SKYSHL SS303T-2A1

SKYSHL SS303T-2A1 OTDR Fiber Optic Tester User Manual

Model: SS303T-2A1 | Brand: SKYSHL

1. Introduction

The SKYSHL SS303T-2A1 is a compact and intelligent portable Optical Time Domain Reflectometer (OTDR) designed for fiber optic installation and maintenance. This device offers dual-wavelength testing at 1310nm and 1550nm, with a dynamic range of 24dB and 22dB respectively. It integrates multiple functions to provide a comprehensive solution for fiber network analysis.

2. Key Features

- **Dual Wavelength OTDR:** 1310nm/24dB and 1550nm/22dB for single-mode fiber testing.
- **8-in-1 Functionality:** Includes OTDR, Event Map, Optical Power Meter (OPM), Visual Fault Locator (VFL), Optical Light Source (OLS), Optical Loss Test, RJ45 Cable Sequence Tester, and RJ45 Network Cable Tracer.
- **Extreme Blind Zones:** Event Dead Zone (EDZ) of 2 meters and Attenuation Dead Zone (ADZ) of 6 meters, ideal for detecting short-distance defects, including 3-meter fiber patch cords.
- **Intelligent Test Modes:** Features Automatic OTDR Mode and Expert OTDR Mode, making it accessible for both novice and experienced users.
- **Event Map Function:** Simplifies test results into graphical representations for easy problem analysis.
- **Broad Connector Compatibility:** Supports APC and UPC connectors, including SC, FC, ST, and LC types, with provided adapters and patch cords.
- **Rechargeable Battery:** Equipped with a 3.7V/4000mAh lithium battery for extended field operation.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact customer support.

Image: Complete package contents of the SKYSHL SS303T-2A1 OTDR Fiber Optic Tester, including the main unit, various adapters, fiber patch cords, RJ45 remote, USB cable, power adapter, and documentation.

- 1 x SKYSHL SS303T-2A1 OTDR Unit (1310nm/24dB, 1550nm/22dB)
- 1 x SC Adapter
- 1 x FC Adapter
- 2 x FC-FC/SM Fiber Optic Patch Cords
- 1 x FC-SC Flange
- 1 x FC-ST Flange
- 1 x FC-LC Flange
- 1 x FC-FC Flange
- 1 x RJ45 Remote Unit
- 1 x USB Cable
- 1 x Power Adapter (AC100-240V)
- 1 x User Manual

- 1 x Carrying Case
- Alcohol Cleaning Pads

4. Setup

4.1 Charging the Device

Before initial use, fully charge the device using the provided power adapter and USB cable. Connect the USB cable to the device and the power adapter to a standard AC outlet (100-240V). The charging indicator will show the charging status.

Image: Illustration of the rechargeable lithium battery, indicating its 3.7V/4000mAh capacity and continuous working time of up to 15 hours.

4.2 Connecting Fiber Optic Cables

The SS303T-2A1 is compatible with various fiber optic connectors (SC, FC, ST, LC) for both APC and UPC types. Use the appropriate adapters and patch cords provided to connect the fiber under test to the OTDR port.

Image: The top panel of the OTDR device showing the OTDR, OPM, and VFL ports with the protective cover removed, ready for fiber connection.

1. Remove the protective cap from the OTDR port.
2. Select the correct adapter (e.g., SC, FC) and attach it to the OTDR port.
3. Clean the fiber end-face of the patch cord and the fiber under test using an alcohol pad.
4. Connect the patch cord to the adapter, then connect the fiber under test to the other end of the patch cord.
5. Ensure all connections are secure to prevent inaccurate readings.

5. Operating Instructions

The SS303T-2A1 offers a user-friendly interface with various testing modes. Navigate through the menus using the directional buttons and the 'OK' button.

Image: The main screen of the OTDR device showing icons for OTDR, Event Map, OPM, VFL, OLS, Loss Test, and RJ45 functions.

5.1 OTDR Mode

The OTDR function is used to characterize optical fibers, locate faults, and measure loss. The device supports both Automatic and Expert modes.

Image: The OTDR settings screen, displaying options for Wavelength, Range, Pulse, Average Time, Event Loss Threshold, Return Loss Threshold, and Unit settings.

1. From the main menu, select 'OTDR'.

2. Choose between 'Auto-Test' for simplified operation or 'Expert Mode' for manual parameter configuration.
3. In Expert Mode, set parameters such as Wavelength (1310nm or 1550nm), Range, Pulse Width, and Averaging Time.
4. Press 'Test' to begin the OTDR measurement.
5. The device will display the trace curve and event information.

5.2 Event Map Function

The Event Map simplifies complex OTDR traces into an easy-to-understand graphical representation of events along the fiber link.

Image: The OTDR device screen showing an event map with link length, loss, and average loss, along with graphical representations of events.

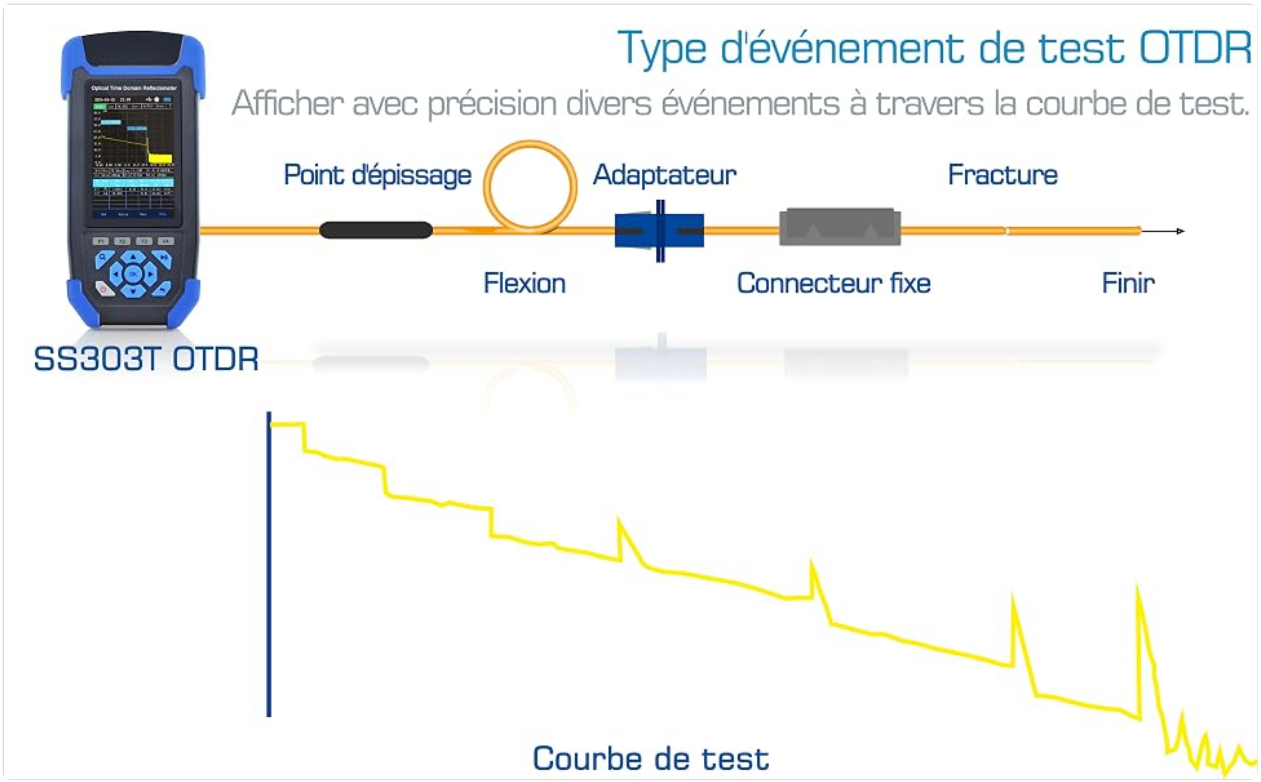

Image: A diagram showing how the OTDR detects and displays various events like splice points, bends, adapters, connectors, and fractures on a test curve.

1. After an OTDR test, select the 'Event Map' option.
2. The screen will display icons representing different events (e.g., splices, connectors, breaks) and their locations.
3. Use the navigation buttons to scroll through events and view detailed information.

5.3 Optical Power Meter (OPM)

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

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

5.4 Visual Fault Locator (VFL)

The VFL emits a visible red laser light into the fiber to quickly locate breaks, bends, or faulty connectors over short distances (up to 10km).

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 light leakage, indicating a fault.
4. **Caution:** Avoid direct eye exposure to the VFL laser light.

5.5 Optical Light Source (OLS)

The OLS provides a stable light source at 1310nm and 1550nm for loss measurement in conjunction with an OPM.

1. From the main menu, select 'OLS'.
2. Select the desired wavelength (1310nm or 1550nm).
3. Connect the fiber to the OLS port.
4. Use an external OPM at the other end of the fiber to measure the received power.

5.6 Optical Loss Test

This function measures the attenuation of a fiber link.

1. From the main menu, select 'Loss Test'.
2. Connect the OLS to one end of the fiber and the OPM to the other end.
3. Follow the on-screen instructions to perform the reference measurement and then the actual loss measurement.

5.7 RJ45 Cable Test (Sequencer & Tracer)

The device includes functions for testing RJ45 network cables, including sequence testing and cable tracing.

1. From the main menu, select 'RJ45 Seq.' or 'RJ45 Tracer'.
2. For sequence testing, connect one end of the RJ45 cable to the main unit and the other end to the provided RJ45 remote unit. The screen will display the wiring sequence.
3. For cable tracing, connect the RJ45 cable to the main unit and use the separate cable tracer tool to locate the cable.

6. Maintenance

6.1 Cleaning Fiber Optic Ports and Connectors

Regular cleaning of fiber optic ports and connectors is crucial for accurate measurements and to prevent damage.

- Always use lint-free wipes and isopropyl alcohol or specialized fiber optic cleaning solutions.

- Clean the end-faces of all patch cords and adapters before each use.
- Use compressed air to remove dust from ports before cleaning with wipes.

6.2 Battery Care

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

6.3 General Care

- Keep the device in its protective carrying case when transporting or storing.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Do not attempt to disassemble or repair the device yourself. Refer to qualified service personnel.

7. Troubleshooting

7.1 Inaccurate OTDR Readings

- **Issue:** Trace appears noisy or events are not clearly defined.
  Solution: Ensure all fiber connectors are clean. Increase the averaging time in OTDR settings. Check for proper connection of launch/receive cables.
- **Issue:** Incorrect distance measurements.
  Solution: Verify the Refractive Index (IOR) setting in the OTDR parameters matches the fiber type being tested.

7.2 VFL Not Emitting Light

- **Issue:** No red light from the VFL port.
  Solution: Check if the VFL function is activated in the menu. Ensure the fiber is properly connected. If the issue persists, the VFL laser may be faulty; contact support.

7.3 Device Not Powering On

- **Issue:** Device does not turn on.
  Solution: Ensure the battery is sufficiently charged. Connect the device to the power adapter and try again. If the battery is completely depleted, it may take a few minutes of charging before the device can power on.

7.4 RJ45 Cable Test Failure

- **Issue:** RJ45 cable test shows errors.
  Solution: Ensure both ends of the RJ45 cable are securely connected to the main unit and the remote unit. Check the cable for visible damage or improper crimping.

8. Specifications

Feature	Specification
Model Number	SS303T-2A1

Feature	Specification
OTDR Wavelengths	1310nm / 1550nm
Dynamic Range	24dB (1310nm) / 22dB (1550nm)
Event Dead Zone (EDZ)	2 meters
Attenuation Dead Zone (ADZ)	6 meters
Test Range	3 meters to 60 kilometers
VFL Test Distance	Up to 10 km
RJ45 Cable Test Distance	Greater than 300 meters
OPM Wavelength Range	800-1625 nm
OPM Power Range	-50 to +26 dBm
OLS Wavelengths	1310nm / 1550nm
Power Source	AC100-240V, 3.7V/4000mAh Lithium battery
Battery Type	1 Lithium metal (included)
Dimensions (L x W x H)	17.6 x 4.2 x 8.5 cm
Weight	1 Kilogram
Operating Temperature	Up to 25 Degrees Celsius
Country of Origin	China

9. Warranty and Support

SKYSHL provides comprehensive support for the SS303T-2A1 OTDR Fiber Optic Tester:

- **Warranty:** 3 years free replacement.
- **Maintenance:** 5 years free maintenance.
- **Lifetime Support:** Lifetime warranty and technical assistance.
- **Technical Assistance:** Professional technical support is available 24 hours a day.

For technical assistance, warranty claims, or any inquiries, please contact SKYSHL customer service through the official website or your purchase platform.