Advantech

Data Acquisition Solutions

A Broad Selection of Form Factors to Satisfy All Your DAQ Needs

- DAQ Software - DAQNavi
- Communication Cards
- PC/104 & PCI-104 Modules
- USB Modules
- PCI /PCI Express Cards
- Signal Conditioners
- CompactPCI
Advantech Data Acquisition Solutions Overview

As a leading supplier of data acquisition products worldwide, Advantech offers a wide range of I/O devices with various interfaces and functions based on PC technology, from legacy ISA to modern USB, from signal-conditioning to graphical software tools. Advantech’s industrial I/O products are reliable, accurate, affordable, and suitable for many industrial automation applications, such as T&M (Test & Measurement) and laboratory applications like monitoring, control, machine automation and production testing.

Comprehensive Product Offerings

- Sensors & Actuators
- Wiring & Signal Conditioners
- DAQ Devices
Signal Conditioning
Signal conditioning circuits improve the quality of signals generated by transducers before they are converted into digital signals by the PC’s data acquisition hardware. The ADAM-3000 series covers a wide range of signals from DC micro voltage to AC 400 V; and from mini-amp to 5 amp signals.

Data Acquisition Hardware
Advantech offers dedicated products for USB, PCI, PCI Express, ISA, CompactPCI, PC/104 or PCI-104 interfaces. So regardless if the platform is an IPC, embedded PC, desktop computer or laptop, customer requirements are covered.

Data Acquisition Software
DAQNavi, Advantech’s next-generation driver package, delivers higher performance, compatibility, and reliability through a brand new driver and SDK; programmers benefit from many new, user-friendly templates and shortened development times.
Guaranteed Reliable Execution for Multi-Thread Programming
Multi-thread programming is now widely-used in DAQ applications. But without careful handling, it can cause unexpected problems like system crashes or data errors. Thread-safe programming technology prevents such problems. DAQNavi has thread-safe mechanisms built into its design, relieving programmers from multi-thread programming problems.

Latest Operating System Support
DAQNavi adheres to the latest Windows (32-bit and 64-bit) and Linux operating system requirements. In addition, DAQNavi software design helps programmers easily migrate their DAQ applications between OS’s, without spending lots of time solving OS-compatibility issues.

Supports Multiple Programming Languages
For DAQ application development, DAQNavi supports 10 popular programming languages, including C/C++, Visual Basic, C#, VB.NET, Delphi, Qt, Borland C++ Builder (BCB), Java, MATLAB and LabVIEW. DAQNavi saves programmer development time when it is necessary to change programming languages.
What is DAQNavi?
DAQNavi, Advantech's next-generation driver package, delivers higher performance, compatibility, and reliability through a brand new driver and SDK; programmers benefit from many new user-friendly templates and shortened development times.

DAQNavi Software Architecture

<table>
<thead>
<tr>
<th>Apps</th>
<th>Native Code</th>
<th>Managed Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Examples</td>
<td>Examples</td>
</tr>
<tr>
<td>Java UI</td>
<td>C++ Console</td>
<td>LabVIEW</td>
</tr>
<tr>
<td></td>
<td>MFC Qt/BCB</td>
<td></td>
</tr>
<tr>
<td>Interpreter</td>
<td>Java Class Library</td>
<td>C++ class library</td>
</tr>
<tr>
<td>Core</td>
<td>integrated DLL (BioDAQ.DLL for Windows 10, Windows 8, Windows 7, QNX, Linux)</td>
<td>DAQ Device Driver (Windows 10, Windows 8, Windows 7, QNX, Linux)</td>
</tr>
</tbody>
</table>

LabVIEW Programming Support
LabVIEW programmers can easily build DAQ applications with DAQNavi Assistant and Polymorphic VI. DAQNavi Assistant, based on LabVIEW Express VI technology, provides an intuitive wizard window that helps complete configuration programming quickly. DAQNavi Polymorphic VI delivers more programming flexibility to experienced LabVIEW programmers.

Component-based Programming
Rapidly changing application requirements challenge DAQ developers, who are pressed to shorten development times. DAQNavi delivers reusable, component-based libraries, which can save up to 70% on programming code. Programmers can ignore many detailed low-level hardware settings, and concentrate on major parameter configurations. For Visual Studio, BCB and Delphi users, DAQNavi offers step-by-step wizards that complete configurations without coding.

Easy-to-Use Utility
DAQNavi provides an integrated utility, Advantech Navigator, where programmers can perform hardware configurations and functionality testing without programming. Hardware manual, software library documentation, and sample source codes are also provided. Everything necessary for DAQ programming is provided in this utility.
Easy-to-Use Navigation Utility

SDKs
Software Development Kit Manual
DAQNavi features detailed instructions that explain the methods, properties, and events for each library, describe programming flows, and provide examples.

Video Tutorial
For each programming language, a dedicated tutorial video is provided that shows how to create a DAQ project.

Devices
All installed Advantech DAQ devices are displayed here, including simulated “Demo Devices”. Thus, even if no DAQ hardware is connected to the computer, relevant operations can be performed. For every device, there are four configurable options.

1. **Device Setting**: Hardware parameter configurations
2. **Device Test**: DAQ function test without coding
3. **Scenario**: To quickly familiarize programmers with DAQNavi component-based libraries, Advantech designed many DAQ application references known as “Scenarios”. For different programming languages, examples with source codes are provided. The utility contains more than 300 examples to dramatically reduce programming efforts.
4. **Reference**: Selected-device hardware manual
Introduction
Advantech DAQNavi DataLogger is ready-to-use application software that engineers can leverage to perform data logging, recording, and display. Without spending time programming, engineers benefit from the flexibility of acquiring and storing data from various Advantech data acquisition devices.

Features
• Data logging, display, and recording without programming
• Instant AI, buffered AI, and static DI data logging
• Hardware channel parameter configuration wizard
• Supports simulated device operation
• Save configurations into a project file for future use
• Real-time display with zoom and pan
• Supports data recording, file storage to disk
• View historical data via recorded data playback
• Supports both analog and digital graph display

Introduction
SignalMeter is a software utility that provides three functions for Advantech DAQ devices. These functions are Scope, AC Performance, and DC Performance, which provide various look angles for data acquisition.

Features
• Real-time displays of frequency spectrum based on zoom and pan operations in the time domain. Automatic amplitude, average, peak-to-peak, and frequency measurements.
• Cursor measurement for signal analysis.
• Enables Windows function for AC signal.
• Provides DC and AC performance measurement.
• Easy to use without programming.
Diverse PCI and PCI Express Cards for Reliable Communication

**Communication Cards**

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux

**Features**
- Universal PCI v2.2
- Speeds up to 921.6 kbps for extremely fast data transmission
- Supports any baud rate setting
- 2 x RS-232 or RS-232/422/485 ports
- Supported operating systems: Windows 7/8/10, and Linux.
- XR17V352 UART with 256-byte FIFOs
- 1KV Surge protection / 3KV Isolation protection

**Ordering Information**

**PCI-1602/1604**

2-Port RS-232 or RS-232/422/485 PCI Communication Card
Suitable for Multiple Applications

Factory Automation

Machine Automation

Distributed Monitoring and Control Systems

Full Range of Communication Cards with Isolation Protection

Advantech provides a full range of PCI and PCI-Express cards to satisfy all automation and equipment monitoring needs. Equipped with isolation protection, Advantech’s PCI and PCI-Express cards are ideal for demanding industrial environments.

PCI-1610/1612
4-Port RS-232 or RS-232/422/485 PCI Communication Card

Features
- Universal PCI v2.2
- Speeds up to 921.6 kbps for extremely fast data transmission
- Supports any baud rate setting
- 4 x RS-232 or RS-232/422/485 ports
- Supported operating systems: Windows 7/8/10, and Linux.
- XR17V352 UART with 256-byte FIFOs
- 1KV Surge protection / 3KV Isolation protection

OS Support
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux

Ordering Information
- PCI-1610B-DE 4-port RS-232 PCI Comm. Card w/Surge
- PCI-1610C-CE 4-port RS-232 PCI Comm. Card w/Surge & Isolation Protection
- PCI-1612B-DE 4-port RS-232/422/485 PCI Comm. Card w/Surge
- PCI-1612C-CE 4-port RS-232/422/485 PCI Comm. Card w/Surge & Isolation

Note: this series includes cable OPT4A.
# Communication Cards

## PCI-1620/1622
8-Port RS-232 or RS-232/422/485 PCI Communication Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Universal PCI v2.2</td>
<td>• PCI-1620A-DE 8-port RS-232 PCI Comm. Card</td>
</tr>
<tr>
<td>• Speeds up to 921.6 kbps for extremely fast data transmission</td>
<td>• PCI-1622B-DE 8-port RS-232/422/485 PCI Comm. Card w/ Surge Protection</td>
</tr>
<tr>
<td>• Supports any baud rate setting</td>
<td>• PCI-1622C-DE 8-port RS-232/422/485 PCI Comm. Card w/ Surge &amp; Isolation Protection</td>
</tr>
<tr>
<td>• 8 x RS-232 or RS-232/422/485 ports</td>
<td></td>
</tr>
<tr>
<td>• Supported operating systems: Windows 7/8/10, and Linux.</td>
<td></td>
</tr>
<tr>
<td>• XR17V352 UART with 256-byte FIFOs</td>
<td></td>
</tr>
<tr>
<td>• 1KV Surge protection / 3KV Isolation protection</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8

## PCIE-1602/1604
2-Port RS-232 or RS-232/422/485 PCIe Communication Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• PCI Express bus 2.0 compliant</td>
<td>• PCIE-1602B-AE 2-port RS-232/422/485 PCIe Express Comm. Card w/Surge</td>
</tr>
<tr>
<td>• Speeds up to 921.6 kbps for extremely fast data transmission</td>
<td>• PCIE-1602C-AE 2-port RS-232/422/485 PCIe Express Comm. Card w/Surge &amp; Isolation</td>
</tr>
<tr>
<td>• Supports any baud rate setting</td>
<td>• PCIE-1604B-AE 2-port RS-232 PCIe Express Comm. Card w/Surge</td>
</tr>
<tr>
<td>• 4 x RS-232 or RS-232/422/485 ports</td>
<td>• PCIE-1604C-AE 2-port RS-232 PCIe Express Comm. Card w/Surge &amp; Isolation</td>
</tr>
<tr>
<td>• Supported operating systems: Windows 7/8/10, and Linux.</td>
<td></td>
</tr>
<tr>
<td>• XR17V352 UART with 256-byte FIFOs</td>
<td></td>
</tr>
<tr>
<td>• 1KV Surge protection / 3KV Isolation protection</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8

## PCIE-1610/1612
4-Port RS-232 or RS-232/422/485 PCIe Communication Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• PCI Express bus 2.0 compliant</td>
<td>• PCIE-1610B-AE 4-port RS-232 PCIe Express Comm. Card w/Surge</td>
</tr>
<tr>
<td>• Speeds up to 921.6 kbps for extremely fast data transmission</td>
<td>• PCIE-1612B-AE 4-port RS-232/422/485 PCIe Express Comm. Card w/Surge</td>
</tr>
<tr>
<td>• Supports any baud rate setting</td>
<td>• PCIE-1612C-AE 4-port RS-232/422/485 PCIe Express Comm. Card w/Surge &amp; Isolation</td>
</tr>
<tr>
<td>• 4 x RS-232 or RS-232/422/485 ports</td>
<td>Note: this series includes cable OPT4A.</td>
</tr>
<tr>
<td>• Supported operating systems: Windows 7/8/10, and Linux.</td>
<td></td>
</tr>
<tr>
<td>• XR17V352 UART with 256-byte FIFOs</td>
<td></td>
</tr>
<tr>
<td>• 1KV Surge protection / 3KV Isolation protection</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
### PCIE-1620/1622
8-Port RS-232 or RS-232/422/485 PCIe Communication Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Operates two separate CAN networks simultaneously</td>
<td>• PCIE-1620A-BE 8-port RS-232 PCI-express Comm. Card</td>
</tr>
<tr>
<td>• High speed transmission up to 1 Mbps</td>
<td>• PCIE-1622B-BE 8-port RS-232/422/485 PCI-express Comm. Card</td>
</tr>
<tr>
<td>• Optical isolation protection of 1000 VDC</td>
<td>• w/ Surge Protection</td>
</tr>
<tr>
<td>• Windows DLL library and examples included</td>
<td>• PCIE-1622C-AE 8-port RS-232/422/485 PCI-express Comm. Card</td>
</tr>
<tr>
<td>• I/O address automatically assigned by PCI PnP</td>
<td>• OPT8C-AE DB62 ox1 to DB25 x8 Cable, 1m</td>
</tr>
<tr>
<td>• XR17V352 UART with 256-byte FIFOs</td>
<td>• OPT8H-AE DB62 x1 to DB9 x8 Cable, 1m</td>
</tr>
<tr>
<td>• 1KV Surge protection / 3KV Isolation protection</td>
<td>• OPT8J-AE DB78 x1 to DB9 x8 Cable, 1m</td>
</tr>
</tbody>
</table>

### PCI-1680U
2-Port CAN-Bus Universal PCI Card with Isolation Protection

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supports 32-bit/64-bit Windows 2000/XP/Vista/7 and Linux</td>
<td>• PCI-1680U 2-port CAN Uni-PCI COMM Card with Isolation</td>
</tr>
<tr>
<td>• 1KV Isolation protection</td>
<td></td>
</tr>
</tbody>
</table>

### PCIE-1680
2-Port CAN-Bus PCIe Card with Isolation Protection

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• PCIe bus specification 1.2 compliant</td>
<td>• PCIE-1680-AE 2-Port CAN-Bus PCIe card with Isolation Protection</td>
</tr>
<tr>
<td>• Operates two separate CAN networks at the same time</td>
<td></td>
</tr>
<tr>
<td>• High speed transmission up to 1 Mbps</td>
<td></td>
</tr>
<tr>
<td>• Optical isolation protection of 2,500</td>
<td></td>
</tr>
<tr>
<td>• Transmit/Receive status LED indicators</td>
<td></td>
</tr>
<tr>
<td>• Windows DLL library and examples included</td>
<td></td>
</tr>
<tr>
<td>• Supports Windows XP/7 driver and utility</td>
<td></td>
</tr>
<tr>
<td>• Supports Linux 2.4.xx / 2.6.xx; Intel x86 hardware platform</td>
<td></td>
</tr>
<tr>
<td>• 2.5KV Isolation protection</td>
<td></td>
</tr>
</tbody>
</table>

**Windows support:** Windows 10, Windows 8.1, Windows 8, Windows 7, Linux
PC/104 & PCI-104 Modules

Enhance Embedded Systems with PC/104 and PCI-104 Modules

Embedded computers are at the heart of many industrial, transportation, military, and aerospace applications. Due to their compact size, expansion capabilities, reliability, anti-vibration, wide operating temperature range and high-speed throughput, PC/104 and PCI-104 are the standard form factors used in embedded computing platforms. Advantech provides a wide variety of PC/104 and PCI-104 module options, such as isolated digital I/O, analog I/O, relay, counter, and multifunction cards.

PC/104 and PCI-104 products support 104 pin, 120 pin, or both, for signal and data transmission. Each pin mates with its corresponding connector so firmly that data integrity is assured, along with a high level of vibration resistance.

Advantech Offers Comprehensive Range of DAQ and Serial Communication Cards

Embedded computers are at the heart of many industrial, transportation, military, and aerospace applications. Due to their compact size, expansion capabilities, reliability, anti-vibration, wide operating temperature range and high-speed throughput, PC/104 and PCI-104 are the standard form factors used in embedded computing platforms. Advantech provides a wide variety of PC/104 and PCI-104 module options, such as isolated digital I/O, analog I/O, relay, counter, and multifunction cards.

Key Features

Anti-Vibration
PC/104 and PCI-104 products support 104 pin, 120 pin, or both, for signal and data transmission. Each pin mates with its corresponding connector so firmly that data integrity is assured, along with a high level of vibration resistance.

Stackable for Easy Expansion
The PC/104 and PCI-104 family supports standard ISA/PCI interfaces, uses open architectures, and is easy to expand upon. The consistent form factor allows different modules to be stacked on top of one another, providing the versatility to easily expand I/O and functionality.
Compact Size
With a standard dimensions of 96 x 90 mm (L x H), the design of the PC/104 and PCI-104 takes less space than traditional I/O cards and is also a perfect solution for compact embedded systems.

Wide Operating Temperature
Unlike traditional IPCs, the PC/104 and PCI-104 form factors are capable of operating in temperatures from -40~85 °C (-40~185 °F) for reliable operation in harsh environments.

Fast Read/Write Speeds
While PCI-104 products use the standard PC/104 form factor, they have dropped the ISA interface, providing more bandwidth for data transmission and allowing faster read/write speeds than traditional ISA cards.

Form Factors

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PC/104</th>
<th>PC/104-Plus</th>
<th>PCI-104</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector</td>
<td>ISA (AT and XT)</td>
<td>ISA and PCI</td>
<td>PCI</td>
</tr>
<tr>
<td>Current Version</td>
<td>2.5</td>
<td>2.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
PCI-104 Form Factors

PCM-3730I
32-ch Isolated Digital I/O PCI-104 Module

**Features**
- 16-ch Isolated DI and 16-ch Isolated DO
- 2,500 VDC Isolation Protection
- Supports DI Interrupt
- 70 VDC over voltage protection on input channels
- Isolated DO current: max. 250 mA / channel
  max. 200 mA / channel (all channel used)

**Ordering Information**
- PCM-3730I 32-ch Isolated DI/O Module
- ADAM-3920 20-pin DIN-rail Wiring Board
- PCL-10120 20-pin Flat Cable, 1 m/ 2 m

**OS Support**

Windows 10  Windows 8.1  Windows 8  Windows 7

PCM-3753I
96-ch Digital I/O PCI-104 Module

**Features**
- Supports 5V/TTL and dry contact
- Keeps DIO port configuration and DO state after system reset
- Supports DI interrupt, Pattern Match and Change of States
- Wide operating temperature range (-20 ~ 70°C, -4 ~ 158°F)

**Ordering Information**
- PCM-3753I 96-ch DI/O Module
- PCL-10150-1.2 50-pin Flat Cable, 1.2 m
- ADAM-3950 50-pin DIN-rail Flat Cable Wiring Board
- PCLD-782B 24-ch Isolated DI Board with 20-pin & 50-pin Flat Cables
- PCLD-785B 24-ch Relay Board with 20-pin & 50-pin Flat Cables

**OS Support**

Windows 10  Windows 8.1  Windows 8  Windows 7

PCM-3761I
8-ch Relay and 8-ch Isolated Digital Input PCI-104 Module

**Features**
- Relay Type: 8 x Form C (SPDT)
- Contact Rating: 0.25 A @ 250 VAC, 2 A @ 30 VDC
- 2,500 VDC isolation protection for DI
- 70 VDC over voltage protection for DI

**Ordering Information**
- PCM-3761I 8-ch Relay and 8-ch Isolated DI Module
- ADAM-3920 20-pin DIN-rail Flat Cable Wiring Board
- ADAM-3950 50-pin DIN-rail Flat Cable Wiring Board
- PCL-10150-1.2 50-pin Flat Cable, 1.2 m
- PCL-10120 20-pin Flat Cable, 1 m/ 2 m

**OS Support**

Windows 10  Windows 8.1  Windows 8  Windows 7
**PCM-3810I**
250 kS/s, 12-bit, 16-ch Multifunction PCI-104 Module

**Features**
- 16-ch single-ended / 8-ch differential AI: 12-bit, 250 kS/s
- 2-ch AO: 12-bit, 250 kS/s
- SV/TTL DIO: 16 input / output
- 3-ch counter: 24-bit, up to 10 MHz
- Event counting, frequency and pulse width measure, pulse train and PWM output

**Ordering Information**
- PCM-3810I 250 kS/s, 12-bit Multifunction Module
- PCL-10150-1.2 50-pin Flat Cable, 1.2 m
- ADAM-3950 50-pin DIN-rail Flat Cable Wiring Board

**PCM-3612I**
4-port RS-232/422/485 PCI-104 Module

**Features**
- Automatic RS-485 data flow control
- LED indicators: TX, RX
- Powerful and easy-to-use utility (ICOM Tools)

**Ordering Information**
- PCM-3612I-AE 4-port RS-232/422/485 PCI-104 Module

## PC/104 & PCI-104 Modules

### PC/104 Form Factors

#### PCM-3724
48-ch Digital I/O PC/104 Module

**Features**
- Supports 5V/TTL
- Supports DI Interrupt

**Ordering Information**
- PCM-3724 48-ch Digital I/O Module
- PCL-10150-1.2E 50-pin Flat Cable, 1.2 m
- ADAM-3950 50-pin DIN-rail Flat Cable Wiring Board
- PCLD-782B 24-ch Isolated DI Board with 20-pin & 50-pin Flat Cable
- PCLD-785B 24-ch Relay Board with 20-pin & 50-pin Flat Cable

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

#### PCM-3730
16-ch Isolated Digital I/O PC/104 Module

**Features**
- 8-ch Isolated DI and 8-ch Isolated DO
- 16-ch 5V/TTL DI and 16-ch 5V/TTL DO
- 2,500 VDC isolation protection for isolated DIO
- Supports DI Interrupt
- Isolated DO current: max. 200 mA / channel
  max. 150 mA / channel (all channel used)

**Ordering Information**
- PCM-3730 16-ch Isolated Digital I/O Module
- PCL-10120 20-pin Flat Cable, 1 m/2 m
- ADAM-3920 20-pin DIN-rail Flat Cable Wiring Board
- PCLD-785 16-ch Relay Board with 20-pin Flat Cable
- PCLD-885 16-ch Power Relay Board with 20-pin & 50-pin Flat Cable

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

#### PCM-3780
2-ch Counter/Timer with 24-ch Digital I/O PC/104 Module

**Features**
- 2-ch counter: 16-bit, up to 20 MHz
- 5V/TTL DIO: 24 input / output
- Supports DI Interrupt

**Ordering Information**
- PCM-3780 2-ch Counter and 24-ch Digital I/O Module
- PCL-10120 20-pin Flat Cable, 1 m
- PCL-10150-1.2E 50-pin Flat Cable, 1.2 m
- ADAM-3920 20-pin DIN-rail Flat Cable Wiring Board
- ADAM-3950 50-pin DIN-rail Flat Cable Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
### PCM-3718H/HO/HG

**100 kS/s, 12-bit, 16-ch PC/104 Multifunction Module**

**Features**
- 16-ch single-ended / 8-ch differential AI: 12-bit, 100 kS/s
- 1-ch AO: 12-bit, 100 kS/s (PCM-3718HO only)
- 5V/TTL DIO: 16 input / output
- 1-ch counter: 16-bit (PCM-3718HO only, for event counting, frequency measure, pulse train output)

**Ordering Information**
- PCM-3718H: 12-bit Multifunction Module
- PCM-3718HG: 12-bit High-gain Multifunction Module
- PCM-3718HO: 12-bit Multifunction with AO Module
- ADAM-3920: 20-pin DIN-rail Flat Cable Wiring Board
- PCLD-780: Screw Terminal Board with Two 20-pin Flat Cables
- PCL-10120: 20-pin Flat Cable, 1 m / 2 m

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux

### PCM-3725

**8-ch Relay and 8-ch Isolated Digital Input PC/104 Module**

**Features**
- Relay Type: 8 x Form C (SPDT)
- Relay contact rating: 30 VDC @ 1.5 A
- 2,500 VDC isolation protection for DI
- 70 VDC over voltage protection for DI

**Ordering Information**
- PCM-3725: 8-ch Relay and 8-ch Isolated DI Module
- PCL-10120: 20-pin Flat Cable, 1 m / 2 m
- PCL-10150-1.2: 50-pin Flat Cable, 1.2 m
- ADAM-3920: 20-pin DIN-rail Flat Cable Wiring Board
- ADAM-3950: 50-pin DIN-rail Flat Cable Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

### PCM-3614

**4-port RS-422/485 High-speed PC/104 Module**

**Features**
- Automatic RS-485 data flow control
- Shared IRQ settings for each ports
- LED indicators: TX, RX
- Powerful and easy-to-use utility (ICOM Tools)

**Ordering Information**
- PCM-3614: 4-port RS-422/485 High-speed Module

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux
Think Outside the Box

Portable, Robust & Versatile USB DAQ Modules

Advantech’s USB DAQ modules are known for their user-friendly design and ability to replace traditional serial and parallel devices as they eliminate the need for external power supplies and allow hot swapping. Through the Advantech USB DAQ series, users can easily upgrade their computing platforms with cutting edge technologies and realize cost-effective maintenance while allowing the data acquisition devices to operate as usual. By adding industrial-grade features, including lockable cables, multiple mounting methods and advanced detection functions, Advantech’s USB data acquisition devices are a great fit for any industrial need.

Key Features

Lockable USB Cable
Reliable connections are critical to automation control and online production. While the standard USB cable is designed for convenience, Advantech provides lockable USB cables that prevent them from being unplugged accidentally.

480Mbps High Speed Data Transfer
Advanced data acquisition functions are covered. Up to 200 kS/s sampling rate, 16-bit resolution, 16-ch analog input, 48-ch digital I/O specifications, as well as interrupt, event counter, and pulse width modulation (PWM) functions are available on Advantech’s USB data acquisition modules.
Bus-powered
With no need for external power, these devices are highly mobile as they derive power from system USB ports, freeing users from the inconvenience of finding additional power sources.

Detachable Screw Terminal & On-Module Pin Assignment Index
Saving space and money are the main benefits of using detachable screw terminals. Significant savings are realized by not having to buy additional cables and/or wiring boards, and extra space can be saved as well. Furthermore, Advantech’s on-module pin assignment simplifies maintenance efforts and reduces incorrect connections that can cause damage to the system.

Device Identification
Identification assignment of each Advantech USB DAQ module is easily made through the provided utility. This ensures that application programs control the correct modules, even if the computer is changed or the USB DAQ modules are switched or rearranged at the USB hub. This feature shortens development time of each control site and reduces duplicate programs.
### USB-4711A
150 kS/s, 12-bit, 16-ch Multifunction USB Module

#### Features
- 16 single-ended / 8 differential AI: 12-bit, 150 kS/s
- 2-ch AO: 12-bit, static update
- 5V/TTL DIO: 8 inputs, 8 outputs
- 1-ch counter: 32-bit, up to 1 kHz
- Event counting, frequency measurement
- One lockable USB cable for secure connection included

#### Ordering Information
- USB-4711A
- 150 kS/s, 12-bit, 16-ch Multi. USB Module
- 1960004544
  - Wall Mount Bracket
- 1960005788
  - VESA Mount Bracket

### USB-4716
200 kS/s, 16-bit, 16-ch Multifunction USB Module

#### Features
- 16 single-ended / 8 differential AI: 16-bit, 200 kS/s
- 2-ch AO: 16-bit, static update
- 5V/TTL DIO: 8 inputs, 8 outputs
- 1-ch counter: 32-bit, up to 1 kHz
- Event counting, frequency measurement
- One lockable USB cable for secure connection included

#### Ordering Information
- USB-4716
- 200 kS/s, 16-bit, 16-ch Multi. USB Module
- 1960004544
  - Wall Mount Bracket
- 1960005788
  - VESA Mount Bracket

### USB-4718
8-ch Thermocouple Input USB Module with 8-ch Isolated Digital Input

#### Features
- 8 differential AI: 16-bit, 10 S/s
- Supports voltage, current and thermocouple inputs
- 8-ch isolated DI & 8-ch isolated DO
- 2,500 VDC isolation protection
- One lockable USB cable for secure connection included

#### Ordering Information
- USB-4718
- 8-ch Thermocouple Input USB Module
- 1960004544
  - Wall Mount Bracket
- 1960005788
  - VESA Mount Bracket
USB-4750
32-ch Isolated Digital I/O USB Module

Features
- 16-ch isolated DI & 16-ch isolated DO
- Isolated DO current: max. 100 mA / channel, max. 1.1 A total
- Supports DI Interrupt
- 2-ch isolated counter: 32-bit, up to 8 MHz
- Event counting and frequency measurement
- 2,500 VDC isolation protection

Ordering Information
- USB-4750
- 1960004544
- 1960005788

OS Support
- Windows 10
- Windows 8.1
- Windows 8

USB-4751/L
48/24-ch Digital I/O USB Module

Features
- USB-4751L: 24-ch TTL DIO
  USB-4751: 48-ch TTL DO
- Supports both dry and wet contact
- Supports DI Interrupt
- 2-ch counter: 32-bit, up to 8 MHz
- Event counting, frequency measurement, pulse train and PWM output
- One lockable USB cable for secure connection included

Ordering Information
- USB-4751
- USB-4751L
- 1960004544
- 1960005788

OS Support
- Windows 10
- Windows 8.1
- Windows 8

USB-4761
8-ch Relay and 8-ch Isolated Digital Input USB Module

Features
- LED indicators to show activated relays
- Relay type: 8 x Form C
- Contact Rating: 0.25 A @ 250 VAC, 2 A @ 30 VDC
- 8-ch isolated DI with 5 - 30 VDC range
- Supports DI Interrupt
- 2,500 VDC protection for Isolated DI on input channels
- One lockable USB cable for secure connection included

Ordering Information
- USB-4761
- 1960004544
- 1960005788

OS Support
- Windows 10
- Windows 8.1
- Windows 8

Linux
## USB-4702

**10 kS/s, 12-bit, 8-ch Multifunction USB Module**

### Features
- 8 single-ended / 4 differential AI: 12-bit, 10 kS/s
- 2-ch AO: 12-bit, static update
- 5V/TTL DIO: 8 inputs, 8 outputs
- 1-ch counter: 32-bit, up to 5 MHz
- Event counting, frequency measurement

### Ordering Information
- USB-4702
- PCL-10137-1
- PCL-10137-2
- PCL-10137-3
- ADAM-3937

### OS Support
- Windows 10
- Windows 8.1
- Windows 8
- Linux

## USB-4704

**48 kS/s, 14-bit, 8-ch Multifunction USB Module**

### Features
- 8 single-ended / 4 differential AI: 14-bit, 48 kS/s
- 2-ch AO: 12-bit, static update
- 5V/TTL DIO: 8 inputs, 8 outputs
- 1-ch counter: 32-bit, up to 5 MHz
- Event counting, frequency measurement
- Suitable for DIN-rail mounting

### Ordering Information
- USB-4704
- 1960004544
- 1960005788

### OS Support
- Windows 10
- Windows 8.1
- Windows 8
- Linux

## USB-4620

**5-port Full-speed Isolated USB 2.0 Hub**

### Features
- 5 downstream USB 2.0 ports
- Compatible with USB 2.0 full-speed, USB 1.1, USB 1.0
- Up to 12 Mbps data transfer rate
- 3,000 V<sub>DC</sub> voltage isolation for each downstream port
- Suitable for DIN-rail mounting
- One lockable USB cable included
- 10 ~ 30 V<sub>DC</sub> power input (power adapter not included)

### Ordering Information
- USB-4620
- PWR-242
- 1960004544
- 1960005788
- USB-LOCKCABLE-AE

### OS Support
- Windows 10
- Windows 8.1
- Windows 8
- Linux
USB-4622
5-port USB 2.0 Hub

Features
- Compatible with USB 2.0 high speed, USB 2.0 full-speed, USB 1.1, USB 1.0
- Up to 480 Mbps data transfer rate
- LED indicator
- Suitable for DIN-rail mounting
- One lockable USB cable included
- 10 ~ 30 VDC power input (power adapter not included)

Ordering Information
- USB-4622 5-port USB 2.0 Hub
- PWR-242 DIN-rail Power Supply
- 1960004544 Wallmount Bracket
- 1960005788 VESA Mounting Bracket
- USB-LOCKCABLE-AE 1.8 M Lockable USB 2.0 Cable with Screw Kit

USB-4630
4-Port SuperSpeed Isolated USB 3.0 Hub

Features
- 2,500 VDC voltage isolation for upstream port
- 4 downstream USB 3.0 SuperSpeed ports
- Supplied by external 10 ~ 30 VDC power or by USB bus power only
- Suitable for DIN-rail mounting
- LED indicators for power-on and speed of each downstream port

Ordering Information
- USB-4630 5-port USB 3.0 Hub
- PWR-242 DIN-rail Power Supply
- 1960004544 Wallmount Bracket
- 1960005788 VESA Mounting Bracket
- USB-LOCKCABLE-AE 1.8 M Lockable USB 2.0 Cable with Screw Kit

OS Support: Windows 10, Windows 7

Dimensions

Unit: mm
Complete PCI and PCI Express Card Range to Meet any Machine and Test Equipment Need

One Source for All High-precision PC-based Applications

With over 20 years of plug-in DAQ card design and manufacturing experience, Advantech has become a global leader, providing a full range of industrial data acquisition and control products. The most requested features for industrial and laboratory applications, such as monitoring, control, data acquisition, and automated testing, are included.

Key Features

BoardID Switch
The BoardID DIP switch defines each card’s unique identity when multiple identical PCI cards are installed in the same computer. BoardID switch settings easily identify and provide access to each card for hardware configuration and software programming.

High Density
High density means many input/output functions are packed onto one PCI card. In the past, customers were often forced to buy more than one card to fulfill their functions, but now they can achieve their goals with just one card. The advantages are: saved space, and more efficient installation.
New Generation Interface for DAQ: PCI Express

PCI Express is a computer expansion bus standard that was designed to replace the older PCI bus standard. The PCI Special Interest Group (PCI-SIG) preserved and developed the PCI specification and released the new PCI Express standard (PCIe 1.0a) in 2003. PCI Express delivers 30 times the bandwidth of PCI bus, with a per-lane data rate of 250 MB/s and a transfer rate of 2.5 GT/s. This new generation interface features high speed point-to-point architecture, high throughput performance, software backward compatibility, I/O simplification, and more. In accord with this technological trend, Advantech offers a series of PCI Express data acquisition cards with the same development software as a PCI card, to satisfy a variety of automation needs.

Auto Calibration

The built-in auto-calibration circuitry corrects gain and offset errors in analog input and analog output channels, thereby eliminating the need for external equipment and user adjustments.

Keeping the Output Values after System Reset

When the system is hot reset (with no power shutoff), Advantech’s DAQ cards with this function can either retain the last digital (or analog) output values, or return to their default configurations, depending on jumper settings. This practical function eliminates any danger caused by misoperation during unexpected system resets.

DMA - Direct Memory Access

This is a method of transferring data to or from memory at a high rate without involving the CPU. DMA is the hardware/software technique that allows the highest rate of data transfer to or from RAM. DMA provides the means to read or write data at precise times, without restricting the microprocessor’s tasks.
Advantech offers multifunction DAQ cards that combine high performance signal measurement, arbitrary wave generation, digital I/O, and counter functionality. All these DAQ cards are equipped with both digital trigger and high-resolution analog trigger, so users can use easily and flexibly define when to start or stop data acquisition.

**Powerful PCI Express Multi-Function Data Acquisition Card**

Advantech offers multifunction DAQ cards that combine high performance signal measurement, arbitrary wave generation, digital I/O, and counter functionality. All these DAQ cards are equipped with both digital trigger and high-resolution analog trigger, so users can use easily and flexibly define when to start or stop data acquisition.
High-Speed PCI Express Digitizer

PCIE-1840 can perform extremely high speed measurements with 16-bit resolution. Its four channels can all acquire signals at a 125 MS/s sampling rate, or the user can cascade all channels into a single channel, and push the sampling rate to 500 MS/s. With its re-trigger function and time-stamp ability, the user can get relative timing information when performing measurements.

PCI Express Dynamic Signal Analyzer

PCIE-1802, with high precision 24-bit resolution, is an ideal solution for sound, audio, and vibration measurements, as well as machine condition monitoring applications. Its high density, 8-channel analog inputs can connect to IEPE and TEDS sensors directly, and can perform simultaneous 256 kS/s sampling acquisition, with an anti-alias filter.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Analog Input Channels</th>
<th>Sampling Rate</th>
<th>Resolution</th>
<th>Analog Output Channels</th>
<th>Update Rate</th>
<th>Resolution</th>
<th>Digital I/O</th>
<th>Counter</th>
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</thead>
<tbody>
<tr>
<td>PCIE-1810</td>
<td>16 SE/8 DI</td>
<td>Single-ch: 800 kS/s</td>
<td>12-bit</td>
<td>2</td>
<td>500 kS/s</td>
<td>12-bit</td>
<td>24</td>
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<tr>
<td>PCIE-1816</td>
<td>16 SE/8 DI</td>
<td>Single-ch: 1 MS/s</td>
<td>16-bit</td>
<td>2</td>
<td>3 MS/s</td>
<td>16-bit</td>
<td>24</td>
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<td>PCIE-1816H</td>
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<td>3 Ms/s</td>
<td>16-bit</td>
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<td>PCIE-1840</td>
<td>4 SE</td>
<td>125 MS/s per channel</td>
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<td>PCIE-1802</td>
<td>8 DI</td>
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<th>TTL DIO Input Channels</th>
<th>Output Channels</th>
<th>Isolated DIO Input Channels</th>
<th>Output Channels</th>
<th>Relay Output Channels</th>
<th>Timer/Counter Channels</th>
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**Selection Guide**

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<tr>
<th>Model Name</th>
<th>Analog Input</th>
<th>Analog Output</th>
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<tr>
<td></td>
<td>Sampling Rate</td>
<td>Resolution</td>
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<td>PCI-1710U</td>
<td>100 kS/s</td>
<td>12-bit</td>
</tr>
<tr>
<td>PCI-1710UL</td>
<td>100 KS/s</td>
<td>12-bit</td>
</tr>
<tr>
<td>PCI-1710HGU*</td>
<td>100 kS/s</td>
<td>12-bit</td>
</tr>
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<td>PCI-1711U</td>
<td>100 kS/s</td>
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<td>PCI-1711UL</td>
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<td>PCI-1712L</td>
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</tr>
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<td>PCI-1716</td>
<td>250 kS/s</td>
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<td>PCI-1716L</td>
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<td>PCI-1714U</td>
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<td>100 kS/s</td>
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<td>PCI-1720U</td>
<td>1 MS/s</td>
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<td>PCI-1721</td>
<td>250 kS/s</td>
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<tr>
<td>PCI-1718HGU*</td>
<td>100 kS/s</td>
<td>12-bit</td>
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<td>PCI-1713U</td>
<td>100 kS/s</td>
<td>12-bit</td>
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<td>PCI-1714UL</td>
<td>10 MS/s</td>
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*Note: PCI-1710HGU offers more gain options than PCI-1710U to increase measurement accuracy.*
<table>
<thead>
<tr>
<th>Model Name</th>
<th>Digital Input</th>
<th>Digital Output</th>
<th>Timer/Counter</th>
<th>Connector</th>
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<td>Channel</td>
<td>Channel</td>
<td>Channel</td>
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<td>4 x BNC</td>
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<td>DB37</td>
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<td>PCI-1721</td>
<td>16 TTL (shared)</td>
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<td>68-pin SCSI</td>
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<td>PCI-1723</td>
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<td>68-pin SCSI</td>
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<td>PCI-1724U</td>
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<td>1 x DB37, 2 x 20-pin</td>
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<td>16 TTL, 16 isolated</td>
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<td>1 x DB37, 4 x 20-pin</td>
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<td>32 TTL</td>
<td>3</td>
<td>5 x 20-pin</td>
</tr>
<tr>
<td>PCI-1737U</td>
<td>24 TTL (shared)</td>
<td></td>
<td>-</td>
<td>1 x 50-pin, 2 x 20-pin</td>
</tr>
<tr>
<td>PCI-1757UP</td>
<td>24 TTL (shared)</td>
<td></td>
<td>-</td>
<td>DB25</td>
</tr>
<tr>
<td>PCI-1739U</td>
<td>48 TTL (shared)</td>
<td></td>
<td>-</td>
<td>2 x 50-pin</td>
</tr>
<tr>
<td>PCI-1751</td>
<td>48 TTL (shared)</td>
<td></td>
<td>3</td>
<td>68-pin SCSI</td>
</tr>
<tr>
<td>PCI-1753</td>
<td>96 TTL (shared)</td>
<td></td>
<td>-</td>
<td>100-pin SCSI</td>
</tr>
<tr>
<td>PCI-1755</td>
<td>32 TTL (shared, high speed)</td>
<td>-</td>
<td>-</td>
<td>100-pin SCSI</td>
</tr>
<tr>
<td>PCI-1750</td>
<td>16 isolated</td>
<td>16 isolated</td>
<td>1</td>
<td>DB37</td>
</tr>
<tr>
<td>PCI-1733</td>
<td>32 isolated</td>
<td>-</td>
<td>-</td>
<td>DB37</td>
</tr>
<tr>
<td>PCI-1734</td>
<td>-</td>
<td>32 isolated</td>
<td>-</td>
<td>DB37</td>
</tr>
<tr>
<td>PCI-1752U/PCIE-1752</td>
<td>-</td>
<td>64 isolated</td>
<td>-</td>
<td>100-pin SCSI</td>
</tr>
<tr>
<td>PCI-1754/PCIE-1754</td>
<td>64 isolated</td>
<td>-</td>
<td>-</td>
<td>100-pin SCSI</td>
</tr>
<tr>
<td>PCI-1756/PCIE-1756</td>
<td>32 isolated</td>
<td>32 isolated</td>
<td>-</td>
<td>100-pin SCSI</td>
</tr>
<tr>
<td>PCI-1758UDI</td>
<td>128 isolated</td>
<td>-</td>
<td>-</td>
<td>dual 100-pin mini-SCSI</td>
</tr>
<tr>
<td>PCI-1758UDO</td>
<td>-</td>
<td>128 isolated</td>
<td>-</td>
<td>dual 100-pin mini-SCSI</td>
</tr>
<tr>
<td>PCI-1758UDIO</td>
<td>64 isolated</td>
<td>64 isolated</td>
<td>-</td>
<td>dual 100-pin mini-SCSI</td>
</tr>
<tr>
<td>PCI-1760U/PCIE-1760</td>
<td>8 isolated</td>
<td>6 x Form A, 2 x Form C</td>
<td>10 (PCI), 2 (PCIE)</td>
<td>DB37</td>
</tr>
<tr>
<td>PCI-1761</td>
<td>8 isolated</td>
<td>4 x Form A, 4 x Form C</td>
<td>-</td>
<td>DB37</td>
</tr>
<tr>
<td>PCI-1762</td>
<td>16 isolated</td>
<td>16 Relay</td>
<td>-</td>
<td>DB62</td>
</tr>
<tr>
<td>PCI-1780U</td>
<td>8 TTL</td>
<td>8 TTL</td>
<td>8</td>
<td>68-pin SCSI</td>
</tr>
<tr>
<td>PCI-1671UP</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>24-pin IEEE 488</td>
</tr>
</tbody>
</table>
PCI Express

PCIE-1730
32-ch TTL and 32-ch Isolated Digital I/O PCI Express Card

**Features**
- 16-ch isolated DI and 16-ch isolated DO
- 16-ch 5V/TTL DI and 16-ch 5V/TTL DO
- Supports DI Interrupt
- 2,500 VDC isolation protection
- High sink current on isolated output channels (500mA max./ch)

**Ordering Information**
- PCIE-1730 32-ch Isolated Digital I/O PCIe Card
- PCL-10120 20-pin Flat Cable, 1 m/2 m
- ADAM-3920 20-pin DIN-rail Flat Cable Wiring Board
- PCLD-782 16-ch Isolated DI Board with 1m 20-pin Flat Cable
- PCLD-885 16-ch Power Relay Board with 20p & 50p Flat Cables
- ADAM-3937 DB37 DIN-rail Wiring Board
- PCL-10137 DB37 Cable, 1 m/2 m

**OS Support**
- Windows 10
- Windows 8
- Windows 7

*Note: When you use PCLD-782/785/885 wiring board, remember to connect external power for relay usage.*

PCIE-1751
48-ch Digital I/O and 3-ch Counter PCI Express Card

**Features**
- Supports 5V/TTL and dry contact
- Programmable DI filter
- Keeps DIO port configuration and DO state after system reset
- Supports DI interrupt, Pattern Match and Change of States
- 3-ch counter: 32-bit, up to 10 MHz
- Event counting, frequency and pulse width measure, pulse train and PWM output

**Ordering Information**
- PCIE-1751 48-ch Digital I/O and 3-ch Counter PCI Express Card
- PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board
- ADAM-3968/20 68-pin to 3 20-pin Box Header Board
- ADAM-3968/50 68-pin to 2 50-pin Box Header Board
- PCLD-8751 48-ch Isolated DI Board
- PCLD-8761 24-ch Relay/Isolated DI Board
- PCLD-8762 48-ch Relay Board

**OS Support**
- Windows 10
- Windows 8
- Windows 7

PCIE-1752
64-ch Isolated Digital Output PCI Express Card

**Features**
- Wide output range (5 ~ 40 VDC)
- High sink current on isolated output channels (500mA max./ch)
- 2,500 VDC isolation protection

**Ordering Information**
- PCIE-1752 64-ch Isolated Digital Output PCI Express Card
- PCL-10250 100-pin SCSI to Two 50-pin SCSI Cable, 1 m/2 m
- ADAM-3951 50-pin DIN-rail Wiring Board with LED Indicators
- PCL-101100M-3 100-pin SCSI to 100-pin SCSI Cable, 3 m
- ADAM-39100 100-pin DIN-rail Wiring Board

**OS Support**
- Windows 10
- Windows 8
- Windows 7
PCIE-1753
96-ch Digital I/O PCI Express Card

**Features**
- Supports 5V/TTL and dry contact
- Programmable DI filter
- Keeps DIO port configuration and DO state after system reset
- Supports DI interrupt, Pattern Match and Change of States

**Ordering Information**
- PCIE-1753 96-ch Digital I/O PCI Express Card
- PCL-10268 100-pin to Two 68-pin SCSI Shielded Cable, 1 m/2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board
- ADAM-3968/20 68-pin to 3 20-pin Box Header Board
- ADAM-3968/50 68-pin to 2 50-pin Box Header Board
- PCLD-8751 48-ch Isolated DI Board
- PCLD-8761 24-ch Relay/Isolated DI Board
- PCLD-8762 48-ch Relay Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

PCIE-1754
64-ch Isolated Digital Input PCI Express Card

**Features**
- Wide input range (10 ~ 30 V_{oc})
- High over-voltage protection (70 V_{oc})
- 2,500 V_{oc} isolation protection
- Supports DI interrupt

**Ordering Information**
- PCIE-1754 64-ch Isolated Digital Input PCI Express Card
- PCL-10250 100-pin SCSI to Two 50-pin SCSI Cable, 1 m/2 m
- ADAM-3951 50-pin DIN-rail Wiring Board with LED Indicators
- PCL-101100M-3 100-pin SCSI to 100-pin SCSI Cable, 3 m
- ADAM-39100 100-pin DIN-rail Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

PCIE-1756
64-ch Isolated Digital Input/Output PCI Express Card

**Features**
- Wide input range (10 ~ 30 V_{oc}) and output range (5 ~ 40 V_{oc})
- High sink current on isolated output channels (500mA max./ch)
- Supports DI interrupt, Pattern Match and Change of States
- High over-voltage protection (70 V_{oc})
- 2,500 V_{oc} isolation protection

**Ordering Information**
- PCIE-1756 64-ch Isolated Digital I/O PCI Express Card
- PCL-10250 100-pin SCSI to Two 50-pin SCSI Cable, 1 m/2 m
- ADAM-3951 50-pin DIN-rail Wiring Board with LED Indicators
- PCL-101100M-3 100-pin SCSI to 100-pin SCSI Cable, 3 m
- ADAM-39100 100-pin DIN-rail Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux
PCI Express

**PCIE-1760**

8-ch Relay and 8-ch Isolated Digital Input PCI Express Card with 2-ch Counter/Timer

**Features**
- Relay Type: 2 x Form C, 6 x Form A
- Contact Rating: 1 A @ 125 VAC, 2 A @ 30 VDC
- 8-ch counter input and 2-ch PWM output
- Isolated DI supports both dry or wet contact (jumper selectable)
- LED indicators to show activated relays
- Programmable DI filter
- Supports DI Interrupt, Pattern Match and Change of Status

**Ordering Information**
- PCIE-1760
- PCL-10137
- ADAM-3937

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux

**PCIE-1810**

800 kS/s, 12-bit, 16-ch PCI Express Multifunction DAQ Card

**Features**
- 16-ch AI: 12-bit, 800 kS/s (single-channel), 500 kS/s (multiple-channel)
- 2-ch AO: 12-bit, 500 kS/s
- Supports both digital trigger and analog trigger (12-bit)
- 5V/TTL DIO: 24 input/output (direction programmable)
- 2-ch counter: 32-bit, up to 10 MHz
- Event counting, frequency and pulse width measure, pulse train and PWM output
- Supports DI Interrupt, Pattern Match and Change of Status

**Ordering Information**
- PCIE-1810
- PCL-10168H
- PCL-10168
- ADAM-3968

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux

**PCIE-1816**

1 MS/s, 16-bit, 16-ch PCI Express Multifunction DAQ Card

**Features**
- 16-ch AI: 16-bit, 1 MS/s (single-channel), 500 kS/s (multiple-channel)
- 2-ch AO: 16-bit, 3 MS/s
- Supports both digital trigger and analog trigger (16-bit)
- 5V/TTL DIO: 24 input/output (direction programmable)
- 2-ch counter: 32-bit, up to 10 MHz
- Event counting, frequency and pulse width measure, pulse train and PWM output
- Supports DI Interrupt, Pattern Match and Change of Status

**Ordering Information**
- PCIE-1816
- PCL-10168H
- PCL-10168
- ADAM-3968

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux
**PCIE-1816H**
5 MS/s, 16-bit, 16-ch PCI Express Multifunction DAQ Card

**Features**
- 16-ch AI: 16-bit, 5 MS/s (single-channel), 1 MS/s (multiple-channel)
- 2-ch AO: 16-bit, 3 MS/s
- Supports both digital trigger and analog trigger (16-bit)
- 5V/TTL DIO: 24 input/output (direction programmable)
- 2-ch counter: 32-bit, up to 10 MHz
- Event counting, frequency, and pulse width measure, pulse train and PWM output
- Supports DI Interrupt, Pattern Match, and Change of Status

**Ordering Information**
- PCIE-1816 5 MS/s, 16-bit Multifunction Card
- PCL-10168H 68-pin SCSI Shielded Cable with Noise Rejection, 1 m/2 m
- PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

---

**PCIE-1840**
4-ch 16-bit 125 MS/s High Speed PCI Express Digitizer

**Features**
- 4-ch simultaneous AI: 16-bit, 125 MS/s per channel
- Cascade channels to achieve higher sampling rate 250 MS/s (2-ch only), 500 MS/s (1-ch only)
- Non-stop data streaming capable
- 2 GB on-board memory
- Onboard anti-aliasing filter
- 1M or 50 Ohm selectable input impedance

**Ordering Information**
- PCIE-1840 4-ch 16-bit 125 MS/s High Speed PCI Express Digitizer

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

---

**PCIE-1802**
24-bit, 8-ch PCI Express Dynamic Signal Analyzer

**Features**
- 8-ch simultaneous AI: 24-bit, 216 kS/s per channel
- 6 gains settings: input ranges from ±0.2 V to ±10 V
- IEPE and TEDS smart sensors support
- 0 - 10 mA excitation, software selectable per channel
- AC or DC coupling, software selectable per channel
- Digital trigger and analog trigger (24-bit)
- Anti-aliasing filter
- Onboard FIFO size: 4096 samples
- DC offset null adjustment
- 5V/TTL DIO: 1 input, 1 output

**Ordering Information**
- PCIE-1802 216 kS/s, 24-bit Dynamic Signal Analyzer Card

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
### Multifunction

#### PCI-1710U/UL/HGU

**100 kS/s, 12-bit, 16-ch PCI Multifunction Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 16 single-ended / 8 differential AI: 12-bit, 100 kS/s</td>
<td>• PCI-1710U 100 kS/s, 12-bit Multifunction Card</td>
</tr>
<tr>
<td>• 2-ch AO: 12-bit, static update (PCI-1710U and PCI-1710HGU only)</td>
<td>• PCI-1710UL 100 kS/s, 12-bit Multifunction Card w/o AO</td>
</tr>
<tr>
<td>• 5V/TTL DIO: 16 inputs, 16 outputs</td>
<td>• PCI-1710HGU 100 kS/s, 12-bit High-gain Multifunction Card (For precise small-signal measurement)</td>
</tr>
<tr>
<td>• 1-ch counter: 16-bit, up to 10 MHz</td>
<td>• PCLD-8710 DIN-rail Wiring Board with CJC</td>
</tr>
<tr>
<td>• Event counting, pulse train output</td>
<td>• PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m</td>
</tr>
<tr>
<td></td>
<td>• ADAM-3968 68-pin DIN-rail SCSI Wiring Board</td>
</tr>
</tbody>
</table>

**OS Support**: Windows 10, 8.1, 8, 7

#### PCI-1711U/UL

**Entry-level 100 kS/s, 12-bit, 16-ch PCI Multifunction Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 16 single-ended AI: 12-bit, 100 kS/s</td>
<td>• PCI-1711U 100 kS/s, 12-bit Multifunction Card</td>
</tr>
<tr>
<td>• 2-ch AO: 12-bit, static update (PCI-1711U only)</td>
<td>• PCI-1711UL 100 kS/s, 12-bit Multifunction Card w/o AO</td>
</tr>
<tr>
<td>• 5V/TTL DIO: 16 inputs, 16 outputs</td>
<td>• PCLD-8710 DIN-rail Wiring Board with CJC</td>
</tr>
<tr>
<td>• 1-ch counter: 16-bit, up to 10 MHz</td>
<td>• PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m</td>
</tr>
<tr>
<td>• Event counting, pulse train output</td>
<td>• ADAM-3968 68-pin DIN-rail SCSI Wiring Board</td>
</tr>
</tbody>
</table>

**OS Support**: Windows 10, 8.1, 8, 7, Linux

#### PCI-1712/L

**1 MS/s, 12-bit, 16-ch PCI Multifunction Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 16 single-ended / 8 differential AI: 12-bit, 1 MS/s</td>
<td>• PCI-1712 1 MS/s, 12-bit Multifunction Card</td>
</tr>
<tr>
<td>• 2-ch AO: 12-bit, 1 MS/s (PCI-1712 only)</td>
<td>• PCI-1712L 1 MS/s, 12-bit Multifunction Card w/o AO</td>
</tr>
<tr>
<td>• 5V/TTL DIO: 16 inputs / outputs (direction programmable)</td>
<td>• PCLD-8712 DIN-rail Wiring Board for PCI-1712/L</td>
</tr>
<tr>
<td>• 3-ch counter: 16-bit, up to 10 MHz</td>
<td>• PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m</td>
</tr>
<tr>
<td>• Event counting, frequency and pulse width measure, pulse train output</td>
<td>• ADAM-3968 68-pin DIN-rail SCSI Wiring Board</td>
</tr>
</tbody>
</table>

**OS Support**: Windows 10, 8.1, 8, 7
### PCI-1716/L

**250 kS/s, 16-bit, 16-ch PCI Multifunction Card**

#### Features
- 16 single-ended / 8 differential AI: 16-bit, 250 kS/s
- 2-ch AO: 16-bit, static update (PCI-1716 only)
- 5V/TTL DIO: 16 inputs, 16 outputs
- 1-ch counter: 16-bit, up to 10 MHz
- Event counting, pulse train output

**Ordering Information**
- PCI-1716: 250 kS/s, 16-bit Multifunction Card
- PCI-1716L: 250 kS/s, 16-bit Multifunction Card w/o AO
- PCLD-8710: DIN-rail Wiring Board w/o CJC
- PCL-10168: 68-pin SCSI Shielded Cable, 1 m/2 m
- ADAM-3968: 68-pin DIN-rail SCSI Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

### PCI-1706U/UL

**250 kS/s, 16-bit, Simultaneous 8-ch Universal PCI Multifunction Card**

#### Features
- 8 differential AI: 16-bit, 250 kS/s for each channel (simultaneously sampling)
- 2-ch AO: 12-bit, static update (PCI-1706U only)
- 5V/TTL DIO: 16 inputs, 16 outputs
- 2-ch counter: 32-bit, up to 10 MHz
- Event counting, pulse train output, frequency input, PWM input, PWM output

**Ordering Information**
- PCI-1706U: 250 kS/s, 16-bit Simultaneous Multifunction Card
- PCI-1706UL: 250 kS/s, 16-bit Simultaneous Multifunction Card w/o AO
- PCL-10168-1: 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2: 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968: 68-pin DIN-rail SCSI Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

### PCI-1742U

**1 MS/s, 16-bit, 16-ch PCI Multifunction Card**

#### Features
- 16 single-ended / 8 differential AI: 16-bit, 1 MS/s
- 2-ch AO: 16-bit, static update
- 5V/TTL DIO: 16 inputs, 16 outputs
- 1-ch counter: 16-bit, up to 10 MHz
- Event counting, pulse train output

**Ordering Information**
- PCI-1742U: 1 MS/s, 16-bit, 16-ch Multifunction Card
- PCL-10168: 68-pin SCSI Shielded Cable, 1 m/2 m
- ADAM-3968: 68-pin DIN-rail SCSI Wiring Board
- PCLD-8710: DIN-rail Wiring Board w/o CJC

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
# PCI / PCI Express Cards

## Analog Input

### PCI-1713U
100 kS/s, 12-bit, 32-ch Isolated Analog Input PCI Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 32 single-ended / 16 differential AI: 12-bit, 100 kS/s</td>
<td>• PCI-1713U 100 kS/s, 12-bit, 32-ch Isolated AI Card</td>
</tr>
<tr>
<td>• 2,500 V&lt;sub&gt;DC&lt;/sub&gt; isolation protection</td>
<td>• ADAM-3937 DB37 DIN-rail Wiring Board</td>
</tr>
<tr>
<td>• 4,096 onboard FIFO</td>
<td>• PCL-10137 DB37 Cable, 1 m/2 m/3 m</td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8

### PCI-1714U/UL
30/10 MS/s, 12-bit, Simultaneous 4-ch Analog Input PCI Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 4 A/D converters simultaneously sampling</td>
<td>• PCI-1714U 30 MS/s, 12-bit, Simultaneous 4-ch AI Card</td>
</tr>
<tr>
<td>• 4 single-ended AI: 12-bit PCI-1714UL: 10 MS/s per channel PCI-1714U: 30 MS/s per channel</td>
<td>• PCI-1714UL 10 MS/s, 12-bit, Simultaneous 4-ch AI Card</td>
</tr>
<tr>
<td>• Supports digital trigger</td>
<td>• ADAM-3909 DB9 DIN-rail Wiring Board</td>
</tr>
<tr>
<td>• Onboard FIFO: PCI-1714UL: 8,192 samples per channel PCI-1714U: 32,768 samples per channel</td>
<td>• PCL-1010B-1 BNC to BNC Wiring Cable, 1 m</td>
</tr>
<tr>
<td></td>
<td>• PCL-10901 PS/2 to DB9 Cable, 1 m/3 m</td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux

### PCI-1715U
500 kS/s, 12-bit, 32-ch Isolated Analog Input PCI Card

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 32 single-ended / 16 differential AI: 12-bit, 100 kS/s</td>
<td>• PCI-1715U 500 kS/s 12-bit, 32-ch Isolated AI Card</td>
</tr>
<tr>
<td>• 2,500 V&lt;sub&gt;DC&lt;/sub&gt; isolation protection</td>
<td>• ADAM-3937 DB37 DIN-rail Wiring Board</td>
</tr>
<tr>
<td>• 1,024 onboard FIFO</td>
<td>• PCL-10137 DB37 Cable, 1 m/2 m/3 m</td>
</tr>
</tbody>
</table>

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux
### Analog Output

#### PCI-1720U

**12-bit, 4-ch Isolated Analog Output PCI Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 4-ch AO: 12-bit, static update</td>
<td>• PCI-1720U 12-bit, 4-ch Isolated AO Card</td>
</tr>
<tr>
<td>• 2,500 VDC isolation protection</td>
<td>• PCL-10137 DB37 Cable, 1 m/2 m/3 m</td>
</tr>
<tr>
<td>• Keeps the output settings and values after system hot reset</td>
<td>• ADAM-3937 DB37 DIN-rail Wiring Board</td>
</tr>
</tbody>
</table>

| OS Support                  | Windows 10 | Windows 8.1 | Windows 8 | Windows 7 |

#### PCI-1723

**16-bit, 8-ch Analog Output PCI Card with 16-ch Digital I/O**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 8-ch AO: 16-bit, static update</td>
<td>• PCI-1723 16-bit, 8-ch AO Card</td>
</tr>
<tr>
<td>• Keeps the output settings and values after system hot reset</td>
<td>• PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m</td>
</tr>
<tr>
<td>• 5V/TTL DIO: 16 input/output (direction programmable)</td>
<td>• ADAM-3968 68-pin DIN-rail SCSI Wiring Board</td>
</tr>
<tr>
<td>• Supports DI Interrupt</td>
<td></td>
</tr>
</tbody>
</table>

| OS Support                  | Windows 10 | Windows 8.1 | Windows 8 | Windows 7 |

#### PCI-1724U

**14-bit, 32-ch Isolated Analog Output PCI Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 32-ch AO: 14-bit, static update</td>
<td>• PCI-1724U 14-bit, 32-ch Isolated AO Card</td>
</tr>
<tr>
<td>• Keeps the output settings and values after system hot reset</td>
<td>• PCL-10162 DB62 Cable, 1 m/3 m</td>
</tr>
<tr>
<td></td>
<td>• ADAM-3962 DB62 DIN-rail Wiring Board</td>
</tr>
</tbody>
</table>

| OS Support                  | Windows 10 | Windows 8.1 | Windows 8 | Windows 7 | Linux |

---
### PCI-1730U

**32-ch Isolated Digital I/O PCI Card**

**Features**
- 16-ch isolated DI and 16-ch isolated DO
- 16-ch TTL DI and 16-ch TTL DO
- Support DI Interrupt
- 2,500 Vdc isolation protection
- Isolated DO current: max. 300 mA / channel
- Keeps DIO port configuration and DO state after system reset

**Ordering Information**
- PCI-1730U
- PCL-10120
- ADAM-3920
- PCLD-885
- PCLD-785
- PCLD-782
- ADAM-3937
- PCL-10137

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux

### PCI-1733/1734

**32-ch Isolated Digital Input / Digital Output PCI Card**

**Features**
- PCI-1733: 32-ch isolated DI
- PCI-1734: 32-ch isolated DO
- Supports DI Interrupt (PCI-1733 only)
- 2,500 Vdc isolation protection
- Isolated DO current: (PCI-1734 only) max. 200 mA / channel max. 150 mA / channel (all channel used)

**Ordering Information**
- PCI-1733
- PCI-1734
- ADAM-3937
- PCL-10137

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux

### PCI-1750

**32-ch Isolated Digital I/O and 1-ch Counter PCI Card**

**Features**
- 16-ch isolated DI & 16-ch isolated DO
- Supports DI Interrupt
- 2,500 Vdc isolation protection
- Isolated DO current:
  - max. 200 mA / channel
  - max. 150 mA / channel (all channel used)
- 1-ch counter: 16-bit, up to 1 MHz
- Event counting, pulse train output

**Ordering Information**
- PCI-1750
- PCL-10137
- ADAM-3937

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Linux
### PCI-1751

**48-ch Digital I/O and 3-ch Counter PCI Card**

**Features**
- Supports 5V/TTL and dry contact
- Supports DI Interrupt
- Keeps DIO port configuration and DO state after system reset
- 3-ch counter: up to 10 MHz
- Event counting, pulse train output

**Ordering Information**
- **PCI-1751** 48-ch Digital I/O and Counter PCI Card
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968/20** 68-pin SCSI to 3 20-pin Box Header Terminal
- **ADAM-3968/50** 68-pin SCSI to 2 50-pin Box Header Terminal
- **PCLD-8751** 48-ch Isolated Digital Input Board
- **PCLD-8761** 24-ch Replay/Isolated Digital Input Board
- **PCLD-8762** 48-ch Relay Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

### PCI-1752U

**64-ch Isolated Digital Output Universal PCI Card**

**Features**
- 2,500 VDC isolation protection
- Wide output range (5 ~ 40 VDC)
- Isolated DO current: max. 200 mA / channel
  max. 150 mA / channel (all channel used)
- Keeps DO state after system reset

**Ordering Information**
- **PCI-1752U** 64-ch Isolated Digital Output Universal PCI Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board with LED Indicators
- **PCL-101100M-3** 100-pin SCSI to 100-pin SCSI Cable, 3 m
- **ADAM-39100** 100-pin DIN-rail Wiring Board

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux

### PCI-1753

**96-ch Digital I/O PCI Card**

**Features**
- Supports 5V/TTL and dry contact
- Keeps DIO port configuration and DO state after system reset
- Supports DI interrupt, Pattern Match and Change of States
- Expands to 192 DIO with PCI-1753E

**Ordering Information**
- **PCI-1753** 96-ch Digital I/O PCI Card
- **PCI-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968/20** 68-pin SCSI to 3 20-pin Box Header Terminal
- **ADAM-3968/50** 68-pin SCSI to 2 50-pin Box Header Terminal
- **PCLD-8751** 48-ch Isolated Digital Input Board
- **PCLD-8761** 24-ch Replay/Isolated Digital Input Board
- **PCLD-8762** 48-ch Relay Board
- **PCL-10268** 100-pin to Two 68-pin SCSI Cables, 1 m/2 m

**OS Support**
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
PCI / PCI Express Cards

**PCI-1756**
64-ch Isolated Digital I/O PCI Card

**Features**
- 2,500 Vdc isolation protection
- 70 Vdc over-voltage protection for DI
- Supports DI Interrupt
- Isolated DO current: max. 200 mA / channel
  max. 150 mA / channel (all channel used)
- Keeps DIO port configuration and DO state after system reset

**Ordering Information**
- PCI-1756
- PCL-10250-1
- ADAM-3951
- PCL-101100M-3
- ADAM-39100

**PCI Express Cards**

**OS Support**
- Windows 10
- Windows 8 (64-bit)
- Windows 8 (32-bit)
- Linux

---

**PCI-1758UDI**
128-ch Isolated Digital Input Universal PCI Card

**Features**
- 2,500 Vdc isolation protection
- Supports DI Interrupt
- Programmable DI filter

**Ordering Information**
- PCI-1758UDI
- PCL-101100S
- ADAM-39100

**OS Support**
- Windows 10
- Windows 8 (64-bit)
- Windows 8 (32-bit)
- Linux

---

**PCI-1758UDO**
128-ch Isolated Digital Output Universal PCI Card

**Features**
- 2,500 Vdc isolation protection
- Isolated DO current: max. 90 mA / channel
- Keeps DO state after system reset

**Ordering Information**
- PCI-1758UDO
- PCL-101100S
- ADAM-39100

**OS Support**
- Windows 10
- Windows 8 (64-bit)
- Windows 8 (32-bit)
- Linux
# PCI-1760U

**8-ch Relay and 8-ch Isolated Digital Input Universal PCI Card with 10-ch Counter/Timer**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relay Type: 2 x Form C, 6 x Form A</td>
<td>• PCI-1760U 8-ch Relay and 8-ch Isolated DI PCI Card</td>
</tr>
<tr>
<td>• Contact Rating: 1 A @ 125 V&lt;sub&gt;AC&lt;/sub&gt;, 2 A @ 30 V&lt;sub&gt;DC&lt;/sub&gt;</td>
<td>• PCL-10137 DB37 Cable, 1 m/2 m/3 m</td>
</tr>
<tr>
<td>• LED indicators to show activated relays</td>
<td>• ADAM-3937 DB37 DIN-rail Wiring Board</td>
</tr>
<tr>
<td>• Programmable DI filter</td>
<td></td>
</tr>
<tr>
<td>• 2,500 V&lt;sub&gt;DC&lt;/sub&gt; isolation protection for DI</td>
<td></td>
</tr>
<tr>
<td>• DI support for both wet and dry contacts</td>
<td></td>
</tr>
<tr>
<td>• Supports DI Interrupt, Pattern Match and Change of States</td>
<td></td>
</tr>
<tr>
<td>• 8-ch counter: 16-bit, up to 500 Hz for event counting</td>
<td></td>
</tr>
<tr>
<td>• 2-ch PWM output</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

## PCI-1761

**8-ch Relay and 8-ch Isolated Digital Input PCI Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relay Type: 4 x Form A, 4 x Form C</td>
<td>• PCI-1761 8-ch Relay and 8-ch Isolated DI PCI Card</td>
</tr>
<tr>
<td>• Contact Rating: 8 A @ 250 V&lt;sub&gt;AC&lt;/sub&gt;, 2 A @ 30 V&lt;sub&gt;DC&lt;/sub&gt;</td>
<td>• PCL-10137 DB37 Cable, 1 m/2 m/3 m</td>
</tr>
<tr>
<td>• LED indicators to show activated relays</td>
<td>• ADAM-3937 DB37 DIN-rail Wiring Board</td>
</tr>
<tr>
<td>• 3,750 V&lt;sub&gt;DC&lt;/sub&gt; isolation protection for DI</td>
<td></td>
</tr>
<tr>
<td>• Supports DI Interrupt</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Linux

## PCI-1780U

**8-ch, 16-bit Counter/Timer Universal PCI Card**

<table>
<thead>
<tr>
<th>Features</th>
<th>Ordering Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 8-ch counter: 16-bit, up to 20 MHz</td>
<td>• PCI-1780 8-ch, 16-bit Counter/Timer PCI Card</td>
</tr>
<tr>
<td>• Event counting, frequency and pulse width measure, pulse train output</td>
<td>• PCL-10168 68-pin SCSI Shielded Cable, 1 m/2 m</td>
</tr>
<tr>
<td>• 8-ch PWM output</td>
<td>• ADAM-3968 68-pin DIN-rail SCSI Wiring Board</td>
</tr>
<tr>
<td>• 5V/TTL DIO: 8 inputs, 8 outputs</td>
<td></td>
</tr>
<tr>
<td>• Supports DI Interrupt</td>
<td></td>
</tr>
<tr>
<td>• Keeps DO state after system reset</td>
<td></td>
</tr>
</tbody>
</table>

**OS Support**

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
## Terminal Boards

### Compatibility Chart

Recommended Cables, I/O Wiring Terminal Boards and Isolated Digital I/O Terminals for Connecting to Data Acquisition Products:

<table>
<thead>
<tr>
<th>Cable</th>
<th>PCI and PCI Express Card</th>
<th>PC/104, PCI-104 Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCL-10168, PCL-10168H</td>
<td>PCI-1710U/1710UL/1710HGU, PCI-1711U/1711UL/1711UDU, PCI-1714U/1714UL/1714UDU</td>
<td></td>
</tr>
<tr>
<td>PCL-10168, PCL-10168H</td>
<td>PCI-1712/1712L, PCI-1718HDU/HGU</td>
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<tr>
<td>PCL-10168</td>
<td>PCI-1727U, PCI-1730U, PCIE-1730</td>
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<td>PCL-10168</td>
<td>PCI-1751, PCIE-1751</td>
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<td>PCL-10137</td>
<td>PCI-1753</td>
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<tr>
<td>PCL-10137</td>
<td>PCI-1713U, PCI-1715U</td>
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<tr>
<td>PCL-10137</td>
<td>PCI-1720U, PCI-1733, PCI-1734, PCI-1750, PCI-1760U, PCIE-1760, PCI-1761, USB-4702</td>
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<td>PCL-10137</td>
<td>PCI-1784U</td>
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<tr>
<td>PCL-10250</td>
<td>PCI-1752U, PCI-1754, PCI-1756, PCIE-1752, PCIE-1754, PCIE-1756</td>
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<td>PCL-10162</td>
<td>PCI-1724U, PCI-1762</td>
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<td>PCL-10150</td>
<td>PCI-1737U, PCI-1739U, USB-4751/L</td>
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<td>PCL-10120, PCL-10121</td>
<td>PCI-1714U/1714UL, PCIE-1744</td>
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<td>PCL-10120, PCL-10121</td>
<td>PCI-1757UP</td>
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<td>PCI-1747U, PCI-1721, PCI-1723, PCI-1780U</td>
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<td>PCL-10120, PCL-10121</td>
<td>PCI-1735U</td>
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<td>PCI-1755</td>
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<td>PCL-10120, PCL-10121</td>
<td>PCI-1758UDI/1758UDO/1758UDIO</td>
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<td>USB-4671</td>
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<td>PCL-10120, PCL-10121</td>
<td>PCM-3718H/HG/HG, PCM-3730</td>
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<td>PCM-3724, PCM-3753I</td>
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<td>PCM-3730I</td>
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<td>ADAM-3937, PCLD-880</td>
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<td>I/O Wiring Terminal Board</td>
<td>Extension Cable</td>
<td>Digital I/O Terminal Board</td>
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<td>PCLD-8710</td>
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</tr>
</tbody>
</table>
Signal Conditioners

DIN-rail Mountable Signal Conditioning Modules

Compact Design with 3-way Isolation Protection and Multiple Input Types

The ADAM-3000 Series consists of the most cost-efficient, field configurable, isolation-based, signal conditioners on the market today. The modules are easily installed to protect your instruments and process signals from the harmful effects of ground loops, motor noise, and other electrical interference.

Products

ADAM-3011
Isolated Thermocouple Input Module

Specifications
• Input Type: J, K, T, E, S, R, B Type Thermocouple
• Output Type: 0~10 V

Ordering Information
• ADAM-3011 Isolated Thermocouple Input Module

ADAM-3013
Isolated RTD Input Module

Specifications
• Input Type: Pt or Ni Type RTD
• Output Type: 0~5 V, 0~10 V, 0~20 mA

Ordering Information
• ADAM-3013 Isolated RTD Input Module
Key Features

**ADAM-3014**
Isolated DC Input/Output Module

**Specifications**
- Input Type:
  - ±10 mV, ±50 mV, ±100 mV, ±5 V, ±1 V, ±10 V, 0~10 mV, 0~50 mV, 0~100 mV, 0~0.5 V, 0~1 V, 0~5 V, 0~10 V, 0~20mA, ±20mA
- Output Type: 5 V, ±10 V, 0~10 V, 0~20 mA

**Ordering Information**
- ADAM-3014 Isolated DC Input/Output Module

**ADAM-3016**
Isolated Strain Gauge Input Module

**Specifications**
- Input Type:
  - Electrical input: ±10, ±20, ±30, ±100 mV
  - Excitation voltage: 1~10 V (60 mA max.)
- Output Type: ±5 V, ±10 V, 0~10 V, 0~20 mA

**Ordering Information**
- ADAM-3016 Isolated Strain Gauge Input Module

**PCLD-8810I/8810E**
68-pin SCSI DIN-rail Wiring Board with CJC

**Specifications**
- 16-single-ended or 8 differential AI inputs, programmable
- On-board CJC circuit for direct thermocouple measurement
- Reserved space for signal-conditioning circuit such as PCLD-8811

**Ordering Information**
- PCLD-8810I-AE PCLD-8810E-AE

**PCLD-8811**
Bandwidth-Configurable Filter Board

**Specifications**
- Offset Error ± 1 LSB
- Gain Error ± 1 LSB
- Filter Frequency: -3dB, 10Hz, 50Hz, 100Hz, 500Hz, 1kHz, 5kHz, 10kHz, 40kHz
- Max. Input Voltage ± 10 V
- Input Impedance 1GΩ / 2pF

**Ordering Information**
- PCLD-8811-AE PCLD-8811-AE
CompactPCI

New Generation of CompactPCI

Reliable PC-based Computing Platform for Mission-critical Applications

This industrial CompactPCI features front-end access, high shock and vibration tolerance, automatic cooling system, fault resilience, and hot swap capability. Advantech leverages 3U CompactPCI as the industrial high-end computing platform, providing Pentium® 4-grade CPU modules, 8-slot chassis, high-speed IO, and serial communication modules. Advantech is a one-stop provider for industrial CompactPCI solutions.

Selection Guide

CompactPCI

**CompactPCI CPU Options**

<table>
<thead>
<tr>
<th>Processor</th>
<th>L3</th>
<th>L2</th>
<th>H1</th>
<th>H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel Atom N455, 1.66GHz</td>
<td>Intel Atom D525, 1.66GHz</td>
<td>Intel 3rd Gen. Core i3-3217UE, 1.6GHz</td>
<td>Intel 3rd Gen. Core i7-3517UE, 1.7 GHz</td>
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<td>Memory</td>
<td>2GB On board</td>
<td>2GB On board</td>
<td>4GB On board</td>
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<td>Storage</td>
<td>1 x CompactFlash Type II 1 x 2.5” SATA HDD</td>
<td>1 x CompactFlash Type II 1 x 2.5” SATA HDD</td>
<td>1 x CFast 1 x 2.5” SATA HDD</td>
<td>1 x CFast 1 x 2.5” SATA HDD</td>
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<td>VGA</td>
<td>1 x DB15 port</td>
<td>1 x DB15 port</td>
<td>1 x DB15 port</td>
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<tr>
<td>Ethernet</td>
<td>2 x 10/100/1000 Mbps, RJ45 connector</td>
<td>2 x 10/100/1000 Mbps, RJ45 connector</td>
<td>2 x 10/100/1000 Mbps, RJ45 connector</td>
<td>2 x 10/100/1000 Mbps, RJ45 connector</td>
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<td>USB 2.0</td>
<td>3 x Type A</td>
<td>3 x Type A</td>
<td>2 x Type A</td>
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<td>Serial</td>
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<td>2 x RS-232, DB9 connector</td>
<td>2 x RS-232, RJ45 connector</td>
<td>2 x RS-232, RJ45 connector</td>
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### Category CPCI

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<th>MIC-3716/3</th>
<th>MIC-3714/3</th>
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<tr>
<td>Resolution (bit)</td>
<td>16</td>
<td>12</td>
<td>-</td>
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<tr>
<td>Channels</td>
<td>16SE/8 Diff</td>
<td>4SE</td>
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<td>FIFO (samples)</td>
<td>1024</td>
<td>32768</td>
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<td>Sampling Rate (S/s)</td>
<td>250 K</td>
<td>30 M</td>
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<td>Input Ranges</td>
<td>0–10, 0–5, 0–2.5, 0–1.25</td>
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<td>Isolated DI/O</td>
<td>- 32 (sink) 64 8 (sink) -</td>
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<tr>
<td>Input Channels</td>
<td>16</td>
<td>-</td>
<td>16</td>
<td>12</td>
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<td>Output Channels</td>
<td>-</td>
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<td>4</td>
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<td>Output Rate</td>
<td>Static update</td>
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<td>Static update</td>
<td>Static update</td>
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<tr>
<td>Output Range (V)</td>
<td>0–5, 0–10, ±5, ±10</td>
<td>±10, 0–20mA, 4–20mA</td>
<td>D–5, 0–10, ±5, ±10, 0–20mA, 4–20mA</td>
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<td>DMA Transfer</td>
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<tr>
<td>Input Channels</td>
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<td>-</td>
<td>16 (shared)</td>
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<tr>
<td>Output Channels</td>
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<tr>
<td>Windows 10/8/7</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Linux</td>
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<tr>
<td>LabVIEW Driver</td>
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### Analog I/O

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<td>Output Channels</td>
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<tr>
<td>Linux</td>
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<td>LabVIEW Driver</td>
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### TTL/DI/O

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<th>MIC-3758/3</th>
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<td>Output Channels</td>
<td>(shared)</td>
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<td>Output Voltage (V)</td>
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<td>Input Voltage (V)</td>
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<td>10 – 50</td>
<td>5 – 25</td>
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<td>Output Current (sink)</td>
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<td>4x FormC</td>
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<td>Input Voltage (V)</td>
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<td>Output Current (sink)</td>
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<td>200mA</td>
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</table>
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