Quick Card

T-BERD®/MTS-5800 Network Tester
Ethernet Optics Self-Test

This quick card describes how to test SFP+, SFP28, QSFP+, QSFP28 and CFP4 optical transceivers using the T-BERD/MTS 5800.

Equipment Requirements:
• T-BERD/MTS-5800 equipped with the following:
  o BERT software release V27.2 or greater
  o Test options:
    ▪ C510GELAN for 10G Gigabit Ethernet
    ▪ C525GE for 25Gigabit Ethernet
    ▪ C540GE for 40Gigabit Ethernet
    ▪ C5100GE for 100Gigabit Ethernet
• Jumper Cable or Loopback Plug:
  o Single Mode LC Loopback plug or LC-LC Jumper Cable for 10GBASE-LR, 25GBASE-LR, 40GBASE-LR4, and 100GBASE-LR4 (VIAVI Part # CB-019965)
  o Multimode LC Loopback plug or -LC Jumper Cable for 10GBASE-SR and 25GBASE-SR (VIAVI Part # CB-019967)
  o 12-Fiber Multimode MPO Loopback plug for 40GBASE-SR4 and 100GBASE-SR4 (VIAVI Part # CB-MPOLB-12F)
• Fiber optic inspection microscope (VIAVI P5000i or FiberChek Probe)
• Fiber Optic Cleaning supplies

Information Requirements:
• BER Threshold

Fiber Inspection Guidelines:
• Use the VIAVI P5000i or FiberChek Probe microscope to inspect the jumper cable or loopback plug before connection to the optical transceiver.
• 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.
Connect Optics Under Test:
1. Insert optics under test into the Port 1 slot on the top of T-BERD/MTS 5800.
2. After inspecting the fiber end faces, connect the Tx and Rx ports using an LC-LC jumper cable or loopback plug.

Launch Test:
1. Press the Power button to turn on the test set.
2. Using the Select Test menu, Quick Launch menu, or Job Manager, launch an Ethernet 10GigE LAN, 25GigE, 40GigE or 100GigE, P1 Optics Self-Test; for example: Ethernet►100GigE►P1 Optics Self-Test.
3. Tap the bottom button to Start a New Configuration.

Configure Test:
1. Choose the Test Duration. Recommended is the suggested setting. Duration will be calculated based on the Line Rate and BER Threshold.
2. Select the BER Threshold. Lower values increase the Recommended test duration.
3. Check Enable the PPM Line Offset box.
4. The default value for PPM Max Offset is +/- 100 and is the recommended value.
5. Check the Stop on Error box if you don’t want the test to continue in case of failure.
6. Tap Next to proceed to the Report Information screen.
Report Information:
1. If you wish to save a report, you can enter the Customer Name, Technician ID, Test Location, Work Order, and Comments/Notes.
2. Tap Next to proceed to the Optics Self-Test screen.

Optics Self-Test:
1. Tap Test SFP Optics, Test QSFP28 Optics, or Test CFP4 Optics to start the test.
2. At the end of the test, select the Result Overview tab and verify all tests pass.
3. If you are testing QSFP+, QSFP28, or CFP4 optics, select the Optical Power (dBm) tab and verify Rx Level for each Lambda is within +/- 1 dBm of each other.
4. Tap Next to proceed to the Report screen.

Create Report:
1. Tap Create Report to generate a test report in .pdf format
2. Tap Exit twice to exit the Optics Self-Test workflow.