QUICK CARD

Ethernet Layer 2 Traffic Loopback
This quick card describes how to set the T-BERD/MTS 5800 up as a Layer 2 Loopback device.

- T-BERD/MTS 5800 equipped with the following:
  - BERT software release V30.1.0 or greater
  - C510M1GE test option for 10 Megabit to 1 Gigabit Ethernet loopback
  - C510GELAN test option for 10 Gigabit Ethernet loopback
  - C525GE test option for 25 Gigabit Ethernet loopback
  - C540GE test option for 40 Gigabit Ethernet loopback
  - C550GE test option for 50 Gigabit Ethernet loopback
  - C5100GE test option for 100 Gigabit Ethernet loopback
- Optical Transceiver supporting the line rate to be tested (SFP or QSFP)
- Cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

LAUNCH TEST

1. Press the Power button to turn on the T-BERD.
2. Press the Test icon at the top of the screen to display the Launch Screen.
3. Using the Select Test menu, Quick Launch menu, or Job Manager, launch the Ethernet Layer 2 Traffic test on Port 1 for the desired data rate. For example: Ethernet ► 1GigE Optical ► Layer 2 Traffic ► P1 Terminate.
4. Tap to open the Tools Panel and select .
5. Press to continue.
The following information is needed to configure the test:

- Physical Interface (10/100/1000BASE-T, 1000BASE-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
- Auto Negotiation settings of the port under test.

For Optical Interfaces:

1. Press the Setup soft key on the top right side of the screen.
2. Select the Interface/Connector folder.
3. Insert desired Optical Transceiver into the Port 1 SFP or QSFP slot on the top of the T-BERD.
4. Review SFP information in the Connector tab:
   - Verify that the SFP operates on the required wavelength (850nm, 1310nm or 1550nm).
   - Verify that the SFP supports the required data rate (1G, 10G LAN, etc).
   - Note the Min and Max Tx Levels (dBm) and Max Rx Level (dBm) to assess if optical attenuators are required.
   - Press the Results soft key to return to the Test Results screen.

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 (On or Off).
CONNECT TO LINE UNDER TEST

► For Optical Interfaces:
1. Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (SFP, attenuators, patch cables, bulkheads)
   - Focus the fiber on the screen.
   - If it appears dirty, clean the fiber end-face and re-inspect.
   - If it appears clean, run the inspection test.
   - If it fails, clean the fiber and re-run inspection test. Repeat until it passes.
2. If necessary, insert optical attenuators into the SFP TX and/or RX ports.
3. Connect the SFP to the port under test using a jumper cable compatible with the line under test.
4. Select the Laser tab in the Actions panel.
5. Press . The button will turn yellow and be relabeled .
6. Press the Restart soft key .
7. Verify the following:
   - Summary LED is yellow.
   - Signal Present LED is green.
   - Sync Acquired LED is green.
   - Link Active LED is green.

► For Copper 10/100/1000BASE-T interfaces:
1. Connect the 10/100/1000 RJ-45 jack to the port under test using CAT 5E or better cable.
2. Press the Restart soft key .
3. Verify the following:
   - Summary LED is yellow.
   - Sync Acquired LED is green.
   - Link Active LED is green.
The T-BERD may be looped up by any of the following methods. Once looped, the T-BERD will reflect all received test packet after inverting Source and Destination MAC addresses.

1. **Broadcast Loop up message**: The T-BERD will respond to VIAVI Loop up messages received via Broadcast MAC address and enter Local Loopback (LLB) mode.

2. **Unicast Loop up message**:  
   - The T-BERD will respond to VIAVI Loop up messages received via Unicast MAC address and enter LLB mode.

3. **Manual Local Loopback**:  
   - Select the Actions Panel and tap to manually enter LLB mode.
   - Tap again to exit LLB mode when the test is complete.

With Unicast and Manual loopback, the operator of T-BERD traffic generator will need to know the MAC address of this T-BERD:

- Tap the Setup soft key, select the Ethernet menu, and tap to display the Factory Default Source MAC Address of your T-BERD.
- Provide this address to the operator of the T-BERD Traffic Generator, upon request.
- Press the Results soft key to view the progress of the test.