ShinewayTech®
Dependable Partner for Future Networks

SLS-50
Stabilized Laser Source

User's Manual

Shineway Technologies, Inc.
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Safety Instructions

WARNING!

The **WARNING** sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personnel injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.

CAUTION!

The **CAUTION** sign denotes a hazard. It calls attention to an operating procedure, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or the entire product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

NOTE

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

WARNING!

Users should avoid looking directly into optic output of any working laser source or live fiber. And the use of microscope or magnifier should also be avoided, for the use of such devices can focus a highly intense beam onto the retina, which may result in permanent eye damage

CAUTION!

Battery: SLS-50 battery type is lithium battery. Do not take battery out without technical staff's assistance. 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: (Optional) Power Adaptor, 5V DC/750mA

Laser Radiation: To avoid serious eye injury, never look directly into the optical output of fiber optic network equipment, test equipment, patch cords or tested jumpers.

- Always avoid looking directly into the optical output port, when the instrument is working
- Always put 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; point the unconnected end at a non-reflective object.

Contents

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.

1.3 Introduction

ShinewayTech® SLS-50 can generate highly stable optical signals at multiple wavelengths to

precisely measure optical link loss and identify optical fiber paired with ShinewayTech OPM-50 Intelligent Optical Power Meter.

Features:

- 6dB adjustable power output range
- Automatic wavelength identification
- Remote reference value setting
- FTTx applicable
- USB power charging
- No warm-up, quick start
- Backlight display
- Over 70 hours continuous operation
- Pocketsize, lightweight and easy-to-use
- CE, FCC, FDA certificates

Automatic Wavelength Identification

SLS-50 can transmit digital encrypted signals through tested fiber to OPM-50 which can automatically identify input wavelength and switch to the corresponding test mode. This feature greatly reduces the workload at both ends and avoids potential error.

6dB Adjustable Power Output Range

Output Power can be adjusted at minimum 0.01dB/step within a range of 6dB.

Remote Reference Value Setting

SLS-50 can transmit digital-encrypted signal with power parameters through tested fiber to OPM-50 as reference for precise link loss measurement even the two units are far apart.

Compatible with FTTx

SLS-50 can generate highly stable signals at 1310nm, 1490nm, 1550nm and 1625nm wavelength, compliant with Passive Optical Network (PON) and FTTx standards.

Direct LCD Display of Output Power

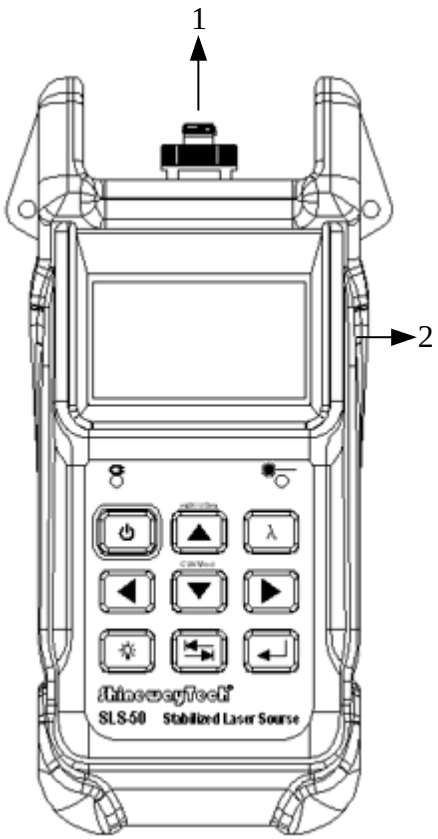
The power value of SLS-50 output signal can be directly displayed on its screen for easy reference.

2. Basic Operation

2.1 Foreword

This part introduces the basic operation on SLS-50. Specific operations of each type instrument 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 Instrument Details



2.2.1 External Interfaces

1. **Optical Output**
   SLS-50 is available with FC connector (Interchangeable SC/ST).

2. **USB Power /Data Port**
   SLS-50 can be charged by external power adapter (5V DC, 750mA).

2.2.2 Keypad

Power on/off

Toggle between output wavelengths

Toggle between mW and dBm
Adjust reference value in [Reference] interface;
Adjust attenuation value in [Attenuator] interface;
Adjust contrast in [Contrast] interface;

Toggle between working modes: CW, Mod & AutoID;
Adjust reference value in [Reference] interface;
Adjust attenuation value in [Attenuator] interface;
Adjust contrast in [Contrast] interface;

Toggle between functional interfaces

Shift digit positions in [Reference] or [Attenuator] interface

Enter functional interface
Confirm

Turn backlight on/off

2.2.3 Indicator

Charging indicator

2.3 Use of Battery

SLS-50 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 SLS-50 as long as its display on LCD is identifiable. Please charge as soon as possible when battery is low to ensure accurate measurement.

NOTE Please take out the battery if SLS-50 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.

Always clean optical connector before using optical power meter to ensure accurate measurement. Clean the optical connector gently with cleaning swab.

Inappropriate maintenance may result in low performance or error:

- Distance error increases;

- Linearity error;
- Extra optical power attenuation;
- Received optical power is beyond normal range.

3. Operation

3.1 Power On

Press [**On/Off**] button and loading screen appears, see Figure 3.1.

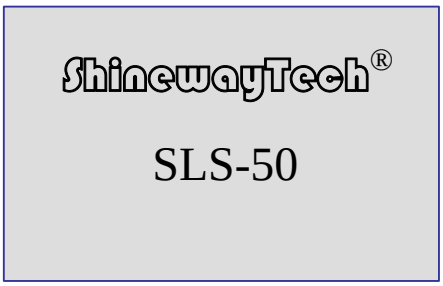


Figure 3.1

Then it enters functional interface (The last interface before last shutdown), see Figure 3.2.

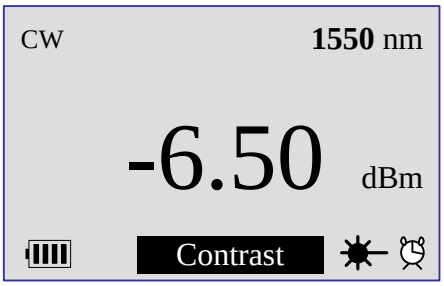
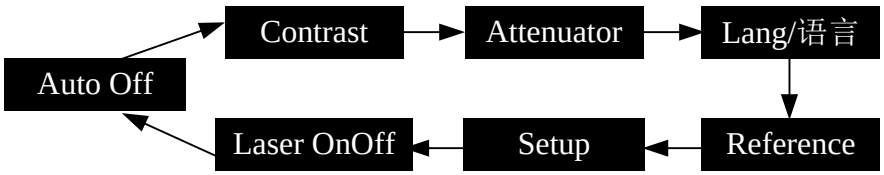


Figure 3.2

Press  and  button to toggle between below functional interfaces:



Press  button to enter selected functional interface. Please see below the detailed information of each interface.

3.2 Contrast

Press  and  button to [Contrast] interface, see Figure 3.3.

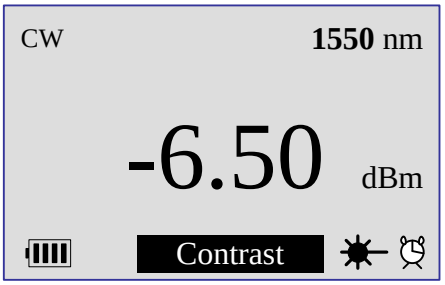


Figure 3.3

Press  button to enter the interface. Press  and  button to adjust contrast and press  button to confirm.

3.3 Attenuation

Press  and  button to [Attenuator] interface, see Figure 3.4.

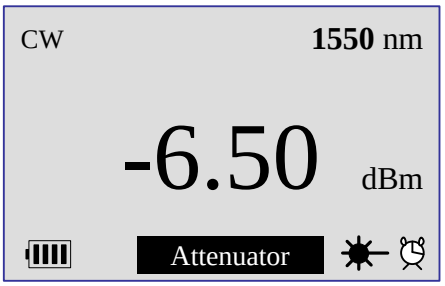


Figure 3.4

Press  button to see interface shown in Figure 3.5, Press  button to shift the digit position of output power value to be adjusted; Press  and  button to adjust output power value.

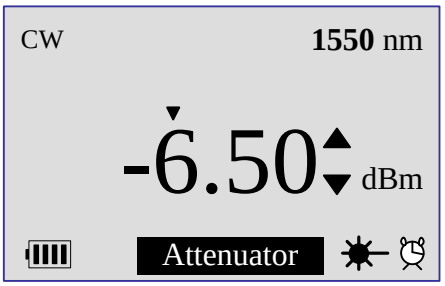


Figure 3.5

Note: 1. Attenuation adjustment is effective only when laser is on (☀ mark appears in the right lower corner of the screen);

2. The attenuation range is 6dB.

3.4 Language Setting

Press ◀ and ▶ button to [语言/Lang.] interface, see Figure 3.6.

Figure 3.6

Press ↵ button to toggle between English and Chinese interface.

3.5 Reference

Press ◀ and ▶ button to [Reference] interface, see Figure 3.7.

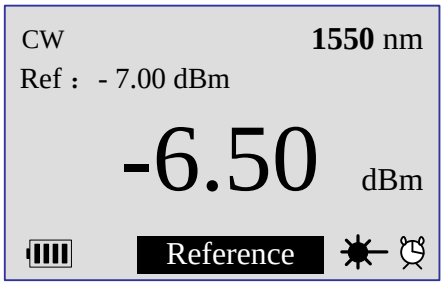


Figure 3.7

In this interface you can set reference value and send it to the optical power meter on the other side of the tested fiber by enabling AutoID function (ShinewayTech optical power meter with AutoID function), which can enhance the testing efficiency and avoid potential operation fault.

If you need manually adjust reference value, press  button to enter reference setting interface, see Figure 3.8.

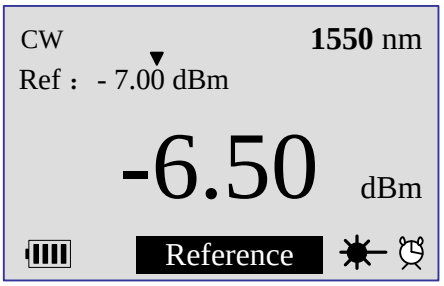


Figure 3.8

Press  button to shift the digit position to be adjusted; press  and  button to adjust the value and press  button to confirm.

3.6 Setup

Press  and  button to [Setup] interface, see Figure 3.9.

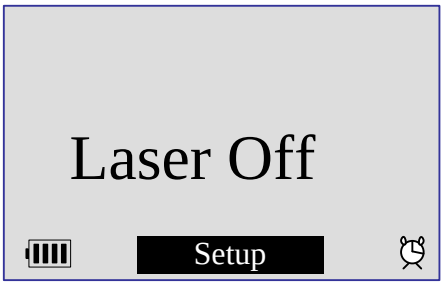


Fig 3.9

press  button to enter Fig.3.10 interface:

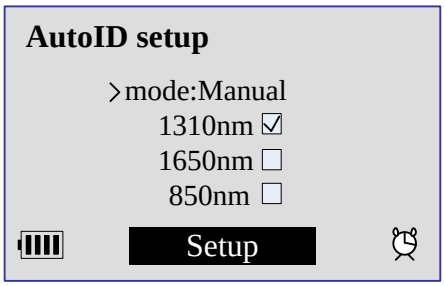


Fig 3.10

When > point to "mode", press  button to switch mode of "Manual" and "Automatic".

When > point to "1310nm", "1650nm" or "850nm", press  button to select or cancel this wavelength.

Note: "Manual" means switch the wavelength by manually press  ; "Automatic" means switch the wavelength in turn automaticly.

3.6 Laser On/Off

Press  and  button to [Laser OnOff] interface, see Figure 3.9.

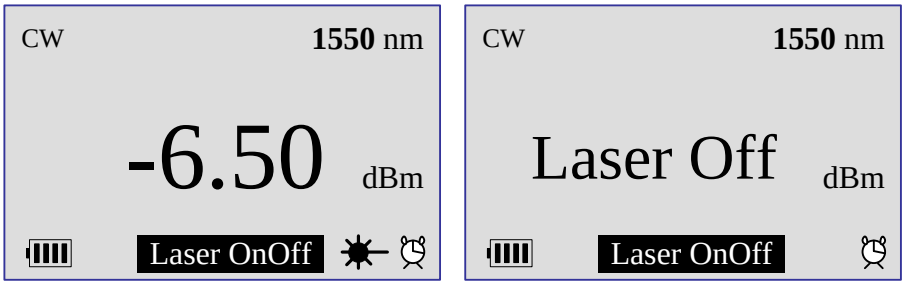


Figure 3.9

Press  button in current interface to turn on/off laser source.

Note: Press  button to toggle between CW, 270Hz, 1000Hz, 2000Hz and AutoID modes only when laser is on.

3.7 Auto Off

Press  and  button to [Auto Off] interface, see Figure3.10.

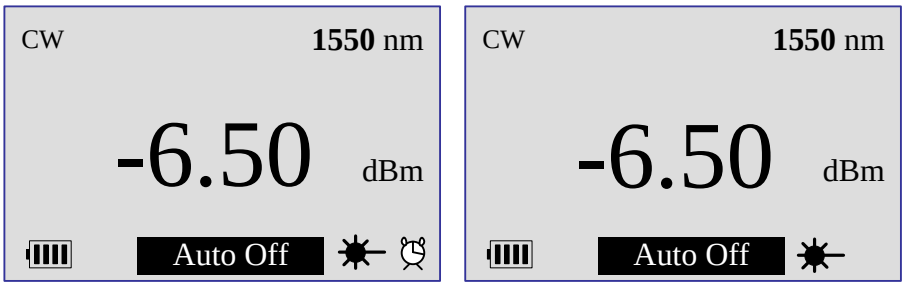


Figure 3.10

Press  button to enable or disable Auto Off function.

4. Calibration

4.1 Optical Interface Cleaning

Optical interface must be always kept clean. Always put protective dust cap on when the unit is not in use, and keep the protective dust cap clean.

4.2 Calibration Requirements

Calibration of the instrument is recommended every 3 years. Please contact our representatives or customer service centers for proper calibration.

5. Specifications

Model	SLS-50				
	A	B	P	V	X
Wavelength (±20nm)	1310/1550	850/1300	1310/1490/ 1550	650/1310/ 1550	1310/1550/ 1625
Spectrum Width	≤5nm				
Application Range	Multimode/Singlemode fibers				
Emitter Type	FP-LD@650,850,1300,1310,1550nm; DFB-LD@1490,1625nm				
Output Power	≥3dBm@650nm; ≥-3dBm@850/1300/1310/1490/1550/1625nm				
Power Stability	±0.05dB/15min; ±0.10dB/8hr@1310/1490/1550/1625nm; ±0.15 dB/8hr@850/1300nm				
Output Mode	CW, 1Hz@650nm; CW,270Hz,1KHz,2KHz@850/1300/1310/1490/1550/1625nm				
Adjustment Range	6dB				
Adjustable Steps	0.01/0.1/1dB				
Auto Wavelength Identification	Yes (With OPM-50)				
Output Power Display	Yes				
Connector	FC/PC (Interchangeable SC, ST)				
Power Supply	Lithium Battery / AC Adapter				
Battery Life	Continuous operation ≥70 hours; Standby ≥250 hours				
Power Saving	Auto-off after 5 minutes idle				
Weight	315g (0.69 lbs)				
Dimensions (H×W×T)	177×80×44mm (6.97×3.15×1.73 inch)				

* Specifications subject to change without notice

6. Warranty Information

6.1 Warranty Period

All ShinewayTech® products are 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 Shineway Technologies Inc free of charge.

In no case will Shineway Technologies, Inc liabilities exceed the original purchase price of the product.

6.2 Exclusion

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

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

Shineway Technologies, Inc. reserves the right to make changes to any of its products at any time without having to replace or change previously purchased units.

6.3 Warranty Registration

A warranty registration card is included with the original shipment of equipment. Please take a few minutes to fill out the card and mail or fax it to the local Customer Service Center of Shineway Technologies, Inc. for your product warranty activation.

6.4 Returning Instrument

To return instrument for yearly calibration or other purposes, please contact the local Customer Service Center of Shineway Technologies, Inc to obtain additional information and a RMA (Return Materials Authorization) number. And describe brief reasons for the return of the equipment to help us offer you efficient services.

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 you 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 agent of Shineway Technologies, Inc in a reliable way.

6.5 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
Tel: +86-10-62953388
Fax: +86-10-62958572
Email: support@shinewaytech.com
WEB: www.shinewaytech.com

THANK YOU FOR CHOOSING
SHINEWAY TECHNOLOGIES!