PCIe/PXIe-9529

8-CH 24-Bit High-Resolution Dynamic Signal Acquisition Module

PXIExpress™ PCI EXPRESS®



Introduction

The ADLINK PCIe/PXIe-9529 are high-performance, high density dynamic signal acquisition modules, featuring up to eight 24-bit analog input channels simultaneously sampling at 192 kS/s, and a 108 dB dynamic range, providing ample power for high-density high channel count signal measurement. The PCIe/PXIe-9529 feature a vibration-optimized lower AC cutoff frequency of 0.5 Hz, and all input channels incorporate 4 mA bias current for integrated electronic piezoelectric (IEPE) signal conditioning for accelerometers and microphones, ideally positioning the module for machine condition monitoring, NVH, and phased array data acquisition applications.

Features

- **24-Bit Sigma-Delta ADC**
- **8 simultaneous analog inputs**
- **192 kS/s maximum sampling rate**
- **±1V, and 10V input ranges**
- **110 dB dynamic range**
- **Antialiasing filters**
- **AC (0.5Hz), or DC coupling, software selectable**
- **IEPE - 4mA, software configurable**

Supported Operating System

- Windows 7/8 x64/x86, Linux

Driver and SDK

- LabVIEW, MATLAB, C/C++, Visual Basic, Visual Studio.NET

Ordering Information

PXIe-9529
8-CH 24-Bit High-Resolution Dynamic Signal Acquisition Module for PXIe bus

PCIe-9529
8-CH 24-Bit High-Resolution Dynamic Signal Acquisition Module for PCIe bus

Specifications

Analog Input

- Number of simultaneously sampled channels: 8
- Input configuration: Differential or pseudo-differential
- Input impedance:

Input Impedance	Differential Configuration	Pseudodifferential Configuration
Between positive input and system ground	1 MΩ	1 MΩ
Between negative input and system ground	1 MΩ	50 Ω

- Input coupling: AC or DC, software selectable
- AC coupling cutoff frequency: 0.5 Hz
- ADC resolution: 24-bit
- ADC type: Sigma-Delta
- Sampling rate: 192 kS/s maximum,
  8 kS/s to 54 kS/s in 192 μS/s increments,
  54 kS/s to 108 kS/s in 576 μS/s increments,
  108 kS/s to 192 kS/s in 768 μS/s increments
- Input signal range: ± 10V, or ± 1V
- Integrated Electronic Piezoelectric (IEPE):
  · Current: 4 mA for each channel
  · IEPE compliance: 24 V
- Overvoltage protection
  · Differential : ± 42.4V
  · Pseudo-differential :
  - Positive terminal : ± 42.4V
  - Negative terminal : Not protected, rated at ± 2.5V
- Offset error: ± 1 mV max
- Gain error: ± 0.5% of FSR
- Crosstalk: < -100 dB
- THD: < -104 dB

Trigger

- Trigger Sources
  · Software trigger
  · Analog trigger
  · External digital trigger
  · PXI STAR trigger (PXIe-9529)
  · SSI (PCIe-9529)
  · PXI trigger bus [0..7] (PXIe-9529)
- Trigger Modes
  · Post-trigger
  · Delay trigger
- External Digital Trigger Input:
  · 5 V TTL compatibility
  · Trigger polarity: rising or falling edge
  · Pulse width: 20 ns minimum

Timebase

- Delay trigger timebase
  PCIe clock (125 MHz)
- Sample clock timebase
  Internal: onboard synthesizer (10 MHz)
  External: SSI (PCIe-9529)
  External: PXIe backplane 10 MHz and 100 MHz (PXIe-9529)

Data Storage and Transfer

- Scatter-Gather DMA data transfer
- 2048 samples for each channel

Onboard Reference

- +5.000 V onboard reference voltage
- < 5.0 ppm/°C reference temperature drift
- 15 minutes recommended warmup

General Specifications

- I/O Connector:
  · SMB x 8 for analog inputs
  · SMB x 1 for external digital input
- Dimensions (not including connectors)
  · PXIe-9529: 160 (W) x 100 (H) mm (6.24" x 3.9")
  · PCIe-9529: 167.64 (W) x 106.68 (H) mm (6.53" x 4.16")
- Bus Interface:
  · PCI Express Gen 1 x4
- Ambient Temperature (Operational):
  · 0°C to 55°C (32°F to 131°F)
- Ambient Temperature (Storage):
  · -20°C to 80°C (-4°F to 176°F)
- Relative Humidity:
  · 10% to 90%, non-condensing

Certifications

- EMC/EMI: CE, FCC Class A

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