

## Quick Card

# T-BERD 5800 Network Tester

## T1 Bit Error Rate Testing (BERT)

This quick card describes how to configure and run a T1 Bit Error Rate Test to a hard loop or another similarly configured T-BERD.

### Equipment Requirements:

- T-BERD 5800 equipped with the following:
  - BERT software release V27.0 or greater
  - Test options:
    - C5E1DS1: E1/DS1 Electrical option
    - C5DUALPORT: Dual Port option (required on T-BERD 5800-100G only)
- One of the following T1 cable sets to connect the T-BERD 5800 DS1 Port(s) to the line under test:
  - Two (2) Bantam to Bantam cables (CB-10615)
  - Dual Bantam to RJ-48C cable (CB-41645)
  - RJ-48C Patch cable (Straight-through or cross-over depending upon equipment under test)



Figure 1: Equipment Requirements

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

- T1 Line Code (B8ZS or AMI)
- T1 Framing (ESF or D4)
- Clock Source (Internal or Recovered)
- Test Patterns(s)
- BER Pass/Fail Threshold

### Connect to Line Under Test:

- The T-BERD 5800v2 has both RJ-48C and bantam ports. You may use Bantam to Bantam, Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables to connect the T-BERD to the line under test.
- The T-BERD 5800-100G has an RJ-48C port. Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables may be used.

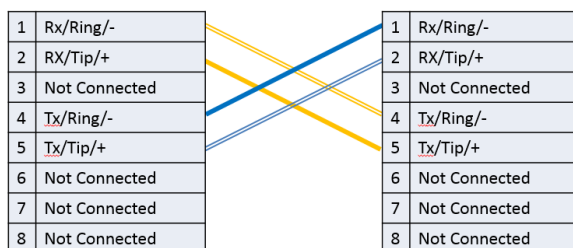


Figure 2: RJ-48C Crossover Cable

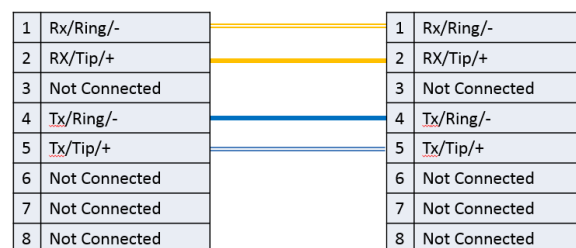




Figure 3: RJ-48C Straight Through Cable

### Launch and Configure Test:

1. Press the Power button  to turn on the test set.
2. Press the Test icon  at the top of the screen.
3. Using the **Select Test** menu, **Quick Launch** menu, or **Job Manager**, launch the **DS1/DS3 ▶ DS1 ▶ DS1 BERT ▶ Terminate** test.

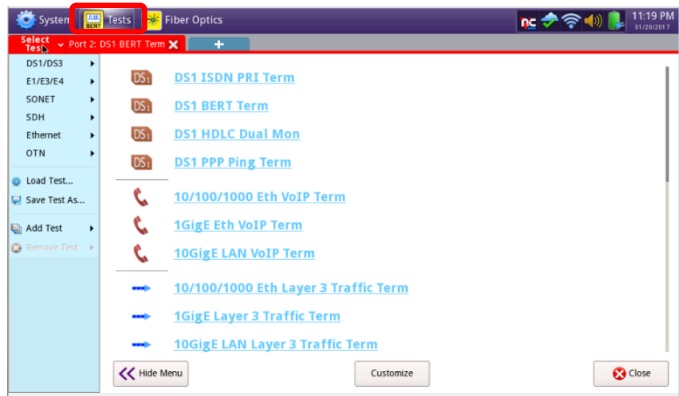





Figure 4: Launch Screen

4. Tap  to open the **Tools Panel** and select .
5. Press  to continue.

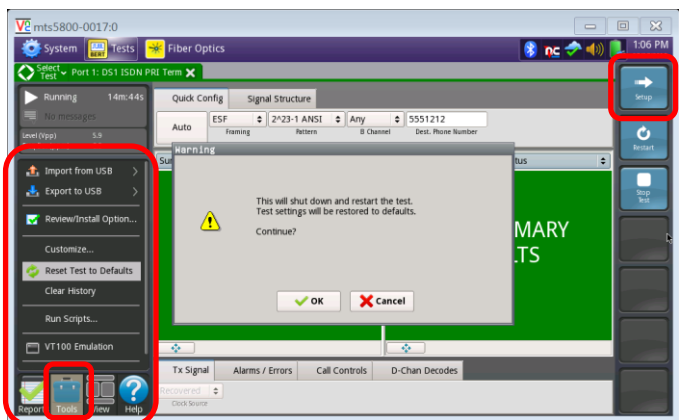



Figure 5: Tools Panel

6. Press the **Setup** Soft Key, , on the top right side of the screen. Select the indicated folders and configure your test as follows. Leave all other values at default, unless specified in the work order.

Folder	Option	Value(s)
Interface	Rx Input	Term
	Line Code	If unknown, select <b>"B8ZS"</b>
	Clock Source	If unknown, select <b>"Internal"</b>
	Clock Offset (ppm)	0
	LBO	0 dB
Framing	Framing	If unknown, select <b>"ESF"</b>
Pattern	Pattern Mode	ANSI
	Pattern	QRSS

7. Press the **Results** Soft Key  to view the **Test Results** screen.

8. Using the drop-down menus, select “**Interface/Signal**” for the right Results display.

9. Press the **Restart** soft key .

10. Verify the following:

- **Summary** LED is green.
- **Signal Present** LED is green. If the LED is red, check your **cables**. Tx and Rx may be reversed.
- **Frame Sync** LED is green.
- **RX Frequency (Hz)** = 1544000 ± 50 Hz.

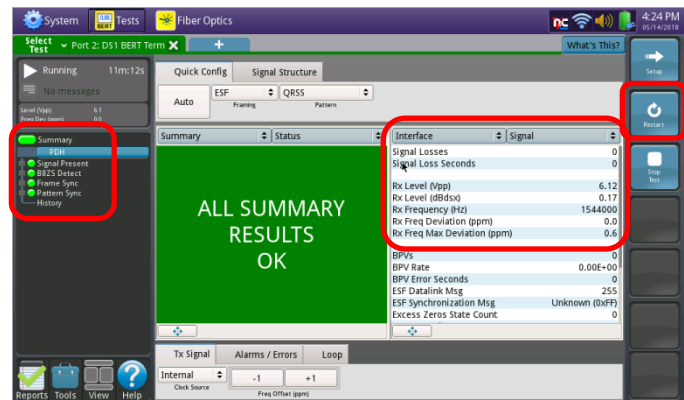


Figure 6: Test Results Screen, Interface/Signal

11. Using the drop-down menus, select “**Payload/BERT**” for the right results display.

12. Allow the test to run for desired duration and verify the following:

- **Pattern Sync** LED is green.
- **Bit/TSE Error Rate** result does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

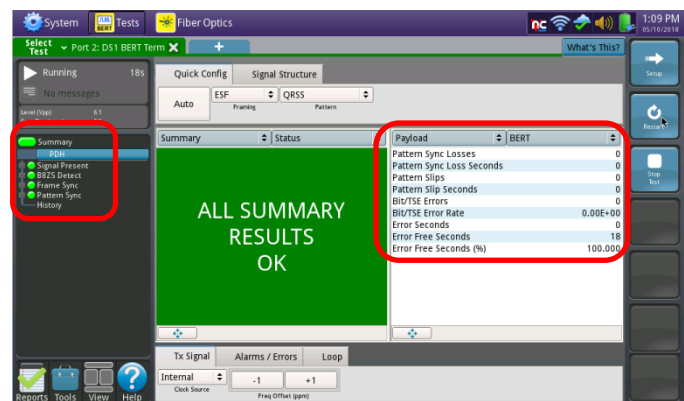



Figure 7: Test Results Screen, Payload/BERT

13. In the T-BERD’s **Quick Config** menu, change “**Pattern**” to the next value in the test plan.

14. Press the **Restart** soft key  to reset results.

15. Allow test to run for desired duration and verify the following:

- **Pattern Sync** LED is green.
- **Bit/TSE Error Rate** does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

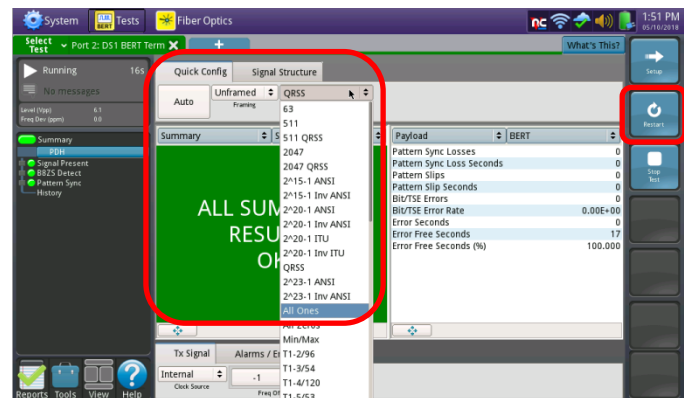


Figure 8: Test Plan

16. Repeat steps 13 through 15 for all Patterns in the test plan. Patterns may include:

- **QRSS**
- **All Zeros**
- **Multipat**
- **Delay**

Simulates live T1 traffic

Tests for equipment mis-optimized for AMI

Five commonly used test patterns to allow BER testing without having to select each test pattern individually. Patterns are: All Ones, 1:7, 2 in 8, 3 in 24, and QRSS. Results are shown in the “**DS1/Multipat**” results display.

Measures Round Trip Delay (RTD) instead of Bit Errors (RTD values are shown instead of BER in the “**Payload/BERT**” results display)