Installing the Dialogic® Brooktrout® TR1034 T1/E1/IP PCI Express Fax Board (Single Span)

Part Number: 931-153-05

The Dialogic® Brooktrout®TR1034 T1/E1/IP combination PCI Express boards ("TR1034" or "TR1034 Fax Board(s)") are full-sized, single slot, PCI Express serial I/O bus-compatible boards with T1/E1, Ethernet, and H.100 capabilities. The TR1034 delivers 33.6 Kbps (V.34) fax transmission speeds, up to 30 fax channels per board, and an on-board T1/E1 interface (see Figure 6). The TR1034 includes an Ethernet connector for T.38 Fax over IP and an H.100 connector to access off-board resources.

The TR1034 T1/E1/IP PCI Express boards use 3.3V and 12.0V power from the serial bus and can be inserted in x4, x8, or x16 bus (signaling) slots.

You need a separate fax application to use the TR1034 Fax Board. Please contact your application provider (normally a third party vendor) for the correct operating system driver, supporting files, and firmware.

System Requirements

This board must be installed in an enclosure that meets the following specifications.

- A Pentium 4 or later host processor
- A PCI Express serial I/O bus slot that is at least x4 wide. See ***Recognizing PCI Express Slots*** for more information.
- Temperature: 0°C - 50°C
- Humidity: 10% - 90% (noncondensing)
- Power requirements:

  3 W at 3.3 VDC

  5 W at 12.0 VDC

  8 W total power

Setting the Module Number

You must set each TR1034 Fax Board to a unique module number to identify the resources associated with a specific board in a multi-board system. Use the rotary switch (Figure 1) to set the module number for each TR1034 Fax Board (see location in Figure 4). The available settings are 2 - F (0 and 1 are reserved).

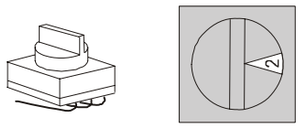

Figure 1 Rotary Switch

Using the H.100 Clock Termination Switch

On a single TR1034 or on multiple TR1034 Fax Boards installed in the same chassis, leave the H.100 clock termination switch (Figure 4) in the OFF position. Multiple TR1034 Fax Boards in the same system do not require the use of a connecting H.100 cable.

If you have a TR1034 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 2).

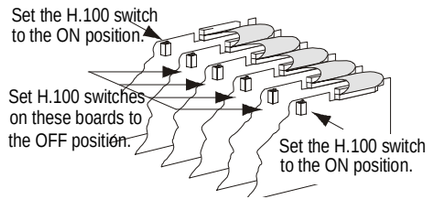

Figure 2 Setting Clock Termination in a Series of Boards Connected by an H.100 Bus

An H.100 termination switch (see Figure 3) controls termination for the H.100 clock signals. Set the switch to ON to terminate the H.100 clock on a TR1034 Fax Board (see Figure 4 for the location of the switch on the board).

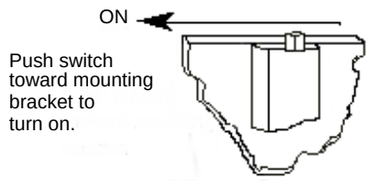

Figure 3 H.100 Clock Termination Switch

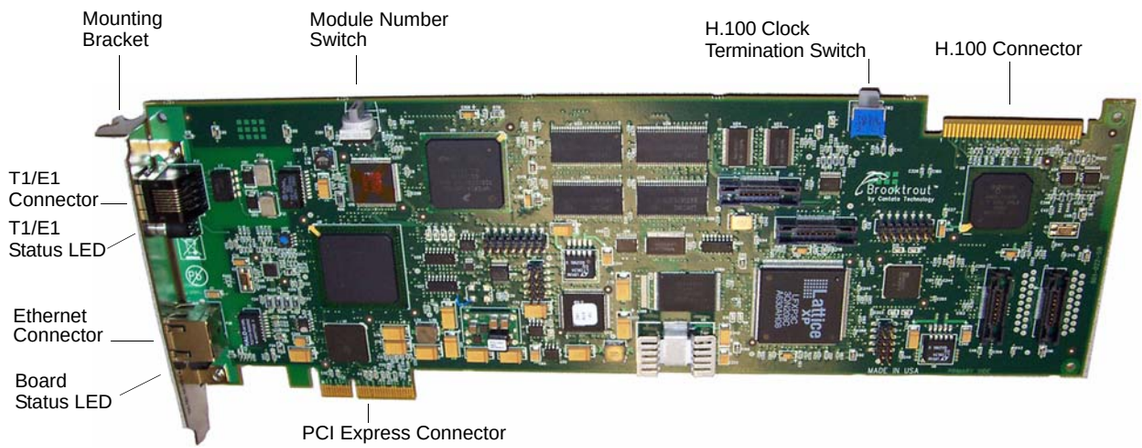

Figure 4 Dialogic® Brooktrout® TR1034 T1/E1/IP/Ethernet PCI Express Fax Board

Safety Compliance Statements

- Install this board only in UL Listed equipment that has instructions stating that the user may install and remove accessory boards.
- Disconnect any TNV circuit connectors (telephone line cords) from this board before removing the cover of the equipment.

Installing the Dialogic® Brooktrout® TR1034 Fax Board

Caution: 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 it as well.
3. Locate an unused PCI Express bus slot (see Figure 5).
4. Holding the TR1034 Fax Board at each top corner, insert the board firmly into the PCI Express slot.
5. Screw the board's mounting bracket securely to the computer's frame. See Figure 4.
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 4) continuously flashes yellow when you turn the computer on.

Warning: 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® Fax 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 Express Slots

The PCI Express slots in the computer chassis appear as black slots. Figure 5 shows the different variations of PCI Express slots. You can insert the Dialogic® Brooktrout® TR1034 Fax Board into any of the PCI Express slots shown in Figure 5.

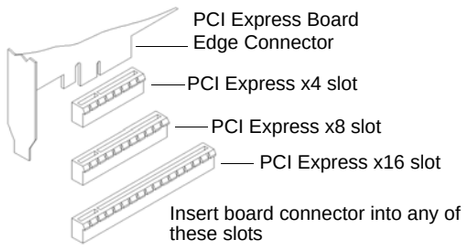

Figure 5 PCI Express Serial Bus Slots

Connecting to the Telephone Service

An RJ-48C telephone jack on the board mounting bracket (see Figure 6) provides the connection to the T1/E1 service.

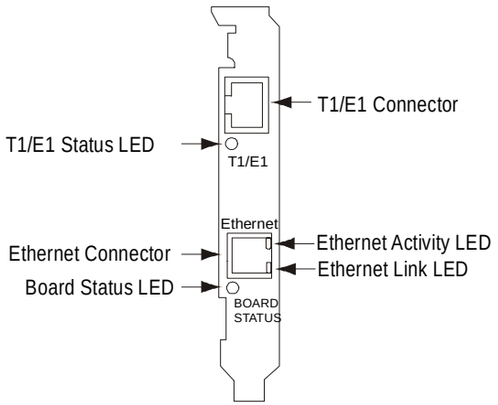

Figure 6 Front View of Mounting Bracket

The TR1034 Fax 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.

Warning: 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

Pins 1, 2, 4, and 5 on the RJ-48C telephone jack provide T1/E1 data paths to and from the board. The connector pins are configured as shown in the table below and in (Figure 7).

Signal Name	RJ-48C Pin
Transmit (TX) Tip	5
Transmit (TX) Ring	4
Receive (RX) Tip	2
Receive (RX) Ring	1

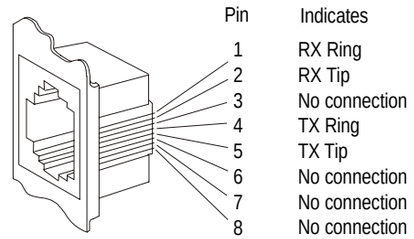

Figure 7 T1/E1 RJ-48C Pinouts

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 6).

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

Dialogic® Brooktrout® Fax Board Status LED

The Board Status LED on the mounting bracket (see Figure 6) indicates the overall status of the TR1034 Fax Board:

Board Status LED	Indicates
Off	Board has no power.
Flashing yellow	Board powered up and ready to load firmware.
Steady red	Board powered up, but failed tests.
Flashing yellow and green	Board is downloading firmware.
Flashing green	Firmware is downloaded and the board is ready for use.

T1/E1 Status LED

The T1/E1 Status LED on the bracket (Figure 6) represents 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).
Green with flashing red	Clocking error, bipolar violation, cyclic redundancy error, or other error.

Using the Dialogic® Brooktrout® TR1034 Fax Board

Once you have installed the TR1034 Fax Board, install and configure your fax software application according to instructions included with the software. After you have set up your software to support the TR1034 Fax Board, you can send and receive faxes.

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.

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 the equipment is causing harm to the telephone network, the telephone company might request that you disconnect the equipment until the problem is resolved.

To obtain technical support, please use the website: www.dialogic.com/support