

Micro OWL 2 Series Test Kits

Certification Testing

Quick Reference Guide

For part numbers:

KIT-M2-L2st

KIT-M2-L2sc

KIT-M2-L2fc



Optical Wavelength Laboratories

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 Micro OWL 2 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 Micro OWL 2:

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.

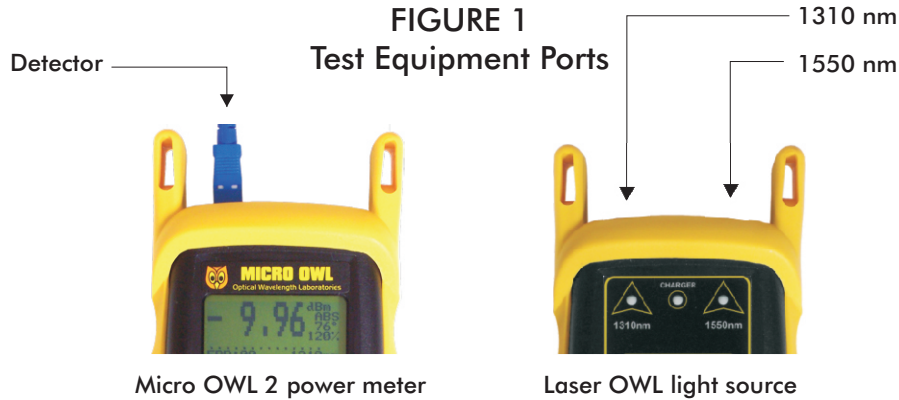
REQUIRED ACCESSORIES

- ▶ (3) singlemode patch cables

NOTE: if you are testing at both 1310nm and 1550nm, each light source wavelength will require its own singlemode patch cable.

EQUIPMENT PORTS

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



VERIFY PROPER OPERATION OF THE EQUIPMENT

STEP 1 Connect the power meter and light source together with one of the patch cables as shown in Figure 2.



- STEP 2** Power on the light source.
- STEP 3** Power on the Micro OWL 2.
- STEP 4** From the OPERATING MODE menu, select SIMPLE METER.
- STEP 5** Press <F3> on the Micro OWL 2 until the wavelength reads 1310nm.
- STEP 6** The Micro OWL 2 should read approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.
- STEP 7** Once proper operation has been verified, remove the first patch cable from both units and set it aside.
- STEP 8** Connect the second singlemode patch cable between the Micro OWL 2 and the Laser OWL as shown in Figure 2.

STEP 9 The Micro OWL 2 should read approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.

STEP 10 Once proper operation has been verified, remove the second patch cable from both units and set it aside.

STEP 11 Connect the third singlemode patch cable between the Micro OWL 2 and the Laser OWL as shown in Figure 2.

STEP 12 The Micro OWL 2 should read approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.

STEP 13 Disconnect the third cable from both units, and set it aside. Press **<DONE>** to return to the OPERATING MODE menu.

RUN LINK WIZARD

STEP 14 From the OPERATING MODE menu, select CERTIFY LINK.

STEP 15 From the START MENU, press **<1>LINK WIZARD**.

```
START MENU
<1>LINK WIZARD
<2>MAIN MENU
```

STEP 16 From the STORED LINKS menu, highlight the stored link name you wish to use and press **<F2>** to select.

```
STORED LINKS
Fiber Link 1
Fiber Link 2
Fiber Link 3
Fiber Link 4
-----
NEXT | SELECT |
```

STEP 17 **OPTIONAL:** you may change the link name to something that better describes the group of fibers you are testing.

Press **<DONE>** to continue.

```
LINK NAME:
[Fiber Link 1]
<--- | SHIFT | --->
```

STEP 18 Change the LINK DATE to the date the fiber will be tested using the format MM-DD-YY.

Press **<DONE>** when you are finished entering the current date.

```
DATE: [MM/DD/YY]
[03-20-08]
<--- | SHIFT | --->
```

 **It is important to set the current date in order to ensure that the correct date appears on the certification reports.**

STEP 19 Highlight the cabling standard to use for the set of fibers you are testing.

Press **<F2>** to select the chosen standard.

```
FIBER STANDARDS
USER DEFINED #1
USER DEFINED #2
[ISO/IEC 11801]
-----
NEXT | SELECT |
```

STEP 20 Highlight the fiber type of the network under test.

Press **<F2>** to select the fiber type.

```
FIBER TYPES
62.5um MM
50.0um MM
[OUTDOOR SM]
OUTDOOR SM
-----
NEXT | SELECT |
```

STEP 21 Enter the end-to-end length of the fiber link under test in meters.

Press **<DONE>** to continue.

```
ENTER FIBER LENGTH:
[1 TO 65535]
[01000] METERS
<--- | UNITS | --->
```

STEP 22 Enter the number of connections (i.e. patch panels) in the link under test. Typical fiber networks will have 2 connections – one for a patch panel located at each end of the link.

Press <DONE> to continue.

```
INLINE CONNECTIONS?
<A CONNECTION IS WHEN
TWO FIBER CONNECTORS
MATE USUALLY A PATCH
PANEL>
[ 2 ]
<--- | SHIFT | --->
```

STEP 23 Enter the number of splices in the link under test. Splices can be either fusion or mechanical. Typical singlemode networks will have zero splices.

NOTE: some connectors use mechanical splice technology for termination. If the link under test is terminated with these “no-polish, no-epoxy” type connectors, they should be considered as mechanical splices.

Press <DONE> to continue.

```
ENTER THE NUMBER OF
SPLICES IN THE FIBER
BEING TESTED:
[ 0 ]
<--- | SHIFT | --->
```

STEP 24 Review your Link Wizard setup.

If correct, press <F1> and continue on to the next step.

If changes need to be made, press <F3> and go back to STEP 17.

```
Standard TIA-568-B.3
Length 81000 Meters
Connections 82 Connections
Splices 00 Splices
Fiber Type 62.5um MM
IS THIS CORRECT?
YES | | NO
```

STEP 25 Press <F1> until the asterisk (*) is in front of 1310nm (as shown at right).

Press <F2> to begin the SET REFERENCE procedure for 1310nm.

```
SET REFERENCES
WAVELEN REF dBm
-----
*1310nm NOT SET
1550nm NOT SET
-----
WAVE | SET | DONE
```

STEP 26 Connect the detector meter and 1310nm light source (left-hand port) together with the singlemode cable as shown in Figure 2.

Press <F1> to continue.

```
CONNECT
1310nm
SOURCE
-----
DONE | |
```

STEP 27 Make sure that the 1310nm light source port is powered ON and selected (the indicator LED on the left-hand side will be lit).

STEP 28 Confirm setting the 1310nm reference.

Pressing <F1> to continue. You will be returned to the SET SOURCE REFERENCES screen.

```
SET
1310nm
REF?
-----
YES | | NO
```

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

STEP 29 For setting a 1550nm reference, repeat steps 25 through 28, except you will select 1550nm (as shown at right). Also make sure that you set the Laser OWL to 1550nm (the right-hand indicator LED will be lit).

```
SET REFERENCES
WAVELEN REF dBm
-----
1310nm -20.00
*1550nm NOT SET
-----
WAVE | SET | DONE
```

After the 1550nm reference is set, the **REF dBm** field will be filled in with a reference value.

STEP 30 Press <F3> to complete the Link Wizard.

STEP 31 Press <F1> to begin taking readings.

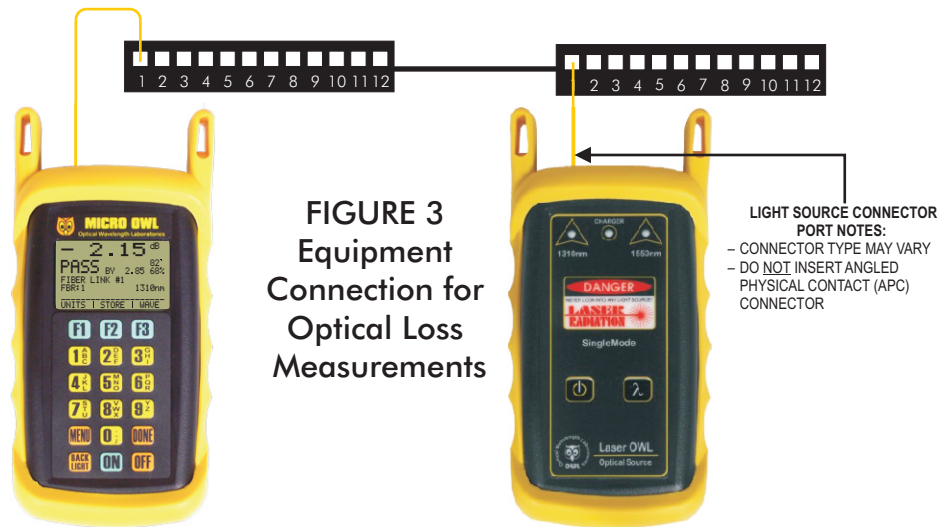
TAKE READINGS

STEP 32 Disconnect the singlemode patch cable from the Micro OWL 2 and take the units to opposite ends of the link.

! Do NOT disconnect the patch cable(s) from the light source at any time until all fibers have been tested.

STEP 33
below.

Connect the units to the first fiber to test as shown in Figure 3. Your readings will vary from the example



STEP 34
a new label.

Press <F2> to store the data point. If this is the first data point in the link, you may be prompted to enter

STEP 35 Press <F3> to save the data point.

STEP 36 Disconnect the patch cables from the patch panels and move them to the next port in the patch panel, then repeat steps 34 through 36 until all fibers in the link have been tested at 1310nm.

STEP 37 If also testing at 1550nm, repeat steps 33 through 36, but this time use the singlemode patch cable attached to the 1550nm port. Also, make sure that you set the Micro OWL 2 and the Laser OWL to 1550nm.