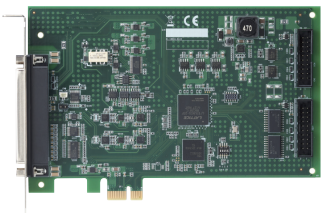
PCIe-9101/9121/9141

16/32 Channels, Multiplexer, High Performance Multifunction Data Acquisition Card



Features

- PCI Express bus
- 32/16 single-ended or 16/8 differential analog input channels
- 16-bit high A/D resolution
- Onboard 4k-sample A/D FIFO
- Supports programmable voltage input range of ±10V, ±5V, ±2.5V, ±1.25V, ±0.625V, ±0.3125V
- Up to 1024 configuration programmable gain amplifiers
- 2-ch 16-bit multiplying analog outputs with waveform generation
- Onboard 1k-sample D/A FIFO
- 16-ch TTL digital input/16-ch TTL digital output
- Up to 2 independent full function general purpose timer counters
- Direct memory access channels offload CPU utilization
- Internal software and external digital/analog trigger support
- Fully automated calibration
- Board ID switch

Introduction

The PCIe-91xx series are PCI Express multi-function data acquisition cards for industrial applications. They feature a high sample rate, high resolution and high density I/O design which allows for easier integration of multiple functions in a single card useful in a variety of applications including data logging, process control, and condition monitoring.

Key benefits

- **Support Operating System**
  Windows 7/10/11 x86/x64 or later, Linux
- **Driver and SDK**
  LabVIEW, C/C++, Visual Basic, Visual Studio.NET
- **Software Utility**
  ACE, Soft-Front Panel

Key benefits

- High density design with many input/output functions packed into each card.
- Programmable gain amplifiers for higher analog input accuracy.
- Direct memory access channels offload CPU utilization.
- Easy to use utility/SDK simplifies design effort.

Ordering Information

- **PCIe-9101**
  16-ch 16-bit 250KS/s Multifunction DAQ
- **PCIe-9121**
  16-ch 14-bit 800KS/s Multifunction DAQ
- **PCIe-9141**
  16-ch 16-bit 1MS/s Multifunction DAQ

Terminal Boards & Cables

- **DIN-37D-01**
  Terminal board with one 37-pin D-sub connector and DIN-rail mounting (Cables not included.)
- **ACL-10137-1MM**
  37-pin D-sub male/male cable, 1 M
- **ACL-10120-1**
  20-pin flat cable, 1 M

Specifications

Model Name	PCIe-9101	PCIe-9121	PCIe-9141
Analog Input			
Number of Channels	16 single-ended (SE) or 8 differential input (DI)		
Resolution	16-bit	14-bit	16-bit
Sampling Rate	Single-channel: 250kS/s Scanning: 100kS/s	Single-channel: 800 kS/s Scanning: up to 400 kS/s	Single-channel: 1MS/s Scanning: up to 500 kS/s
FIFO buffer size	Onboard 4k samples		
Input Range	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V, ±0.3125 V		
Input impedance	10MΩ		
Input coupling	DC		
Overvoltage protection	Continuous ±20 V	Continuous ± 15 V	
Trigger Source	Software Digital Analog		
Data Transfer	Polling DMA		
SNR	90 dB	84 dB	90 dB
ENOB	14.5 bit	13.5 bit	14.5 bit
Analog Output			
Number of Channels	2		
Resolution	16 Bit		
Output Range	± 10 V		
FIFO buffer size	Onboard 1K samples (2-channel share)		
Output driving capacity	± 20 mA max		
Slew rate	10 V/μs		

Specifications

Model Name	PCIe-9101	PCIe-9121	PCIe-9141
Settling time (0.1% of Full scale)	5 us		
Output coupling	DC		
Output impedance	< 0.1 ohm		
Trigger Source	Software Digital		
Data transfers	Polling DMA		
Digital Input			
Number of Channels	16		
Compatibility	TTL		
Input Impedance	pull-low 100K ohm		
Input frequency range	0.01Hz to 1M Hz		
FIFO buffer size	Onboard 512 samples		
Isolation	No		
Trigger Source	Software Digital		
Data Transfer	Polling DMA		
Digital Output			
Number of Channels	16		
Compatibility	TTL		
Input Impedance	pull-low 100Kohm		
Input frequency range	0.01Hz to 1M Hz		
FIFO buffer size	Onboard 512 samples		
Isolation	No		
Trigger Source	Software Digital		
Data Transfer	Polling DMA		
General Purpose Timer Counter			
Number of Channels	2		
Resolution	32 Bit		
Compatibility	TTL		
Clock Source	Internal clock fixed to 33M Hz. External clock 0.01Hz to 8M Max Selected by software		
Output Frequency	By internal clock: 16.5MHz By external clock: 32MHz Max		
General Specification			
Bus Type	PCI Express 1.0		
Bus Width	x1 lane		

Specifications

Model Name	PCIe-9101	PCIe-9121	PCIe-9141
Dimension (L x W x H)	169.55 mm x 16.15 mm x 98.4 mm		
Connector	37-pin D-type connector		
Operating Temperature	0°C to 60°C		
Storage Temperature	-40 to 85 °C		
Power Consumption	Typical: 71.6 mA@3.3V 261.5 mA@12V Max: 257.8 mA@3.3V 556.24 mA@12V	Typical: 35 mA@3.3V 105 mA@12V Max: 186 mA@3.3V 557 mA@12V	