QUICK CARD

4100-series OTDR Expert OTDR Settings

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 4000 equipped with a 4100-series OTDR module.

EQUIPMENT REQUIREMENTS

- T-BERD/MTS 4000 equipped with the following:
  - Fiber Optics Software Release V21.14 or greater
  - 4100 Series OTDR Module
  - Fiber optic cleaning and inspection tools
- Minimum 20-meter Fiber optic patch cable (Launch Cable)
- Optical Coupler to connect Launch Cable to Fiber Under Test

Figure 1: Equipment Requirements

FIBER INSPECTION GUIDELINES

- 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

QUICK CARD

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: OTDR Port Inspection

1. Inspect the OTDR port on top of the test set.
2. Inspect the fiber end face of the Launch Cable.
3. Connect the Launch Cable to the OTDR port.
4. If the interface to the FUT is a patch cord, connect the patch cord to an optical coupler.
5. Inspect the FUT connected to the coupler or OPP port and the fiber end face of the Launch Cable.
6. Connect the Launch Cable to the coupler or OPP port.

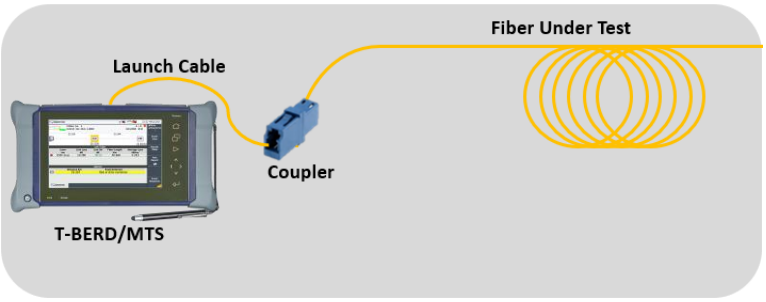

Figure 4: Connecting to coupler

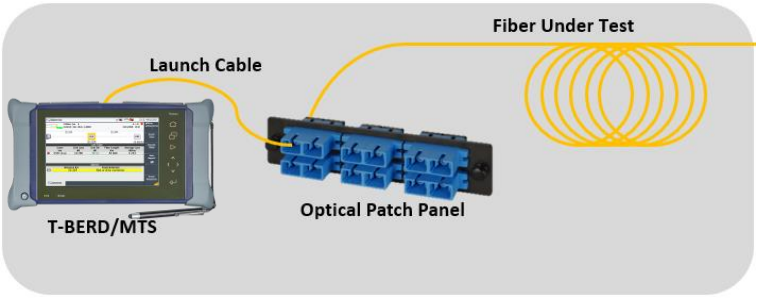

Figure 5: Connecting to OPP

LAUNCH TEST

1. Press the ON/OFF button 

to start the test set.
2. Press the Home button  to display the Home view with the **EXPERT OTDR** icon.
3. Tap the **EXPERT OTDR** icon 

until it is yellow and highlighted.

Figure 6: Fiber Optics Home Screen

QUICK CARD

CONFIGURE TEST

1. Tap the **Setup** soft key 

.

2. Tap **Acquisition** and configure the following basic settings for the trace:
   - **Laser:** Choose the wavelength(s) to test.
   - **Acquisition Mode:**
     - Select **Manual** to manually to enter **Range** and **Pulse** width settings.
     - Select **Auto** to automatically configure **Range, Pulse** width, and **SmartAcq** settings.
     - Select **SmartAcq** to perform an acquisition with a short pulse width, followed by an acquisition with a longer pulse width. The first acquisition allows events at the beginning of the fiber to be detected more precisely.
   - **Acq. Time:** Select **Realtime**, **Auto** or the desired time to sample the fiber.
   - **Launch Cable**: Select and enter **Length** if you are using a Launch Cable.
     Enter 20 meters or 66 feet for Viavi supplied 20-meter launch cables.

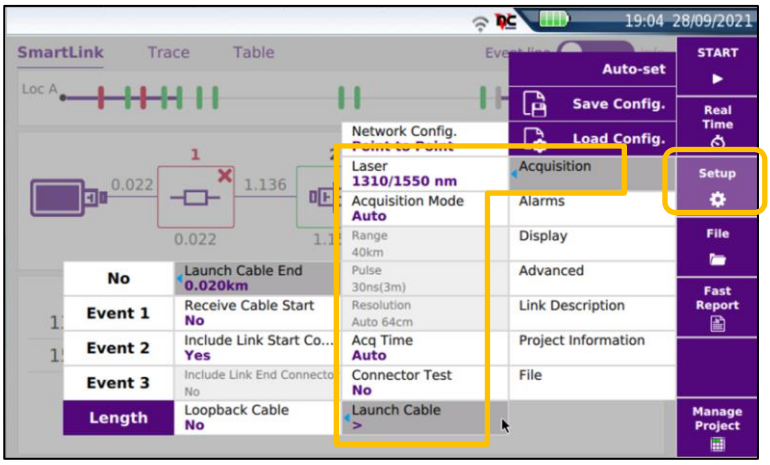

Figure 7: Acquisition settings

3. Tap **Alarms** and configure pass/fail criteria:
   - Set **Alarm Level** to **Fail**.
   - Set **Threshold** to **Default**, or select alternate alarm thresholds (TIA-568.3, User, etc.)

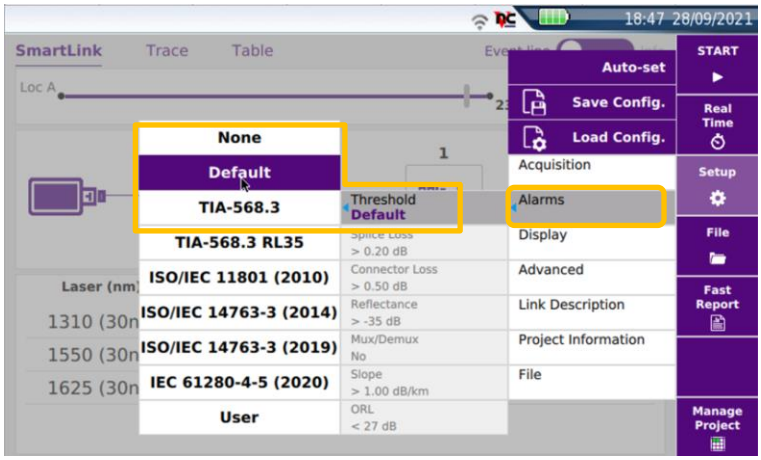

Figure 8: Alarm Settings

4. Tap **Display** and set **Distance Unit** to your desired unit of measure.

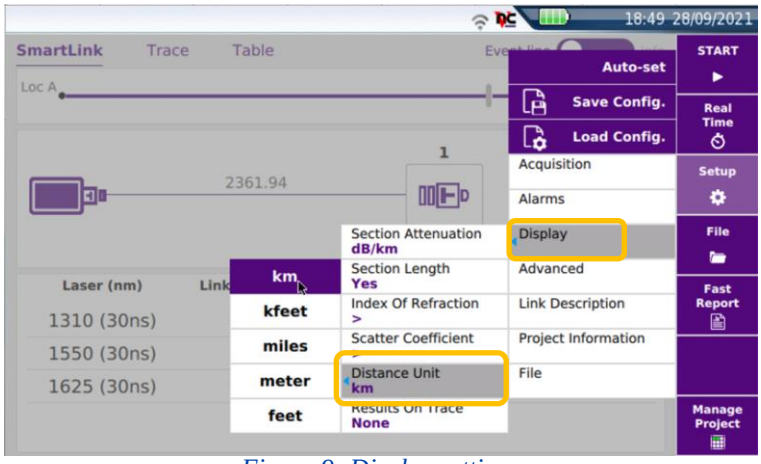

Figure 9: Display settings

QUICK CARD

RUN TEST

1. Tap the Start soft-key 

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 fiber end-face that fails the inspection test.
2. After connection checks, the OTDR will perform acquisitions at the configured wavelengths.
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 (front connector, launch cable, connectors, splices, bends, etc.) and distances. Swipe left or right to view additional icons on spans with more than 4 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 4000s when acquisition Mode = SmartAcq.
   Rerun the test with Manual or Auto Acquisition or contact VIAVI to upgrade your unit to add this feature.

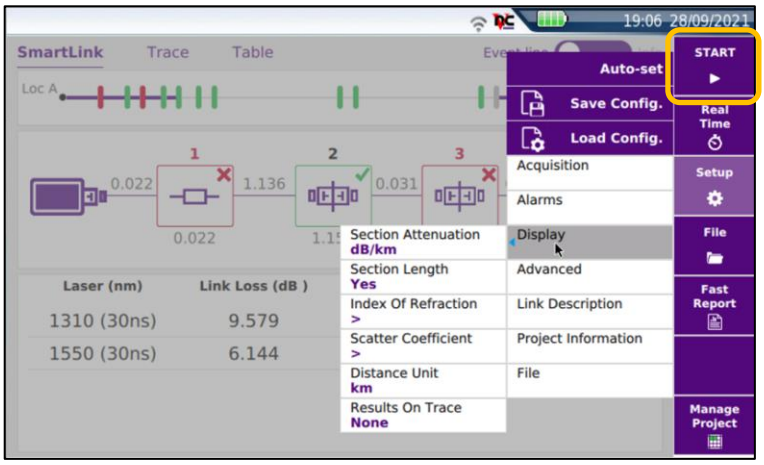

Figure 10: Start Test

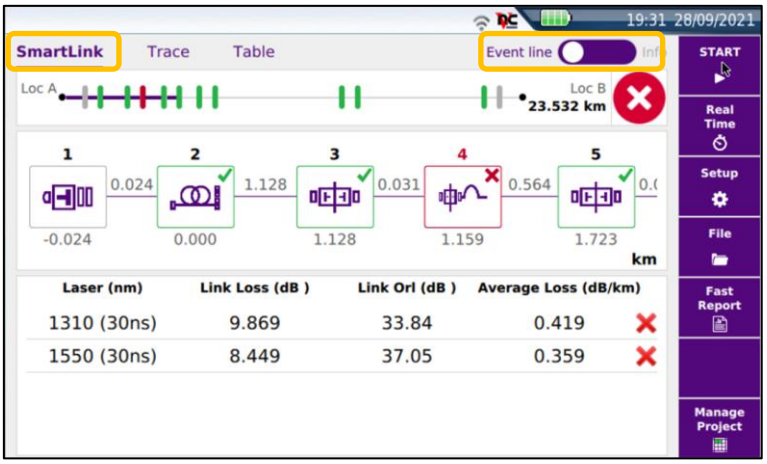

Figure 11: SmartLink View, Summary Results

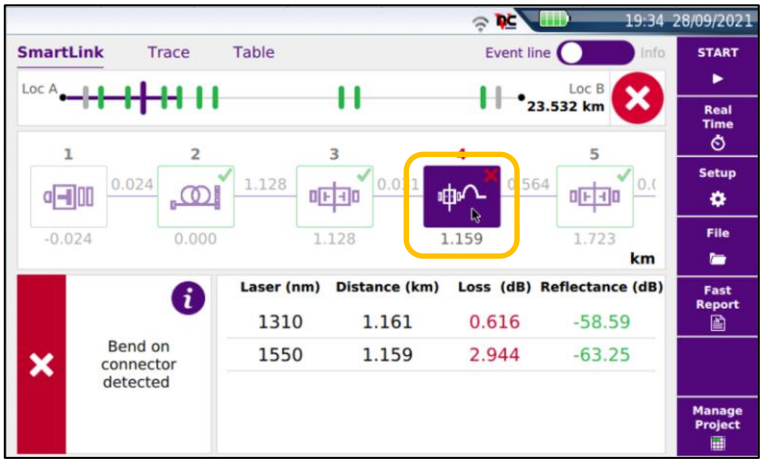

Figure 12: SmartLink View, Event Results

6. Tap the **Trace** tab at the left screen top to select **Trace view**.
7. Set the toggle switch at the screen top to **Info**.
8. Tap the magnifying glass icons to zoom in, zoom out, or auto-zoom the display. You can also pinch and zoom with your fingers.
9. View trace results:
   - ► Trace information is shown in the upper display. Tap **1** or **2** to select the acquisition (wavelength or pulse width) for results 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.

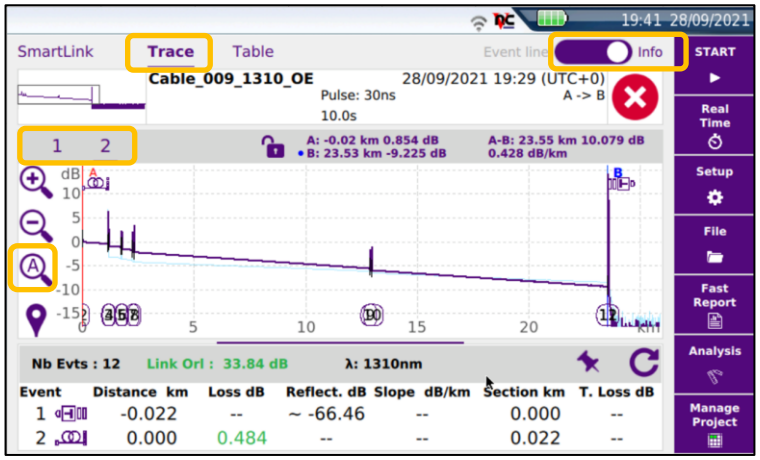

Figure 13: Trace view

10. Tap the **Table** tab to select **Table view**.
11. Set the toggle switch at the right screen top to the center (off) position.
12. View table results:
    - ► Distance, Loss, and Reflectance are shown for each event.
    - ► Tap the toggle switch to view All events or Failed events.

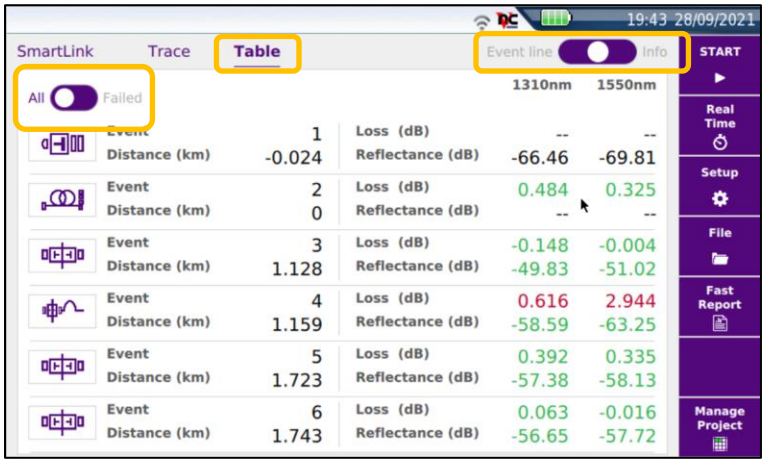

Figure 14: Table view

QUICK CARD

SAVE RESULTS

1. Tap the **Fast Report** soft key 

.

2. Enter **Job Id**, **Cable ID**, **Fiber Number**, **Locations**, and **Direction**.
   - ► The Job Id field identifies the Job and creates a folder by the same name. Results are saved to this folder.
   - ► The Cable Id, Fiber Id, and Fiber Number fields determine the file name.

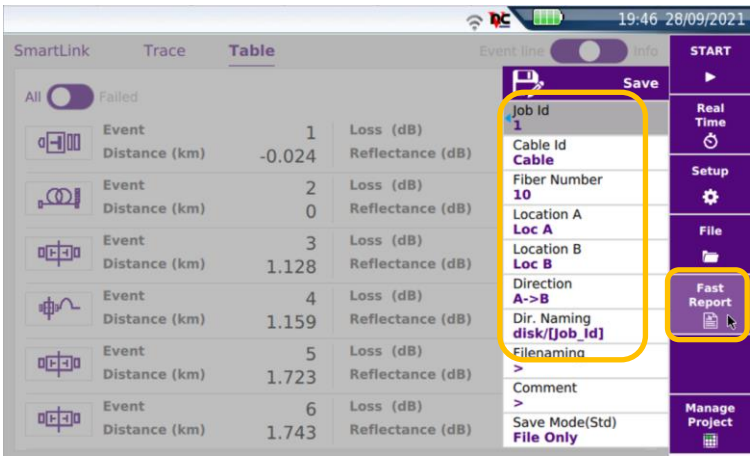

Figure 15: Report Settings

3. Set **Dir. Naming** to **disk/[Job_Id]**. Use the **abc/[auto]** button to toggle between test entry and field entry,

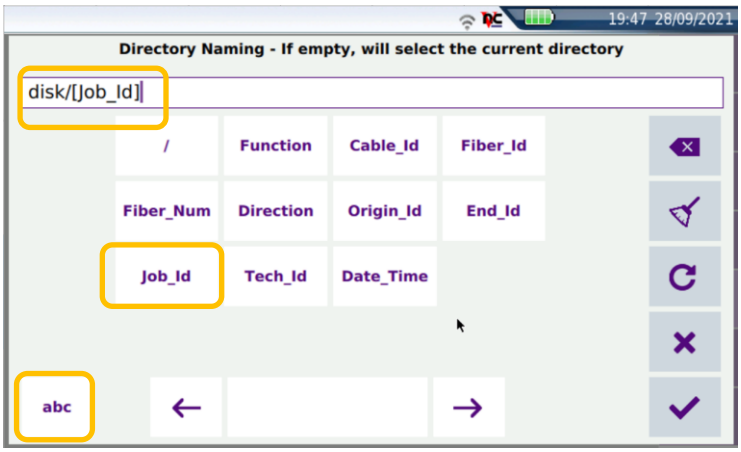

Figure 16: Directory Naming

4. Set **Save Mode** to **pdf**.
5. Tap **Save**. 

6. Tap ✔ to accept the default filename and save test results.
7. Tap the **Fast Report** soft key again to return to the results display.
8. Press the Home button  to return to the Home view.

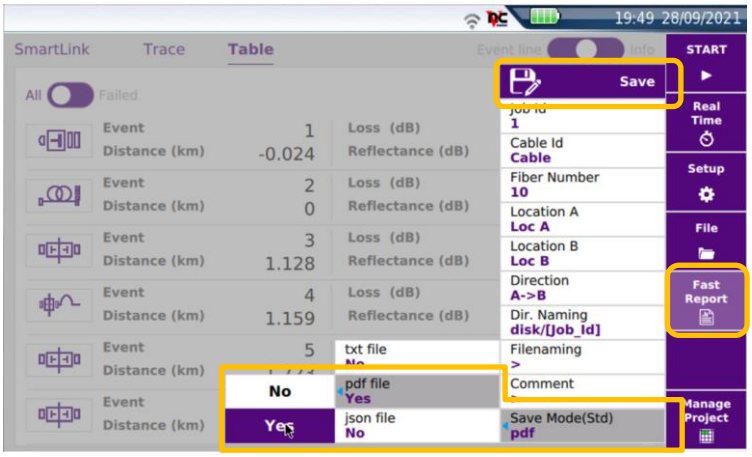

Figure 17: Fast Report

Contact Us **+1 844 GO VIAVI (+1 844 468-4284)**

To reach the VIAVI office nearest you, visit viavisolutions.com/contact