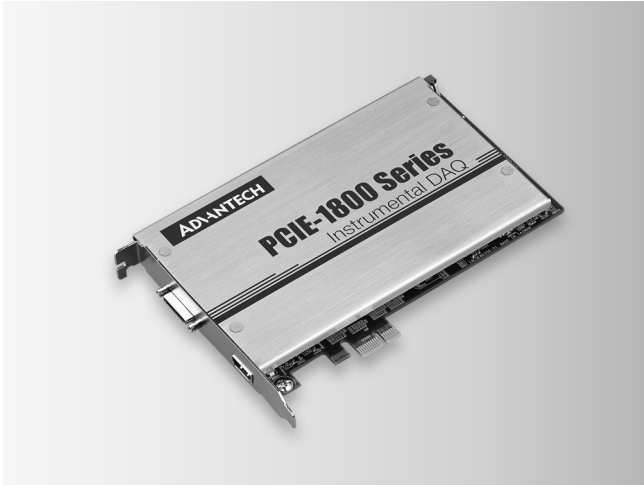


# PCIE-1802

## 8-ch, 24-bit, 216 kS/s Dynamic Signal Acquisition PCI Express Card



### Features

- 8 simultaneously sampled analog inputs up to 216 kS/s
- 24-bit resolution ADCs with 115 dB dynamic range
- Wide input ranges from  $\pm 0.2$  V to  $\pm 10$  V
- Built-in anti-aliasing filter
- Software configurable 4 or 10 mA Integrated Electronic Piezoelectric Excitation (IEPE)
- Software selectable AC/DC coupling
- Full auto-calibration
- Multiple card synchronization

### Introduction

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

### Specifications

#### Analog Input

- **Channels** 8 (simultaneously sample, differential or 50  $\Omega$  pseudo-differential)
- **Resolution** 24 bits (Delta-sigma)
- **Max. Sampling Rate** 100 S/s to 216 kS/s (with resolution  $\leq 363.80$   $\mu$ S/s)
- **Input Coupling** AC/DC, selectable per channel
- **AC Cut-Off Frequency** 0.727 Hz (-3 dB)
- **Trigger Modes** Start trigger, Delay to Start trigger  
Stop trigger, Delay to Stop trigger
- **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)
- **Multiple Card Synchronization** For more than 8 AI 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 AI)  
CN601 HDMI (for clock, trigger, and DI/DOs)
- **Dimensions (L x H)** 168 x 99 mm (6.6" x 3.9")
- **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
- **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-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

#### HDMI

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



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