

QUICK CARD

Ethernet RFC 2544 Layer 2 Service Acceptance Test

This quick card describes how to configure and run an RFC 2544 Layer 2 Traffic Test for Metro Ethernet service activation. The quick card documents a procedure to set up the OneAdvisor on a 1GigE Optical Interface, but the same workflow may be applied to other data rates.

EQUIPMENT REQUIREMENTS

- OneAdvisor 800 equipped with the following:
 - o RAXxMA-O Radio Analysis Module, SPA06MA-O Spectrum Analyzer Module, TM400GB-QQ 400G Module, or TM400GB-QO 400G Module.
 - o Transport software release V5.1.0 or greater
 - o CA10M1GE or ONA-SP-10M1GE 1-Gigabit Ethernet option
- Optical Transceiver supporting the Ethernet data rate to be tested (SFP, SFP+, SFP28, QSFP28, QSFP-DD, etc.)
- Cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i, FiberChek Probe, or INX-760)
- Fiber optic cleaning supplies



Figure 1: Equipment Requirements

LAUNCH TEST

- Press the Power button  on the ONA-800 base top panel to turn on the OneAdvisor.
- Tap  to display the Home Screen.
- Tap  to display the Tests menu.
- Tap **Radio Analysis Transport >** or **400G Transport >** to show the Transport test application.
- Tap the **Transport** icon. 
- If the **Select Test** menu is not displayed, tap **>> All Tests** in the lower left screen corner.
- Using the **Select Test** menu or favorite test list, launch the Ethernet RFC 2544 Layer 2 Traffic test for the desired data rate and port (P1 or P2).
For example: **Ethernet ▶ 1GigE Optical ▶ RFC 2544 ▶ L2 Traffic ▶ P1 Terminate**
or **Ethernet ▶ 1GigE Optical ▶ RFC 2544 ▶ L2 Traffic ▶ Terminate**.
- Tap the **Go →** button next to “**Start a New Configuration (reset to defaults)**”

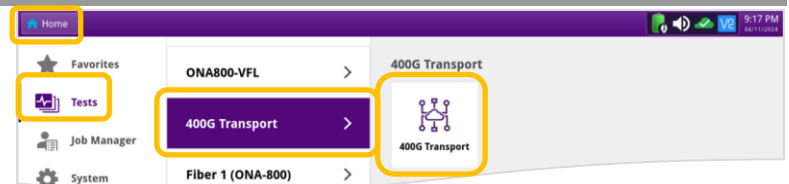


Figure 2: Transport Launch screen

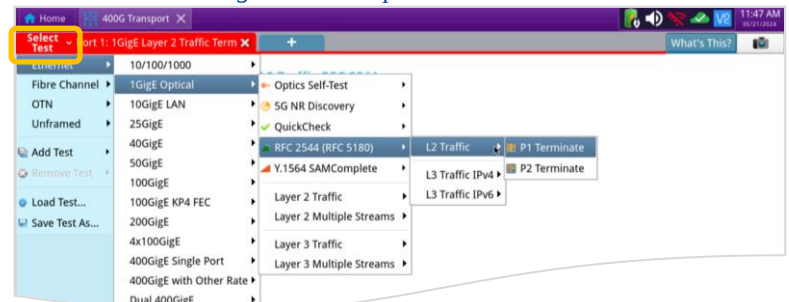


Figure 3: Select Test

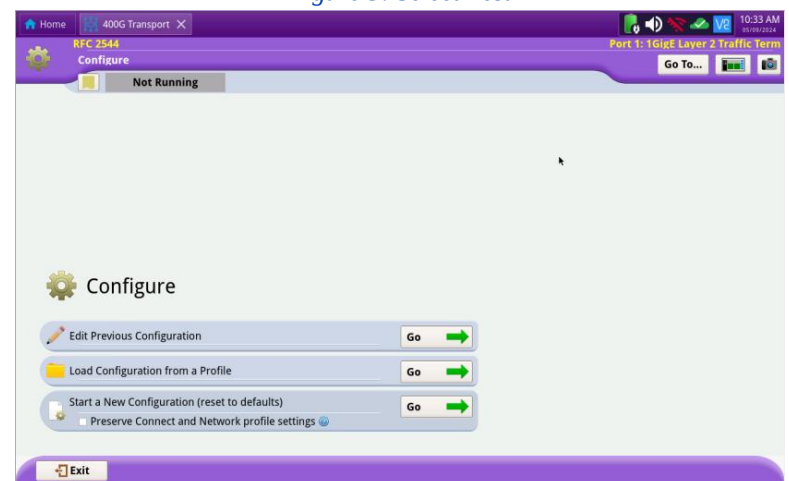


Figure 4: Configure

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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
1. Tap the **Next** → button to display the **L2 Network Settings - Local** screen.
 - ▶ If you are testing a VLAN, set **Encapsulation** to **VLAN** and enter the **VLAN ID**.
 - ▶ If you are using a VIAVI instrument or hard loop for loopback, proceed to step 2. If your loopback device is a non-VIAVI instrument that does respond to VIAVI Loop Up messages:
 - Tap [Set Loop Type, EtherType and MAC addresses](#).
 - Set **Loop Type** to **Unicast**
 - Set **Destination MAC** to the MAC address of the loopback device.
 - Tap the **← Back** button.
 2. Tap the **Next** → button twice to display the **Select Tests** screen.
 3. Select the **Throughput**, **Latency**, **Frame Loss**, and **Packet Jitter** tests.
 4. Tap the **Next** → button to display the **Utilization** screen.
 5. Set **Max Bandwidth** to the Committed Information Rate (CIR).
 6. Tap the **Next** → button to display the **Frame Lengths** screen.



Figure 5: Work Order

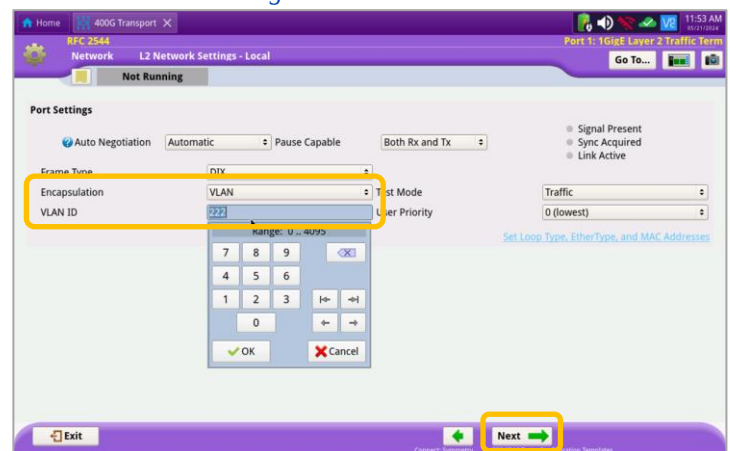


Figure 6: L2 Network Settings - Local

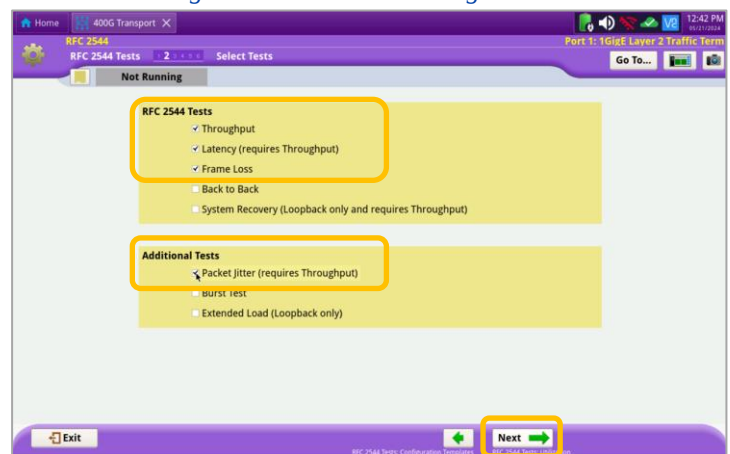


Figure 7: Select Tests

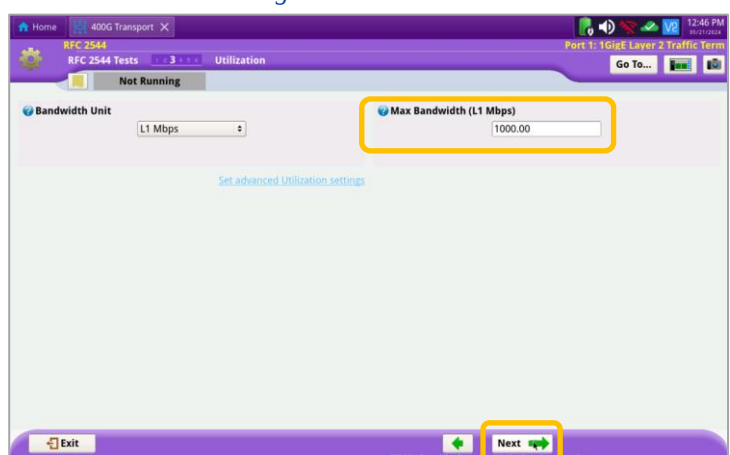


Figure 8: Utilization

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8. Select the 1st, 4th, and 8th Frame Lengths. The number values will vary based on the encapsulation (None or VLAN),
9. If the MTU is greater than 1518 (1522 with VLAN tagging), enter and select the frame length of the MTU.
10. Deselect (uncheck) all other frame lengths.
11. Tap the **Next** → 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 **Next** → button 3 times to display the **Run J-QuickCheck** screen.

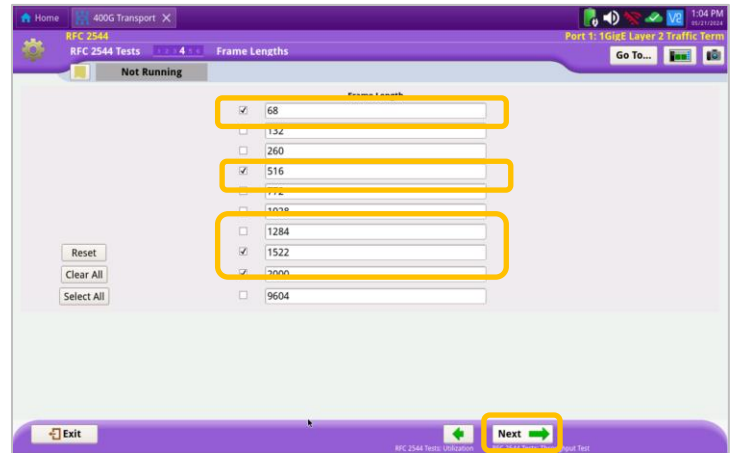


Figure 9: Frame Lengths

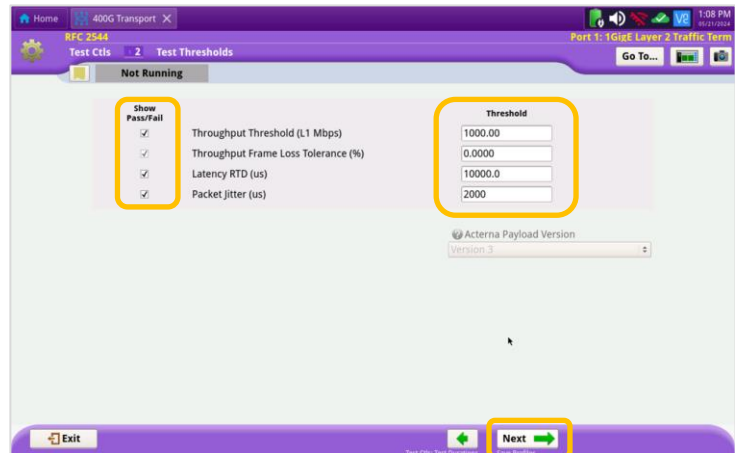


Figure 10: Test Thresholds

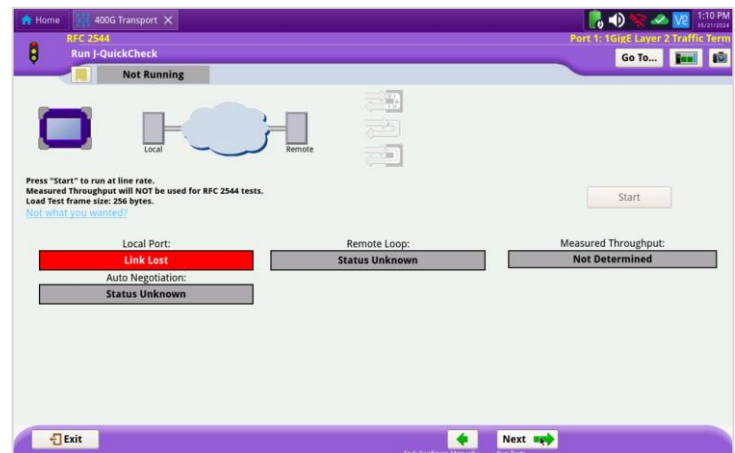


Figure 11: J-QuickCheck

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CONNECT TO LINE UNDER TEST AND LOOP BACK DEVICE

► For Optical Interfaces:

1. Use the VIAVI P5000i, FiberChek Probe or INX 760 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 OneAdvisor.
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.

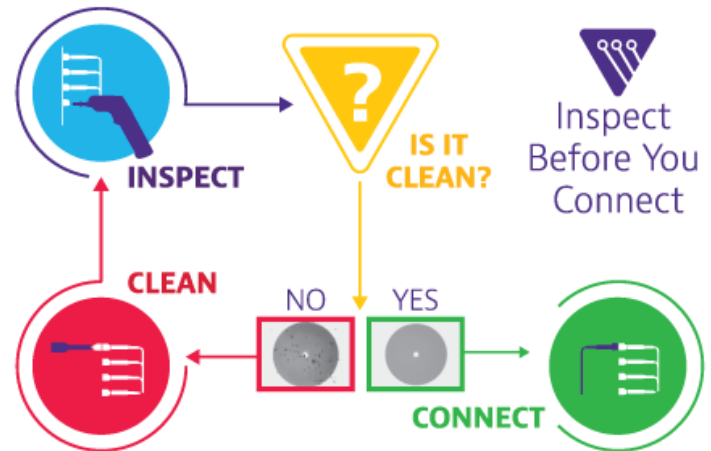


Figure 12: Inspect Before You Connect

► 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 is **UP** and Full Duplex (**FD**)

- Tap the **Start** button.

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

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

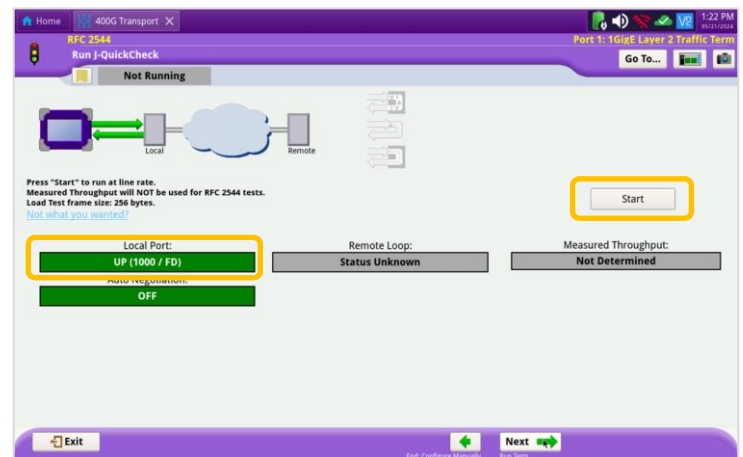


Figure 13: Local Port status

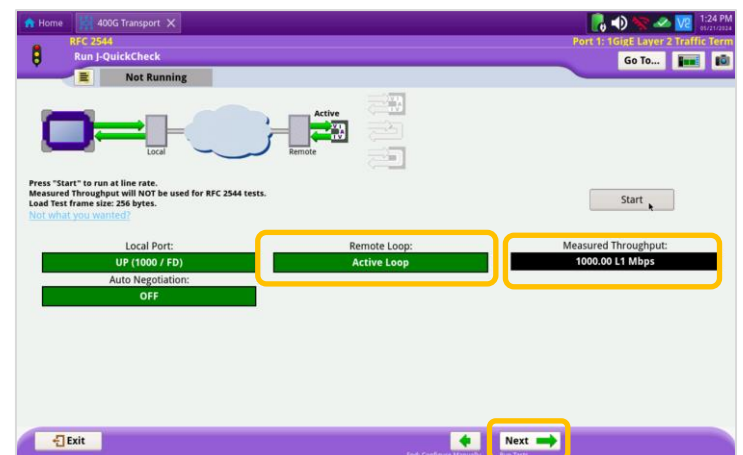


Figure 14: Run J-QuickCheck

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RUN TEST

1. Tap the **Run Test** button.
2. Wait for the test to complete and verify that all tests pass or complete as indicated by green or blue checkmarks.

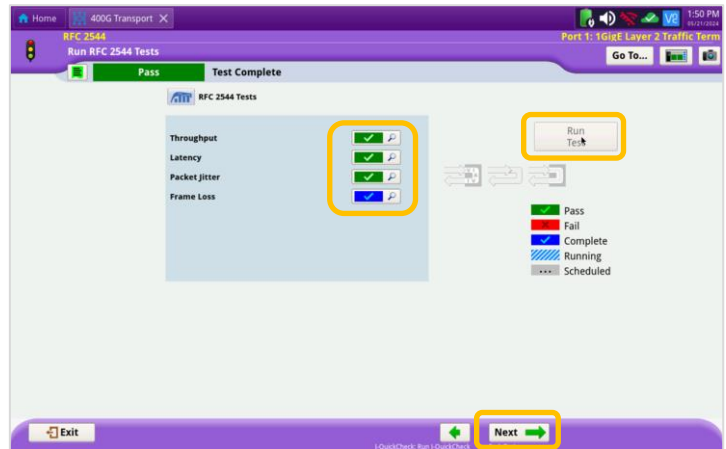


Figure 15: Run RFC 2544 Tests

CREATE REPORT

1. Tap the **Next** → button three times to display the **Report** screen.
2. Tap the **Create Report** button.
3. Tap the ← **Exit** buttons three times to close the report and exit the RFC-2544 test.

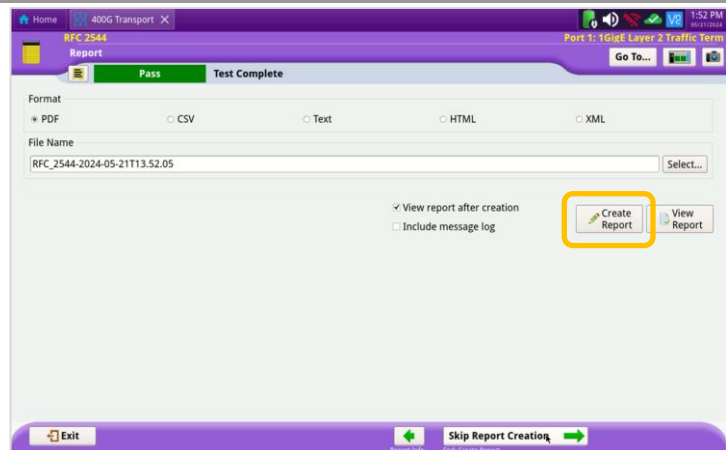


Figure 16: Create Report

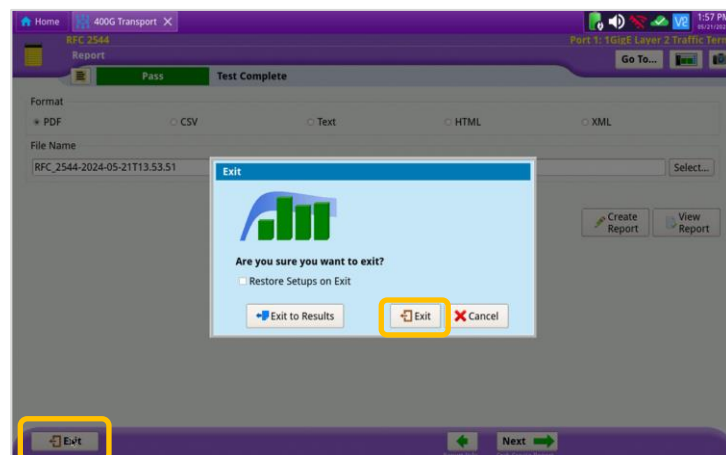


Figure 17: Exit