PCI-822LU

PCI-826LU

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Universal PCI, 250 kS/s, 32-ch, 12-bit AI Multifunction Board (8 K WORD FIFO)

PCI-826LU

Universal PCI, 250 kS/s, 32-ch, 16-bit AI Multifunction Board (8 K WORD FIFO)

Features

- Universal PCI (3.3 V/5 V) Interface
- Supports Card ID (SMD Switch)
- 32 Single-ended/16 Differential Analog Input Channels
  - 12-bit 250 kS/s High-speed AD for PCI-822LU
  - 16-bit 250 kS/s High-speed AD for PCI-826LU
  - Built-in MagicScan Controller
  - Supports Software-trigger and Pacer-trigger
  - 8 K-sample Hardware FIFO
- 2-channel, 16-bit Analog Output
- 32-channel programmable DI/O
  - Pull-high and Pull-low Resistors for DI Channels
  - Supports Digital Output Status Readback (Register Level)

Introduction

The PCI-822LU/826LU is a series of multifunction boards that provides high-speed Analog and Digital I/O functions, and features a continuous 250 kS/s, 12- or 16-bit resolution AD converter, an 8-kSample hardware FIFO, a 2-channel, 16-bit DA converter, and 32 programmable Digital I/O channels with DO readback. The PCI-822LU/826LU series provides either 32 single-ended or 16 differential Analog Input channels that are jumper selectable, and is equipped with a high-speed PGA featuring programmable gain (1, 2, 4 or 8).

The PCI-822LU/826LU series also includes an onboard Card ID switch that enables the board to be easily recognized via software if two or more boards 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 interrupted.

The PCI-822LU/826LU series includes an AD channel scan function called MagicScan, which eliminates the majority of the effort required to acquire AD values, such as selecting the channel, setting the gain values and the settling time, triggering the ADC, and acquiring the data. Using the built-in MagicScan and the interrupt features, these complex tasks are effectively offloaded from the CPU. Even in MagicScan mode, a different gain code can be used for each channel, and the sampling rate can still reach a total of 250 kS/s, making the PCI-822LU/826LU series especially suitable for high-end applications.

Pin Assignments

Pin Assignment	Terminal No.		Pin Assignment
AI_0	01	20	AI_16
AI_1	02	21	AI_17
AI_2	03	22	AI_18
AI_3	04	23	AI_19
AI_4	05	24	AI_20
AI_5	06	25	AI_21
AI_6	07	26	AI_22
AI_7	08	27	AI_23
AI_8	09	28	AI_24
AI_9	10	29	AI_25
AI_10	11	30	AI_26
AI_11	12	31	AI_27
AI_12	13	32	AI_28
AI_13	14	33	AI_29
AI_14	15	34	AI_30
AI_15	16	35	AI_31
A.GND	17	36	Da2 out
Da1 out	18	37	D.GND
Ext_Trg	19		

CON3

Pin Assignment	Terminal No.		Pin Assignment
PB 0	01	02	PB 1
PB 2	03	04	PB 3
PB 4	05	06	PB 5
PB 6	07	08	PB 7
PB 8	09	10	PB 9
PB 10	11	12	PB 11
PB 12	13	14	PB 13
PB 14	15	16	PB 15
GND	17	18	GND
+5 V	19	20	+12 V

CON1

Pin Assignment	Terminal No.		Pin Assignment
PA 0	01	02	PA 1
PA 2	03	04	PA 3
PA 4	05	06	PA 5
PA 6	07	08	PA 7
PA 8	09	10	PA 9
PA 10	10	12	PA 11
PA 12	12	14	PA 13
PA 14	14	16	PA 15
GND	16	18	GND
+5 V	18	20	+12 V

CON2

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

Applications

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

Ordering Information

PCI-822LU CR	Universal PCI, 250 kS/s, 32-ch, 12-bit AI Multifunction Board (8 K WORD FIFO) (RoHS) Includes one CA-4002 D-Sub connector
PCI-826LU CR	Universal PCI, 250 kS/s, 32-ch, 16-bit AI Multifunction Board (8 K WORD FIFO) (RoHS) Includes one CA-4002 D-Sub connector

Hardware Specifications

Model	PCI-822LU	PCI-826LU
Hardware		
Card ID	Yes (4-bit)	
Connector	Female DB37 x 1 , 20-pin box header x 2	
Analog Input		
Channels	32 single-ended/16 differential	
Range	Gain: 1, 2, 4, 8 Bipolar Range: ±10 V, ±5 V, ±2.5 V, ±1.25 V	
Resolution	12-bit	16-bit
Accuracy	0.1% of FSR ±1 LSB @ 25 °C, ±10 V	0.05 % of FSR ±1 LSB @ 25 °C, ±10 V
Sampling Rate	250 kS/s. Max.	
Overvoltage Protection	Continuous ±35 Vp-p	
Zero Drift	15 ppm/°C of FSR	
FIFO Size	8192 samples	
Trigger Mode	Software, Pacer	
Data Transfer	Polling, Interrupt	
Analog Output		
Channels	2	
Range	-5 V ~ 5 V , -10 V ~ 10 V, 0 ~ 10 V, 0 ~ 5 V	
Resolution	16-bit	
Accuracy	±6 LSB	
Response Time	250 kHz (Typical)	
Voltage Output Capability	±5 mA	
Slew Rate	0.7 V/μs	
Operation Mode	Static Update	
Digital Input		
Channels	32 (Bi-Direction)	
Type	5 V/TTL	
ON Voltage Level	2.0 V Min.	
OFF Voltage Level	0.8 V Max.	
Response Speed	1.0 MHz (Typical)	
Pull-high/Pull-low Resistors	Yes	
Trigger Mode	Static Update	
Digital Output		
Channels	32 (Bi-Direction)	
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: 40 mA Source: 20 mA	
Response Speed	1.0 MHz (Typical)	
DO Readback	Yes	
PC Bus		
Type	3.3 V/5 V Universal PCI, 32-bit	
Data Bus	16-bit	
Power		
Consumption	1 A @ +5 V (Max.)	
Mechanical		
Dimensions (mm)	150 X 170 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

ADP-20/PCI CR	Extender, Extended dual 20-pin flat-cable connector to PC slot window (RoHS)
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	16-channel Isolated Digital Input Daughter Board (RoHS)
DB-16R CR	16-channel Relay Output Daughter Board (RoHS)
DN-20/DN-20-381 CR	20-pin DIN-RAIL mounting I/O connector board (RoHS)
DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
2AB125R CR	Resistor DIP 125R 0.1% 1/4W MF 50PPM (1PCS) (RoHS)