# T-BERD/MTS 5800 Portable Network Tester



### QUICK CARD

### **ISDN Primary Rate Interface (PRI) Testing**

This quick card describes how to configure and run a DS1 ISDN PRI Terminate Test to validate the provisioning and performance of an ISDN PRI trunk.

- T-BERD/MTS 5800 equipped with the following:
  - Transport software release V31.2.1 or greater
  - C5E1DS1 test option: E1/DS1 Electrical
  - C5DUALPORT test option: Dual Port option (required on T-BERD 5800-100G only)
- Headset (Plantronics M114, Plantronics M210c, or Benertech A310QD recommended)
- One of the following T1 cable sets to connect the T-BERD 5800 DS1 Port(s) to the line under test:
  - Two (2) Bantam to Bantam cables (CB-10615)
  - Dual Bantam to RJ-48C cable (CB-41645)
  - RJ-48C Patch cable (Straight-through or cross-over depending upon equipment under test)



### CONNECT HEADSET AND CONFIGURE AUDIO SETTINGS

- Press the Power button to turn on the T-BERD.
- 2. Connect the headset to the headset jack on the side of the T-BERD.
- 3. Press the **System** icon System in the top left corner of the screen.
- Press the Audio icon . Set Speaker Volume to the maximum setting and set Microphone Volume to the center setting. If desired, you can adjust these settings during the test. The speaker icon on the top bar of the T-BERD provides a shortcut to this screen.





😇 System 🔛 Test 🏾 😽 Fiber Optics	😡 📣 🚺 10:09 AM
System > Audio	T-BERD 5800-100G Version 31.1.1
speaker volume	Mute
Microphone volume	t





#### LAUNCH TEST

- 1. Press the **Test** icon **Test** at the top of the screen to display the **Launch Screen**.
- Using the Select Test menu, Quick Launch menu, or Job Manager, launch the DS1/DS3 ► DS1 ► DS1 ISDN PRI ► Terminate test.
  - Note: If tests have been launched on both Port 1 and Port 2, you must remove the test on Port 1 before launching DS1 ISDN PRI. Tap the icon next to Port 1 tabs in the Select Test bar or tap Remove Test in the Select Test menu to remove the test.
- Tap to open the **Tools** Panel and select <a href="https://www.select.com">Reset Test to</a>.
- 4. Press Vor to continue.

🥶 System	Test	😽 Fiber Op	ptics				<u>ve</u> 📣 🍋 💦	4:35 PM
Select ~ Por Test ~ Por	t 2: 10/1	00/1000 Eth	VoIP Term 🗙	+	Timing Source		What's This?	101
DS1/DS3 E1/E3/E4 SONET SDH Ethernet Fibre Channel CPRI	· · · · · ·	図 ひ ひ ひ ひ	DS1 ISDN PI 10/100/1000 1GigE Eth Vo 10GigE LAN	RI Term Eth VoIP DIP Term VoIP Term	<u>ferm</u>			
eCPRI OBSAI OTN Timing Dark Fiber/Unf I Add Test Remove Test	BERT •	4 4 4 4	10/100/1000 1GigE L2 Tra 10GigE LAN 100GigE L2 S	L2 Strean offic SAMC L2 Stream Streams S/	ns SAMComplet omplete is SAMComplet AMComplet	e		

#### Figure 4: Launch Screen



#### Figure 5: Tools Panel

#### CONFIGURE TEST

- The following Information is needed to configure the test:
  - T1 Line Code (B8ZS or AMI)
  - T1 Framing (ESF or D4)
  - ISDN Call Control (National, AT&T 5ESS, Nortel DMS 100)
  - Customer's Billing Telephone Number for the PRI trunk
  - Destination Telephone Number(s) for outbound call testing



Figure 6: Work Order

# T-BERD/MTS 5800 Portable Network Tester



# QUICK CARD

### CONFIGURE TEST

1. Press the **Setup** soft key side of the screen.

on the top right

2. Select the indicated folders and configure your test as follows. Leave all other values at default, unless specified in the work order.

Folder	Option	Value(s)
	Rx Input	Term
Interface	Line Code	If unknown,
internace		select "B8ZS"
	LBO	0 dB
Framing	Framing	lf unknown,
11411118		select "ESF"
	Emulation	TE Emulation
	Call Control	If unknown, select
ISDN,		"NI-2 (National)"
General	Numbering Type	Auto
	D Channel	24
	Call Type	Voice
	B Channel	Any
	Calling Dhono	Enter Billing
		Telephone Number
	Number	for the PBX
		Enter your mobile
	Destination	phone number in the
	Phone Number	format required for
ISDN, Call		your dialing area
ŕ		(usually 10-digit)
		If you are turning up
		new service, Select
		"Prompt." If you are
		troubleshooting a
	wode	working line and want
		to reject inbound
		calls, select "Reject."

3. Press the **Results** soft key Test Results screen.

Results to

to view the

System 🛄 Test	😽 Fiber Optics				<b>V2</b> 🕩	5:35 PM
Select - Port 2: DS1	ISDN PRI Term 🗙 📃	+	Timing Source	What's This?	10	<b>-</b>
Interface	DS1					Results
Framing	Rx Input		Term		\$	
Pattern	Line Code		B8ZS		¢	
ISDN Timed Test	Clock Source				¢	
inned lest						
						1000





Figure 8: Setup, Framing

System 🔛	Test 🏾 😽 Fiber Op	otics				V2 🕩	8:28 PM
Select ~ Port 2: Test	DS1 ISDN PRI Ter	rm 🗙 📃	+	Timing Source	What's This?	ø	
Interface	General	all Deco	de				Results
Framing							
Pattern	Emulatio	'n		TE Emulation	1	\$	and the second second
ISDN	Call Cont	trol		NI-2 (Nation	al)	\$	
Timed Test	Numberi	ing Type		Auto		•	
	Numberi	ing Plan		ISDN		٥	
	D Channe	el		24			
	D Channe	el Rate					

#### Figure 9: Setup, ISDN/General



Figure 10: Setup, ISDN/Call



### CONNECT TO LINE UNDER TEST

- T-BERD 5811 AND T-BERD 5822 mainframes have both RJ-48C and bantam ports. You may use either port with Bantam to Bantam, Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables to connect the T-BERD to the line under test.
- T-BERD 5882 and T-BERD 5800-100G mainframes have an RJ-48C port. Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables may be used to connect the T-BERD to the line under test.

Rx/Ring/-

1

Some access devices require cross-over cables, while others require straight through cables.



Figure 11: RJ-48C Crossover Cable

#### **RUN TEST**

- 1. Using drop-down menus 主 , select "Call/Status" for the right results display.
- Press the **Restart** soft key 2.
- Verify the following: 3.
  - Summary LED is green.
  - ► Signal Present LED is green.
  - ► Frame Sync LED is green.
  - D Chan Ready LED is green

If the specified LEDs are not green, check your cables (Tx and Rx may be reversed) and check Setup values (page 3).

2	RX/Tip/+		2	RX/Tip/+
3	Not Connected		3	Not Connected
4	Tx/Ring/-		4	Tx/Ring/-
5	Tx/Tip/+		5	Tx/Tip/+
6	Not Connected		6	Not Connected
7	Not Connected		7	Not Connected
8	Not Connected		8	Not Connected
	Figure 12.	RI-48C Straight		hrough Cable

Figure 12: RJ-48C Straight Through Cable

1 Rx/Ring/-



Figure 13: Results, Interface/Signal



### INBOUND CALL TESTING

- Using your cell phone, dial the billing telephone number (BTN) for the PBX (or dial the temporary "test" number if the BTN has not been ported).
- In the T-BERD's Actions Panel, select the Call Controls tab. Allow the call to ring at least 2 times. Confirm the Ring back tone is heard on your cell phone and tap Answer call Controls to answer the call.
- 3. Put on the headset. If the headset includes an on/off switch and volume control, turn it on and adjust the volume to the desired level.
- 4. Confirm that voice is heard, and voice quality is acceptable on both the T-BERD's headset and the Cell Phone. If static is heard on your cell phone, move the microphone boom farther away from your mouth to avoid overdriving the microphone.
- 5. Hang up the call from your cell phone. Verify that the call status on the T-BERD changes to **IDLE**.



Figure 14: Results, Incoming call



Figure 15: Results, Connected call



Figure 16: Results, Disconnected



#### OUTBOUND CALL TESTING

- 1. In the T-BERD's Actions Panel, tap Connect The T-BERD will transmit a SETUP message to initiate the call. Call status is displayed in the right Results Group.
- Answer the incoming call on your cell phone. "CONNECTED" indicates that the call setup was successful. If the call fails, a cause code will be displayed.
- 3. Converse and confirm that voice quality is acceptable on the T-BERD and the Cell Phone.
- 4. In the T-BERD's Actions Panel, tap Disconnect to disconnect the call.
- In the T-BERD's Quick Config menu, change "Destination Phone Number" to the next number in the call plan.
- 6. In the T-BERD's Actions Panel, tap Connect Call.
- Converse and confirm that voice quality is acceptable on the T-BERD and for the called party.
- 8. In the T-BERD's Actions Panel, tap Disconnect to disconnect the call.
- 9. Repeat steps 5 through 8 for all numbers in the call plan. Call Plans may include:
  - Toll Free numbers
  - Local off-network and numbers
  - Local on-network numbers
  - Long Distance numbers
  - International numbers
  - Blocked Calls
  - n11 numbers such as 411 (directory assistance), 611 (customer service), and 911 (emergency services)
- Troubleshooting Tip: If outbound calls fail with cause code "Invalid Number Format", tap the Setup soft key and change the "Numbering Type" setting from "Auto" to "Local" or "National."



#### Figure 17: Results, Connect Call



Figure 18: Results, Connected call



Figure 19: Results, Call Plan Testing

# T-BERD/MTS 5800 Portable Network Tester



### QUICK CARD

#### CREATE REPORT



3. A report will be saved to the T-BERD 5800's /bert/reports folder.

reports	/user/bert/reports		💠 🗅 🔶 🖽 🛛
SFP_Regi RFC_254 RFC_254 1_1GigE. RFC_254 1_1GigE. SAMCom	ster Dump.txt 4-2023-07-10T16.25.23.jsor report_2023-07-1116.25.23.jsor report_2023-07-11T10.37.4 4-2023-07-11T11.06.45.pdf report_2023-07-18T09.48.5i plete-2023-07-18T09.58.04	SAMComplete-20 QSFP_RegisterDu 0.pdf 8.pdf .pdf	23-08-02T12.53.45.pdf mp.txt
File type: All	files (*)		
File type: All File Name:	files (*) 2_DS1.report_2023-09-	13T11.08.05	
File type: All File Name: Format:	files (*) 2_DS1.report_2023-09- * PDF CSV	13T11.08.05 Text HTML XMI	L
File type: All File Name: Format: Comments/N	files (*) 2_DS1.report_2023-09- * PDF CSV lote:	13T11.08.05 • Text • HTML • XMI	L

Figure 20: Create Report