OptoTest
Test Solutions for Fiber Optics

LASER
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AN-108

Test Procedure for SC-LC Hybrid Cables (OPL-PRO 930)

◢ Overview

Testing duplex cables with unlike connectors can be both time consuming and messy without the proper procedure. The following test procedure will show how to best test duplex cables with unlike connectors—in this case, LC-SC— as well as having an organized and in-depth test report created through OPLPro 930 software.

◢ Test Procedure for LC-SC Duplex Cables (OPL-PRO)

Upon first switching on the OP930, it must have 10-15 minutes to warm up. During this warm-up time, verify that the OPM adapter is a universal 1.25mm adapter for referencing LC cables. This is because the duplex LC-SC DUT will test the SC endfaces first thus having the LC endfaces initially connected to the reference cable. Connect the FC/APC-FC/APC saver cable to the OP930 front panel connectors. Next, connect the FC/APC-LC/PC reference cable to the saver cable.

Setup

Start up the OPL-PRO930 software either through the Start menu or the shortcut on the desktop. To set up the serial number, navigate to **Setup > Options** and in the **Measurement Setup** tab, verify the **Alphanumeric (32 char)** option in the Serial Number Configuration is checked. Click close to exit and save these settings.

To enter header data, click **Enter Data Header**. A popup screen will allow the user to make any necessary header changes to the test report. Click **Save and Close** when finished making changes. The information will be automatically added to the Data file.

Figure 1: Header information pop-up

Verify that the correct Setup file, Parameter file, and Configuration are selected. *Note that if using a Multimode system that the proper MMF configuration is selected.*
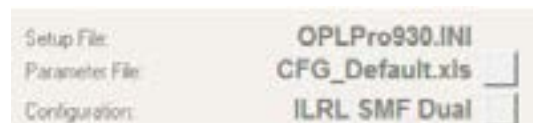

Figure 2: Verfication of correct setup

Figure 3: Configuration change warning pop-up

If a change is made, the user will be prompted to re-reference as shown in figure 3.

Otherwise, click **Ref**.

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Testing the LC Side of the Duplex Cable

Reference

The user will be prompted to take an RL Reference. With the reference cable's LC endface unmated, click **Next** to begin. The software will search for the largest reflection and display the power for both wavelengths as well as the approximate position.
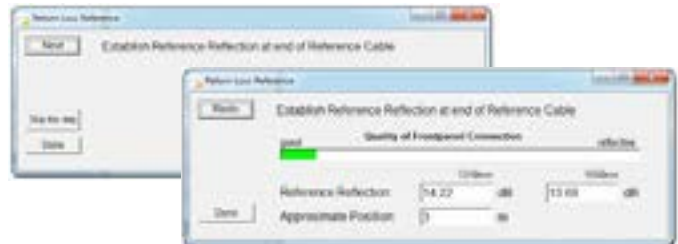
Figure 4: RL reference prompt

Figure 5: Insertion Loss Reference prompt

The next popup screen will prompt the user to prepare for an insertion loss reference. Connect the unmated endface to the 1.25mm OPM adapter and click **Next**. Then, connect the 2.5mm adapter to the OPM to accommodate the SC connector of the cable under test.

Serial Number Setup

Click on the Serial Number text to the **Serial Number Entry** edit box. Here, the user is able to add pre- and post-fix indicators for the serial number. For example, connector type as well as channels can be designated (LC or SC; channel A or B). This is also configured for up to 32 alphanumeric characters. When finished, click **OK**.
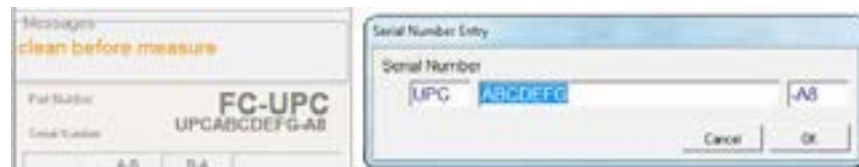
Figure 6: Serial number display and edit box

Testing

Connect the first of the LC/PC endfaces of the DUT (LC1) to the LC end of the reference cable and click **Test**. For the initial test, the user will be prompted to create a Data file.

If an existing data file is going to be used, remember to append the data to avoid losing any previous information. Every other test after this will append data to the selected data file so this step will not need to be performed again.
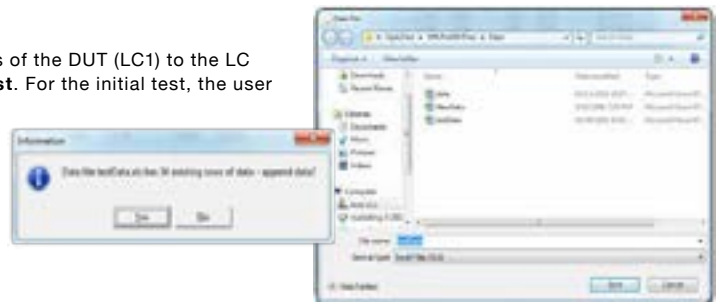
Figure 7: Showing if using an existing file you need to append the data

After the user has chosen whether or not to append the data, actual testing of DUT will begin. When the test has finished and passed, change to LC2 endface, edit the serial number to specify proper endface, pre-fix, post-fix, etc., and click **Test**.

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Testing the SC Side of the Duplex Cable

When switching to the SC testing, make sure that the 2.5mm OPM adapter in connected to the detector. Also, a new FC/APC-SC/PC reference cable must be used to test the SC endfaces of the DUT. Because of the new reference cable, insertion loss and return loss should be re-referenced before testing the cables.

Reference

When the cables are reconfigured for the second half of testing, press the **Ref** button. As before, the user will be prompted to take an RL Reference. With the reference cable's SC endface unmated, click **Next** to begin.
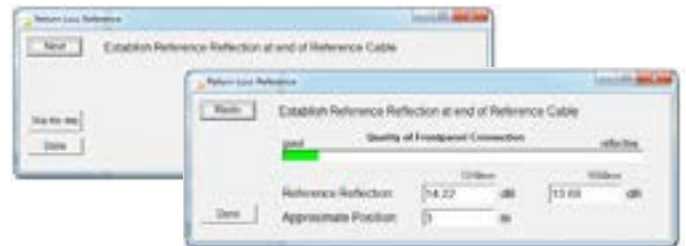
Figure 8: RL reference prompt

Figure 9: Insertion Loss Reference prompt

The next popup screen will again prompt the user to prepare for an insertion loss reference. Connect the unmated SC endface to the 2.5mm OPM adapter and click **Next**. After the reference is done, connect the 1.25mm adapter to the OPM to accommodate the LC connectors of the cable under test.

Testing

After making sure that the serial number properly specifies the endface, pre-fix, post-fix, etc., connect the first of the SC/PC endfaces of the DUT (SC1) to the SC end of the reference cable and click **Test**. When the test has finished and passed, change to SC2 endface, edit the serial number to specify proper endface, pre-fix, post-fix, etc., and click **Test**.