

# ORL500 Optical Reflection Locator

User Guide \_ Version 1.0

### **Ascentac**

www.ascentac.com

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F 07-398-3965

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- The label with S/N has been altered or damaged.

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# Service & Support

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

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(R.O.C.)

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

Product model and S/N

Warranty information

# Content

1.	Safe	Safety Information1				
2.	Intro	duction			2	
	2.1	Features			3	
	2.2	Application			3	
3.	Layo	out			4	
	3.1	Appearance			4	
	3.2 Instruction					
	3.3	3.3 LED Indicator5				
4.	Display6					
	4.1	Home			6	
	4.2	.2 Function				
5.	Оре	eration			8	
	5.1	Power-on			8	
	5.2 Home Screen				8	
	5.3	Optical Refle	ction L	ocator	9	
					or10	
					11	
			1.1.1	_	11	
			1.1.2		14	
		5.3.1.2			17	
		5.3.1.3			20	
		5.3.1.4			23	
		5.3.1.5			26	
		5.3.1.6		_	28	
		5.3.1.7	Thres	nold of Total Return	Loss31	
		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			
	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			
	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			
	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			
	5.5.1 Turn on/off Light Source	78		
5.6	Insertion Loss Meter			
	5.6.1 Insertion Loss	80		
	5.6.2 Calibration	82		
5.7	Visual Fault Locator			
	5.7.1 Turn on/off Visual Fault Locator85			
	5.7.2 Modulation Output			
	J./.Z MOUUIUIIUI UUIPUI			

5.8 System Setup			
	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	Syster	n 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
0	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	Α	Battery
		В	Support stand

# 3.3 LED Indicator

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



# 4. Display

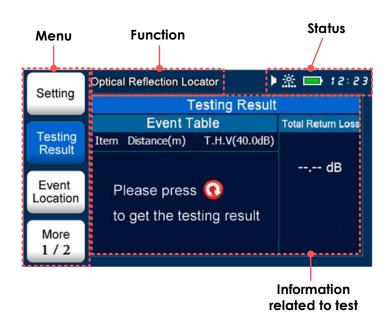
## 4.1 Home



Icon	Function	Description
	Optical Reflection	Measure total return loss, total loss, event return loss and the location
	Locator	in the optical cable
	Optical Power Meter	Measure optical power
*	Light Source	Output constant light source
0.52 dB	Insertion Loss Meter	Measure the insertion loss of fibers or components
	Visual Fault Locator	Output visual light
O	System Setup	Set parameter
<b>1</b>	System Info	System information



# 4.2 Function



Icon	Function		Description
	Battery status		Fully charged
			Low battery
			Insufficient power
		*	Charging
Brightness		5	The brightness of LCD display can be adjusted.
*	Laser On		Emitting optical light
(()	Alert tone	(()	On
111			Off



# 5. Operation

### 5.1 Power-on

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



### 5.2 Home Screen

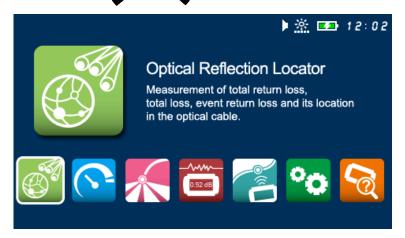
Short press [ ] or [ ] key to select the desired function.





# 5.3 Optical Reflection Locator

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



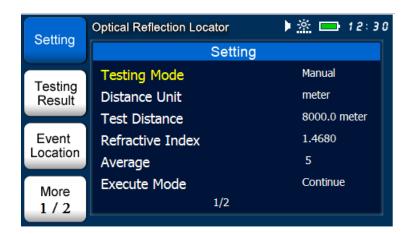
Short press [ ] key to enter into the home screen of optical reflection locator.





# 5.3.1 Setting Optical Reflection Locator

Short press [F1] key to set parameters.

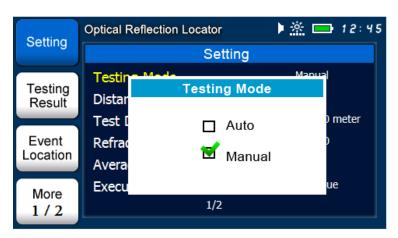




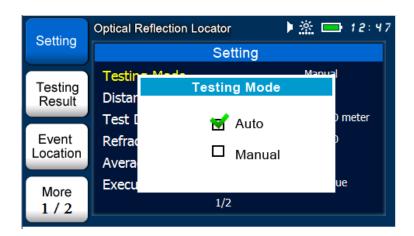
# 5.3.1.1 Setting Testing Mode

### 5.3.1.1.1 Auto Test

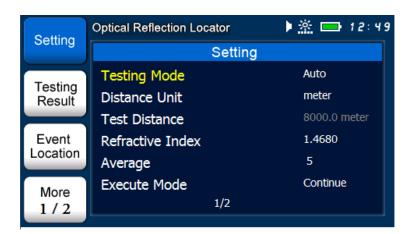








Short press [ ] key to confirm the setting.

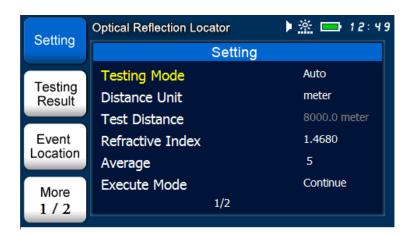


### Note

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

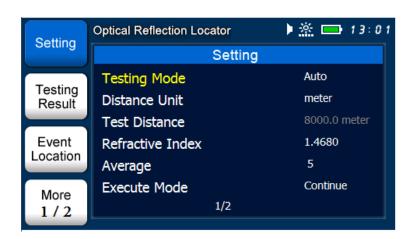


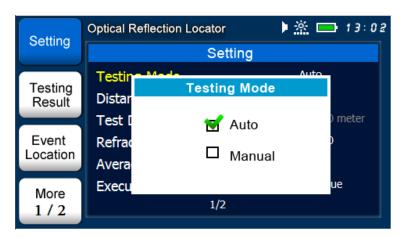
Short press [ ] key to discard the setting and return to the setting display.





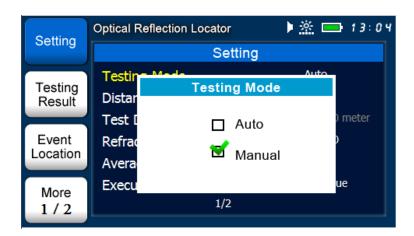
### 5.3.1.1.2 Manual Test



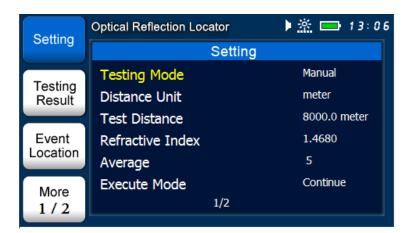




Short press [ ] or [ key to select "Manual".



Short press [ ] key to confirm the setting.

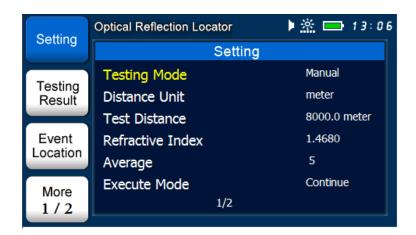


### Note

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



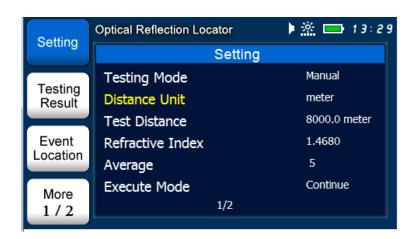
Short press [ ] key to discard the setting and return to the setting display.

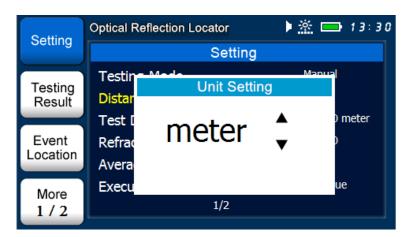




### 5.3.1.2 Distance Unit

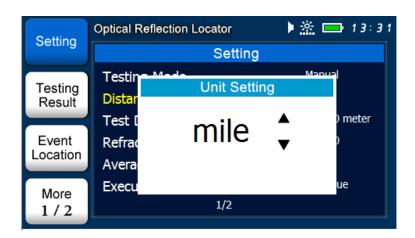
Short press [ ] or [ ] key to move to "**Distance Unit**", and then short press [ ] key to access unit setting.







Short press [ or [ lev to select the desired unit.

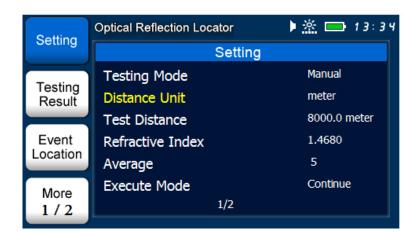


Short press [ ] key to confirm the setting.





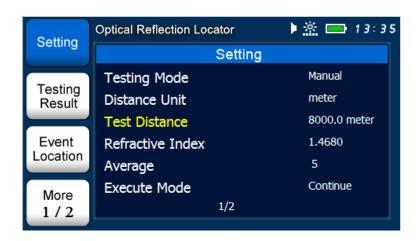
Short press [ ] key to discard the setting and return to the setting display.

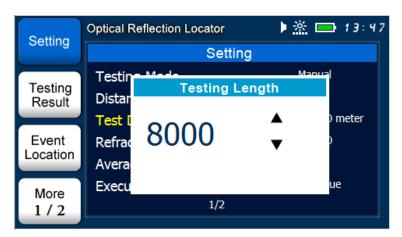




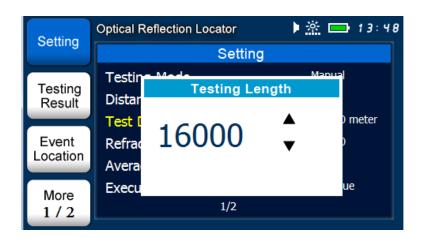
### 5.3.1.3 Test Distance

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

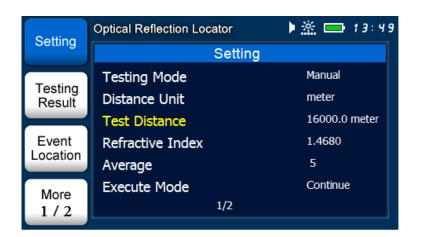






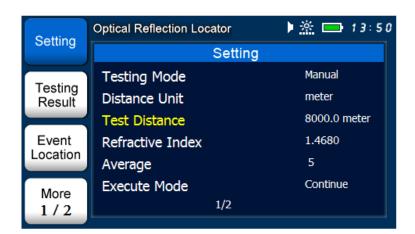


Short press [ ] key to confirm the setting.





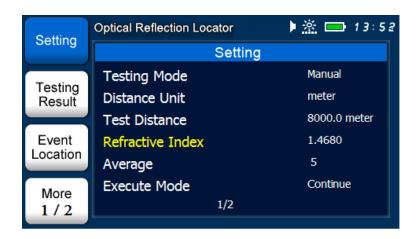
Short press [ ] key to discard the setting and return to the setting display.

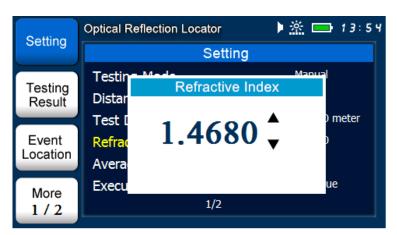




### 5.3.1.4 Refractive Index

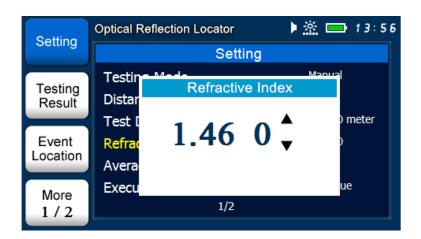
Short press [ ] or [ ] key to move to "Refractive Index", and then short press [ ] key to access refractive index setting.



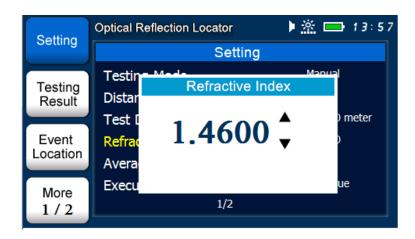


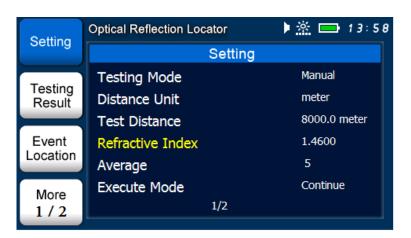


Short press [ ] or [ ] key to select the refractive index and modify the digits.



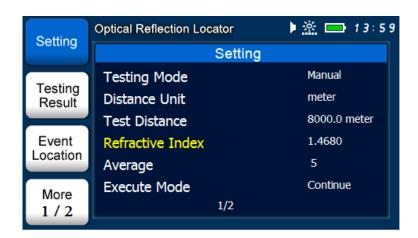
Short press [ ) or [ ) key to adjust the value.







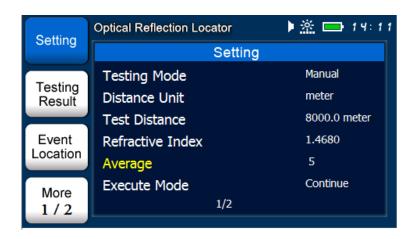
setting display.

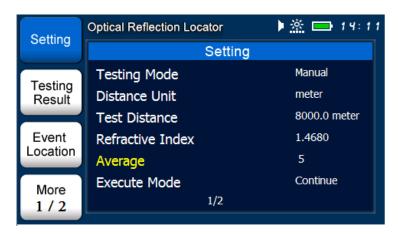




# 5.3.1.5 Average

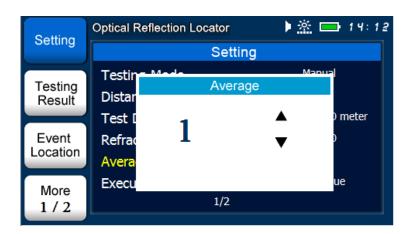
Short press [ ] or [ ] key to move to "Average", and then short press [ ] key to access average setting.



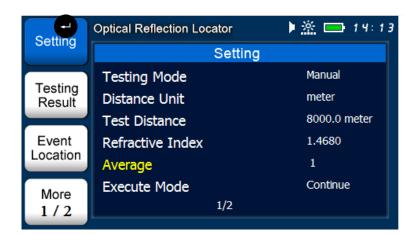




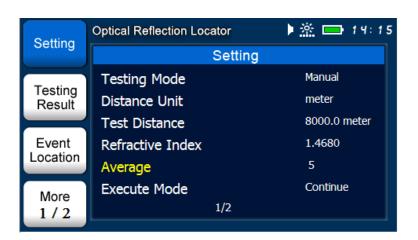
Short press [ or [ lev to set average.



Short press [ ] key to confirm the setting.



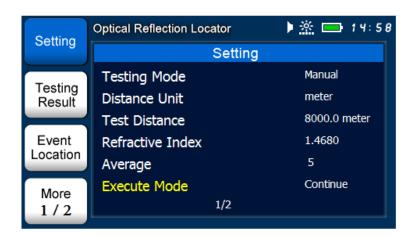
Short press [ ] key to discard the setting and return to the setting display.

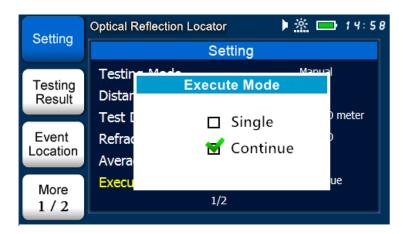




### 5.3.1.6 Execute Mode

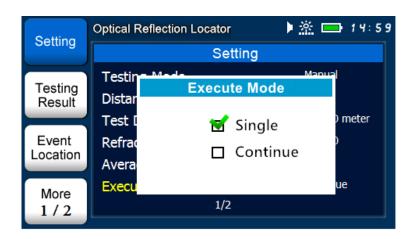
Short press [ ] or [ ] key to move to "Execute Mode", and then short press [ ] key to access mode setting.



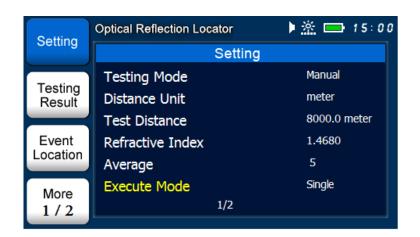




Short press [ or [ lev to set the mode.

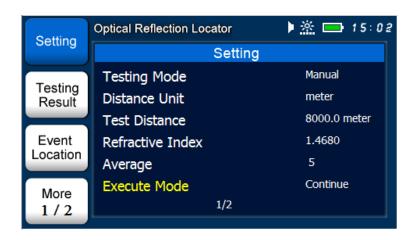


Short press [ ] key to confirm the setting.





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".



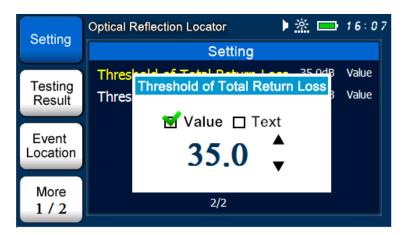


## 5.3.1.7.1 Value Mode

Short press [ ] key to access the setting.

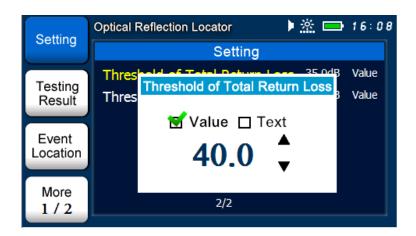


Short press [ ] or [ ] key to select the value mode.

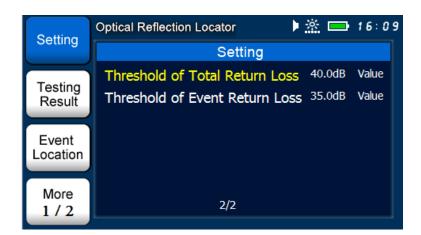




Short press [ or [ lev ] key to set the threshold.



Short press [ ] key to confirm the setting.





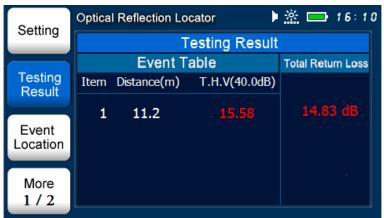


#### Note

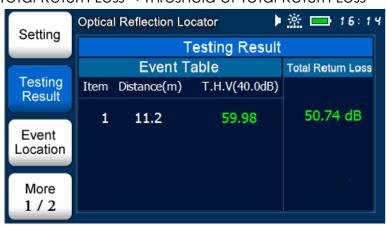
Threshold of total return loss under the value mode:

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



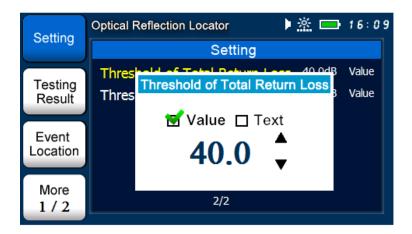
### Total Return Loss < Threshold of Total Return Loss



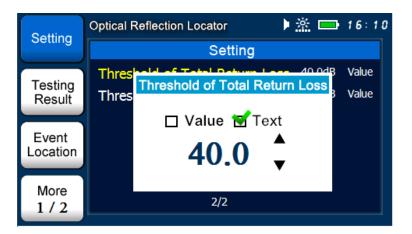


## 5.3.1.7.2 Text Mode

Short press [ ] key to access the setting.



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

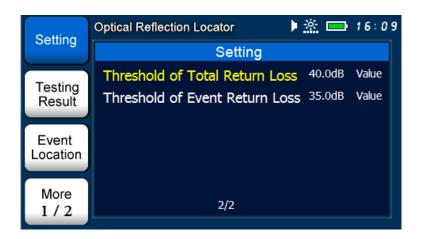




Short press [ ] key to confirm the setting.



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



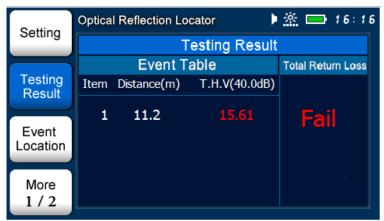


#### Note

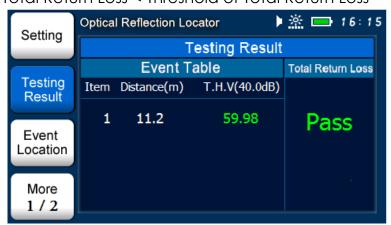
Threshold of total return loss under the text mode:

- 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.
- 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.





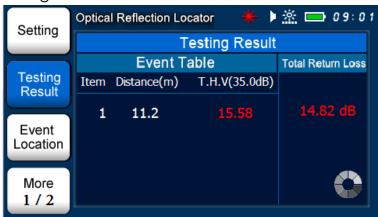
Total Return Loss < Threshold of Total Return Loss



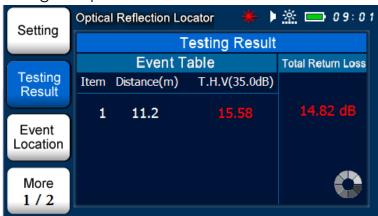


## 5.3.2 Test

Testing

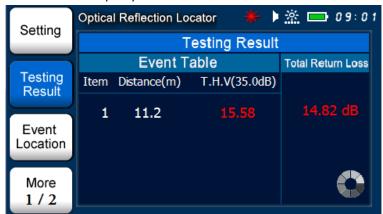


Testing completed





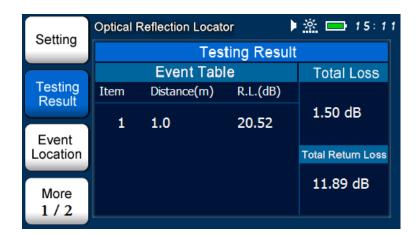
Test results displayed





## 5.3.3 Test Results

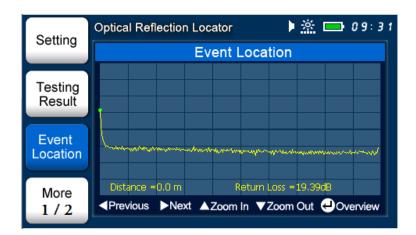
Short press [ **F2** ] key to view the test results.



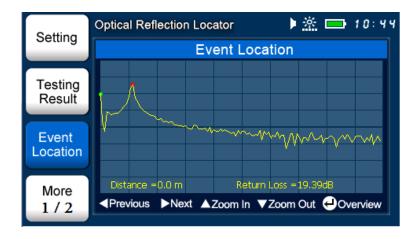


#### **Event Location** 5.3.4

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

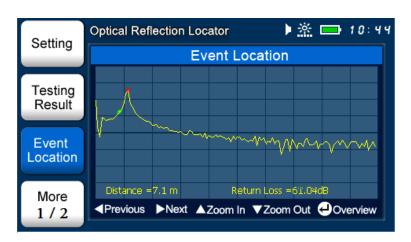


out.





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



## Note

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

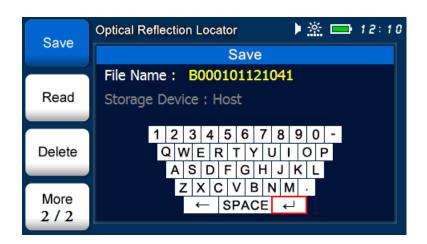


## 5.3.5 Saving Data

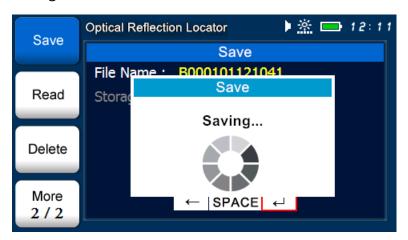
Short press [F1] key to access the display of saving data.

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

Select [ ] to save it.

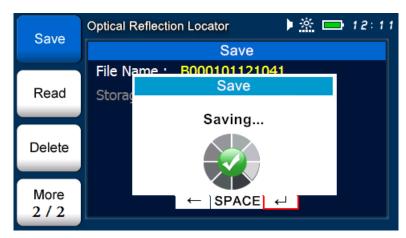


### Saving





# Saving completed



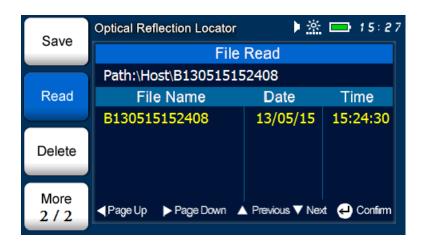
## Note

USB supports FAT32 format but does not support NTFS format.



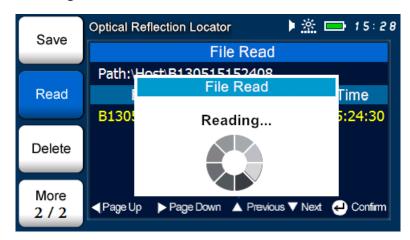
## 5.3.6 Reading Data

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





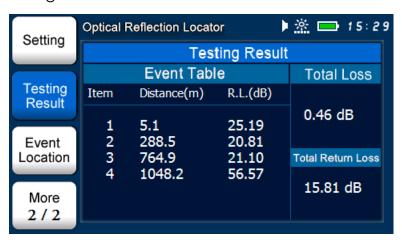
## Reading



Reading completed



Testing result





## 5.3.6.1 Threshold of Event Return Loss

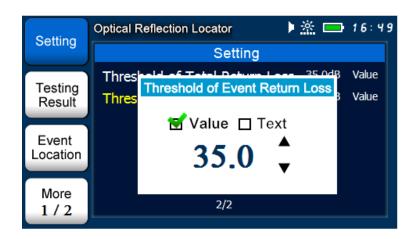
Short press [ ] or [ ] key to move to "Threshold of Event Return Loss".



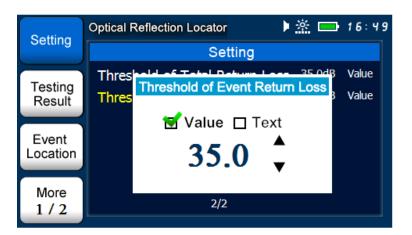


# 5.3.6.1.1 Value Mode

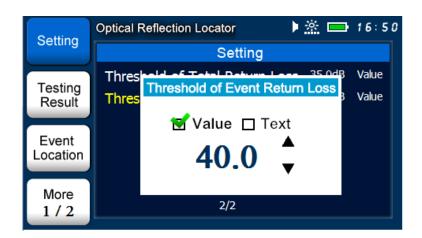
Short press [ ] key to access the setting.



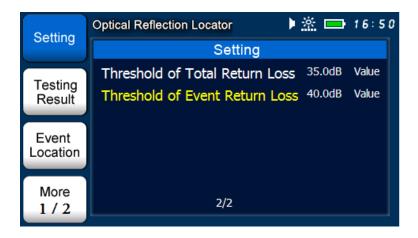
Short press [ ] or [ ] key to select the value mode.



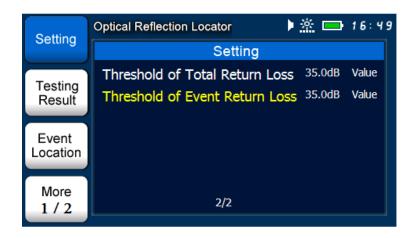




Short press [ • ] key to confirm the setting.



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

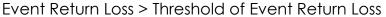


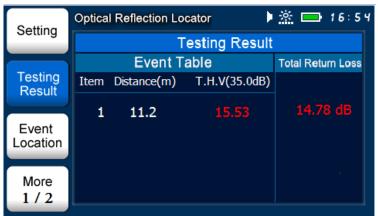


#### Note

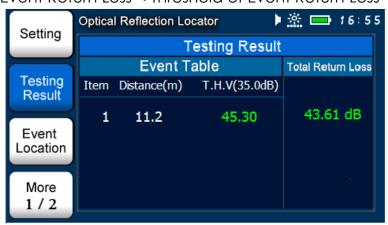
Threshold of total return loss under the value mode:

- When the event return loss is higher than the threshold 1. 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.





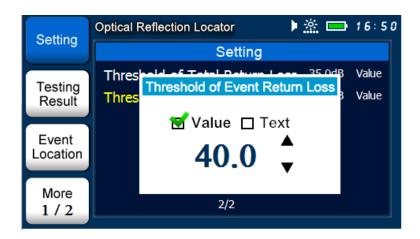
### Event Return Loss < Threshold of Event Return Loss



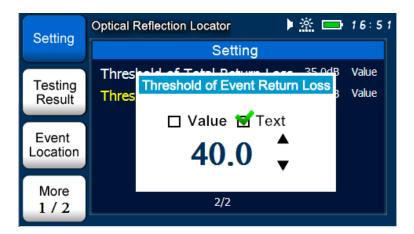


## 5.3.6.1.2 Text Mode

Short press [ ] key to access the setting.

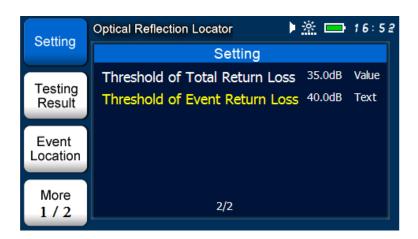


Short press [ ] or [ ] key to select the text mode.

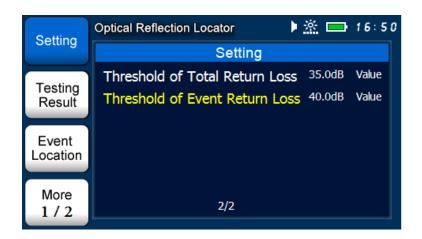




Short press [ ] key to confirm the setting.



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



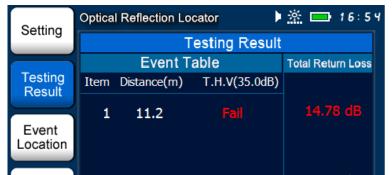


#### Note

More 1 / 2

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.
- 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

Event Return Loss < Threshold of Event Return Loss



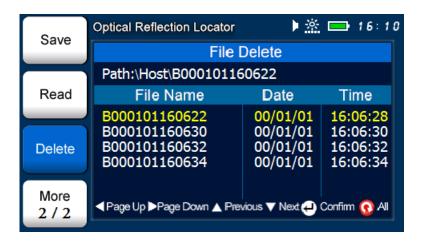


## 5.3.7 Deleting Data

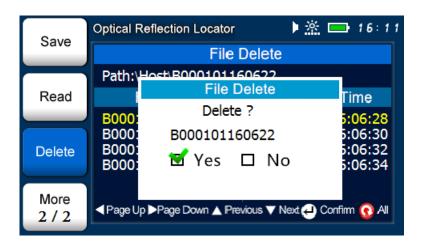
Short press [ F3 ] key to access the display of deleting data.

## 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.

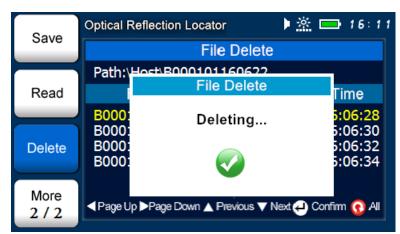


Short press [ ] or [ ] key to confirm whether to delete or not.

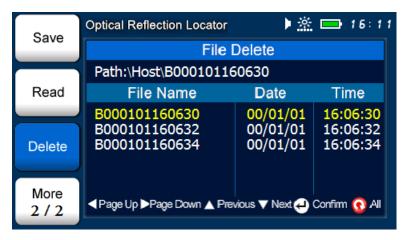




### Deleting

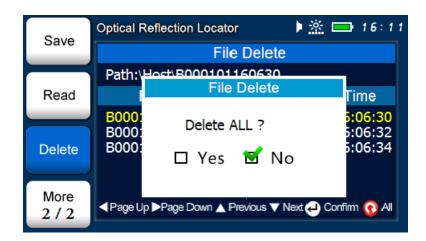


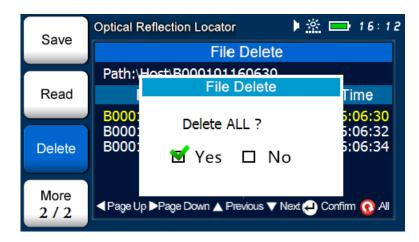
Deletion completed





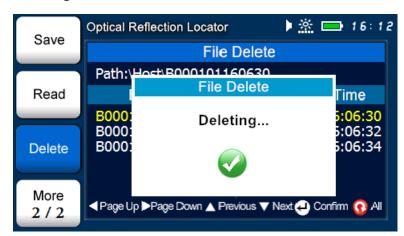
### 5.3.7.2 All Data



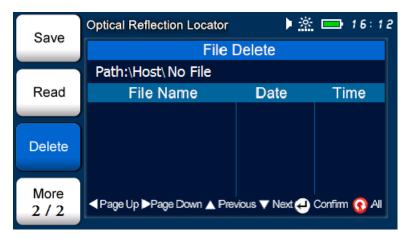




## Deleting



Deletion completed



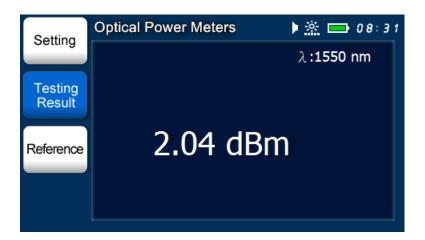


## **5.4 Optical Power Meter**

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



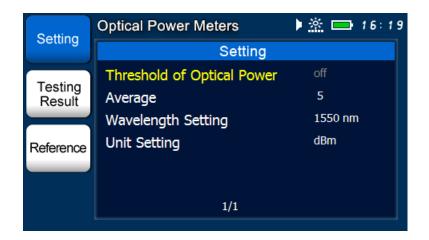
Short press [ ] key to enter into the measured display of optical power meter.





#### 5.4.1 **Setting Optical Power Meter**

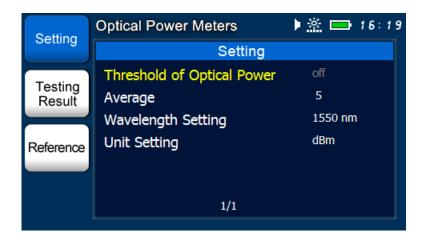
Short press [ **F1** ] key to set parameters.





# 5.4.1.1 Threshold of Optical Power

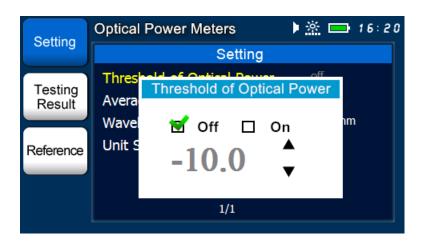
Optical Power".



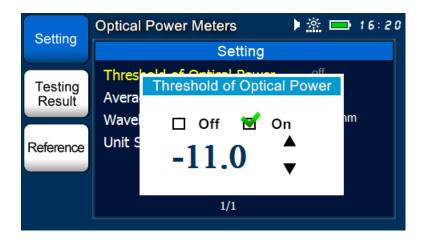


## 5.4.1.1.1 Turn on the Threshold of Optical Power

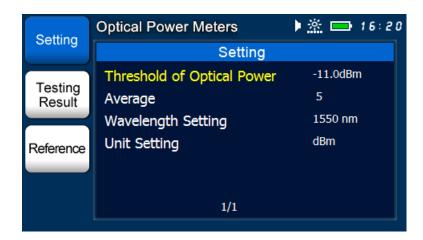
Short press [ • ] key to access the setting.



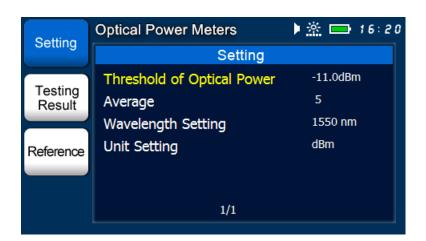
Short press [ ] or [ ] key to enable the threshold of optical power to turn on.







the setting display.



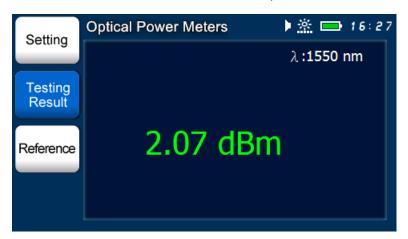


### Note

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

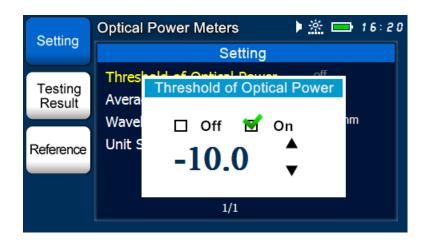


Measured Value < Threshold of Optical Power

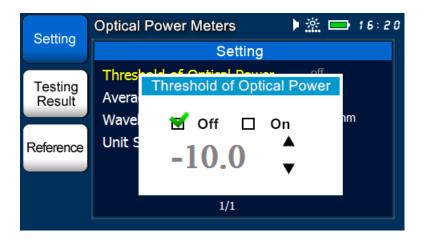




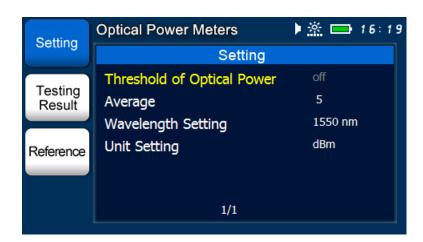
## 5.4.1.1.2 Turn off the Threshold of Optical Power



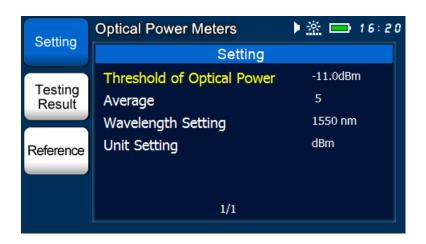
Short press [ ] or [ ] key to enable the threshold of optical power to turn ott.







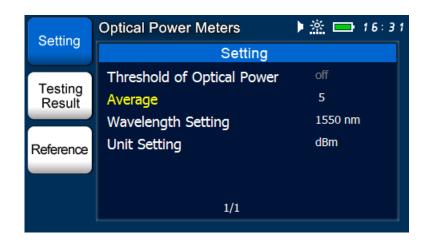
Short press [ ] key to discard the setting and return to the setting display.

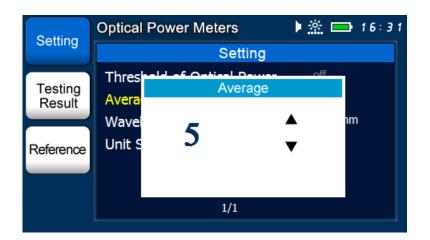




# 5.4.1.2 Average

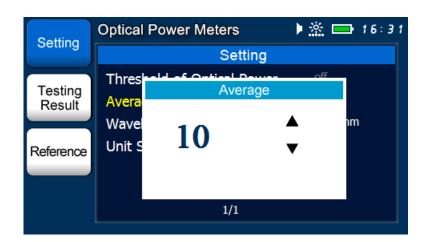
Short press [ ] or [ ] key to move to "Average", and then short press [ ] key to access average setting.



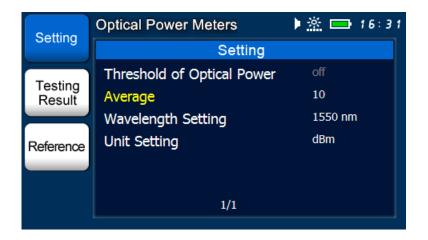




Short press [ or [ lev to set average.



Short press [ ] key to confirm the setting.

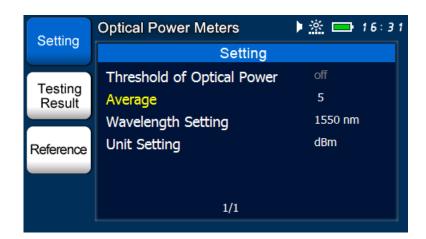


### Note

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



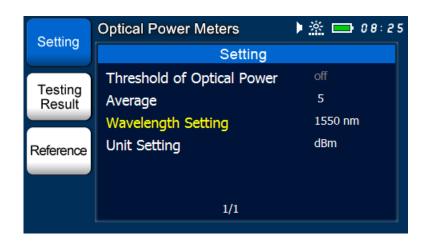
Short press [ ] key to discard the setting and return to the setting display.

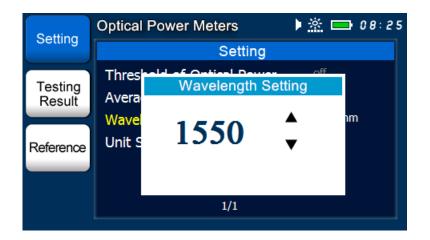




## 5.4.1.3 Wavelength Setting

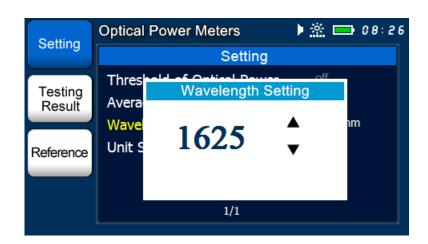
Short press [ ] or [ ] key to move to "Wavelength Setting", and then short press [ ] key to access wavelength setting.



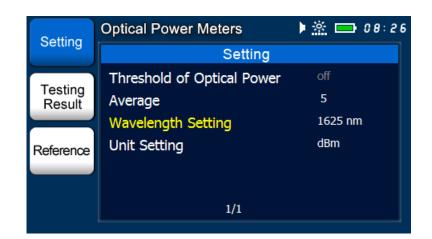




Short press [ or [ lev to set wavelength.

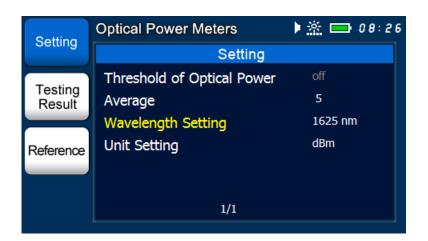


Short press [ ] key to confirm the setting.





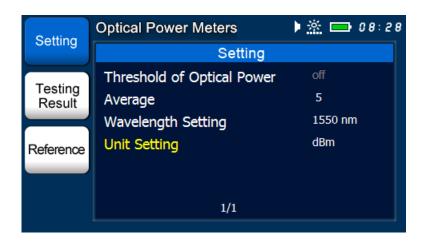
Short press [ ] key to discard the setting and return to the setting display.

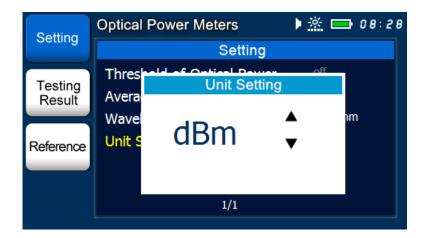




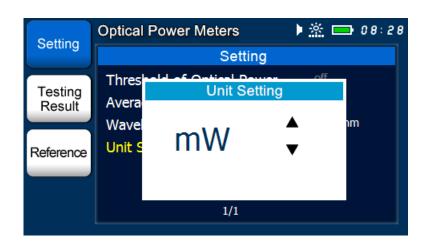
## 5.4.1.4 Unit Setting

Short press [ ] or [ ] key to move to "**Unit Setting**", and then short press [ ] key to access unit setting.

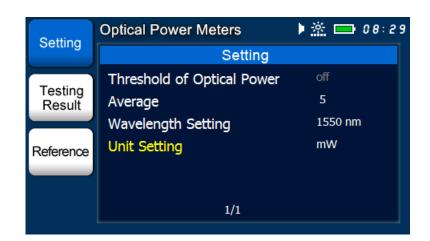






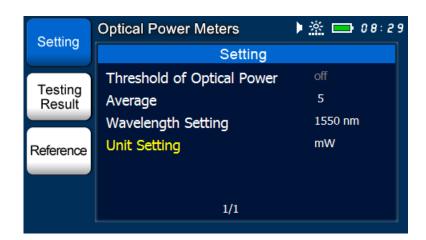


Short press [ ] key to confirm the setting.





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





## 5.4.2 Test Results

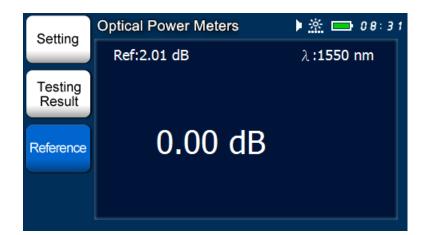
Short press [ **F2** ] key to view the test results.





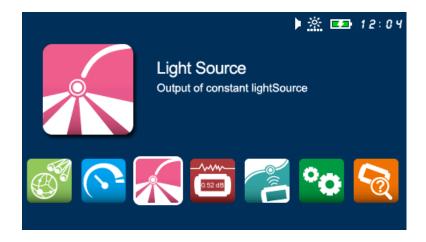
## 5.4.3 Reference Value

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





## 5.5 Optical Light Source



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





## 5.5.1 Turn on/off Light Source







### 5.6 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.





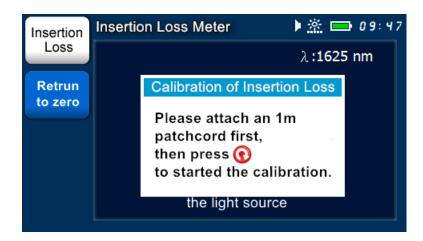




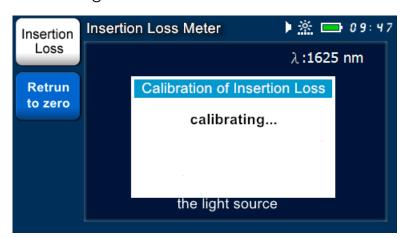


### 5.6.2 Calibration

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

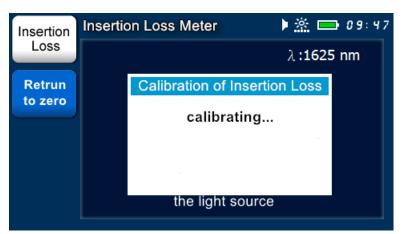


### Calibrating





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



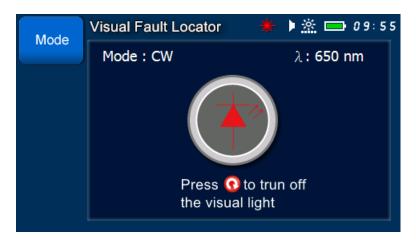




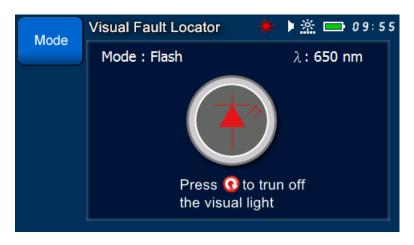
#### 5.7.2 **Modulation Output**

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

### $\mathsf{CW}$



### FLASH



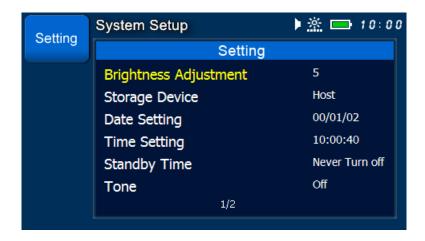


### 5.8 System Setup

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



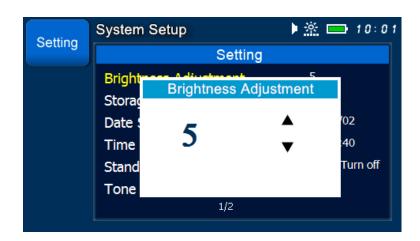
Short press [ - ] key to enter into the main display of system setup.

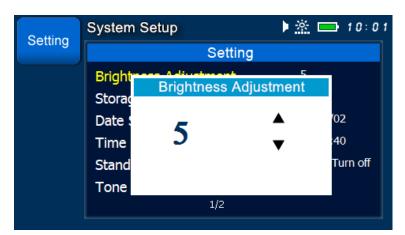




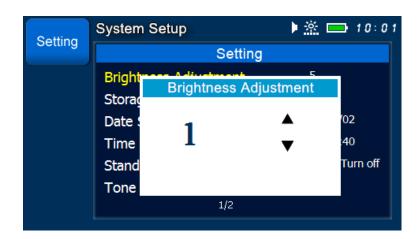
## 5.8.1 Brightness Adjustment

Short press [ ] or [ | key to move to "Brightness Adjustment", and then short press [ | key to access the setting.

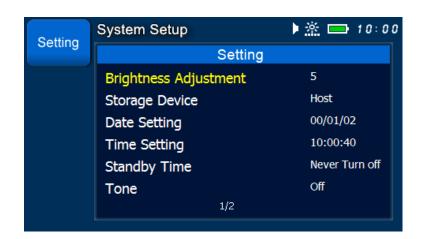






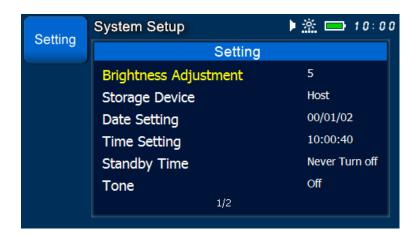


Short press [ ] key to confirm it.





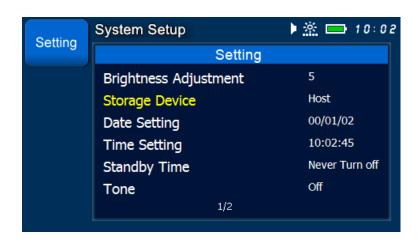
Short press [ ] key to discard the setting and return to the setting display.





#### **Storage Device** 5.8.2

then short press [ - ] key to access the setting.



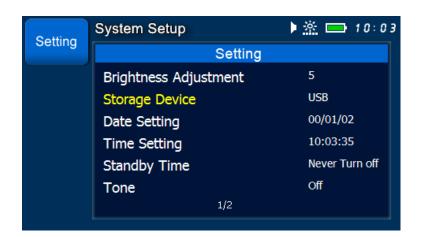




Short press [ ] or [ ] set the storage device.

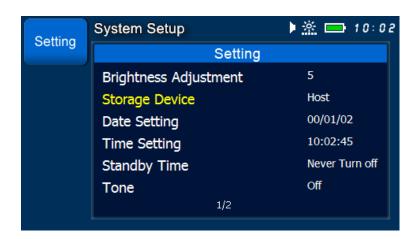


Short press [ ] key to confirm it.



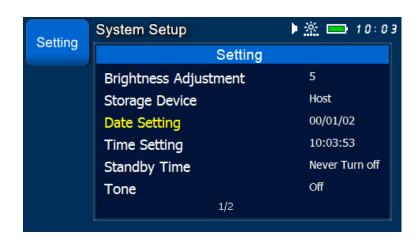


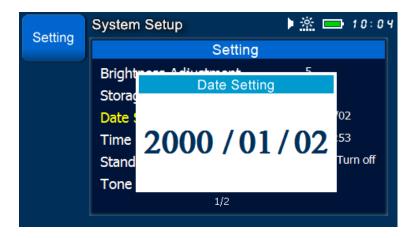
Short press [ ] key to discard the setting and return to the setting display.





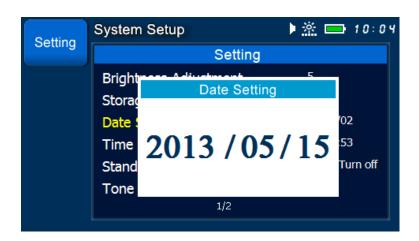
### 5.8.3 Date Setting



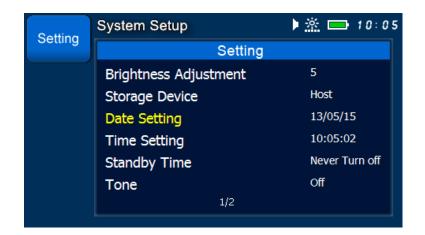




Short press [ ] or [ ] key to move to the desired position, and then short press [ or [ set the date.

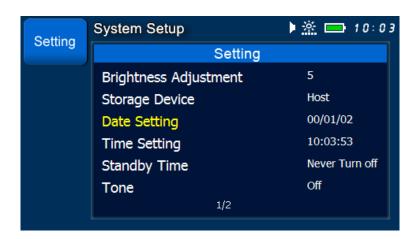


Short press [ ] key to confirm it.



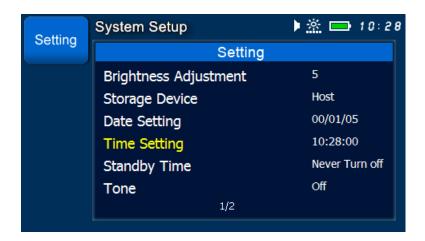


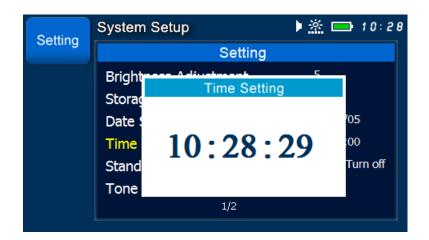
Short press [ ] key to discard the setting and return to the setting display.





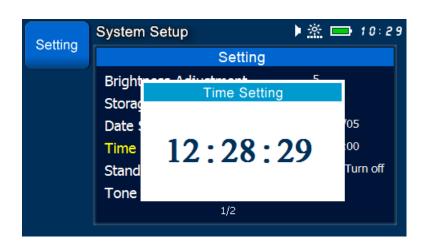
### 5.8.4 Time Setting



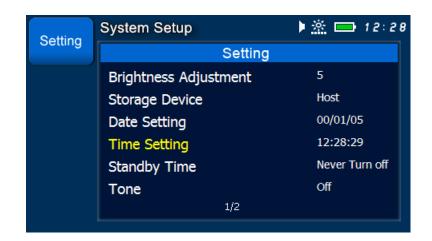




Short press [ ] or [ ] key to move to the desired position, 

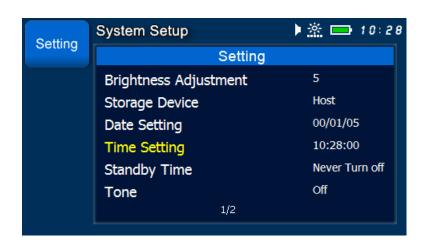


Short press [ ] key to confirm it.





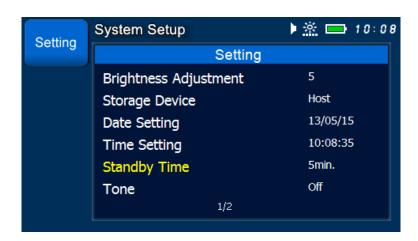
Short press [ ] key to discard the setting and return to the setting display.

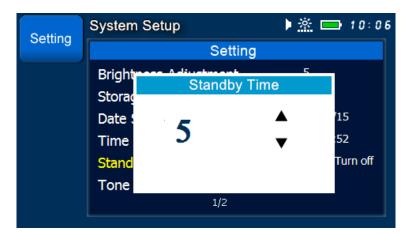




## 5.8.5 Standby Time

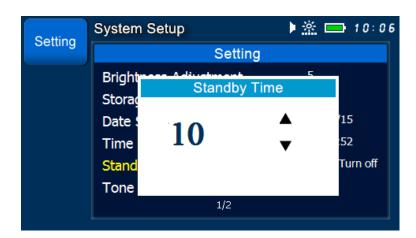
Short press [ ] or [ ] key to move to "**Standby Time**", and then short press [ ] key to access the setting.

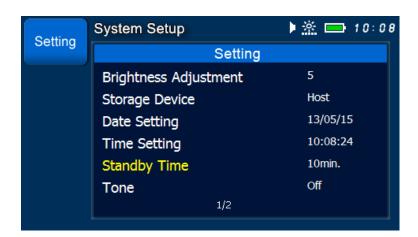




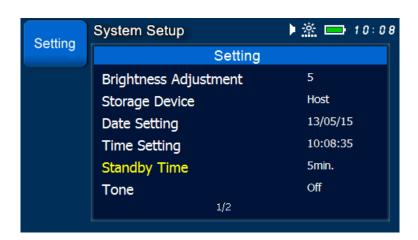


Short press [ ] or [ ] set the time.



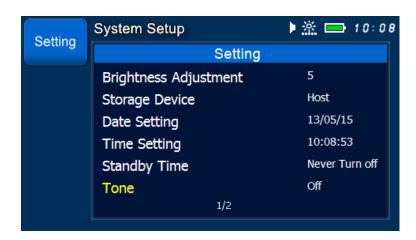


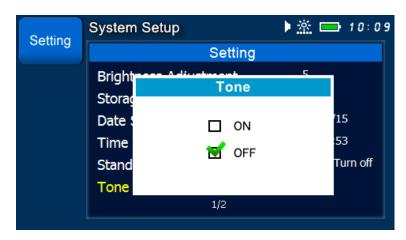
Short press [ ] key to discard the setting and return to the setting display.



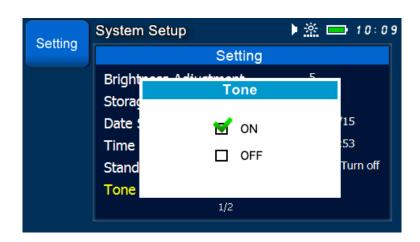


### 5.8.6 Tone

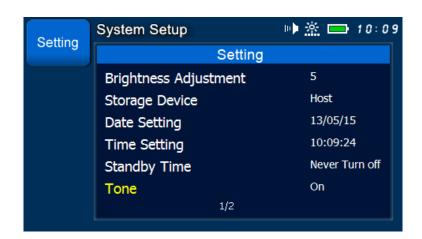






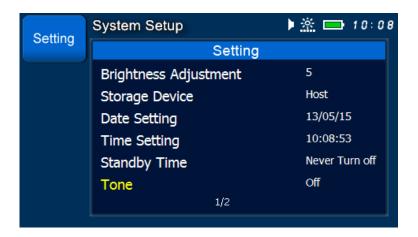


Short press [ ] key to confirm it.





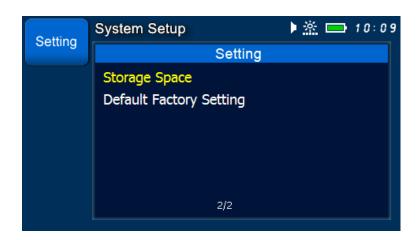
Short press [ ] key to discard the setting and return to the setting display.

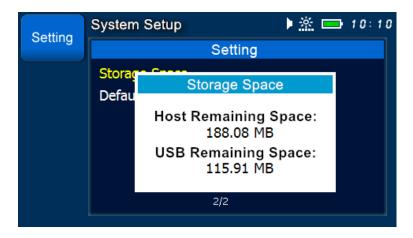




### 5.8.7 Storage Space

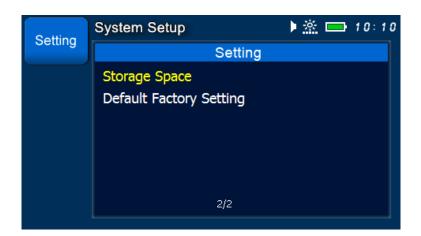
Short press [ ] or [ ] key to move to "Storage Space", and then short press [ ] key to check the remaining space in the Host and USB device.







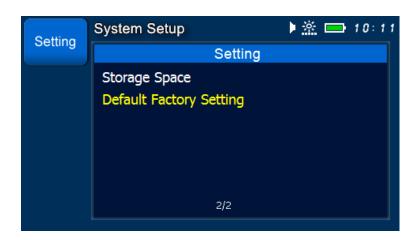
The display automatically returns to the setting display after 3 seconds.

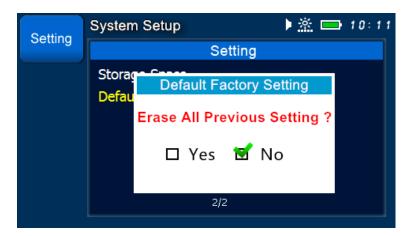




## 5.8.8 Default Factory Setting

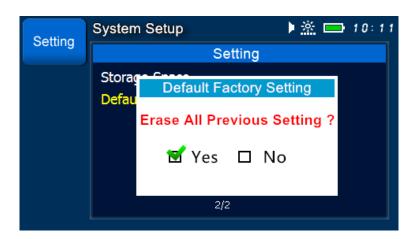
Short press [ ] or [ ] key to move to "**Default Factory Setting**", and then short press [ ] key to access the setting.



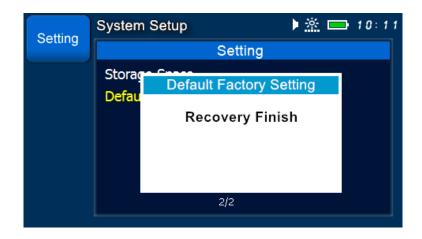




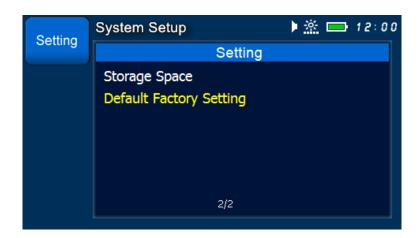
Short press [ ] or [ ] key to select "Yes".



Short press [ ] key to confirm it.



Back to the setting display.





### 5.9 System Information



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

