

PCI-E-1810

800 kS/s, 12-Bit, 16-Ch PCI Express Multifunction DAQ Card



Features

- 16 analog inputs, up to 800 kS/s, 12-bit resolution
- 2 analog outputs, up to 500 kS/s, 12-bit resolution
- Supports digital and analog triggers
- 24 programmable digital I/O lines
- Two 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)
- Automatic channel/gain scanning

Introduction

PCI-E-1810 is a multifunction PCI Express card that includes digital I/O, analog I/O, and counter functions. The card also features a 800 kS/s 12-bit A/D converter and supports analog triggers for A/D data acquisition.

Specifications

Analog Input

- Channels**
 - Single end 16
 - Differential 8
- Resolution** 12 bits
- Sample Rate**
 - Single channel 800 kS/s max.
 - Multiple channels 500 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be $500k/4 = 125$ kS/s per channel.

- Trigger Reference** Digital and analog triggers
- Trigger Mode**
 - Start, Delayed Start
 - Stop, Delayed Stop
- FIFO Size** 4,000 samples
- Overvoltage Protection** 30 Vp-p
- Input Impedance** 1 G Ω
- Sampling Modes** Software and external clock
- Input Range** Software programmable

| Gain | 0.5 | 1 | 2 | 4 | 8 |
|--------------------------------------|-----------|---------|-----------|------------|-------------|
| Bipolar | $\pm 10V$ | ± 5 | ± 2.5 | ± 1.25 | ± 0.625 |
| Unipolar | N/A | 0 ~ 10 | 0 ~ 5 | 0 ~ 2.5 | 0 ~ 1.25 |
| Absolute Accuracy (% of FSR)* | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 |

Analog Output

- Channels** 2
- Resolution** 12 bits
- Output Rate**
 - Static software polling
 - 500 kS/s max.
- Output Range** Software programmable

| Internal Reference | Unipolar | 0 ~ 5 V 0 ~ 10 V |
|---------------------------|--|----------------------------|
| | Bipolar | -5 V ~ 5 V -10 V ~ 10 V |
| External Reference | 0 ~ +x V @ -x V (-10 \leq x \leq 10) | |

- Slew Rate** 20 V/ μ s
- Driving Capability** 5 mA
- Operation Mode** Static update, waveform generation
- Accuracy** INLE: ± 1 LSB, DNLE: ± 1 LSB

Digital I/O

- Channels** 24
- Compatibility** 5 V/TTL
- Input Voltage**
 - Logic 0: 0.8 V max.
 - Logic 1: 2.0 V min.
- Output Voltage**
 - Logic 0: 0.8 V max.
 - Logic 1: 2.0 V min.
- Output Capability**
 - Sink: 15 mA @ 0.8 V
 - Source: 15 mA @ 2.0 V

Counter

- Channels** 2
- Resolution** 32 bits
- Compatibility** 5 V/TTL
- Max. Input Frequency** 10 MHz
- Pulse Generation** Yes
- Timebase Stability** 50 ppm

General

- Form Factor** PCI Express x1
- Triggering** 2 x Analog/2 x digital (12 bits)
- I/O Connector** 68-pin SCSI, female
- Dimensions (L x W)** 167 x 100 mm (6.6" x 3.9")
- Power Consumption**
 - Typical: 3.3 V @ 488 mA
 - 12 V @ 112 mA
 - Max.: 3.3 V @ 2.25 A
 - 12 V @ 390 mA
- Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F) (refer to IEC 60068-2-1, 2)
- Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 60068-2-3)

Ordering Information

- PCI-E-1810-AE** 800 kS/s, 12-bit multifunction card

Accessories

- PCL-10168H-1E** 68-pin SCSI shielded cable with noise rejection, 1 m
- PCL-10168H-2E** 68-pin SCSI shielded cable with noise rejection, 2 m
- PCL-10168-1E** 68-pin SCSI shielded cable, 1 m
- PCL-10168-2E** 68-pin SCSI shielded cable, 2 m
- ADAM-3968-AE** 68-pin DIN rail SCSI wiring board
- PCLD-8810E-AE** 68-pin SCSI DIN-rail Wiring Board for PCI-E-1800 series
- PCLD-8811-AE** Low-Pass Active Filter Board