

T-BERD[®]/MTS-5800 Network Tester TCP Throughput Testing to an iPerf v3 Server

This document provides instructions on how to configure and execute TCP Wirespeed Throughput test from a T-BERD/MTS 5800 instrument to an iPerf v3 server.

Equipment Requirements:

- T-BERD/MTS-5800 equipped with the following:
 - BERT software release V28.1 or greater
 - Ethernet and Layer4 test options:
 - C510M1GE and C5LSLAYER4 for 10/100 Megabit or 1 Gigabit Ethernet
 - C510GELAN and C510GLAYER4 for 10 Gigabit Ethernet
 - SFP or SFP+ 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-SX, 1000BASE-LX, 10GBASE-LR, etc.)
- Auto Negotiation settings of the port under test.

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.)

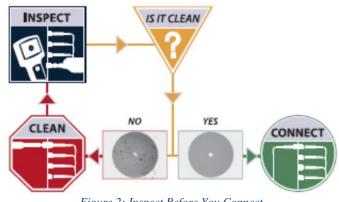


Figure 2: Inspect Before You Connect



Connect to Fiber Under Test (FUT):

- For copper 10/100/1000BASE-T interface 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 interface 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 or SFP+ 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 SFP, QSFP, or CFP4 to the port under test using a Single Mode or Multimode jumper cable compatible with the interface under test.

Launch and Configure Test:

- 1. 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 4 TCP Wirespeed, IPv4, Terminate test on port 1 for the desire physical interface. For example: Ethernet ▶ 10/100/1000 ▶ Layer 4 TCP Wirespeed ▶ IPv4 ▶ P1 Terminate.
- 3. If the test is not in the default settings, tap
 - the **Tools icon** , and select Reset Test to Defaults. Press **У ок** to

continue and wait for test to reconfigure.

 Press the Setup Soft Key, to display the Interface settings tab. If you are testing a 10/100/1000 Electrical or 1GigE Optical tests with auto negotiation disabled, select the Physical Layer tab, and configure settings to match the Ethernet port under test.



5 Jack Figure 3: T-BERD 5800v2



Port 1 SFP+/SFP28 Port Figure 4: T-BERD 5800-100G

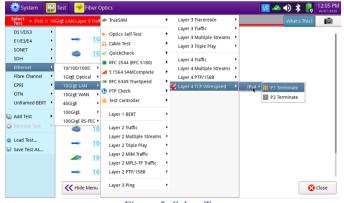


Figure 5: Select Test



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	Signal Physical Layer	Network Visibility	Test Con	trol			
All Streams	Auto Negotiation						
1	Auto Negotiation	On	•				and the owner of
2	10BaseTX FDX	Yes	•	10BaseTX HDX	Yes	•	
3	100BaseTX FDX	Yes	•	100BaseTX HDX	Yes		
4	1000BaseTX FDX	Ves		1000BaseTX HDX	Yes	+	Stream Pare
5	Fallback Duplex	Half (802.3)		TOODUJCIATIDA	ics		
6		(Hall (802.3)	•				
7	Flow Control Pause Capable	Both Rx and Tx	•				
B		1000					
9	Pause Length (Quanta)	Pau		ause Length (Time - ms) 5.12			
10	Polarity Correction						
TCP Host	Contractive Polarity Conten	LUON					
Capture							
Filters							
Timed Test							
Reset Test to Defaults							

Figure 7: Auto Negotiation Settings



- 5. Navigate to All Streams settings.
- Configure appropriate Source IP, Subnet Mask and Default Gateway parameters for the TBERD 5800 test port, leave all other parameters at defaults.

8. If the circuit under test uses VLAN tagging,

parameter to **VLAN**, and configure the appropriate VLAN ID and Priority values.

select Ethernet tab, set the Encapsulation

Select v Port 1: 10/10	0/1000 Eth Layer 4 TCP Wirespe	ed Term 🔀 🛛 🕂	•	What's This?			
Interface	MAC Address Setup	MAC Address Setup					
	Source MAC	Factory Default	Default Source MAC	00-80-16-93-43-85			
1	ARP Mode	Enabled	•				
2	Actema Payload Version						
3	Payload Version Mode	All Streams	Payload Version	Version 3 🗘			
4	Layer 3				Stree Pa		
5	Source IP Type	Static - Single	Source IP	192.168.3.222			
6	Default Gateway	192.168.3.150	Subnet Mask	255.255.255.0			
7	IP ID increment	Enabled	•				
8	Layer 4						
9	ATP Listen IP Type	Auto Obtained	ATP Listen IP Address	192.168.3.222			
10	Stream Selection				1.11		
TCP Host	Load Unit	Percent	•				
Capture	Burst Stream	None	•				
Filters	🗆 Allow flooding 🕜						
Timed Test		nfigure					

Figure 8: All Stream settings

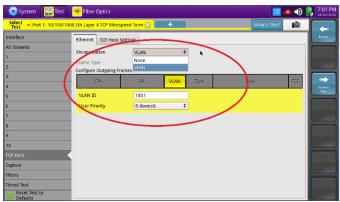


Figure 9: TCP Host, Ethernet Settings

9. Select TCP Host Settings tab.

7. Navigate to TCP Host settings.

- 10. Set the iPerf Version parameter to 3.
- 11. Set the **Direction** parameter to **Upstream** to test in the TBERD 5800 to iPerf server direction or to **Downstream** to test in the iPerf server to TBERD 5800 direction.
- 12. Set the **Connect to Server** parameter to the IP address of the iPerf server.
- 13. Set the **Connect to Port** parameter to TCP port the iPerf server is listening on.
- 14. Set the **Window Size** parameter to 4194304 bytes.
- 15. If required adjust the **Max Seg Size** parameter to match the circuit under test configuration, otherwise leave at default.
- 16. If required configure the **TOS** or **DSCP** values to match the circuit under test configuration, otherwise leave at defaults.
- 17. Set the **Transmit Mode** parameter to **Time** and set the **Time** parameter to desired test duration in seconds.
- 18. Set the **Number of Connections** parameter to desired value.
- 19. The T-BERD 5800 is configured for the test.

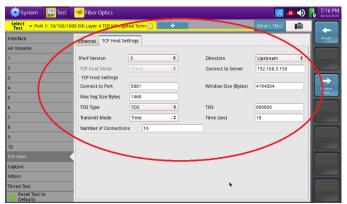


Figure 10: TCP Host Settings





2. If using optical test port, select the Laser tab in the Action panel at the bottom of

Laser Off the screen, and press The button Laser

On will turn yellow and be relabeled

- 3. Ensure the TBERD 5800 test port established a link to circuit under test as indicated by green Signal Present (optical test port only), Sync Acquired and Link Active LEDs.
- 4. Set the real-time test results view to TCP Host -> Detailed L4 Stats.
- 5. To start the TCP Throughput test tap on the Start TCP Client button on the Actions tab at the bottom of the screen and observe the real-time test results.
- 6. Once the test is finished tap on the **Reports** button in the bottom left screen corner and select Create Report option to generate and save the test report.

System 🔛 Test	😽 Fiber Optics		b,	V2 🗸	🗞 🕕 🔒 6:35 PM
Select - Port 1: 10/100/1000	Eth Layer 4 TCP Wirespeed	Term 🔀 🕂 🕂	1	What's This?	10 🕞
▶ Running 10m:53s ■ 2 messages	Status Sync Acquired Link Active Frame Detect History		Frame Detect VLN SVLAN TCP UDP History		
	Summary Acterna Test Packet Detect		¢ Status		City Sold Sold Complete
					Down Per Bolar
	Actions Peak IFG	Errors Capture			
eports Tools View Help	Start Loop Traffic Up	Loop Down LLB	Pause Frame Star Insert TCP C		TrueSpeed



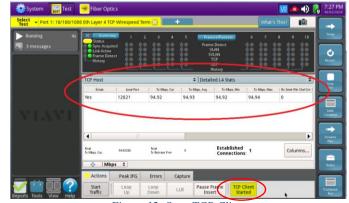


Figure 12: Start TCP Client

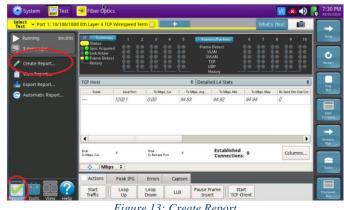


Figure 13: Create Report

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