VIAVI Solutions

Quick Card

ONA-800 Modular Test Set

Real Time Testing with Smart Test Assistant

This quick card describes how to connect to a fiber under test, configure **SMART TEST Assistant** with **Real Time** test OTDR settings, run tests, and analyze results with a VIAVI ONA-800 and 4100-series OTDR module.

Equipment Requirements:

- ONA-800 or ONA-1000 with Fiber Optics Software Release V21.04 or greater
- E4100 Series OTDR Module
- Fiber optic cleaning and inspection tools
- Launch Cable with connectors matching the OTDR port and Fiber Under Test (a minimum 20-meter Fiber optic patch cable or leash is recommended)
- Optical Coupler to connect Launch Cable to Fiber Under Test

Figure 1: Equipment Requirements

The following information is required to complete the test:

- Type of Fiber (Multimode or Single Mode)
- Type of Connectors (SC UPC, SC APC, LC UPC, etc.)

Fiber Inspection Guidelines:

- Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (OTDR Port, Launch Cable, bulkhead connectors, patch cords, etc.)
- Focus fiber on the screen. If dirty, clean the end-face.
- If it appears clean, run inspection test.
- If it fails, clean the fiber and re-run inspection test. Repeat until it passes.

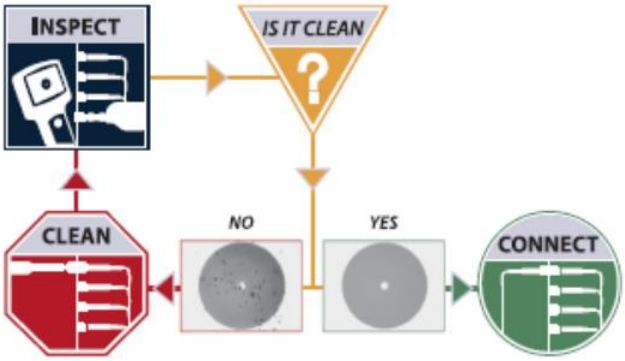

Figure 2: Inspect Before You Connect (IBYC)

Connect Launch Cable to OTDR port:

1. Inspect the OTDR port on top of the test set.
2. Inspect the fiber end face of Launch Cable.
3. Connect Launch Cable to the OTDR port.

Figure 3: OTDR Port Inspection

Connect to Fiber Under Test (FUT):

The Launch Cable may be connected to the FUT via an optical patch panel (OPP) or an optical coupler:

1. If the interface to the FUT is a patch cord, connect the patch cord to an optical coupler with the same connector type.
2. Inspect the FUT connected to the coupler or OPP.
3. Inspect the other fiber end face of the Launch Cable.
4. Connect the Launch Cable to the coupler or OPP.

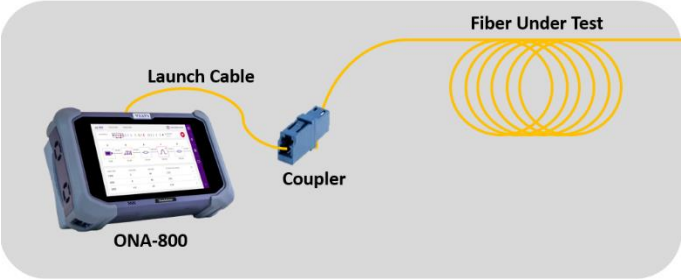

Figure 4: Connecting the Launch Cable to the FUT with a coupler

Figure 5: Connecting the Launch Cable to an OPP

Launch Smart Test Assistant:

1. Press the Power button on the top left of the ONA-800 to start the instrument.
2. Tap the **Tests**, **Fiber 1** and **SMART TEST** icon until it is Blue and highlighted

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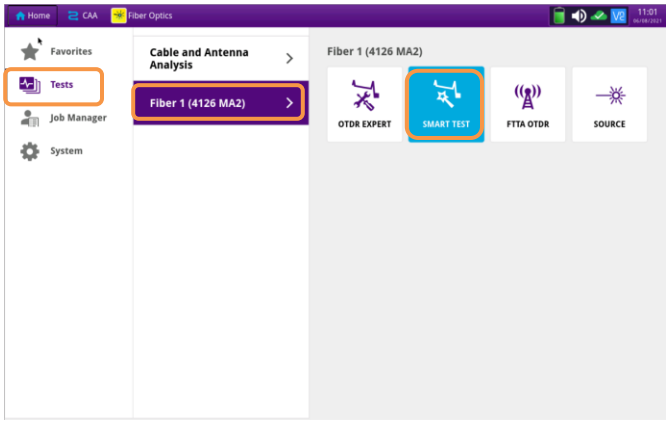

Figure 6: Fiber Optics Home screen

3. Select the **CERTIFICATION** configuration file
4. Tap LOAD to load the configuration and view the **SMART TEST Setup** screen.

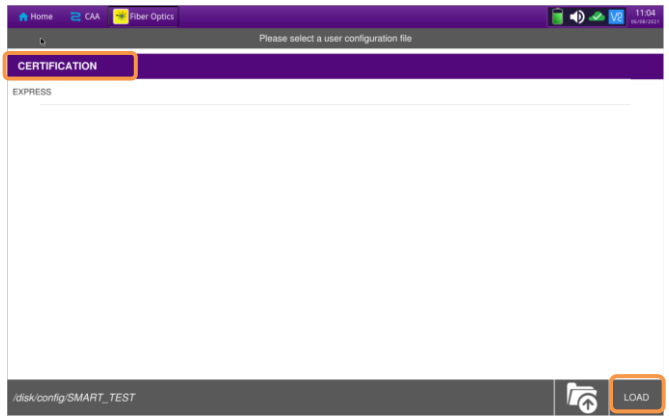

Figure 7: SMART TEST Configuration Files

Configure Test:

1. **Laser**: If the wrong wavelength is selected, tap the screen to deselect. Tap the desired wavelength to test.
2. **Distance Unit:** Tap the desired unit of measure for the launch cable.
3. **Launch Cable:** Tap to select **No.**
4. **Alarms:** Tap to select **No.**

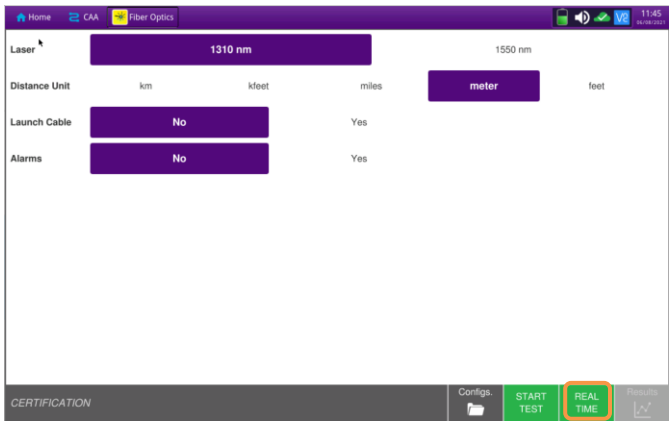

Figure 8: SMART TEST Setup

Run Test:

1. Tap Real Time to start the test. After auto-configuration, the OTDR will perform a connection check to ensure that the connection is **Good**. If the Connection is **Bad**, disconnect the launch cable, and reconnect as described on pages 1, 2 and 3, cleaning every end-face that fails the inspection test.
2. The OTDR will perform real-time acquisitions at the configured wavelength. You can optimize the trace on the screen by using Automatic zoom and start Measurements by using Average.
3. Tap the roll down menu **Test** to measure **Loss** or **ORL** or **Reflectance** at the bottom left screen.
4. You can select the A or B cursors to change ` measurements values. Just select the B cursor and move it on the screen to the position where measurement is required.
5. Figure 11 shows Loss measurement, Figure 12 shows ORL measurement while Figure 13 shows Reflectance measurement.
6. View SmartLink and Table are disabled in Real Time mode.
7. Select STOP to stop the Real Time measurement. If you need to restart the real time measurement, just select Real Time

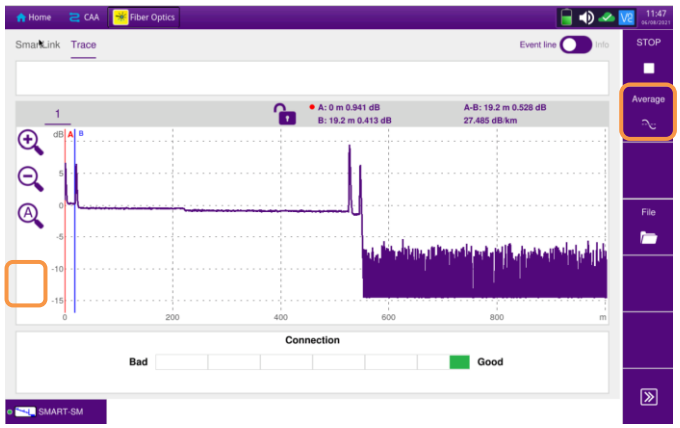

Figure 9: Connection Check & RealTime test

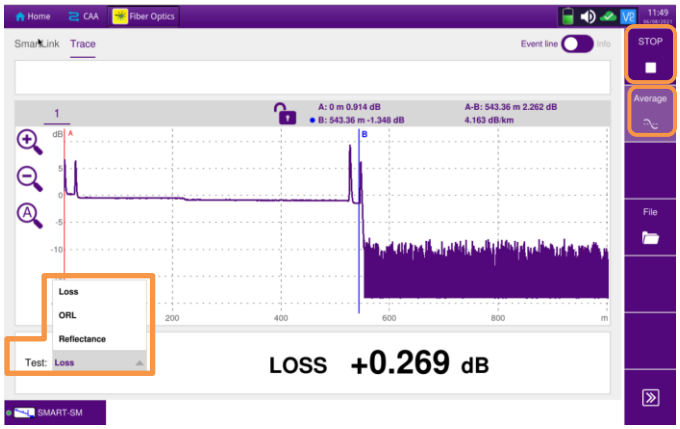

Figure 10: Trace View, Loss Result

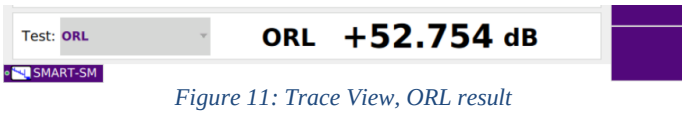

Figure 11: Trace View, ORL result

Figure 12: Trace View, Reflectance Result

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