WaveTester Series Test Kits

Certification Testing

Quick Reference Guide

For part numbers:
KIT-WT-L2st
KIT-WT-L2sc
KIT-WT-L2fc

Optical Wavelength Laboratories

Quick Reference Guide
WaveTester Series
Firmware Version 2.56

Revision 1.1
26009

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NOTICE TO NEW USERS:

All personnel testing optical fibers should be adequately trained in the field of fiber optics before using any fiber optic test equipment.

If the user is not completely familiar with testing fiber optics, they should seek professional training. Such training can be acquired from a variety of sources, such as local hands-on training classes.

Valuable information about fiber optic testing can also be gathered from reading printed literature carefully or by thoroughly reading supplied operations manuals.

Fiber optic testers vary from other types of test equipment due to issues such as:

1) standards-based testing
2) proper fiber optic test procedures (FOTPs)
3) "zeroing" or referencing of power levels
4) determining the correct link budget to pass or fail by

Complete understanding of each of these issues is critical for performing proper fiber optic tests.

GETTING STARTED
Thank you for your purchase of this OWL certification test kit. Included in this kit is a WaveTester optical power meter and a WaveSource multimode fiber optic light source. This quick reference guide will assist you in setting up your test kit for a standards-based certification test.

BEFORE YOU TEST
Prior to performing a certification test, there are a few things you need to know about your link:

- ► *Fiber Type*
- ► *Fiber Length*
- ► *Number of Connections (i.e. patch panels)*
- ► *Number of Splices*
- ► *Fiber Cabling Standard*
- ► *Connector Type*

It is also important to understand the definition of a fiber optic link as it pertains to the WaveTester:

A link is a group of fibers that have the same characteristics, and follow the same pathway from one end to the other.
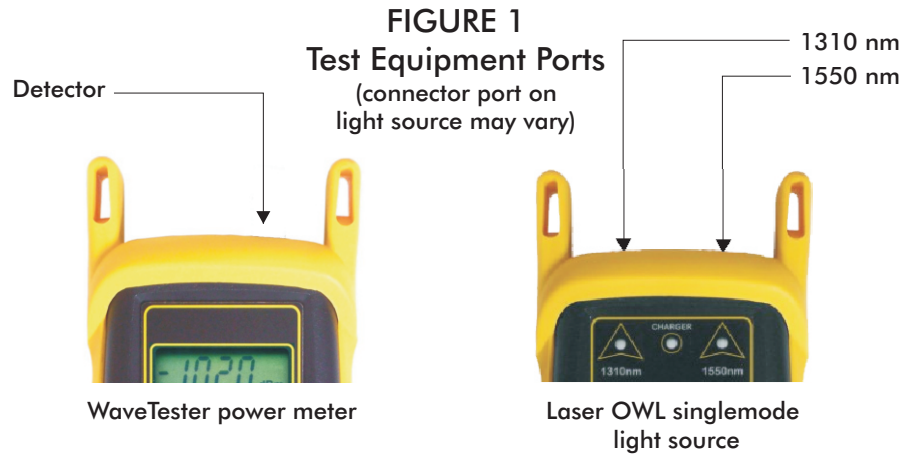
Also, ensure that your patch cable connectors match the patch panel ports on the link under test.

REQUIRED ACCESSORIES

➤ (3) singlemode patch cables

EQUIPMENT PORTS

Figure 1 shows the ports used during this procedure. These ports may vary depending upon the model of equipment.

FIGURE 1
Test Equipment Ports
(connector port on light source may vary)

Detector

1310 nm
1550 nm

WaveTester power meter

Laser OWL singlemode light source

VERIFY PROPER OPERATION OF THE EQUIPMENT

STEP 1 Connect the power meter and light source together with the first patch cable as shown in Figure 2.

FIGURE 2
Verify Patch Cable

LIGHT SOURCE CONNECTOR PORT NOTES:
– CONNECTOR TYPE MAY VARY
– DO NOT INSERT ANGLED PHYSICAL CONTACT (APC) CONNECTOR

STEP 2 Power on the light source.

STEP 3 Power on the WaveTester.

STEP 4 Press λ/**AUTO** several times until the wavelength is set to 1310nm.

STEP 5 The WaveTester should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.

STEP 6 Once proper operation has been verified, remove the first patch cable from both units and set it aside.

STEP 7 Connect the power meter and light source together with the second patch cable as shown in Figure 2.

STEP 8 The WaveTester should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.

STEP 9 Once proper operation has been verified, remove the second patch cable from both units and set it aside.

STEP 10 Connect the power meter and light source together with the third patch cable as shown in Figure 2.

STEP 11   The WaveTester should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.

STEP 12   Once proper operation has been verified, continue on to the next step.

SET REFERENCE

STEP 13   Press and hold the **UNITS/ZERO** button on the WaveTester to set the reference for 1310nm.

The WaveTester display should change to show readings in '**dB**', and the power reading should be approximately 0.00 dB. This means that the meter and light source have been successfully "zeroed" at 1310nm.

⚠️ **NOTE:** if you are also testing at 1550nm, you will need to connect **a separate singlemode patch cable** to the 1550nm port.

STEP 14   Connect the 1550nm singlemode patch cable to the detector port on the WaveTester.

STEP 15   Press λ/**AUTO** several times until the WaveTester is set to 1550nm.

STEP 16   Press and hold the **UNITS/ZERO** button on the WaveTester to set the reference for 1550nm.

The WaveTester display should show a power reading of approximately 0.00 dB. This means that the meter and light source have been successfully "zeroed" at 1550nm.

TAKE READINGS

STEP 17   Remove the patch cable from the detector port on the WaveTester, and bring both units to the opposite ends of the link under test.

STEP 18   Connect the WaveTester and Laser OWL to the link under test as shown in Figure 3 below.

FIGURE 3
Taking
Readings

LIGHT SOURCE CONNECTOR
PORT NOTES:
– CONNECTOR TYPE MAY VARY
– DO NOT INSERT ANGLED
  PHYSICAL CONTACT (APC)
  CONNECTOR

STEP 19   Press λ/**AUTO** several times until the WaveTester is set to 1310nm.

STEP 20   Press **<SAVE>** on the WaveTester to store the reading for the current fiber under test.

STEP 21   Disconnect the patch cables from both ends of the patch panel and move to the next port on the patch panel.

STEP 22   Repeat steps 20 and 21 for each fiber in the cable under test until all fibers have been tested at 1310nm.

STEP 23   For testing 1550nm, again connect to the first fiber under test, except this time use the singlemode patch cable connected to the 1550nm port.

STEP 24   Press λ/**AUTO** several times until the WaveTester is set to 1550nm.

STEP 25   Press <SAVE> on the WaveTester to store the reading for the current fiber under test.

STEP 26   Disconnect the patch cables from both ends of the patch panel and move to the next port on the patch panel.

STEP 27   Repeat steps 25 and 26 for each fiber in the cable under test until all fibers have been tested at 1550nm.