Quick Card

T-BERD®/MTS-5800 Network Tester
TCP Throughput Testing to an iPerf v3 Server

This document provides instructions on how to configure and execute TCP Wirespeed Throughput test from a T-BERD/MTS 5800 instrument to an iPerf v3 server.

Equipment Requirements:
- T-BERD/MTS-5800 equipped with the following:
  - BERT software release V28.1 or greater
  - Ethernet and Layer4 test options:
    - C510M1GE and C5LSLAYER4 for 10/100 Megabit or 1 Gigabit Ethernet
    - C510GELAN and C510GLAYER4 for 10 Gigabit Ethernet
  - SFP or SFP+ optical transceiver to match the line under test
- Patch Cables to match the optical transceiver and line under test (CAT5E, Single mode or Multimode Fiber)
- 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, etc.)
- Auto Negotiation settings of the port under test.

Fiber Inspection Guidelines:
- All fiber end-faces must be clean and pass an inspection test prior to connection.
- Use the VIAVI P5000i, FiberChek Probe, or Sidewinder microscope to inspect both sides of every connection being used (SFP/QSFP Port, bulkhead connectors, patch cables, etc.)
Connect to Fiber Under Test (FUT):
1. For copper 10/100BASE-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 10/100BASE-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:
   - Insert desired SFP or SFP+ into the Port 1 slot on the top of T-BERD.
   - Inspect and, if necessary, clean all SFPs, fibers, and bulkheads, as described on page 1.
   - 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 and Configure Test:
1. Press the Power button to turn on the test set and view the startup screen.
2. Using the Select Test menu, Quick Launch menu, or Job Manager, launch an Ethernet, Layer 4 TCP Wirespeed, IPv4, Terminate test on port 1 for the desired physical interface. For example: Ethernet►10/100/1000►Layer 4 TCP Wirespeed►IPv4►P1 Terminate.
3. If the test is not in the default settings, tap the Tools icon, and select Reset to Defaults. Press OK to continue and wait for test to reconfigure.
4. Press the Setup Soft Key to display the Interface settings tab. If you are testing a 10/100/1000 Electrical or 1GigE Optical tests with auto negotiation disabled, select the Physical Layer tab, and configure settings to match the Ethernet port under test.
5. Navigate to All Streams settings.

6. Configure appropriate Source IP, Subnet Mask and Default Gateway parameters for the TBERD 5800 test port, leave all other parameters at defaults.

7. Navigate to TCP Host settings.

8. If the circuit under test uses VLAN tagging, select Ethernet tab, set the Encapsulation parameter to VLAN, and configure the appropriate VLAN ID and Priority values.

9. Select TCP Host Settings tab.
10. Set the iPerf Version parameter to 3.
11. Set the Direction parameter to Upstream to test in the TBERD 5800 to iPerf server direction or to Downstream to test in the iPerf server to TBERD 5800 direction.
12. Set the Connect to Server parameter to the IP address of the iPerf server.
13. Set the Connect to Port parameter to TCP port the iPerf server is listening on.
14. Set the Window Size parameter to 4194304 bytes.
15. If required adjust the Max Seg Size parameter to match the circuit under test configuration, otherwise leave at default.
16. If required configure the TOS or DSCP values to match the circuit under test configuration, otherwise leave at defaults.
17. Set the Transmit Mode parameter to Time and set the Time parameter to desired test duration in seconds.
18. Set the Number of Connections parameter to desired value.
19. The T-BERD 5800 is configured for the test.
1. Press the **Results** Soft Key, to view the Results screen.

2. If using optical test port, select the **Laser** tab in the **Action panel** at the bottom of the screen, and press [Laser On]. The button will turn yellow and be relabeled [Laser Off].

3. Ensure the TBERD 5800 test port established a link to circuit under test as indicated by green **Signal Present** (optical test port only), **Sync Acquired** and **Link Active** LEDs.

4. Set the real-time test results view to **TCP Host -> Detailed L4 Stats**.

5. To start the TCP Throughput test tap on the **Start TCP Client** button on the **Actions** tab at the bottom of the screen and observe the real-time test results.

6. Once the test is finished tap on the **Reports** button in the bottom left screen corner and select **Create Report** option to generate and save the test report.