



# SPTK-3302XR-45

# **Optical Time-Domain Reflectometer (OTDR)**



### Overview

OTDR can used to test single-mode wavelengths of 1310nm, 1550nm, 1490nm, 1625nm and 1650nm, multi-mode wavelengths of 850nm and 1300nm as well as customized special wavelengths. It provides multiple optional modules, such as single wavelength, multi-wavelength and online test. With the maximum dynamic range of up to 50dB, the device can be used for remote multi-branch communication network test. It's designed with a minimum event dead zone of 0.5m which makes the near connection easy to be supervised, and the lowest sampling resolution of 2.5cm which enables it to locate the event point accurately. Additionally, the device is also designed with multiple convenient functional options, such as stable light source, optical power meter, visible red light source and fiber end face inspection tester.

OTDR is designed with an operating temperature and a storage temperature of  $-10^{\circ}C \sim 50^{\circ}C$  and  $-40^{\circ}C \sim 70^{\circ}C$  respectively to meet both EMC requirements as well as vibration and shock test requirements, a MTBF( $\theta_0$ ) of 6000h or above to ensure a high reliability, and a 75W built-in Li battery to ensure an endurance for continuous measurement in the wild field.

#### **Main Characteristics**

- Maximum dynamic range up to 50dB, and 256k data sampling points;
- Online test of PON network;



- Integrated mono-mode and multi-mode test;
- Automatic monitoring of optical communication signals;

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• File formats of Bellcore GR196 and SR-4731 supported.

#### **Rapid automatic test**

Due to the automatic test function of OTDR, it's not necessary for the user to know more about its operation. Connect the optical fiber and press the [Test] button. Then, the device will set the optimum test conditions automatically, and finally output accurate test results, such as the test curve and the list of events.



As an ideal tester of ODN and FTTx, OTDR is provided a unique built-in PON network test function, can penetrate an optical splitter of up to 1:128, and can be used to test each branch of the PON network accurately.

#### Automatic monitoring and alarm of incoming optical signals

When the OTDR is testing the optical fiber line, the optical communication signal in the optical fiber, if any, will lead to inaccurate test results and even unrecoverable damages to the detectors in the device. OTDR can monitor the optical communication signal in the optical fiber under test automatically. As long as the optical fiber under test is connected to the optical interface of OTDR, the device can automatically sense and monitor whether there is optical communication signal in it. Once an optical signal is monitored, it will prompt an alarm in time, so as to provide the quickest and the most timely protection for the device.

## **Typical Applications**







**Technical Specifications** 

Maximum dvnamic	See the "Technical specifications for each standard module of OTDR" for more		
range	information.		
Ranging accuracy	$\pm$ (0.75 + 0.0025% × distance +sampling resolution) (excluding the refractivity placement error) (m)		
Ranging resolution	0.05, 0.1, 0.2, 0.5, 1, 2, 4, 8, 16 and 32m		
Test range	0.1, 0.4, 0.8, 1.6, 3.2, 6.4, 16, 32, 64, 128, 256 and 512km (mono-mode);		
Testing PW	3, 5, 10, 30, 100, 275, 1000, 2500, 10000, 20000ns		
Maximum number of sampling points	256k		
Reflectance Accuracy	±2db		
Real time sweep	4 HZ		
Stable output power	-2.5 dbm for 1550nm		
Linearity	$\pm 0.03$ dB/dB		
Sampling resolution	Single mode 0.04 $\geq$ 5m		
Loss resolution	0.001dB		
Reflectivity setting range	1.00000 ~ 1.999999(step: 0.00001)		
Range unit	km, m, thousand feet, feet		
Display	800×480, 7-inch TFT color LCD (a capacitive touch screen in the standard configuration)		
Optical output interface	SC/APC (Other common connector heads, ST / LC / FC)		
Interface language	Simplified Chinese, English, Spanish, Russian and Korean available (contact the office for other language support)		

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External interfaces	USB, Micro-USB, 10M/100M Ethernet, earphone and Micro SD			
Power supply	AC/DC adapter: AC100V~240V, 50/60Hz and 1.5A; DC: 17V±3V(2A) Internal Li battery: 11.1V, 6800mAh, battery operating time: 8h Battery charging time: 12h			
Power consumption	10W			
Dimensions	252mm	(W)×180mm (H)×55mm (D)		
Weight	About 1	.8kg		
Environmental adaptability	Operating temperature: -10°C~+50°C (battery charging: 5°C~40°C) Storage temperature: -40°C~+70°C (battery: -20°C~60°C) RH: 5% ~95%, no condensation			
Power Capacity	6400mAh			
Power Saving	Working time≥8H			
Data Storage	Internal memory: SD card≥8G' build-in memory:99M			
Proof Class	IPX4			
Scale Indication	0.001dB			
Distance Resolution	0.025/0.05/0.1/0.2/0.5/1/2/4/8/16/32m			
Distance Accuracy	±(0.75+sampling gap+0.0025%x distance)m , Refractive index error not included			
• VFL		Optical power meter	• Stable light source	
Operating wavelength:		Wavelength range: 1200nm~1650nm Power	Operating wavelength: the same as	
650nm±20nm		range: -65dBm~+10dBm Uncertainty: ±5%	OTDR	
Output power: 2mW (typical)		(-25dBm, CW) Calibrated	Output power: ≥-5dBm	
Operating mode: CW, 1Hz and 2Hz		Wavelength:1310/1490/1550/1650	Operating mode: CW, 270Hz, 1kHz	
		Resolution:0.01dB	and 2kHz	
		Accuracy: ±0.35dB±1nW	Accuracy:±0.5dB	
			Connector: FC/UPC	
		Modulation Identification:270/1k/2kHz,		
		Pinput≥-40dBm		
		Connector: FC/UPC		

Note:

1,The OTDR works under an operating system fully compatible with Microsoft Office programs such as Word, Excel, PowerPoint that run under the Microsoft Windows operating system.

2, The OTDR has the ability to work using Wi-Fi and connections.

3, Equipment must be spill and splash proof.

4, The testing equipment provide multi pulse/time automatic interpretation function.

5, Battery charging time: 12 hours, off or in continuous operation. Rechargeable Li-ion batteries.

6, Charger for use in vehicle. The appropriate charger and cable to connect to the vehicle's cigarette lighter are included.

7, The test equipment includes a dedicated port for out-of-band measurements of an in-service FTTx network; where

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signals from PON networks such as 1310nm and 1550nm do not affect the measurements; for this purpose, the computer port tests in the length of 1625nm or 1650 nm from a dedicated port on the OTDR.

8, The port for OTDR in-service network measurements at 1625nm or 1650nm includes an internal filter that rejects or isolates 1310nm and 1550nm signals.

9, The OTDR function in the optical fiber measurement equipment automatically detects transmissions in the fiber or devices under test and have indications of danger or auto-shutdown.

10, The test equipment is capable of accurately measuring at least G.652, G.653, G.655, and G.657 fibers.

11, Filtered port: 1625nm with isolation >50 dB from 1270 nm to 1585 nm

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Module number	Operating wavelength	Laser wave length	Dynamic range <sup>2</sup> (dB)	Event dead zone <sup>3</sup> (m)	ATT dead zone <sup>4</sup> (m)	PON dead zone4 (m)
SPTK-3302XR-45	Mono-mode 1310/1550/1625nm	Dual	42/41/42	0.5	2.5	30

Notes:

- a) One must and only one can be chosen for the standard module.
- b) An ambient temperature of  $23^{\circ}C\pm5^{\circ}C$ , the maximum test PW, over 500 times averagely, and a SNR of 1.
- c) A range of 1.6km or smaller, a PW of 3ns, a fiber end face reflection loss of 40dB or above, and a typical value.
- d) A range of 1.6km or smaller, a PW of 5ns or smaller, a fiber end face reflection loss of 50dB or above, and a typical value.

# **Order Information**

- Main unit: OTDR
- Standard configuration:

S/N	Description	Remarks	
1		Power line and power adapter: an input voltage of 100~240V,	
	Power line assembly	50~60Hz, an output voltage and an output current of 19V and	
		3.42A respectively at 2.0A	
2	User manual	-	
3	Product certificate of		
	conformity	-	
4	CD	Including simulation analysis software	
5	Special portable soft bag of	f	
	OTDR	-	
6	Special strap of OTDR	_	





• Packing case:

Special bag



Note: Due to the design improvement requirement, the contents mentioned above can be modified without notice.

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Ordering information

Part Number	Product Description			
SPTK-3302XR-45	Handheld OTDR Three Wavelengths-S	M 1310/1550/1625nm(built-in filter)		
	Maximum dynamic range 45dB			

Note: If you need more customized services, please contact us.

- E-mail: info@sopto.com.cn
- Web : <u>http://www.sopto.com.cn</u>

