

## QUICK CARD

### Serial Datacom Bit Error Rate Testing (BERT)

This quick card describes how to configure the T-BERD 5800 as Data Terminal Equipment (DTE) and run a Bit Error Rate Test on a Serial Datacom interface with typical configuration settings. Please refer to the T-BERD 5800 Testing Manual for an explanation of all settings.

- T-BERD/MTS 5800 with Transport software release V31.2.1 or greater
- Datacom Expansion Module (VIAVI Part# C5DEM)
- USB Type B to USB Type A cable
- One of the following Datacom cables to connect the Datacom Expansion Module to the line under test:
  - RS-232/V.24, EIA-530 Cable (VIAVI Part# CB-21148994-002)
  - RS-449/V.36 Cable (VIAVI Part# CB-21144332-002)
  - V.35 Cable (VIAVI Part# CB-21148995-002)





Figure 1: Equipment Requirements

## CONNECT TO LINE UNDER TEST

- Connect the **USB Type B to USB Type A cable** to the Datacom Module and the USB port on the side of the T-BERD 5800.
- Connect the desired **Datacom cable** to the Datacom Expansion Module.
- Use the connector labeled “To DCE” to connect to the line under test.

## LAUNCH TEST

1. Press the **Power button**  to turn on the T-BERD.
2. Tap the **Datacom** icon  at the top of the launch screen.

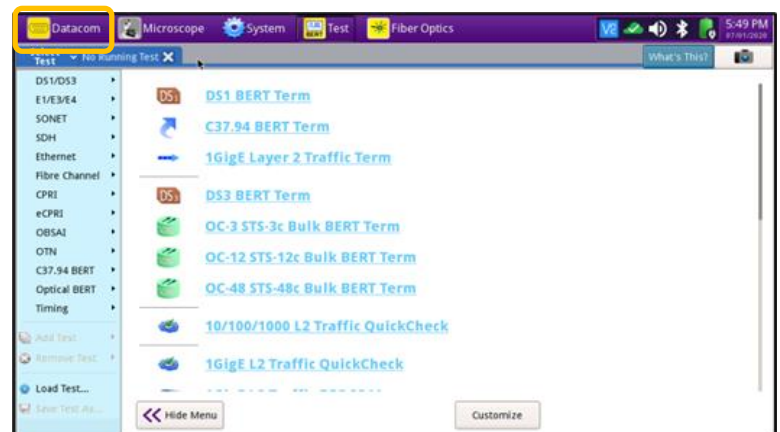


Figure 2: Launch Screen


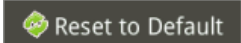

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### CONFIGURE TEST

- The following Information is needed to configure the test:
  - Interface (RS-232/V.24, EIA-530, RS-449/V.36, or V.35)
  - Signal Mode (Balanced or Unbalanced)
  - Timing Mode (Synchronous or Asynchronous)
  - Rx Timing Source (Internal or Interface)
  - Tx Timing Source (Internal or Interface)
  - Out of Band Flow Control (On or Off)
  - Test Pattern(s)
  - BER Pass/Fail Threshold



Figure 3: Work Order

- Press the **Setup** soft key  on the top right side of the screen.
- Tap .
- Press  to continue.
- Select the indicated folders and configure your test as follows. Leave all other values at default, unless specified in the work order.

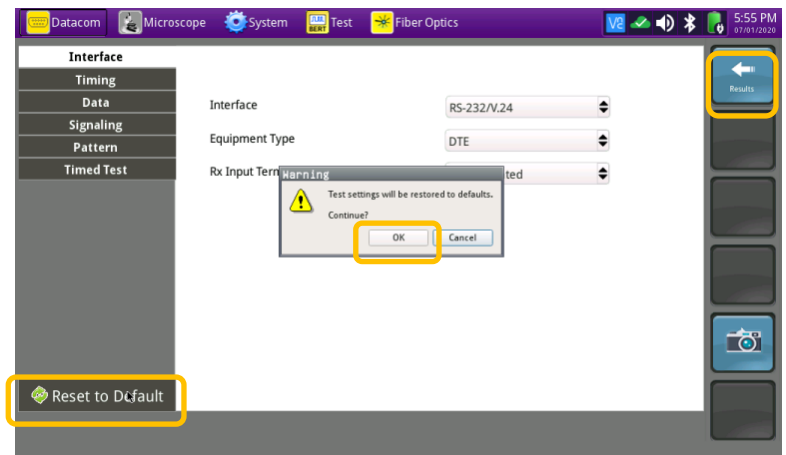


Figure 4: Setup, Interface

| Folder    | Option                | Value(s)   |
|-----------|-----------------------|--|
| Interface | Interface             | RS-232/V.24, EIA-530, RS-449/V.36, etc.  |
| Timing    | Timing Mode           | Synchronous or Asynchronous  |
|           | Rx Timing Source      | Interface (RT)   |
|           | Tx Timing Source      | 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               | Enter the 1st Pattern in your test plan (QRSS, 2 <sup>11</sup> -1, etc.)<br>Note: 2 <sup>11</sup> -1 = 2047, 2 <sup>9</sup> -1 = 511, 2 <sup>6</sup> -1 = 63 |

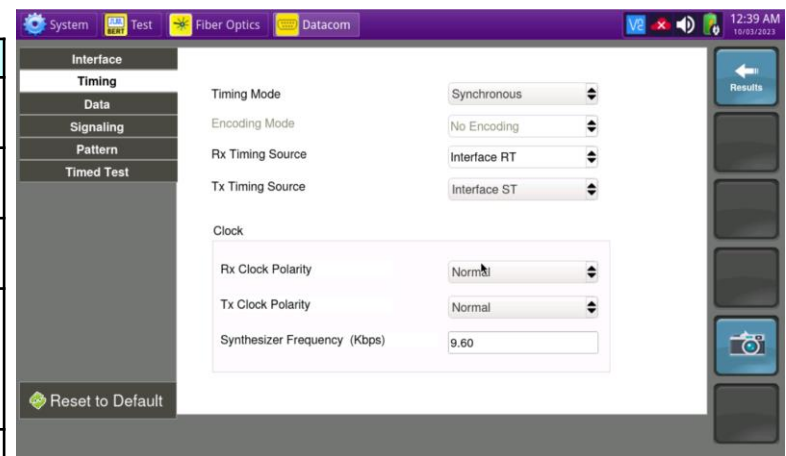


Figure 5: Setup, Timing




- Press the **Results** soft key  to view the Test Results screen.



Figure 6: Setup, Pattern

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### RUN TEST

1. Tap the **Signal Lead** tab at the bottom of the screen and tap the RTS and DTR buttons.
2. Press the **Restart** soft key .
3. Using the drop-down menus, select **“Summary/Status”** for the left results display and select **“HS Datacom/BERT”** for the right results display.
4. Allow the test to run for desired duration and verify the following:
  - **Pattern Sync** LED is green.
  - **Error Rate** result does not exceed your required Bit Error Rate (BER) threshold. (0.00E+00 if pass/fail threshold unknown)
5. In the T-BERD’s **Quick Config** menu, change **“Pattern”** to the next value in the test plan.
6. Press the **Restart** soft key  to reset results.
7. Allow the test to run for desired duration and verify the following:
  - **Pattern Sync** LED is green.
  - **Error Rate** result does not exceed your required BER threshold. (0.00E+00 if pass/fail threshold unknown)
8. Repeat steps 5 through 7 for all Patterns in the test plan.

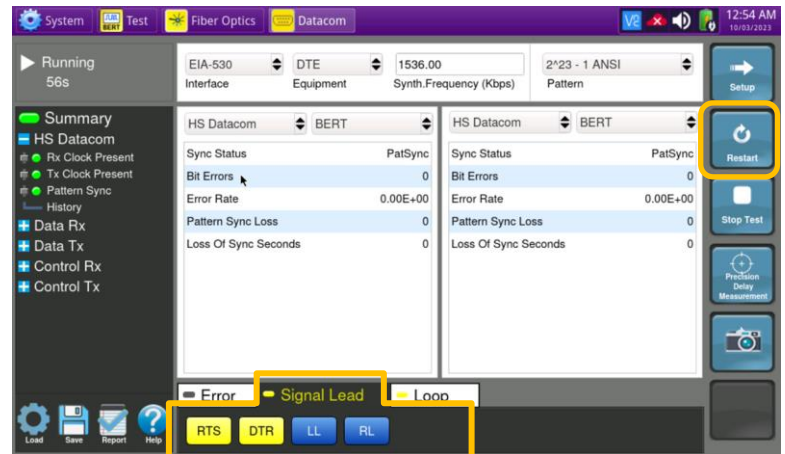


Figure 7: Test Results Screen, Signal Leads

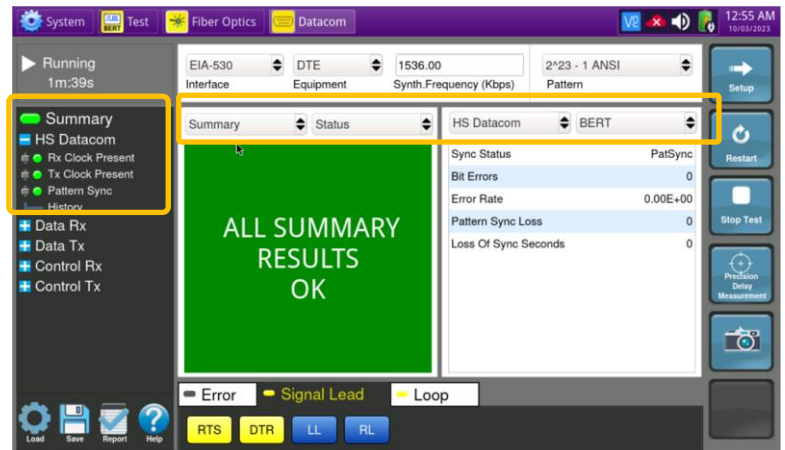


Figure 8: Test Results Screen, HS Datacom/BERT

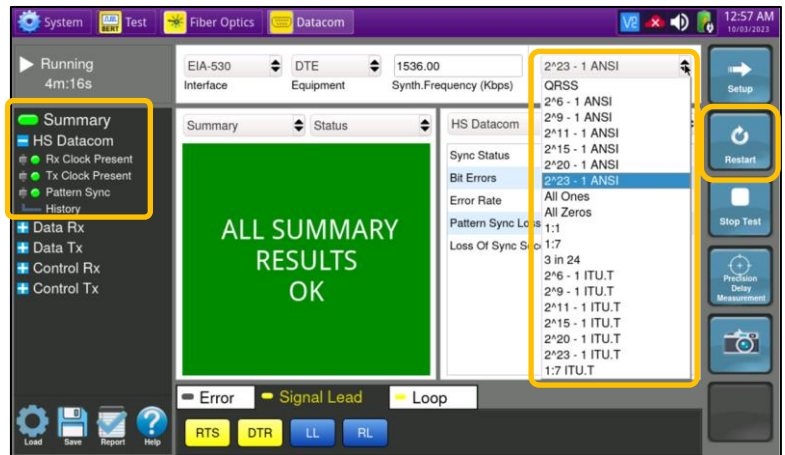


Figure 9: Test Plan