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)

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.
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.

4. Tap to open the Tools Panel and select Reset Test to Defaults.
5. Press to continue.

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.

<table>
<thead>
<tr>
<th>Folder</th>
<th>Option</th>
<th>Value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>Rx Input</td>
<td>Term</td>
</tr>
<tr>
<td></td>
<td>Line Code</td>
<td>If unknown, select “B8ZS”</td>
</tr>
<tr>
<td></td>
<td>Clock Source</td>
<td>If unknown, select “Internal”</td>
</tr>
<tr>
<td></td>
<td>Clock Offset (ppm)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>LBO</td>
<td>0 dB</td>
</tr>
<tr>
<td>Framing</td>
<td>Framing</td>
<td>If unknown, select “ESF”</td>
</tr>
<tr>
<td>Pattern</td>
<td>Pattern Mode</td>
<td>ANSI</td>
</tr>
<tr>
<td></td>
<td>Pattern</td>
<td>QRSS</td>
</tr>
</tbody>
</table>

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.

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)

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)

16. Repeat steps 13 through 15 for all Patterns in the test plan. Patterns may include:
    - **QRSS** Simulates live T1 traffic
    - **All Zeros** Tests for equipment mis-optioned 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)