

Quick Card

T-BERD[®]/MTS-5800 Network Tester

Ethernet RFC 2544 Layer 3 Traffic

This document outlines how to configure and run an RFC 2544 Layer 3 Traffic Test for Metro Ethernet Service Activation. A second T-BERD/MTS 5800 or compatible loopback device should be used at the far-end of the line under test for traffic loopback.

Equipment Requirements:

- T-BERD/MTS-5800 equipped with the following:
 - BERT software release V27.0 or greater
 - Ethernet test options:
 - C510M1GE for 1 Gigabit or less
 - 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
- Patch Cords to match the T-BERD/MTS optics and the line under test
- 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-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
- Auto Negotiation settings of the port under test
- VLAN ID, if VLAN tagging is used
- IP Address Parameters (DHCP or Static, Source IP, Default Gateway, Subnet Mask, and Destination IP)

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 Port, bulkhead connectors, patch cords, etc.)

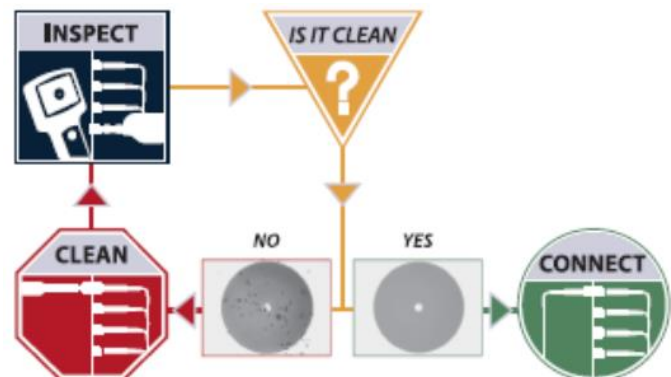


Figure 2: Inspect Before You Connect

Connect to Fiber Under Test (FUT):

1. 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.
2. 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.
3. For optical interfaces:
 - Insert SFP, QSFP, or CFP4 compatible with your physical interface into the Port 1 slot on the top of the test set.
 - Inspect and, if necessary, clean all 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.

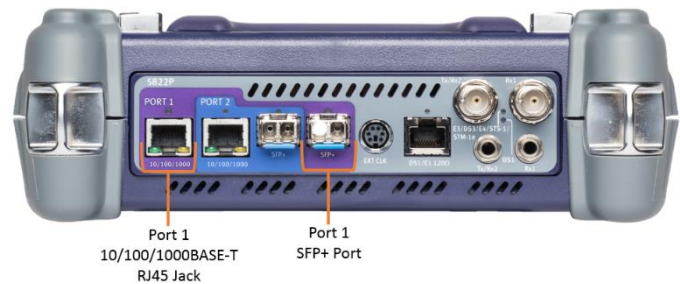


Figure 3: T-BERD 5800v2 Dual Port mainframe

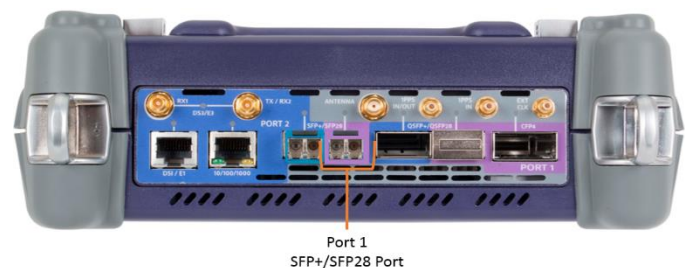



Figure 4: T-BERD 5800-100G mainframe

Launch 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, RFC 2544, L3 Traffic, Terminate** test on port 1 for the desired physical interface. For example: **Ethernet ► 10/100/1000 ► RFC 2544 ► L3 Traffic ► P1 Terminate**.

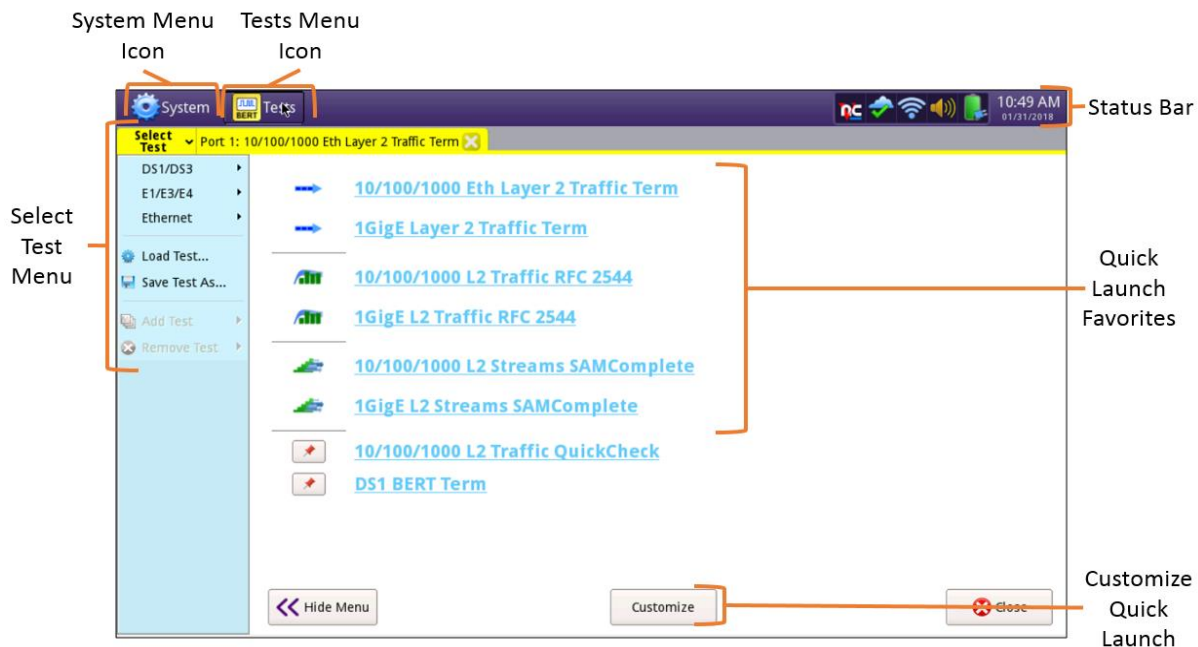
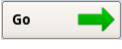


Figure 5: Startup Screen

- Tap the  button next to **“Start a New Configuration (reset to defaults)”**

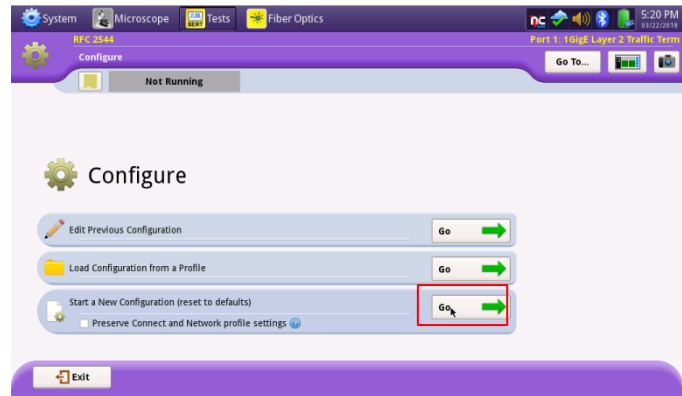



Figure 6: RFC 2544 test

Configure Test:

- Tap the  button to display the **L2 Network Settings** screen. If you are testing a VLAN, set Encapsulation to VLAN and enter your VLAN ID.

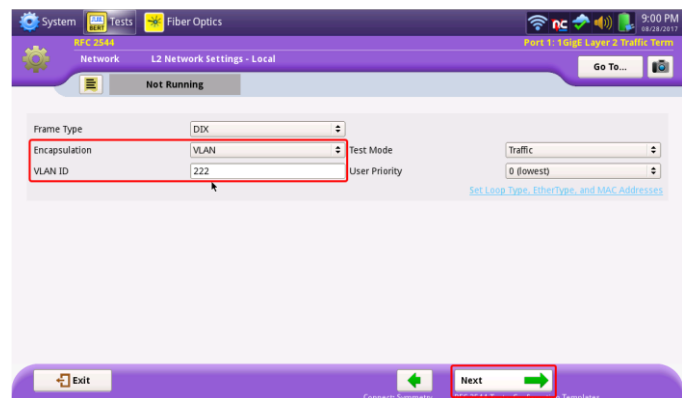
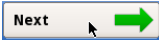
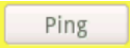


Figure 7: L2 Network Settings – Local

- Tap the  button to display the RFC 2544 Test: **L3 Networks Settings - Local** screen.
- Enter IP Parameters (**Source IP Type, Source IP, Default Gateway, Subnet Mask, and Destination IP**). The T-BERD/MTS will resolve the destination IP address using the Address Resolution Protocol (ARP). Once resolved, the  button becomes available and you can use it to verify connectivity to the far-end loopback device.

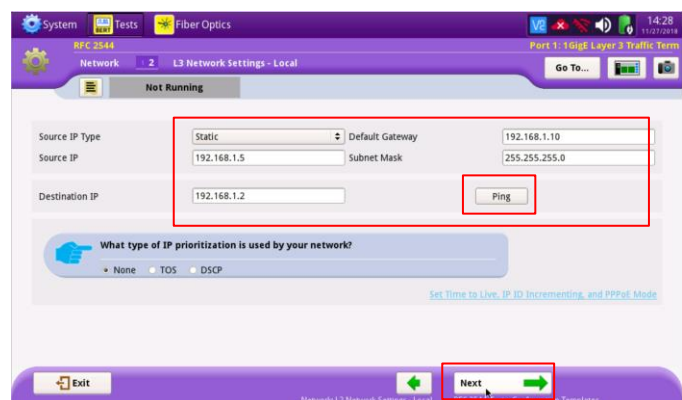
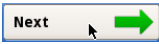


Figure 8: L3 Network Settings: Local

- Tap the  button twice to display the **RFC 2544 Test: Select Tests** screen.
- Select the **Throughput, Latency, Frame Loss, Packet Jitter, and Burst Test** Tests.

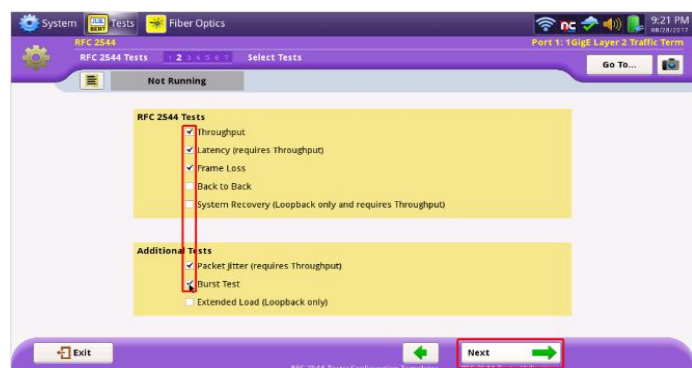



Figure 9: Select Tests

- Tap the  button to display the **RFC 2544 Test: Utilization** screen. Set **Max Bandwidth** to the Committed Information Rate (CIR).

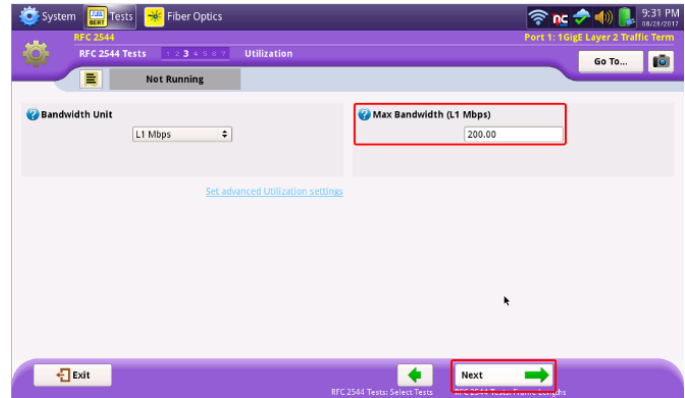



Figure 10: Utilization

- Tap the  button to display the **RFC 2544 Test: Frame Lengths** screen. Select the 1st, 4th, and 8th Frame Lengths.

If the MTU is greater than 1518 (1522 with VLAN), also enter and select the frame length of the MTU. Deselect (uncheck) all other frame sizes.

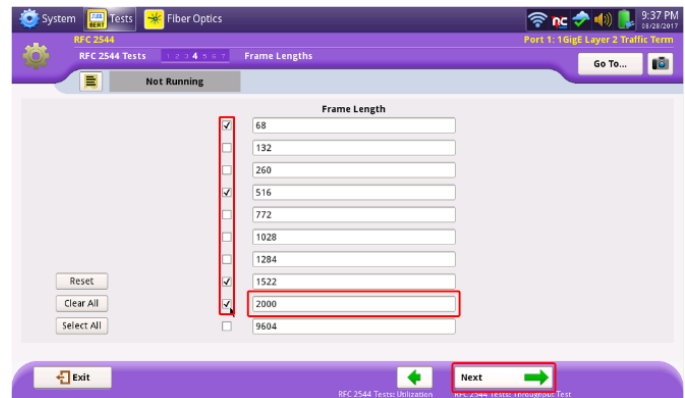


Figure 11: Frame Lengths

- Tap the  button 3 times to display the **RFC 2544 Test: Burst Test** screen. Set **CBS (kB)** to the Committed Burst Size.

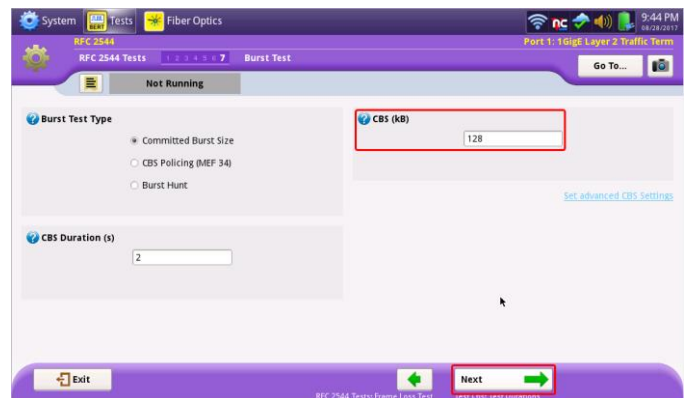



Figure 12: Burst Test

- Tap the  button twice to display the **Test Ctls: Test Thresholds** screen. Check all boxes for which a Pass/Fail Threshold is known. Enter the Threshold for each selection.

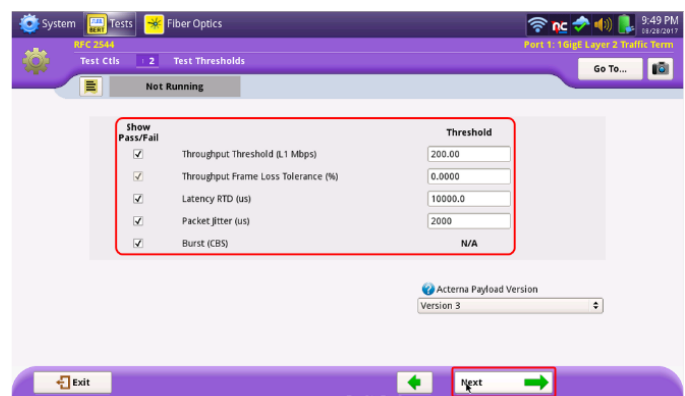
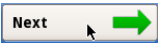


Figure 13: Test Thresholds

Run Test:

1. Tap the  button 3 times to display the **Run J-QuickCheck** screen. Tap the [Not what you want?](#) link and check **Test using configured RFC2544 Max bandwidth** box, then tap **Back** to return to previous screen.

Tap the  button.

Verify that the **Remote Loop** is recognized, and that **Measured Throughput** is greater than or equal to the Committed Information Rate.

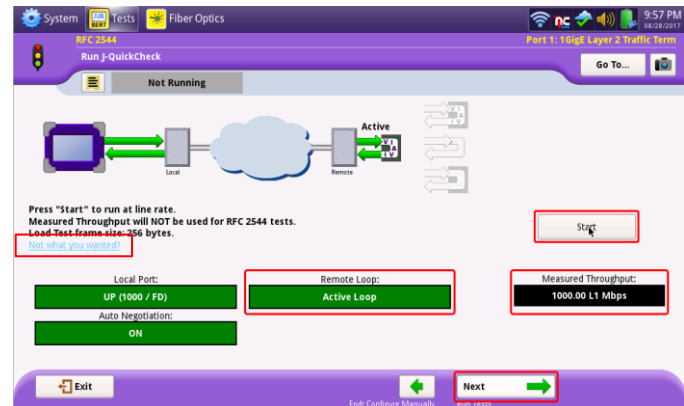
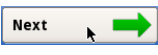



Figure 14: Run J-QuickCheck

2. Tap the  button to display the **Run RFC 2544 Tests** screen.

Tap the  button.

Wait for the test to complete and verify that all tests pass or complete as indicated by a green or blue checkmark.

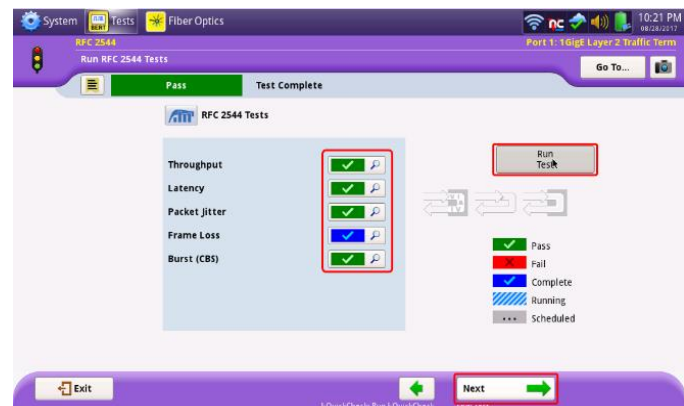
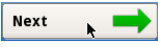




Figure 15: Run RFC 2544 Tests

3. Tap the  button three times to display the **Report** screen. Tap .

4. Tap the  button three times to close the report and exit the RFC-2544 test.

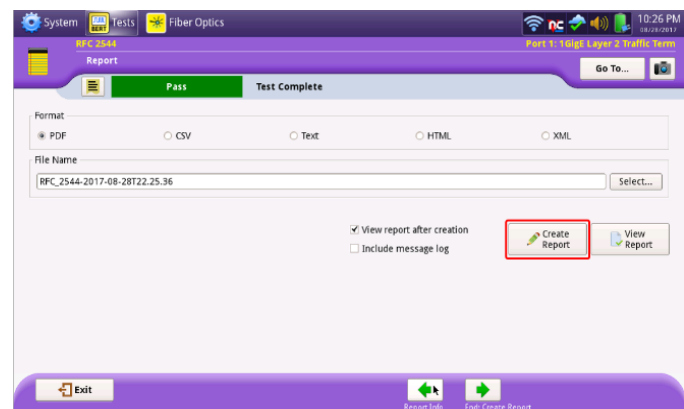


Figure 16: Create Report