

RTU-5000 OTDR Monitoring Unit



Pic1: 8-channel for dark fiber monitoring



Pic2: 16-channel for dark fiber monitoring



Pic3: 4-channel for online fiber monitoring



Pic4: 8-channel for online fiber monitoring



Pic5: RTU-5000 Back view

Note:

- For dark fiber monitoring, Maximum can support 16-channel in 1U height. Normally adopt single OTDR wavelength(1310nm/1550nm) or double wavelength (1310nm+1550nm)
- Online monitoring ensures uninterrupted service operations, Normally adopt single OTDR wavelength (1625nm or 1650nm).

Main features:

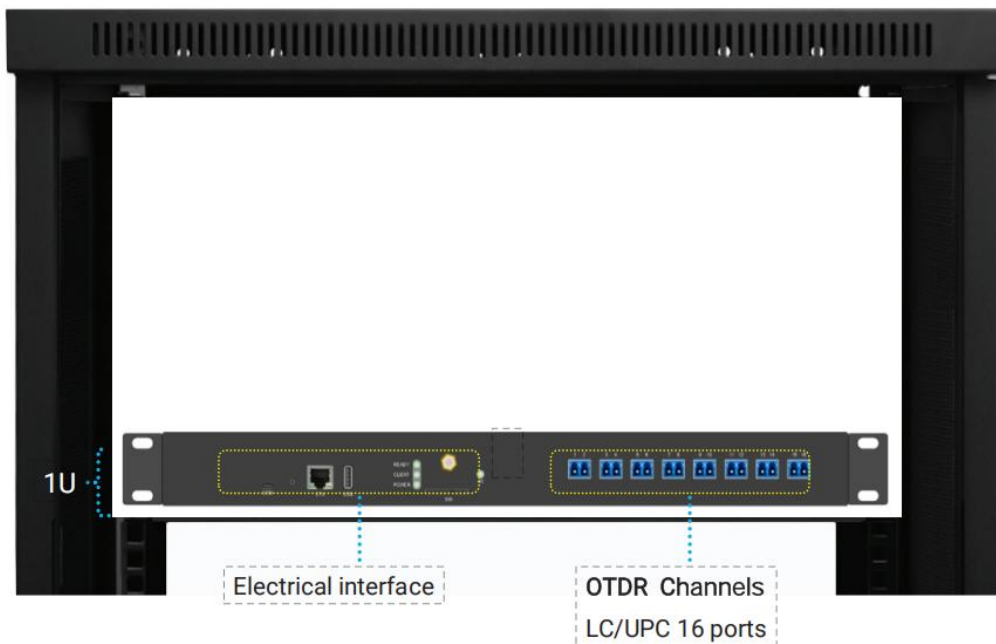
- Support customized multi-channel monitoring(1 to 16)
- Complete and compact (1U)
- Combine OTDR unit (45dB Max), optical switch, WDM, main control board and power module
- Dark fiber and in service fiber monitoring
- Support monitoring port expansion to 8/16/24/32/64/128, etc
- Support PC, mobile app, and cloud platform operation management
- Provide standard RJ-45 Ethernet and 4G dual network connection
- Continuous OTDR monitoring and active real-time fault alarm
- Provide communication protocols that support secondary development and meet users' personalized needs

Application:

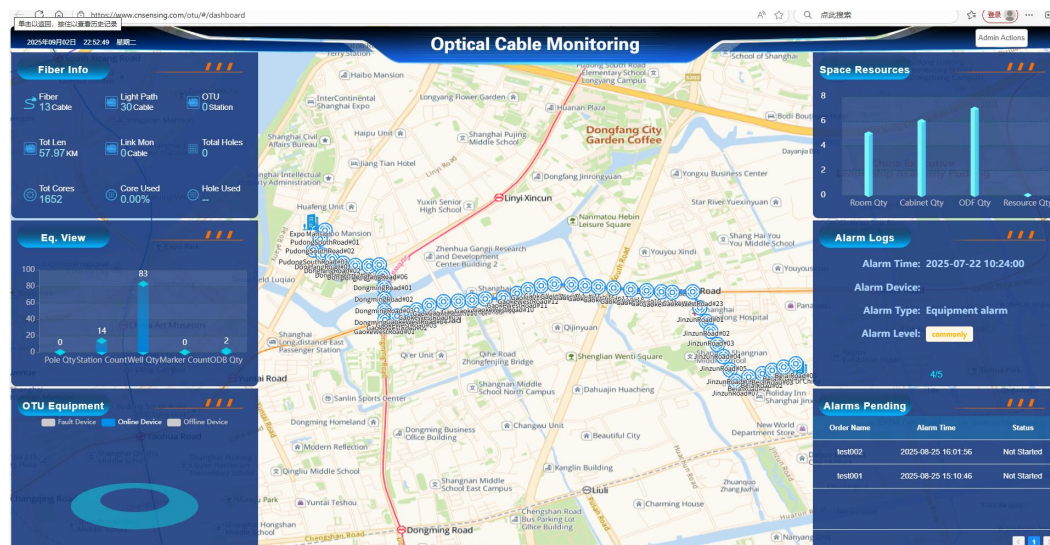
- Integrated into optical communication equipment, such as DWDM system equipment, OTN equipment and etc.
- Can be applied in fields such as optical transmission networks, data clouds, access networks, and CATV network.
- Anticipate service disruptions by detecting fiber degradation before it affects service.
- Empower your network with 7X24 real-time fiber monitoring and proactive fault detection.
- Accelerate repair time with remote OTDR testing and intelligent fault localization.
- A future-ready, scalable platform trusted by operators worldwide.

Description:

As a component of Grandway's remote fiber optic testing and monitoring solution, RTU-5000 is a standard 1U height testing unit that can be remotely controlled through Grandway's central fiber monitoring system platform. It is a modular device, which enables high flexibility and scalability. By utilizing OTDR modules and optical switches, centralized identification and monitoring of multiple optical fibers can be achieved. Up to 16 fiber optic cables can be monitored simultaneously.



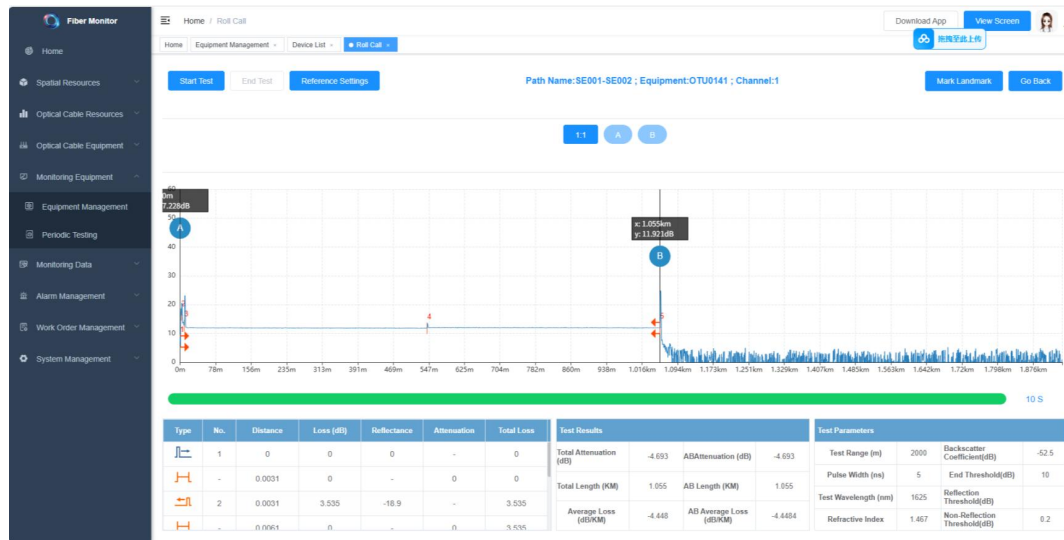
OTDR Graph and Georeferencing



Central Monitoring Platform

- Advanced GIS-based fault mapping&active alarm
- Visual management of resources (Cable, RTU equipment, computer rooms, ODF, manhole, cabinet, etc.)
- Interact with the generated map.
- View and track information from the map.
- Access to the tool screen to consult network details.
- Centralized network visibility

OTDR Graph and Georeferencing



OTDR Graph Measurement

- Support roll call test and periodic test for different channel fibers
- Support custom alarm threshold
- Analysis and Warning of Fiber Optic Quality Degradation
- Support remote control testing on mobile phones

Specifications

RTU5000 Base Unit

Optical port number	1~16
Network Interfaces	ETH 10/100Mbps+LTE-Cat.1
Optical port	LC/UPC or LC/APC
Height	1U
Width	Standard 19 inch rack
Dimension	438mm×300mm×45mm(L×W×H)
Working temperature	-10~+60℃(14°F~140°F)
Storage temperature	-40~+85℃(-40°F~185°F)
Relative humidity	0% to 95% (non-condensing)
Power supply	AC 110-240V, ≤0.5A, 50-60Hz and DC 48V power supply

RTU5000 OTDR Unit

Monitoring wavelength	1: 1310nm/1550nm single wavelength 2: 1310nm+1550nm dual wavelengths	3: 1625nm/1650nm single wavelength
Filter support	Not support	Support
Pulse width	3ns~20us	
Dynamic range	32dB~45dB(customizable)	
Event deadzone	0.8m	

Attenuation deadzone	3.5m
Sampling resolution	0.05~4m
Distance resolution	0.01m
Test range	0.05~265km
Sampling points	Max 256,000
Distance accuracy	$\pm(0.75+3\times 10^{-5}\times \text{Test distance}+\text{Sampling resolution})\text{m}$
Linearity	$\pm 0.03\text{dB/dB}$

Optical Switch Unit

Output port number	1~16
Insertion loss	<1.2dB
Working wavelength range	1200nm~1650nm
Switching time	$\leq 25\text{ms}$
Working life	$\geq 1 \text{ million}(10^6)$
Return loss	$\geq 45\text{dB}$
Isolation	$\geq 55\text{dB}$
Directivity	$\geq 60\text{dB}$
Optical interface	LC/UPC or LC/APC

WDM Unit

Wavelength	1260nm~1580nm
Insertion loss	<1dB
Return loss	$\geq 45\text{dB}$
Isolation	$\geq 40\text{dB}$
Directivity	$\geq 50\text{dB}$
Optical interface	LC/UPC or LC/APC