OneAdvisor 800 Transport and Wireless Platforms

QUICK CARD

Ethernet Layer 3 Traffic Loopback

This quick card describes how to set up the OneAdvisor 800 as a Layer 3 Loopback device. The quick card documents a procedure to set up the OneAdvisor on a 1GigE Optical Interface utilizing IPv4 addressing, the same workflow may be applied to other data rates and IPv6.

EQUIPMENT REQUIREMENTS

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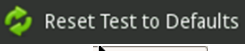- Optical Transceiver supporting the Ethernet data rate to be tested (SFP, SFP+, SFP28, or QSFP28)
- Cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i, FiberChek Probe, or INX-760)
- Fiber optic cleaning supplies

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 **🏠 Home** to display the Home Screen.

3. Tap **⌁❘ Tests** to display the Tests menu.

4. Tap **Radio Analysis Transport ＞** or **400G Transport ＞** to show the Transport test application.

5. Tap the **Transport** icon. ⊞ TRANSPORT

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 Layer 3 Traffic test for the desired data rate and port (P1 or P2). For example: **Ethernet ►1GigE Optical ► Layer 3 Traffic ►IPv4 ►P1 Terminate.**

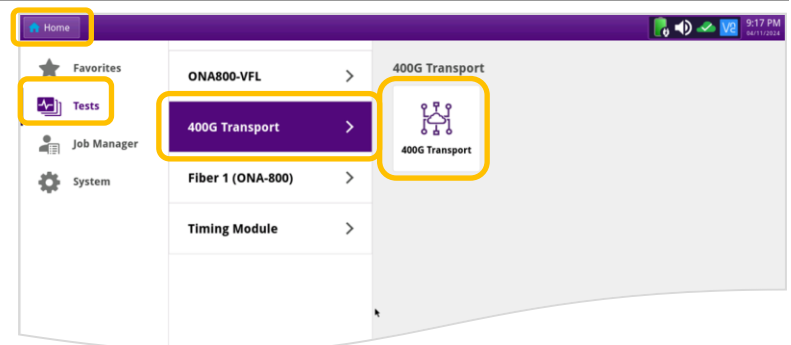8. If the current configuration is unknown, tap 🧰 Tools to open the **Tools** Panel and select **⟳ Reset Test to Defaults**.

9. Press **✓ OK** to continue.

Figure 2: Transport Launch screen

Figure 3: Select Test

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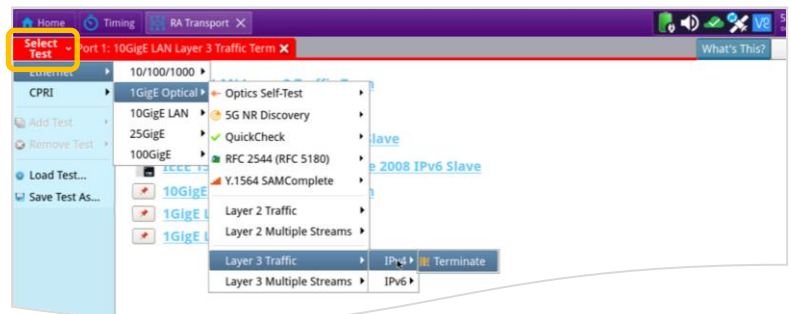
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CONFIGURE TEST

► The following info is needed to configure the test:

- Type of Optical Transceiver (10/100/1000 Copper SFP, 1G/10G Multimode SFP+, 10G/25G Single mode SFP+, 100G LR4 QSFP28, etc.)
- Auto Negotiation settings of the port under test.
- IP Address settings (DHCP or Static, Source IP, Default Gateway, Subnet Mask, and Destination IP)

Figure 4: Work Order

► For 1GigE Optical or 10/100/1000 Copper 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**).

► For 10/100/1000 Copper tests, tap the **Setup** soft key on the top right side of the screen and proceed to page 3.

► For Optical Interfaces:
1. Tap 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 OneAdvisor.
4. Review SFP information:
   o Verify that the SFP operates on the required wavelength (850nm, 1310nm, 1550nm,etc..).
   o Verify that the SFP supports the required data rate (10G, 25G, etc..)
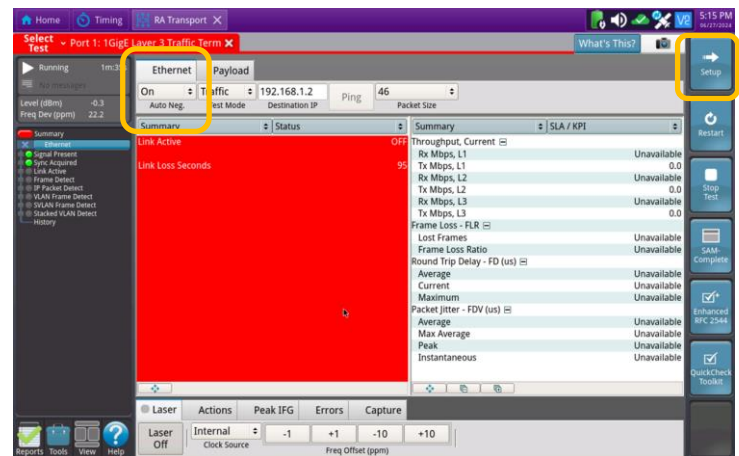   o Note the Min and Max Tx Levels (dBm) and Max Rx Level (dBm) to assess if optical attenuators are required.

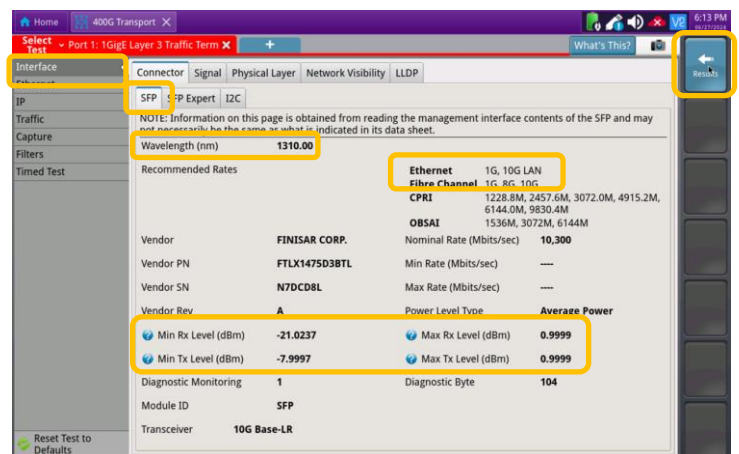*Figure 5: Quick Config, Auto Neg.*

Figure 6: Setup, Interface/Connector/SFP

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CONFIGURE TEST (CONTINUED)

► If you are testing a VLAN, select the **Ethernet** settings tab, set **Encapsulation** to **VLAN,** tap the VLAN field and enter your **VLAN ID**.

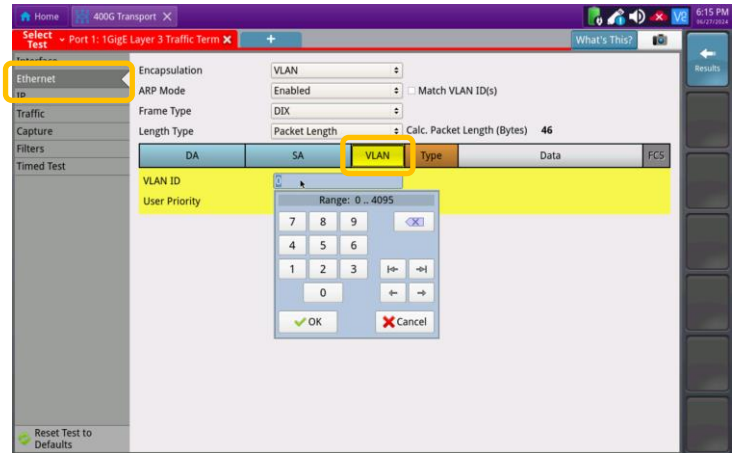*Figure 7: Setup, Ethernet/VLAN*

► Select the **IP** settings tab:

    ○ Tab the Source/Destination Addresses field and configure **Source IP Type**, **Source IP** Address, **Default Gateway**, and **Subnet Mask**.
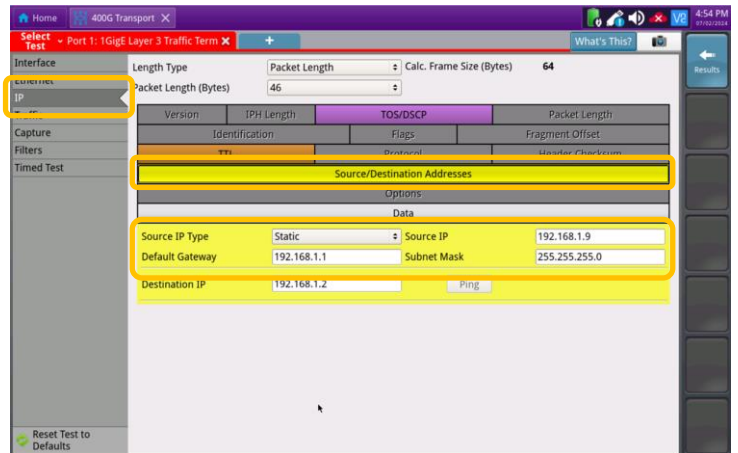
► Tap the Results soft key.

Figure 8: Setup, IP

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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 optical transceiver 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 [Laser Off]. The button will turn yellow and be relabeled [Laser On].
6. Press the [Restart] soft key.
7. Verify the following:
   - **Summary** LED is yellow.
   - **Signal Present** LED is green.
   - **Sync Acquired** LED is green.
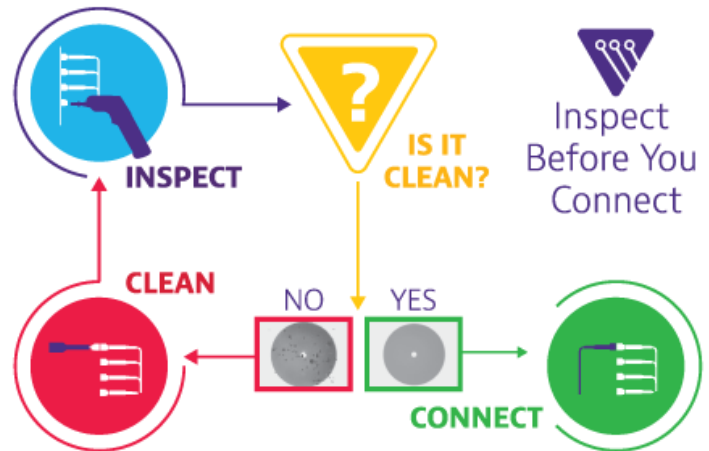   - **Link Active** LED is green.
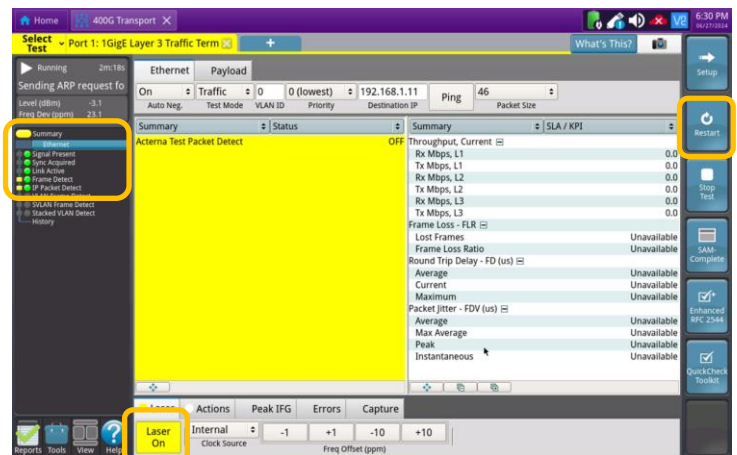
► **For 10/100/1000M Copper Interfaces:**

1. Connect the copper SFP to the port under test using CAT5e 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.

Figure 9: Inspect Before You Connect

Figure 10: Optical Interface Results

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LOOP UP

The OneAdvisor may be looped up by the following methods. Once looped, the OneAdvisor will reflect all received test packet after inverting Source and Destination MAC addresses and IP addresses.

1. **Unicast Loop up message**:

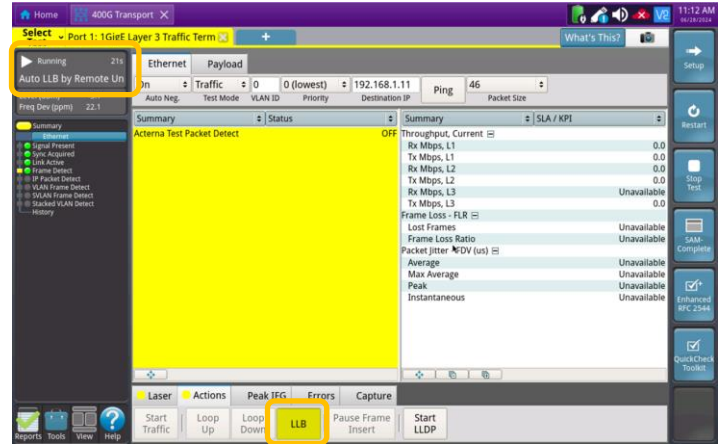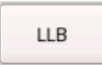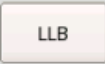   ▶ The OneAdvisor will respond to VIAVI Layer 3 **Loop up** messages and enter **LLB** mode.

Figure 11: Loop Up message response

2. **Manual Local Loopback**:

    ▶ Select the **Actions** Panel and tap [LLB] to manually enter **LLB** mode.

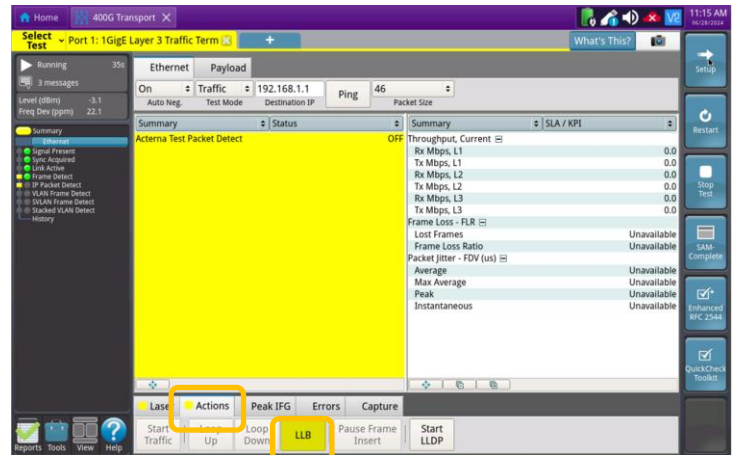   ▶ Tap [LLB] again to exit **LLB** mode when the test is complete.

Figure 12: Manual LLB

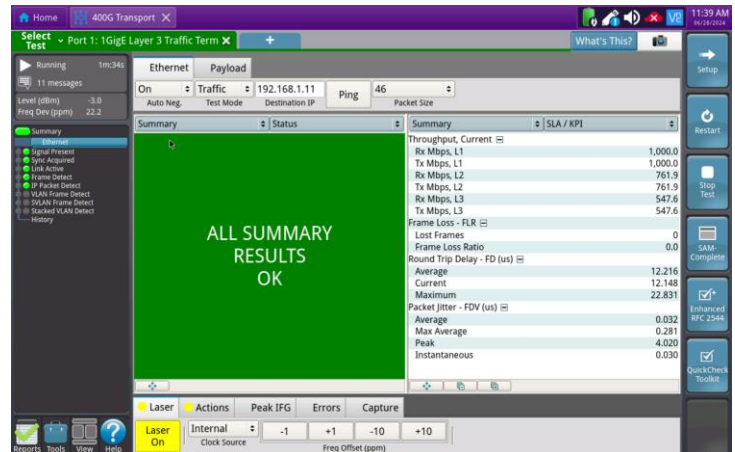In either case, real-time results can be viewed in the left and right results window, as the test progresses.

Figure 13: Real Time Results

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