Quick Card

T-BERD 5800 Network Tester
DS3 Bit Error Rate Testing (BERT)

This quick card describes how to configure and run a DS3 Bit Error Rate Test to a hard loop or to another similarly configured T-BERD.

Equipment Requirements:

- T-BERD 5800 equipped with the following:
  - BERT software release V27.0 or greater
  - Test options:
    - C5DS3STS1: DS3/STS-1 Electrical option
    - C5DUALPORT: Dual Port option (required on T-BERD 5800-100G only)
- One or more of the following DS3 cable sets to connect the T-BERD 5800 DS3 Port(s) to the line under test:
  - Two (2) BNC to BNC cables (CB-30662)
  - Two (2) BNC to WECO 440A cables (CB-015837)
  - Two (2) mini BNC to BNC adapters (CB-MINITOBNCQTY1) for T-BERD 5800-100G

The following information is required to complete the test:

- DS3 Framing (C-BIT or M13)
- Clock Source (Internal or Recovered)
- Test Pattern(s)
- BER Pass/Fail Threshold

Connect to Line Under Test:

- The T-BERD 5800v2 has BNC ports for DS3 testing. You may use BNC to BNC or BNC to WECO cables to connect the T-BERD to the line under test.
- The T-BERD 5800-100G has mini BNC ports for DS3 testing. CB-MINITOBNCQTY1 adapters are required to adapt to a standard BNC connector. You may use BNC to BNC or BNC to WECO cables to connect the adapter to the line under test.
Run 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 ► DS3 ► DS3 BERT ► Terminate test.
4. Tap 📊 to open the Tools Panel and select Reset Test to Defaults.
5. Press 🎯 OK 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>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 “C-BIT”</td>
</tr>
<tr>
<td>Pattern</td>
<td>Pattern Mode</td>
<td>ANSI</td>
</tr>
<tr>
<td></td>
<td>Pattern</td>
<td>2^23-1 ANSI</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)**
      \[
      = 44736000 \pm 895 \text{ Hz}
      \]

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