

Quick Card

T-BERD[®]/MTS-5800 Modular Test Set E4100 Module EXPERT OTDR Quick Setup

This quick card explains how to connect to a fiber under test, configure **EXPERT OTDR** test settings using Quick Setup, run tests, and analyze results with a VIAVI T-BERD/MTS-5800 equipped with a 4100-series OTDR module.

Equipment Requirements:

- T-BERD/MTS-5800 equipped with the following:
 - Fiber Optics Software Release V21.0 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.)
- Cable Name or ID
- Fiber Name or ID
- Fiber Number
- Origin and Endpoint Locations Names or IDs

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 the fiber on the screen. If dirty, clean the connector.
- If it appears clean, run inspection test.
- If it fails, clean the fiber and re-run inspection test. Repeat until it passes.

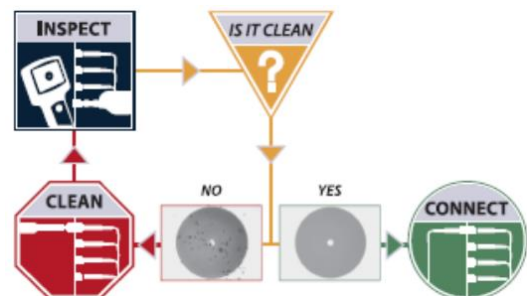


Figure 2: Inspect Before You Connect (IBYC)

Connect the Launch Cable to the OTDR port:

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.








Figure 3: OTDR Port Inspection

Connect to Fiber Under Test (FUT):

The OTDR may be connected to the FUT via an optical patch panel (OPP) bulkhead or coupler as follows:

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 fiber end face of the Launch Cable.
4. Connect the Launch Cable to the coupler or OPP.

Launch and Configure Test:

1. Press the Power button  to start the test set.
2. Tap the **Fiber Optics** icon  in the Status Bar at the top of the screen.
3. Tap the purple > on the left screen side  to display the Fiber Optics Home screen.
4. Tap the **EXPERT OTDR** icon until it is yellow and highlighted .
5. Tap the **Setup** soft key .
6. 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,

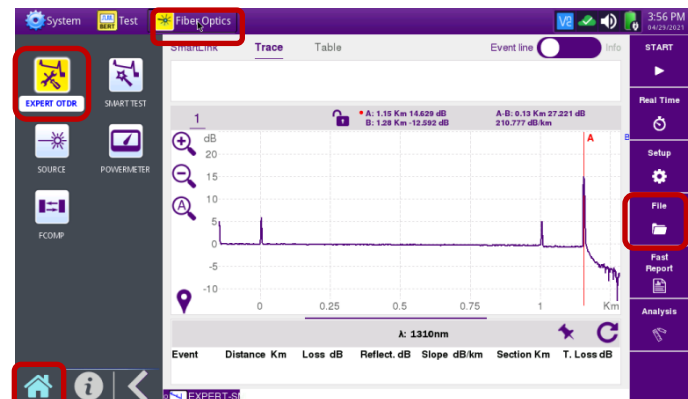


Figure 4: Home view

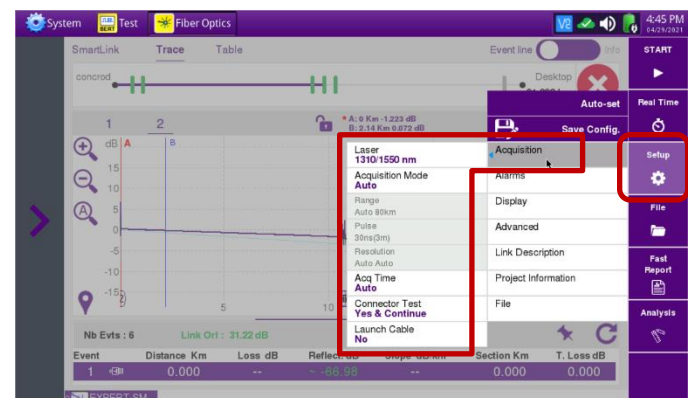


Figure 5: Acquisition settings

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.

7. Tap **Alarms**.
8. Set **Alarm Level** to **Fail**.
9. Set **Threshold** to **Default**, or select alternate alarm thresholds (TIA-568.3, User, etc.)

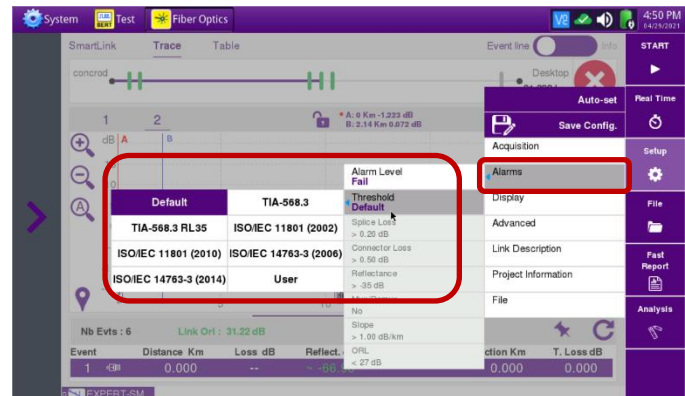

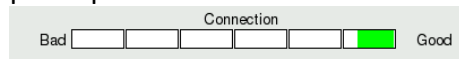


Figure 6: Alarm settings

Run Test:

- Press 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 end-face that fails the inspection test. Also, inspect and clean the fiber end faces in any patch panels or connectors near the OTDR.



After the connection check, the OTDR will perform acquisitions at each selected wavelength.

- The top section of the screen can be set to display an **Event line**, or **Trace Information** by tapping the toggle switch at the top right side of the display.
- Results may be displayed in three formats: **SmartLink**, **Trace** or **Table**.



Figure 7: Start Test

Trace view:






- Graphical results for each wavelength or pulse width are shown in different colors in center display. Tap **1** or **2** to select the wavelength or pulse width for results display.
- Distance, Loss, and Reflectance** for the first event is listed in the lower display. Swipe up to see additional events. Values that violate loss or reflectance pass/fail thresholds are shown in **RED**.
- Tap the magnifying glass icons to zoom in , zoom out , or auto-zoom  the display. You can also pinch and zoom with your fingers.



Figure 8: Trace view

SmartLink view:

- The Fiber under test is displayed as a series of icons representing each event (connector, splice, bend, etc.). If there are more than 4 events, swipe left to display additional icons. Note: the icon-based view is not available if Acquisition Mode = SmartAcq.
- In the center display, view summary results per wavelength or pulse width for the entire span. Acquisitions for which all events are acceptable are marked with a green check . Acquisitions with events that exceed pass/fail thresholds for loss or reflectance are marked with a red .
- In the lower display, view each event that exceeds thresholds.
- Tap on an event icon to view detailed results for the event.

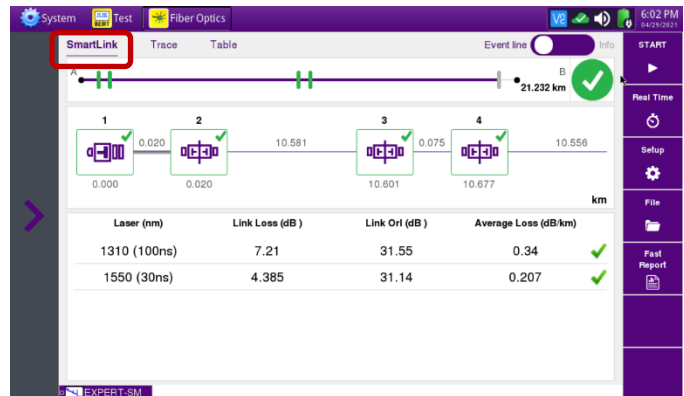


Figure 9: SmartLink view

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

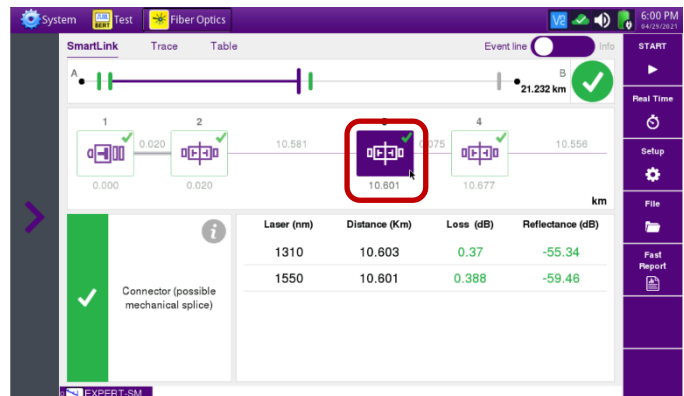


Figure 10: Event view

Table View:

- **Distance, Loss, and Reflectance** are shown for each event. Values that violate loss or reflectance pass/fail thresholds are shown in **RED**.
- Tap the toggle switch to **All** events of **Failed** events.

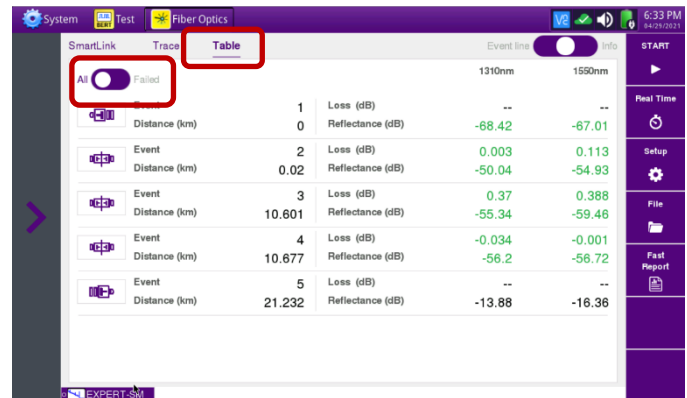









Figure 11: Table view

Fast Report:

1. Tap the **FILE** soft key  and tap the **fiber** folder.
2. Tap the **Create Directory** soft key  and enter a name for your new folder. All trace files will be saved to this directory.
3. Tap the **Exit** soft key .
4. Tap the **Fast Report** soft key  and enter **Cable ID, Fiber Number, Locations, and Direction**.
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. Tap  to return to the OTDR Home screen.

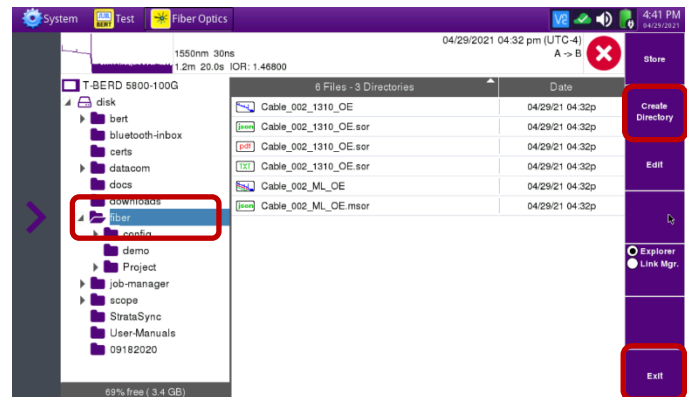


Figure 12: File Manager

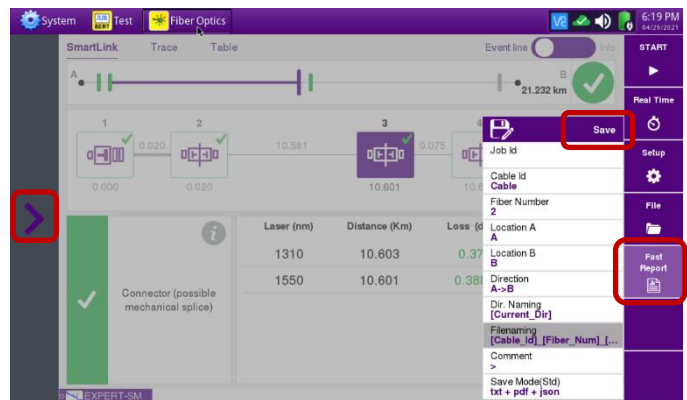


Figure 13: Fast Report