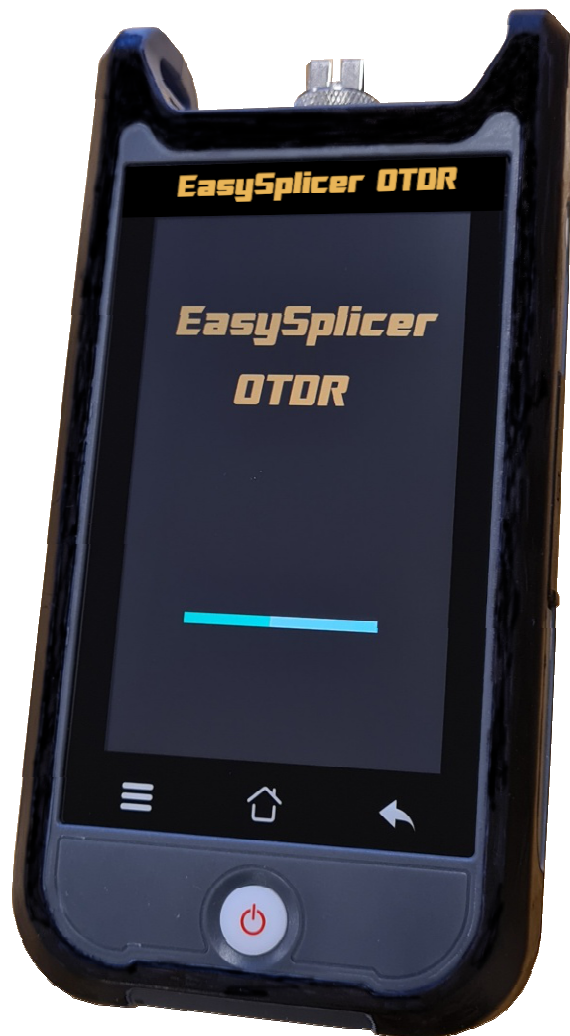


# EasySplicer OTDR

## Owners Manual



- Professional instrument for measuring loss and finding faults in Fiber networks
- OTDR (Optical Time-Domain Reflectometer)
- Measure distance from 0 to 60 km, in resolution of 0.001m
- Measure dB loss with a resolution of 0.001 dB
- Dynamic range of 24/22 dB
- Auto mode for super easy operation (and Expert mode for Experts).
- 4.3 inch, multi color LED, touch screen
- Carrying-case with launch cable and 4x adapter cables
- VFL, OPM and OLS, two wavelengths, 1310nm and 1550nm
- RJ45 Cable tracker and distance readout (up to 300m)

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The EasySplicer OTDR incorporates all the best a Swedish designed OTDR can offer.  
NOTE: EasySplicer OTDR is a high precision instrument and should always be handled with care!

## **Disclaimer**

SB Scandinavia AB reserves the right to modify the product in any way without prior customer notification or any other form of notice.

In no event shall SB Scandinavia AB be liable for any damages of any type, incidental, indirect, consequential or other, originating from or relating to this manual or the information contained herein. While SB Scandinavia AB tries to make the user manual complete and accurate, it may contain mistakes, and the user uses it solely at his or her own risk.

## **EasySplicer OTDR components**

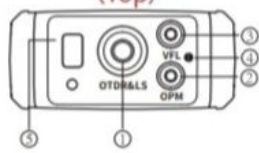
The following components are included for doing test and measurement in the fiber optic Networks:

<b>Item</b>	<b>Description</b>	<b>Quantity</b>
1	EasySplicer OTDR	1
2	Power supply (USB-charger)	1
3	Carrying-case with 500m G.652 launch cable	1
4	Adapter-cable, SC-APC	1
5	Adapter-cable, SC-UPC	1
6	Adapter-cable, LC-APC	1
7	Adapter-cable, LC-UPC	1
8	RJ45 Wire tracker	1
9	Owners Manual	1

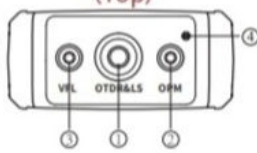
**NOTE:** The EasySplicer OTDR is a rugged field instrument designed to withstand field environment. However, to ensure best performance, it is important to keep maintenance as described later in this manual.

## BRIEF

Possess laser ranging port (Top)  
(Top)



Not Possess laser ranging port  
(Top)



### Top view

- ① OTDR/LS port
- ② OPM port
- ③ VFL port
- ④ LED flashlight
- ⑤ Laser ranging port(Optional)

### Main view

- ① Dust Cover
- ② 4.3 inch Color LCD
- ③ Function Keys
- ④ LED Charging indicator

### Left side

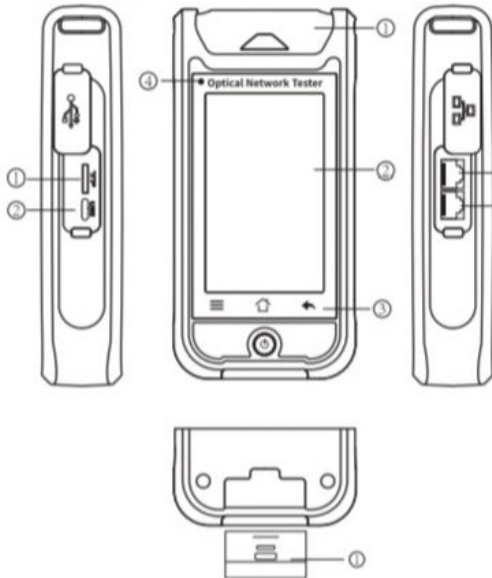
- ① TF Card Port
- ② Type C USB

### Right side

- ① RJ45 Tracker port
- ② RJ45 Sequence port

### Bottom view

- ① RJ45 Remote tester



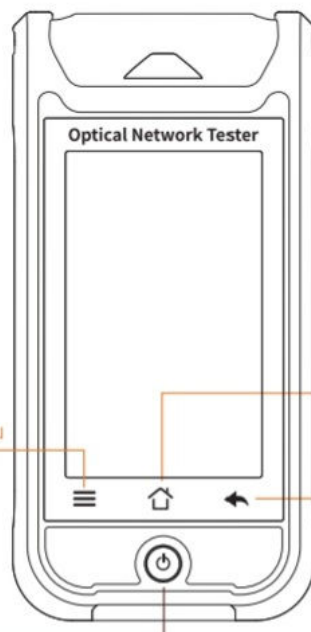
## FUNCTION KEYS

### Menu key

Short press to pop up the shortcut menu

### ON/OFF key

Short press to start, long press to prompt to shut down;  
After power on, briefly press to turn on the flashlight function



### Home key

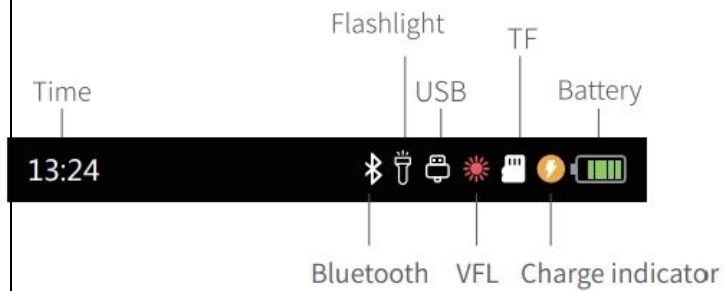
Short press to return to the main interface

### Return key

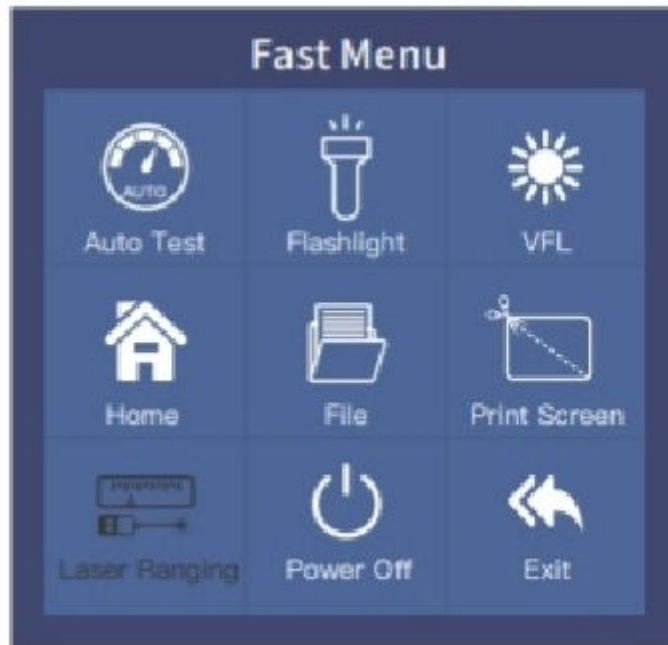
Return to the previous menu

## MAIN MENU (Start-up)

Turn ON the instrument and the EasySplicer OTDR will start up in the Main menu. Touch the function of Your choice.



# SHORTCUT MENU



**Press the menu key to enter the quick operation menu, and press different function icons to enter the corresponding function interface or realize the corresponding operation functions.**

**Screen capture:** Capture the current interface, the picture will be automatically saved in the instrument, and the file name is the time when the screenshot is generated.

**Note:** The laser ranging function is optional, and the standard configuration does not have the laser ranging function.

Under the shortcut menu, the laser ranging is grayed out and cannot be operated.

## AUTO OTDR (Auto Mode)



**Auto OTDR:** only need to set the wavelength as other parameters are automatically selected.

**Settings:** enter "Test Setting" / "Pass/Fail" setting interface.

Test settings: set the wavelength, IOR and test time

### Pass/Fail settings

Avg. Loss Thre.: set the threshold of the max link loss (margin).

Event Loss Thre.: set the loss threshold of events in the link. If it is greater than this threshold, it will be judged as fail, otherwise it will be pass.

**Files:** open the saved curve data

**Save:** the file is saved in the folder with the name of the same day

**Test:** start OTDR automatic test

## Attention

Besides 1625/1650nm, pls don't test online!

## AUTO OTDR LIST

13:24

PASS

Curve

List

Event Map

Auto Test 1550nm 8km 80ns

Total Length						
Total-L						
Avg.L						
Total Event	3	Pass		Fail		
		3		0		

No.	Type	Dis km	Loss dB	Total-L dB	Avg.L dB/km	Return dB
3-1		50.500	-0.11	0.18	34.73	8.93
3-2		71.486	0.88	0.20	-----	13.94
3-3		95.160	-----	0.19	17.08	18.44
3-4		95.160	-----	0.19	17.08	18.44
3-5		95.160	-----	0.19	17.08	18.44

◀

Event

▶

Setting

Files

Save

Test

**List:** the test results are displayed in the form of a list.

**Total length:** the total length of the link

**Total-L:** the total loss of the link

**Avg.L:** the threshold loss (margin) of the link

**Total Event:** the total number of events, passed numbers, failed numbers

**In the event list:**

**NO.:** the order of the current event

**Type:** the type of the current event

**Dis:** the distance of the current event

**Loss:** the loss value of the current event

**Total-L:** the total loss from the start to the current event point

**Avg.L:** the average loss value from the start to the current event

**Return:** the return loss value of the current event point

## EXPERT OTDR (Expert Mode)

13:24						
Curve		List		Event Map		



**Expert OTDR:** set parameters such as wavelength, range and pulse width.

**Fast Setting:** quickly set the test parameters of OTDR

**Measurement mode:** OTDR scanning event mode, AutoTest/  
RealTest/Avg.Test

**Wavelength:** select the test wavelength of OTDR **Test range:** usually  
choose about 2 times of the length of the optical fiber to be tested

**Test pulse width:** 3ns~20000ns optional, different range, the optional pulse  
width is different

**There are five types of events:**

Reflection event



Non reflective event



Amplification (gain)



Fiber splitter



Fiber end



## OTDR SETTING

Test Setting	Pass/Fail
Avg.Time	5s >>
Wave	1550nm >>
Refractive Index (1550nm)	1.468000 >>
Unit	km >>
Real Time Test Analyse	Open >>
Event Loss Threshold	0.20dB >>
Reflectance Threshold	40.00dB >>
End Loss Threshold	10.00dB >>
Auto Save	Open >>

OK Default Cancele Test

**Test Setting:** Avg.Time, Wave and Refractice Index are the same as those in Auto OTDR.

**Refractive Index:** provided by optical cable or fiber manufac turer. It is the key parameter for calculating the distance, and can not be set arbitrarily.

**Unit:** select the required unit, there are 3 options for mi/km/kft.

**Real Time Test Analyse:** Open/Cancel the real Time Test Analyse function at the end of real-time test

**Event Loss Threshold:** set the loss threshold of connection point, fusion point in the link that can be tested, between 0.2dB ~ 30dB, and the default value is 0.2dB. Loss value larger than the setting value will be listed in the event list, or it will be ignored.

**Reflectance Threshold:** set the return loss threshold of the link reflection events that can be tested, ranging from 10dB to 60dB, the default value is 40dB.

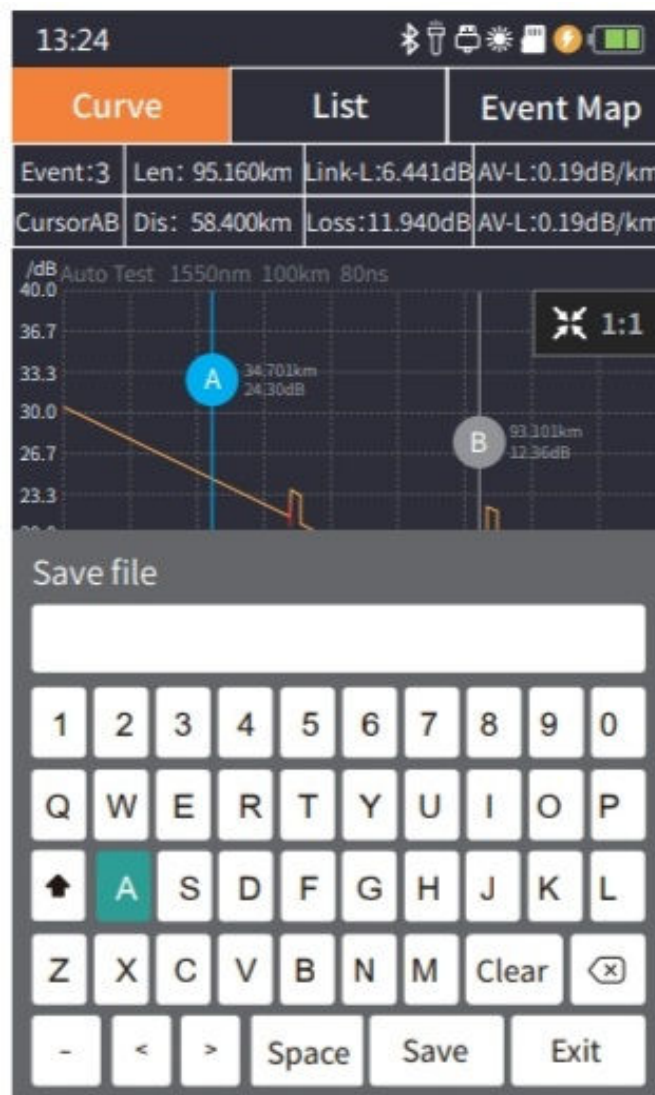
**End Loss Threshold:** set the loss threshold after link that can be tested, ranging from 1dB to 30dB, the default value is 10dB.

**Auto Save:** Open/Cancel the Auto Save file function at the end of real-time test

**OK:** save the set parameters

**Default:** restore factory settings

## OTDR FILE – SAVE FILES



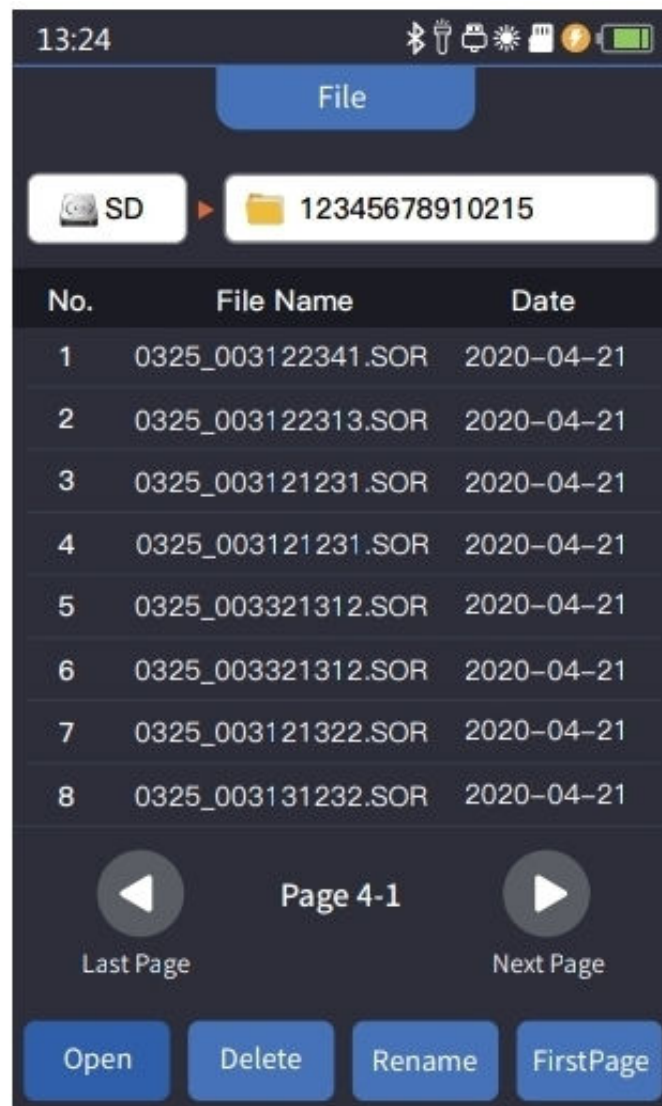
### OTDR-File Save

Press the [Save] key to save file after the test is complete, pop up the keyboard, enter the name of the file, and press Enter to save the file. If the automatic save (otdr) function is turned on "System Settings", it will be saved automatically after the test is complete without manual operation.

### Auto-save function

Enter the system settings, open the auto-saving function, the instrument will automatically save the test files after the average or auto-test.

## OTDR FILE OPERATION – File maintenance



### OTDR-File Operation

Press **【Files】** to enter the file list.

**Head:** back to the first page

**Delete:** delete the current file or folder

**Rename:** change the name of the current file or folder

**Open:** open the selected file or folder

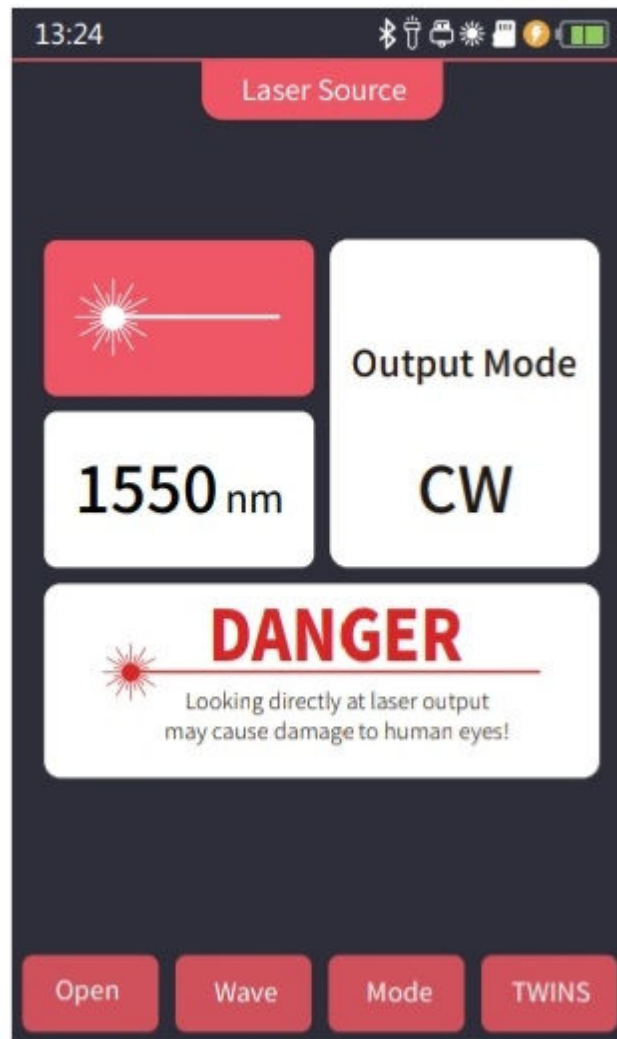
## EVENT MAP

The function can be operated automatically by one key, and the information of the length of the link, the type of event point and the position of breakpoint can be displayed in a graphical form. The result is clear and easy to understand.



**Attention** Besides 1625/1650nm, pls don't test online !

## LASER SOURCE



The wavelength of stabilized laser source is the same as OTDR wavelength. It is used to measure the parameters of telecommunication, CATV, LAN cable, insertion loss, isolation loss and echo loss of optical passive devices, and wavelength responsiveness of detectors.

**Open:** turn on the laser source

**Wave:** switch the wavelength, the output wavelength is consistent with OTDR

**Mode:** switch the modulation frequency of light source, CW/270/330/1000/2000Hz optional

**TWINS:** enter the paired output mode. This function is used with the twins function of optical power meter

### **WARNING**

Looking directly at laser output may cause damage to human eyes!

## OPM – OPTICAL POWER METER



The function is used to test the power of optical signal and insertion loss of various devices and photoelectric components. It can identify and measure the frequency of 270/330/1000/2000Hz optical signal.

**Wave:** switch the working wavelength

**Reference:** set current power as reference power

**CAL:** enter the user calibration mode and calibrate with the standard light source

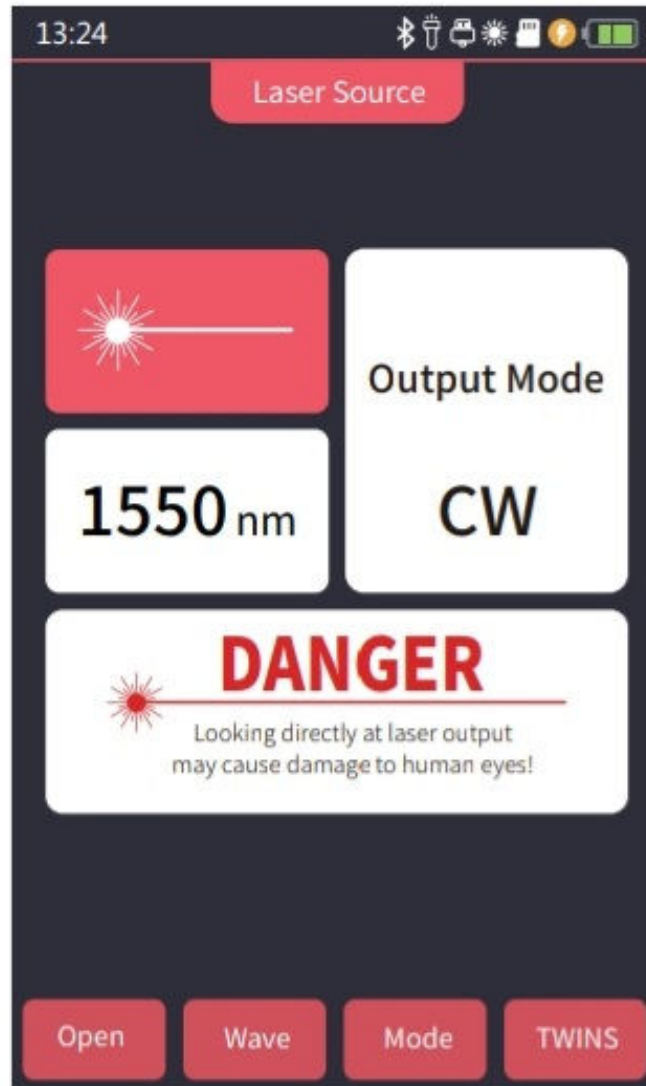
**TWINS:** identify the wavelength and frequency of the tested laser source. This function is used with the twin's function of the laser source

-50~+26dBm: received power  $> -10\text{dBm}$

-70~+6dBm: received power  $> -30\text{dBm}$



## VFL – VISUAL FAULT LOCATOR



Visible red light (650 nm) is injected into the optical fiber, and the position of the optical fiber fault point can be judged conveniently and accurately by observing the leakage position on the measured fiber. It is suitable for the detection of bare optical fibers, jumpers and other high loss sections caused by near-end faults and micro-bending of optical fibers and cables which can leak red light.

**Normal:** turn on red light, continuous light

**1Hz:** red light flashes once in 1 second

**2Hz:** red light flashes twice in 1 second

**Close:** turn off red light

### **WARNING**

Looking directly at laser output may cause damage to human eyes!



## OPTICAL LOSS TEST



**Used to test the insertion loss of optical passive components.**

The loss test steps are as follows:

- 1, First connect the LS and opm optical interface with standard jumpers, Press **【Open】** and press **Reference】** after the power is stable.
- 2, Then connect the tested part to LS and opm optical interfaces with standard jumper, Press **【Open】** , and "relative power" is the insertion loss of the tested part.

## RJ45 TRACKER



### RJ45 Tracker

Used for Rj45 tracker. After the line-finding function is activated, the cable being searched is touched by the distal end of the line-searching, and the sound of continuous “ticking and ticking” heard.

The equipment can withstand voltage and prevent burning, and can be directly charged for line finding. Ethernet switch, router and other weak current equipment with DC voltage less than 60V.

**Start:** open the RJ45 cable tracking function

**Analog Mode/Digital Mode:** different route tracking methods

**Standard:** Digital cable tracker

### ATTENTION

The cable tracker port is designated as the upper interface displayed in yellow.  
Incorrect connection will cause damage!

## RJ45 SEQUENCE TEST



### RJ45 line sequence measurement

Measure the sequence of 8-core wires inside the network cable.

Please connect to the remote module when measuring.

**Standard:** select different network cable standards

**Test:** start cable sequence test

**Exit:** exit the cable sequence test and return to the main interface

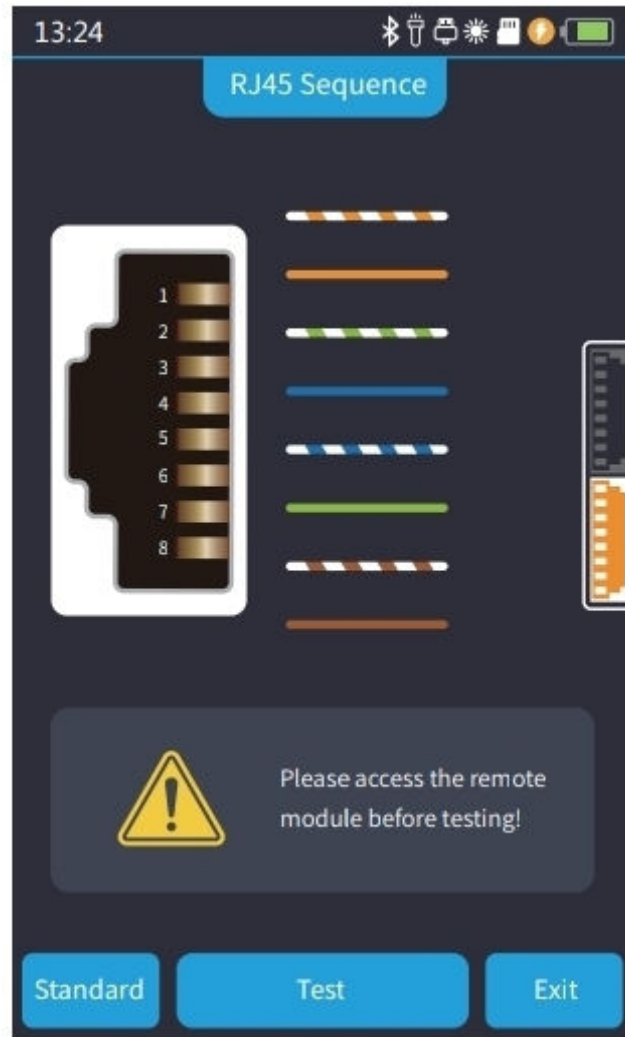
### WARNING

Please do not test online!

### ATTENTION

The cable sequence port is designated as the lower interface displayed in yellow. Incorrect connection will cause damage!

## RJ45 LENGTH



**RJ45 Length test: Test the length of the network cable.**

**Standard:** select different cable standards

**Unit:** switch different units

**CAL:** adjust the test result according to the actual length,  
and display length = last test result × correction

**Test:** start cable length test

### **WARNING**

Please do not test online!

### **ATTENTION**

The cable sequence port is designated as the lower interface displayed in yellow. Incorrect connection will cause damage!

## SYSTEM (Setup)



**Brightness:** slide the progress bar to adjust the backlight brightness

**Energy conservation:** slide the progress bar to set automatic screen power off without operation for 1-10 minutes

**Auto OFF:** slide the progress bar to set the automatic shutdown time without operation

**Date & Time:** set the instrument date and time

**Sound:** turn the touch tone on or off

**Flashlight:** turn the flashlight on or off

**USB connection:** connect to the computer after opening and transfer data

**Bluetooth:** turn Bluetooth on or off

**Language:** displays the native language type

**Auto Save:** automatically save the curve file after opening

**Restore factory settings:** restore default parameter values

**Upgrade:** software upgrade

**Version information:** view local information and alarm records

## FAULTS AND SOLUTIONS

Fault description	Cause of failure	Solutions
OTDR cannot start normally.	The battery is dead.	Charge the battery and observe the charging indicator. If the red light is displayed, continue charging. Otherwise, contact the supplier.
OTDR cannot be charged normally.	Charging conditions are not met.	Charge the instrument at 0°C~ 50°C.
	Battery or internal circuit problem.	Contact the supplier to replace the battery.
Normal curve cannot be measured.	OTDR parameters are not set correctly.	Reset the correct test parameters.
	Fiber output end face is polluted.	Clean OTDR output end face.
	Output connector of OTDR is damaged.	Replace OTDR output connector.
	Optical output connector mismatch.	Replace the matched connector.
The noise of test curve is big and the waveform is not smooth.	The connector is not connected properly.	Re connect the appropriate output interface.
	The pulse width setting is too small.	Increase the test pulse width.
Saturation (flat top) appeared in the front of the test curve.	The pulse width is too large.	Decrease test pulse width parameter.
The reflection peak at the beginning of the test curve decreased slowly. There is a tailing phenomenon.	Fiber output end face is polluted.	Clean OTDR output end face.
	Output connector of OTDR is damaged	Replace OTDR output connector.
	Optical output connector mismatch.	Replace the matched connector.
The reflection peak at the end of the fiber cannot be measured.	The setting for test range is too small.	Increase test range value.
	The setting for pulse width is too small.	Increase test pulse width parameter.
False positive in curve analysis.	Test curve with poor quality.	Increase test pulse width parameter, increase the event threshold value.
	Event threshold setting is too small.	
The tested fiber length is not accurate.	OTDR parameters are not set correctly.	Reset the appropriate parameters.
	The refractive index is not set accurately.	Reset fiber index.
The average loss value of optical fiber is not accurate.	The test curve front end with too long tail.	Clean OTDR output end face.
	Improper setting of cursor position.	Reset cursor point position.

## MAINTENANCE

### Cleaning of connectors

The optical output interface of this series OTDR is a replaceable universal interface, and the end face must be kept clean during use. When the instrument fails to test the normal curve or the test result is not accurate, first consider cleaning the connector.

When cleaning, be sure to turn off OTDR and visible red light fault location function. Screw off the output port and wipe the connection end face with a special dust-free paper towel or cotton swab wetted with alcohol. At the same time, please cover the dust cap after using the instrument, and keep the dust-proof clean at the same time.

### Instrument screen cleaning

The display of this series of optical time domain reflectors is 4.3 inch TFT full view color LCD with capacitive touch screen. When using, do not click on the LCD with sharp objects, or the LCD screen may be damaged. When cleaning, clean the LCD screen with soft paper. Do not wipe the LCD screen with organic solvent, otherwise it may damage the LCD screen.

# TECHNICAL SPECIFICATION

## EasySplicer OTDR

SC APC - Singelmode G.652 SM

Wavelength	1310nm and 1550nm
Dynamic Range	24/22dB
Event Blind Zone	2.5m (0m with launch cable)
ATT Blind Zone	8m (0m with launch cable)
Test Range	500m/1km/2km/4km/8km/ 16km/32km/64km/100km
Pulse Width	3ns/5ns/10ns/20ns/30ns/ 50ns/80ns/160ns/320ns/ 500ns/800ns/1us/2us/3us/ 5us/8us/10us/20us
Ranging Accuracy	± (1m+Sample interval+0.005% ×Test distance)
Linearity	≤0.05dB/dB
Sample Points	6k~128k
Sample Resolution	0.05m~8m
Loss Resolution	0.001dB
Loss Threshold	0.20dB
Range Resolution	0.001m
Refractive Index	1.00000-2.00000
Reflection Accuracy	±3dB
File Format	SOR Standard File Format
Loss Analysis	4-point method /5-point method
Laser Safety Level	Class II
Connector	SM/APC (Interchangeable SC, LC ST)
Refresh Rate	3Hz (Typ.)