

## Quick Card

# T-BERD<sup>®</sup>/MTS 5800 Network Tester

## Ethernet Y.1564 Layer 2 Multiple Streams

This document outlines how to configure and run a Y.1564 Layer 2 Multiple Stream test for Metro Ethernet Service Activation.

### Equipment Requirements:

- T-BERD/MTS 5800 equipped with the following:
  - BERT software release V26.0 or greater
  - 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
    - C5COS for multiple stream traffic generation
  - SFP or QSFP optical transceiver to match the line under test
- CAT 5E or fiber optic jumper cables to match the line under test
- Fiber optic inspection microscope (VIAVI P5000i or FiberChek Probe)
- Fiber optic cleaning supplies



*Figure 1: Equipment Requirements*

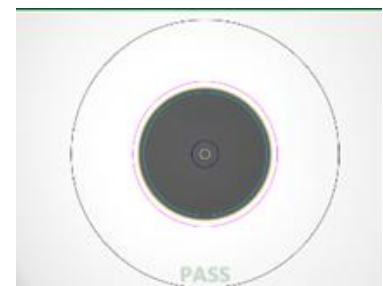
### The following information is required to complete the test:

- Physical Interface (10/100/1000BASE-T, 1000BASE-SX, 1000BASE-LX, 10GBASE-LR, 100GBASE-LR4, etc.)
  - VLAN ID, if VLAN tagging is used
  - Maximum Transmission Unit (MTU), if Jumbo Frames are used
  - Committed Information Rate (CIR)
  - Excess Information Rate (EIR)
  - Committed Burst Size (CBS)
  - Pass/Fail Threshold for Frame Loss, Frame Delay and Delay Variation

### Fiber Inspection Guidelines:

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

- Focus fiber on the screen. If dirty, clean the connector.
- If it appears clean, run inspection test.
- If it fails, clean fiber and re-run inspection test. Repeat until it passes.
- 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 auto-focus.
- If a fiber stub (a darker circle on a lighter background as shown above) 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 uses a lens and cannot be cleaned.



*Figure 2: Image of Clean Fiber*

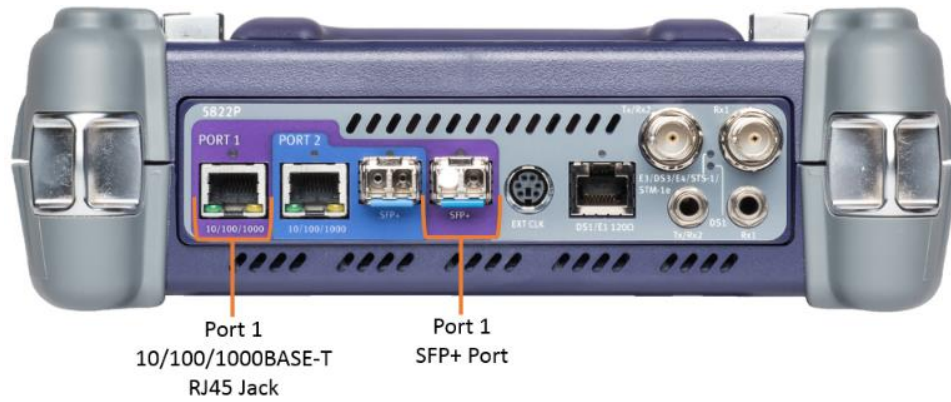


Figure 3: T-BERD 5800v2 Dual Port mainframe

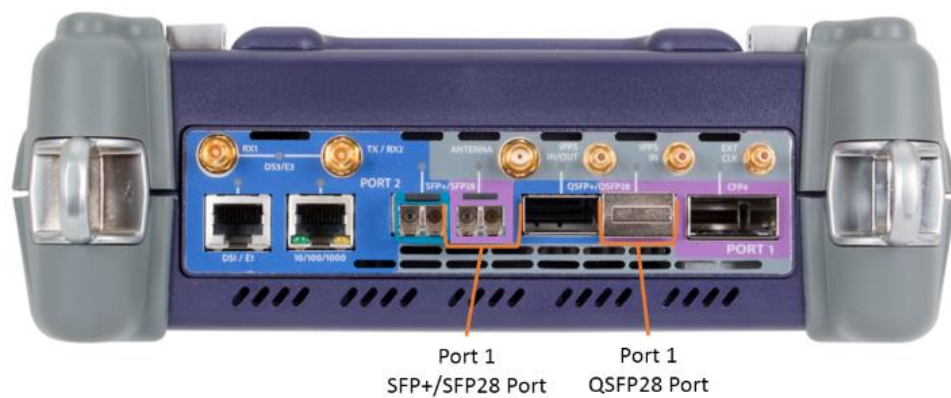


Figure 4: T-BERD 5800-100G mainframe

### Connect to Line Under Test:

1. 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.
2. 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, QSFP, or CFP4 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 Test:

1. Press the Power button  to turn on the test set.

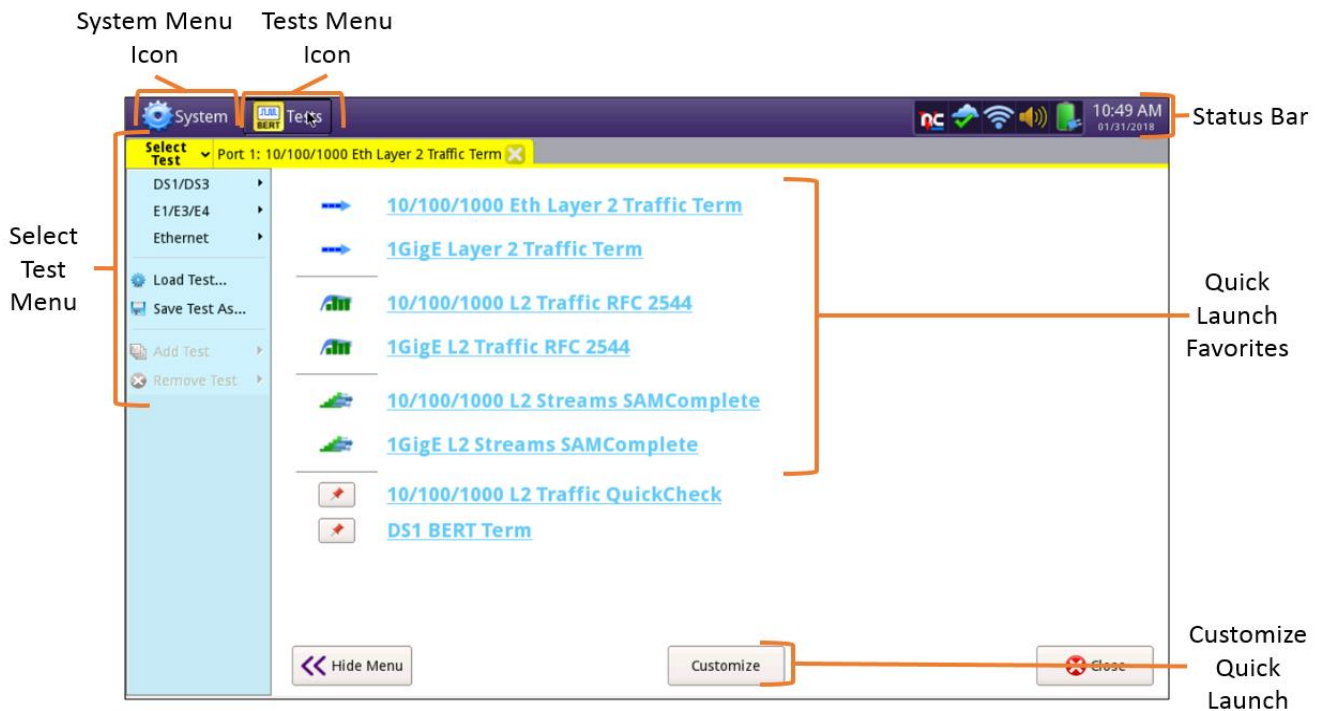
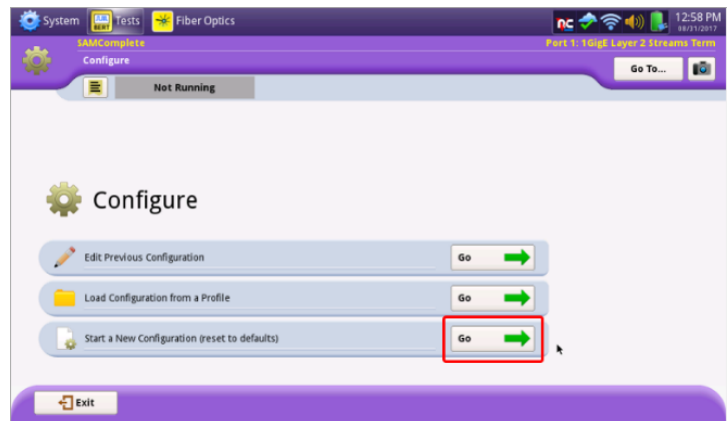



Figure 5: Startup screen

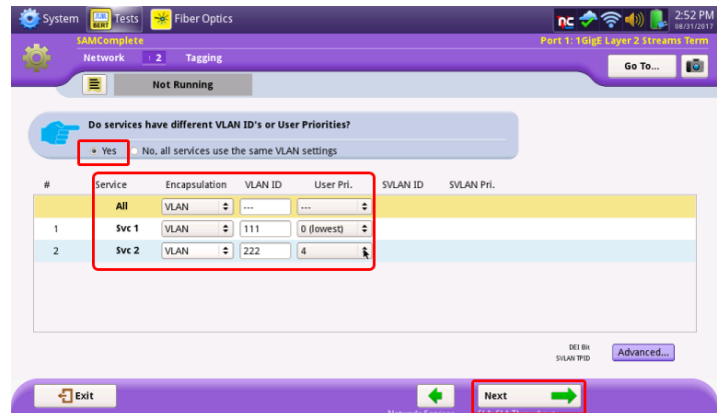
2. Using the **Select Test** menu, **Quick Launch** menu, or **Job Manager**, launch an **Ethernet, Y.1564 SAMComplete, L2 Multiple Streams, Terminate** test on port 1 for the desired physical interface. For example: Ethernet ► 10/100/1000 ► Y.1564 SAMComplete ► L2 Multiple Streams ► P1 Terminate.

3. Tap the  button next to “Start a New Configuration (reset to defaults)”




## Configure Test:

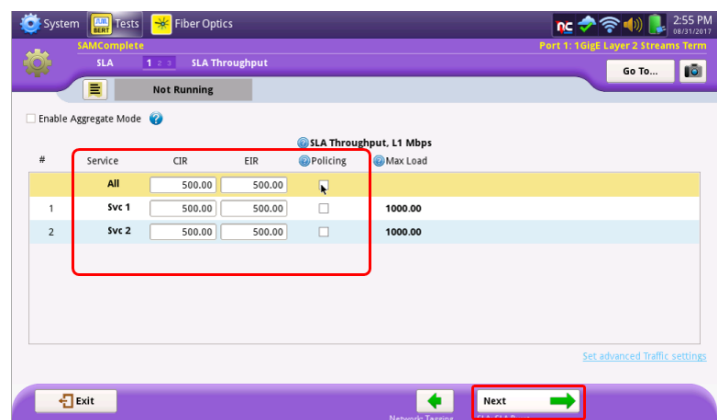
1. Tap the  button 3 times to display the **Network Tagging** screen. Set **Number of Services** to the number of streams you wish to test.



Do services have different VLAN ID's or User Priorities?  
 Yes - No, all services use the same VLAN settings

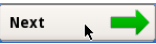
#	Service	Encapsulation	VLAN ID	User Pri.	SVLAN ID	SVLAN Pri.
	All	VLAN	...	...		
1	Svc 1	VLAN	111	0 (lowest)		
2	Svc 2	VLAN	222	4		

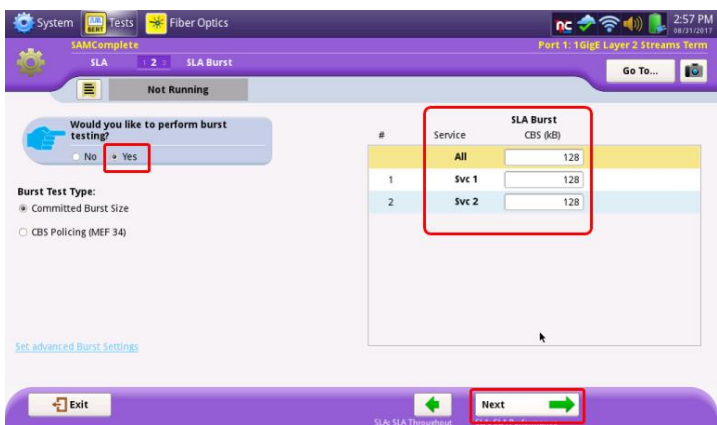
2. Tap the  button to display the **SLA Throughput** screen. Set **CIR** and **EIR** to the desired traffic loads for each service. If the service is policed, check the **Policing** boxes for each service. Otherwise, uncheck the **Policing** boxes.



SLA Throughput, L1 Mbps

#	Service	CIR	EIR	Policing	Max Load
	All	500.00	500.00	<input checked="" type="checkbox"/>	
1	Svc 1	500.00	500.00	<input type="checkbox"/>	1000.00
2	Svc 2	500.00	500.00	<input type="checkbox"/>	1000.00


3. Tap the  button to display the **SLA Burst** screen. Tap **Yes** after the **Would you like to perform burst testing?** Prompt and enter the **CBS** for each service.

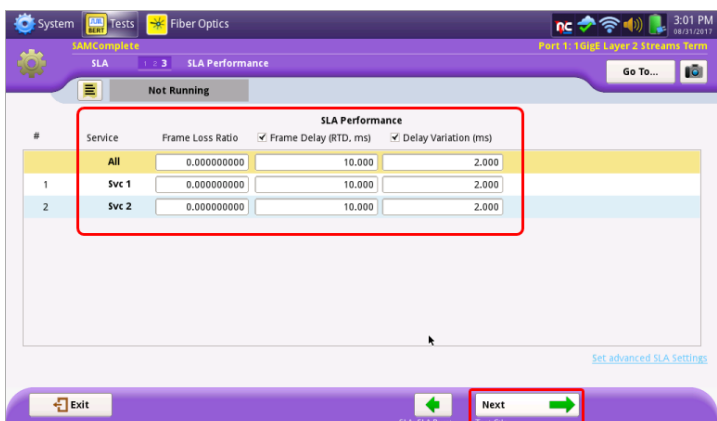


Would you like to perform burst testing?  
 Yes

Burst Test Type:  
 Committed Burst Size  
 CBS Policing (MEF 34)

#	Service	SLA Burst CBS (kB)
	All	128
1	Svc 1	128
2	Svc 2	128



4. Tap the  button to display the **SLA Performance** screen. Check all boxes for which a Pass/Fail Threshold is known. Enter the Threshold for each selection.

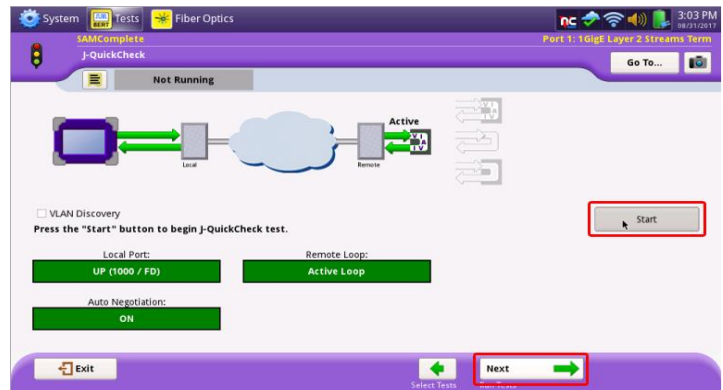


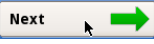

SLA Performance

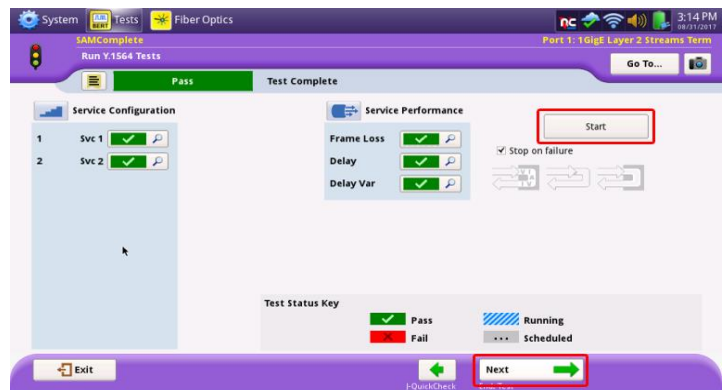
#	Service	Frame Loss Ratio	Frame Delay (RTD, ms)	Delay Variation (ms)
	All	0.000000000	10.000	2.000
1	Svc 1	0.000000000	10.000	2.000
2	Svc 2	0.000000000	10.000	2.000



**Run Test:**

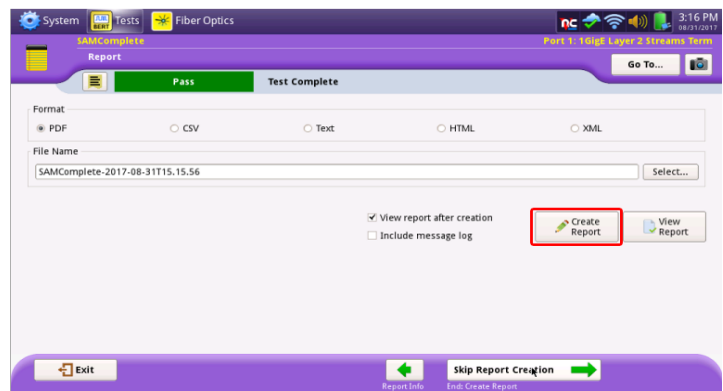
1. Tap the  button 5 times to display the **J-QuickCheck** screen.  
Tap the  button. Verify that the **Remote Loop** is recognized.




2. Tap the  button to display the **Run Y.1564 Tests** screen. Tap the  button. Wait for the test to complete and verify that all tests pass with green or blue checkmarks.



3. Tap the  button three times to display the **Report** screen. Tap .



4. Tap the  button three times to close the report and exit the Y.1564 test.

