

Quick Card

T-BERD®/MTS-5800 Network Tester

Ethernet Packet Capture/Decode from SPAN ports

This document outlines how to use the T-BERD 5800 to capture and analyze live, in-service network traffic from a **SPAN** (Switch Port Analyzer) port on an Ethernet switch. A **SPAN** port is a spare switch port configured to transmit a copy of the packets sent or received on another switch port. It allows the T-BERD to receive and analyze all network traffic, without being physically attached to that port. Bidirectional Traffic can be transmitted to the T-BERD on a single RJ-45, SFP, or QSFP port.

Equipment Requirements:

- T-BERD/MTS-5800 equipped with the following:
 - BERT software release V28.0 or greater
 - Ethernet test options:
 - C510M1GE and C5LSCAPTURE for 10/100/1000 copper and 1 Gigabit Optical.
 - C510GELAN and C510GCAPTURE for 10 Gigabit Ethernet.
 - C5100GELAN and C5100GCAPTURE for 100 Gigabit Ethernet.
 - SFP or QSFP optical transceiver to match the line under test
- Patch Cables to match the optical transceiver and line under test (CAT5E, Single mode or Multimode Fiber)
- Fiber optic inspection microscope (VIAVI P5000i or FiberChek Probe)
- Fiber Optic Cleaning supplies



Figure 1: Equipment Requirements

The following information is required to complete the test:

- Physical Interface (10/100/1000BASE-T, 1000BASE-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
- Filtering criteria (VLAN ID, Destination MAC address, Source MAC address, EtherType)

Fiber Inspection Guidelines:

- All fiber end-faces must be clean and pass an inspection test prior to connection.
- Use the VIAVI P5000i, FiberChek Probe, or Sidewinder microscope to inspect both sides of every connection being used (SFP/QSFP Port, bulkhead connectors, patch cables, etc.)

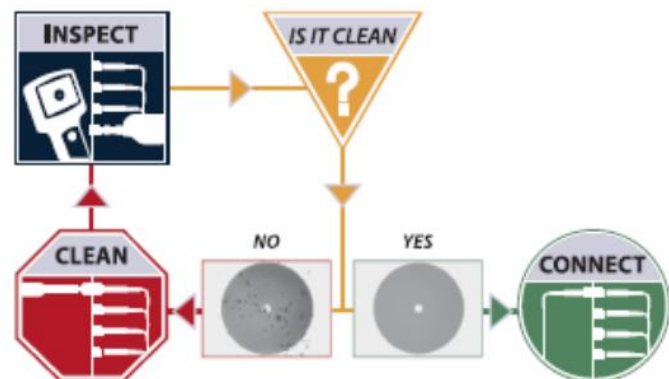


Figure 2: Inspect Before You Connect

Connect to SPAN Port:

- For copper 10/100/1000BASE-T interfaces on the T-BERD 5800v2, use CAT 5E or better cable to connect the T-BERD's Port 1 RJ-45 port to the SPAN port.
- For copper 10/100/1000BASE-T interfaces on the T-BERD 5800-100G, use CAT 5E or better cable to connect the T-BERD's Port 2 RJ-45 port to the SPAN port.
- For optical interfaces, insert the required SFP/QSFP into the Port 1 slot on the T-BERD and connect the T-BERD's SFP/QSFP to the SFP/QSFP in the SPAN port. Use yellow Single mode patch cables with Single Mode optics; use orange or teal Multimode fiber patch cables with multimode optics.

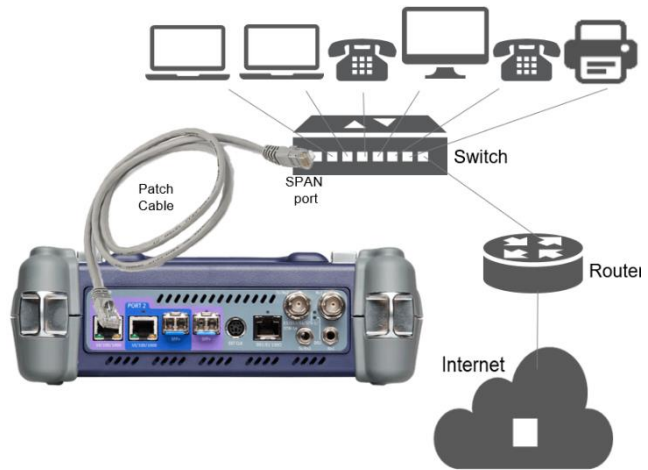




Figure 3: Copper SPAN Port connection

Launch Test:

- Press the Power button  to turn on the test set and view the startup screen.
- Using the **Select Test** menu, **Quick Launch** menu, or **Job Manager**, launch an **Ethernet, Layer 2 Traffic, Monitor** test as follows:
 - For 10/100/1000BASE-T Copper SPAN Ports on the T-BERD 5800v2:
Ethernet ▶ 10/100/1000 ▶ Layer 2 Traffic ▶ P1 Monitor
 - For 10/100/1000BASE-T copper SPAN Ports on the T-BERD 5800-100G:
Ethernet ▶ 10/100/1000 ▶ Layer 2 Traffic ▶ P2 Monitor
 - For GigE optical Span ports:
Ethernet ▶ 1GigE Optical ▶ Layer 2 Traffic ▶ P1 Monitor/Thru
 - For 10GigE optical Span ports:
Ethernet ▶ 10GigE LAN ▶ Layer 2 Traffic ▶ P1 Monitor/Thru
- For optical SPAN ports, select the **Laser** tab in the **Actions** panel, and press



The button will turn yellow and be relabeled .

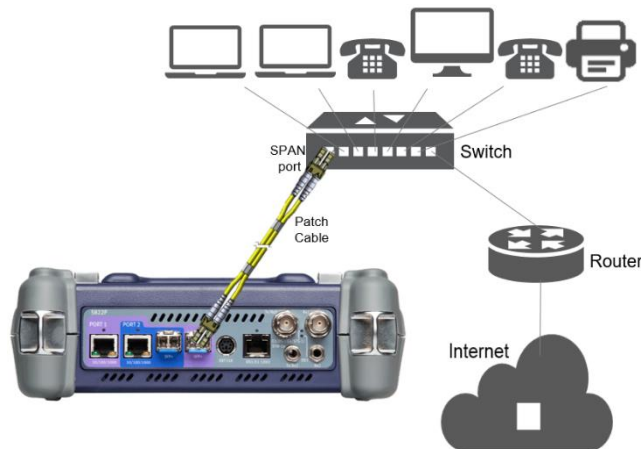


Figure 4: Optical SPAN port connection

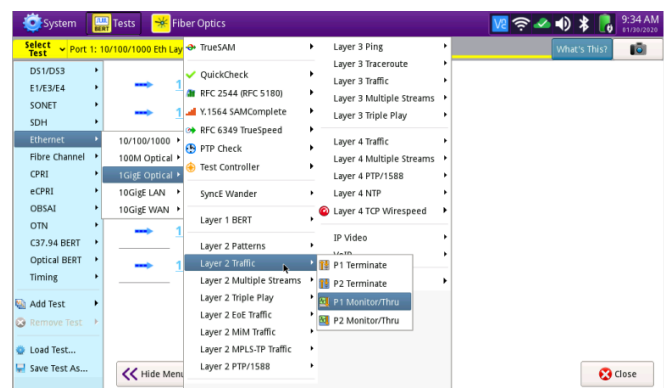








Figure 5: Launch Test

Configure Test:

1. Tap  to display the T-BERD's **Tools Panel**. Tap  and press  to continue.
2. Check LEDs: a green **Signal Present** LED  indicates the T-BERD is receiving an optical signal from the Span port or TAP. Green **Sync Acquired** and **Link Active** LEDs indicate that the T-BERD has successfully connected to the Span Port or TAP.
3. Press the **Setup** soft key  and select the **Filters** menu.
4. In the **Filters/Ethernet** settings, set desired encapsulation, MAC Address filter (DA or SA), VLAN filter, or Type filter.
5. In the **Rx/Payload** settings, set **Payload Analysis** to **Off**.
6. Press the **Results** soft key  to return to the Results screen.

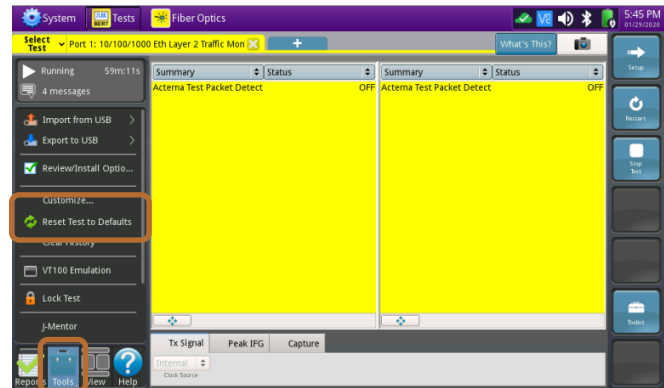


Figure 6: Reset Test to Defaults

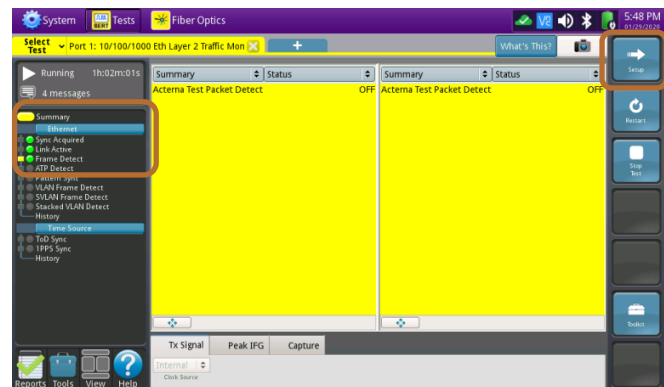


Figure 7: Check LEDs

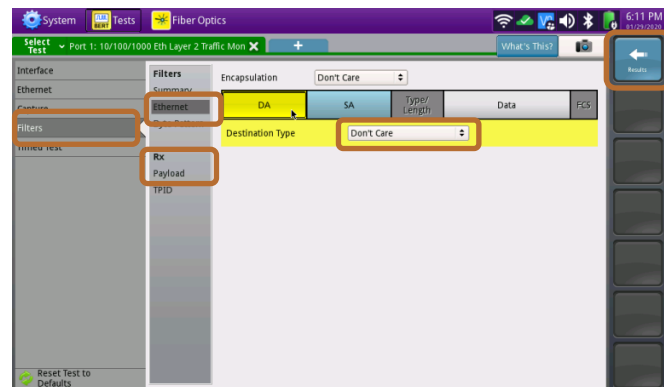









Figure 8: Setup

Packet Capture/Decode:

1. Press the **Restart** Soft Key  on the right side of the screen.
2. Set the right Results Window to display **Ethernet/Capture** results.
3. Select the **Capture** tab in the **Actions** panel, and press . The button will turn yellow and be relabeled .
4. When the desired number of packets have been processed, press  to stop packet capture. The button will turn gray and be relabeled .
5. Press . Ensure “Launch Wireshark after saving” is checked and press  to save the **PCAP (Packet CAPture)** file to the /bert/capture folder of the T-BERD’s hard drive.
6. View and analyze the packet capture using WireShark.

Note: Go to <https://www.wireshark.org/> for information and tutorials on WireShark.

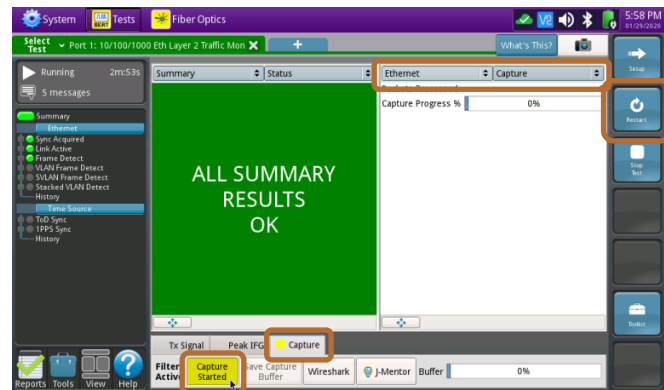


Figure 9: Start Capture

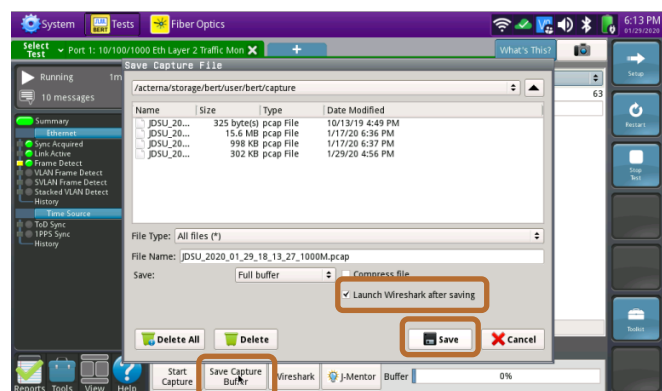


Figure 10: Save Capture Buffer

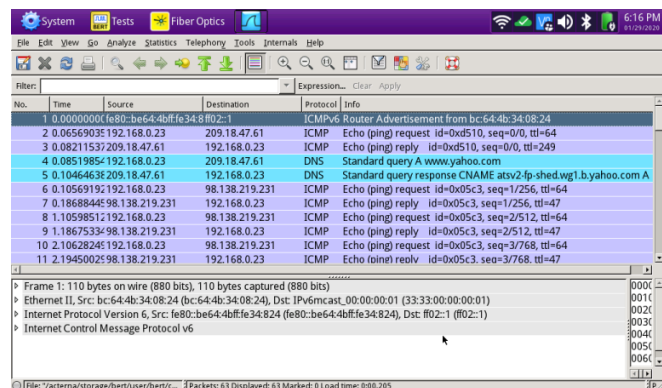


Figure 11: WireShark