

Quick Card

T-BERD 5800 Network Tester ISDN Primary Rate Interface (PRI) Testing

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

Equipment Requirements:

- T-BERD 5800 equipped with the following:
 - BERT software release V26.1 or greater
 - Test options:
 - C5E1DS1: E1/DS1 Electrical option
 - C5DUALPORT: Dual Port option (required on T-BERD 5800-100G only)
- Headset (Plantronics M114 or M210c recommended)
- One of the following T1 Cables to connect the T-BERD 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)



Figure 1: Equipment Requirements

The following information is required to complete 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

Connect to Line Under Test:

- The T-BERD 5800v2 has both RJ-48C and bantam ports. You may use 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.
- The T-BERD 5800-100G has an RJ-48C port. Dual Bantam to RJ-48C, RJ-48C straight through, or RJ-48C crossover cables may be used.

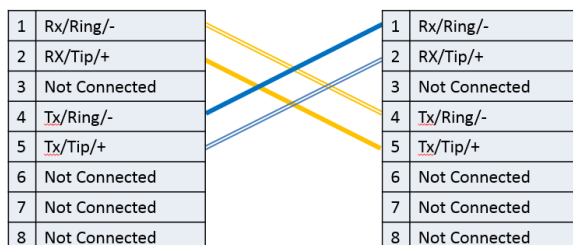


Figure 2: RJ-48C Crossover Cable

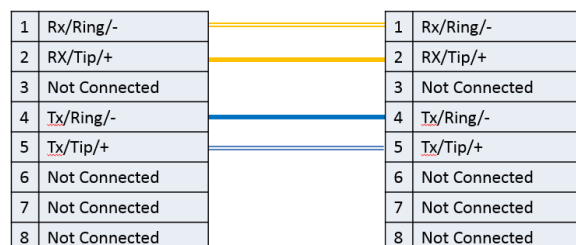






Figure 3: RJ-48C Straight Through Cable

Connect and Configure Headset:

1. Press the Power button  to turn on the test set.
2. Connect the headset to the headset jack on the side of the test set.
3. Press the **System** icon  in the top left corner of the screen.
4. Press the **Audio** icon . Set **Speaker Volume** to the maximum setting and set **Microphone Volume** to the minimum 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.

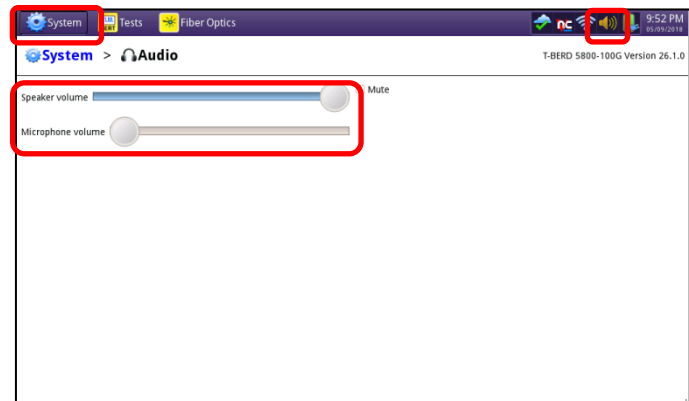


Figure 4: Audio settings

Launch and Configure Test:





1. Press the **Test** icon  at the top of the screen.
2. 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  in the **Select Test** menu to remove the test.



Figure 5: Launch Screen

3. In the **Tools Panel**  select .
4. Press  to continue.

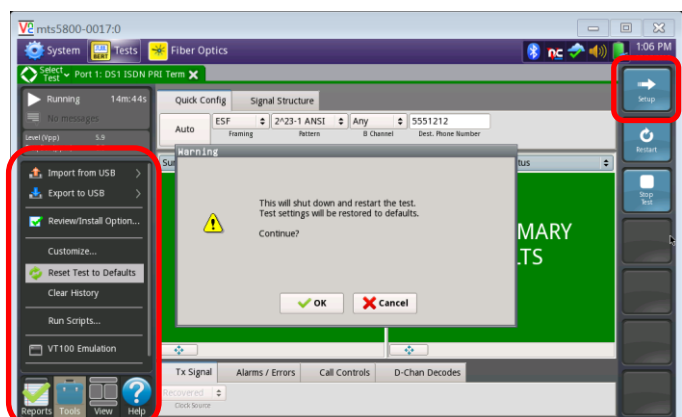





Figure 6: Tools Panel

5. Press the **Setup** Soft Key, , on the top right side of the screen. 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)
Interface	Rx Input	Term
	Line Code	If unknown, select "B8ZS"
	LBO	0 dB
Framing	Framing	If unknown, select "ESF"
ISDN, General	Emulation	TE Emulation
	Call Control	If unknown, select "NI-2 (National)"
	Numbering Type	Auto
	D Channel	24
ISDN, Call	Call Type	Voice
	B Channel	Any
	Calling Phone Number	Enter Billing Telephone Number for the PBX
	Destination Phone Number	Enter your mobile phone number in the format required for your dialing area (usually 10-digit)
	Call Answer Mode	If you are turning up new service, Select "Prompt." If you are troubleshooting a working line and want to reject inbound calls, select "Reject."

6. Press the **Results** Soft Key  to view the **Test Results** screen.

7. Using the drop-down menus, select **"Call/Status"** for the right Results display.

8. Press the **Restart** soft key  to reset results.

9. Verify the following:

- **Signal Present** LED is green
- **Frame Sync** LED is green
- **D Chan Ready** LED is green

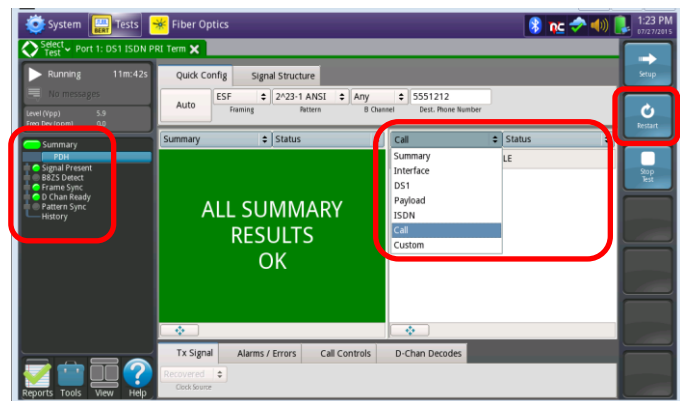



Figure 7: Test Results Screen

If the specified LEDs are not green, check your **cables** (Tx and Rx may be reversed) and check **Setup** values (step 5 above).

Inbound Call Testing:

1. 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).
2. 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  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 volume to desired level.

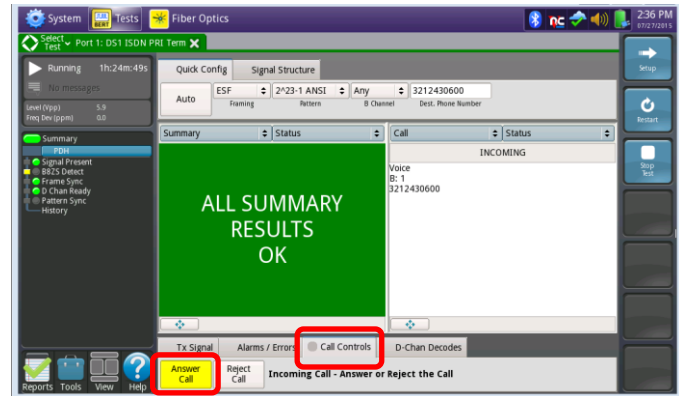


Figure 8: Call Controls

4. Confirm that voice is heard, and voice quality is acceptable on the T-BERD’s headset and on 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**.

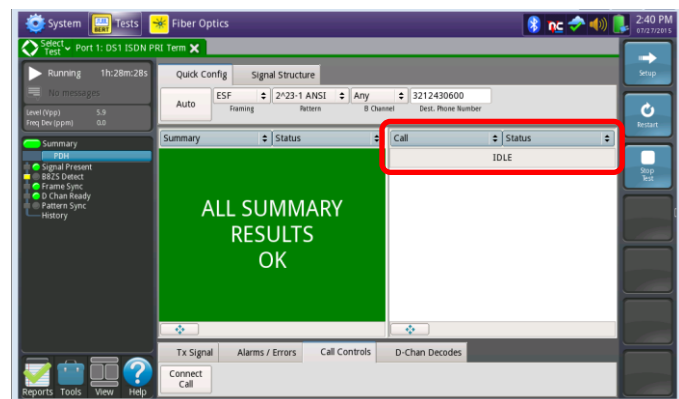
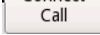


Figure 9: Call Status

Outbound Call Testing:

1. In the T-BERD's **Actions Panel**, tap . The T-BERD will transmit a SETUP message to initiate the call. Call status is displayed in the right Results Group.
2. 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.

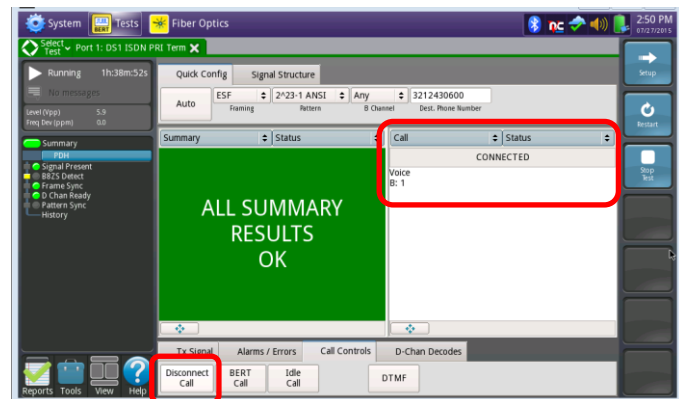
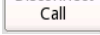



Figure 10: Outgoing Call

4. In the T-BERD's **Actions Panel**, tap  to disconnect the call.
5. 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 . The T-BERD will transmit a SETUP message to initiate the call.
7. Converse and confirm that voice quality is acceptable on the T-BERD and for the called party.

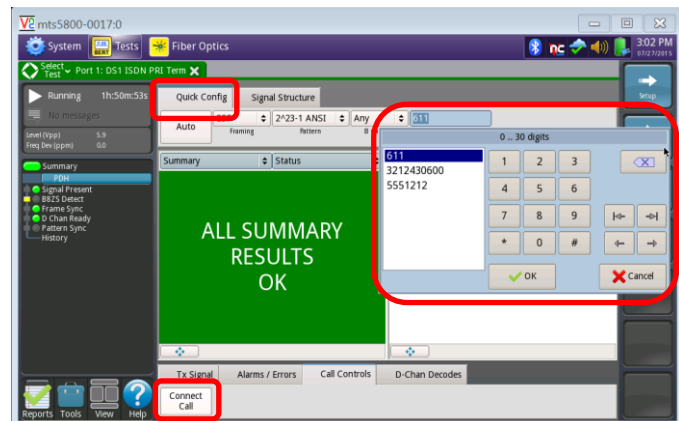
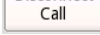


Figure 11: Call Plan Testing

8. In the T-BERD's **Actions Panel**, tap  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 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."