VIAVI Solutions

Quick Card

T-BERD®/MTS-5800 Network Tester

CPRI Check, RRU Testing with ALU BBU Emulation and RF over CPRI Spectrum Analysis

This quick card describes how to connect to a ALU CPRI Remote Radio Unit (RRU) and configure a T-BERD 5800v2 for CPRI Testing including BBU Emulation and RF over CPRI Spectrum Analysis.

Equipment Requirements:

- RRU with power
- T-BERD/MTS-5800v2 equipped with:
  - BERT software release V27.1 or greater
  - CPRI test options:
    - C512GCPRI for CPRI Rate 2 (1228.8M)
    - C524GCPRI for CPRI Rate 3 (2457.6M)
    - C549GCPRI for CPRI Rate 5 (4915.2M)
    - C598GCPRI for CPRI Rate 7 (9830.4M)
    - C5RFOCPRI for RF over CPRI Spectrum Analysis
    - C5RRHA for ALU BBU Emulation
- SFP or SFP+ optical transceiver that supports the CPRI rate for the interface under test
- Single mode jumper cable to connect the T-BERD/MTS to the interface under test
- Fiber optic inspection microscope (VIAVI P5000i or FiberChek Probe)
- Fiber optic cleaning supplies

Figure 1: Equipment Requirements

Information Requirements:

- CPRI Line Rate
- RRH Bandwidth (MHz)
- Carrier Transmit Frequency (MHz)
- Carrier Receive Frequency (MHz)

Fiber Inspection Guidelines:

- Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every fiber optic connection being (bulkhead connectors, patch cords, etc.)
- Focus the fiber on the screen. If dirty, clean the connector.
- If it appears clean, run inspection test.
- If it fails, clean the fiber and re-run inspection test.
- Repeat until it passes.

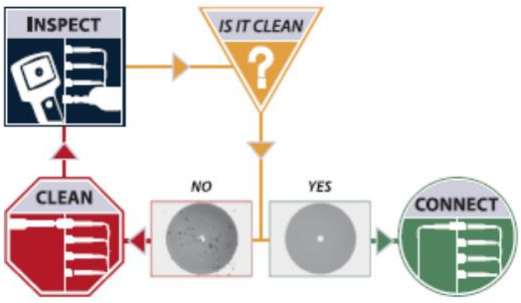


Figure 2: Inspect Before You Connect (IBYC)

Connect to Fiber Under Test:

1. Insert CPRI optics into the Port 1 slot on the top of the T-BERD/MTS 5800v2.
2. After inspecting the fiber end faces, connect the SFP/SFP+ to the fiber under test using an LC-LC jumper cable.

Figure 3: T-BERD/MTS 5800v2 Dual Port mainframe

Launch Test:

1. Press the Power button to turn on the test set.
2. Using the **Select Test** menu, **Quick Launch** menu, or **Job Manager**, launch the **CPRI ► Rates 1-7 ► CPRI Check ► Terminate** test on port 1.
3. Tap the bottom Go button to **Start a New Configuration**.

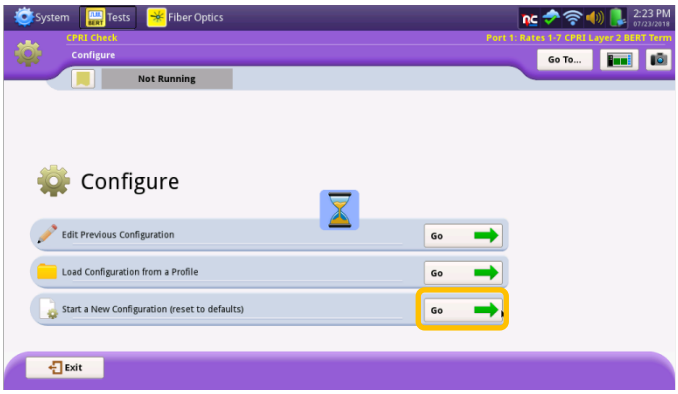


Figure 4: CPRI Check Startup screen

Configure Test:

1. Tap the **Far-end Device** drop-down list and select **ALU.**
2. The **Local SFP Verification**, **Interface**, **Start-up Sequence**, and **RTD** tests will be automatically selected and greyed-out.
3. Tap the checkboxes for all other desired tests:
   - ✓ RRH Identification
   - ✓ Remote Electrical Tilt (RET)
   - ✓ Voltage Standing Wave Ratio (VSWR)
   - ✓ Diversity Imbalance
   - ✓ PIM Detection
   - ✓ 2-Tone PIM Analysis
4. Tap Next twice to proceed to the **RRH Transmit and Receive** settings.

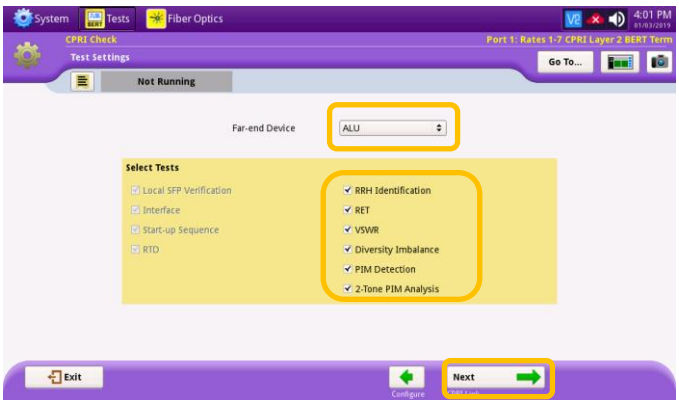


Figure 5: Test Settings

5. Configure RRH Transmit and Receive Settings as follows:
   - **Default to Max. Tx Power**: No
   - **Swap I and Q**: No
   - **Bandwidth**: 10MHz
   - **Carrier Tx Frequency (MHz)**: enter the Transmit Frequency for the RRH
   - **Carrier Max. Tx Power (MHz)**: 40.0
   - **Carrier Rx Frequency (MHz)**: enter the Transmit Frequency for the RRH

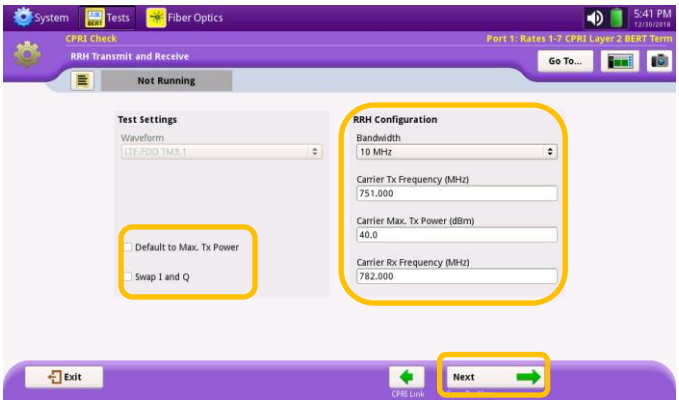


Figure 6: RRH Transmit and Receive

6. Tap Next, Skip Save Profiles, and Next to proceed to the **Local SFP Verification** screen.

Local SFP Verification:

1. Select the **CPRI Rate** to test.
2. Verify that **Signal Present**, **Sync Acquired**, and **Frame Sync** LEDs are all green.
   - If any of the lights are red in color, the CPRI Rate may be incorrect, the RRU may need to be reset, or power may need to be cycled.
   - If the Frame sync LED is red, the SFP may not be in working order or it may not support the selected CPRI Rate.
3. Press Next to proceed to the **Run CPRI Tests** screen.

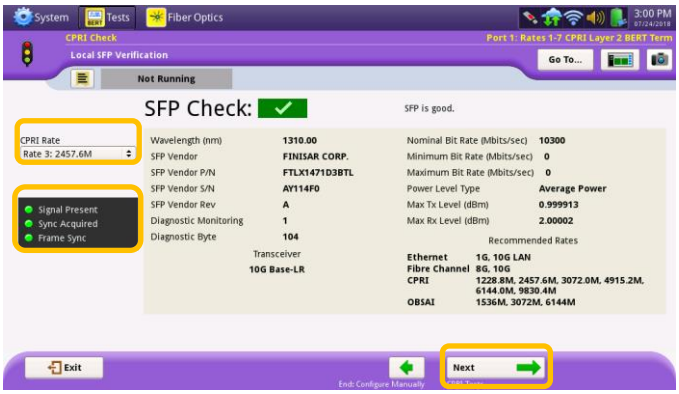


Figure 7:Local SFP Verification

Run Test:

1. Tap Run Test to run the Interface, Start-up Sequence, RTD, and RRH Identification tests.
2. At the end of the test duration, Pass/Fail status for each scheduled test will be indicated by green checkmark, ✓, or red x, ✗. Tests for which no pass/fail threshold was specified will have a blue checkmark, ✓.

Figure 8: Run CPRI Tests

3. Tap the  symbols to view detailed results for each completed test.
4. Tap  to return to the Tests screen.

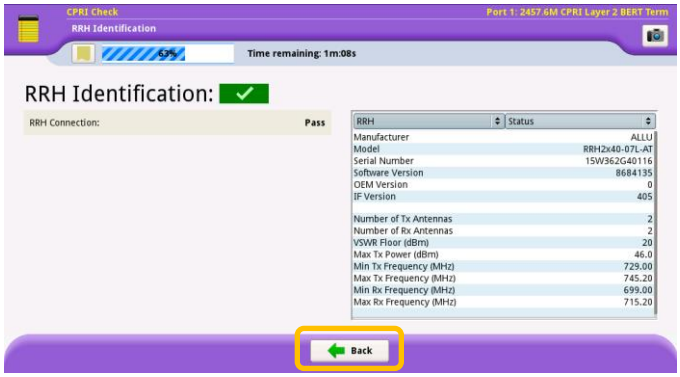
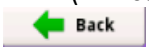


Figure 9: RRH Identification

5. Tap the  button to run the RET test.
6. Tap the RET  symbol to view detailed results.
7. Tap  to check the Alarm state for each ALD (RET controller).
8. Tap  to return to the Tests screen.

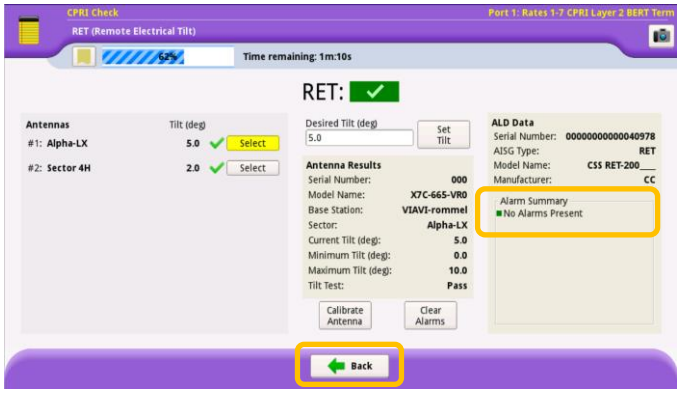


Figure 10: RET

9. Tap the  button to run the VSWR test.
10. Tap the  symbol to view detailed test results.
11. Tap  to return to the Tests screen.

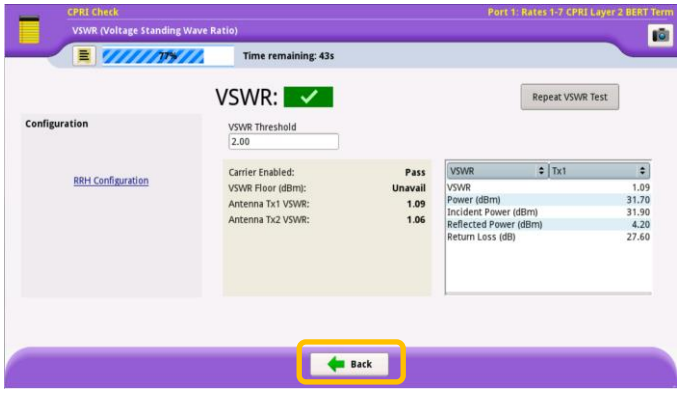
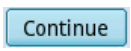


Figure 11: VSWR

12. Press the  button to run the Diversity Imbalance test.
13. Tap the  symbol to view detailed results.
14. Tap the  button to view the Diversity Screen.
15. Tap  to return to the Diversity Imbalance screen.
16. Tap  to return to the Tests screen.

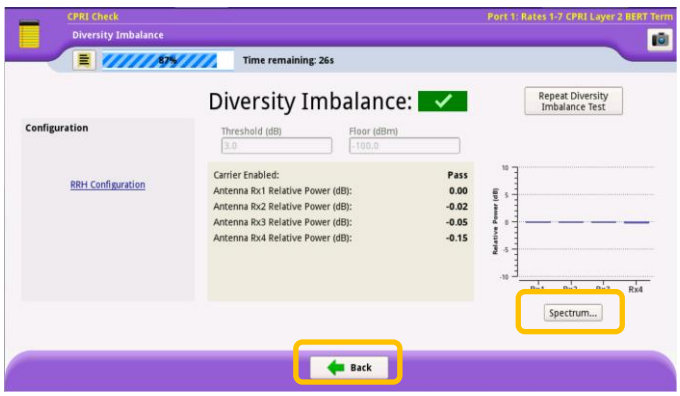


Figure 12: Diversity Imbalance

17. Press the Continue button to run the PIM Detect test.
18. Tap the  symbol to view detailed results.
19. Press the Spectrum... button to view the PIM trace.
20. Tap Back to return to the PIM Detection screen.
21. Tap Back to return to the Tests screen.

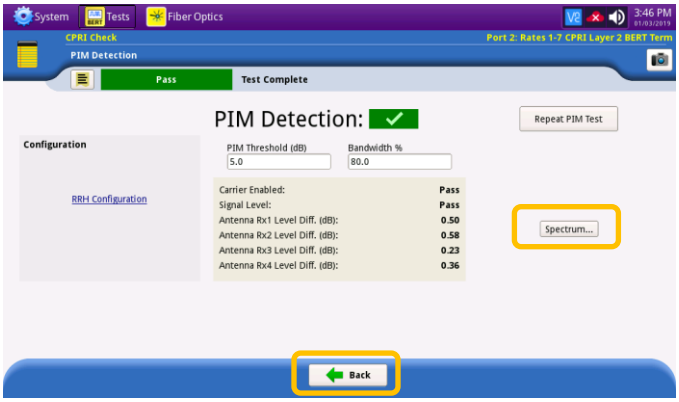


Figure 13: PIM Detection

22. Press the Continue button to run the 2-Tone PIM Detect test.
23. Tap the  symbol to view detailed results.
24. Press the Spectrum... button to view the PIM trace.
25. Tap Back to return to the 2-Tone PIM Analysis screen.
26. Tap Back to return to the Tests screen.

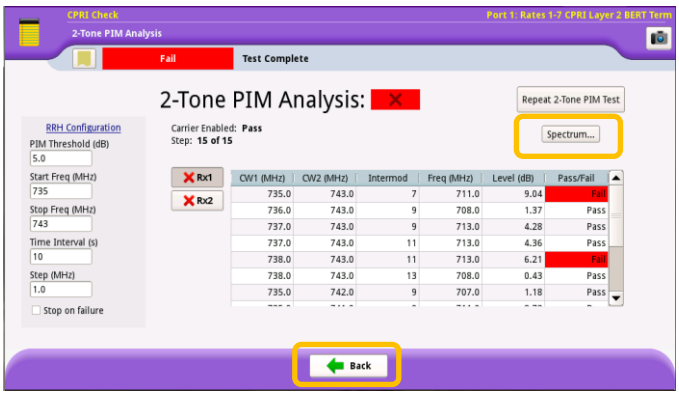


Figure 14: 2-Tone PIM Analysis

27. Press Next twice to proceed to the **Report Info** screen.

Save Report:

1. Enter Customer name, Technician ID, and other desired header information for the report.
2. Tap Next to proceed to the **Create Report** screen.
3. Enter a File Name and tap Create Report.
4. After viewing the report, tap Exit.

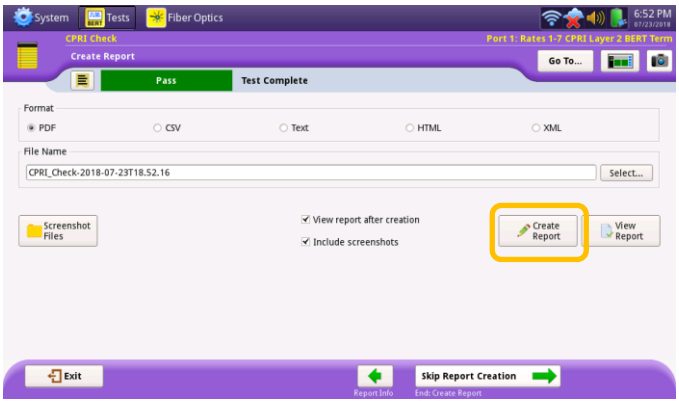


Figure 15: Create Report