



## PCI-822LU

Universal PCI, 250 kS/s, 32/16-ch 12-bit Analog Input, 2-ch 16-bit Analog Output and 32-ch Programmable DIO

### Features

- Supports both +5 V and +3.3 V PCI bus.
- Card ID function.
- 1. A/D :**
  - 12-bit resolution A/D converter.
  - One A/D converter with maximum 250 k Samples/Sec.
  - 8 K samples hardware FIFO.
  - 32 single-ended/16 differential analog inputs
  - Built-in MagicScan Controller.
  - Interrupt function.
  - Two different A/D trigger: software trigger, pacer trigger.
  - Programmable gain control, programmable offset control.
- 2. D/A :**
  - 2-ch 16-bit voltage output.
- 3. DI/DO :**
  - 32-ch programmable DI/DO.
  - Pull high/pull low function on DI
  - DO status read back.
  - High speed data transfer rate.



### Introduction

PCI-822LU is a high performance multifunction card providing high-speed analog I/O and digital I/O functions. The PCI-822LU card has a universal PCI interface supporting both 3.3 V and 5 V PCI bus. This card features a continuous, 250 k Samples/Sec 12-bit resolution A/D converter, 8 K samples hardware FIFO, 2-ch 16-bit D/A converter, 32-ch programmable digital I/O and DO read back. PCI-822LU provides either 32-ch single-ended or 16-ch differential analog inputs which are jumper selectable. The PCI-822LU is equipped with a high speed PGA featuring programmable gain controls (1,2,4,8).

The PCI-822LU has the Card ID switch and pull-high/pull-low resistors for DI on board. Users can set Card ID on a board and recognize the board by the ID via software when using two or more PCI-822LU cards in one computer. The pull-high/pull-low resistors allow specifying the DI status; when the DI channels are unconnected, the DI status will remain in high or low status without being left floating.

The PCI-822LU provides two programmable trigger methods: software trigger and pacer trigger. The A/D channel scan function of PCI-822LU is so amazing, we call it MagicScan. The MagicScan controller takes out most works of getting A/D value such as select channel, set gain, settling time, trigger ADC and get data. With the built-in MagicScan and interrupt features, it is effectively off-loading your CPU from the job. Even in channel scan mode, it can have different gain code for each channel, and the sampling rate can still reach 250 kS/s total. The PCI-822LU is suitable for the demands of high end applications.

### Software

- Toolkit for DOS
- Toolkit for Windows 2000/XP
- Toolkit for Windows 2003/Vista 32-bit

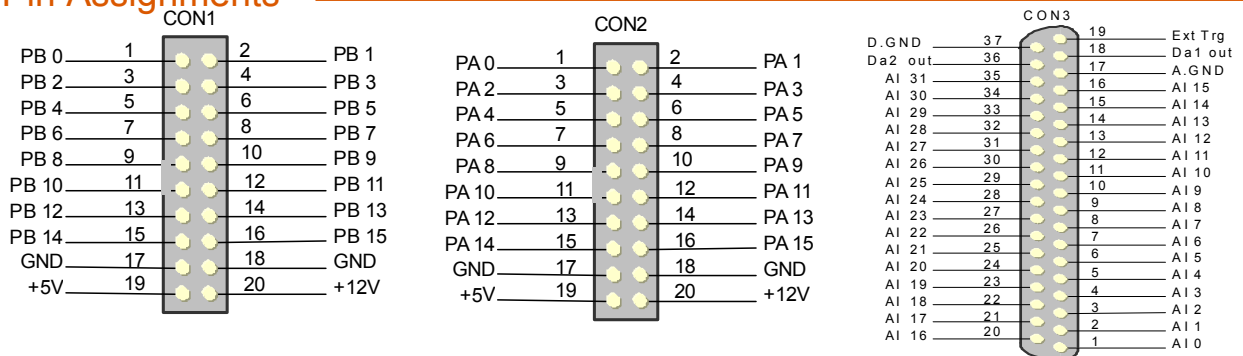
### Applications

- High speed data acquisition system
- Process monitor and control.
- Vibration analysis.

## Specifications

<b>Analog Input</b>	
Channels	32 single-ended/16 differential
A/D Converter	12-bit, 8 $\mu$ s conversion time
Sampling Rate	250 kS/s. max.
FIFO Size	8192 samples
Over voltage Protection	Continuous +/-35 Vp-p
Input Impedance	10,000 M $\Omega$ /4pF
Trigger Modes	Software, Pacer
Data Transfer	Polling, Interrupt
Accuracy	0.1 % of FSR $\pm$ 1 LSB @ 25 $^{\circ}$ C, $\pm$ 10 V
Input Range	Gain: 1, 2, 4, 8/Bipolar(V):+/-10, +/-5, +/-2.5, +/-1.25
Zero Drift	15 ppm/ $^{\circ}$ C of FSR
<b>Analog Output</b>	
Channels	2
Resolution	16-bit
Accuracy	0.06% of FSR $\pm$ 1 LSB @ 25 $^{\circ}$ C, $\pm$ 10 V
Output Range	-5 V ~ 5 V , -10 V ~ 10 V, 0 ~ 10 V, 0 ~ 5 V
Output Driving	+/- 5 mA
Slew Rate	8.33 V/ $\mu$ s
Output Impedance	0.1 $\Omega$ max.
Operating Mode	Software
<b>Programmable I/O</b>	
Channels	32
<b>Digital Input</b>	
Compatibility	5 V/TTL
Input Voltage	Logic 0: 0.8 V max./Logic 1: 2.0 V min.
Pull High/Low	Yes
Response Speed	1.0 MHz (Typical)
<b>Digital Output</b>	
Compatibility	5 V/TTL
Output Voltage	Logic 0: 0.4 V (max.)/Logic 1: 2.4 V (min.)
Output Capability	Sink: 0.8 mA @ 0.8 V/Source: -2.4 mA @ 2.0 V
DO Read Back	Yes
Response Speed	1.0 MHz (Typical)
<b>General</b>	
Bus Type	3.3 V/5 V Universal PCI, 32-bit
Data Bus	16-bit
Card ID	Yes(4-bit)
I/O Connector	Female DB37 x 1/20-pin box header x 2
Dimensions (L x W x D)	169 mm x 105 mm x 22 mm
Power Consumption	1 A @ +5 V max.
Operating Temperature	0 ~ 60 $^{\circ}$ C
Storage Temperature	-20 ~ 70 $^{\circ}$ C
Humidity	5 ~ 85% RH, non-condensing

## Pin Assignments



## Ordering Information

<b>PCI-822LU CR</b>	Universal PCI, 250 kS/s, 32/16-ch 12-bit Analog Input, 2-ch 16-bit Analog Output and 32-ch Programmable DIO. (RoHS) Includes one CA-4002 D-Sub connector.
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## Optional Accessories

<b>CA-3710</b>	DB-37 Male-Male D-sub cable 1 M Cable for Daughter Board (45 $^{\circ}$ )
<b>CA-4002</b>	37-pin Male D-sub connector with plastic cover
<b>CA-2020</b>	20-pin flat cable 2 M.
<b>DN-37</b>	DIN Rail Mounting 37-pin Connector (Pitch=5.08 mm)
<b>DN-20</b>	20-pin DIN-RAIL mounting I/O connector board
<b>DB-1825</b>	Analog input screw terminal board
<b>DB-16P</b>	Isolated digital input daughter board