

PCI-62C QUICK INSTALLATION GUIDE

1.0) Connecting the PCI 62C to the PC Backplane

Requirements:

- a) Any PCI Based Computer
- b) Philips Screw Driver (or one to match screw on the computer cabinet and bracket)

Procedure:

- a) Switch off the computer and all attached devices
- b) Unplug power cord from the computer and all attached devices.

+ **Warning**

Failure to disconnect all power cables can result in hazardous conditions, as there may be dangerous voltage levels present in externally connected cables.

- c) Remove the top cover from the PC. If you are not sure how to do this, consult the manual supplied with the system unit.
- d) Choose any PCI expansion slot and remove the screw from the metal bracket fixed corresponding to the chosen slot.
- e) If you are using the Digital I/O lines or the PCI-62C-32 (32 channel version) or the PCI-62C-48 (48 channel version) then you must insert the Ribbon Cables into the appropriate IDC40 Headers.
- f) Align the gold plated edge connector with the edge socket and the rear adaptor slot with the board bracket. Firmly press the board down into the socket on the computer's system board. Ensure that the board's edge connector is in the socket and has not slipped sideways past the socket.
- g) Move the Ribbon Cables [for Digital I/O; Channels 16-31 or Channels 32-47 if you are using them as well] thru another empty slot on the computer.
- h) Replace the screw on the bracket and tighten the screw to the back panel.
- i) Replace the computer's cover. Plug in all cables and switch the computer power on. The PCI-62C is now installed.

2.1) PCI 62C DB37 User Connector (P1)

The PCI 62C optically isolated input channels 0 to 15 interfaces to the external world via a D-Type 37 way female connector.

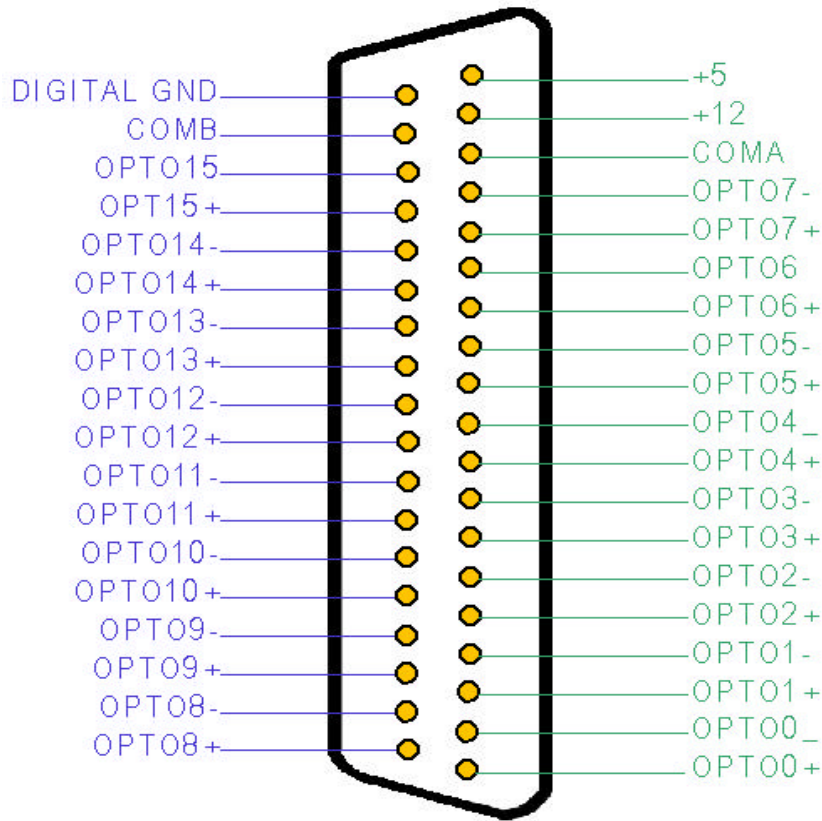


Figure 2.1: PCI 62C DB37RF Interface Connector (as seen from the rear of the PC)

2.2) Optically Isolated Input Channels 16 to 31 IDC40 User Connector (H5)

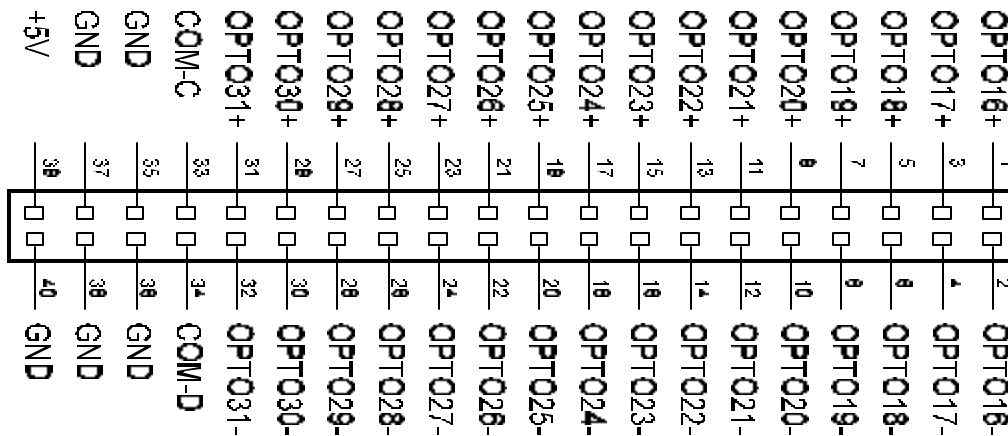


Figure 2.2: Channels 16 to 31 User Connector (Component View on PCI-62C Card)

2.3) Optically Isolated Input Channels 32 to 47 IDC40 User Connector (H7)

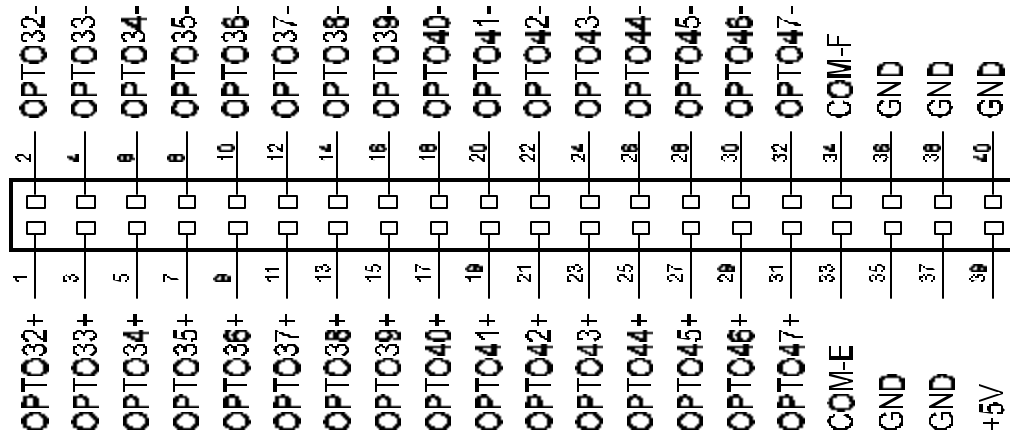


Figure 2.3: Channels 32 to 47 User Connector (Component View on PCI-62C Card)

2.4) The Digital I/O IDC40 Connector (JP2)

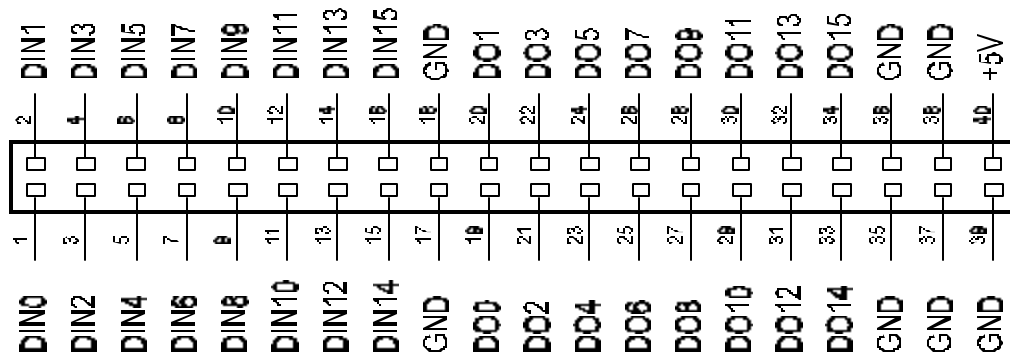
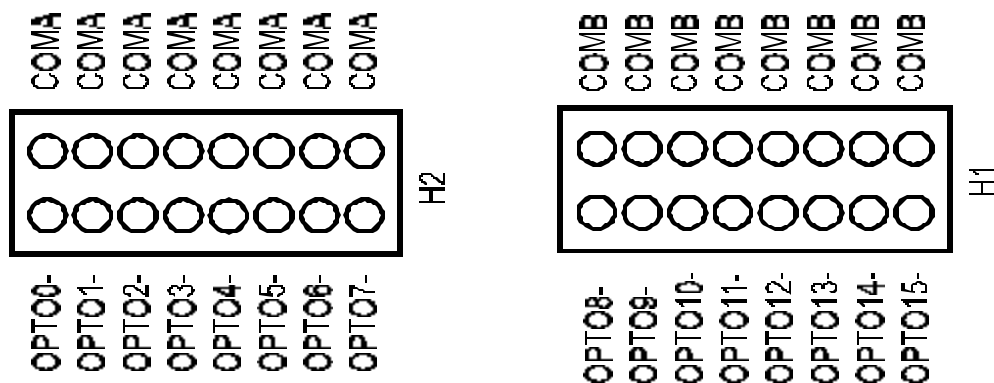


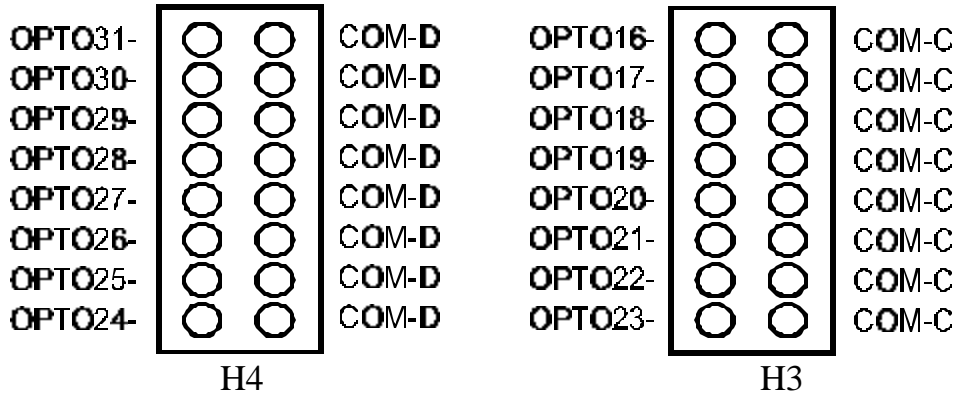
Figure 2.4a: Digital I/O Connector (Component View on PCI-62C Card)

2.5) Common Line Connectors for Opto Isolators 0 to 7 [H2] and 8 to 15 [H1]



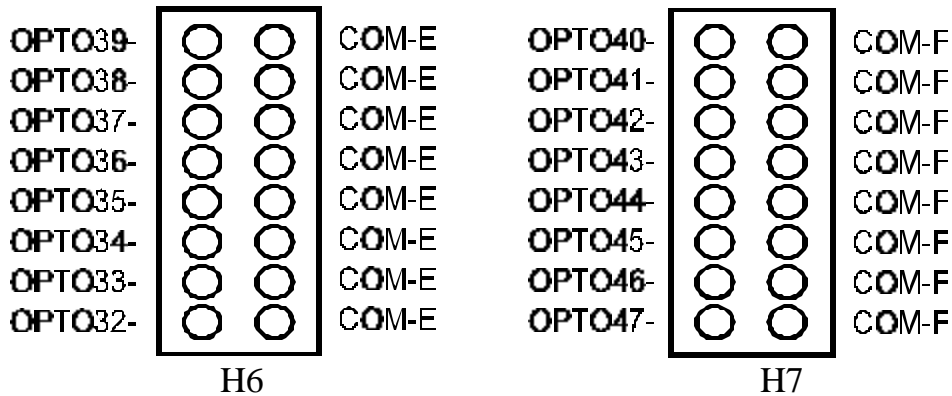
All the negative lines of the Opto-Isolators can be commoned by installing the jumper on the appropriate opto isolator channel. The Common Line [ie: COM -A and COM -B] are routed to the DB37 Connector. You can connect these pins [ie: COM-A and COM-B] to Digital Ground if you wish.

2.6) Common Line Connectors for Opto Isolators 16 to 23 [H3] and 24 to 31 [H4]



All the negative lines of the Opto-Isolators Channels 16 thru 23 can be commoned by installing the jumper on the appropriate opto isolator channel. The Common Lines [ie: COM -C and COM -D] are routed to the IDC40 Header H5. You can connect these pins [COM -C and COM -D] to Digital Ground if you wish.

2.7) Common Line Connectors for Opto Isolators 32 to 39 [H6] and 40 to 47 [H7]



All the negative lines of the Opto-Isolators Channels 32 thru 47 [in blocks of 8] can be commoned by installing the jumper on the appropriate Opto Isolator channel. The Common Lines [ie: COM -E and COM -F] are routed to the IDC40 Header H8. You can connect these pins [COM -E and COM -F] to Digital Ground if you wish.

3) Testing the PCI 62C

Before attempting to interface the PCI 62C with your application, it is essential that you test the board first. This is done using the following procedure:

3.1) Testing the PCI 62C Board

- a) Install the PCI-62C hardware as explained in Sections 1.0; 2.5; 2.6; and 2.7.
- b) Switch the Computer on and boot from an OS [DOS, Win '95/98 or NT] of your choice.
- b) Insert the EDR CD and run Setup under Win '95/98 or NT in order to install the all the files.
- c) For Windows NT: Run Install.bat in EDRE\WinNT\PCIXX\ directory.
 Copy edrapi.dll and edrecfg.cpl from EDRE\UTILS\ to
 WINNT\SYSTEM32.
- d) Reboot Computer
- e) Test card by running the **EAGLEDAQ control panel applet**
- f) Run the DIO Example in the EDR\EXAMPLES\ SubDir.
- g) Feed any voltage on the optically isolated input lines up to a maximum of 24V [0 to 2.9V: Low and 3.1V to 24V: Logical High]. Check if the software registers the level shifts that matches the inputs.
- h) If you intend using the Digital I/O: Apply a voltage (TTL only) to the digital inputs. Note that you must ground all unused digital input channels.
- i) As for the Digital Outputs: Write a logical Low or High to these lines and check (using a logic Probe or Multimeter) whether the output lines matched the levels of those written.

The PCI-62C is now ready for use.

4.1) EDR Enhanced Functions for PCI62C

Function List:

EDRE_GetAPIInfo	-Supply information about the EDRE API
EDRE_GetBoardInfo	-Supply information about a specific board that is installed
EDRE_GetSerialNo	-Return a specific device's serial number
EDRE_WaitOnInterrupt	-Hangs a thread until an interrupt event is received
EDRE_ReleaseInterrupt	-Releases an interrupt thread pre-maturely
EDRE_DioWrite	-Write to a Digital Port
EDRE_DioRead	-Read from a Digital Port
EDRE_StrBoardType	-Return a specific devices name
EDRE_StrError	-Convert an error code into a string

A detailed installation procedure is given in the EDR Enhanced Software Manual.