



ORL500

Optical Reflection Locator

User Guide _ Version 1.0

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Service & Support

If you have any questions or need any assistance, please contact our service center.

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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	1
2. Introduction	2
2.1 Features	3
2.2 Application	3
3. Layout	4
3.1 Appearance	4
3.2 Instruction	5
3.3 LED Indicator	5
4. Display	6
4.1 Home	6
4.2 Function	7
5. Operation	8
5.1 Power-on	8
5.2 Home Screen	8
5.3 Optical Reflection Locator	9
5.3.1 Setting Optical Reflection Locator	10
5.3.1.1 Setting Testing Mode	11
5.3.1.1.1 Auto Test	11
5.3.1.1.2 Manual Test	14
5.3.1.2 Distance Unit	17
5.3.1.3 Test Distance	20
5.3.1.4 Refractive Index	23
5.3.1.5 Average	26
5.3.1.6 Execute Mode	28
5.3.1.7 Threshold of Total Return Loss	31
5.3.1.7.1 Value Mode	32

5.3.1.7.2	Text Mode.....	35
5.3.2	Test.....	38
5.3.3	Test Results	40
5.3.4	Event Location	41
5.3.5	Saving Data.....	43
5.3.6	Reading Data	45
5.3.6.1	Threshold of Event Return Loss.....	47
5.3.6.1.1	Value Mode	48
5.3.6.1.2	Text Mode.....	51
5.3.7	Deleting Data.....	54
5.3.7.1	Single Data.....	54
5.3.7.2	All Data	56
5.4	Optical Power Meter.....	58
5.4.1	Setting Optical Power Meter	59
5.4.1.1	Threshold of Optical Power.....	60
5.4.1.1.1	Turn on the Threshold of Optical Power	61
5.4.1.1.2	Turn off the Threshold of Optical Power	64
5.4.1.2	Average.....	66
5.4.1.3	Wavelength Setting	69
5.4.1.4	Unit Setting	72
5.4.2	Test Results	75
5.4.3	Reference Value	76
5.5	Optical Light Source.....	77
5.5.1	Turn on/off Light Source.....	78
5.6	Insertion Loss Meter	79
5.6.1	Insertion Loss	80
5.6.2	Calibration.....	82
5.7	Visual Fault Locator	84
5.7.1	Turn on/off Visual Fault Locator	85
5.7.2	Modulation Output.....	86

5.8	System Setup	87
5.8.1	Brightness Adjustment	88
5.8.2	Storage Device	91
5.8.3	Date Setting.....	94
5.8.4	Time Setting	97
5.8.5	Standby Time.....	100
5.8.6	Tone	102
5.8.7	Storage Space	105
5.8.8	Default Factory Setting	107
5.9	System Information	109

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 ORL 500 Series, Optical Reflection Locator, which is intended for testing immoderate reflections in optical cables uses the exclusive techniques to shorten the event dead-zone to 1 meter. Reflection caused by end-face contamination, poor connections and degraded or damaged fiber can be quickly pinpointed in installation or maintenance of fiber-optic networks. The high accuracy is assured as its less than or equal to -60 dBm return loss measurements plus the angled single-mode test port (APC).

Ascentac ORL 500 Series can be applied for a wide range of functions, including locating reflection point or visual fault, total return loss or insertion loss measurement, optical power measurement and light source output. Testing can be completed with ease by single instrument and will be less constrained whether clients are at home or not. It is all-featured and convenient for technicians at any level to intensify the work efficiency.

2.1 Features

- 5 fiber-optic test functions in one unit (ORL, Power meter, Light source, Insertion loss meter, VFL)
- Extremely short event dead-zone: 1m
- Widely applicable range of optical power: +10 to -60 dBm
- Storage capacity up to 500 records
- Automatic Pass/Fail analysis

2.2 Application

- Locating breaks, severe bends, high-loss splices, dirty connectors or potentially weak network cabling areas

3. Layout

3.1 Appearance

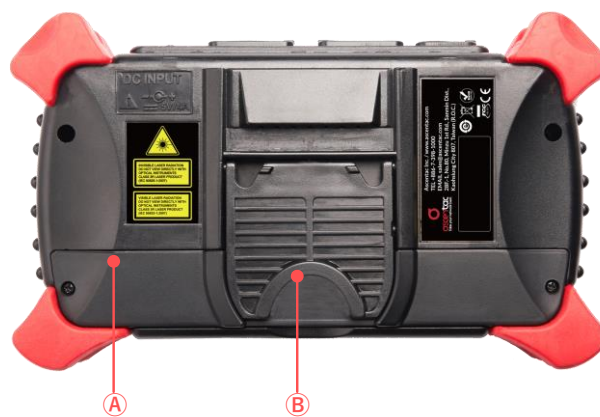
- Front








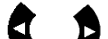

- Top





- Back



3.2 Instruction

Button	Function	Item	Function
	Power on/off	1	Power
	Start or stop	2	USB
	 : Enter	3	Ethernet
	 : Up / Down	4	Reflection Locator
	 : Left / Right	5	Optical Power Meter
	Menu or ESC	6	Visual Fault Locator
F1 to F4	Function keys	A	Battery
		B	Support stand








3.3 LED Indicator

Icon	LED Indicator	LED Status	Description
	Laser	Off	Laser Off
		Red	Laser On
	Battery	Red	Low battery
		Orange	Charging
		Green	Normal

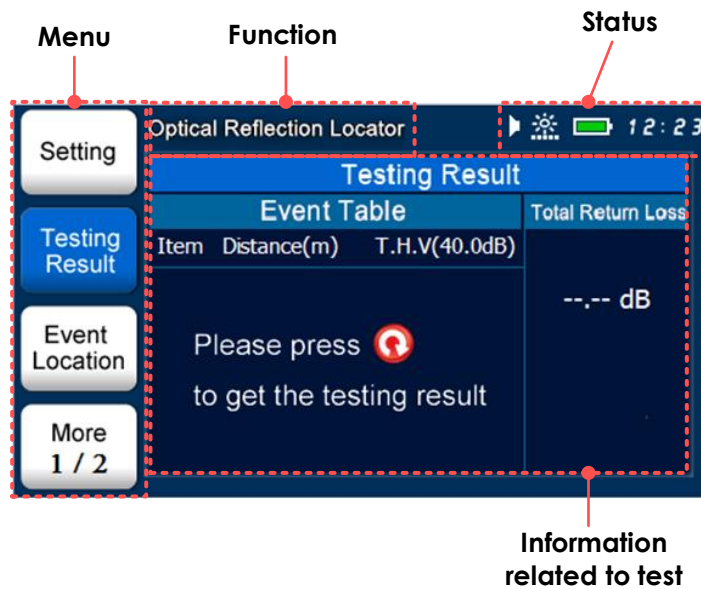
4. Display











4.1 Home



Icon	Function	Description
	Optical Reflection Locator	Measure total return loss, total loss, event return loss and the location in the optical cable
	Optical Power Meter	Measure optical power
	Light Source	Output constant light source
	Insertion Loss Meter	Measure the insertion loss of fibers or components
	Visual Fault Locator	Output visual light
	System Setup	Set parameter
	System Info	System information

4.2 Function



Icon	Function	Description
	Battery status	 Fully charged
		 Low battery
		 Insufficient power
		 Charging
	Brightness	The brightness of LCD display can be adjusted.
	Laser On	Emitting optical light
	Alert tone	 On
		 Off



5. Operation

5.1 Power-on

Long Press [] key for two seconds to turn on the equipment and enter into startup screen.





5.2 Home Screen


Short press [] or [] key to select the desired function.

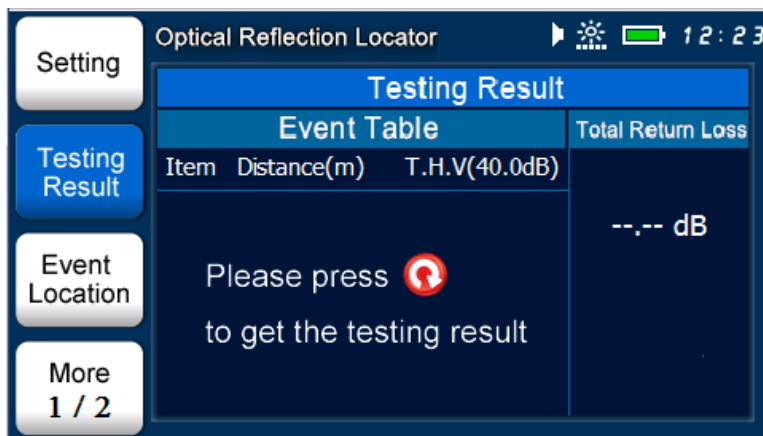


5.3 Optical Reflection Locator

Short press [] or [] key to select **Optical Reflection Locator**.

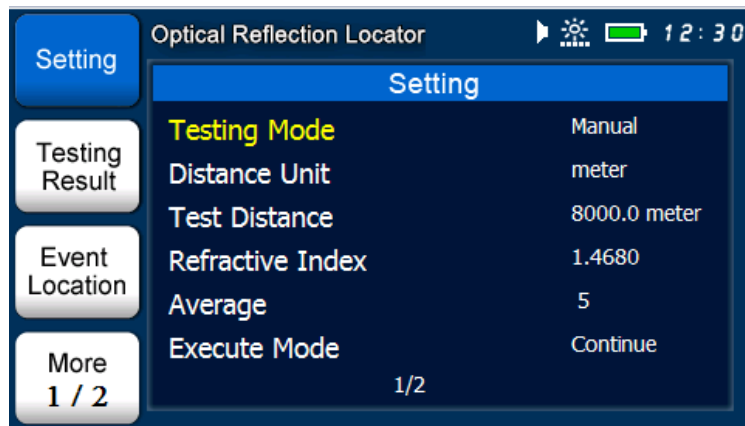


Short press [] key to enter into the home screen of optical reflection locator.



5.3.1 Setting Optical Reflection Locator

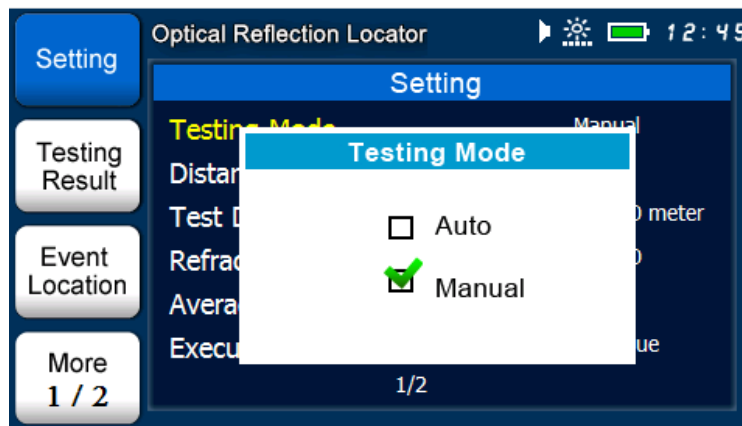
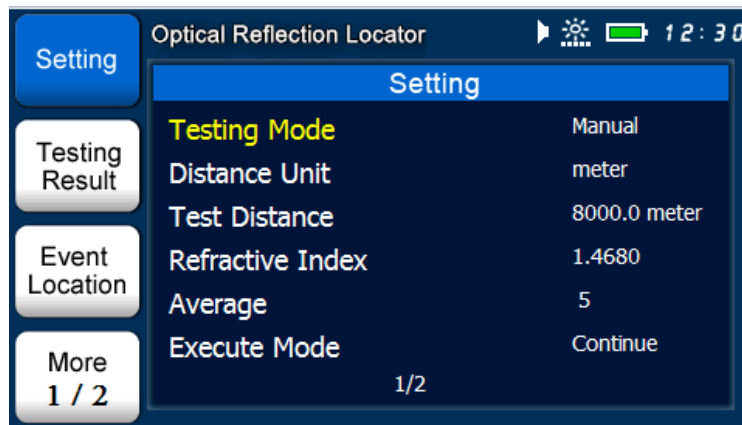
Short press [F1] key to set parameters.



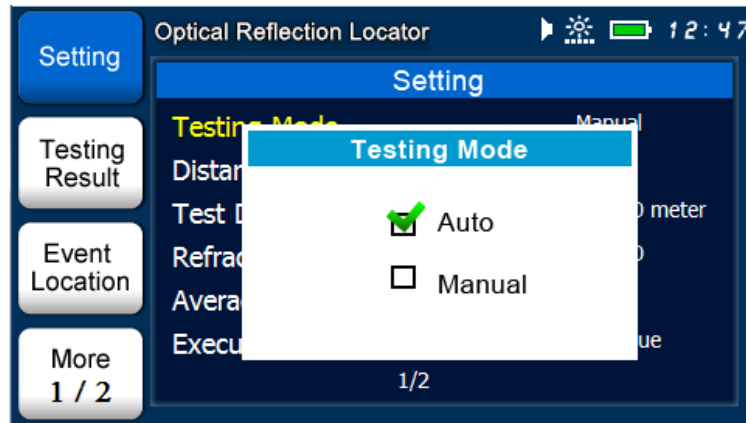
5.3.1.1 Setting Testing Mode


5.3.1.1.1 Auto Test

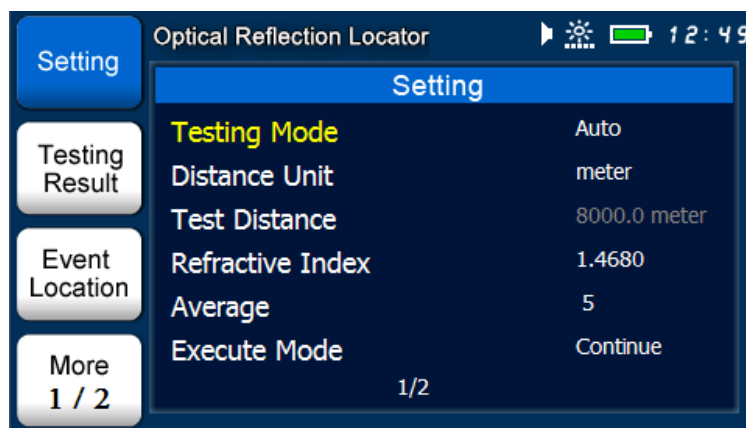
Short press [] or [] key to move to "Testing Mode", and then short press [] key to access mode setting.



Short press [] or [] key to select “Auto”.




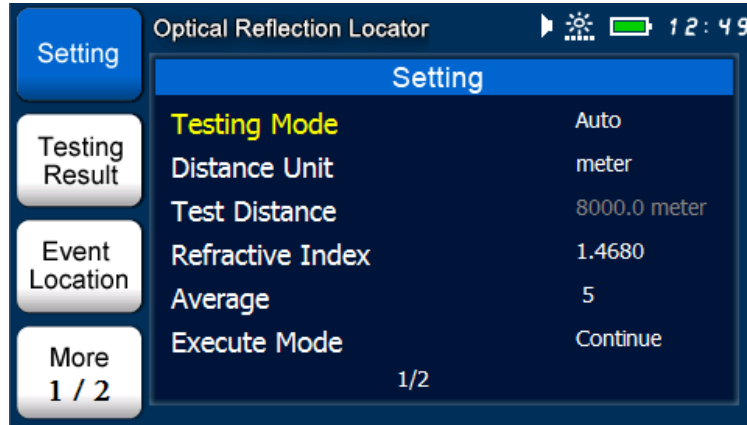
Short press [] key to confirm the setting.



Note

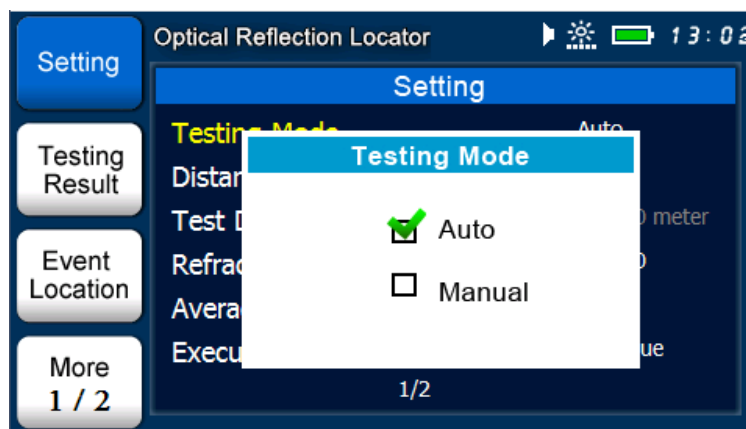
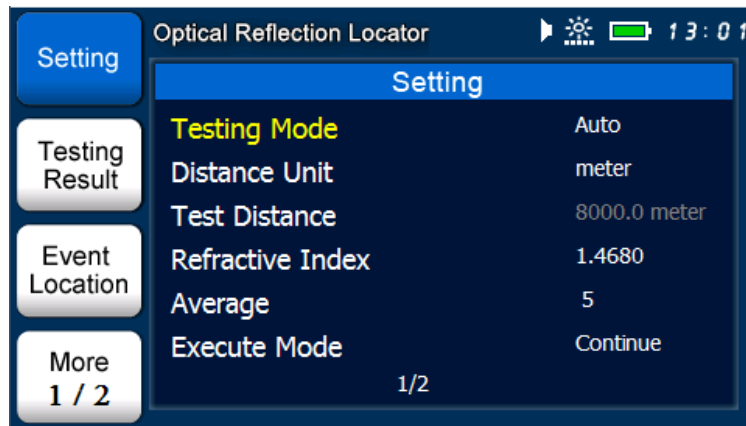
Auto Mode is an automated testing method. ORL500 will automatically set **Test Distance** based on the length of optical fiber.

Short press [] key to discard the setting and return to the setting display.

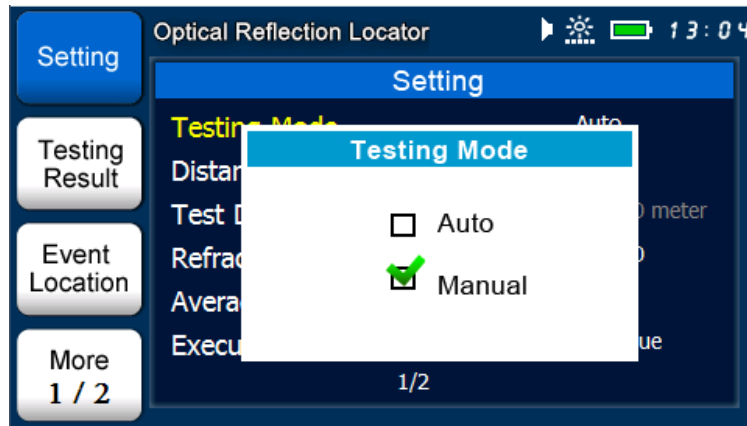



5.3.1.1.2 Manual Test

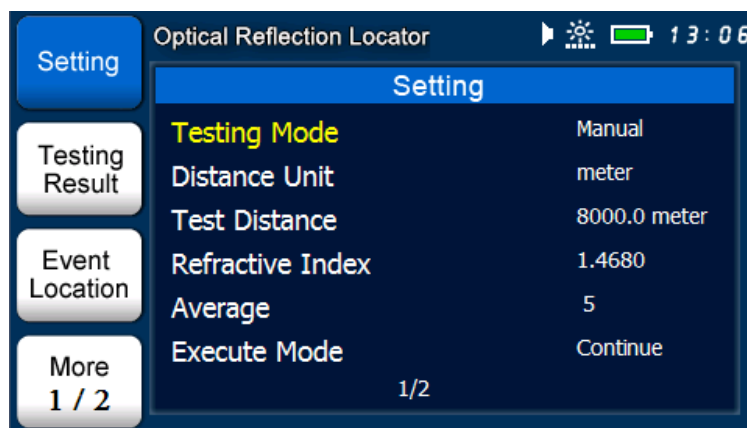
Short press [] or [] key to move to “**Testing Mode**”, and then short press [] key to access mode setting.



Short press [] or [] key to select “Manual”.




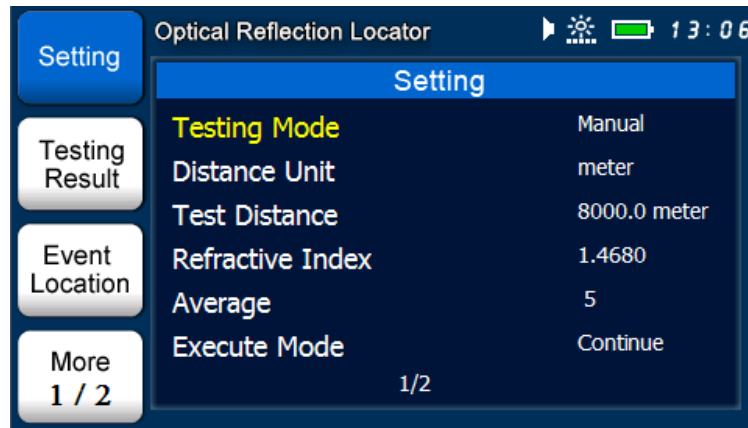
Short press [] key to confirm the setting.






Note

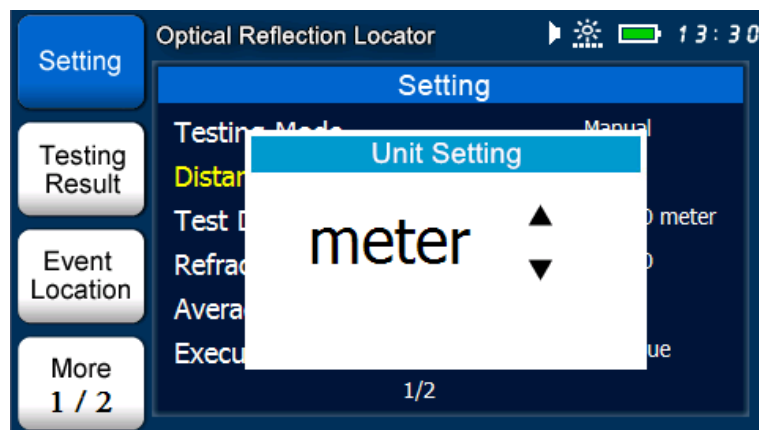
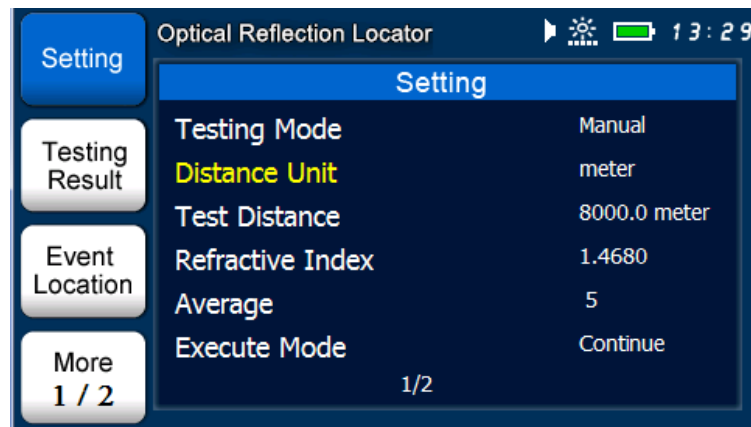
Users need to set a proper **Testing Distance** under the **Manual Mode** for ORL500 to accurately detect reflection events in the optical fiber.



Short press [] key to discard the setting and return to the setting display.

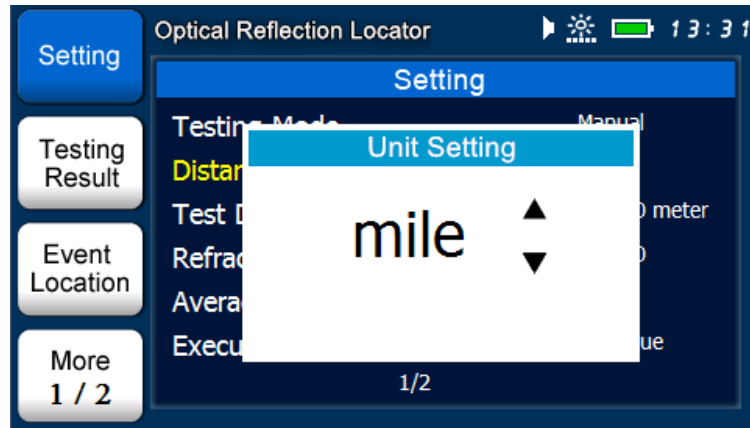



5.3.1.2 Distance Unit

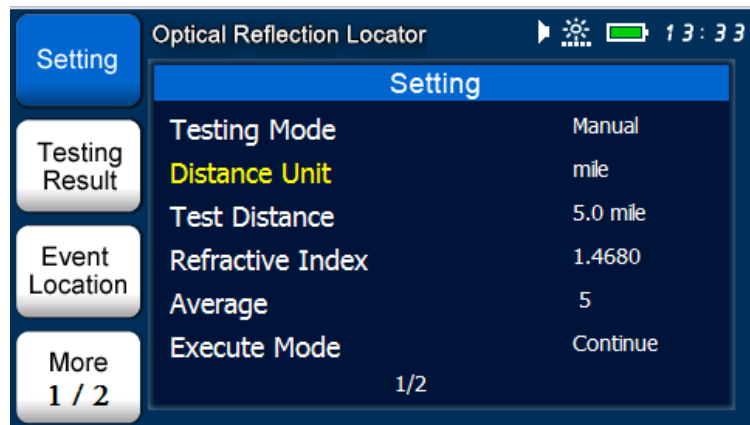
Short press [] or [] key to move to “Distance Unit”, and then short press [] key to access unit setting.




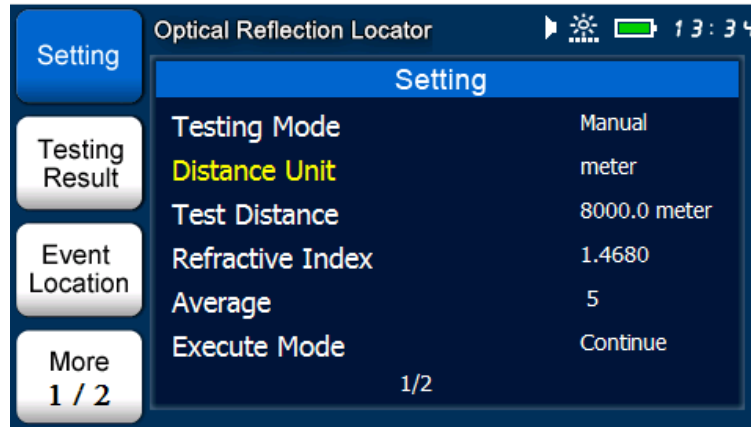
Short press [] or [] key to select the desired unit.






Short press [] key to confirm the setting.

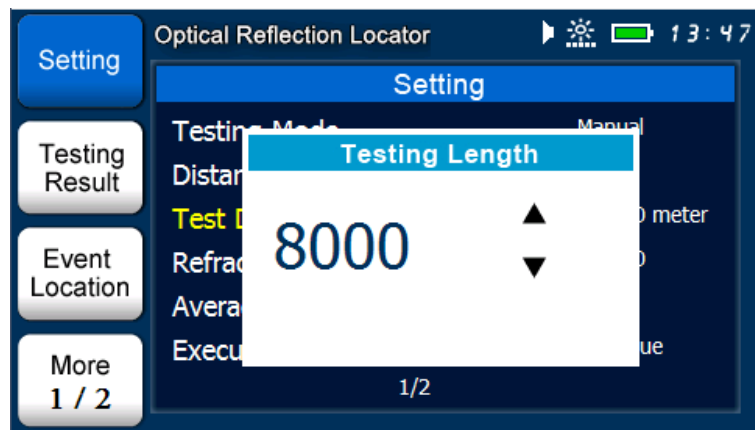
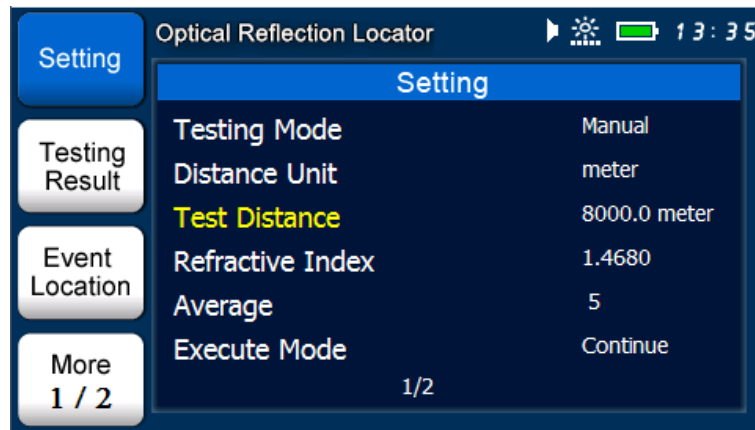


Short press [] key to discard the setting and return to the setting display.

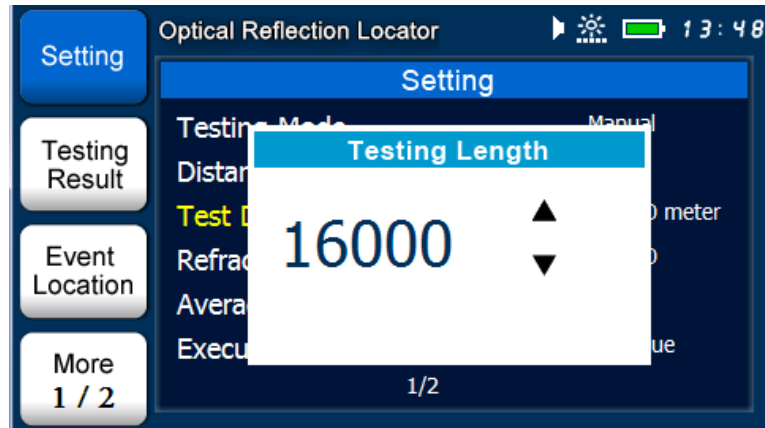



5.3.1.3 Test Distance

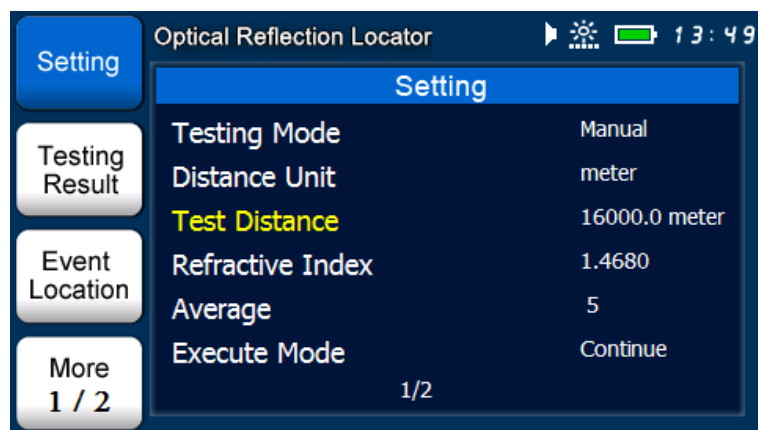
Short press [] or [] key to move to “Test Distance”, and then short press [] key to access distance setting.




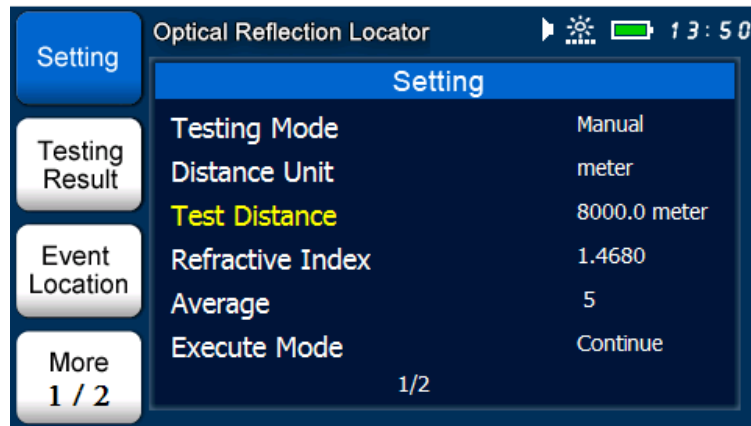
Short press [] or [] key to select the distance.






Short press [] key to confirm the setting.

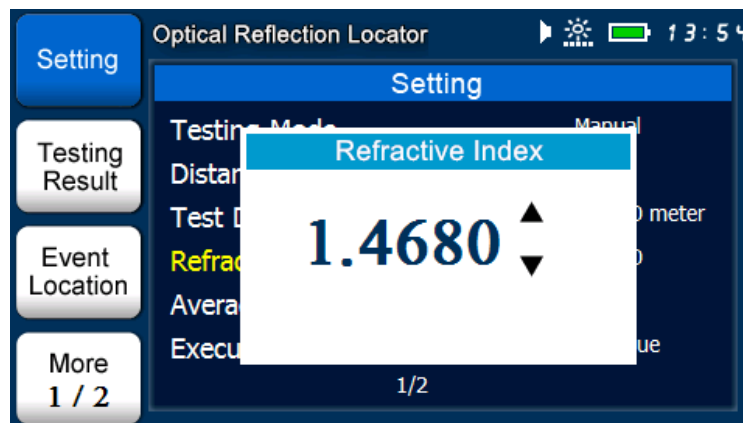
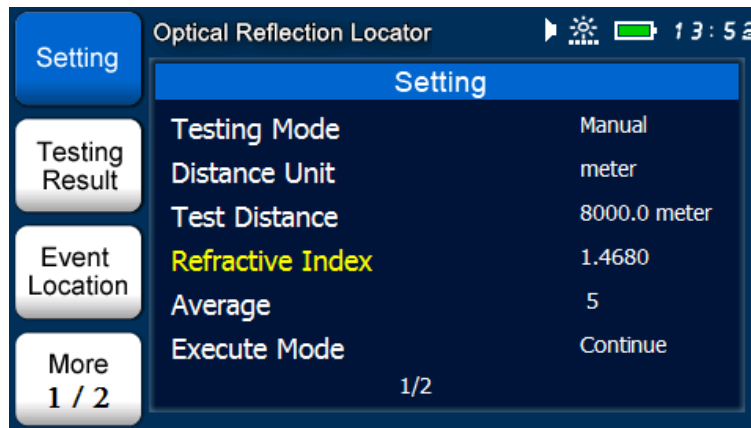




Short press [] key to discard the setting and return to the setting display.

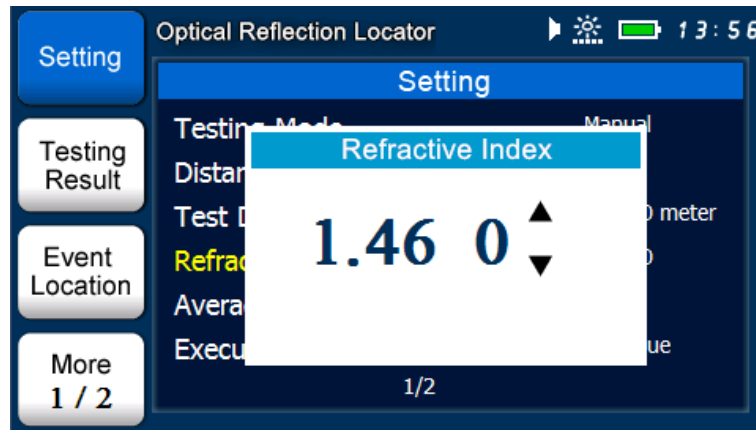


5.3.1.4 Refractive Index

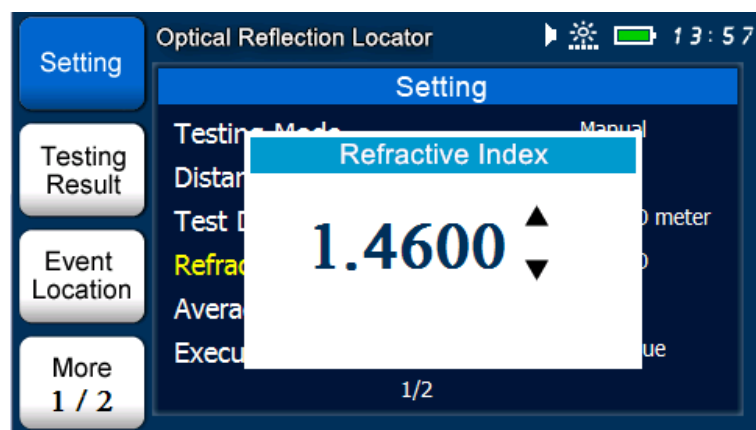
Short press [] or [] key to move to “**Refractive Index**”, and then short press [] key to access refractive index setting.




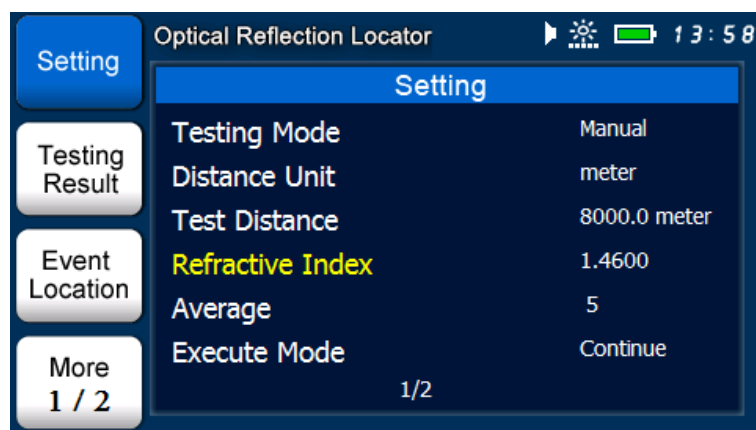
Short press [] or [] key to select the refractive index and modify the digits.




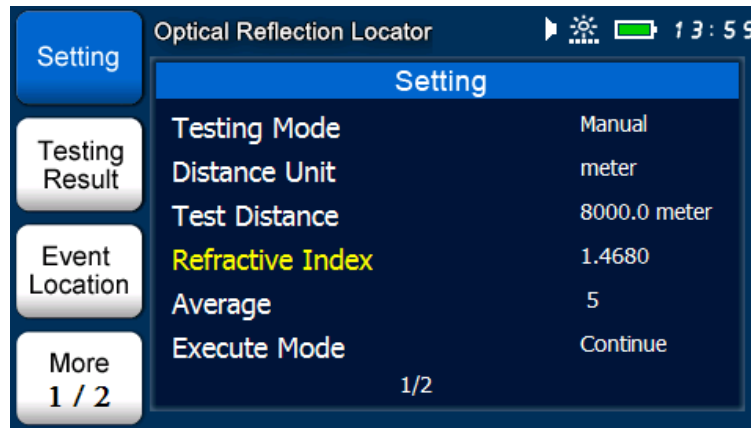
Short press [] or [] key to adjust the value.






Short press [] key to confirm the setting.

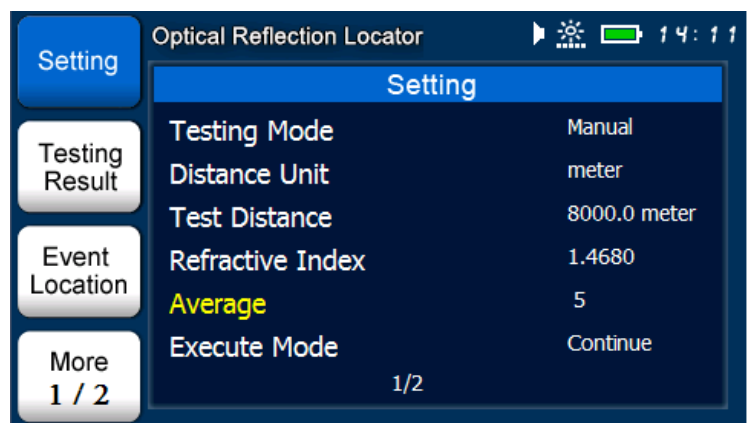
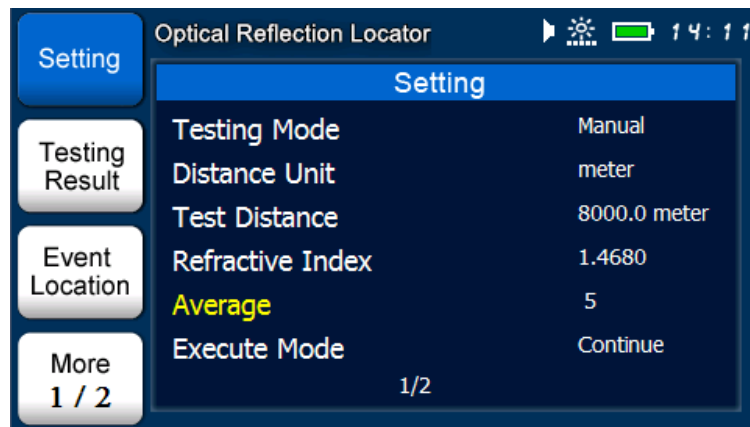


Short press [] key to discard the setting and return to the setting display.

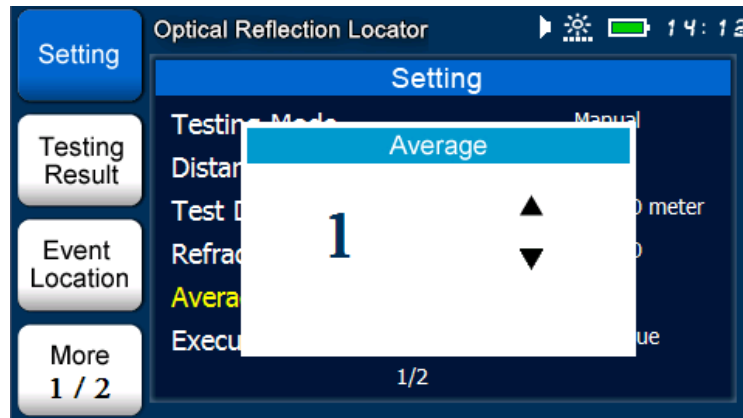



5.3.1.5 Average

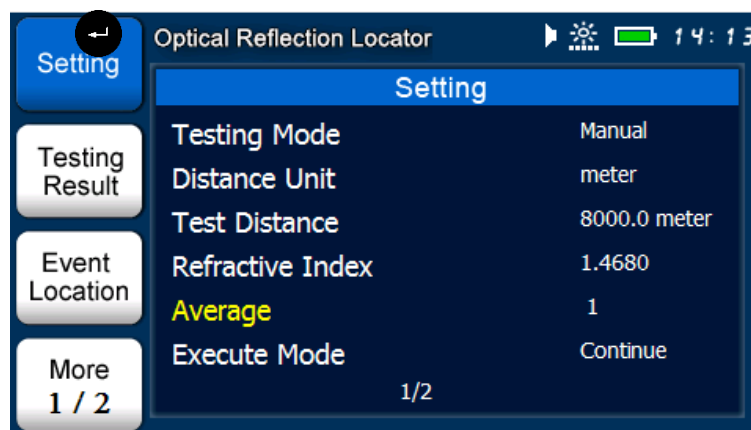
Short press [] or [] key to move to “**Average**”, and then short press [] key to access average setting.




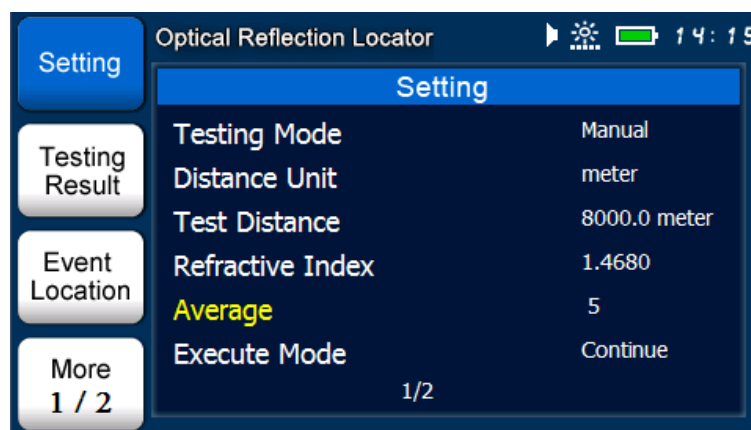
Short press [] or [] key to set average.






Short press [] key to confirm the setting.

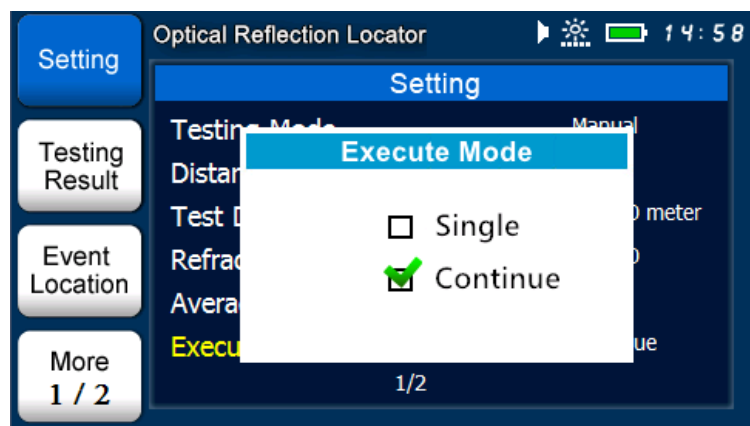
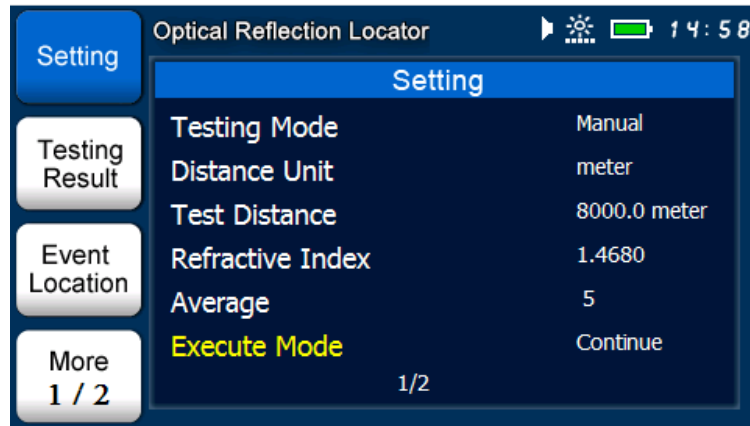


Short press [] key to discard the setting and return to the setting display.

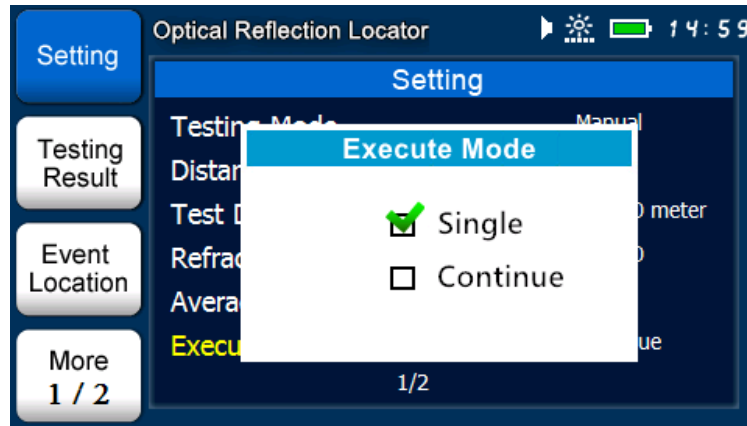



5.3.1.6 Execute Mode

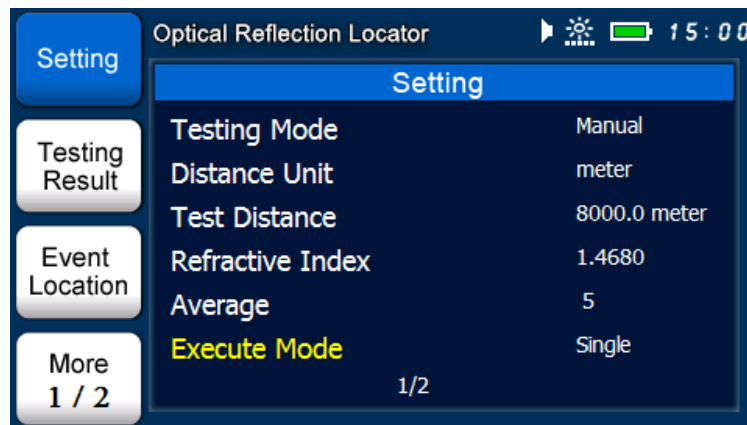
Short press [] or [] key to move to “Execute Mode”, and then short press [] key to access mode setting.




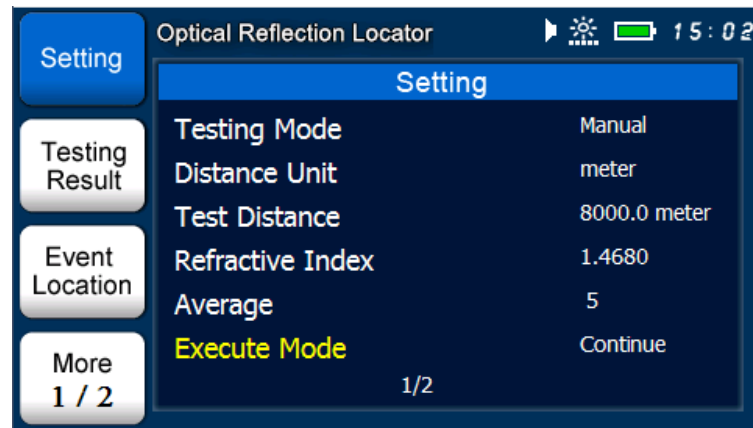
Short press [] or [] key to set the mode.



Short press [] key to confirm the setting.





Short press [] key to discard the setting and return to the setting display.

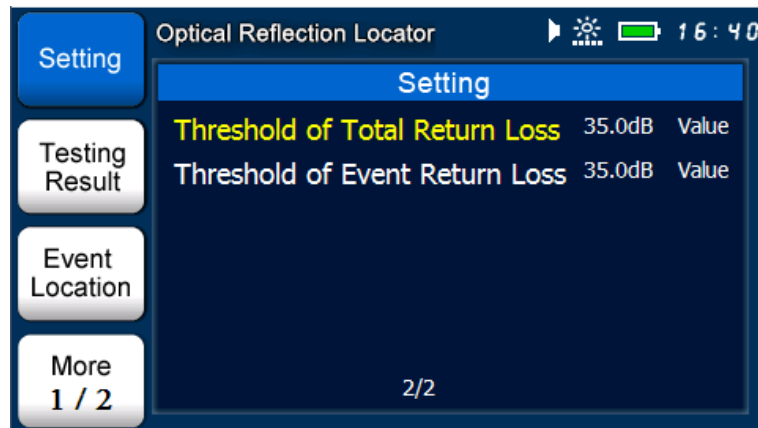


Note


Under “**Continue**” mode, ORL500 will stop the test if the threshold value is exceeded for two times.

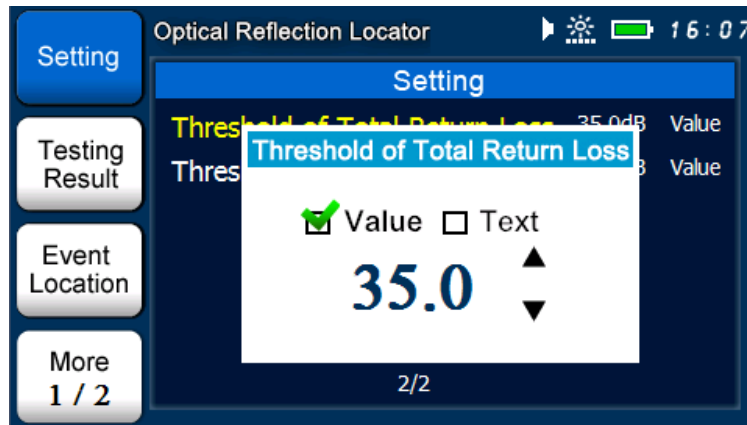
5.3.1.7 Threshold of Total Return Loss



Short press [] or [] key to move to “Threshold of Total Return Loss”.

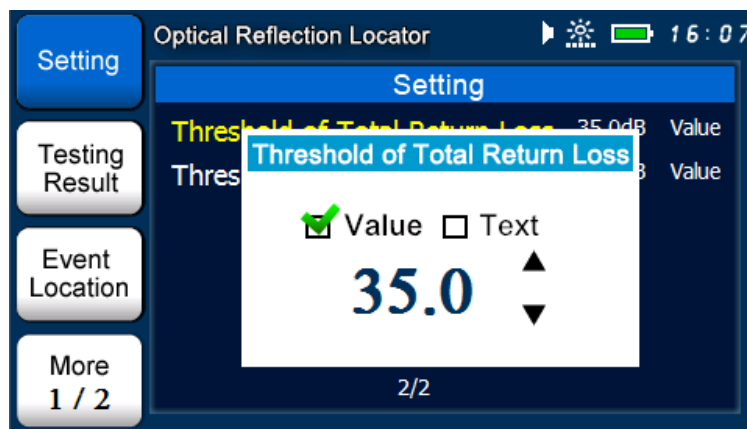


5.3.1.7.1 Value Mode

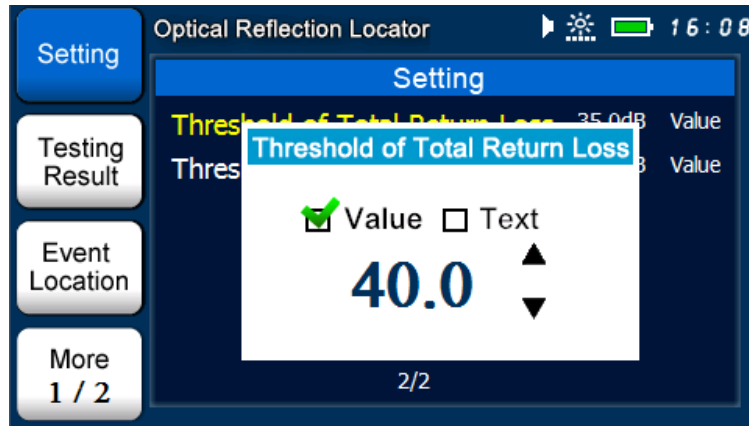
Short press [] key to access the setting.



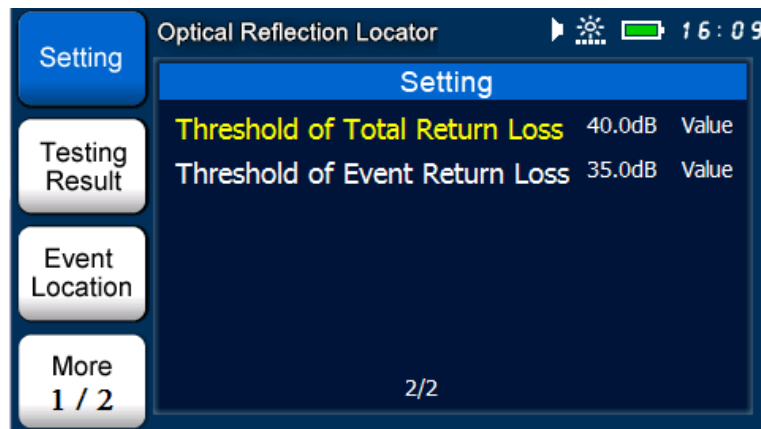
Short press [] or [] key to select the value mode.




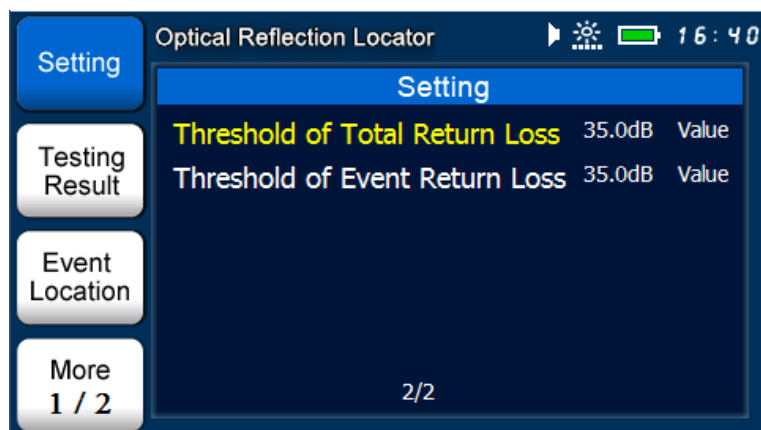
Short press [] or [] key to set the threshold.



Short press [] key to confirm the setting.



Short press [] key to discard the setting and return to the setting display.

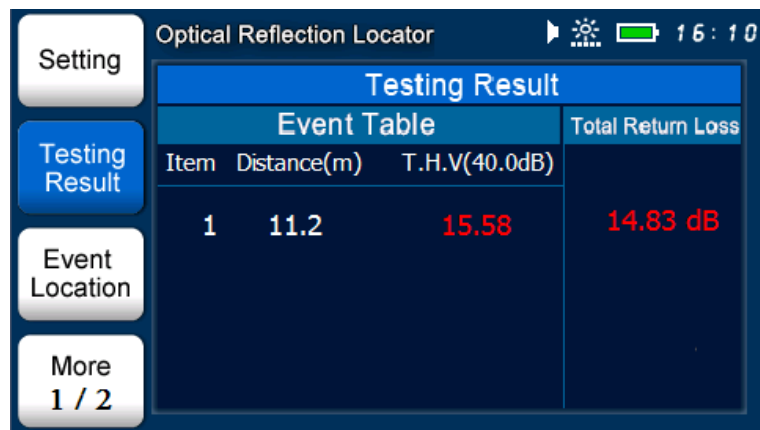


Note

Threshold of total return loss under the value mode:

1. When the total return loss is higher than the threshold of total return loss, the measured value will be in red.
2. When the total return loss is lower than the threshold of total return loss, the measured value will be in green.

Total Return Loss > Threshold of Total Return Loss

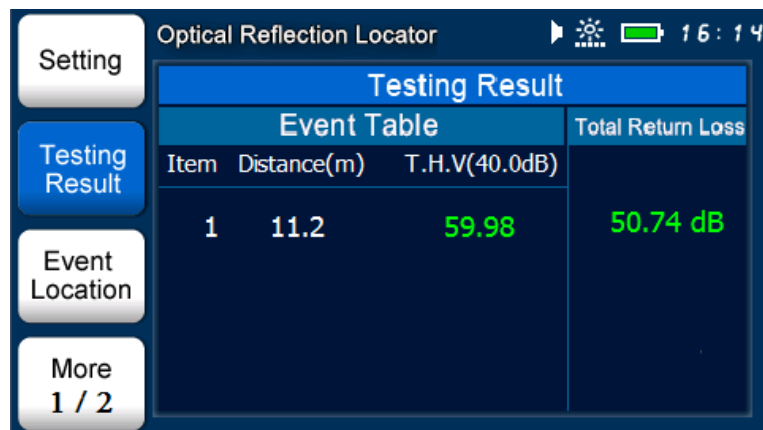


The screenshot shows the 'Optical Reflection Locator' app interface. The 'Testing Result' section displays an 'Event Table' with the following data:

Item	Distance(m)	T.H.V(40.0dB)	Total Return Loss
1	11.2	15.58	14.83 dB

The values for T.H.V and Total Return Loss are displayed in red, indicating that the measured value is higher than the threshold.

Total Return Loss < Threshold of Total Return Loss




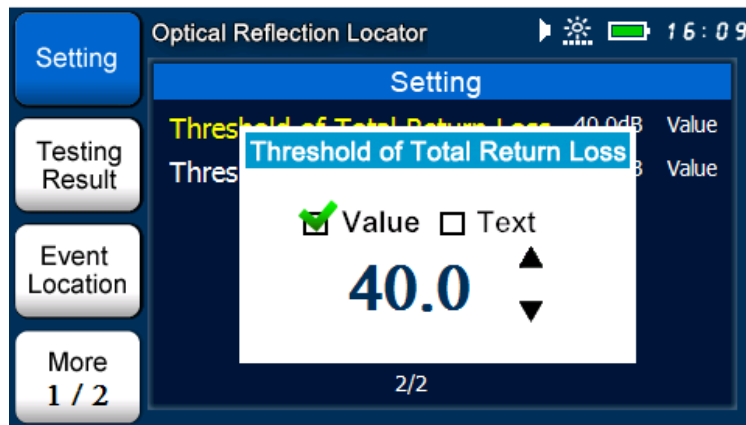
The screenshot shows the 'Optical Reflection Locator' app interface. The 'Testing Result' section displays an 'Event Table' with the following data:



Item	Distance(m)	T.H.V(40.0dB)	Total Return Loss
1	11.2	59.98	50.74 dB

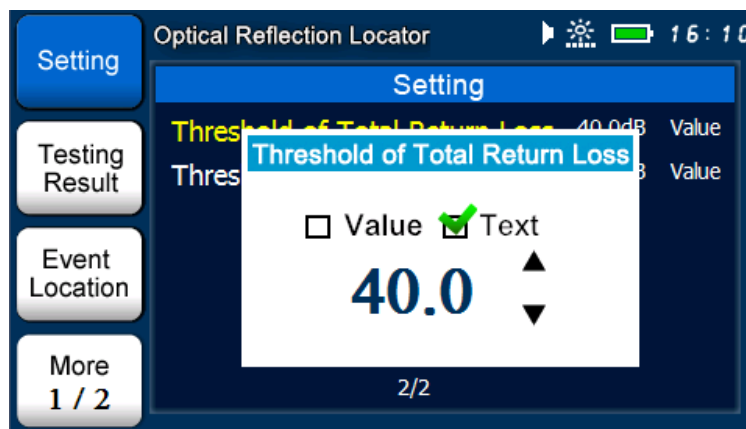
The values for T.H.V and Total Return Loss are displayed in green, indicating that the measured value is lower than the threshold.


5.3.1.7.2 Text Mode

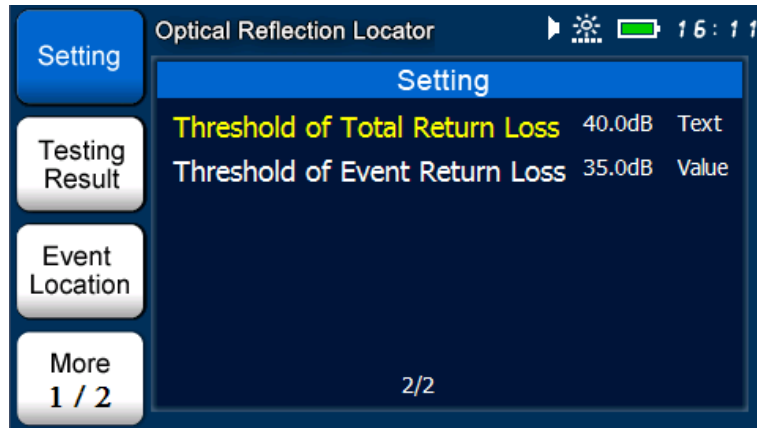
Short press [] key to access the setting.




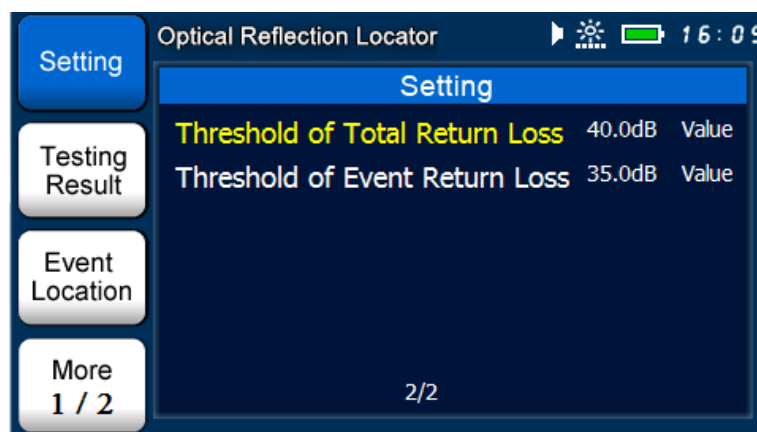
Short press [] or [] key to select the test mode.



Short press [] key to confirm the setting.



Short press [] key to discard the setting and return to the setting display.

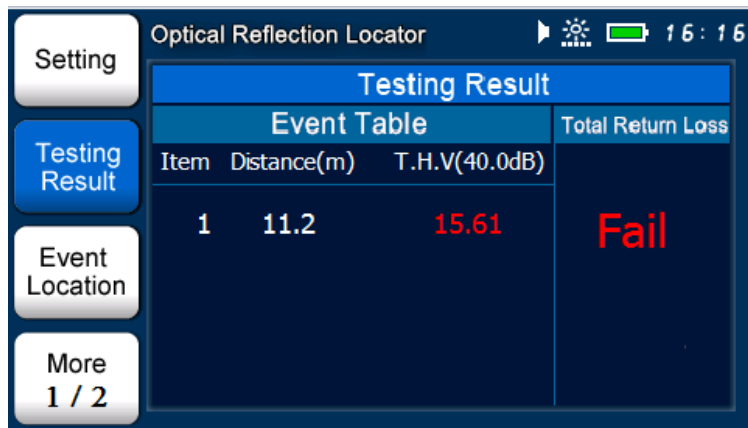


Note

Threshold of total return loss under the text mode:

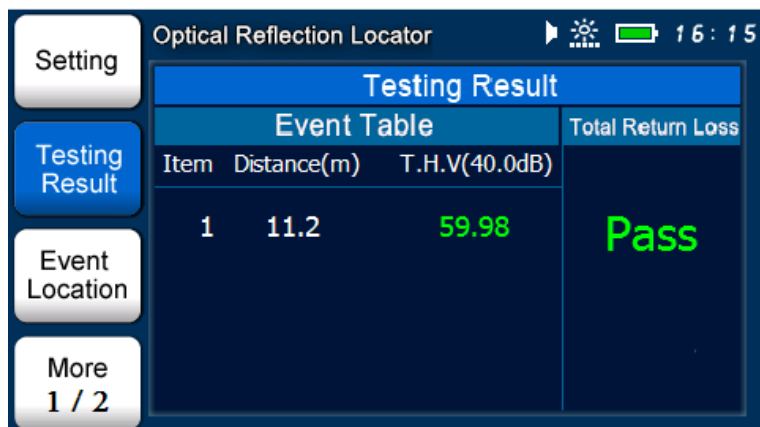
1. When the total return loss is higher than the threshold of total return loss, the measured value will be in red. "Fail" will show on the display.
2. When the total return loss is lower than the threshold of total return loss, the measured value will be in green. "Pass" will show on the display.

Total Return Loss > Threshold of Total Return Loss




Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(40.0dB)	
1	11.2	15.61	Fail

Total Return Loss < Threshold of Total Return Loss

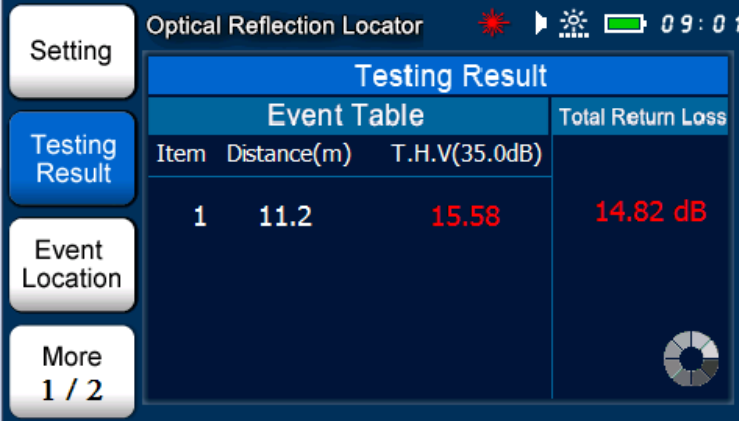


Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(40.0dB)	
1	11.2	59.98	Pass

5.3.2 Test

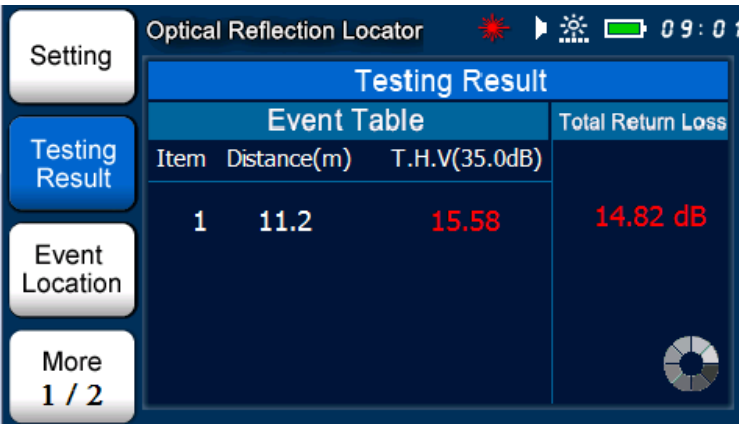
Short press [] key to start the test based on the parameters users set.

- Testing



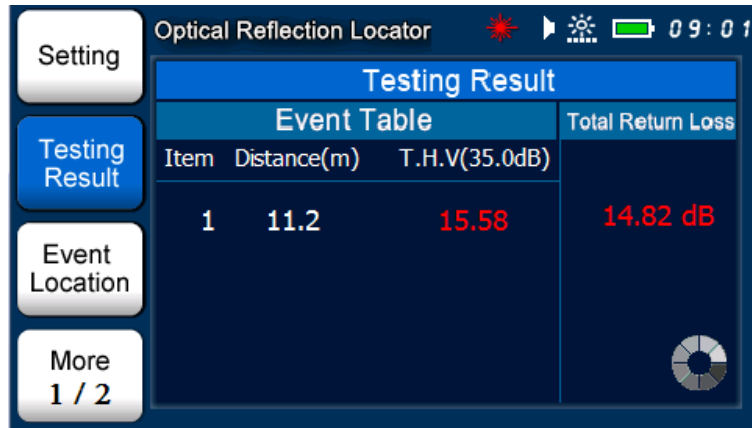
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	15.58	14.82 dB

- Testing completed



Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	15.58	14.82 dB

- Test results displayed



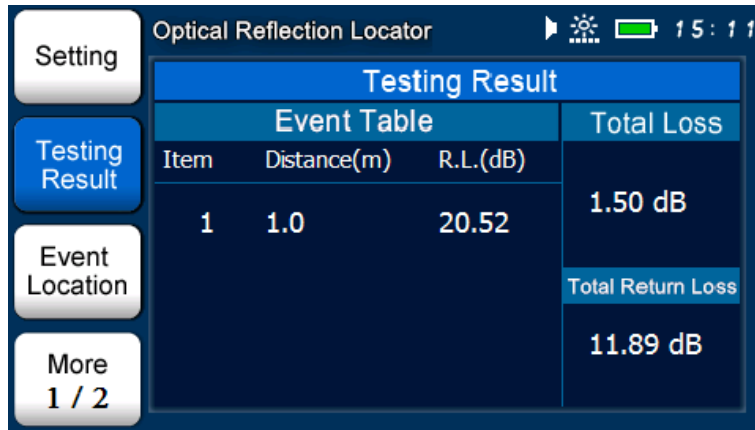
The screenshot shows the 'Optical Reflection Locator' app interface. At the top, the title 'Optical Reflection Locator' is displayed along with a red star icon, a play button, a battery icon, and the time '09:01'. On the left side, there is a vertical menu with four buttons: 'Setting', 'Testing Result', 'Event Location', and 'More 1 / 2'. The main area displays a 'Testing Result' section with a blue header. Below this is an 'Event Table' with the following data:

Item	Distance(m)	T.H.V(35.0dB)	Total Return Loss
1	11.2	15.58	14.82 dB

At the bottom right of the main area, there is a circular icon with a gear-like pattern.

5.3.3 Test Results

Short press [**F2**] key to view the test results.

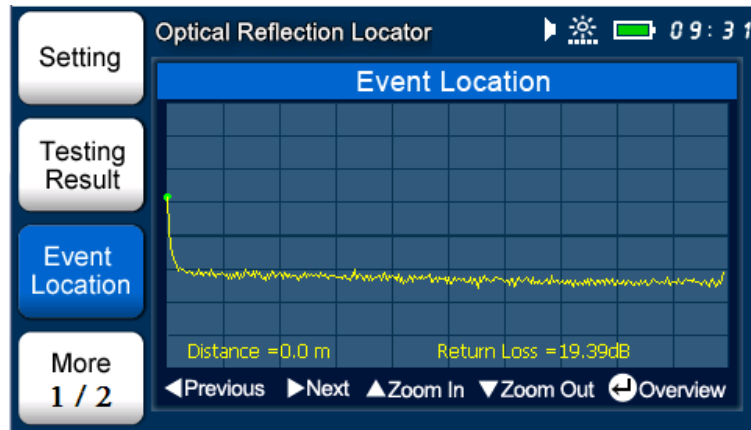




The screenshot shows the 'Optical Reflection Locator' application interface. On the left is a sidebar with buttons for 'Setting', 'Testing Result', 'Event Location', and 'More 1 / 2'. The main area displays a 'Testing Result' window with an 'Event Table' and 'Total Loss' information.

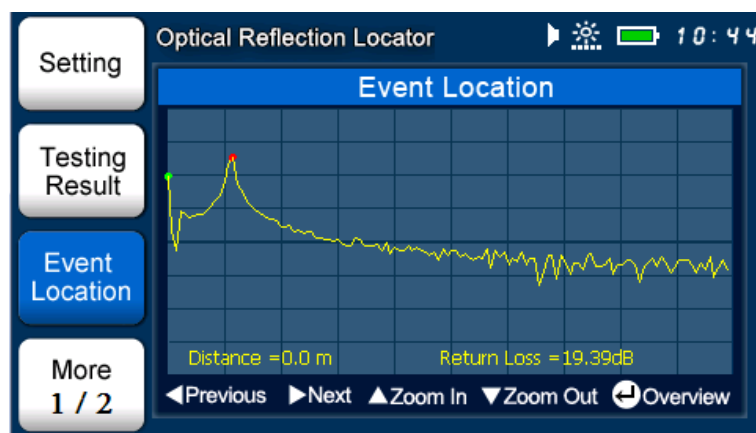
Testing Result			
Event Table			Total Loss
Item	Distance(m)	R.L.(dB)	
1	1.0	20.52	1.50 dB
			Total Return Loss
			11.89 dB



5.3.4 Event Location

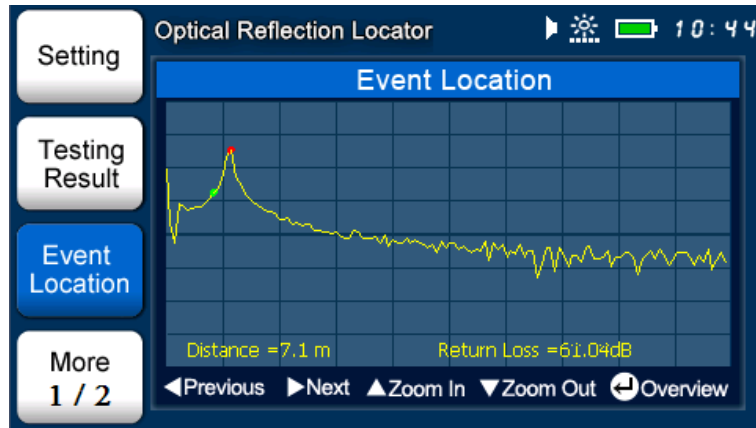
Short press [**F3**] key to view the event location.



Short press [] key to zoom in and press [] key to zoom out.



Short press [] or [] key to move the green cursor.




Note

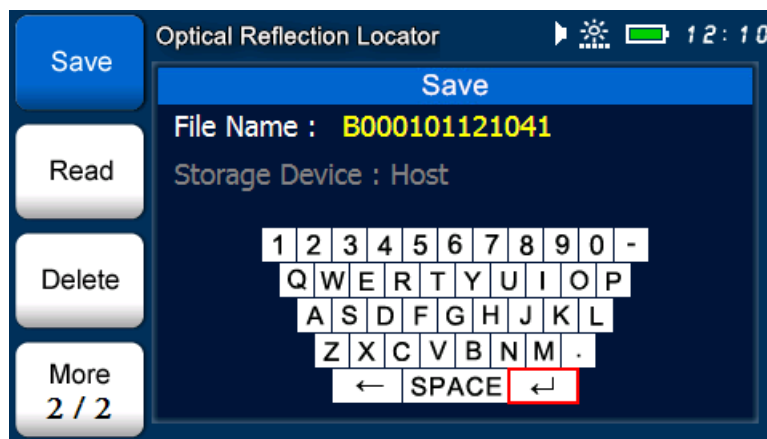
1. Red cursor: Fixed.
2. Green cursor: Position can be moved at will.

5.3.5 Saving Data

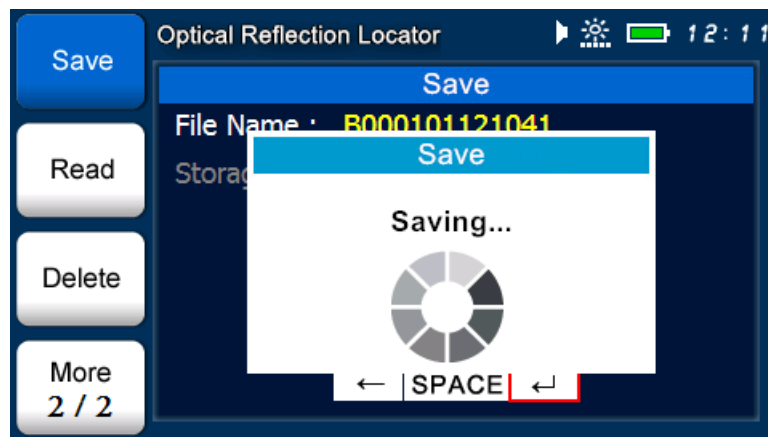
Short press [**F1**] key to access the display of saving data.

Short press [], [], [] or [] to input file name, and then short press [] key to confirm it.

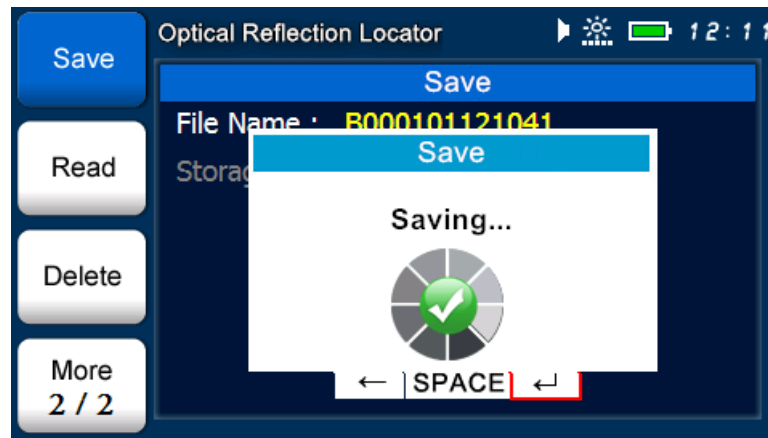
Select [] to save it.



- Saving



- Saving completed






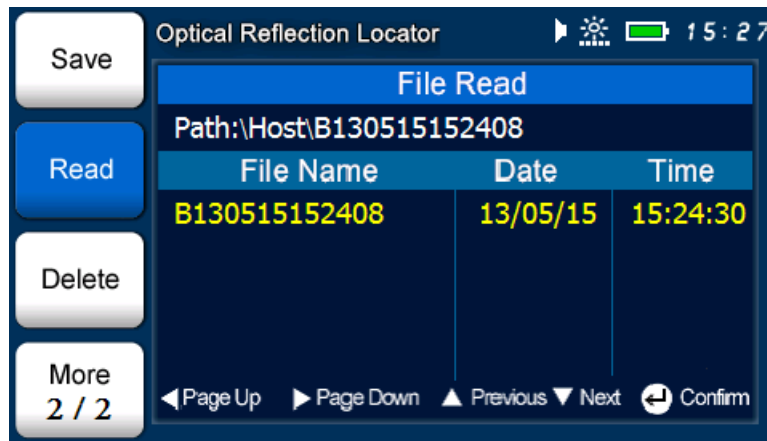
Note

USB supports FAT32 format but does not support NTFS format.

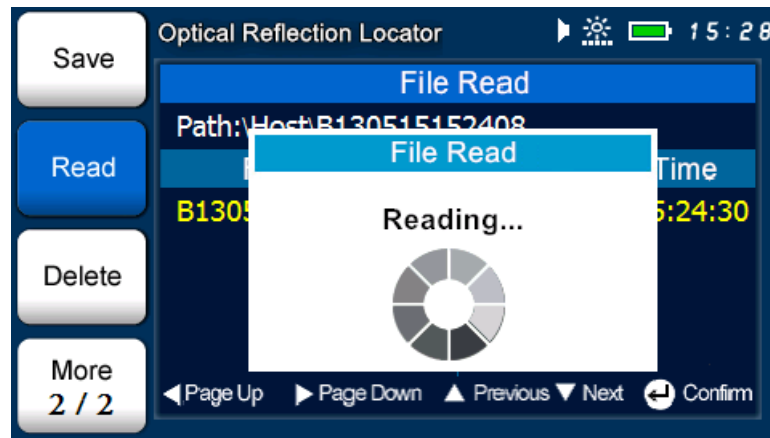
5.3.6 Reading Data

Short press [**F2**] key to read the saved data.

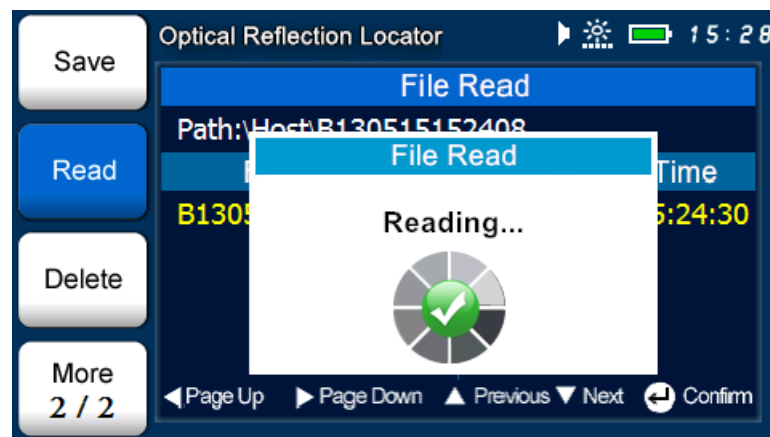
Short press [] or [] key to select the data, and then press [] key to confirm it.



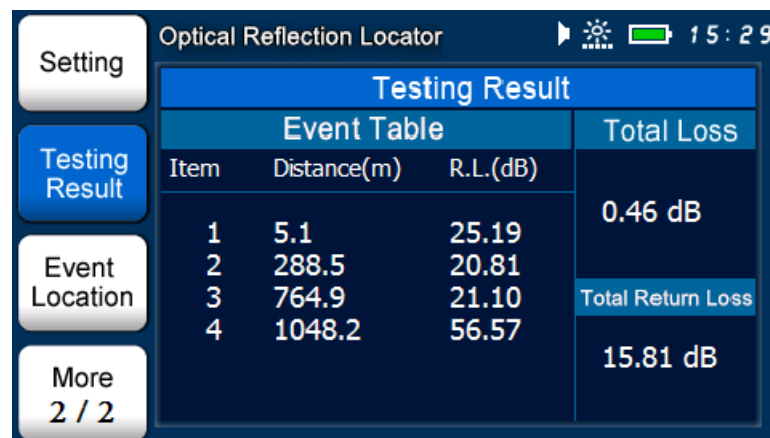
- Reading



- Reading completed



- Testing result





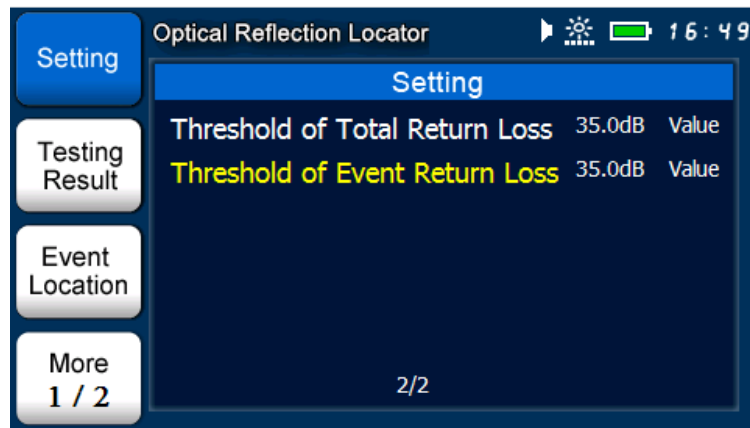
The screenshot shows the 'Optical Reflection Locator' application interface displaying the 'Testing Result' screen. The screen features a table with the following data:

Testing Result			
Event Table			Total Loss
Item	Distance(m)	R.L.(dB)	
1	5.1	25.19	0.46 dB
2	288.5	20.81	
3	764.9	21.10	Total Return Loss
4	1048.2	56.57	
			15.81 dB


The interface also includes buttons for 'Setting', 'Testing Result', 'Event Location', and 'More 2 / 2'. The top status bar shows 'Optical Reflection Locator', signal strength, battery level, and the time '15:29'.

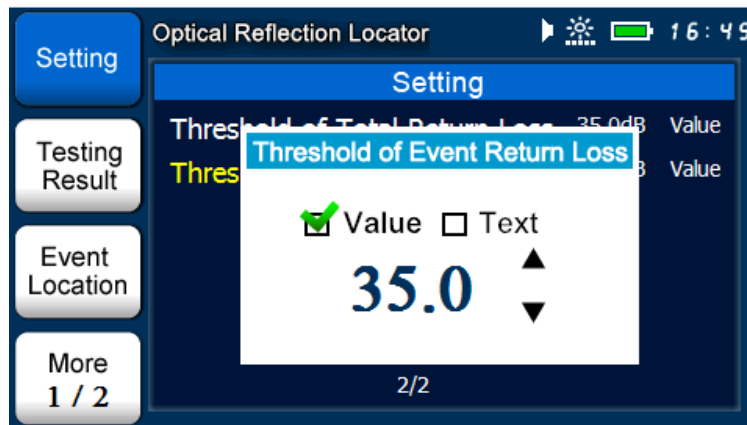
5.3.6.1 Threshold of Event Return Loss



Short press [] or [] key to move to “Threshold of Event Return Loss”.

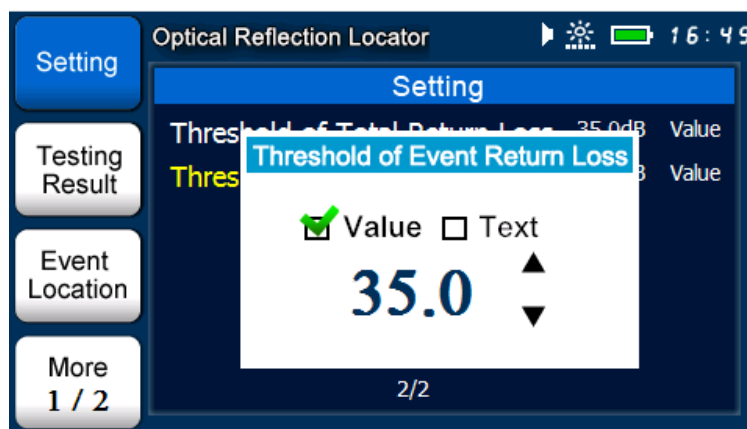


5.3.6.1.1 Value Mode

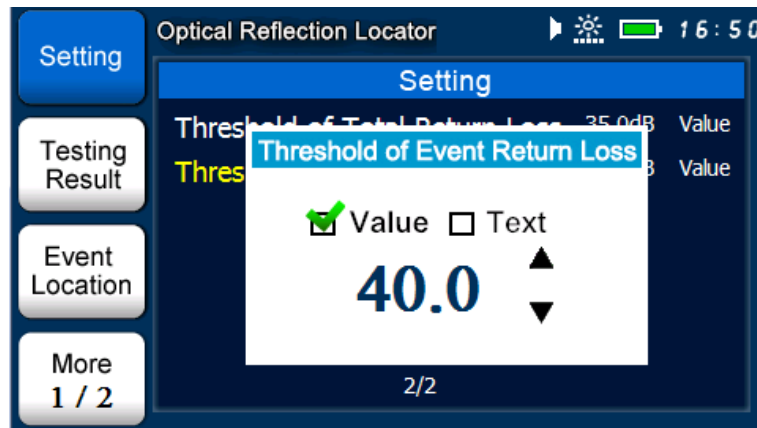
Short press [] key to access the setting.




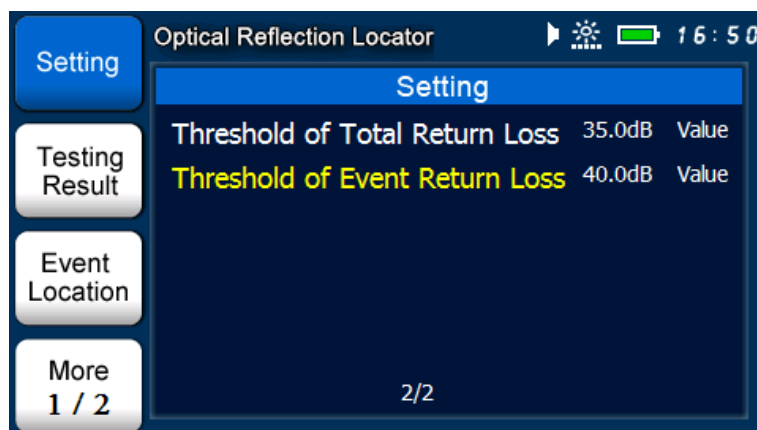
Short press [] or [] key to select the value mode.




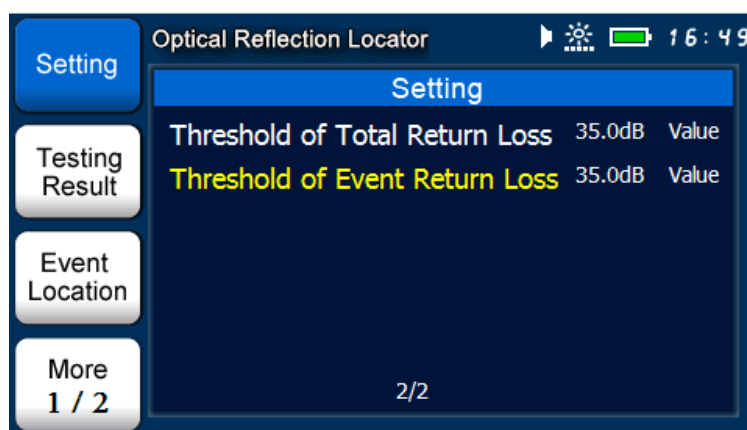
Short press [] or [] key to set the threshold.



Short press [] key to confirm the setting.



Short press [] key to discard the setting and return to the setting display.

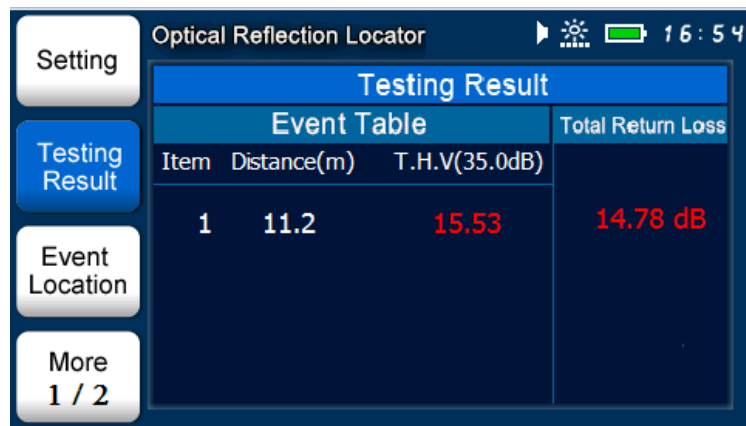


Note

Threshold of total return loss under the value mode:

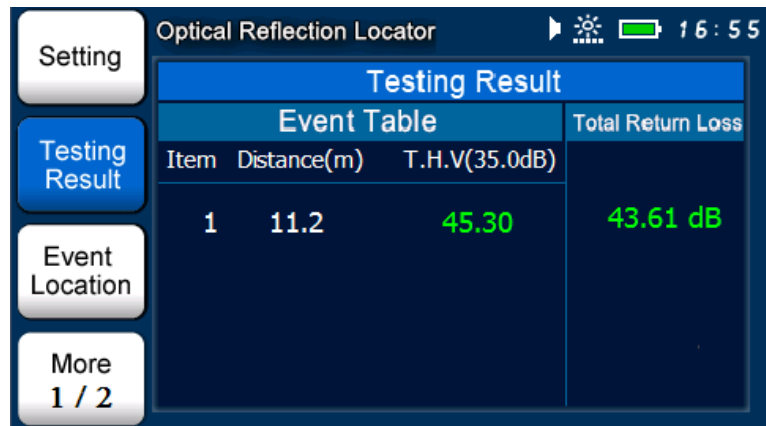
1. When the event return loss is higher than the threshold of event return loss, the measured value will be in red.
2. When the event return loss is lower than the threshold of event return loss, the measured value will be in green.

Event Return Loss > Threshold of Event Return Loss




Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	15.53	14.78 dB

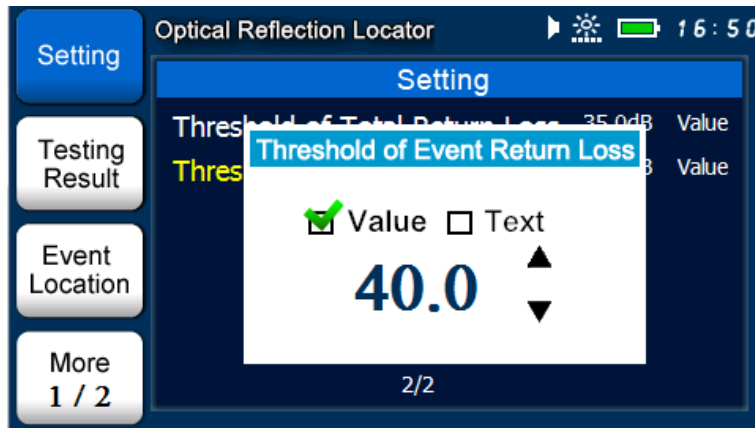
Event Return Loss < Threshold of Event Return Loss





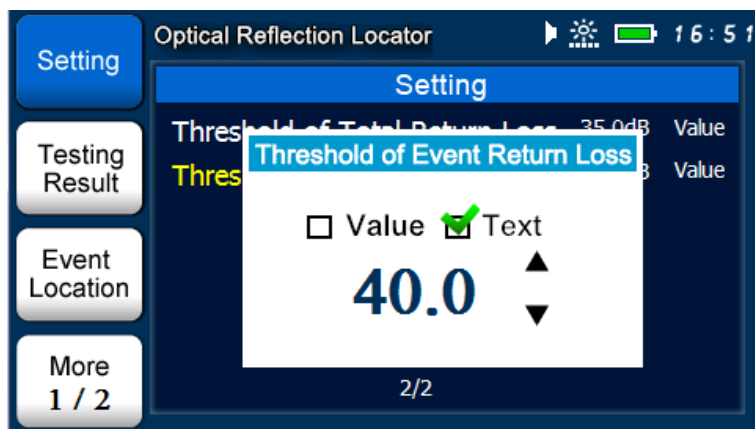
Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	45.30	43.61 dB

5.3.6.1.2 Text Mode

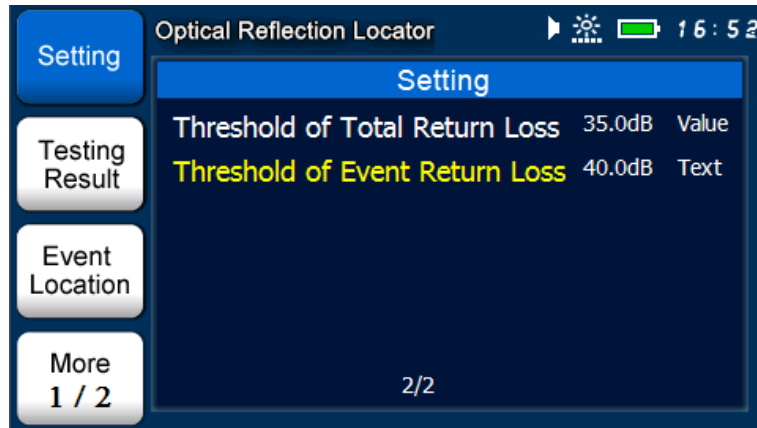
Short press [] key to access the setting.




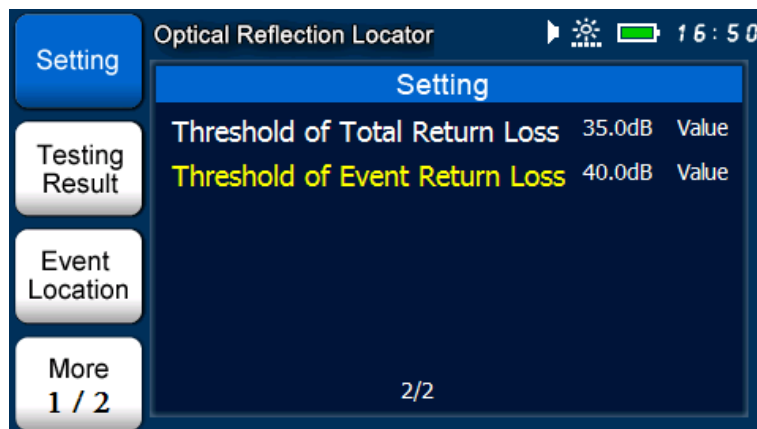
Short press [] or [] key to select the text mode.



Short press [] key to confirm the setting.



Short press [] key to discard the setting and return to the setting display.

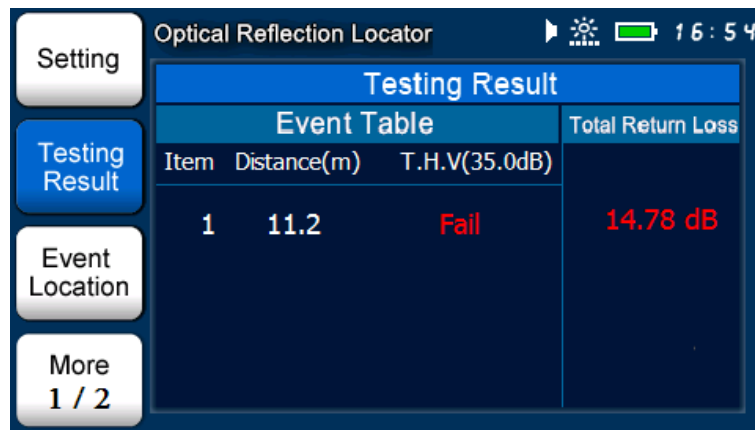


Note

Threshold of event return loss under the text mode:

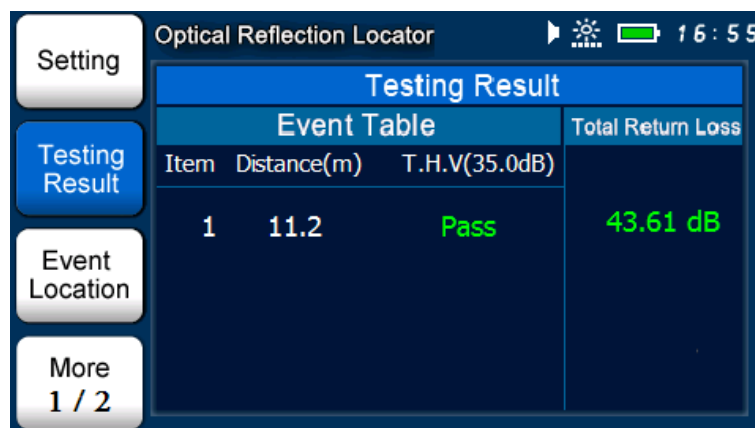
1. When the event return loss is higher than the threshold of event return loss, the measured value will be in red. "Fail" will show on the display.
2. When the event return loss is lower than the threshold of event return loss, the measured value will be in green. "Pass" will show on the display.

Event Return Loss > Threshold of Event Return Loss



Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	Fail	14.78 dB

Event Return Loss < Threshold of Event Return Loss






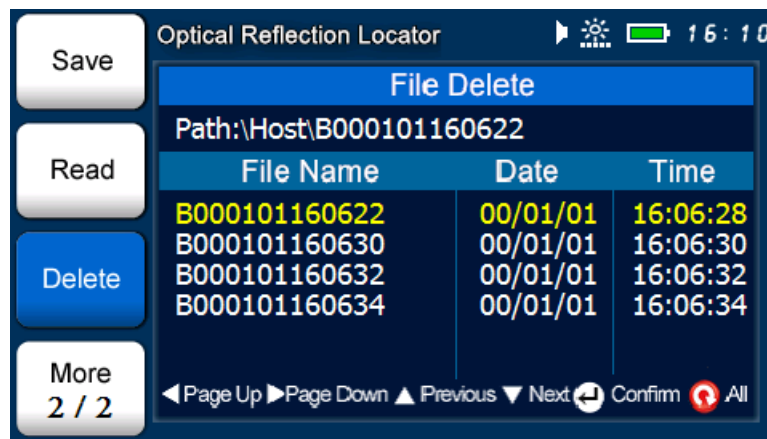
Optical Reflection Locator			
Testing Result			
Event Table			Total Return Loss
Item	Distance(m)	T.H.V(35.0dB)	
1	11.2	Pass	43.61 dB



5.3.7 Deleting Data

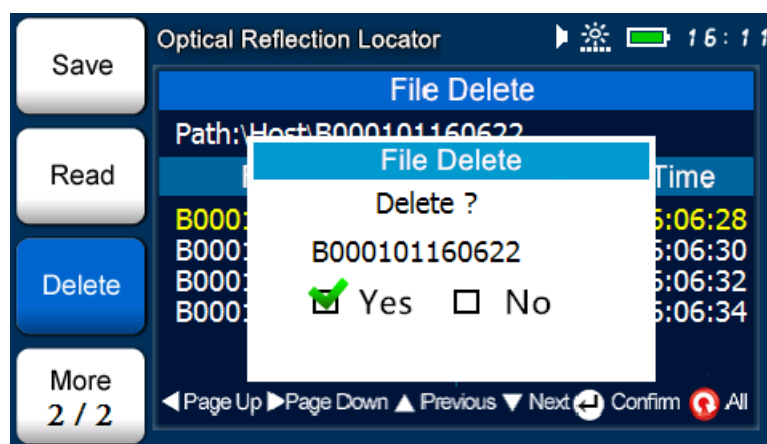
Short press [**F3**] key to access the display of deleting data.

5.3.7.1 Single Data

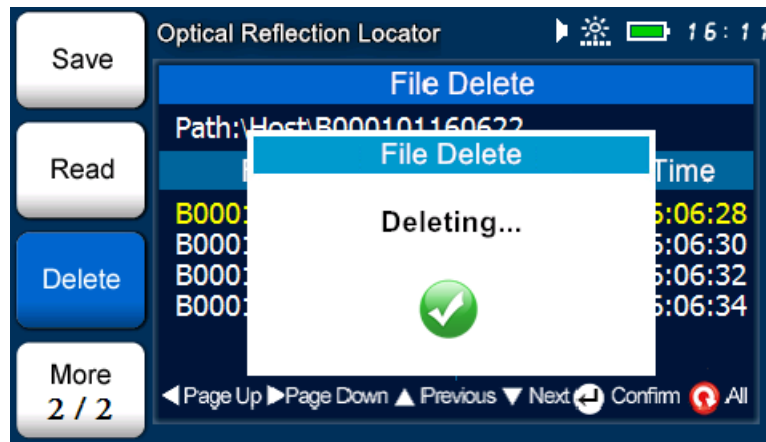
Short press [] or [] key to select the data you would like to delete, and then short press [] key to confirm the data.



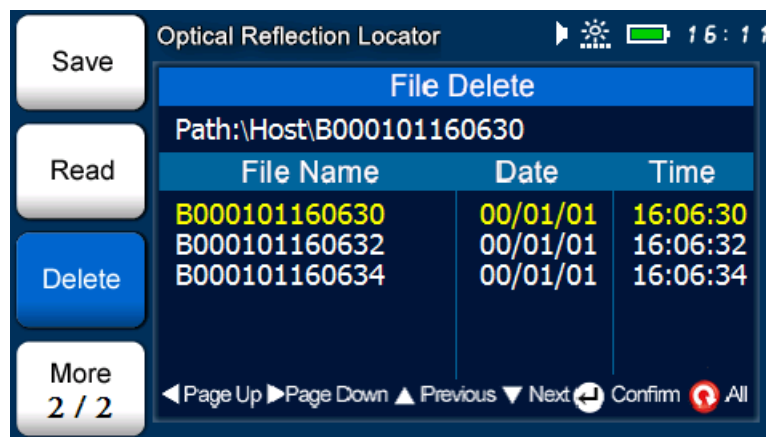
Short press [] or [] key to confirm whether to delete or not.




- Deleting

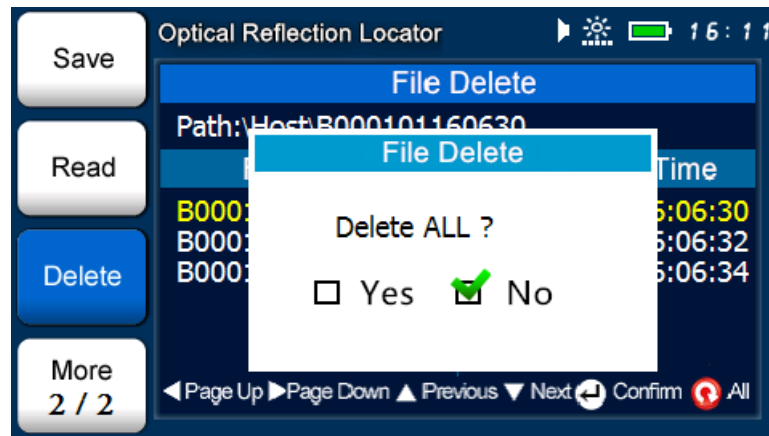



- Deletion completed

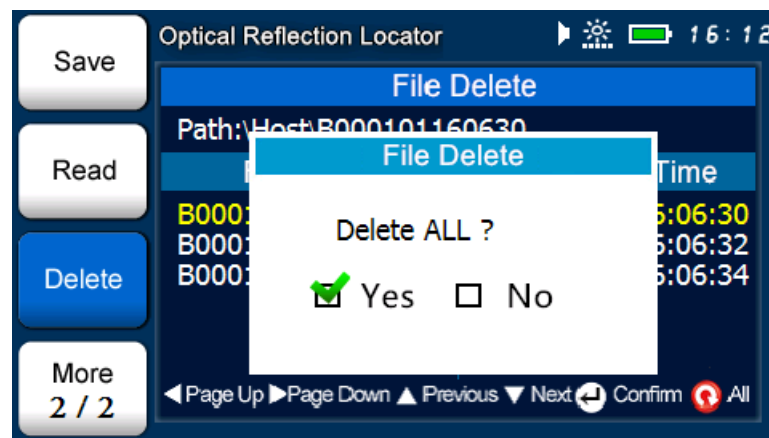


5.3.7.2 All Data

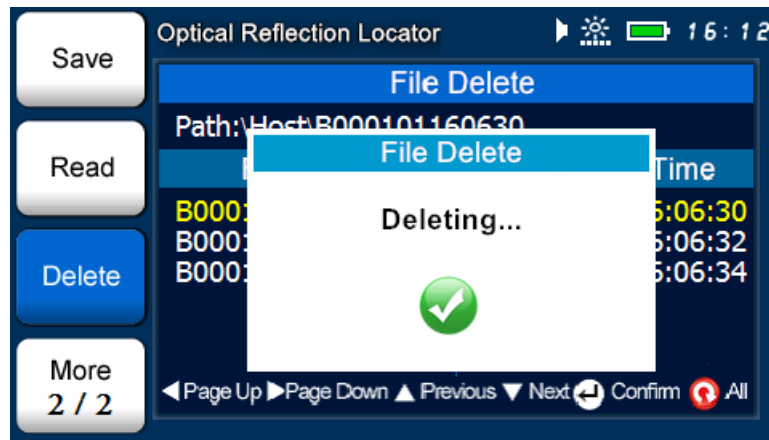
Short press [] key to execute to delete all data.



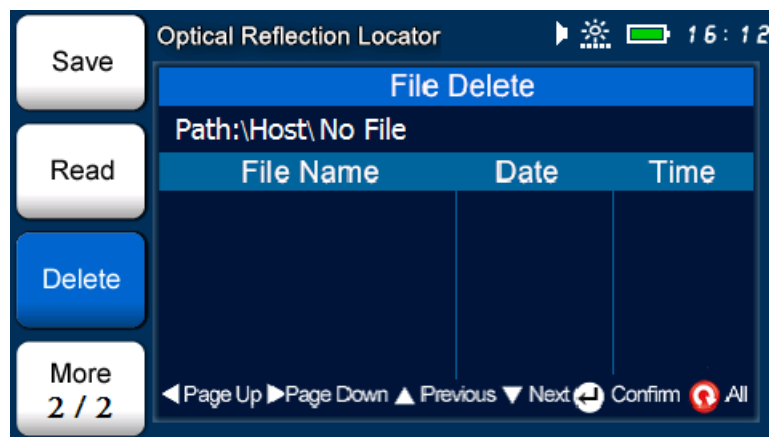
Short press [] or [] key to confirm whether to delete all data or not.



- Deleting




- Deletion completed

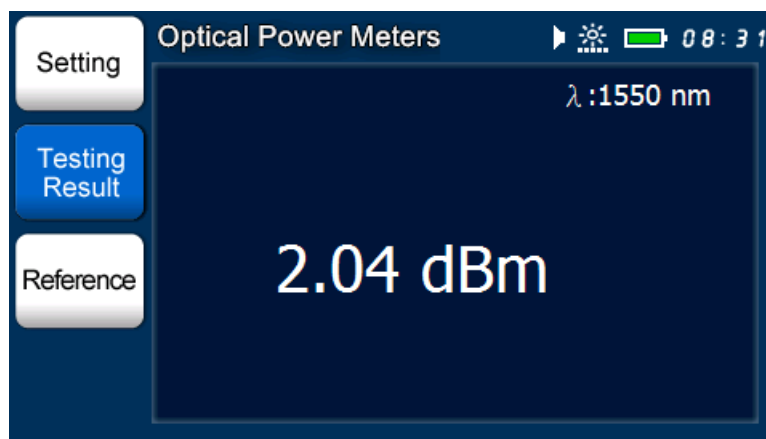


5.4 Optical Power Meter

Short press [] or [] key to select **Optical Power Meter**.

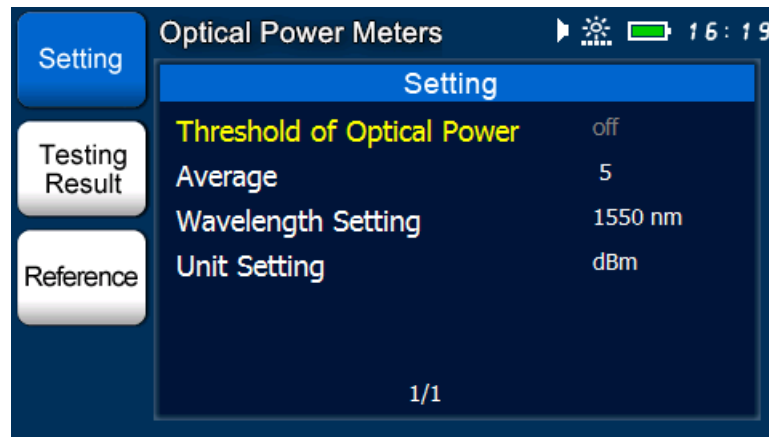


Short press [] key to enter into the measured display of optical power meter.





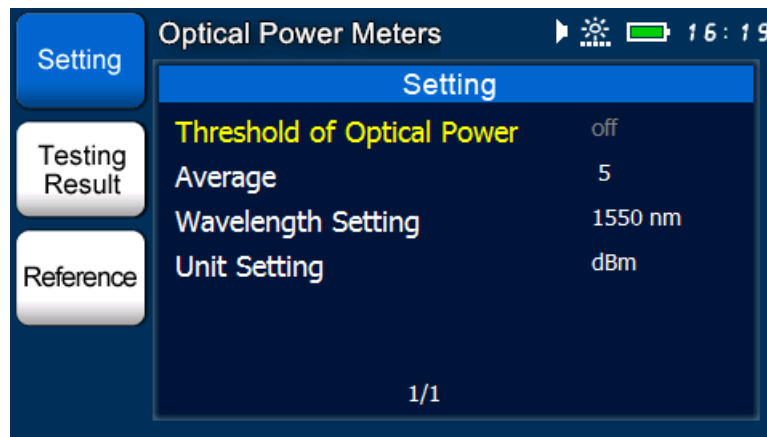
5.4.1 Setting Optical Power Meter

Short press [F1] key to set parameters.




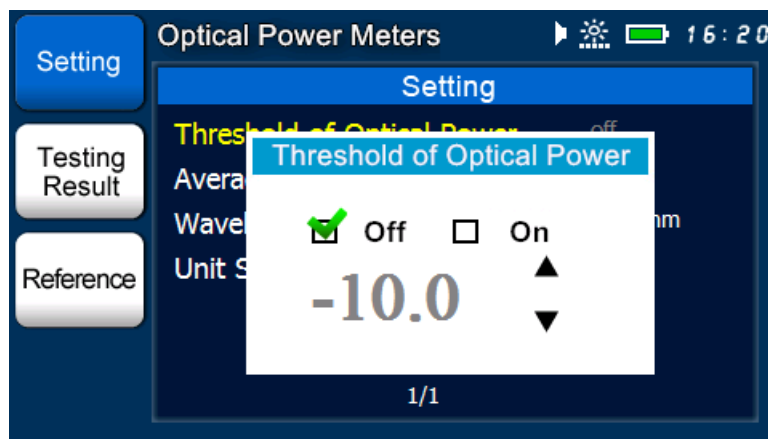
5.4.1.1 Threshold of Optical Power



Short press [] or [] key to move to “**Threshold of Optical Power**”.

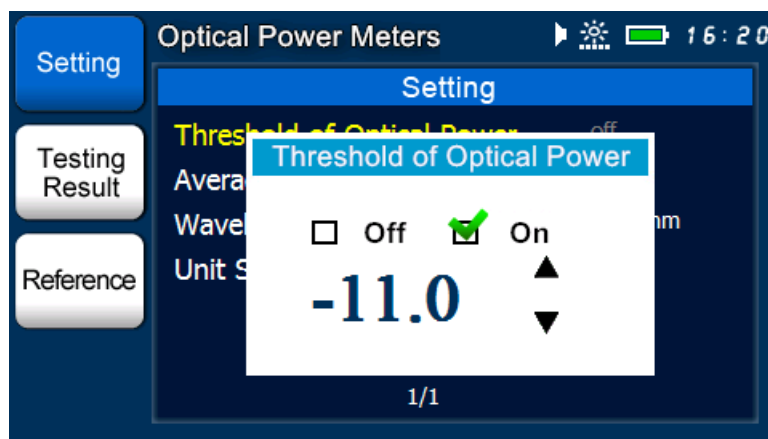





5.4.1.1.1 Turn on the Threshold of Optical Power

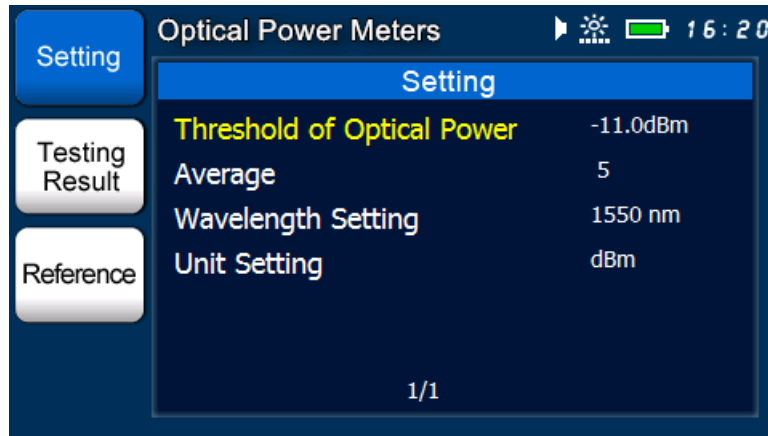
Short press [] key to access the setting.




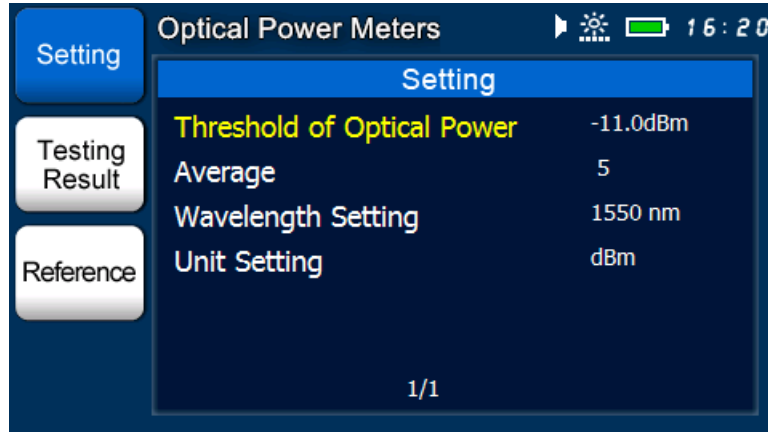
Short press [] or [] key to enable the threshold of optical power to turn on.



Short press [] or [] key to set the value of threshold, and then short press [] key to confirm it.



Short press [] key to discard the setting and return to the setting display.

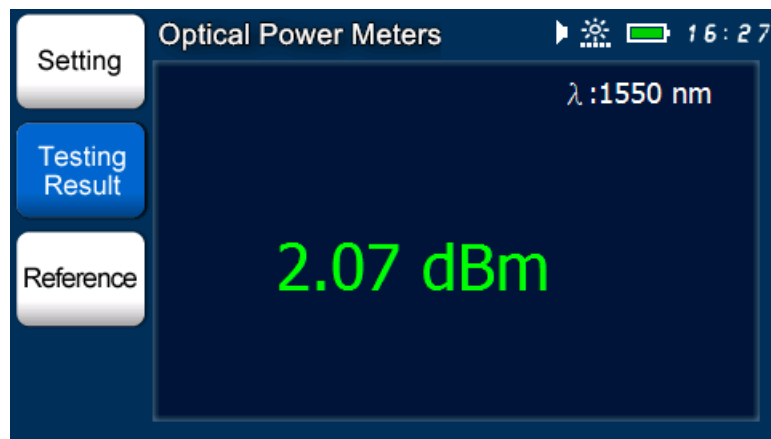


Note

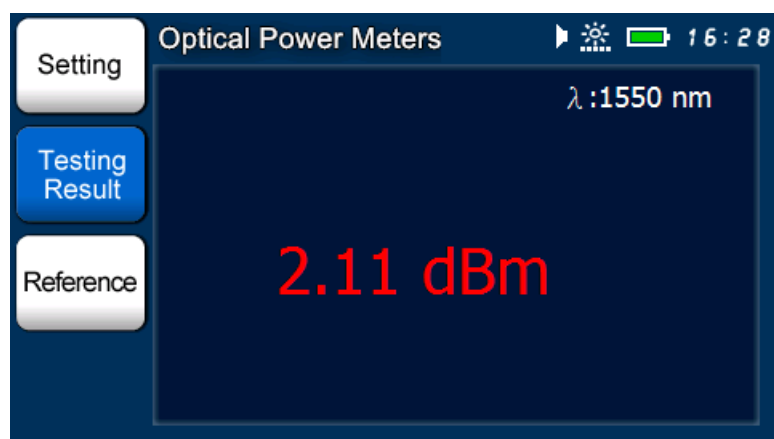
Turn on the threshold of optical power:

1. When the measured value of optical power is higher than the threshold of optical power, the measured value will be in red.
2. When the measured value of optical power is lower than the threshold of optical power, the measured value will be in green.


Measured Value > Threshold of Optical Power

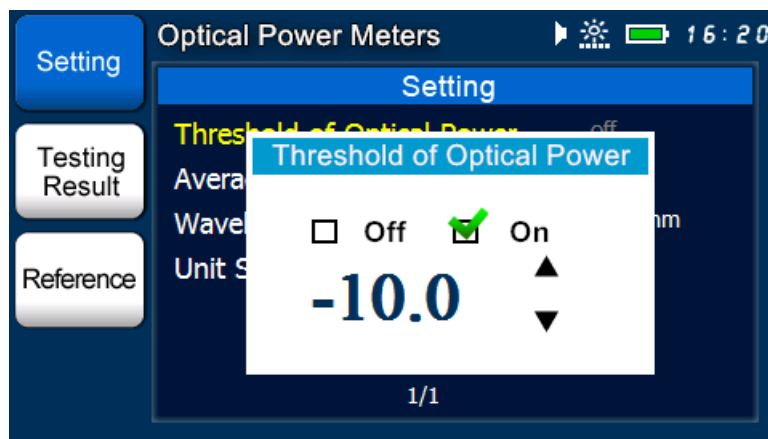




Measured Value < Threshold of Optical Power

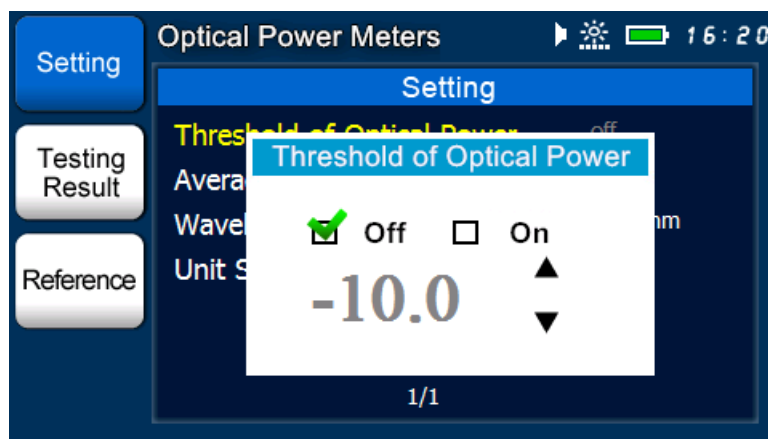



5.4.1.1.2 Turn off the Threshold of Optical Power

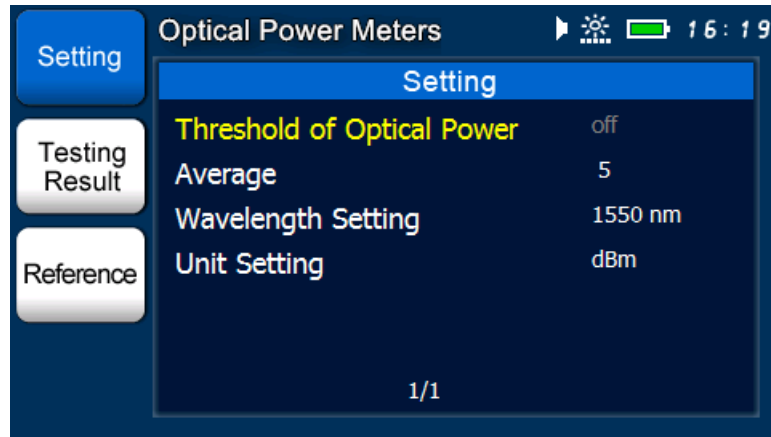
Short press [] key to access the setting.




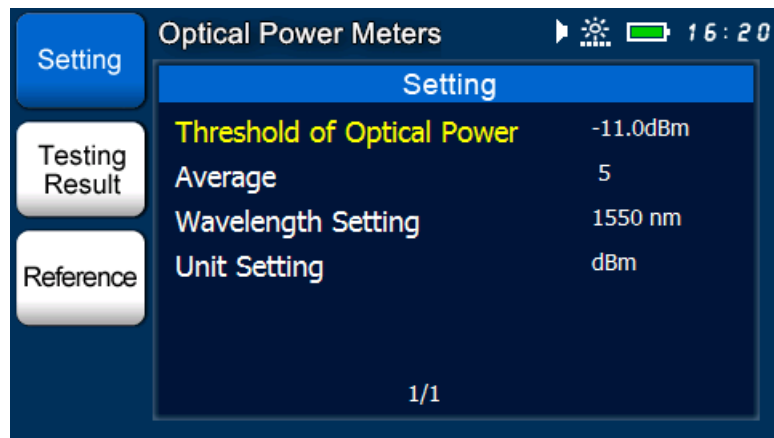
Short press [] or [] key to enable the threshold of optical power to turn off.






Short press [] key to confirm the setting.

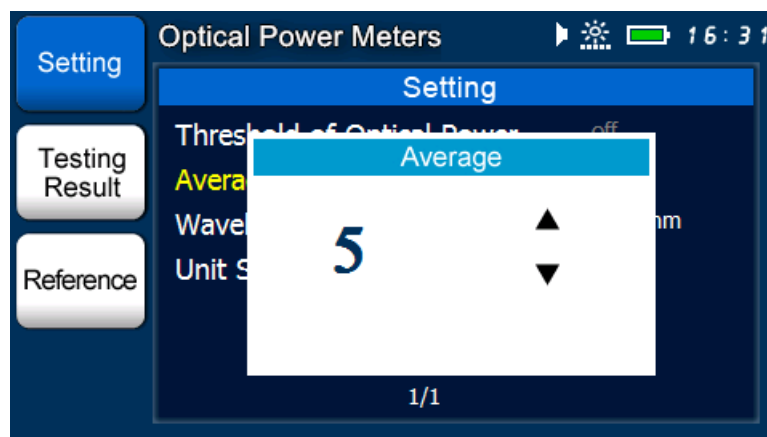
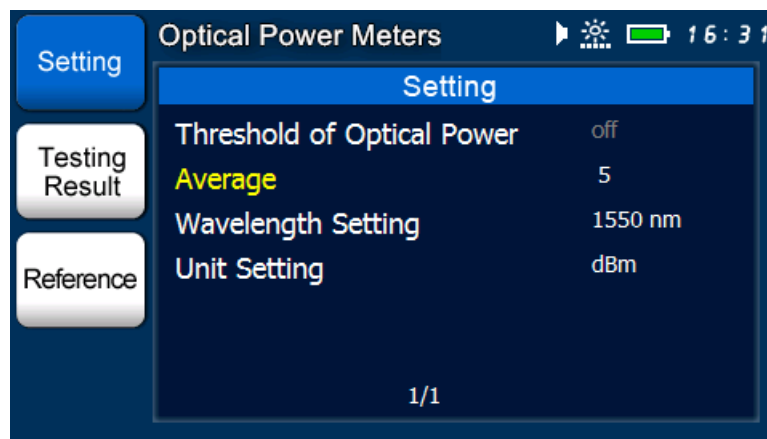


Short press [] key to discard the setting and return to the setting display.

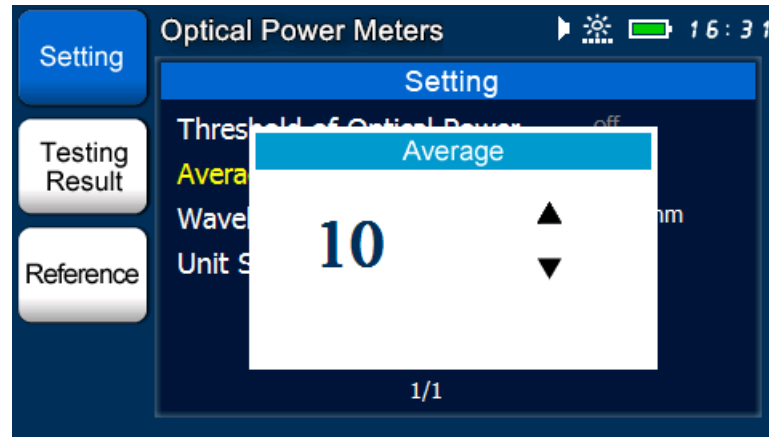



5.4.1.2 Average

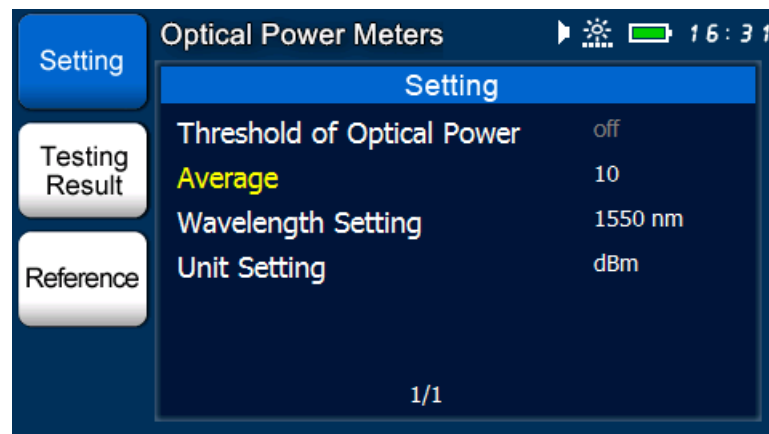
Short press [] or [] key to move to “Average”, and then short press [] key to access average setting.



Short press [] or [] key to set average.




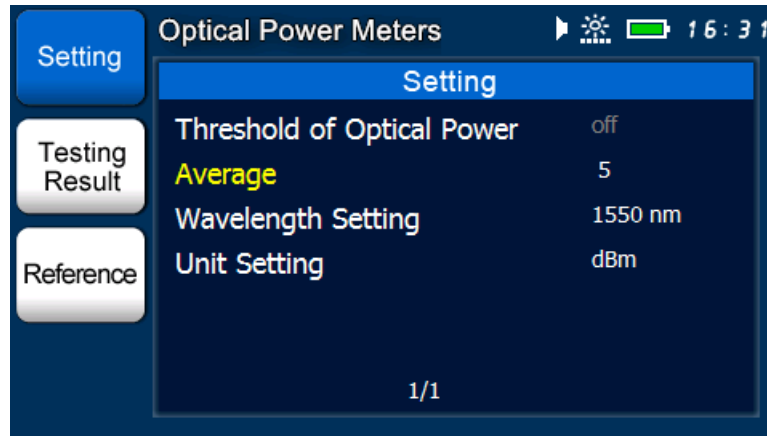
Short press [] key to confirm the setting.



Note

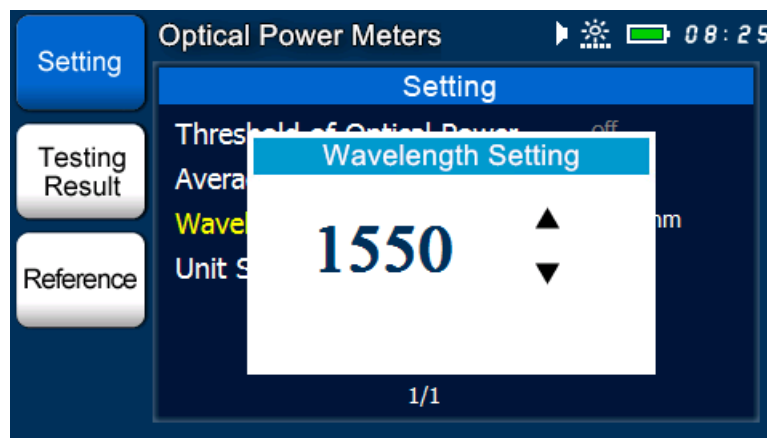
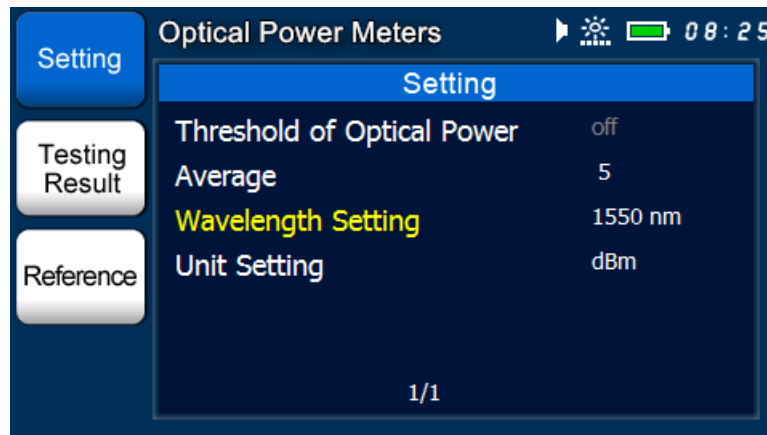
The larger the value of average, the higher accuracy of the reflection event and the longer testing time it takes.

Short press [] key to discard the setting and return to the setting display.

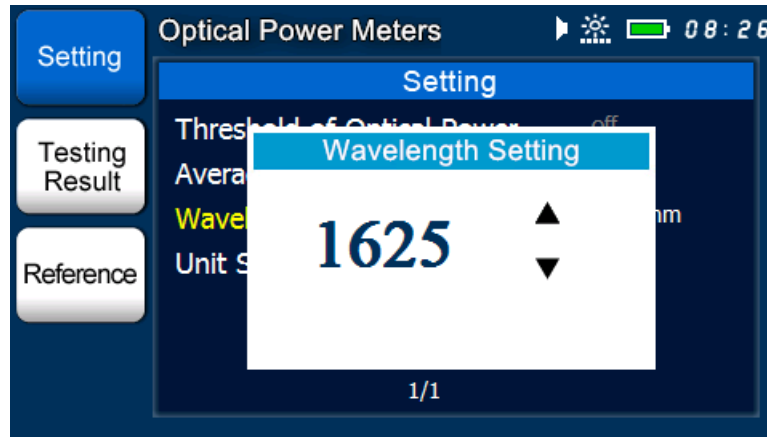



5.4.1.3 Wavelength Setting

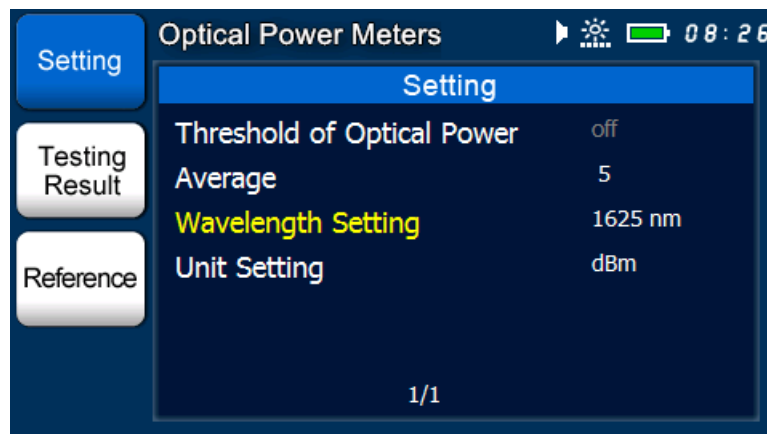
Short press [▲] or [▼] key to move to “**Wavelength Setting**”, and then short press [↩] key to access wavelength setting.




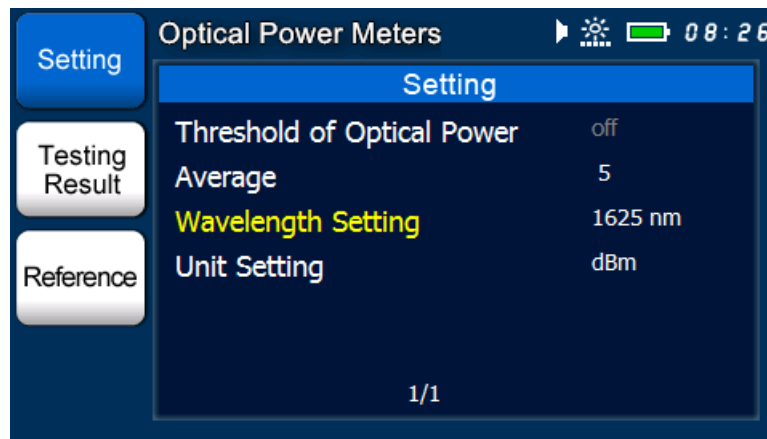
Short press [] or [] key to set wavelength.



Short press [] key to confirm the setting.

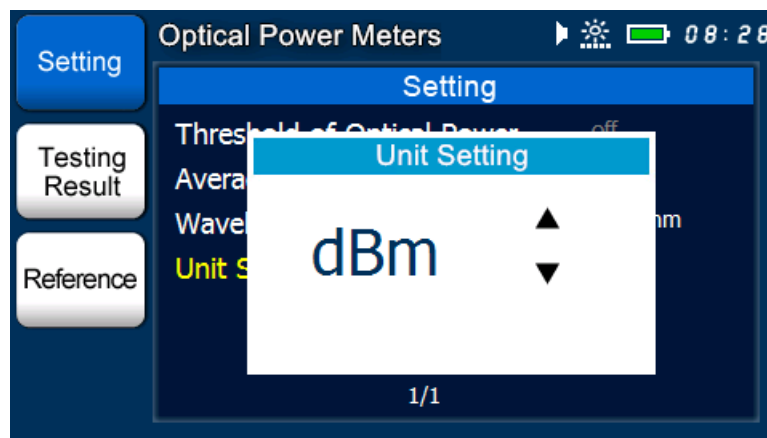
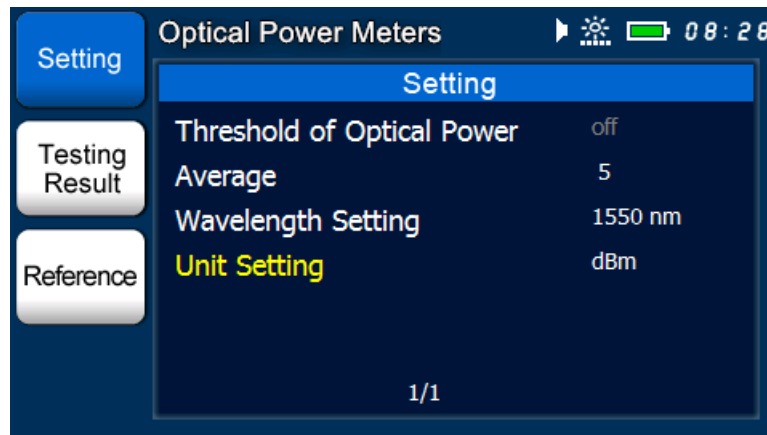




Short press [] key to discard the setting and return to the setting display.

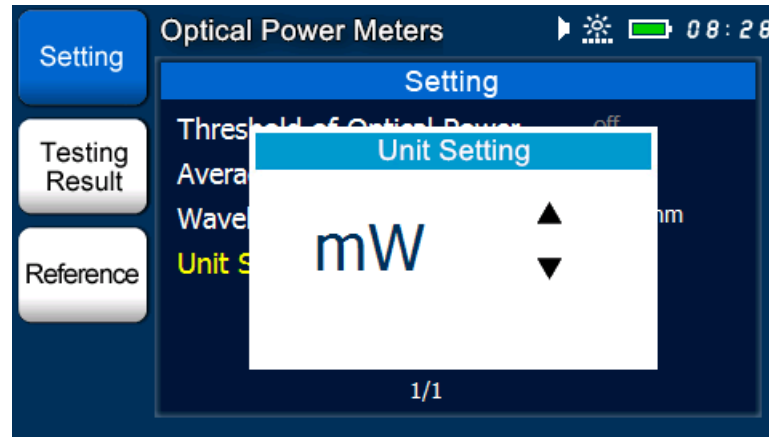



5.4.1.4 Unit Setting

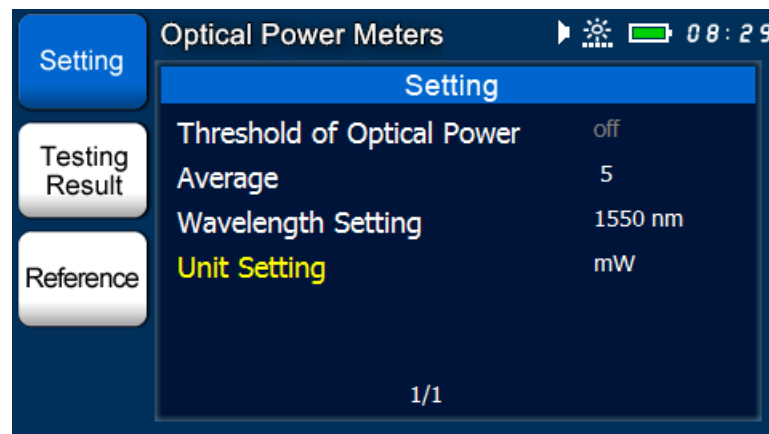
Short press [▲] or [▼] key to move to “Unit Setting”, and then short press [←] key to access unit setting.




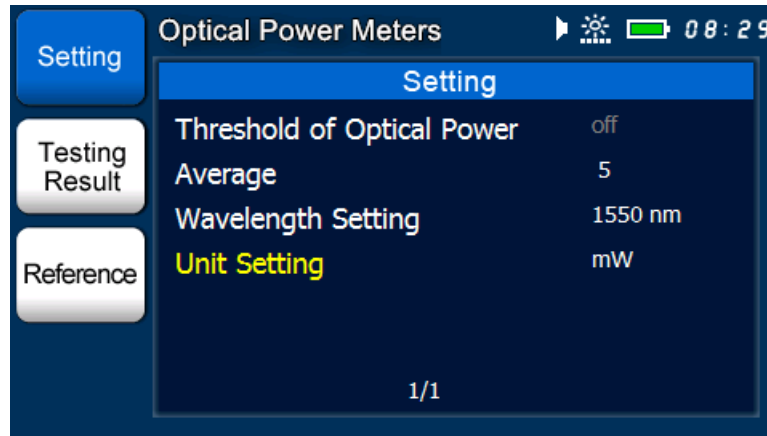
Short press [] or [] key to set the displayed unit.



Short press [] key to confirm the setting.

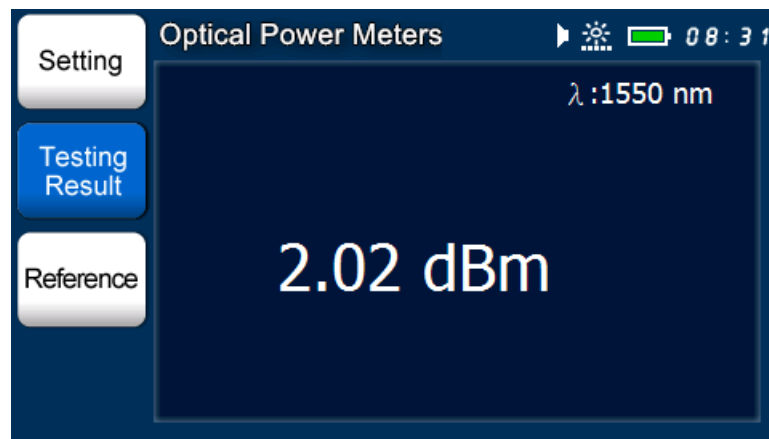


Short press [] key to discard the setting and return to the setting display.



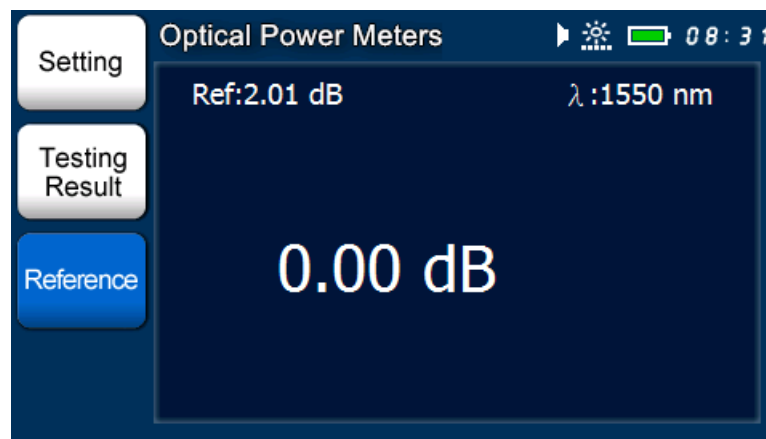
5.4.2 Test Results

Short press [**F2**] key to view the test results.




5.4.3 Reference Value

Short press [F3] key to set the currently measured value as the reference value.

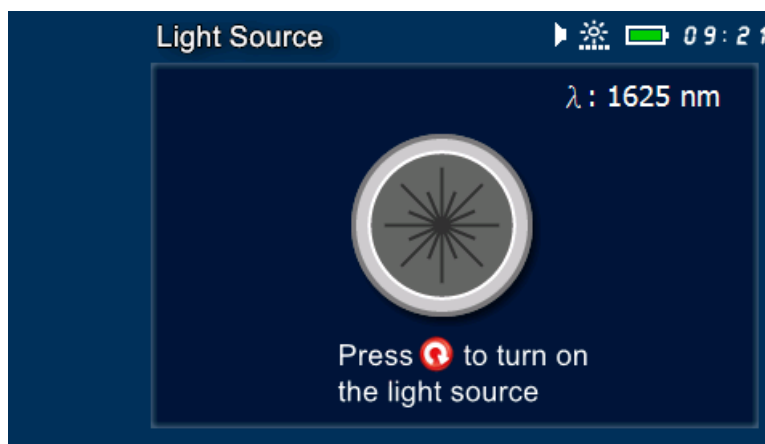


5.5 Optical Light Source


Short press [] or [] key to select **Optical Light Source**.




Short press [] key to enter into the main display of optical light source.



5.5.1 Turn on/off Light Source



Short press [] key to turn on the light source.




Short press [] key to turn off the light source.

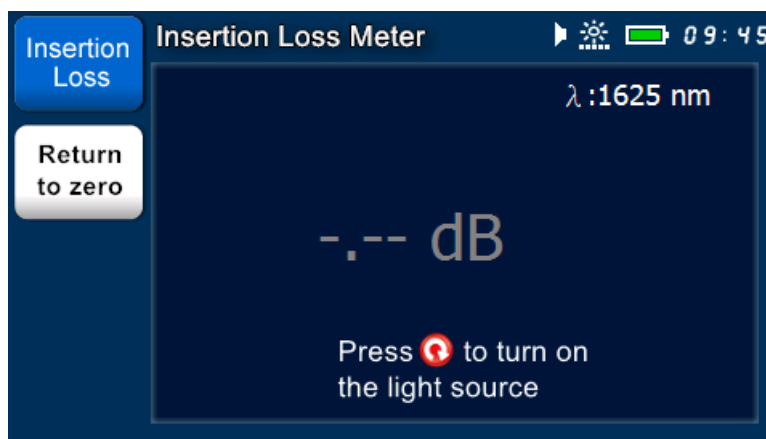


5.6 Insertion Loss Meter

Short press [] or [] key to select **Insertion Loss Meter**.

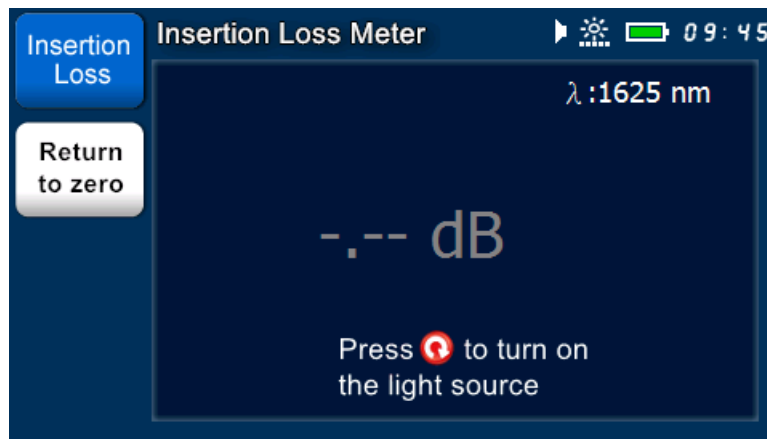


Short press [] key to enter into the measured display of insertion loss meter.

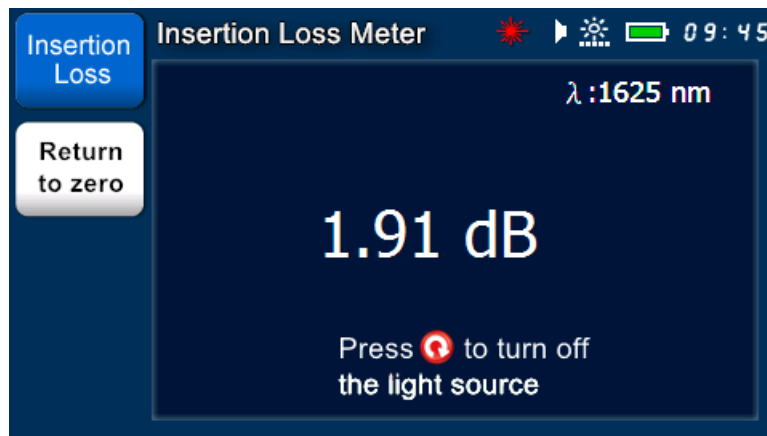


5.6.1 Insertion Loss

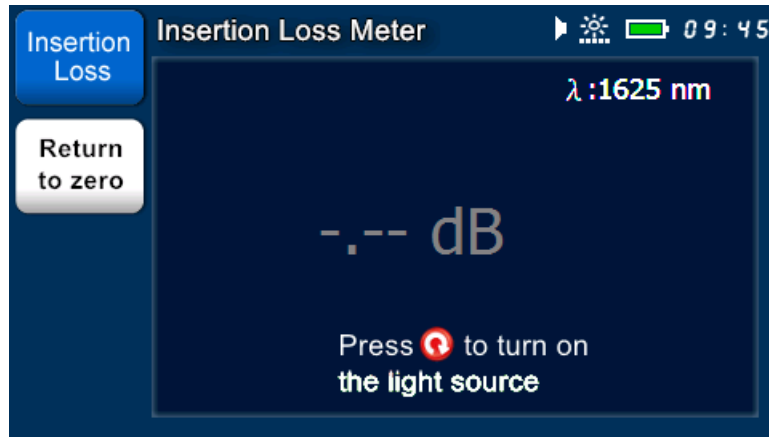
Short press [**F1**] key to enter into the measured display of insertion loss.



Short press [] key to start the test.

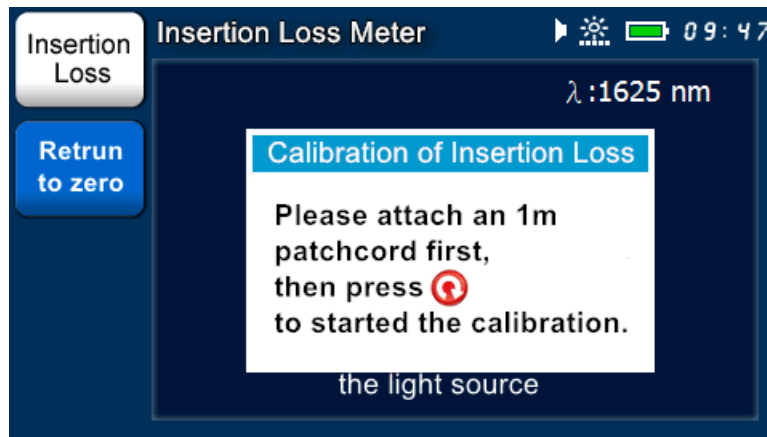


Short press [] key to stop the test.



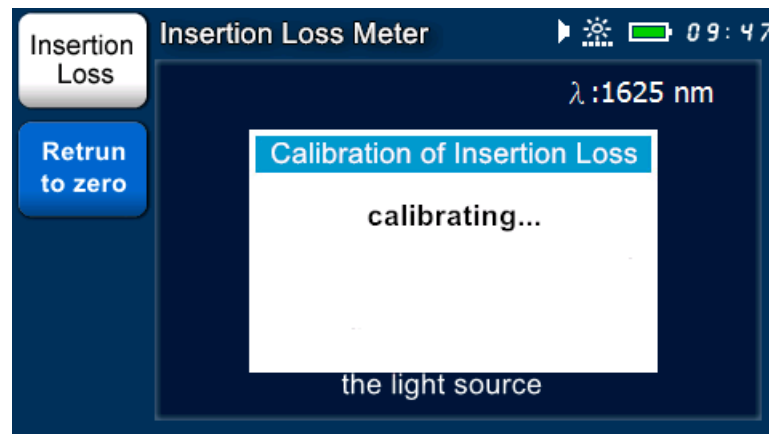
5.6.2 Calibration

Short press [**F2**] key to enter into the display of calibration.

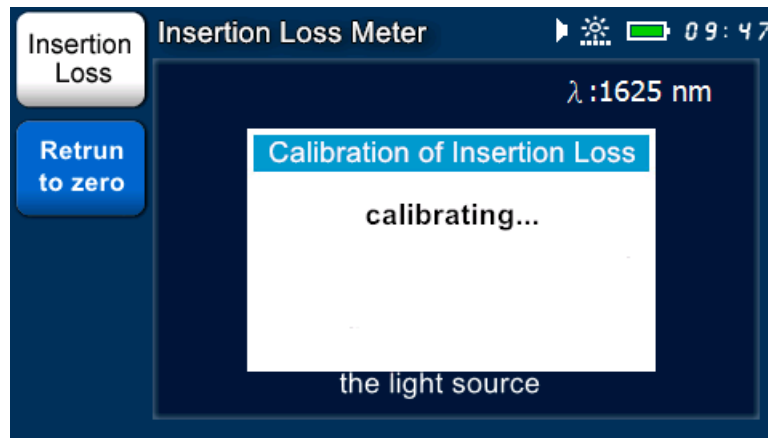


Short press [] key to start the calibration.

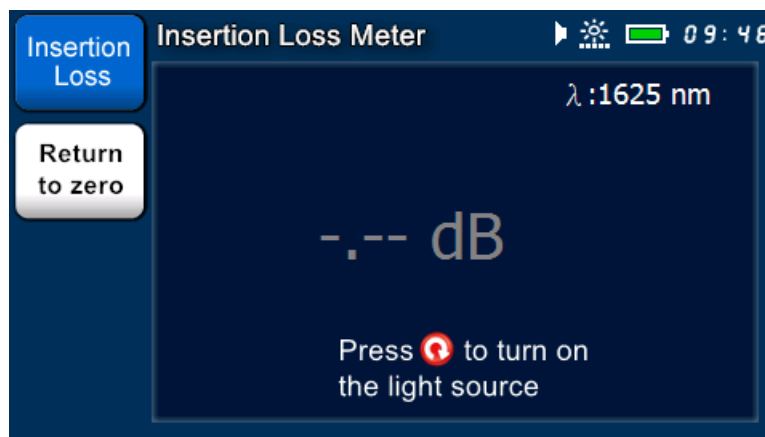
- Calibrating




- Calibration completed




Back to the display of calibration.



5.7 Visual Fault Locator


Short press [] or [] key to select **Visual Fault Locator**.




Short press [] key to enter into the display of visual fault locator.



5.7.1 Turn on/off Visual Fault Locator

Short press [] key to turn on visual fault locator



Short press [] key to turn off visual fault locator.



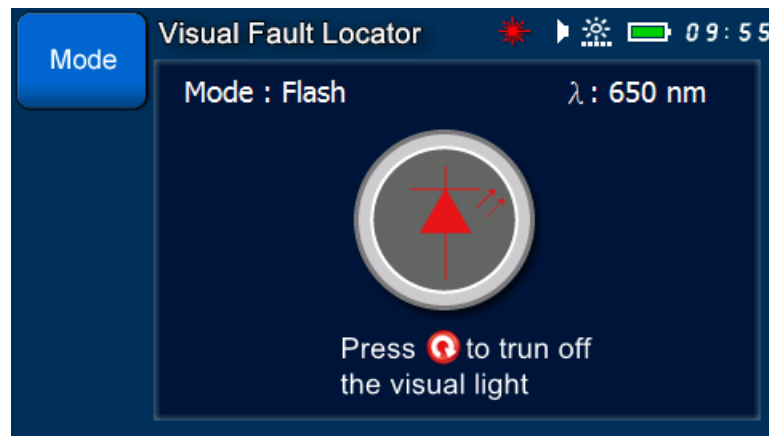
5.7.2 Modulation Output

Short press [F1] key to switch the modulation output (CW or FLASH).



- CW




- FLASH

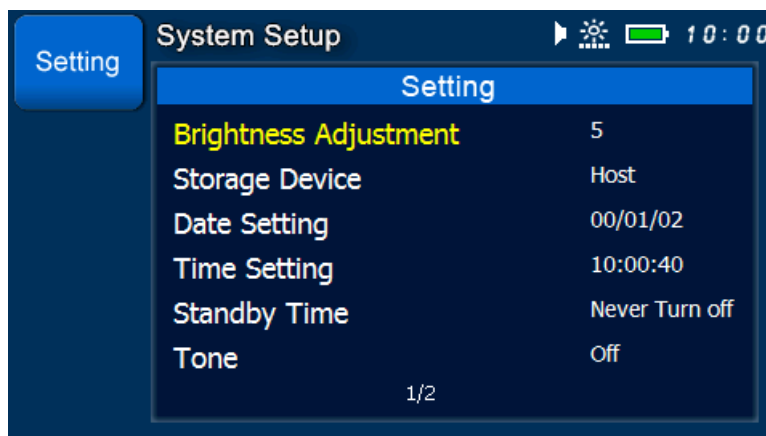


5.8 System Setup




Short press [] or [] key to select **System Setup**.

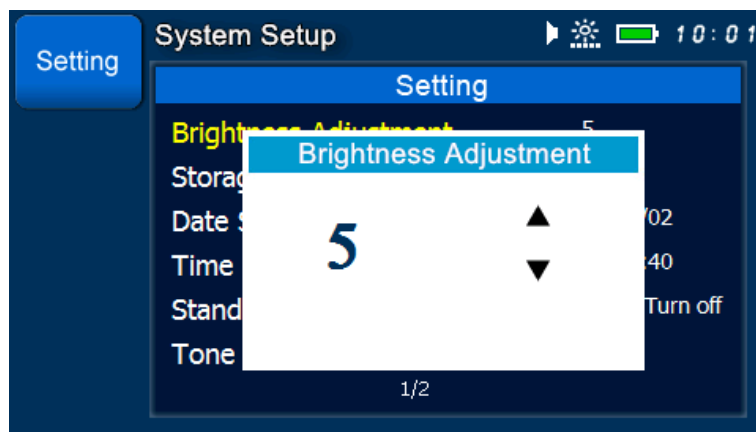
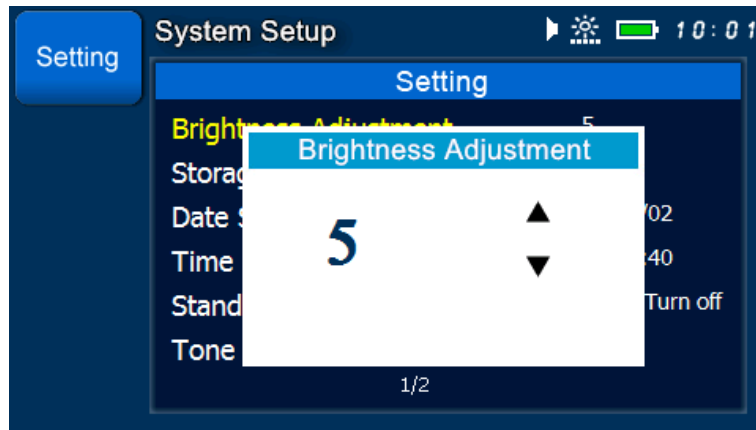




Short press [] key to enter into the main display of system setup.

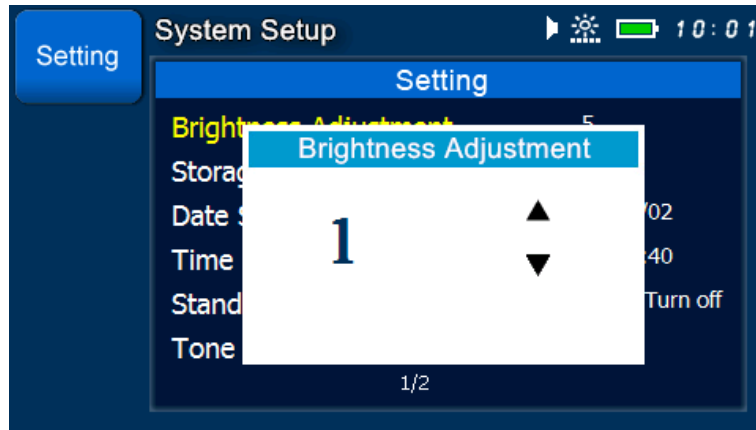


5.8.1 Brightness Adjustment

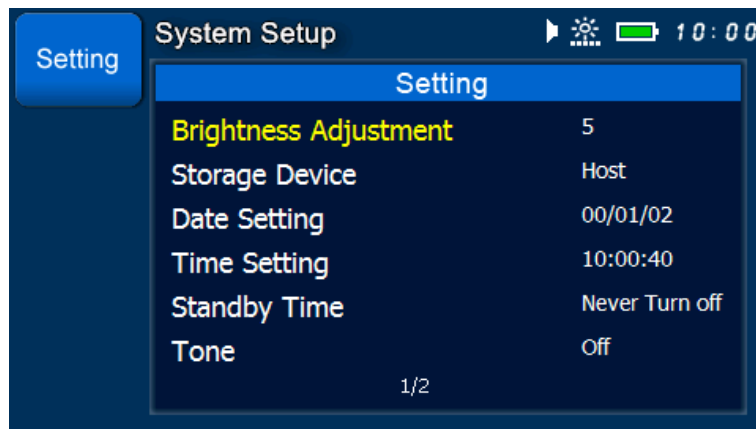
Short press [] or [] key to move to “**Brightness Adjustment**”, and then short press [] key to access the setting.




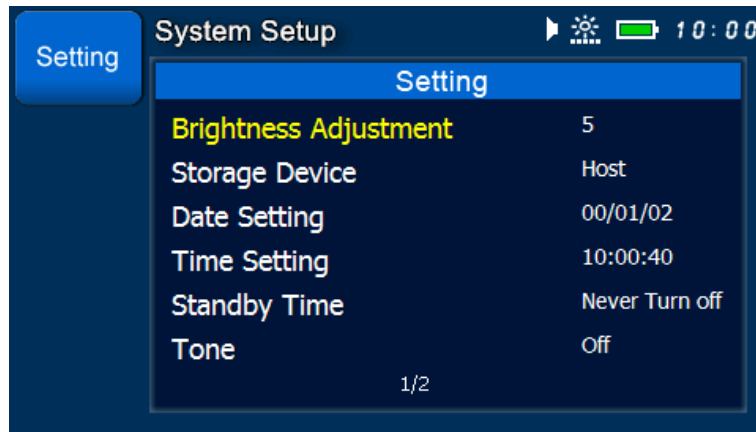
Short press [] or [] key to adjust the brightness.






Short press [] key to confirm it.

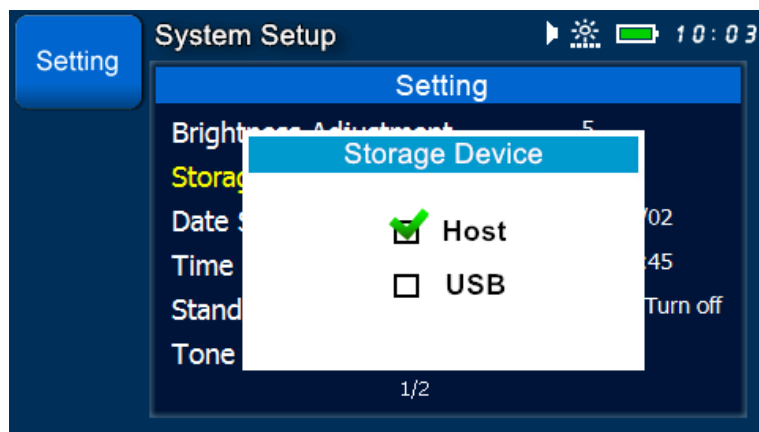
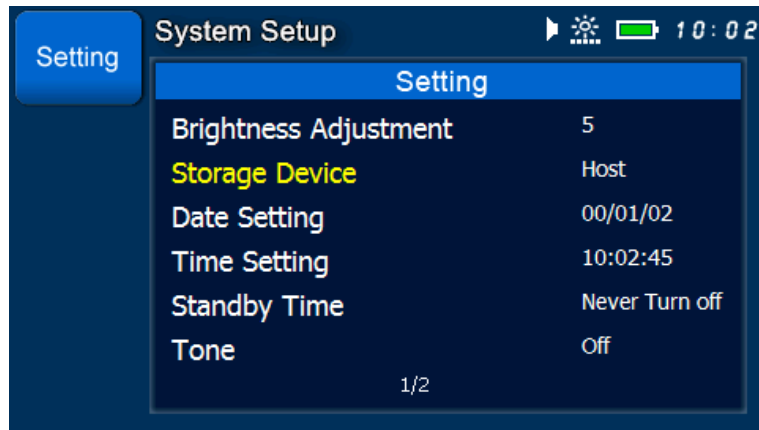


Short press [] key to discard the setting and return to the setting display.

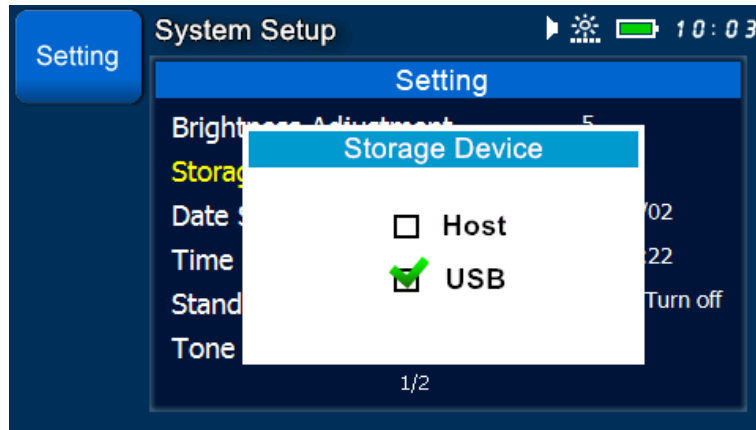


5.8.2 Storage Device

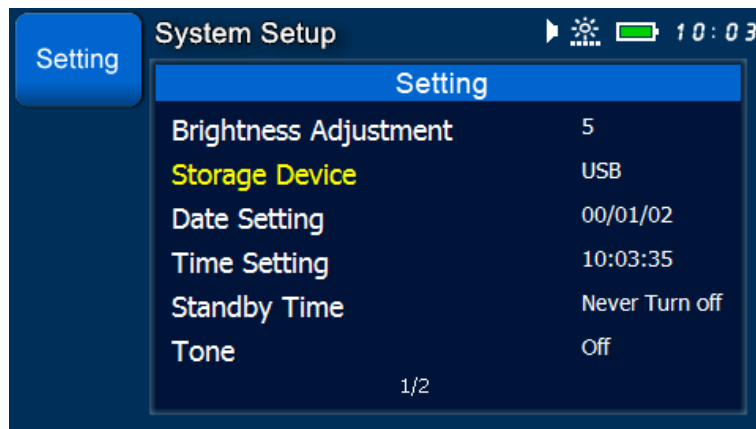
Short press [] or [] key to move to "Storage Device", and then short press [] key to access the setting.




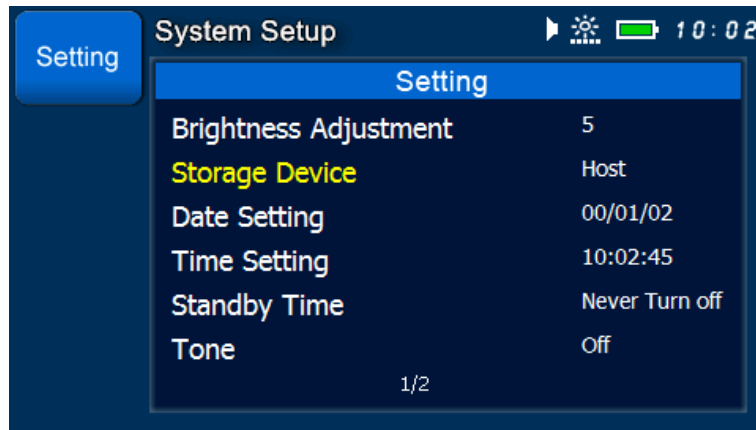
Short press [] or [] set the storage device.






Short press [] key to confirm it.

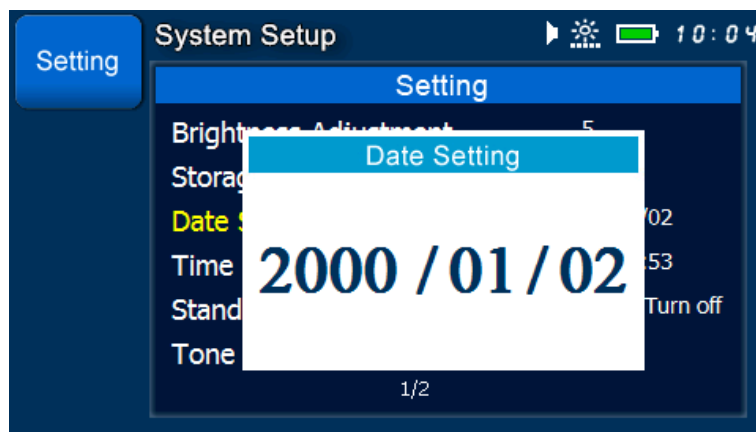
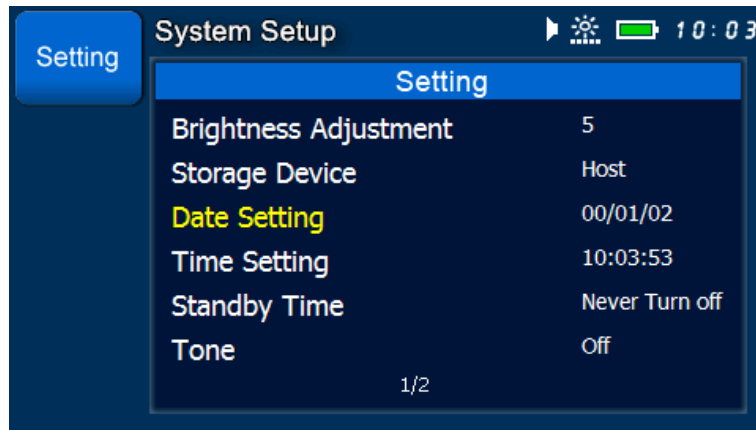





Short press [] key to discard the setting and return to the setting display.

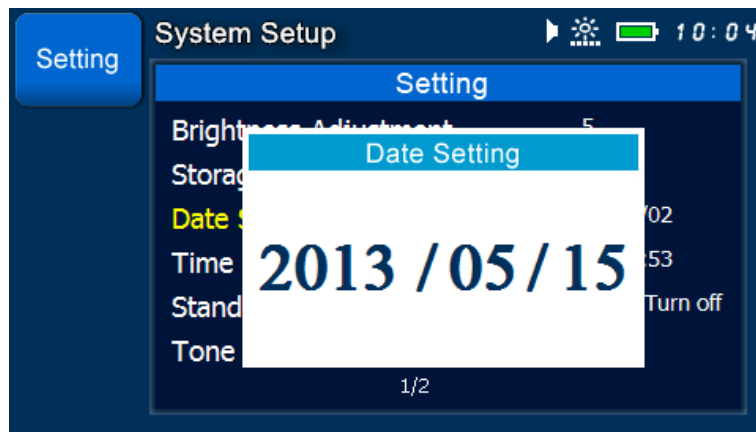


5.8.3 Date Setting

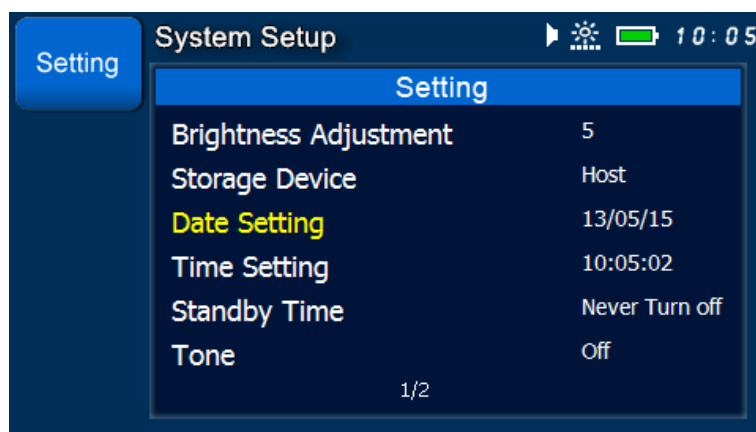
Short press [] or [] key to move to “**Date Setting**”, and then short press [] key to access the setting.




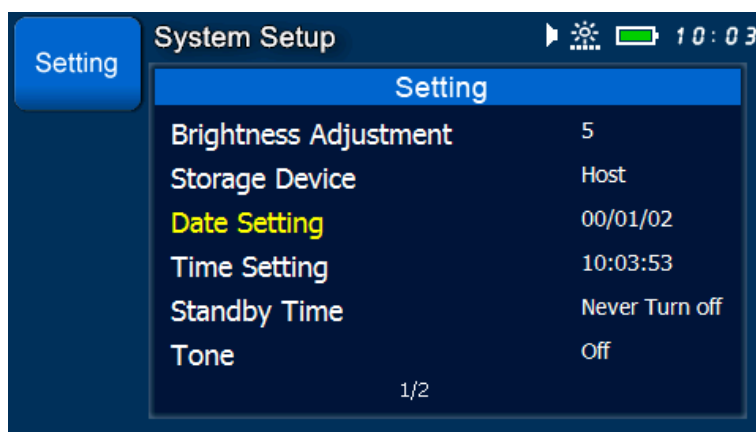
Short press [] or [] key to move to the desired position, and then short press [] or [] key to set the date.






Short press [] key to confirm it.

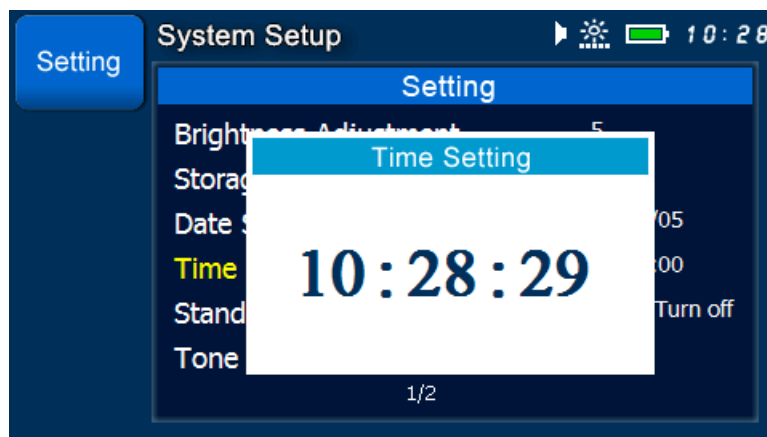
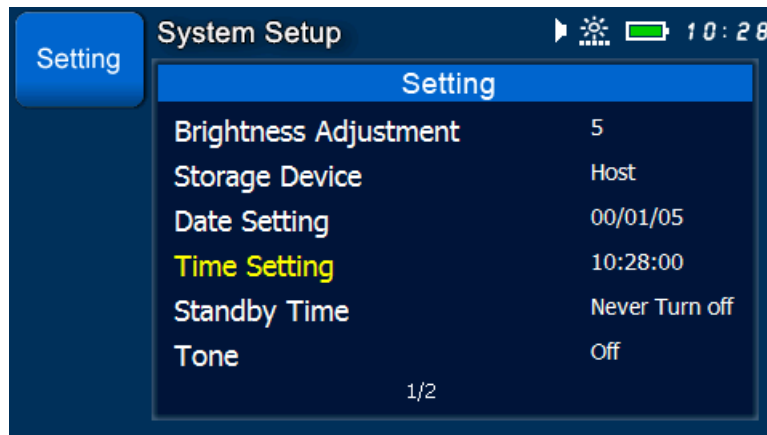






Short press [] key to discard the setting and return to the setting display.

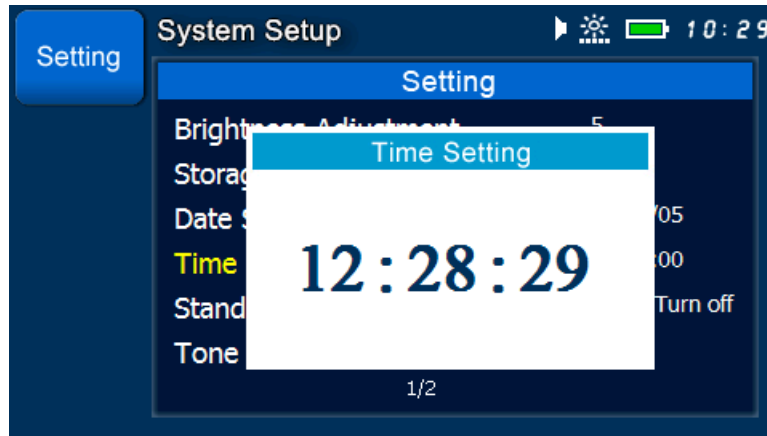


5.8.4 Time Setting

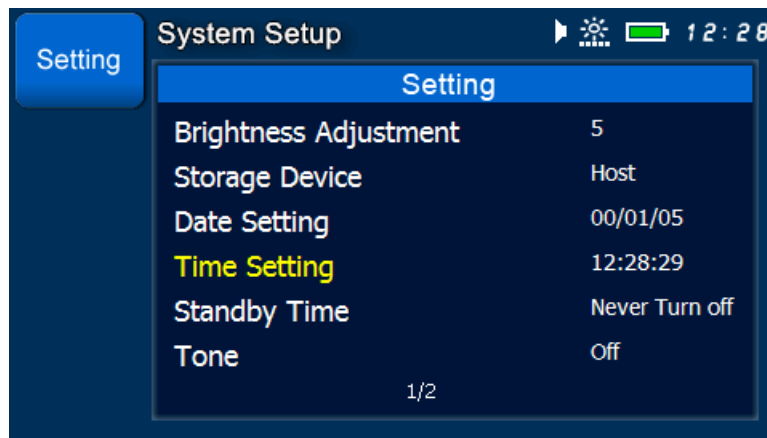
Short press [] or [] key to move to “**Time Setting**”, and then short press [] key to access the setting.




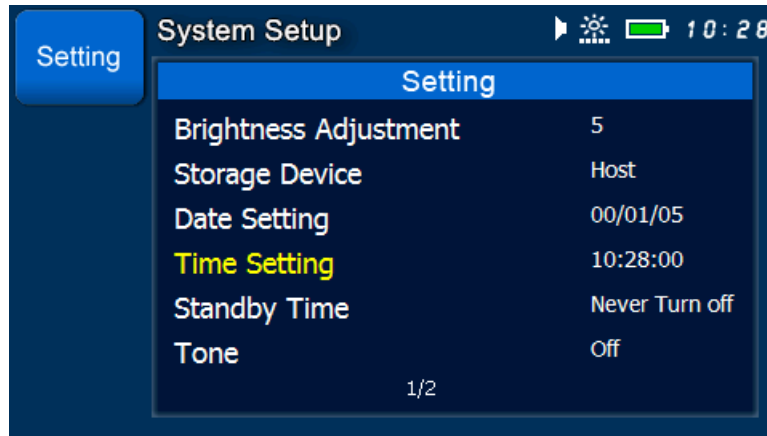
Short press [] or [] key to move to the desired position, and then short press [] or [] key to set the time.






Short press [] key to confirm it.

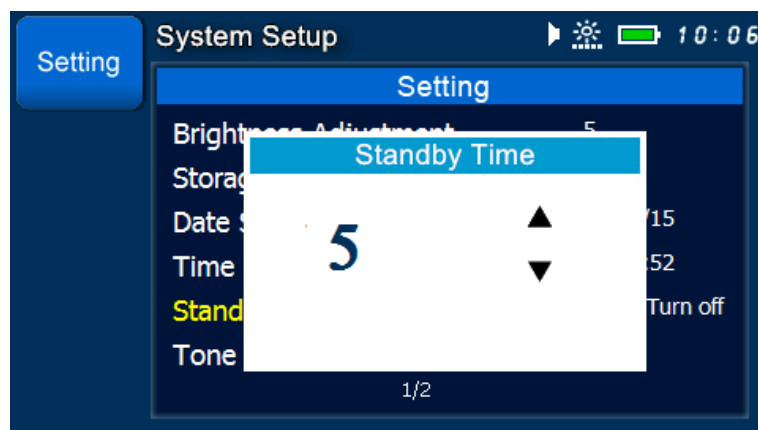
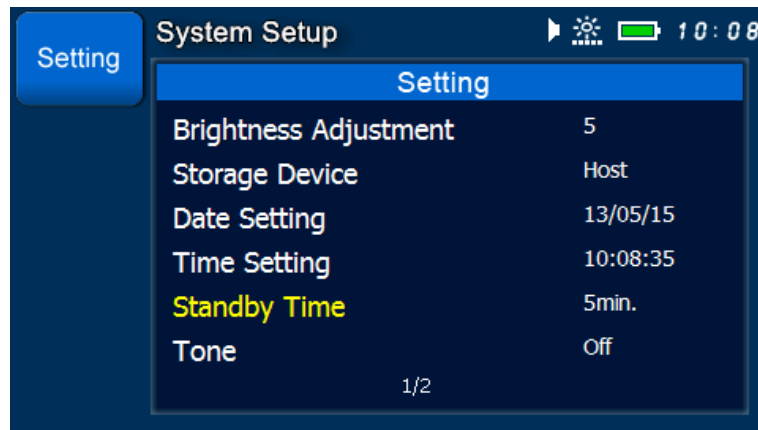


Short press [] key to discard the setting and return to the setting display.

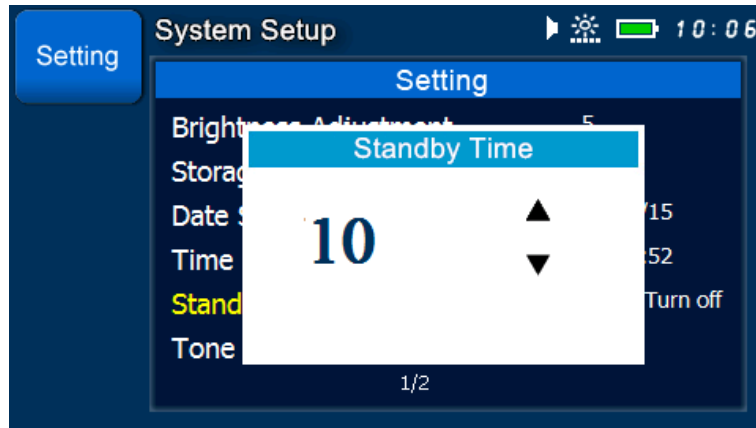


5.8.5 Standby Time

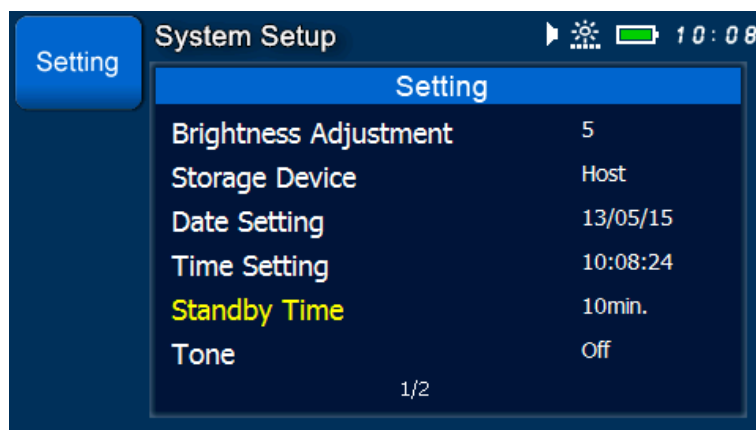
Short press [] or [] key to move to “**Standby Time**”, and then short press [] key to access the setting.




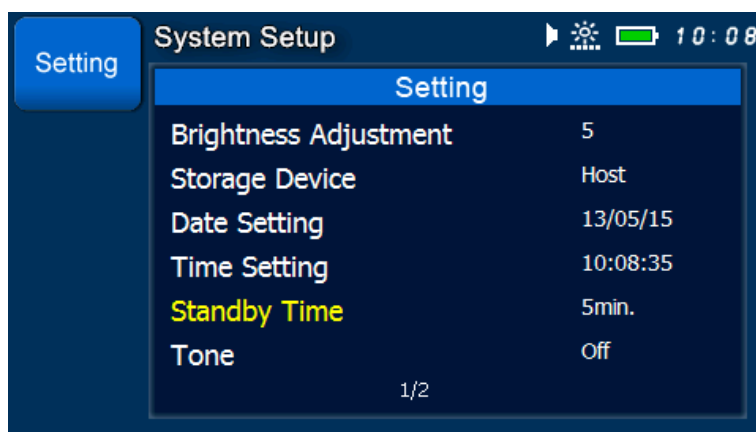
Short press [] or [] set the time.






Short press [] key to confirm it.

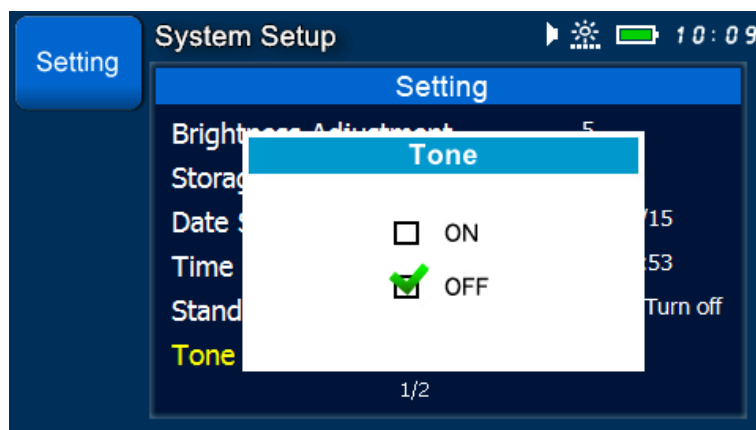
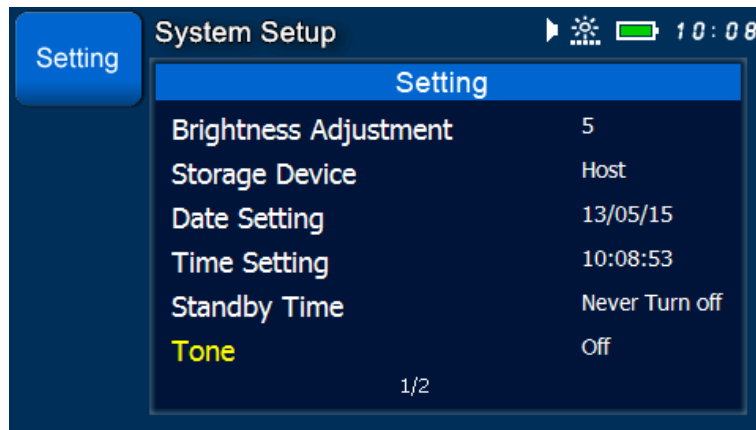


Short press [] key to discard the setting and return to the setting display.

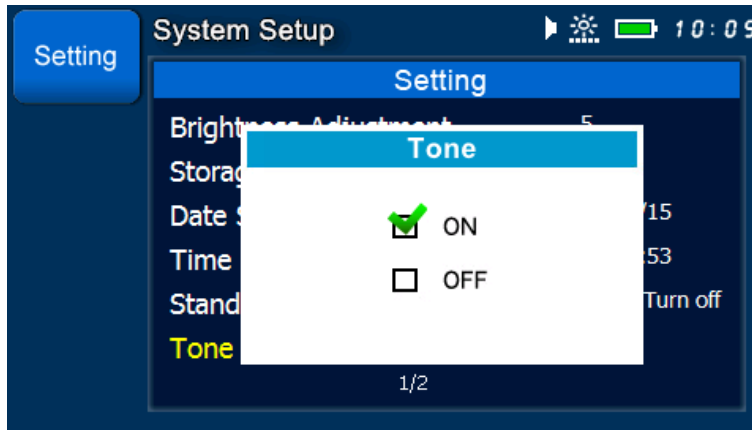


5.8.6 Tone

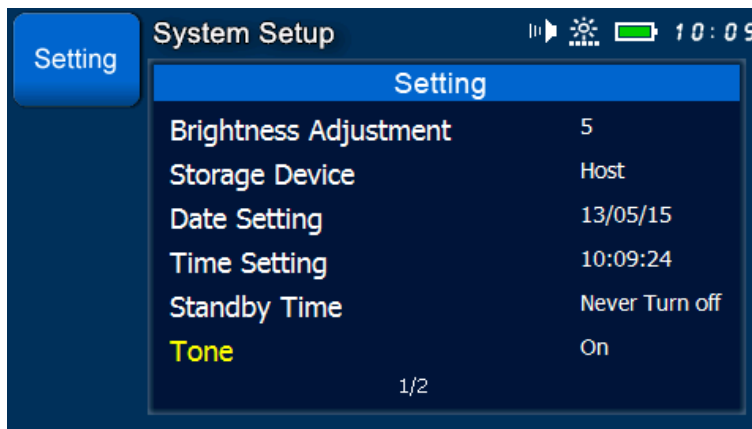
Short press [] or [] key to move to “**Tone**”, and then short press [] key to access the setting.




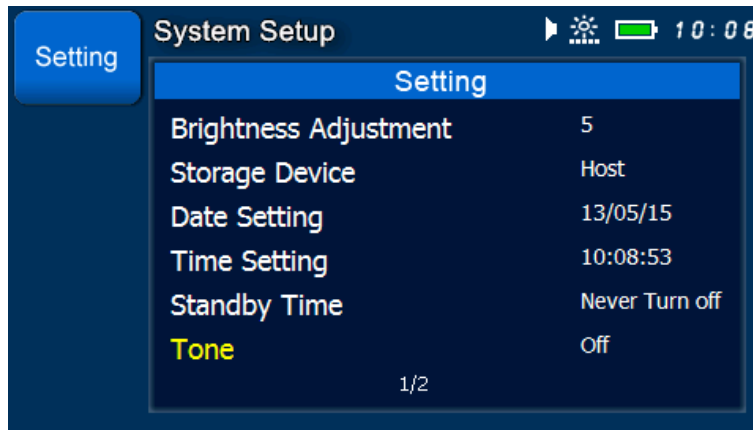
Short press [] or [] key to turn on/off tone.






Short press [] key to confirm it.

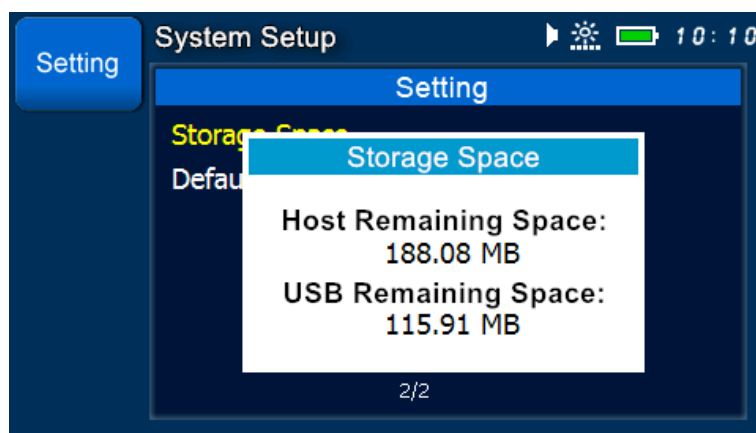
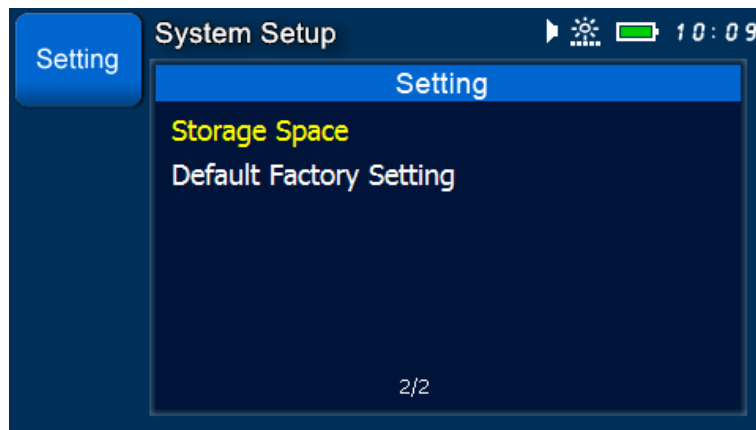


Short press [] key to discard the setting and return to the setting display.

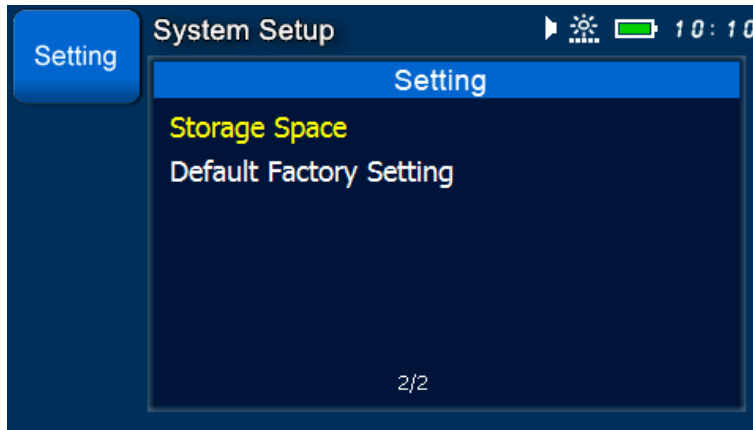


5.8.7 Storage Space




Short press [] or [] key to move to "Storage Space", and then short press [] key to check the remaining space in the Host and USB device.

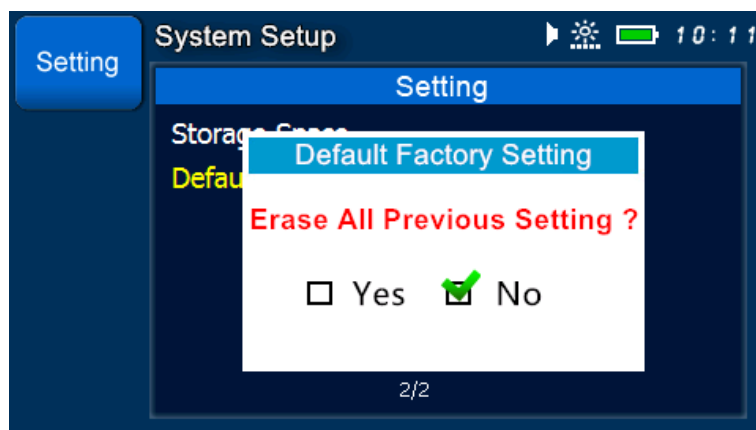
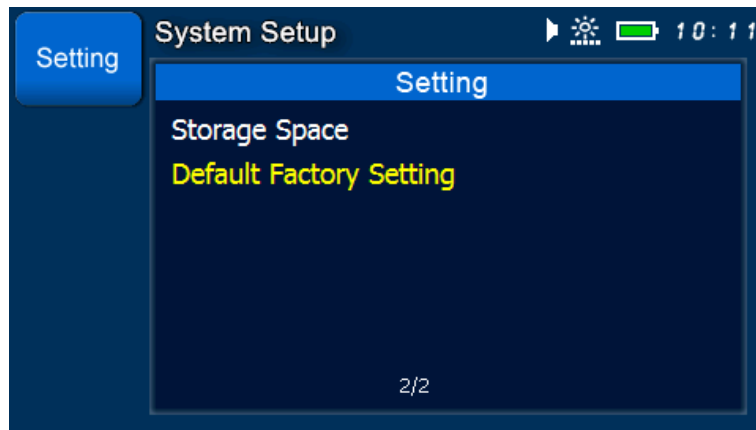


The display automatically returns to the setting display after 3 seconds.

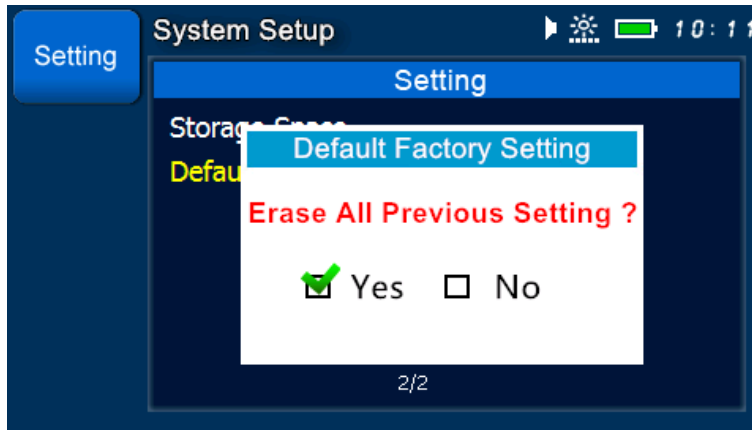


5.8.8 Default Factory Setting

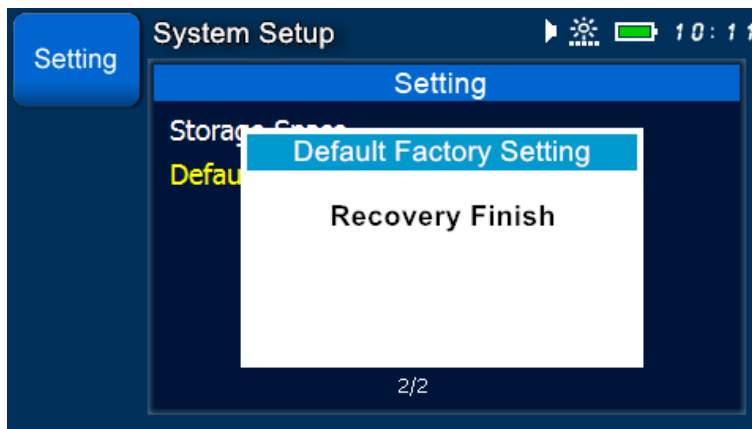
Short press [] or [] key to move to “**Default Factory Setting**”, and then short press [] key to access the setting.



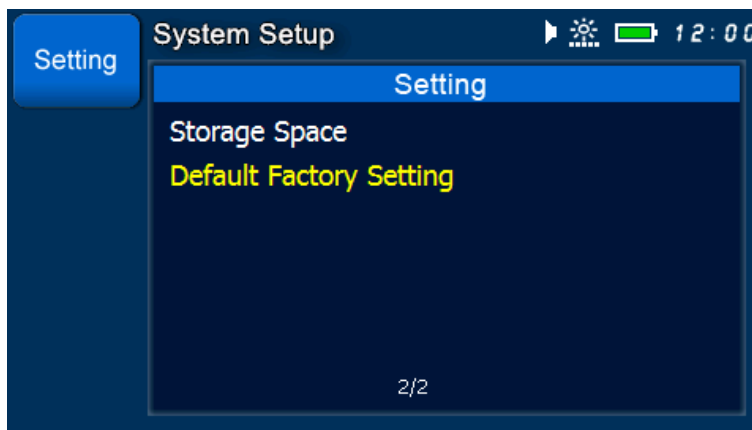
Short press [] or [] key to select "Yes".



Short press [] key to confirm it.




Back to the setting display.



5.9 System Information

Short press [] or [] key to select **System Information**



Short press [] key to enter into the display of system information.

