

QUICK CARD

Ethernet RFC 2544 Layer 2 Traffic

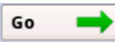
This quick card describes how to configure and run an RFC 2544 Layer 2 Traffic Test for Metro Ethernet service activation.

- 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
 - C510GELAN test option for 10 Gigabit Ethernet
 - C525GE test option for 25 Gigabit Ethernet
 - C540GE test option for 40 Gigabit Ethernet
 - C550GE test option for 50 Gigabit Ethernet
 - C5100GE test option for 100 Gigabit Ethernet
- 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



Figure 1: Equipment Requirements

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 RFC 2544 Layer 2 Traffic test on Port 1 for the desired rate. For Example:
Ethernet ► 1GigE Optical ► RFC 2544 ► L2 Traffic ► P1 Terminate.
4. Tap the  button next to “**Start a New Configuration (reset to defaults)**”

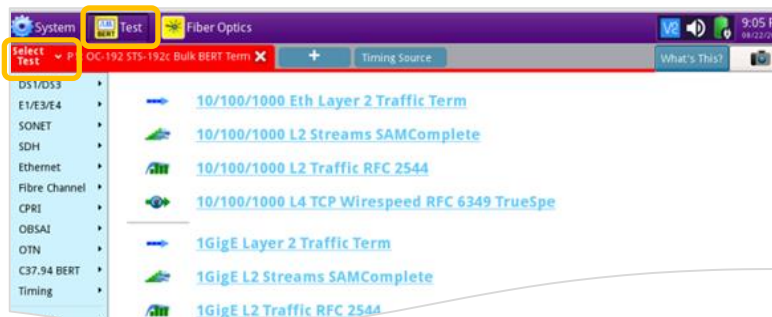


Figure 2: Launch Screen

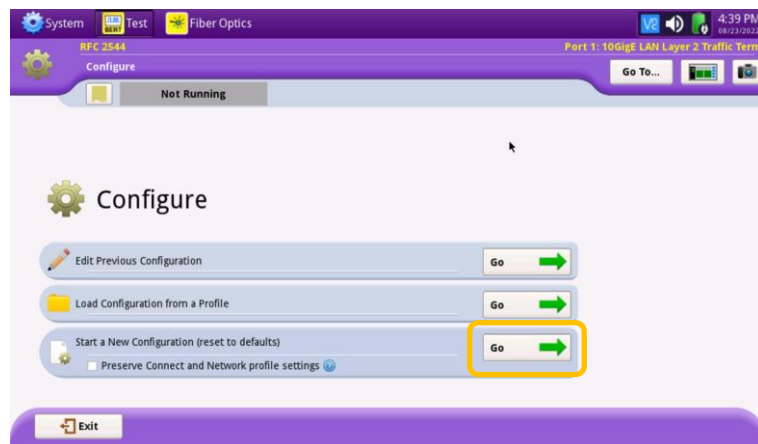


Figure 3: RFC 2544 test

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CONFIGURE TEST

- ▶ The following Information is needed to configure the test:
 - VLAN ID, if VLAN tagging is used.
 - Maximum Transmission Unit (MTU), if Jumbo Frames are used.
 - Committed Information Rate (CIR)
 - Pass/Fail Threshold for Throughput, Frame Loss, Latency and Jitter



Figure 4: Work Order

1. Tap the **Next** button to display the **L2 Network Settings** screen.
2. If you are testing a VLAN, set **Encapsulation** to **VLAN** and enter your **VLAN ID**.
3. Tap the **Next** button twice to display the **Select Tests** screen.
4. Select the **Throughput**, **Latency**, **Frame Loss**, and **Packet Jitter** tests.
5. Tap the **Next** button to display the **Utilization** screen.
6. Set **Max Bandwidth** to the Committed Information Rate (CIR).
7. Tap the **Next** button to display the **Frame Lengths** screen.

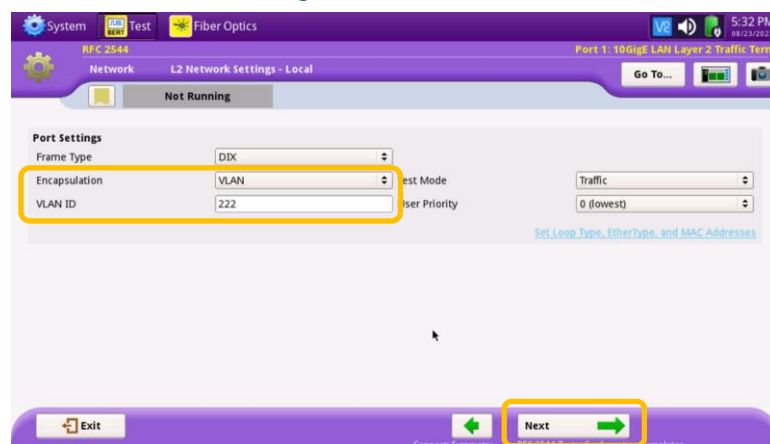


Figure 5: L2 Network Settings

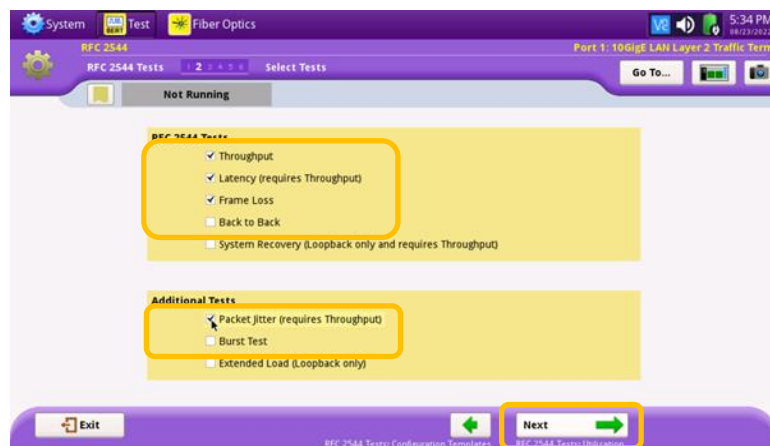


Figure 6: Select Tests

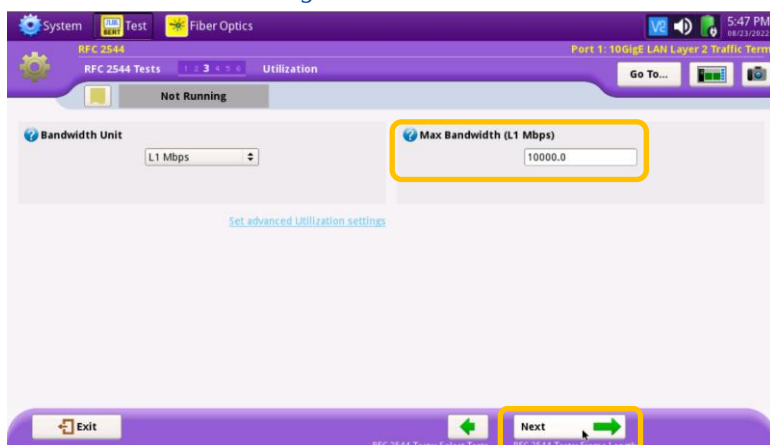
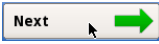


Figure 7: Utilization

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8. Select the 1st, 4th, and 8th Frame Lengths.
9. If the MTU is greater than 1518 (1522 with VLAN tagging), also enter and select the frame length of the MTU.
10. Deselect (uncheck) all other frame lengths.
11. Tap the  button four times to display the **Test Thresholds** screen.
12. Check all boxes for which a Pass/Fail Threshold is known. Enter the Threshold for each selection.
13. Tap the  button 3 times to display the **Run J-QuickCheck** screen.

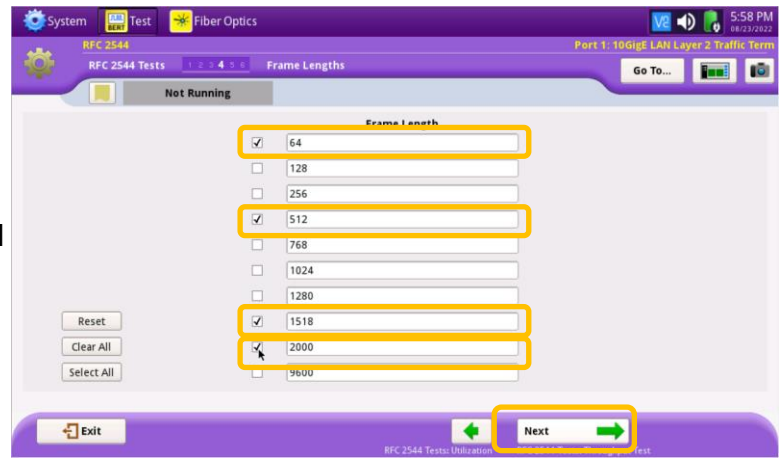


Figure 8: Frame Lengths

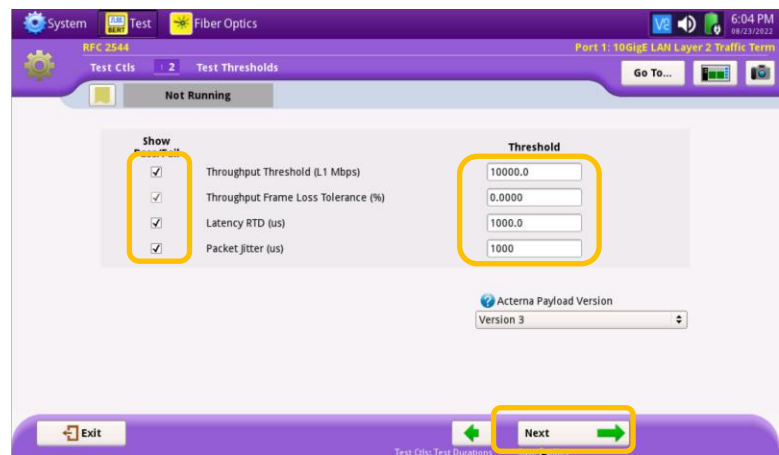


Figure 9: Test Thresholds

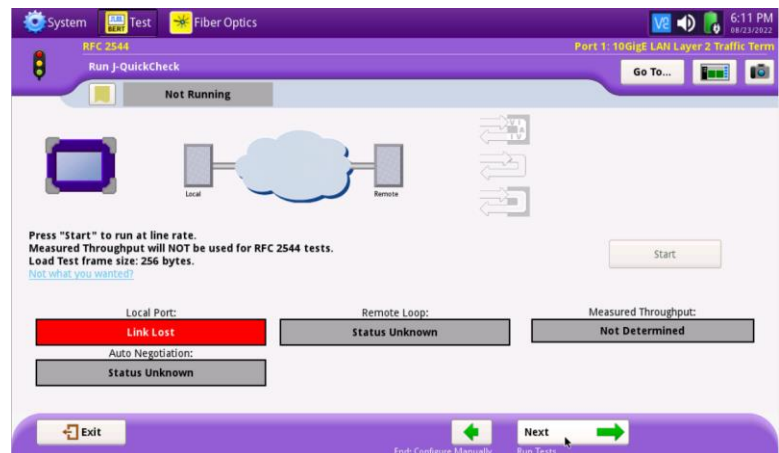


Figure 10: J-QuickCheck

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CONNECT TO LINE UNDER TEST AND LOOP BACK DEVICE

► 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. Insert desired Optical Transceiver into the Port 1 SFP or QSFP slot on the top of the T-BERD.
3. If necessary, insert optical attenuators into the SFP TX and/or RX ports.
4. Connect the SFP to the port under test using a jumper cable compatible with the line under test.



Figure 11: Inspect Before You Connect

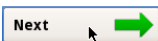
► For Copper 10/100/1000BASE-T interfaces:

Connect the 10/100/1000 RJ-45 jack to the port under test using CAT 5E or better cable.

- Verify that **Local Port** status **UP** and Full Duplex (**FD**)

- Tap the  button.

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

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

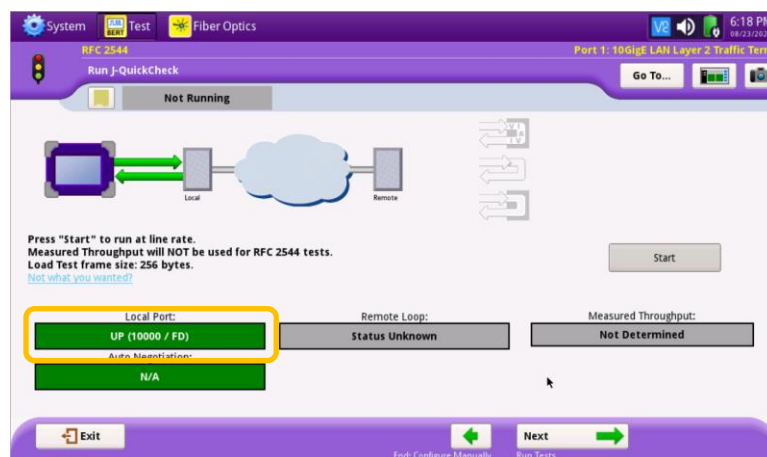


Figure 12: Local Port status

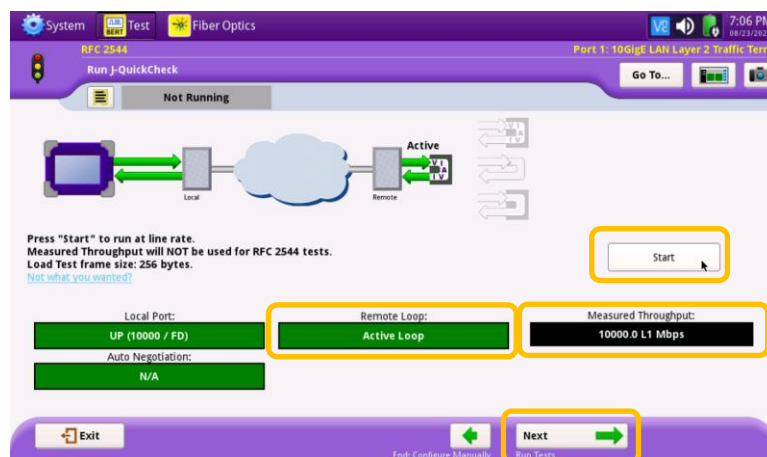


Figure 13: Run J-QuickCheck

T-BERD/MTS 5800 Portable Network Tester

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RUN TEST

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

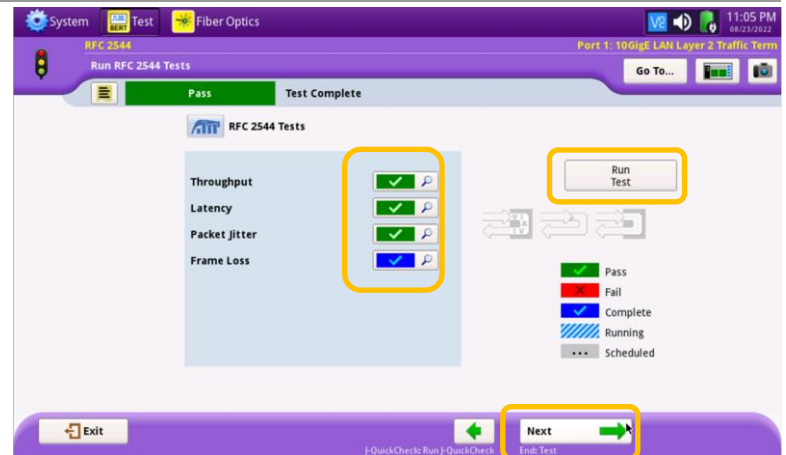
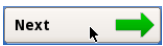


Figure 14: Run RFC 2544 Tests

CREATE REPORT

1. Tap the  button three times to display the **Report** screen.
2. Tap  .
3. Tap  buttons three times to close the report and exit the RFC 2544 test.

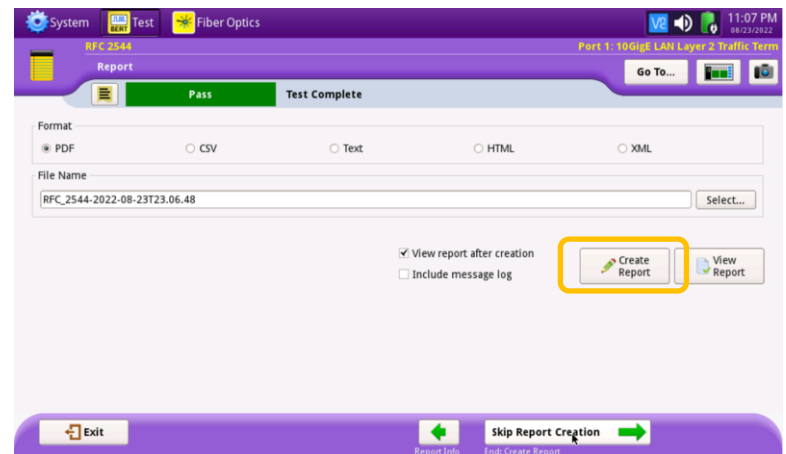


Figure 15: Create Report

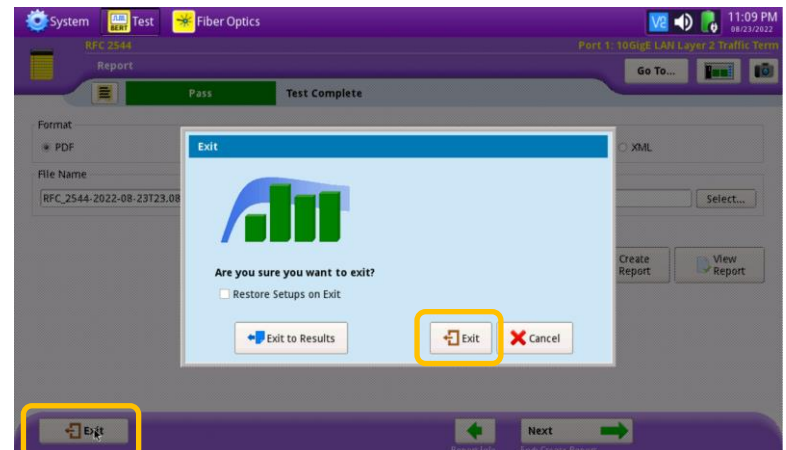


Figure 16: Exit