Quick Card

**T-BERD 5800 Network Tester**

**C37.94 Bit Error Rate Testing (BERT)**

This quick card describes how to configure and run a C37.94 Optical Bit Error Rate Test to a hard loop or another similarly configured T-BERD/MTS 5800.

**Equipment Requirements:**
- T-BERD 5800 equipped with the following:
  - BERT software release V27.2 or greater
  - C5C3794 ITU C37.94 Optical BERT option
  - C37.94 capable optical transceiver (SFP) to match the line under test
- Patch cables to match the optical transceiver and the line under test
- Fiber optic inspection microscope (P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

**The following information is required to complete the test:**
- Clock Source (Internal or Recovered)
- Data Rate (Number of 64K Channels)
- Test Pattern(s)
- BER Pass/Fail Threshold

**Fiber Inspection Guidelines:**
- All fiber end-faces must be clean and pass an inspection test prior to connection.
- Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (SFP Port, bulkhead connectors, patch cords, etc.)
Connect to Fiber Under Test:

1. Insert C37.94 optics into the Port 1 SFP/SFP+ slot on the top of the T-BERD/MTS.
2. After inspecting the fiber end faces, connect the C37.94 optics to the fiber under test using an LC-LC jumper 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 C37.94 BERT►P1 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.
7. Review the displayed SFP information to verify that the correct optics are installed.
8. Select the Signal folder and configure the Clock Source:
   - Select Internal if the T-BERD/MTS is to provide clock to the Multiplexor
   - Select Recovered if the Multiplexor is providing clock to the T-BERD/MTS.
   - Note: Only one device on the C37.94 circuit should be set to provide internal clock. Multiple Clocks will cause intermittent Bit/TSE Errors and Patterns Slips.

9. Tap Payload to display data rate settings.
10. Enter the value for N, the number of 64K channels on the interface (1 through 12).
11. Press the Results Soft Key to view the Test Results screen.

12. Using the drop-down menus, select “Payload/BERT” for the right Results display.
13. Select the Laser tab in the Actions panel, and tap . The button will turn yellow and be relabeled.
14. Press the Restart soft key.
15. Verify the following:
   - Signal Present LED is green
   - Frame Sync LED is green
   - Pattern Sync LED is green
   - Summary/Status results shows ‘ALL SUMMARY RESULTS OK’
16. Allow the test to run for desired duration and verify the following:
   - **Bit/TSE Error Rate** result does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

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

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

19. 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)

20. Repeat steps 17 through 19 for all Patterns in the test plan. Patterns may include:
   - **QRSS** Simulates live traffic
   - **All Zeros** Tests for DS1 channels mis-optioned for AMI
   - **Delay** Measures Round Trip Delay (RTD) instead of Bit Errors (RTD values are shown instead of BER in the “**Payload/BERT**” results display)