VIAVI Solutions

Quick Card

T-BERD 6000Av2 Network Tester

Datacom Bit Error Rate Testing (BERT)

This quick card describes how to configure the T-BERD 6000A as Data Terminal Equipment (DTE) and run a Bit Error Rate Test on a Datacom interface using typical configuration settings. Please refer to the **MSAM Data Communication and Diphase Testing Manual** for an explanation of all settings.

Equipment Requirements:

- T-BERD 6000Av2 equipped with the following:
  - BERT software release V26.3 or greater
  - Test options:
    - High Speed Datacom test option (VIAVI Part# CTHSDATA)
- Multi-Services Application Module (VIAVI Part# C1010V2)
- Datacom Physical Interface Module (PIM) (VIAVI Part# CPHSDATAV2)
- One of the following Datacom cables to connect the Datacom PIM to the line under test:
  - RS-232/V.24, MIL-188c, EIA-530 Cable (VIAVI Part# CB-44385)
  - RS-449/V.36 Cable (VIAVI Part# CB-44388)
  - V.35 Cable (VIAVI Part# CB-44390)

Figure 1: Equipment Requirements

The following information is required to complete the test:

- Interface (RS-232/V.24, MIL-188c, EIA-530, RS-449/V.36, or V.35)
- Signal Mode (Balanced or Unbalanced)
- Timing Mode (Synchronous or Asynchronous)
- Rx Timing Source (Internal, Interface, or Recovered)
- Tx Timing Source (Internal or Interface)
- Out of Band Flow Control (On or Off)
- Test Patterns(s)
- BER Pass/Fail Threshold

Connect to Line Under Test:

- Connect the desired Datacom cable to the Datacom PIM.
- Use the connector labeled “To DCE” to connect to the line under test.

Launch and Configure Test:

1. Press the Power button 

to turn on the test set.
2. Press the Home button 

and tap the BERT icon 

to launch the MSAM.

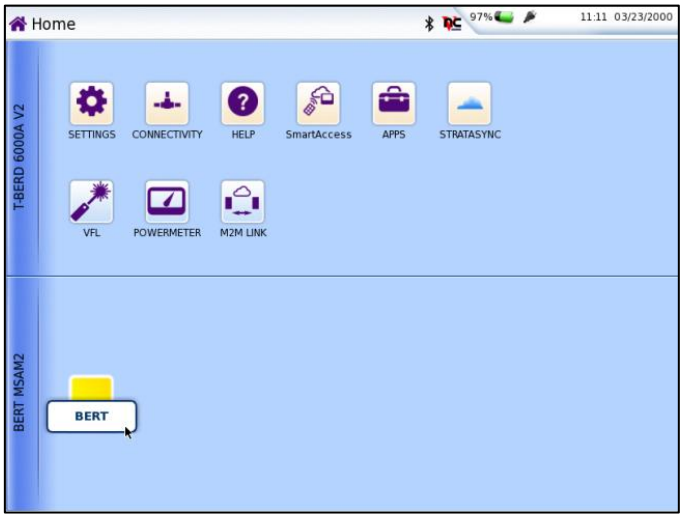

Figure 2: Home screen

3. Using the **Select Test** menu or **Quick Launch** menu, launch the **HS Datacom►HS Datacom BERT►Terminate** test.

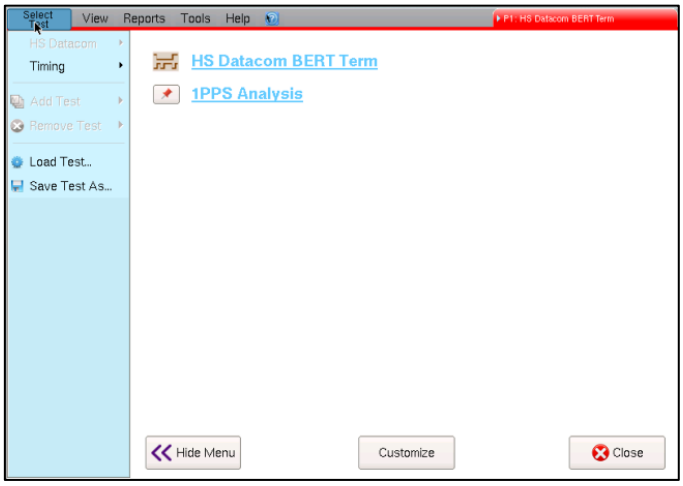

Figure 3: Launch Screen

4. Tap the tools menu and select 

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5. Press 

to continue.

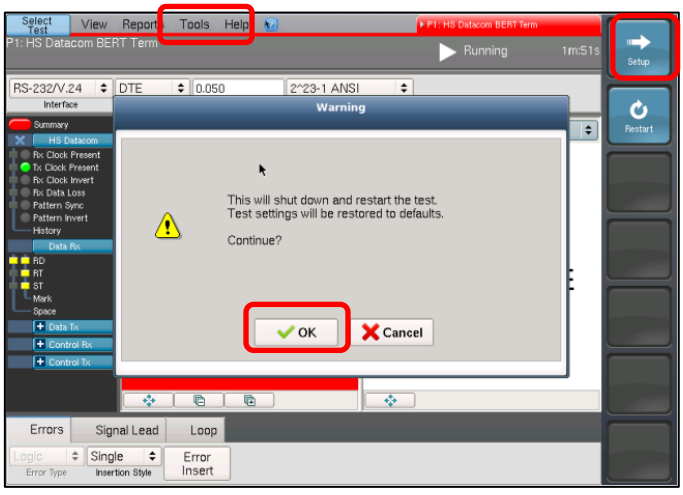

Figure 4: Reset Test to Defaults

6. Press the **Setup** Soft Key, 

, on the top right side of the screen. Select the indicated tabs and configure your test as follows. Leave all other values at default, unless specified in the work order.

Folder	Option	Value(s)
Interface	Interface	RS-232/V.24, EIA-530, RS-449/V.36, etc.
	Equipment Type	DTE
	Signal Mode	Balanced or Unbalanced
Timing	Timing Mode	Synchronous or Asynchronous
	Rx Timing Source	Recovered or Interface (RT). If unknown, select Interface (RT).
	Tx Timing Source	Internal (Synth), External (BNC), or Interface (ST). If unknown, select Interface (ST) for Synchronous timing, select Internal (Synth) for Asynchronous timing.
	Synthesizer Frequency	Enter frequency in kHz; i.e. 9.6 kHz for 9600 bps.
Pattern	Pattern Mode	ANSI
	Pattern	Enter the first Pattern in your test plan (QBF, QRSS, etc.)

7. Press the **Results** Soft Key 

to view the **Test Results** screen.
8. Tap the **Signal Lead** tab at the bottom of the screen and tap the **RTS** and **DTR** buttons.
9. Press the **Restart** soft key 

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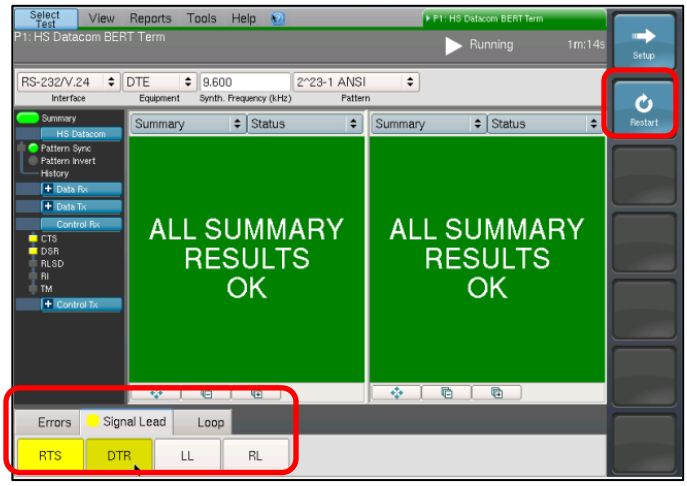

Figure 5: Test Results Screen, Signal Leads

10. Using the drop-down menus, select "**HS Datacom/BERT**" for the right results display.
11. Allow the test to run for desired duration and verify the following:
    - **Summary** LED is green.
    - **Pattern Sync** LED is green.
    - **Bit Error Rate** result does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

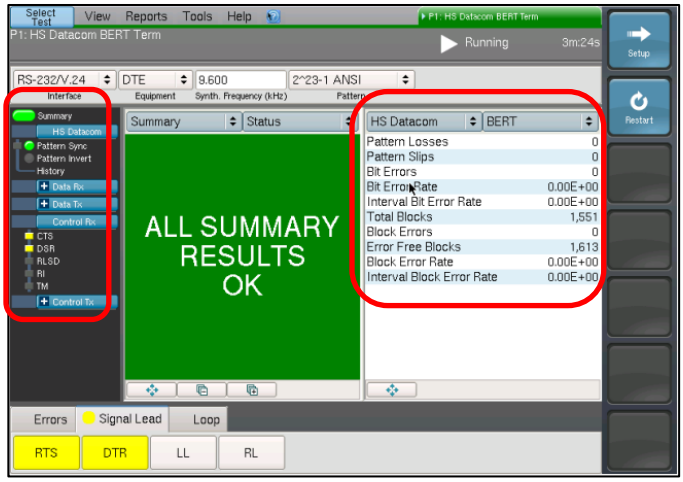

Figure 6: Test Results Screen, HS Datacom/BERT

12. In the T-BERD's **Quick Config** menu, change "**Pattern**" to the next value in the test plan.
13. Press the **Restart** soft key 

to reset results.
14. Allow test to run for desired duration and verify the following:
    - **Pattern Sync** LED is green.
    - **Bit Error Rate** does not exceed your required threshold. (0.00E+00 if pass/fail threshold unknown)

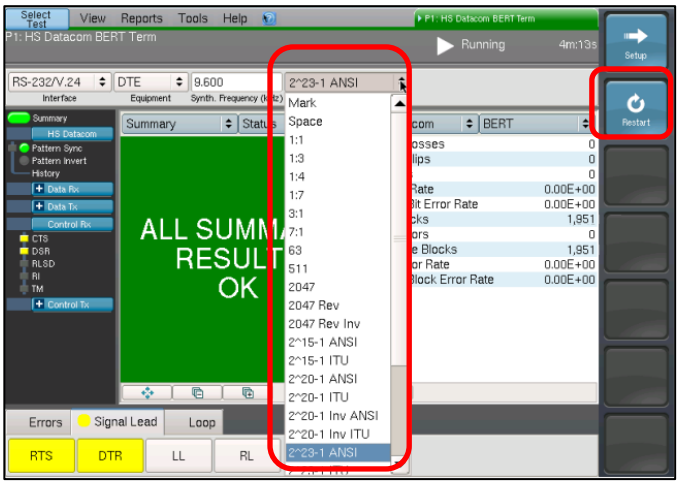

Figure 7: Test Plan

15. Repeat steps 12 through 14 for all Patterns in the test plan. Patterns may include:
    - **QRSS** — Simulates live traffic
    - **QBF** — Quick Brown Fox message
    - **R-Trip Delay** — Measures Round Trip Delay (RTD) instead of Bit Errors (RTD values are shown instead of BER in the "**Payload/BERT**" results display)