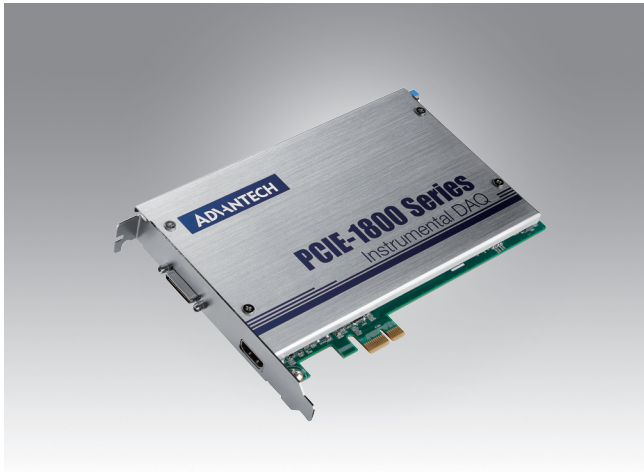


# PCIE-1802

# PCIE-1802L

**8-Ch, 24-Bit, 216 kS/s Dynamic Signal Acquisition PCI Express Card**

**4-Ch, 24-Bit, 216 kS/s Dynamic Signal Acquisition PCI Express Card**



## Features

- 8/4 simultaneously sampled analog inputs, up to 216 kS/s
- 24-bit resolution ADCs with 115 dB dynamic range
- Wide input range of  $\pm 0.2 \sim 10$  V
- Built-in anti-aliasing filter
- Software-configurable 4/10 mA integrated electronic piezoelectric (IEPE) excitation currents
- Software-selectable AC/DC coupling
- Full automatic calibration
- Multiple card synchronization

## Introduction

PCIE-1802/1802L is a 24-bit, high-accuracy data acquisition PCI Express module specifically designed for sound and vibration-related applications. This module features built-in 4/10 mA excitation currents for IEPE sensors, such as accelerometers and microphones.

## Specifications

### Analog Input

- **Channels**
  - PCIE-1802: 8
  - PCIE-1802L: 4 (simultaneous sampling differential or 50  $\Omega$  pseudo-differential)
- **Resolution** 24 bits (delta sigma)
- **Max. Sampling Rate** 100 S/s to 216 kS/s (with resolution  $\leq 363.80 \mu\text{S/s}$ )
- **Input Coupling** AC/DC, selectable per channel
- **AG Cut-Off Frequency** 0.727 Hz (-3 dB)
- **Trigger Modes** Start, Delayed Start, Stop, Delayed Stop
- **Input Range**  $\pm 0.2, \pm 0.5, \pm 1, \pm 2, \pm 5, \pm 10$  V
- **Offset Error**  $< \pm 1$  mV
- **Gain Error**  $< \pm 0.2$  %
- **Total Harmonic Distortion (THD)** -100 dB
- **Total Harmonic Distortion Plus Noise (THD+N)** -98 dB
- **Dynamic Range** 115 dB
- **IEPE Excitation** 0, 4, or 10 mA, selectable per channel
- **Data Transfer** Direct memory access (DMA)
- **Multi-Card Support** For synchronizing more than 8 analog input channels

### Digital Input/Output

- **DI Channels** 1 (interrupt)
- **DO Channels** 2

### General

- **Bus Type** PCI Express x1
- **I/O Connectors** CN600 36-pin mini SCSi (for analog input)  
CN601 HDMI (for clock, trigger, and DI/Os)
- **Dimensions (L x H)** 168 x 99 mm (6.6 x 3.9 in)
- **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-1802-AE** 8-ch, 24-bit, 216 kS/s dynamic signal acquisition PCI Express card
- **PCIE-1802L-AE** 4-ch, 24-bit, 216 kS/s dynamic signal acquisition PCI Express card
- **PCLD-8840-AE** 20-pin DIN rail HDMI cable wiring board for PCIE-1802 and PCIE-1840
- **PCL-108BNC-50E** Mini SCSi to 8-BNC cable
- **PCL-104BNC-50E** Mini SCSi to 4-BNC cable
- **PCL-10119-1E** HDMI cable

## Pin Assignments

### Mini SCSi

|      |    |    |      |
|------|----|----|------|
| AGND | 36 | 18 | AGND |
| AI0- | 35 | 17 | AI0+ |
| AGND | 34 | 16 | AGND |
| AI1- | 33 | 15 | AI1+ |
| AGND | 32 | 14 | AGND |
| AI2- | 31 | 13 | AI2+ |
| AGND | 30 | 12 | AGND |
| AI3- | 29 | 11 | AI3+ |
| AGND | 28 | 10 | AGND |
| AGND | 27 | 9  | AGND |
| AI4- | 26 | 8  | AI4+ |
| AGND | 25 | 7  | AGND |
| AI5- | 24 | 6  | AI5+ |
| AGND | 23 | 5  | AGND |
| AI6- | 22 | 4  | AI6+ |
| AGND | 21 | 3  | AGND |
| AI7- | 20 | 2  | AI7+ |
| AGND | 19 | 1  | AGND |

\* AI4 to AI7 (PCIE-1802 only)

### HDMI

|             |    |    |            |
|-------------|----|----|------------|
| DGND        | 2  | 1  | REF_CLK_IN |
| REF_CLK_OUT | 4  | 3  | DGND       |
| DGND        | 6  | 5  | DGND       |
| DGND        | 8  | 7  | DTRG0      |
| TRIGOUT0    | 10 | 9  | DTRG1      |
| TRIGOUT1    | 12 | 11 | DGND       |
| DO1         | 14 | 13 | DO0        |
| SYNC_OUT    | 16 | 15 | SYNC_IN    |
| RESERVED    | 18 | 17 | DGND       |
|             |    | 19 | DIO        |