

### Features

- 2500 V<sub>DC</sub> isolation protection
- 32 single-ended or 16 differential analog inputs, or a combination
- 12-bit resolution for A/D conversion
- Up to 100 kS/s sampling rate for A/D conversion
- Programmable gain for each input channel
- On-board 4 K samples FIFO buffer
- S/W, internal or external pacer triggering supported

### Introduction

The PCI-1713 is an isolated high-speed analog input card for the PCI bus. It provides 32 analog input channels with a sampling rate up to 100 kS/s, 12-bit resolution and isolation protection of 2500 V<sub>DC</sub>.

#### Flexible Input Type and Range

The PCI-1713 features an automatic channel/gain scanning circuit. The circuit controls multiplexer switching during sampling. The on-board SRAM stores different gain values and configuration for each channel. This design lets you perform multi-channel sampling with different gains for each channel, and with different combinations of single-ended or differential inputs.

#### High-speed Data Acquisition

The PCI-1713 provides a sampling rate up to 100 kS/s. It has an on-board FIFO buffer, which can store up to 4K A/D samples and generates an interrupt signal when the FIFO is half full. This feature provides continuous high-speed data transfer and more predictable performance on Windows systems.

#### Supports S/W, Internal and External Pacer Triggering

The PCI-1713 supports three kinds of trigger modes for A/D conversion: software triggering, internal pacer triggering and external pacer triggering. The software trigger allows users to acquire a sample when it is needed; the internal pacer triggers continuous high-speed data acquisition. The PCI-1713 also accepts external trigger sources, allowing synchronous sampling with external devices.

#### Satisfies the Request for Isolation Protection

The PCI-1713 provides optical isolation protection of 2500 V<sub>DC</sub> between the inputs and the PCI bus to protect the PC and peripherals from damage due to high voltages on the input lines. It is ideal for situations where budget-conscious users require flexibility, stability and a high level of isolation protection for their data acquisition system.

### Applications

- Signal isolation
- Process monitoring and control
- Transducer/sensor interfacing
- Multi-channel DC voltage measurement

### Specifications

#### Analog Input:

- **Channels:** 32 single-ended or 16 differential (software programmable)
- **Resolution:** 12-bit
- **On-board FIFO:** 4 K samples
- **Conversion time:** 2.5 ms
- **Input range:** (software programmable)  
Bipolar:  $\pm 10$  V,  $\pm 5$  V,  $\pm 2.5$  V,  $\pm 1.25$  V,  $\pm 0.625$  V  
Unipolar: 0 ~ 10 V, 0 ~ 5 V, 0 ~ 2.5 V, 0 ~ 1.25 V
- **Maximum Input Overvoltage:**  $\pm 30$  V
- **Common Mode Rejection Ratio(CMRR):**

Gain	CMRR
0.5, 1	75dB
2	80dB
4	84dB
8	84dB

- **Maximum sampling rate:** 100 kS/s
- **Accuracy:** (Depends on gain)

Gain	Accuracy
0.5, 1	0.01% of FSR $\pm$ 1LSB
2	0.02% of FSR $\pm$ 1LSB
4	0.02% of FSR $\pm$ 1LSB
8	0.04% of FSR $\pm$ 1LSB

# 100 kS/s, 12-bit, 32-channel, Isolated Analog Input Card

- Linearity error:  $\pm 1$  LSB
- Input impedance: 1 GW
- Trigger mode: Software, on-board programmable pacer or external (TTL level)

## Programmable Pacer

- Timer: 32-bit programmable timer
- Time base: 10 MHz

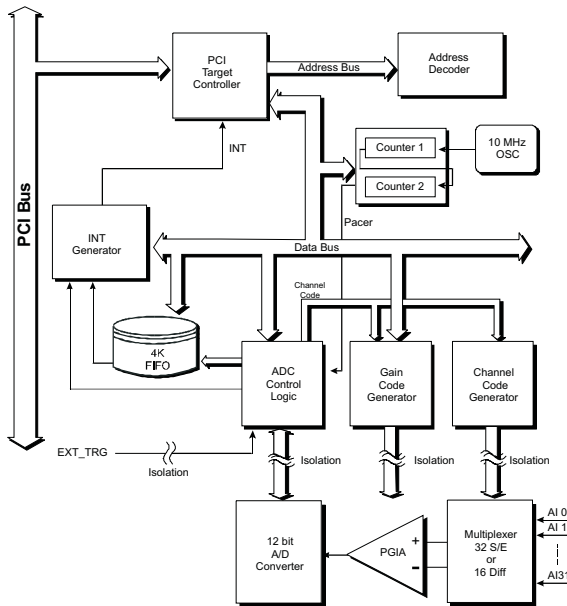
## General:

- I/O Connector: 37-pin D-type female connector
- Dimensions: 175 mm (L) x 100 mm (H) (6.9" x 3.9")
- Power consumption: +5 V @ 850 mA (Typical), +5 V @ 1.0 A (Max.)
- Operating temperature: 0 ~ +60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- Storage temperature: -20 ~ +70° C (-4 ~ 158° F)
- Operating humidity: 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)

## Pin Assignments

AI0	1	20	AI1
AI2	2	21	AI3
AI4	3	22	AI5
AI6	4	23	AI7
AI8	5	24	AI9
AI10	6	25	AI11
AI12	7	26	AI13
AI14	8	27	AI15
GND	9	28	GND
GND	10	29	GND
AI16	11	30	AI17
AI18	12	31	AI19
AI20	13	32	AI21
AI22	14	33	AI23
AI24	15	34	AI25
AI26	16	35	AI27
AI28	17	36	AI29
AI30	18	37	AI31
EXT_TRG	19		

## Block Diagram



## Ordering information

- PCI-1713:** 100 kS/s, 12-bit, 32-channel Isolated Analog Input Card, user's manual and driver CD-ROM. (cable not included)
- PCLD-881B:** Industrial Wiring Terminal Board (cable not included)
- ADAM-3937:** Wiring Terminal Board
- PCL-10137:** 37-pin D-type cable, 1 meter
- PCLS-OCX:** Activex control for data acquisition and control