980RTC HANDY MINI OTDR

All in 1 Device, Pocket-sized, Multi Functions, Easy-to-use, and Affordable for Technicians at Any Level

Features

- Single, dual, and triple wavelength light-weight OTDR
- Combines all essential fiber tests in one handheld with OPM, OLS, VFL, etc
- Easy to understand OTDR analysis with event map result view and pass/fail indications
- Access network or point-to-point network verification or troubleshooting
- Upgrades easily in the field
  All-day battery life

Application

- FTTX Testing and Maintenance
- CATV Network Testing
- Access Network Testing
- LAN Network Testing
- Metro Network Testing
- FTTA Troubleshooting

9 Function in One Device | OTDR | Optical Power Meter | Optical Light Source | Visual Fault Locator | Insertion Loss Testing | Event Map | LED Light | RJ45 Cable Sequence | RJ45 Cable Tracker

Configuration

			Hot Sale			
Model#	**980RTC-D26**	**980RTC-D24SF**	**980RTC-A26**	**980RTC-B26**	**980RTC-T3**	**980RTC-M24**
Wavelength	1310/1550nm	1550nm	1625nm	1650nm	1310/1550/1650nm	850/1300nm
Dynamic Range	26/24dB	24dB	26dB	26dB	24/22/22dB	24/22dB
Testing Range	3m to 90km	3m to 70km	3m to 90km	3m to 90km	3m to 90km	3m to 70km
OTDR	√	√	√	√	√	√
Event Map	√	√	√	√	√	√
Power Meter	√	√	√	√	√	√
Light Source	√	√	√	√	√	√
VFL	√	√	√	√	√	√
Loss Test	√	√	√	√	√	√
LED Light	√	√	√	√	√	√
RJ45 Sequence	√	√	√	√	√	√
RJ45 Tracker	√	√	√	√	√	√
1490nm Online	x	√	√	√	√	x
1550nm Online	x	x	√	√	√	x
1610nm Online	x	x	x	√	√	x

The Kit Includes: OTDR, FC/SC Connector, OTDRviewer Software, Power Charging Adapter, USB Cable, Carrying Case, User Manual, Certificate of Calibrate, RJ45 Signal Receiver(optional)

Note: 980RTC-A26 is with Filter for Online Testing even though 1490/1550nm Light is in Fiber Cable
980RTC-B26 is with Filter for Online Testing even though1490/1550/1610nm light is in Fiber Cable
980RTC is with Filter for Online Testing even though 1490/15501610nm Light is in Fiber Cable

General

Size/Weight	175x105x45mm/ 450g (Battery included)
Display	4.3 inch touch-sensitive TFT Screen, 800x480 Resolution
Interface	SD port, Type A USB, Type C USB, OTDR port, VFL port, Optical Power Meter Port
Power Supply	Input: 100V(ac) to 240V(ac), 50~60Hz, 0.8A; Output: 5V(DC), 1A 5200mAh/3.7V Lithium battery (with air traffic certification)
Battery	Continuous Working>8 hours, Standby Time>15 hours
Power Saving	Back light: Common/Highligh/Power saving/Customized Auto power off: Never/1min/5min/10min/30min/60min
Data Storage	Internal Memory: 1000 traces, SD Card (optional)
Language	English, Spanish, French, Korean, Italian, Portugal, Russian
Environmental Conditions	Operating temperature and humidity: -10℃~+55℃, ≤95% (non-condensation) Storage temperature and humidity: -20℃~+80℃, ≤95% (non-condensation)

OTDR Module

Pulse Width	5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs
Distance Range	100m, 500m,1km, 2km, 5km, 10km, 20km, 40km, 60km, 90km
Sampling Resolution	0.2m to 8.0m
Sampling Point	Maximum 20,000 points
Linearity	±0.2dB/dB
Reflection Accuracy	±3.0dB
Dead Zone	Event Dead Zone: 1.2m, Attenuation Dead Zone: 6.5m
Distance Accuracy	±(1m+Sampling interval+0.005% x measuring range)
Loss Threshold	0.01 dB
Loss Resolution	0.001dB
Distance Resolution	0.001m
IOR Setting	1.0~1.9, 0.0001 step
Units	km, miles, kfeet
OTDR Trace Format	sor, pdf

VFL Module

Connector	2.5mm universal, compatible with SC, FC, ST
Wavelength	650nm
Output Power	10mw, CLASSIII B
Range	12km
Launching Mode	CW/1Hz/2Hz

OPM Module

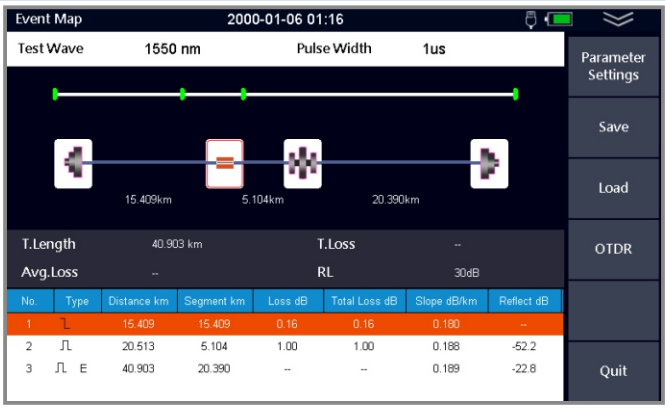
Connector Port	2.5mm universal, compatible with SC, FC, ST
Wavelength	850/1300/1310/1490/1550/1625/1650nm
Power Range	-70~+ 10dBm (in default) or -50~+ 26dBm
Display Resolution	0.01dB
Accuracy	±0.35dB±1nW
Modulation	270Hz/330Hz/1000Hz/2000Hz, Pi≥-40dBm

OLS Module

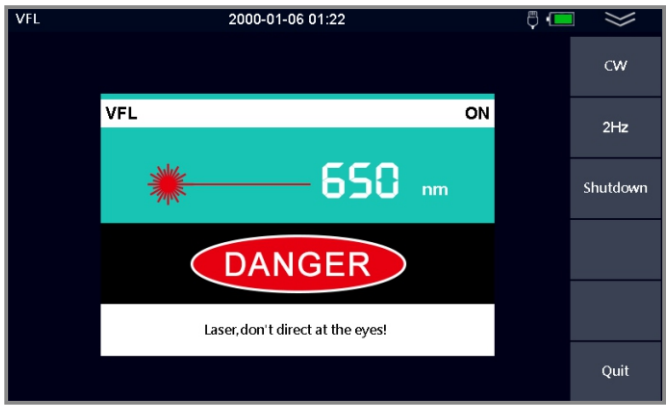
Connector	SC, FC
Wavelength	Same as OTDR Wavelengths
Output Power	-7.0 dBm to - 3.0 dBm
Output Stability	±0.1 dBm
Output mode	CW/270Hz/330Hz/1000Hz/2000Hz

Functions Display

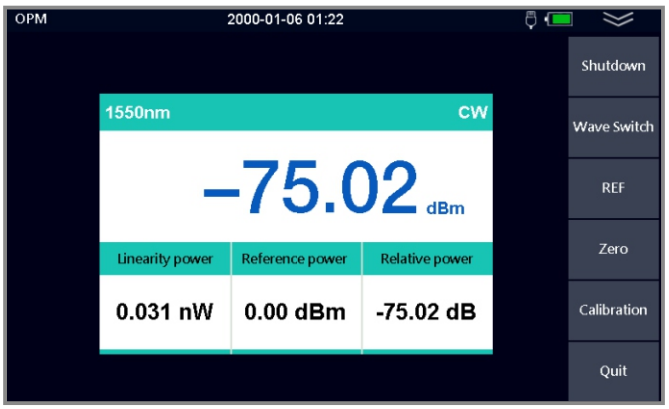
OTDR Curve & Event List



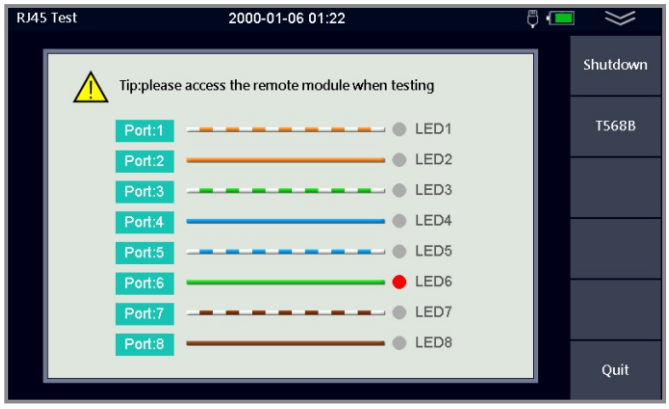
Event Map



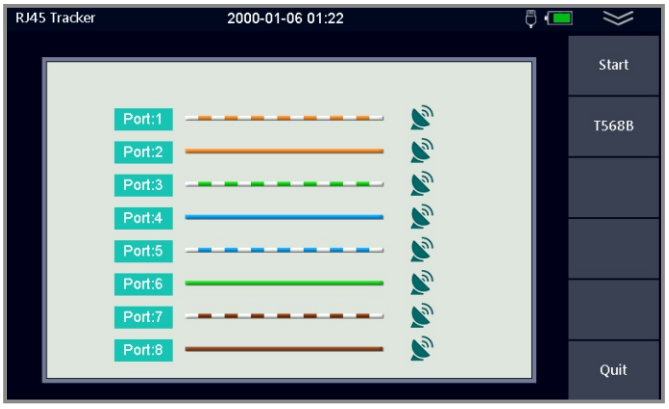
Visual Fault Locator



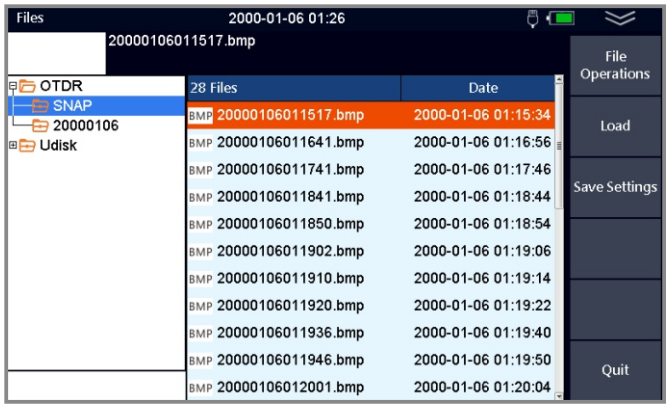
Optical Power Meter



RJ45 Cable Sequence



RJ45 Cable Tracker

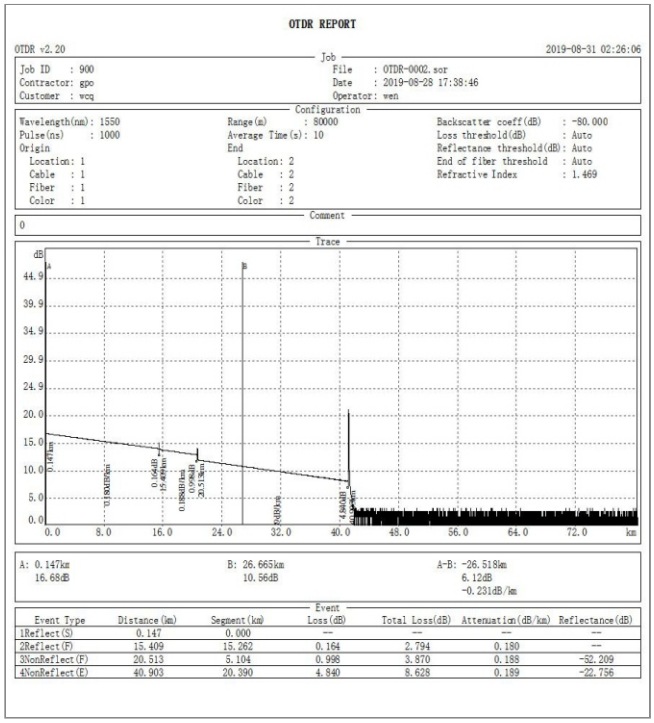


SOR and BMP Files Management

Parameter Setting

✶ for more pictures and video demo, please contact our sales or technical support
tech@FirstFiber.cn

OTDR Report Printing



OTDR REPORT

OTDR v2.20 — 2019-08-31 02:26:06

Job
Job ID : 900 — File : OTDR-0002.sor
Contractor: gpo — Date : 2019-08-28 17:38:46
Customer : wcq — Operator: wen

Configuration
Wavelength(nm): 1550 — Range(m) : 80000 — Backscatter coeff(dB) : -80.000
Pulse(ns) : 1000 — Average Time(s): 10 — Loss threshold(dB) : Auto
Origin — End — Reflectance threshold(dB): Auto
Location: 1 — Location: 2 — End of fiber threshold : Auto
Cable : 1 — Cable : 2 — Refractive Index : 1.469
Fiber : 1 — Fiber : 2
Color : 1 — Color : 2

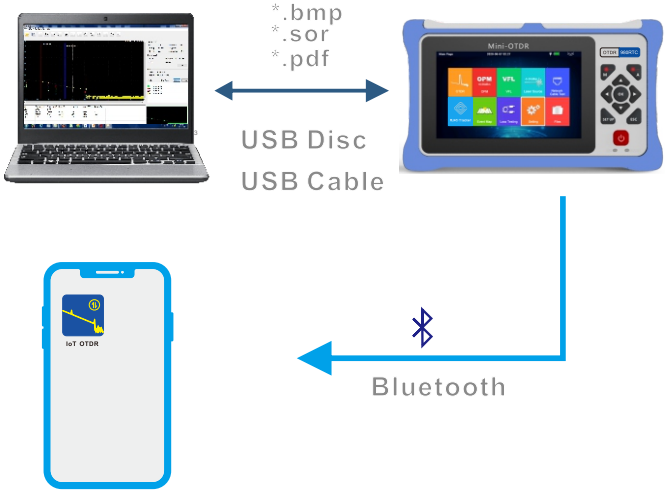
Comment
0

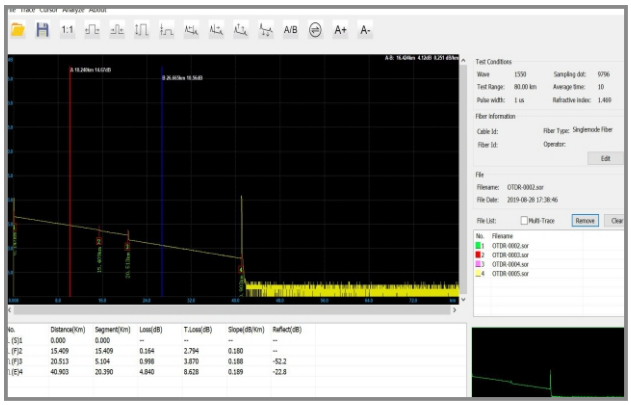
Trace

A: 0.147km — B: 26.665km — A-B: -26.518km
16.68dB — 10.56dB — 6.12dB
-0.231dB/km

Event

Event Type	Distance(km)	Segment(km)	Loss(dB)	Total Loss(dB)	Attenuation(dB/km)	Reflectance(dB)
1Reflect(S)	0.147	0.000	---	---	---	---
2Reflect(F)	15.409	15.262	0.164	2.794	0.180	---
3NonReflect(F)	20.513	5.104	0.998	3.870	0.188	-52.209
4NonReflect(E)	40.903	20.390	4.940	8.628	0.189	-22.756





PC Software

OTDR Online Testing

Recent years, many OTDR manufacturers and suppliers declare their OTDRs support online testing, but some times, it is a trap if you do not understand what is OTDR online testing clearly. This artical will explain what is OTDR online testing.

1. OTDR working wavlength
OTDR emits a specific wavelength of light pulse into the tested fiber, while at the same time, OTDR receives backscattered and reflected light from the tested fiber. OTDR analyzes the received optical light and forms a curve, which is displayed on the screen. Please note that the wavelength of the backscattered and reflected light received by OTDR is consistent with the wavelength of the light emitted by OTDR. That is to say, the specific wavelength of optical light used in OTDR testing are emitted by OTDR itself. This wavelength is called the OTDR working wavelength.

2. Fiber network service wavelength
Fiber optic networks transmit information through specific wavelength optical signals. Due to the characteristics of optical fibers, at wavelengths of 1310nm, 1490nm, and 1550nm, the loss is relatively small, so these three wavelengths are usually used for signal transmission. The following table briefly lists the wavelengths used in common GPON, EPON, and CWDM technologies.

GPON 1310nm 1490nm 1550nm
EPON 1310nm 1490nm 1550nm
CWDM 1270nm 1290nm 1310nm 1330nm 1350nm 1370nm 1390nm 1410nm 1430nm 1450nm 1490nm 1510nm 1530nm 1550nm 1570nm 1590nm 1610nm

OTDR Online Testing

3. when no service wavelength in fiber network
Throughout the OTDR testing process, OTDR only needs to use the wavelength of light emitted by itself. It does not need or want to have optical signals of other wavelengths in the tested fiber. If there is, it needs to be filtered out.
In the daily OTDR test scenario, it can be roughly divided into the acceptance testing before the network is opened and the maintenance test after the network is opened. During the acceptance testing, the optical cable is usually just laid and the network service has not been opened, so there is no optical signal in the optical fiber. At this time, it is very friendly to OTDR. Considering that the service wavelength for future operation is 1310/1490/1550nm, it is recommended to select the corresponding wavelength for testing on OTDR, which can better simulate the fiber optic link condition during operation. Of course, other wavelengths such as 1610nm or 1525nm can also be chosen, because although the fiber exhibits slight differences in loss at different wavelengths, these differences are not significant due to the close proximity of wavelengths, and they only affect the loss and do not affect the testing of length and event points. Therefore, for the tested fiber without optical signals, any wavelength can be selected for testing. Due to the lower cost of 1310nm/1550nm lasers, it is customary to use 1310nm/1550nm for testing.

4. when there is an optical signal in the tested fiber
When conducting fiber optic maintenance or troubleshooting, maintenance personnel generally do not disconnect the fiber optic link from the OLT, as a PON port on an OLT typically manages dozens of ONUs. Once not online, the impact range is large. Therefore, during troubleshooting, technical personnel usually conduct online testing. At this point, we have learned that the so-called OTDR online testing refers to testing when there is an optical signal present in the fiber optic link.

5. Testing of GPON/EPON optical networks
5.1. There is a 1490nm downlink signal in the link
In traditional GPON/EPON networks, upstream signals are transmitted at a wavelength of 1310nm, while downstream signals are transmitted at a wavelength of 1490nm. When testing with 1550nm wavelength OTDR from the ONU to the OLT side, the 1490nm wavelength light in the link will also enter the OTDR, which affects the testing. Therefore, it is necessary to filter out the 1490nm wavelength optical signal present in the link. A specialized passive component filter is a good choice. Usually, it is customary to refer to OTDR with integrated filters as online testing

5.2 There are 1490nm and 1550nm downlink signals in the link
In GPON/EPON optical networks, 1550nm cable TV video signals are generally added, so the downstream wavelengths of 1490nm and 1550nm will coexist in the fiber optic link, making it impossible to use 1550nm OTDR for online testing. It is necessary to find another wavelength as the testing wavelength for OTDR. Considering cost factors, OTDR at 1610nm is a good choice. This way, a filter can be built into the 1610nm OTDR to filter out all wavelengths except for 1610nm.

6. CWDM fiber network testing
Due to the use of a transmission wavelength of 1610nm in the CWDM fiber optic communication system, OTDR with a working wavelength of 1610nm cannot be used. At this point, the 1625nm OTDR came in handy. So, 1310nm/1550nm/1625nm OTDR is the most widely used. The 1310nm/1550nm wavelengths are mainly used for non online testing. 1625nm is mainly used for online testing. However, due to the proximity of 1625nm to 1610nm, its isolation is relatively low. Sometimes, there may be problems that cannot be measured online. Therefore, in recent years, 1650nm online OTDR has been developed. Due to the relatively high cost of 1650nm lasers, in general, if users purchase 1650nm OTDR, its main purpose is to conduct online testing. In this way, most of them only purchase OTDR with a single wavelength of 1650nm.