

QUICK CARD

Ethernet RFC 2544 Layer 3 Service Acceptance Test

This quick card describes how to configure and run an RFC 2544 Layer 3 Traffic Test for Metro Ethernet service activation. The quick card documents a procedure to set up the OneAdvisor on a 1GigE Optical Interface with IPv4, the same workflow may be applied to other data rates or IPv6 addressing.

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

1. Press the Power button  on the ONA-800 base top panel to turn on the OneAdvisor.
2. Tap  to display the Home Screen.
3. Tap  to display the Tests menu.
4. Tap **Radio Analysis Transport >** or **400G Transport >** to show the Transport test application.
5. Tap the **Transport** icon. 
6. If the **Select Test** menu is not displayed, tap **>> All Tests** in the lower left screen corner.
7. Using the **Select Test** menu or favorite test list, launch the Ethernet RFC 2544 Layer 3 Traffic test for the desired data rate and port (P1 or P2). For example:
Ethernet ▶ 1GigE Optical ▶
RFC 2544 ▶ L3 Traffic IPv4 ▶ P1 Terminate
or Ethernet ▶ 1GigE Optical ▶
RFC 2544 ▶ L3 Traffic IPv4 ▶ Terminate.
8. Tap the **Go →** button next to “Start a New Configuration (reset to defaults)”

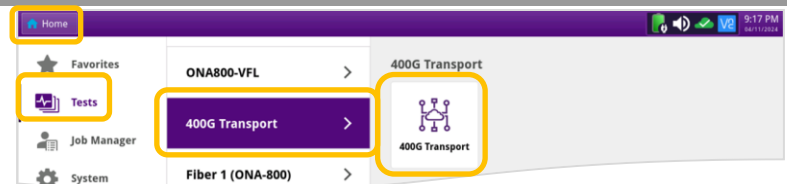


Figure 2: Transport Launch screen

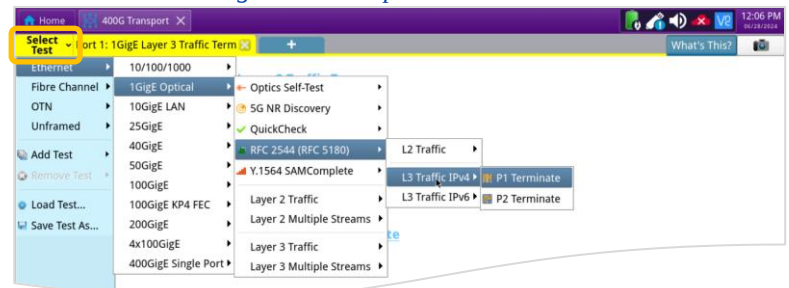


Figure 3: Select Test

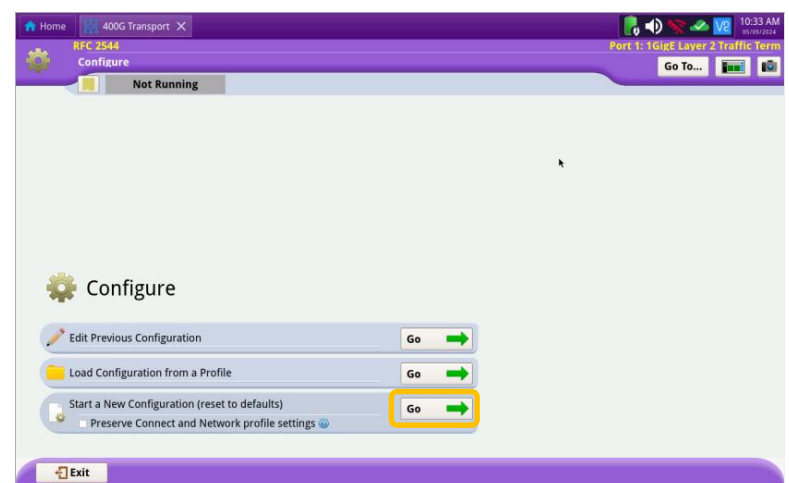


Figure 4: Configure

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CONNECT TO LINE UNDER TEST

► 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.

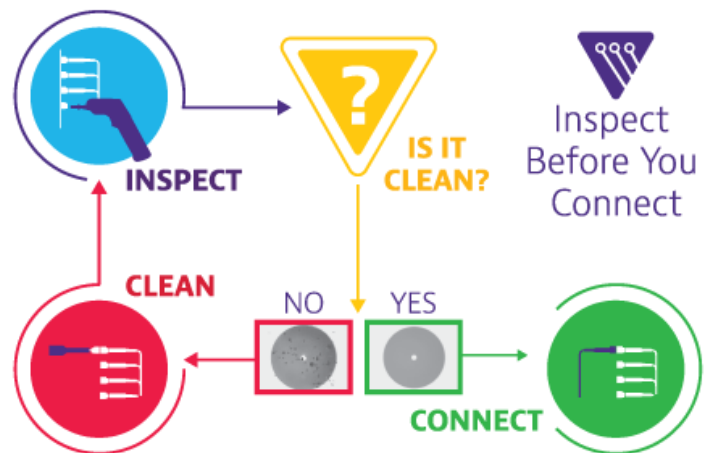


Figure 5: Inspect Before You Connect

► 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.

CONFIGURE TEST

► The following Information is needed to configure the test:

- Source and Destination IP Address settings
- Maximum Transmission Unit (MTU), if Jumbo Frames are used.
- Committed Information Rate (CIR)
- Pass/Fail Threshold for Throughput, Frame Loss, Latency and Jitter



Figure 6: Work Order

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CONFIGURE TEST (Continued)

1. Tap the **Next →** button **twice** to display the **L3 Network Settings - Local** screen.
 - ▶ Enter IP Parameters (Source IP Type, Source IP, Default Gateway, Subnet Mask, and Destination IP for Loopback).
 - ▶ The OneAdvisor will resolve the destination IP address using the Address Resolution Protocol (ARP).
 - ▶ Once resolved, the **Ping** button becomes available, and you can use it to verify connectivity to the loopback device.
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.

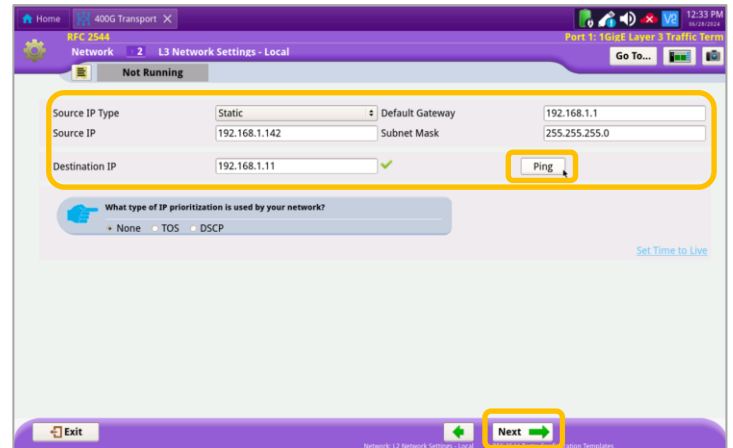


Figure 7: L3 Network Settings - Local

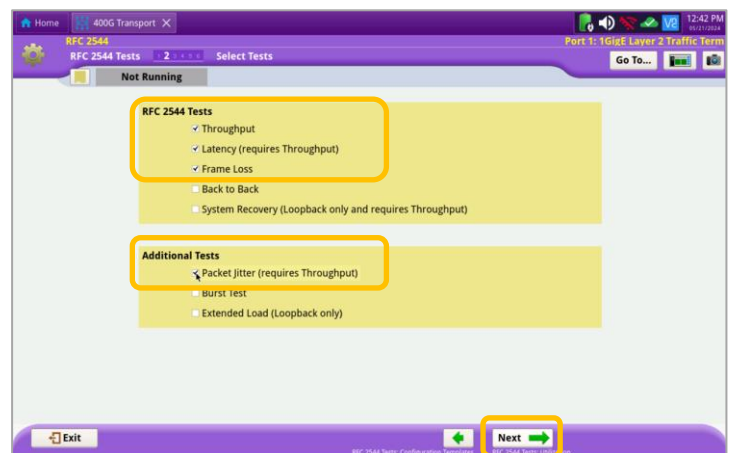


Figure 8: Select Tests

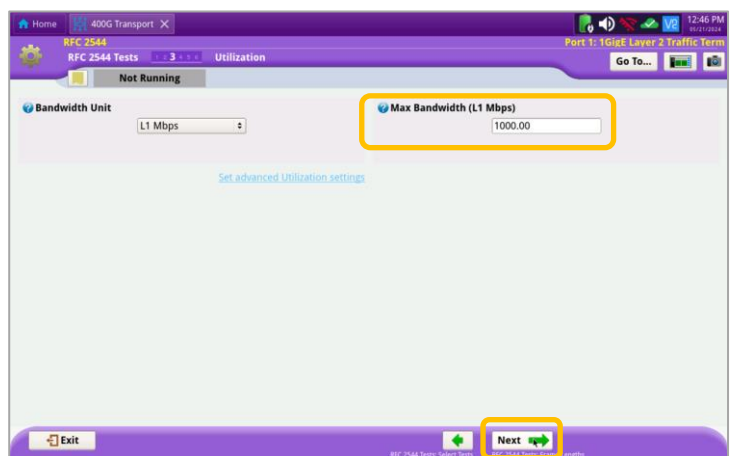


Figure 9: Utilization

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8. Select the 1st, 4th, and 8th Packet Lengths.
 - Note: Packet Lengths exclude Layer 2 overhead. Corresponding Frame Lengths are displayed to the left of the Packet Lengths.
9. If the MTU is greater than 1500, enter and select the packet length of the MTU.
10. Deselect (uncheck) all other packet lengths.
11. Tap the **Next** → button **3 times** to display the **Test Durations** screen. Minimum recommended duration for **All Tests** is **60 seconds** (per frame size).
12. Tap the **Next** → button to display the **Test Thresholds** screen.
13. Check all boxes for which a Pass/Fail Threshold is known. Enter the Threshold for each selection.
14. Tap the **Next** → button **3 times** to display the **Run J-QuickCheck** screen.
15. Verify that **Local Port** status is **UP** and Full Duplex (**FD**), and that **ARP Status** is **Success**.

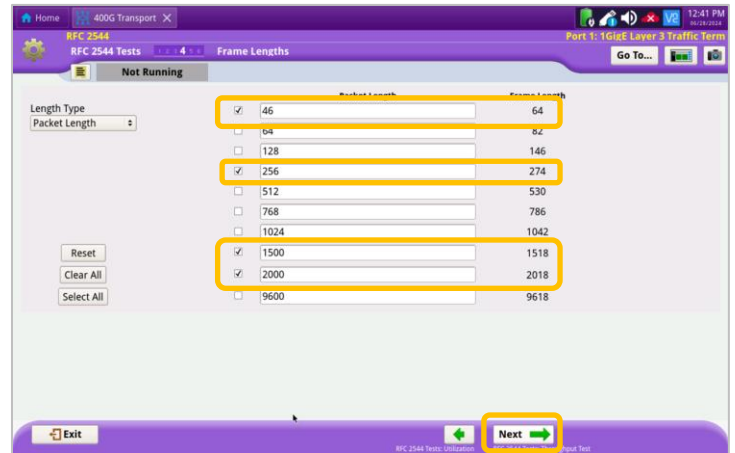


Figure 10: Frame Lengths

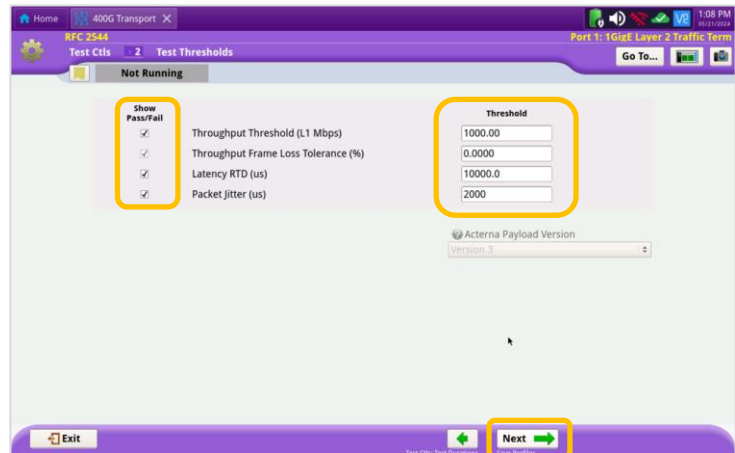


Figure 11: Test Thresholds

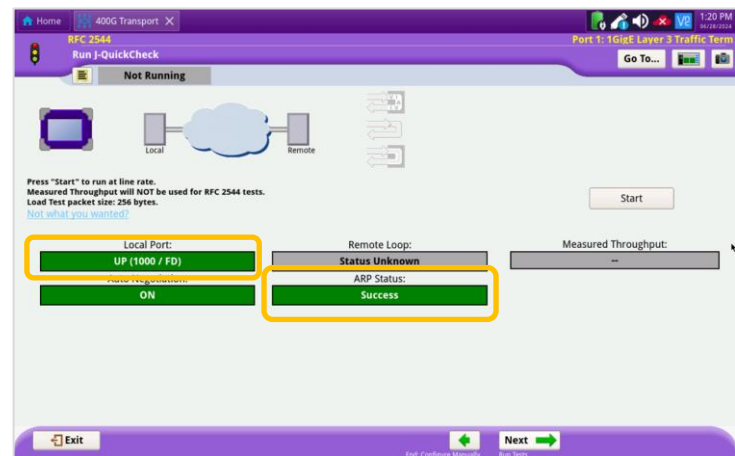


Figure 12: Local Port status

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RUN J-QUICKCHECK

1. Tap the **Start** button.
2. 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.
3. Tap the **Next** → button to display the **Run RFC 2544 Tests** screen.

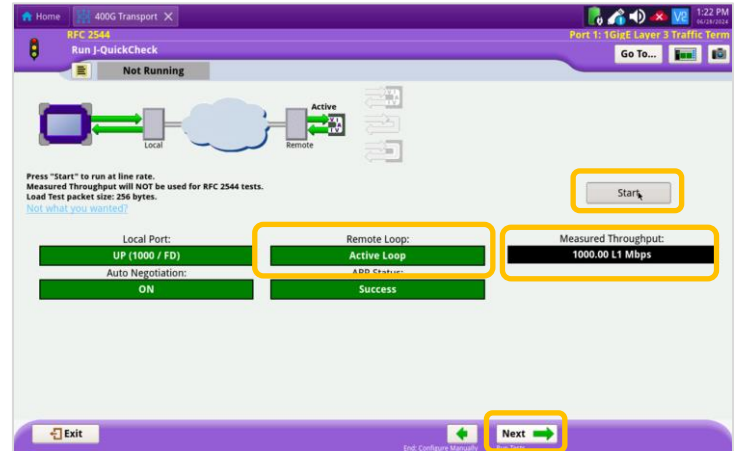


Figure 13: Run J-QuickCheck

RUN RFC 2544 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.

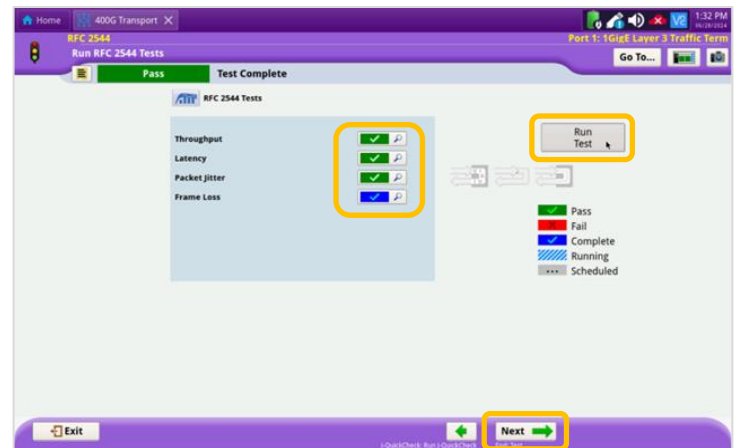


Figure 14: Run RFC 2544 Tests

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CREATE REPORT

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

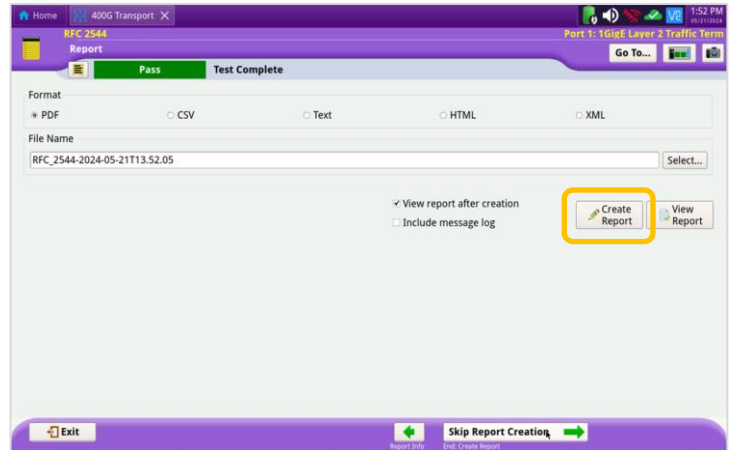


Figure 15: Create Report

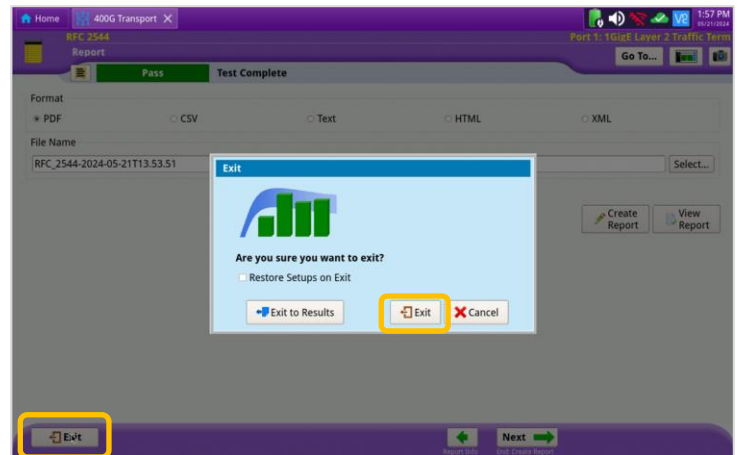


Figure 16: Exit