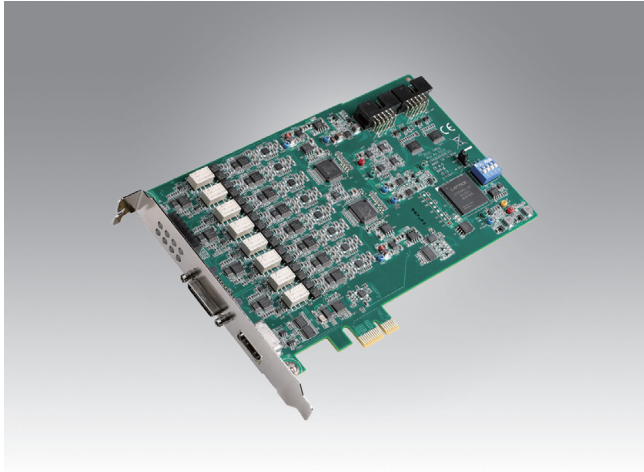


# PCIE-1803

## 8-ch, 24-bit, 128 kS/s Dynamic Signal Acquisition PCI Express Card



### Features

- 8 simultaneously sampled analog inputs, up to 128 kS/s
- 24-bit resolution ADCs with -102 dB total harmonic distortion plus noise (THD+N)
- Wide input range of  $\pm 1 \sim 10$  V
- Built-in anti-aliasing filter
- Low power consumption
- Software-selectable AC/DC coupling
- Full automatic calibration
- Multiple card synchronization
- Built-in software readable open-short indicator

### Introduction

PCIE-1803 is a 24-bit, high-accuracy data acquisition PCI Express module specifically designed for sound and vibration-related applications. This module features built-in 2 mA excitation currents for IEPE sensors, such as accelerometers and microphones.

### Specifications

#### Analog Input

- **Channels** 8 (simultaneous sampling differential or 50  $\Omega$  pseudo-differential)
- **Resolution** 24 bits (delta sigma)
- **Max. Sampling Rate** 1kS/s to 128 kS/s (with resolution  $\leq 1.09$  mS/s)
- **Input Coupling** AC/DC, selectable per channel
- **AC Cut-Off Frequency** 0.796 Hz (-3 dB)
- **Trigger Modes** Start, Delayed Start, Stop, Delayed Stop
- **Input Range**  $\pm 1, \pm 2, \pm 5, \pm 10$  V
- **Offset Error**  $< \pm 1$  mV
- **Gain Error**  $< \pm 0.02$  %
- **Total Harmonic Distortion (THD)** -113dB
- **Total Harmonic Distortion Plus Noise (THD+N)** -102dB
- **Dynamic Range** 102dB
- **IEPE Excitation** 2mA
- **Data Transfer** Direct memory access (DMA)
- **Multi-Card Support** For synchronizing more than 8 analog input channels
- **Sensor fault detection** Open/short/normal LED indicator for each channel, SW readable

#### Digital Input/Output

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

#### General

- **Bus Type** PCI Express x1
- **I/O Connectors** 36-pin mini SCSII (for analog input)  
HDMI (for clock, trigger, and DI/Os)
- **Dimensions (L x H)** 168 x 100 mm (6.6" x 3.9")
- **Operating Temperature** 0 ~ 70  $^{\circ}$ C (32 ~ 158  $^{\circ}$ F)
- **Storage Temperature** -40 ~ 80  $^{\circ}$ C (-40 ~ 176  $^{\circ}$ F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing
- **Power Consumption** +3.3 V @ 300 mA typ./350 mA max.  
+12 V @ 200 mA typ./230 mA max.

### Ordering Information

- **PCIE-1803-A1E** 8-ch, 24-bit, 128 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 SCSII to 8-BNC cable
- **PCL-10119-1E** HDMI cable for wiring board
- **1700030423-01** IDC 10 flat cable for synchronization

### Pin Assignments

#### Mini SCSII

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

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