PCI-9812

4-ch 12-bit 20 MS/s Simultaneous-Sampling Analog Input Card

Features

- Up to 20 MS/s sampling rate
- 4 simultaneous analog inputs
- High resolution 12-bit ADC
- Up to 17 MHz bandwidth for analog input
- Programmable input voltage range of ±1V or ±5V
- Bus mastering DMA data transfer for high speed data streaming
- 3-ch TTL digital inputs (with A/D conversion)

Introduction

ADLINK's PCI-9812 is a 4-ch, 12-bit, 20 MS/s simultaneous-sampling analog input card. The high-speed analog input channels are single-ended, with hardware programmable input ranges of ±1 V and ±5 V, and input impedances of 50 Ω, 1.25 kΩ and 15 MΩ. The onboard 32 k-sample A/D FIFO can buffer so data throughput is less than 100 Mbytes/s; the FIFO performs as the temporary A/D sample buffer, so no data loss will occur. When four channels operate at 20 MS/s simultaneously, each sample generates two bytes, resulting in 160 Mbytes/s (4 channels * 20 M * 2 bytes) of throughput, which exceeds the peak 132 Mbytes/s bandwidth of the PCI bus. To avoid data loss, the FIFO has a 32 k-sample count limitation.

In addition to the onboard 40 MHz timebase, users are able to supply an external timebase in either sine wave or digital forms. The PCI-9812 also features an external digital trigger and programmable analog trigger, so the conversion start point of multiple cards can be synchronized to external events. The trigger modes (software-trigger, pre-trigger, post-trigger, middle-trigger and delay trigger) further expand the capabilities of these high-speed devices. ADLINK's PCI-9812 delivers cost-effective and reliable data acquisition capabilities and is ideal for vibration testing, image digitizing, ultrasonic measurement, biomedical research, ATE and other high-end industrial, scientific, and military applications.

Ordering Information

PN	Description
PCI-9812	4-ch 12-bit 20 MS/s Simultaneous-Sampling Analog Input Card

Supported Operating Systems

- Windows 10/11, Linux

Driver and SDK

- C/C++, C#, LabVIEW

Specifications

Model Name	PCI-9812
Analog Input	
Number of Channels	4 single-ended
Resolution	12-bit
Maximum Sampling Rate	20 MS/s
Input Range	±1V, ±5V
Input Impedance	50Ω, 1.25 kΩ, 15MΩ
Accuracy	±1.5% of reading (typical)
Input Coupling	DC
Trigger Sources	Software, analog, digital trigger (5 V/TTL compatible)
Trigger Modes	Pre-trigger, post-trigger, middle-trigger, delay trigger
Triggering	
Analog Trigger Modes	Pre-trigger, post-trigger, middle-trigger, delay-trigger
Analog Trigger Source	CH0, CH1, CH2, CH3
Analog Trigger Slope	Rising, falling
Analog Trigger Coupling	DC
Digital Trigger Modes	Pre-trigger, post-trigger, middle-trigger, delay-trigger
Digital Trigger Source	External digital trigger
Digital Trigger Slope	Rising edge
Digital Trigger Compatibility	5 V/TTL (minimum pulse width: 25 ns)
External Sine Wave Clock	
Input Coupling	AC
Input Impedance	50 Ω
Input Frequency	300 kHz to 40 MHz
Input Range	1.0 to 2.0 Vpp
Overvoltage Protection	2.5 Vpp
External Digital Clock	
Input Coupling	DC
Input Impedance	50 Ω
Compatibility	5 V/TTL
Input Frequency	20 kHz to 40 MHz
Overvoltage Protection	Diode clamping, -0.3 V to +5.3 V
Digital Input	
Number of Channels	3
Compatibility	5 V/TTL with 10 KΩ pull down resistors
Overvoltage Protection	Diode clamping, -0.3 V to +5.3 V
Data Transfers	Bus mastering DMA with A/D samples

Specifications

General Specifications	
I/O Connector	BNC x 5 10-pin ribbon male
Operating Temperature	0˚C to 40˚C (32˚F to 104˚F)
Storage Temperature	-20˚C to 70˚C (-4˚F to 158˚F)
Relative Humidity	10% to 90%, non-condensing
Power Requirement	5 V: 1.4 A
Dimensions (not including connectors)	173 mm x 108 mm (6.74” x 4.21”)