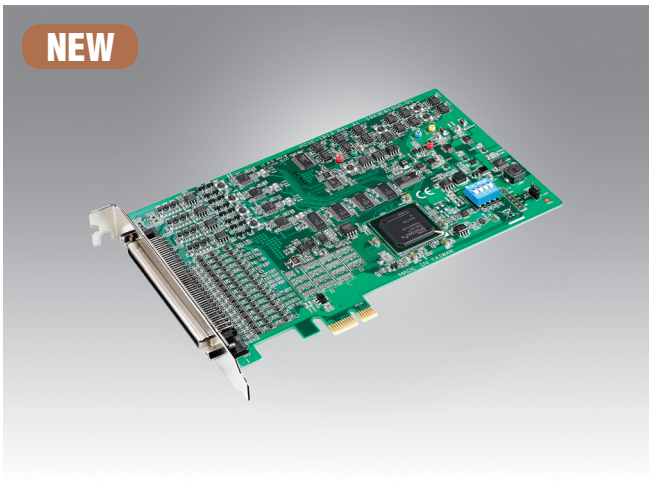
PCIE-1813

38.4 kS/s, 26-Bit, 4-Ch, Simultaneous Sampling, Universal Bridge Input, Multifunction PCI Express Card



Features

- 4 simultaneous sampling analog inputs, up to 38.4 kS/s, 26-bit resolution
- Full, half, and quarter-bridge sensor input with built-in anti-aliasing filter
- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Four 32-bit programmable encoder counters/ timers/ encoder counters
- 32 programmable DI/Os with interrupt functions
- Board ID switch
- Full automatic calibration

Introduction

PCIE-1813 is a 26-bit high-resolution multifunction data acquisition PCI Express card specifically designed for bridge sensor inputs, such as strain gauges, load cells, pressure sensors, and torque sensors. PCIE-1813 also features 2-ch, 16-bit analog outputs with waveform generation capability and supports simultaneous waveform generation and analog input functions.

Specifications

Analog Input Overview

- **Channels** 4
- **Resolution** 26 bits
- **Sample Rate** 38.4 kS/s max. simultaneous

Voltage Input

- **Input Ranges** ±10 V, ±5 V, ±2.5 V, ±1.25 V, ±625 mV, ±312.5 mV
- **Accuracy** ±0.01% of FSR

Bridge Input

- **Input Ranges** ±31.25 mV/V, ±62.5 mV/V, ±125 mV/V, ±250 mV/V,±500 mV/V, and ±1 V/V
- **Bridge Mode** Full, half, quarter
- **Bridge Resistance** 120 Ω, 350 Ω, 1 kΩ
- **Shunt Calibration** 33.333 kΩ, 50 kΩ, 100 kΩ
- **Excitation Voltage** 0 ~ 10 V
- **Remote Sensing** Yes

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** 3 MSPS 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** 5 mA
- **Operation Mode** Static update, waveform generation
- **Accuracy** ±0.01% of FSR

Analog Trigger

- **Channels** 2
- **Resolution** 16 bits
- **Input Range** -10 V ~ +10 V
- **Hysteresis** Yes. Hysteresis range is configurable
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital Trigger

- **Channels** 2
- **Input Voltage** Logic 0: 1.5 V max.
Logic 1: 3.5 V min.
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital I/O

- **Channels** 32 (shared)
- **Input Voltage** Logic 0: 1.5 V max.
Logic 1: 3.5 V min.
- **Output Voltage** Low 0.5 V max.@ +20 mA (sink)
High 4.5 V min.@ -20 mA (source)

Counter/ Timer/ Encoder Counter

- **Channels** 4
- **Resolution** 32 bits
- **Input/Output Voltage** Same as that for digital I/O
- **Max. Input Frequency** 10 MHz
- **Counter/Timer Functions** Frequency measurement, pulse width measurement, pulse output, PWM output
- **Encoder Functions** Quadrature (X1, X2, X4), dual pulse (CW/CCW), signed pulse (OUT/DIR)

General

- **Form Factor** PCI Express x1
- **I/O Connector** 100-pin SCSI female ribbon-type connector
- **Dimensions (L x W)** 167 x 100 mm (6.6" x 3.9")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **Board ID** TM switch

Ordering Information

- **PCIE-1813-AE** 38.4 kS/s, 26-bit, 4-ch, simultaneous sampling, universal bridge input, multifunction PCI Express card

Accessories

- **PCL-101100R-1E** 100-pin SCSI shielded cable, 1 m
- **PCL-101100R-2E** 100-pin SCSI shielded cable, 2 m
- **ADAM-39100-BE** 100-pin DIN rail SCSI wiring board
- **PCLD-8810-AE** Low-Pass Active Filter Board
- **PCLD-8813-AE** 6Advanced Signal Conditioning Board for PCIE-1812/PCIE-1813
- **PCLD-8811-AE** Low-Pass Active Filter Boar

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