

# PCIe-9103

## 32 Channels, Multiplexer, High Performance Multifunction Data Acquisition Card



### Features

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

### Introduction

The PCIe-9103 is a PCI Express multi-function data acquisition card for industrial applications featuring 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.

### Feature Support

- **Supported Operating Systems**  
Windows 7/10/11 x86/x64 or later, Linux
- **Drivers and SDK**  
LabVIEW, C/C++, Visual Basic, Visual Studio.NET
- **Software Utilities**  
ACE, Soft-Front Panel

### Key Benefits

- High density design with many input/output functions.
- 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-9103**  
32-ch 16-bit 500KS/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

Analog Input	Number of Channels	32 single-ended (SE) or 16 differential input (DI)
	Resolution	16-bit
	Sampling Rate	Single-channel: 500kS/s Scanning: 500kS/s
	FIFO buffer size	Onboard 4k samples
	Input Range	$\pm 10\text{ V}$ , $\pm 5\text{ V}$ , $\pm 2.5\text{ V}$ , $\pm 1.25\text{ V}$ , $\pm 0.625\text{ V}$ , $\pm 0.3125\text{ V}$
	Input impedance	10M $\Omega$
	Input coupling	DC
	Overvoltage protection	Continuous $\pm 15\text{ V}$
	Trigger Source	Software/Digital/Analog
	Data Transfer	Polling/DMA
	SNR	90 dB
	ENOB	14.5 bit
Digital Input	Number of Channels	16
	Compatibility	TTL isolation
	Input Impedance	2.4Kohm/0.5W
	Isolation	Yes
	Data Transfer	Polling
Digital Output	Number of Channels	16
	Compatibility	TTL
	Output Impedance	No, default Open
	Isolation	Yes
	Isolation Voltage	2500Vrms
	Data Transfer	Polling
General Purpose Timer Counter	Number of Channels	1
	Resolution	32-bit
	Compatibility	TTL
	Clock Source	Internal clock fixed to 33M Hz. External clock 0.01Hz to 2M 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
	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: 113 mA@3.3V/292.1 mA@12V Max: 140 mA@3.3V/656.2 mA@12V

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