

QUICK CARD

SFP+ (10G) and SFP28 (25G) Optics Validation

This quick card describes how to set up the OneAdvisor 800 **SPA06MA-O RA Transport Module** to test 10G or 25 Optics (BiDi or Duplex) for proper operation.

- OneAdvisor 800 equipped with the following:
 - SPA06MA-O Radio Analysis & Optical Module
 - Platform Release 25.2.2 or greater (25276)
 - ONA-SP-OB10G option for 10G SFP+ Test
 - ONA-SP-OB25G option for 25G SFP28 Test
- Optical Transceiver(s) to be tested (SFP+, SFP28). These could be traditional 2 port SFPx or BiDi pair (one fiber port)
- Simplex fiber cable to loopback or interconnect the SFPx
- Fiber optic inspection microscope (P5000i, INX760, or FiberChek Probe)
- Fiber optic cleaning supplies



Figure 1: Equipment Requirements

LAUNCH TEST

- Press the Power button  on the ONA-800 base unit top panel to turn on the OneAdvisor.
- Press the  Home then  Tests then **ODU Emulation** to access the required test category. (Figure 2)
- Or if already in the Radio Analysis 6 GHz application, access the Mode button , O-RAN and Optical BERT and press Done (figure 3)

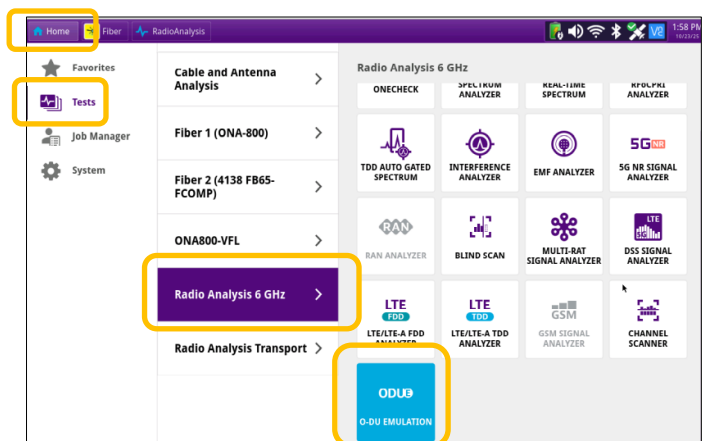


Figure 2: ODU-Emulation Launch screen

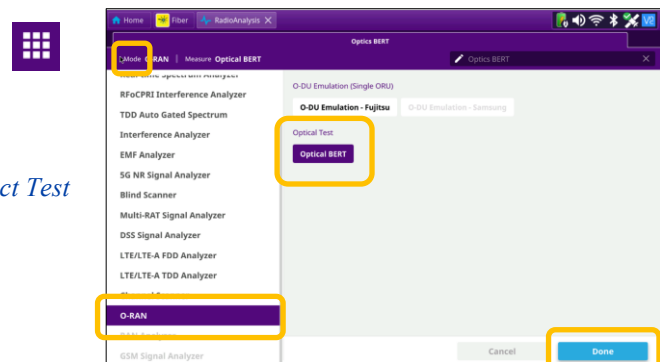


Figure 3: Select Test

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PERFORM FIBER END FACE INSPECTION & CLEANING

► For All Optical Interfaces:

1. Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (SFPx, cables, attenuators, etc.)
 - Focus the fiber on the screen.
 - If it appears dirty, clean the fiber end-face and re-inspect.
 - If it appears clean, run the inspection test.
 - If it fails, clean the fiber and re-run inspection test. Repeat until it passes.

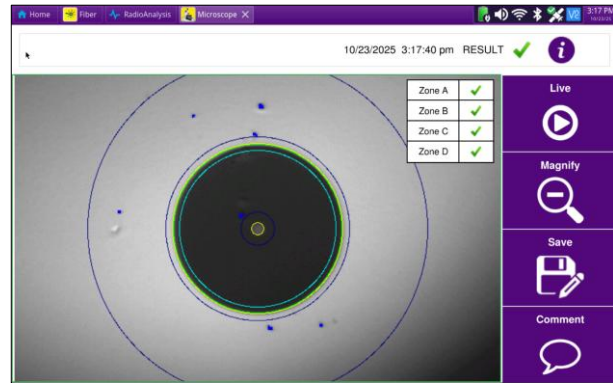


Figure 4: Fiber Inspection

INSERT SFPx AND FIBER

► Insert SFPs:

1. Use Port 1 only for traditional SFPx (left picture)
2. Use Ports 1 & 2 for a BiDi pair (right picture). BiDi optics operate as a pair. You need both sides or a “known good” SFPx to use to test the other.
3. Connect the simplex fiber between the SFPx ports

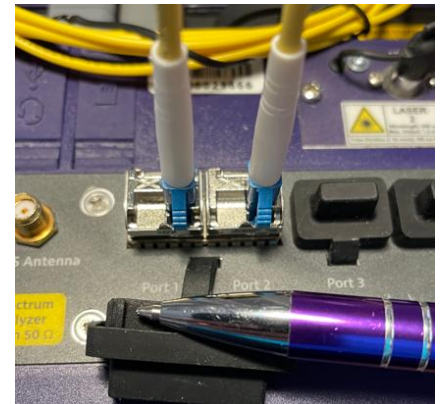


Figure 5: Insert SFP and simplex Fiber to connect Tx to Rx. Duplex example on left, BiDi on right

CONFIGURE THE TEST

► Configure the test:

1. Configure the Link Rate
2. Enable and adjust power limits if desired
3. Configure the test duration and Bit error rate (BER) Threshold (for pass criteria)
4. Turn on the laser(s)

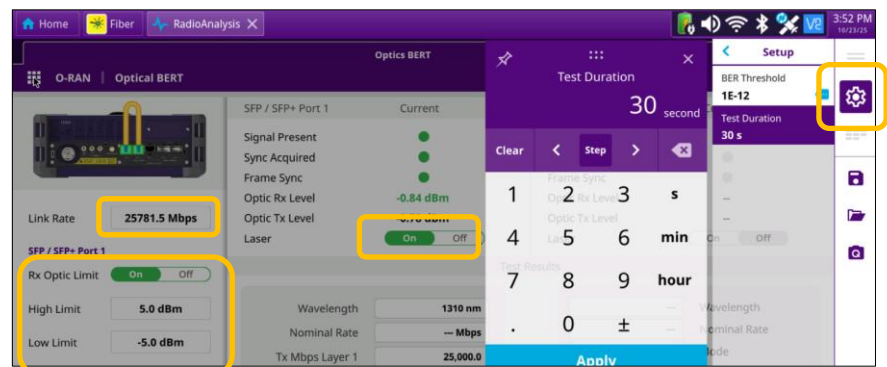


Figure 6: Configure the test.

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REVIEW SFPx INFORMATION AND RUN THE TEST

With SFPx module(s) inserted, the OneAdvisor800 will display the capabilities and parameters reported by each SFPx.

1. Observe the Tx and Rx power levels reported
2. Click the Start Button  at the bottom of the screen to run the test.
3. The receive counts will be in **green** if the BER is within the threshold or **red** if failing
4. Figures 7 and 8 (right) show the parameters and test results for a duplex SFP28 (25G)
 1. Note that port 2 remains blank (not in use)
5. Figures 9 and 10 (below) show the parameters and test results for an SFP+ (10G) BiDi pair
 1. Note there are parameters displayed for both ports 1 and 2
 2. Note the wavelength for one SFP+ is 1270 nm and the other is 1330 nm. For BiDi SFPx, opposites interoperate.
 3. In Figure 10 the wavelength of **1330** is in red. This is just flagging the difference from the wavelength in port 1

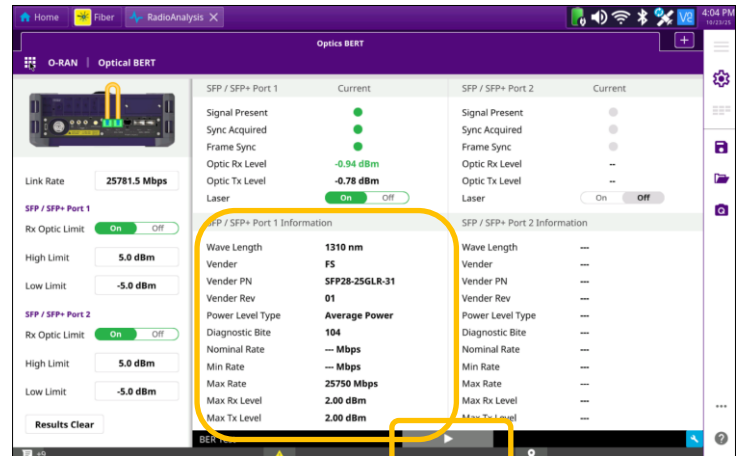


Figure 7: Duplex SFP28 (25G) Example

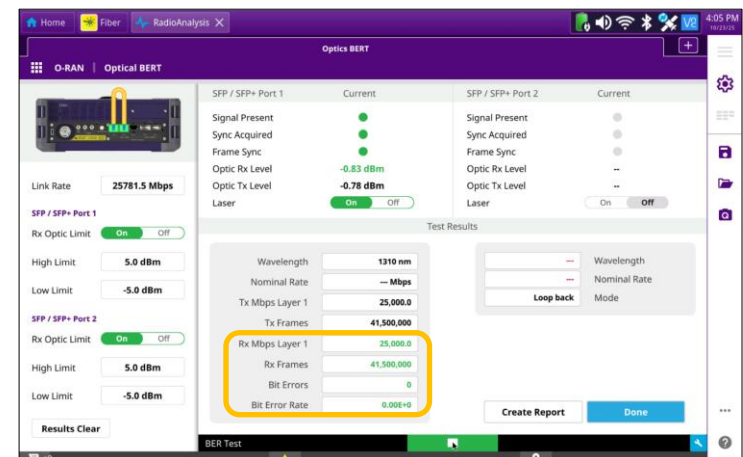


Figure 8: Duplex SFP28 (25G) Results

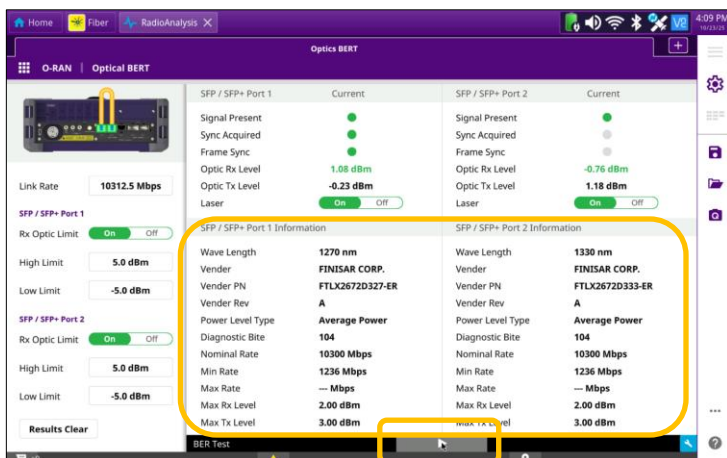


Figure 9: BiDi SFP+ (10G) Example

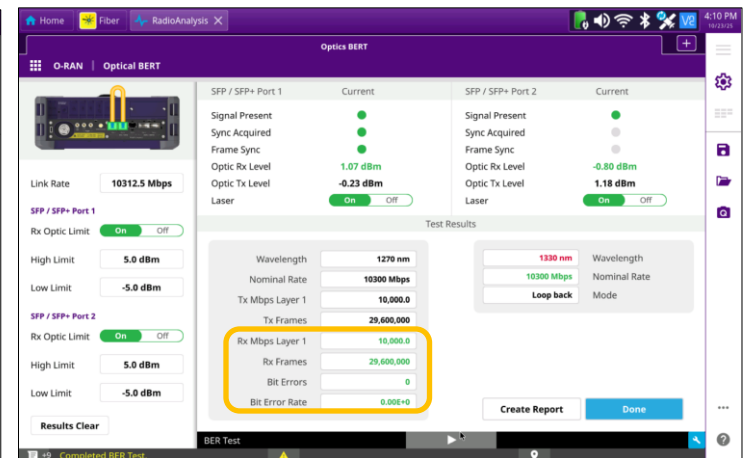


Figure 10: BiDi SFP+ (10G) Results