

# FIBER QUICKMAP™

## Multimode Troubleshooter

### Getting Started Guide

PN 3891235

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## Accessing the Users Manual

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This guide provides basic information to help you get started using the FIBER QUICKMAP Multimode Troubleshooter. For additional information, see the *FIBER QUICKMAP Multimode Troubleshooter Users Manual* on the Fluke Networks website.

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## Safety Information

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### Warning: Class 1 Laser

To prevent possible damage to your eyes caused by hazardous radiation:

- Do not look directly into optical connectors. Some optical equipment emits invisible radiation that can cause permanent damage to your eyes.
- Do not turn on the troubleshooter unless a fiber is attached to the port.
- Do not use a magnifying device to look at the optical outputs without the correct filter.
- Use of controls, adjustments, or procedures that are not in this manual can cause exposure to hazardous radiation.

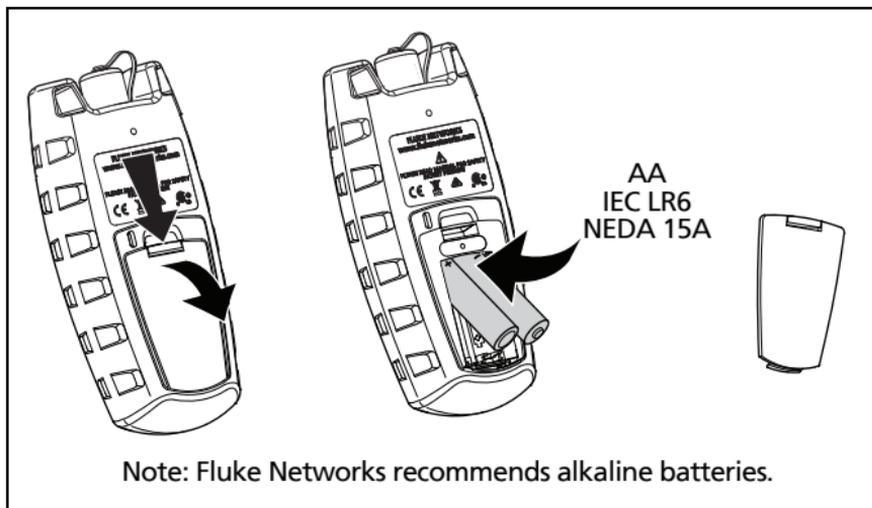
### Caution

To prevent damage to fiber connectors, to prevent data loss, and to make sure that your test results are as accurate as possible:

- Do not connect APC connectors to the troubleshooter. An APC connector will cause damage to the fiber endface in the connector on the troubleshooter.

- Use only patch cords that comply with GR-326-CORE specifications and have UPC connectors. Other patch cords can cause unreliable measurements.
- Use the correct procedures to clean all fiber connectors before each test. If you do not do this or if you use incorrect procedures, you can get unreliable test results and can cause permanent damage to the connectors.
- Put protective caps on all connectors when you do not use them.
- Do not connect the troubleshooter to a network that is on. If you do, the troubleshooter can cause problems in the network.
- If ACTIVE LINE blinks, immediately disconnect the troubleshooter from the fiber. Optical power levels more than +7 dBm can cause damage to the detector in the troubleshooter.
- The troubleshooter senses optical signals only at 850 nm. If there might be signals at other wavelengths on a fiber, use a different instrument to make sure that the fiber is not active before you connect the troubleshooter to the fiber.

## Battery Installation and Life

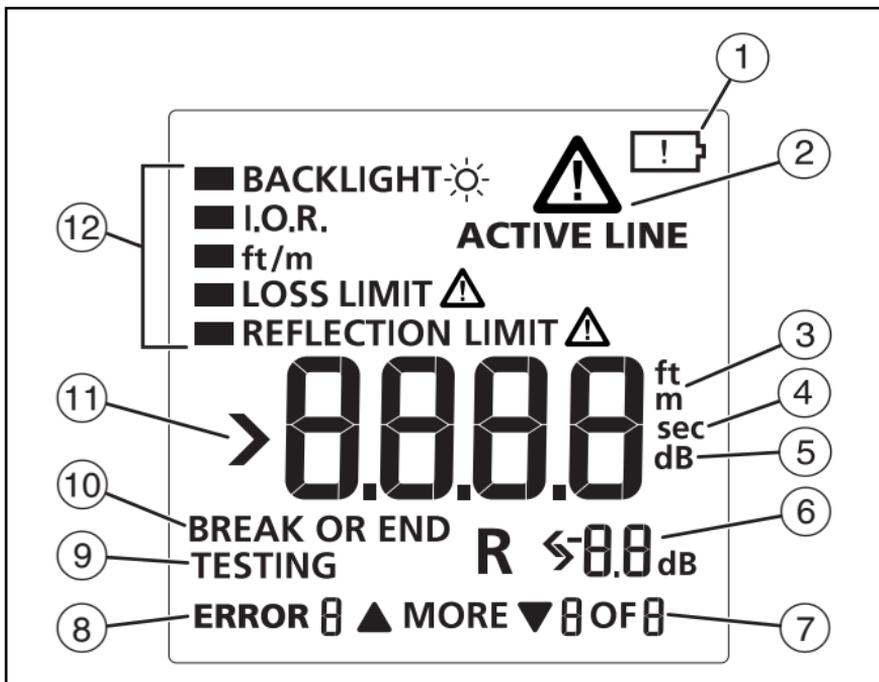


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**Figure 1. How to Install the Batteries**

The troubleshooter can do approximately 1500 tests before you must replace the batteries.

## Display Features



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Figure 2. Display Features

- ① When the low battery symbol shows, replace the batteries soon. See page 3.
- ② When you press **TEST**, the troubleshooter looks for an 850 nm optical signal on the fiber. If there is an 850 nm signal stronger than -15 dBm on the fiber, **ACTIVE LINE** blinks and the troubleshooter will not do a test.
- ③ The digits show the fiber length in feet or meters.
- ④ Shows when you look at the setting for the backlight timer. The setting is in seconds.
- ⑤ Shows when you look at the setting for the reflection limit. The setting is in decibels.

- ⑥ **R**: Shows the reflectance of an incident on the fiber. The measurement is in decibels.
- ⑦ **▼ MORE ▲**: Shows when the troubleshooter found more than one incident. Press   to see the reflectance of the incidents. The numbers show the number of the incident and the total number of incidents.
- ⑧ Shows an error number for error conditions.
- ⑨ Shows as the troubleshooter does a test.
- ⑩ Shows when the troubleshooter shows the distance to a break or the end of the fiber.
- ⑪ **➤**: Shows when the length is more than the range of the troubleshooter.
- ⑫ Settings for the troubleshooter.

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## Settings

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To change the settings on the troubleshooter:

- 1 Press .
  - 2 To select a setting to change, press , then press .
  - 3 Use   to change the setting. See below for information on the settings.
  - 4 Press  or  to save the setting.
- **BACKLIGHT**: Timer for the display backlight.
  - **I.O.R.:** Index of refraction.
  - **ft/m**: Unit for length measurements.
  - **LOSS LIMIT**: Sets the minimum value of power loss for incidents that the troubleshooter shows as an incident. You can select a value from 0.50 dB (lower loss) to 6.10 dB (higher loss) in 0.2 dB increments. The default is 0.70 dB.

### Note

*When you change the loss limit, the troubleshooter also applies the new limit to the results shown from a previous test.*

- **REFLECTION LIMIT:** Sets the minimum size of a reflection that the troubleshooter shows as an incident or the end of the fiber. You can select a value from -20 dB (larger reflection) to -45 dB (smaller reflection) in 5 dB increments. The default is -35 dB.

## The Connector Adapter

You can change the SC connector adapter to connect to LC, ST, or FC fiber connectors. See Figure 3.

### ⚠ Caution

**Turn only the collar on the adapter. Do not use tools to remove or install the adapters.**

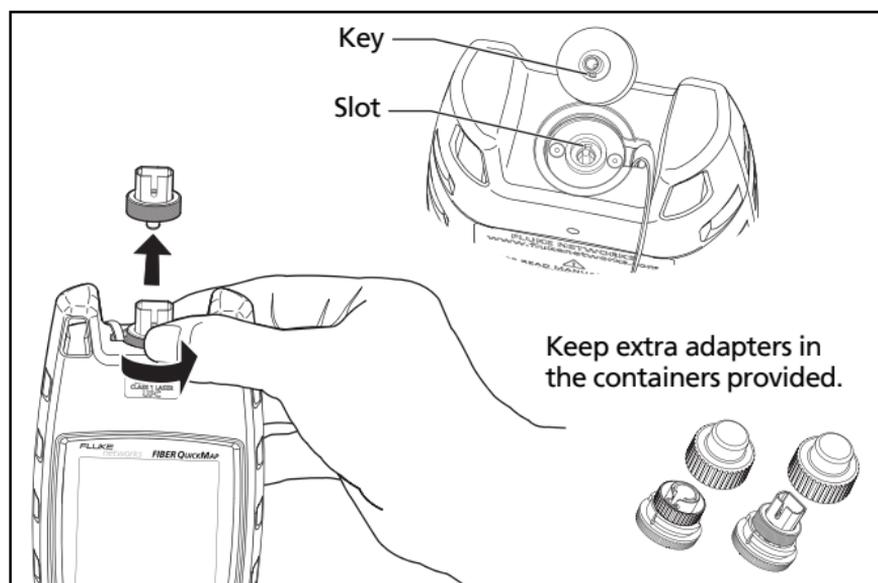


Figure 3. How to Remove and Install the Connector Adapter

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## How to Clean Connectors

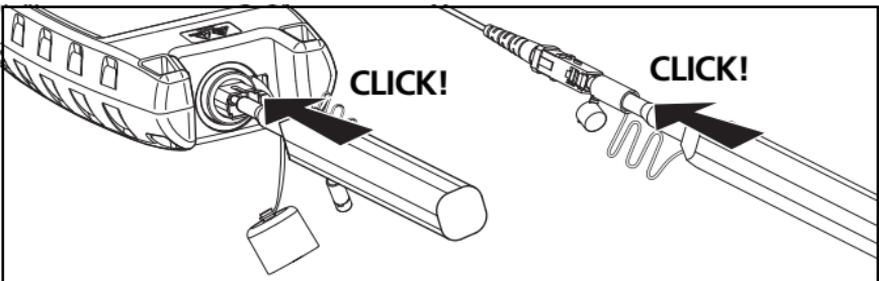
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Fluke Networks recommends that you use a mechanical device to clean connectors. See Figure 4. If you do not have such a device, use other optical-grade supplies to clean connectors. See the Users Manual.

Use a video microscope, such as the Fluke Networks FI-7000 FiberInspector™ Pro, to inspect connectors.

### Caution

To prevent damage to the device and to connectors, read all instructions and obey all safety precautions given by the manufacturer of the device you use to clean connectors.



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**Figure 4. How to Use a Mechanical Device to Clean Connectors**

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## Protect Connectors

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Always put protective caps on connectors that you do not use. Clean the caps periodically with a swab or wipers and fiber optic solvent.

# How to Use the Troubleshooter

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### Notes

*Always use test cords that comply with GR-326-CORE specifications and have UPC connectors. Other cords can cause unreliable measurements.*

*Fluke Networks recommends that you use launch and receive fibers. See the Users Manual.*

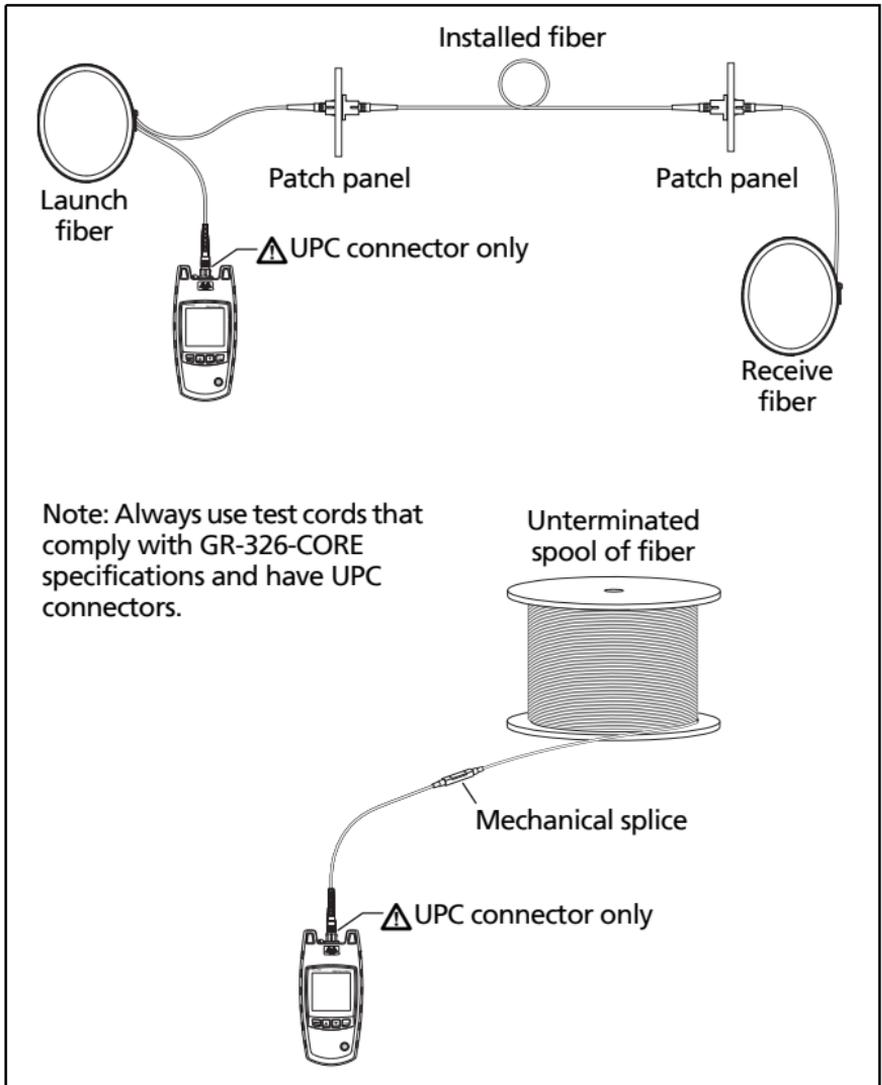
- 1 Clean all fiber connectors.
- 2 Connect the fiber to the troubleshooter (Figure 5).
- 3 Turn on the troubleshooter, then press . Pages 10 and 11 show examples of measurement results.

### Note

*If there is a break in the fiber, the troubleshooter does not show incidents after the break.*

If the reflectance or loss of a connection is higher than the limit:

- A connector endface is dirty or damaged.
- A connector is loose.
- The cable is damaged within about 3 m of the connector.
- The connection is between fibers of different types.
- The fiber has a bad splice or a sharp bend.



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**Figure 5. How to Make Connections**

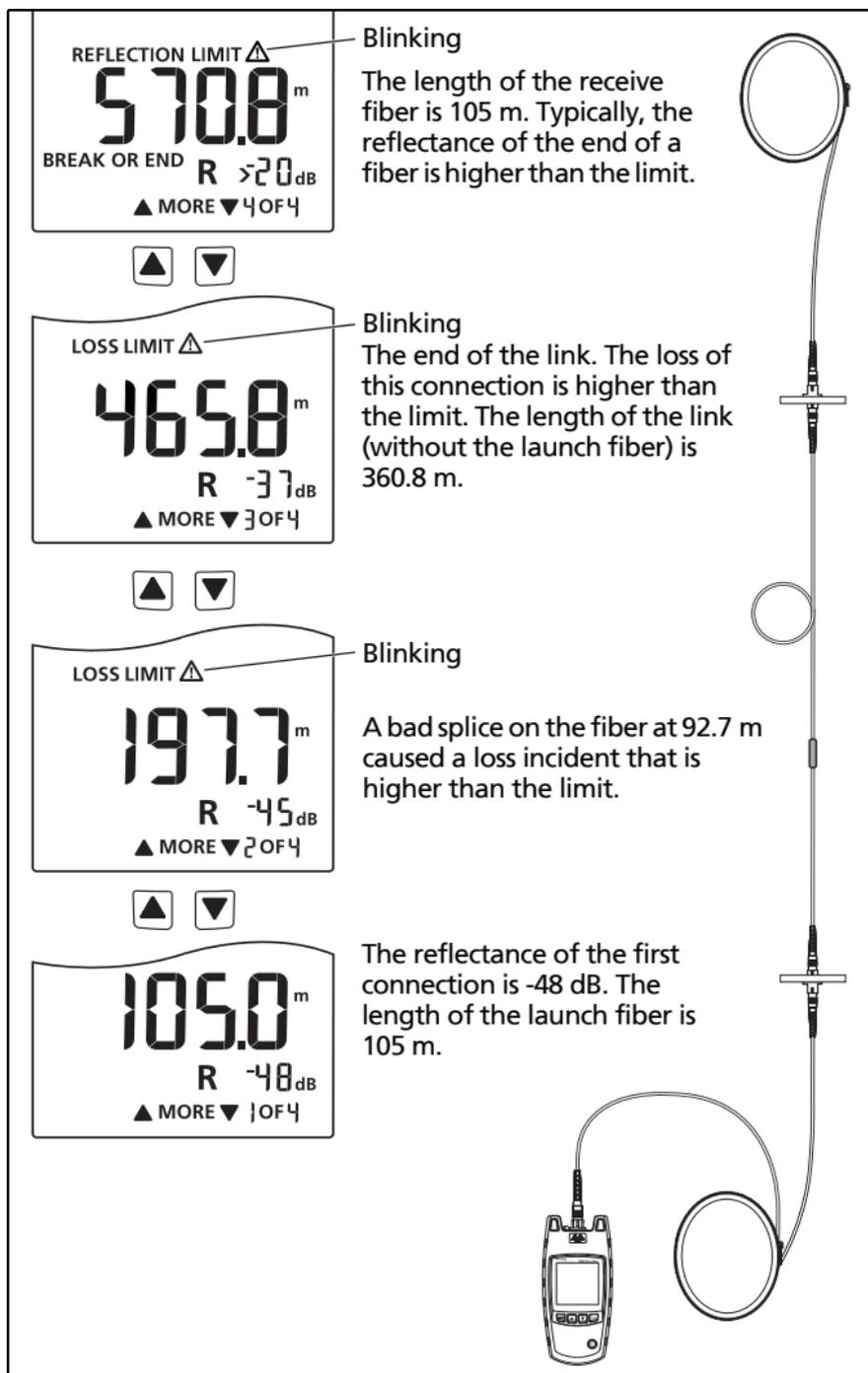


Figure 6. Examples of Results

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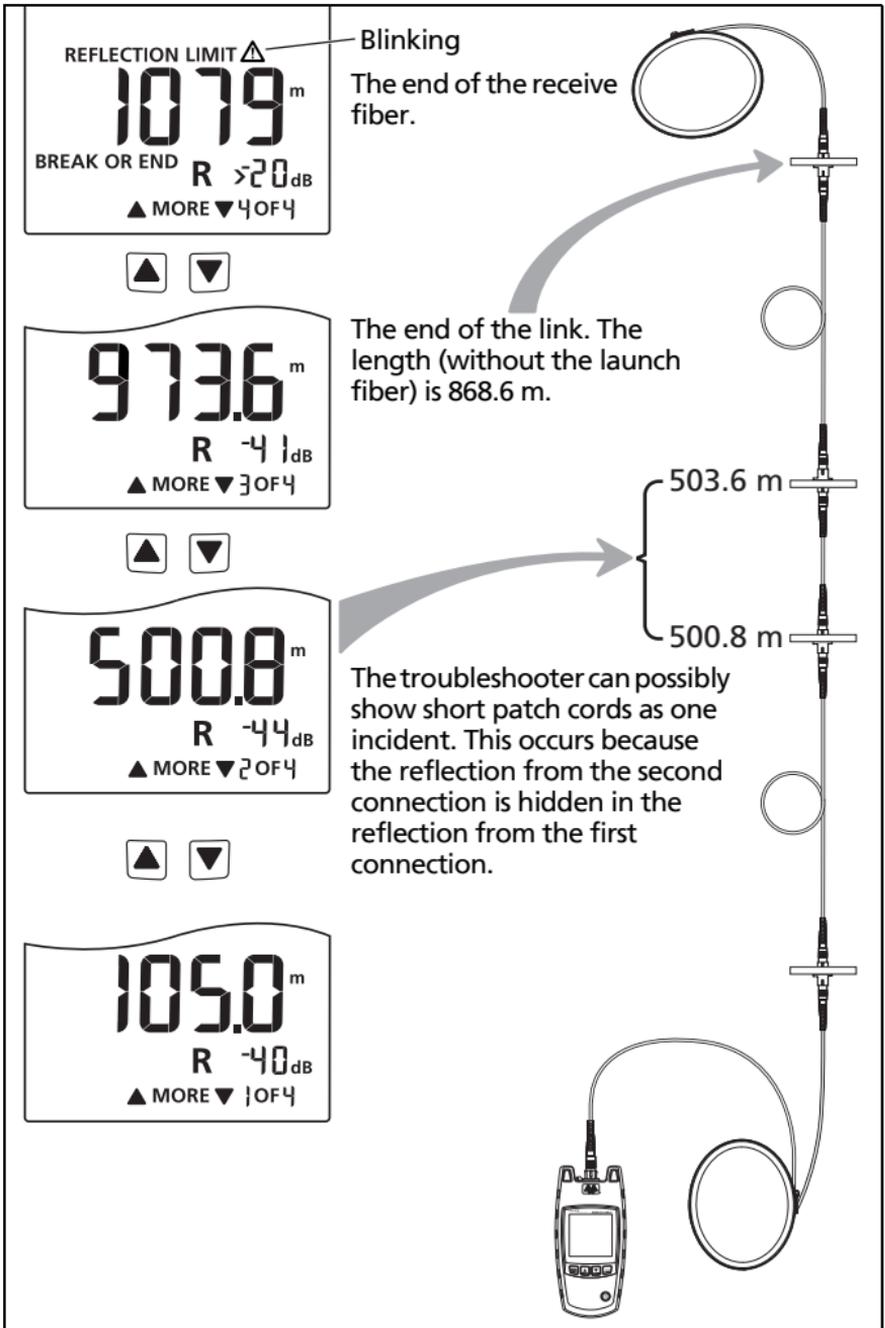


Figure 7. Results from a Link with a Short Patch Cord