

SKYSHL

SS316T Series OTDR

User's Manual



Shenzhen SKYSHL Technology Co.,LTD.

www.skyshl.net

V2025.03

The SS316T offers superior performance thanks to a completely new algorithm, a large capacity battery and a 7in user-friendly screen. Ensure measurement quality and improve work efficiency, benefits include:

Full range selection

- Wide dynamic range 30-45dB
- Up to 9 OTDR models for selection
- Five optional modules to be customized

Advanced trace analysis

- Multi-trace analysis
- Bidirectional testing
- 4-points test

Not just OTDR

- VNC/GPS/WIFI
- OPM (Optical power meter module)
- SLS (Stabilized light source module)
- VFL (Visual fault locator module)
- RJ45 (Network Test module)
- FIP (Fiber connector end-face inspection module + analysis function)

*FIP module can first perform connector end-face detection and then OTDR link testing

Operability

- 7-inch color LCD touch screen
- Generate PDF reports quickly
- F/P analytical judgment function
- Smart map to analyze links graphically

Strong reliability

- Up to 12h battery life
- Minimum sampling resolution 0.04m
- Maximum sampling points 250,000



Full range selection

SKYSHL SS316T comes with an iLOA test function that enables complex front-line test work with less-experience, to support a variety of applications, including installation and maintenance (I&M) of mainline fiber (core network, metropolitan area network, mobile forward, mobile backhaul) and troubleshooting of access networks and FTTx. And combines industry-leading OTDR technology with OPM, VFL, SLS, network testing and fiber end inspection capabilities in one powerful handheld device.

SKYSHL SS316T OTDR Models

Fiber type	Link type		Test application			
	Area	PON	Installation (measurement of live fibers and dark fibers)			
			Model/Description	Wavelength(nm) Dynamic range(dB)		
SM	Access network	1x32	SS316T-2A (Entry-level model)	1310	1550	
				32	30	
	Access network / Metropolitan area network	1x64	SS316T-2B (basic model)	1310	1550	
				35	33	
			SS316T-3A (3 wavelengths + live model)	1310	1550	1625
				32	30	28
			SS316T-3B (High dynamic range wavelengths + live model)	1310	1550	1625
				38	36	34
MM	Metropolitan network / Core network	1x128	SS316T-2C (Standard model)	1310	1550	
				40	38	
			SS316T-2D (High dynamic model)	1310	1550	
				42	40	
			SS316T-2E (Super-high dynamic model)	1310	1550	
				45	43	
	LAN		SS316T-2MM (MM model)	850	1300	
				20	22	
			SS316T-4A (SM&MM model)	850	1300	1310 1550
				20	22	32 30

SS316T-2A/2B/2C/2D/2E

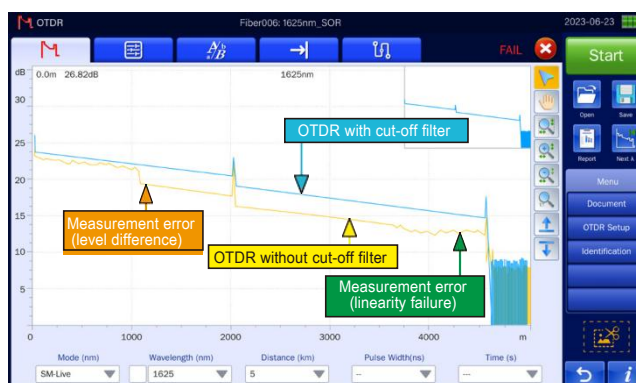
Dual wavelength module 1310/1550nm,
used in fiber installations



1µ s Pulse width trace

SS316T-3A/3B

Maintenance models for real-time communication lines



Real-time communication line trace

SS316T-4A

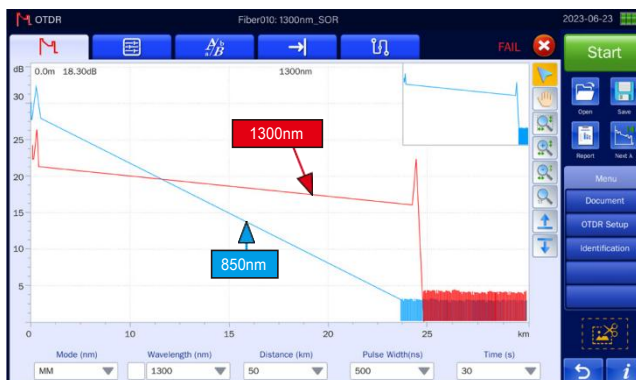
SM&MM model



A trace with a macro bend

SS316T-2MM

MM model



MM fiber trace

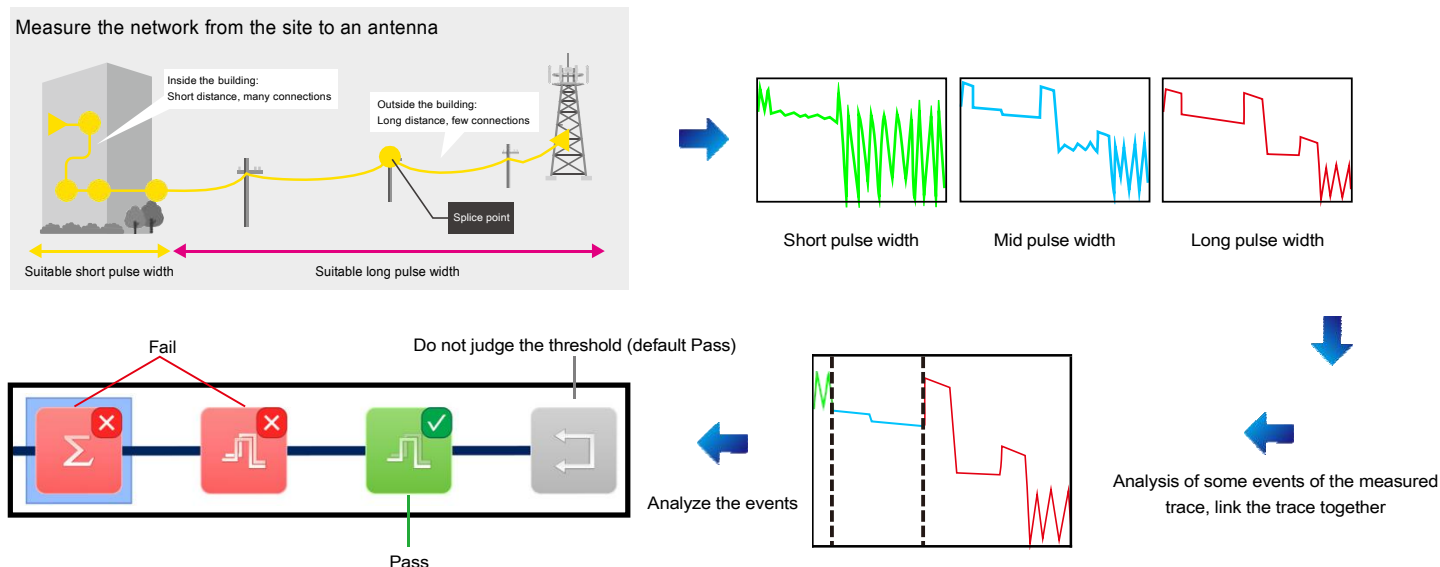
iOLA (Hawkeye)

OTDR faces a series of challenges:



To address these challenges, SKYSHL has developed a better way to test fiber links: iOLA (Hawkeye) is an OTDR-based application designed to simplify the OTDR testing process by eliminating the need to configure parameters, analyze and interpret multiple complex OTDR curves. It adopts advanced algorithm, can dynamically define the test parameters, and according to the measured network to determine the appropriate curve acquisition times; Multiple pulse widths at multiple wavelengths can also be correlated to locate and identify faults with very high resolution - all at the touch of a button.

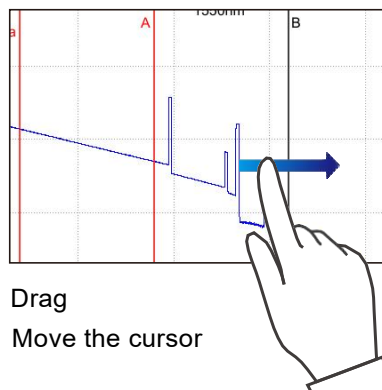
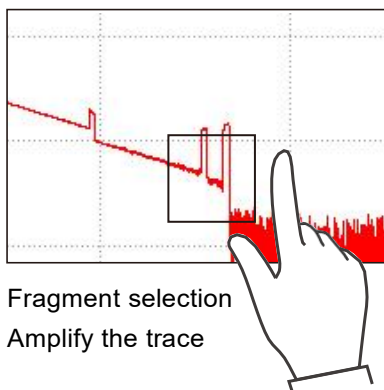
Working principle




Operability

7.0 inch multi-touch capacitive touch screen

It supports new gestures to amplification. The screen capture color is clear. The interface design is simple and clear.



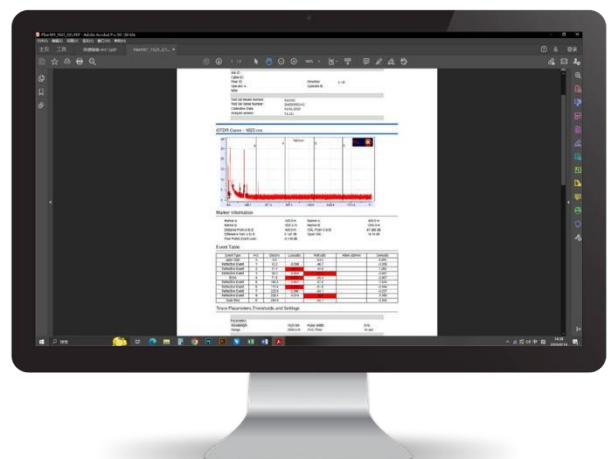
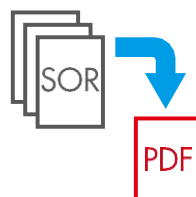
Expand the trace display area

By tapping the icon  , you can enlarge the trace display area to view more detail.



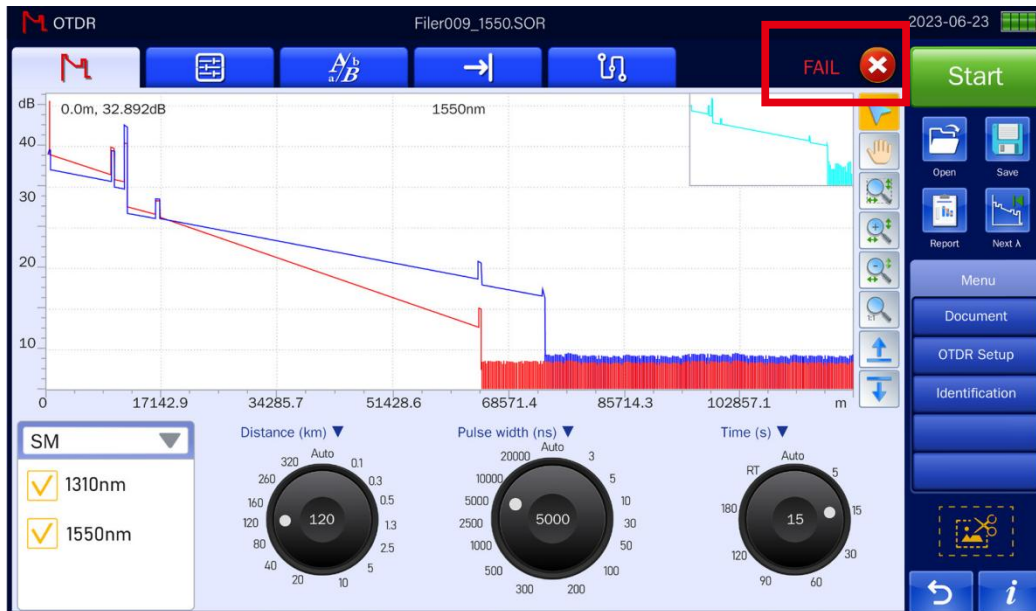
Quickly generate the PDF report

Built -in post -processing software to generate reports of PDF format.



Pass & Fail analysis function

Automatically perform Pass/Fail judgments for each event based on pre-specified thresholds. The measurement results can be viewed through the result display items (As shown in the red box on the following side).



Smart map analyze links graphically

With Smart Map, users only need to press one button to execute measurement, detect network events and execute Pass&Fail judgment. It includes a simple icon view that facilitates the location and type of the event, and automatically executes the Pass&Fail judgment of each event based on the pre-specified threshold.

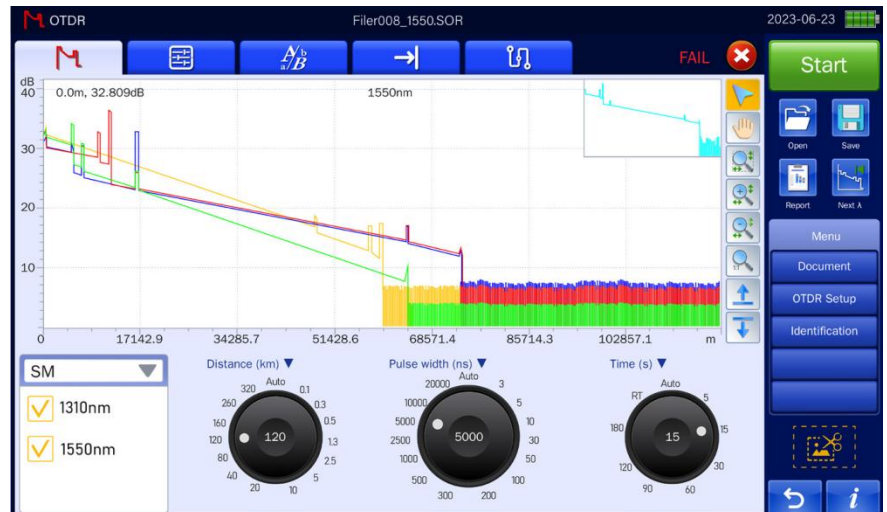


Advanced trace analysis

The OTDR master module is capable of performing advanced analysis of measured data

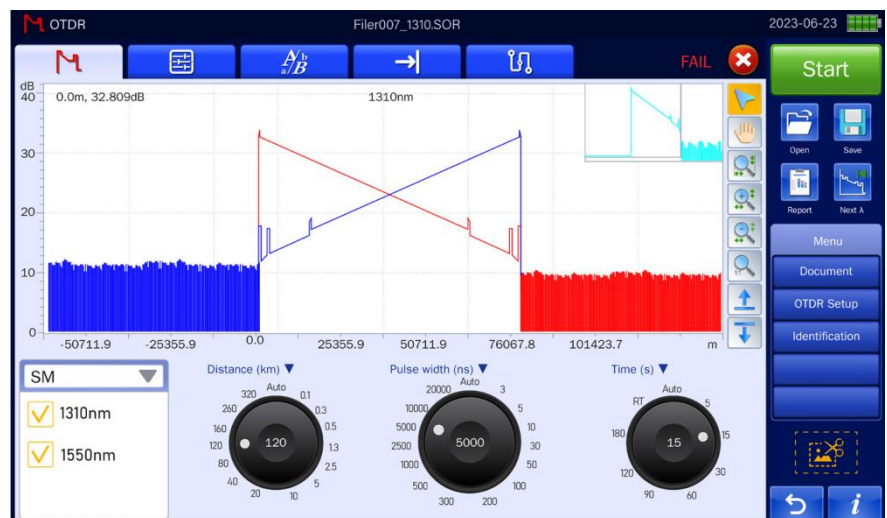
Multi-trace analysis

View multi -trace, can view up to 4 traces at the same time, comprehensive analysis, and the results are more accurate.



Bidirectional testing

Averaging values obtained from opposite directions provides a more accurate quantification of losses. Bidirectional testing is a great way to improve test integrity in long-distance applications.



4-points testing

Real-time monitoring of splicing and insertion loss, less noise impact, more accurate test results.



Not just OTDR

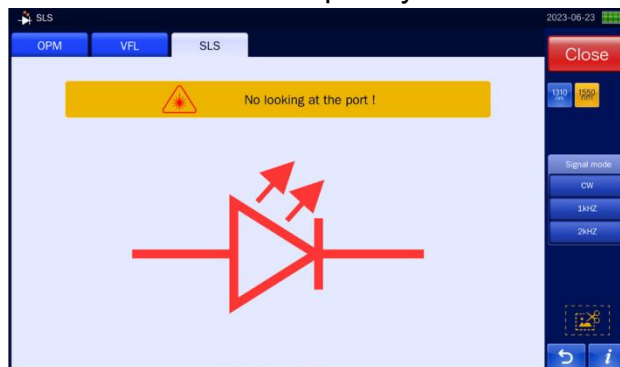
OPM module

Used to measure absolute optical power or the relative loss of optical power through a section of fiber link



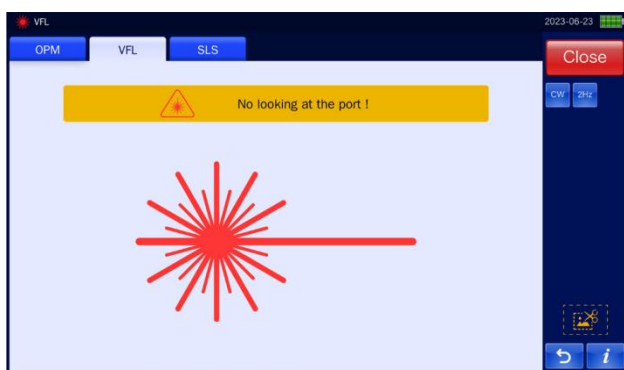
SLS module

Output stable continuous signal, used in combination with an OPM to measure optical loss in fiber optic systems



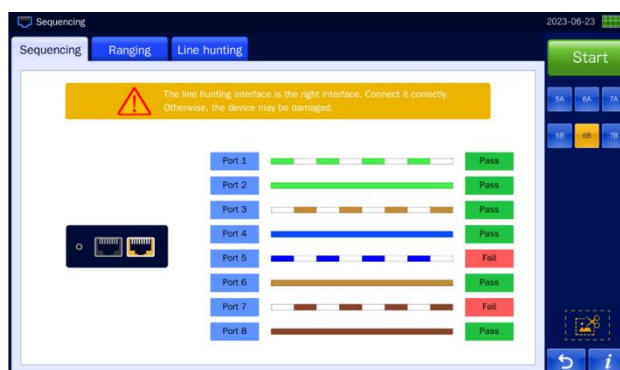
VFL module

Luminous stability, strong light source, strong penetration; Two light source modes - steady on, flashing



Network test module

Network sequencing + Network ranging + Network hunting (optional)

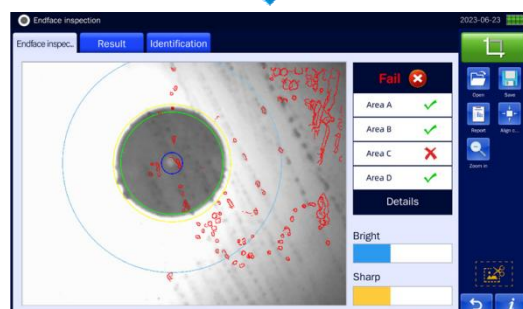
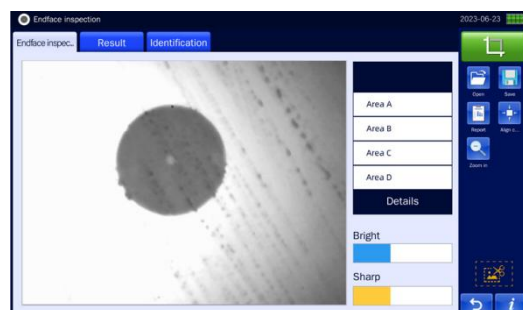


Fiber connector inspection module

The fiber connector end-face inspection module can visualize the surface of the connector, and combine with handle probe(optional) can automatically analyze the scratches and dust on the fiber connector, save the surface image and judge the result. And offer a PDF report



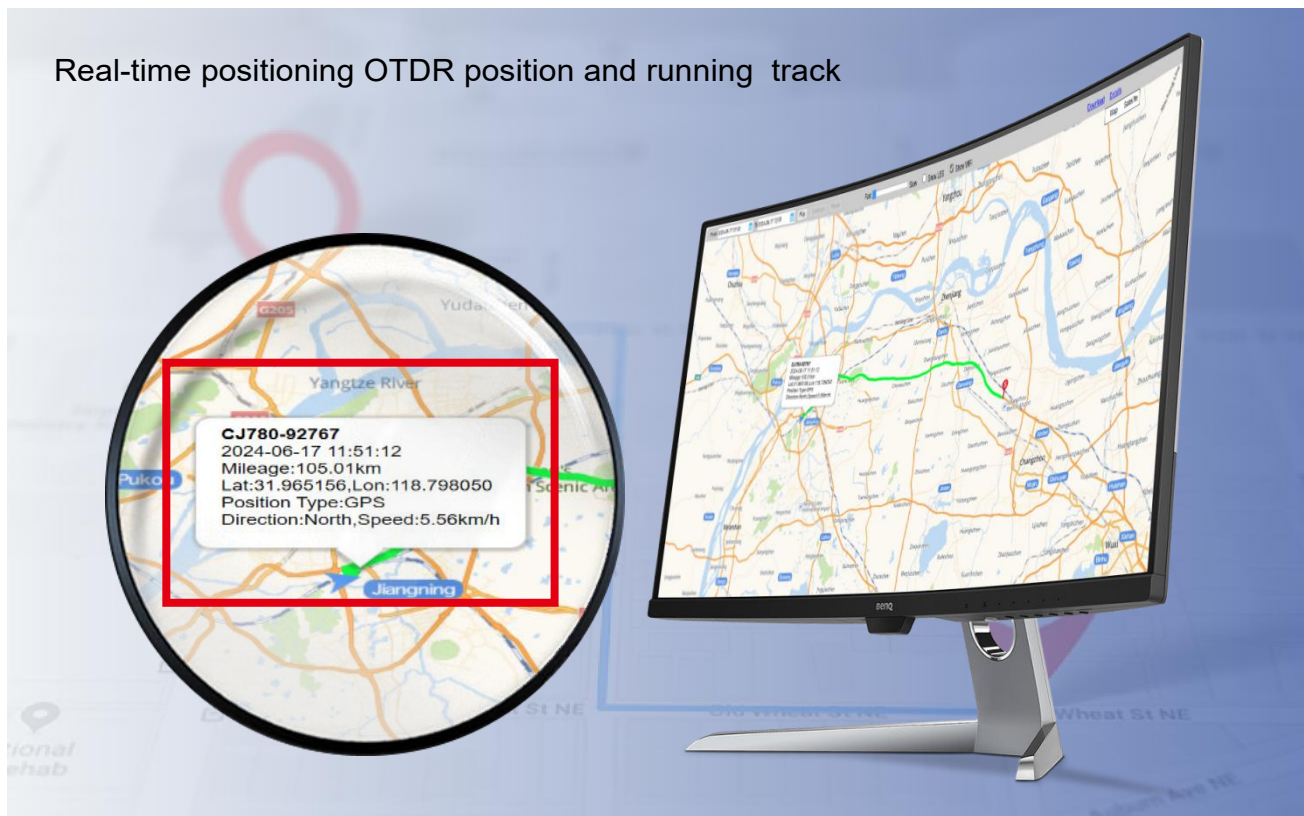
*FIP module can first perform connector end-face detection and then OTDR link testing



Fiber connector detection result

GPS

Real-time positioning OTDR position and running track



WIFI remote control

VNC remote control function, using mobile phones or computers online remote operation OTDR easily solve the remote work, can simultaneously take into account multiple room testing, greatly improve efficiency.

Office



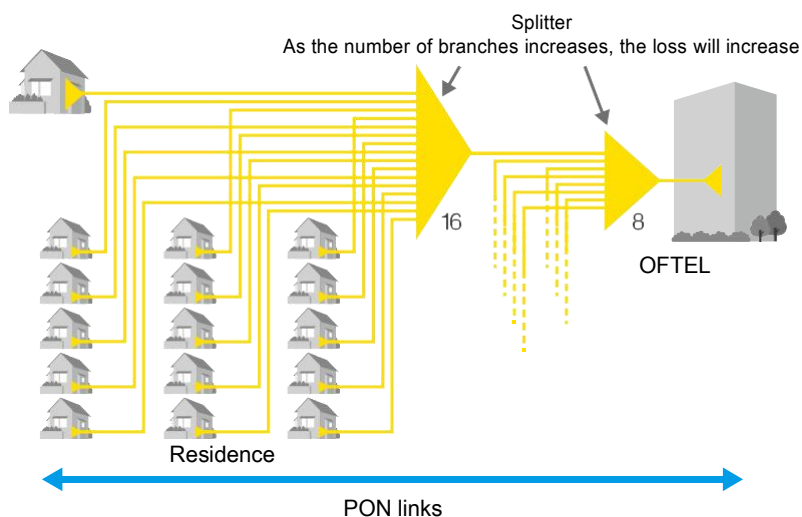
Server Room



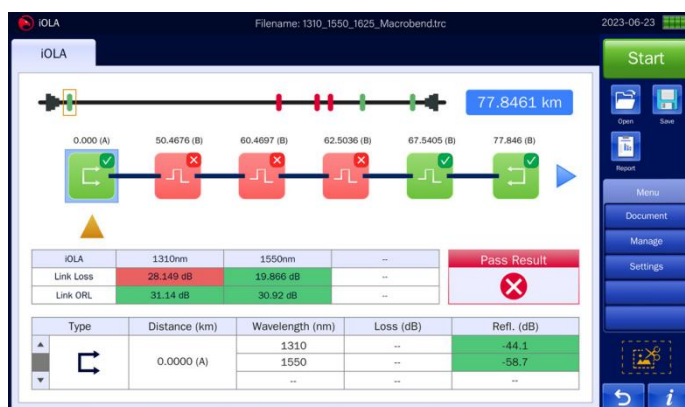
PON optimization

Quickly, easily and correctly measure networks with large losses, such as PON links. In PON mode, simply select the route configuration to be measured on the screen, and OTDR will automatically determine the appropriate measurement conditions and set the optimal value, even after the optical splitter caused large losses, the SS316T OTDR can ensure high trace quality.

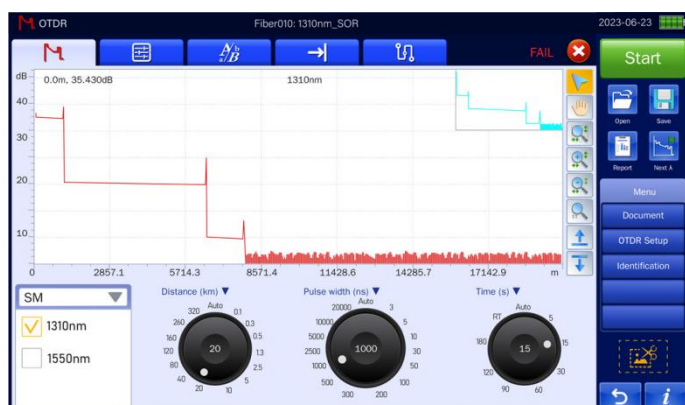
Measuring a residential PON network with two-level splitters



Set the parameters of the splitter to be measured in PON mode



Ultra-high signal-to-noise ratio measurement

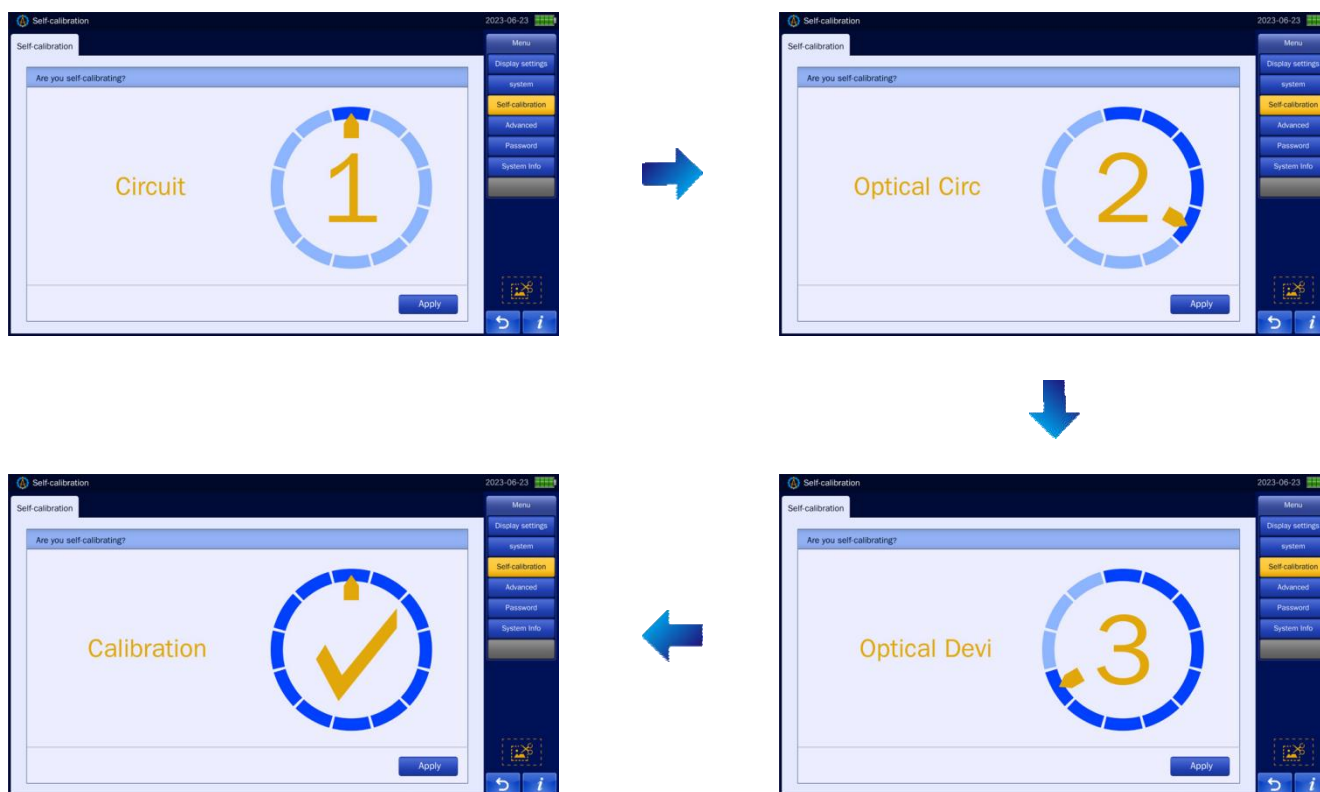


Measuring total 1:128 splitter

Additional function

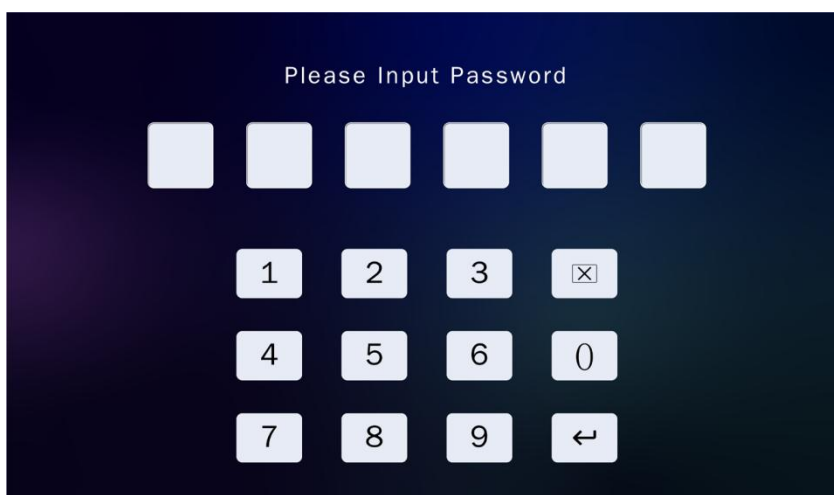
Self calibration

Shorten maintenance time and reduce maintenance costs



Power-on password

Acquire and use OTDR by means of leasing, paying in installments according to the agreed time and amount





Appearance





OTDR Specifications

OTDR module

Model		SS316T-2A	SS316T-2B	SS316T-2C	SS316T-2D	SS316T-2E	SS316T-3A	SS316T-3B	SS316T-2MM	SS316T-4A
Wavelength (nm)		1310/1550	1310/1550	1310/1550	1310/1550	1310/1550	PON 1310/1550/1625 (built-in filter)		850/1300	850/1300+1310/1550
Dynamic range (dB)		32/30	35/33	40/38	42/40	45/43	32/30/28	38/36/34	20/22	20/22 32/30
Number of optical port		1	1	1	1	1	2	2	1	2
Event dead zone★① (m)		0.8	0.8	0.8	0.8	0.8	1	1	1.5	SM≤1；MM≤1.5
Attenuation dead zone★② (m)		3	3	2.5	2.5	2.5	3	3	5	SM≤3.5；MM≤5
Multi-fiber Measurement		√							√	√
Multi-pulse Measurement		√							×	√
Splitters Measurement		Max 1:32	Max 1:64	Max 1:128			Max 1:32	Max 1:64	×	Max 1:32
Applicable fiber		SM (ITU-T G.652)								
Distance range (km)		0.1, 0.3, 0.5, 1.3, 2.5, 5, 10, 20, 40, 80, 120, 160, 260, 320								
Pulse width (ns)		3, 5, 10, 30, 50, 100, 200, 300, 500, 1000, 2500, 5000, 10000, 20000								
Number of sampling points		Max 250000								
Sampling resolution		Min 0.04m								
Distance measurement accuracy		±(0.75 m + Measurement distance × 2 × 10 ⁻⁵ + Sampling resolution)								
Loss measurement accuracy		±0.03 dB/dB								
Return loss measurement accuracy		±2 dB								
Optical Power Meter Module (Built-in)						√				
OPM	Wavelength	800 ~ 1650nm								
	Measure range	-70 ~ +6dBm								
	Measure accuracy	< (±0.2dB or ±5%)								
	Display resolution	0.01dB								
	Optical input port	2.5mm Universal ferrule for FC,SC,ST/UPC								
Stabilized Light Source Module (Built-in)						√				
SLS	Wavelength (nm)	1310/1550					1310/1550/1625		850/1300	850/1300+1310/1550
	Output power	≥-10dBm								
	Modulation mode	CW, 270 Hz, 1 kHz, 2 kHz								
	Laser class	Class 1M or Class 1								
	Optical input port	OTDR port								
Visual Fault Locator Module (Built-in)						√				
VFL	Wavelength (nm)	650±10nm								
	Output power	10mW								
	Modulation mode	CW, CHOP (2 Hz)								
	Laser class	Class 3R								
	Optical input port	2.5 mm Universal ferrule type for FC,SC,ST								
Fiber Inspection Probe (Built-in)						Optional				
	Pass / Fail	√								
	Magnification	400X								

FIP	Resolution(um)	≥1.0
	Electrical interface	USB2.0
	Optical Connector	FC/UPC,SC/UPC,ST/UPC
	CMOS size	1/3 inch
RJ45 Networks Test (Built-in)		√
RJ45	Applicable cable	CAT5, CAT6
	Distance of Cable Collationl	300m
	Distance of emitting signal	300m
GPS Module (Built-in)		Optional
GPS	Location accuracy	< 50m
	Real-time Monitoring	support
WIFI Module (Built-in)		√
WIFI	Data transmission	√
	Remote Control	√

General Specifications	
Link Map	√
Pass/Fail judgment	√
Distance unit	m, km, mile, kf
PC Analysis Software	√
Languages	English, Español, Chinese, Português, Français, Русский, ไทย, 한국어
Optical connector	FC/UPC (SC/UPC/APC、 LC/UPC/APC 、 FC/APC Optional)
Display	7-inch touch screen (Resolution: 1024 × 600)
Port	Charge port × 2, 12V - 2.5A & Type C
Operating temperature	'-10 ~ 50°C (0 ~ 40°C when AC adapter is being used. 0 to 35°C when battery is be charged)
Storage temperature	-20 to 60°C
Altitude	4000 m
Humidity	0 to 90% RH (20 to 90% with 739874 AC adapter, non-condensing)
Power requirements	100 - 240V AC, 50/60Hz (AC adapter)
Battery	7.4V,10500mAh,≥77Wh
LED Light illumination	>15000mcd
Operating time★③	12 hours
Data storage	Internal storage: ≥10000 traces, External storage: USB memory
Dimensions	232 mm (W) × 161 mm (H) × 70 mm (D)
Weight	1.6 kg (including internal battery and protectors, excluding OTDR unit and options)

Notes:

- ★①. Minimum pulse width, return loss: ≥55 dB (≥40 dB for 850/1300 nm), group refractive index: 1.5, the unsaturated peak level <1.5dB.
 - ★②. Minimum pulse width, group refractive index: 1.5, the backscatter level is >0.5dB of the normal level. For SMF, at 1310nm, return loss: ≥55dB. For MMF, at 850nm, return loss: ≥40dB.
 - ★③. New Battery
- All specifications valid at 23°C ± 2°C (73.4°F ± 3.6°F) unless otherwise specified.

If you have questions or suggestion about the product,please contact us for help:

Shenzhen SKYSHL Technology Co.,LTD

Address: C-211,Qixing Industrial Area,LongTian Road,PingShan Direct,Shenzhen City,Guangdong,China.

WhatsAPP/Wechat:+086-18923700205

Sales email: sales1@skyshl.net After Sales email:af@skyshl.net

Website:www.skyshl.net