ShinewayTech®
Dependable Partner for Future Networks

OFI-60

Optical Cable Identifier

User's Manual

Safety Instructions

Safety Terms Used in This Manual

The **WARNING** sign denotes a hazard. It calls attention to a procedure which could result in personnel injury.

The **CAUTION** sign denotes a hazard. It calls attention to an operating procedure if not correctly performed or adhered to, could result in damage to or destruction of part or the entire product.

The **NOTE** sign information that may be beneficial during the use and maintenance of the instrument.

OFI-60 Optical Cable Identifier is a laser device, user should always avoid direct eye exposure to the laser output. Using microscope or magnifier to observe the laser output should also be avoided: laser beam may converge on the retina and cause permanent eye injury.

Battery: OFI-60 battery type is lithium battery.

Battery Power Supply: Do not expose battery to fire or intense heat. Do not open or mutilate battery. Avoid touching the electrolyte in the battery, which is corrosive and may cause injuries to eyes, skin or damage to clothes.

External Power Supply: OFI-60 support external power supply: 12V DC/2A. External power supply is optional.

Laser Radiation: To avoid serious eye injury, never look directly

into the optical outputs of fiber optic network equipment, test equipment,

- Always avoid looking directly into the optical output port, when the instrument is working
- Always replace protective dust cap on the detector port when the instrument is not in use.
- Always avoid looking directly at unconnected end of optic fiber in testing and make the unconnected end pointing at a non-reflective object.

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1. General Information

1.1 Scope of this Manual

Thank you for purchasing ShinewayTech® instrument. Please read this manual carefully before using ShinewayTech® fiber optic instrument. Always be aware of the **Warning** and **Caution** sign appearing throughout this manual.

This manual contains the information necessary for proper operation and maintenance of ShinewayTech® instrument, troubleshooting instructions as well as information regarding maintenance services.

All ShinewayTech® instruments are carefully assembled and undergo rigorous mechanical, electrical, and optical inspection prior to shipment. Beside the instrument, the package also includes a lithium battery pack, a charging/data transfer cable, a power adapter, a FC/PC flange and this user's manual. For detailed information, please refer to the packing list.

Upon receiving the instrument, please check for any obvious signs of physical damage that may have occurred during shipment. Report any damage to the shipping agent or the representative of Shineway Technologies Inc. immediately. Retain the original packing materials in case reshipment is necessary.

1.2 Unpacking and Inspection

This instrument has been carefully packed in accordance with standard shipping procedures. Examine the instrument for damage that may have occurred during shipment. If you find any damage or the instrument is not working, or if any of the following items are not included, please contact your representative of Shineway Technologies, Inc.

If necessary, you may contact Shineway Technologies, Inc via this email:
support@shinewaytech.com.

NOTE To return the instrument in the case of repair, calibration or other maintenance, please note the following:

- Be sure to pack the instrument with soft cushion like Polyethylene, so as to protect the shell of the instrument.
- Please use the original hard packing box. If use other packing material, please

ensure at least 3 cm soft material around the instrument.

- Be sure to correctly fill out and return the warranty registration card, which should include the following information: company name, postal address, contact, phone number, email address and problem description.
- Be sure to seal the packing box with exclusive tape.
- Be sure to ship to your representative or the agent of the Company in a reliable way.

1.3 Introduction

ShinewayTech® OFI–60 use optical fiber sensing principle to confirm the target fiber, It can quickly identify deep buried, overhead and pipe fiber cable without any destroy, and provide a simple method for maintenance personnel. Users only need gently knock on cable, when knocking to the target cable, OFI-60 can clearly hear the knock from earphone, which can accurately identify the target cable.

OFI–60 has a high sensitivity, strong resistance to electromagnetic interference, easy operation and large dynamic range, it plays a very important role for computer room construction, fiber cable line modification, cable cleft grafting, standard management, resources survey, duty maintenance, on-line monitoring and so on. OFI-60 is a kind of ideal tool for optical fiber communication network maintenance.

Features:

- Easy to use, reliable
- Fast identification of deep buried, overhead and pipe fiber cable
- High SNR，clear identification by image and voice two solutions
- 5.6 inch touch screen& keypad operation.
- Win CE6.0 platform, friendly GUI.
- Big dynamic range, option for 50km and 80km measurement distance.
- Built-in rechargeable lithium battery, continuous operation time up to 15 hours
- Lightweight: only 1.2kg
- VFL function is available.

Application Environment

- Telecommunication engineering and maintenance
- Integrated wiring project
- Other network construction and maintenance
- Scientific research, laboratory

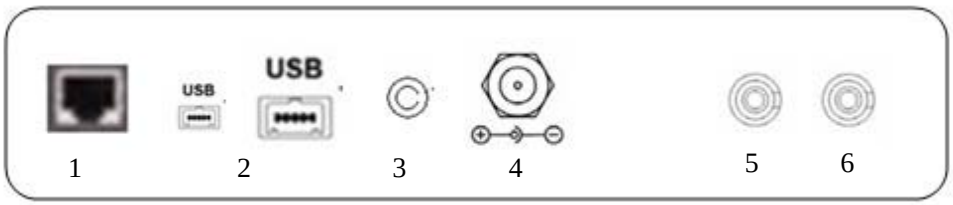
2. Basic Operation

2.1 Foreword

This part introduces the basic operation on OFI-60. Specific operations are elaborated in Chapter 3 of this manual. Please read this manual carefully for optimal operation. If you encounter any problems during operation, you are welcome to contact the technical staff of our company or representatives.

2.2.1 Instrument Details

Module interface diagram:



1. WAN interface: used to set up the testing system and for Internet access.

2. USB and mini USB interfaces: used for equipment calibration, communication and software upgrades, etc.

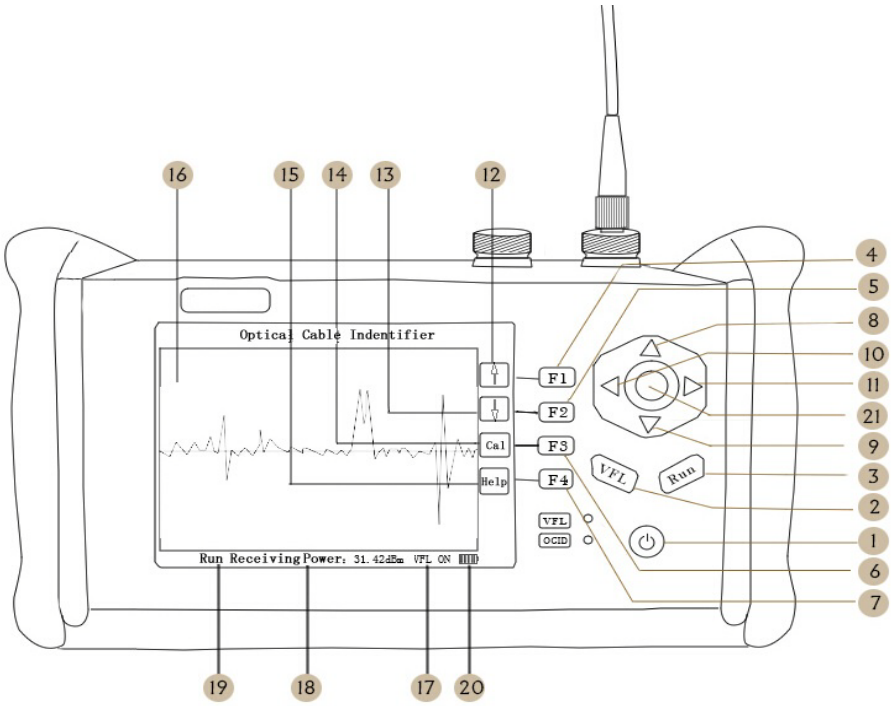
3. Headset interface: used to monitor the audio signal produced by the vibration of optical fiber.

4. Power interface: DC power interface; please use our original DC power adapter when charging to ensure the safe use of this instrument.

5. Light connection interface 1: visible red light interface.

6. Light connection interface 2: used to connect the optical cable to be measured; the instrument shall transmit and receive the testing signal through optical interface, and this instrument adopts FC/APC optical connector as the light connection interface.

2.2.2 Keypad Instruction to Instrument Panel and Functions



As shown in the above figure, the keys and touch screen are introduced as follows:

1 represents the power on/off button, which is used to turn on or off the power supply of OCID;

2 represents the visible red light switch button; shortly press once for the open state, twice for the modulation signal, and press again for the close state;

3 represents the run/stop button, making the OCID switch between running and stop states. After pressing this button, the instrument is in the testing mode, and the status bar of instrument display shows "running" with real-time waveform, while the Audio Output outputs the audio signal to the headset. Press this button again, it will show "stop", with both waveform and voice disappearing;

4 represents the level increase button, the operation of which under the main testing interface may increase the level value, thus increasing the sensitivity of the machine;

5 represents the level decrease button, the operation of which under the main testing interface may decrease the level value, thus decreasing the sensitivity of the machine;

6 represents the noise calibration button, the press of which may activate the automatic calibration of environmental noise, and filter the noise in the bad environment, so as to truly reflect the tapping strength of the optical cable, thus more accurately distinguishing the target optical cable;

7 represents the help menu button, the press of which can help to pull up the interface and get the help information about the operation of the instrument; press the "ok" key under the help interface can exit from the help interface back to main testing interface;

8 represents the level up button, the press of which can increase the level value, equal to function of F1 button;

9 represents the level down button, the press of which can decrease the level value, equal to function of F2 button;

10 represents the red light start/pause button, the press of which can start and pause the output of red light, equal to function of VFL button;

11 represents the run/stop button, making the OCID switch between running and stop states. After pressing this button, the instrument is in the testing mode, and the status bar of instrument display shows "running" with real-time waveform, while the Audio Output outputs the audio signal to the headset. Press this button again, it will show "stop", with both waveform and voice disappearing; equal to function of "RUN" button;

12 represents the level up touch key, the touch of which can increase the level value, equal to the function of F1 button;

13 represents the level down touch key, the touch of which can decrease the level value, equal to the function of F2 button;

14 represents for environmental noise calibration touch key, the touch of which may activate the automatic calibration of environmental noise, equal to the function of F3 button;

15 represents the help touch key, the touch of which may pull up the help menu, equal to the function of F4 button;

16 represents the display area of level gain and environmental noise, displaying the current level value and environmental noise;

17 represents the status bar of visible red light, displaying the turn-on, flashing or turn-off states of the red light;

18 represents the display area of receiving light power, displaying the power of the reflected light signal in the currently measured optical cable;

19 represents the display area of system status, displaying the of operation mode for the current system, and the system may switch between the "testing mode" and "pending mode" by pressing the "Run" key;

20 represents the power display area, displaying the current battery power;

21 represents the enter key, the press of which may turn the current level coefficient (no matter what it is) to the default value.

2.3 Use of Battery

OFI-60 works on lithium battery. Please make sure battery is mounted properly before use. When battery is low, low battery indicator will appear on LCD. You can still use OFI-60 as long as its display on LCD is identifiable. When LCD display becomes dim, laser source output will become unstable and power meter measurement will be inaccurate. Please charge as soon as possible when battery is low to ensure accurate measurement.

NOTE Please take out the battery if OFI-60 is not in use for a long time.

2.4 Connector Cleaning

Please follow the instructions below when cleaning:

- Turn off the instrument before cleaning.
- Non-compliant operation may result in hazardous radiation exposure.
- Turn off laser source before cleaning optical interface.
- Always avoid looking directly into the optical output port when the instrument is working, laser is invisible and can cause serious eye damage.
- Disconnect instrument from power supply before cleaning to prevent electric shock.
- Do not install unauthorized parts or make unauthorized adjustments on instrument.
- Please consult qualified professional about maintenance and repair services.

NOTE Always clean optical connector before using OFI-60 to ensure accurate measurement. Clean the optical connector gently with cleaning swab.

3. Operation

1. Determine the head end of cable to be identified, and pick out the one (or two, depending on the testing mode adopted) from the target optical cables to connect the testing equipment;

2. Connect the optical fiber to open testing equipment at the head end of the target cable. It shall be noted that the optical interface is of FC/APC for the testing equipment, and please use the transfer jumper for connection if the optical connector is not of FC/APC for the target cable termination. Our standard configuration includes the jumper from FC/APC to FC/UPC;

3. The optical fiber connector shall be of PC at the end of target cable in order to enhance the strength of reflection signal, and reflector may be connected at the end if necessary;

4. The light power value received shall be greater than -55dBm at the testing equipment, otherwise please check whether the connection is correct or whether the line loss is too large;

5. Unfasten at least 1m of the original binding fiber bundle at the identified cable, and number each cable with tape;

6. Use the headset of the testing equipment at the head end of target cable to listen to the voice by tapping the cable, and adjust the sound volume to the appropriate value through the adjusting knob on the headset;

7. Use the metal rod of screwdriver to tap each cable with the same strength at the cable to be identified, and use the headset of the testing equipment at the head end of target cable to listen to and record the voices of tapping different cables. It shall be noted at this step that: in order to prevent the vibration from transmitting to other cables when tapping one, a sponge or soft cloth shall be used at the binding to separate the cable tapped with other cables. The same effect may be achieved if one person holds the cable with his hands and another taps the cable;

8. The above step shall be repeated by reducing the tapping strength if the voices by tapping different cables are almost the same. In most cases, the cable shall only be tapped slightly with finger;

9. Analyze which one is the target cable. There shall be an optical cable of which the voice

is significantly greater than that of others when tapped with the same strength according to the record results.

4. Maintenance and Calibration

4.1 Cleaning of the connectors

Keep the cleanness of connectors and dust caps. The detector needs to be cleaned timely.

4.2 Calibration Requirement

Calibration of OFI-60 is recommended every three years. Please contact Shineway Technologies Inc. or our agent for proper calibration.

5. Warranty Information

5.1 Terms of Warranty

OFI-60 is warranted against defective material and workmanship for a period of one (1) year from the date of shipment to the original customer. Any product found to be defective within the warranty period would be repaired or replaced by the Provider free of charge.
In no case will the Provider's liabilities exceed the original purchase price of the product.
The warranty doesn't include the accessories and optional parts.

5.2 Exclusions

The warranty on your equipment shall not apply to defects resulting from the following:

- *Unauthorized repair or modification*
- *Misuse, negligence, or accident*

The Provider reserves the right to make changes to any of its products at any time without having to replace or change previously purchased units.

5.3 Warranty Registration

A warranty registration card is included with the original shipment of equipment. Please take a few moments to fill out the card and mail or fax it to ShinewayTech's local Customer Service Center to ensure proper initiation of your warranty term and scope of your warranty.

5.4 Returning Instruments

To return instrument for reasons of yearly calibration or other, please contact the local Customer Service Center of ShinewayTech to obtain additional information and a RMA# (Return Materials Authorization number). And describe briefly reasons for the return of the equipment, to allow us offer you more efficient service.

NOTE To return the instrument in the case of repair, calibration or other

maintenance, please note the following:

- Be sure to pack the instrument with soft cushion like Polyethylene, so as to protect the shell of the instrument.
- Please use the original hard packing box. If use other packing material, please ensure at least 3 cm soft material around the instrument.

5.5 Contact Customer Service

Please check our web site **(www.shinewaytech.com)** for updates to this manual and additional application information. If you need technical or sales support, please contact local **Shineway Technologies** Customer Service.

Shineway Technologies (China), Inc.:
Address: Fl.7, Zhongtai Plaza, No.3 Shuangqing Rd, Haidian District, Beijing, China
Postal code: 100085
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THANK YOU FOR CHOOSING
SHINEWAY TECHNOLOGIES!

DOC P/N：MAN-OFI-60-EN V1409