

PCIE-1802L

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

Preliminary



Features

- 4 simultaneously sampled analog inputs up to 216 kS/s
- 24-bit resolution ADCs with 115 dB dynamic range
- Wide input ranges from ± 0.2 V to ± 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-1802L 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** 4 (simultaneously sample, differential or 50 Ω pseudo-differential)
- Resolution** 24 bits (Delta-sigma)
- Max. Sampling Rate** 100 S/s to 216 kS/s (with resolution ≤ 363.80 μ 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** ± 0.2 , ± 0.5 , ± 1 , ± 2 , ± 5 , ± 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-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-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
NC	26	8	NC
AGND	25	7	AGND
NC	24	6	NC
AGND	23	5	AGND
NC	22	4	NC
AGND	21	3	AGND
NC	20	2	NC
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