cPCI-9116 Series
64-CH 16-Bit 250 kS/s Multi-Function DAQ Cards

Introduction
ADLINK's cPCI-9116 series are high-density and high-resolution multi-function DAQ cards for PXI/CompactPCI form factors. The devices can sample up to 64 AI channels with different gain settings and scan sequences, making them ideal for dealing with high-density analog signals with various input ranges and sampling speeds. The cPCI-9116 devices feature flexible configurations on analog inputs. They provide analog inputs with 4 programmable input ranges for both bipolar and unipolar inputs. The A/D on the cPCI-9116 devices features a sampling rate of up to 250 kS/s with resolution at 16 bits. These devices also offer differential mode for 32 AI channels in order to achieve maximum noise elimination.

The cPCI-9116 series also feature 1-CH 16-bit general purpose timer/counter, B-CH TTL digital inputs, and B-CH TTL digital outputs. The cPCI-9116R allows I/O connectivity to be routed through the backplane via J2/P2 allowing a rear I/O transition module to be inserted, which is capable of efficient trouble-shooting and maintenance. ADLINK's cPCI-9116 devices deliver cost-effective and reliable data acquisition capabilities, and are ideal for a broad variety of applications.

Features
- 3U/6U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R2.1)
- 16-bit A/D resolution, up to 250 kS/s sampling rate
- Up to 250 kS/s sampling rate
- 64-CH single-ended or 32-CH differential inputs
- Onboard 1 x sample A/D FIFO
- Bipolar or unipolar analog input ranges
- Programmable gains of x1, x2, x4, x8
- 512-configuration channel-gain queue
- Bus-mastering DMA for analog inputs
- 8-CH TTL digital inputs and 8-CH TTL digital outputs
- 1-CH 16-bit general purpose timer/counter
- Rear I/O available on cPCI-9116R

Operating Systems
- Linux
- Windows CE (call for availability)

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

Driver Support
- DAQPlot for Windows
- DAQPlot for LabVIEW™
- DAQ-MLTB for MATLAB®
- PCI-DS/A for Windows
- PCI-DS/A for Linux

Specifications
Analog Input
- Number of channels: 64 single-ended or 32 differential (software selectable per channel)
- Resolution: 16 bits
- Maximum sampling rate: 250 kS/s
- Input signal ranges (software programmable)

<table>
<thead>
<tr>
<th>Gain</th>
<th>Input Range</th>
<th>Bipolar</th>
<th>Unipolar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>±2.5 V</td>
<td>0 to 10 V</td>
<td>0 to 5 V</td>
</tr>
<tr>
<td>2</td>
<td>±1.25 V</td>
<td>0 to 2.5 V</td>
<td>0 to 1.25 V</td>
</tr>
<tr>
<td>4</td>
<td>±0.625 V</td>
<td>0 to 1.25 V</td>
<td>0 to 0.625 V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.01% of FSR ± 1 LSB</td>
</tr>
<tr>
<td>2</td>
<td>0.02% of FSR ± 1 LSB</td>
</tr>
<tr>
<td>8</td>
<td>0.04% of FSR ± 1 LSB</td>
</tr>
</tbody>
</table>

Digital I/O
- Number of channels: 8 inputs and 8 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: 24 MHz, external clock up to 24 MHz

General Specifications
- I/O connector: 100-pin SCSI-II female
- Power requirements
  - Relative humidity: 5% to 95%, non-condensing
  - Storage temperature: -20˚C to 80˚C
  - Operating temperature: 0˚C to 55˚C
  - I/O connector: 100-pin SCSI-II female
  - Compatibility: 5 V/TTL
  - AC Line: 110/220 V, 50/60 Hz, 550 mA
  - Power input: ±15 V
  - Overvoltage protection: Continuous ±35 V
  - Data transfers: programmed I/O
  - FIFO buffer size: 1 k samples
  - Channel-gain queue size: 512 configurations

Pin Assignment

Terminal Boards & Cables
- DIN-1005-01
  Terminal Board with One 100-pin SCSI-II Connector and DIN-Rail Mounting (cables are not included.)

ACLB-102100-1
100-pin SCSI-II cable (rating with AMP-787082-9), 1 M
* For more information on mating cables, please refer to P2-91/60.

Ordering Information
- cPCI-9116
  64-CH 16-Bit 250 kS/s Multi-Function DAQ Card
- cPCI-9116R
  64-CH 16-Bit 250 kS/s Multi-Function DAQ Card with Rear I/O

ExtTimeBase
ExtTrg
FSH_OUT
GP_TC_GATE
GP_TC_UPDN
+5Vout
DGND

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