

Quick Card

T-BERD[®]/MTS 5800 Network Tester Ethernet Layer 3 IPv4 Ping Test

This quick card describes how to verify IPv4 connectivity with the T-BERD 5800v2 or T-BERD 5800-100G using the Ethernet Layer 3 Ping IPv4 test selection.

Equipment Requirements:

- T-BERD/MTS 5800 equipped with the following:
 - $_{\odot}$ BERT software release V26.0 or greater
 - \odot Ethernet test options:
 - C510M1GE for 10 Megabit to 1 Gigabit Ethernet
 - C510GELAN for 10 Gigabit Ethernet
 - C525GELAN for 25 Gigabit Ethernet
 - C540GELAN for 40 Gigabit Ethernet
 - C5100GELAN for 100 Gigabit Ethernet
 - \circ SFP, QSFP, or CFP4 optical transceiver to match the line under test
- CAT5E cable or fiber optic jumper cables to match the optical transceiver and the line under test
- Fiber 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.)
- Auto Negotiation settings of the port under test (if 1 Gigabit or below)
- Encapsulation (VLAN or None)
- VLAN ID (if Encapsulation = VLAN)
- Source IP Type (Static or DHCP)
- Source IP Address (if Source IP Type = Static)
- Subnet Mask (if Source IP Type = Static)
- Default Gateway (if Source IP Type = Static)
- Destination IP Address

Fiber Inspection Guidelines:

Inspect both sides of every fiber optic connection being used (bulkhead connectors, patch cords, and SFP ports) prior to reconnection for each test. Using the VIAVI P5000i or FiberChek Probe microscope:

- Focus fiber on the screen. If dirty, clean the connector.
- If it appears clean, run inspection test.
- If it fails, clean the fiber and re-run inspection test. Repeat until it passes.



Figure 2: FiberChek Probe



- To inspect SFP ports with the **P5000i**, insert the probe tip into the SFP port, move the focus wheel all the way to one end, and slowly move the focus wheel to the other end.
- To inspect SFP ports with the **FiberChek Probe**, manually focus with middle toggle switch or pull the trigger to autofocus.
- If a fiber stub (a darker circle on a lighter background as shown in figure 3) is detected, follow standard inspection and cleaning procedures. If you are unable to focus on a fiber end face, do not clean the port. The SFP contains a lens and cannot be cleaned.



Figure 3: Image of Clean Fiber

Connect to Port Under Test:

- For copper 10/100/1000BASE-T testing with the T-BERD/MTS 5800v2, connect the Port 1 10/100/1000 RJ-45 jack to the port under test using CAT 5E or better cable.
- For copper 10/100/1000BASE-T testing with the T-BERD/MTS 5800-100G, insert a copper SFP into the Port 1 SFP+/SFP28 slot and connect to the port under test using CAT 5E or better cable.
- 3. For optical interfaces:
 - Insert desired SFP, QSFP, or CFP4 into the Port 1 slot on the top of the T-BERD/MTS.
 - Inspect and, if necessary, clean all SFPs, fibers, and bulkheads, as described on page 1.
 - Connect the SFP, QSFP, or CFP4 to the port under test using a Single Mode or Multimode jumper cable compatible with the interface under test.



Figure 4: T-BERD 5800v2 Dual Port mainframe



SFP+/SFP28 Port QSFP28 Port

Figure 5: T-BERD 5800-100G mainframe



Launch and Configure Test:

- 1. Press the Power button to turn on the test set.
- Using the Select Test menu, Quick Launch menu, or Job Manager, launch an Ethernet, Layer 3 Traffic, IPv4, Terminate test on port 1 for the desire physical interface. For example:

Ethernet ► 10/100/1000 ► Layer 3 Ping ► IPv4 ► P1 Terminate.



3. If the test is not in the default setup, tap



Press to continue and wait for test to reconfigure.

- ⇒ J-Connect IPoE
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 Pint Type
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- 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.
- For 1GigE, 10GigE, 25GigE, 40GigE, or 100GigE optical tests, select the Laser tab in the Actions panel, and press

button will turn yellow and be relabeled



- 6. Press the **Restart** soft key right side of the screen.
- 7. A green Signal Present LED indicates the T-BERD/MTS is receiving an optical signal from the port under test. Green Sync Acquired and Link Active LEDs indicate that the T-BERD/MTS has successfully connected to the port under test and the link is active.

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 Press the Setup soft key, setup and select the Ethernet settings tab. If a VLAN is present, set Encapsulation to VLAN, tap the VLAN field, and enter the VLAN ID.

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- Select the IP settings tab. Enter the Source IP Type (Static IP or DHCP). If Static, enter the Source IP address, Subnet Mask, and Default Gateway.
- 10. Set **Destination Address** to the address of the IP host you wish to ping.
- 11. Set **Ping Type** to **Multiple** and set **Pings** to **100**.



- 🗽 🧈 奈 📣 😵 Source IP Type Static IP Source IP 192.168.1.1 192.168.1.1 Subnet Mask 255.255.255.0 Default Gateway Capture NS Type None Destination IP 192.168.1 imed Test on Type Packet Siz Ping Int TOS Type TOS TOS Time To Live (hops) 64 Reset Test to Defaults
- 12. Press the **Results** soft key,
- Using the dropdown menus, select
 Ethernet/Ping for the right results display.
- 14. Select the Action tab in the Actions panel,



- 15. Verify the following:
 - The Left Result window displays "ALL SUMMARY RESULTS OK."
 - **Ping Requests Tx** and **Ping Replies Rx** are both incrementing in the Right Results window.
- Allow the test to run for the desired duration. Verify that the Left Result window still displays "ALL SUMMARY RESULTS OK" and that Lost Pings = 0.

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