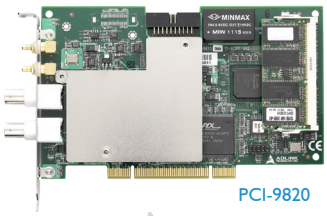
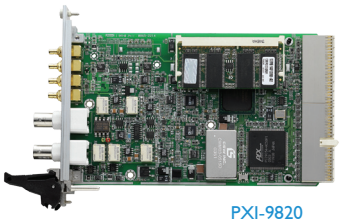
PCI/PXI-9820

2-CH 14-Bit 65 MS/s PCI/PXI Digitizers with SDRAM



PCI-9820



PXI-9820

Introduction

ADLINK's PCI/PXI-9820 is a 65 MS/s, high-resolution PXI digitizer with deep SODIMM SDRAM memory. The device features flexible input configurations, including programmable input ranges and user-configurable input impedance. With the deep onboard acquisition memory, the PCI-9820/PXI-9820 is not limited by the 132 MB/s bandwidth of PCI bus and can record the waveform for a long period of time. The PCI-9820/PXI-9820 is ideal for high-speed waveform capturing, such as radar and ultrasound applications, as well as software radio applications, or those signal digitizing applications which need deep memory for data storage.

Features

- **Supports a 32-bit 3.3 V or 5 V PCI bus**
- **PXI specifications Rev.2.2 compliant (PXI-9820)**
- **14-bit A/D resolution**
- **Up to 60 MS/s (with internal timebase) & 65 MS/s (with external timebase) sampling rate per channel**
- **Up to 130 MS/s sampling rate in "ping pong" mode**
- **2-CH single-ended bipolar inputs**
- **>30 MHz -3 dB bandwidth**
- **Up to 512 MB onboard SODIMM SDRAM**
- **Programmable ranges of ±1 V and ±5 V**
- **User-configurable input impedance of 50 Ω or high input impedance**
- **Scatter-gather DMA**
- **Analog and digital triggering**
- **2-CH synchronous digital inputs (PXI-9820)**
- **Fully auto calibration**
- **Multiple modules synchronization capability**

OS Information

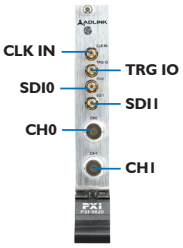
• Windows XP/7/8, x64/x86

Software Compatibility

• LabVIEW, MATLAB, Visual Studio, Visual Studio.NET

Software Recommendations

• AD-Logger, DAQBench



Specifications

Analog Input

- Number of channels: 2 simultaneous-sampled single-ended
- Resolution: 14 bits
- Maximum sampling rate
  - · 65 MS/s for 2 inputs
  - · 130 MS/s for Ping-Pong mode using external timebase
- Onboard sample memory
  - · 512 MB
- Bandwidth (-3 dB): 30 MHz minimum
- Input signal ranges: (software programmable) ±5 V, ±1 V
- Input Coupling: DC
- Overvoltage protection

Range	Overvoltage Protection
± 5 V	± 14 V
± 1 V	± 5 V

- Input Impedance (soldering selectable): 50 Ω, 1.5 MΩ
- Crosstalk: < -80 dB, DC to 1 MHz
- Total harmonic distortion (THD): -75 dB
- Signal-to-Noise ratio (SNR)

Range	SNR
± 5 V	66 dB
± 1 V	62 dB

- Spurious-free dynamic range (SFDR): 75 dB
- Data transfer: bus-mastering DMA with scatter-gather

Auto Calibration

- Onboard reference: +5 V
- Onboard reference temperature drift: 2 ppm/°C
- Stability: 6 ppm/1000 Hrs

External Timebase Input

- PCI-9820: direct external timebase input
  PXI-9820: 10 MHz input for PLL or direct external timebase input
- Connector: SMB
- Impedance: 50 Ω
- Coupling: AC
- Input amplitude: 1 Vpp to 2 Vpp
- Overvoltage protection: 2.5 Vpp
- Frequency range: 500 kHz - 65 MHz

Triggering

Analog Triggering

- Modes: pre-trigger, post-trigger, middle-trigger, delay-trigger
- Sources: CH0 and CH1
- Coupling: DC

Digital triggering

- Modes: pre-trigger, post-trigger, middle-trigger, delay-trigger
- Source: external digital trigger from SMB
- Compatibility: 5 V/TTL

Synchronous Digital Input (For PXI-9820 Only)

- Number of channels: 2
- Compatibility: 5 V/TTL
- Data transer: bus-mastering DMA with scatter/gather

General Specifications

- I/O connector
  - · BNC x 2 for analog inputs
  - · SMB x 4 for external digital trigger, external time base, and synchronous digital inputs
- Operating temperature: 0°C to 50°C (32°F to 122°F)
- Storage temperature: -20°C to 80°C (-4°F to 176°F)
- Relative humidity: 10% to 90%, non-condensing
- Power requirements

Power Rail	Current	
	PXI-9820	PCI-9820
5 V	900 mA typical	895 mA
12 V	305 mA typical	295 mA
3.3 V	360 mA typical (with 128 MB SDRAM) 500 mA typical (with 512 MB SDRAM)	310 mA (with 128 MB SDRAM) 430 mA (with 512 MB SDRAM)

- Dimensions (not including connectors)
  PCI-9820: 175 mm x 107 mm (6.82" x 4.17")
  PXI-9820: 160 mm x 100 mm (6.24" x 3.9")

Certifications

- EMC/EMI: CE, FCC Class A

Cable Accessories

Cable	Description	PXI-9820	PCI-9820
SMB-SMB-1M	1-meter SMB to SMB cable	√	√
SMB-BNC-1M	1-meter SMB to BNC cable	√	√
ACL-SSI-2	SSI Bus cable for 2 devices	-	√
ACL-SSI-3	SSI Bus cable for 3 devices	-	√
ACL-SSI-4	SSI Bus cable for 4 devices	-	√

Ordering Information

- **PCI-9820D/128-0**
  2-CH 14-Bit 65 MS/s Digitizer with 128 MB Memory
- **PCI-9820D/512-0**
  2-CH 14-Bit 65 MS/s Digitizer with 512 MB Memory
- **PXI-9820D/128**
  2-CH 14-Bit 65 MS/s Digitizer with 128 MB Memory
- **PXI-9820D/512**
  2-CH 14-Bit 65 MS/s Digitizer with 512 MB Memory

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