Quick Card

T-BERD®/MTS 5800 Network Tester
Ethernet Layer 3 IPv4 Traffic Loopback

This quick card describes how to set the T-BERD/MTS 5800 up as a Layer 3, IPv4 Loopback device.

Equipment Requirements:
- T-BERD/MTS 5800 equipped with the following:
  - BERT software release V26.0 or greater
  - Ethernet 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, QSFP, or CFP4 optical transceiver to match the line under test
- CAT5E cable or fiber optic Jumper cables to match the optical transceiver and the line under test
- Fiber 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-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
- Auto Negotiation settings of the port under test (if 1 Gigabit or below)
- Encapsulation (VLAN or None)
- VLAN ID (if Encapsulation = VLAN)
- Source IP Type (Static or DHCP)
- Source IP Address (if Source IP Type = Static)
- Subnet Mask (if Source IP Type = Static)
- Default Gateway (if Source IP Type = Static)
- Destination IP Address

Fiber Inspection Guidelines:
Inspect both sides of every fiber optic connection being used (bulkhead connectors, patch cords, and SFP ports) 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 the fiber and re-run inspection test. Repeat until it passes.

Figure 2: FiberChek Probe

- 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 3) 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 contains a lens and cannot be cleaned.
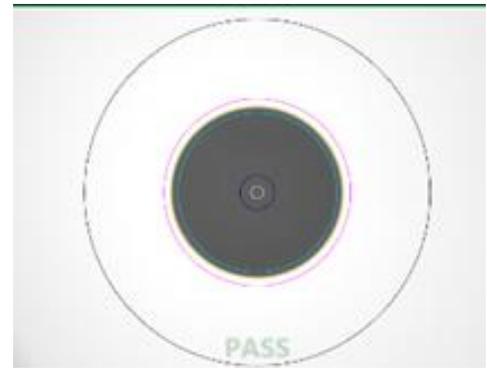

Figure 3: Image of Clean Fiber

Connect to Line Under Test:

1. For copper 10/100/1000BASE-T 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 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.
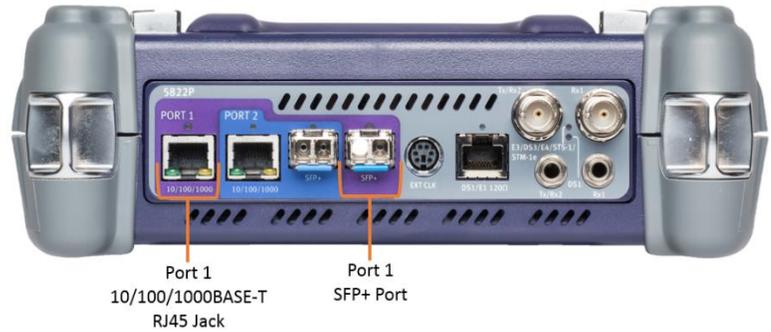

Figure 4: T-BERD 5800v2 Dual Port mainframe

3. For optical interfaces:
   - Insert desired SFP, QSFP, or CFP4 into the Port 1 slot on the top of the T-BERD/MTS.
   - 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.
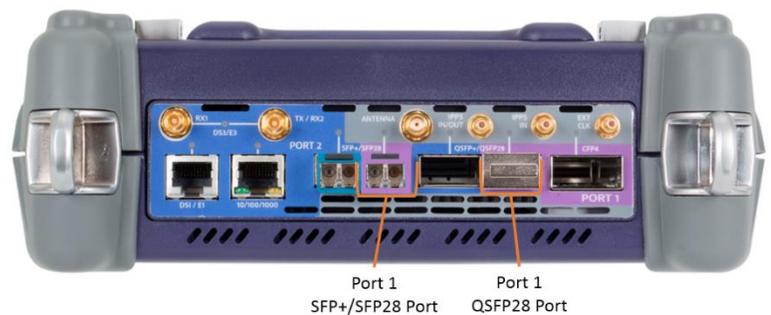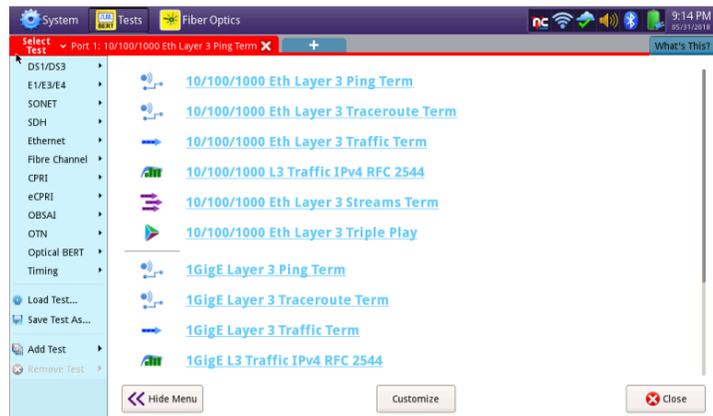

Figure 5: T-BERD 5800-100G mainframe

Launch and Configure 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**, **Layer 3 Traffic, IPv4, Terminate** test on port 1 for the desired physical interface.
   For example:
   **Ethernet ▶ 10/100/1000 ▶ Layer 3 Traffic ▶ IPv4 ▶ P1 Terminate**.

3. If the test is not in the default setup, tap the **Tools icon** [Tools], and select [Reset Test to Defaults].
   Press [✓ OK] to continue and wait for test to reconfigure.
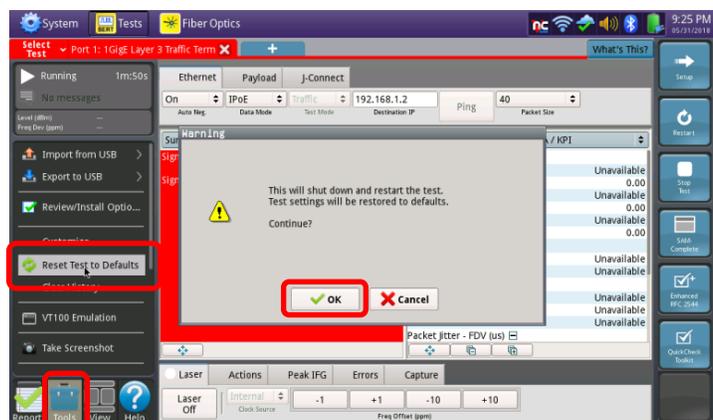
4. For **10/100/1000** Electrical and **1GigE** Optical tests, tap the **Ethernet** tab of the **Quick Configuration menu** and set **Auto Neg.** to the same value as the Ethernet port under test.

5. For **1GigE, 10GigE, 25GigE, 40GigE,** or **100GigE** optical tests, select the **Laser** tab in the **Actions panel,** and press [Laser Off]. The button will turn yellow and be relabeled [Laser On].
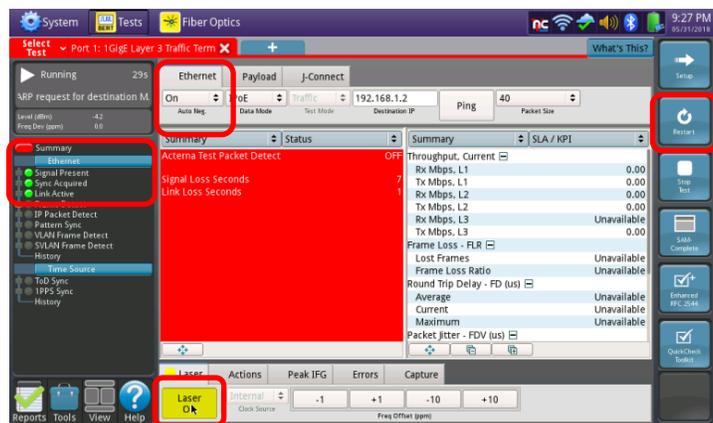
6. Press the **Restart** soft key [Restart], on the right side of the screen.

7. A green **Signal Present** LED ● indicates the T-BERD/MTS is receiving an optical signal from the port under test. Green **Sync Acquired** and **Link Active** LEDs indicate that the T-BERD/MTS has successfully connected to the port under test and the link is active.

8. Press the **Setup s**oft key ![Setup], and select the **Ethernet** settings tab. If a VLAN is present, set **Encapsulation** to **VLAN**, tap the **VLAN** field, and enter the **VLAN ID.**
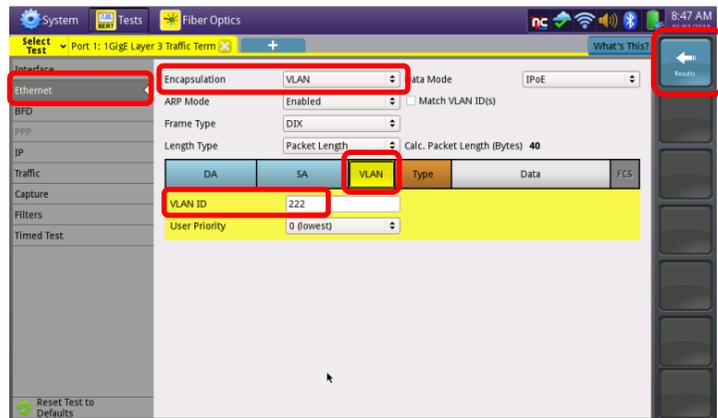
9. Select the **IP** settings tab and tap the **Source/Destination Address** field. Enter the **Source IP Type** (Static or DHCP). If **Static**, enter the **Source IP** address, **Subnet Mask**, and **Default Gateway**.
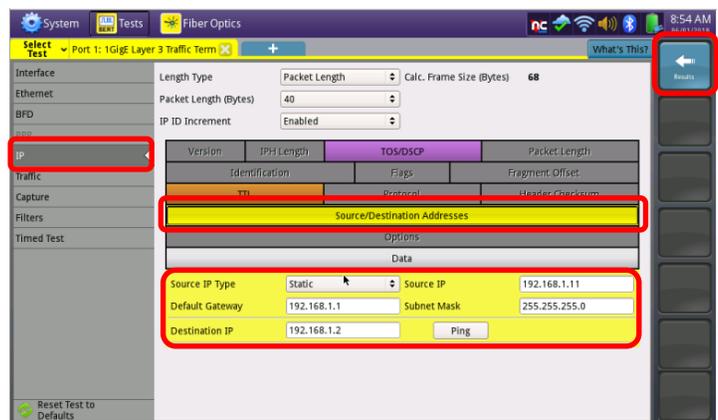
10. Set **Destination Address** to the IP Address of the T-BERD/MTS traffic generator, running the Layer 3 Traffic, RFC-2544, or Y.1564 SAMComplete test. Tap the **PING** button to verify IP connectivity.

11. Press the **Results** Soft Key ![Results], to view the progress of the test.