PCI-9112

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

Features

- Supports a 32-bit 5 V PCI bus
- 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

Operating Systems
- Windows 2000/NT/XP/9x
- DOS
- Red Hat Linux
- Windows CE (call for availability)

Recommended Software
- VB/VC++/BCB/Delphi
- DAQBench

Driver Support
- PCIS-DASK for Windows 2000/NT/XP/9x
- PCIS-DASK/X for Red Hat Linux
- PCIS-OCX ActiveX controls
- PCIS-LVIEW/PnP for LabVIEW *NEW!*

Introduction

ADLINK PCI-9112 is a 16-CH, 12-bit, 110kS/s multi-function DAQ Card. The PCI-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 device features a sampling rate up to 110kS/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 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. ADLINK PCI-9112 delivers cost-effective and reliable data acquisition capabilities, and is ideal for a broad variety of applications.

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, and external trigger (5 V/TTL compatible)
- 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	
Bipolar	±10 V, ±5 V, ±EXTREF
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 %, noncondensing
- Power requirements

+5 V	+12 V
460 mA typical	110 mA typical

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

Termination Boards

- **DIN-37D**
  Termination Board with a 37-pin D-sub Connector and DIN-Rail Mounting (Including One 1-meter ACL-10137 Cable)
- **DIN-20P**
  Termination Board with a 20-pin Ribbon Connector and DIN-Rail Mounting (Including One 1-meter ACL-10120 Cable)
- **ACLD-9137**
  General-Purpose Termination Board with a 37-pin D-sub Male Connector
- **ACLD-9138**
  General-Purpose Termination Board with a 37-pin D-sub Connector (Including One 1-meter ACL-10237 Cable)
- **ACLD-9178**
  General-Purpose Termination Board with Two 20-pin Ribbon Connectors (Including Two 1-meter ACL-10120 Cables)
- **ACLD-8125**
  Termination Board with a 37-pin D-sub Connector and One Cold Junction Temperature Sensor (Including One 1-meter ACL-10137 Cable)
- **ACLD-9188**
  General-Purpose Termination Board with Two 20-pin Ribbon Connectors and One 37-pin D-sub Connector (Including Two 1-meter ACL-10120 Cables)
- **ACLD-9182A**
  Termination Board with 16-CH Isolated Digital Inputs (Including One 1-meter ACL-10120 Cable)
- **ACLD-9185**
  Termination Board with 16-CH Relay Outputs (Including One 1-meter ACL-10120 Cable)

Pin Assignment

CN3: Analog Input / Output & Counter/Timer

AI0 (AIH0)	1	20	(AIL0) AI8
AI1 (AIH1)	2	21	(AIL1) AI9
AI2 (AIH2)	3	22	(AIL2) AI10
AI3 (AIH3)	4	23	(AIL3) AI11
AI4 (AIH4)	5	24	(AIL4) AI12
AI5 (AIH5)	6	25	(AIL5) AI13
AI6 (AIH6)	7	26	(AIL6) AI14
AI7 (AIH7)	8	27	(AIL7) AI15
AGND	9	28	AGND
AGND	10	29	AGND
V.REF	11	30	AO1
ExtVref2	12	31	ExtVref1
+12Vout	13	32	AO2
AGND	14	33	GATE0
D.GND	15	34	GATE
Cout0	16	35	Cout1
ExtTrg	17	36	N/C
N/C	18	37	EXTCLK
+5Vout	19		

CN1: Digital Input

DI0	1	2	DI1
DI2	3	4	DI3
DI4	5	6	DI5
DI6	7	8	DI7
DI8	9	10	DI9
DI10	11	12	DI11
DI12	13	14	DI13
DI14	15	16	DI15
GND	17	18	GND
+5Vout	19	20	+12Vout

CN2: Digital Output

DO0	1	2	DO1
DO2	3	4	DO3
DO4	5	6	DO5
DO6	7	8	DO7
DO8	9	10	DO9
DO10	11	12	DO11
DO12	13	14	DO13
DO14	15	16	DO15
GND	17	18	GND
+5Vout	19	20	+12Vout

Ordering Information

- **PCI-9112**
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