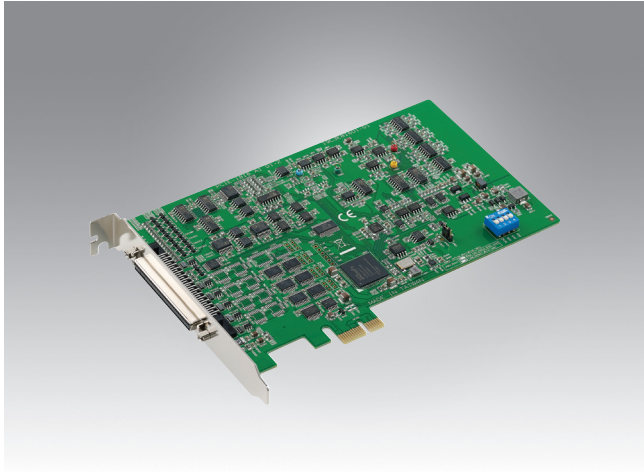


# PCIE-1816

# PCIE-1816H

**500 KS/s, 16-Bit, 16-Ch PCI Express Multifunction DAQ Card**

**1 MS/s, 16-Bit, 16-Ch PCI Express Multifunction DAQ Card**



## Features

### PCIE-1816

- 16 analog inputs, up to 1 MS/s, 16-bit resolution

### PCIE-1816H

- 16 analog inputs, up to 5 MS/s, 16-bit resolution

### PCIE-1816/1816H

- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Supports analog and digital triggers for analog I/O
- Supports waveform generation for analog output
- 24 programmable digital I/O lines
- Two 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)

## Introduction

PCIE-1816/1816H is a 16-ch (up to 5 MS/s) multifunction DAQ card with integrated digital I/O, analog I/O, and counter functions. PCIE-1816/1816H also features analog and digital triggering support, 2-ch 16-bit analog outputs with waveform generation capability, 24-ch programmable digital I/O lines, and two 32-bit general purpose timer/counters.

## Specifications

### Analog Input

- Channels**
  - Single end 16
  - Differential 8
- Resolution** 16 bits
- Sample Rate**
  - PCIE-1816 Single channel 1 MS/s max. Multiple channels 500 kS/s max.
  - PCIE-1816H Single channel 5 MS/s max. Multiple channels 1 MS/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  $1M/4 = 250$  kS/s per channel.

- Trigger Reference** Digital and analog triggers
- FIFO Size** 4,000 samples
- Overvoltage Protection** 30 Vp-p
- Input Impedance** 1 G $\Omega$
- Sampling Mode** Software and external clock
- Input Range** Software programmable

PCIE-1816					
Gain	0.5	1	2	4	8
<b>Bipolar</b>	$\pm 10V$	$\pm 5$	$\pm 2.5$	$\pm 1.25$	$\pm 0.625$
<b>Unipolar</b>	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
<b>Absolute Accuracy ( % of FSR)*</b>	0.0075	0.0075	0.0075	0.008	0.008

### Analog Output

- Channels** 2
- Resolution** 16 bits
- Output Rate** 3 MS/s max.
- Output Range** Software programmable

Internal Reference	Unipolar	0 ~ 5 V 0 ~ 10 V
	Bipolar	-5 V ~ 5 V -10 V ~ 10 V
<b>External Reference</b>		0 ~ +x V @ -x V (-10 $\leq$ x $\leq$ 10)

- Slew Rate** 20 V/ $\mu$ s
- Driving Capability** 5 mA
- Operation Mode** Static update, waveform generation
- Accuracy** INLE:  $\pm 4$  LSB, DNLE:  $\pm 1$  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 (16 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)
- Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- Storage Humidity** 5 ~ 95% RH non-condensing

## Ordering Information

- PCIE-1816-AE** 1 MS/s, 16-bit multifunction card
- PCIE-1816H-AE** 5 MS/s, 16-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 PCIE-1800 series
- PCLD-8811-AE** Low-Pass Active Filter Board

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