Quick Card

T-BERD®/MTS-5800 Network Tester
Ethernet 4x10GigE Layer 2 Traffic Loopback

This document outlines how to set the T-BERD/MTS 5800 up as a Layer 2 Traffic Loopback device across a Link Aggregation Group (LAG) with up to 4 10GigE links.

Equipment Requirements:
- T-BERD/MTS-5800 equipped with the following:
  - BERT software release V29.1.1 or greater
  - Ethernet test options:
    - C510GELAN for 10 Gigabit Ethernet
    - C54x10GELAN for 40 Gigabit Ethernet
  - 40GBASE-SR4 or 4x10GBASE-LR4 QSFP+ optical transceiver to match the line under test
- MPO to LC fanout Cable to match the optical transceiver and line under test (Single mode or Multimode Fiber)
- Fiber optic inspection microscope with MPO and LC tips (VIAVI Sidewinder)
- Fiber Optic Cleaning supplies

Figure 1: Equipment Requirements

The following information is required to complete the test:
- Type of hash (Layer 2/MAC Address or Layer 3/IP Address)
- Number of 10GigE LAN physical ports in the LAG (2 for 20Gig service, 3 for 30Gig service, 4 for 40Gig service)

Fiber Inspection Guidelines:
- All fiber end-faces must be clean and pass an inspection test prior to connection.
- Use the VIAVI Sidewinder microscope to inspect both sides of every connection being used (QSFP Port, Breakout Cable, bulkhead connectors, etc.)
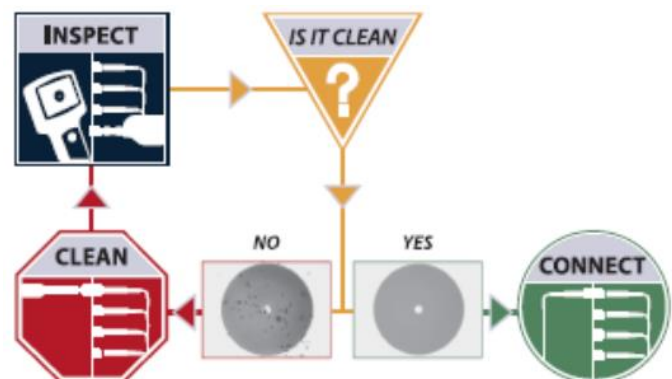
Figure 2: Inspect Before You Connect

Connect to Fibers Under Test (FUT):

1. For optical interfaces:
   - Insert QSFP+ Optical Transceiver 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 QSFP+ to the **MPO to LC fanout cable.**
   - Connect the **LC fanouts** to the 10GigE LAN physical ports under test as follows, per your work order:
     - Fanouts #1 and #2 for 20Gig service
     - Fanouts #1, #2 and #3 for 30Gig service
     - Fanouts #1, #2, #3 & #4 for 40Gig service
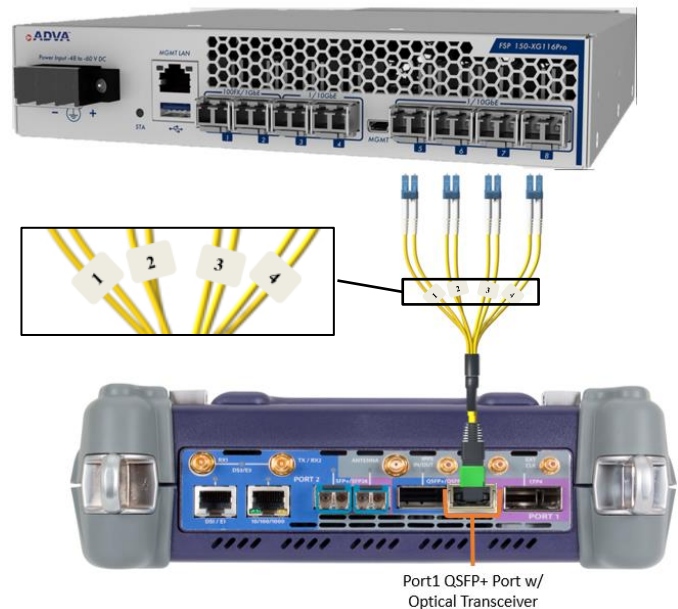
Figure 3: T-BERD 5800-100G and Fanout

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 2 Traffic test as follows:
   Ethernet►4x10GigE LAN►
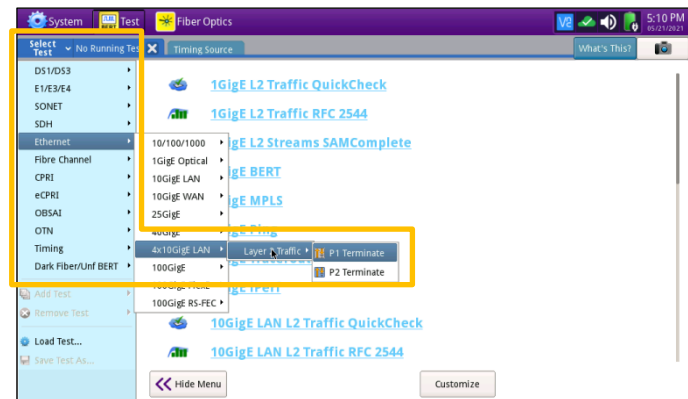   **Layer 2 Traffic►P1 Terminate**.

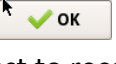*Figure 4:Launch Test*

3. 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.

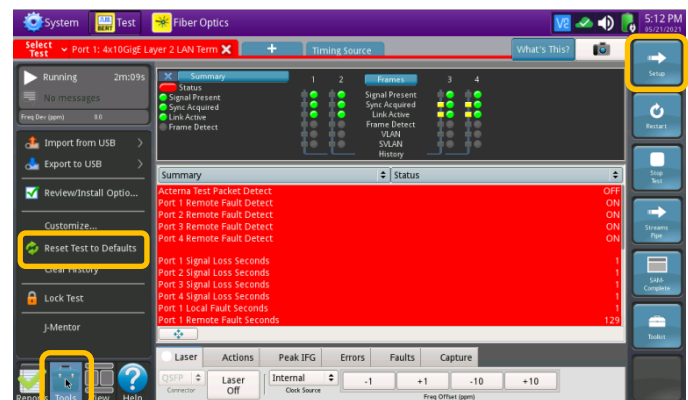4. Press the **Setup** Soft Key, ➡ to display the **Interface** settings tab**.**

Figure 5: Ethernet, 1 GigE Optical, Layer 2 Traffic, Terminate test

5. Select the **All Streams** settings tab.

6. Tap the **Configure Streams** button.

7. Enable the physical ports in the LAG by tapping the check boxes:
   - ✓ Select **Port 1/Stream 1** and **Port 2/Stream 2** for 20Gig service.
   - ✓ Select **Port 1/Stream 1**, **Port 2/Stream 2** and **Port 3/Stream 3** for 30Gig service.
   - ✓ Select **Port 1/Stream 1 through Port 4/Stream 4** for 40Gig service.
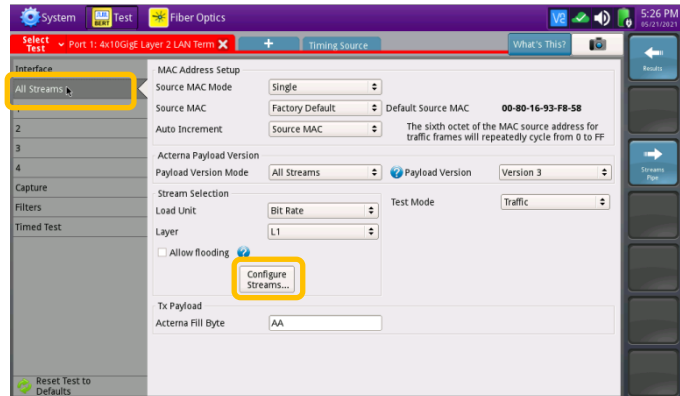
8. Tap **OK** to return to **All Streams** settings.

9. Tap the **Results** Soft Key, , to view the Results screen.
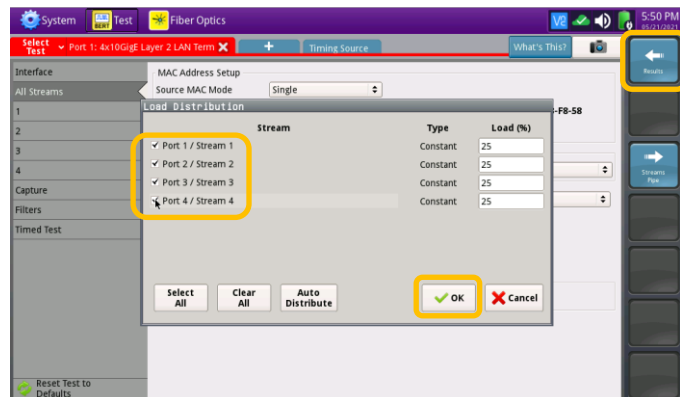

*Figure 6: All Streams settings*

Figure 7: Configure Streams

10. Select the **Laser** tab in the **Action panel** at the bottom of the screen, and tap . The button will turn yellow and be relabeled .

11. Tap the **Restart** Soft Key , on the right side of the screen.

12. Confirm that **Signal Present**, **Sync Acquired** and **Link Active** LEDs are green ● for each port in the LAG. A green **Signal Present** LED indicates the T-BERD/MTS is receiving an optical signal from the port. Green **Sync Acquired** and **Link Active** LEDs indicate that the T-BERD/MTS has successfully connected to the port and **the T-BERD/MTS is ready to be looped up.**
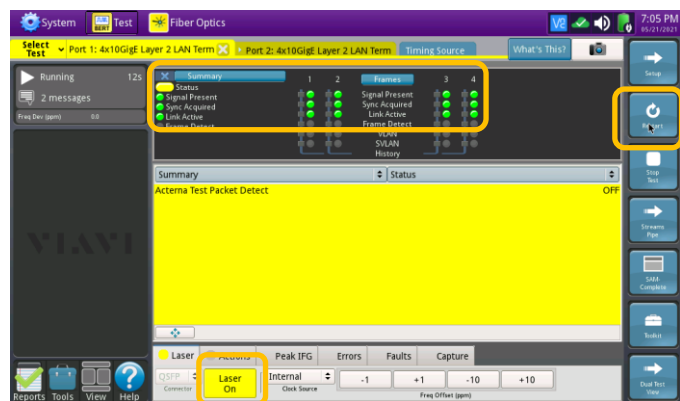

Figure 8: Results