Hardware Installation Guide

ACQ216CPCI

16 Channel High Speed Data Acquisition PCI Card

1 Installation Notes

The ACQ216CPCI Card is a complex multilayer, Compact PCI Card. Special care should be taken in handling. The card is susceptible to damage by ESD and improper power connections.

1.1 Ensure ESD precautions are taken before opening card from packaging.

1.2 This card only fits in 6U CPCI Backplane Systems. It requires that J3 and J5 connectors be fitted to backplane.

1.3 If a Rear Transition Module RTM is fitted, ensure that it is ACQ2xx compatible. Connection to third party RTM may cause expensive damage to your board. Please note that ACQ32, ACQ1xx RTM modules are not compatible with ACQ2xx.

1.4 Ensure proper ESD precautions are taken during installation.

2 CPCI Slot Selection

The ACQ216CPCI can be used in either a System Slot or in a conventional Peripheral Slot

If the ACQ216CPCI is the only card to be used in the Chassis it must be plugged into the System Slot.

Compact PCI convention has the System Slot marked with a triangle and Peripheral Slots are marked with a circle.

3 Connectors

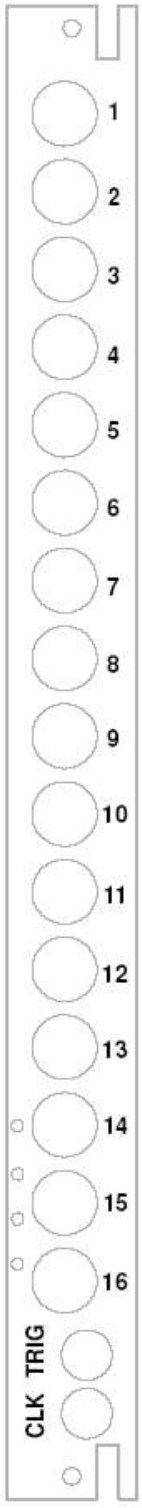
It is common practice for customers to manufacture their own cables and termination units, to fit in with their own sensor requirements. The following sections explains each connector configuration.

D-TACQ Solutions supply a standard range of cable and termination accessories, and can also produce custom solutions.

4 Further Information

For initial boot configuration and trouble shooting refer to the 2G Software User Guide

4.1 Front panel Layout



View of Front Panel as viewed in a vertical chassis

4.2 Analog Input Connector on Front Panel for Channels 1 to 16

Located on the front of the panel these consists of 16 2 pin Lemo Connectors (type EPL.0S.302.HLN) for analog input signals. This has a half-moon insert with a male and female pin. Positive side of differential signal is connected to male pin on lemo panel. This will reverse for connectors on cables.

4.3 Front Panel External Clock and Trigger Connectors

Located on the front of the panel these consists of 2 single pin Lemo Connectors (type EPL.00.250.NTN). The input signal is to a high speed opto-coupler type HCPL-2430 (Agilent) the pin is the LED drive and the shell is the return signal.

The Trigger and Clock signal Opto-Coupler is design to receive signals up to a frequency of 20MHz.

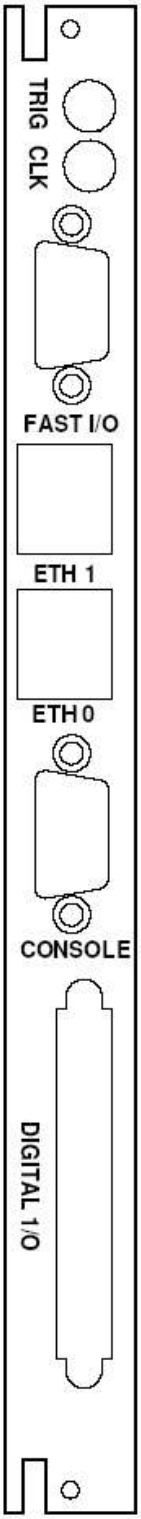
For analog and digital input signals please refer to LEMO catalogue or website (www.lemo.com).

5 Rear Transition Panel for ACQ216CPCI

The ACQ216CPCI normally requires a Rear transition Module for operation. There is currently 1 version available :-

ACQ216CPCI-RTM1 – Digital I/O, Dual Ethernet, RS232, Clock and Trigger Functionality

The Rear Panel is shown below



View of Rear Panel as viewed in a vertical chassis

5.1 Clock and Trigger Connectors.

These consists of 2 single pin Lemo Connectors as per the Front Panel Connectors (type EPL.00.250.NTN). The input signal is to a high speed opto-coupler type HCPL-2430 (Agilent) the pin is the LED drive and the shell is the return signal.

5.2 Fast I/O Connector

Utilises a 9 way D-type connector for additional clock and triggers. Functionality is per following table

Pin	Description
1	DI 2
6	DI 2 Return
2	DI 3
7	DI 3 Return
8	DI 4
3	DI 4 Return
9	DI 5
4	DI 5 Return
5	NC

5.3 Ethernet Connectors

Standard RJ45 connector for 10/100/100 Base-T Ethernet

5.4 Console Connector.

9 pin standard D plug DCE pinout (use null modem to connect to a PC)

5.5 Digital I/O Connector

Pin No.	Signal	Pin No.	Signal
1	NC	35	0V
2	NC	36	0V
3	Digital I/O 1	37	0V
4	Digital I/O 2	38	0V
5	Digital I/O 3	39	0V
6	Digital I/O 4	40	0V
7	Digital I/O 5	41	0V
8	Digital I/O 6	42	0V
9	Digital I/O 7	43	0V
10	Digital I/O 8	44	0V
11	Digital I/O 9	45	0V
12	Digital I/O 10	46	0V
13	Digital I/O 11	47	0V
14	Digital I/O 12	48	0V
15	Digital I/O 13	49	0V
16	Digital I/O 14	50	0V
17	Digital I/O 15	51	0V
18	Digital I/O 16	52	0V
19	Digital I/O 17	53	0V
20	Digital I/O 18	54	0V
21	Digital I/O 19	55	0V
22	Digital I/O 20	56	0V
23	Digital I/O 21	57	0V
24	Digital I/O 22	58	0V
25	Digital I/O 23	59	0V
26	Digital I/O 24	60	0V
27	Digital I/O 25	61	0V
28	Digital I/O 26	62	0V
29	Digital I/O 27	63	0V
30	Digital I/O 28	64	0V
31	Digital I/O 29	65	0V
32	Digital I/O 30	66	0V
33	Digital I/O 31	67	0V
34	Digital I/O 32	68	0V

Matching connector type is 68 way male Micro D (SCSI-II Type) with 4-40 screw. Cable can be 68 way ribbon or 34 sheathed wire pairs. The latter is preferable.