Installing the Dialogic® Brooktrout® Digital Board (Multiple Spans)

Part Number: 931-111-06

The Dialogic® Brooktrout® digital boards (formerly known as Dialogic® Brooktrout® TR1000 Series digital boards and also referred to herein as “board”) are telephony platforms for T1/E1 switch-based and packet network services. The Dialogic® Brooktrout® digital board provides a range of boards combining telephony and media that includes Dialogic® Brooktrout® TR1034 products that provide a platform for fax applications

You need a separate fax application to use the digital board. Please contact your application provider for the correct operating system driver, supporting files, and firmware.

Operating/Environmental Specifications

This device must be installed in an enclosure that meets the following electrical and mechanical requirements:

- Power requirements: 5A at 5 VDC = 25W maximum per PCI slot
- Temperature: 0°C - 50°C
- Operating humidity: 10% - 95% (noncondensing)
- Storage requirements: -40 to 100 degrees C ambient
- Supply voltages: interfaces to 5V from the PCI host backplane. Onboard DC-DC converters will generate all required onboard voltages at 5% regulation.
- MTBF (mean time between failures): >32,000 hours

Locating the Serial Number and MAC Address

You can find the board serial number (2 letters and 9 digits) and MAC address (00A08A and 6 more digits) on white labels on the back of the board.

Setting the Module Number (SW1)

You must set each board to a unique module number to identify the resources associated with a specific board in a multi-board system (to a maximum of 4 boards). SW1 (Figure 1) is a rotary switch (see location in Figure 2). Use it to set the module number for each board. The available settings are 2 - F (0 and 1 are reserved).

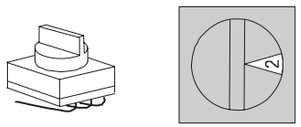

Figure 1. Rotary Switch - SW1

Using the H.100 Termination Switch

On a single board or on multiple boards installed in the same chassis, leave the H.100 Termination Switch in the OFF position. Multiple boards in the same system do not require a connecting H.100 cable.

The H.100 Termination Switch (see Figure 2 for location) controls termination for the H.100 clock signals. If you have the board and other boards that need to be connected using an H.100 cable (not supplied), you must terminate the H.100 clock signal. Only the boards at each end of the cable *must* be terminated. All other boards *must not* be terminated (see Figure 3).

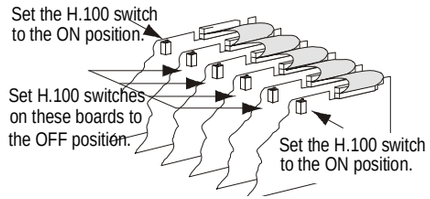

Figure 3. Setting Clock Termination in a Series of Boards Connected by an H.100 Bus

Set the switch to ON (slide towards the end of the board that contains the T1/E1 and Ethernet interface connectors) to terminate the H.100 clock on the board. The LED lights when the switch is set to the ON position. Slide the switch towards the back of the board to turn the switch to the OFF position.

Note: The H.100 Termination Switch LED is located on the opposite side of the board, behind the termination switch.

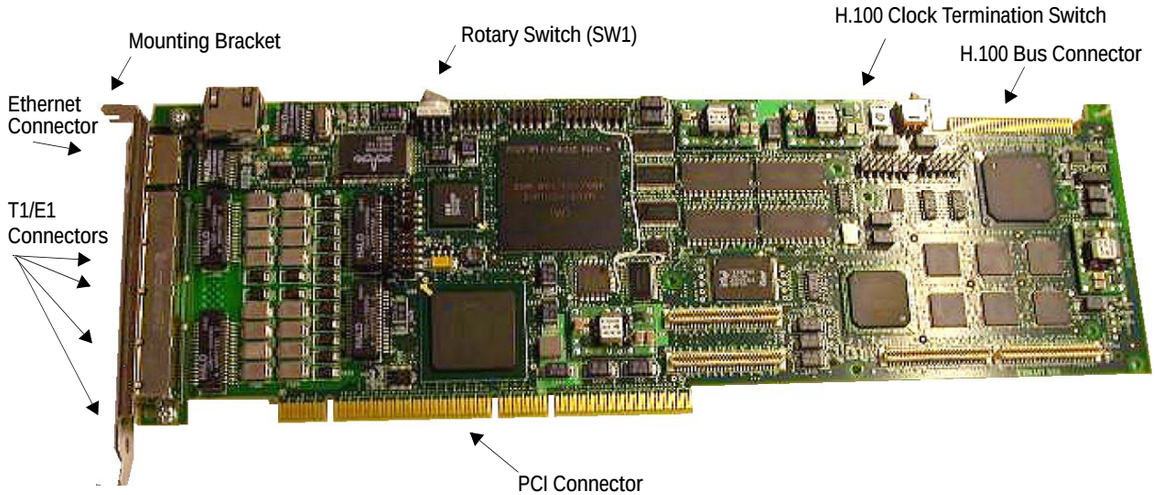

Figure 2. Dialogic® Brooktrout® Digital Board

Installing the Dialogic® Brooktrout® Digital Board

Read the product instructions for installing hardware and software before installing your board so that you install them in the proper order.

A small amount of static electricity can destroy the sensitive components on your board. To prevent static damage, always connect yourself to ground using a ground strap before touching a circuit board. Handle boards only by the edges or metal mounting brackets and transport boards in an anti-static bag.

To install the board:

1. Power off the computer.
2. Remove the computer cover. If the system has a board hold-down bar, remove that as well.
3. Locate an unused PCI expansion slot and remove the blank bracket.
4. Holding the board at each top corner, insert the board firmly into the PCI slot.
5. Screw the board’s mounting bracket securely to the computer's frame. See Figure 2.
6. Attach the connector on the H.100 cable to the connector on the board, if needed.
7. Replace the computer cover.
8. Turn on the computer.

   The board status LED (see Figure 5) continuously flashes yellow when you turn the computer on.

When installing the board, be sure that the mounting bracket is securely fastened to the chassis and the chassis is plugged into a grounded three prong plug. Improper chassis or bracket grounding can result in harmful or fatal electrical shock as well as component damage.

Note: Dialogic® Brooktrout® Digital boards should not be present in the computer during the installation of any operating system. The operating system can misinterpret the board as being some other device, with unpredictable consequences.

Recognizing PCI Slots

The board is compliant with the following:

- 32/64 bit, 33 MHz/66 MHz, PCI-SIG 2.3 chassis
- PCI-X chassis up to 66 MHz

The PCI connectors in the computer chassis usually appear as white slots. The different variations of PCI connectors that can be used with the board are shown in Figure 4. The board can be inserted into any of the PCI slots shown in Figure 4.

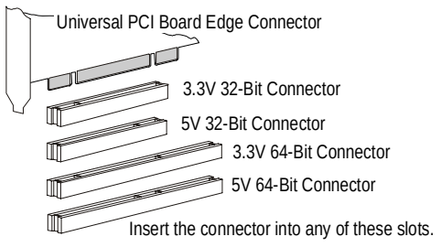

Figure 4. PCI Slots

Connecting to the Telephone Service

An RJ-48C telephone jack on the board mounting bracket (see Figure 5) provides the connection to the T1/E1 service.

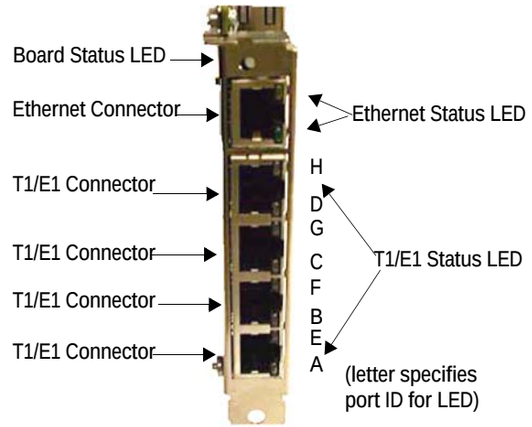

Figure 5. Front View of Mounting Bracket

The board, when used with a T1/E1 line, is approved as a DSX-1 device and must be connected to the telecommunications network through a PBX or CSU.

Do not connect the Ethernet cable into the T1/E1 connector, or vice versa. It can cause serious damage to the board.

Pinouts for the T1/E1 Connector

RJ-48C connectors provide T1/E1 data paths to and from the board. For an eight span board, the connector pins are configured as shown in Figure 6.

The eight spans are paired up on the four RJ-48C connectors located on the front panel as follows: A-E (example pin-out given below), B-F, C-G, D-H (bottom to top). See Figure 5 for more information.

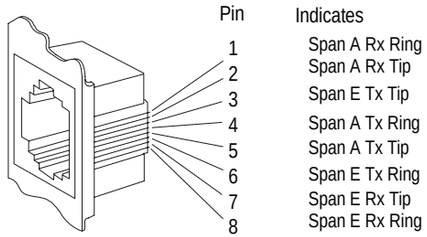

Figure 6. T1/E1 RJ48C Pinouts

Ethernet Specifications

- Media: 10BASE-T/100BASE-TX
- Connector: RJ-45 (Pin 1=TD+, Pin 2=TD-, Pin 3=RD+, Pin 6=RD-)
- Cabling: Category 5 UTP up to 100m (328 feet)

Status Indicators

Ethernet Status LEDs

The Ethernet interface LEDs are located on the mounting bracket Ethernet connector (see Figure 5).

Ethernet Status LEDs	Indicates
Activity (Flashing yellow)	Activity on Ethernet.
Link (Steady Green)	Link is established.

Note: The Ethernet Status LEDs do not indicate interface state until a base image is downloaded.

After diags complete (but NOT while diags are running), the Ethernet Status LEDs match the state of the Board Status LED, as indicated below.

Dialogic® Brooktrout® Digital Board Status LED

After you have uploaded an operational image (cp.bin), the Board Status LED (see Figure 5) indicates the overall status of the board:

Board Status LED	Indicates
Off	Board has no power.
Flashing yellow	Board has successfully powered up and is ready to load firmware.
Steady red	Board has failed power up tests.
Flashing yellow and green	Application is downloading firmware to the board.
Flashing green	Firmware is downloaded and the board is in service.

Before you upload an operational image (cp.bin):

Board Status LED	Indicates
Toggling Green/Yellow every 1.5 secs:	A diag image (diag<x>.bin) has been downloaded successfully and is ready
Toggling Green/Off every 1/2 sec:	Diags are running, without detecting failures
Toggling Green/Red 1/2 sec:	Diags are running and have detected one or more failures
Toggling Green/Yellow every 1/2 sec:	Diags are running and looping on failure
Flashing Red/Off every 1/2 sec:	Diags are complete with one or more failures detected
Solid Green:	Diags are complete without a failure

T1/E1 Status LED

The T1/E1 Status LEDs on the front panel connectors (see Figure 5 for location) represent the T1/E1 service status as shown:

T1/E1 Status LED	Indicates
Off	The software has not yet initialized the board with the telephony configuration.
Green	Normal error-free operation; layer 1 is up.
Red	Red alarm (loss of incoming network signal).
Yellow	Yellow alarm (transmitting alarm – board is failing to synchronize with incoming signal).

There are a total of 8 LEDs. If your board supports 4 spans, each LED on a connector represents the span. If your board supports 8 spans, the spans are represented in the following pairings: A-E, B-F, C-G, D-H where A-E is the LED set on the bottom connector.

Getting Help

Dialogic provides technical support for customers who have purchased hardware or software products from Dialogic. If you purchased products from a reseller, please contact that reseller for technical support. This equipment contains no user serviceable parts and is not intended for repair by unauthorized personnel. If you experience problems with the Dialogic® Brooktrout® digital board, for repair or warranty information, please refer to www.dialogic.com/support/ If the equipment is causing harm to the telephone network, the telephone company might request that you disconnect the equipment until the problem is resolved.

Returning a Product

To return a board for warranty repair or other returns, please refer to www.dialogic.com/warranties/

Sales Assistance

If you have a sales question, please contact your local Sales Representative or the Regional Sales Office for your area. Address, telephone, and fax numbers are available at the Dialogic website www.dialogic.com/contact/.

To purchase Dialogic® products, please refer to the following website www.dialogic.com/purchase/