Dialogic®

Dialogic® DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ Digital Network Interface Boards

Installation Guide

1. Product Description

The Dialogic® DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ Digital Network Interface Boards ("DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ" or "boards") are high-density, high-performance, network interface boards with one, two, or four T1/E1 digital network interfaces in a full-length PCI Express form factor.

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ include the following components, shown in the Physical Layout illustration:

RJ-48C jacks: Connectors to T1 or E1 trunks. (The DNI310TEPEHMPQ has a jack for trunk 1 only, and the DNI610TEPEHMPQ has jacks for trunks 1 and 2 only. The DNI1210TEPEHMPQ has jacks for trunks 1-4.)
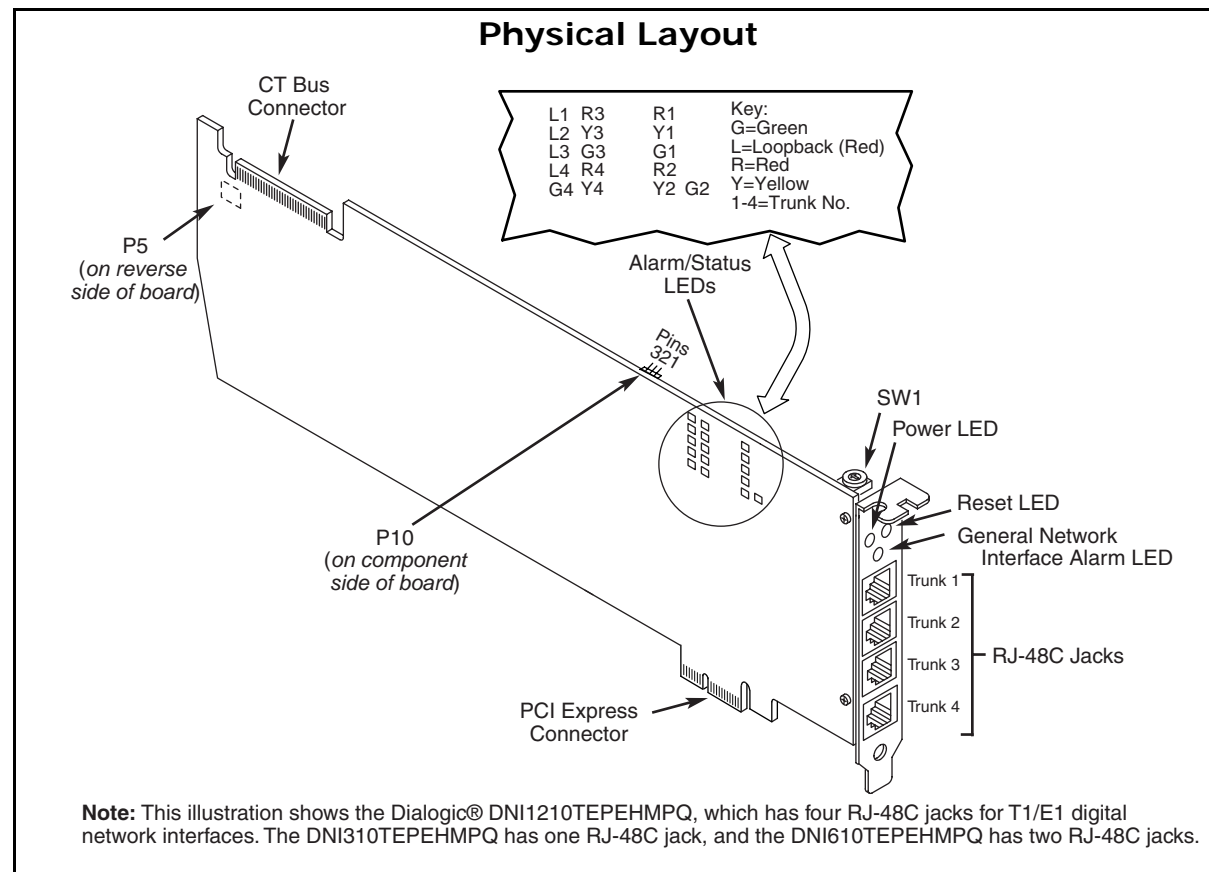
General network interface alarm LED: When lit (yellow), indicates that an alarm condition is present on one or more of the trunks. When unlit, alarm conditions are cleared.

Reset LED: When lit (red), indicates that the board is in the reset state. When unlit, the board is no longer in the reset state.

Power LED: When lit (green), indicates that board power is good. When unlit, either power has not been applied to the board, or the board has detected that one or more of the on-board-generated voltages are not correct.

SW1: Rotary switch used when setting board ID.

Alarm/status LEDs: A set of four LEDs for each trunk. Refer to the Physical Layout illustration for LED arrangement. (The DNI310TEPEHMPQ has the LEDs for trunk 1 only, and the DNI610TEPEHMPQ has the LEDs for trunks 1 and

Part number: 64-0303-01

Physical Layout

Key:
G=Green
L=Loopback (Red)
R=Red
Y=Yellow
1-4=Trunk No.

L1 R3 R1
L2 Y3 Y1
L3 G3 G1
L4 R4 R2
G4 Y4 Y2 G2

CT Bus Connector

P5 (*on reverse side of board*)

Pins 321

Alarm/Status LEDs

SW1

Power LED

Reset LED

General Network Interface Alarm LED

Trunk 1
Trunk 2
Trunk 3
Trunk 4

RJ-48C Jacks

P10 (*on component side of board*)

PCI Express Connector

Note: This illustration shows the Dialogic® DNI1210TEPEHMPQ, which has four RJ-48C jacks for T1/E1 digital network interfaces. The DNI310TEPEHMPQ has one RJ-48C jack, and the DNI610TEPEHMPQ has two RJ-48C jacks.

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2 only. The DNI1210TEPEHMPQ has LEDs for trunks 1-4.)

During power-up, the LEDs indicate Power-On Self Test (POST) status. After the board is started, the green, yellow, and red LEDs indicate normal operation or Carrier Failure Alarms (CFAs) for each trunk, as shown in the following table. The Loopback LED indicates when the respective trunk is in loopback mode.

Green	Yellow	Red	Indicated Condition
ON	OFF	OFF	Normal operation
OFF	OFF	ON	Loss of Signal (LOS)
ON	OFF	ON	Red Alarm
ON	ON	OFF	Yellow Alarm/Remote Alarm Indicator (RAI)
ON	ON	ON	Alarm Indicator Signal (AIS)

Power budgeting jumper P10: 3-pin jumper to set how the board responds to the system power budgeting function.

- P10 jumper in pins 2-3: Board adheres to power budgeting values set by system.

- P10 jumper in pins 1-2: Board ignores power budgeting values set by system.
Factory default is P10 jumper in pins 2-3.

CT Bus connector: H.100 computer telephony bus connector.

P5: CT Bus termination jumper block. Only the boards in the end positions of a CT Bus cable should be terminated. Factory default is unterminated (clip installed over one pin only).

PCI Express connector: Host bus connector. Compatible with x1 or larger PCI Express Link connectors.

Additional Information

Additional information about the DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ is available from a number of sources, such as via the product data sheet, which is accessible at http://www.dialogic.com/products. The product data sheet provides a functional description of the DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ, as well as information about their applications,

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configurations, features, and technical specifications.

Refer to the Release Guide and the online Release Update for your Dialogic® Software release to verify that the DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ are supported in the release, and for information on any new features or issues that may relate to them.

The Regulatory Notices document that is packed with each DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ contains safety warnings and national requirements for proper operation of telecommunications equipment.

2. Before You Begin

Protecting the Board from Damage

CAUTION: All computer boards are sensitive to electrostatic discharge ("ESD"). Handle all static-sensitive boards and components at a static-safe work area, and observe anti-static precautions at all times.

If you are not familiar with ESD safety precautions, visit http://www.dialogic.com/support/hwinstall to learn more.

Unpacking the Board

Unpack the board according to the following steps:
1. Prepare a static-safeguarded work area.
2. Carefully remove the board from the shipping carton and anti-static packaging. Handle the board by the edges and avoid touching the board's components.
3. Lay the board on the static-dissipative work surface.

Note: Place board in static-shielding bag when carrying board from station to station.

CAUTION: Do not remove the board from the anti-static packaging until you are ready to install it. Observe proper anti-static precautions at all times.

3. Configuring the Board

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ use Plug and Play technology to simplify installation. No user configuration is required for IRQ or memory address.

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ have the following manually configurable options:

- Board ID
- CT Bus termination
- Power budgeting (see Choosing a Slot section below)

Setting the Board ID

When the system is started, each Dialogic® board is assigned a board instance ID number that

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programs can use to identify individual boards in a multi-board system. The setting of SW1 controls the generation of the instance numbers.

Windows Systems: In a Windows system, leave SW1 set to the "0" position (the factory default setting) on all Dialogic® boards. This setting causes the system software to assign instance numbers geographically, based on the bus and slot numbers. Note that there is no way to know what the instance numbers will be until the system is started and configured, and the instance number for any given board is likely to change when there is any change in the number or arrangement of boards in the system. You can read the ID numbers assigned to the boards in the Dialogic® Configuration Manager (DCM) tool after you start the system.

Linux Systems: In a Linux system, you must explicitly specify the board ID numbers by setting SW1 on each board to a different position (0-9 or A-F). Refer to the Configuration Guide for DM3 architecture products in your Dialogic® Software documentation for further information about the board ID numbers.

Setting CT Bus Termination

If you are connecting multiple boards via a CT Bus cable, the bus signal should be terminated on the boards that are located at the ends of the CT Bus cable. All other boards should be left in their factory default configuration with the CT Bus termination pins not linked.

To terminate the CT Bus, install a link clip over the pair of P5 pins indicated in the following figure.

CT Bus Connector

CT Bus Termination Pins
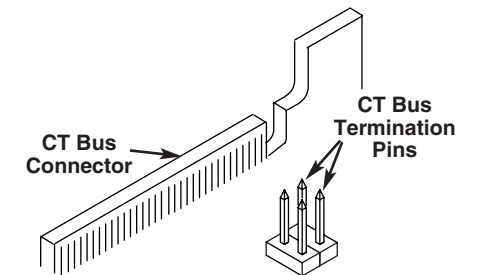
4. Choosing a Slot

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ are full length x1 form factor PCI Express boards that require 16W of power. The following explanation and guidelines are provided for configuration of the product.

Power Budgeting is a new feature, introduced in the PCI Express Specification, that provides a mechanism to enable a system to negotiate power consumption requirements for add-in devices.

Per PCI Express Card Electromechanical Specification Revision 1.0a or higher, a x1 add-in card can draw no more than 10W in a x1 slot unless the board's required power is successfully negotiated and allocated by the system (power

budgeting). However, implementation of power budgeting by a vendor's system is not a compliance requirement per the PCI Express Card Electromechanical Specification Revision 1.0a or higher. Therefore, some chassis may not support this feature. Power Budgeting jumper P10 is designed to ensure proper configuration of the product.

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ must be installed in a slot that can be allocated 16W of power.

If Power Budgeting is **not** implemented by a vendor's system, the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ **must** be plugged into a x4 or higher slot with the P10 jumper in position 1-2 (power budgeting ignored). This is allowed per PCI Express Card Electromechanical Specification Revision 1.0a or higher because a x4 or greater slot must be able to support a minimum of 25W of power.

If Power Budgeting is implemented by a vendor's system, the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ **can** be plugged into a x1 slot but the P10 jumper must be in position pins 2-3 (power budgeting adhered to).

WARNING! Installing the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ in a x1 slot with the P10 jumper in position 1-2 will void the warranty of the board.

If the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ will be connected to other boards via a CT Bus cable, you should install the boards to minimize unused connectors on the CT Bus cable (in addition to ensuring that the power requirements are met):

■ Install boards in adjacent slots whenever possible.

■ If the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ will be connected to one or more PCI boards, use the PCI Express slot(s) located closest to the PCI slots.

5. Installing the Board

WARNING! Unplug the equipment before performing the procedures described here. Failure to disconnect the power before you open the chassis can result in personal injury. Ensure that the system is disconnected from its power source and from all telecommunications links, networks, or modem lines whenever the chassis cover is removed. Do not operate the system with the cover removed.
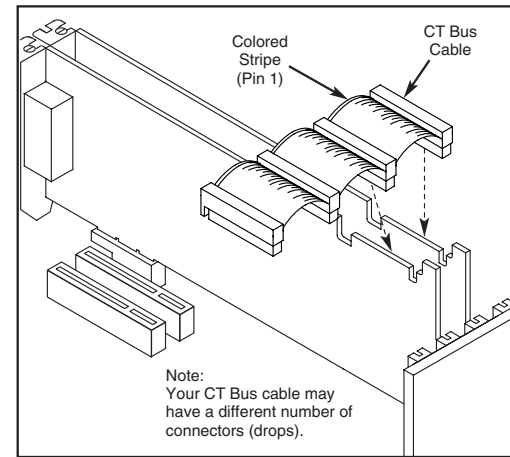
CAUTION: To avoid possible damage to the board, remove power from the computer before beginning installation. Observe proper anti-static precautions at all times while handling and installing the board.

To install the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ, perform the following steps:

1. Turn off all power to the system and disconnect the system's power cords.
2. Remove the computer's cover.
3. Choose an empty PCI Express expansion slot and remove that slot's retaining screw and access cover plate.
4. Insert the board's edge connector into the bus slot, and apply firm pressure to the top edge of the board until the board is fully seated in the edge connector.
5. Reinstall the retaining screw.
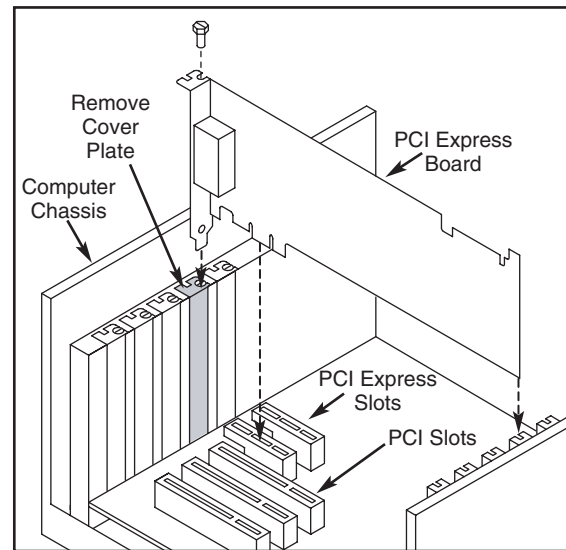
6. Repeat Step 3 through Step 5 for any additional boards you are installing.
7. If applicable, connect the boards together with a CT Bus cable of the appropriate size (not included). If possible, use a cable assembly that matches the total number of boards in your system. If the cable has more than one unused connector, install the cable so that all the unused connectors are at one end of the cable.

7. After Installing the Board

The DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ require the use of a Dialogic® Software version that specifically supports them.

If this is the first Dialogic® board you have installed in your system, you will need to install an appropriate version of the Dialogic® Software and configure the software for the specific board(s) you are using. Refer to the installation and configuration documentation that accompanies the release for instructions.

If you are installing the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ in a system that already has the Dialogic® Software installed, you should verify that your installed

Note:
Your CT Bus cable may have a different number of connectors (drops).
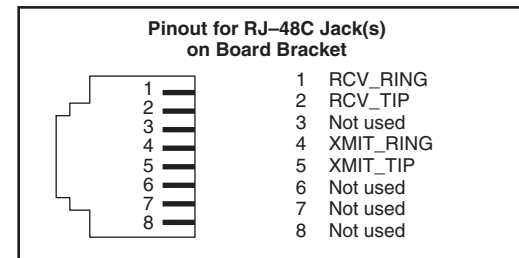
8. Replace the computer's cover.
9. Reconnect the computer's power cord.

6. Connecting to External Equipment

Each RJ-48C jack on the DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ supports a T1 or E1 digital network interface. Use an appropriate cable to connect each RJ-48C jack to a CSU or other network termination equipment.

The following figure illustrates the pinouts of the RJ-48C jack.

Pinout for RJ–48C Jack(s) on Board Bracket	
1	1 RCV_RING
2	2 RCV_TIP
3	3 Not used
4	4 XMIT_RING
5	5 XMIT_TIP
6	6 Not used
7	7 Not used
8	8 Not used

software version supports the board. If not, you will need to obtain and install a Service Update that does support the DNI310TEPEHMPQ, DNI610TEPEHMPQ, and DNI1210TEPEHMPQ before configuring the system for the newly installed board(s).

Please refer to the Release Update document for your release version (on the Dialogic Telecom Support Resources web page) for up-to-date information about support for PCI Express boards and any known issues relating to their use.

For technical specifications and product information go to: http://www.dialogic.com/products.htm.

8. Removing the Board

Removal of the DNI310TEPEHMPQ, DNI610TEPEHMPQ, or DNI1210TEPEHMPQ is essentially the reverse of the installation procedure, as summarized in Step 1 through Step 7 below:

1. Observe anti-static precautions.
2. Disconnect the telephony cables.
3. Remove the computer's power cord.
4. Remove the computer's cover.
5. Disconnect the CT Bus cable (if applicable).
6. Remove and set aside the board's retaining screw.
7. Remove the board and place it in static-protective packaging.

9. Warranty and Return Information

Warranty Period

For specific warranty information for this board, refer to the Warranty section of the Products page, located at this URL: http://www.dialogic.com/warranties/.

Contacting Technical Support

Dialogic provides technical support for its products through a network of value added distributors who are trained to answer technical questions on installing and configuring Dialogic® products. If you are unsure how to contact your support channel, please call Dialogic in the United States at 973-967-6600 (9am-5pm EST) and we will assist in obtaining the appropriate support channel.

Outside the United States please refer to http://www.dialogic.com/support/contact to obtain local contact information. Dialogic also provides direct support via Dialogic® Pro™ Services agreements. For more details of direct support from Dialogic please refer to: http://www.dialogic.com/support/DialogicPro

Returning a Product

To return a board for warranty repair or any other returns, please refer to the following: http://www.dialogic.com/support/hwfaults.

10. 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 located at: http://www.dialogic.com/contact.htm.

To purchase Dialogic® products, please refer to the following website to locate the appropriate supplier: http://www.dialogic.com/purchase.htm.