

QUICK CARD

DWDM Optical Channel Checker

This quick card describes how to connect to a fiber under test, configure DWDM Optical Channel Checker (OCC) test setups, run tests, and analyze results with a T-BERD/MTS-5800 equipped with an OCC-4056C module.

 **Note: The OCC module is used to monitor wavelengths on a live network. Care should be exercised when unplugging fibers from the network as the fibers may be carrying traffic.**

- ▶ T-BERD/MTS-5800 equipped with the following:
- ▶ Fiber Optics Software Release V21.0 or greater
- ▶ OCC-4056C DWDM OCC Module
- ▶ 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

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CONNECT TO FIBER UNDER TEST (FUT)

All fibers and connectors should be cleaned and inspected prior to connection, as described on page 1. The OCC is typically connected to the FUT via a Monitor Port or splitter/tap to not disrupt service. The OCC can also be directly connected to the common port or common fiber via a coupler during turn up or maintenance:

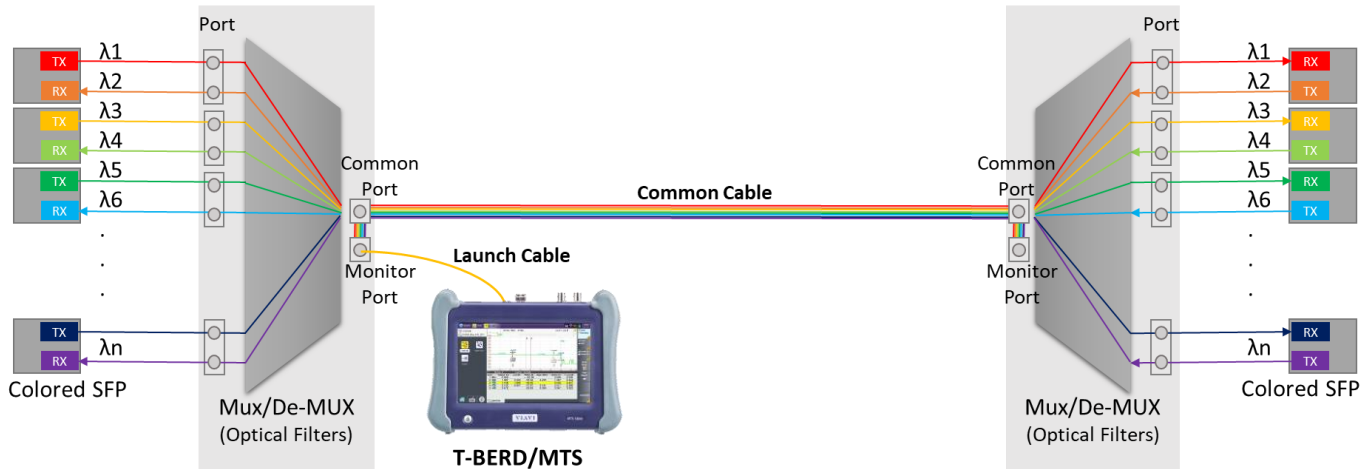


Figure 3: Connecting to Monitor Port

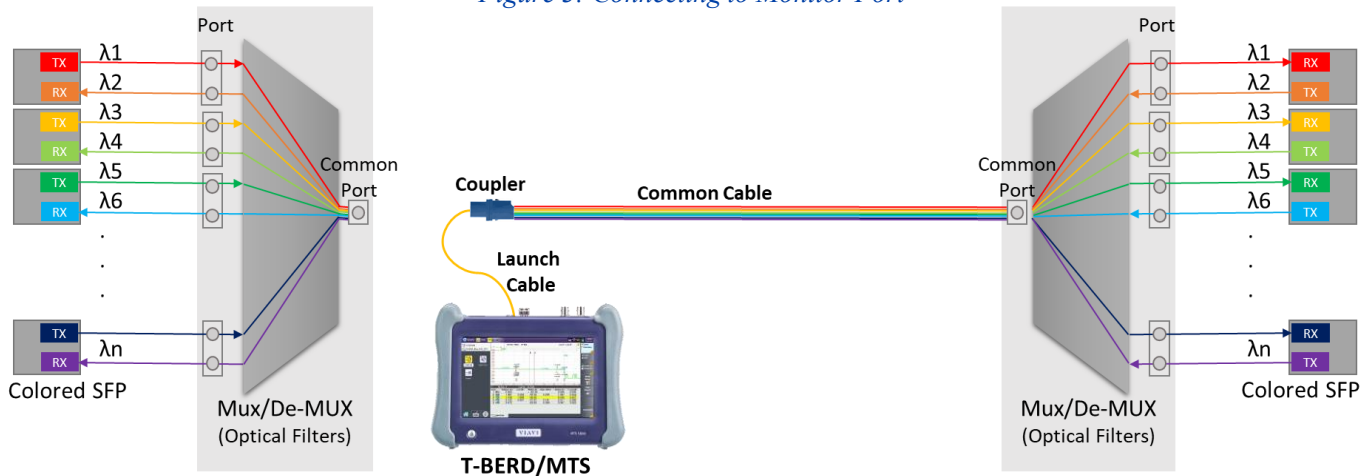







Figure 4: Connecting to Common Cable

1. Inspect the OCC port on top of the test set.
2. If connecting to the Common Cable, connect the Common Cable to an optical coupler with the same connector type and inspect the fiber end face in the coupler.
3. If connecting to the Monitor Port or Common Port on the Mux, inspect the Mux Port.
4. Inspect the fiber end face of the Launch Cable.
5. Connect the Launch Cable to the OCC port.
6. Inspect the other fiber end face of the Launch Cable.
7. Connect the Launch Cable to the coupler or Mux port.

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LAUNCH TEST

1. Press the Power button  to start the test instrument.
2. Tap the **Fiber Optics** icon  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 **OCC-4056c** icon  until it is yellow and highlighted .

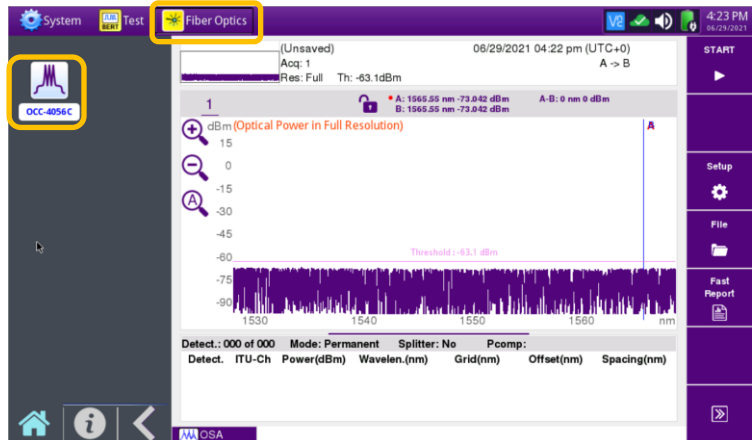






Figure 5: Fiber Optics Home Screen

CONFIGURE TEST

1. If files are to be saved, tap the **File** soft key  and tap the fiber folder . Otherwise proceed to step 4.
2. 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.
3. Tap the **Exit** soft key .
4. Tap the **Setup** soft key  to display the Setup menu.
5. Tap **Auto-set** to auto-configure the OCC for a single sweep and to auto-store results.
6. Tap the **Analysis** tab. If a splitter/tap is used to access the signal, set **Splitter Value** to the splitter loss (in dB or %).
7. Tap the **Link** tab. Enter Cable ID, Fiber Number, Locations, and Direction.

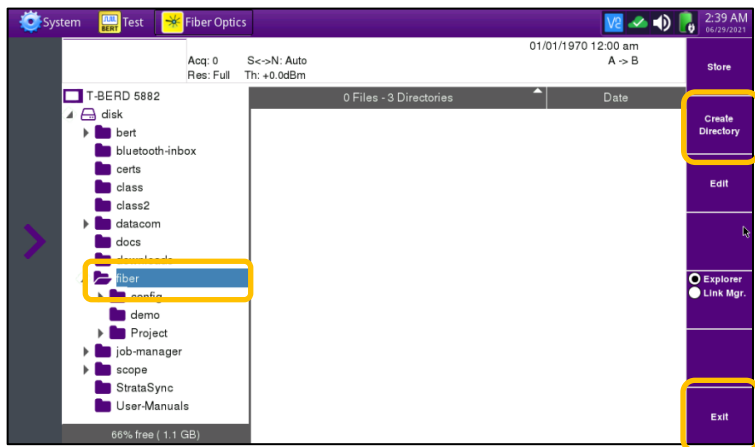


Figure 6: File Menu

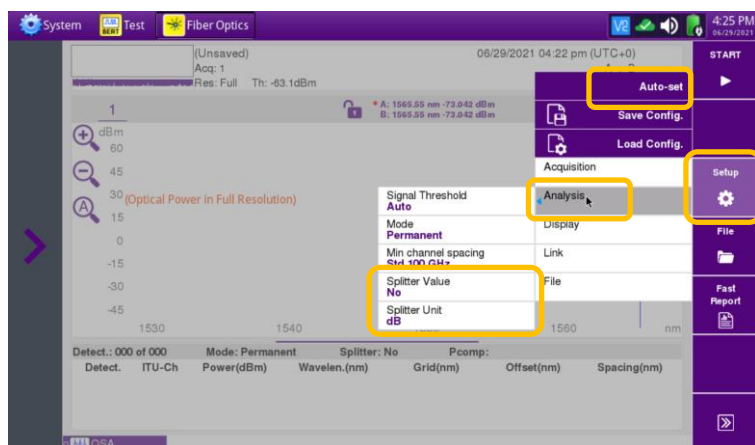



Figure 7: Setup Menu

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RUN TEST

1. Tap the **START** soft key  to start the test.
2. The OCC will sweep the entire DWDM wavelength range. Results will be shown in graphical and tabular formats as shown in *Figure 8: Test Results*.
3. Verify that traffic is on all expected channels, at the anticipated wavelengths and power levels, and that there are no unexpected wavelengths present.
4. Things to look for:
 - ▶ Every expected wavelength/channel is present.
 - ▶ Power levels of each channel are within roughly 3 dB of each other, or within the relative amplitude specification of the Network Equipment Manufacturer.

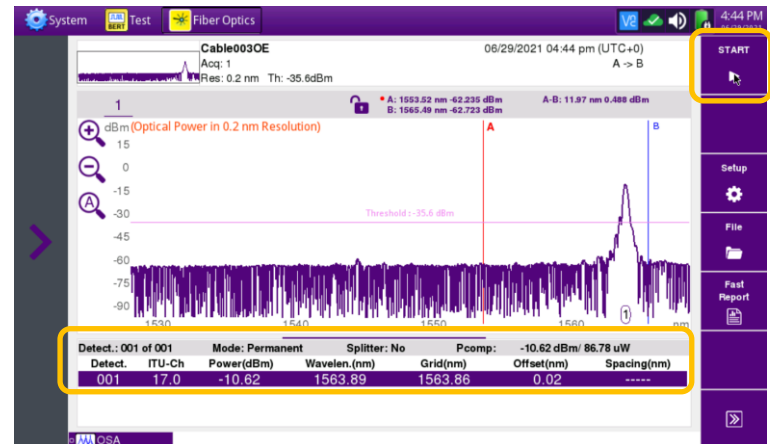


Figure 8: Test Results