


Quick Card

T-BERD[®]/MTS-2000 Modular Test Set DWDM Expert OTDR

This quick card describes how to connect to a fiber under test, configure **Expert OTDR** test setups, run tests, and analyze results with a VIAVI T-BERD/MTS-2000 equipped with a 4100-series DWDM OTDR module.

 **The DWDM OTDR is meant to test a specific wavelength on a live Dense Wavelength Division Multiplexed (DWDM) network. Care must be taken to select and test the correct wavelength.**

Equipment Requirements:

- T-BERD/MTS-2000 equipped with:
 - Software Release V18.0 or greater
 - ESMARTACQ Smart Acquisition option (recommended)
- E4100 Series DWDM OTDR Module (E41DWDMC-PC or E41DWDM-APC)
- Fiber optic cleaning and inspection tools
- Launch Cable (minimum 20-meter Fiber optic patch cable)
- 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 Connectors (SC UPC, SC APC, LC)
- Distance unit (feet, meters, miles, kilometers)
- DWDM Wavelength to be tested



Figure 2: E41DWDMC-APC OTDR Module

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 connector, patch cables, 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.

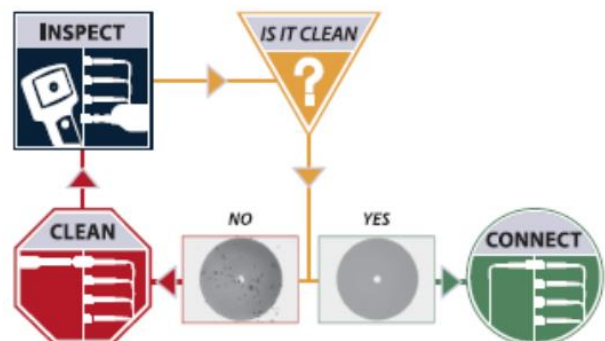


Figure 3: Inspect Before You Connect (IBYC)

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 coupler, optical patch panel (OPP) or a DWDM MUX if testing a live DWDM System:

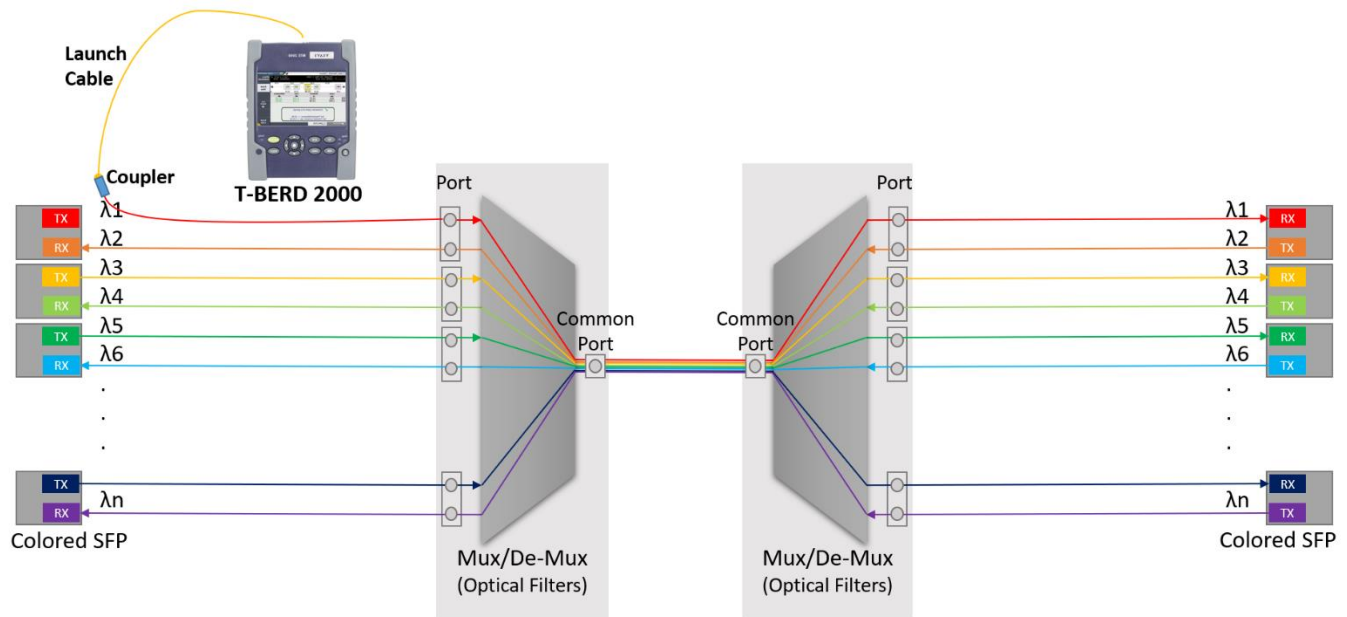


Figure 4: Connecting to Fiber Under Test



The DWDM OTDR is meant to test a specific wavelength on a live DWDM network and care must be taken to select and test the correct wavelength.

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 with the same connector type.
3. Inspect the FUT connected to the coupler or OPP port.
4. Inspect the fiber end face of the Launch Cable.
5. Connect the Launch Cable to the OTDR port.
6. Inspect the other fiber end face of the Launch Cable.
7. Connect the Launch Cable to the coupler or OPP port.
8. Disconnect or disable the far end SFP on this wavelength.

Setup 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 to view the **File Explorer**. Otherwise, proceed to step 5.
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. Once selected the icon will be relabeled “Singlemode OTDR”
6. Tap the **SETUP** button to view setup parameters.
7. In the **Acquisition** setup:
 - a. Select your desired **Unit** (THz for Frequency, **nm** for Wavelength, **Channel** for Channel Number) and select the desired DWDM Channel.
 - b. If you **do not** have the enhanced ESMARTACQ license, set **Acquisition Mode** to **Auto**
 - c. If you **do** have the enhanced ESMARTACQ license, set **Acquisition Mode** to **SmartAcq**
8. Press the **Top Menu** soft key to return to the setup screen.
9. **Before proceeding**, confirm that you are connected to the correct port on the DWDM Mux, that the OTDR is configured for the correct wavelength, and that the fiber is not lit on that wavelength.



Figure 5: File Manager

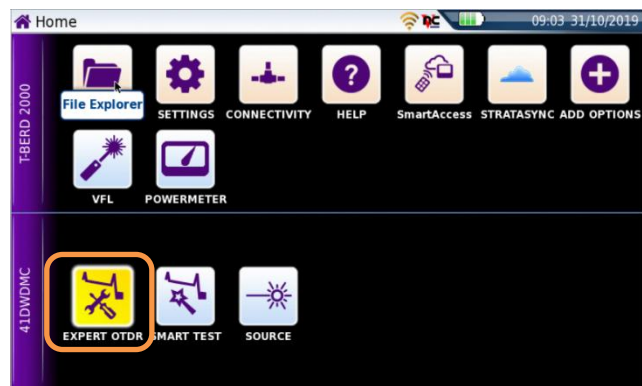


Figure 6: Home Screen

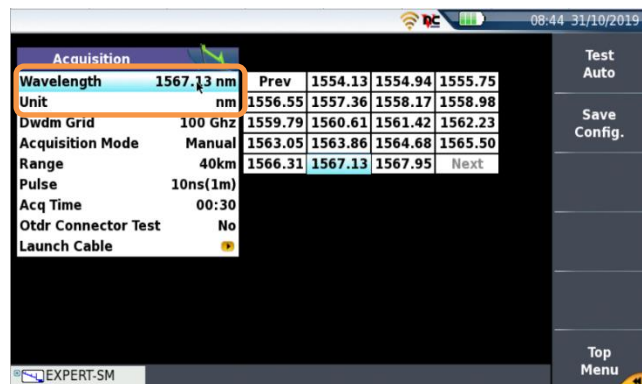


Figure 7: Channel selection

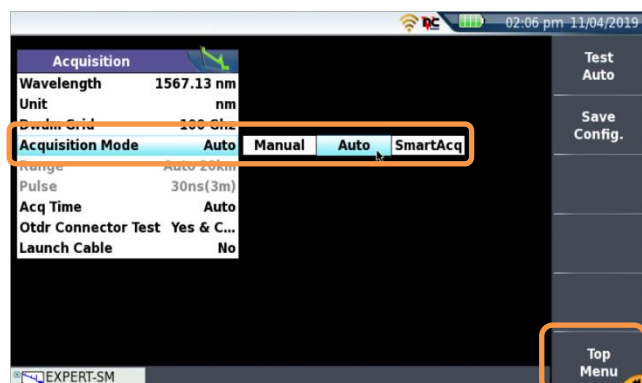


Figure 8: Acquisition Mode

Run Test:

1. Tap 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**. After the connection check, the OTDR will test at the configured wavelength.
2. Results may be displayed in 2 different formats: **Trace** view or **SmartLink** view. Tap the **Trace/SmartLink** soft key to toggle between views.
 - a. **Trace view:** Graphical result for the wavelength are shown in the upper display. Use the following controls to change the display:
 - Toggle between single event and multiple event view in lower screen.
 - Tap the **Zoom** soft key to enable the following controls:
 - Toggle between auto zoom and full trace view.
 - Expand and contract trace.
 - b. **SmartLink view:** The FUT is displayed as a series of icons representing each event (mux/demux, connector, splice, etc.).
 - The center display shows summary results 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 .
 - The lower display shows each event that exceeds alarm thresholds.
 - Tap an event icon and tap the **Event View** soft key to show results for the event.
3. Repeat steps 1 and 2 for all wavelengths and fibers under test being careful to check the wavelength to be tested.

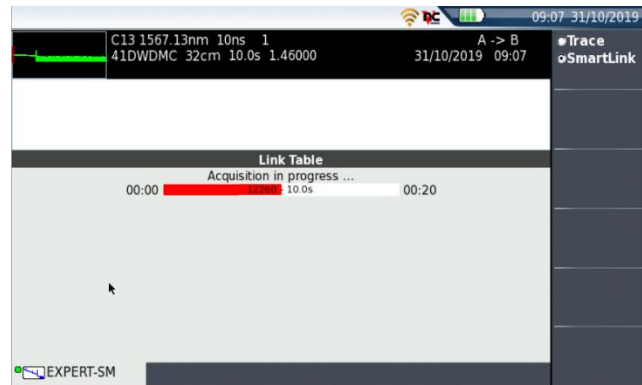


Figure 9: Acquisition in Progress



Figure 10: Trace View

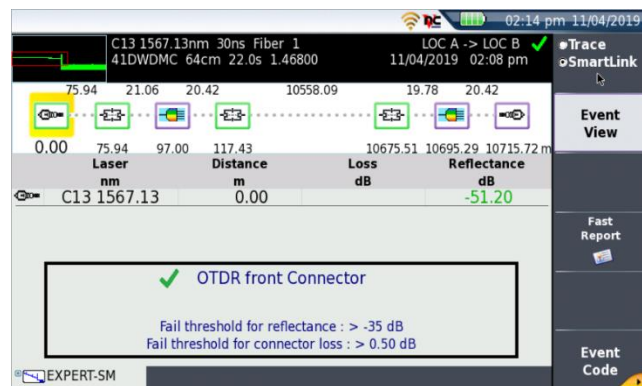


Figure 11: SmartLink View