

# PXle-9848

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



### 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 50 $\Omega$  impedance receives  $\pm 0.2$  V or  $\pm 2$  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.

### 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  $\pm 0.2$  V or  $\pm 2$  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

### Highlights

#### Flexible Use Options

The PXle-9848 provides a flexible input range from  $\pm 0.2$  V to  $\pm 2$  V, software selectable 50 $\Omega$  or 1 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 PXIe 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.

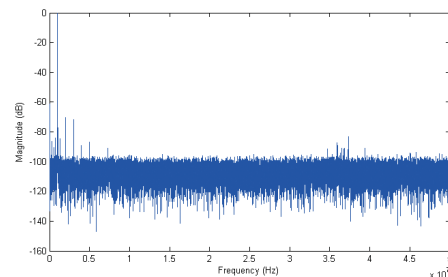


Equipped with ADLINK PXES-2590 PXIe chassis and PXle-9848 modules, high density testing system with up to 64 channels can be implemented. Note: For PXES-2590 details, please refer to pages I-13.

### Specifications

#### Analog Input

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

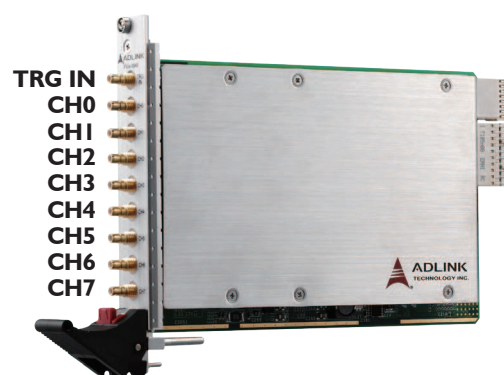
**General Specifications**

- 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

**IO connector definition****Ordering Information**

- **PXIe-9848**  
8-CH 14-Bit 100 MS/s High-Speed PXI Express Digitizer