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
    - C5BT: Bluetooth option (for Bluetooth headset)
    - C5DUALPORT: Dual Port option
      (required on T-BERD 5800-100G only)
- 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)

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.
Connect Headset to the T-BERD:
You can use a VIAVI provided headset (Plantronics M114 or M210C) or your own Bluetooth headset. Recommended Bluetooth headsets include the Plantronics Voyager and Discovery series. Voice quality can vary greatly on Bluetooth devices.

1. Press the Power button to turn on the test set.
2. If you are using the Plantronics M114 or M210C wired headset, connect the headset to the headset jack on the side of the test set and proceed to page 3.
3. If you are using a Bluetooth headset, press the System icon in the top left corner of the screen.
4. Press the Bluetooth icon. Select (check) “Enable Bluetooth” and “Allow other devices to pair with this device”.
5. Place your Bluetooth headset in Pairing mode and tap Start Scanning.
6. Tap the headset name, when it appears in the list of “Discovered devices”.
7. Tap the headset name again, when it appears in the list of “Paired devices”.
8. Tap to activate the headset.
9. Press the System icon in the top left corner of the screen.
10. 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.
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.

3. In the Tools Panel select

4. Press to continue.

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.

<table>
<thead>
<tr>
<th>Folder</th>
<th>Option</th>
<th>Value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>Rx Input</td>
<td>Term</td>
</tr>
<tr>
<td></td>
<td>Line Code</td>
<td>If unknown, select “B8ZS”</td>
</tr>
<tr>
<td></td>
<td>LBO</td>
<td>0 dB</td>
</tr>
<tr>
<td>Framing</td>
<td>Framing</td>
<td>If unknown, select “ESF”</td>
</tr>
<tr>
<td>ISDN, General</td>
<td>Emulation</td>
<td>TE Emulation</td>
</tr>
<tr>
<td></td>
<td>Call Control</td>
<td>If unknown, select “NI-2 (National)”</td>
</tr>
<tr>
<td></td>
<td>Numbering Type</td>
<td>Auto</td>
</tr>
<tr>
<td></td>
<td>D Channel</td>
<td>24</td>
</tr>
<tr>
<td>ISDN, Call</td>
<td>Call Type</td>
<td>Voice</td>
</tr>
<tr>
<td></td>
<td>B Channel</td>
<td>Any</td>
</tr>
<tr>
<td></td>
<td>Calling Phone Number</td>
<td>Enter Billing Telephone Number for the PBX</td>
</tr>
<tr>
<td></td>
<td>Destination Phone Number</td>
<td>Enter your mobile phone number in the format required for your dialing area (usually 10-digit)</td>
</tr>
</tbody>
</table>
|                 | 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

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 **Answer** 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.
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.

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**Figure 9: Test Results Screen**

**Figure 10: Call Controls**

**Figure 11: 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.
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.
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.”