FLUKE networks

FIBER ONESHOT™ PRO

Singlemode Fiber Troubleshooter

Quick Reference Guide

⚠ Safety Information

⚠ 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.**

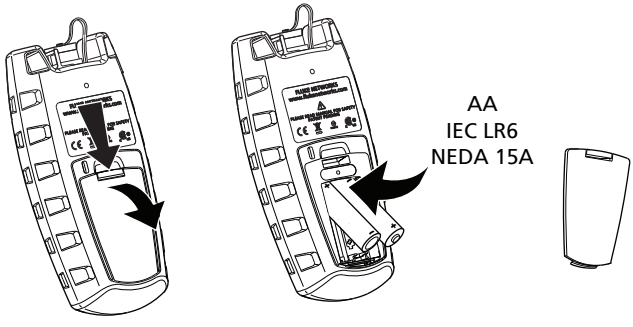
March 2011, Rev. 1 10/2015

⚠ 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.**
- **Connect only UPC connectors to 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 at 1310 nm, 1490 nm, 1550 nm, and 1625 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



Note: Fluke Networks recommends alkaline batteries.

fjy03.eps

Figure 1. How to Install the Batteries

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

Display Features

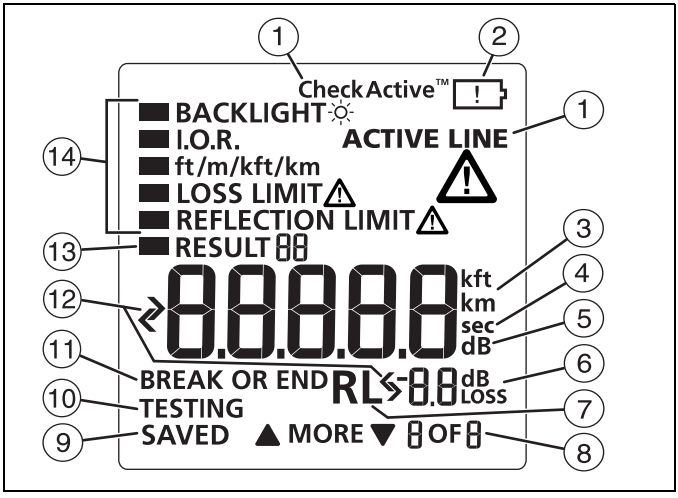


Figure 2. Display Features

① When you press TEST, **CheckActive™** shows and the troubleshooter looks for an optical signal on the fiber. If there is a singlemode signal stronger than approximately -29 dBm on the fiber, **ACTIVE LINE** blinks and the troubleshooter will not do a test.

⚠ Caution

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.

② When the low battery symbol shows, replace the batteries soon. See page 3.

③ The digits show the fiber length in feet, kilofeet, meters, or kilometers.

④ **sec**: Shows when you look at the setting for the backlight timer. The setting is in seconds.

⑤ **dB**: Shows when you look at the setting for the reflection limit. The setting is in decibels.

⑥ **dB**: Shows when the display shows the reflectance of an incident on the fiber. The measurement is in decibels.
dB LOSS: Shows when the display shows the power loss of an incident on the fiber. The measurement is in decibels.

⑦ **RL:** Result loss. See page 14.

⑧ ▼ **MORE** ▲: Shows when the troubleshooter finds more than one incident. Press [▲] [▼] to see more incidents. The numbers show the number of the incident and the total number of incidents. The troubleshooter shows up to 9 incidents. If there are more than 9 incidents on the fiber, the last 9 blinks when you look at the ninth incident.

⑨ **SAVED**: Shows after a test. The troubleshooter automatically saves the test results.

⑩ **TESTING**: Shows as the troubleshooter does a test.

⑪ **BREAK OR END**: Shows when the troubleshooter shows the distance to a break or the end of the fiber.

⑫ : The measurement is above or below the range that the troubleshooter can show, or the troubleshooter cannot give a more accurate measurement.

⑬ **RESULT**: Shows when you look at saved results.

⑭ Settings for the troubleshooter. **LOSS LIMIT**⚠ and **REFLECTION LIMIT**⚠ blink if a measurement is equal to or greater than the limit you select.

Settings

To change the settings on the troubleshooter:

1 Hold down MENU SELECT until the settings menu shows.

2 To select a setting to change, press ▼, then press MENU SELECT.

3 Use ▲ ▼ to change the setting.

4 Press MENU SELECT or TEST to save the setting.

5 To exit the settings menu, hold down MENU SELECT for 4 seconds. To exit and do a test, press TEST.

BACKLIGHT: Timer for the display backlight.

I.O.R.: Index of refraction.

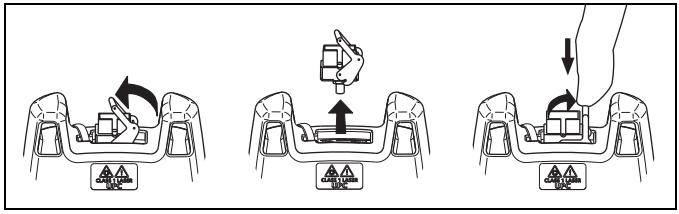
ft/m/kft/km: Unit for length measurements.

LOSS LIMIT: Sets the minimum level at which the troubleshooter shows the warning **LOSS LIMIT** ⚠ for an incident.

REFLECTION LIMIT: Sets the minimum size at which the troubleshooter shows the warning **REFLECTION LIMIT** ⚠ for an incident.

The Connector Adapter

The troubleshooter has an SC connector adapter that you can replace with another type of adapter, such as LC. See Figure 3.



gmh08.eps

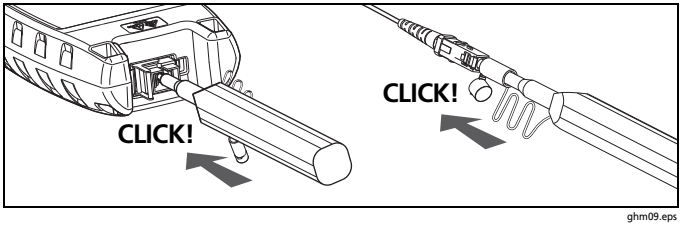
Figure 3. How to Remove and Install the Connector Adapter

How to Clean Connectors

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.

⚠ 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.



ghm09.eps

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

About Launch and Receive Fibers

Launch and receive fibers give the troubleshooter a better view of the first and last connectors in the link. If you do not use a launch fiber, the troubleshooter cannot detect the loss of the first connector in the link. If you do not use a receive fiber, the troubleshooter cannot detect the loss of the last connector in the link. Also, the reflectance measurement for the first and last connectors will be inaccurate.

Usually, you do not need to use a launch or receive fiber with the FIBER ONESHOT PRO tester. But you must use them in these situations:

- You must use a launch fiber if you want to detect a loss incident (such as a connector, splice, or macrobend) in the first 30 m of the fiber link.
- You must use a receive fiber if you want to detect the loss of the last connector in the fiber link.

If you use a launch or receive fiber, it must have a minimum length of 30 m (98 ft).

When you use launch or receive fibers, be sure to subtract their lengths from the length measurement to get the actual length of the fiber you are testing.

How to Use the Troubleshooter

Notes

Always use patch cords that comply with GR-326-CORE specifications and have a UPC connector at the end you will connect to the troubleshooter. Other patch cords can cause unreliable measurements and damage to the troubleshooter.

Do not use the troubleshooter to do tests on fibers that have PC connectors. PC connectors cause large reflections that the troubleshooter shows as the end of the fiber.

1 Clean all fiber connectors.

2 Connect the fiber to the troubleshooter, as shown in Figure 5.

3 Turn on the troubleshooter, then press TEST. The troubleshooter automatically saves the results.

Note

After you turn on the troubleshooter, it shows PASS *for a short time to show that it operates correctly.*

⚠ Caution

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.

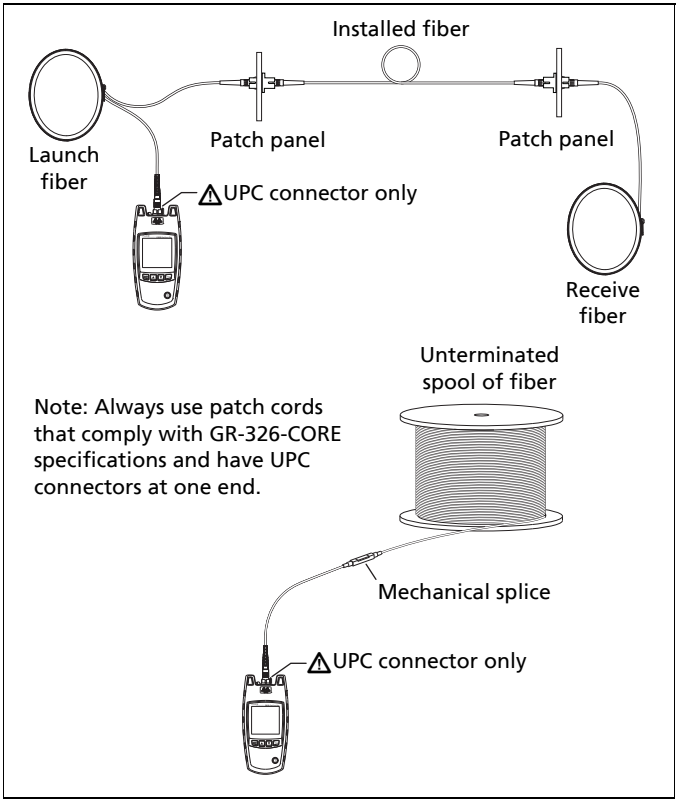
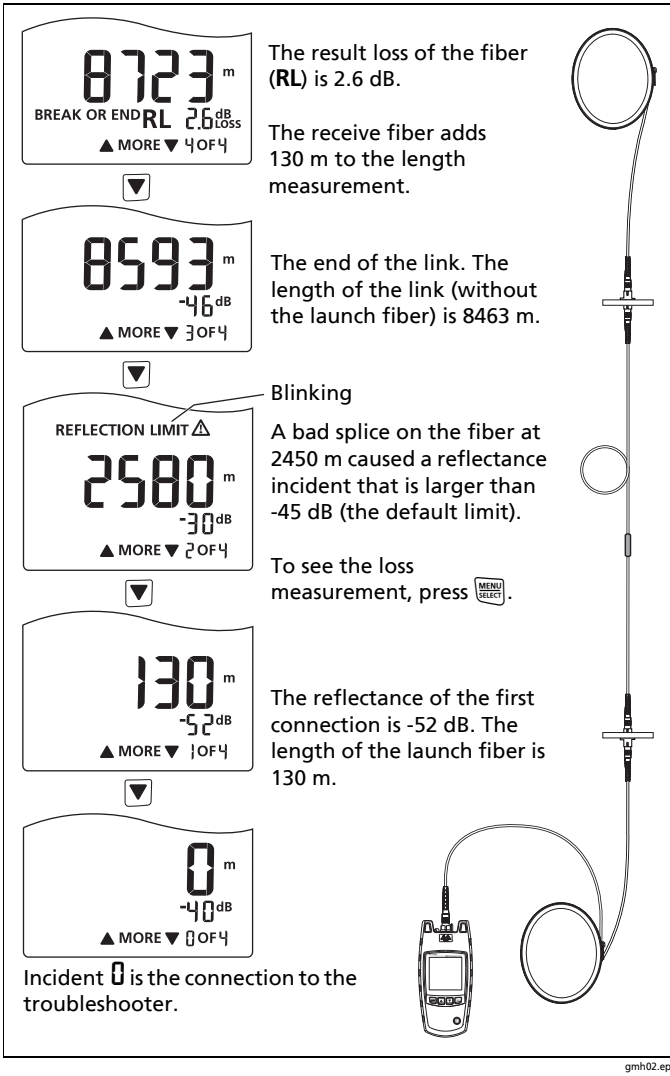


Figure 5. How to Make Connections



gmh02.eps

Figure 6. Examples of Measurement Results

Memory Functions

The troubleshooter automatically saves the results of each test in non-volatile memory. The troubleshooter can save up to 99 results. After that, it replaces the oldest saved results with the results from a new test.

How to See Saved Results

1 Hold down MENU SELECT until the settings menu shows.

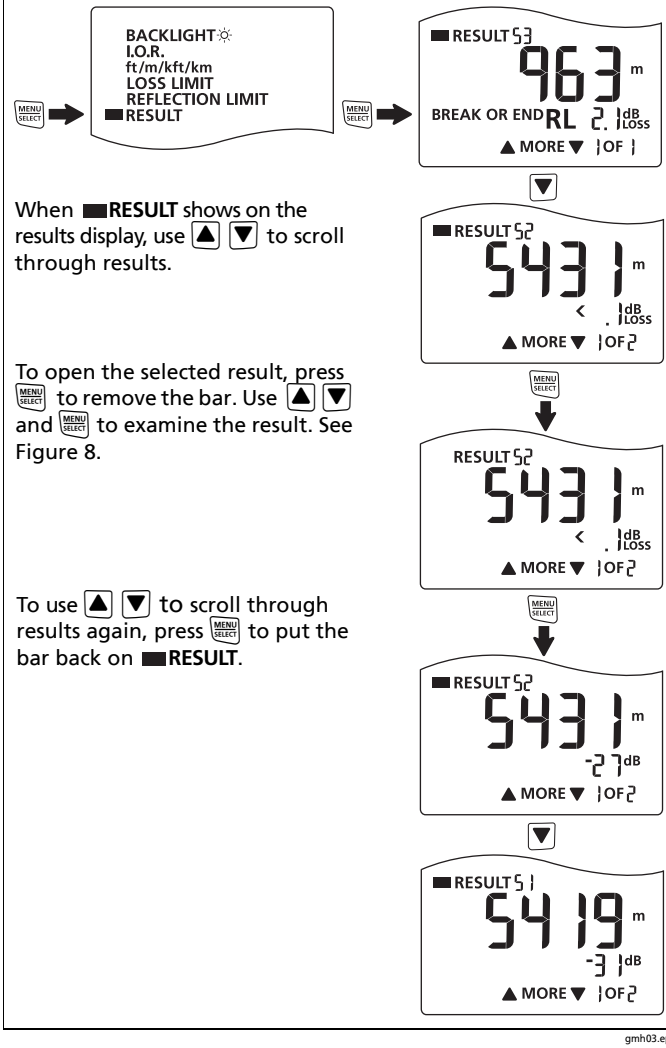
2 With **RESULT** selected, press MENU SELECT. The troubleshooter shows the result from the most recent test. The number next to **RESULT** shows the sequence of the result in memory.

3 Figure 7 shows how to scroll through the results.

Notes

Saved results do not include the loss and reflection limits you used for the test. **LOSS LIMIT** ⚠ and **REFLECTION LIMIT** ⚠ *blink when a measurement is more than the limit that the settings show currently.*

The display shows nonE *if no results are in memory.*



When **RESULT** shows on the results display, use ▲ ▼ to scroll through results.

To open the selected result, press MENU SELECT to remove the bar. Use ▲ ▼ and MENU SELECT to examine the result. See Figure 8.

To use ▲ ▼ to scroll through results again, press MENU SELECT to put the bar back on **RESULT**.

gmh03.eps

Figure 7. How to Scroll Through Saved Results

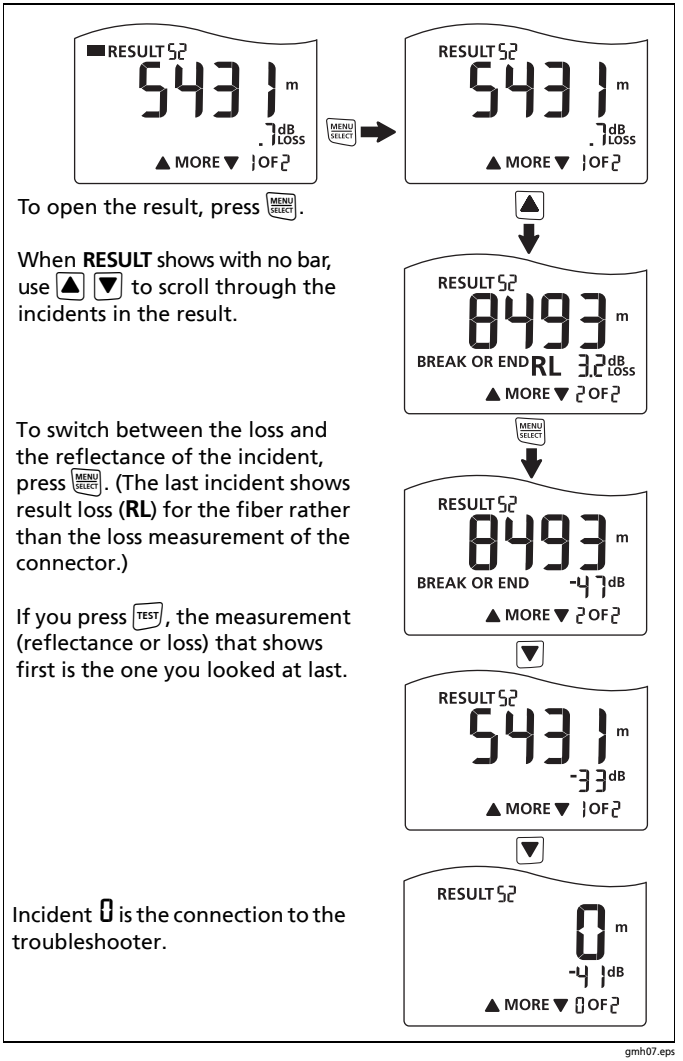


Figure 8. How to Examine a Saved Result

How to Delete Saved Results

Note

This procedure deletes all saved results. You cannot delete individual results.

1 Hold down MENU SELECT until the settings menu shows.

2 With **RESULT** selected, press MENU SELECT to see the results display.

3 Hold down ▼ for 4 seconds. dELr blinks.

4 To delete all tests, press MENU SELECT. The display shows dEL to show you that the tests were deleted.

5 To exit and not delete tests, press ▲ or ▼.

Contacting Fluke Networks


www.flukenetworks.com


support@flukenetworks.com


+1-425-446-5500

- Australia: 61 (2) 8850-3333 or 61 (3) 9329 0244
- Beijing: 86 (10) 6512-3435
- Brazil: 11 3759 7600
- Canada: 1-800-363-5853
- Europe: +31-(0) 40 2675 600
- Hong Kong: 852 2721-3228
- Japan: 03-6714-3117
- Korea: 82 2 539-6311
- Singapore: +65-6799-5566
- Taiwan: (886) 2-227-83199
- USA: 1-800-283-5853

For more phone numbers, go to our website.

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Fluke Networks mainframe products will be free from defects in material and workmanship for one year from the date of purchase, unless stated otherwise herein. Parts, accessories, product repairs and services are warranted for 90 days, unless otherwise stated. Ni-Cad, Ni-MH and Li-Ion batteries, cables or other peripherals are all considered parts or accessories. This warranty does not cover damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Fluke Networks' behalf.

To obtain service during the warranty period, contact your nearest Fluke Networks authorized service center to obtain return authorization information, then send your defective product to that Service Center with a description of the problem.

For a list of authorized resellers, visit **www.flukenetworks.com/wheretobuy**.

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. FLUKE NETWORKS IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY.

Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

4/15

Fluke Networks
PO Box 777
Everett, WA 98206-0777
USA