Introduction
ADLINK's cPCI/PCI-9112 are 16-CH, 12-bit, 110 kS/s multi-function DAQ cards. The cPCI/PCI-9112 devices features flexible configurations on analog inputs. They provides analog inputs with 4 programmable input ranges for both bipolar and unipolar inputs. The A/D on the cPCI/PCI-9112 features a sampling rate up to 110 kS/s with resolution at 12 bits. These devices support 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 cPCI/PCI-9112 also feature 2-CH 12-bit multiplying analog outputs, 1-CH 16-bit general-purpose timer/counter, 16-CH TTL digital inputs, and 16-CH TTL digital outputs.

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: 0.5, 1, 2, 4, 8
  - Input Range: ±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V
- Accuracy: 0.01% of FSR ± 1 LSB
- Input coupling: DC
- Overvoltage protection: continuous ±35 V
- Input impedance: 1 GΩ
- Trigger modes: software
- Data transfers: programmed I/O, interrupt, bus-mastering DMA

**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

**Calibration**
- PCI-9112: Calibrate Analog Output on 5V
- PCI-9112A: Calibrate Analog Output on 10V

**General Specifications**
- I/O connector: 37-pin D-sub female
- Operating temperature: 0°C to 60°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 5% to 95%, non-condensing
- Power requirements
  - ±5 V: 600 mA typical
  - ±12 V: 20 mA typical
  - PCI-9112: 460 mA typical
  - PCI-9112A: 110 mA typical
- Dimensions (not including connectors)
  - 160 mm x 100 mm (cPCI-9112)
  - 175 mm x 107 mm (PCI-9112)

**Features**
- Supports a 3.3 V or 5 V PCI bus (PCI-9112)
- 3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R2.1) (cPCI-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 0.5, 1, 2, 4, 8
- 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

**Operating Systems**
- Linux

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

**Driver Support**
- DAQPilot for LabVIEW™
- DAQ-MLT/LB for MATLAB®
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux
## Terminal Boards & Cables

**For PCI-9112:**
- **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-9138-01**
  - General-Purpose Terminal Board with One 20-pin Ribbon Connectors and One 37-pin D-sub Connector
- **ACLD-9182A-01**
  - Terminal Board with One 100-pin SCSI-II Connector and DIN-Rail Mounting
- **ACLD-9185-01**
  - Terminal Board with 16-CH Isolated Digital Inputs
- **ACLD-91037-1MP**
  - 37-pin D-sub male/female cable, 1 M
- **ACLD-91037-1MF**
  - 37-pin D-sub male/female cable, 1 M
- **ACLD-91021-01**
  - 20-pin flat cable, 1 M
- **ACLD-91027-01**
  - 37-pin D-sub male/female flat cable, 1 M

**For cPCI-9112:**
- **DIN-100S-01**
  - Terminal Board with 100-pin SCSI-II Connector and DIN-Rail Mounting
- **ACLD-9102100-1**
  - 100-pin SCSI-II cable (mating with AMP-787802-9), 1 M

*For more information on mating cables, please refer to P2-61/62.

### Pin Assignment

#### PCI-9112/PCI-9112A

<table>
<thead>
<tr>
<th>CN3: Analog Input /Output &amp; Counter/Timer</th>
<th>cPCI-9112</th>
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<tbody>
<tr>
<td>DOUT_0</td>
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<tr>
<td>DOUT_1</td>
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<tr>
<td>DOUT_2</td>
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<td>DOUT_14</td>
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<td>+5Vout</td>
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<td>D114</td>
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<tr>
<td>GND</td>
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<tr>
<td>+5Vout</td>
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<td>D14</td>
</tr>
<tr>
<td>GND</td>
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<tr>
<td>+5Vout</td>
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#### Ordering Information

- **PCI-9112**
  - 16-CH 12-Bit 110 kS/s Multi-Function DAQ Card
  - (AO Calibrated on 5V)
- **PCI-9112A**
  - 16-CH 12-Bit 110kS/s Multi Function DAQ Card
  - (AO Calibrated on 10V)
- **cPCI-9112**
  - 16-CH 12-Bit 110 kS/s Multi-Function DAQ Card