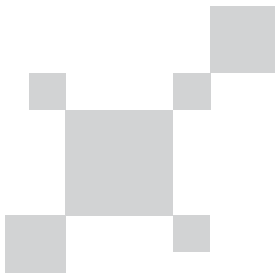


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UNI-T®

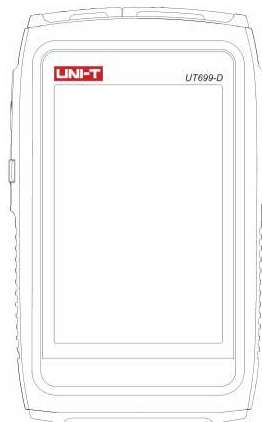


UNI-T®
UNI-TREND TECHNOLOGY
(CHINA) CO., LTD.

No.6, Gong Ye Bei 1st Road,
Songshan Lake National High-Tech Industrial
Development Zone, Dongguan City,
Guangdong Province, China

Made in China

UT699-D UT699-S Optical Time Domain Reflectometer



User Manual

RPEFACE

Thank you for purchasing the new Optical Time Domain Reflectometer. To use this product safely and correctly, please read this manual thoroughly.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

LIMITED WARRANTY AND LIABILITY

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damage caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact authorized service center or send the product back with problem description.

This warranty is the only compensation you can obtain. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

Cautions

Any changes or modifications not expressly approved in this manual could void your authority to operate this device.

To reduce the risk of fire or electric shock, do not expose this device to rain or moisture.

To prevent electric shock, do not open the case. Maintenance service must be performed by qualified personnel only.

Please ensure there is no signal in the optical fiber before testing;

otherwise, the device may be damaged, and such damage is not covered under warranty.

Notes

As the laser beam in this unit is harmful to the eyes, do not attempt to disassemble the case or look directly into the laser output port.



Operating Notes

Battery Use:

This device is powered by a dedicated lithium-ion battery. Please select the correct power adapter for charging operations.

Avoid Condensation:

Sudden temperature changes should be avoided as much as possible.

When moving the device from a cold to a warm location, or after a sudden temperature rise in the room, do not use it immediately, as condensation may form inside the unit.

If a sudden temperature change occurs while using the device, stop using it immediately.

Storage:

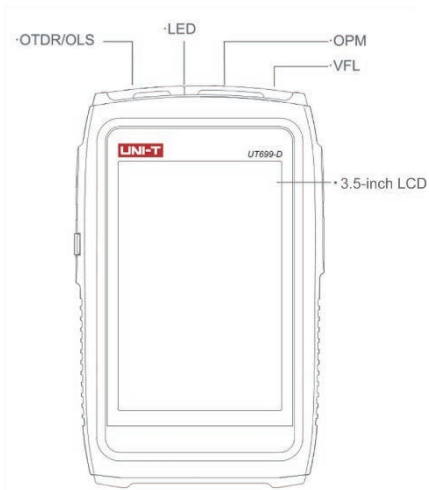
For long-term storage, fully charge and discharge once every 3 months, then recharge the battery to 70% capacity.

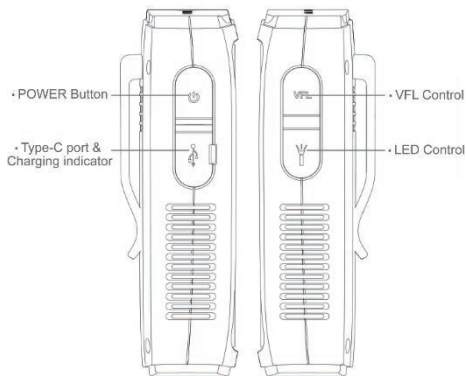
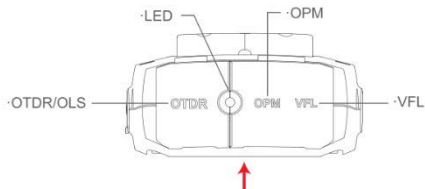
※The contents of this manual are for reference only; Everything is subject to the actual items.

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1. Product Overview





2. Technical Parameters

Model	UT699-S	UT699-D
Wavelength	1550nm (Supports 1577nm Live Fiber Test)	1310nm±20nm/1550nm±20nm
Dynamic Range	20dB	22dB/20dB
Number of Optical Ports	1	
Test Range	0.1 to 80km	
Fiber Type	Single mode	
Optical Port	SC/UPC	
Pulse Width	5ns to 20μs	
Measurement Time	5s to 180s	
Real-time Refresh Rate	2Hz	
Attenuation Dead Zone	10m	
Event Dead Zone	<3m	
Sampling Point	15600	
MIN Sampling Interval	0.16m	
Linearity	±0.05dB/dB	
Loss Threshold	0.01dB	
Loss Resolution	0.001dB	
Distance Uncertainty	± (0.8 + 0.005% *Distance + Sampling Resolution) m	
Input Light Detection	Supported	
Refractive Index Setting	1.0000 to 2.0000	

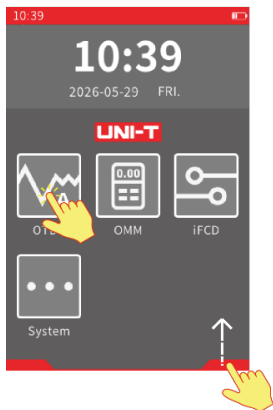
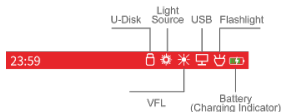
OPM Functions		
Port	2.5mm universal port	
Detector Type	InGaAs	
Response Wavelength	700 to 1700nm	
Calibrated Wavelengths	850/980/1270/1300/1310/1490/1550/1577/1625/1650nm	
Power Range	+30 to -50dBm (C-type)	
Accuracy	C-type: ±0.4dB(1310/1490/1550/1625nm) ±1dB(850/980/1270/1300/1577/1650nm)	
Display Precision	0.01dBm	
Display Unit	dBm, dB, W (auto switch to mW, uW or nW)	
Frequency Identification	270/1K/2KHz	
Wavelength Memory	√	
User Self-Calibration	Supported	
Relative Measurement	Supported	
VFL Functions		
Port	2.5mm universal port	
Wavelength	650±20nm	
Output Power	10mW	
Mode	CW/1Hz/2Hz	
OLS Functions		
Port	SC/UPC	
Wavelength	1550nm	1310nm/1550nm
Output Power	> -5dBm	
Mode	CW/270Hz/1kHz/2kHz/1kHz+Flashing/2kHz+Flash	

	ing	
Others		
Screen	3.5-inch color screen, 320*480 resolution, touch screen	
LED Light	Supported	
Auto Power Off	Supported	
Charging Port	USB flash drive can be used for temporary storage; Type-C port	
Battery	3.7V/2000mAh/Lithium battery	
Battery Indicator	Yes, 5-level indicator	
Operating Time	Standby > 6 hours, Measuring > 4 hours	
Charging Indicator	Charging (red), Fully charged (green)	
Operating Temp/Humidity	-10 to 50°C (Working); 0 to 45°C (Charging). <90% RH, non-condensing	
Storage Temp/Humidity	100% Battery: 1hr at -20 to 60°C, 24hrs at -20 to 45°C. 50% Battery: 12hrs at -20 to 60°C, 1 month at -20 to 45°C. Recommended: 50% battery, 65±20% RH, 25°C environment. Charge and discharge once every 3 months.	
Size	123mm x 76mm x 39mm	
Weight	About 206g	About 211g
Accessories	Optical Time Domain Reflectometer*1, Gift Box*1, User Manual *1, Type-C Cable *1, Cloth Bag*1.	

3. Main Menu

The device enters the main menu by default after powering on.

Title Bar icons: These will light up when the corresponding functions are enabled.

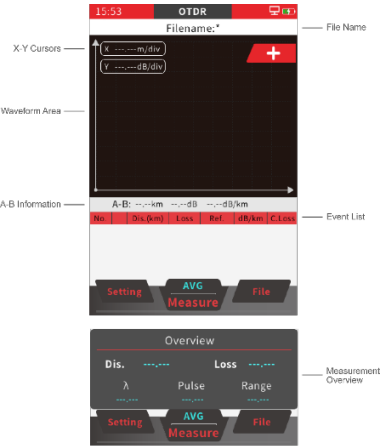


Tap the module icon to enter the corresponding function interface. In the main interface of any functional module, swipe up from the bottom to return to the main menu.

4. OTDR

OTDR Measurement Interface Diagram.

Tap the "  " icon in the upper right corner to display hidden icons. Tap the "  " icon to show options for resetting cursors and showing/hiding cursors; tap the "  " icon to enlarge the waveform interface; tap the "  " icon to display the measurement overview in the event list area.



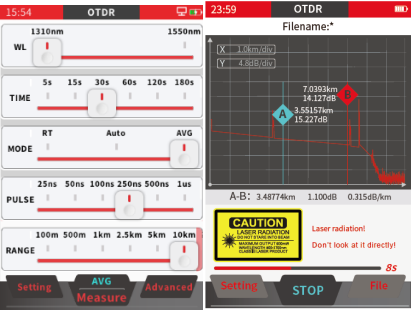
5. OTDR – Measurement Settings

Tap the **Setting** icon on the OTDR interface to enter the parameter settings interface.

Tap the **AVG Measure** icon on either the OTDR interface or the measurement settings interface to start measurement based on the current parameters.

Tap the **STOP** icon during the measurement process to interrupt.

If the Real-time Analysis function is enabled during Real-time Measurement, the device will perform one average measurement before stopping.



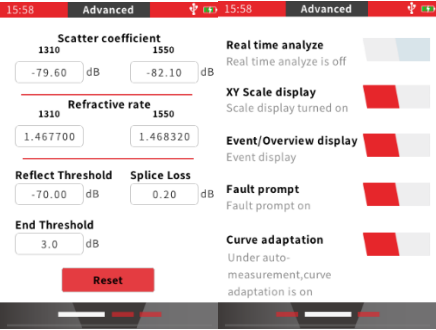
The Parameter Settings Interface

6. OTDR – Advanced Settings

Tap the "  " icon on the OTDR measurement settings interface to enter the advanced settings menu.

There are three interface pages for advanced settings; swipe left or right to switch between them.

When the "  " icon appears at the bottom of the screen, swipe up from the bottom to return to the previous interface.



Advanced Settings Interface



7. OTDR– Waveform Analysis

After the measurement or when a saved waveform is opened, the current waveform data and events will be displayed in the Measurement Overview and Event List.

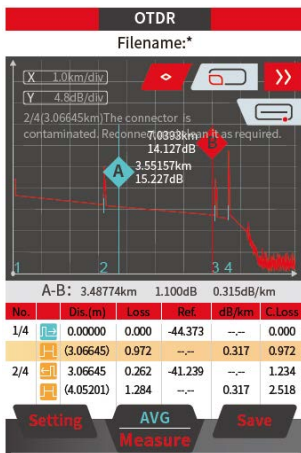
When the fault prompt function is enabled, a prompt message will be displayed at the end of the measurement.

The function expansion icons in the upper right corner of the waveform area can be used to control the display, as follows:

Tap the "  " icon to show options for resetting cursors and showing/hiding cursors.

Tap the "  " icon to zoom in the waveform interface and tap the "  " icon to zoom out it.

Double-tap the waveform area to reset the view; you can also use two fingers (pinch-to-zoom) to perform zoom operations.





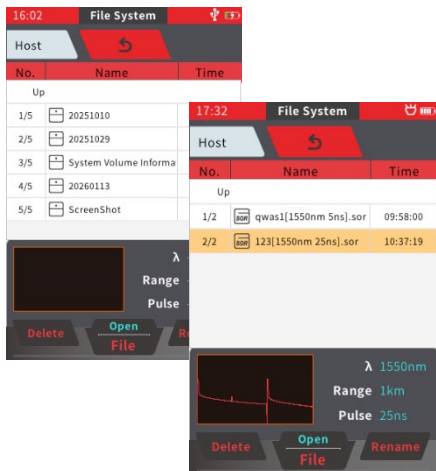
Zoom in the waveform interface.

8. OTDR – File Management

Tap the "Open File" icon on the OTDR interface to enter the file management interface.

When the auto-save function is enabled, the device will automatically generate a filename and save it after the measurement is completed. When a file or folder is selected, you can rename, open, or delete it. When a file is selected, the bottom displays a waveform thumbnail of the selected file (supports .sor files only).

Tap the "Back" icon to return to the previous path/folder.



9. Optical Multimeter - OPM

Connect the optical fiber to be tested to the designated interface and

operate according to the interface icons. Tap the "SET" icon to enter the Optical Power Meter (OPM) settings interface:

Frequency Identification: Select to enable/disable the power meter's frequency identification function.

Offset Setting: When enabled, the wavelength bar and offset setting box

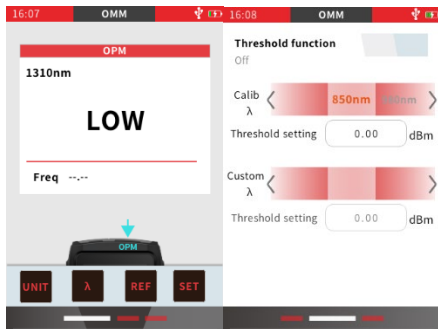
will appear below. Users can calibrate the power values for each wavelength based on actual conditions.

Threshold Function: Select to enable/disable the threshold function.

Calibration Wavelengths: Factory-default calibrated wavelengths and threshold settings include 850nm, 980nm, 1270nm, 1300nm, 1310nm, 1490nm, 1550nm, 1577nm, 1610nm, 1625nm and 1650nm. If the application requires high wavelength precision, User-Defined Calibration is required.

User-Defined Wavelength: Measurement wavelengths added after user calibration are called "User-Defined Calibration Wavelengths." The adjustable range is within the detector's operating range of 700nm to 1700nm. Calibration requires a stable light source with a known wavelength and power level, with the power adjusted between -30 and +10 dBm. The light source wavelength can be measured using professional equipment such as an optical spectrum analyzer (OSA), or by using a tunable light source where the wavelength can be set manually. The light source power must be accurately measured using a master meter. After completing the above two steps, connect the light source to the device's OPM port. Ensure the connection method is identical to that used with the master meter to avoid insertion loss and measurement errors caused by environmental differences.

Once connected, tap the "+" button and input the wavelength and power values for calibration. After a successful calibration, enable this function, and it will function the same as a factory-calibrated wavelength. You can then switch to this custom wavelength value during measurement.



UNIT: Show REF **REF:** Set REF

λ: Switch Test Wavelength



10. Optical Multimeter - VFL

Tap the "  " icon to change the VFL operating status: Continuous Wave (CW) -> Flashing 1Hz -> Flashing 2Hz -> OFF. The red laser is emitted from the VFL output port, as shown in the diagram.



11. Optical Multimeter - OLS

Connect the optical fiber to the designated interface and operate according to the interface icons.

Multi-modulation Signal: Tap the "" to switch between: CW, 270Hz, 330Hz, 1kHz, 2kHz, 1kHz+Flashing, and 2kHz+Flashing.

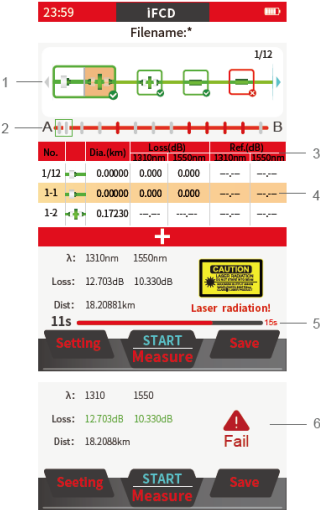
Wavelength Switch Button: For multi-wavelength models only, tap the

"" icon to switch wavelengths.

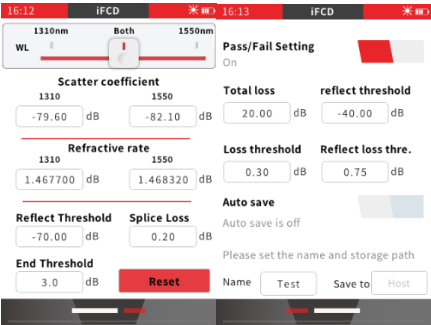


12. Intelligent Fiber Cable Detection

- 1.Events and Event Interval
- 2.Event Locations
- 3.Event List
- 4.Details of Selected Event
- 5.Measurement Status
- 6.Pass/Fail



Tap the " **Setting** " icon on the Intelligent Fiber Cable Detection interface to enter its settings menu. Swipe left on the screen to enter additional settings interfaces.



Settings Interface

On the Intelligent Fiber Cable Detection, Event List, or Measurement Settings interface, tap the " **START Measure** " icon to begin measuring based on current parameters. Tap the " **Save** " icon to store the data.

When no measurement is in progress, tap the " **File** " icon to enter the file management interface. The Intelligent Fiber Cable Detection shares the

same file management system as the OTDR.

After the measurement is complete, tap the "" icon to enter the Event List. When a file is selected, you can rename, open or delete it (only .tor files are displayed in this mode).

23:59

iFCD



Filename:*

No.		Dis.(km)	Loss (dB)		Ref. (dB)	
			1310nm	1550nm	1310nm	1550nm
1/12		0.00000	0.000	0.000	---	---
1-1		0.00000	0.000	0.000	---	---
1-2		0.00183	0.000	0.000	---	---
		(0.01340)	---	---	---	---
2/12		0.01340	0.385	0.739	-51.938	-53.136
		(0.28744)	---	---	---	---
3/12		0.30084	---	-0.299	---	---
		(0.68706)	---	---	---	---
4/12		0.98790	0.256	0.328	---	---
		(0.34621)	---	---	---	---
5/12		1.33411	0.249	0.518	-55.402	-55.458
		(0.03534)	---	---	---	---

Seeting

START Measure

Save

23:59

File System



Host



Delete

Open File

Rename

13. System Settings

Tap the "System Settings" on the main interface to enter the General Settings interface:

- Smart Power Saving: When there is no operation, the backlight brightness will be reduced after a specified time.
- Auto Power Off: Used to set the auto-power-off time or cancel the auto-power-off.

- Format: Tap to appear all currently connected devices. Select a device and follow the prompts to confirm formatting, which will delete all files within that device.

Swipe left on the screen to view Language and Version information.



Note: For future version upgrades, please refer to the actual version of the product; no further notice will be provided. The SN is subject to the actual product received.

Swipe down from the top of the screen on any interface to display the navigation bar:



: When a USB flash drive is connected, tap this icon and it will light up, allowing you to read files from the USB drive.



: When connected to a computer, tap this icon and it will light up, allowing you to access files from the computer while charging.



: Tap this icon and it will light up, make buzzer on or off.



: Tap this icon to take a screenshot of the current interface and save it in the device's "Screenshot" folder.



: Swipe the progress bar left or right to adjust the backlight brightness.



The manual is subject to change without prior notice!

Due to different batches, the materials, operation interfaces, and details of actual products may be slightly different from the graphic information, please refer to the actual product received. Experimental data provided on the page is from internal laboratory of UNI-T, but it should not be a reference for customers to place orders. Any questions, please contact the customer service, thanks!

菲林做货要求：

序号	项目	内容	备注
1	尺寸	尺寸：68*110mm	
2	材质	封面封底128g铜版纸彩色印刷，内页80g书纸单页印刷	
3	颜色		
4	外观要求	完整清晰、版面整洁，无斑墨、残损、毛边、刀线错位等缺陷。	
5	装订方式	钉装	
6	表面处理		
7	其它	无	
版本			
DWH 设计		MODEL 机型:	Part NO. 物料编号: P/N:110401114747X
CHK 审核		 优利德科技（中国）有限公司 UNI-TREND TECHNOLOGY (CHINA) LIMITED	
APPRO. 批准			