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## SKYSHL SS322T-2A3

# SKYSHL SS322T-2A3 Single Mode OTDR Fiber Tester User Manual

Model: SS322T-2A3

## 1. INTRODUCTION

This manual provides detailed instructions for the operation and maintenance of the SKYSHL SS322T-2A3 Single Mode Optical Time Domain Reflectometer (OTDR). This device is designed for comprehensive fiber optic testing, integrating OTDR, Optical Power Meter (OPM), Optical Light Source (OLS), and Visual Fault Locator (VFL) functionalities. It is suitable for various applications including fiber network construction, maintenance, and fault location.

## 2. SAFETY INFORMATION

Please read and understand all safety warnings and operating instructions before using this device. Failure to follow these instructions may result in injury or damage to the device.

- **Laser Radiation:** The VFL and OLS emit laser radiation. Avoid direct eye exposure to the laser beam. Never look directly into the optical output ports.
- **Optical Connectors:** Always ensure optical connectors are clean before use. Contaminated connectors can lead to inaccurate measurements and damage to the device or fiber.
- **Power Supply:** Use only the specified power adapter and battery type. Do not attempt to open or modify the battery pack.
- **Environmental Conditions:** Operate the device within the specified temperature and humidity ranges. Avoid exposure to extreme temperatures, moisture, or corrosive environments.
- **Maintenance:** Refer all servicing to qualified personnel. Do not attempt to disassemble the device.

## 3. PACKAGE CONTENTS

Verify that all items listed below are included in your package. If any items are missing or damaged, contact your supplier immediately.



Figure 3.1: The SKYSHL SS322T-2A3 OTDR and its complete set of accessories, including various fiber optic connectors, patch cables, cleaning swabs, USB cable, power adapter, and user manual.

- 1x SKYSHL SS322T-2A3 SM OTDR Fiber Tester
- 2x SM FC-FC Fiber Optic Patch Cables
- Various Connectors: FC, SC, LC, ST
- Flanges: FC-SC, FC-ST, FC-FC, FC-LC
- Power Adapter
- USB Cable
- User Manual
- Carrying Bag
- Cleaning Swabs

## 4. DEVICE OVERVIEW

The SKYSHL SS322T-2A3 features a robust design with a 7-inch touch screen for intuitive operation. Key components include optical ports for OTDR, OPM, OLS, and VFL functions, along with control buttons and a power

input.



Figure 4.1: Front view of the SS322T-2A3 OTDR, showing the 7-inch touch screen display and the navigation/function buttons on the right side.



Figure 4.2: Top view of the SS322T-2A3, highlighting the various optical ports for OTDR (UPC/APC), VFL, and OPM, along with USB and Ethernet ports.



Figure 4.3: Rear view of the SS322T-2A3, showing the integrated kickstand for convenient desktop use and product information label.

## 5. SETUP

## 5.1. Initial Power-On

1. Ensure the device is fully charged or connected to the power adapter.
2. Press and hold the power button (usually located at the bottom right of the control panel) until the screen illuminates.
3. The device will boot up and display the main menu.

## 5.2. Connecting Optical Fibers

Before connecting any fiber, ensure the connector end-face is clean. Use the provided cleaning swabs for optimal performance and to prevent damage.

1. Identify the correct optical port for your test (OTDR, VFL, OPM).

2. Select the appropriate adapter (SC, FC, ST, LC) for your fiber connector type.
3. Gently insert the cleaned fiber connector into the device's port until it clicks into place.

## 6. OPERATING MODES

The SS322T-2A3 integrates multiple testing functions. Navigate through the main menu using the touch screen or physical buttons to select the desired mode.

### 6.1. OTDR (Optical Time Domain Reflectometer)

The OTDR function is used to characterize optical fibers, locate faults, and measure loss. The SS322T-2A3 supports 1310nm and 1550nm wavelengths with dynamic ranges of 40dB and 38dB respectively, allowing for testing distances up to 165km.



Figure 6.1: An example of an OTDR test curve displayed on the device, illustrating various fiber events and their corresponding distance and attenuation values.

## 1310nm and 1550 Test Curve



Figure 6.2: A side-by-side comparison of OTDR test curves for 1310nm and 1550nm wavelengths, demonstrating different measurement parameters and results.

### Performing an OTDR Test:

1. From the main menu, select "OTDR".
2. Configure test parameters such as wavelength (1310nm or 1550nm), pulse width, range, and test mode (Auto or Manual).
3. Connect the fiber to be tested to the OTDR port.
4. Press the "Start" button to initiate the test.
5. The device will display the OTDR trace and an event table.

**Note:** The smaller the pulse width, the smaller the event dead zone (0.8m typical) and attenuation dead zone (4.5m typical), allowing for detection of close-range faults. However, a smaller pulse width also results in a smaller dynamic range.

### 6.2. OPM (Optical Power Meter)

The OPM measures the optical power of a fiber optic signal. The SS322T-2A3 supports wavelengths from 850nm to

1650nm and a power range of -60 to +3dBm.

### Using the OPM:

1. From the main menu, select "OPM".
2. Connect the fiber to the OPM port.
3. The device will display the measured optical power in dBm.

### 6.3. OLS (Optical Light Source)

The OLS provides a stable optical signal for loss measurements when paired with an OPM. The SS322T-2A3 offers 1310nm and 1550nm wavelengths.

### Using the OLS:

1. From the main menu, select "OLS".
2. Select the desired wavelength (1310nm or 1550nm).
3. Connect the fiber to the OLS port. The device will emit a continuous wave or modulated signal.

### 6.4. VFL (Visual Fault Locator)

The VFL emits a visible red laser (650nm, 2km range) into the fiber, allowing for visual identification of breaks, bends, or faulty connectors over short distances.

### Using the VFL:

1. From the main menu, select "VFL".
2. Connect the fiber to the VFL port.
3. Activate the VFL. Observe the fiber for any visible red light leakage, indicating a fault.

## 7. EVENT MAP AND GRAPHICS ANALYSIS

The SS322T-2A3 simplifies fiber analysis with its intelligent event mapping and graphics analysis modes, making it easier to identify and locate network components and faults.



Figure 7.1: The OTDR display showing both the graphical trace and a detailed event table, providing specific data points for each detected event on the fiber link.

## 1310nm and 1550nm Graphics Analysis



Figure 7.2: A visual representation of the event map and graphics analysis mode, which simplifies the interpretation of OTDR traces by presenting events in an easy-to-understand graphical format.

After an OTDR test, the device can automatically generate an event map, visually representing splices, connectors, and other events along the fiber. The graphics analysis mode provides detailed information about each event, including distance, loss, and reflectance, aiding in quick fault diagnosis.

## 8. SMART APP MODULE AND DATA MANAGEMENT

The SS322T-2A3 supports connectivity with smart devices (Android/iOS/Windows) and PCs via a dedicated APP module. This allows for viewing, sharing, analyzing, and saving test data remotely.

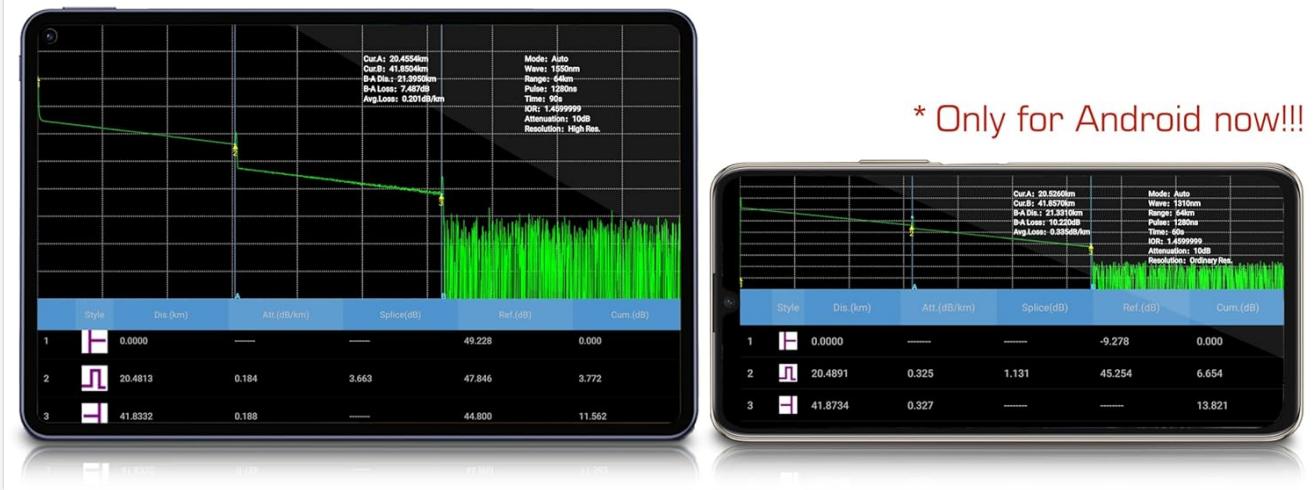


Figure 8.1: The network settings interface on the SS322T-2A3, showing options for Wi-Fi and Bluetooth connectivity to facilitate data transfer and remote control via the Smart APP.

## Connecting to the Smart APP:

1. Download and install the SKYSHL Smart APP on your compatible device.
2. On the SS322T-2A3, navigate to "General Settings" -> "Network Settings".
3. Enable Wi-Fi or Bluetooth and connect to your smart device.
4. Follow the APP instructions to establish a connection and manage your test data.

**Note:** The Smart APP functionality is currently optimized for Android devices.

## 9. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your SS322T-2A3 OTDR.

### 9.1. Cleaning

- **Optical Ports:** Always clean optical connector end-faces before each use with specialized fiber optic cleaning

tools (e.g., cleaning swabs, lint-free wipes with isopropyl alcohol). Contamination is the leading cause of inaccurate measurements and damage.

- **Screen and Casing:** Use a soft, dry, lint-free cloth to clean the screen and device casing. Do not use abrasive cleaners or solvents.

## 9.2. Storage

- Store the device in its carrying bag when not in use to protect it from dust and physical damage.
- Store in a cool, dry place, away from direct sunlight and extreme temperatures.
- If storing for extended periods, ensure the battery is partially charged (around 50%) and recharge it every few months to prevent deep discharge.

## 10. TROUBLESHOOTING

This section addresses common issues you might encounter with your SS322T-2A3 OTDR.

Problem	Possible Cause	Solution
Device does not power on.	Low battery or faulty power adapter.	Charge the device using the provided power adapter. Ensure the adapter is properly connected.
Inaccurate OTDR measurements.	Dirty optical connectors, incorrect test parameters, or damaged fiber.	Clean all optical connectors. Verify OTDR test parameters (wavelength, pulse width, range). Inspect the fiber for damage.
VFL light is dim or not visible.	Dirty VFL port, VFL function not activated, or fiber too long/damaged.	Clean the VFL port. Ensure VFL mode is active. VFL is effective for short distances (up to 2km); for longer fibers, use OTDR.
Cannot connect to Smart APP.	Incorrect network settings, APP not installed, or device compatibility issues.	Check Wi-Fi/Bluetooth settings on both the device and your smart device. Ensure the APP is correctly installed. Verify device compatibility (currently optimized for Android).

If the problem persists after attempting these solutions, please contact SKYSHL customer support for further assistance.

## 11. SPECIFICATIONS

Key technical specifications for the SKYSHL SS322T-2A3 OTDR.

- **Model Number:** SS322T-2A3
- **OTDR Wavelengths:** 1310nm / 1550nm
- **OTDR Dynamic Range:** 40dB (1310nm) / 38dB (1550nm)
- **Maximum Test Distance:** Up to 165km
- **Event Dead Zone (EDZ):** 0.8m (typical for SM)
- **Attenuation Dead Zone (ADZ):** 4.5m (typical for SM)
- **VFL Wavelength:** 650nm
- **VFL Range:** 2km
- **OPM Wavelength Range:** 850nm ~ 1650nm
- **OPM Power Range:** -60 ~ +3dBm

- **OLS Wavelengths:** 1310nm / 1550nm
- **Display:** 7-inch Touch Screen
- **Compatible Connectors:** APC & UPC SC, FC, ST, LC
- **Operating System:** Linux
- **Dimensions:** 9.84 x 7.09 x 2.17 inches
- **Weight:** 6.83 Pounds
- **Batteries:** 1 Lithium Metal battery (included)

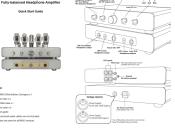
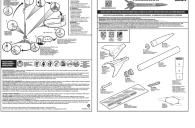
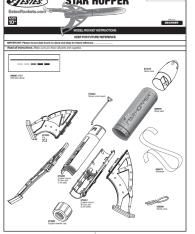
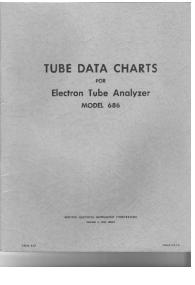
## 12. WARRANTY AND SUPPORT

SKYSHL provides comprehensive support for the SS322T-2A3 OTDR.

- **Warranty:** 3 years free replacement.
- **Maintenance:** Lifetime maintenance.
- **Technical Support:** 24 hours professional technical support is available. Please refer to the contact information provided with your product or on the official SKYSHL website for assistance.

### Related Documents - SS322T-2A3



	<p><a href="#"><u>Woo Audio WA33 (2nd Gen) Fully-Balanced Headphone Amplifier Quick Start Guide</u></a></p> <p>This guide provides instructions for setting up and using the Woo Audio WA33 (2nd Gen) Fully-Balanced Headphone Amplifier. It details the contents of the box, vacuum tube installation, and technical specifications.</p>
	<p><a href="#"><u>Estes Firehawk Model Rocket Assembly Instructions</u></a></p> <p>Detailed assembly guide for the Estes Firehawk model rocket (Model No. 0804), including parts list, step-by-step instructions, and essential safety precautions for safe operation.</p>
	<p><a href="#"><u>Estes Star Hopper Model Rocket Instructions</u></a></p> <p>Detailed assembly, preparation, and launch instructions for the Estes Star Hopper model rocket. Includes parts list, safety warnings, and flying tips for beginners.</p>
	<p><a href="#"><u>Weston Model 686 Electron Tube Analyzer Tube Data Charts</u></a></p> <p>Comprehensive tube data charts for the Weston Model 686 Electron Tube Analyzer, featuring specifications, nomenclature, and base diagrams for various vacuum tubes like 0A2, 1A7, 2A3, 6L6, and many more.</p>