

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



Figure 1: Equipment Requirements

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.)

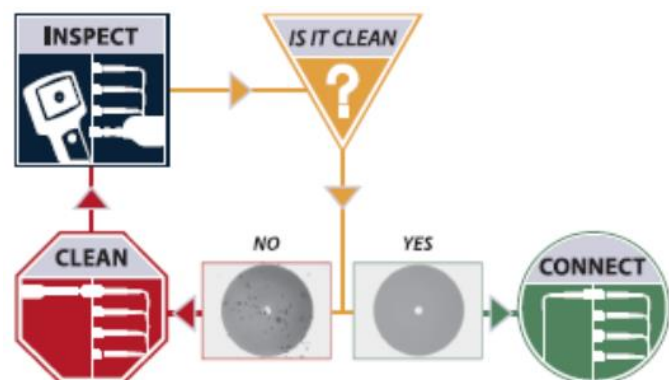


Figure 2: Inspect Before You Connect

Connect to Fiber Under Test (FUT):

- 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.
- 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.
- 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.

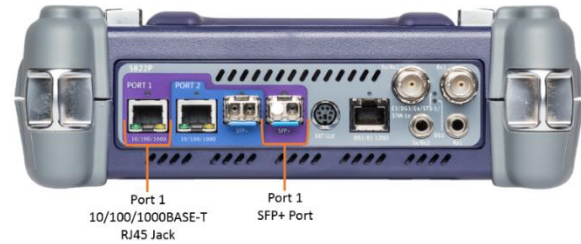


Figure 3: T-BERD 5800v2

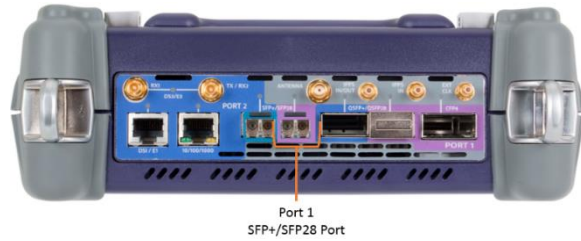





Figure 4: T-BERD 5800-100G

Launch and Configure Test:

- Press the Power button  to turn on the test set and view the startup screen.
- 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**.
- If the test is not in the default settings, tap the **Tools icon** , and select **Reset Test to Defaults**. Press **OK** to continue and wait for test to reconfigure.
- 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.

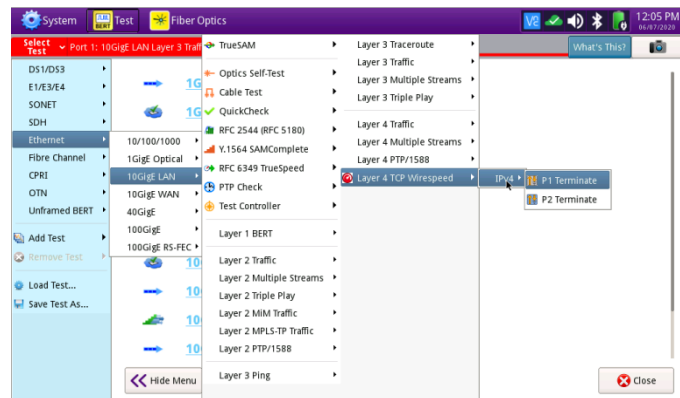


Figure 5: Select Test

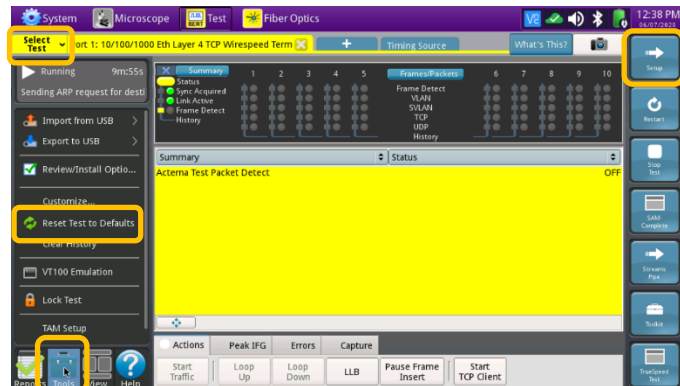


Figure 6: Layer 4 TCP Wirespeed Test

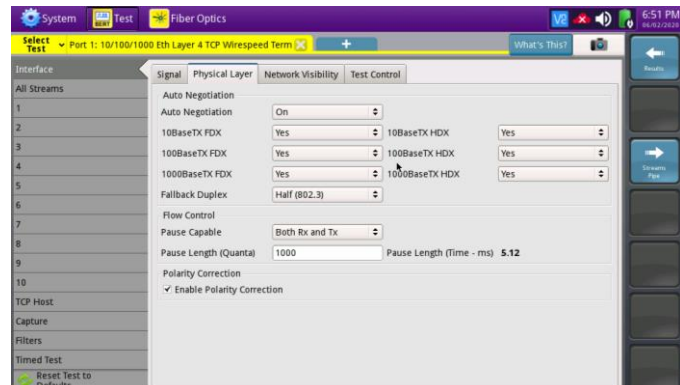


Figure 7: Auto Negotiation Settings

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.

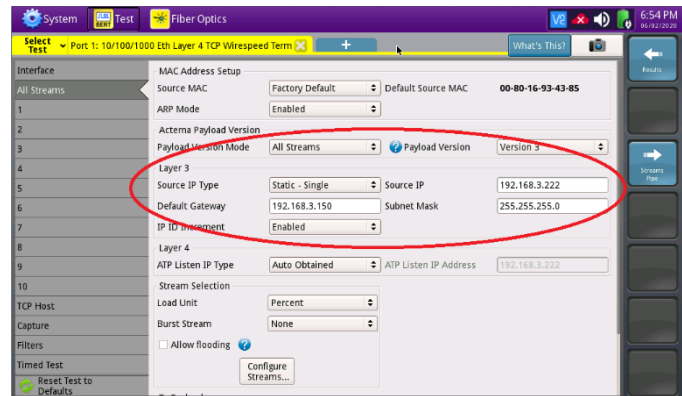


Figure 8: All Stream settings

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.

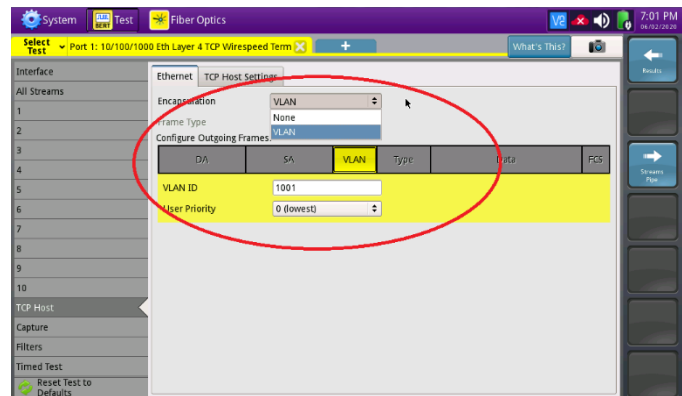


Figure 9: TCP Host, Ethernet Settings

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.

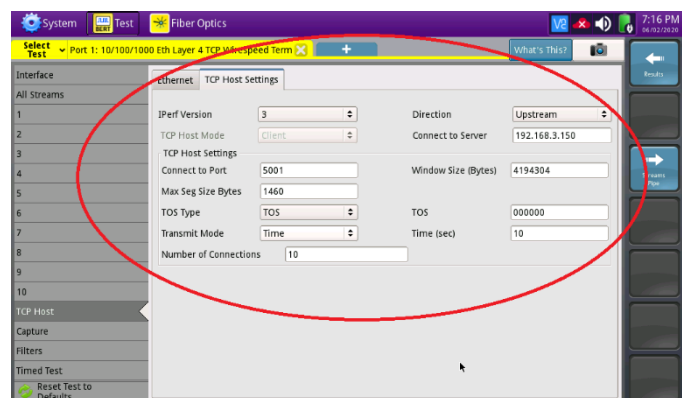
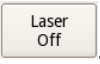



Figure 10: TCP Host Settings

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 . The button will turn yellow and be relabeled .

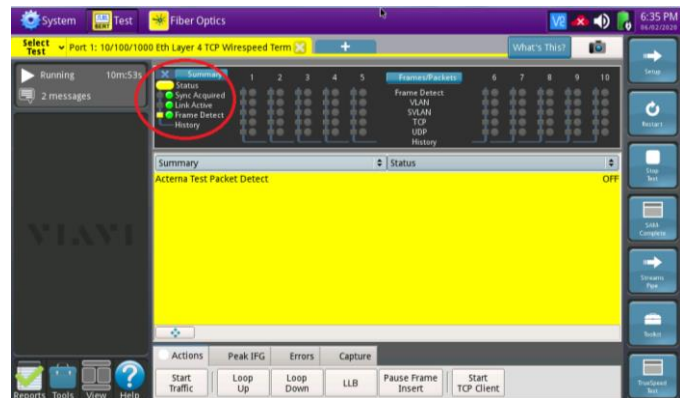


Figure 11: Check LEDs

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.

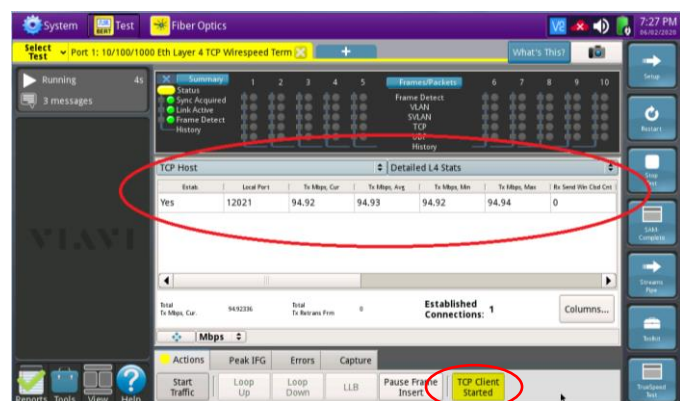


Figure 12: Start TCP Client

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.

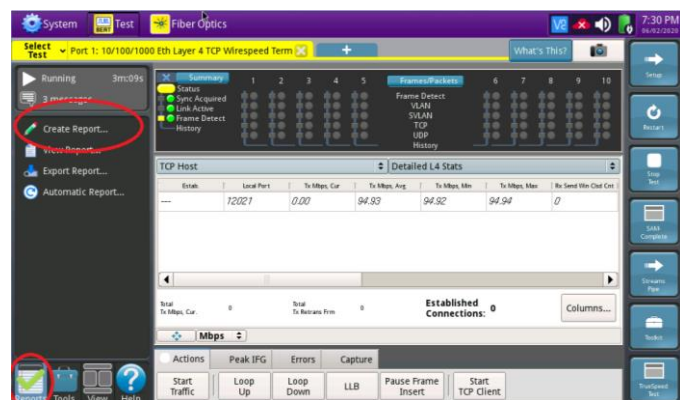


Figure 13: Create Report