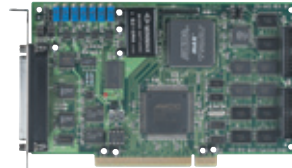


PCI-9112/LPCI-9112

16-CH 12-Bit 110 kS/s Multi-Function DAQ Card / Low-Profile DAQ Card

Features

- Support a 32-bit 5 V PCI bus (PCI-9112)
 - Supports a 3.3 V or 5 V PCI bus (LPCI-9112)
 - 12-bit A/D resolution
 - Up to 110 kS/s sampling rate
 - 16-CH single-ended or 8-CH differential inputs
 - Bipolar or unipolar analog input ranges
 - Programmable gains of x0.5, x1, x2, x4, x8
 - Automatic analog inputs scanning
 - Bus-mastering DMA for analog inputs
 - 2-CH 12-bit multiplying analog outputs
 - 16-CH TTL digital inputs and 16-CH TTL digital outputs
 - 1-CH 16-bit general-purpose timer/counter
 - Compact, half-size PCB (PCI-9112)
 - Compact, low-profile PCI size PCB (LPCI-9112)
- Operating Systems**
 - Windows Vista/XP/2000/2003
 - Linux
 - Windows CE (call for availability)
 - Recommended Software**
 - VB.NET/VC.NET/VB/VC++/BCB/Delphi
 - DAQBench
 - Driver Support**
 - DAQPilot for Windows
 - DAQ-LVIEW PnP for LabVIEW™
 - DAQ-MTLB for MATLAB®
 - PCIS-DASK for Windows
 - PCIS-DASK/X for Linux



PCI-9112



LPCI-9112

Introduction

ADLINK PCI-9112/LPCI-9112 is a 16-CH, 12-bit, 110 kS/s multi-function DAQ Card. The PCI-9112/LPCI-9112 device features flexible configurations on analog inputs. It provides analog inputs with 4 programmable input ranges for both bipolar and unipolar inputs. The A/D on the PCI-9112/LPCI-9112 features a sampling rate up to 110 kS/s with resolution at 12 bits. The device supports automatic analog input scanning, and offers a differential mode for 8-CH analog inputs and maximum noise elimination, as well as single-ended modes for 16-CH analog inputs.

The PCI-9112/LPCI-9112 also features 2-CH 12-bit analog outputs, 1-CH 16-bit general-purpose timer/counter, 16-CH TTL digital inputs and 16-CH TTL digital outputs. LPCI-9112 is the MD1 size, low-profile version of PCI-9112. The low-profile PCI card is especially suitable for the applications which have the space-restriction on the size of peripheral cards. Based on the technology of PCI-9112, LPCI-9112 enhances the supporting of PCI bus from 5 V only to 3.3 V or 5 V universal PCI bus.

Specifications

Analog Input

- Number of channels: 16 single-ended or 8 differential
- Resolution: 12 bits
- Conversion time: 8 µs
- Maximum sampling rate: 110 kS/s
- Input signal ranges

Gain	Input Range	
	Bipolar	Unipolar
0.5	±10 V	--
1	±5 V	0 to 10 V
2	±2.5 V	0 to 5 V
4	±1.25 V	0 to 2.5 V
8	±0.625 V	0 to 1.25 V

Accuracy

Gain	Accuracy
0.5, 1	0.01 % of FSR ± 1 LSB
2, 4	0.02 % of FSR ± 1 LSB
8	0.04 % of FSR ± 1 LSB

- Input coupling: DC
- Overvoltage protection: continuous ±35 V
- Input impedance: 1 GΩ
- Trigger modes: software, pacer
- Data transfers: programmed I/O, interrupt, bus-mastering DMA

Analog Output

- Number of channels: 2 voltage outputs
- Resolution: 12 bits
- Output ranges (software programmable)

Output Range	
Unipolar	0 to 10 V, 0 to 5 V, 0 to EXTREF

- Output driving capacity: ±5 mA max
- Settling time: 30 µs to 0.5 LSB
- 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-Purpose Timer/Counter

- Number of channels: 1
- Resolution: 16 bits
- Compatibility: 5 V/TTL
- Base clock available: 2 MHz, external clock to 10 MHz

General Specifications

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

	+5 V	+12 V
PCI-9112	460 mA typical	110 mA typical
LPCI-9112	500 mA typical	110 mA typical

- Dimensions (not including connectors)
 - 175 mm x 107 mm (PCI-9112)
 - 120 mm x 65 mm (LPCI-9112)

Termination Boards

For PCI-9112:

- DIN-37D-01***
Termination Board with one 37-pin D-sub Connector and DIN-Rail Mounting
- DIN-20P-01***
Termination Board with one 20-pin Ribbon Connector and DIN-Rail Mounting
- ACLD-9137-01**
General-Purpose Termination Board with one 37-pin D-sub Male Connector
- ACLD-9138-01***
General-Purpose Termination Board with one 37-pin D-sub Connector
- ACLD-9125-01***
Termination Board with one 37-pin D-sub Connector and One Cold Junction Temperature Sensor
- ACLD-9188-01***
General-Purpose Termination Board with Two 20-pin Ribbon Connectors and One 37-pin D-sub Connector
- ACLD-9182A-01***
Termination Board with 16-CH Isolated Digital Inputs
- ACLD-9185-01***
Termination Board with 16-CH Relay Outputs

For LPCI-9112:

- DIN-68S-01***
Termination Board with one 68-pin SCSI-II Connector and DIN-Rail Mounting (Including One 1-meter ACL-10568 Cable)

* Cables are not included. For information on mating cables, refer to Section 12.

Pin Assignment

PCI-9112		LPCI-9112	
CN3: Analog Input/Output & Counter/Timer			
AIO (AIH0)	1 20 (AIL0) AI8	DOUT0	1 35 DIN0
A1 (AIH1)	2 21 (AIL1) AI9	DOUT1	2 36 DIN1
A2 (AIH2)	3 22 (AIL2) AI10	DOUT2	3 37 DIN2
A3 (AIH3)	4 23 (AIL3) AI11	DOUT3	4 38 DIN3
A4 (AIH4)	5 24 (AIL4) AI12	DOUT4	5 39 DIN4
A5 (AIH5)	6 25 (AIL5) AI13	DOUT5	6 40 DIN5
A6 (AIH6)	7 26 (AIL6) AI14	DOUT6	7 41 DIN6
A7 (AIH7)	8 27 (AIL7) AI15	DOUT7	8 42 DIN7
AGND	9 28 AGND	DOUT8	9 43 DIN8
AGND	10 29 AGND	DOUT9	10 44 DIN9
V.REF	11 30 AO1	DOUT10	11 45 DIN10
ExtVref2	12 31 ExtVref1	DOUT11	12 46 DIN11
+12Vout	13 32 AO2	DOUT12	13 47 DIN12
AGND	14 33 GATE0	DOUT13	14 48 DIN13
D.GND	15 34 GATE	DOUT14	15 49 DIN14
Cout0	16 35 Cout1	DOUT15	16 50 DIN15
ExtTrg	17 36 N/C	FCOUT0	17 51 EXTCLK
N/C	18 37 EXTCLK	EXTTRG	18 52 GATE0
+5Vout	19	FCOUT1	19 53 GATE
CN1: Digital Input			
DIO	1 2 DI1	+12V	20 54 SGND
DI2	3 4 DI3	VCC	21 55 SGND
DI4	5 6 DI5	AGND	22 56 AGND
DI6	7 8 DI7	VREF	23 57 EXTVREF1
DI8	9 10 DI9	EXTVREF2	24 58 DAOUT0
DI10	11 12 DI11	AGND	25 59 DAOUT1
DI12	13 14 DI13	AGND	26 60 AGND
DI14	15 16 DI15	AIN0	27 61 AIN8
GND	17 18 GND	AIN1	28 62 AIN9
+5Vout	19 20 +12Vout	AIN2	29 63 AIN10
CN2: Digital Output			
DO0	1 2 DO1	AIN3	30 64 AIN11
DO2	3 4 DO3	AIN4	31 65 AIN12
DO4	5 6 DO5	AIN5	32 66 AIN13
DO6	7 8 DO7	AIN6	33 67 AIN14
DO8	9 10 DO9	AIN7	34 68 AIN15
DO10	11 12 DO11		
DO12	13 14 DO13		
DO14	15 16 DO15		
GND	17 18 GND		
+5Vout	19 20 +12Vout		

Ordering Information

- PCI-9112**
16-CH 12-Bit 110 kS/s Multi-Function DAQ Card
- LPCI-9112**
16-CH, 12-Bit 110 kS/s Multi-Function Low-Profile DAQ Card

1 Software Solutions
2 PXI/CompactPCI Platforms
3 Modular Instrument
4 PXI/CompactPCI Modules
5 Bus Interface
6 GPIB Interface
7 PCI/PCI Express® DAQ Cards
8 PCI/PCI Express® DIO Cards
9 PC/104-Plus Modules
10 ISA DAS/DIO Cards
11 System Product
12 Wiring Termination Boards
13 Motion, HSL, Vision, COM & GEME
14 Remote I/O Modules
15 Industrial Computers