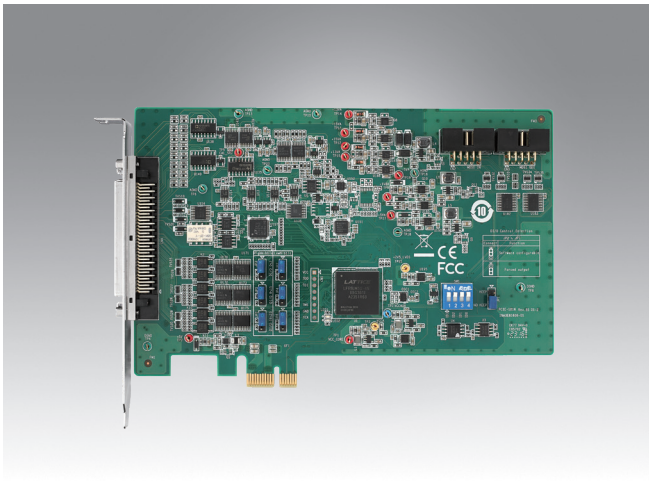
PCIE-1816
PCIE-1816H

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

5 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 (8,192 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** 8,192 samples
- **Overvoltage Protection** ±15 V
- **Input Impedance** 1 GΩ
- **Sampling Mode** Software and external clock
- **Input Range** Software programmable

Accuracy (Within Calibration Temperature* ±5°C)					
Range	±10 V	±5 V	±2.5 V	±1.25 V	±0.625 V
Accuracy	±0.01 %	±0.01 %	±0.01 %	±0.02 %	±0.025 %
Range		0 ~ 10 V	0 ~ 5 V	0 ~ 2.5 V	0 ~ 1.25 V
Accuracy		±0.01 %	±0.01 %	±0.01 %	±0.01 %

* Factory calibration temperature is 25°C

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
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- **Slew Rate** 20 V/μs
- **Driving Capability** 20 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: 0.4 V max.
  Logic 1: 4.0 V min.
- **Output Capability** Sink: 2 mA @ 0.4 V
  Source: 2 mA @ 4.0 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)** 175 x 100 mm (6.9 x 3.9)
- **Power Consumption** Max.: 3.3 V @ 350 mA
  12 V @ 250 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 °C to 70 °C (-4 °F to 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **PCIE-1816-B** 1 MS/s, 16-bit multifunction card
- **PCIE-1816H-B** 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
- **1700030423-01** 10-pin flat cable for MDSI synchronization, 10 cm

Last updated: 16-Apr-2026