

PCI-9111 Series

16-CH 12/16-Bit 100 kS/s Low-Cost Multi-Function DAQ Cards



Introduction

ADLINK's PCI-9111 series are 16-CH, 100 kS/s low-cost multi-function DAQ cards that feature flexible analog input configurations. An RC filter is implemented on each A/D input channel to allow attenuation or filtering of the input signals. The PCI-9111 series provide analog inputs with 5 programmable input ranges for bipolar inputs. The PCI-9111 series also support automatic analog input scanning. The PCI-9111DG provides 12-bit A/D resolution while the PCI-9111HR provides 16-bit A/D resolution.

The PCI-9111 series also feature 1-CH 12-bit analog output, 16-CH TTL digital inputs and 16-CH TTL digital outputs. ADLINK's PCI-9111 series delivers cost-effective and reliable data acquisition capabilities, and is ideal for a broad variety of applications.

Features

- Supports a 32-bit 5 V PCI bus
- 12-bit A/D resolution (PCI-9111DG)
- 16-bit A/D resolution (PCI-9111HR)
- 16-CH single-ended analog inputs
- Up to 100 kS/s sampling rate
- Onboard 1 k-sample A/D FIFO
- Programmable gains of $\times 1$, $\times 2$, $\times 4$, $\times 8$, $\times 16$
- Bipolar analog input ranges
- Onboard low-pass filtering capability for analog inputs
- Automatic analog inputs scanning
- One 12-bit multiplying analog outputs
- 16-CH TTL digital inputs and 16-CH TTL digital outputs
- 4-CH TTL extended digital inputs and 4-CH TTL extended digital outputs
- Compact, half-size PCB

Operating Systems

- Windows 7/Vista/XP/2000/2003 Server
- Linux

Recommended Software

- AD-Logger
- VB.NET/VC.NET/VB/VC++/BCB/Delphi
- DAQBench

Driver Support

- DAQPilot for LabVIEW™
- DAQ-MTLB for MATLAB®
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux

Specifications

Analog Input

- Number of channels: 16 single-ended
- Resolution
 - 12 bits (PCI-9111DG)
 - 16 bits (PCI-9111HR)
- Conversion time: 8 μ s
- Maximum sampling rate: 100 kS/s
- Input signal ranges (software programmable)

Gain	Input Range
	Bipolar
1	± 10 V
2	± 5 V
4	± 2.5 V
8	± 1.25 V
16	± 0.625 V

Accuracy

Gain	Accuracy
1, 2	0.01% of FSR \pm 1 LSB
4, 8	0.02% of FSR \pm 1 LSB
16	0.04% of FSR \pm 1 LSB

- Input coupling: DC
- Overtoltage protection: continuous ± 35 V
- Input impedance: 10 M Ω
- Trigger modes: software, pacer, and external trigger (5 V/TTL compatible)
- FIFO buffer size: 1 k samples
- Data transfers: polling, interrupt

Analog Output

- Number of channels: 1 voltage output (NO s)
- Resolution: 12 bits
- Output ranges (jumper selectable)

Output Range	
Bipolar	± 10 V
Unipolar	0 to 10 V

- Output driving capacity: ± 5 mA max
- Settling time: 30 μ s
- Data transfers: programmed I/O

Digital I/O

- Number of channels: 16 inputs and 16 outputs
- Compatibility: 5 V/TTL
- Data transfers: programmed I/O

General Specifications

- I/O connector
 - 37-pin D-sub female
 - 20-pin ribbon male x 2
- Operating temperature: 0°C to 60°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 5% to 95%, non-condensing
- Power requirements

Device	+5 V
PCI-9111DG	570 mA typical
PCI-9111HR	570 mA typical

- Dimensions (not including connectors)
175 mm x 107 mm

Terminal Boards & Cables

DIN-37D-01*

Terminal Board with One 37-pin D-sub Connector and DIN-Rail Mounting

DIN-20P-01*

Terminal Board with One 20-pin Ribbon Connector and DIN-Rail Mounting

ACLD-9137-01

General-Purpose Terminal Board with One 37-pin D-sub Male Connector

ACLD-9188-01*

General-Purpose Terminal Board with Two 20-pin Ribbon Connectors and One 37-pin D-sub Connector

ACLD-9182A-01*

Terminal Board with 16-CH Isolated Digital Inputs

ACLD-9185-01*

Terminal Board with 16-CH Relay Outputs

* Cables are not included. For information on mating cables, refer to P2-61/62

Ordering Information

PCI-9111DG

16-CH 12-Bit 100 kS/s Low-Cost Multi-Function DAQ Card

PCI-9111HR

16-CH 16-Bit 100 kS/s Low-Cost Multi-Function DAQ Card

Pin Assignment

CN3		CN1	
A10	1	20	1
A11	2	21	2
A12	3	22	3
A13	4	23	4
A14	5	24	5
A15	6	25	6
A16	7	26	7
A17	8	27	8
A.GND	9	28	A.GND
A.GND	10	29	A.GND
N/C	11	30	DA Out
PreTrg	12	31	ED10
+12Vout	13	32	ED11
D.GND	14	33	ED12
D.GND	15	34	ED13
ExtTrg	16	35	ED00
EDO1	17	36	ED02
EDO3	18	37	N/C
+5Vout	19		
CN2			
D00	1	2	DO1
D02	3	4	DO3
D04	5	6	DO5
D06	7	8	DO7
D08	9	10	DO9
DO10	11	12	DO11
DO12	13	14	DO13
DO14	15	16	DO15
GND	17	18	GND
+5Vout	19	20	+12Vout

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