8 Industrial I/O and Video Solutions

Advantech Data Acquisition and Control Solutions

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 and from signal-conditioning to graphical software tools.

Advantech's industrial I/O products are reliable, accurate, affordable, and suitable for many industrial automation applications (e.g., testing and measurement) and laboratory applications (e.g., monitoring, control, machine automation, and product testing).

Signal Sensing

Equipment Sensor

Physical Phenomenon

Signal Conditioning

Signal Conditioners

Advantech's signal conditioners provide sensor and signal conditioning on a per-module basis for various types of sensors or signals.

I/O Wiring Terminal Boards

I/O wiring terminal boards offer convenient and reliable signal wiring for a wide range of Advantech products.

Analog Signal

Data Acquisition

Embedded Computers

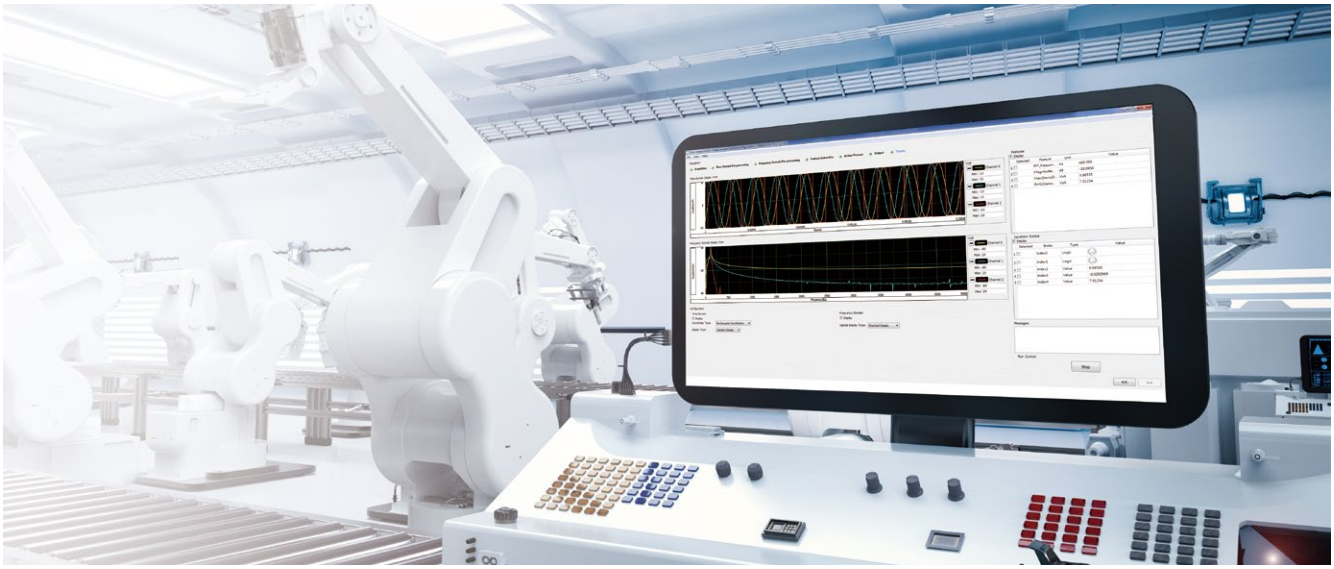
MIC-1800 series units are standalone embedded computers with integrated data acquisition modules and signal conditioning to provide digital I/O, analog I/O, and counter functions. The palm-sized design with built-in terminals is suitable for space-limited applications.

SuperSpeed USB 3.0 DIO Modules

SuperSpeed USB 3.0 digital I/O modules can be leveraged for a diverse range of industrial control applications.

Conditioned Signal

Back to Top



and Control

Data Acquisition and Communication Cards

Advantech offers dedicated products for USB, PCI, PCI Express, CompactPCI, PC/104, and PCI-104 interfaces. Thus, regardless of whether the platform is an IPC, embedded PC, desktop computer, or laptop, your project requirements are covered.

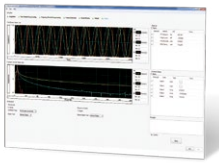
USB Data Acquisition Modules

Advantech's USB data acquisition modules are renowned for their user-friendly design and ability to replace traditional serial and parallel devices by eliminating the need for external power and allowing for hot-swapping.

Conditioned Signal

Software

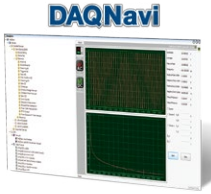
WebAccess/MCM



Machine Condition Monitoring Software

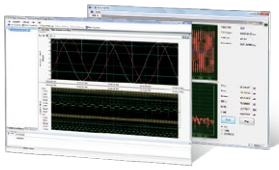
WebAccess/MCM is machine condition monitoring software that provides easy sensor signal acquisition, signal analysis, feature extraction, data management/interpretation, and alert notification.

DAQNavi



Software Development Package

DAQNavi, Advantech's next-generation driver package, delivers higher performance, compatibility, and reliability through a brand new driver and SDK.



Configurable Data Logging / Signal Analysis Software

DataLogger can be leveraged to help engineers perform data logging, recording, and visualization, while SignalMeter includes scope, AC performance, and DC performance functions to assist engineers with signal analysis.

Digital Data

Back to Top

Analog I/O and Multifunction Card Selection Guide

Category			Multifunction & Analog Input						
Sampling / Updating			Multiplexer						
Part Number			PCI-1710U/ 1710UL	PCI-1710HGU	PCI-1711U/ 1711UL	PCI-1712/ 1712L	PCI-1718HDU	PCI-1713U	PCI-1715U
Analog Input	Resolution		12-bit	12-bit	12-bit	12-bit	12-bit	12-bit	12-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	16 SE	16 SE/8 diff.	16 SE/8 diff.	32 SE/16 diff.	32 SE/16 diff.
	Onboard FIFO		4,096 samples	4,096 samples	1,024 samples	1,024 samples	1,024 samples	4,096 samples	1,024 samples
	Sampling Rate		100 kS/s	100 kS/s	100 kS/s	1 MS/s	100 kS/s	100 kS/s	500 kS/s
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01 V	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V
		Bipolar Inputs	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V
		Configurable Per Channel	✓	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software/ External Pulse	✓	✓	✓	✓	✓	✓	✓
		Analog Slope	-	-	-	✓	-	-	-
		Advanced Trigger	-	-	-	✓	-	-	-
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓	✓
		DMA	-	-	-	Bus mastering	-	-	Bus mastering
Analog Output	Resolution		12-bit	12-bit	12-bit	12-bit	12-bit	-	-
	Channels		2 (PCI-1710U only)	2	2 (PCI-1711U only)	2 (PCI-1712 only)	1	-	-
	Onboard FIFO		-	-	-	32,768 samples	-	-	-
	Output Range		0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10 V	-	-
	Output Rate		Static update	Static update	Static update	1 MHz	Static update	-	-
	DMA Transfer		-	-	-	✓	-	-	-
Digital I/O	Input Channels		16	16	16	16 (shared)	16	-	-
	Output Channels		16	16	16		16	-	-
Timer/ Counter	Channels		1	1	1	3	1	-	-
	Resolution		16-bit	16-bit	16-bit	16-bit	16-bit	-	-
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	-	-
Isolation Voltage			-	-	-	-	-	2,500 V_{DC}	2,500 V_{DC}
Auto Calibration			-	-	-	✓	-	-	-
Board ID Switch			✓	✓	✓	-	✓	-	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			68-pin SCSI	68-pin SCSI	68-pin SCSI	68-pin SCSI	DB37	DB37	DB37
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓	✓	✓
	WinCE		✓	-	-	-	-	✓	-
	Linux		✓	✓	✓	✓	✓	✓	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	WinCE		✓	-	-	-	-	-	-
	Linux		-	-	✓	-	-	-	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* All channels should be set to the same range.
✓: supported, - : not supported, △ : optional

▲ Back to Top

Analog I/O and Multifunction Card Selection Guide

Category			Multifunction & Analog Input						
Sampling / Updating			Multiplexer					Simultaneous Sampling	
Part Number			PCI-1716/ 1716L	PCI-1718HDU	PCI-1742U	PCI-1741U	PCI-1747U	PCI-1714U/ 1714UL	PCI-1706U
Analog Input	Resolution		16-bit	12-bit	16-bit	16-bit	16-bit	12-bit	16-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.	64 SE/32 diff.	4 SE	8 diff.
	Onboard FIFO		1,024 samples	1,024 samples	1,024 samples	1,024 samples	1,024 samples	32,768/8,192 samples	8,192 samples
	Sampling Rate		250 kS/s	100 kS/s	1 MS/s	200 kS/s	250 kS/s	30/10 MS/s	250 kS/s
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V*	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	-	-
		Bipolar Inputs	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V*	±10, 5, 2.5, 1.25, 0.625 V	±5, 2.5, 1, 0.5 V	±10, 5, 2.5, 1.25 V
		Configurable Per Channel	✓	✓	✓	-	✓	✓	✓
	Trigger Modes	Pacer/Software/ External Pulse	✓	✓	✓	✓	Pacer/software	✓	✓
		Analog Slope	-	-	-	-	-	✓	✓
		Advanced Trigger	-	-	-	-	-	✓	✓
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓	✓
		DMA	Bus mastering	-	Bus mastering	-	Bus mastering	Bus mastering	✓
Analog Output	Resolution		16-bit	12-bit	16-bit	16-bit	-	-	12-bit
	Channels		2 (PCI-1716 only)	1	2	1	-	-	2
	Onboard FIFO		-	-	-	-	-	-	-
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	±5, ±10 V	-	-	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20, 0 ~ 24, 4 ~ 20 mA
	Output Rate		Static update	Static update	Static update	Static update	-	-	Static update
	DMA Transfer		-	-	-	-	-	-	-
Digital I/O	Input Channels		16	16	16	16	-	-	16 (shared)
	Output Channels		16	16	16	16	-	-	
Timer/ Counter	Channels		1	1	1	1	-	-	2
	Resolution		16-bit	16-bit	16-bit	16-bit	-	-	32-bit
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz	-	-	10 MHz
Isolation Voltage			-	-	-	-	-	-	-
Auto Calibration			✓	-	✓	✓	✓	✓	✓
Board ID Switch			✓	✓	✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			68-pin SCSI	DB37	68-pin SCSI	68-pin SCSI	68-pin SCSI	4 x BNC	68-pin SCSI
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	✓	-	-
	Linux		✓	✓	✓	✓	✓	✓	✓
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-	-
	Linux		-	-	-	✓	✓	✓	-
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* All channels should be set to the same range.
✓: supported, - : not supported, △ : optional

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Analog I/O and Multifunction Card Selection Guide



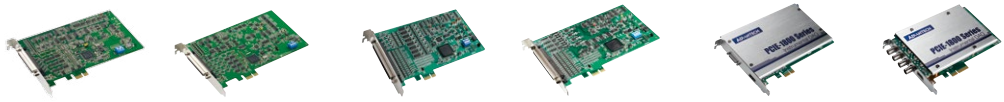


Category			Multifunction & Analog Output				
Sampling / Updating			Static Update				Dynamic Update
Part Number			PCI-1713U	PCI-1727U	PCI-1724U	PCI-1723	PCI-1721
Analog Input	Resolution		12-bit	-	-	-	-
	Channels		32 SE/16 diff.	-	-	-	-
	Onboard FIFO		4,096 samples	-	-	-	-
	Sampling Rate		100 kS/s	-	-	-	-
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	-	-	-	-
		Bipolar Inputs	±10, 5, 2.5, 1.25, 0.625 V	-	-	-	-
		Configurable Per Channel	✓	-	-	-	-
	Trigger Modes	Pacer/ Software/ External Pulse	✓	-	-	-	-
		Analog Slope	-	-	-	-	-
		Advanced Trigger	-	-	-	-	-
	Data Transfer Modes	Software	✓	-		-	-
		DMA	-	-	-	-	-
Analog Output	Resolution		-	14-bit	14-bit	16-bit	16-bit
	Channels		-	12	32	8	4 (waveform output)
	Onboard FIFO		-	-	-	-	1,024 samples
	Output Range		-	±10, 0 ~ 20 mA	±10, 0 ~ 20 mA	±10, 0 ~ 20, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20, 4 ~ 20 mA
	Output Rate		-	Static update	Static update	Static update	10 MHz
	DMA Transfer		-	-	-	-	Bus mastering
Digital I/O	Input Channels		-	16	-	16 (shared)	16 (shared)
	Output Channels		-	16	-		
Timer/ Counter	Channels		-	-	-	-	1
	Resolution		-	-	-	-	16-bit
	Max. Input Frequency		-	-	-	-	10 MHz
Isolation Voltage			2,500 V_{DC}	-	1,500 V_{DC}	-	-
Auto Calibration			-	-	-	✓	✓
Board ID Switch			-	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			DB37	2 x 2-pin DB37	DB62	68-pin SCSI	68-pin SCSI
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓
	WinCE		✓	-	✓	-	-
	Linux		✓	✓	✓	✓	✓
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-
	Linux		-	✓	✓	-	✓
LabVIEW Driver			✓	✓	✓	✓	✓

* 80 kHz on Pentium® 4-based (or higher) systems.
** SS: Single DMA channel, single A/D channel scan.
✓: supported, - : not supported, △ : optional

▲ Back to Top

Analog I/O and Multifunction Card Selection Guide



Category			Multifunction & Analog Input					
Sampling / Updating			Multiplexer		Simultaneous Sampling			
Part Number			PCIE-1810	PCIE-1816/H	PCIE-1812	PCIE-1813	PCIE-1802/ 1802L	PCIE-1840/ 1840L
Analog Input	Resolution		12-bit	16-bit	16-bit	26-bit	24-bit	16-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	8 diff.	4 diff.	8 diff./ 4 diff.	4 SE
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples	1 G samples
	Sampling Rate		500 kS/s	500 KSPS/ 1MSPS	250 kS/s	38.4 kS/s	216 kS/s	125/80 MSPS
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	±31.25 mV/V, ±62.5 mV/V, ±125 mV/V, ±250 mV/V, ±500 mV/V, and ±1 V/V (bridge inputs)	-	-
		Bipolar Inputs	±10, ±5, 2.5, 1.25, 0.625 V	±10, ±5, 2.5, 1.25, 0.625 V	±10, ±5, 2.5, 1.25, 0.625 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±625 mV, ±312.5 mV	±0.2, ±0.5, ±1, ±2, ±5, ±10 V	0.2, 0.4, 1, 2, 4, 10, 20 Vpp
		Configurable Per Channel	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/ Software/ External Pulse	✓	✓	✓	✓	✓	✓
		Analog Slope	✓	✓	✓	✓	✓	✓
		Advanced Trigger	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓
		DMA	Bus mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering
Analog Output	Resolution		12-bit	16-bit	16-bit	16-bit	-	-
	Channels		2 (waveform output)	2 (waveform output)	2 (waveform output)	2 (waveform output)	-	-
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples	-	-
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	-	-
	Output Rate		500 kS/s	3 MHz	3 MHz	3 MHz	-	-
	DMA Transfer		Bus mastering	Bus mastering	Bus mastering	Bus mastering	-	-
Digital I/O	Input Channels		24 (shared)	24 (shared)	32 (shared)	32 (shared)	1	-
	Output Channels						2	
Timer/ Counter	Channels		2	2	4 (encoder included)	4 (encoder included)	-	-
	Resolution		32-bit	32-bit	32-bit	32-bit	-	-
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz	-	-
Isolation Voltage			-	-	-	-	-	-
Auto Calibration			✓	✓	✓	✓	✓	✓
Board ID Switch			✓	✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			68-pin SCSI	68-pin SCSI	100-pin SCSI (female)	100-pin SCSI (female)	1 x 19-pin MINI SCSI (for AI) 1 x HDMI (for Ext. clock and trigger)	4 x BNC (for AI) 1 x HDMI (for Ext. clock and trigger)
Legacy Driver	Windows XP/2000		-	-	-	-	-	-
	WinCE		-	-	-	-	-	-
	Linux		-	-	-	-	-	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	-	-
	WinCE		-	-	-	-	-	-
	Linux		-	-	-	-	-	-
LabVIEW Driver			✓	✓	✓	✓	-	-

* 80 kHz on Pentium® 4-based (or higher) systems.
** SS: Single DMA channel, single A/D channel scan.
✓: supported, - : not supported, △ : optional

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
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7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Digital I/O and Counter Card Selection Guide






Category			Non-Isolated Digital I/O					
Bus			PCI					
Part Number			PCI-1735U	PCI-1737U	PCI-1739U	PCI-1751	PCI-1753	PCI-1757UP
TTL DI/O	Input Channels		32	24 (shared)	48 (shared)	48 (shared)	96 (shared)	24 (shared)
	Output Channels		32					
	Output Channel	Sink Current	24 mA @ 0.5 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.44 V	24 mA @ 0.5 V
		Source Current	15 mA @ 2.0 V	15 mA @ 2.4 V	15 mA @ 2.4 V	15 mA @ 2.4 V	24 mA @ 3.76 V	24 mA @ 3.7 V
Isolated Digital I/O	Input	Channels	-	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-	-
		Input Range	-	-	-	-	-	-
	Output	Channels	-	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-	-
		Output Range	-	-	-	-	-	-
		Max. Sink Current	-	-	-	-	-	-
Timer/ Counter	Channels		3	-	-	3	-	-
	Resolution		16-bit	-	-	16-bit	-	-
	Max. Input Frequency		10 MHz	-	-	10 MHz	-	-
Advanced Function	Pattern Match		-	-	-	-	✓	-
	Change of State		-	-	-	-	✓	-
	Board ID Switch		✓	✓	✓	✓	✓	✓
	Channel-Freeze Function		-	-	-	-	-	-
	Output Status Read Back		✓	✓	✓	✓	✓	✓
	Dry/Wet Contact*		-	✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	120 x 65 mm (4.7" x 2.5")
Connector			5 x 20-pin	1 x 50-pin	2 x 50-pin	68-pin SCSI	100-pin SCSI	1 x DB25
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-
	Linux		✓	✓	✓	✓	✓	✓
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-
	Linux		-	-	-	✓	-	-
LabVIEW Driver			✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.

✓: supported, - : not supported, △ : optional

Digital I/O and Counter Card Selection Guide





Category			Isolated Digital I/O				
Bus			PCI Express				
Part Number			PCIE-1730/1730H	PCIE-1752	PCIE-1754	PCIE-1756/ 1756H	PCIE-1760
TTL DI/O	Input Channels		16	-	-	-	-
	Output Channels		16	-	-	-	-
	Output Channel	Sink Current	24 mA @ 0.5 V	-	-	-	-
		Source Current	15 mA @ 2.4 V	-	-	-	-
Isolated Digital I/O	Input	Channels	16	-	64	32	8
		Isolation Voltage	2,500 V_{DC}	-	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}
		Input Range	10 ~ 30 V_{DC}	-	10 ~ 30 V_{DC}	10 ~ 30 V_{DC}	4.5 ~ 12 V_{DC}
	Output	Channels	16 (sink)	64 (sink)	-	32 (sink)	6 x Form A 2 x Form C
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	-	2,500 V_{DC}	2,500 V_{DC}
		Output Range	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	-	5 ~ 40 V_{DC}	1 A @ 125 V_{AC} 2 A @ 30 V_{AC}
		Max. Sink Current	500 mA	500 mA	-	500 mA	
Timer/ Counter	Channels		-	-	-	-	8 x UP CTR 2 x PWM
	Resolution		-	-	-	-	16-bit
	Max. Input Frequency		-	-	-	-	500 Hz
Advanced Function	Pattern Match		-	-	-	-	✓
	Change of State		-	-	-	-	✓
	Board ID Switch		✓	✓	✓	✓	✓
	Channel-Freeze Function		✓	✓	-	✓	-
	Output Status Read Back		✓	✓	-	✓	✓
	Dry/Wet Contact*		✓	-	-	-	-
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			1 x DB37 4 x 20-pin	100-pin SCSI	100-pin SCSI	100-pin SCSI	1 x DB37
Legacy Driver	Windows XP/2000		-	-	-	-	-
	WinCE		-	-	-	-	-
	Linux		-	-	-	-	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-
	Linux		-	-	-	-	✓
LabVIEW Driver			✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.

✓: supported, - : not supported, △ : optional

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Digital I/O and Counter Card Selection Guide





Category			Isolated Digital I/O			Non-Isolated Digital I/O	
Bus			PCI Express				
Part Number			PCIE-1761H	PCIE-1762H	PCIE-1765	PCIE-1751	PCIE-1753
TTL DI/O	Input Channels		-	-	-	48 (shared)	96 (shared)
	Output Channels		-	-	-		
	Output Channel	Sink Current	-	-	-	15 mA @ 0.8 V	15 mA @ 0.8 V
		Source Current	-	-	-	15 mA @ 2.0 V	15 mA @ 2.0 V
Isolated Digital I/O	Input	Channels	8	16	-	-	-
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	-	-	-
		Input Range	4.5 ~ 12 V_{DC}	10 ~ 50 V_{DC}	-	-	-
	Output	Channels	6 x Form A 2 x Form C	16**	12 Form C	-	-
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	-	-
		Output Range	1 A @ 125 V_{AC}	0.25 A @ 250 V_{AC}	1A @ 125 V_{AC}	-	-
		Max. Sink Current	2 A @ 30 V_{DC}	2 A @ 30 V_{DC}	2A @ 30 V_{DC}	-	-
Timer/ Counter	Channels		8 x CTR 2 x PWM	-	-	3	-
	Resolution		16-bit (2,500 isolation)	-	-	32-bit	-
	Max. Input Frequency		500 Hz for CTR	-	-	10 MHz	-
Advanced Function	Pattern Match		✓	-	-	✓	✓
	Change of State		✓	-	-	✓	✓
	Board ID Switch		✓	✓	-	✓	✓
	Channel-Freeze Function		-	✓	-	-	-
	Output Status Read Back		✓	✓	-	✓	✓
	Dry/Wet Contact*		-	-	-	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	168 x 100 mm (6.6" x 3.9")	168 x 100 mm (6.6" x 3.9")
Connector			1 x DB37	1 x DB62	1 x DB37	68-pin SCSI	68-pin SCSI
Legacy Driver	Windows XP/2000		-	✓	-	-	-
	WinCE		✓	✓	-	-	-
	Linux		-	✓	-	-	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-
	Linux		-	✓	-	-	-
LabVIEW Driver			✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper selectable Form A / Form B type relay output
✓: supported, - : not supported, △ : optional

Digital I/O and Counter Card Selection Guide

Category			Isolated Digital I/O					
Bus			PCI					
Part Number			PCI-1730U	PCI-1733	PCI-1734	PCI-1750/ 1750SO	PCI-1752U/ 1752USO	PCI-1754
TTL DI/O	Input Channels		16	-	-	-	-	-
	Output Channels		16	-	-	-	-	-
	Output Channel	Sink Current	24 mA @ 0.5 V	-	-	-	-	-
		Source Current	15 mA @ 2.4 V	-	-	-	-	-
Isolated Digital I/O	Input	Channels	16	32	-	16	-	64
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	-	2,500 V_{DC}	-	2,500 V_{DC}
		Input Range	5 ~ 30 V_{DC}	5 ~ 30 V_{DC}	-	5 ~ 50 V_{DC}	-	10 ~ 50 V_{DC}
	Output	Channels	16 (sink)	-	32 (sink)	16 (sink/source)	64 (sink/source)	-
		Isolation Voltage	2,500 V_{DC}	-	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	-
		Output Range	5 ~ 40 V_{DC}	-	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	-
		Max. Current	300 mA	-	200 mA	200 mA	200 mA	-
Timer/ Counter	Channels		-	-	-	1	-	-
	Resolution		-	-	-	16-bit	-	-
	Max. Input Frequency		-	-	-	1 MHz	-	-
Advanced Function	Pattern Match		-	-	-	-	-	-
	Change of State		-	-	-	-	-	-
	Board ID Switch		✓	✓	✓	-	✓	✓
	Channel-Freeze Function		✓	-	-	-	✓	-
	Output Status Read Back		✓	-	✓	-	✓	-
	Dry/Wet Contact*		✓	✓	-	✓	-	-
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			1 x DB37 4 x 20-pin	1 x DB37	1 x DB37	1 x DB37	100-pin SCSI	100-pin SCSI
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓	✓
	WinCE		✓	-	✓	✓	✓	✓
	Linux		✓	✓	✓	✓	✓	✓
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-
	Linux		✓	-	-	✓	✓	-
LabVIEW Driver			✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.

✓: supported, - : not supported, △ : optional

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Digital I/O and Counter Card Selection Guide

Category			Isolated Digital I/O						
Bus			PCI						
Part Number			PCI-1756	PCI-1758UDI	PCI-1758UDO	PCI-1758UDIO	PCI-1760U	PCI-1761	PCI-1762
TTL DI/O	Input Channels		-	-	-	-	-	-	-
	Output Channels		-	-	-	-	-	-	-
	Output Channel	Sink Current	-	-	-	-	-	-	-
		Source Current	-	-	-	-	-	-	-
Isolated Digital I/O	Input	Channels	32	128	-	64	8	8	16**
		Isolation Voltage	2,500 V_{DC}	2,500 V_{RMS}	-	2,500 V_{DC}	2,500 V_{DC}	3,750 V_{DC}	2,500 V_{DC}
		Input Range	10 ~ 50 V_{DC}	5 ~ 25 V_{DC}	-	5 ~ 25 V_{DC}	4.5 ~ 12 V_{DC}	5 ~ 50 V_{DC}	10 ~ 50 V_{DC}
	Output	Channels	32 (Sink)	-	128	64	6 x Form A 2 x Form C	4 x Form A 4 x Form C	16
		Isolation Voltage	2,500 V_{DC}	-	2,500 V_{RMS}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}
		Output Range	5 ~ 40 V_{DC}	-	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	1 A @ 125 V_{AC} 2 A @ 30 V_{DC}	8 A @ 250 V_{AC} 2 A @ 30 V_{DC}	0.25 A @ 250 V_{AC} 2 A @ 30 V_{DC}
		Max. Sink Current	200 mA	-	90 mA	90 mA			
Timer/Counter	Channels		-	-	-	-	8 x CTR 2 x PWM	-	-
	Resolution		-	-	-	-	16-bit (2,500 isolation)	-	-
	Max. Input Frequency		-	-	-	-	500 Hz for CTR	-	-
Advanced Function	Pattern Match		-	-	-	-	✓	-	-
	Change of State		-	-	-	-	✓	-	-
	Board ID Switch		✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function		✓	-	-	-	-	-	✓
	Output Status Read Back		✓	-	✓	✓	✓	✓	✓
	Dry/Wet Contact*		-	-	-	-	-	-	-
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			100-pin SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI	1 x DB37	1 x DB37	1 x DB62
Legacy Driver	Windows XP/2000		-	✓	✓	✓	-	✓	✓
	WinCE		✓	✓	✓	✓	✓	✓	✓
	Linux		-	✓	✓	✓	-	✓	✓
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-	-
	Linux		-	✓	✓	✓	-	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper selectable Form A / Form B type relay output
✓: supported, - : not supported, △ : optional

Digital I/O and Counter Card Selection Guide





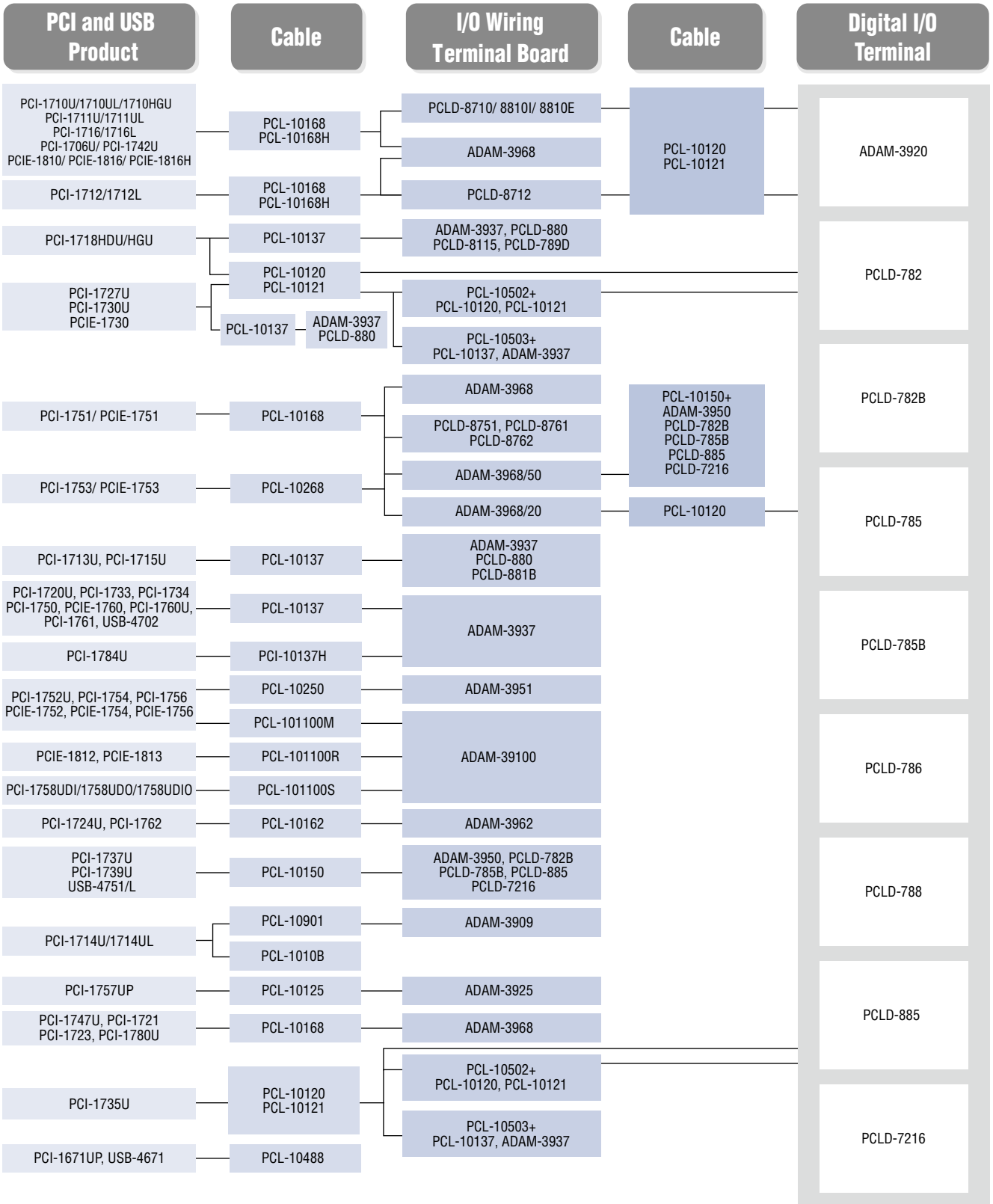

Category			Isolated Digital I/O				Counter	
Bus			PC/104		PCI-104		PCI	PC/104
Part Number			PCM-3725	PCM-3730	PCM-3730I	PCM-3761I	PCI-1780U	PCM-3780
TTL DI/O	Input Channels		8	16	-	-	8	24 (shared)
	Output Channels		8	16	-	-	8	
	Output Channel	Sink Current	-	0.5 V @ 8 mA	-	-	24 mA @ 0.5 V	24 mA @ 0.5 V
		Source Current	-	0.4 mA @ 2.4 V	-	-	15 mA @ 2.4 V	15 mA @ 2.0 V
Isolated Digital I/O	Input	Channels	8	8	16	8	-	-
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	-	-
		Input Range	10 ~ 50 V_{DC}	5 ~ 24 V_{DC}	5 ~ 30 V_{DC}	5 ~ 30 V_{DC}	-	-
	Output	Channels	8 x Form C	8	16	8 x Form C	-	-
		Isolation Voltage	2,000 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,000 V_{DC}	-	-
		Output Range	0.25A @ 240 V_{DC} 1A @ 30 V_{DC}	5 ~ 40 V_{DC}	5 ~ 30 V_{DC}	0.25 A @ 250 V_{AC} 2 A @ 30 V_{DC}	-	-
		Max. Sink Current		200 mA	300 mA		-	-
Timer/ Counter	Channels		-	-	-	-	8 x CTR	2
	Resolution		-	-	-	-	16-bit	16-bit
	Max. Input Frequency		-	-	-	-	20 MHz	20 MHz
Advanced Function	Pattern Match		-	-	-	-	-	-
	Change of State		-	-	-	-	-	-
	Board ID Switch		-	-	-	✓	✓	-
	Channel-Freeze Function		-	-	-	-	-	-
	Output Status Read Back		-	-	-	✓	-	-
	Dry/Wet Contact*		-	-	-	-	-	-
Dimensions (L x H)			96 x 90 mm (3.8" x 3.5")	96 x 90 mm (3.8" x 3.5")	96 x 90 mm (3.8" x 3.5")	96 x 90 mm (3.8" x 3.5")	175 x 100 mm (6.9" x 3.9")	96 x 90 mm (3.8" x 3.5")
Connector			1 x 20-pin 1 x 50-pin	3 x 20-pin	2 x 20-pin	1 x 20-pin 1 x 50-pin	68-pin SCSI	1 x 50-pin 1 x 20-pin
Legacy Driver	Windows XP/2000		✓	✓	✓	✓	✓	✓
	WinCE		✓	✓	✓	✓	-	✓
	Linux		✓	✓	✓	✓	✓	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓
	WinCE		-	-	-	-	-	-
	Linux		-	-	-	✓	-	-
LabVIEW I/O Driver			✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper-selectable Form A/B-type relay output.
✓: supported, - : not supported, △ : optional

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Terminal Board Selection Guide

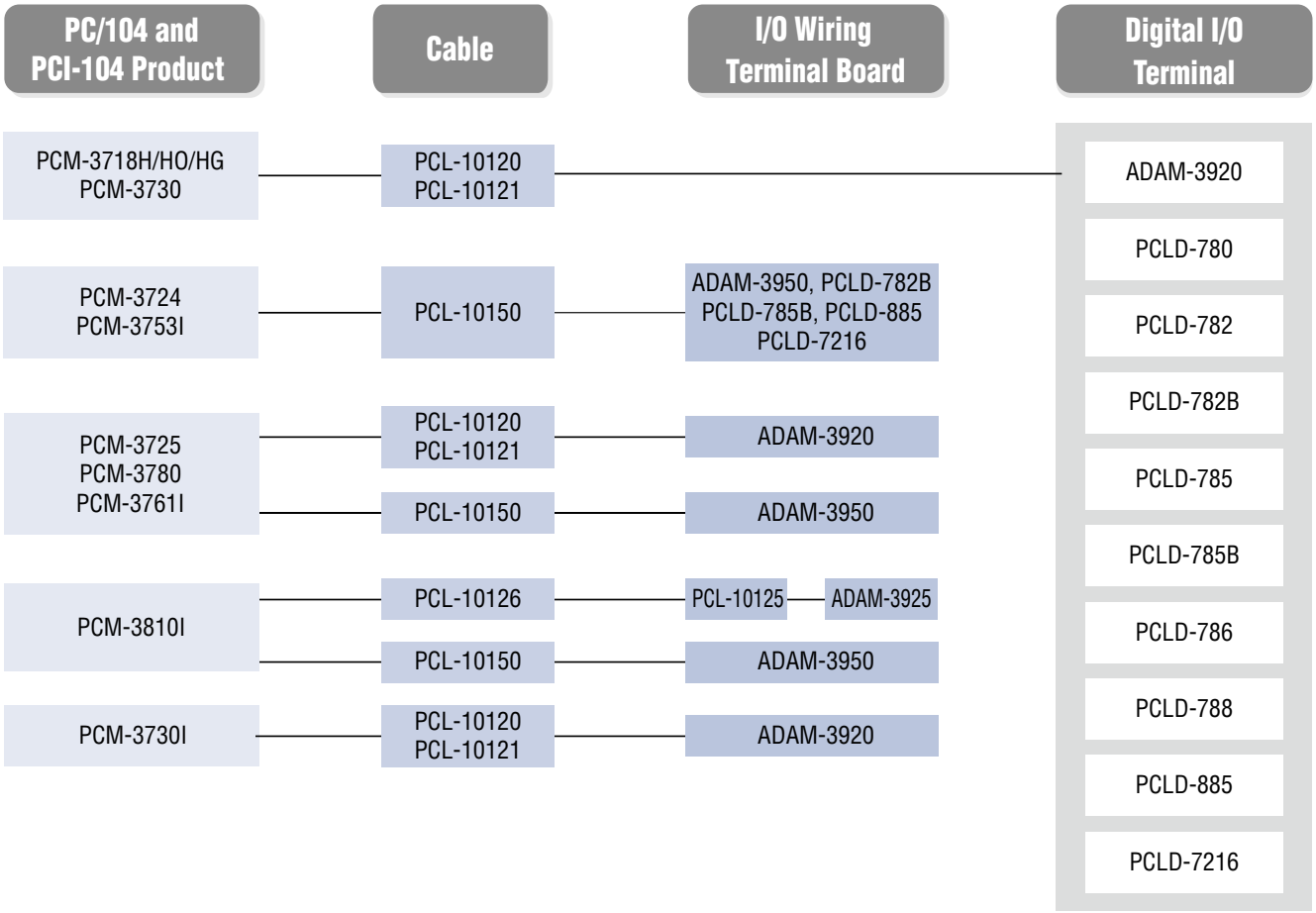
Recommended Cables, I/O Wiring Terminal Boards, and Isolated Digital I/O Terminals for Connecting to PC/104 and PCI-104 DAQ Products



Back to Top

Terminal Board Selection Guide

Recommended Cables, I/O Wiring Terminal Boards, and Isolated Digital I/O Terminals for Connecting to PC/104 and PCI-104 DAQ Products



Cable Accessories

Part Number	Description
PCL-1010B-1E	BNC to BNC wiring cable, 1 m
PCL-101100-1E	100-pin SCSI high-speed cable, 1 m
PCL-101100R-1E	100-pin SCSI shielded cable, 1 m
PCL-101100R-2E	100-pin SCSI shielded cable, 2 m
PCL-101100S-1E	100-pin mini SCSI cable, 1 m
PCL-101100S-2E	100-pin mini SCSI cable, 2 m
PCL-101100S-3E	100-pin mini SCSI cable, 3 m
PCL-101100M-3E	100-pin SCSI shielded cable, 3 m
PCL-10120-0.4E	20-pin flat cable, 0.4 m
PCL-10120-1E	20-pin flat cable, 1 m
PCL-10120-2E	20-pin flat cable, 2 m
PCL-10121-2E	20-pin shielded cable, 2 m
PCL-10125-1E	DB25 cable, 1 m
PCL-10125-3E	DB25 cable, 3 m
PCL-10126-0.2E	26-pin to DB25(f) flat cable, 0.2 m
PCL-10137-1E	DB37 cable, 1 m
PCL-10137-2E	DB37 cable, 2 m
PCL-10137-3E	DB37 cable, 3 m
PCL-10137H-1E	DB37 high-speed cable, 1 m

Part Number	Description
PCL-10137H-3E	DB37 high-speed cable, 3 m
PCL-10141-0.2E	40-pin to DB37(f) flat cable, 0.2 m
PCL-10150-1.2E	50-pin flat cable, 1.2 m
PCL-10162-1E	DB62 cable, 1 m
PCL-10162-3E	DB62 cable, 3 m
PCL-10168-1E	68-pin SCSI shielded cable, 1 m
PCL-10168-2E	68-pin SCSI shielded cable, 2 m
PCL-10168H-1E	68-pin SCSI shielded cable with noise rejection, 1 m
PCL-10168H-2E	68-pin SCSI shielded cable with noise rejection, 2 m
PCL-10250-1E	100-pin SCSI to 2 x 50-pin SCSI cable, 1 m
PCL-10250-2E	100-pin SCSI to 2 x 50-pin SCSI cable, 2 m
PCL-10268-1E	100-pin SCSI to 2 x 68-pin SCSI cable, 1 m
PCL-10268-2E	100-pin SCSI to 2 x 68-pin SCSI cable, 2 m
PCL-10488-2	IEEE-488 cable, 2 m
PCL-10502-AE	Dual 20-pin to PC slot plate extender
PCL-10503-AE	Dual 20-pin to DB37 adapter
PCL-10901-3E	DB9 to PS/2 cable, 3 m

DAQ-Embedded Computer Selection Guide




Category			Multifunction Platform			
CPU			Intel Celeron 1047UE	Intel Core™ i3-3217UE	Intel Celeron 1047UE	Intel Core™ i3-3217UE
Memory			DDR3 4GB			
Part Number			MIC-1810-S4A1E	MIC-1810-S6A1E	MIC-1816-S4A1E	MIC-1816-S6A1E
Analog Input	Resolution		12-bit	12-bit	16-bit	16-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples
	Sampling Rate		500 kS/s	500 kS/s	1MSPS	1MSPS
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V
		Bipolar Inputs	±10, ±5, 2.5, 1.25, 0.625 V	±10, ±5, 2.5, 1.25, 0.625 V	±10, ±5, 2.5, 1.25, 0.625 V	±10, ±5, 2.5, 1.25, 0.625 V
		Configurable Per Channel	✓	✓	✓	✓
	Trigger Modes	Pacer/ Software/ External Pulse	✓	✓	✓	✓
		Analog Slope	✓	✓	✓	✓
		Advanced Trigger	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop	Start/Stop/Delayed Start/Delayed Stop
	Data Transfer Modes	Software	✓	✓	✓	✓
		DMA	Bus mastering	Bus mastering	Bus mastering	Bus mastering
Analog Output	Resolution		12-bit	12-bit	16-bit	16-bit
	Channels		2 (waveform output)	2 (waveform output)	2 (waveform output)	2 (waveform output)
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V
	Output Rate		500 kHz	500 kHz	3 MHz	3 MHz
	DMA Transfer		Bus mastering	Bus mastering	Bus mastering	Bus mastering
Digital I/O	Input Channels		24 (shared)	24 (shared)	24 (shared)	24 (shared)
	Output Channels					
Timer/ Counter	Channels		2	2	2	2
	Resolution		32-bit	32-bit	32-bit	32-bit
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz
Isolation Voltage			-	-	-	-
Auto Calibration			✓	✓	✓	✓
Board ID Switch			✓	✓	✓	✓
Dimensions (L x H)			165 x 130 x 59 mm (6.49" x 5.12" x 2.32")	165 x 130 x 59 mm (6.49" x 5.12" x 2.32")	165 x 130 x 59 mm (6.49" x 5.12" x 2.32")	165 x 130 x 59 mm (6.49" x 5.12" x 2.32")
Legacy Driver	Windows XP/2000		-	-	-	-
	WinCE		-	-	-	-
	Linux		-	-	-	-
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓
	WinCE		-	-	-	-
	Linux		-	-	-	-
LabVIEW Driver			✓	✓	✓	✓

* 80 kHz on Pentium® 4-based (or higher) systems.
** SS: Single DMA channel, single A/D channel scan.
✓: supported, - : not supported, △ : optional

Signal Conditioner Selection Guide



Model		ADAM-3011	ADAM-3013	ADAM-3014
Signal Type		Thermocouple	RTD	DC input
Channel		1	1	1
Input Type	Voltage	-	-	±10 mV, ±50 mV, ±100 mV, ±0.5 V, ±1 V, ±5 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
	Current	-	-	0 ~ 20, ±20 mA
	Others	J, K, T, E, S, R, B Type	Pt or Ni	-
Output	Voltage	0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 10, ±5, ±10 V
	Current	-	0 ~ 20 mA	-




Model		ADAM-3016	ADAM-3017	ADAM-3112	ADAM-3114
Signal Type		Strain Gauge	IEPE input	AC/DC input	Current input
Channel		1	1	1	1
Input Type	Voltage	±10, ±20, ±30, ±100 mV (electrical voltage)	4 ~ 24 V (IEPE sensor with up to 10 mA current source)	AC: 0 ~ 120, 0 ~ 250, 0 ~ 400 V DC: 0 ~ 120, 0 ~ 250, 0 ~ 400 V	-
	Current	-	-	-	AC: 0 ~ 5 A_{rms} DC: 0 ~ 5 A
	Others	-	-	-	-
Output	Voltage	0 ~ 10, ±5, ±10 V	DC Couple: 4~24 V AC Couple: ±11 V	0 ~ 5 V_{DC}	0 ~ 5 V_{DC}
	Current	-	-	-	-

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

USB Digital I/O Module and USB Hub Selection Guide

Category			USB 3.0 Isolated Digital I/O					
Model			USB-5830-AE	USB-5856-AE	USB-5850-AE	USB-5855-AE	USB-5860-AE	USB-5862-AE
Isolated Digital I/O	Input	Channels	16	32	16	32	8	16
		Input Range	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)
		Isolation Protection	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}
	Output	Channels	16	32	-	-	-	-
		Load Voltage	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	-	-	-	-
		Load Current	350mA/ch (sink) @ 25°C 250mA/ch (sink) @ 60°C	350mA/ch (sink) @ 25°C 250mA/ch (sink) @ 60°C	-	-	-	-
		Isolation Protection	2,500 V_{DC}	2,500 V_{DC}	-	-	-	-
		Opto-Isolator Response Time	100 µs	100 µs	-	-	-	-
Relay Output	PhotoMOS SPST(Form A)	Channels	-	-	8	16	-	-
		Load Voltage	-	-	60V (AC peak or DC)	60V (AC peak or DC)	-	-
		Load Current	-	-	1.2A/ch	1.2A/ch	-	-
		Isolation Protection	-	-	1,500 V_{DC}	1,500 V_{DC}	-	-
		Response Time	-	-	Turn-on: 1 ms (typical) Turn-off: 0.6 ms (typical)	Turn-on: 1 ms (typical) Turn-off: 0.6 ms (typical)	-	-
	Relay Output Form A	Channels	-	-	-	-	8	16
		Contact Rating (resistive)	-	-	-	-	2A @ 250 V_{AC}, 2A @ 30 V_{DC}	2A @ 250 V_{AC}, 2A @ 30 V_{DC}
		Max. Switching Power	-	-	-	-	500 VA, 60 W	500 VA, 60 W
		Max. Switching Voltage	-	-	-	-	270 V_{AC}, 125 V_{DC}	270 V_{AC}, 125 V_{DC}
		Response Time	-	-	-	-	Operating time: 10 ms (max.) Release time: 5 ms (max.)	Operating time: 10 ms (max.) Release time: 5 ms (max.)
Dimensions			120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")
Board ID Switch			✓	✓	✓	✓	✓	✓
Operating Temperature			0 ~ 60 °C (32 ~ 140 °F)					
Supported Operating Systems			Windows XP/7/8/10 and Linux					

✓: supported, - : not supported, △ : optional

USB Digital I/O Module and USB Hub Selection Guide




Category			USB 2.0 Digital I/O			
Model			USB-4750-AE	USB-4751-AE	USB-4751L-AE	USB-4761-AE
DI/O	Input	Channels	16	48 (Shared)	24 (Shared)	8
		Input Range	Logic 0: 2 V max. Logic 1: 5 V min. (60 V max.)	Logic 0: 0.8 V max. Logic 1: 2 V min. (5 V/TTL)	Logic 0: 0.8 V max. Logic 1: 2 V min. (5 V/TTL)	Logic 0: 2 V max. Logic 1: 5 V min. (30 V max.)
		Isolation Protection	2,500 V_{DC}	-	-	2,500 V_{DC}
	Output	Channels	16	48 (Shared)	24 (Shared)	-
		Load Voltage	5 ~ 40 V_{DC}	Logic 0: 0.5 V max. Logic 1: 3.8 V min	Logic 0: 0.5 V max. Logic 1: 3.8 V min	-
		Load Current	200mA/ch (sink)	Sink: 12 mA @ 0.5 V Source: 5 mA @ 3.8 V for all channels in high status	Sink: 12 mA @ 0.5 V Source: 5 mA @ 3.8 V for all channels in high status	-
		Isolation Protection	2,500 V_{DC}	-	-	-
		Opto-Isolator Response Time	100 µs	-	-	-
Relay Output		Channels	-	-	-	8 x Form C
		Contact Rating (resistive)	-	-	-	0.25A@250V_{AC}, 1A@30V_{DC}
		Max. Switching Power	-	-	-	62.5 VA, 60 W
		Max. Switching Voltage	-	-	-	250 V_{AC}, 220 V_{DC}
		Response Time	-	-	-	Operating time: 6 ms (max.) Release time: 4 ms (max.)
Counter		Channels	2	2	2	-
		Isolation Protection	2,500 V_{DC}	-	-	-
		Max. Input Frequency	1 MHz	8 MHz	8 MHz	-
Dimensions			132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
Supported Operating Systems			Windows XP/7/8/10 and Linux			



Category		Industrial USB Hub		
Model		USB-4620-AE	USB-4622-BE	USB-4630-AE
Connectivity	Ports	1 x Upstream (Type B) 5 x Downstream (Type A)	1 x Upstream (Type B) 5 x Downstream (Type A)	1 x Upstream (Type B) 4 x Downstream (Type A)
	Compatibility	USB 2.0 Full Speed	USB 2.0 High Speed	USB 3.0 SuperSpeed
	Transfer Speed	12 Mbps	480 Mbps	5 Gbps shared by all downstream ports
	Supply Current	500 mA max. per port	500 mA max. per port	External power: 900 mA max. per port USB bus power: 700 mA max. shared by all ports
Isolation Protection		3,000 V_{DC}	-	2,500 V_{DC}
General	Dimensions	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")		
	DC Input	10 ~ 30 V_{DC}		
	Operating Temperature	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (32 ~ 140°F)	0 ~ 70°C (32 ~ 158°F)

1 Software and Industry Solutions
2 Industrial Server
3 Intelligent System
4 Intelligent HMI and Monitors
5 Automation Computers and Controllers
6 Industrial Communication
7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Multifunction DAQ USB Module Selection Guide

Category			USB 2.0 Multifunction				
Part Number			USB-4702-AE	USB-4704-AE	USB-4711A-AE	USB-4716-AE	USB-4718
Analog Input	Resolution		12-bit	14-bit	12-bit	16-bit	16-bit
	Channels		8 SE/4 diff.	8 SE/4 diff.	16 SE/8 diff.	16 SE/8 diff.	8 diff.
	Onboard FIFO		512 samples	512 samples	1,024 samples	1,024 samples	-
	Sampling Rate		10 kS/s	48 kS/s	150 kS/s	200 kS/s	10 S/s
	Input Ranges	Unipolar Inputs	-	-	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 20, 4 ~ 20 mA Thermocouple J, K , T, E, R, S, B 0 ~ 1, 0 ~ 2.5, 0 ~ 0.015, 0 ~ 0.05, 0 ~ 0.1, 0 ~ 0.5 V
		Bipolar Inputs	±20, 10, 5, 4, 2.5, 1.25, 1 V	±20, 10, 5, 4, 2.5, 1.25, 1 V	±10, 5, 2.5, 1.25 V 0.625 V	±10, 5, 2.5, 1.25 V 0.625 V	-
		Configurable Per Channel	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software	✓	✓	✓	✓	✓
		External Pulse	✓	✓	✓	✓	✓
	Data Transfer	Software	✓	✓	✓	✓	✓
Analog Output	Resolution		12-bit	12-bit	12-bit	16-bit	-
	Channels		2	2	2	2	-
	Output Range		0 ~ 5 V	0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	-
	Output Rate		Static update	Static update	Static update	Static update	-
Digital I/O	Input Channels		8	8	8	8	8 (isolated)
	Output Channels		8	8	8	8	8 (isolated)
Timer/ Counter	Channels		1	1	1	1	-
	Resolution		32-bit	16-bit	16-bit	16-bit	-
	Max. Input Frequency		5 MHz	10 MHz	1 KHz	1 KHz	-
Auto Calibration			✓	✓	✓	✓	-
Dimensions (L x H)			70 x 70 mm (2.76" x 2.76")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
Connector			DB37	Onboard screw terminal	Onboard screw terminal	Onboard screw terminal	Onboard screw terminal
Supported Operating Systems			Windows XP/7/8/10 and Linux				
LabVIEW Driver			✓	✓	✓	✓	✓

✓: supported, - : not supported, △ : optional

Serial Communication Card Selection Guide

Serial Communication Cards

NEW

Bus		PCI Express								
Part Number		PCI-1602	PCI-1602UP	PCI-1604	PCI-1604L	PCI-1610	PCI-1612	PCI-1620	PCI-1622	PCI-1680U
I/O Ports		2	2	2	2	4	4	8	8	2
Communication Interfaces	RS-232	✓	✓	✓	✓	✓	✓	✓	✓	-
	RS-422	✓	✓	-	-	-	✓	-	✓	-
	RS-485	✓	✓	-	-	-	✓	-	✓	-
	CAN	-	-	-	-	-	-	-	-	✓
Drivers		Windows XP/7/8/10 and Linux								
Protection	ESD	15 kV (air), 8 kV (contact)								8 kV (air), 4 kV (contact)
	Isolation	3,000 V_{DC}	2,500 V_{DC}	3,000 V_{DC}	-	3,000 V_{DC}	3,000 V_{DC}	-	3,000 V_{DC}	1,000 V_{DC}

Bus		PCI Express						
Part Number		PCIE-1602	PCIE-1604	PCIE-1610	PCIE-1612	PCIE-1620	PCIE-1622	PCIE-1680
I/O Ports		2	2	4	4	8	8	2
Communication Interfaces	RS-232	✓	✓	✓	✓	✓	✓	-
	RS-422	✓	-	-	✓	-	✓	-
	RS-485	✓	-	-	✓	-	✓	-
	CAN	-	-	-	-	-	-	✓
Drivers		Windows XP/7/8/10 and Linux						
Protection	ESD	15 kV (air), 8 kV (contact)						
	Isolation	3,000 V_{DC}	3,000 V_{DC}	-	3,000 V_{DC}	-	3,000 V_{DC}	2,500 V_{DC}

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1 Software and Industry Solutions
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7 Remote I/O & Wireless Sensing Modules
8 Industrial I/O and Video Solutions

Serial Communication Card Selection Guide

PC/104 Communication Modules







Bus		PC/104						
Part Number		PCM-3680	PCM-3660	PCM-3610	PCM-3612	PCM-3614	PCM-3618	PCM-3641
I/O Ports		2	2	2	2	4	8	4
Communication Interfaces	Ethernet	-	✓	-	-	-	-	-
	RS-232	-	-	✓	-	-	-	✓
	RS-422	-	-	✓	✓	✓	✓	-
	RS-485	-	-	✓	✓	✓	✓	-
	CAN	✓	-	-	-	-	-	-
Protection	ESD	8 kV (air), 4 kV (contact)						
	Isolation	2,500 V_{DC}	-	2,500 V_{DC}	-	-	-	-

PCI-104 Communication Modules




Bus		PCI-104	
Part Number		PCM-3680I	PCM-3612I
I/O Ports		2	4
Communication Interfaces	Current Loop	-	-
	RS-232	-	V
	RS-422	-	V
	RS-485	-	V
	CAN	V	-
Protection	ESD	8 kV (air), 4 kV (contact)	15 kV (air), 8 kV (contact)
	Isolation	2,500 V_{DC}	-

Bus	MIOe PCI Express	
Part Number	MIOe-3680-AE	MIOe-3674-AE
Protocol	CAN 2.0 A/B	802.3af (PoE)
Ports	2	4 Gigabit Ethernet MAC and PHY ports
Protection	2,500 V_{DC}	ESD 8 kV, EFT 2 kV

Accessories





Part Number		1700018791	OPT4A	OPT8C	OPT8H	OPT8J
Length		30 cm	30 cm	1 m	1 m	1 m
Communication Interfaces	Connector Type	DB37 Male	DB37 Male	DB62 Male	DB62 Male	DB78
	Qty	1	1	1	1	1
	Connector Type	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB9 Male
	Qty	4	4	8	8	8
Applications		PCI-1610B, PCI-1610C, PCI-1612B, PCI-1612C, PCIE-1610B, PCIE-1612B, PCIE-1612C	PCI-1610B, PCI-1610C, PCI-1612B, PCI-1612C, PCIE-1610B, PCIE-1612B, PCIE-1612C	PCI-1620A, PCI-1620B, PCIE-1620A, PCIE-1622B	PCI-1620A, PCI-1620B, PCIE-1620A, PCIE-1622B	PCI-1622C, PCIE-1622C

✓: supported, - : not supported, △ : optional

▲ Back to Top

DAQNavi Introduction

What is DAQNavi?

DAQNavi is an Advantech next-generation driver package that enables programmers to develop application programs using Advantech DAQ boards and devices. This integrated driver package includes device drivers, an SDK, tutorial, and utility. The user-friendly design allows even beginners to quickly understand how to utilize DAQ hardware and write programs via the intuitive "Advantech Navigator" utility environment. Additionally, the provision of numerous example codes for various development environments dramatically reduces programming time and effort.

For more information about Advantech DAQNavi, visit www.advantech.com/DAQNavi.

Multiple Operating Systems

DAQNavi supports most of the popular operating systems (OS) employed for automation applications. Because API functions are the same for different OS, users only need to install the driver without modifying the program when migrating between two OS. DAQNavi supports Microsoft's Windows 10/7 and Windows CE OS (both 32 and 64 bit). For an alternative to Windows, the DAQNavi software package also supports Linux OS including the Ubuntu, Fedora, Debian, and SUSE distributions. For other distributions, please contact your local Advantech branch or customer sales representative.

LabVIEW and MATLAB Support

LabVIEW is popular graphical development environment for measurement and automation applications. For LabVIEW users, DAQNavi offers two options for programming: Express VI and Polymorphic VIs. Express VI enables user to program quickly without additional wiring. To perform configurations, simply drag the Express VI icon to the LabVIEW block diagram and the DAQNavi Wizard pop-up window will appear. DAQNavi Wizard is similar to the .NET Component DAQ Wizard used in the Microsoft Visual Studio environment and also streamlines programming. With Polymorphic VI, users can build more complex programs using several VIs and wiring. In addition to LabVIEW, DAQNavi also supports MATLAB programming.

.NET Support

DAQNavi offers a series of .NET component objects with the latest .NET technology that allow users to benefit from platform-unified features. To begin programming, simply drag and drop .NET components into a .NET programming environment, such as Microsoft Visual C# or VB .NET. The DAQNavi Wizard pop-up window will appear to guide users through performing configurations in sequence. This is also known as “Configure & Run programming”. Programmers can also write code manually using .NET components for mroe object calling flexibility. Using Advantech CSCL technology, engineers can perform similar programming in a native environment such as Visual C++.

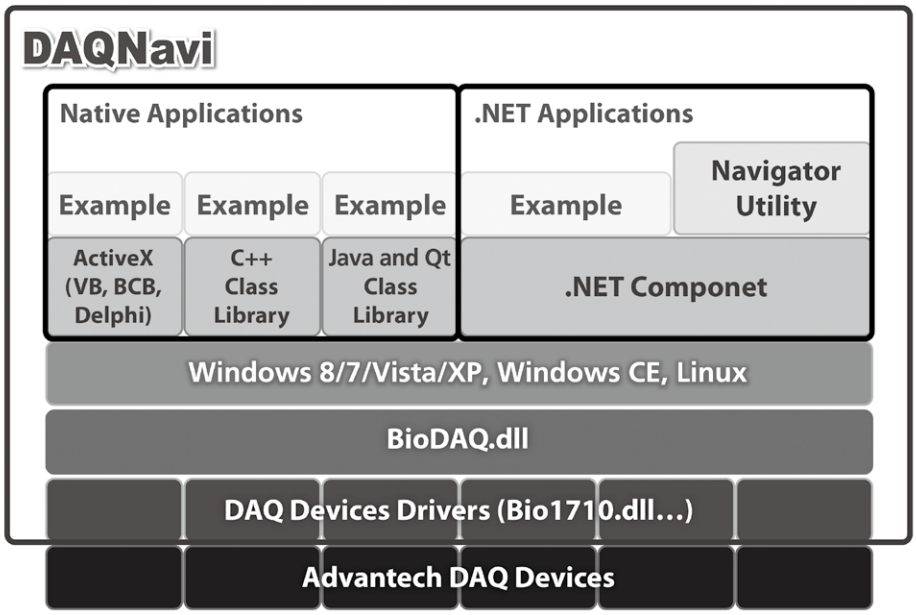
C++, Delphi, VB, BCB, Java, and Qt Support

DAQNavi provides a C++ class library (for VC++ and Borland C++ Builder) and ActiveX (for Visual Basic, Delphi, and BCB) for native programming environments with the same calling interface as the .NET Framework Class Library. With the DAQNavi Java class library and Qt class library, users can develop Java and Qt programs that support migration between various OS (including Windows and Linux).

Additional Modules

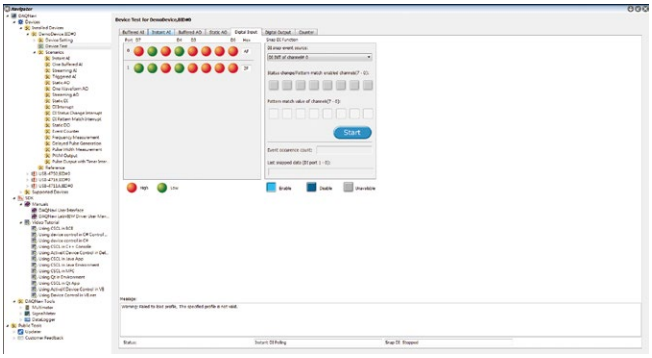
DAQNavi supports all PCI Express, PCI, PC/104, and PCI-104 cards, as well as all USB DAQ devices.

DAQNavi Driver Package Architecture



The DAQNavi SDK and individual DAQNavi drivers for specific hardware are available on the Advantech DAQNavi website (www.advantech.com/DAQNavi). These offerings need to be installed to use the hardware.

Advantech Navigator – A Powerful Intuitive Utility



Devices

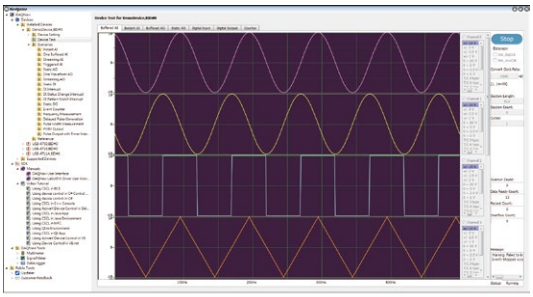
All installed Advantech DAQ devices are listed here, including a virtual DAQ device named “Demo Device”. This allows programmers to run examples and test operations within DAQNavi without installing hardware. For every device listed, there are four selectable options.

1. Device Setting

This option allows uses to configure the hardware of the selected device.

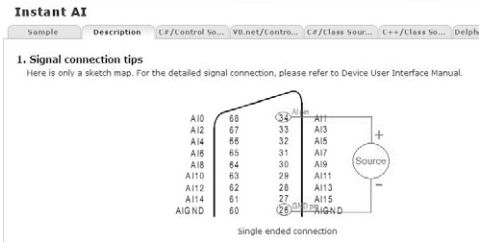
2. Device Test

This option allows users to test the hardware functionality without programming.



3. Scenarios

Advantech has defined common measurement and automation applications as “scenarios” for user reference. For each scenario, one example program is embedded in Advantech Navigator for direct execution. The corresponding source code for each scenario is provided and written in various languages (C#, VB .NET, C++, Delphi , Qt, VB6, and Java). A wiring diagram is also included for each scenario.



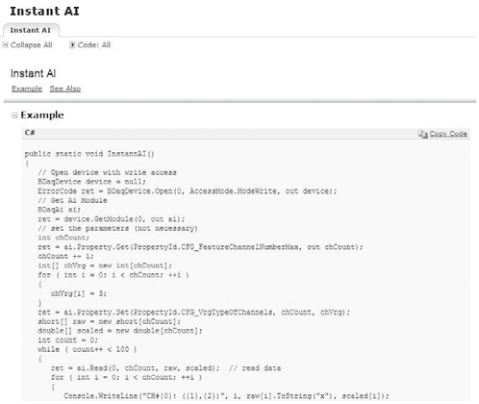
4. Reference

This option allows users to reference the user manual of the selected device.

SDKs

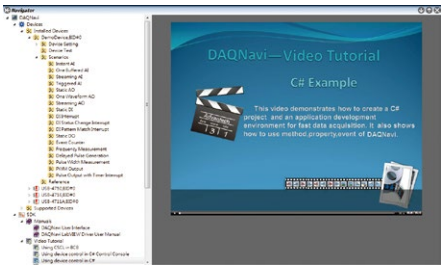
1. DAQ User Interface Manual

To reduce development time, Advantech offers a wealth of tutorial and reference documentation for both Class Library and Device Control programming methods. The programming instructions not only explain how to create an application project, but also how to write a program using a programming chart and example code.



2.Tutorial Video

Advantech also offers a tutorial video for reference when creating a project.



Common Scenarios for Measurement and Automation Applications

Category	Scenario	Description
Analog Input	Instant AI	Read single AI value once
	Asynchronous One Buffered AI	Read a buffer of AI values once (Don't need to wait the acquisition is done to run other program)
	Synchronous One Buffered AI	Read a buffer of AI values once (Need to wait the acquisition is done to run other program)
	Streaming AI	Continuously read a buffer of AI values
Analog Output	Static AO	Change AO values once
	Asynchronous One Waveform AO	Change AO value based on a pre-defined waveform once (Don't need to wait the generation is done to run other program)
	Synchronous One Waveform AO	Change AO value based on a pre-defined waveform once (Need to wait the generation is done to run other program)
	Streaming AO	Continuously change AO value based on a pre-defined waveform
Digital Input	Static DI	Read the selected DI port value once
	DI Interrupt	When DI bit meets a pre-defined edge change (rising or falling), an interupt is generated
	DI Pattern Match Interrupt	When selected DI port meets pre-defined pattern, an interupt is generated
	DI Status Change Interrupt	When the status of certain selected channel of DI port changes, an interupt is generated
Digital Output	Static DO	Change DO values once
Timer/ Counter	Delayed Pulse Generation	When a trigger from coutner gate is met, a pulse is generated after a specific period
	Pulse Output with Timer Interrupt	Continuously generate a periodic pulse train (using counter internal clock), and an event will be sent out at the same time.
	Event Counter	Continously count the pulse number of signal from counter input
	Frequency Measurement	Meaure frequency of singal from counter input
	Pulse Width Measurement	Meaure pulse width of signal from counter input
	PWM Output	Generate PWM (Pulse Width Modulation) signal

WebAccess/MCM: Machine Condition Monitoring Software

Implement a Successful Predictive Maintenance System by Integrating Advantech's WebAccess/MCM

WebAccess/MCM is Machine Condition Monitoring software that provides easy sensor signal acquisition, signal analysis, feature extraction , data management and interpretation, and sends alerts. Engineers or system integrators can configure settings to meet the needs of different applications.

WebAccess/MCM helps customers to quickly install Advantech's DAQ modules and implement predictive maintenance in their factories. This helps improve equipment uptime, performance and safety, while greatly reducing maintenance costs.

Benefits

Real-time Online Condition Monitoring

- Acquires and analyzes massive quantities of dynamic signals
- Data interpretation and alarm function
- Provides data management such as storage, search, comparison, and playback

Reduce Maintenance Cost; Increase Machine Uptime

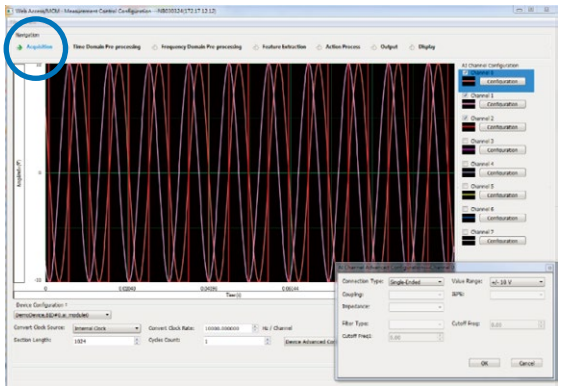
- Keeps abreast of machine condition to reduce downtime
- Monitors key component life instead of replacing parts based on a calendar or routine system

Save Development Time and Human Resources

- Easy setup without programming
- Provides plenty of algorithms for data analysis

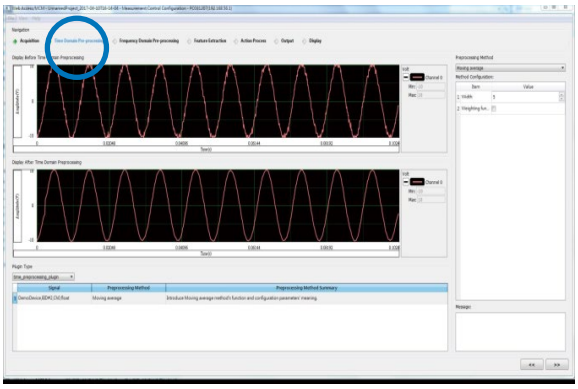
User-guided Graphical Interface for Easy Setup of Machine Condition Maintenance

1 Acquire Signals from Sensors



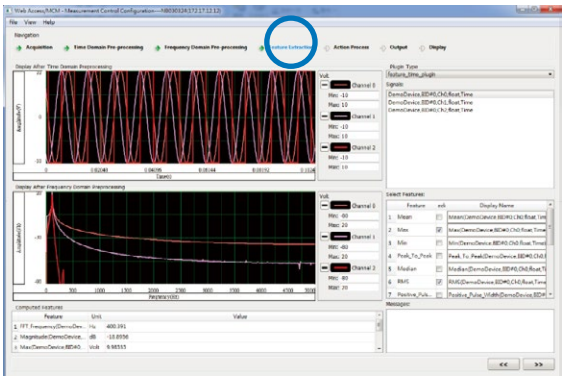
Quickly configure the signal acquisition settings, such as channel, range, single ended / differential inputs, sampling rate, memory size and trigger. No programming required.

2 Optimize the Data



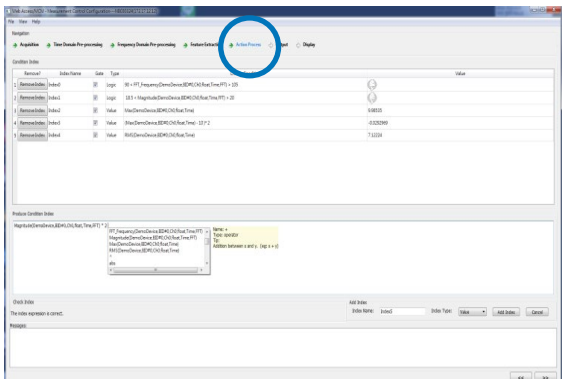
Provides multiple algorithms like FFT, IFFT, a variety of filters, smoothers, and mixers to optimize the data.

3 Extract Key Features



Provides various settings like the Max/Min/Median/Mean, RMS, Pulse Width/Frequency, Time, FFT Frequency to extract data features for later analysis.

4 Set up the Criteria for Machine Condition Interpretation

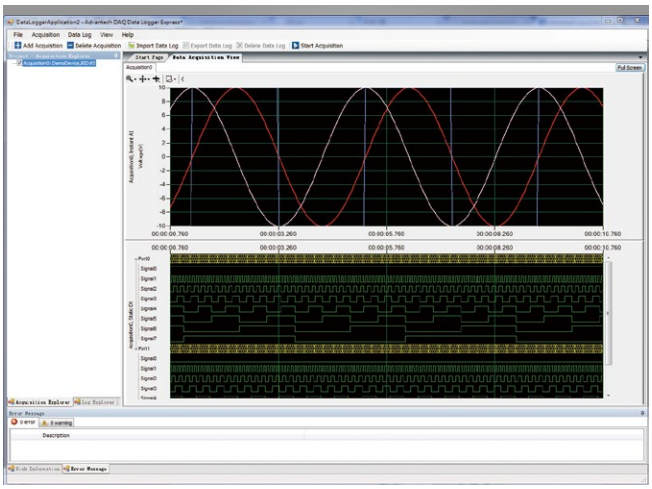


Offers simple mathematical and logical calculation settings for interpreting the features and taking actions based on the results, such as sending signals to other equipment or sending alerts to administrators.

For more information, please see the Datasheet on page xx-xx.

DataLogger

Configurable Data Logging Software



Features

- Data logging, display, and recording without programming
- Instant AI, buffered AI, and static DI data logging
- Intuitive wizard for hardware channel configuration
- Supports device simulation operations
- Configurations can be saved into a project file for future use
- Real-time display with zoom and pan capabilities
- Supports data recording and storage to local disk
- Playback function enables viewing of historical data
- Supports both analog graph and digital graph displays

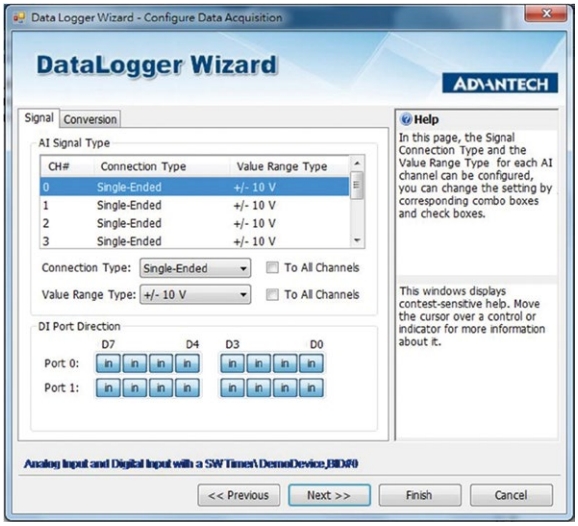
Introduction

Advantech DataLogger is a ready-to-use application software with a user-friendly interface that engineers can leverage to perform data logging, display, and recording. This software enables engineers to flexibly collect and store data from various Advantech data acquisition devices for relevant data logging tasks without time-consuming programming.

Feature Details

Data Acquisition Device Configuration

Before data logging measurement, engineers can configure all necessary analog and digital input channels using the built-in DAQNavi Wizard. A pop-up window displays step-by-step instructions to ensure settings can be easily configured. Besides DAQ devices, DataLogger also supports device simulation, enabling engineers to perform operations without hardware installation.



Configuration Management via Project Files

Engineers can create and edit projects to include one or more data logging tasks. A single project can display data acquired from one or multiple DAQ devices. The input channel configurations and logging settings can be saved as specific project files. Engineers can then open these project files to load all saved configurations and perform data logging tasks immediately.

Real-Time Data Logging, Display, and Recording

After DAQ configuration, data collection can be immediately initiated, with the collected data displayed on a real-time graph. Engineers can zoom in, zoom out, or dynamically pan across the graph during data logging, and can decide whether to record the collected data (save data into a pre-defined file).

Historical Data Playback

Previously recorded data can be loaded into the DataLogger software and viewed using the Playback function. Zoom in, zoom out, and pan operations are also possible for historical data displays.

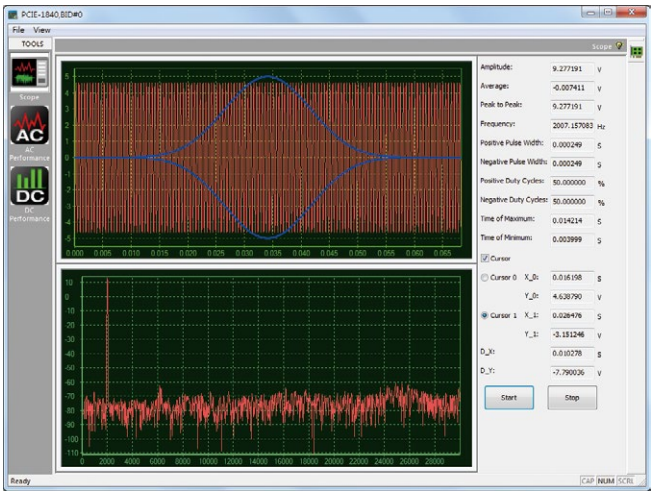
Specifications

Supported Hardware

- PCI Express multifunction, analog input, and digital input cards
- PCI multifunction, analog input, and digital input cards
- USB multifunction, analog input, and digital input modules
- PC/104 and PCI-104 multifunction, analog input, and digital input cards

SignalMeter

Signal Analysis Software



Features

- Easy to use, no programming required
- Provides DC and AC performance measurements
- Provides cursor measurements for signal analysis
- Enables Windows function for AC signals
- Real-time frequency displays based on zoom and pan operations in the time domain
- Automatic amplitude, average, peak-to-peak, and frequency measurements
- Cost-free tool

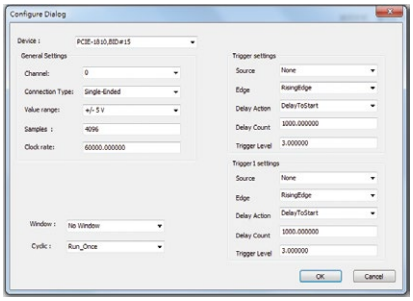
Introduction

SignalMeter is ready-to-use application software designed for Advantech's DAQ devices that enables scope, AC performance, and DC performance functions to facilitate signal analysis. Using the simple, user-friendly interface, engineers can control the settings for the three functions with a single configuration.

Feature Details

Data Acquisition Device Configuration

Before using SignalMeter, the necessary data acquisition parameters can set via the configuration dialog interface. The configuration interface includes device selection, general settings, trigger settings, and start mode settings. Engineers can set the three function modes to follow the same configuration settings.



Scope Mode

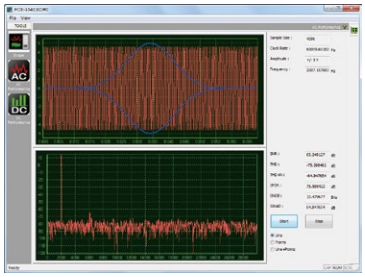
The Scope mode offers the following simple oscilloscope features:

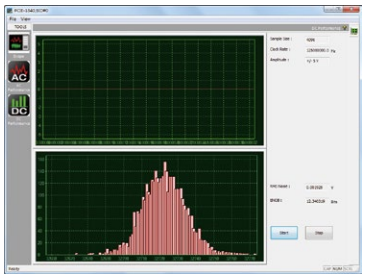
- Amplitude: Returns the difference between the signal highs and lows
- Average: The mean vertical level of the entire captured waveform
- Peak-to-Peak: Returns the difference between the extreme maximum and minimum values
- Frequency: Frequency is the inverse of period, where period is the average completion time for a cycle using the entire waveform in the capture window.

The Scope mode function not only supports simultaneous displays of the time and frequency domains, but also synchronous zoom.

AC and DC Performance Mode

The AC Performance function enables automatic calculation of the SNR, THD, and SIMAD— important information for data acquisition. For DC signals, the DC Performance function can be used to display RMS noise and plot a histogram. Overall, the interface is simple and easy to navigate.





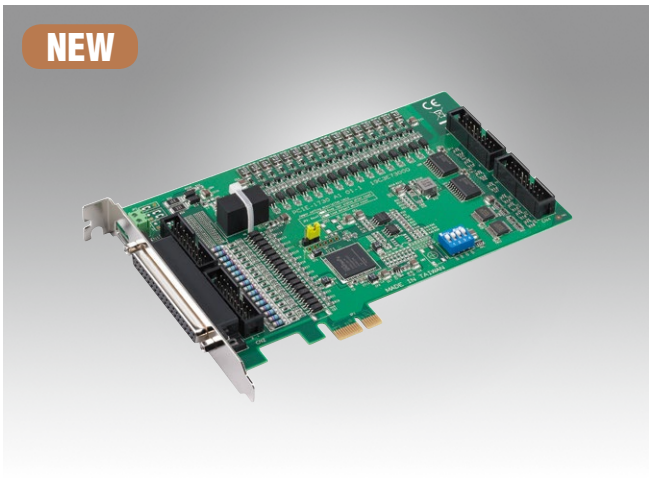
Specifications

Supported Hardware

- PCI Express multifunction, analog input, and digital input cards
- PCI multifunction, analog input, and digital input cards
- USB multifunction, analog input, and digital input modules
- PC/104 and PCI-104 multifunction, analog input, and digital input cards

PCIE-1730
PCIE-1730H

32-Ch TTL, 32-Ch Isolated Digital I/O PCIe Card
32-Ch TTL, 32-Ch Isolated Digital I/O PCIe Card with Digital Filter and Interrupt Function



Features

- 32-ch isolated DI/O (16-ch digital input, 16-ch digital output)
- 32-ch TTL DI/O (16-ch digital input, 16-ch digital output)
- High output driving capacity
- Interrupt handling capability
- Selectable digital filter time
- D-type connector for isolated input and output channels
- High-voltage isolation on output channels (2,500 V_{DC})

FCC CE RoHS

Introduction

PCIe-1730/1730H feature 32 TTL digital I/O channels and 32 digital I/O channels with up to 2,500 V_{DC} isolation protection, making them ideal for industrial applications that require high-voltage isolation. For PCIE-1730H, all signals can be used as interrupt request signals and to disable/enable the interrupt function for every channel, as well as to support the input signal edge, which generates interrupts. All PCIE-1730 digital input channels have a digital filter to prevent inaccurate recognition of input signals that contain noise or chattering.

Specifications

Digital Input

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2.0 V min.
- **Interruptible Channels** PCIE-1730: 2 (IDI0, IDI8)
  PCIE-1730H: 16

Isolated Digital Input

- **Channels** 16
- **Input Voltage** Logic 0: 3 V max.
  Logic 1: 10 V min. (30 V max.)
- **Interruptible Channels** PCIE-1730: 2 (IDI0, IDI8)
  PCIE-1730H: 16
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 50 µs
- **Input Resistance** 2.7 kΩ @ 1 W
- **Digital Filter Time (PCIE-1730H only)**

Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time
0 (00h)	The filter function is not used.	7 (07h)	16µsec	14 (0Eh)	2.048msec
1 (01h)	0.25µsec	8 (08h)	32µsec	15 (0Fh)	4.096msec
2 (02h)	0.5µsec	9 (09h)	64µsec	16 (10h)	8.192msec
3 (03h)	1µsec	10 (0Ah)	128µsec	17 (11h)	16.384msec
4 (04h)	2µsec	11 (0Bh)	256µsec	18 (12h)	32.768msec
5 (05h)	4µsec	12 (0Ch)	512µsec	19 (13h)	65.536msec
6 (06h)	8µsec	13 (0Dh)	1.024msec	20 (14h)	131.072msec

Digital Output

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.5V max.
  Logic 1: 2.4V min.
- **Output Capability** Sink: 24mA @ 0.5V
  Source: 15mA @ 2.4V

Isolated Digital Output

- **Channels** 16
- **Output Type** Sink type (NPN)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Sink Current** 500 mA max./channel
- **Opto-Isolator Response** 50 µs

General

- **Bus Type** PCI Express V1.0
- **I/O Connectors** 1 x DB37, female
  4 x 20-pin box header
- **Dimensions (L x H)** 168 x 100 mm (6.6" x 3.9")
- **Power Consumption** Typical:3.3 V @ 280 mA, 12 V @ 330 mA
  Max.: 3.3 V @ 420 mA, 12 V @ 400 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCIE-1730-AE** 32-ch TTL and 32-ch isolated digital I/O PCIe card
- **PCIE-1730H-AE** 32-ch TTL and 32-ch isolated digital I/O PCIe card with digital filter and interrupt function

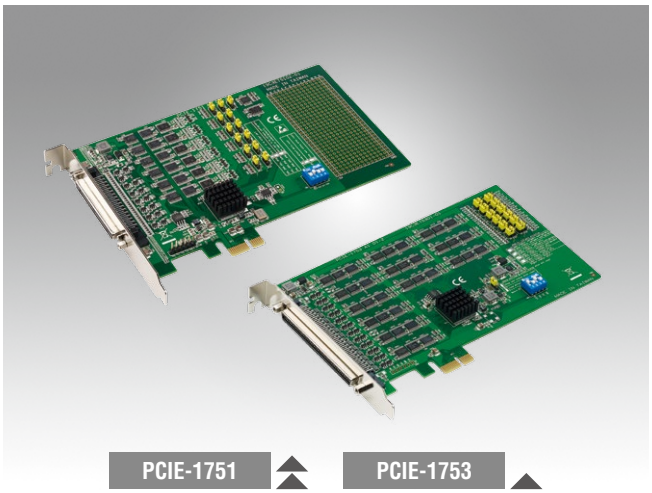
Accessories

- **PCL-10120-1E** 20-pin flat cable, 1 m
- **PCL-10120-2E** 20-pin flat cable, 2 m
- **ADAM-3920-AE** 20-pin DIN rail flat cable wiring board
- **PCLD-782-BE** 16-ch isolated DI board w/1 m, 20-pin flat cable
- **PCLD-885-AE** 16-ch power relay board w/20-pin and 50-pin flat cables
- **PCLD-785-BE** 16-ch relay board w/1 m, 20-pin flat cable
- **ADAM-3937-BE** DB37 DIN rail wiring board
- **PCL-10137-1E** DB37 cable, 1 m
- **PCL-10137-2E** DB37 cable, 2 m
- **PCL-10137-3E** DB37 cable, 3 m

PCIE-1751
PCIE-1753

48-Ch Digital I/O, 3-Ch Counter PCI Express Card

96-Ch Digital I/O PCI Express Card



PCIE-1751 PCIE-1753

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Features

- Emulates Mode 0 of the Intel® 8255 PPI chip (every port with nibbles)
- Buffered circuits for a higher driving capacity compared to the Intel® 8255 PPI chip
- Interrupt handling capability
- Timer/counter interrupt capability
- Supports both dry and wet contact
- Retains I/O port settings and DO configuration after system reset
- Board ID switch
- Pattern match interrupt function for DI
- Change-of-state interrupt function for DI
- Programmable digital filter function for DI
- Output status read back

Introduction

PCIE-1751 is a 48-channel digital I/O card for the PCI Express bus. The channels are divided into six 8-bit I/O ports. Users can configure 4 channels per port (nibbles) to serve as input or output channels via software. PCIE-1751 also provides three 32-bit counters. PCIE-1753 is a 96-channel digital I/O card that emulates Mode 0 of the Intel® 8255 PPI chip. However, the buffered circuits offer a higher driving capability than that of the 8255 PPI chip. The 96 I/O channels are divided into twelve 8-bit I/O ports: A0, B0, C0, A1, B1, C1, A2, B2, C2, A3, B3 and C3. Users can configure every port to serve as input or output ports via software.

Specifications

Digital Input

- **Channels** PCIE-1751: 48 (shared with output)
  PCIE-1753: 96 (shared with output)
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2 V min.
- **Interruptible Channels** PCIE-1751: 6
  PCIE-1753: 12

Digital Output

- **Channels** PCIE-1751: 48 (shared with input)
  PCIE-1753: 96 (shared with input)
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
  Logic 1: 2.4 V min.
- **Output Capability** Sink: 24mA @ 0.4 V
  Source: 15mA @ 2.4 V

Counter/Timer (PCIE-1751 only)

- **Channels** 3
- **Resolution** 3 x 32-bit counter
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 20K / 200K / 2M / 20MHz
  External Clock Frequency: 10 MHz
  External Voltage Range: 5 V/TTL

General

- **Bus Type** Universal PCI Express
- **I/O Connectors** PCIE-1751: 1 x 68-pin SCSI, female
  PCIE-1753: 1 x 100-pin SCSI, female
- **Dimensions (L x H)** 168 x 100 mm (6.6" x 3.9")
- **Power Consumption** Typical: PCIE-1751: 5 V @ 400 mA
  PCIE-1753: 3.3 V @ 850 mA
  Max.: PCIE-1751: 5 V @ 2.63 A
  PCIE-1753: 3.3V @ 2.7 A

Note: Maximum power consumption includes the consumption for a +5 V output.

- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

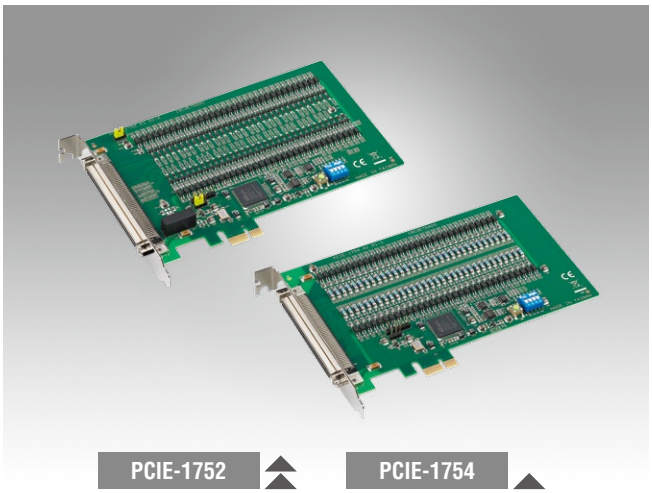
- **PCIE-1751-AE** 48-ch digital I/O and 3-ch counter PCI Express card
- **PCIE-1753-AE** 96-ch digital I/O PCI card

Accessories

- **PCL-10168-1E** 68-pin SCSI shielded cable, 1 m
- **PCL-10168-2E** 68-pin SCSI shielded cable, 2 m
- **PCL-10268-1E** 100-pin to 2 x 68-pin SCSI cables, 1 m
- **PCL-10168-2E** 100-pin to 2 x 68-pin SCSI cables, 2 m
- **ADAM-3968-AE** 68-pin DIN rail SCSI wiring board
- **ADAM-3968/20-AE** 68-pin SCSI to 3 x 20-pin box header board
- **ADAM-3968/50-AE** 68-pin SCSI to 2 x 50-pin box header board
- **PCLD-8751-AE** 48-ch isolated digital input board
- **PCLD-8761-AE** 24-ch replay/ isolated digital input board
- **PCLD-8762-AE** 48-ch relay board

PCIE-1752
PCIE-1754

64-Ch Isolated Digital Output PCI Express Card
64-Ch Isolated Digital Input PCI Express Card



Features

PCIE-1752

- Wide output range (5 ~ 40 V_{DC})
- High sink current on isolated output channels (500mA max./ch)
- 2,000 V_{DC} ESD protection
- High-voltage isolation (2,500 V_{DC})
- Interrupt handling capability

PCIE-1754

- Wide input range (10 ~ 30 V_{DC})
- Either +/- voltage input for DI by group
- High overvoltage protection (70 V_{DC})
- High-voltage isolation (2,500 V_{DC})
- Output status read back
- Retains the output settings and values after system hot reset
- Channel-freeze function

Introduction

PCIE-1752 and PCIE-1754 are isolated DI/O cards that offer 64 isolated digital input/output channels with up to 2,500 V_{DC} isolation protection. Featuring a wide input (10 ~ 30 V_{DC})/ output (5 ~ 40 V_{DC}) range and high sink current (500mA max./channel), PCIE-1752 and PCIE-1754 are ideal for use in industrial automation control systems. With Advantech's DAQNavi driver package, users can adjust the configuration settings easily and efficiently.

Specifications

Isolated Digital Input

Channels	PCIE-1754: 64
Input Voltage	Logic 0: 3 V max. Logic 1: 10 V min. (30 V_{DC} max.)
Input Current	10 V_{DC} @ 2.97 mA 20 V_{DC} @ 6.35 mA 30 V_{DC} @ 9.73 mA
Interruptible Channels	PCIE-1754: 4
Isolation Protection	2,500 V_{DC}
Overvoltage Protection	70 V_{DC}
ESD Protection	2,000 V_{DC}
Opto-Isolator Response	50 µs

Isolated Digital Output

Channels	PCIE-1752: 64
Output Type	Sink (NPN)
Isolation Protection	2,500 V_{DC}
Output Voltage	5 ~ 40 V_{DC}
Sink Current	500 mA max./channel
Opto-isolator Response	50 µs

General

Bus Type	PCI Express V1.0
I/O Connectors	1 x 100-pin SCSI, female
Dimensions (L x H)	168 x 100 mm (6.6" x 3.9")
Power Consumption	**PCIE-1752** Typical: 3.3 V @ 485 mA Max.: 3.3 V @ 530 mA; 12V @ 90 mA **PCIE-1754** Typical: 3.3 V @ 285 mA Max.: 3.3 V @ 330 mA
Operating Temperature	0 ~ 60 °C (32 ~ 140 °F)
Storage Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
Storage Humidity	5 ~ 95% RH, non-condensing

Ordering Information

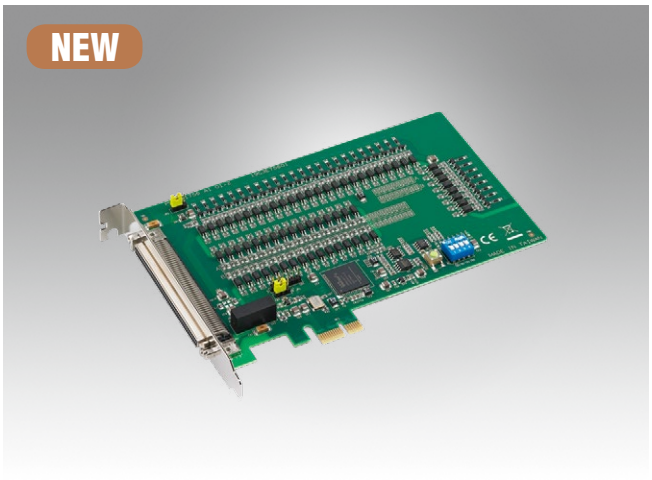
PCIE-1752-AE	64-ch isolated digital output PCI Express card
PCIE-1754-AE	64-ch isolated digital input PCI Express card

Accessories

PCL-10250-1E	100-pin SCSI to 2 x 50-pin SCSI cable, 1 m
PCL-10250-2E	100-pin SCSI to 2 x 50-pin SCSI cable, 2 m
ADAM-3951-BE	50-pin DIN rail wiring board w/LED indicators
PCL-101100M-3E	100-pin SCSI to 100-pin SCSI cable, 3 m
ADAM-39100-BE	100-pin DIN rail wiring board

PCIE-1756
PCIE-1756H

64-Ch Isolated Digital I/O PCIe Card
64-Ch Isolated Digital I/O PCIe Card with Digital Filter and Interrupt Function



Features

- 32-ch isolated digital input
- 32-ch isolated digital output with wide output range (5 ~ 40 V_{DC})
- Interrupt handling capability
- Software-selectable digital filter time for all DI channels (PCIE-1756H only)
- Output status read back
- Retains the output settings and values after system hot reset

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Introduction

PCIE-1756 and PCIE-1756H are isolated DI/O cards that offer 64 isolated digital input/output channels with up to 2,500 V_{DC} isolation protection. Featuring a wide input (10 ~ 30 V_{DC})/ output (5 ~ 40 V_{DC}) range and high sink current (500mA max./channel), PCIE-1756 and PCIE-1756H are ideal for use in industrial automation control systems. For PCIE-1756, all signals can be used as interrupt request signals and to disable/enable the interrupt function for every channel, as well as to support the input signal edge, which generates interrupts. All PCIE-1756H digital input channels have a digital filter to prevent inaccurate recognition of input signals that contain noise or chattering.

Specifications

Isolated Digital Input

- **Channels** 32
- **Input Voltage** Logic 0: 3 V max.
Logic 1: 10 V min. (30 V_{DC} max.)
- **Input Current** 10 V_{DC} @ 2.97 mA
20 V_{DC} @ 6.35 mA
30 V_{DC} @ 9.73 mA
- **Interruptible Channels** PCIE-1756: 2 (IDI0, IDI16)
PCIE-1756H: 32
- **Isolation Protection** 2,500 V_{DC}
- **Overvoltage Protection** 70 V_{DC}
- **ESD Protection** 2,000 V_{DC}
- **Opto-Isolator Response** 50 µs
- **Digital Filter Time (PCIE-1756H only)**

Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time
0 (00h)	The filter function is not used.	7 (07h)	16µsec	14 (0Eh)	2.048msec
1 (01h)	0.25µsec	8 (08h)	32µsec	15 (0Fh)	4.096msec
2 (02h)	0.5µsec	9 (09h)	64µsec	16 (10h)	8.192msec
3 (03h)	1µsec	10 (0Ah)	128µsec	17 (11h)	16.384msec
4 (04h)	2µsec	11 (0Bh)	256µsec	18 (12h)	32.768msec
5 (05h)	4µsec	12 (0Ch)	512µsec	19 (13h)	65.536msec
6 (06h)	8µsec	13 (0Dh)	1.024msec	20 (14h)	131.072msec

Isolated Digital Output

- **Channels** 32
- **Output Type** Sink (NPN)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Sink Current** 500 mA max./channel
- **Opto-isolator Response** 50 µs

General

- **Bus Type** PCI Express V1.0
- **I/O Connectors** 1 x 100-pin SCSI, female
- **Dimensions (L x H)** 168 x 100 mm (6.6" x 3.9")
- **Power Consumption** Typical: 3.3 V @ 385 mA
Max.: 3.3 V @ 430 mA; 12V @ 55 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

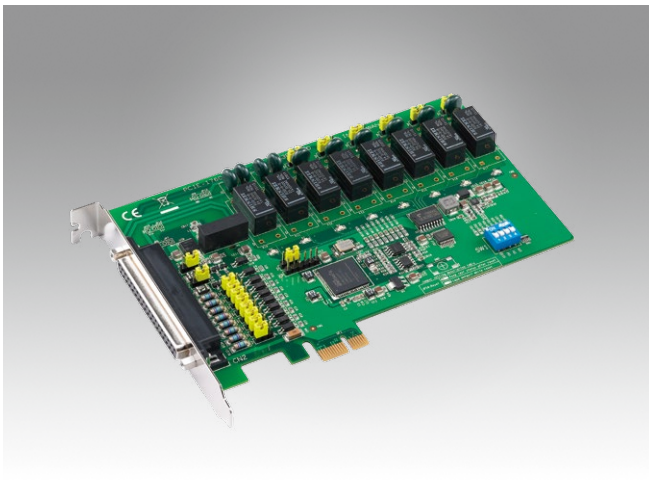
- **PCIE-1756-AE** 64-ch isolated digital I/O PCIe card
- **PCIE-1756H-AE** 64-ch isolated digital I/O PCIe card with digital filter and interrupt function

Accessories

- **PCL-10250-1E** 100-pin SCSI to 2 x 50-pin SCSI cable, 1 m
- **PCL-10250-2E** 100-pin SCSI to 2 x 50-pin SCSI cable, 2 m
- **ADAM-3951-BE** 50-pin DIN rail wiring board w/ LED indicators
- **PCL-101100M-3E** 100-pin SCSI to 100-pin SCSI cable, 3 m
- **ADAM-39100-BE** 100-pin DIN rail wiring board

PCIE-1760

8-Ch Relay and 8-Ch Isolated Digital Input PCI Express Card



Features

- 8 opto-isolated digital input channels with counter/timer function
- 8 relay actuator output channels
- 2 opto-isolated PWM outputs
- LED indicators to show activated relays
- Jumper-selectable dry/wet-contact input signals
- Up event counters for DI
- Programmable digital filter function for DI
- Pattern match interrupt function for DI
- Change-of-state interrupt function for DI
- Board ID switch

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Introduction

The PCIE-1760 relay actuator and isolated digital input card is a PC add-on card for the PCI Express bus that satisfies the PCI Express (Revision 1.0) standard. PCIE-1760 features 8 opto-isolated digital inputs with up to 2,500 V_{DC} isolation protection for collecting digital inputs in noisy environments, 8 relay actuators that can be used as on/off control devices or small power switches, and 2 isolated PWM (pulse width modulation) outputs for custom applications.

For easy monitoring, each relay is equipped with a single red LED that indicates the on/off status. Each isolated input supports both dry and wet contact to enable easy interfacing with other devices when no voltage is present in the external circuit.

Specifications

Isolated Digital Input

- **Channels** 8
- **Input Voltage** Logic 0: 1.0 V max.
Logic 1: 4.5 V min. (12 V max.)
- **Interruptible Channels** 8
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 25 µs
- **Input Resistance** 2 kΩ 1/4 W

Counter/Timer

- **Channels** 8
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 500 Hz
- **Isolation Protection** 2,500 V_{DC}
- **PWM Channels** 2
- **Digital Noise Filter** Min. effective high input period ≥ [(2 ~ 65535) x 5 ms] + 5 ms
Min. effective low input period ≥ [(2 ~ 65535) x 5 ms] + 5 ms

Relay Output

- **Channels** 8
- **Relay Type** 2 x Form C, and 6 x Form A
- **Contact Rating** 1 A @ 125 V_{AC}, 2 A @ 30 V_{DC}
- **Max. Switching Power** 125 VA, 60 W
- **Max. Switching Voltage** 250 V_{AC}, 220 V_{DC}
- **Max. Switching Current** 2 A
- **Operate/Release Time** 5 / 3.5 ms max
- **Resistance** Contact: 50 mΩ max.
Insulation: 100 MΩ min. @ 500 V_{DC}
- **Life Expectancy (Electrical)** 3 x 10^5 cycles min.: 2 A @ 30 V_{DC}, 1 A @ 125 V_{AC}
10^6 cycles min.: 1 A @ 30 V_{DC}, 0.5 A @ 125 V_{AC}

General

- **Bus Type** PCI Express V1.0
- **I/O Connectors** 1 x DB37, female
- **Dimensions (L x H)** 168 x 100 mm (6.6" x 3.9")
- **Power Consumption** Typical: 5 V @ 450 mA
Max.: 5 V @ 850 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing

Ordering Information

- **PCIE-1760-AE** 8-ch relay/IDI PCIe card w/10-ch counter/timer

Accessories

- **PCL-10137-1E** DB37 cable, 1 m
- **PCL-10137-2E** DB37 cable, 2 m
- **PCL-10137-3E** DB37 cable, 3 m
- **ADAM-3937-AE** DB37 DIN rail wiring board

PCIE-1810

800 kS/s, 12-Bit, 16-Ch PCI Express Multifunction DAQ Card

Features

- 16 analog inputs, up to 800 kS/s, 12-bit resolution
- 2 analog outputs, up to 500 kS/s, 12-bit resolution
- Supports digital and analog triggers
- 24 programmable digital I/O lines
- Two 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)
- Automatic channel/gain scanning

FCC CE RoHS

Introduction

PCIE-1810 is a multifunction PCI Express card that includes digital I/O, analog I/O, and counter functions. The card also features a 800 kS/s 12-bit A/D converter and supports analog triggers for A/D data acquisition.

Specifications

Analog Input

- **Channels** Single end 16
  Differential 8
- **Resolution** 12 bits
- **Sample Rate** Single channel 800 kS/s max.
  Multiple channels 500 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 500k/4 = 125 kS/s per channel.

- **Trigger Reference** Digital and analog triggers
- **Trigger Mode** Start, Delayed Start
  Stop, Delayed Stop
- **FIFO Size** 4,000 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software and external clock
- **Input Range** Software programmable

Gain	0.5	1	2	4	8
Bipolar	±10V	±5	±2.5	±1.25	±0.625
Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static software polling
  500 KS/s max.
- **Output Range** Software programmable

Internal Reference	Unipolar	0 ~ 5 V 0 ~ 10 V
	Bipolar	-5 V ~ 5 V -10 V ~ 10 V
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- **Slew Rate** 20 V/μs
- **Driving Capability** 5 mA
- **Operation Mode** Static update, waveform generation
- **Accuracy** INLE: ± 1 LSB, DNLE: ± 1 LSB

Digital I/O

- **Channels** 24
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2.0 V min.
- **Output Voltage** Logic 0: 0.8 V max.
  Logic 1: 2.0 V min.
- **Output Capability** Sink: 15 mA @ 0.8 V
  Source: 15 mA @ 2.0 V

Counter

- **Channels** 2
- **Resolution** 32 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Pulse Generation** Yes
- **Timebase Stability** 50 ppm

General

- **Form Factor** PCI Express x1
- **Triggering** 2 x Analog/2 x digital (12 bits)
- **I/O Connector** 68-pin SCSI, female
- **Dimensions (L x W)** 167 x 100 mm (6.6" x 3.9")
- **Power Consumption** Typical: 3.3 V @ 488 mA
  12 V @ 112 mA
  Max.: 3.3 V @ 2.25 A
  12 V @ 390 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F) (refer to IEC 60068-2-1, 2)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 60068-2-3)

Ordering Information

- **PCIE-1810-AE** 800 kS/s, 12-bit multifunction card

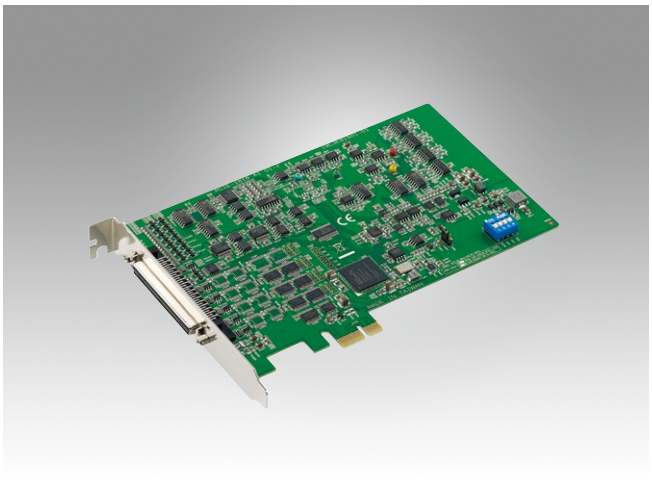
Accessories

- **PCL-10168H-1E** 68-pin SCSI shielded cable with noise rejection, 1 m
- **PCL-10168H-2E** 68-pin SCSI shielded cable with noise rejection, 2 m
- **PCL-10168-1E** 68-pin SCSI shielded cable, 1 m
- **PCL-10168-2E** 68-pin SCSI shielded cable, 2 m
- **ADAM-3968-AE** 68-pin DIN rail SCSI wiring board
- **PCLD-8810E-AE** 68-pin SCSI DIN-rail Wiring Board for PCIE-1800 series
- **PCLD-8811-AE** Low-Pass Active Filter Board

Back to Top

PCIE-1816
PCIE-1816H

500 KS/s, 16-Bit, 16-Ch PCI Express Multifunction DAQ Card
1 MS/s, 16-Bit, 16-Ch PCI Express Multifunction DAQ Card



FCC CE RoHS

Features

PCIE-1816
- 16 analog inputs, up to 1 MS/s, 16-bit resolution

PCIE-1816H
- 16 analog inputs, up to 5 MS/s, 16-bit resolution

PCIE-1816/1816H
- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Supports analog and digital triggers for analog I/O
- Supports waveform generation for analog output
- 24 programmable digital I/O lines
- Two 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)

Introduction

PCIE-1816/1816H is a 16-ch (up to 5 MS/s) multifunction DAQ card with integrated digital I/O, analog I/O, and counter functions. PCIE-1816/1816H also features analog and digital triggering support, 2-ch 16-bit analog outputs with waveform generation capability, 24-ch programmable digital I/O lines, and two 32-bit general purpose timer/counters.

Specifications

Analog Input

- **Channels**: Single end 16; Differential 8
- **Resolution**: 16 bits
- **Sample Rate**: PCIE-1816: Single channel 1 MS/s max., Multiple channels 500 kS/s max.; PCIE-1816H: Single channel 5 MS/s max., Multiple channels 1 MS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 1M/4 = 250 kS/s per channel.

- **Trigger Reference**: Digital and analog triggers
- **FIFO Size**: 4,000 samples
- **Overvoltage Protection**: 30 Vp-p
- **Input Impedance**: 1 GΩ
- **Sampling Mode**: Software and external clock
- **Input Range**: Software programmable

PCIE-1816					
Gain	0.5	1	2	4	8
Bipolar	±10V	±5	±2.5	±1.25	±0.625
Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Absolute Accuracy (% of FSR)*	0.0075	0.0075	0.0075	0.008	0.008

Analog Output

- **Channels**: 2
- **Resolution**: 16 bits
- **Output Rate**: 3 MS/s max.
- **Output Range**: Software programmable

Internal Reference	**Unipolar**	0 ~ 5 V 0 ~ 10 V
	Bipolar	-5 V ~ 5 V -10 V ~ 10 V
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- **Slew Rate**: 20 V/μs
- **Driving Capability**: 5 mA
- **Operation Mode**: Static update, waveform generation
- **Accuracy**: INLE: ± 4 LSB, DNLE: ± 1 LSB

Digital I/O

- **Channels**: 24
- **Compatibility**: 5 V/TTL
- **Input Voltage**: Logic 0: 0.8 V max., Logic 1: 2.0 V min.
- **Output Voltage**: Logic 0: 0.8 V max., Logic 1: 2.0 V min.
- **Output Capability**: Sink: 15 mA @ 0.8 V, Source: 15 mA @ 2.0 V

Counter

- **Channels**: 2
- **Resolution**: 32 bits
- **Compatibility**: 5 V/TTL
- **Max. Input Frequency**: 10 MHz
- **Pulse Generation**: Yes
- **Timebase Stability**: 50 ppm

General

- **Form Factor**: PCI Express x1
- **Triggering**: 2 x Analog/2 x digital (16 bits)
- **I/O Connector**: 68-pin SCSI, female
- **Dimensions (L x W)**: 167 x 100 mm (6.6" x 3.9")
- **Power Consumption**: Typical: 3.3 V @ 488 mA, 12 V @ 112 mA; Max.: 3.3 V @ 2.25 A, 12 V @ 390 mA
- **Operating Temperature**: 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature**: -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Humidity**: 5 ~ 95% RH non-condensing

Ordering Information

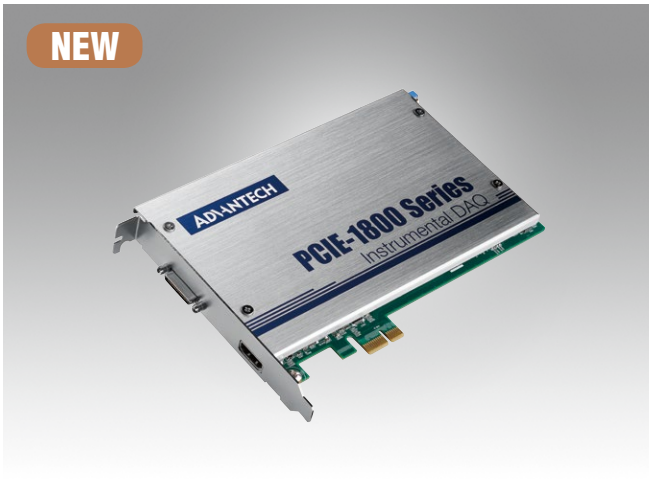
- **PCIE-1816-AE**: 1 MS/s, 16-bit multifunction card
- **PCIE-1816H-AE**: 5 MS/s, 16-bit multifunction card

Accessories

- **PCL-10168H-1E**: 68-pin SCSI shielded cable with noise rejection, 1 m
- **PCL-10168H-2E**: 68-pin SCSI shielded cable with noise rejection, 2 m
- **PCL-10168-1E**: 68-pin SCSI shielded cable, 1 m
- **PCL-10168-2E**: 68-pin SCSI shielded cable, 2 m
- **ADAM-3968-AE**: 68-pin DIN rail SCSI wiring board
- **PCLD-8810E-AE**: 68-pin SCSI DIN-rail Wiring Board for PCIE-1800 series
- **PCLD-8811-AE**: Low-Pass Active Filter Boar

PCIE-1802
PCIE-1802L

8-Ch, 24-Bit, 216 kS/s Dynamic Signal Acquisition PCI Express Card
4-Ch, 24-Bit, 216 kS/s Dynamic Signal Acquisition PCI Express Card



Features

- 8/4 simultaneously sampled analog inputs, up to 216 kS/s
- 24-bit resolution ADCs with 115 dB dynamic range
- Wide input range of ±0.2 ~ 10 V
- Built-in anti-aliasing filter
- Software-configurable 4/10 mA integrated electronic piezoelectric (IEPE) excitation currents
- Software-selectable AC/DC coupling
- Full automatic calibration
- Multiple card synchronization

Introduction

PCIE-1802/1802L is a 24-bit, high-accuracy data acquisition PCI Express module specifically designed for sound and vibration-related applications. This module features built-in 4/10 mA excitation currents for IEPE sensors, such as accelerometers and microphones.

Specifications

Analog Input

Channels	PCIE-1802: 8 PCIE-1802L: 4 (simultaneous sampling differential or 50 Ω pseudo-differential)
Resolution	24 bits (delta sigma)
Max. Sampling Rate	100 S/s to 216 kS/s (with resolution ≤ 363.80 μS/s)
Input Coupling	AC/DC, selectable per channel
AC Cut-Off Frequency	0.727 Hz (-3 dB)
Trigger Modes	Start, Delayed Start, Stop, Delayed Stop
Input Range	±0.2, ±0.5, ±1, ±2, ±5, ±10 V
Offset Error	< ±1 mV
Gain Error	< ±0.2 %
Total Harmonic Distortion (THD)	-100 dB
Total Harmonic Distortion Plus Noise (THD+N)	-98 dB
Dynamic Range	115 dB
IEPE Excitation	0, 4, or 10 mA, selectable per channel
Data Transfer	Direct memory access (DMA)
Multi-Card Support	For synchronizing more than 8 analog input channels

Digital Input/Output

DI Channels	1 (interrupt)
DO Channels	2

General

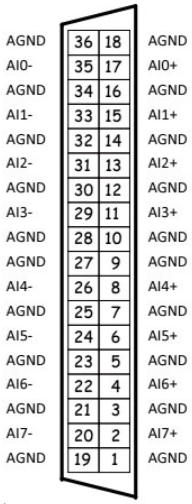
Bus Type	PCI Express x1
I/O Connectors	CN600 36-pin mini SCSI (for analog input) CN601 HDMI (for clock, trigger, and DI/Os)
Dimensions (L x H)	168 x 100 mm (6.6" x 3.9")
Operating Temperature	0 ~ 60 °C (32 ~ 140 °F)
Storage Temperature	-40 ~ 70 °C (-40 ~ 158 °F)
Storage Humidity	5 ~ 95 % RH, non-condensing

Ordering Information

PCIE-1802-AE	8-ch, 24-bit, 216 kS/s dynamic signal acquisition PCI Express card
PCIE-1802L-AE	4-ch, 24-bit, 216 kS/s dynamic signal acquisition PCI Express card
PCLD-8840-AE	20-pin DIN rail HDMI cable wiring board for PCIE-1802 and PCIE-1840
PCL-108BNC-50E	Mini SCSI to 8-BNC cable
PCL-104BNC-50E	Mini SCSI to 4-BNC cable
PCL-10119-1E	HDMI cable

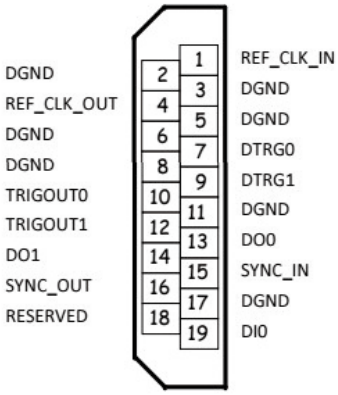
Pin Assignments

Mini SCSI



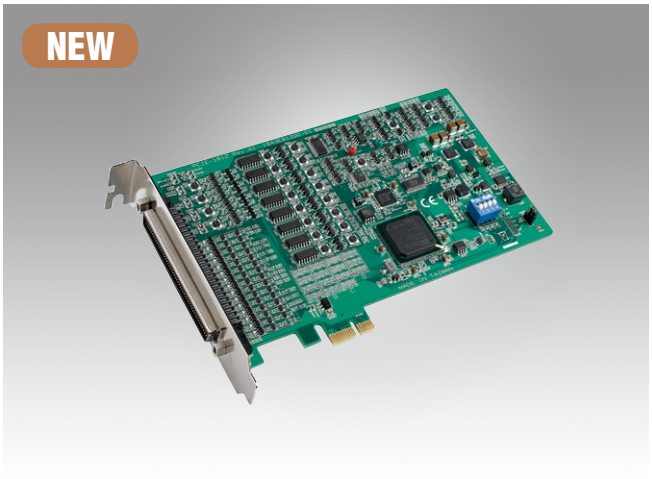
* AI4 to AI7 (PCIE-1802 only)

HDMI



PCIE-1812

250 kS/s, 16-Bit, 8-Ch, Simultaneous Sampling Multifunction PCI Express DAQ Card



Features

- 8 differential simultaneous sampling analog inputs, up to 250 kS/s, 16-bit resolution
- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Full automatic calibration
- 2 analog triggers and 2 digital triggers for analog I/O
- 32 programmable DI/Os with interrupt functions
- Four 32-bit programmable counters/ timers/ encoders
- Board ID switch

Introduction

PCIE-1812 is a simultaneous-sampling multifunction DAQ card designed to meet a wide range of application requirements. PCIE-1812 supports simultaneous sampling of 8 analog input channels with differential input configuration for maximum noise elimination. In addition to providing 2-ch, 16-bit analog outputs with waveform generation capabilities, PCIE-1812 supports simultaneous waveform generation and analog input functions.

Specifications

Analog Input

- **Channels** 8
- **Mode** Differential input
- **Resolution** 16 bits
- **Sample Rate** 250 kS/s max.
- **Input Impedance** 100GΩ/350pF
- **Sampling Mode** Software and external clock
- **Input Range** Software programmable

Gain	0.5	1	2	4	8
Bipolar	±10V	±5	±2.5	±1.25	±0.625
Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Absolute Accuracy (% of FSR)*	0.01	0.01	0.01	0.01	0.01

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** 3 M max.
- **Output Range** Software programmable

Internal Reference	Unipolar	0 ~ 5 V, 0 ~ 10 V
	Bipolar	-5 V ~ 5 V, -10 V ~ 10 V
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- **Slew Rate** 20 V/μs
- **Driving Capability** 5 mA
- **Operation Mode** Static update, waveform generation
- **Accuracy** 0.01%

Analog Trigger

- **Channels** 2
- **Resolution** 16 bits
- **Input Range** -10 ~ 10 V
- **Hysteresis** Yes. Hysteresis range is configurable
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital Trigger

- **Channels** 2
- **Input Voltage** Logic 0: 1.5 V max.
  Logic 1: 3.5 V min.
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital I/O

- **Channels** 32 (shared)
- **Input Voltage** Logic 0: 1.5 V max.
  Logic 1: 3.5 V min.
- **Output Voltage** Low 0.5 V max.@ +20 mA (sink)
  High 4.5 V min.@ -20 mA (source)

Counter/ Timer/ Encoder

- **Channels** 4
- **Resolution** 32 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Counter/Timer Functions** Frequency measurement, pulse width measurement, pulse output, PWM output
- **Encoder Functions** Quadrature (X1, X2, X4), dual pulse (CW/CCW), signed pulse (OUT/DIR)

General

- **Form Factor** PCI Express x1
- **I/O Connector** 100-pin SCSI, female
- **Dimensions (L x W)** 167 x 100 mm (6.6" x 3.9")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **Board ID** TM switch

Ordering Information

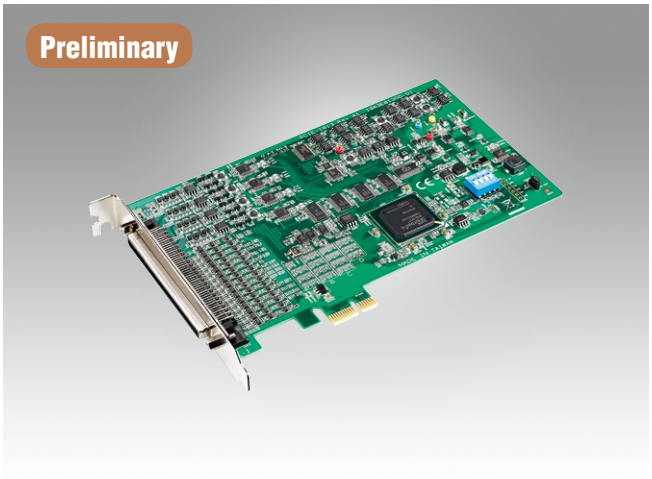
- **PCIE-1812-AE** 250 kS/s, 16-bit, 8-ch simultaneous sampling multifunction card

Accessories

- **PCL-101100R-1E** 100-pin SCSI shielded cable, female to male, 1 m
- **PCL-101100R-2E** 100-pin SCSI shielded cable, female to male, 2 m
- **ADAM-39100-BE** 100-pin DIN rail SCSI wiring board
- **PCLD-8813-AE** 6Advanced Signal Conditioning Board for PCIE-1812/PCIE-1813
- **PCLD-8811-AE** Low-Pass Active Filter Boar

PCIE-1813

38.4 kS/s, 26-Bit, 4-Ch, Simultaneous Sampling, Universal Bridge Input, Multifunction PCI Express Card



Features

- 4 simultaneous sampling analog inputs, up to 38.4 kS/s, 26-bit resolution
- Full, half, and quarter-bridge sensor input with built-in anti-aliasing filter
- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Four 32-bit programmable encoder counters/ timers/ encoder counters
- 32 programmable DI/Os with interrupt functions
- Board ID switch
- Full automatic calibration

FCC CE RoHS

Introduction

PCIE-1813 is a 26-bit high-resolution multifunction data acquisition PCI Express card specifically designed for bridge sensor inputs, such as strain gauges, load cells, pressure sensors, and torque sensors. PCIE-1813 also features 2-ch, 16-bit analog outputs with waveform generation capability and supports simultaneous waveform generation and analog input functions.

Specifications

Analog Input Overview

- **Channels** 4
- **Resolution** 26 bits
- **Sample Rate** 38.4 kS/s max. simultaneous

Voltage Input

- **Input Ranges** ±10 V, ±5 V, ±2.5 V, ±1.25 V, ±625 mV, ±312.5 mV
- **Accuracy** ±0.01% of FSR

Bridge Input

- **Input Ranges** ±31.25 mV/V, ±62.5 mV/V, ±125 mV/V, ±250 mV/V,±500 mV/V, and ±1 V/V
- **Bridge Mode** Full, half, quarter
- **Bridge Resistance** 120 Ω, 350 Ω, 1 kΩ
- **Shunt Calibration** 33.333 kΩ, 50 kΩ, 100 kΩ
- **Excitation Voltage** 0 ~ 10 V
- **Remote Sensing** Yes

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** 3 MSPS max.
- **Output Range** Software programmable

Internal Reference	**Unipolar**	0 ~ 5 V, 0 ~ 10 V
	Bipolar	-5 V ~ 5 V, -10 V ~ 10 V
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- **Slew Rate** 20 V/μs
- **Driving Capability** 5 mA
- **Operation Mode** Static update, waveform generation
- **Accuracy** ±0.01% of FSR

Analog Trigger

- **Channels** 2
- **Resolution** 16 bits
- **Input Range** -10 V ~ +10 V
- **Hysteresis** Yes. Hysteresis range is configurable
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital Trigger

- **Channels** 2
- **Input Voltage** Logic 0: 1.5 V max.
Logic 1: 3.5 V min.
- **Trigger Edge** Rising edge or falling edge, selected by software

Digital I/O

- **Channels** 32 (shared)
- **Input Voltage** Logic 0: 1.5 V max.
Logic 1: 3.5 V min.
- **Output Voltage** Low 0.5 V max.@ +20 mA (sink)
High 4.5 V min.@ -20 mA (source)

Counter/ Timer/ Encoder Counter

- **Channels** 4
- **Resolution** 32 bits
- **Input/Output Voltage** Same as that for digital I/O
- **Max. Input Frequency** 10 MHz
- **Counter/Timer Functions** Frequency measurement, pulse width measurement, pulse output, PWM output
- **Encoder Functions** Quadrature (X1, X2, X4), dual pulse (CW/CCW), signed pulse (OUT/DIR)

General

- **Form Factor** PCI Express x1
- **I/O Connector** 100-pin SCSI female ribbon-type connector
- **Dimensions (L x W)** 167 x 100 mm (6.6" x 3.9")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **Board ID** TM switch

Ordering Information

- **PCIE-1813-AE** 38.4 kS/s, 26-bit, 4-ch, simultaneous sampling, universal bridge input, multifunction PCI Express card

Accessories

- **PCL-101100R-1E** 100-pin SCSI shielded cable, 1 m
- **PCL-101100R-2E** 100-pin SCSI shielded cable, 2 m
- **ADAM-39100-BE** 100-pin DIN rail SCSI wiring board
- **PCLD-8810-AE** Low-Pass Active Filter Board
- **PCLD-8813-AE** 6Advanced Signal Conditioning Board for PCIE-1812/PCIE-1813
- **PCLD-8811-AE** Low-Pass Active Filter Boar

PCIE-1840
PCIE-1840L

4-Ch, 16-Bit, 125 MS/s Digitizer

4-Ch, 16-Bit, 80 MS/s Digitizer

Features

PCIE-1840

- 4 simultaneous analog inputs, up to 125 MHz, 16-bit resolution
- 500 MHz time-interleaved sampling

PCIE-1840L

- 4 simultaneous analog inputs, up to 80 MHz, 16-bit resolution
- 320 MHz time-interleaved sampling

PCIE-1840/PCIE-1840L

- Non-stop data streaming capabilities
- 2 GB of onboard memory
- 1M or 50 Ohm selectable input impedance
- Built-in tunable anti-aliasing filter
- AC/DC coupling support

Introduction

PCIE-1840/1840L is a 16-bit resolution digitizer that provides up to 2 GB of onboard sample memory, true ENOBs of up to 11.4 bits, and sampling rates of up to 125 per second. PCIE-1840/1840L divides the input voltage range into 65,536 digitization levels and can support 1 or 2 digitizing channels (up to 250/500 MSPS).

Specifications

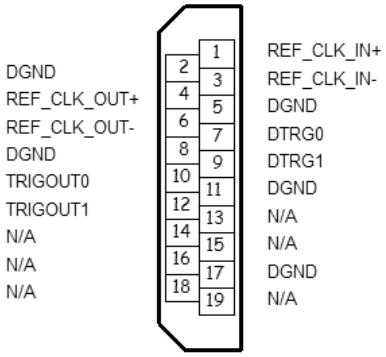
Analog Input

Channels	4 x single ended, simultaneous
Resolution	16 bits
Max. Sampling Rate	125 MS/s (PCIE-1840) 80 MS/s (PCIE-1840L)
Memory Size	2 GB
Overvoltage Protection	30 Vp-p
Input Impedance	50 Ω / 1M Ω For 1 MΩ: AC/DC coupling
Sampling Modes	Software and external clock
Trigger Modes	Start, Delayed Start Stop, Delayed Stop
Input Range	0.2 / 0.4 / 1 / 2 / 4 / 10 / 20 Vpp (input Impedance must be 1 MΩ)
Time Interleaved Sampling	- 4 channels combined, 500 MPS max. (PCIE-1840) 320 MPS max. (PCIE-1840L) - 2 channels combined, 250 MPS max. (PCIE-1840) 160 MPS max. (PCIE-1840L) - Configured automatically by setting sampling rate

General

Bus Type	PCI Express Gen2 x4
I/O Connectors	4 x BNC (for analog input) 1 x HDMI (for external clock and trigger)
Dimensions (L x H)	175 x 100 mm (6.9" x 3.9")
Power Consumption	Under test
Operating Temperature	0 ~ 50 °C (32 ~ 122 °F)
Storage Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
Storage Humidity	5 ~ 95% RH, non-condensing

Pin Assignments



Ordering Information

PCIE-1840-AE	4-ch, 16-bit, 125 MS/s digitizer
PCIE-1840L-AE	4-ch, 16-bit, 80 MS/s digitizer
PCLD-8840-AE	20-pin DIN rail HDMI cable wiring board for PCIE-1802 and PCIE-1840
PCL-10119-1E	HDMI cable
PCL-1010B-1E	BNC coaxial cable, 1 m

MIC-1810

12-Bit, 500 KS/s, 12-Ch DAQ Platform with Intel® Core™ i3/Celeron® Processer

Features

- 16 x Analog inputs, up to 800 kS/s, 12-bit resolution
- 2 x Analog outputs, up to 500 kS/s, 12-bit resolution
- Supports digital and analog triggers
- 24 x Programmable digital I/O lines
- 2 x 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)
- 2 x RS-232 ports
- 2 x 10/100/1000 Base-T RJ-45 LAN ports
- 2 x USB 2.0 and 2 x USB 3.0 ports

MIC-1810-S4A1E

- Intel® Celeron® 1047UE processer, 1.4 GHz

MIC-1810-S6A1E

- Intel® Core™ i3-3217UE processor 1.6 GHz

Introduction

MIC-1810 is a stand-alone automation controller featuring an integrated DAQ module and signal conditioning to provide digital I/O, analog I/O, and counter functions. This application-ready controller also supports serial communication ports and several other networking interfaces to enable seamless integration and rapid system development.

Specifications

Analog Input

- **Channels** 16-ch single ended, 8-ch differential
- **Resolution** 12 bits
- **Sample Rate** Single channel: 800 kS/s max.; Multiple channels: 500 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 500k/4 = 125 kS/s per channel.

- **Trigger Reference** Digital and analog triggers
- **Trigger Mode** Start, Delayed Start Stop, Delayed Stop
- **FIFO Size** 4,000 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software and external clock
- **Input Range** Software programmable

Gain	0.5	1	2	4	8
Unipolar	NA	0~10	0~5	0~2.5	0~1.25
Bipolar	±10	±5	±2.5	±1.25	±0.625
Gain Error (%FSR)	0.1	0.1	0.2	0.2	0.4

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Sample Rate** 500 kS/s max.
- **Output Range** Software programmable

Output Range	Internal Reference	0V~5V, 0V~10V, ±5V, ±10V	
	External Reference	Reference Input	Maximum Range
	Unipolar	-10V ≦ x ≦ 10V	0 ~ x V
	Bipolar		-x V ~ x V

Digital I/O

- **Channels** 24
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max. Logic 1: 2.0 V min.
- **Output Voltage** Logic 0: 0.8 V max. Logic 1: 2.0 V min.
- **Output Capability** Sink: 15 mA @ 0.8 V Source: 15 mA @ 2.0 V

Counter

- **Channels** 2
- **Resolution** 32 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Pulse Generation** Yes
- **Timebase Stability** 50 ppm

General

- **Dimensions (W x H x D)** 165 x 59 x 130 mm (6.49" x 2.32" x 5.11")
- **Power Consumption** 45 W (typical)
- **Power Requirements** Single 12V_{DC} power input
- **Weight** 2.4 kg (typical)
- **OS Support** Windows 7

System Hardware

- **CPU** Intel® Celeron® 1047UE processer, 1.4 GHz (MIC-1810-S4A1E) Intel® Core™ i3-3217UE processor, 1.6 GHz (MIC-1810-S6A1E)
- **Memory** 4G SODIMM DDR3-1600
- **Indicators** LEDs for Power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** USB
- **Storage** 1 x 2.5" SSD

Environment

- **Storage Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** 0 ~ 50 °C (14 ~140 °F) @ 5 ~ 85% RH with 0.7m/s air flow
- **Storage Temperature** -20 ~ 80 °C (-4 ~ 176 °F)

Ordering Information

- **MIC-1810-S4A1E** DAQ platform with Intel® Celeron® 1047UE processer
- **MIC-1810-S6A1E** DAQ platform with Intel® Core™ i3-3217UE processer
- **2070014966** img WES7P MIC-1810 64bit 1701 10MUI

Optional Accessories

- **1700001714** Power cord (BSMI) 3P, 7A, 125V, 18AWG, 180 cm
- **1702002600** Power cord UL/CSA (USA) 3P, 10A, 125V, 1.83 m, 180 D
- **1700023535-01** Power cord (CCC) 3P, 16A, 250V, 183 cm
- **1960077844N001** Table mount (130 x 175 mm)
- **2070014966** Image WES7P (64 bit)

Back to Top

MIC-1816

16-Bit, 1MS/s, 16-Ch DAQ Platform with Intel® Core™ i3/Celeron® Processer

Features

- 16 x Analog inputs, up to 1 MS/s, 16-bit resolution
- 2 x Analog outputs, up to 3 MS/s, 16-bit resolution
- Supports digital and analog triggers
- 24 x Programmable digital I/O lines
- 2 x 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 samples)
- 2 x RS-232 ports
- 2 x 10/100/1000 Base-T RJ-45 LAN ports
- 2 x USB 2.0 and 2 x USB 3.0 ports

MIC-1816-S4A1E

- Intel® Celeron® 1047UE processer, 1.4 GHz

MIC-1816-S6A1E

- Intel® Core™ i3-3217UE processor 1.6 GHz

Introduction

MIC-1816 is a stand-alone automation controller featuring an integrated DAQ module and signal conditioning to provide digital I/O, analog I/O, and counter functions. This application-ready controller also supports serial communication ports and several other networking interfaces to enable seamless integration and rapid system development.

Specifications

Analog Input

- **Channels** 16-ch single ended, 8-ch differential
- **Resolution** 16 bits
- **Sample Rate** Single channel: 5 MS/s max.; Multiple channels: 1 MS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 1MS/4 = 250 kS/s per channel.

- **Trigger Reference** Digital and analog triggers
- **Trigger Mode** Start, Delayed Start; Stop, Delayed Stop
- **FIFO Size** 4,000 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software and external clock
- **Input Range** Software programmable

Gain	0.5	1	2	4	8
Unipolar	NA	0~10	0~5	0~2.5	0~1.25
Bipolar	±10	±5	±2.5	±1.25	±0.625
Gain Error (%FSR)	0.1	0.1	0.2	0.2	0.4

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Sample Rate** 3 MS/s max.
- **Output Range** Software programmable

Output Range	Internal Reference	0V~5V, 0V~10V, ±5V, ±10V	
	External Reference	Reference Input	Maximum Range
	Unipolar	-10V ≦ x ≦ 10V	0 ~ x V
	Bipolar		-x V ~ x V

Digital I/O

- **Channels** 24
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.; Logic 1: 2.0 V min.
- **Output Voltage** Logic 0: 0.8 V max.; Logic 1: 2.0 V min.
- **Output Capability** Sink: 15 mA @ 0.8 V; Source: 15 mA @ 2.0 V

Counter

- **Channels** 2
- **Resolution** 32 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Pulse Generation** Yes
- **Timebase Stability** 50 ppm

General

- **Dimensions (W x H x D)** 165 x 59 x 130 mm (6.49" x 2.32" x 5.11")
- **Power Consumption** 45 W (typical)
- **Power Requirements** Single $12V_{DC}$ power input
- **Weight** 2.4 kg (typical)
- **OS Support** Windows 10 and Windows 7

System Hardware

- **CPU** Intel® Celeron® 1047UE processer, 1.4 GHz (MIC-1816-S4A1E); Intel® Core™ i3-3217UE processor, 1.6 GHz (MIC-1816-S6A1E)
- **Memory** 4G DDR3
- **Indicators** LEDs for Power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** USB
- **Storage** 1 x 2.5" SSD

Environment

- **Storage Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** 0 ~ 50 °C (14 ~140 °F) @ 5 ~ 85% RH with 0.7m/s air flow
- **Storage Temperature** -20 ~ 80 °C (-4 ~ 176 °F)

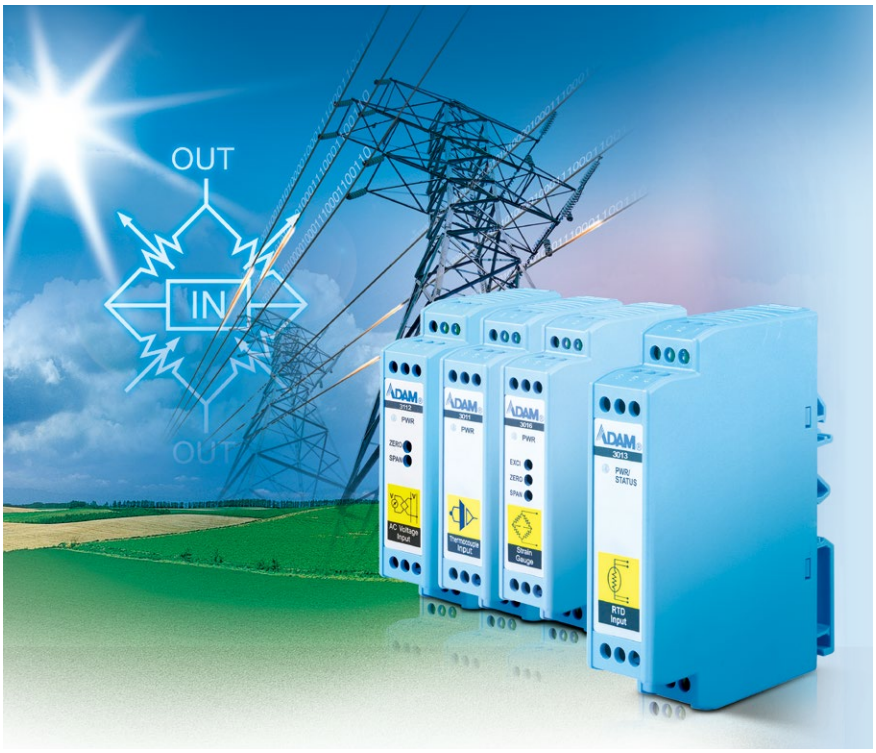
Ordering Information

- **MIC-1816-S4A1E** DAQ platform with Intel® Celeron® 1047UE processer
- **MIC-1816-S6A1E** DAQ platform with Intel® Core™ i3-3217UE processer
- **2070015202** img WES7P MIC-1816 64bit 1701 10MUI

Optional Accessories

- **1700001714** Power cord (BSMI) 3P, 7A, 125V, 18AWG, 180 cm
- **1702002600** Power cord UL/CSA (USA) 3P, 10A, 125V, 1.83 m, 180 D
- **1700023535-01** Power cord (CCC) 3P, 16A, 250V, 183 cm
- **1960077844N001** Table mount (130 x 175 mm)

ADAM-3000 Series



Features

- 1,000 V_{DC} three-way isolation
- Easy input/output range configuration
- Flexible DIN rail mounting
- Linearized thermocouple/RTD measurement
- Low power consumption
- Wide input bandwidth

Introduction

Advantech's ADAM-3000 series modules are the most cost-efficient, field-configurable, isolation-based, signal conditioners available on the market today. Easy to install, these modules are designed to protect instruments and process signals from damage resulting from ground loops, motor noise, and other electrical interferences.

Affordable Signal Isolation Solution

Featuring optical isolation technology, ADAM-3000 modules offer three-way (input/output/power) 1,000 V_{DC} isolation. Optical isolation provides pin-point accuracy and stability for a wide range of operations with minimal power consumption.

Flexible Analog Data Conversion

The input/output range for ADAM-3000 modules can be configured using internal switches. The modules accept voltage, current, thermocouple, and RTD inputs, as well as pass voltage or current outputs. Thermocouple input is handled by the built-in input thermocouple linearization circuitry and a cold junction compensation function that ensure accurate temperature measurement and conversion into voltage or current output.

Configuration

ADAM-3000 modules accept 24 V_{DC} power, which can be acquired from adjacent modules, greatly simplifying wiring and maintenance. The I/O configuration switches are located inside the modules. To access these switches, simply remove the modules from the DIN rail bracket by sliding the modules downward.

Modular Industrial Design

ADAM-3000 modules can be easily mounted on a DIN rail, with the signal wires connected through screw terminals. The screw terminals and input/output configuration switches are located inside the industrial-grade plastic casing. Using two-wire input/output cables, these modules can be easily integrated to provide reliable solutions for harsh industrial environments.

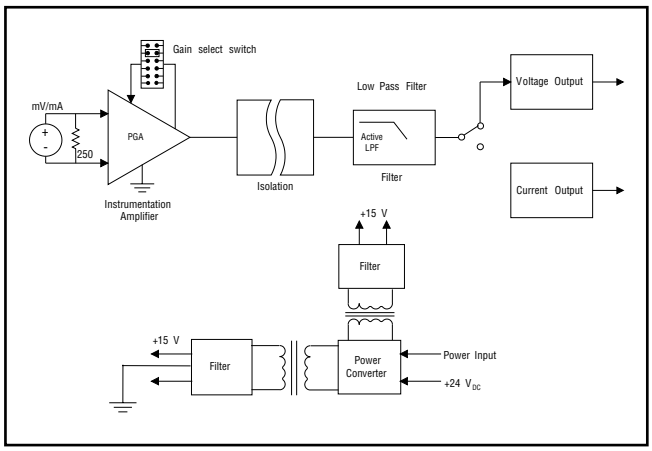
Applications

- Signal isolation
- Signal transmitters
- Thermocouple/RTD/strain gauge measurements
- Signal amplifiers
- Noise filter

Common Specifications

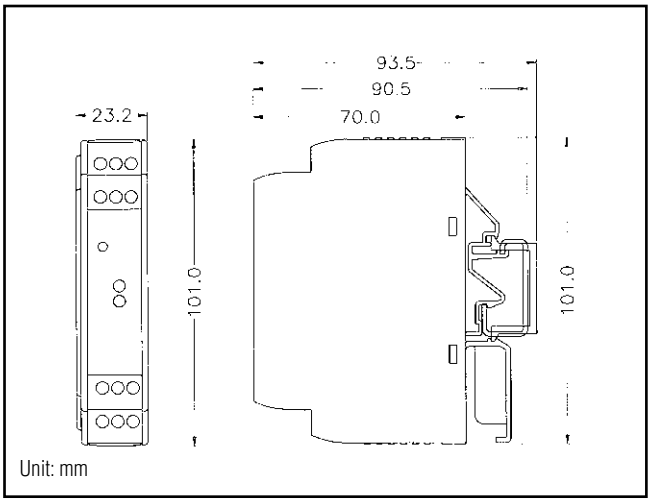
Isolation	1,000 V_{DC}
Indicators	Power LED indicator
Power Requirement	24 V_{DC} ± 10%
Case	ABS
Screw Terminal	Accepts 0.5 mm^2 ~ 2.5 mm^2 1- #12 or 2- #14 ~ #22 AWG
Operating Temperature	0 ~ 70 °C (32 ~ 158 °F) ADAM-3011: 0 ~ 50 °C (32 ~ 122 °F)
Storage Temperature	-25 ~ 85 °C (-13 ~ 185 °F)

Block Diagram



Block Diagram of ADAM-3014

Dimensions



ADAM-3000 Series Modules

Three-Way Signal Isolation

Three-way (input/output/power) 1,000 V_{DC} isolation.

Field Configurable I/O Range

The I/O range can be configured on site via internal switches.

Easy Daisy Chain Power Wiring

Adjacent modules can be linked in a daisy chain and connected to a single power source.

Interfacing with DAQ Cards

A wiring adapter can be used to connect modules to a data acquisition card.

ADAM-3011
ADAM-3013
ADAM-3014

Isolated Thermocouple Input Module

Isolated RTD Input Module

Isolated DC Input/Output Module

ADAM-3011

ADAM-3013

ADAM-3014

Specifications

Thermocouple Input

- **Common Mode Rejection** 115 dB min
- **Input Type**

T/C Type	Temperature Range (°C)	Accuracy at 25 °C
J	-40 ~ 760	±2
K	0 ~ 1,000	±2
T	-100 ~ 400	±2
E	0 ~ 1,000	±2
S	500 ~ 1,750	±4
R	500 ~ 1,750	±4
B	500 ~ 1,800	±4

- **Isolation** 1,000 V_{DC} (three way)
- **Output Impedance** 0.5 Ω
- **Stability (Temperature Drift)** ±2 °C
- **Voltage Output** 0 ~ 10 V

General

- **Connectors** Screw terminal
- **Enclosure** ABS
- **Indicators** Power LED indicator
- **Isolation** 1,000 V_{DC}
- **Power Consumption** 1.4 W
- **Power Input** 24 V_{DC} ± 10%
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** 0 ~ 50 °C (32 ~ 122 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **ADAM-3011-AE** Isolated thermocouple input module

Specifications

RTD Input

- **Accuracy** ± 0.1% of full range (voltage) or ± 0.15 °C (voltage) ± 0.2% of full range (current)
- **Bandwidth** 4 Hz
- **Input CMR at DC** 92 dB min.
- **Input Connections** 2/3/4 wires
- **Input Type**

RTD Type	α	Temperature Range (°C)
Pt	0.00385	-100 ~ 100
Pt	0.00385	0 ~ 100
Pt	0.00385	0 ~ 200
Pt	0.00385	0 ~ 600
Pt	0.00385	-100 ~ 0
Pt	0.00385	-100 ~ 200
Pt	0.00385	-50 ~ 50
Pt	0.00385	-50 ~ 150
Pt	0.00392	-100 ~ 100
Pt	0.00392	0 ~ 100
Pt	0.00392	0 ~ 200
Pt	0.00392	0 ~ 600
Ni	N/A	0 ~ 100
Ni	N/A	-80 ~ 100

- **Output Range** 0 ~ 5 V, 0 ~ 10 V, 0 ~ 20 mA
- **Output Resistance** < 5 Ω
- **Temperature Drift** ± 30 ppm of full range

General

- **Connectors** Screw terminal
- **Enclosure** ABS
- **Indicators** Power LED indicator
- **Isolation** 1,000 V_{DC}
- **Power Consumption** < 0.95 W
- **Power Input** 24 V_{DC} ±10%
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** 0 ~ 70 °C (32 ~ 158 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **ADAM-3013-AE** Isolated RTD input module

Specifications

I/O

- **Accuracy** ±0.1% of full range (typical)
- **Common Mode Rejection** > 100 dB @ 50 Hz/60 Hz
- **Current Input** Bipolar: ±20 mA Unipolar: 0 ~ 20 mA Input impedance: 250 Ω
- **Current Output** 0 ~ 20 mA
- **Stability (Temperature Drift)** 150 ppm (typical)
- **Voltage Input** Bipolar input: ±10 mV, ±50 mV, ±100 mV, ±0.5 V, ±1.0 V, ±5 V, ±10 V Unipolar input: 0 ~ 10 mV, 0 ~ 50 mV, 0 ~ 100 mV, 0 ~ 0.5 V, 0 ~ 1 V, 0 ~ 5 V, 0 ~ 10 V Input impedance: 2 MΩ Input bandwidth: 2.4 kHz (typical)
- **Voltage Output** Bipolar: ±5 V, ±10 V Unipolar: 0 ~ 10 V Impedance: < 50 Ω Drive: 10 mA max.

General

- **Connectors** Screw terminal
- **Enclosure** ABS
- **Indicators** Power LED indicator
- **Isolation** 1,000 V_{DC} (three way)
- **Power Consumption** 0.85 W (voltage output) 1.2 W (current output)
- **Power Input** 24 V_{DC} ±10%
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** -10 ~ 70 °C (14 ~ 158 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **ADAM-3014-AE** Isolated DC input/output module

Back to Top

ADAM-3016
ADAM-3017

Isolated Strain Gauge Input Module
External Powered IEPE Signal Conditioner

ADAM-3016

ADAM-3017

Specifications

I/O

- **Accuracy** ±0.1% of full range
- **Bandwidth** 2.4 kHz (typical)
- **Isolation Mode Rejection** >100 dB @ 50 Hz/60 Hz
- **Current Output** Current: 0 ~ 20 mA
  Current load resistor: 0 ~ 500 Ω (Source)
- **Stability (Temperature Drift)** 150 ppm (typical)
- **Voltage Specifications** Electrical input: ±10 mV, ±20 mV, ±30 mV, ±100 mV
  Excitation voltage: 1 ~ 10 V_{DC} (60 mA max)
- **Voltage Output** Bipolar: ±5 V, ±10 V
  Unipolar: 0 ~ 10 V
  Impedance: < 50 Ω

General

- **Connectors** Screw terminal
- **Enclosure** ABS
- **Indicators** Power LED indicator
- **Isolation** 1,000 V_{DC} (Three-way)
- **Power Consumption** ≤ 1.85 W (voltage output)
  ≤ 2.15 W (current output)
- **Power Input** 24 V_{DC} ±10%
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** -10 ~ 70 °C (14 ~ 158 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **ADAM-3016-AE** Isolated strain gauge input module

Specifications

Integrated Electronic Piezoelectric (IEPE)Excitation

- **Channels** 1
- **Upper Cut-Off Frequency (for all couple settings)**
  x1, x10 gain (-5%) 100 kHz
  x100 gain (-1%) 50 kHz
- **Lower Cut-Off Frequency (-3dB, 1 MΩ load, for all gain settings)**
  DC Couple DC
  AC Couple (1 µF) 0.58 Hz
  AC Couple (47 µF) 0.012 Hz
- **Accuracy** < ±2% for all gain settings
- **Compliance** > 24 V
- **Current** 0, 4, 6, or 10 mA ± 5%
- **Discharge Time Constant (1 MΩ load, for all gain settings)**
  DC Couple 0 second
  AC Couple (1 µF) > 0.3 seconds
  AC Couple (47 µF) > 13 seconds
- **DC Offset** < 30 mV

Isolation Protection

- **Input/Output to Power** 1,000 V_{DC}

General

- **I/O Connectors** Screw terminal
  (Including a female BNC to terminal block adaptor)
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **ADAM-3017-AE** Externally powered IEPE signal conditioner

ADAM-3112
ADAM-3114

Isolated AC Voltage Input Module

Isolated AC Current Input Module

ADAM-3112

CE FCC FM APPROVED

Specifications

Voltage Input

Full Range Mode		400 V	250 V	120 V
Input Voltage	AC (V_{RMS})	0 ~ 400	0 ~ 250	0 ~ 120
	DC (V)	0 ~ 400	0 ~ 250	0 ~ 120
Input Impedance		48 k	30 k	14.4 k

Voltage Output

- **Output Signal** 0 ~ 5 V_{DC}
- **Accuracy** < ±1.0 % for full range
- **Output Impedance** < 10 Ω @ operating frequency <60 Hz
- **Load** > 10 k Ω
- **Ripple** < 120mVp-p
- **Temperature Coefficient** 400 ppm/°C
- **Input Bandwidth** 6 kHz

Power Consumption

- **Supply Voltage** 24 V_{DC} ± 10%
- **Current Consumption** 40 mA

General

- **Isolation Protection** 1,000 V_{DC} (output to power)
  2,500 V_{RMS} (input to output, input to power)
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95%

Ordering Information

- **ADAM-3112-AE** Isolated AC voltage input module

ADAM-3114

CE FCC FM APPROVED

Specifications

Current Input

- **AC Current Input** 0 ~ 5 A_{RMS}
- **DC Current Input** 0 ~ 5 A

Voltage Output

- **Output Signal** 0 ~ 5 V_{DC}
- **Accuracy** < ±1.0 % for full range
- **Output Impedance** <10 Ω @ operating frequency <60 Hz
- **Load** > 10 kΩ
- **Ripple** < 120 mVp-p
- **Temperature Coefficient** 400 ppm/°C
- **Input Bandwidth** 10 kHz

Power Consumption

- **Supply Voltage** 24 V_{DC} ± 10%
- **Current Consumption** 40 mA

General

- **Isolation Protection** 1,000 V_{DC} (output to power)
  2,500 V_{RMS} (input to output, input to power)
- **Dimensions (W x H x D)** 23.2 x 101 x 93.5 mm (0.91" x 3.97" x 3.68")
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95%

Ordering Information

- **ADAM-3114-AE** Isolated AC current input module

USB-5830
USB-5850
USB-5860

16-ch Isolated Digital Input and 16-ch Isolated Digital Output USB 3.0 I/O module

16-ch Isolated Digital Input & 8-ch PhotoMOS Relay USB 3.0 I/O module

8-ch Isolated Digital Input & 8-ch Relay USB 3.0 I/O module

USB-5830

FCC CE RoHS COMPLIANT 2002/95/EC

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 16-ch digital input and 16-ch digital output with 2,500 V_{DC} isolation
- Wide input voltage range (10 ~ 30 V_{DC})
- Wide output voltage range (5 ~ 40 V_{DC}) and high output current (350 mA/ch)
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Specifications

Digital Input

- **Channels** 16
- **Input voltage** Logic 0: 3 V max.
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

Digital Output

- **Channels** 16
- **Load voltage** 5 ~ 40 V_{DC}
- **Load current** 350mA/ch (sink) @ 25°C
250mA/ch (sink) @ 60°C
- **Isolation protection** 2,500 V_{DC}
- **Opto-isolator Response Time** 100us

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 4 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 120 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 480mA @ 5V

Ordering Information

- **USB-5830-AE** 16-ch isolated digital input & 16-ch isolated digital output USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

USB-5850

FCC CE RoHS COMPLIANT 2002/95/EC

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 16-ch digital input and 8-ch PhotoMOS Relay output (Form A) isolation
- Wide input voltage range (10 ~ 30 V_{DC})
- 1500 V_{DC} optical isolation for relay outputs
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Specifications

Digital Input

- **Channels** 16
- **Input voltage** Logic 0: 3 V max.
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

PhotoMOS Relay Output

- **Channels** 8
- **Relay type** PhotoMOS SPST (Form A)
- **Load Voltage** 60V (AC peak or DC)
- **Load current** 1.2A
- **Peak load current** 4A @ 100ms (1 pulse)
- **Isolation protection** 1,500 V_{DC}
- **Turn-on time** 1 ms typical
- **Turn-off time** 0.6 ms typical

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 4 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 120 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 420mA @ 5V

Ordering Information

- **USB-5850-AE** 16-ch isolated digital input & 8-ch PhotoMOS relay USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

USB-5860

FCC CE RoHS COMPLIANT 2002/95/EC

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 8-ch Isolated Digital Input and 8-ch Form A-type Relay Output
- Wide input voltage range (10 ~ 30 V_{DC})
- High-voltage isolation on input channel (2,500 V_{DC})
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Specifications

Digital Input

- **Channels** 8
- **Input voltage** Logic 0: 3 V max.;
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

Relay Output

- **Channels** 8
- **Relay Type** Form A
- **Contact Rating (resistive)** 2A @ 250V_{AC}, 2A @ 30V_{DC}
- **Max. Switching Power** 500VA , 60W
- **Max. Switching Voltage** 270V_{AC}, 125V_{DC}
- **Resistance** 30mΩ max.
- **Operating Time** Max. 10ms
- **Releasing Time** Max. 5ms
- **Life Expectancy** Mechanical 2 x 10^7 ops. at no load.
Electrical 3 x 10^4 ops. @ 2A/250V_{AC}

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 3 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 120 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 460mA @ 5V

Ordering Information

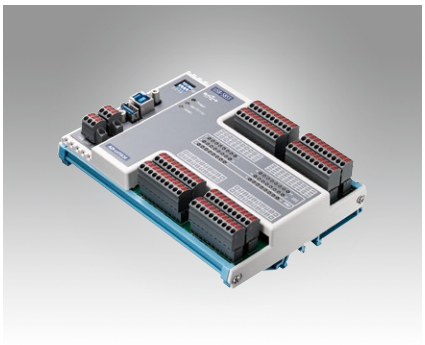
- **USB-5860-AE** 8-ch isolated digital input & 8-ch relay USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

Introduction

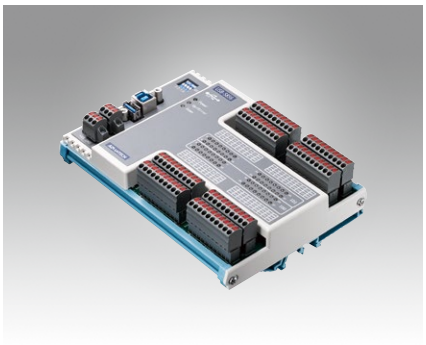
The USB-5800 series are industrial isolated digital input and output USB 3.0 I/O modules. Its compact size and DIN-rail mount kit can install easily in a cabinet. Built in USB hub can support daisy chain topology. Euro type pluggable terminal blocks and LED indicator help users to maintain and set up their system. All digital input and digital output channels are protected by 2,500 V_{DC} isolation.

USB-5855
USB-5856
USB-5862

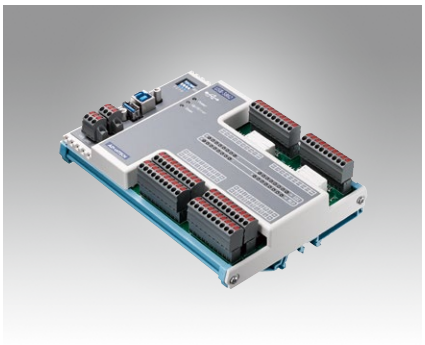
32-ch Isolated Digital Input & 16-ch PhotoMOS Relay USB 3.0 I/O module
32-ch Isolated Digital Input and 32-ch Isolated Digital Output USB 3.0 I/O module
16-ch Isolated Digital Input & 16-ch Relay USB 3.0 I/O module



USB-5855



USB-5856



USB-5862

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 32-ch digital input and 16-ch PhotoMOS Relay output (Form A) isolation
- Wide input voltage range (10 ~ 30 V_{DC})
- 1500 V_{DC} optical isolation for relay outputs
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 32-ch digital input and 32-ch digital output with 2,500 V_{DC} isolation
- Wide input voltage range (10 ~ 30 V_{DC})
- Wide output voltage range (5 ~ 40 V_{DC}) and high output current (350 mA/ch)
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Features

- USB 3.0 SuperSpeed
- Daisy chainable by built in USB hub
- 16-ch Isolated Digital Input and 16-ch Form A-type Relay Output
- Wide input voltage range (10 ~ 30 V_{DC})
- High-voltage isolation on input channel (2,500 V_{DC})
- Quick removable European type connector
- LED indicators for I/O status
- Supported operating systems: Windows XP/7/8/10

Introduction

The USB-5800 series are industrial isolated digital input and output USB 3.0 I/O modules. Its compact size and DIN-rail mount kit can install easily in a cabinet. Built in USB hub can support daisy chain topology. Euro type pluggable terminal blocks and LED indicator help users to maintain and set up their system. All digital input and digital output channels are protected by 2,500 V_{DC} isolation.

Specifications

Digital Input

- **Channels** 32
- **Input voltage** Logic 0: 3 V max.
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

PhotoMOS Relay Output

- **Channels** 16
- **Relay type** PhotoMOS SPST (Form A)
- **Load Voltage** 60V (AC peak or DC)
- **Load current** 1.2A
- **Peak load current** 4A @ 100ms (1 pulse)
- **Isolation protection** 1,500 V_{DC}
- **Turn-on time** 1 ms typical
- **Turn-off time** 0.6 ms typical

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 8 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 168 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 720mA @ 5V

Specifications

Digital Input

- **Channels** 32
- **Input voltage** Logic 0: 3 V max.
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

Digital Output

- **Channels** 32
- **Load voltage** 5 ~ 40 V_{DC}
- **Load current** 350mA/ch (sink) @ 25°C
250mA/ch (sink) @ 60°C
- **Isolation protection** 2,500 V_{DC}
- **Opto-isolator Response Time** 100us

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 8 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 168 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 600mA @ 5V

Specifications

Digital Input

- **Channels** 16
- **Input voltage** Logic 0: 3 V max.;
Logic 1: 10 V min. (30 V max.)
- **Isolation protection** 2,500 V_{DC}

Relay Output

- **Channels** 16
- **Relay Type** Form A
- **Contact Rating (resistive)** 2A @ 250V_{AC}, 2A @ 30V_{DC}
- **Max. Switching Power** 500VA , 60W
- **Max. Switching Voltage** 270V_{AC}, 125V_{DC}
- **Resistance** 30mΩ max.
- **Operating Time** Max. 10ms
- **Releasing Time** Max. 5ms
- **Life Expectancy** Mechanical 2 x 10^7 ops. at no load.
Electrical 3 x 10^4 ops. @ 2A/250V_{AC}

General

- **Interface** USB 3.0
- **Data transfer rates** 5 Gbps
- **Connectors** 10-pin 3.81 mm terminal block * 6 (I/O)
3-pin 3.81 mm screw terminal block (power) * 2
USB 3.0 type A (to PC)
USB 3.0 type B (hub)
- **Dimensions** 168 x 120 x 40 mm
- **Operating temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage humidity** 5 ~ 95% RH (non-condensing)
- **Power supply** 10 ~ 30 V_{DC}
- **Power Consumption** Typical 240mA @ 5V;
Max. 680mA @ 5V

Ordering Information

- **USB-5855-AE** 32-ch isolated digital input & 16-ch PhotoMOS relay USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

Ordering Information

- **USB-5856-AE** 32-ch isolated digital input & 32-ch isolated digital output USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

Ordering Information

- **USB-5862-AE** 16-ch isolated digital input & 16-ch relay USB 3.0 I/O module
- **96PSD-A40W24-MM** DIN RAIL A/D 100-240V 40W 24V

Last updated: 31-Aug-2018

USB-4750
USB-4761

32-Ch Isolated Digital I/O USB Module
8-Ch Relay, 8-Ch Isolated Digital Input USB Module

USB-4750

FCC CE RoHS

Features

- Compatible with USB 1.1/2.0
- Bus powered
- 16 x isolated digital input and 16 x digital output channels
- High voltage isolation on all channels (2,500 V_{DC})
- High sink current on isolated output channels (200 mA/channel)
- Supports 5 ~ 60 V_{DC} isolated input channels
- Interrupt handling capability
- Timer/counter capability
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

Specifications

Isolated Digital Input

- **Channels** 16
- **Input Voltage** Logic 0: 2 V max.
  Logic 1: 5 V min. (60 V max.) or dry contact
- **Interruptible Channels** 2
- **Isolation Protection** 2,500 V_{DC}

Isolated Digital Output

- **Channels** 16
- **Output Type** Sink (NPN)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Sink Current** 200 mA max. per channel
  Total 1.1 A max.

Isolated Counter

- **Channels** 2
- **Resolution** 32 bit
- **Max. Input Frequency** 1 MHz
- **Isolation Protection** 2,500 V_{DC}

General

- **Bus Type** USB 1.1/2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 200 mA
  Max.: 5 V @ 350 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **USB-4750-BE** 32-ch isolated digital I/O USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4761

FCC CE RoHS

Features

- Compatible with USB 1.1/2.0
- Portable
- Bus powered
- 8 x Relay output and 8 x isolated digital input channels
- LED indicators to show activated relays
- 8 x Form C-type relay output channels
- High-voltage isolation on input channels (2,500 V_{DC})
- High ESD protection (2,000 V)
- Wide input range (5 ~ 30 V_{DC})
- Interrupt handling capability
- Detachable screw terminal on modules
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

Specifications

Isolated Digital Input

- **Channels** 8
- **Input Voltage** Logic 0: 2 V max.
  Logic 1: 5 V min. (30 V max.)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 50 µs

Relay Output

- **Contact Rating** 0.25 A @ 240 V_{AC}, 1 A @ 30 V_{DC}
- **Max. Switching Power** 62.5 VA, 60 W
- **Max. Switching Voltage** 250 V_{AC}, 220 V_{DC}
- **Max. Switching Current** 5 A
- **Operate/Release Time** max. 5 / 4 ms
- **Life Expectancy (Electrical)** 5 x 10^7 cycles typ. @ 10 mA/12 V
  2 x 10^5 cycles typ. @ 2000 mA/30 V

General

- **Bus Type** USB 1.1/2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 60 mA
  Max.: 5 V @ 400 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing

Ordering Information

- **USB-4761-BE** 8-ch relay/isolated digital input USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4751
USB-4751L

48-Ch Digital I/O USB Module

24-Ch Digital I/O USB Module

Features

- Compatible with USB 1.1/2.0
- Portable
- Bus powered
- 48/24 x TTL digital I/O
- Emulates Mode 0 of the Intel® 8255 PPI chip
- Buffered circuits offer a higher driving capacity compared to the Intel® 8255 PPI chip
- Interrupt handling capability
- Timer/Counter interrupt capability
- Supports both dry and wet contact
- 50-pin Opto-22-compatible box header
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

FCC CE RoHS COMPLIANT 2002/95/EC

Introduction

The USB-4700 series comprises plug-and-play DAQ modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4700 series modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers.

USB-4751 and USB-4751L are 48/24-bit digital I/O modules that feature a USB interface, event counter, and three 16-bit timers, which can be cascaded to provide a 32-bit timer. The 48/24 bits are divided into six/three 8-bit I/O ports that can be individually configured as input or output ports using software.

Specifications

Digital Input

- **Channels** USB-4751: 48 (shared with output)
  USB-4751L: 24 (shared with output)
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2 V min.

Digital Output

- **Channels** USB-4751: 48 (shared with input)
  USB-4751L: 24 (shared with input)
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.5 V max.
  Logic 1: 3.8 V min.
- **Output Capability** Sink: 12 mA @ 0.5 V
  Source: 12 mA @ 3.8 V for single channels
  5 mA @ 3.8 V for all channels in high status

Counter/Timer

- **Channels** 2
- **Resolution** 32-bit
- **Max. Input Frequency** 8 MHz

General

- **Bus Type** USB 1.1/2.0
- **I/O Connector** 50-pin box headers, pin assignments are fully compatible with Opto-22 I/O module racks
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 200 mA
  Max.: 5 V @ 500 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

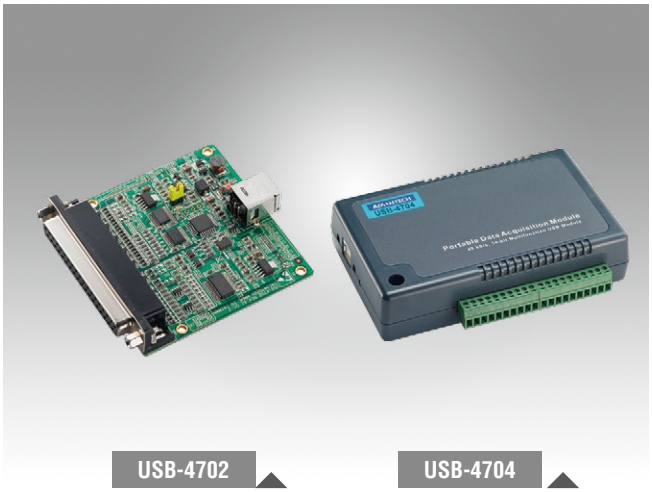
- **USB-4751-AE** 48-ch digital I/O USB module
- **USB-4751L-AE** 24-ch digital I/O USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket
- **PCL-10150-1.2E** 50-pin flat cable, 1.2 m
- **ADAM-3950-AE** 50-pin DIN rail flat cable wiring board
- **PCLD-782B-AE** 24-ch IDI board with 20-pin and 50-pin flat cables
- **PCLD-785B-AE** 24-ch relay board with 20-pin and 50-pin flat cables

USB-4702
USB-4704

10 kS/s, 12-Bit, 8-Ch Multifunction DAQ USB Module
48 kS/s, 14-Bit, 8-Ch Multifunction DAQ USB Module



Features

- Supports USB 2.0
- Portable
- Bus powered
- 8 x Analog input channels
- 12-bit (USB-4702), 14-bit (USB-4704) resolution AI
- Sampling rates of up to 10 kS/s (USB-4702), 48 kS/s (USB-4704)
- 8-ch Digital input/8-ch digital output, 2-ch analog output, and 1 x 32-bit counter

Introduction

USB-4702 and USB-4704 are low-cost USB data acquisition modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4702 and USB-4704 DAQ modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers. Additionally, because USB-4702 and USB-4704 draw power from the computer via the USB port, no external power connection is required, making these modules the most cost-effective solution for testing and measurement applications.

Specifications

Analog Input

- **Channels** 8 single ended/4 differential (software programmable)
- **Resolution** USB-4702: single ended: 11 bits; Differential: 12 bits
  USB-4704: single ended: 13 bits; Differential: 14 bits
- **Max. Sampling Rate** USB-4702: 10 kS/s max.
  USB-4704: 48 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 10k/4 = 2.5 kS/s per channel.

- **FIFO Size** 512 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 127 kΩ
- **Sampling Modes** Software, onboard programmable pacer, and external
- **Input Range and Absolute Accuracy**

Single Ended		±10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Differential		N/A	±1	±1.25	±2	±2.5	±4	±5	±10	±20
Absolute Accuracy (% of FSR)*	**USB-4702**	0.2	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	USB-4704	0.15	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.15

* ±1 LSB is added as the derivative for absolute accuracy

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** 0 ~ 5 V (software programmable)
- **Slew Rate** 0.7 V/μs
- **Driving Capability** 5 mA
- **Output Impedance** 51 Ω
- **Operation Mode** Single output
- **Accuracy** Relative: ±12 LSB
  Differential non-linearity: ±5 LSB

Digital Input

- **Channels** 8
- **Compatibility** 3.3 V/5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2.0 V min.

Digital Output

- **Channels** 8
- **Compatibility** TTL
- **Output Voltage** Logic 0: 0.4 V max.@ 4 mA (sink)
  Logic 1: 3.5 V min.@ 4 mA (source)

Counter

- **Channels** 1
- **Resolution** 32 bits
- **Compatibility** 3.3 V/TTL
- **Max. Input Frequency** 5 MHz

General

- **Bus Type** USB 2.0
- **I/O Connector** USB-4702: 1 x DB37, female
  USB-4704: Onboard screw terminal
- **Dimensions (L x W x H)** USB-4702: 70 x 70 mm (2.76" x 2.76")
  USB-4704: 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 100 mA
  Max.: 5 V @ 500 mA
- **Operating Temperature** 0 ~ 55 °C (32 ~ 131 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **USB-4702-AE** 10 kS/s, 12-bit, 8-ch multifunction DAQ USB module
- **USB-4704-AE** 48 kS/s, 14-bit, 8-ch multifunction DAQ USB module

Accessories

- **PCL-10137-1E** DB37 cable, 1 m
- **PCL-10137-2E** DB37 cable, 2 m
- **PCL-10137-3E** DB37 cable, 3 m
- **ADAM-3937-BE** DB37 DIN rail wiring board
- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4711A

150 kS/s, 12-Bit, 16-Ch Multifunction DAQ USB Module

Features

- Supports USB 2.0
- Portable
- Bus powered
- 16 x Analog input channels
- 12-bit resolution analog input
- Up to 150 kS/s sampling rate
- 8-ch Digital input/8-ch digital output, 2-ch analog output, and 1 x 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

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Introduction

The USB-4700 series comprises plug-and-play DAQ modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4700 series modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers.

USB-4711A is equipped with an onboard terminal block, 16-ch analog input, 2-ch analog output, 16-ch digital I/O, and a counter channel capable of outputting a constant frequency square wave. Additionally, because USB-4711A draws power from the computer via the USB port, no external power connection is required, making this module a most cost-effective solution for diverse testing and measurement applications.

Specifications

Analog Input

- **Channels** 16 Single ended/8 differential (software programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate** 150 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 150k/4 = 37.5 kS/s per channel.

- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software, onboard programmable pacer, and external
- **Input Range and Absolute Accuracy**

Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4

* ±1 LSB is added as the derivative for absolute accuracy

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

Internal Reference	Unipolar	0 ~ 5, 0 ~ 10
	Bipolar	±5, ±10

- **Slew Rate** 0.125 V/us
- **Driving Capability** 5 mA
- **Output Impedance** 0.1 Ω
- **Operation Mode** Single output
- **Accuracy** Relative: ±1 LSB
  Differential non-linearity: ±1 LSB

Digital Input

- **Channels** 8
- **Compatibility** 3.3 V/5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
  Logic 1: 2.0 V min.

Digital Output

- **Channels** 8
- **Compatibility** 3.3 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.@ 6 mA
  Logic 1: 2.6 V min.@ 6 mA

Event Counter

- **Channels** 1
- **Compatibility** 3.3 V/TTL
- **Max. Input Frequency** 1 kHz

General

- **Bus Type** USB 2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 360 mA
  Max.: 5 V @ 450 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

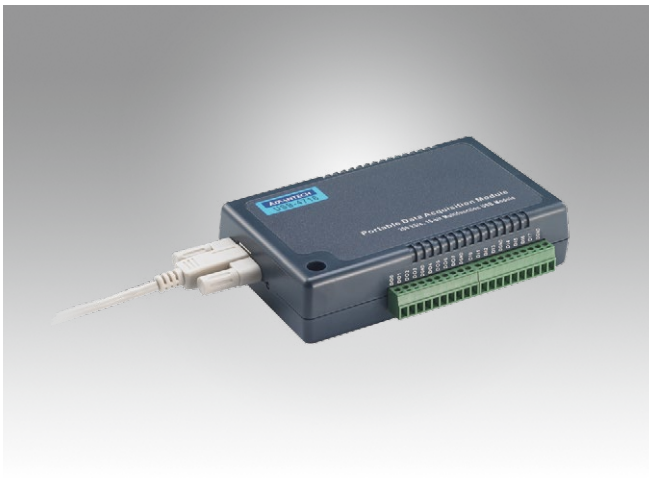
- **USB-4711A-AE** 150 kS/s, 12-bit, 16-ch multifunction DAQ USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4716

200 kS/s, 16-Bit, 16-Ch Multifunction DAQ USB Module



Features

- Supports USB 2.0
- Portable
- Bus powered
- 16 x Analog input channels
- 16-bit resolution analog input
- Up to 200 kS/s sampling rate
- 8-ch Digital input/8-ch digital output, 2-ch analog output, and 1 x 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

FCC CE RoHS

Introduction

The USB-4700 series comprises plug-and-play DAQ modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4700 series modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers.

USB-4716 offers 16 single-ended/8 differential analog inputs with 16-bit resolution, up to 200 kS/s throughput, 16 digital I/Os, 1 user counter, and 2 16-bit analog outputs. Additionally, because USB-4716 draws power from the computer via the USB port, no external power connection is required, making this module a most cost-effective solution for diverse testing and measurement applications.

Specifications

Analog Input

- **Channels** 16 Single ended/ 8 differential (software programmable)
- **Resolution** 16 bits
- **Max. Sampling Rate** 200 kS/s (for USB 2.0)

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 200k/4 = 50 kS/s per channel.

- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software, onboard programmable pacer, or external
- **Input Range and Absolute Accuracy**

Single Ended	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Differential	±10	±5	±2.5	±1.25	±0.625
Absolute Accuracy (% of FSR)*	0.015	0.03	0.03	0.05	0.1

* ±1 LSB is added as the derivative for absolute accuracy

Analog Output

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

Internal Reference	**Unipolar**	0 ~ 5 , 0 ~ 10
	Bipolar	±5, ±10

- **Slew Rate** 0.125 V/μs
- **Driving Capability** 5 mA
- **Output Impedance** 0.1 Ω max.
- **Operation Mode** Single output
- **Accuracy** Relative: ±1 LSB

Digital Input

- **Channels** 8
- **Compatibility** 3.3 V/5 V/TTL
- **Input Voltage** Logic 0: 1.0 V max.
Logic 1: 2.0 V min.

Digital Output

- **Channels** 8
- **Compatibility** 3.3 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.
- **Output Capability** Sink: 6 mA (sink)
Source: 6 mA (source)

Event Counter

- **Channels** 1
- **Compatibility** 3.3V/TTL
- **Max. Input Frequency** 1 kHz

General

- **Bus Type** USB 2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 360 mA
Max.: 5 V @ 450 mA
- **Operating Temperature** 0 ~ 60 °C (32 ~ 158 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Operating Humidity** 5 ~ 85% RH non-condensing
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

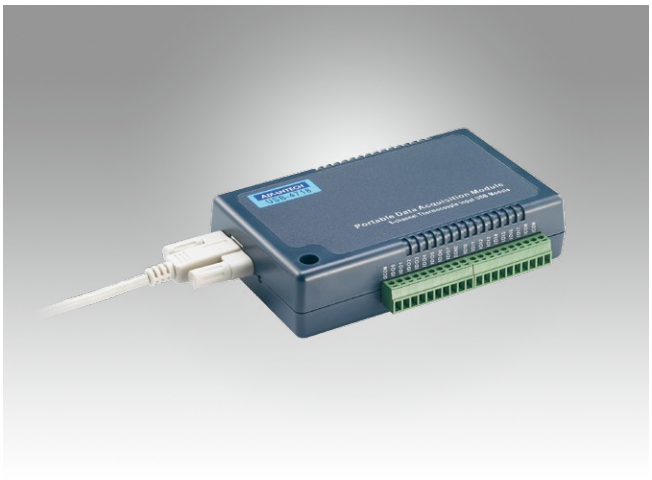
- **USB-4716-AE** 200 kS/s, 16-bit, 16-ch multifunction DAQ USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4718

8-Ch Thermocouple Input USB Module with 8-Ch Isolated Digital Input



Features

- Supports USB 2.0
- Supports voltage, current, and thermocouple inputs
- Bus powered
- 8 x Thermocouple input channels
- 2,500 V_{DC} isolation
- Supports 4 ~ 20 mA current input
- Detachable screw terminal on modules
- 8-ch isolated digital input and 8-ch isolated digital output
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

FCC CE RoHS

Introduction

The USB-4700 series comprises plug-and-play DAQ modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4700 series modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers.

USB-4718 offers 8 thermocouple inputs with 16-bit resolution and up to 0.1% input range accuracy. With its compact and portable design, USB-4718 is ideal for field-based applications. Additionally, the module's input channels can be individually configured to enable handling of multiple sensor types.

Specifications

Analog Input

- **Accuracy** ±0.1% for voltage input
- **Bandwidth** 13.1 Hz @ 50 Hz, 15.72 Hz @ 60 Hz
- **Channels** 8 differential
- **Independent Channel Configuration** Yes
- **CMR @ 50/60 Hz** 92 dB min.
- **Resolution** 16 bits
- **Input Impedance** 1.8 MΩ
- **Input Range** 0 ~ 15 mV, 0 ~ 50 mV, 0 ~ 100 mV, 0 ~ 500 mV, 0 ~ 1 V, 0 ~ 2.5 V, 0 ~ 20 mA, 4 ~ 20 mA
- **Input Types** Thermocouple, mV, V, mA
- **Sampling Rate** 10 S/s (shared for all channels)

Note: Because of the hardware design, the sampling rate for each channel is fixed at 10/8 = 1.25 S/s per channel regardless of the number of channels used.

- **Span Drift** ±25 ppm/°C
- **T/C Type and Temperature Ranges**

J	0 ~ 760 °C	**R**	500 ~ 1750 °C
K	0 ~ 1370 °C	**S**	500 ~ 1750 °C
T	-100 ~ 400 °C	**B**	500 ~ 1800 °C
E	0 ~ 1000 °C		

- **TVS/ESD Protection** Built in
- **Zero Drift** ±0.3 μV/°C

Isolated Digital Input

- **Channels** 8
- **Input Voltage** Logic 0: 3 V max. Logic 1: 5 V min. (30 V max.)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 25 μs

Isolated Digital Output

- **Channels** 8
- **Output Type** Sink (NPN)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 30 V_{DC}, 1.1 A max./ total
- **Sink Current** 200 mA max./channel
- **Opto-Isolator Response** 25 μs

General

- **Bus Type** USB 2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (Lx W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** 100 mA @ 5 V
- **Watchdog Timer** 1.6 sec. (system)
- **Operating Temperature** 0 ~ 60 °C (32 ~ 140 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **USB-4718-AE** 8-ch thermocouple input USB module

Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

USB-4620
USB-4622
USB-4630

5-Port Isolated USB 2.0 Full-Speed Hub

5-Port USB 2.0 High-Speed Hub

4-Port Isolated USB 3.0 SuperSpeed™ Hub

USB-4620 FCC CE RoHS

USB-4622 FCC CE RoHS

USB-4630 FCC CE RoHS

Features

- 5 downstream USB 2.0 ports
- Supports USB 2.0 full speed
- 3,000 V_{DC} voltage isolation for each downstream port
- Suitable for DIN rail mounting
- One lockable USB cable included
- 10 ~ 30 V_{DC} power input (power adapter not included)

Specifications

Connectivity

Ports	1 x Upstream (Type B) 5 x Downstream (Type A)
Compatibility	USB 2.0 full speed
Transfer Speed	12 Mbps
Supply Current	500 mA max. per channel

General

Housing	Plastic (ABS+PC)
Dimensions (L x W x H)	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
DC Input	10 ~ 30 V_{DC}
Power Consumption	24 V @ 36 mA
Operating Temperature	0 ~ 60 °C (32 ~ 140 °F)
Storage Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
Storage Humidity	5 ~ 95% RH non-condensing

Protection

Isolation Protection	3,000 V_{DC}

Ordering Information

USB-4620-AE	5-port isolated USB 2.0 full-speed hub

Accessories

96PSD-A40W24-MM	DIN rail power supply, 40 W, 24 V
1960004544	Wall mount bracket
1960005788	VESA mount bracket
USB-LOCKCABLE-AE	Lockable USB 2.0 cable, 1 m, with screw kit

Features

- 5 downstream USB 2.0 ports
- Supports USB 2.0 high speed, USB 2.0 full speed, and USB 1.0
- 480 Mbps high-speed data transfer
- LED indicator
- Suitable for DIN rail mounting
- Lockable USB cable included
- 10 ~ 30 V_{DC} power input (power adapter not included)

Specifications

Connectivity

Ports	1 x Upstream (Type B) 5 x Downstream (Type A)
Compatibility	USB 2.0 high speed, USB 2.0 full speed, USB 1.0
Transfer Speed	480 Mbps/12 Mbps/1.5 Mbps
Supply Current	500 mA max. per channel

General

Housing	Plastic (ABS+PC)
Dimensions (L x W x H)	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
DC Input	10 ~ 30 V_{DC}
Power Consumption	24 V @ 36 mA
Operating Temperature	0 ~ 60 °C (32 ~ 140 °F)
Storage Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
Storage Humidity	5 ~ 95% RH non-condensing

Ordering Information

USB-4622-BE	5-port USB 2.0 high-speed hub

Accessories

96PSD-A40W24-MM	DIN rail power supply, 40 W, 24 V
1960004544	Wall mount bracket
1960005788	VESA mount bracket
USB-LOCKCABLE-AE	Lockable USB 2.0 cable, 1 m, with screw kit

Features

- 2,500 V_{DC} voltage isolation for upstream ports
- 4 x downstream USB 3.0 SuperSpeed™ ports
- Can be powered via a USB bus or 10 ~ 30 V_{DC} external power source
- ESD protection up to ±8 kV (Level 3)
- Power status and downstream port speed LED indicators
- The world's first isolated USB 3.0 SuperSpeed Hub
- Up to 5 Gbps transfer speed
- Lockable USB 3.0 cable is included

Specifications

Connectivity

Ports	1 x Upstream (Type B) 4 x Downstream (Type A)
Compatibility	USB 3.0 SuperSpeed (1)
Transfer Speed	5 Gbps shared by all downstream ports
Load Current	External power: 900 mA max. per port USB bus power: 700 mA max. shared by all ports (2)

General

Housing	Plastic (ABS + PC)
Dimensions (L x W x H)	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
Power Input	10 ~ 30 V_{DC}
Power Consumption	760 mW (no load)
Operating Temperature	0 ~ 70 °C (32 ~ 158 °F) with external power 0 ~ 60 °C (32 ~ 140 °F) with USB bus power
Storage Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
Storage Humidity	5 ~ 95% RH (non-condensing)

Protection

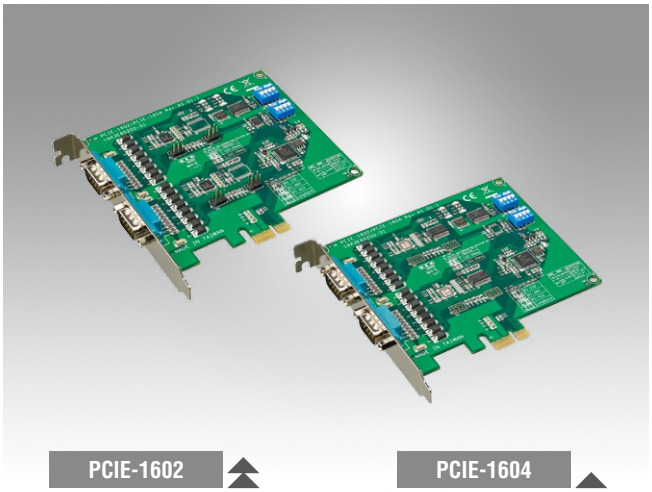
Isolation Protection	2,500 V_{DC}
ESD Protection	Contact discharge: ±4 kV (Level 2) Air discharge: ±8 kV (Level 3)

Ordering Information

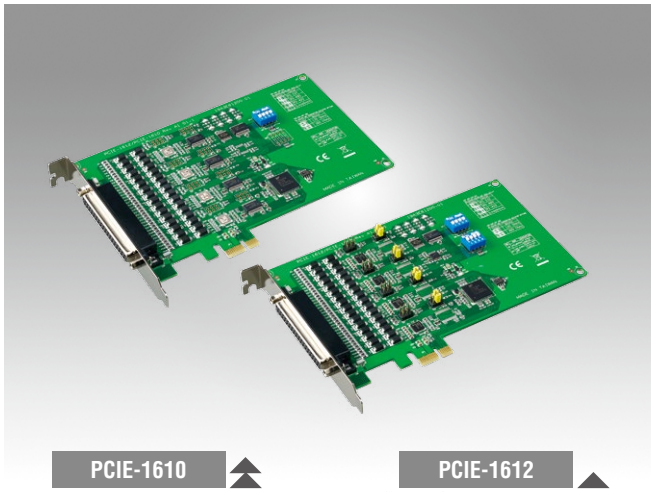
USB-4630-AE	4-port isolated USB 3.0 SuperSpeed™ hub
96PSD-A40W24-MM	DIN rail power supply, 40 W, 24 V

PCIE-1602
PCIE-1604
PCIE-1610
PCIE-1612

2-Port RS-232/422/485 PCI Express Communication Card
2-Port RS-232 PCI Express Communication Card
4-Port RS-232 PCI Express Communication Card
4-Port RS-232/422/485 PCI Express Communication Card



PCIE-1602 PCIE-1604



PCIE-1610 PCIE-1612

Features

- PCI Express bus 2.0 compliant
- Up to 921.6 kbps speed for extremely fast data transmissions
- Supports any baud rate setting
- 2 x RS-232 or RS- 232/422/485 ports
- Supports Windows XP/7/8/10, and Linux operating systems
- XR17V352 UART with 256-byte FIFOs

Specifications

General

- **Bus Type** PCI Express bus 2.0 compliant
- **Bus Interface** PCI Express x1
- **Certification** CE, FCC class A
- **Connectors** 2 x DB9, male
- **Dimensions (L x H)** 119.63 x 111 mm (4.71" x 4.4")
- **Power Consumption** 260 mA @ +3.3 V (typ.)

Communications

- **Comm. Controller** XR17V352
- **Data Bits** 5, 6, 7, 8
- **FIFO** 256 bytes
- **Parity** None, Odd, Even, Mark and Space
- **Speed** 50 bps ~ 921.6 kbps
- **Stop Bits** 1, 1.5, 2

Software

- **Bundled Software** ICOM tools
- **OS Support** Windows XP/7/8/10 and Linux (check the software release note for versions supported)

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Protection

Part Number	ESD Protection	EFT Protection	Surge Protection	Isolation Protection
PCIE-1602B	15KV (air), 8KV (contact)	1000 V	1000 VDC	
PCIE-1602C	15KV (air), 8KV (contact)	1000 V	1000 VDC	3000 VDC
PCIE-1604B	15KV (air), 8KV (contact)	1000 V	1000 VDC	
PCIE-1604C	15KV (air), 8KV (contact)	1000 V	1000 VDC	3000 VDC

Ordering Information

- **PCIE-1602B-AE** 2-port RS-232/422/485 PCI Express comm. card w/surge
- **PCIE-1602C-AE** 2-port RS-232/422/485 PCI Express comm. card w/surge and isolation
- **PCIE-1604B-AE** 2-port RS-232 PCI Express comm. card w/surge
- **PCIE-1604C-AE** 2-port RS-232 PCI Express comm. card w/surge and isolation

Features

- PCI Express bus 2.0 compliant
- Up to 921.6 kbps speed for extremely fast data transmissions
- Supports any baud rate setting
- 4 x RS-232 or RS- 232/422/485 ports
- Supports Windows XP/7/8/10, and Linux operating systems
- XR17V354 UART with 256-byte FIFOs

Specifications

General

- **Bus Type** PCI Express bus 2.0 compliant
- **Bus Interface** PCI Express x1
- **Certification** CE, FCC class A
- **Connectors** 1 x DB37, female
- **Dimensions (L x H)** 168 x 111 mm (6.6" x 4.4")
- **Power Consumption** 260 mA @ +3.3 V (typ.)

Communications

- **Comm. Controller** XR17V354
- **Data Bits** 5, 6, 7, 8
- **FIFO** 256 bytes
- **Parity** None, Odd, Even, Mark and Space
- **Speed** 50 bps ~ 921.6 kbps
- **Stop Bits** 1, 1.5, 2

Software

- **Bundled Software** ICOM tools
- **OS Support** Windows XP/7/8/10 and Linux (check the software release note for versions supported)

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Protection

Part Number	ESD Protection	EFT Protection	Surge Protection	Isolation Protection
PCIE-1610B	15KV (air), 8KV (contact)	1000 V	1000 VDC	
PCIE-1612B	15KV (air), 8KV (contact)	1000 V	1000 VDC	
PCIE-1612C	15KV (air), 8KV (contact)	1000 V	1000 VDC	3000 VDC

Ordering Information

- **PCIE-1610B-AE** 4-port RS-232 PCI Express comm. card w/surge
- **PCIE-1612B-AE** 4-port RS-232/422/485 PCI Express comm. card w/surge
- **PCIE-1612C-AE** 4-port RS-232/422/485 PCI Express comm. card w/surge and isolation

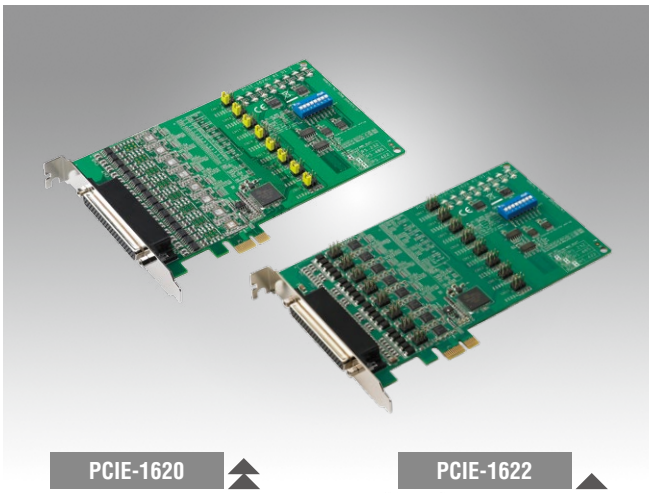
Note: This series includes an OPT4A cable.

Accessories

- **OPT4A-AE** 1 x DB37 to 4 x DB9 cable, 30 cm
- **1700018791** 1 x DB37 to 4 x DB25 cable, 30 cm

PCIE-1620
PCIE-1622

8-Port RS-232 PCI Express Communication Card
8-Port RS-232/422/485 PCI Express Communication Card



PCIE-1620 PCIE-1622

Features

- PCI Express bus 2.0 compliant
- Up to 921.6 kbps speed for extremely fast data transmissions
- Supports any baud rate setting
- 8 x RS-232 or RS-232/422/485 ports
- XR17V358 UART with 256-byte FIFOs
- Supports Windows XP/7/8/10, and Linux operating systems
- Board ID function for fixed COM ports

Introduction

PCIE-1620 and PCIE-1622 are 8-port RS-232/RS-232/422/485 PCI Express communication cards, compatible with the PCI Express x1 specification. Featuring 8 EFT protected ports (up to 1,000 V) with high data transmission speeds (up to 921.6 kbps) and high-performance XR17V358 UARTs with 256-byte FIFOs to reduce CPU load, PCIE-1620 and PCIE-1622 are ideal for diverse applications in multitasking environments.

Specifications

General

- **Bus Type** PCI Express bus 2.0 compliant
- **Bus Interface** PCI Express x1
- **Certification** CE, FCC class A
- **Connectors** 1 x DB62, female (PCIE-1620A/22A/22B)
1 x DB78, female (PCIE-1622C)
- **Dimensions (L x H)** 168 x 111 mm (6.6" x 4.4")
- **Power Consumption** 260 mA @ +3.3 V (typ.)

Communications

- **Comm. Controller** XR17V358
- **Data Bits** 5, 6, 7, 8
- **Data Signals** RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD (PCIE- 1620A/22B) TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI (PCIE-1622C) RS-422: Tx+, Tx-, Rx+, Rx- (PCIE-1620A/22A/22B) CTS+, CTS-, RTS+, RTS-, Tx+, Tx-, Rx+, Rx- (PCIE- 1622C) RS-485: Data+, Data- (PCIE-1622)
- **FIFO** 256 bytes
- **Flow Control** DTR/DSR, RTS/CTS, Xon/Xoff
- **Parity** None, Odd, Even, Mark, or Space
- **Speed** 50 bps ~ 921.6 kbps
- **Stop Bits** 1, 1.5, 2

Protection

Part Number	ESD Protection	EFT Protection	Surge Protection	Isolation Protection
PCIE-1620A	15KV (air), 8KV (contact)	1000 V		
PCIE-1622B	15KV (air), 8KV (contact)	1000 V	1000 V	
PCIE-1622C	15KV (air), 8KV (contact)	1000 V	1000 V	3000 V_{DC}

Software

- **Bundled Software** ICOM tools
- **OS Support** Windows XP/7/8/10 and Linux (check the software release note for versions supported)

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

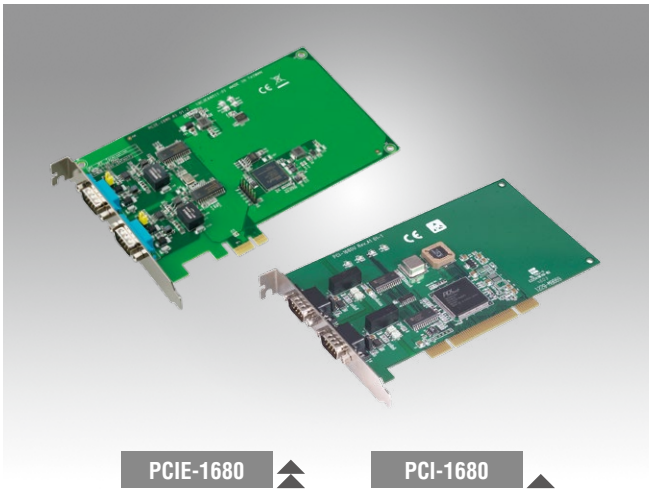
- **PCIE-1620A-BE** 8-port RS-232 PCI Express comm. card
- **PCIE-1622B-BE** 8-port RS-232/422/485 PCI- Express comm. card w/ surge
- **PCIE-1622C-AE** 8-port RS-232/422/485 PCI- Express comm. card w/ surge and isolation protection

Accessories

- **OPT8C-AE** 1 x DB62 to 8 x DB25 cable, 1 m (for PCIE-1620A-BE and PCIE-1622B-BE)
- **OPT8H-AE** 1 x DB62 to 8 x DB9 cable, 1 m (for PCIE-1620A-BE and PCIE-1622B-BE)
- **OPT8J-AE** 1 x DB78 to 8 x DB9 cable, 1 m (for PCIE-1622C-AE)

PCIE-1680
PCI-1680

2-Port CAN Bus PCIE Card with Isolation Protection
2-Port CAN Bus Universal PCI Card with Isolation Protection



FCC CE

Features

- PCIe bus specification 1.1 compliant
- 2 x Independent CAN ports
- Up to 1 Mbps transmission speeds
- 16 MHz CAN controller frequency
- Optical isolation protection of 2,500 V_{DC}
- I/O address automatically assigned by PCI PnP
- Transmit/Receive status LED indicators
- Windows DLL library and examples included
- Supports Windows CE5/CE6/XP/7/8.1/10 drivers and utilities
- Supports Linux 2.4.xx/2.6.xx, QNX 6.5, and Intel® x86 architecture

Introduction

PCI-1680 and PCIE-1680 are purpose-built communication cards that ensure CAN connectivity. With 2 independent CAN controllers built in, PCI-1680 and PCIE-1680 enable bus arbitration and error detection with automatic transmission repetition, drastically reducing data loss and ensuring system reliability. Additionally, both PCI-1680 and PCIE-1680 operate at baud rates of up to 1 Mbps.

Specifications

General

- **Bus Type** PCI Express V1.0/Universal PCI
- **Certification** CE, FCC
- **Connectors** 2 x DB9, male
  2 x 10 pin box wafer (optional)
- **Ports** 2
- **Power Consumption** 3.3 V @ 600 mA (typical)

Communication

- **CAN Controller** NXP SJA-1000
- **CAN Transceiver** NXP TJA1051T
- **Signal Support** CAN_H, CAN_L
- **Protocol** CAN 2.0 A/B
- **Data Transfer Rate** Programmable up to 1 Mbps
- **CAN Frequency** 16MHz

Protection

- **Isolation Protection** 2,500 V_{DC}

Mechanical and Environmental

- **Operating Temperature** 0 ~ 70 °C (32 ~ 158 °F) (refer to IEC 60068-2-1, 2)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 5 ~ 95% relative humidity, non-condensing
- **Dimensions (L x H)** 168 x 111 mm (6.6" x 4.4")

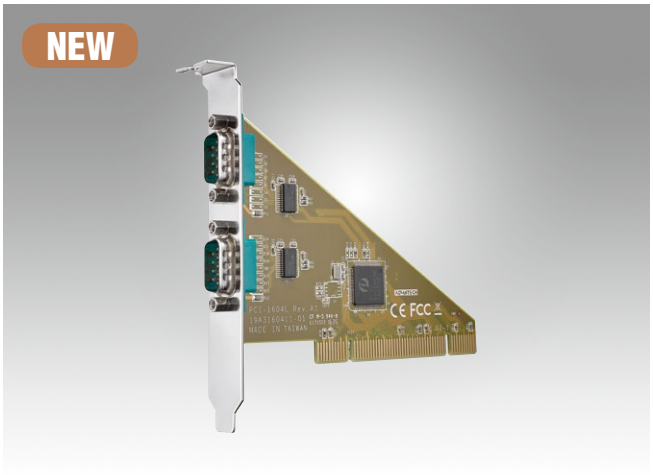
Ordering Information

- **PCIE-1680-AE** 2-port CAN bus PCIE card with isolation protection
- **PCI-1680-BE** 2-port CAN bus PCI card with isolation protection

PCI-1604L
PCI-1602UP

2-Port RS-232 PCI Communication Card
2-Port RS-232/422/485 Low-Profile Universal PCI Communication Card with Isolation Protection

NEW



PCI-1604L

FCC CE RoHS COMPLIANT 2002/95/EC

Features

- PCI bus 2.2 compliant
- Up to 921.6 kbps speed for extremely fast data transmissions
- Level 4 ESD protection (air 15 KV , contact 8 KV)
- 2 x RS-232 ports
- 128-byte FIFO
- Supports Windows XP/7/8/10 and Linux operating systems
- -20 ~ 60 °C operating temperature

Specifications

General

- **Bus Type** Universal PCI v2.2
- **Certification** CE, FCC class A
- **Connectors** 2 x DB9, male
- **Dimensions (L x H)** 119.91 x 83.06 mm (4.72" x 3.27")
- **Power Consumption** 200mA @ +3.3V (typ.)

Communications

- **Comm. Controller** PI7C8952
- **Data Bits** 5, 6, 7, 8
- **Data Signals** RS232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI
- **FIFO** 128 bytes
- **Flow Control** DTR/DSR, RTS/CTS, Xon/Xoff
- **Parity** None, Odd, Even, Mark, or Space
- **Speed** 50 bps ~ 921.6 kbps
- **Stop Bits** 1, 1.5, 2

Protection

- **ESD Protection** 15 KV (air), 8 KV (contact)
- **EFT Protection** 1 KV

Software

- **Bundled Software** ICOM tools
- **OS Support** Windows XP/7/8/10, and Linux

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** -20 ~ 60 °C (-4 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **PCI-1604L-AE** 2-port RS-232 PCI comm. card

PCI-1602UP

Features

- PCI bus 2.2 compliant
- Up to 921.6 kbps speed for extremely fast data transmissions
- 2 x RS-232/422/485 ports
- Supports Windows XP/7/8/10 and Linux operating systems
- 3,000 V_{DC} isolation protection
- Automatic RS-485 data flow control
- Powerful and easy-to-use utility (ICOM tools)
- Supports any baud rate setting

Specifications

General

- **Bus Type** Universal PCI V 2.2
- **Certification** CE, FCC class A
- **Connectors** 1 x DB25, female
- **Dimensions (L x H)** 119.91 x 64.41 mm (4.72" x 2.5") (low-profile MD1)
- **Power Consumption** 260mA@ +3.3V (typ.)

Communications

- **Communication Controller** PI7C8952
- **Data Bits** 5, 6, 7, 8
- **Data Signals** RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI
  RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-
  RS-485: Data+, Data-
- **FIFO** 128 bytes
- **Flow Control** CTS/RTS, Xon/Xoff
- **Parity** None, Even, Odd, Mark and Space
- **Speed** 50 bps ~ 921.6 kbps
- **Stop Bits** 1, 1.5, 2

Protection

- **EFT Protection** 1 KV
- **Isolation Protection** 3,000 V_{DC}
- **ESD Protection** 15KV (air), 8KV (contact)
- **Surge Protection** 1 KV

Software

- **Bundled Software** ICOM tools
- **OS Support** Windows XP/7/8/10 and Linux (check the software release note for versions supported)

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** -10 ~ 60 °C (14 ~ 140 °F)
- **Storage Temperature** -25 ~ 85 °C (-13 ~ 185 °F)

Ordering Information

- **PCI-1602UP-CE** 2-port RS-232/422/485 low-profile universal PCI comm card w/ isolation protection

Note: Both PCI-1602UP are equipped with a DB25 to 2 x DB9 cable.

Intelligent Video Solution

Innovative Video Platform with Intelligent Video Analytics

Advantech offers an extensive range of video products, including video capture cards (PCIe, mini PCIe, and M.2) and industrial-grade video processing systems, to meet various market needs. From lecture recording to medical imaging, event broadcasting, live video streaming, and 24-hour surveillance, Advantech's intelligent video platforms are capable of supporting diverse video-related applications. These integrated hardware and software solutions are also pre-installed with intelligent video analysis software and equipped with a powerful software development kit that enables developers to more efficiently implement unique application software, thereby shortening overall development time.

Completed Architecture

Efficient Development

Professional Service

Multiple Applications Supported

Stability Performance

High-Efficiency Video Coding

High Compatibility

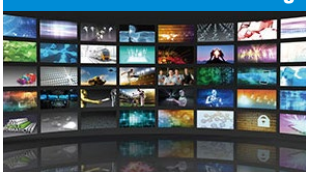
Medical Imaging

Advantech's video capture cards are designed to deliver precise imaging for medical applications. The inclusion of a powerful software development kit and support for various programming languages allows system integrators to easily develop unique applications.

Video Recording/Streaming

Advantech's video capture cards also support video streaming, specifically multi-stream channel recording and file exporting/merging. This allows hospitals to record and stream video in various formats for medical education and training.

Multi-Platform Broadcasting



Equipped with transcoding and multi-streaming protocols, Advantech's video card solutions can be used to broadcast multimedia content to a wide variety of client devices and facilitate multi-platform streaming operations.

Video Surveillance

Advantech provides a full range of capture card solutions for the video surveillance market. These high-performance cards support diverse video output interfaces to enable flexible support for diverse applications.

Back to Top

DVP Video Capture Card

NEW NEW

Model Name		DVP-7011HE	DVP-7013HE	DVP-7016HE	DVP-7017HE	DVP-7019HE	DVP-7021HE	DVP-7031HE
Video	Compression	SW H.264	SW H.264	S/W H.264	S/W H.264	S/W H.264	S/W H.264	SW H.264
	Channels	1	1	1	1	1	2	4
	Host Interface	PCIe x1 (Gen2)	PCIe x1 (Gen 2)	Mini PCIe x1 (Gen 2)	Mini PCIe x1 (Gen2)	PCIe x1 (Gen1)	PCIe x1 (Gen2)	PCIex4 (Gen2)
	Input Interface	SDI/HDMI/DVI/ VGA/YPbPr/ Composite/ S-Video	HDMI/DVI/ VGA/YPbPr/ Composite/ S-Video	1 x HDMI/DVI/ YPbPr/VGA	1 x SDI	SDI/DVI/ VGA/HDMI/ Composite/ YPbPr/S-video	SDI/DVI/ VGA/HDMI/ Composite/ YPbPr/S-video/ VGA	HDMI
	Max. Display Resolution	1920 x 1080p @ 60/50	1920 x 1080p @ 60/50	1920 x 1080 @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 60/50	1920 x 1080 @ 60/50
	Max. Recording Resolution	1920 x 1080p @ 60/50	1920 x 1080p @ 60/50	1920 x 1080 @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 60/50	1920 x 1080 @ 60/50
	Max. Display Rate	60/50 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)
	Max. Recording Rate	60/50 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)
	Video Outputs	-	HDMI/DVI/ YPbPr/ Composite/ S-Video Loop Through	-	1 x SDI (Loop Through)	-	-	-
Audio	Audio Inputs	1 x SDI, 1 x HDMI, 2 x RCA	1 x HDMI / 2 x RCA	1 x HDMI / 2 x RCA	1 x SDI + 2 x RCA	HDMI/SDI/ Audio (L/R)	2 x HDMI / Audio (L/R)	4 x HDMI
	Format	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz
Watchdog		Yes	Yes	No	NO	-	-	Yes
Physical Characteristic	Operating Temperature	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)
	Storing Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimensions (W x H x D)	107 x 101 mm (4.21" x 3.97")	135 x 69 mm (5.31" x 2.71")	30 x 51 mm (1.18" x 2")	30 x 51 mm (1.18" x 2")	105 x 69 mm (4.13" x 2.71") PCIe Low profile	108 x 85 mm (4.25" x 3.34") PCIe Full Height	168 x 93 mm (6.64" x 3.66")
	Safety	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Operating System	Operating System	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/8/8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/ Win8/Win8.1/ Win10; Linux 2.6.14 or higher; 32/64-bit

DVP Video Capture Card

NEW NEW NEW NEW NEW 4K ULTRA HD

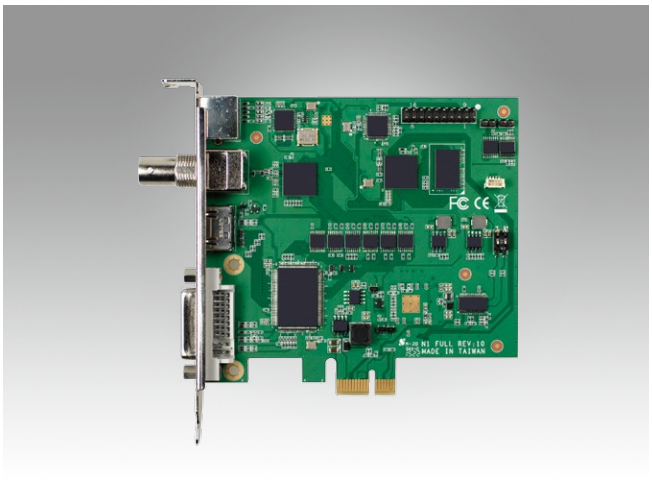





Model Name		DVP-7033HE	DVP-7035HE	DVP-7635HE	DVP-7011MHE	DVP-7012MHE	DVP-7011UHE
Video	Compression	SW H.264	S/W H.264	H/W H.264	S/W H.264	S/W H.264	S/W H.264
	Channels	4	4	4	1	1	1
	Host Interface	PCIe x4 (Gen2)	PCIe x4 (Gen2)	PCIe x 4	PCIeM.2	PCIeM.2	PCIe x 4
	Input Interface	3G-SDI/HD-SDI/ SDI	TVI/CVI/AHD/ Composite (CVBS)	TVI/CVI/AHD/ Composite (CVBS)	HDMI/DVI/VGA/ YPbPr	SDI	HDMI 2.0
	Max. Display Resolution	1920 x 1080 @ 60/50	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	4096 x 2160p @ 60/50
	Max. Recording Resolution	1920 x 1080 @ 60/50	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	4096 x 2160p @ 60/50
	Max. Display Rate	60/50 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)
	Max. Recording Rate	60/50 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)	60/50 fps (NTSC/PAL)
	Video Outputs	-	-	-	-	SDI x 1 (Loop through)	-
Audio	Audio Inputs	4 x SDI + 2 x 3.5mm Audio	2 x 3.5mm Audio	-	1 x HDMI / Audio (L/R)	1 x SDI / Audio (L/R)	HDMI/SDI/ Audio (L/R)
	Format	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz	Stereo, 16-bit, 32 ~ 48 kHz
Watchdog		Yes	-	Yes	-	-	Yes
Physical Characteristic	Operating Temperature	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)	-20 ~ 70 °C (-4~ 158 °F)
	Storing Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimensions (W x H x D)	140 x 101 mm (5.51" x 3.97")	128 x 101mm (5.03" x 3.97") PCIe Full Height	150 x 101 mm (5.9" x 3.97")	22 x 60 mm (0.86" x 2.36") M.2 Type B/M	22 x 60 mm (0.86" x 2.36") M.2 Type B/M	145 x 69 mm (5.7" x 2.71") PCIe Low profile
	Safety	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Operating System	Operating System	Windows XP/ XPe/Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/ XPe/Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit

DVP-7011HE

1-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK



Features

- 1-channel HD-SDI/HDMI/DVI-D/DVI-A/YPbPr video input with H.264/MPEG4 software compression
- 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display
- PCIe x 1 host interface
- Supports Watchdog function
- Windows/Linux OS supported

FC CE RoHS COMPLIANT 2002/95/EC

Introduction

DVP-7011HE is a PCIe-bus, software compression video capture card with 1 channel of either HD-SDI, HDMI, DVI-D, DVI-A, or YPbPr video and 1 audio input. DVP-7011HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and flexibility to stack multiple cards, DVP-7011HE is an ideal solution for various video capture applications or video surveillance.

Specifications

Video	Video Input	1 x SDI/HDMI/DVI-D/DVI-A/YPbPr
	Compression	S/W H.264 / MPEG4
	Max. Display Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p
	Max. Recording Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p
Audio	Audio Input	1 x SDI, 1 x HDMI, 2 x RCA
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	IIntel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™ 2 Quad Q9400 2.6GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7; Linux 2.6.14 or higher; 32/64 bit
Physical Characteristics	Host Interface	PCIe x 1
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storing Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	107 x 101 mm (4.2" x 3.9")
	Safety	CE/FCC

*For high quality full HD video recording at max. recording rate, Intel Sandy Bridge processor or above and Win7 OS are recommended

Ordering Information

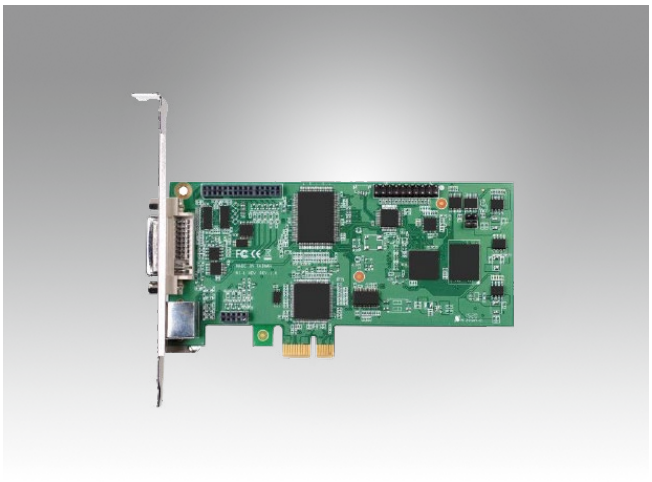
Part Number	Description
DVP-7011HE	1-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7011HE Capture Card	1 (piece)
Audio (RCA) / Video (YPbPr) cable	1 (piece)

DVP-7013HE

1-ch H.264/MPEG4 Low-Power PCIe Video Capture Card with SDK



Features

- 1-channel HDMI/DVI-I/YPbPr/S-Video/Composite video input with H.264 software compression
- 60/50 fps (NTSC/PAL) at up to full HD resolution for recording and display
- PCIe x1 (Gen2) host interface
- Low power consumption
- Supports Watchdog function
- Windows/Linux OS supported

FCC CE RoHS COMPLIANT 2002/95/EC

Introduction

DVP-7013HE is a PCIe-bus, low-power software compression video capture card with 1 channel of either HDMI/DVI-I/YPbPr/S-Video/Composite and 2 audio inputs. DVP-7013HE supports H.264 baseline compression format at up to full HD resolution at real-time frame rate (60/50fps). With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards; DVP-7013HE is an ideal solution for various video capture applications.

Specifications

Video	Video Input	1 x HDMI/DVI-I/YPbPr/S-Video/Composite
	Video Output	1 x HDMI/DVI-I/YPbPr/S-Video/Composite Loop Through
	Compression	S/W H.264/MPEG4
	Max. Display Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p
	Max. Recording Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p
Audio	Audio Input	2 x RCA (Audio L/R through component cable)
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x1 (Gen 2)
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	135 x 69 mm (5.3" x 2.7")
	Safety	CE/FCC

*For high quality, full HD video recording at max. recording rate, Intel® Sandy Bridge processor or above and Win7 OS are recommended

Ordering Information

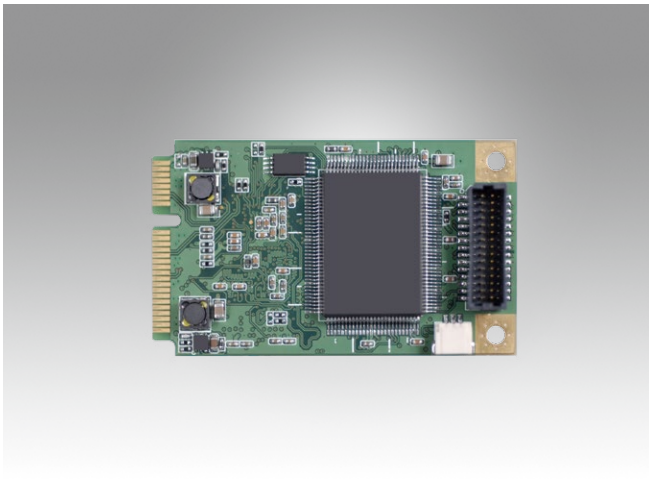
Part Number	Description
DVP-7013HE	1-ch H.264/MPEG4 Low-Power PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7013HE Capture Card	1 (piece)
YPbPr Cable	2 (piece)
S/AV Cable	2 (piece)
Short bracket (One to One)	2 (piece)

DVP-7016HE

1-ch Full HD H.264 MiniPCIe Video Capture Card with SDK



Features

- 1 channel HDMI/DVI-D/DVI-A/YPbPr channel video inputs with H.264 software compression
- 30/25 fps (NTSC/PAL) at up to full HD resolution for recording and display
- Mini PCIe x1 (Gen2) host interface
- Windows/Linux OS supported

FCC CE RoHS COMPLIANT 2002/95/EC

Introduction

DVP-7016HE is a Mini PCIe-bus, software compression video capture card with 1 video and 1 audio inputs. DVP-7016HE supports H.264 compression format at up to full HD resolution at real-time frame rate (30/25fps). With an easy-to-use software development kit (SDK), DVP-7016HE is an ideal solution for various video capture applications.

Specifications

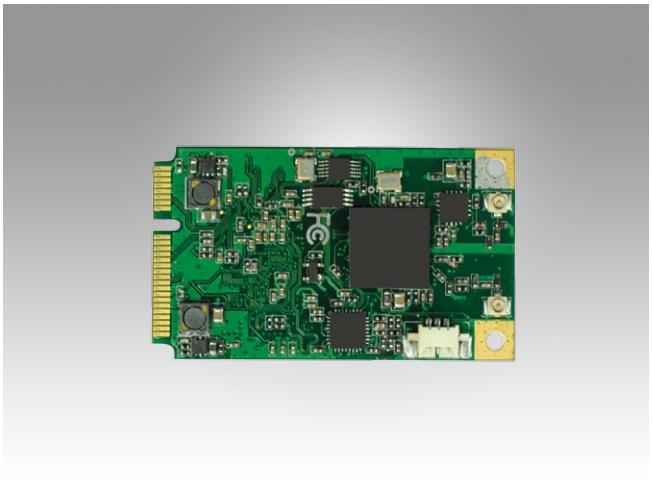
Video	Video Standard	NTSC/PAL
	Video Input	1 x HDMI/DVI-D/DVI-A/YPbPr
	Compression	S/W H.264
	Max. Resolution / FPS	1920 x 1080 @ 60/50 FPS (Input) 1920 x 1080 @ 30/25 FPS (Output)
	RAW Data Format	YV12/NV12/YUY2/RGB24/RGB32
Audio	Audio Input	HDMI Embedded Audio/ Audio L/R
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	Mini PCIe x1 (Gen 2)
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	30 x 51 mm (4.2" x 3.9")
	Certification	CE/FCC

Ordering Information

Part Number	Description
DVP-7016HE	1-ch Full HD H.264 MiniPCIe Video Capture Card with SDK
XMSE1-MC-HDV-CB	HDMI/VGA Cable (optional)
XKUO-A56-A072-V126	HDMI/VGA Cable (optional)

DVP-7017HE

1-ch Full HD H.264 Mini PCIe Video Capture Card with SDK



Features

- 1 channel SDI channel video inputs with H.264 software compression
- 30/25 fps (NTSC/PAL) at up to full HD resolution for recording and display
- Mini PCIe x1 (Gen2) host interface
- Windows/Linux OS supported

Specifications

Video	Video Standard	NTSC/PAL
	Video Input	1 x SDI
	Compression	S/W H.264
	Max. Resolution /FPS	60/50 fps @ 1920 x 1080p (Input) 30/25 fps @ 1920 x 1080p (Output)
Audio	Audio Input	SDI Embedded Audio Audio L/R (2 x RCA through wafer connector to RCA cable)
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	Mini PCIe x1 (Gen 2)
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	30 x 50.95 mm (1.1" x 2")
	Certification	CE/FCC

Ordering Information

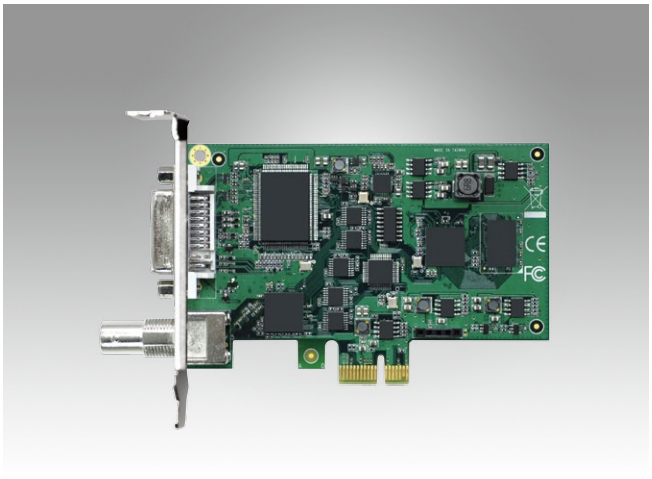
Part Number	Description
DVP-7017HE	1-ch Full HD H.264 MiniPCie Video Capture card with SDK
XKUO-A56-D009-V12	SDI Video cable (optional)

Packing List

Item	Amount
DVP-7017HE Capture Card	1pcs

DVP-7019HE

1-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK



Features

- 1-channel SDI/HDMI/DVI-D/DVI-A/YPbPr video input with H.264/MPEG4 software compression
- 30/25 fps (NTSC/PAL) at up to 1920 x 1080p resolution
- PCIe x 1 host interface
- Windows/Linux OS supported

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Introduction

DVP-7019HE is a PCIe-bus, software compression video capture card with 1 channel of either SDI, HDMI, DVI-D, DVI-A, or YPbPr video and 1 audio input. DVP-7019HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and flexibility to stack multiple cards, DVP-7011HE is an ideal solution for various video capture applications or video surveillance.

Specifications

Video	Video Input	1 x SDI/HDMI/DVI-D/DVI-A/YPbPr
	Compression	S/W H.264 / MPEG4
	Max. Video input	30/25 fps (NTSC/PAL) @ 1920 x 1080p
	Max. Video Output	30/25 fps (NTSC/PAL) @ 1920 x 1080p
Audio	Audio Input	1 x SDI, 1 x HDMI, 2 x RCA
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™2 Quad Q9400 2.6GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x 1
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storing Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	105 x 69 mm (4.1" x 2.7")
	Safety	CE/FCC

*For high quality full HD video recording at max. recording rate, Intel Sandy Bridge processor or above and Win7 OS are recommended.

Ordering Information

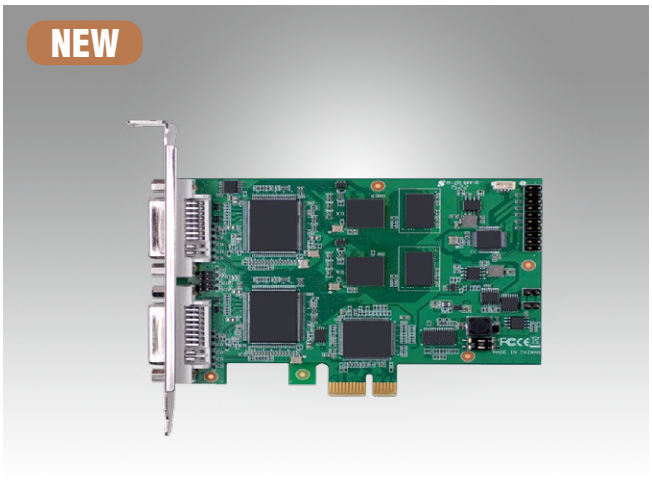
Part Number	Description
DVP-7019HE	1-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7019HE Capture Card	1 (piece)
DVI to YPbPr/AV/S-video cable	1

DVP-7021HE

2-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK



Features

- 2-channel HDMI/DVI/VGA/S-Video/YPbPr video inputs with H.264/MPEG4 software compression
- 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- PCIe x1 host interface
- Supports Watchdog function
- Windows/Linux OS supported

FCC CE RoHS COMPLIANT 2002/95/EC

Introduction

DVP-7021HE is a PCIe-bus, software compression video capture card with 2ch HDMI/DVI/VGA/S-Video/YPbPr video and 2ch audio inputs. DVP-7021HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards, DVP-7021HE is an ideal solution for various video capture applications.

Specifications

Video	Video Standard	HDMI/DVI/VGA/S-Video/YPbPr
	Video Input	2 x HDMI/DVI/VGA/S-Video/YPbPr
	Compression	S/W H.264 / MPEG4
	Max. Display Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p/ch
	Max. Recording Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p/ch
Audio	Audio Input	2 x HDMI/ 2 x RCA
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x1
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	108 x 85 mm (4.2" x 3.3")
	Safety	CE/FCC

*For high quality full HD video recording at max. recording rate, Intel Sandy Bridge processor or above and Win7 OS are recommended.

Ordering Information

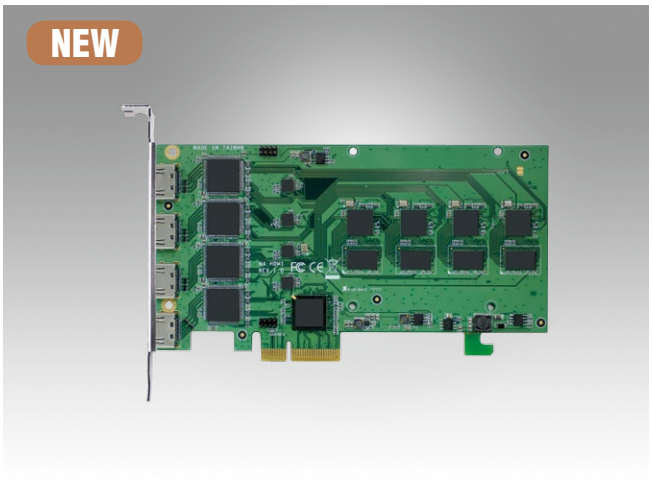
Part Number	Description
DVP-7021HE	2-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7021HE Capture Card	1 (piece)
DVI to YPbPr / AV / S-video cable	2 (piece)

DVP-7031HE

4-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK



Features

- 4-channel HDMI video inputs with H.264/MPEG4 software compression
- 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- PCIe x4 host interface
- Supports Watchdog function
- Windows/Linux OS supported

FCC CE RoHS COMPLIANT 2002/95/EC

Introduction

DVP-7031HE is a PCIe-bus, software compression video capture card with 4 HDMI video and 4 audio inputs. DVP-7031HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards, DVP-7031HE is an ideal solution for various video capture applications.

Specifications

Video	Video Standard	HDMI
	Video Input	4 x HDMI
	Compression	S/W H.264 / MPEG4
	Max. Display Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p/ch
	Max. Recording Rate	60/50 fps (NTSC/PAL) @ 1920 x 1080p/ch
Audio	Audio Input	4 x HDMI
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	167.65 x 93.04 mm (6.6" x 3.6")
	Safety	CE/FCC

*For high quality full HD video recording at max. recording rate, Intel Sandy Bridge processor or above and Win7 OS are recommended.

Ordering Information

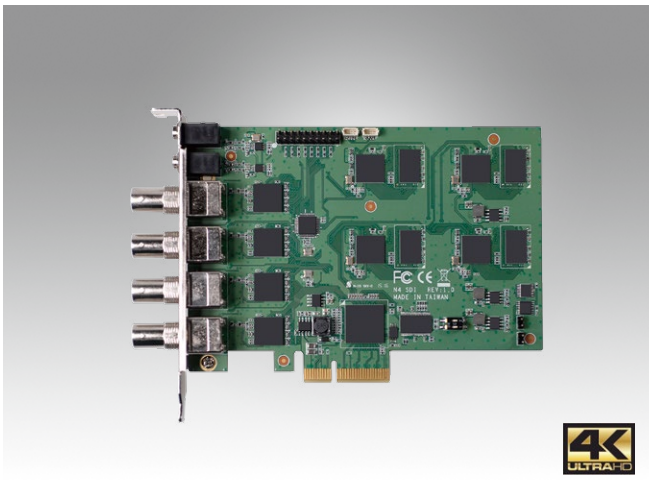
Part Number	Description
DVP-7031HE	4-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7031HE Capture Card	1 (piece)

DVP-7033HE

4-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK



Features

- 4-channel SDI video inputs with H.264/MPEG4 software compression
- 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- 4K (4096 x 2160) ultra HD video capture supported
- HEVC/H.265 software compression (with Intel Skylake platform)
- PCIe x4 host interface
- Supports Watchdog function
- Windows/Linux OS supported

Introduction

DVP-7033HE is a PCIe-bus, software compression video capture card with 4 HD-SDI video and 4 audio inputs. DVP-7033HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards, DVP-7033HE is an ideal solution for various video capture applications.

Specifications

Video	Video Standard	SDI (3G-SDI / HD-SDI / SD-SDI)
	Video Input	4 x SDI
	Compression	S/W H.264 / MPEG4
	Max. Resolution / FPS	1920 x 1080 @ 60/50 FPS (Input) 1920 x 1080 @ 60/50 FPS (Output)
	Raw Data Format	YV12/NV12/YUY2/RGB24/RGB32
Audio	Audio Input	4 x SDI
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)*	Intel® Core™ 2 Quad Q9400 2.6GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	140 x 101 mm (5.5" x 3.9")
	Safety	CE/FCC

*For high quality full HD video recording at max. recording rate, Intel Sandy Bridge processor or above and Win7 OS are recommended.

Ordering Information

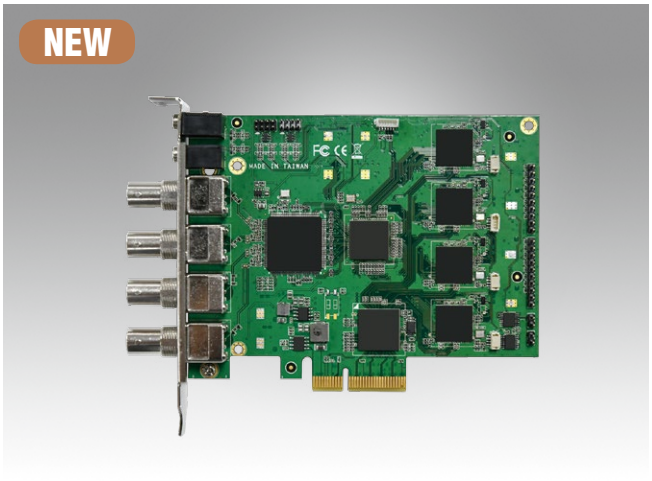
Part Number	Description
DVP-7033HE	4-ch Full HD H.264/MPEG4 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7033HE Capture Card	1 (piece)
Audio Cable	2 (piece)

DVP-7035HE

4-ch Full HD H.264/MPEG4 AHD/CVI/TVI/ CVBS PCIe Video Capture Card with SDK



Features

- 4-channel AHD/CVI/TVI/Composite (CVBS) software compression
- 30/25 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- PCIe x4 host interface
- Supports Watchdog function
- Windows/Linux OS supported

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Introduction

DVP-7035HE is a PCIe-bus, software compression video capture card with 4ch AHD/CVI/TVI/Composite (CVBS) video and 4 audio inputs. DVP-7035HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards, DVP-7035HE is an ideal solution for various video capture applications.

Specifications

Video	Video Standard	AHD/CVI/TVI
	Video Input	4 x AHD/CVI/TVI/Composite (CVBS)
	Compression	S/W H.264 / MPEG4
	Max. Resolution / FPS	1920 x 1080 @ 30/25 FPS (Input) 1920 x 1080 @ 30/25 FPS (Output)
	Raw Data Format	YV12/NV12/YUY2/RGB24/RGB32
Audio	Audio Input	4 x AHD/CVI/TVI/Composite (CVBS)
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ i3-4330
	CPU (Recording)*	Intel® Core™ i3-4330
	Memory	4 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	128 x 101 mm (5" x 3.9")
	Safety	CE/FCC

Ordering Information

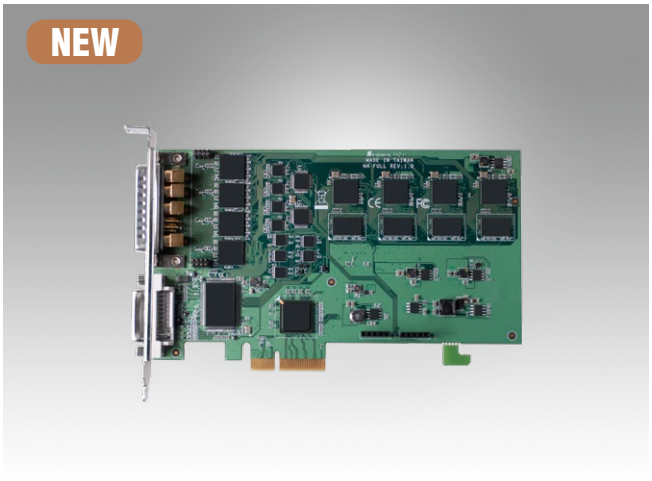
Part Number	Description
DVP-7035HE	4-ch Full HD H.264/MPEG4 AHD/CVI/TVI/Composite (CVBS) PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7035HE Capture Card	1 (piece)
Audio Cable	2 (piece)

DVP-7634HE

4ch Full HD H.264 PCIe Video Capture Card with SDK



Features

- 4ch SDI + VGA/HDMI/DVI/Composite/S-Video/YPbPr video input with H.264 (High Profile) hardware compression
- 30/25 fps (NTSC/PAL) at up to 1080p resolution for display and recording
- PCIe x4 host interface
- Windows/Linux OS supported

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Introduction

DVP-7634HE is a PCIe-bus, hardware compression video capture card with 4ch SDI + VGA/HDMI/DVI/Composite/S-Video/YPbPr video and input. DVP-7634HE supports H.264 high profile compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and flexibility to stack multiple cards, DVP-7634HE is an ideal solution for various video capture applications.

Specifications

Video	Video Input	4ch SDI + VGA/HDMI/DVI/Composite/S-Video/YPbPr
	Compression	H/W H.264 High Profile
	Max. Display Rate	30/25 fps (NTSC/PAL) @ 1920 x 1080p
	Max. Recording Rate	30/25 fps (NTSC/PAL) @ 1920 x 1080p
Audio	Audio Input	SDI / HDMI / Audio L/R
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)	Intel® Core™ 2 Duo E2200 2.2 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	167.65 x 101.03 mm (6.6" x 3.9")
	Safety	CE/FCC

Ordering Information

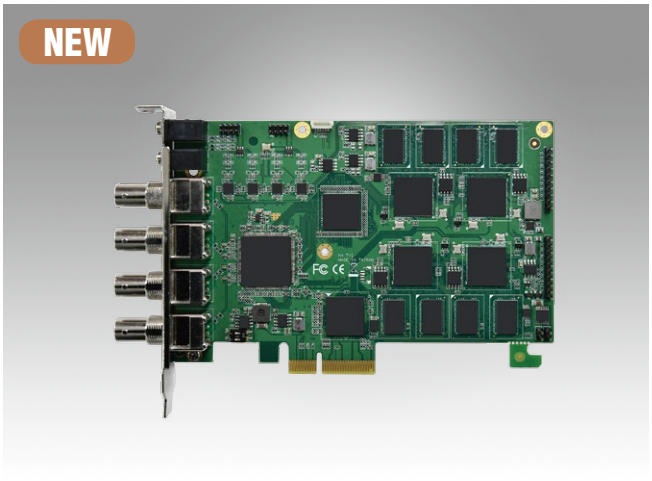
Part Number	Description
DVP-7634HE	4ch Full HD H.264 PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7634HE Capture Card	1 (piece)
4 BNC/4 RCA cable	1 (piece)
DVI to YPbPr/AV/S-video	1 (piece)

DVP-7635HE

4-ch Full HD H.264/MPEG4 AHD/CVI/TVI PCIe Video Capture Card with SDK



Features

- 4-channel AHD/CVI/TVI/Composite (CVBS) hardware compression
- 30/25 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- PCIe x4 host interface
- Supports Watchdog function
- Windows/Linux OS supported

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Introduction

DVP-7635HE is a PCIe-bus, hardware compression video capture card with 4ch AHD/CVI/TVI/Composite (CVBS) video and 4 audio inputs. DVP-7635HE supports H.264/MPEG4 compression format at up to Full HD 1080p for each channel. With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards, DVP-7635HE is an ideal solution for various video capture applications.

Specifications

Video	Video Standard	AHD/CVI/TVI
	Video Input	4 x AHD/CVI/TVI/Composite (CVBS)
	Compression	H/W H.264
	Max. Resolution / FPS	1920 x 1080 @ 30/25 FPS (Input) 1920 x 1080 @ 30/25 FPS (Output)
	Raw Data Formate	YV12/NV12/YUY2/RGB24/RGB32
Audio	Audio Input	2 x 3.5mm Audio
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ i3-4330
	CPU (Recording)*	Intel® Core™ i3-4330
	Memory	4GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	150 x 101 mm (5.9" x 3.9")
	Safety	CE/FCC

Ordering Information

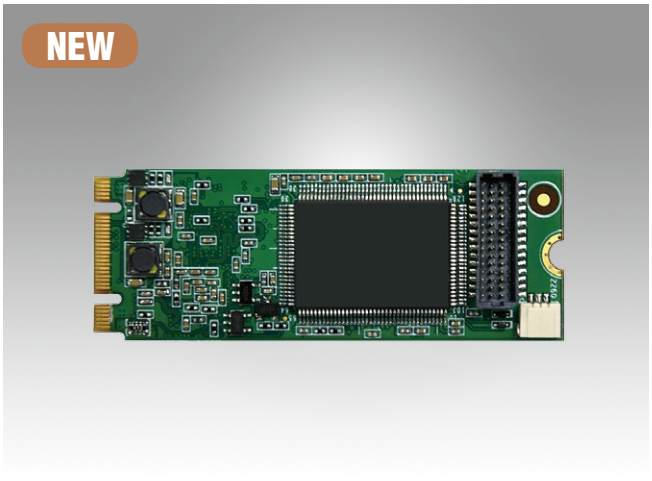
Part Number	Description
DVP-7635HE	4-ch Full HD H.264/MPEG4 AHD/CVI/TVI/Composite (CVBS) PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7635HE Capture Card	1 (piece)
Audio Cable	2 (piece)

DVP-7011MHE

1-ch Full HD H.264 M.2 Video Capture Card with SDK



Features

- 1 channel HDMI/DVI-D/DVI-A/YPbPr channel video inputs with H.264 software compression
- 30/25 fps (NTSC/PAL) at up to full HD resolution for recording and display
- PCIe M.2 (B/M) host interface
- Windows/Linux OS supported

Introduction

DVP-7011MHE is a PCIe M.2, software compression video capture card with 1 video and 1 audio inputs. DVP-7011MHE supports H.264 compression format at up to full HD resolution at real-time frame rate (30/25fps). With an easy-to-use software development kit (SDK), DVP-7011MHE is an ideal solution for various video capture applications.

Specifications

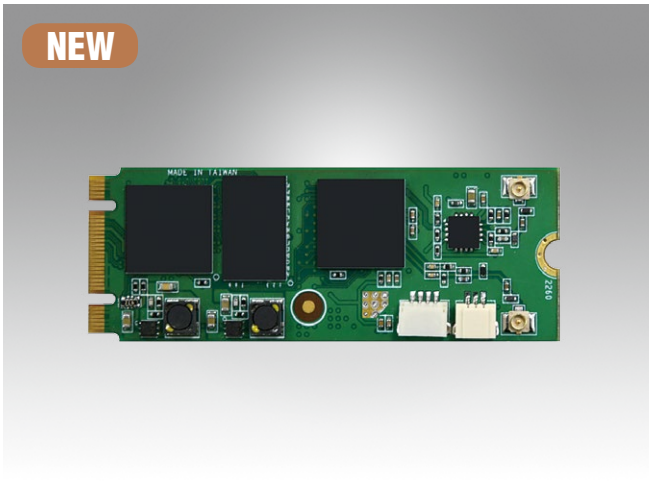
Video	Video Standard	NTSC/PAL
	Video Input	1 x HDMI/DVI-D/DVI-A/YPbPr
	Compression	S/W H.264
	Max. Resolution / FPS	1920 x 1080 @ 30/25 FPS (Input) 1920 x 1080 @ 30/25 FPS (Output)
	RAW Data Format	YV12/NV12/YUY2/RGB24/RGB32
Audio	Audio Input	HDMI Embedded Audio/ Audio L/R
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™2 Duo E2200 2.2 GHz
	CPU (Recording)	IIntel® Core™2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe M.2 (B/M)
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storing Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	60 x 22 mm (2.3" x 0.8")
	Certification	CE/FCC

Ordering Information

Part Number	Description
DVP-7011MHE	1-ch Full HD H.264 PCIe M.2 Video Capture Card with SDK
XMSE1-MC-HDV-CB	HDMI/VGA Cable (optional)
XKUO-A56-A072-V126	HDMI/VGA Cable (optional)

DVP-7012MHE

1-ch Full HD H.264 M.2 Video Capture Card with SDK



Features

- 1 channel SDI channel video inputs with H.264 software compression
- 30/25 fps (NTSC/PAL) at up to full HD resolution for recording and display
- PCIe M.2 (B/M) host interface
- Windows/Linux OS supported

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Specifications

Video	Video Standard	NTSC/PAL
	Video Input	1 x SDI
	Compression	S/W H.264
	Max. Resolution /FPS	30/25 fps @ 1920 x 1080p (Input) 30/25 fps @ 1920 x 1080p (Output)
Audio	Audio Input	SDI Embedded Audio Audio L/R (2 × RCA through wafer connector to RCA cable)
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ 2 Duo E2200 2.2 GHz
	CPU (Recording)	Intel® Core™ 2 Quad Q9400 2.6 GHz
	Memory	2 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe M.2 (B/M)
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	22 x 60 mm (0.8" x 2.3")
	Certification	CE/FCC

Ordering Information

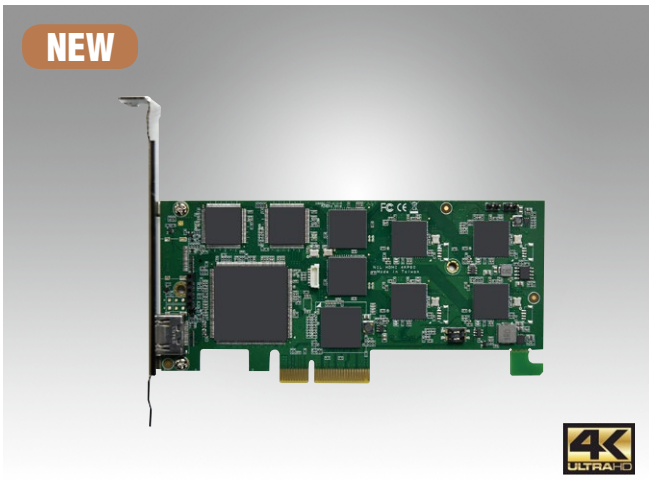
Part Number	Description
DVP-7012MHE	1-ch Full HD H.264 PCIe M.2(B/N) Video Capture card with SDK
XKUO-A56-D009-V12	SDI Video cable (optional)

Packing List

Item	Amount
DVP-7012MHE Capture Card	1pcs

DVP-7011UHE

1-ch H.264 4K HDMI 2.0 PCIe Video Capture Card with SDK



Features

- 1-channel 4K HDMI 2.0 video input with H.264 software compression
- 60/50 fps (NTSC/PAL) at up to 4096 x 2160p resolution for recording and display
- PCIe x 4 host interface
- Low profile size
- Windows/Linux OS supported

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Introduction

DVP-7011UHE is a PCIe-bus, hardware compression video capture card with 1 channel 4K HDMI 2.0 inputs. DVP-7011UHE supports H.264 software compression format at up to 4K resolution at real-time frame rate (60/50fps). With an easy-to-use software development kit (SDK) and the flexibility to stack multiple cards; DVP-7011UHE is an ideal solution for various video capture applications.

Specifications

Video	Video Input	1 x 4K HDMI 2.0
	Compression	S/W H.264
	Max. Display Rate	60/50 fps (NTSC/PAL) @ 4096 x 2160p
	Max. Recording Rate	60/50 fps (NTSC/PAL) @ 4096 x 2160p
Audio	Audio Input	1 x HDMI Embedded audio
	Format	Stereo, 16-bit, 32 ~ 48 kHz
System Requirements	CPU (Display)	Intel® Core™ i5-6500
	CPU (Recording)*	Intel® Core™ i5-6500
	Memory	8 GB
	VGA	1024 x 768, DirectX 9.0c
	Operating System	Windows XP/XPe/Vista/7/8/8.1/10; Linux 2.6.14 or higher
Physical Characteristics	Host Interface	PCIe x 4
	Operating Temperature	-20 ~ 70 °C (-4 ~ 158 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Dimension (L x H)	145 x 69 mm (5.7" x 2.7")
	Safety	CE/FCC

Ordering Information

Part Number	Description
DVP-7011UHE	1-ch HDMI 2.0 4K Software compression PCIe Video Capture Card with SDK

Packing List

Item	Amount
DVP-7011UHE Capture Card	1 (piece)
Low Profile bracket	1 (piece)

DVP-5311D

Video (DVI-DVI), Control and Data Transmission Extender

Features

- Supports High Resolution 1920x1200 @ 60Hz WUXGA
- Zero pixel loss with TMDS signal correction
- DVI loop-through for supporting local display and monitoring
- Extremely low latency(<3 ms) for video, control and data transmission
- Full re-locking for the receiver regenerates digital signal producing top signal quality
- Supports 4 USB 2.0 devices in the remote location (keyboard, mouse, touch panel, storage…)
- Support RS-232 serial communication transmission interface
- Power Over Ethernet Cable. Only one power supply supports both transmitter and receiver
- Strong and mountable design for Industry application scenario
- Extends up to 100 meter (330 ft)

Introduction

The DVP-5311D video and control extender Let you control a PC from up to 100m *33ft) away from a single Cat 5e or Cat 6 cable connection, with uncompressed 1920 x 1200 DVI-D video, with 24-bit color depth, and access to up to four connected USB devices (keyboard, mouse, touch panel, storage or other peripherals) and RS-232 control interface, with less than 3 milliseconds latency.

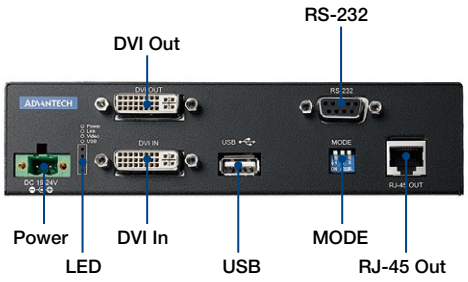
DVP-5311D enable users to install critical industry PC in a secure and controlled environment away from work station or control room. And with Power-Over-Cable feature, users just need to supply the power to one device to have the whole set working for solving the hassle of running power cables. DVP-5311D is the most suitable solution for remote display and control in industrial applications.

Specifications

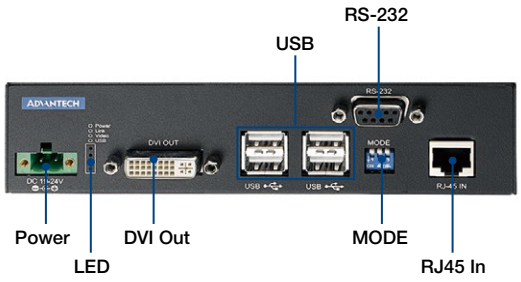
		Extender Transmitter (Tx)	Extender Receiver (Rx)
Electronic	Video Interface	DVI-D (29 pins female) DVI-D (29 pins female) - Loop Through	DVI-D (29 pins female)
	Video Transmission Cable	CAT 5/6	CAT 5/6
	Video Bandwidth	340 MHz (10.2Gbps)	340 MHz (10.2Gbps)
	Video Resolution	480p / 720p / 1080p@60 / 1920x1200@60	480p / 720p / 1080p@60 / 1920x1200@60
	Transmission Distance	100 meters (328 ft)	100 meters (328 ft)
	USB Port(s)	1 USB port for connecting to IPC, comply with USB 2.0	4 x USB 2.0 ports, for keyboard, mouse, touch panel and data transmission (client)
	RS232	Supported	Supported
	Dimension (W x H x D)	80 x 50 x 160 mm (3.1" x 1.9" x 6.2")	80 x 50 x 160 mm (3.1" x 1.9" x 6.2")
	Input Power	19 - 24 V_{DC} ± 20%	19 - 24 V_{DC} ± 20%
	ESD Protection	8KV (contact) / 15KV (air)	8KV (contact) / 15KV (air)
	Power Connector	Phoenix-type (2 pins) The power can also be transferred to Rx side via CAT5/6 cable (power over cable)	Phoenix-type (2 pins) The power can also be transferred to Tx side via CAT5/6 cable (power over cable)
	HDCP Compliance	Yes (1.4)	Yes (1.4)
	Indicator Light	Power, Link, USB, Video	Power, Link, USB, Video
	Grounding	grounding screw for the better noise immunity	grounding screw for the better noise immunity
	DIP Switch	RS-232 Configuration & Firmware Update	RS-232 Configuration & Firmware Update
Mechanical	Housing	Metal	Metal
	Mounted design	Support DIN-Rail, Pole and VESA mount installation	Support DIN-Rail, Pole and VESA mount installation
Environmental	Operation Temperature	0 ~ 50 °C	0 ~ 50 °C
	Storage Temperature	-20 ~ 70 °C	-20 ~ 70 °C
	Humidity	95% RH@ 40 °C	95% RH@ 40 °C

Connector

Extender Transmitter (Tx)



Extender Receiver (Rx)



Switch Mode

DIP Switch Pin 1	RS-232 Mode
On (down)	DTE mode
Off (up)	DCE mode

	Pin 2 On (down)	Pin 2 Off (up)
Pin 3 On (down)	FW update for MCU 1	FW update disabled
Pin 3 Off (up)	FW update for MCU 2	FW update disabled

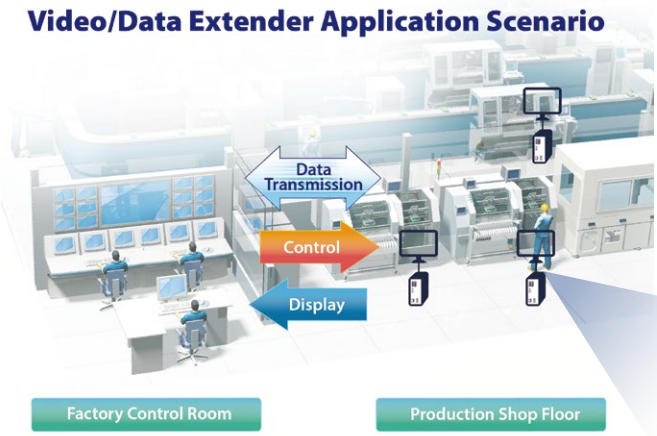
Ordering Information

Part Number	Description
DVP-5311D	DVI Extender : Extender Transmitter (TX) & Extender Receiver(RX)

Packing List

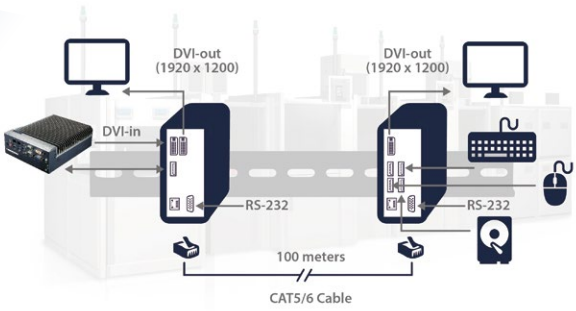
Part Number	Description	Quantity
DVP-5311D	DVI Extender : Extender Transmitter (TX) & Extender Receiver(RX)	TX x 1 / RX x 1
Power Adaptor	ADP A/D 100-240V 65W 19V C6 TERMINAL BLOCK 2PIN	1
DIN-Rail Bracket	1950016395T101	1

Extender Scenario



Video / Data Extender – Scenario Diagram

Advantech focuses on industrial application and provides industry grade product. Mountable design for industrial application scenario. Easy to use for multiple equipment alignments.



Back to Top