

AN-104

MTP-MTP Insertion Loss/Return Loss Testing with OPL-Max

Overview

There are three (3) methods to measure an MTP-MTP patch cord. The first involves using the large area detector or integrating sphere on the OP930. The second method uses a launch and receive cable and reference insertion loss individually per channel through an OP710 Multichannel Power Meter. The third method is a combination of the two where insertion loss is referenced to the large area detector or integrating sphere and the test measurements are taken individually per channel using the OP710.

Note: The third method is less reliable because the cables are referenced to a different detector than will be used for testing. These procedures also assume a test cable which has different gender connectors.

This short instruction will focus on testing an MTP-MTP patch cord using the first method.

Testing with Large Area Detector

Cable and Software Setup

Using the MTP-breakout patch cord as a launch cable, connect the fanout side to the OP930 and the MTP endface unmated. Return loss will be referenced first.

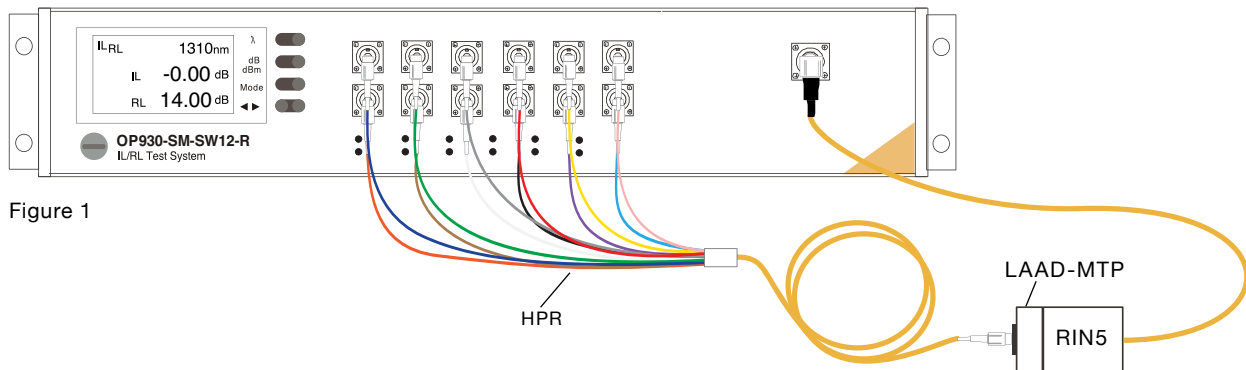
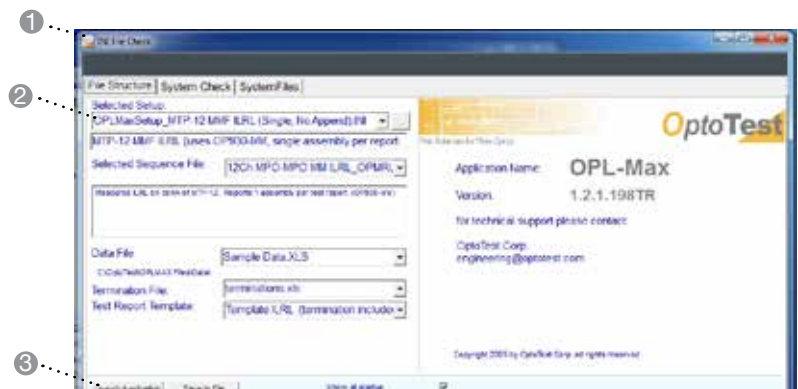


Figure 1

To open the software, open from the Start Menu or on the Desktop. Upon starting, the **1 INI File Check** splash screen will pop up. Select the appropriate setup file via the **2 Selected Setup** drop-down menu. It will automatically fill in the rest of the menus with the saved sequences and descriptions. When the proper setup is selected, click **3 Launch Application**. The assumed setup file for this procedure is shown.



When the software starts up, the chosen sequence will be shown: ④

This can also be edited and viewed in Excel through **Edit > Edit Sequence** in Excel on the toolbar. ⑤

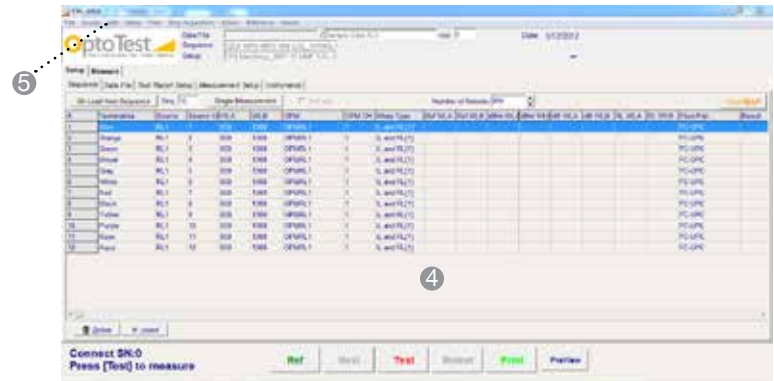


Figure 3

Navigate to the **Setup > Data File** ⑥ tab to select the proper data file for the test report and go to the **Measure** ⑦ tab to configure the test report headers. When finished and a reference is ready to be made, click **Ref.** ⑧

Insertion Loss Reference

The user will be prompted to prepare for an insertion loss reference. To do so, attach the unmated MTP side of the launch cable to the Large Area Detector. This will reference insertion loss from the MTP connector.

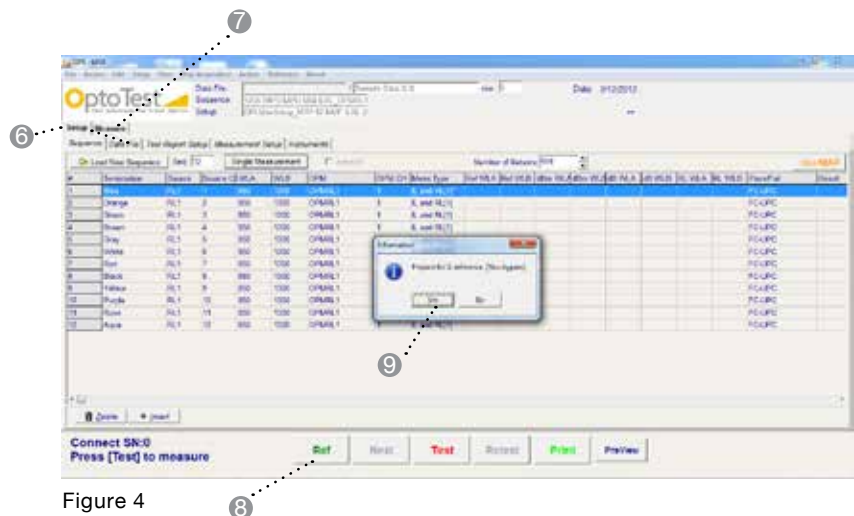


Figure 4

Return Loss Reference

When insertion loss is completed, the user will be prompted for a return loss reference. Upon clicking **Yes** ⑨ a popup screen will be shown. This is for referencing return loss. ⑩

Note that only the first channel is going to be referenced; the remaining channels will copy this reference. This is because all channels are of same length in the fanout end of the launch cable and they are all being referenced to the same MTP endface.



Figure 5

Testing

When insertion loss is completed, the user will be prompted for testing

Now that the MTP-fanout launch cable has been referenced to the Large Area Detector, attach the MTP-MTP DUT to the MTP side of the launch cable and the other endface to the detector. When ready, click **Test**. The software will begin testing and when completed, click **PreView** to view the test report/data file in Excel. This test may be viewed in **Setup > Sequence** or **Measure** tabs.

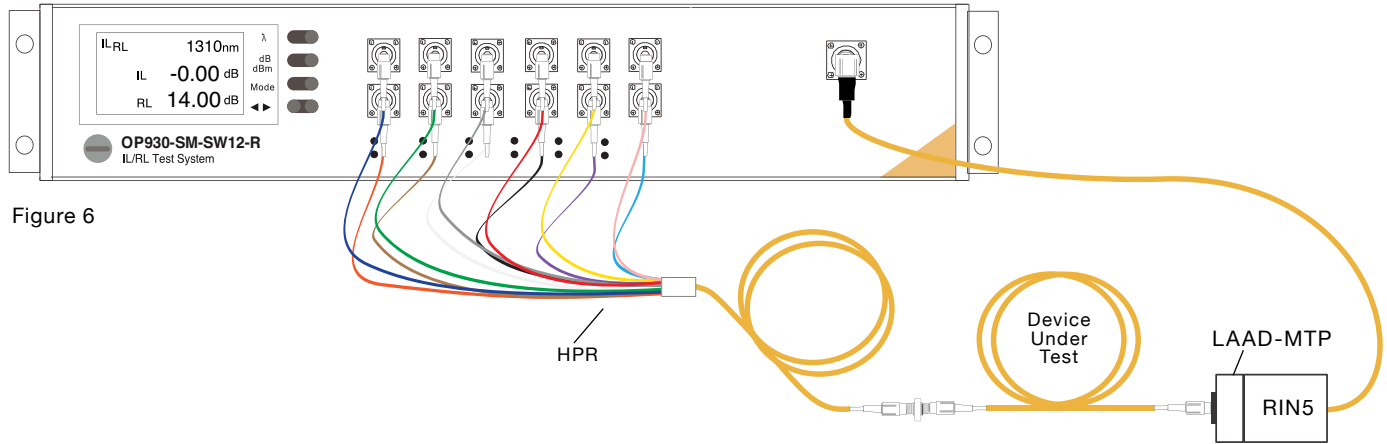


Figure 6

To test the second side of the cable under test, the aforementioned procedure should be repeated with a reference cable that has the appropriate gender. It is advised that this process be done after all cables have their first connector tested since it requires a full reference cycle.