# T-BERD/MTS 5800 Portable Network Tester



# 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)
  - o 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** (b) to turn on the T-BERD.
- Tap the **Datacom** icon Patacom at the top of the 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 Patterns(s)
  - BER Pass/Fail Threshold
- 1. Press the **Setup** soft key : on the top right side of the screen.
- 2. Tap 🧔 Reset to Default
- 3. Press **Vok** to continue.
- 4. Select the indicated folders and configure your test as follows. Leave all other values at default, unless specified in the work order.



Figure 3: Work Order

Datacom	scope 💽 System 🚟 Test 🏾 😽 Fiber O	ptics	<u>v</u> e 🗠 🌒 🖇	07/01/2020
Interface Timing				-
Data	Interface	RS-232/V.24	\$	Lesons -
Signaling	Equipment Type	DTE		
Pattern	Equipment Type	DIE	•	
Timed Test	Rx Input Tern Harning	ted	\$	
🚳 Reset to Difault	Tes settings will be restor Continue?	Cancel		

#### Figure 4: Setup, Interface

			💇 System 🔛 Test 🗧	😽 Fiber Optics 🛛 🧰 Datacom			🚾 📣 🌒 💦 12:39 / 10/03/20
Folder	Option	Value(s)	Interface				( <b>-</b>
luct a uf a s a	luctor of a so	RS-232/V.24, EIA-530,	Timing Data	Timing Mode	Synchronous	\$	Results
Interface	Interface	RS-449/V.36, etc.	Signaling	Encoding Mode	No Encoding	\$	
	Timing	Synchronous or	Pattern Timed Test	Rx Timing Source	Interface RT	\$	
	Mode	Asynchronous		Tx Timing Source	Interface ST	\$	
	Rx Timing			Clock			
Timing	Source	Interface (RT)		Rx Clock Polarity	Normal	\$	
		Select Interface (ST) for		Tx Clock Polarity	Normal	\$	
	Tx Timing	Synchronous timing,		Synthesizer Frequency (Kbps)	9.60		<b>1</b>
	Source	select Internal (Synth) for					
		Asynchronous timing.	Reset to Default				
	Synthesizer	Enter frequency in kHz;					
	Frequency	i.e., 9.6 kHz for 9600 bps.	Figure 5: Setup, Timing				
Pattern		Enter the 1st Pattern in your	System 🔛 Test 🗧	Fiber Optics 🛛 🔤 Datacom			12:45 /
	Dattorn	test plan (QRSS, 2^6-1, etc.)	Interface				
	Pattern	Note: 2^11-1 = 2047,	Timing Data	Pattern	2422 - 1 ANSI		Results
		2^9-1 = 511, 2^6-1 = 63	Signaling		E ED T I MINOL	•	
			Timed Test				

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

Figure 6: Setup, Pattern



# QUICK CARD

#### 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
- 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)
- 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.

56s	EIA-530 DTE Interface Equip	<ul> <li>1536.00</li> <li>Synth.Free</li> </ul>	equency (Kbps) Patte	- 1 ANSI 🔶	seta
Summary	HS Datacom	BERT 🗢	HS Datacom	BERT 🔷	
<ul> <li>BS Datacom</li> <li>Rx Clock Present</li> </ul>	Sync Status	PatSync	Sync Status	PatSync	Rest
Tx Clock Present	Bit Errors	0	Bit Errors	0	-
Pattern Sync History	Error Rate	0.00E+00	Error Rate	0.00E+00	
Data Rx	Pattern Sync Loss	0	Pattern Sync Loss	0	Stop
Data Tx Control Rx Control Tx	Loss Of Sync Seconds	0	Loss Of Sync Seconds	0	Preci Del Measur
	and the second se				

Figure 7: Test Results Screen, Signal Leads





#### Figure 9: Test Plan

Contact Us

+1 844 GO VIAVI (+1 844 468-4284)

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