



PEX-1002L

PCI Express, 110 kS/s, 32-ch, 12-bit Multi-function Board

PEX-1002H

PCI Express, 44 kS/s, 32-ch, 12-bit Multi-function Board

Introduction

The PEX-1002L/H series utilizes the PCI Express bus and is designed as an easy replacement for the PCI-1002 series without requiring any modification to either the software or the driver.

The PEX-1002L/H provides 32 single-ended or 16 differential Analog Input channels at 12-bit resolution, together with 16 TTL Digital Input and 16 TTL Digital Output channels.

The PEX-1002L/H includes a Card ID switch that enables the board to be easily recognized via software if two or more cards are installed in the same computer. The pull-high/low jumpers allow the DI status to be predefined instead of remaining floating if the DI channels are disconnected or line broken.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
AI_0	01	AI_16	DO 0	01	DO 1
AI_1	02	AI_17	DO 2	03	DO 3
AI_2	03	AI_18	DO 4	05	DO 5
AI_3	04	AI_19	DO 6	07	DO 7
AI_4	05	AI_20	DO 8	09	DO 9
AI_5	06	AI_21	DO 10	11	DO 11
AI_6	07	AI_22	DO 12	13	DO 13
AI_7	08	AI_23	DO 14	15	DO 15
AI_8	09	AI_24	GND	17	GND
AI_9	10	AI_25	+5 V	19	+12 V
AI_10	11	AI_26			CON1
AI_11	12	AI_27			
AI_12	13	AI_28	Pin Assignment	Terminal No.	Pin Assignment
AI_13	14	AI_29	DO 0	01	DO 1
AI_14	15	AI_30	DO 2	03	DO 3
AI_15	16	AI_31	DO 4	05	DO 5
A.GND	17	N.C.	DO 6	07	DO 7
N.C.	18	D.GND	DO 8	09	DO 9
Ext_Trng	19		DO 10	11	DO 11
			DO 12	13	DO 13
			DO 14	15	DO 15
			GND	17	GND
			+5 V	19	+12 V
					CON2

Ordering Information

PEX-1002L CR	PCI Express, 44 kS/s, 32-ch, 12-bit Multi-function Board (RoHS) Includes one CA-4002 D-Sub connector
PEX-1002H CR	PCI Express, 110 kS/s, 32-ch, 12-bit Multi-function Board (RoHS) Includes one CA-4002 D-Sub connector

Features

- PCI Express x1 Interface
- 16-channel 5 V/TTL Digital Input
- 16-channel 5 V/TTL Digital Output
- Pull-high/Pull-low Jumpers for DI Channels
- 12-bit, 32 Single-ended/16 Differential Analog Input channels
- Internal/External Trigger
- 110 or 44 kS/s AD Sampling Rate
- Supports Card ID (SMD Switch)



Software

Drivers

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

Sample Programs

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

Hardware Specifications

Model	PEX-1002L	PEX-1002H
Analog Input		
Channels	32 Single-ended/16 Differential	
Resolution	12-bit, 8 μs Conversion Time	
Accuracy	0.01% of FSR ±2 LSB @ 25°C, ±10 V	
Sampling Rate	110 kS/s	44 kS/s
Digital Input		
Channels	16	
Compatibility	5 V/TTL	
Input Voltage	Logic 0: 0.8 V Max., Logic 1: 2.0 V Min.	
Response Speed	500 kHz (Typical)	
Digital Output		
Channels	16	
Compatibility	5 V/TTL	
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	
Response Speed	500 kHz (Typical)	
Timer/Counter		
Channels	3	
Resolution	16-bit	
Reference Clock	Internal: 4 MHz	
General		
Bus Type	PCI Express x1	
Card ID	Yes (4-bit)	
Connectors	Female DB37 x 1, 20-pin Box Header x 2	
Power Consumption	900 mA @ +3.3 V; 350 mA @ +12 V	
Operating Temperature	0°C to +60°C	
Humidity	5 to 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)
	CA-4002 CR	37-pin Male D-sub connector with plastic cover. (RoHS)
	DB-1825 CR	Analog Input Screw terminal Board (RoHS)
	DB-16P CR	Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	Relay Output Daughter Board (RoHS)
	DN-20/DN-20-381 CR	20-pin DIN-RAIL mounting I/O connector board (RoHS)
	DN-37/DN-37-381 CR	I/O Connector Block with DIN-Rail Mounting and 37-Pin D-Sub Connector (RoHS)
	2AB125R CR	Resistor DIP 125R 0.1% 1/4W MF 50PPM (1PCS) (RoHS)

