

Quick Card

T-BERD[®]/MTS-2000 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-2000 equipped with a 4100-series OTDR module.

Equipment Requirements:

- T-BERD/MTS-2000 equipped with the following:
 - Fiber Optics Software Release V17.30 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 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.)
- Distance unit (feet, meters, miles, kilometers)

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.

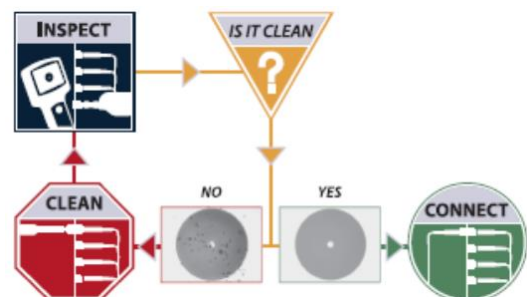


Figure 2: Inspect Before You Connect (IBYC)

Connect the Launch Cable to the OTDR port:



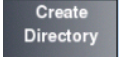


1. Inspect the OTDR port on top of the test set.
2. Inspect the fiber end face of the Launch Cable.
3. Connect the Launch Cable to the OTDR port.

Connect to Fiber Under Test (FUT):

All fibers and connectors should be inspected prior to connection, as described on page 1. 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 **ON/OFF** button  to turn on the test set.
2. If files are to be saved, tap the **FILE** Button  and tap the **results** folder. Otherwise, proceed to step 4.
3. Tap the **Create Directory** soft key , enter a name for your new folder, and tap the **Enter** key. All trace files will be saved to this directory.
4. Press the **HOME** button to display the Home Screen.
5. Tap the **EXPERT OTDR** icon  until it is yellow and highlighted .

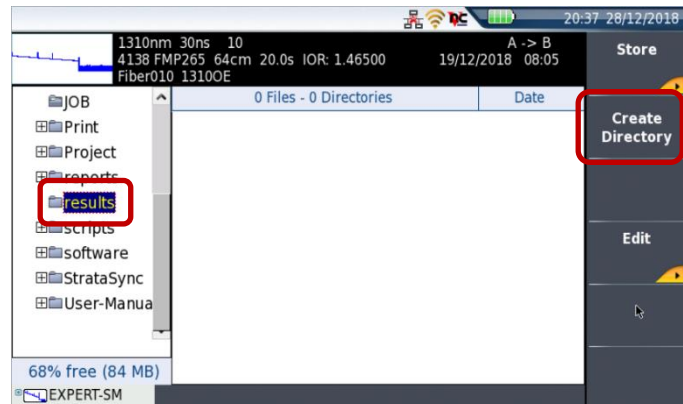


Figure 3: File manager



Figure 4: Home screen



6. Press the **RESULTS** button  to show the **Results view**.
7. Tap the **Quick Setup** soft key  to display Acquisition settings.



Figure 5: Results view

8. Configure the following basic settings for the trace:

- **Laser:** Choose the wavelength(s) to test.
- **Acquisition:**
 - 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.
- **Time:** Select **Realtime**, **Auto** or the desired time to sample the fiber.

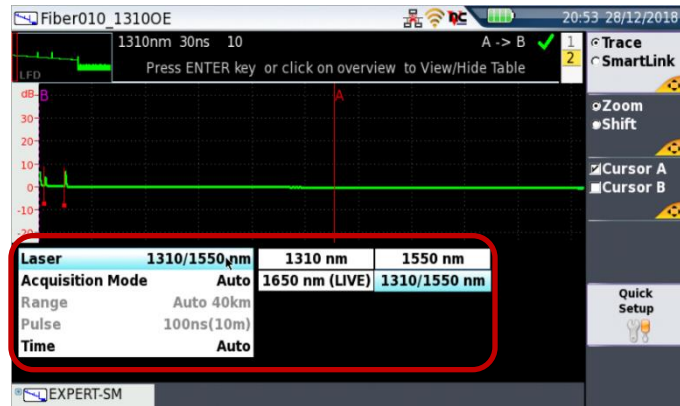


Figure 6: Quick Setup acquisition settings

Run Test:



1. Press the **START/STOP** button  to start the test. After auto-configuration, the OTDR will perform a connection check to ensure that the connection is **Good**.
2. 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.
3. After the connection check, the OTDR will perform acquisitions at each configured wavelength.
4. Results may be displayed in two formats: **Trace** or **SmartLink**. Tap the **Trace/SmartLink** soft key  to toggle between views:



Figure 7: Good Connection Check

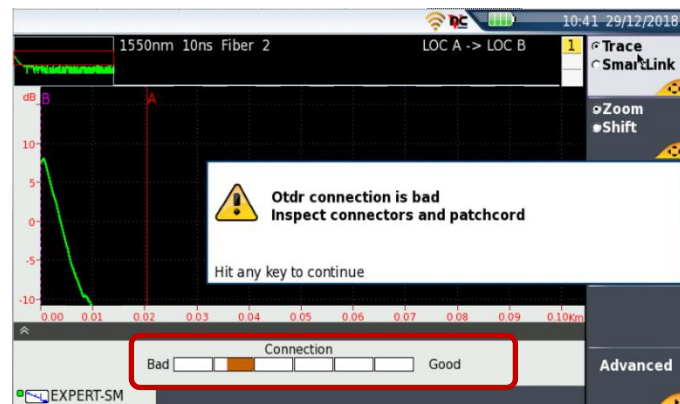


Figure 8: Bad Connection Check

Trace view: Results for each wavelength are shown in different colors in upper display. Each event is listed in the lower display. Events that violate loss or reflectance pass/fail thresholds are shown in **RED**.






- After selecting trace view, use the following controls to change the display:
 -  to toggle between results for each wavelength.
 -  to toggle between single event and multiple event view in lower screen.



Figure 9: Trace view

SmartLink view:

- In the upper display, view the FUT as a series of icons representing each event (connector, splice, bend, etc.). Note: the icon-based view is not available if Acquisition Mode = SmartAcq.
- In the center display, view summary results per wavelength/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 an event icon and tap the **Event View** soft key  to view details for the event.

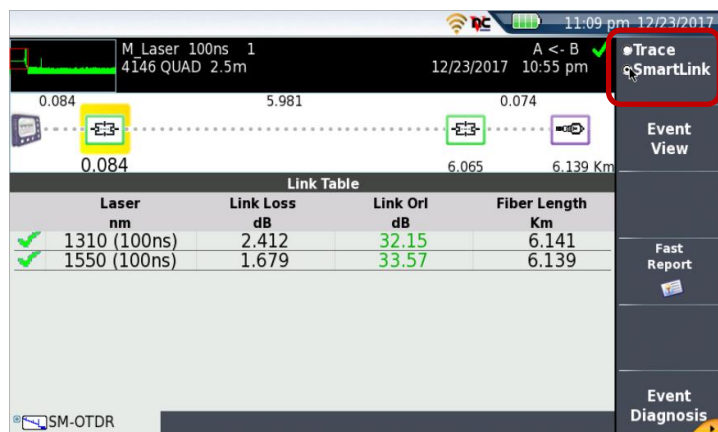






Figure 10: SmartLink view

Fast Report:

1. In the SmartLink view, tap the **Fast Report** soft key  and enter **Cable ID, Fiber Number, and Direction**.
2. Tap the **Save All** soft key .
3. Tap the **Auto Filenaming** soft key .
4. Tap the **Enter** soft key .

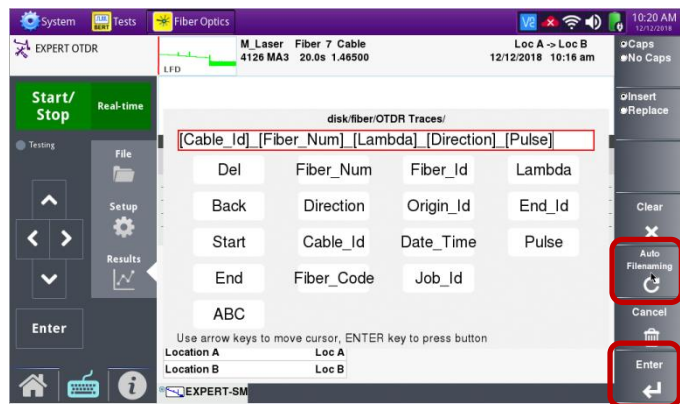


Figure 11: Fast Report