

T-BERD/MTS 5800 Portable Network Tester

QUICK CARD

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.

- T-BERD/MTS 5800 equipped with the following:
 - BERT software release V30.1.0 or greater
 - C5E1DS1 test option: E1/DS1 Electrical
 - C5DUALPORT test option: 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

LAUNCH TEST

- Press the Power button  to turn on the T-BERD.
- Press the **Test** icon  at the top of the screen to display the **Launch Screen**.
- Using the **Select Test** menu, Quick Launch menu, or Job Manager, launch the **DS1/DS3►DS1►DS1 BERT►Terminate** test.

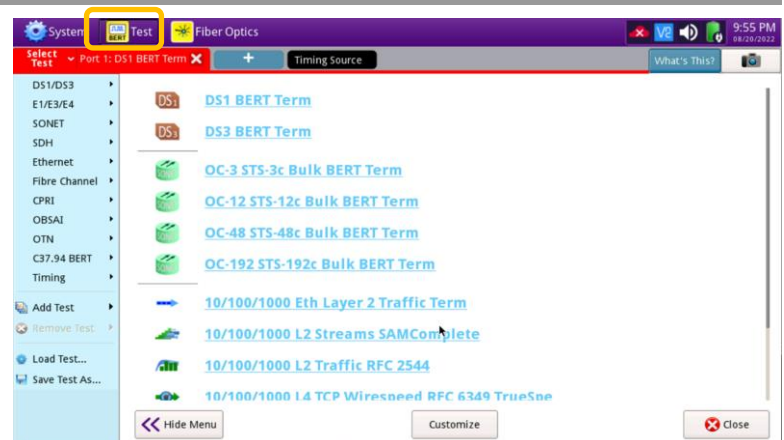


Figure 2: Launch Screen

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

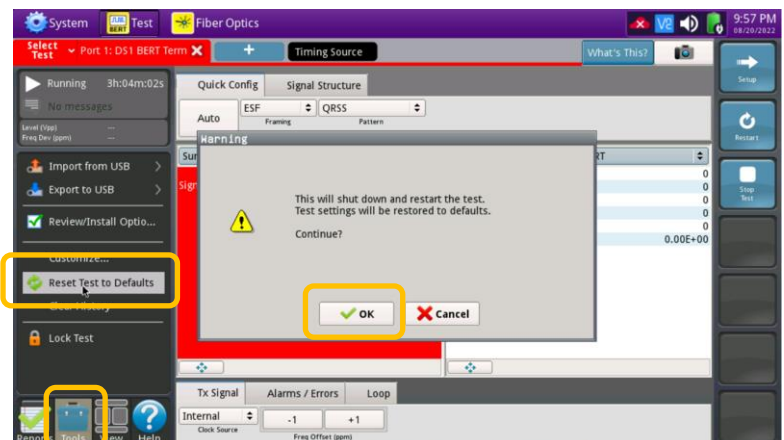


Figure 3: Tools Panel

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CONFIGURE TEST

- The following Information is needed to configure the test:
 - T1 Line Code (B8ZS or AMI)
 - T1 Framing (ESF or D4)
 - Clock Source (Internal or Recovered)
 - Test Pattern(s)
 - BER Pass/Fail Threshold



Figure 4: Work Order

- Press the **Setup** soft key  on the top right side of the screen.

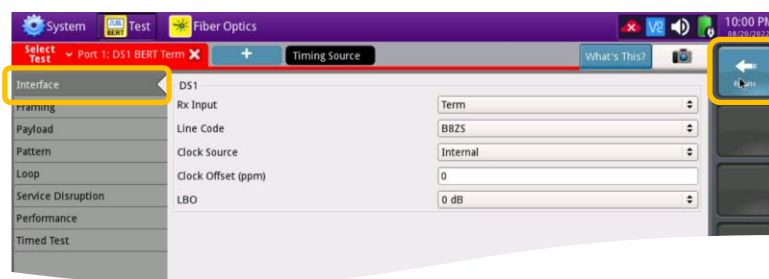


Figure 5: Setup, Interface

- 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 "B8ZS"
	Clock Source	If unknown, select "Internal"
	Clock Offset	0 ppm
	LBO	0 dB
Framing	Framing	If unknown, select "ESF"
Pattern	Pattern Mode	ANSI
	Pattern	QRSS

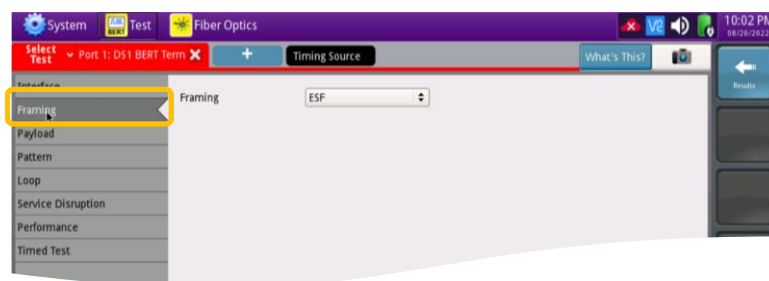


Figure 6: Setup, Framing

- Press the **Results** soft key  to view the Test Results screen.

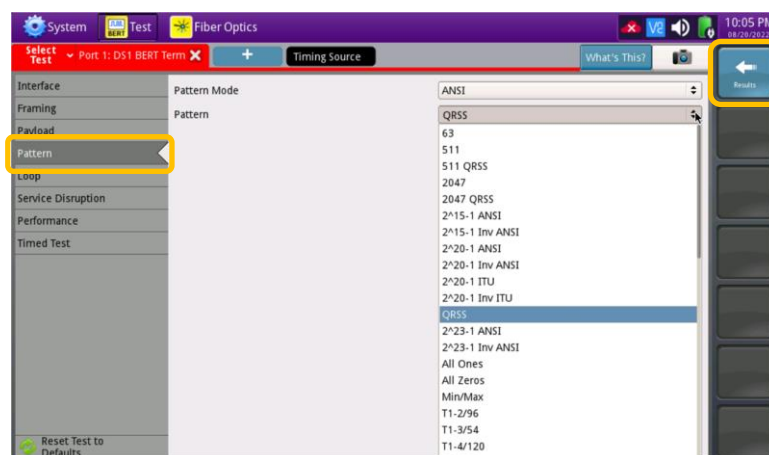


Figure 7: Setup, Pattern

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CONNECT TO LINE UNDER TEST

- T-BERD 5811 AND T-BERD 5822 mainframes have 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.
- T-BERD 5882 and T-BERD 5800-100G mainframes have an RJ-48C port. Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables may be used.

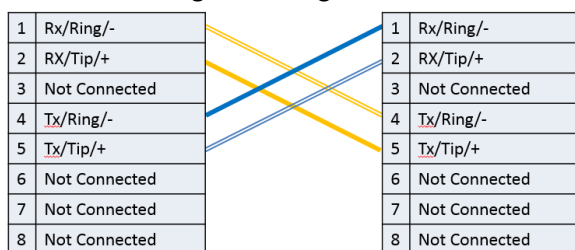


Figure 8: RJ-48C Crossover Cable

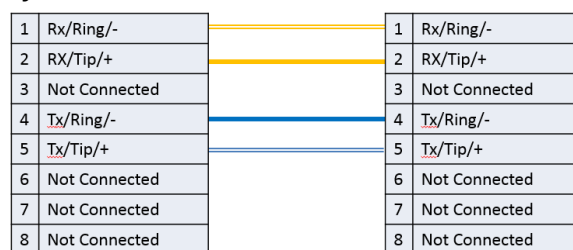


Figure 9: RJ-48C Straight Through Cable

RUN TEST

- Using drop-down menus , select **"Interface/Signal"** for the right results display.
- Press the Restart soft key .
- 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.
- Using drop-down menus , select **"Payload/BERT"** for the right results display.
- 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)

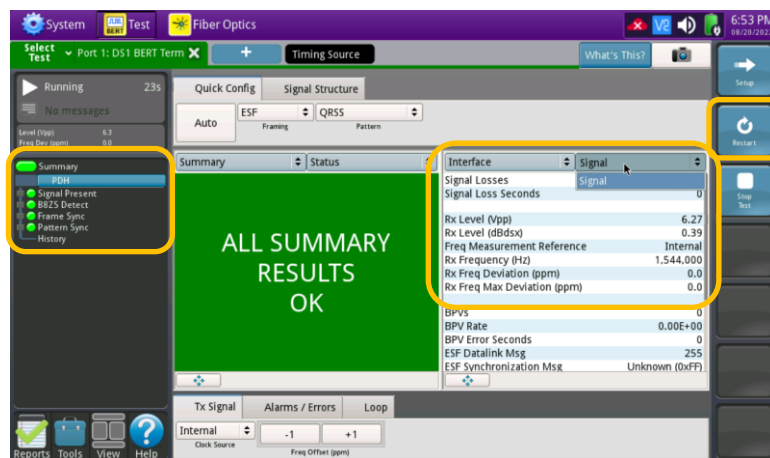


Figure 10: Results, Interface/Signal

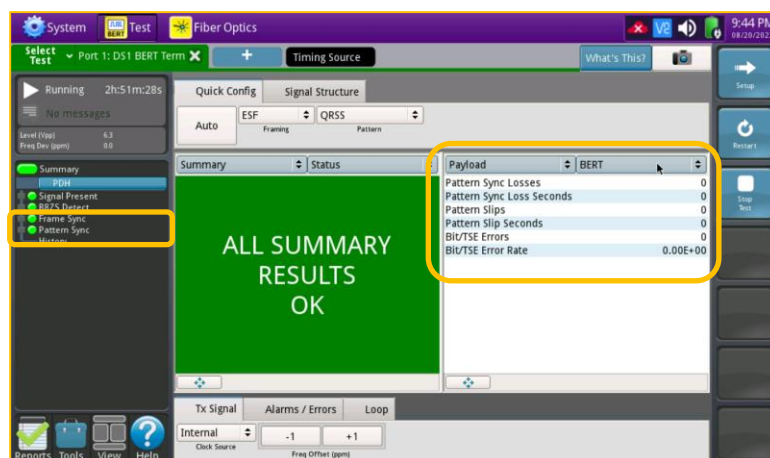


Figure 11: Results, Payload BERT

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- In the T-BERD's **Quick Config** menu, change "**Pattern**" to the next value in the test plan.
- Press the Restart soft key  to reset results.
- 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)
- Repeat steps 6 through 8 for all **Patterns** in the test plan. Patterns may include:
 - **QRSS**: Simulates live T1 traffic
 - **All Zeros**: Tests for equipment mis-optional for AMI
 - **Multipat**: 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.
 - **Delay**: Measures Round Trip Delay (RTD) instead of Bit Errors (RTD values are shown instead of BER in the "Payload/BERT" results display)

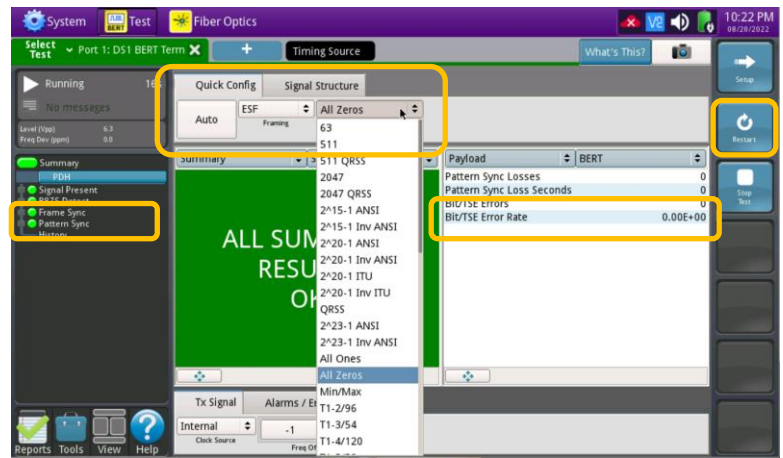


Figure 12: Results, Quick Config

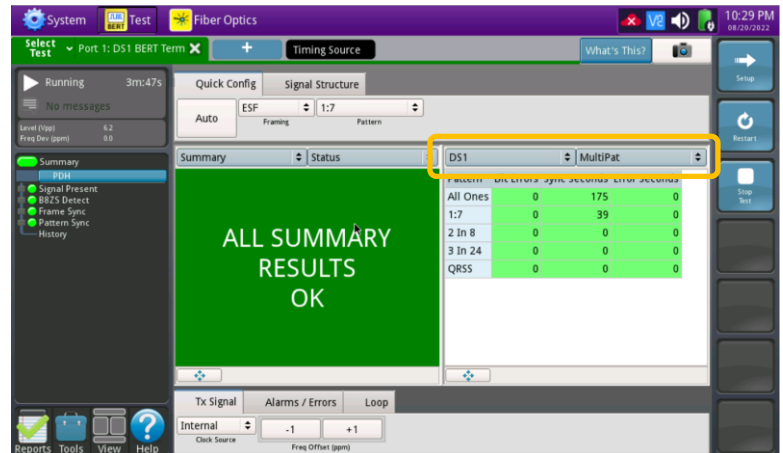
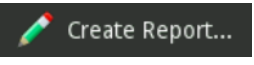


Figure 13: Results, DS1/MultiPat

CREATE REPORT

- Tap  to open the **Reports** Panel and select .
- Tap .
- A report will be saved to the T-BERD 5800's **/bert/reports** folder.

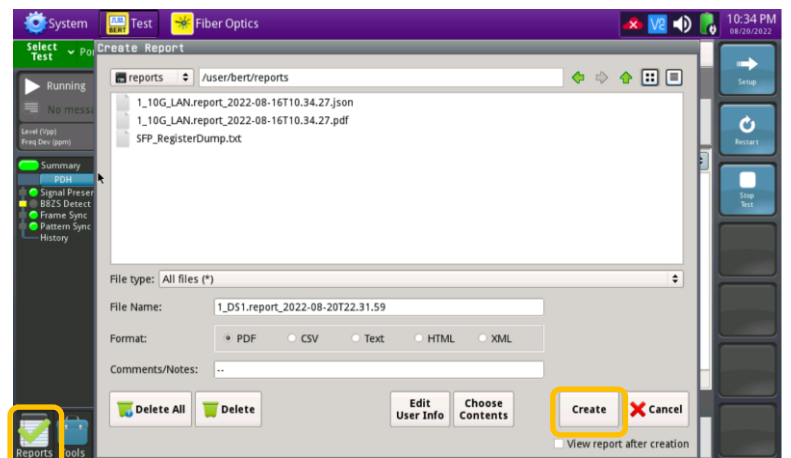


Figure 14: Create Report