

PXle-9848

8-CH 14-Bit 100 MS/s High-Speed PXI Express Digitizer

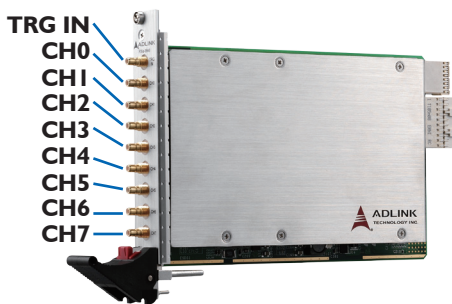
NEW



Features

- PXI Express specification Rev. 1.0 compliant
- Up to 100 MS/s sampling rate
- 8 simultaneously analog inputs
- High resolution 14-bit ADC
- Up to 100 MHz bandwidth for analog input
- 512 MB onboard storage memory
- Programmable input voltage range of $\pm 0.2\text{ V}$ or $\pm 2\text{ V}$
- Scatter-Gather DMA data transfer for high speed data streaming
- One external digital trigger input
- Full auto-calibration
- OS Information
 - Windows XP/7/8, x64/x86
 - Linux
- Software Compatibility
 - LabVIEW, MATLAB, Visual Studio, Visual Studio.NET

IO connector definition



Introduction

The ADLINK PXle-9848 is a 8-CH 14-bit 100 MS/s digitizer for high frequency and wide dynamic range signals with an input frequency up to 100 MHz. The 100 MHz bandwidth analog input with 50Ω impedance receives $\pm 0.2\text{ V}$ or $\pm 2\text{ V}$ high speed signals. With a PCI Express bus interface and ample onboard acquisition memory up to 512 MB, the PXle-9848 easily manages simultaneous 8-CH data streaming.

Equipped with high speed and high linearity 14-bit A/D converters, the PXle-9848 is ideal for applications requiring high-speed data acquisition, such as power module testing, LIDAR testing, and video signal analysis.

Highlights

Flexible Use Options

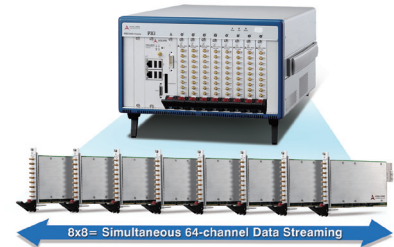
The PXle-9848 provides a flexible input range from $\pm 0.2\text{ V}$ to $\pm 2\text{ V}$, software selectable 50Ω or $1\text{ M}\Omega$ input impedance, a wide variety of triggering options, and tight synchronization capability, all maximizing convenience of use.

High Density Simultaneous 8-CH Data Streaming

Benefiting from PXle architecture, the PXle-9848 easily manages simultaneous 8-CH data streaming. Users can synchronize multiple PXle-9848 digitizers to mount a test system providing up to 64 channels in a single 9-slot PXI Express chassis.

Extra Buffering

The PXle-9848 provides built-in memory up to 512 MB for massive data storage, enabling users to extend acquisition for preset durations.

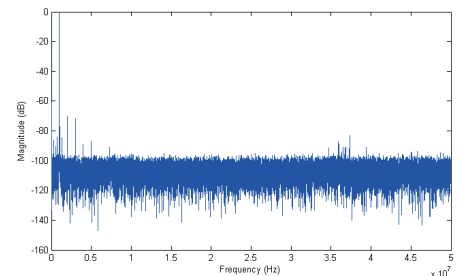


Equipped with ADLINK PXES-2590 PXle chassis and PXle-9848 modules, high density testing system with up to 64 channels can be implemented. Note: For PXES-2590 details, please refer to pages I-13.

Specifications

Analog Input

- Number of channels: 8 single-ended
- Input impedance: 50Ω or $1\text{ M}\Omega$, software selectable
- Input Coupling: AC or DC, software selectable
- Input signal range: $\pm 0.2\text{ V}$ or $\pm 2\text{ V}$
- Overvoltage protection: $\pm 5\text{ V}$
- ADC resolution: 14 bits, 1 in 16384
- Crosstalk: $< -80\text{ dB}$ from DC to 1 MHz, for all input ranges
- -3 dB bandwidth: 100MHz
- Offset error: $\pm 1\text{ mV}$
- Gain error: $\pm 0.5\%$
- System noise:
- Spectral Characteristics
 - Sampling rate: 100MS/s
 - SINAD: 65 dB
 - SNR: 66 dB
 - THD: -72 dB
 - ENOB: 10.58 bit
 - SFDR: 74 dB



Typical values are measured using 1 MHz sine wave input at 100 MS/s with amplitude at -1 dB of full scale on a $\pm 2\text{ V}$ range. Acquired data lengths are in 64k points, calculated with Hanning window FFT.

Trigger

- Trigger Source
 - Software
 - External digital trigger
 - Analog trigger from CH0 ~ CH7
 - PXI_STAR
 - PXI trigger bus [0..7]
 - PXIe_DSTARB
- Trigger Modes
 - Post-trigger
 - Pre-trigger
 - Middle trigger
 - Delay trigger
- External Digital Trigger Input
 - Source: Front panel SMB connector
 - Configurable threshold: 0.8 mV to 3.3 V, default 1.67 V
 - Maximum input overload: -0.5 V to +5.5 V
 - Trigger polarity: rising or falling edge
 - Pulse width: 20 ns minimum

Timebase

- Sample clock source
 - Internal: on-board clock (oscillator)
 - External: PXI_CLK10 or PXIe_CLK100
- Timebase frequency: 100 MHz
- Sampling rate: 100 MS/s to 1025.9 S/s
- Internal timebase accuracy: < ± 25 ppm

Data Storage and Transfer

- 512 MB onboard memory, shared among the eight analog inputs (64 MB/per channel)
- Scatter-Gather DMA data transfer

Onboard Reference

- +2.5 V onboard reference voltage
- < 3.0 ppm/°C reference temperature drift
- 15 minutes recommended warm-up

General Specifications

- I/O Connector:
 - SMB x 8 for analog inputs
 - SMB x 1 for external digital input
- Dimensions (not including connectors):
 - 160 (W) x 100 (H) mm (6.24" x 3.9")
- 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
- Power consumption:

Power Rail	Standby current (mA)	Full load (mA)
+3.3 V	5350	5900
+12 V	470	500

Certifications

- EMC/EMI: CE, FCC Class A

Ordering Information**■ PXIe-9848**

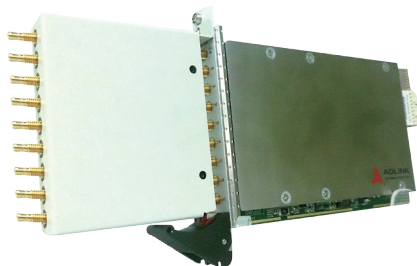
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■ PXIe-9848H

8-CH 14-Bit 100 MS/s High Speed PXI Express Digitizer with x15/x50 attenuator

■ Attenuator dedicated fit for PXIe-9848

The attenuator is specifically designed to support the ADLINK PXIe-9848 as a signal conditioning module, providing 8 simultaneous analog inputs and 15:1 or 50:1 attenuation ratio. Input impedance, analog input connectors, over-voltage protection, and mechanical design make the attenuator board a transparent match with the PXIe-9848. The attenuator delivers the best solution to measurement range expansion in the PXI system.

**Specifications**

	15:1	50:1
Attenuation ratio	15:1	50:1
Bandwidth (-3 dB)	45 MHz	35 MHz
DC gain error	1%	1%
Offset error	< ± 2 mV	< ± 2 mV
Passband flatness	< ± 0.4 dB	< ± 0.4 dB
Input impedance	1M Ω	920k Ω
Input Capacitance	13.75pF	15pF
Compensation Range	6.5 ~ 30pF	6.5 ~ 30pF
SNR	65 dB	66 dB

- The attenuator is connected with the PXIe-9848 for all test conditions
- Dimensions: 99.5 (W) x 94 (H) mm (3.88" x 3.67")
- Ambient Temperature (Operational): 0°C to 55°C (32°F to 131°F)
- Relative Humidity: 10% to 90%, non-condensing