QUICK CARD

CWDM OTDR Smart Test Assistant

This quick card describes how to connect to a fiber under test and use the Smart Test Assistant to configure test setups, run tests, and analyze results on a VIAVI T-BERD/MTS-5800 equipped with a 4100-series CWDM OTDR module.

🖐 **Note: The CWDM OTDR module is used to test individual CWDM channels on a live network. Care must be taken to select and test the correct channel or wavelength.**

► T-BERD/MTS-5800 equipped with the following:

- Fiber Optics Software Release V21.0 or greater

- 4100 Series CWDM OTDR Module (E41CWDMC10L-APC, E41CWDMC10L-PC, E41CWDM10U-APC, E41CWDM10U-PC, E41CWDM8U-APC or E41CWDM8U-PC)

► Fiber optic cleaning and inspection tools

► 20-meter Fiber optic patch cable (Launch Cable)

► Optical Coupler to connect Launch Cable to Fiber Under Test

Figure 1: Equipment Requirements

► Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (OCC Port, Launch Cable, bulkhead connectors, patch cables, etc.)

► Focus fiber on the screen. If dirty, clean the end-face.

► If it appears clean, run inspection test.

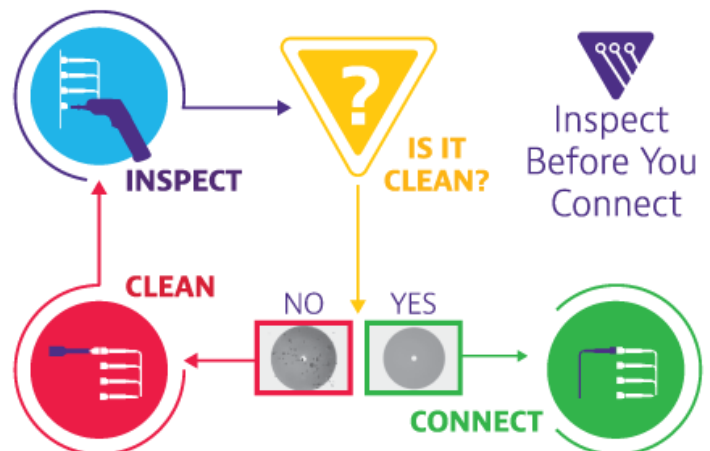► If it fails, clean the fiber and re-run inspection test. Repeat until it passes.

Figure 2: Inspect Before You Connect

T-BERD®/MTS-5800 Network Tester

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CONNECT TO FIBER UNDER TEST (FUT)

All fibers and connectors should be inspected and clean prior to connection, as described on page 1. The OTDR may be connected to the FUT via an optical patch panel (OPP) or a coupler:
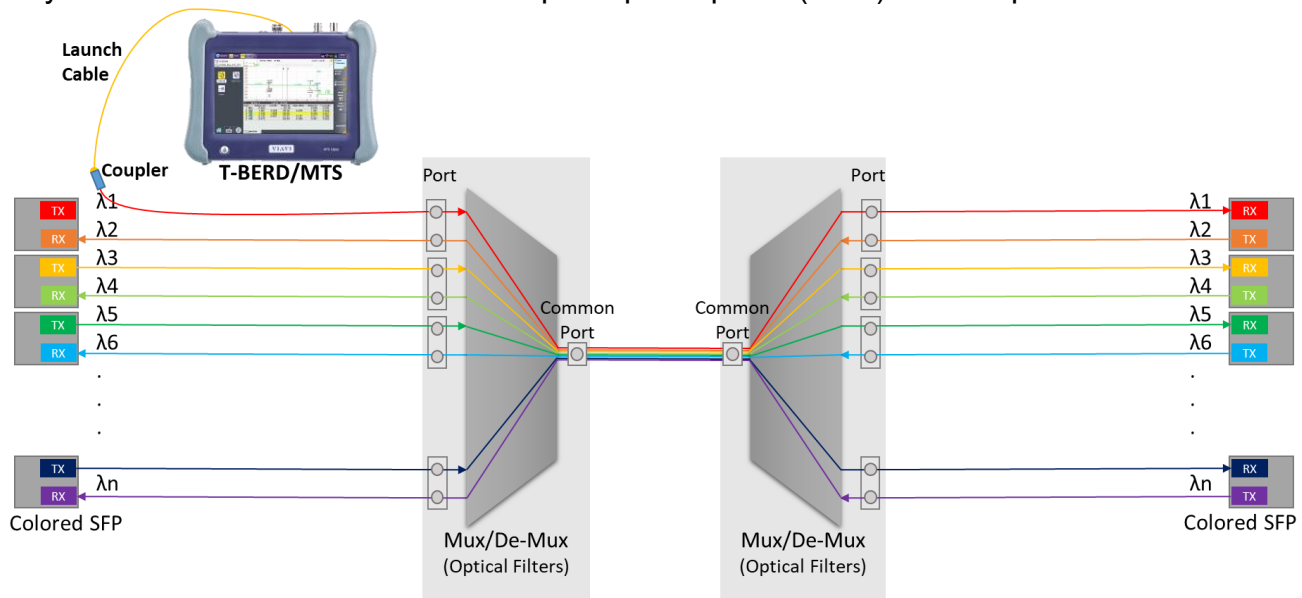

Figure 3: Connecting to Fiber Under Test

1. Inspect the OTDR port on top of the test set.
2. If the interface to the FUT is a patch cord, connect the patch cord to an optical coupler.
3. Inspect the FUT connected to the coupler or OPP port and the fiber end face of the Launch Cable.
4. Connect the Launch Cable to the OTDR port.
5. Inspect the other fiber end face of the Launch Cable.
6. Connect the Launch Cable to the coupler or OPP port.
7. Disconnect or disable the far end SFP on this channel/wavelength.

LAUNCH TEST

1. Press the Power button ⏻ to start the test instrument.
2. Tap the **Fiber Optics** icon ☀ Fiber Optics in the Status Bar at the top of the screen.
3. If a purple ▶ symbol is displayed on the left screen side, tap it to display the **Fiber Optics** home screen.
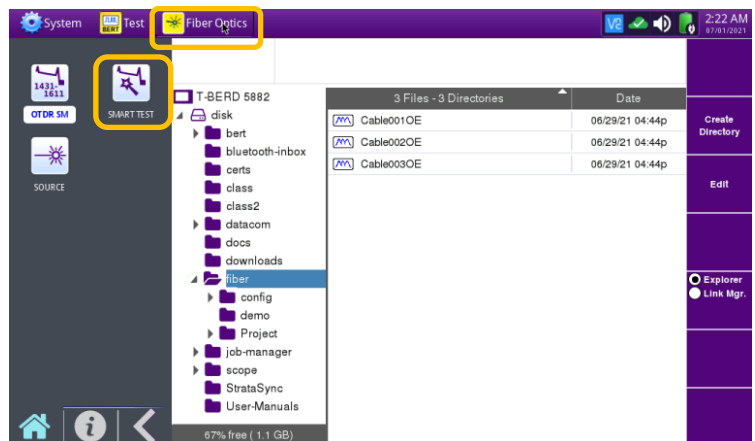4. Tap the **SMART TEST** icon until it is yellow and highlighted.

Figure 4: Fiber Optics Home Screen

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CONFIGURE TEST

1. Select a configuration file:

   ► Select the **CERTIFICATION_AutoTest_20s** configuration file to setup the T-BERD/MTS for automatic 20 second acquisitions to confirm loss and distance AND analyze all events (splices, connectors, etc.)

   ► Select the **CERTIFICATION_SmartAcq_20s** configuration file to setup the T-BERD/MTS for multiple 20 second acquisitions using different pulse widths.

   ► Select the **EXPRESS_AutoTest_5s** configuration file to setup the T-BERD/MTS for 5 second acquisitions to quickly confirm total span loss and distance.

   ► Tap [icon] to select a user configuration file stored in the /disk/fiber/config folder.
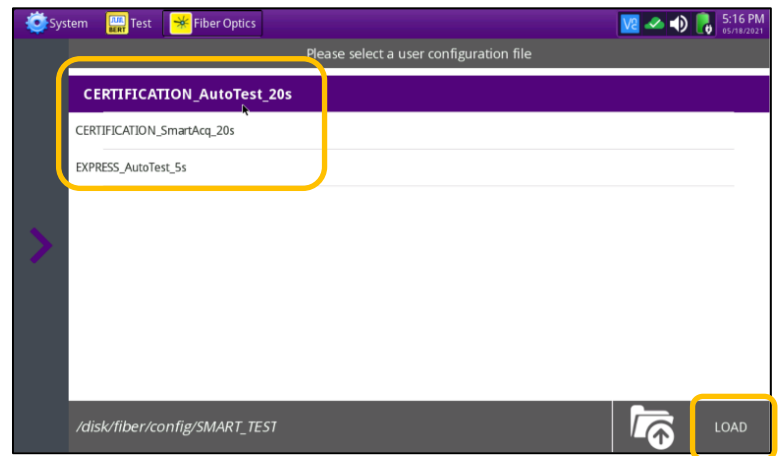

Figure 5: SMART TEST Configuration Files

2. Tap LOAD to load the configuration and view the SMART TEST Setup screen.

3. Configure test settings:

   ► **Laser**: If the wrong wavelength is selected, tap to deselect. Select the CWDM channel to test.

   ► **Distance Unit**: Tap the desired unit of measure.

   ► **Launch Cable**: Tap **YES** if you are using a Launch Cable. Tap the [icon] icon and enter the Launch Cable length. Enter 20 meters or 66 feet for Viavi supplied 20-meter launch cables.

   ► **Alarms**: Tap **YES** and choose **Default** for Viavi recommended Pass/Fail limits.
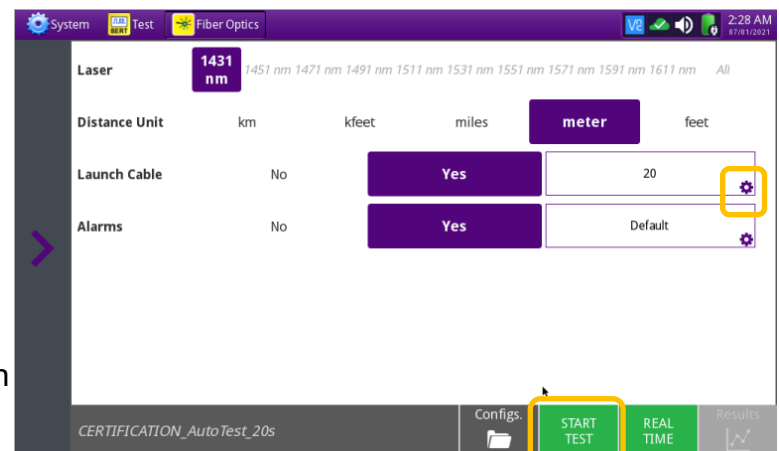

Figure 6: SMART TEST Setup

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RUN TEST

1. Tap **START TEST** 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 and 2, cleaning every end-face that fails the inspection test.

2. The OTDR will perform an acquisition at the configured wavelength. Overall test results (Pass or Fail) will be displayed in a popup window. Touch the popup window to close it.

3. Tap the **SmartLink** tab at the left screen top to select SmartLink view.

4. Set the toggle switch at the right screen top to **Event Line**.

5. View SmartLink results:

   ▶ The FUT is displayed as a series of icons representing events (Mux, Demux connectors, splices, bends, etc.) and distances. Swipe left or right to view additional icons on spans with more than 5 events.

   ▶ The center of the display shows summary results for the entire span for each acquisition or wavelength. Tap any event in the upper display to view detailed results for that specific event.

   ▶ Events and Acquisitions are marked with a green check or red x based on the Alarms setting.

   Note: the icon-based view may not be available on older T-BERD/MTS 5800s when acquisition Mode = SmartAcq. Rerun the test with the **CERTIFICATION_AutoTest_20s** configuration file or contact VIAVI to upgrade your unit to add this feature.
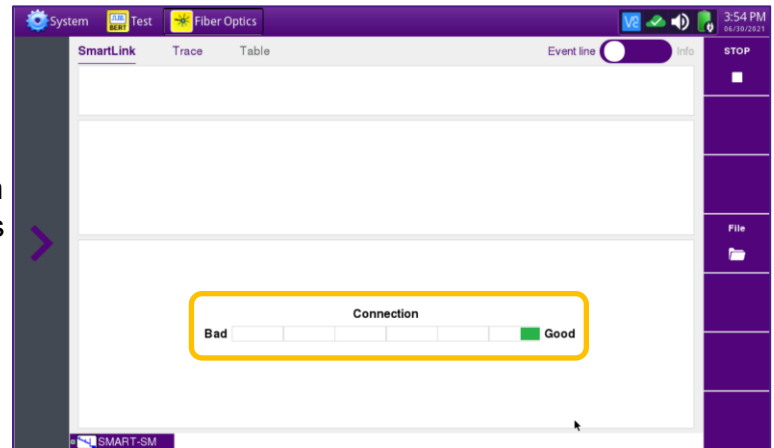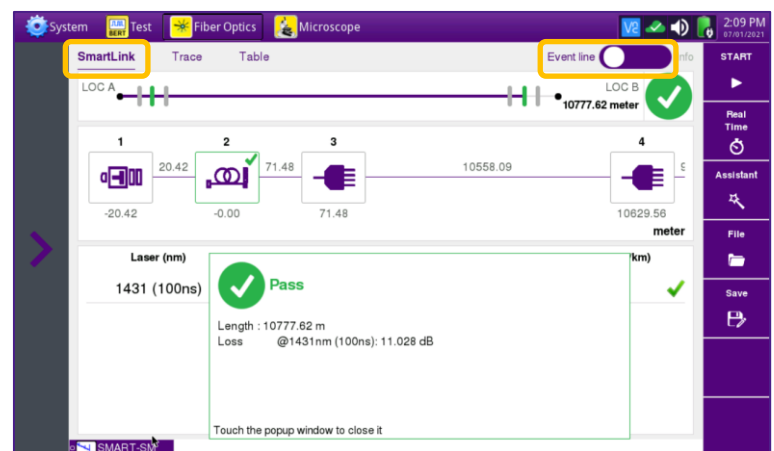

Figure 7: Connection Check

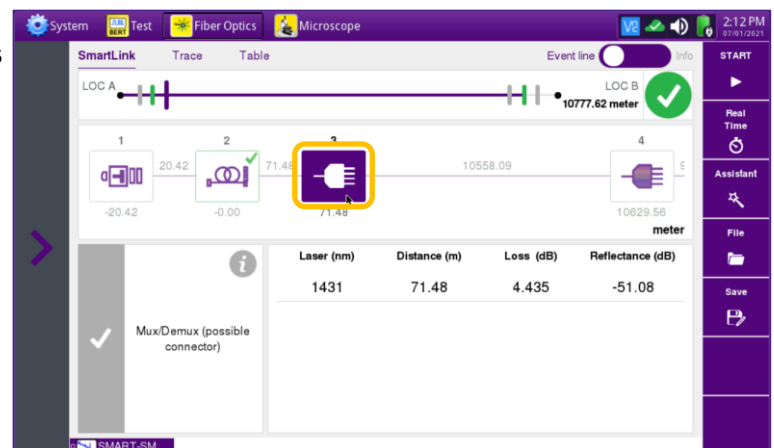*Figure 8: SmartLink View, Summary Results*

Figure 9: SmartLink View, Event Results

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6. Tap the **Trace** tab at the left screen top to select **Trace view**.

7. Set the toggle switch at the right screen top to **Info**.

8. Tap [magnifier icon] to auto-zoom.

9. View trace results:

   ► Trace information is shown in the upper display.

   ► Graphical results (dB versus distance) are shown in the center display..

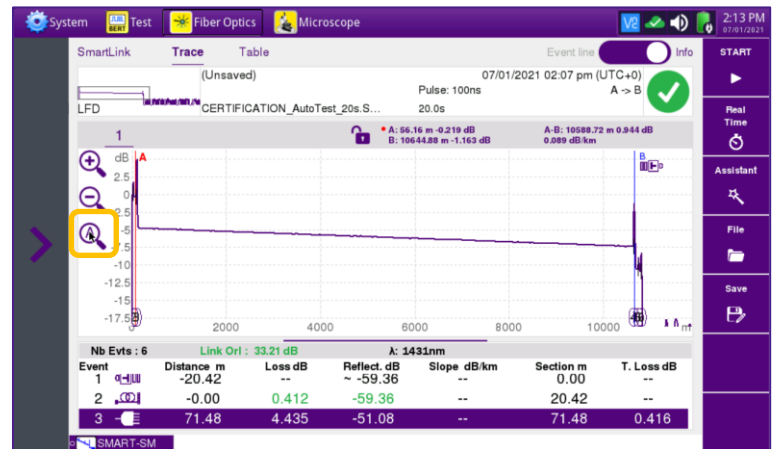   ► A color-coded **Event table** is shown in the lower display. Swipe up and down to view all events.

Figure 10: Trace view

9. Tap the **Table** tab at the left screen top to select Table view.

10. Set the toggle switch at the right screen top to the center (off) position.

11. View table results:

    ► Distance, Loss, and Reflectance are shown for each event.

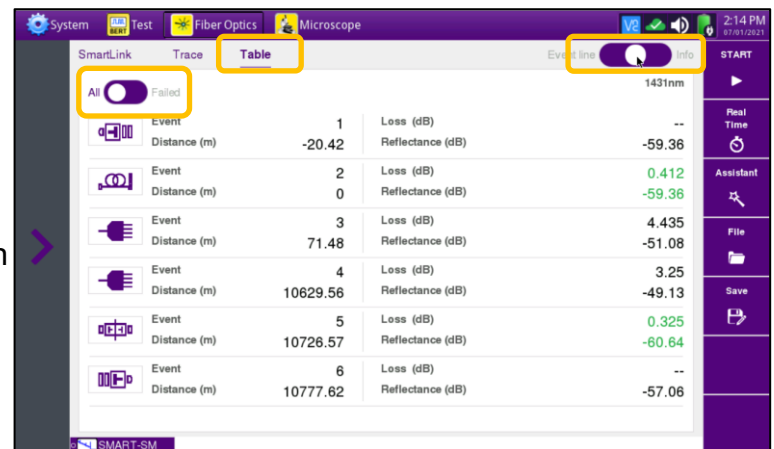   ► Tap the toggle switch to view All events or Failed events.

12. Tap the **Assistant** soft key [Assistant icon] to return to the SMART TEST Setup menu.

13. Repeat all steps on pages 2 through 5 for all Fibers under test.

Figure 11: Table view

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