Quick Card

**T-BERD®/MTS 5800 Network Tester**

**Ethernet RFC 2544 Layer 2 Traffic**

This document outlines how to configure and run an RFC 2544 Layer 2 Traffic Test for Metro Ethernet service activation.

**Equipment Requirements:**

- T-BERD/MTS 5800 equipped with the following:
  - BERT software release V26.0 or greater
  - Test options:
    - C510M1GE for 10 Megabit to 1 Gigabit Ethernet
    - C510GELAN for 10 Gigabit Ethernet
    - C525GELAN for 25 Gigabit Ethernet
    - C540GELAN for 40 Gigabit Ethernet
    - C5100GELAN for 100 Gigabit Ethernet
  - SFP or QSFP optical transceiver to match the line under test
- Cat5E cable or fiber optic jumper cables to match the T-BERD/MTS optics and the line under test
- Fiber optic inspection microscope (VIAVI P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

**The following information is required to complete the test:**

- Physical Interface (10/100/1000BASE-T, 1000BASE-SX, 1000BASE-LX, 10GBASE-LR, 25GBASE-SR, 40GBASE-SR4, 100GBASE-LR4, etc.)
- VLAN ID, if VLAN tagging is used.
- Maximum Transmission Unit (MTU), if Jumbo Frames are used.
- Committed Information Rate (CIR)
- Committed Burst Size (CBS)
- Pass/Fail Threshold for Throughput, Frame Loss, Latency and Jitter

**Fiber Inspection Guidelines:**

Inspect and clean (if necessary) both sides of every fiber optic connection being used (bulkhead connectors, patch cords, and SFP port) prior to reconnection for each test. Using the VIAVI P5000i or FiberChek Probe microscope:

- Focus fiber on the screen. If dirty, clean the connector.
- If it appears clean, run inspection test.
- If it fails, clean fiber and re-run inspection test. Repeat until it passes.
- To inspect SFP ports with the P5000i, insert the probe tip into the SFP port, move the focus wheel all the way to one end, and slowly move the focus wheel to the other end.
- To inspect SFP ports with the FiberChek Probe, manually focus with middle toggle switch or pull the trigger to auto-focus.
- If a fiber stub (a darker circle on a lighter background as shown in figure 2) is detected, follow standard inspection and cleaning procedures. If you are unable to focus on a fiber end face, do not clean the port. The SFP uses a lens that cannot be cleaned.
Connect to Port Under Test:
1. For copper 10/100/1000BASE-T interface testing with the T-BERD/MTS 5800v2, connect the Port 1 10/100/1000 RJ-45 jack to the port under test using CAT 5E or better cable.
2. For copper 10/100/1000BASE-T interface testing with the T-BERD/MTS 5800-100G, insert a copper SFP into the Port 1 SFP+/SFP28 slot and connect to the port under test using CAT 5E or better cable.
3. For optical interfaces:
   - Inspect and, if necessary, clean all SFPs, fibers, and bulkheads, as described on page 1.
   - Insert desired SFP, QSFP, or CFP4 into the Port 1 slot on the top of the T-BERD/MTS.
   - Connect the SFP, QSFP, or CFP4 to the port under test using a single mode or multimode jumper cable compatible with the interface under test.

Launch Test:
1. Press the Power button to turn on the test set.

   ![Startup screen](image-url)
2. Using the Select Test menu, Quick Launch menu, or Job Manager, launch an Ethernet, RFC 2544, L2 Traffic, Terminate test on port 1 for the desire physical interface. For example: Ethernet ► 10/100/1000 ► RFC 2544 ► L2 Traffic ► P1 Terminate.

3. Tap the Go button next to “Start a New Configuration (reset to defaults)”

Configure Test:

1. Tap the button to display the L2 Network Settings screen. If you are testing a VLAN, set Encapsulation to VLAN and enter your VLAN ID.

2. Tap the button twice to display the RFC 2544 Test: Select Tests screen. Select the Throughput, Latency, Frame Loss, Packet Jitter, and Burst Test tests.
3. Tap the button to display the **RFC 2544 Test: Utilization** screen. Set **Max Bandwidth** to the Committed Information Rate (CIR).

4. Tap the button to display the **RFC 2544 Test: Frame Lengths** screen. Select the 1st, 4th, and 8th Frame Lengths. If the MTU is greater than 1518 (1522 with VLAN), also enter and select the frame length of the MTU. Deselect (uncheck) all other frame sizes.

5. Tap the button 3 times to display the **RFC 2544 Test: Burst Test** screen. Set **CBS (kB)** to the Committed Burst Size.

6. Tap the button twice to display the **Test Ctls: Test Thresholds** screen. Check all boxes for which a Pass/Fail Threshold is known. Enter the Threshold for each selection.
Run Test:

1. Tap the button 3 times to display the Run J-QuickCheck screen. Tap the Not what you want? link and check the “Test using configured RFC2544 Max bandwidth” box, then tap Back to return to previous screen. Tap the Start button. Verify that the Remote Loop is recognized, and that Measured Throughput is greater than or equal to the Committed Information Rate.

2. Tap the button to display the Run RFC 2544 Tests screen. Tap the Run Test button. Wait for the test to complete, and verify that all tests pass or complete as indicated by a green or blue checkmark.

3. Tap the button three times to display the Report screen. Tap the button.

4. Tap the button three times to close the report and exit the RFC-2544 test.