

Testing Insertion Loss & Return Loss with the OP925

This video takes viewers through the process of connector-level insertion loss (IL) and return loss (RL) testing with the OP925 Continuous Wave RL and IL meter.

To test insertion loss and return loss with the OP925 first power the instrument on. You'll need a reference cord with a connector that's similar to your DUT, also a matching block to terminate the end of the DUT.

Initially, the instrument starts up in OPM mode. To do dual wavelength measurements, it is usually easier to cycle over to the dual wavelength IL screen. What we're going to do is perform a reference. Right now the instrument is referenced for IL.

For RL, make sure you have a flat connector here similar to this. You're going to press and hold reference, and it's going to cycle through two wavelengths. This will zero the instrument to a 14.7dB return loss.

So, next I want to connect up my DUT. What I'm going to do is I'm going to navigate to the dual IL and RL mode. You'll see here that when nothing is connected to the power meter, you're going to see these dashed lines, which mean that there's no IL being measured at that moment. So what we're going to do is we're going to connect up our DUT. I'm going to clean off the end of this, and I'm going to mate the DUT to the reference cable.

Right now you'll see that we're getting bad return loss measurements. What I need to do is terminate the back end of this DUT into the matching block, that gives us our return loss measurement there, 45 and 52.

Next to measure insertion loss I'm going to connect to the detector. Now we're going to see the IL measurement. So we see we get a 0.15 and a 0.11dB for IL, and now we test the other side.

Disconnect it. Disconnect here. Connect up the DUT on this side. Terminate the back end with the matching block. You see we get a much better return loss here, so 50 and 52. And then I'm going to connect up this to the power meter, which will give us our IL measurements, so we're getting an IL of 0.34 and 0.31 on this side of the DUT.