

QUICK CARD

Ethernet Layer 2 Traffic Loopback






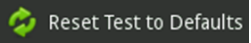

This quick card describes how to set up the OneAdvisor 1000 **100G Module** as a Layer 2 Loopback device.

- OneAdvisor 1000 equipped with the following:
 - 100G Transport Module
 - BERT software release V30.1.0 or greater
 - C510GELAN test option for 10 Gigabit Ethernet loopback
 - C525GE test option for 25 Gigabit Ethernet loopback
 - C540GE test option for 40 Gigabit Ethernet loopback
 - C550GE test option for 50 Gigabit Ethernet loopback
 - C5100GE test option for 100 Gigabit Ethernet loopback
- Optical Transceiver supporting the Ethernet data 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 OneAdvisor.
2. Press the 100G Module **Test** icon  at the top of the screen.
3. Tap the Power button  and click  to launch the 100G Module.
4. Using the **Select Test** menu, Quick Launch menu, or Job Manager, launch the Ethernet Layer 2 Traffic test on Port 1 for the desired data rate. For example: **Ethernet ► 1GigE Optical ► Layer 2 Traffic ► P1 Terminate**.
5. Tap  to open the **Tools** Panel and select .
6. Press  to continue.

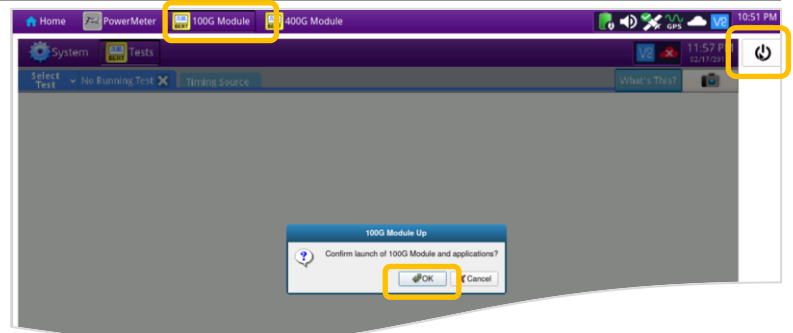


Figure 2: Launch 100G Module

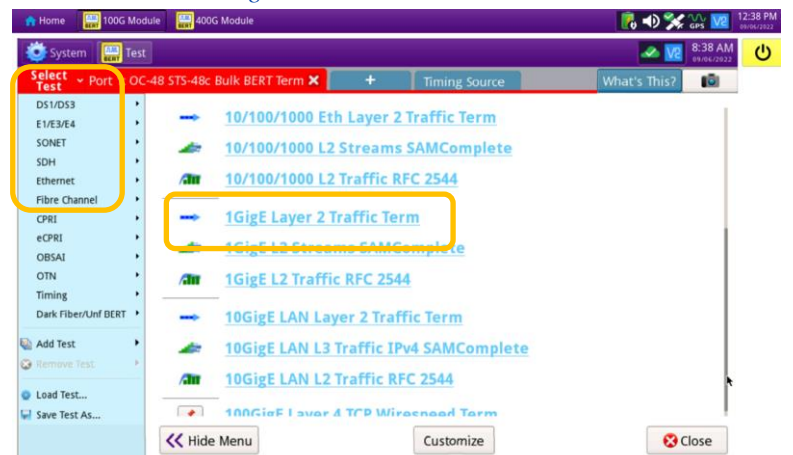


Figure 3: Launch Test

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CONFIGURE TEST



► The following Information is needed to configure the test:

- Physical Interface (10/100/1000BASE-T, 1000BASE-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
- Auto Negotiation settings of the port under test.



Figure 4: Work Order

► For Optical Interfaces:

1. Press 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 in the **Connector** tab:
 - Verify that the SFP operates on the required wavelength (850nm, 1310nm or 1550nm).
 - Verify that the SFP supports the required Data Rate (1G, 10GE LAN, etc).
 - Note the Min and Max Tx Levels (dBm) and Max Rx Level (dBm) to assess if optical attenuators are required.
 - Press the **Results** soft key  to return to the Test Results screen.

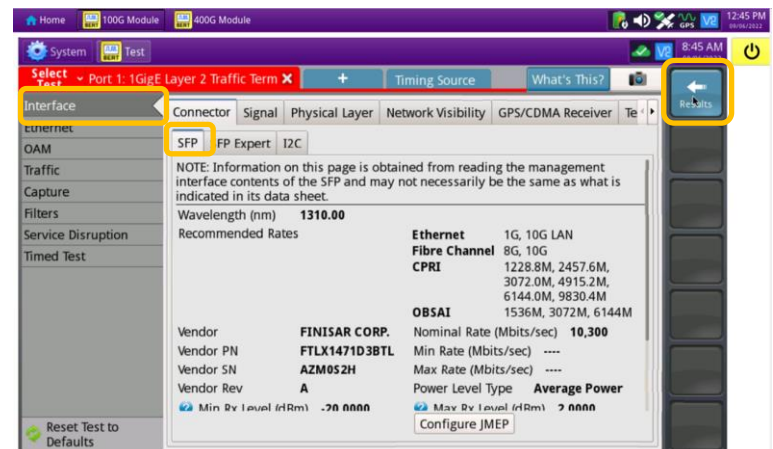


Figure 5: Setup, Interface/Connector/SFP

► For 10/100/1000 Electrical and 1GigE Optical 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**).

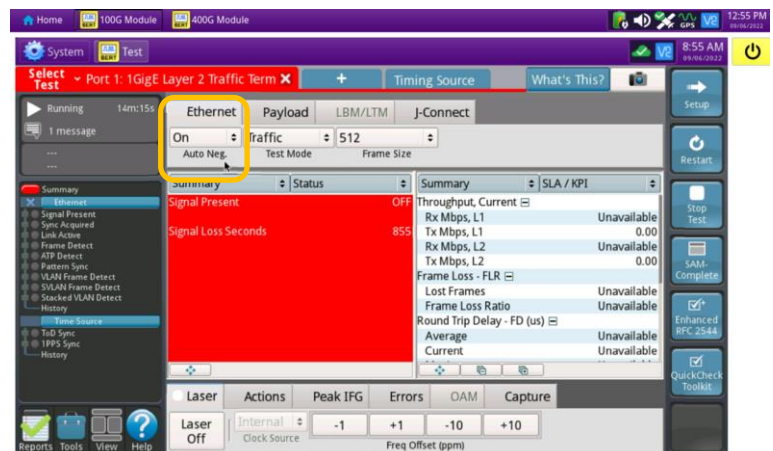


Figure 6: Quick Config, Auto Neg.

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CONNECT TO LINE UNDER TEST

► For Optical Interfaces:

- 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.
- If necessary, insert optical attenuators into the SFP TX and/or RX ports.
- Connect the SFP to the port under test using a jumper cable compatible with the line under test.
- Select the **Laser** tab in the **Actions** panel.
- Press . The button will turn yellow and be relabeled .
- Press the **Restart** soft key .
- Verify the following:
 - Summary** LED is yellow.
 - Signal Present** LED is green.
 - Sync Acquired** LED is green.
 - Link Active** LED is green.



Figure 7: Inspect Before You Connect

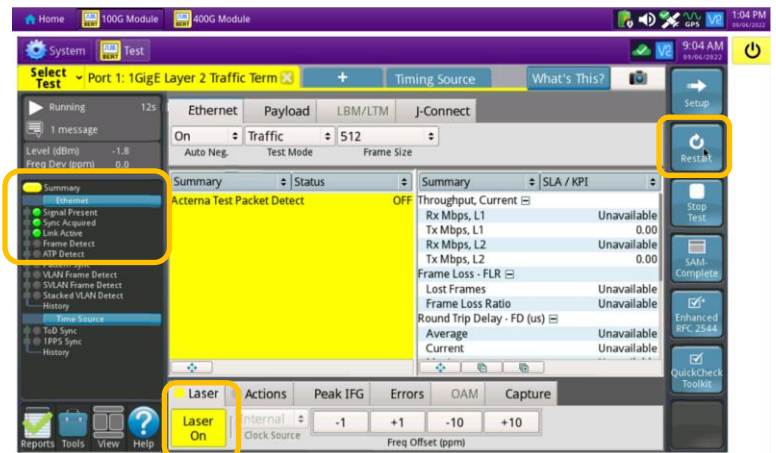


Figure 8: Optical Interface Results

► 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.
- Press the **Restart** soft key .
- Verify the following:
 - Summary** LED is yellow.
 - Sync Acquired** LED is green.
 - Link Active** LED is green.

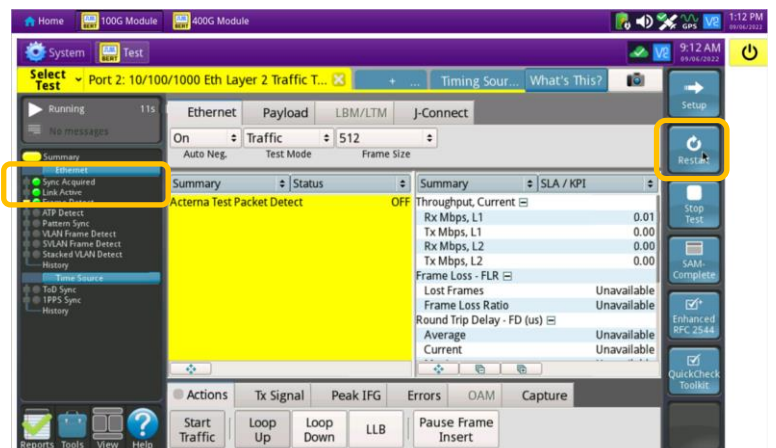


Figure 9: Copper Interface Results

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LOOP UP


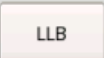
The OneAdvisor may be looped up by any of the following methods. Once looped, the OneAdvisor will reflect all received test packet after inverting Source and Destination MAC addresses.

1. **Broadcast Loop up message:** The OneAdvisor will respond to VIAVI **Loop up** messages received via Broadcast MAC address and enter Local Loopback (LLB) mode.




2. **Unicast Loop up message:**

- ▶ The OneAdvisor will respond to VIAVI **Loop up** messages received via Unicast MAC address and enter **LLB** mode.

3. **Manual Local Loopback:**

- ▶ Select the **Actions** Panel and tap  to manually enter **LLB** mode.
- ▶ Tap  again to exit **LLB** mode when the test is complete.

With **Unicast** and **Manual** loopback, the operator of T-BERD or OneAdvisor traffic generator will need to know the MAC address of this OneAdvisor:

- ▶ Tap the Setup soft key , select the Ethernet menu, and tap  to display the Factory Default Source MAC Address of your OneAdvisor.
- ▶ Provide this address to the operator of the Traffic Generator, upon request.
- ▶ Press the Results soft key  to view the progress of the test.

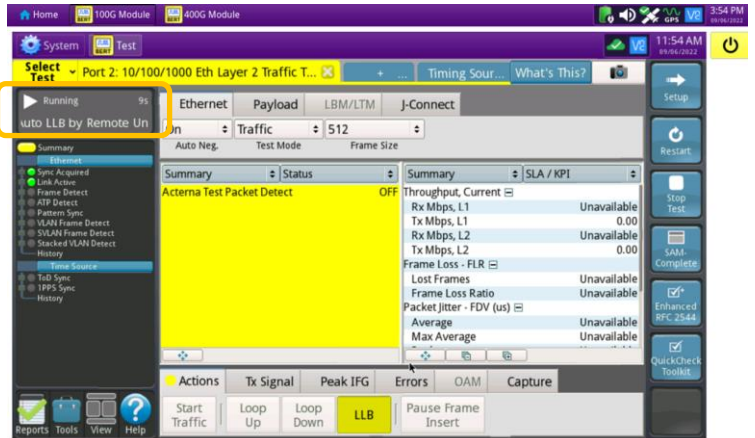


Figure 10: Loop Up message response

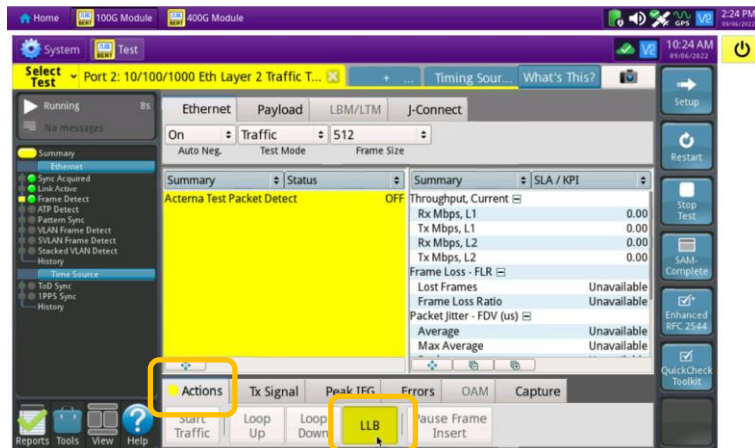


Figure 11: Manual LLB

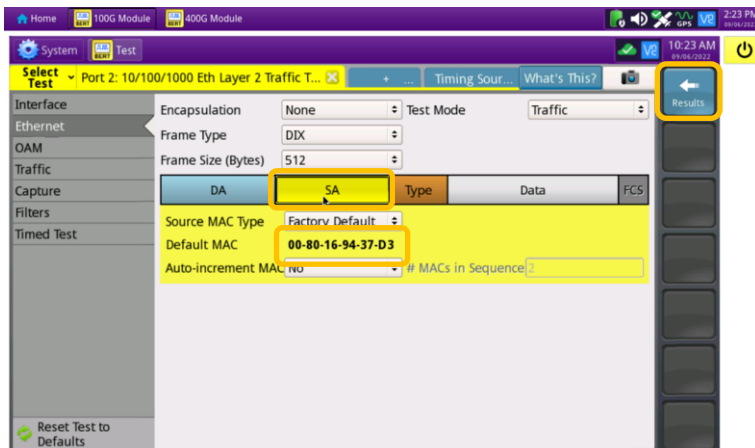


Figure 12: Ethernet Setup, Source MAC