OLM300

Optical Loss Meter

User Guide _ Version 1.0

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Warranty

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If any of the following conditions takes place, the warranty shall be null and void.

- Defects or malfunction caused by human factors, accident, improper use not conforming to product manual instructions, abuse or unauthorized alteration, modification or repair of the product.
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If you have any questions or need any assistance, please contact our service center.

- Kaohsiung Office
  TEL: +886-7-398-1000
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  Address: 11F.-1, No.80, Minzu 1st Rd., Sanmin Dist., Kaohsiung City 80761, Taiwan (R.O.C.)

Please prepare below information before you contact us and describe the problems.

- Product model and S/N
- Warranty information

Content

1. Safety Information

Read all safety information carefully before using this product to ensure personal safety and proper use.

- Assure the power supply conforming to the specification of this product and qualified for the country of use.
- Use batteries that meet the specifications of this product.
- Do not use damaged power cords, accessories or other peripheral equipment.
- Make sure the product is operated on the permitted ambient conditions.
- Never directly look into the optical outputs interface.
- Dangerous laser radiation: 

2. Introduction

Ascentac OLM300 Series, Optical Loss Meter, combines optical light source (OLS), optical power meter (OPM) and visual fault locator (VFL) in one handheld unit which can conveniently perform optical power & link loss measurement and troubleshooting of fiber-optic network. It is a perfect instrument for bi-directional testing for both multi-mode and single-mode fibers.

Ascentac OLM300 Series characterizes remote wavelength-switching and enables technicians to read remote measurement values. The fairly better feature is to analyze cable status like macro-bending or low power and notify technicians of the condition on screen.

Ascentac OLM300 Series can accommodate up to 1000 results and transfer data to PC via USB connection. It is battery-operated by either dry batteries or rechargeable batteries (4 AAA-size).

2.1 Feature

- Auto-wavelength recognition and remote wavelength-switching
- Automatically bidirectional loss test Readable remote measurement values
- Analysis of cable status e.g. Bending (Displayed on screen)
- Document results and generate reports to PC via USB connection
- Memory capacity of 1000 results
- Auto shutdown & backlight sleep mode (Programmable) (Extend the battery life)

2.2 Application

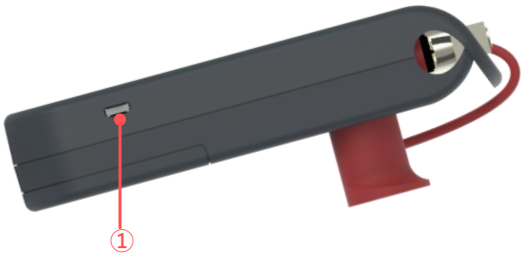
- Optical loss measurement

3. Layout

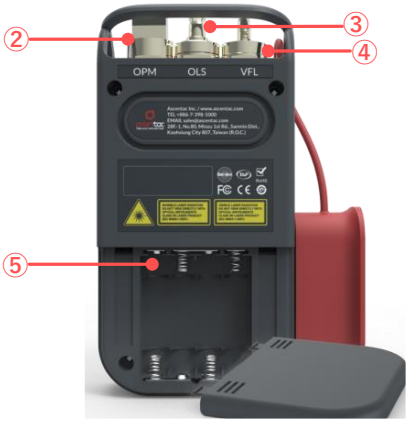
3.1 Appearance

- Front

- Side



- Back



3.2 Instruction

Button	Function	Description
	Power on/off	Long press for two seconds to turn on/off the meter.
Source λ / LASER	Wavelength selection	Short press to switch wavelength of optical light source.
	Laser on/off	Long press for two seconds to turn on/off the laser.
CW / Zero	Modulation output (OLS mode)	Short press to switch modulation output.
	Calibration and zeroing (OLM mode)	Long press for two seconds to do calibration and zeroing.
MIN/MAX / MEAS	Record min. or max. value of optical power	Short press to record min. or max. value of optical power.
	Optical power monitoring	Long press for two seconds to turn on/off this function.
MODE / REF	Mode switching	Short press to switch mode. OLM-M → OLM-S → OPM → OLS → OLM-M
	REF setting (OPM mode)	Long press for two seconds to set reference value.
dBm / mW	Measurement unit selection	Short press to switch measurement unit or cancel reference value.
LOAD / SAVE	Data loading	Short press to load measurement results.
	Data saving	Long press for two seconds to save measurement results.
Power入	Wavelength selection	Short press to switch wavelength.
	Setting	Short press to access device setting.

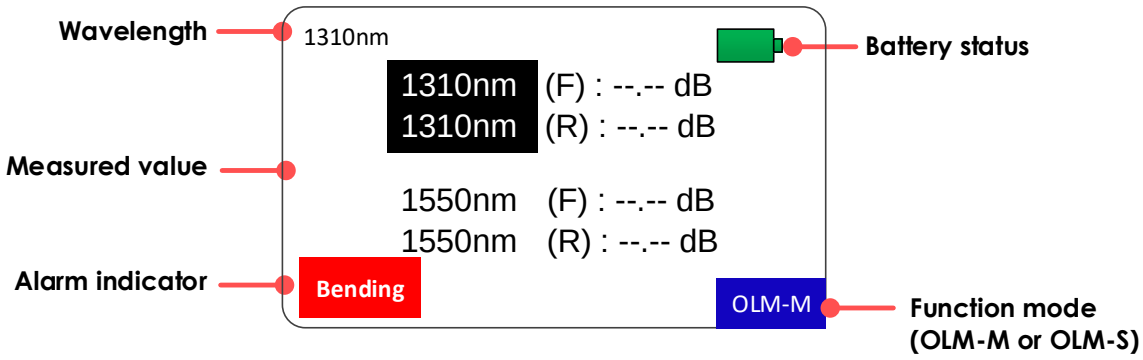
Item	Function	Description
1	USB	1. Power supply 2. Charge rechargeable batteries 3. Transfer measured record to PC
2	OPM optical connector	SC, FC, LC, Universal 2.5mm or 1.25mm
3	OLS optical connector	Universal 2.5mm
4	VFL optical connector	Universal 2.5mm
5	Battery	Dry batteries or rechargeable batteries (Charged by USB connection): AAA-size x 4

3.3 LED Indicator

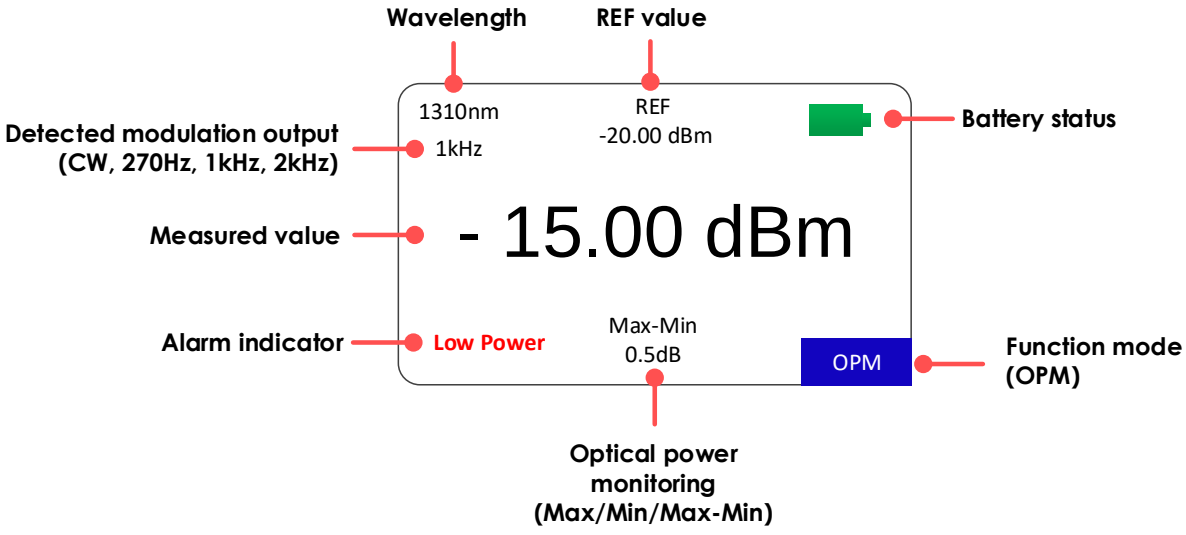
Item	LED Indicator	LED Status	Description
1	PASS/FAIL	Off	Without setting any threshold
		Red	Measured value is lower than the threshold.
		Green	Measured value is higher than or equal to the threshold.
2	LASER	Off	No emitting light
		Red	Emitting light

4. Display

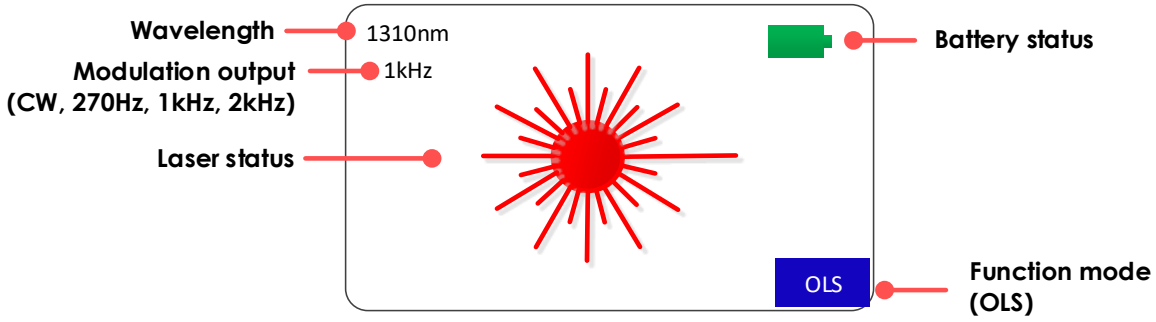
4.1 Optical Loss Meter (OLM)



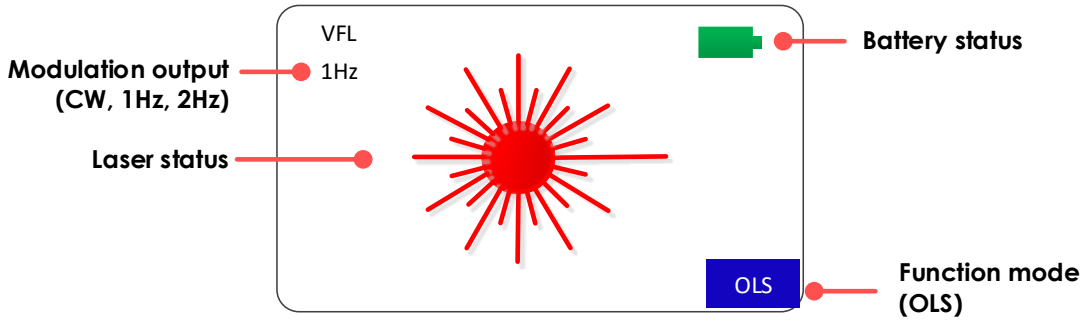
4.2 Optical Power Meter (OPM)



4.3 Optical Light Source (OLS)



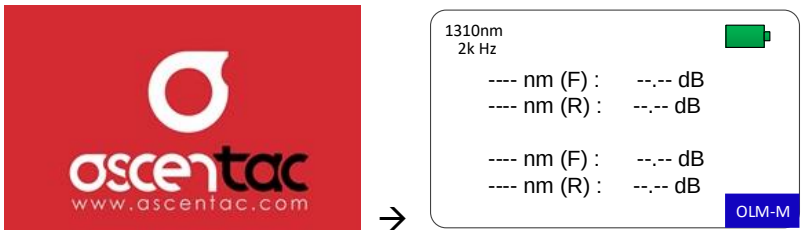
4.4 Visual Fault Locator (VFL) (Option)



5. Operation

5.1 Power-on

Press [⏻] key for two seconds to turn on the meter.
Startup screen → Enter into optical loss measurement interface.



Note

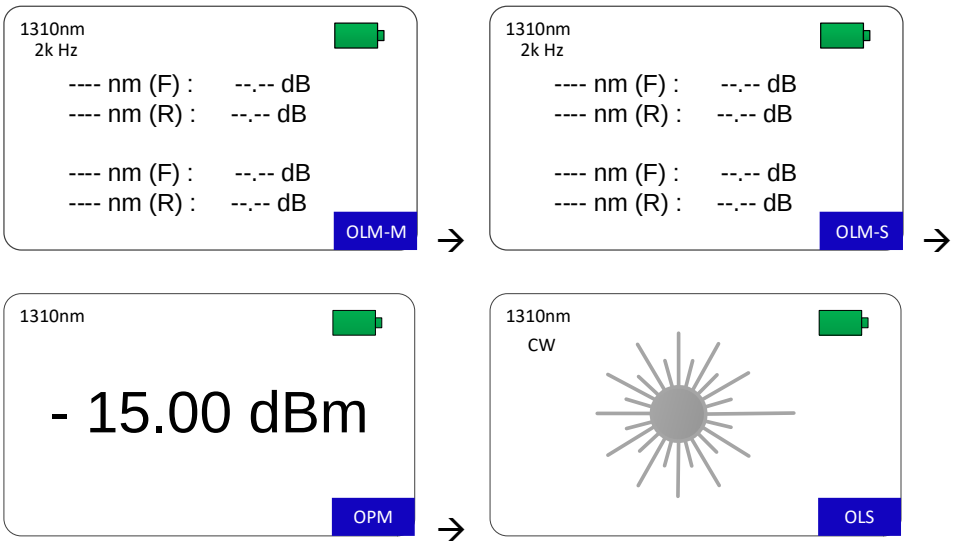
"--.-- dBm" is displayed when there is no input of optical light source.

5.2 Power-off

Press [⏻] key for two seconds to turn off the meter.

5.3 Switching Function Modes

Short press [MODE / REF] key to switch function modes.

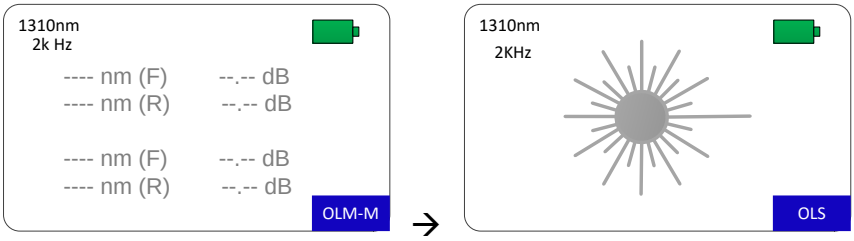


Note

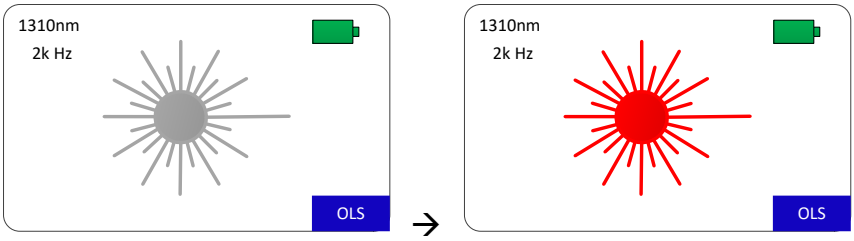
1. Function mode: OLM-M → OLM-S → OPM → OLS → OLM-M
2. [Source λ / LASER] & [CW] key are not available in OPM mode.
3. [dBm / mW], [LOAD / SAVE], [MIN/MAX / MEAS] & [Power人] key are not available in OLS mode.
4. Light source will be turned off first if short pressing [⚙] key in OLS or OLM mode.
5. Light source will be turned off when the function mode is switched.

5.4 Laser-on

1. Short press [MODE / REF] key to switch to OLS mode.



2. Long press [Source λ / LASER] key for two seconds to turn on laser.

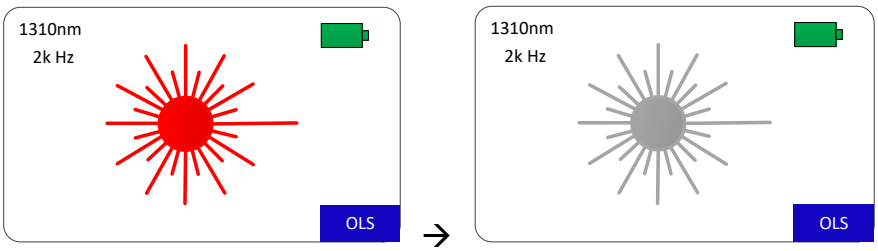


Note

" " refers to emitting light.

5.5 Laser-off

Long press [Source λ / LASER] key for two seconds to turn off laser.

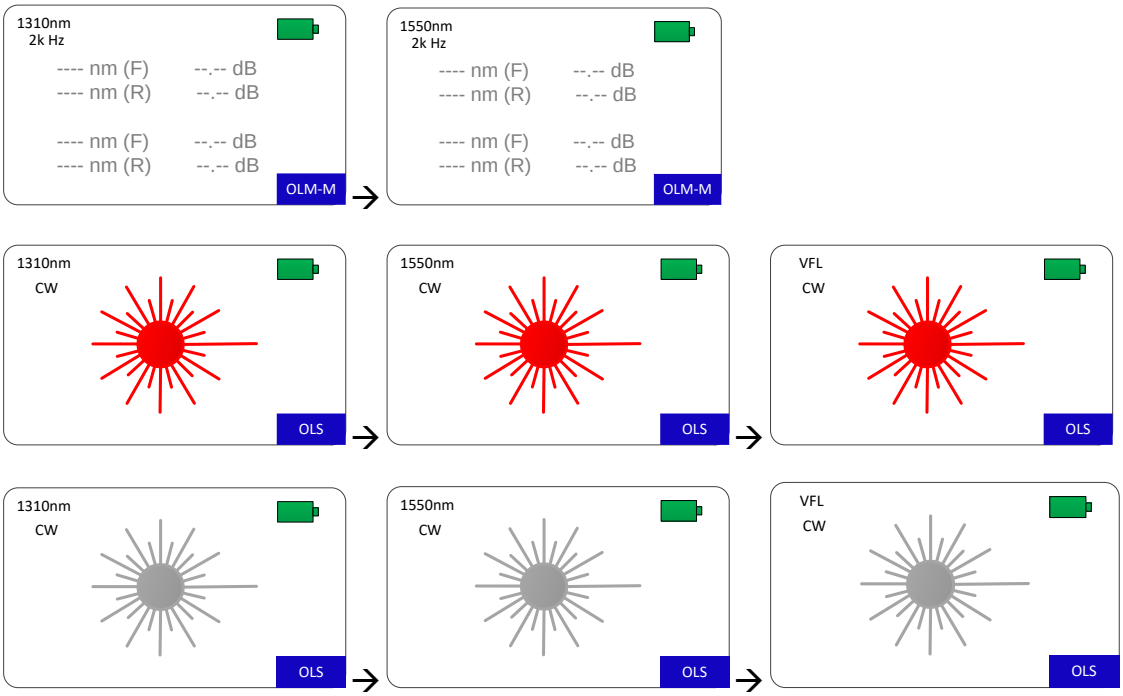


Note

" " refers to no emitting light.

5.6 Setting Wavelength of Optical Light Source

Short press [Source λ / LASER] key to switch wavelength.

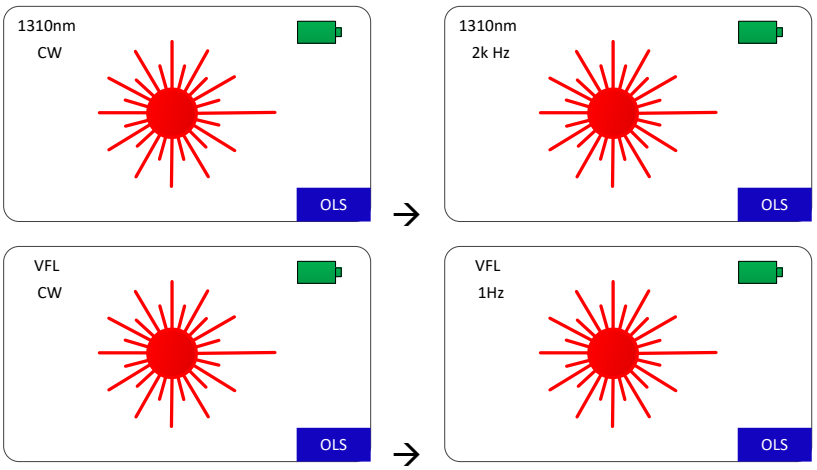


Note

1. Wavelength can also be switched by short pressing [Source λ / LASER] key when laser is off.
2. [Source λ / LASER] key is not available in OPM mode.
3. VFL can't be turned on in OLM mode.

5.7 Setting Modulation Output of Optical Light Source

Short press [CW/Zero] key repeatedly until the desired modulation output is displayed in OLS mode.

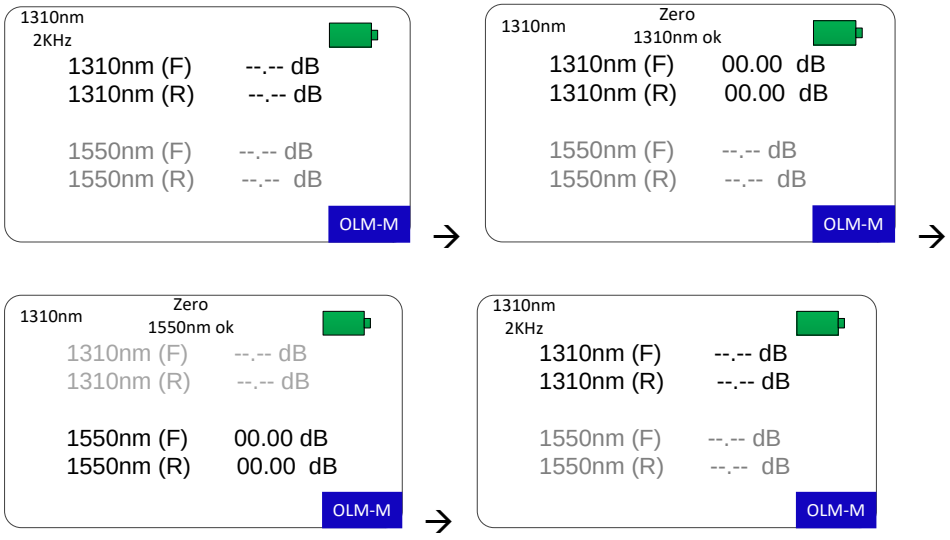


Note

1. Modulation output can't be switched by short pressing [CW/Zero] key when the function mode is not OLS mode.
2. Modulation output:
   - 650nm: CW → 1Hz → 2Hz → CW
   - Other wavelengths: CW → 270Hz → 1kHz → 2kHz → CW

5.8 Calibration and Zeroing

Prepare a short patch cord before performing optical loss measurement. Connect one end of the patch cord to the optical connector of OPM and the other end to the optical connector of OLS. Long press [CW / Zero] key for two seconds to do calibration and zeroing.



Note

The modulation output of optical light source is 2kHz in OLM mode.

5.9 Setting Wavelength of Optical Power Meter

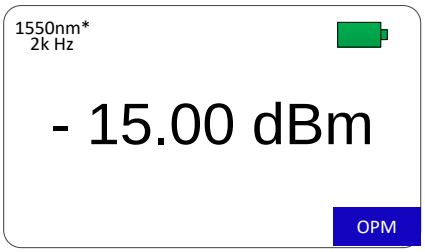
1. Short press [MODE/REF] key to switch to OPM mode.

2. Short press [Power入] key repeatedly until the desired wavelength is displayed.

Note

1. Wavelength can't be selected in OLS mode.
2. [CW] key is not available in OPM mode.

3. The wavelength can be automatically recognized if the modulation output of optical light source is 2kHz from Ascentac OLS200 or OLM300 series.

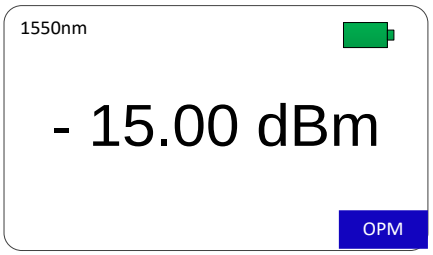


Note

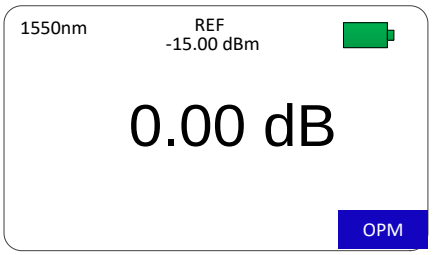
"*" behind the wavelength refers to automatic wavelength recognition.

5.10 Setting Reference Value (Default: OFF)

1. Short press [MODE/REF] key to switch to OPM mode.



2. Long press [MODE/REF] key for two seconds to set the reference value.

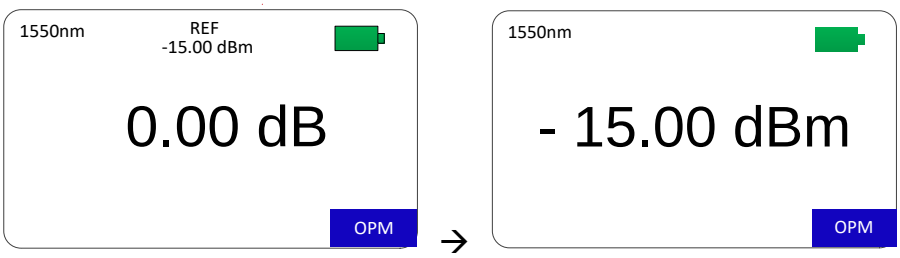


Note

The measurement unit will be dB after setting the reference value.

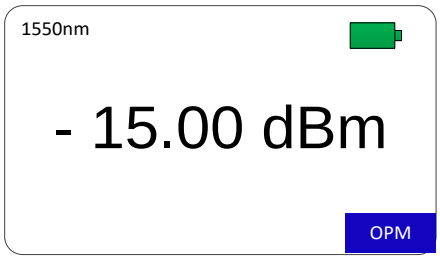
5.11 Cancelling Reference Value

Short press [dBm/mW] key to cancel the reference value.

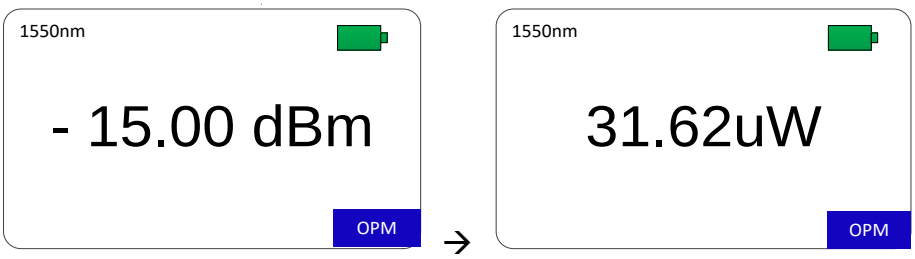


5.12 Setting Measurement Units (Default: dBm)

1. Short press [MODE / REF] key to switch to OPM mode.

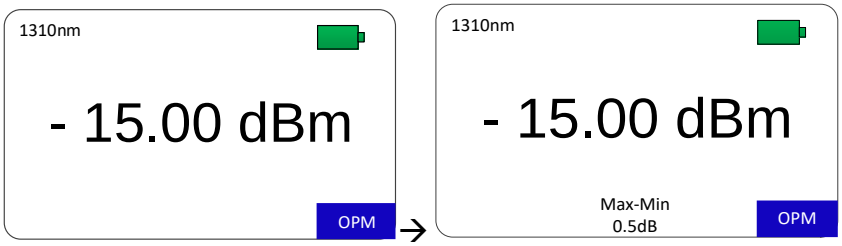


2. Short press [dBm / mW] key to switch measurement units.



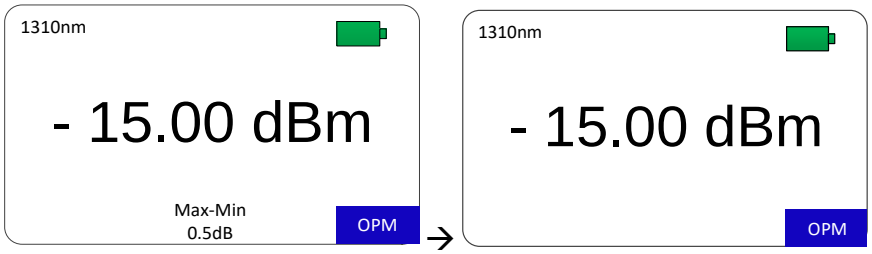
5.13 Optical Power Monitoring (Default: OFF)

1. On the display of optical power measurement, press [MIN/MAX MEAS] key for two seconds to access optical power monitoring.



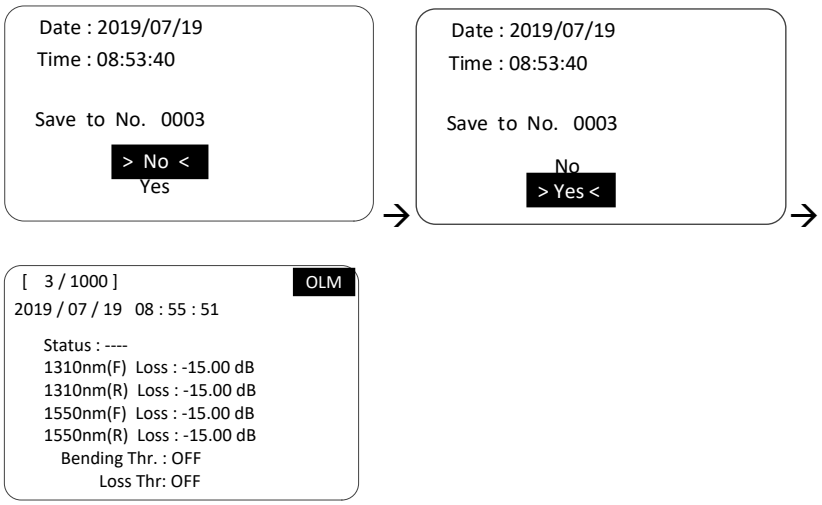
2. Short press [MIN/MAX MEAS] key to switch monitoring mode.
   - Monitoring mode: Max → Min → Max-Min → Max
   - Definition of monitoring mode:
     - Max: Record the maximum value of optical power.
     - Min: Record the minimum value of optical power.
     - Max-Min: Record the difference of the above value.

3. Long Press [MIN/MAX MEAS] key for two seconds to turn off monitoring mode.



5.14 Saving Measurement Result

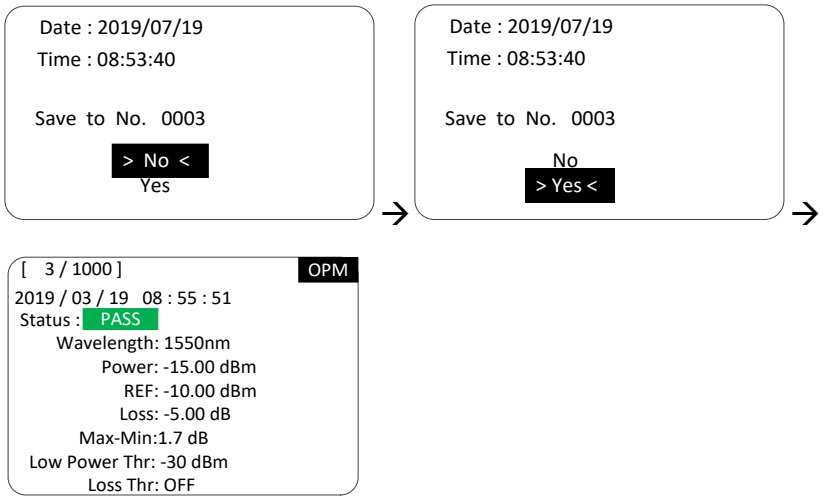
1. On the display of optical loss measurement (OLM-M mode), long press [LOAD / SAVE] key for two seconds to save measurement result. Press [↑] [↓] to select "Yes" and press [↵] to confirm it.



Note

- Date: Refer to the saving date.
- Time: Refer to the saving time.
- Save to No.: Refer to data saving number.
- Status:
  - ----
    Without setting Bedning Thr. & Loss Thr.
  - **PASS**
    Value measured with long wavelength and the value measured with short wavelength ≤ Bending Thr.
    Value measured with long wavelength and the value measured with short wavelength ≤ Loss Thr.
  - **Bending**
    Value measured with long wavelength minus value measured with short wavelength > Bending Thr.
  - **Loss**
    Value measured with long wavelength **or** the value measured with short wavelength > Loss Thr.
- **Loss** will be displayed when the alarm of Bending and Loss occur at the same time.

2. On the display of optical power measurement, long press [LOAD / SAVE] key for two seconds to save measurement result. Press [↑] [↓] to select "Yes" and press [↵] to confirm it.



Note

- Date: Refer to the saving date.
- Time: Refer to the saving time.
- Save to No.: Refer to data saving number.
- Status:
  - ----
    Without setting Low Power Thr. & Loss Thr..
  - **PASS**
    Measured value of optical power ≥ Low Power Thr.
    Measured value of loss ≤ Loss Thr
  - **Low Power**
    Measured value of optical power < Threshold of low power
  - **Loss**
    Measured value of loss > Loss Thr.
- REF: Reference value can be saved if there is a reference value. However, the status of REF will be "OFF" if users don't set reference value.
- Loss: If there is a reference value, loss value will be saved. If there is no reference value, the status of Loss will be "--.--".

- MEAS: Without monitoring mode, the status of MEAS will be "OFF". With monitoring mode, the value will be displayed. (e.g., MAX-MIN: 1.7dB)

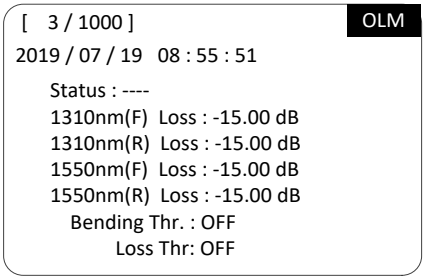
3. Press [↵] to save measurement result and return to the display of optical power measurement; press [ESC] to discard saving and return to the display of optical power measurement.

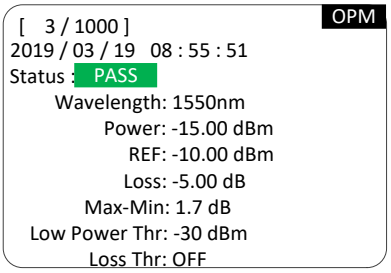
   Note

   Measurement result can't be saved in OLS mode.

5.15 Loading Measurement Result

4. On the display of optical power measurement, short press [LOAD/SAVE] key to load measurement result.

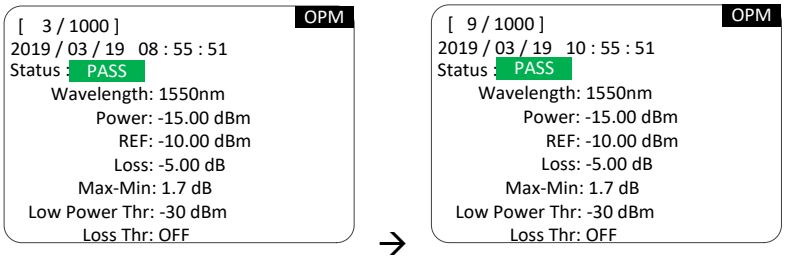




Note

- Date: Refer to the saving date.
- Time: Refer to the saving time.
- Save to No.: Refer to data saving number.
- Status:
  - ----
    Without setting Low Power Thr. & Loss Thr.
  - **PASS**
    Measured value of optical power ≥ Low Power Thr.
    Measured value of loss ≤ Loss Thr.
  - **Low Power**
    Measured value of optical power < Threshold of low power
  - **Loss**
    Measured value of loss > Loss Thr.
- REF: Reference value can be saved if there is a reference value. However, the status of REF will be "OFF" if users don't set reference value.
- Loss: If there is a reference value, loss value will be saved. If there is no reference value, the status of Loss will be "--.--".
- MEAS: Without monitoring mode, the status of MEAS will be "OFF". With monitoring mode, the value will be displayed. (e.g., MAX-MIN: 1.7dB)

5. Press [↑] [↓] to select the data.



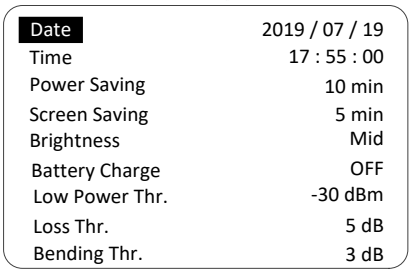
6. Press [ESC] to return to the display of optical power measurement.

Note

On the display of loading measurement result, only [↑] [↓] [ESC] are available.

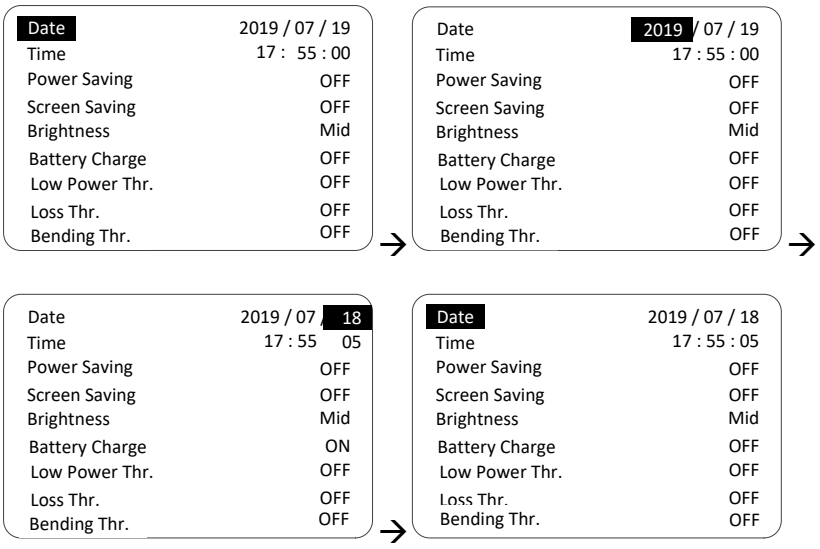
5.16 Device Setting

Short press [⚙] key to access setting as below image.



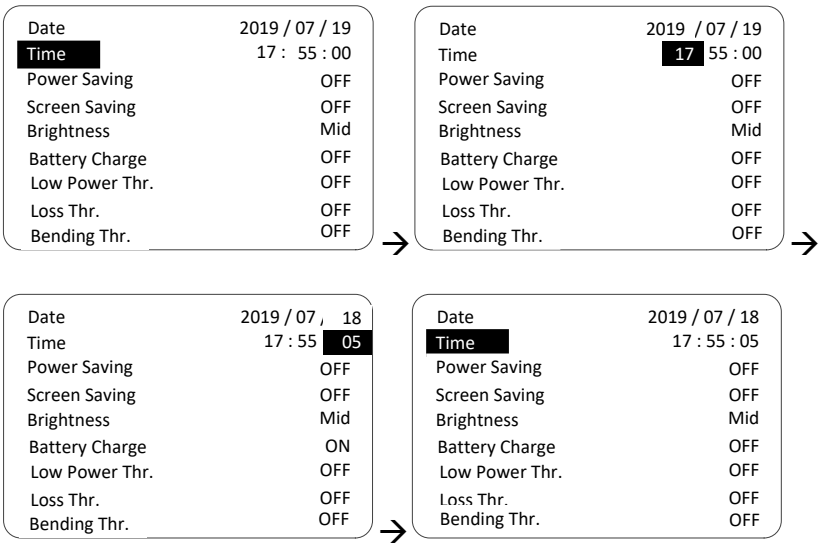
5.16.1 Date

1. Press [↑] [↓] to move to "Date" and press [↵] to access year setting.
2. Press [↑] [↓] to select year and press [↵] to access month setting; press [ESC] to discard change and return to the original display.
3. Press [↑] [↓] to select month and press [↵] to access date setting; press [ESC] to discard change and return to access year setting.
4. Press [↑] [↓] to select date and press [↵] to confirm it; press [ESC] to discard change and return to access month setting.



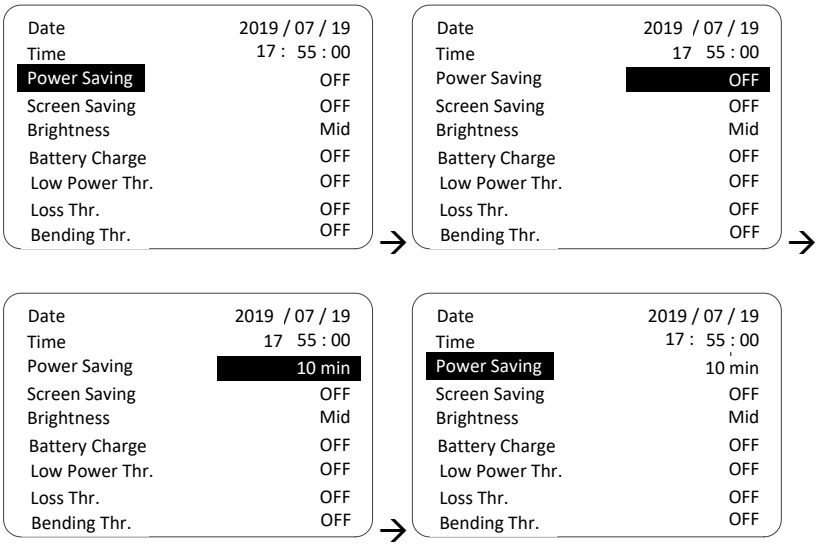
5.16.2 Time

1. Press [↑] [↓] to move to "Time" and press [↵] to access hour setting.
2. Press [↑] [↓] to select hour and press [↵] to access minute setting; press [ESC] to discard the change and return to the original display.
3. Press [↑] [↓] to select minute and press [↵] to access second setting; press [ESC] to discard the change and return to access hour setting.
4. Press [↑] [↓] to select second and press [↵] to confirm it; press [ESC] to discard change and return to access minute setting. (10 secs/unit)



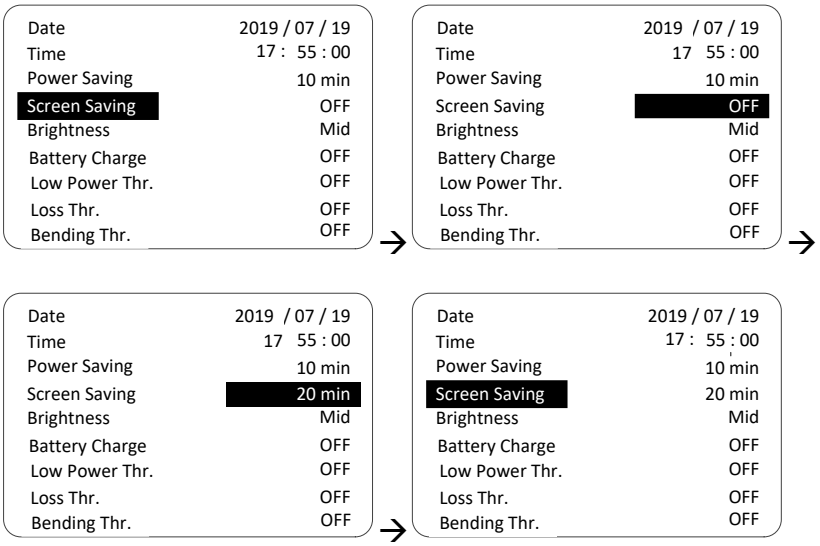
5.16.3 Power Saving (Default: 10 mins)

1. Press [↑] [↓] to move to "Power Saving" and press [↵] to set time.
2. Press [↑] [↓] to select time (OFF or 10 to 120 mins) (10 mins/interval) and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.



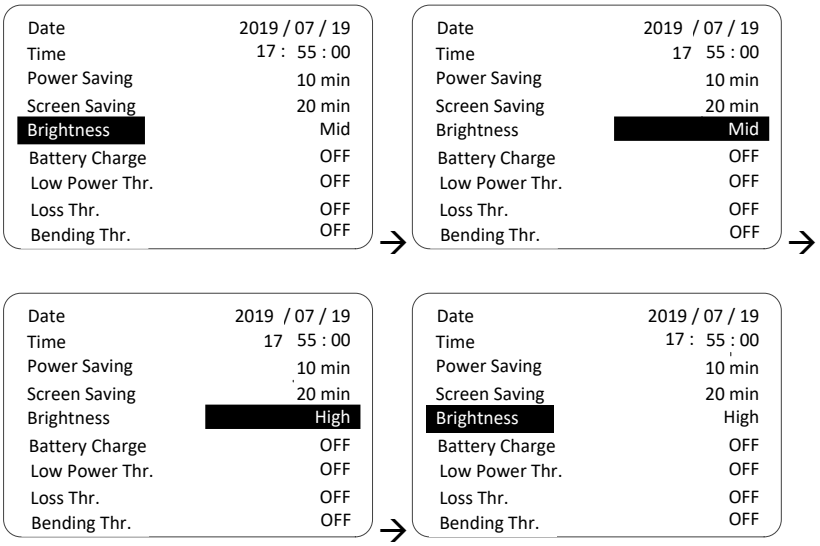
5.16.4 Screen Saving (Default: 5 mins)

1. Press [↑] [↓] to move to "Screen Saving" and press [↵] to access time interval setting.
2. Press [↑] [↓] to select time interval (OFF or 5 to 30 mins) (5 mins/interval) and press [↵] to confirm it; press [ESC] to discard change and return to the original display.



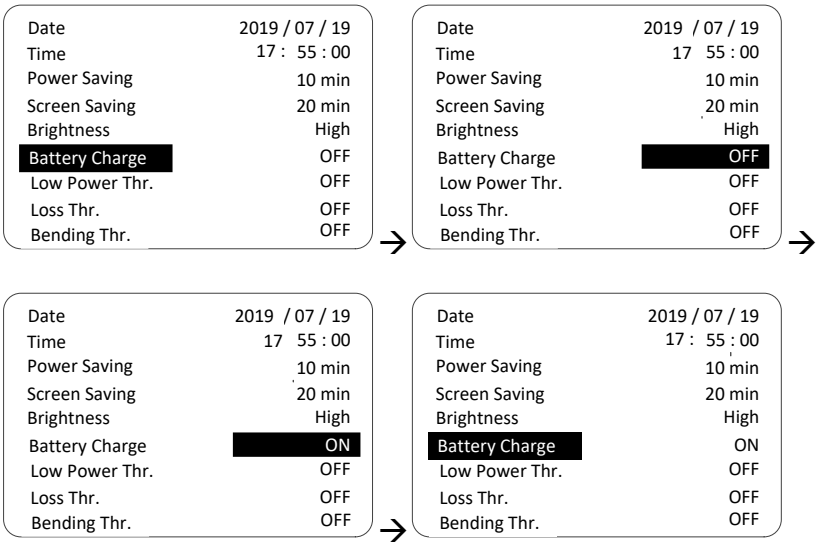
5.16.5 Brightness (Default: Mid)

1. Press [↑] [↓] to move to “Brightness” and press [↵] to access setting.
2. Press [↑] [↓] to select the brightness (High, Mid or Low) and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.



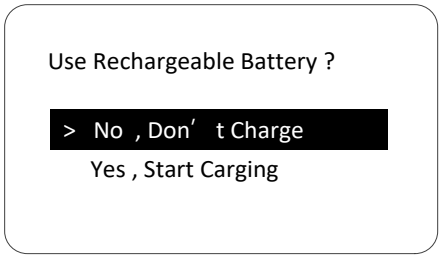
5.16.6 Battery Charge (Default: OFF)

1. Press [↑] [↓] to move to "Battery Charge" and press [↵] to access turning on/off battery charge.
2. Press [↑] [↓] to select turning on/off battery charge and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.



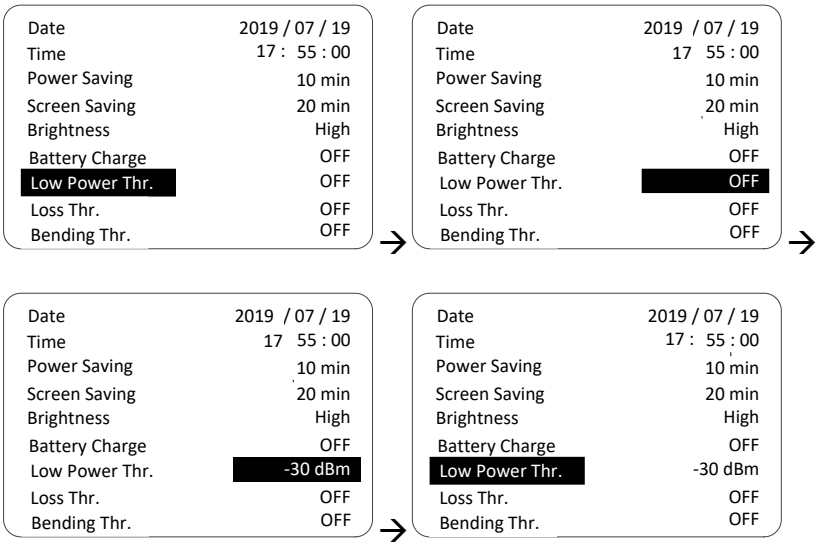
Note

Users are required to confirm whether to turn on battery charge again after the device detects USB connection.



5.16.7 Low Power Thr. (Default: -30dBm)

1. Press [↑] [↓] to move to "Low Power Thr." and press [↵] to access setting.
2. Press [↑] [↓] to select the low power threshold (OFF or 0 to -45 dBm) (1dBm/interval) and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.

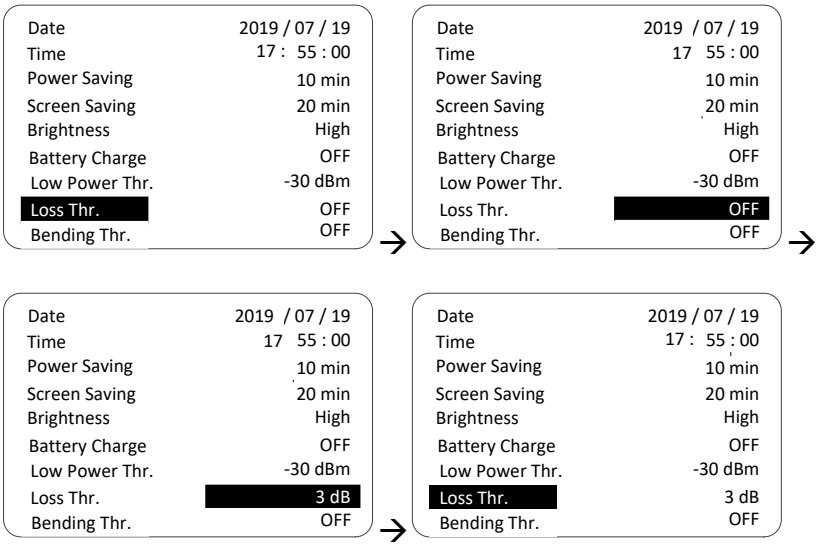


Note

"Low Power" will be displayed if the measured value of optical power is less than low power threshold. The Pass/Fail LED indicator on the device will be red.

5.16.8 Loss Thr. (Default: 5dB)

1. Press [↑] [↓] to move to "Loss Thr." and press [↵] to set the threshold.
2. Press [↑] [↓] to select the threshold (OFF or 1 to 5 dB) (0.5dB/interval) and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.

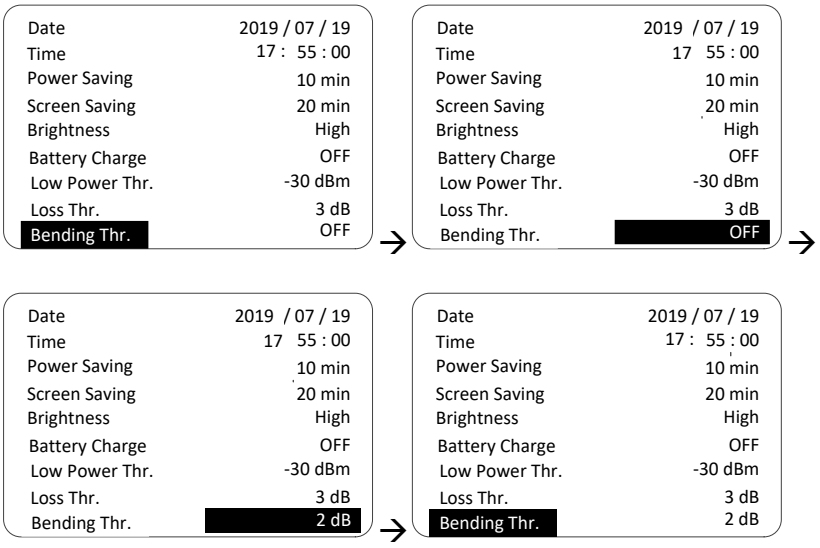


Note

"**Loss**" will be displayed if the value measured with long wavelength and the value measured with short wavelength are all higher than loss threshold. The Pass/Fail LED indicator on the device will be red.

5.16.9 Bending Thr. (Default: 3dB)

1. Press [↑] [↓] to move to "Bending Thr." and press [↵] to set the threshold.
2. Press [↑] [↓] to select the threshold (OFF or 1 to 5 dB) (0.5dB/interval) and press [↵] to confirm it; press [ESC] to discard the change and return to the original display.



Note

1. This function is only available in OLM-M mode.
2. "**Bending**" will be displayed if the value measured with long wavelength and the value measured with short wavelength are all higher than bending threshold. The Pass/Fail LED indicator on the device will be red.

5.16.10 Device Info.

Press [↑] [↓] to move to "Device Info" and press [↵] to view device information.