



PCI-1800LU

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

PCI-1800HU

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

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.



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	20 AI_8	DO 0	01	02 DO 1
AI_1	02	21 AI_9	DO 2	03	04 DO 3
AI_2	03	22 AI_10	DO 4	05	06 DO 5
AI_3	04	23 AI_11	DO 6	07	08 DO 7
AI_4	05	24 AI_12	DO 8	09	10 DO 9
AI_5	06	25 AI_13	DO 10	10	12 DO 11
AI_6	07	26 AI_14	DO 12	12	14 DO 13
AI_7	08	27 AI_15	DO 14	14	16 DO 15
A.GND	09	28 A.GND	GND	16	18 GND
A.GND	10	29 A.GND	+5 V	18	20 +12 V
N.C.	11	30 DA out0	CON1		
N.C.	12	31 N.C.	DI 0	01	02 DI 1
+12 Vout	13	32 DA out1	DI 2	03	04 DI 3
A.GND	14	33 N.C.	DI 4	05	06 DI 5
D.GND	15	34 N.C.	DI 6	07	08 DI 7
N.C.	16	35 N.C.	DI 8	09	10 DI 9
Ext_Trig	17	36 N.C.	DI 10	11	12 DI 11
Da1 out	18	37 N.C.	DI 12	13	14 DI 13
+5 V out	19		DI 14	15	16 DI 15
			GND	17	18 GND
			+5 V	19	20 +12 V
			CON2		

Software

Drivers

- ☒ 32/64-bit Windows 10/11
- ☒ Linux ☒ DASyLab

Sample Programs

- ☒ DOS Lib and TC/BC/MSC Demo
- ☒ VB/VB.NET/C#.NET/VC.NET/LabVIEW/Python/MATLAB

Applications

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

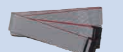
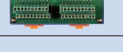
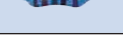
Ordering Information

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

Hardware Specifications

Model	PCI-1800LU	PCI-1800HU
Hardware		
Card ID	Yes (4-bit)	
Connector	Female DB37 x 1 , Male 20-bit ribbon x 2	
Analog Input		
Channels	16 single-ended/8 differential	
Range	Gain: 0.5, 1, 5, 10, 50, 100, 500, 1000 Bipolar Range: ±10 V, ±5 V, ±1 V, ±0.5 V, ±0.1V, ±0.05 V, ±0.01 V, ±0.005 V Unipolar Range: 0 ~ 10 V, 0 ~ 1 V, 0 ~ 0.1 V, 0 ~ 0.01 V	
Resolution	12-bit	
Accuracy	0.01% of FSR ±1 LSB @ 25 °C, ±10 V	
Sampling Rate	330 kS/s. Max.	44 kS/s. Max.
Input Impedance	10 MΩ/6 pF	
Overvoltage Protection	Continuous ±35 Vp-p	
Zero Drift	±2 ppm/°C of FSR	
FIFO Size	1024 samples	
Trigger Mode	Software, Internal programmable pacer, External (5 V/TTL)	
Data Transfer	Polling	
Analog Output		
Channels	2	
Range	Bipolar:±5 V, ±10 V	
Resolution	12-bit	
Accuracy	0.06% of FSR ± 1 LSB @ 25 °C, ± 10 V	
Response Time	1.0 MHz (Typical)	
Voltage Output Capability	±5 mA	
Slew Rate	8.33 V/μs	
Operation Mode	Static Update	
Digital Input		
Channels	16	
Type	5 V/TTL	
ON Voltage Level	2.0 V Min.	
OFF Voltage Level	0.8 V Max.	
Response Speed	1.0 MHz (Typical)	
Trigger Mode	Static Update	
Digital Output		
Channels	16	
Type	5 V/TTL	
Operation Mode	Static Update	
Load Voltage	Logic 0: 0.4 V Max. , Logic 1: 2.4 V Min.	
Load Current	Sink: 2.4 mA @ 0.8 V , Source: 0.8 mA @ 2.0 V	
Response Speed	1.0 MHz (Typical)	
Timer/Counter/Frequency		
Channels	3 (Independent x 1/Internal pacer x 1/External pacer x 1)	
Type	5 V/TTL	
Resolution	16-bit	
Input Frequency	10 MHz Max.	
Reference Clock	Internal: 8 MHz	
PC Bus		
Type	3.3 V/5 V Universal PCI , 32-bit, 33 MHz	
Data Bus	16-bit	
Power		
Consumption	300 mA @ +5 V	
Mechanical		
Dimensions (mm)	105 x 200 x 22 (W x L x D)	
Environment		
Operating Temperature	0 ~ +60°C	
Storage Temperature	-20 ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

Accessories

	CA-2002 CR	20-pin flat cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin flat cable, 1 M (RoHS)
	CA-2020 CR	20-pin flat cable, 2 M (RoHS)
	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180° (RoHS)
	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180° (RoHS)
	DB-1825 CR	Analog Input Screw terminal Board (RoHS)
	DB-8225 CR	Screw terminal board , filter circuitry can be added for 1800HU, 1800LU (RoHS)
	DB-889D CR	16-channel Analog Multiplexer Board (for PCI-1800LU/HU) (RoHS)
	DB-16P CR	16-channel Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	16-channel Relay Output Daughter Board (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
	DN-20/DN-20-381 CR	20-pin DIN-RAIL mounting I/O connector board (RoHS)
	2AB125R CR	Resistor DIP 125R 0.1% 1/4W MF 50PPM (1PCS) (RoHS)

