SKYSHL SS313T-1B1

SKYSHL SS313T-1B OTDR Tester User Manual

Model: SS313T-1B

1. Introduction

The SKYSHL SS313T-1B is a multi-functional Optical Time Domain Reflectometer (OTDR) designed for comprehensive fiber optic network testing. It integrates OTDR, Optical Power Meter (OPM), Optical Light Source (OLS), and Visual Fault Locator (VFL) functionalities into a single handheld device. This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of the SS313T-1B OTDR Tester.

Figure 1: Front view of the SKYSHL SS313T-1B OTDR Tester.

2. Safety Information

WARNING: Laser Radiation Hazard

- Do not look directly into the optical output interface when the device is operating, especially when the VFL or OLS functions are active. Laser radiation can cause severe eye damage.
- Use caution when handling fiber optic cables and connectors. Always ensure proper cleaning procedures are followed to prevent contamination.
- Operate the device within the specified environmental conditions to prevent damage and ensure accurate measurements.
- Only use the provided charger and accessories. Unauthorized accessories may damage the device or pose a safety risk.

Figure 2: Optical ports of the SS313T-1B, showing the laser warning label.

3. Package Contents

Verify that all items listed below are included in your package:

- 1 x SKYSHL SS313T-1B OTDR Tester
- 3 x OTDR/OLS Connector (1*SC/APC + 1*ST/APC + 1*FC/APC)
- 2 x Patch Cords (FC/UPC-FC/UPC and FC/UPC-FC/APC)
- 1 x USB Cable
- 1 x Power Adapter (100-240V AC Charger)
- 1 x User Manual (this document)
- 1 x Carrying Bag
- Additional connectors: SC, ST, FC, LC compatible with UPC and APC.

Figure 3: Included accessories and the SS313T-1B OTDR Tester.

4. Product Features

- **1625nm 33dB Wavelength:** Provides a 1625nm single-mode wavelength with a 33dB dynamic range, supporting a maximum test distance of up to 160km (100 miles).
- **Integrated Functions:** Combines Optical Time Domain Reflectometer (OTDR), Visual Fault Locator (VFL - Max 10km), Optical Power Meter (OPM - 850-1625nm, -50~+26dB), and Optical Light Source (OLS - 1625nm).
- **Extremely Short EDZ/ADZ:** Utilizes advanced optical technology for a short event dead zone (1m) and attenuation dead zone (5m), enabling detection of closely spaced faults.
- **Intelligent Operation & Multi-language Support:** Features automatic testing, automatic analysis, and event map functions for ease of use. Supports Chinese, English, German, French, Spanish, and Portuguese.
- **Multiple Interfaces:** Equipped with 2x USB and 1x Micro USB ports for convenient data storage, analysis, and sharing.
- **Rechargeable Lithium Battery:** Powered by an 8.4V 6600mAh rechargeable lithium battery, providing up to 15 hours of continuous work for outdoor use.

Figure 4: The SS313T-1B integrates multiple fiber testing tools.

Figure 5: Long-lasting battery for extended field use.

5. Setup

5.1 Charging the Battery

Before first use, fully charge the device. Connect the provided power adapter to the charging port on the device and plug it into a standard AC outlet (100-240V). The charging indicator will show the charging status. A full charge typically takes several hours.

5.2 Powering On/Off

- To power on: Press and hold the power button located on the front panel until the screen illuminates.
- To power off: Press and hold the power button until a shutdown prompt appears, then confirm.

5.3 Initial Interface Overview

Upon powering on, the device will display the main interface, providing access to various functions such as OTDR, Optical Power Meter, Light Source, Visual Fault Locator, Event Map, Help, Settings, and Files.

Figure 6: Main user interface with function icons.

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Video 1: Introduction to the SKYSHL SS313T OTDR User Interface.

6. Operating Instructions

6.1 OTDR Testing

The OTDR function is used to characterize optical fibers, measure length, attenuation, and identify events like splices, connectors, and breaks.

1. From the main interface, select "OTDR".
2. Connect the fiber to be tested to the appropriate OTDR port. Ensure the connector is clean.
3. Adjust test parameters such as wavelength (1625nm for this model), range, and pulse width as needed in the "Setting" menu.
4. Press "Start" to begin the test. The device will display the trace curve and event table.
5. Use the "Cursor" and "Operate" functions to analyze specific points on the trace.
6. Click "Analyze" to automatically detect and list events.

Figure 7: Example of an OTDR test curve (1625nm).

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Video 2: Demonstration of Real-Time OTDR Testing on the SS313T.

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Video 3: Guide to Cursor Operation during OTDR Testing.

6.2 Event Map Function

The Event Map provides a simplified graphical representation of the fiber link, showing detected events and their locations, making it easier to interpret test results.

1. After completing an OTDR test and analyzing the trace, select "Event Map" from the OTDR interface.
2. The map will display icons representing different events (e.g., connectors, splices, ends) along the fiber length.
3. Click on an event icon for detailed information about that specific event.

Figure 8: Event Map interface for simplified fault identification.

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Video 4: Introduction to the SKYSHL SS313T OTDR Event Map Function.

6.3 Optical Power Meter (OPM)

The OPM measures the optical power of a signal in a fiber optic cable.

1. From the main interface, select "Optical Power Meter".
2. Connect the fiber to the OPM port.
3. The device will display the measured optical power in dBm or mW.

6.4 Optical Light Source (OLS)

The OLS emits a stable optical signal for loss measurement when used in conjunction with an OPM.

1. From the main interface, select "Light Source".
2. Connect the fiber to the OLS port.
3. Select the desired wavelength (1625nm for this model). The OLS will emit a continuous wave.

6.5 Visual Fault Locator (VFL)

The VFL emits a visible red laser light into the fiber, allowing for visual identification of breaks, macrobends, or faulty connectors over short distances (up to 10km).

1. From the main interface, select "Visual Fault Locator".
2. Connect the fiber to the VFL port.
3. Activate the VFL. Observe the fiber for any visible light leakage, which indicates a fault.

6.6 Saving Test Results

Test results can be saved as .sor files for later analysis or reporting.

1. After completing an OTDR test, navigate to the "File" option on the OTDR page.
2. Select "Save" or "Save as" to store the current trace.
3. Enter a file name using the on-screen keyboard and confirm.

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Video 5: How to Save .sor Files on the SKYSHL SS313T OTDR.

7. Maintenance

7.1 Cleaning Optical Ports

Regular cleaning of optical ports and connectors is crucial for accurate measurements and to prevent damage. Use only approved fiber optic cleaning tools and methods.

- Always power off the device before cleaning.
- Use lint-free wipes and optical-grade cleaning solution or specialized fiber optic cleaning sticks.
- Never use abrasive materials or solvents.

7.2 Battery Care

- Recharge the battery regularly, even if the device is not in frequent use, to maintain battery health.
- Avoid fully discharging the battery frequently.
- Store the device in a cool, dry place when not in use.

7.3 Storage

When storing the device for extended periods, ensure it is powered off and placed in its protective carrying case to prevent physical damage and exposure to dust or moisture.

8. Troubleshooting

This section addresses common issues you might encounter. For more detailed troubleshooting, refer to the official Troubleshooting Guide (PDF).

Problem	Possible Cause	Solution
Device does not power on.	Low battery; Power button not pressed long enough.	Charge the battery; Press and hold the power button for several seconds.
Inaccurate OTDR readings.	Dirty connectors; Incorrect test parameters; Damaged launch cable.	Clean all connectors; Verify test settings (wavelength, range, pulse width); Inspect and replace launch cable if damaged.
VFL light is dim or not visible.	Dirty VFL port; Fiber not properly connected; VFL module fault.	Clean the VFL port; Ensure fiber is securely connected; Contact support if issue persists.
Cannot save files.	Insufficient storage space; File naming error.	Delete old files to free up space; Ensure file name is valid and unique.

9. Specifications

Feature	Detail
Model Number	SS313T-1B1
OTDR Wavelength	1625nm
Dynamic Range	33dB
Event Dead Zone (EDZ)	1m
Attenuation Dead Zone (ADZ)	5m
VFL Range	Max 10km
OPM Wavelength Range	850-1625nm
OPM Power Range	-50~+26dB
OLS Wavelength	1625nm
Battery	8.4V/6600mAh Lithium Battery
Continuous Work Time	Up to 15 hours
Product Dimensions	9.06 x 2.76 x 6.5 inches
Item Weight	2.52 Kilograms (5.56 Pounds)

Feature	Detail
Interfaces	2*USB, 1*Micro USB
Compatible Connectors	SC/UPC, ST/UPC, FC/UPC, LC/UPC, SC/APC, ST/APC, FC/APC, LC/APC

10. Warranty and Support

SKYSHL provides a free replacement warranty for 3 years from the date of purchase. For technical assistance, product inquiries, or warranty claims, please contact SKYSHL customer support through their official channels. Refer to the product packaging or the official SKYSHL website for the most current contact information.
For additional resources, you may visit the SKYSHL Store on Amazon.

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Video 6: Overview of SKYSHL as a Professional Optical Communication Manufacturer.

Related Documents - SS313T-1B1

[SKYSHL SS304T Mini PRO Series Optical Time Domain Reflectometer User Manual]

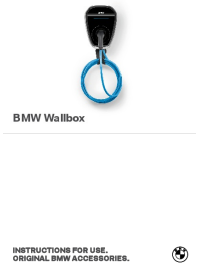
Comprehensive user manual for the SKYSHL SS304T Mini PRO Series Optical Time Domain Reflectometer, detailing its features, operation, maintenance, and troubleshooting for optical cable construction and maintenance.

[Luxus Maison Corso Sofa: Specifications and Configurations]

Detailed specifications and available configurations for the Luxus Maison Corso Sofa, including dimensions, materials, and component details. Optimized for search engines.

[PACCAR Transmissions 12 Speed Operator's Manual]

This operator's manual provides essential information for the safe and efficient operation of PACCAR 12-speed transmissions. It covers safety guidelines, driving procedures, maintenance, and general information.

	[PACCAR MX-13 Engine Operator's Manual] Comprehensive operator's manual for the PACCAR MX-13 engine, covering safety, controls, driving, maintenance, and general information. Essential guide for proper engine operation and care.
	[Kenworth T680 & T880 Operator's Manual] Official operator's manual for Kenworth T680 and T880 heavy-duty trucks. Covers safety, operation, controls, maintenance, emergency procedures, and driving tips. Essential guide for owners and operators.
	[BMW Wallbox Instructions for Use] This document provides comprehensive instructions for the installation, operation, and maintenance of the BMW Wallbox, an original BMW accessory for charging electric and plug-in hybrid vehicles. It includes safety information, technical specifications, troubleshooting guides, and details on various models.