

view300

Handheld Portable OTDR

USER MANUAL



v1.0

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Preface

Safety Symbols

To prevent personal injury and loss caused by improper operation of the instrument, **INNO Instrument** uses the following safety signs to indicate relevant safety information. Before using the instrument, make sure you fully understand the meaning of these signs.

Some or all of these signs may not appear on the instrument. In addition, the safety signs on the device may not be shown in the illustrations of this manual.

Safety Signs used in This Manual

Sign	Description
Dangerous 	This sign indicates that this is a highly dangerous operation, and improper operation could result in serious injury and death.
Warning 	This sign indicates a moderately dangerous operation. Improper operation could result in serious injury or death.
Caution 	This sign indicates a moderately hazardous operation or condition. Careless or improper operation may cause minor or serious injury and damage.

Safety Signs used in This Manual and on the Machine

The following safety signs are marked on the device, near the operating positions, or in this manual to provide relevant safety information and remind users to operate with caution. Before using the instrument, make sure you fully understand the meaning of these signs and take the necessary precautions.

Sign	Description
	This sign indicates a prohibited operation. The circle with a slash is placed on or near the operating position.
	This sign indicates that caution is required when performing a specific operation. The circle symbol is placed on or near the operating position.
	This sign indicates a warning or caution. Relevant information appears inside or near the triangle.
	This sign indicates an explanation. Relevant information is presented in the box.
	These signs indicate that the labeled components must be recycled.



Laser Safety Labels

Electrical Safety

To prevent damage to the instrument and injury or death to the user, the following warnings must be observed:

- Do not use the instrument or external charger if either is damaged or ruptured.
- Only use the external power adapter provided by our company. We cannot guarantee the performance or safety of other adapters.
- Do not use the power adapter outdoors or in damp or humid environments.
- Ensure the external input voltage is within the allowable range.

Precautions

Caution

Replace internal memory battery: This instrument uses a lithium battery for power. When the battery exceeds its service life and needs replacement, please contact qualified personnel for assistance.

External memory: This device uses a USB drive as external memory to save data.

INNO Instrument (China) Inc. is not responsible for any data loss

Chapter 1 - Overview

1.1 Introduction

The high-performance hardware and user-friendly software of the VIEW300 help shorten the processes of installation, debugging, and fiber distance maintenance. This chapter describes the features and basic operations of the VIEW300 OTDR test unit.

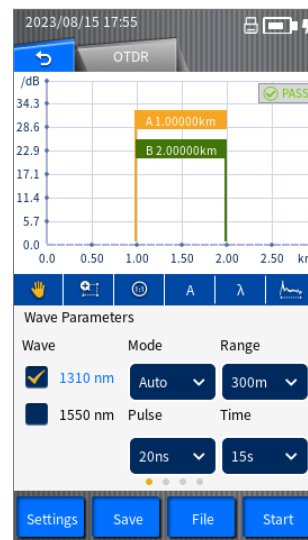
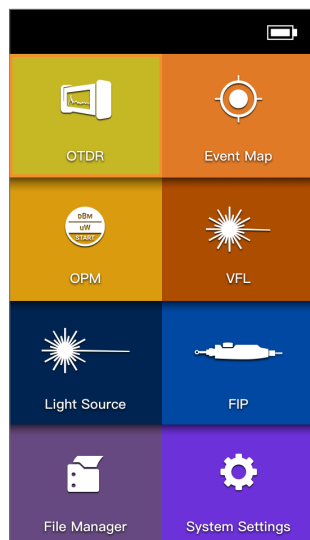


1.2 Basic Function

VIEW300 is mainly used for fiber fault diagnosis, especially in FTTH applications. Besides the basic OTDR function, it also has an optical power meter and light source function for fiber identification internally installed.

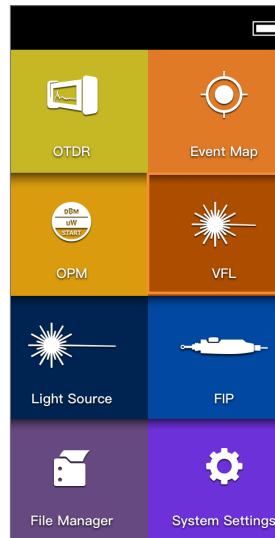
OTDR Test

Based on the principles of Rayleigh scattering and Fresnel reflection, the OTDR performs measurements on optical fiber links. It can measure the distance to fiber connection losses and faults, allowing identification of loss points along the fiber. The OTDR's automatic analysis function can analyze measured traces to detect events on the fiber, such as reflection loss or splice points that exceed loss threshold limits. Additionally, the detected data is displayed in the event table on the OTDR.



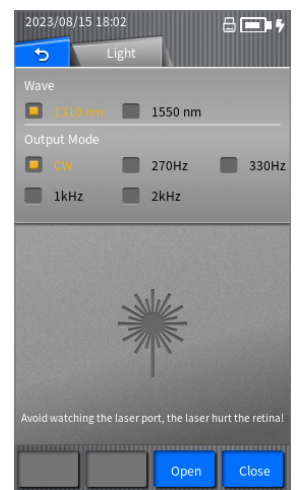
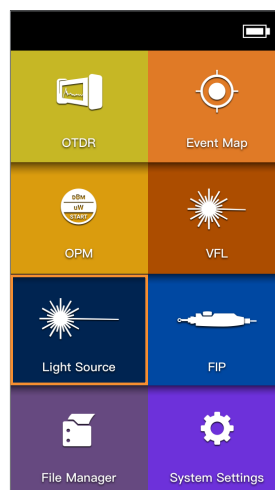
VFL/LS Module

The visual fault locator uses a 650 ± 20 nm light source to provide a visual method for fiber fault location. The red light emitted by the visual light source is visible to the human eye, allowing direct fault location in fiber test dead zones or enabling fiber core alignment in multi-fiber cables.



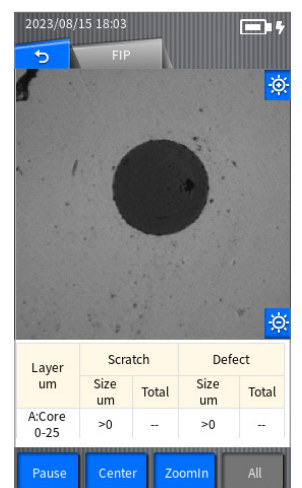
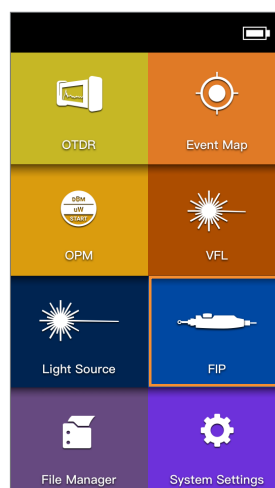
LS (Stable Light Source)

The VIEW300's built-in light source supports different wavelengths (e.g., 1310/1550 nm) and multiple signal modulation modes to meet the demands of real-world applications, as shown in the following picture.



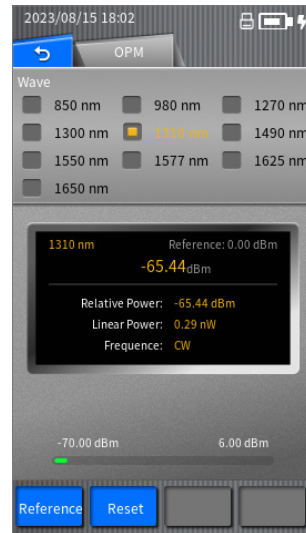
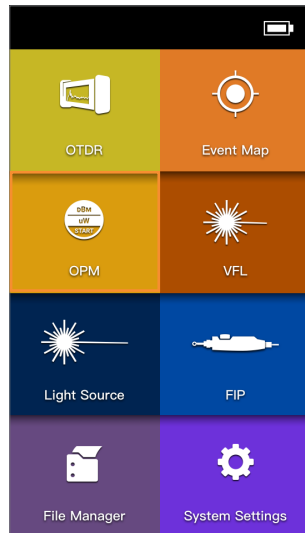
Fiber Microscope (Fiber Inspection Probe) Module

The grind quality and cleanliness of the optical connector can be inspected by connecting an external fiber inspection device to the USB port.



OPM Module

The optical power meter is used to measure absolute optical power or relative optical power loss over a span of optical fiber. This module can measure optical power at multiple wavelengths.



1.3 Standard Configuration

- Capacitive Touch 4.3-inch, 480×272 Color LCD
- AC Adapter/Charger, Power Cord
- Rechargeable Lithium Battery Pack
- Basic Menu Operation
- Shoulder Belt
- Operation Manual

1.4 Power Supply

- AC/DC adapter, Input: 100V~240V, 50/60Hz, 0.3A
- Input 5V, 2A; Lithium Battery: 3.7V, 2500mAh

1.5 Dimensions and Weight

- Size: 182mm × 100mm × 39mm
- Weight: ≤472g (Battery included)

1.6 Environmental Conditions

- Operating Environment: Temperature: -10°C to 50°C; Relative humidity: 0% to 95%
- Storage Environment: Temperature: -40°C to 70°C; Relative humidity: 0% to 95%

Chapter 2 - Installation

2.1 Safety Reminder and Precautionary Measures

It is important to remember that the VIEW300 is designed solely for fiber testing and not for any other purpose. The OTDR is a high-precision instrument and should be handled with great care. Therefore, always observe the following safety rules and general specifications when using and carrying the VIEW300. Failure to follow these safety measures or comply with the warnings and precautions in this manual violates the safety standards for the design, manufacture, and use of the OTDR. Users assume all consequences resulting from such violations.

2.2 Safety Warnings for Operation

1. Do not operate the OTDR in flammable or explosive environments.
2. Do not disassemble or assemble any OTDR components without authorization, except for those explicitly allowed for user replacement in this manual. Component replacement and internal adjustments must be performed only by authorized maintenance personnel.
3. When connecting or disconnecting the battery charging adapter cable, hold the plug firmly. Do not pull on the cable itself. Ensure the cable is in good condition to avoid fire or electric shock risks.
4. Do not expose the OTDR to fire, electric shock, rain, or humid environments.
5. If the OTDR exhibits any of the following conditions, turn it off immediately and unplug the adapter from the power input port to prevent serious damage or malfunction:
 - Fumes, peculiar smell, or abnormal sound.
 - Liquid or foreign matters enter inside the OTDR.
 - OTDR suffers from strong vibration or impact.

Please contact the maintenance center immediately if any of the above faults occur. Failure to take timely action may result in device damage, electric shock, fire, personal injury, or even death.
6. Use only the exclusive VIEW300 AC adapter. Using an inappropriate power supply may cause fumes, electric shock, device damage, fire, personal injury, or death.
7. Use only the exclusive AC power cord. Do not place heavy objects on the power cord, expose it to heat, or modify it. A damaged or improper power cord may cause fumes, electric shock, device damage, fire, personal injury, or death.

2.3 Transportation and Storage

1. When transporting the OTDR from a cold to a warm environment, allow it to warm gradually to prevent condensation inside the instrument, which can cause damage.
2. Properly pack the device when it is not in use.
3. Keep the OTDR clean and dry.
4. The OTDR has been precisely calibrated and adjusted. Store it in a carrying case to protect it from damage or contamination during transport. For long-distance transport, use additional buffered packaging outside the carrying case.
5. Avoid exposing the OTDR to direct sunlight or excessively hot environments.
6. Maintain relative humidity below 95% during storage.

2.4 Appearance Overview

Front Panel



Description of keys	
ON/OFF button	Power Switch (ON/OFF)
Enter button	Confirm the Function
Back button	Back to last view interface
Direction keys Up▲Down▼Left◀Right▶	Select keys shown on the screen

Port description	
DC Power Connector	Connect the adapter.
SMF Port (Testing Port)	VIEW300 testing interface, applied in OTDR and light source modules of VIEW300.
OPM Port	Optical power meter port.
VFL Port	Visual light source port.
USB Port	Connect USB storage device / fiber end probe.
TF Port	Data Storage

2.5 Charging Method

Remaining battery capacity can be checked by viewing the battery status when the VIEW300 is powered on.



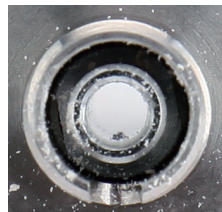
2.6 Test Port

The measurement port of the VIEW300 is located on the upper panel of the device. Depending on the model, there may be one or two measurement ports. The port connected to the optical fiber depends on the testing application and the wavelength being measured. The following are the mixed universal FC/SC connectors used in the VIEW300:



Steps for Cleaning the Universal Connectors:

1. Open the cover of the measurement port that needs cleaning.
2. Remove the universal connector.
3. Blow compressed air onto the top of the connecting bar.
4. Use a special cleaning wipe or a lint-free cloth dipped in alcohol to clean the top of the connecting bar.
5. Use compressed air to blow-dry the top of the connecting bar.
6. Optional: Turn off the VIEW300 and inspect the top of the connecting bar using a microscope or magnifying lens.



Top of the contaminated connecting bar



Top of the cleaned connecting bar

Connection Testing

Connect the Test Fiber

The measurement port is used to connect the fiber being tested for OTDR, OPM, or LS applications.

Steps to connect the tested fiber to the measurement port:

1. Clean the fiber jumper and connect it to the measurement port.
2. Clean the fiber to be tested.
3. Connect the fiber jumper to the tested fiber.

Connect Fiber Inspection Probe (Fiber Microscope)

Connect the external fiber end inspection probe via the USB interface. To connect the visual light source:

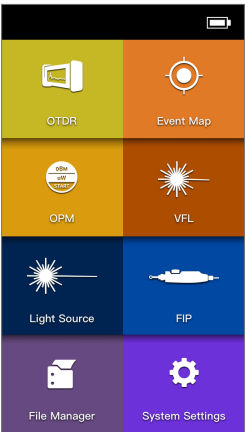
- Open the cover of the Type-C port.
- Connect the fiber jumper to the microscope connector.

Chapter 3 - Basic Operation

3.1 Power ON/OFF

Power ON:

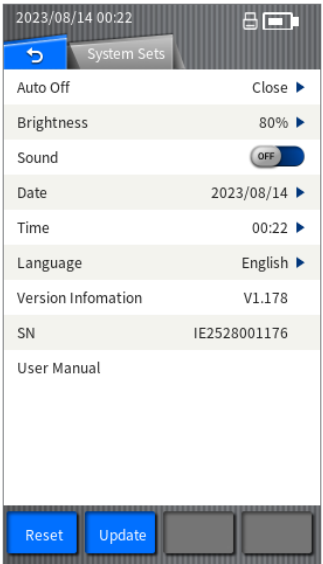
Press the power key. The device name will appear on the VIEW300 screen, followed by the INNO Instrument boot screen. After that, the main menu screen will be displayed.



Power OFF:

Press and hold the power key until the shutdown screen (gray logo) appears.

Note: Under no circumstances should you press and hold the power key for more than ten seconds to force shutdown.

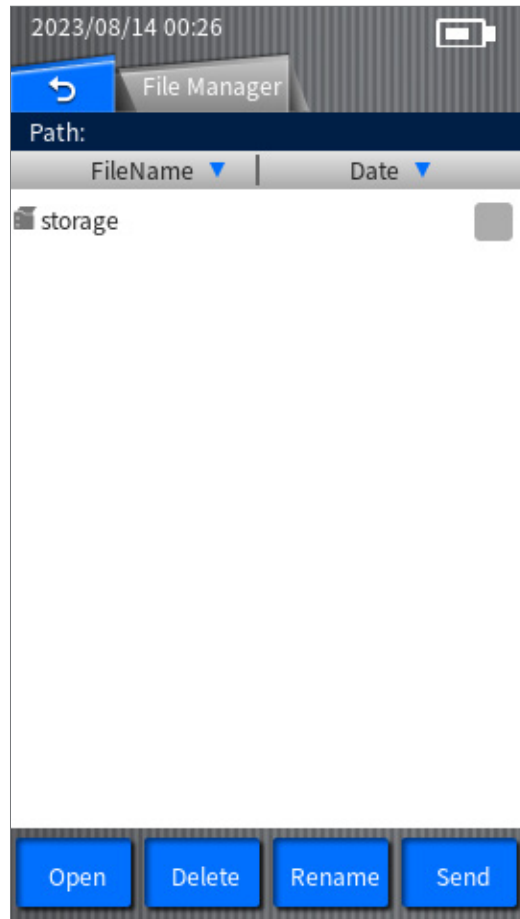


3.2 Software Upgrade

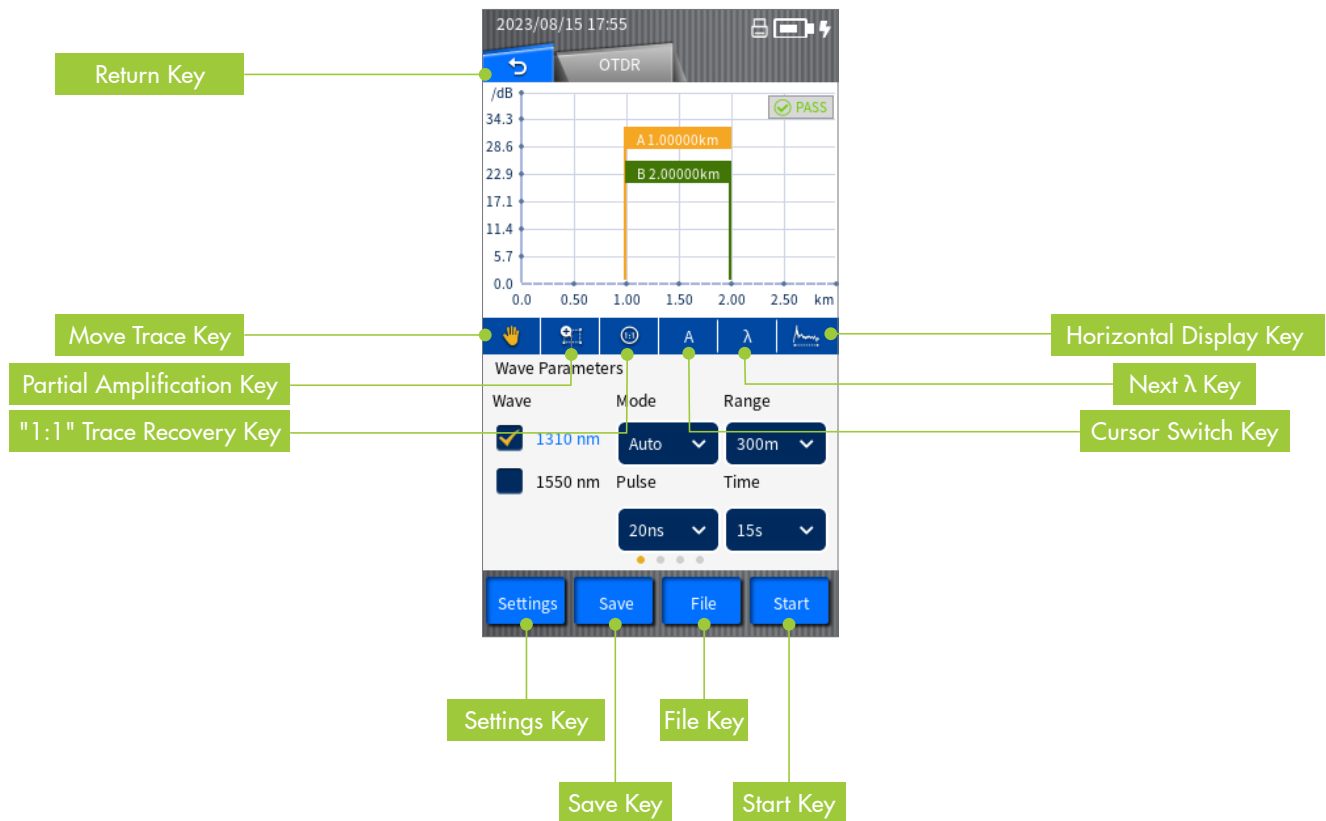
Please refer to Section 10.3.5 for detailed information.

3.3 File Operations

As shown in the following figure, plug in the external storage device, view its path in "File Management," and then perform operations such as "Open," "Delete," "Rename," or "Send" on the file.

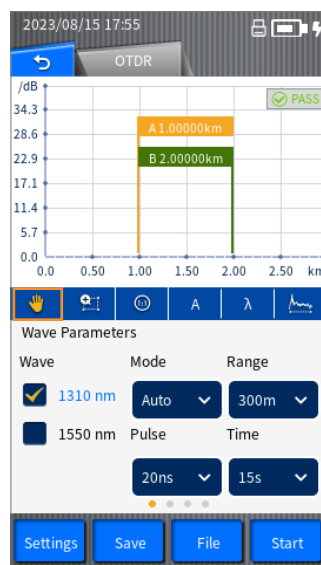


Chapter 4 - OTDR Module



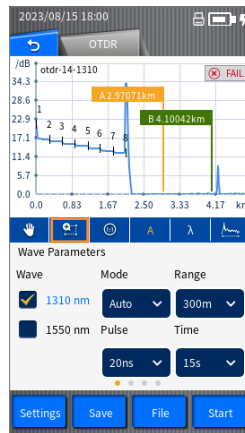
4.1 Move Trace Key

Click this key to move the trace; you can drag the amplified trace by touching the screen.



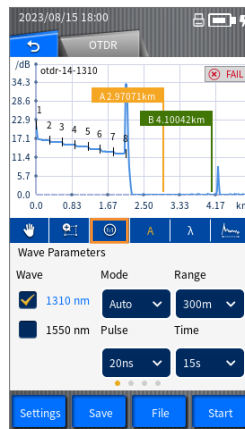
4.2 Partial Amplification Key

Click the “Partial Amplification” key, then tap the screen to select the trace area to be amplified. This area will be enlarged and displayed on the “Trace Display Small Screen” interface.



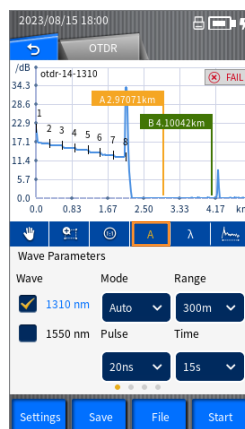
4.3 “1:1” Trace Recovery Key

As shown in the following picture, after zooming in or out on the trace, click the “1:1 Trace Recovery” key to reset the trace.



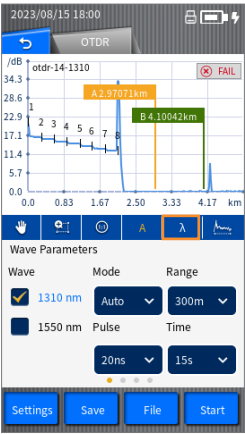
4.4 Cursor Switch Key

Press the button to select which cursor to move. “A” means moving cursor A, while “AB” means moving both cursors together.



4.5 Next λ Key

On the premise of obtaining two traces during dual-wavelength testing, as shown on the picture, you can click “λ” to switch the trace and it’s information.



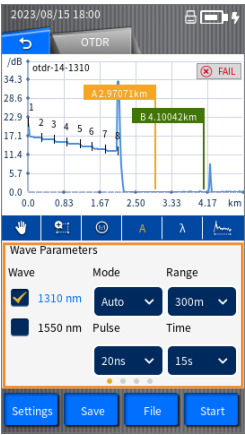
4.6 Horizontal Display Key

Curves and parameter configurations are displayed in landscape orientation.



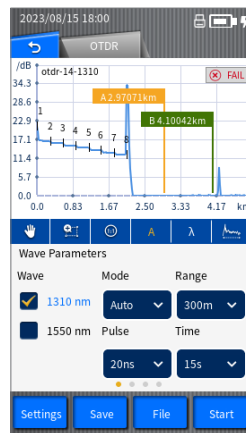
4.7 Parameter Setting Key

The wavelength, distance range, pulse width, and averaging time can be set on the Measurement Parameter Settings interface.



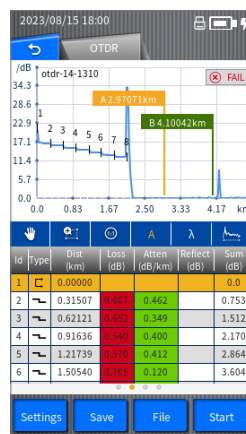
4.8 OTDR Key

As shown in the picture, click "OTDR" to enter the OTDR measurement settings interface.



4.9 Event Key

As shown in the picture, enter the event interface by swiping left on the touchscreen. Information about events such as Type, Number, Location, Loss, Reflectance, Attenuation, and Cumulative Loss (Sum) will be displayed.

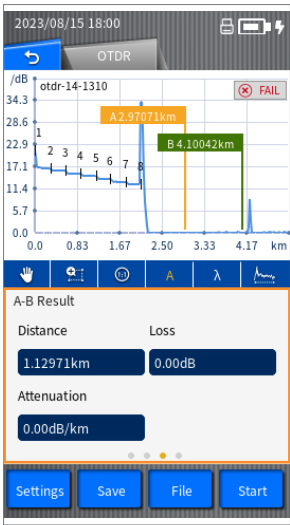


Note: Types of Events are shown in the Following table.

Event type	Event icon	Brief description
Start point of cross segment		Start point of fiber (generally the first event point)
End point of cross segment		End point of fiber (generally the last event point)
Continuous fiber		It indicates that no fiber end is found at the sampling end, and the sampling points are insufficient
Non-reflection event		Events such as "loss"
Reflection event		Reflection event
Gain event		Gain phenomenon appears, generally regarded as pseudo gain
Fiber span		Fiber span without any event
Echo		Echo phenomenon appears
Reflection event (possible echo)		Possible echo phenomenon

4.10 Measurement

As shown in the figure, enter the measurement interface by swiping left on the touchscreen.



The distance, loss, attenuation, and reflectance calculated between cursor A and cursor B will be displayed.

Loss

Event loss (expressed in dB) is calculated by measuring the reduction in signal strength in Rayleigh backscattering (RBS) caused by the event. Both reflective and non-reflective events can cause event loss.

Attenuation

The attenuation measured between two points refers to the Rayleigh backscattering (RBS) attenuation calculated over the distance between those points (expressed in dB/km, according to fiber standards). Only these two points are used for the calculation, and no averaging is applied.

4.11 Start/Stop Key

Click "START" to begin measuring in average mode, and click "STOP" to terminate.



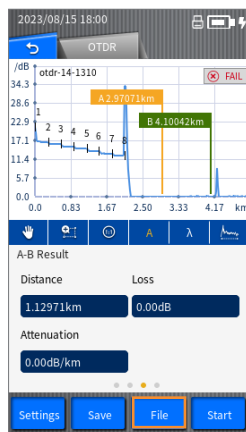
4.12 Save Key

You can perform the operation to save the measured trace.



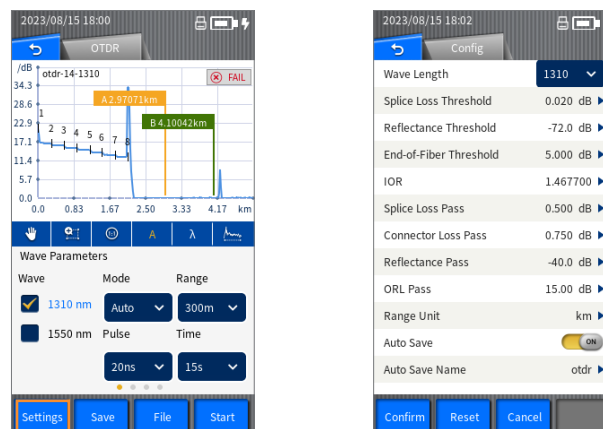
4.13 File Key

You can perform the operation to load the selected SOR file.



4.14 OTDR Setting Key

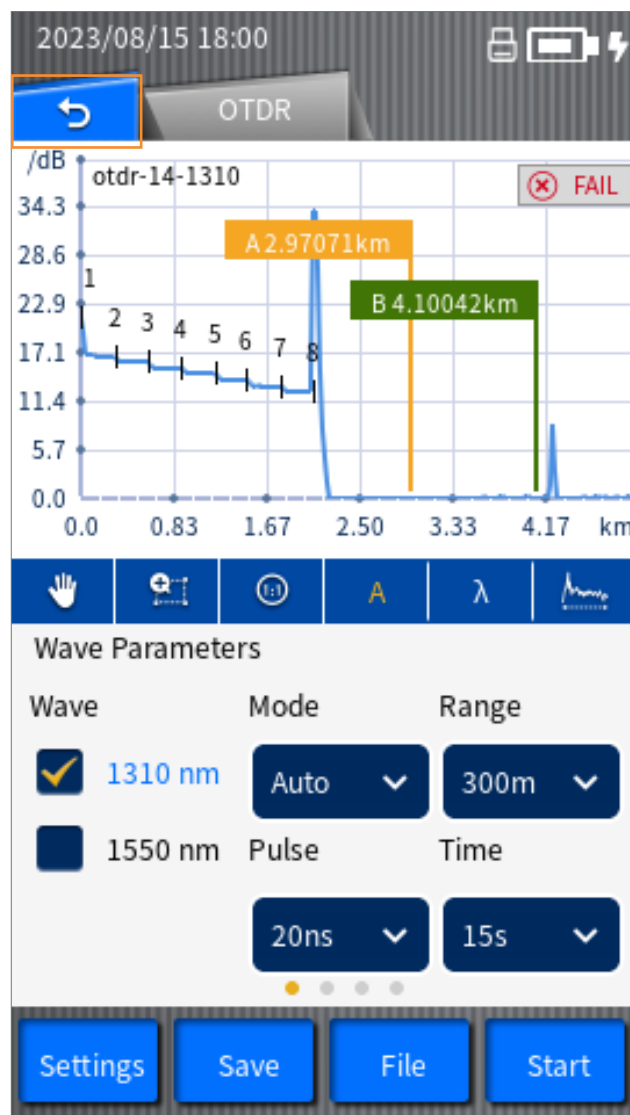
As shown in the picture, click the "Settings" key to enter the OTDR configuration interface.



- a. Splice Loss Threshold: Used to analyze small non-reflective events on the trace.
- b. Reflectance Threshold: Used to analyze small reflective events on the trace.
- c. End-of-Fiber Threshold: Used to analyze significant event losses on the trace.
- d. IOR: Refers to the Index of Refraction of the trace, i.e., the group index. The distance measurement of the trace varies depending on this parameter. You can input the IOR directly into the device.
- e. Splice Loss Pass, Connector Loss Pass, Reflectance Pass, ORL Pass: These thresholds are set to judge “event points,” and the “pass/fail” results are displayed accordingly.
- f. Range Unit: Units available on VIEW300 include km, yd, mile, and kft.
- g. Auto Save: Automatically saves measurement information after the test is completed.
- h. Auto Save Name: Automatically generates a file name starting with the set parameters.

4.15 Return Key

To exit the current operating interface on various screens, click the “Return” key to quickly go back to the previous interface.



Chapter 5 - Event Map

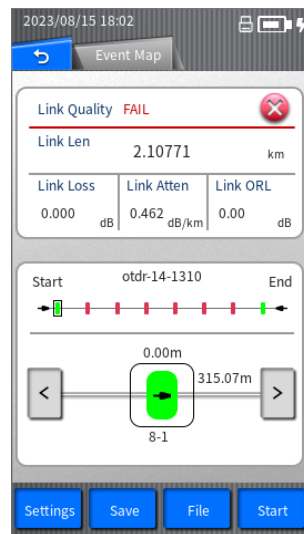
Event Map is based on an application program of OTDR.

5.1 Event Map Menu

The Link Loss and Link ORL for each measurement at each wavelength on the optical fiber link will be shown on the Event Map interface.

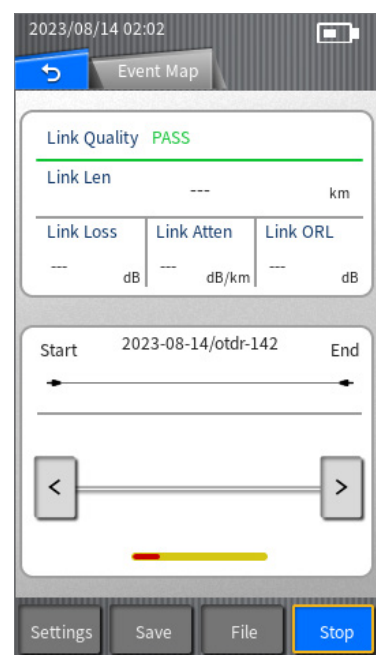
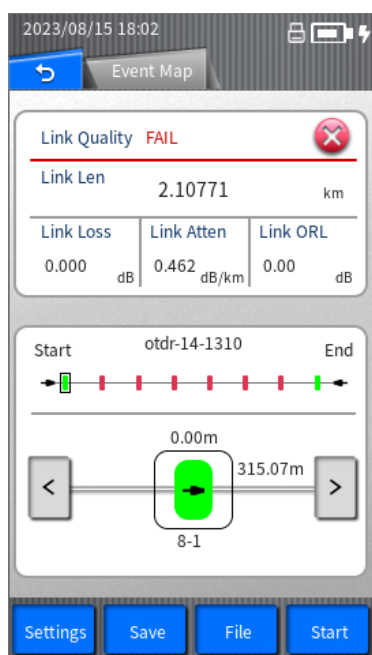
Link Loss: Refers to the total loss measured on the fiber link.

Link ORL: Refers to the Optical Return Loss (ORL) of the entire fiber link.



5.2 Start/ Stop

Click "Start" to begin measurement, or click "Stop" to end measurement.



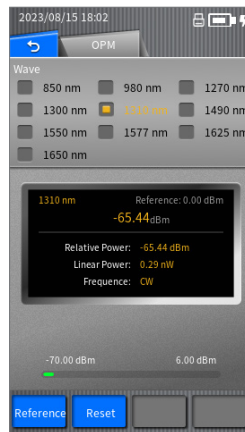
Chapter 6 - Optical Power Meter

6.1 Overview

The high-accuracy optical power meter is used to measure absolute optical power or relative optical power loss over a span of optical fiber. This module can measure optical power at multiple wavelengths and is easy to operate.

6.2 OPM Operation

- Connect the light source to the OPM port using a fiber jumper connector.
- Click "OPM" in the home menu to enter the optical power meter interface, as shown in the picture.



Reference Value (OPM on VIEW300):

You can set a reference value in the OPM interface. This reference is used to calculate the current optical power, which will be displayed on the first line inside the circle.

Chapter 7 - VFL and Light Source

7.1 Overview

The types of sources on the VIEW300 include a visual light source and a light source.

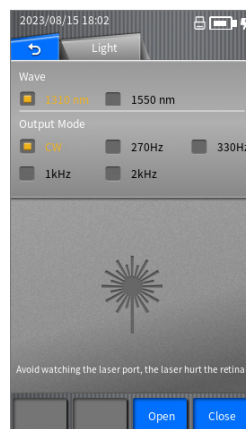
Visual Light Source (VFL)

The visual light source equipped in the VIEW300 provides a visualization method for fiber fault location. The red light emitted can be seen by the human eye, allowing direct identification of fault locations in fiber test dead zones or enabling fiber core calibration in multi-fiber cables. The visual light source in the VIEW300 can operate in three modes: continuous wave (CW) light, 1 Hz blinking, and 2 Hz blinking.



Stable Light Source (LS)

Click "Light Source" to enable the light source function.



The light source module can provide an invisible light source (wavelength and power depend on the selected module type). The available light types include CW, 270 Hz, 330 Hz, 1 kHz, and 2 kHz.

7.2 Visual Light Source Operation

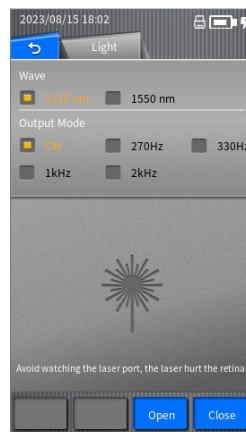
- Connect the tested fiber to the optical source port.
- Tap the light source icon on the Home menu to enter the visual light source interface, as shown in the following picture.



- Click "CW," "1Hz," or "2Hz" to select and switch the light source. The selected light source name will be displayed on the message bar of the interface ("CW" is continuous light, while "1Hz" and "2Hz" are blinking lights).
- Click "Close" to turn off the light source.

7.3 Light Source Operation

- Connect the fiber to be tested to the light source port.
- Tap the light source icon on the main interface, then select "Light Source" to enter the invisible light source interface; see the following picture.



- Select the wavelength of the light source (1310/1550 nm) by tapping the upper left side of the screen; select the light source mode (CW/270Hz/330Hz/1kHz/2kHz) by tapping the lower left side of the screen. Then, tap the "Open" key to activate the invisible light source.
- To turn off the light source, tap the "Close" key on the right side.

Warning: Do not look directly at the VIEW300 light source or the fiber end connected to the light source, as this may cause eye damage.

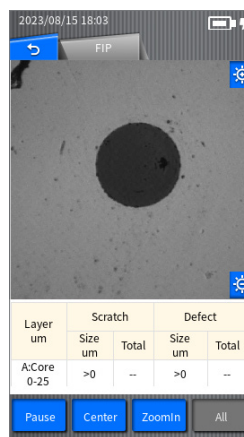
Chapter 8 - Fiber Microscope

8.1 Overview

The grind quality and cleanliness of the fiber connector end face can be inspected using the magnified surface view displayed on the VIEW300 screen.

8.2 Start Fiber End Inspection

After connecting the fiber inspection probe, click "FIP" on the VIEW300 main interface to enter the inspection interface. Please refer to the picture.

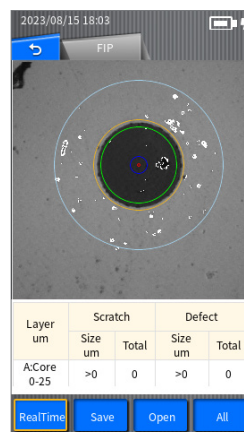


Notice: If the fiber inspection probe is not successfully connected to the VIEW300, the message "Please connect fiber inspection probe" will appear. However, the GDM file can still be opened.

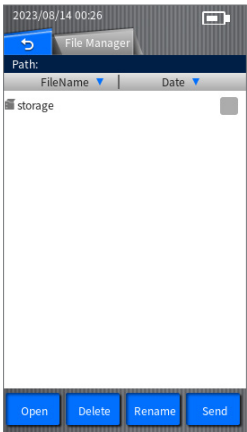
8.3 Fiber Microscope Functions

The functions of the Fiber Inspection Probe (Fiber Microscope) include "Pause/RealTime", "Save", "Open", "Center", "Zoom In", and "All".

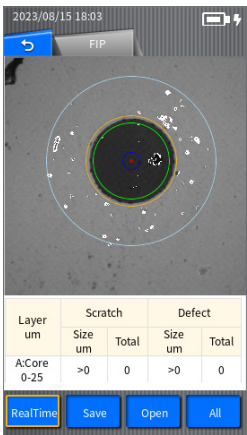
- The "Pause/RealTime" function is a prerequisite for "Save". After successfully connecting the device, you cannot enable the "Save" function until the "Pause/RealTime" soft key changes to "RealTime".



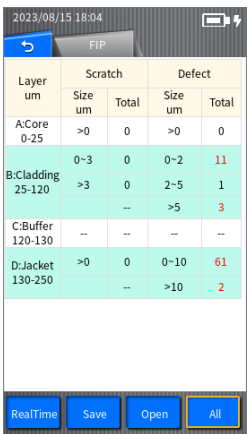
- The “Open” function is used to open files that have already been saved.



- The “Center” function is used to position the image in the middle of the screen. The “Zoom In” function is used to enlarge the currently displayed image.



- The “All” function is used to display the active image and show the results in table format.



8.4 Check Saved Image

- Click the file icon on the main interface.
- Select the image save path (for VIEW300, the default save path is: storage\Fiber_Microscope).

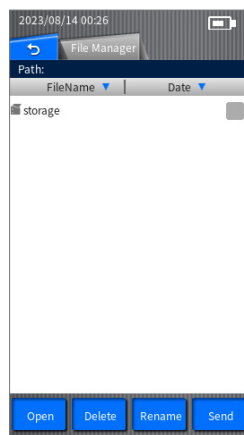
Chapter 9 - File Management

9.1 Overview

"File Management" is used to view saved data and perform operations such as "copy," "delete," "rename," and "create folder." All file operations should be carried out within the directories of internal storage and USB storage (the VIEW300 directories include SD card and USB).

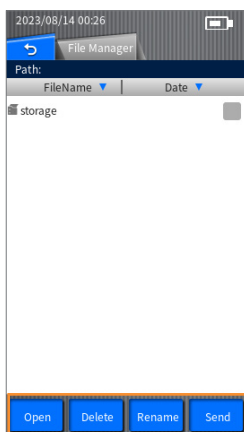
9.2 Start File Management

Click "File Manager" on the main interface of VIEW300 to enter the file menu.



9.3 "Operate" Function

The operation interface includes the functions "open," "delete," "rename," and "send."



• DELETE Key

This function deletes files or subdirectories within the directory.

Operation steps:

- Click FILE TYPE to select the type of file to be deleted.
- Click and access the root directory (SD card / USB).
- Select the folder or files you want to delete, then execute DELETE.

• RENAME key

It can rename folders, files, and file formats.

Operating steps:

- Click FILE TYPE to select the type of file to be renamed.
- Click and access the root directory (SD card / USB).
- Select the folder or file, then click RENAME to enter the input interface and edit the name.
- Press ENTER to confirm

• SEND TO FOLDER

The Send To USB key is used to send the selected files or folders to the USB drive.

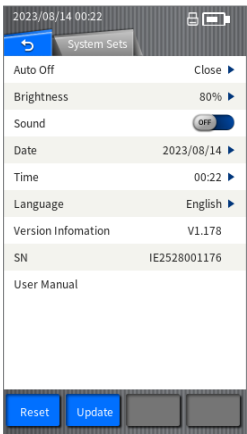
Chapter 10 - System Setting

10.1 Overview

The system setup function provided by VIEW300 allows the user to modify system parameters as needed.

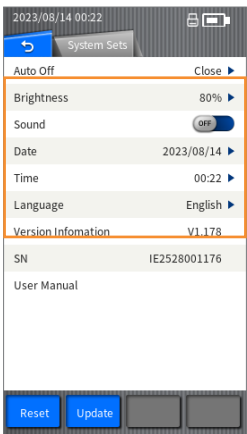
10.2 System Setting

Click “Settings” on the main interface of VIEW300 to enter the “System Setup” interface.



10.3 Functions of System Settings

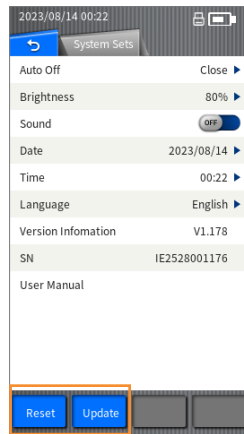
VIEW300 includes functions such as “Auto Off,” “Brightness,” “Sound,” “Date,” “Time,” “Language,” “Version Information,” “SN,” and “User Manual.”



"Auto Off"	Set the stand-by time and auto power-off time when using battery or adapter
"Sound"	Set the measurement warning sound and key warning sound
"Date", "Time"	Set the date and time that is displayed on the device
"Language"	Set the languages displayed on the screen

System Maintenance

There are two functions, "Reset" and "Update." Please refer to the picture.



- "Update" can be used for software upgrade or downgrade. Operation steps:
 - Click "Upgrade," then an upgrade notice will appear;
 - Click "Confirm" to proceed with the upgrade operation.

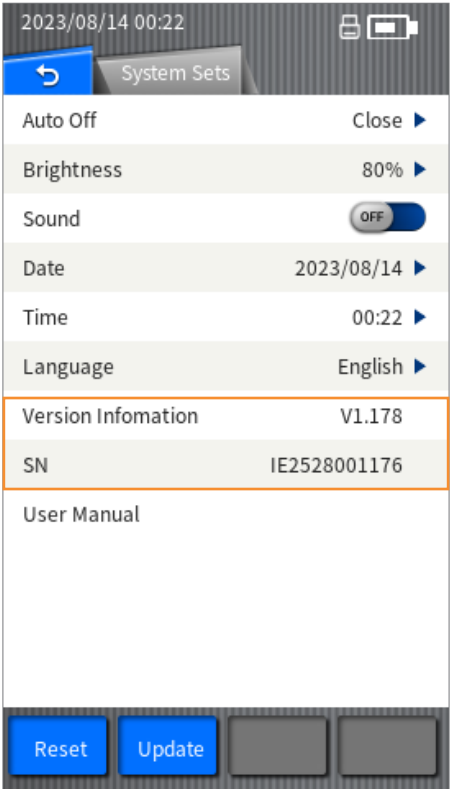
Note: Before upgrading, ensure the battery level is above 50%!

- "Reset" is used to restore the system parameters to their original default settings.

Chapter 11- System Information

11.1 System Information

As shown in the picture, this interface displays information about the product and the manufacturer.



Attachment

1. Structure requirement

1) Display screen: 4.3-inch (480 x 272)

2) Keys (4)

Names of buttons	Quantity
Power button	1
Enter button	1
Back button	1
Direction key Up▲Down▼Left◀Right▶	1

3) Operating Time >4h, Charging Time <3h

2. Hardware Interface Requirement

- DC INPUT: Power Port
- USB port: For data storage and connecting the fiber inspection probe
- Optical interface: interchangeable port (FC, SC)
- OPM port: 2.5mm universal interface
- VFL port: 2.5mm universal interface
- TF card port: Data Storage

3. Software Interface Requirement

- Interface mode: Button input or touch screen input
- Operating platform: Linux

4. Operating Environment Requirement

- Temperature requirements:
 - Working temperature: -10°C ~ 50°C
 - Storage temperature: -40°C ~ 70°C
- Humidity requirement (general standard):
 - Operating humidity: 0% ~ 45%, non -condensation
 - Storage humidity: 0% ~ 95%, non -condensation

VIEW300 Parameter

Module	Parameter	
OTDR	Fiber Type	G.652 SM
	Wave Length	1310nm±20nm / 1550nm±20nm
	Max Dynamic Range	28dB (1310nm) / 26dB (1550nm)
	Event Dead Zone	2m
	Attenuation Dead Zone	8m
	Test Range	100m/300m/500m/1.3km/2.5km/5km/10km/20km/40km/64km/96km
	Pulse Width	3ns/5ns/10ns/30ns/50ns/100ns/200ns/300ns/500ns/1us/2.5us/5us/10us/20us
	Ranging Accuracy	3ns/5ns/10ns/20ns/30ns/50ns/80ns/160ns/320ns/500ns/800ns/1us/2us/3us/5us/8us/10us/20us
	Linearity	±(1m+Sampling Resolution+0.005%×Test Distance)
	Max Sampling Points	64000
	Sampling Resolution	0.03m~4m
	Loss Resolution	0.01dB
	Loss Threshold	0.02dB
	Distance Resolution	0.1m
	Refractive Index	1.000000~2.000000
	Format	SOR Standard File Format
	Loss Analysis Mode	TPA (2-point method)
	Laser Safety Level	Class II
	Optical Connector	SC/APC (Default), FC/APC (Optional)
Light Source	Export Wavelength	Consistent with OTDR export wavelengths
	Laser Type	Consistent with OTDR type
	Export Power	≥-5dBm
	Stability	CW, ±0.5dB/15min (After 15min of preheating)
	Optical Connector	SC/APC (Interchangeable FC, LC)
	Output Mode	CW/270Hz/330Hz/1kHz/2kHz
OPM	Wavelength Range	800nm~1700nm
	Calibration Wavelength	850/980/1270/1300/1310/1490/1550/1577/1625/1650nm
	Measurement Range	-70~+6dBm(Default), -50~+26dBm (Optional)
	Identification Frequency	CW/270Hz/330Hz/1kHz/2kHz
	Resolution	0.01dB
	Uncertainty	±5%
	Optical Connector	Universal FC/SC/ST
Visual Light Source	Wavelength	650±20nm
	Output Power	1mW
	Operation Mode	CW/1Hz/2Hz
	Optical Connector	Universal FC/SC/ST

Common Index	Display	4.3inch, 480 × 272, IPS TFT-LCD, Multi Touch Capacitive Touch Screen
	Power Supply	AC/DC adapter Input: 100V~240V, 50/60Hz, 0.3A DC Input: 5V,2A, Lithium Battery: 3.7V, 2500mAh
	Battery Life	Standby > 6h, Continuous test > 4h
	Save Data	Internal: 8GB EMMC; External: Supports TF card and USB flash drive
	Charging Interface	USB Type-C
	Other Connector	USB2.0, TF
	Wireless Network	WIFI, 4G LTE Cat.1, GPS
	Working Environment	-10°C ~ +50°C
	Storage Temperature	-40°C ~ +70°C
	Relative Humidity	0~95% Non Condensing
	Weight	≤472g (Battery included)
	Size	182mm × 100mm × 39mm

Term list

This term list gives explanations about fiber and related devices.

B

- **Backscattering:** Scattered light traveling opposite to the original propagation direction.
- **Bandwidth:** The frequency range transmitted by a waveguide, measured at the point where the signal drops by 3 dB below zero frequency. The bandwidth depends on the waveguide length but not proportionally.

C

- **Coating Layer:** Protective material coated on optical fiber during the drawing process to prevent damage from environment or handling.
- **Cladding:** Insulating material surrounding the fiber core.
- **Cable Pipelines:** Pipes used to lay cables or pull cables through.
- **Cable Bending Radius:** The minimum radius a cable can bend without damage; "free bend" means the allowable bending diameter without load.
- **Cable Module:** A cable pre-installed with connectors at one or both ends, used for interconnection in optical systems. One-ended connectors are "tail end fibers," two-ended are "bridging cables" or "wire jumpers."

D

- **Decibel (dB):** Unit for measuring optical power gain or loss.
- **Dielectric:** Non-metallic, non-conductive material; glass optical fiber is a dielectric. Medium cables contain no metal parts.

F

- **Fiber Core:** Central area of fiber where light propagates.
- **Fiber Core Eccentricity Ratio:** Measurement of how far the core center is displaced from the cladding center.
- **Fiber Core Ellipticity:** Degree to which the fiber core deviates from a perfect circle.

I

- **Insertion Loss:** Attenuation caused by inserting optical components (connectors, couplers) in the transmission path.

M

- **Material Dispersion:** Dispersion caused by the refractive index properties of the fiber material, affecting speed and wavelength of light.
- **Module (1):** Refers to independent light paths through fibers, e.g., multimode or single mode.
- **Module (2):** Modes of light waves in the waveguide; single mode fibers have one basic mode; multimode fibers have many modes differing in shape and speed. The number of modes depends on core diameter and waveguide parameters.
- **Monochrome:** Light composed of a single wavelength or a narrow wavelength band.
- **Multi Optical Fiber and Cable:** Cable containing two or more optical fibers.
- **Multimode Fiber:** Optical fiber that supports multiple modes of light propagation, typically with core/cladding diameters like 62.5/125 micrometers.

N

- **Nanometer (nm):** Unit of length equal to 10^{-9} meters, used to specify wavelengths (e.g., 1300 nm).

O

- **OTDR (Optical Time Domain Reflectometer):** Device sending pulses into fiber to measure backscattered light and reflections, allowing fault location and loss measurement.
- **Optical Fiber:** Thin strand of dielectric material that guides light.

- **Optical Fiber Link:** Transmission channel formed by one or more fibers connecting end devices or segments.
- **Optical Cable:** Protective assembly containing optical fibers, designed to withstand mechanical and environmental stresses.

P

- **Plug-in Board:** Network device modules like OTDRs or switches.
- **Photoelectric Device:** Device that converts between electrical and optical signals or responds to optical power.
- **Port:** Connection point on devices for fiber or wire jumpers.
- **Peak Wavelength:** Wavelength at which source optical power is maximum.

S

- **Single Mode Optical Fiber:** Fiber with small core diameter ($\sim 9\ \mu\text{m}$), supporting only the basic mode, used for long-distance, high-bandwidth transmission where dispersion limits bandwidth.

T

- **Transmitter:** Device converting electrical signals into optical signals.
- **Transmission Loss:** Total optical power loss during transmission.
- **Telecom Cabinet (TC):** Enclosure housing fiber terminals and telecom equipment; acts as cross-connect point between main and horizontal wiring.

W

- **WDM (Wavelength Division Multiplexing):** Technique of transmitting multiple signals simultaneously in one fiber using different wavelengths.

The End

* Products models and specifications are subject to change without prior notice.