

Quick Card

T-BERD[®]/MTS-5800 Network Tester

Ethernet 4x10GigE Layer 2 Y.1564 Test

This document outlines how run a Y.1564 Metro Ethernet Service Activation Test across a Link Aggregation Group (LAG) with up to 4 10GigE links.

Equipment Requirements:

- T-BERD/MTS-5800 equipped with the following:
 - BERT software release V29.1.1 or greater
 - Ethernet test options:
 - C510GELAN for 10 Gigabit Ethernet
 - C54x10GELAN for 40 Gigabit Ethernet
 - 40GBASE-SR4 or 4x10GBASE-LR4 QSFP+ optical transceiver to match the line under test
- MPO to LC fanout Cable to match the optical transceiver and line under test (Single mode or Multimode Fiber)
- Fiber optic inspection microscope with MPO and LC tips (VIAVI Sidewinder)
- Fiber Optic Cleaning supplies



Figure 1: Equipment Requirements

The following information is required to complete the test:

- Type of hash (Layer 2/MAC Address or Layer 3/IP Address)
- Number of 10GigE LAN physical ports in the LAG (2 for 20Gig service, 3 for 30Gig service, 4 for 40Gig service)
- Maximum Frame Loss Ratio, Frame Delay, and Delay Variation (pass/fail criteria)

Fiber Inspection Guidelines:

- All fiber end-faces must be clean and pass an inspection test prior to connection.
- Use the VIAVI Sidewinder microscope to inspect both sides of every connection being used (QSFP Port, Breakout Cable, bulkhead connectors, etc.)

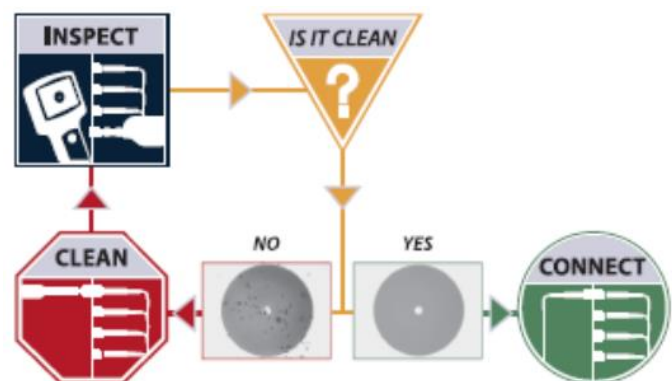


Figure 2: Inspect Before You Connect

Connect to Fibers Under Test (FUT):

1. For optical interfaces:

- Insert QSFP+ Optical Transceiver into the Port 1 slot on the top of T-BERD.
- Inspect and, if necessary, clean all SFPs, fibers, and bulkheads, as described on page 1.
- Connect the QSFP+ to the **MPO to LC fanout cable**.
- Connect the **LC fanouts** to the 10GigE LAN physical ports under test as follows, per your work order:
 - Fanouts #1 and #2 for 20Gig service
 - Fanouts #1, #2 and #3 for 30Gig service
 - Fanouts #1, #2, #3 & #4 for 40Gig service

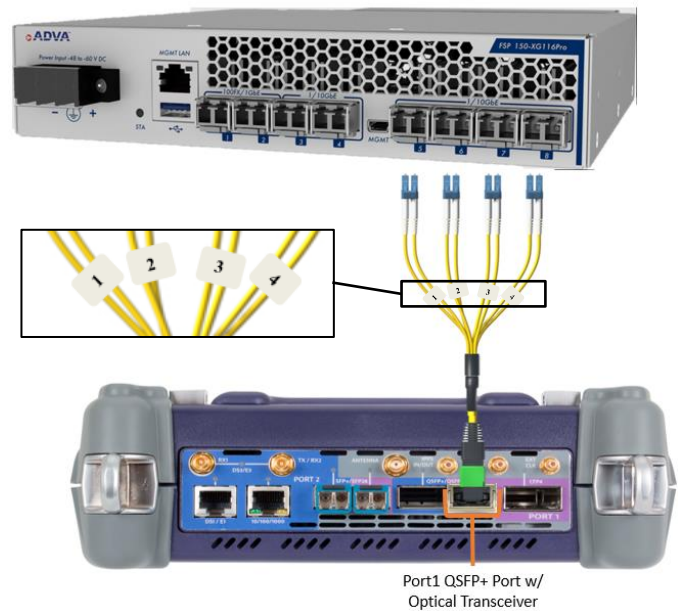




Figure 3: T-BERD 5800-100G and Fanout

Launch Test:

1. Press the Power button  to turn on the test set and view the startup screen.
2. Using the **Select Test** menu, **Quick Launch** menu, or **Job Manager**, launch an Ethernet Layer 2 Traffic test as follows:
Ethernet ▶ 4x10GigE LAN ▶ Layer 2 Traffic ▶ P1 Terminate.
3. Tap the **SAM-Complete** Soft Key,  to launch the Y.1564 workflow.

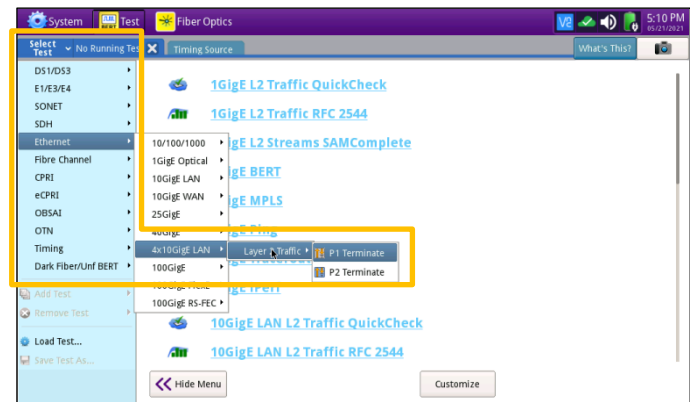


Figure 4: Launch Test

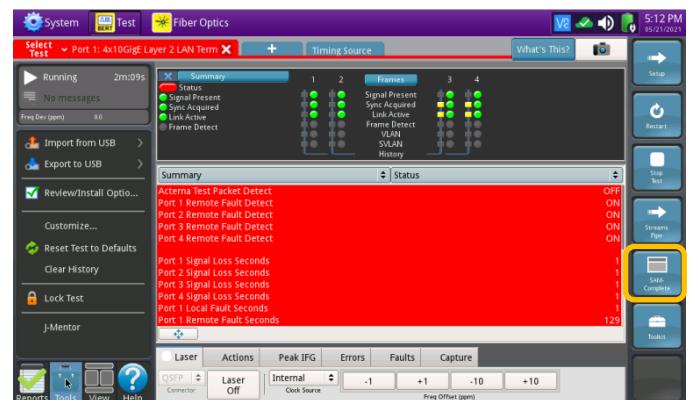

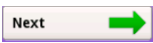

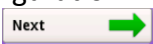
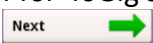


Figure 5: Ethernet, 1 GigE Optical, Layer 2 Traffic, Terminate test

Configure Test:

1. Tap the  button next to “Start a New Configuration (reset to defaults)”
2. Tap  to accept default Symmetry settings and advance to **Local Settings** configuration.
3. Tap the [Loop Type and MAC Address](#) link to display **Local Advanced Settings**.
4. If you are using a Layer 2/MAC Address Hash, set **Auto-Increment Address** to **Source MAC**.
5. If you are using a Layer 3/IP Address Hash, set **Auto-Increment Address** to **Source IP**.
6. Tap  to return to Local Setting configuration.
7. Tap  to advance to **Services** configuration.
8. Enable the physical ports in the LAG:
 - Set Number of Ports/Services to 2 for 20Gig service.
 - Set Number of Ports/Services to 3 for 30Gig service.
 - Set Number of Ports/Services to 4 for 40Gig service.
9. Tap  to advance to **Tagging** configuration.

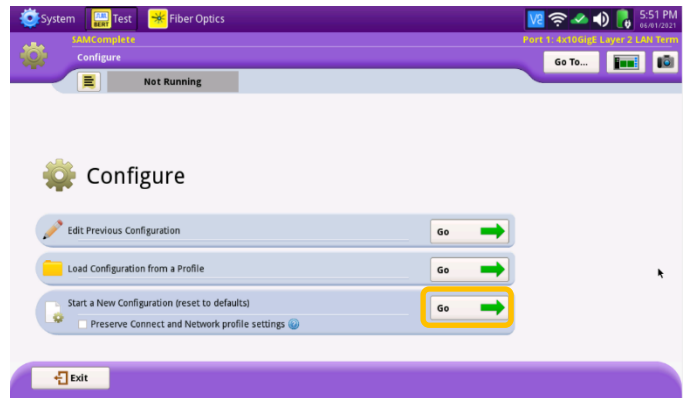


Figure 6: Start a New Configuration

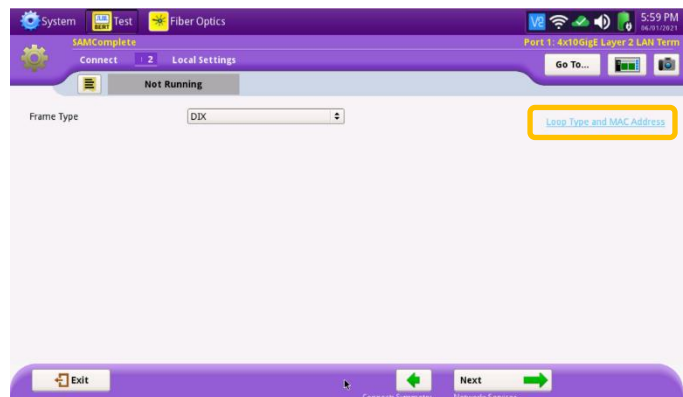


Figure 7: Local Settings

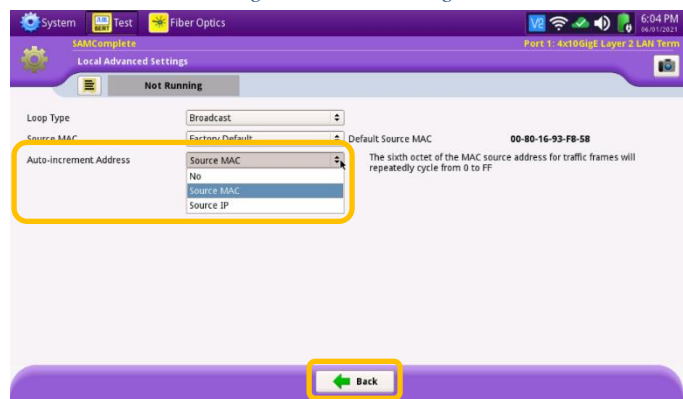


Figure 8: Local Advanced Settings

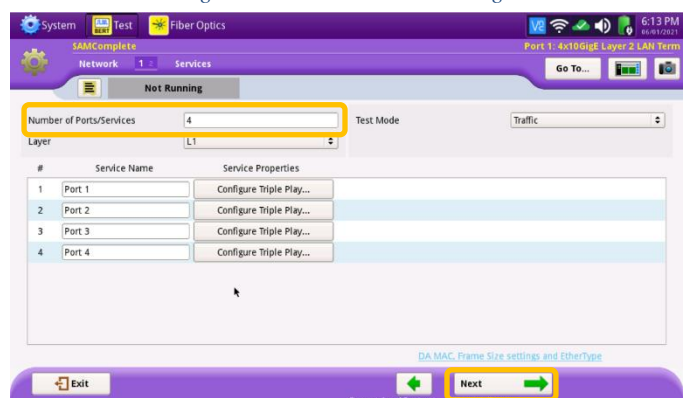
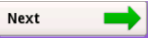


Figure 9: Services configuration

10. If traffic requires VLAN tagging, set **Encapsulation** to **VLAN** and configure VLAN settings.

11. Tap **Next**  to advance to **SLA Throughput** configuration.

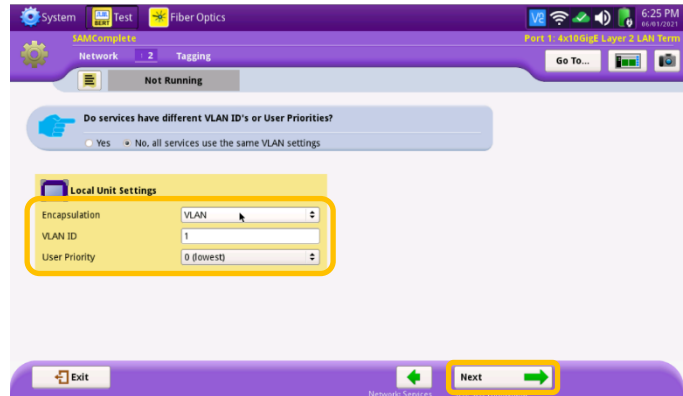
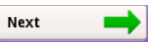


Figure 10: Tagging configuration

12. Set **CIR** to **10,000.0** and uncheck the **Policing** checkbox in the **All Service** row.

13. Tap **Next**  to advance to **SLA Performance** configuration.

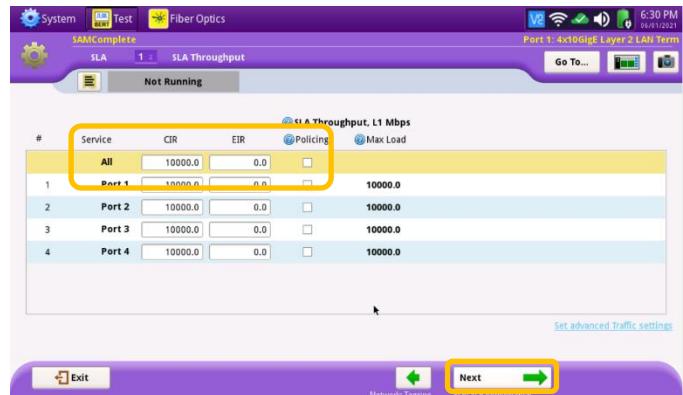
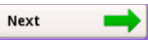


Figure 11: SLA Throughput configuration

14. In the **All Service** row, set **Frame Loss Ratio**, **Frame Delay**, and **Delay Variation** to match your Service Level Agreement (SLA) or Standard Operating Procedures.

15. Tap **Next**  to advance to **Test Controls** configuration.

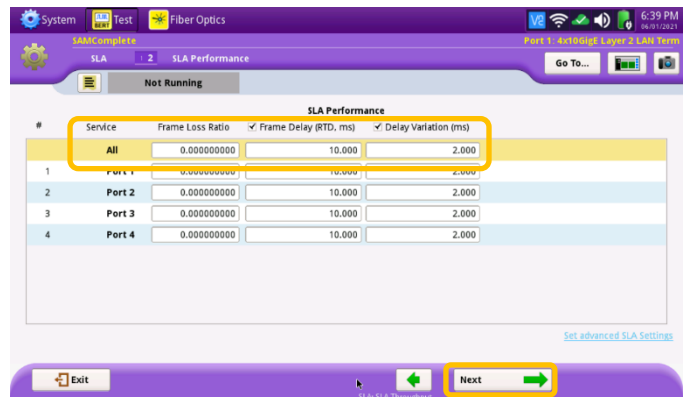
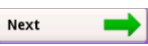


Figure 12: SLA Performance configuration

16. Set **Step Duration** and **Test Duration** to match your Standard Operating Procedures.

17. Tap **Next**  four times to advance to the **QuickCheck** screen.

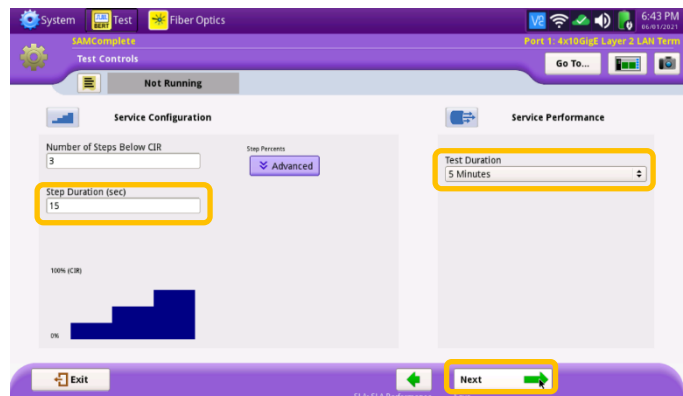

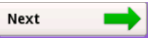


Figure 13: Test Controls

Run Test:

1. Tap  to run the J-QuickCheck pre-test.
2. Verify that the **Local Port is UP**, and the **Remote Loop is Active**.
 - If Local Port is not up, check Fanout cable connection between the T-BERD/MTS 5800 and NID
 - If Remote Loop is not active, verify configuration of far-end T-BERD/MTS 5800 loopback device and verify laser is on.
3. Tap  to advance to the **Run Y.1564 Tests** screen.

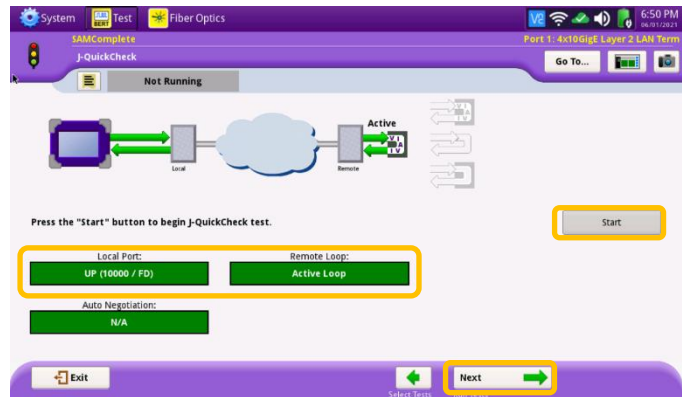

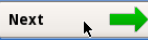


Figure 14: QuickCheck

4. Tap  to run the test. Wait for the test to complete and verify that all Service Configuration and Service Performance tests pass with green checkmarks.
5. Tap  button three times to display the **Report** screen.

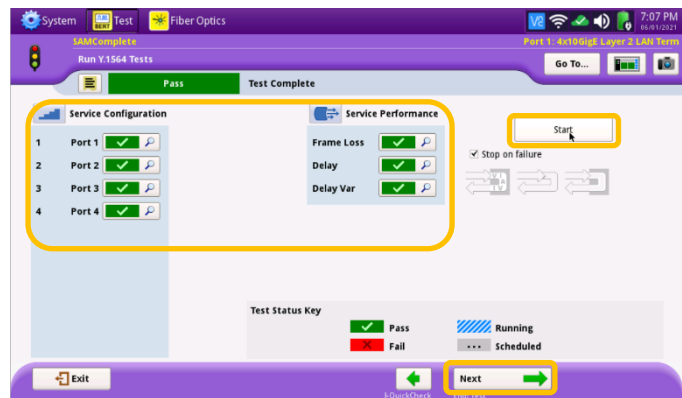




Figure 15: Run Y.1564 Tests

Create Report:

1. Tap  to create a report in PDF format.
2. After viewing the report, tap  three times to close the report and exit the Y.1564 test.

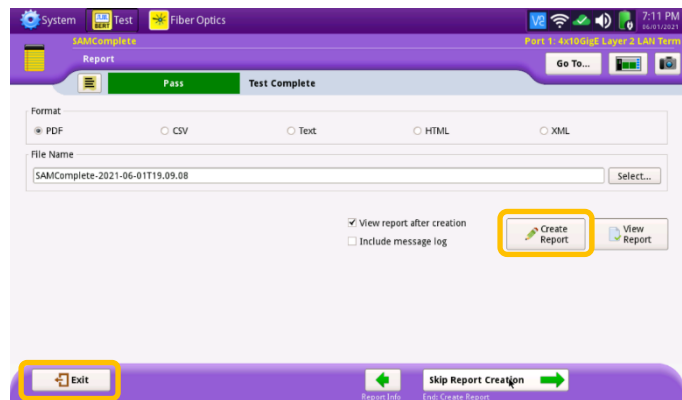


Figure 16: Report