



## PCI-1800LU

Universal PCI, 330 kS/s, 16-ch, 12-bit Analog Input  
Multifunction Board

## PCI-1800HU

Universal PCI, 44 kS/s, 16-ch, 12-bit Analog Input  
Multifunction Board

### Introduction

The PCI-1800LU/HU card is designed as an easy replacement for the PCI-1800L/H without requiring any modification to the software or the driver.

The PCI-1800LU/HU is a high-performance multifunction card that provides high-speed Analog and Digital I/O functions. The PCI-1800LU/HU is based on the Universal PCI interface, supporting both the 3.3 V and the 5 V PCI bus, and features a continuous 330 kS/s or 44 kS/s 12-bit resolution AD converter, a 1 K-sample hardware FIFO, a MagicScan controller (for multi-channel scanning), a 2-channel 12-bit D/A converter, and 16-channel Digital Input and 16-channel Digital Output.

The PCI-1800LU/HU provides either 16-channel single-ended or 8-channel differential Analog Inputs that are jumper selectable, and a programmable high-speed PGA that is equipped for gain controls (0.5/1/2/4/8 for Low Gain, and 0.5/1/5/10/50/100/500/1000 for High Gain).

The PCI-1800LU/HU also includes an onboard Card ID switch and pull-high/low DI resistors. The Card ID enables the board to be recognized via software if two or more PCI-1800LU/HU cards are installed in the same computer. The pull-high/pull-low resistors allow the DI status to be predefined instead of remaining floating if the DI channels are disconnected or interrupted.

### Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
AI_0	01	AI_8	DO 0	01	DO 1
AI_1	02	AI_9	DO 2	03	DO 3
AI_2	03	AI_10	DO 4	05	DO 5
AI_3	04	AI_11	DO 6	07	DO 7
AI_4	05	AI_12	DO 8	09	DO 9
AI_5	06	AI_13	DO 10	10	DO 11
AI_6	07	AI_14	DO 12	12	DO 13
AI_7	08	AI_15	DO 14	14	DO 15
A.GND	09		GND	16	GND
A.GND	10		+5 V	18	+12 V
N.C.	11				
N.C.	12				CON1
+12 Vout	13		Pin Assignment	Terminal No.	Pin Assignment
A.GND	14		DI 0	01	DI 1
D.GND	15		DI 2	03	DI 3
N.C.	16		DI 4	05	DI 5
Ext_Trig	17		DI 6	07	DI 7
Da1 out	18		DI 8	09	DI 9
+5 V out	19		DI 10	11	DI 11
			DI 12	13	DI 13
			DI 14	15	DI 15
			GND	17	GND
			+5 V	19	+12 V
					CON2

### Features

- Universal PCI (3.3 V/5 V) Interface
- Supports Card ID (SMD Switch)
- 2-channel, 12-bit Analog Output
- 16-channel 5 V/TTL Digital Output
- 16-channel 5 V/TTL Digital Input
  - Pull-high and Pull-low Resistors for DI Channels
- 16 Single-ended/8 Differential Analog Input Channels
  - 12-bit, 330 kS/s or 44 kS/s AD Converter
  - Built-in MagicScan Controller
  - Internal Trigger: Software-trigger, Pacer-trigger
  - External Trigger: Post-trigger, Pre-trigger, Middle-trigger
- High-speed data transfer rate up to 2.7 M words/sec.



### Software

#### Drivers

- 32/64-bit Windows XP/2003/2008/7/8/10
- Linux
- DASYLab

#### Sample Programs

- DOS Lib and TC/BC/MSVC Demo
- LabVIEW Toolkit
- VB/VC/Delphi/BCB/VB.NET/C#.NET/MATLAB Demo

### Hardware Specifications

Model	PCI-1800LU	PCI-1800HU
<b>Analog Input</b>		
Channels	16 Single-ended/8 Differential	
AD Conversion	12-bit, 3 μs Conversion Time	
Accuracy	0.01% of FSR ±1 LSB @ 25 °C, ±10 V	
FIFO Size	1024 Samples	
Sampling Rate	330 kS/s	44 kS/s
<b>Analog Output</b>		
Channels	2	
Resolution	12-bit	
Accuracy	0.06% of FSR ±1 LSB @ 25°C, ±10 V	
Output Driving	±5 mA	
Output Range	±5 V, ±10 V	
<b>Digital I/O</b>		
Channels	DI	16, 5 V/TTL
	DO	16, 5 V/TTL
Input Voltage	Logic 0: 0.8 V Max.; Logic 1: 2.0 V Min.	
Output Voltage	Logic 0: 0.4 V Max.; Logic 1: 2.4 V Min.	
Output Capability	Sink: 2.4 mA @ 0.8 V; Source: 0.8 mA @ 2.0 V	
<b>Timer/Counter</b>		
Channels	3	
Resolution	16-bit	
Input Frequency	10 MHz Max.	
Reference Clock	Internal: 8 MHz	
<b>General</b>		
Bus Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz	
Card ID	Yes (4-bit)	
Connectors	Female DB37 x 1, 20-pin Box Header x 2	
Power Consumption	300 mA @ +5 V	
Operating Temperature	0°C to +60°C	
Humidity	5 to 85% RH, Non-condensing	

### Ordering Information

<b>PCI-1800LU CR</b>	Universal PCI, 330 kS/s, 16-ch, 12-bit Analog Input Multifunction Board (RoHS) Includes one CA-4002 D-Sub connector
<b>PCI-1800HU CR</b>	Universal PCI, 44 kS/s, 16-ch, 12-bit Analog Input Multifunction Board (RoHS) Includes one CA-4002 D-Sub connector

## Accessories

	CA-2002	20-pin flat cable, 20 cm x 2
	CA-2010	20-pin flat cable, 1 M
	CA-2020	20-pin flat cable, 2 M.
	CA-3710	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°))
	CA-3710D	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°))
	CA-3715DM-H	DB-37 Male-Male Cable, 1.5 M, 180°. (RoHS)
	CA-3730DM-H	DB-37 Male-Male Cable, 3.0 M, 180°. (RoHS)
	CA-4002	37-pin Male D-sub connector with plastic cover.
	DB-1825	Analog Input Screw terminal Board
	DB-8225	Screw terminal board , filter circuitry can be added for 1800HU, 1800LU
	DB-889D	16-channel Analog Multiplexer Board (for PCI-1800LU/HU)
	DB-16P	16-channel Isolated Digital Input Daughter Board
	DB-16R	16-channel Relay Output Daughter Board
	DN-37	DIN Rail Mounting 37-pin Connector
	DN-20/DN-20-381	20-pin DIN-RAIL mounting I/O connector board
	125Ω, 0.1% DIP Resistors	125 Ω External Resistor for use with Current Input

