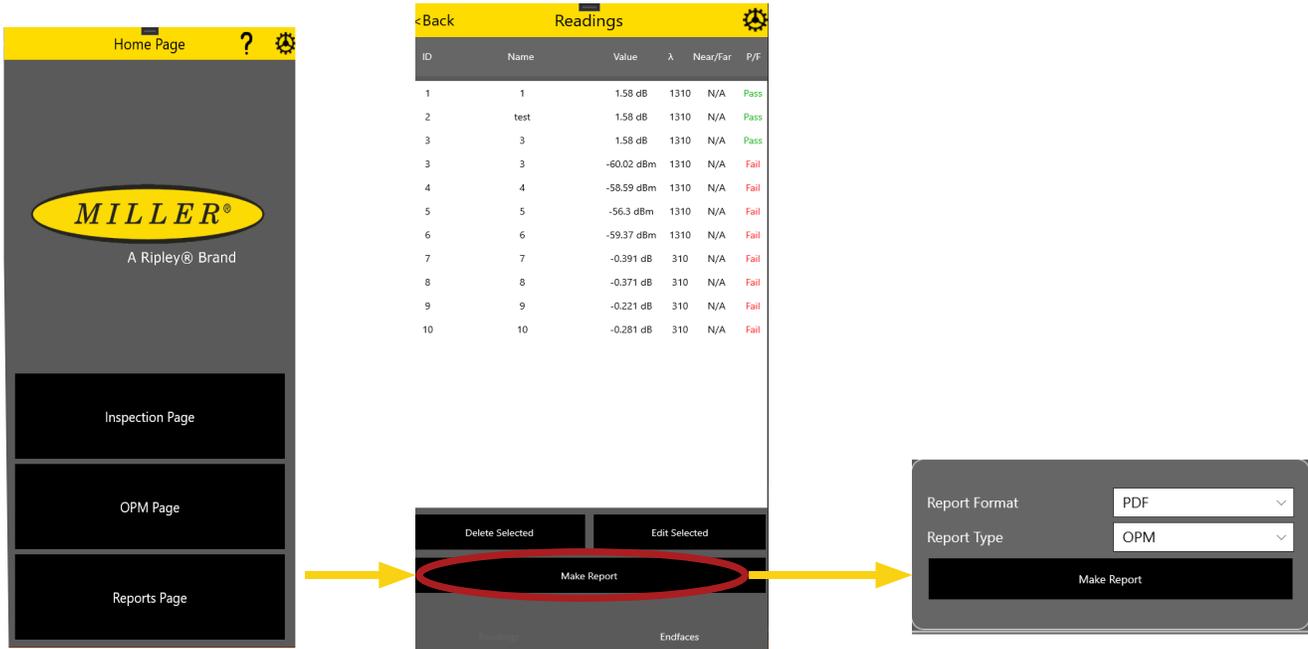


Any readings which fall between the Min and Max values will be displayed in green in the display and the saved data field. Readings which fall outside this range will be displayed in red.

To make and send a report from the InSpec app, touch the icon in the top left of the screen and select Reports from the flyout menu.

NOTE: the UPM100 data stream will disconnect automatically when the Reports screen is accessed. To restart the data stream and continue testing, follow the connection instructions on page 19.

Delete and/or edit any readings as needed using the buttons onscreen, then touch Make Report. Next select the type of report and format. Finally share the report using whichever method you prefer.



Certifications, Accessories, and Contact Info

Calibration Certificates

The UPM100 comes calibrated and should be recalibrated every 2 years. Included with the UPM100 is a calibration certificate, and free recalibration within 2 years of the date of purchase. To start the calibration process simply call or email technical support!

Warranty

The UPM100 comes with a 2 year warranty for any manufacturer defects or damage due to reasonable use. To start the RMA process simply email or call technical support!

Optical Power Meter Accessories

OPM Adapters	
Part Number	Description
AC 020	2.5 mm Universal Adapter
AC 021	1.25 mm Universal Adapter
AC 026	SC Adapter
AC 027	ST Adapter
AC 028	FC Adapter
AC 029	LC Adapter

Patch Cord & Battery Accessories	
Part Number	Description
AC 500	SM SC-LC - 1m Simplex
AC 505	SM SC-ASC - 1m Simplex
AC 501	SM SC-SC - 1m Simplex
AC 502	SM LC-LC - 1m Simplex
AC 600	SC-SC - Simplex Bulkhead
AC 601	LC-LC - Simplex Bulkhead
AC 602	LC-LC - Duplex Bulkhead
AC300	CR2 Non-Chargeable Battery Pack (Pack of 5)
AC 310	CR2 Rechargeable Battery Charger w/2 Batteries
AC 311	CR2 Non-Chargeable Battery (Pack of 1)
AC 312	CR2 Rechargeable Battery (Pack of 1)

Specifications	
Detector Type	-02:InGaAs/ -04: Filtered InGaAs
Measurement Range	-02: +6 to -70 dBm / -04: +23 to -45 dBm
WavelengthRange	850 nm to 1650nm
Selectable Wavelengths	850 / 1300 / 1310 / 1490 / 1550 / 1611 / 1625
Resolution	0.01 dB
Absolute Accuracy	± 0.25dB (23°C ± 2°at 0dBm)
Optical Interface	Universal 2.5mm (Additional Adapters Available)
Display	LCD
Tone ID	2 kHz
Storage Temperature	-10°C to +55°C
Dimensions	3.9" x 0.85" x 0.7" (15.5cm x 2.38cm x 1.9cm)
Weight	2 oz (85.4 g)
Data Transfer	USB

Certifications and Contact Information



This product conforms with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). This product was tested by an ISO 17025 accredited laboratory and complies with the following CE directives and standards listed below:

Directives:

Electromagnetic Compatibility (2014/30/EU)

Low-Voltage (2014/35/EU)

Standards:

EMC: EN 61326-1:2013 Industrial

Safety: EN/IEC61010-1:2010+A1:2016



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Contact Support

contact us with any questions pertaining to this or any other Ripley product.

 **Call Us:**
(603) 524-8350

 **Email Us:**
tech.support@odm.ripley-tools.com

 **Visit Us Online:** www.ripley-tools.com