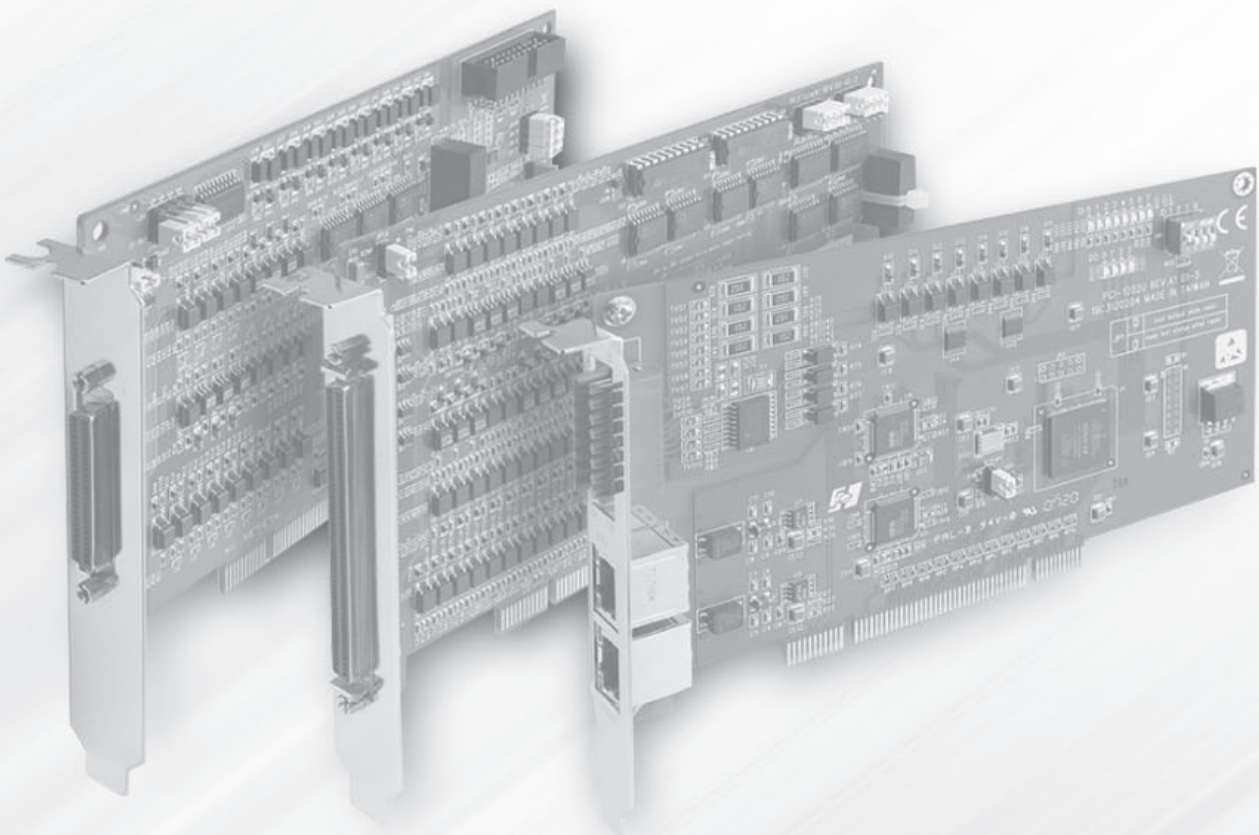


## Motion Control I/O Modules

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<b>PCI-1220U</b>	2-axis Stepping and Servo Motor Control Universal PCI Card	<b>19-10</b>
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<b>PCI-1243U</b>	4-axis Stepping Motor Control Universal PCI Card	<b>19-11</b>
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To view all of Advantech's Motion Control I/O Modules, please visit [www.advantech.com/products](http://www.advantech.com/products).

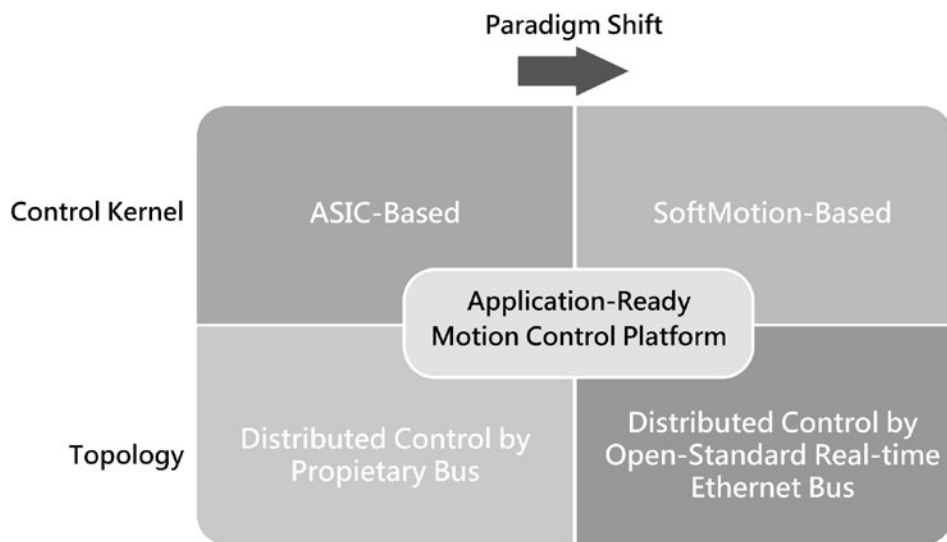


# Motion Control Overview

## Application-Oriented Motion Control Platforms to Fulfill a Variety of Control Requirements

Looking back over the past decades of PC-based motion control, ASIC-based & distributed control topologies through proprietary bus are quite common. However, the new emerging market for machine control comes with multiple-axis dependency, synchronization, and improved response times. These factors drive the paradigm shift from ASIC-based to SoftMotion-based and have more flexibility in design through suitable trajectories aligned with machines to meet the faster throughput, high performance and precision, and real-time Ethernet to give system integrators and machine builders help find the suitable solutions and reduce costs. Combining SoftMotion-based & Ethernet, this paradigm shift helps improve flexible trajectories, wiring-saving, and faster response times compared with past centralized topologies and reduce system implementation complexity.

Moreover, each quadrant of technology in the following diagram could be integrated into PC-based barebones to provide application-ready motion control platforms with off-the-shelf utilities and bountiful libraries for vertical market applications. For example, Advantech's PEC-3240 is a dispensing-oriented controller for the electronic industries.



**Application-ready Motion Control Platform Related Technology Chart**

### ASIC-based Motion Control

Since the 1990's, Advantech has been developing several motion control boards with ASIC-based technology. Based on the ASIC kernel, the boards are digital signal type and connected with servo drivers and motors to build a system. The pulse train speed and resolution will determine the control precision and response. Advantech's motion control team implemented application-ready libraries to fulfill the different machines in industry. The ASIC-based series boards are for GMC (General Motion Control) purposes to provide faster time-to-market with robust and cost-effective market adopters.

### Distributed Control

As industrial Ethernet technology moves forward to increase response times and accurate time-deterministic precision, using real-time Ethernet is the future trend and benefits many machine builders with open standards. Distributed motion control can significantly reduce wiring efforts and cost in significant ways. In the past, fieldbus control was proprietary and had lower response times. Machine builders only have limited options in the market. However, open standard real-time Ethernet is the next generation. This technology will be also applied to a variety of Advantech platforms to offer application-ready motion control platforms with real-time Ethernet technology.

### SoftMotion-based Motion Control

In order to meet increasingly demands for complexity of trajectories, such as Gantry control & synchronization, and voltage signals for speed/torque control, Advantech's motion control team developed SoftMotion-based motion controllers and provides application-oriented & customization services. The SoftMotion technology is a control kernel executed by software which can run in DSP-based, RISC-based and X86-based CPUs with real-time extension. This technology gives flexibility in system implementation and the possibility to integrate 3rd party real-time I/O control boards.

### Features and Benefits of Common Motion APIs

Most machine builders and system integrators face library integration headaches from different vendors and different boards. Moreover, re-programming applications are necessary when the motion control boards are changed or upgraded. Advantech's motion control team delivered the common motion API concept and developed the common motion library is to reduce time-consuming on this task and give faster time-to-market if any upgrading request exists. The common motion API concept is applied to all of Advantech's motion controllers.

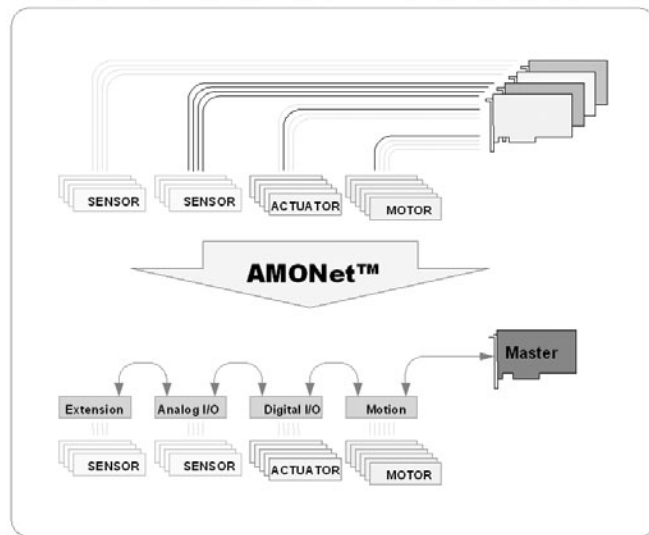
### Application-Ready Motion Control Platform

In any vertical specific application, machine builders and system integrators are looking for application-ready control platforms. The main reasons for this consideration are system integrity and system stability. Compared with plug-in motion controllers plus industrial PCs, the application-ready motion control platform provides a well-designed system with validation to guarantee stability. Furthermore, this concept can bring higher add-on value to system integrators and machine builders.

## Complete Application-Ready Platforms for General Motion Control Tasks

Advantech offers application-ready platforms that range from industrial workstations and industrial-grade CPUs, to motion control, encoder input and isolated I/O cards for general motion control (GMC) applications such as SMT/PCB, semiconductor and LCD manufacturing machinery. Advantech provides a full-range of industrial computing platforms that include high-brightness LCD displays, keypads, up to 20-slot backplanes and redundant power supplies for machine builders.

Nowadays general motion applications are divided into two functions - centralized and distributed motion control solutions. For centralized motion control, ASIC-based motion controllers are entry level that allow customers to easily build their own motion machines. As complicated and high performance applications are increasing, Advantech has recently developed SoftMotion control modules which are DSP-based to help customers do more tasks that ASIC-based motion modules can't do, such as gantry control, trajectory planning, electrical-CAM and so on. Furthermore, in order to enhance performance and stability, customized firmware in SoftMotion will be possible and can add secure protection for authorization. Advantech provides 2, 4, and 6 axis motion modules to fulfill the different motion applications.



Wire-Saving/Long-Distance

## AMONet - Advantech Distributed Motion Control Solutions

Motion control is growing in complexity as the number of axes in newly developed machines with motion control increases each year. Distance is also becoming an issue, as motors are located further and further away from the host computer. AMONet (Advantech Motion Network) was engineered to tackle the problems of increasing spending on wiring and maintenance of these complex motion control systems, and it also gets rid of distance limitations.

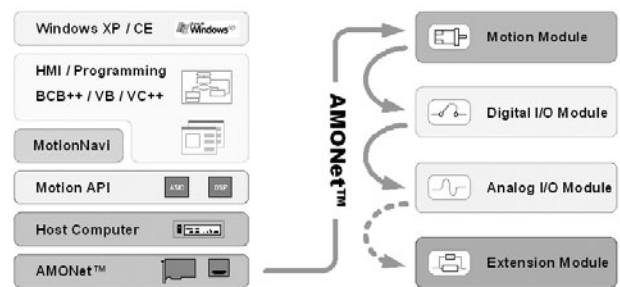
The first series of distributed motion control products from Advantech are called the AMONet RS-485 Series. AMONet RS-485 products are categorized as Master cards or Slave modules. While the Master card is kept in the host PC, the slave modules can be distributed so that they are next to motor drivers on the factory floor. The communication speed between the AMONet RS-485 slave modules can be up to 20 Mbps. This makes it possible to scan 2048 I/O points within 1.04 ms (or 1024 I/O points in 0.56 ms). Furthermore, an AMONet RS-485 master will update the I/O status automatically, and map data into local memory. Software running on the host PC can then read the status by simply reading the onboard memory, so no polling of slave modules is necessary.

Each port of a master card can control up to 2048 I/O connections or 256 motion axes, so future extensions are easily implemented. The distance between a master card and its slave modules can be up to 100 meters, and this distance is covered with a cost-effective Cat 5 network cable. In addition to saving wiring costs, debugging and maintenance are also simplified.

Another advantage of AMONet RS-485 is its compatibility with motor drivers from different vendors. Advantech provides specially designed wiring boards for popular motion drivers from vendors such as Panasonic, Mitsubishi and Yaskawa. This makes configuration easier, as pin-to-pin cables can be used. Having a selection of motor vendors can also be an advantage when sourcing of a certain motor is difficult.

Motion control and I/O functions with AMONet RS-485 use the same library. This unique feature saves time, as programmers do not need to study both a motion library and an I/O library. You can also connect to a manual pulse generator directly to adjust and calibrate the system without having to write programs first.

AMONet makes machine building with motion control easier. The savings made on wiring and programming effort, as well as the compatibility with a wide range of popular motors have already led to many requests for AMONet products.



System Architecture

# Motion Control Technology Overview

## A Broad Array of Products for Centralized Motion Control

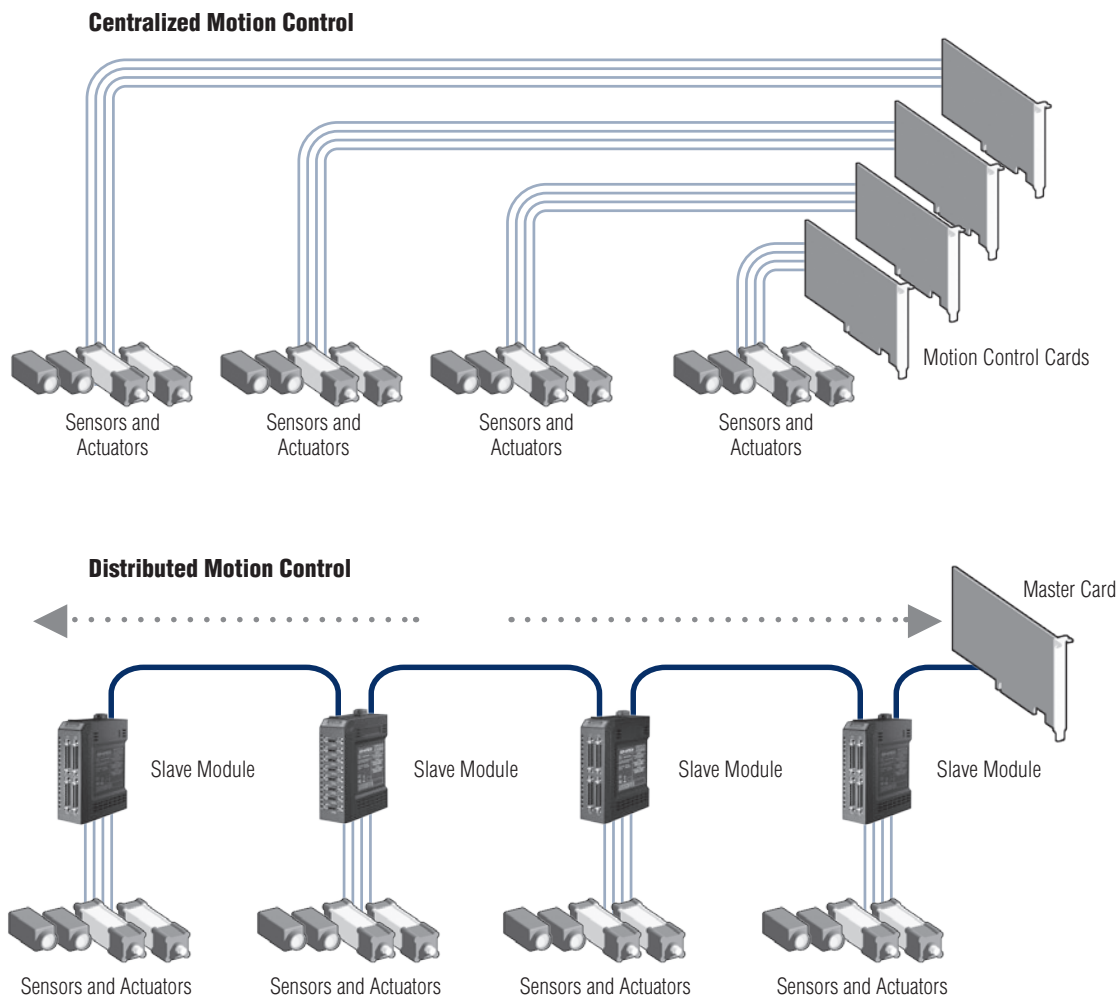
Advantech's full product offering can accommodate all your motion control needs. You can choose from 2-axis and 4-axis controllers, pulse-output or voltage-output, ISA-bus-based or PCI-bus-based, and standard PC-based or embedded in a system. The functions of the motion cards also vary, from high-end 3-axis circular interpolation cards to low-cost point-to-point motion devices. And if you cannot find a controller to meet your exact requirements for an embedded motion controller, then Advantech can design one to your specifications. We are ready to build cost-effective controllers to meet your criteria, whether it be adding digital I/O channels or changing connector styles, or perhaps changing CPU grade. With all the inherent costs, time and risks involved, there's no reason why you should design your own controller when you can instead rely on the expertise, cost-efficiency, experience and proven reliability of Advantech.

## The Differences Between Centralized & Distributed Motion Control

Machine control system architectures generally fall into two categories - centralized or distributed. In a centralized system, all control loops including logic, trajectory generation, and PID control, are executed on a single processor. In a distributed system, the trajectory generation and logic control executes in the central processor, but the PID control loop is executed in the intelligent slave module. A distributed approach gives more processing power, while it reduces overall wiring cost and system complexity.

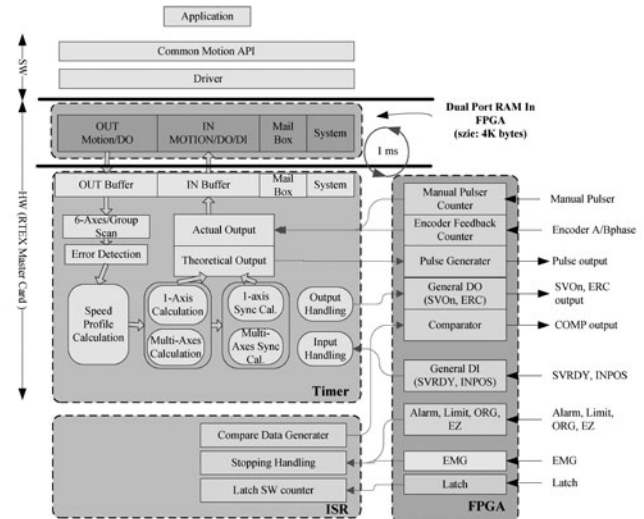
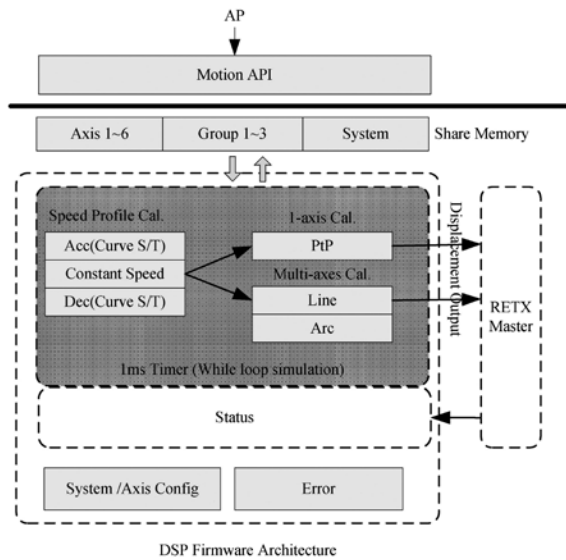
The Distributed Motion Control Products are categorized in two groups - Master Cards and Slave Modules. Communication between master and slave is based on a custom-engineered technology based on RS-485, which saves wires, transmits over long distances at high speeds, and has time-deterministic features.

The communication interface between master and host PC is based on memory mapping. Various functions can be chosen on the slave modules, and the industrial DIN-rail mountable design makes it easy to distribute them in the field. The master card collects information from slave modules and publishes the data to its host PC, and vice versa.



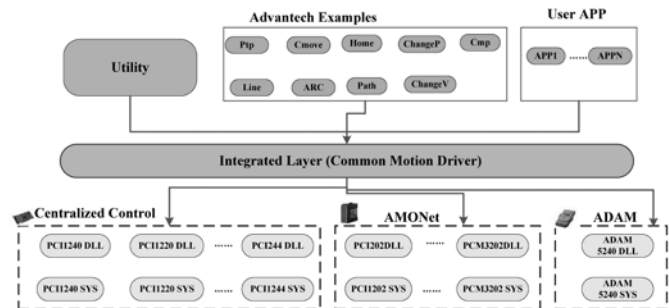
## SoftMotion-based Motion Control

Advantech develops DSP-based SoftMotion control cards which enable the simplified utilization of complex motion manipulation involving JOG, PTP, linear and circular interpolation, multiple axes synchronized motion, and etc. For highly flexible programming features, it has the possibility to offer motion kernel customization. For high performance FPGA, high execution rate DSP, and Dual-Port RAM (DPM) technology, SoftMotion control cards can support faster encoding speeds, higher speed position comparison, and trigger pulse outputs over cards which use ASIC motion IC. SoftMotion controllers can provide programmable acceleration and deceleration to eliminate jerk and smooth velocity profile. For each axis, individual unlimited point tables can realize seamless continuous movements. These tables are also able to combine linear and arc segments. Based on the Common motion API—DSP & FPGA architectures, Advantech provides customers much easier programming environment and robust motion control.



## Common Motion APIs

In order to benefit users to apply single API for all series of Advantech motion controller, a new software architecture is designed for all Advantech motion devices which is called "Common Motion Architecture". This architecture defines all user interfaces and all motion functions are implemented, including single axis and multiple axes. This unified programming platform enables us to operate devices in the same manner. Advantech Common Motion (ACM) Architecture defines three types of operation objects: Device, Axis and Group. Each type has its own methods, properties and states.



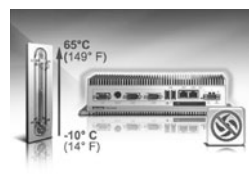
## Application-Ready Motion Control Platforms - PEC Series

Advantech provides embedded motion control platforms for embedded motion applications. PEC series is 1/8 the size compared with standard industrial computers, even with built-in motion control and digital I/O. Analog input functionalities, greatly saving space and development time. Fanless, no internal cables, and diskless mechanisms allow PEC series to operate under -10 ~ 65° C (14 ~ 149° F) without any heat issues. Due to its PC-based computing architecture integrated with motion control and digital I/O, PEC series can handle a wide range of devices under test (DUT), such as touch panel profiles very quickly, greatly reducing development time. Its small size allows it to fit into space-constrained applications and its anti-vibration capabilities allow PEC series to withstand vibration and noise interference during verification processes. To meet different demands for industrial automation, PEC series provides a variety of motion control functions, such as 2/3-axis linear, 2-axis circular interpolation, continuous interpolation, T/S-curve speed profile and software limits. PEC series features USB ports, COM (RS-232) ports, 10/100 Base-T LAN ports, and CompactFlash slots. These interfaces provide the capability to easily expand peripheral devices and modules.

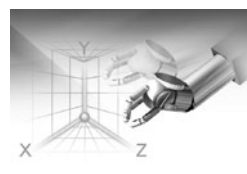
### Compact Size



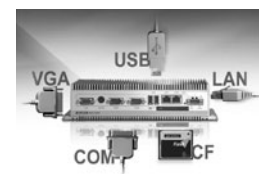
### Robust Design



### Advanced Motion Control



### Rich Interfaces



# Selection Guide

## Centralized Motion Control Solutions



Bus		PCI					ISA			PC/104
Category		Motion Control					Encoder	Motion Control	Encoder	Motion Control
Model		PCI-1220U	PCI-1240U	PCI-1243U	PCI-1244U	PCI-1245LT/65LT	PCI-1784U	PCL-839+	PCL-833	PCM-3240
Axes	Number of Axes	2	4	4	4	4/6	-	3	-	4
	Linear Interpolation	V	V	-	V	V	-	-	-	V
	2-axis Circle Interpolation	V	V	-	-	V	-	-	-	V
Advanced Functions	Encoder Channels	2	4	-	4	4/6	4	-	3	4
	Limit Switch Input Channels	4	8	8	8	8/12	-	6	-	8
	Home Input Channels	2	4	4	4	4/6	-	3	-	4
	Emergency Stop Input Channels	1	1	1	-	1	-	-	-	1
	Slow Down Limit Switches	4	8	-	8	8/12	-	6	-	8
	General Purpose DI Channels	6	12	8	-	8/20	4	16	2	12
	Servo On Output Channels	-	-	-	4	-	-	-	-	-
	General Purpose DO Channels	8	16	8	-	-/8	4	16	-	16
	Analog Input Channels	-	-	-	-	-/2	-	-	-	-
	BoardID Switch	V	V	V	V	V	V	-	-	V
	Position Compare Event	V	V	-	-	V	-	-	-	V
	Position Latch	-	-	-	-	V	-	-	-	-
Dimensions (mm)		175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	185 x 100	185 x 100	185 x 100	96 x 90
Connector		50-pin SCSI	100-pin SCSI	DB62	100-pin SCSI	100-pin SCSI 50-pin SCSI 20-pin IDC	DB37	1 x DB37 2 x 20-pin	1 x DB25	2 x 50-pin IDC
Wiring Boards		ADAM-3952 ADAM-3955	ADAM-3952 ADAM-3955	ADAM-3962	ADAM-39100	ADAM-3952 ADAM-3955	ADAM-3937	ADAM-3937 ADAM-3920	ADAM-3925	ADAM-3950 ADAM-3952
Page		19-10	19-10	19-11	19-11	19-12	online	online	online	19-10

## Embedded Motion Controller and Integrated I/O Controller



Model		PEC-3240	PEC-3710
CPU		Celeron M 1.0 GHz CPU	AMD LX800 500Hz CPU
Onboard RAM		512 MB DDR SDRAM	512 MB DDR SDRAM
Operating Systems		Windows XP Embedded	Windows CE, Windows XP
Motion Axes	Number of Axes	4	-
	Linear Interpolation	V	-
	2-axis Circle Interpolation	V	-
	General Inputs	12 (IN0 ~ 2 of each axis)	-
	General Outputs	16 (OUT4 ~ 7 of each axis)	-
Analog Input Channel		-	16 single-ended/ 8 differential
Analog Output Channel		-	4
Isolated Digital Input Channel		16	16
Isolated Digital Output Channel		16	16
Isolated Counter Channel		-	1
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## AMONet Distributed Motion Control Solutions

19  
Motion Control

20  
Serial & Wireless I/O

21  
Ethernet I/O



Bus		PCI	PCI-104	PC-104+
Category		Master Card		
Model		PCI-1202U	PCM-3202I	PCM-3202P
Advanced Functions	General Purpose DI Channels	8	-	-
	General Purpose DO Channels	4	-	-
	Remote Motion	V	V	V
	Remote I/O	V	V	V
Dimensions (mm)		175 x 100	96 x 90	96 x 90
Connectors		2 x RJ45	4 x RJ45	4 x RJ45
Digital I/O Slave Modules		AMAX-2752SY, AMAX-2754SY, AMAX-2756SY		
Motion Slave Modules		AMAX-2241/PMA, AMAX-2242/J2S, AMAX-2243/YS2		
Page		19-13	19-13	19-13

## AMONet Motion Slave Modules



Model		AMAX-2241/PMA	AMAX-2242/J2S	AMAX-2243/YS2
Axes	Number of Axes	4	4	4
	Linear Interpolation	V	V	V
	2-axis Circle Interpolation	V	V	V
Advanced Functions	Encoder Channels	4	4	4
	Limit Switch Input Channels	8	8	8
	Home Input Channels	4	4	4
	Emergency Stop Input Channels	1	1	1
	Slow Down Limit Switches	8	8	8
	Servo On Output Channels	4	4	4
	BoardID Switch	V	V	V
	Position Compare Event	V	V	V
	Position Latch	V	V	V
	Power Consumption		5W @24V typical	
Dimensions (L x W x H)		125 x 47.6 x 151 mm	125 x 47.6 x 151 mm	125 x 47.6 x 151 mm
Page		19-14	19-14	19-14

## Isolated Digital I/O Slave Modules



Model	AMAX-2752SY	AMAX-2754SY	AMAX-2756SY
Isolated Digital Input Channels	32	-	16
Isolated Digital Output Channels	-	32	16
Typical power consumption	1.2W	1.2W	1.2W
Maximum power consumption	13W	5W	8W
Dimensions (L x W x H)	125 x 47.6 x 151 mm	125 x 47.6 x 151 mm	125 x 47.6 x 151 mm
Page	19-15	19-15	19-15

# PEC-3240

## Intel® Celeron® M 1.0 GHz 4-axis Embedded Motion Controller with 32-ch Digital I/O



### Features

- Onboard Celeron® M 1.0 GHz CPU
- 2 x RS-232 ports
- Two 10/100Base-T RJ-45 ports
- 2 x USB ports (one with lockable cable mechanism)
- Windows® XP Embedded SP2 ready solution
- Independent 4-axis motion control
- 32-ch isolated Digital I/O (16-ch inputs and 16-ch outputs)
- 2/3-axis linear, 2-axis circular interpolation function
- Continuous interpolation
- Up to 4 Mpps output; up to 1MHz encoder input
- Two pulse output types: CW/CCW or pulse/direction
- Two encoder pulse input types: A/B or CW/CCW

### Introduction

PEC-3240 is a standalone embedded motion controller that provides 4-axis motion and 32 isolated digital inputs/outputs. This controller also supports serial communication ports and several other networking interfaces. The Windows XP Embedded OS offers a pre-configured image with optimized onboard device drivers. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with this application ready controller.

### Specifications

#### General

- **Certifications** CE, FCC Class A
- **Dimensions (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Power Consumption** 24 W (Typical)
- **Power Requirements** 10 ~ 30 V<sub>DC</sub> (e.g 24 V @ 2 A) (Min. 48 W), AT
- **Weight** 2.4 kg (Typical)
- **OS Support** Windows XP Embedded, Windows 2000/XP

#### System Hardware

- **CPU** Celeron M 1.0 GHz
- **Memory** 512 MB DDR SDRAM
- **Indicators** LEDs for Power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 2 x internal type I/II CompactFlash® slot

#### I/O Interface

- **Serial Ports** 2 x RS-232 with DB9 connectors
- **Serial Port Speed** 50 ~ 115.2 kbps
- **LAN** 2 x 10/100Base-T RJ-45 ports
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

#### Pulse Type Motion Control

- **Number of Axes** 4
- **Interpolation** 2-axis linear, 3-axis linear, 2-axis circular
- **Max. Output Speed** 4 Mpps
- **Step Count Range** ±2, 147, 483, 646
- **Pulse Output Type** CW/CCW or pulse/direction
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O** PEL x 4, MEL x 4, ORG x 4, ALM x 4, INP x 4, CMP x 4
- **General Inputs** 12 (INO ~ 2 of each axis)
- **General Outputs** 16 (OUT4 ~ 7 of each axis)

#### Encoder Interface

- **Input Type** Quadrature (x1, x2, x4 A/B phase) or CW/CCW
- **Input Range** 5 ~ 25 V
- **Isolation Protection** 1,000 V<sub>DC</sub>
- **Max. Input Frequency** 1 MHz

#### Isolated Digital Input

- **Channels** 16
- **Input Voltage** Logic 0: 2 V max.; Logic 1: 5 V min. (24 V max.)
- **Isolation Protection** 1,000 V<sub>DC</sub>

#### Isolated Digital Output

- **Channels** 16
- **Output Type** Sink Type (NPN)
- **Output Voltage** 5~40 V max.
- **Sink Current** 200 mA max. per channel
- **Isolation Protection** 1,000 V<sub>DC</sub>

#### Environment

- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** -10 ~ 65° C (14 ~ 149° F) @ 5 ~ 85% RH
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Shock Protection** IEC 68 2-27
- **Vibration Protection** CompactFlash: 50 G @ wall mount, half sine, 11 ms  
IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)  
CompactFlash: 2 Grms @ 5 ~ 500 Hz

### Ordering Information

- **PEC-3240** Celeron M 1 GHz 4-axis Motion Controller w/ DIO

#### Accessories

- **PCL-10251-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1m
- **PCL-10251-2** 100-pin SCSI to Two 50-pin SCSI Cable, 2m
- **PCL-10251-3** 100-pin SCSI to Two 50-pin SCSI Cable, 3m
- **PCL-10125-1** DB25 Cable, 1m
- **PCL-10125-3** DB25 Cable, 3m
- **ADAM-3952** 50-pin DIN-rail SCSI and Box Header Board
- **ADAM-3925** DB25 DIN-rail Wiring Board

# PEC-3710

**AMD LX800 500 MHz Controller  
with 16-ch AI, 4-ch AO  
and 32-ch Isolated DI/O**

**NEW**



## Features

- Onboard AMD LX800 500Hz CPU
- 2 x RS-232 ports
- Two 10/100Base-T RJ-45 ports
- 2 x USB ports (one with lockable cable mechanism)
- 16-ch single-ended or 8-ch differential or a combination of Analog Input
- 12-bit A/D converter, with up to 100kHz sampling rate
- Programmable gain
- Onboard FIFO memory (4,096 samples)
- 4-ch 12-bit Analog Output
- 16-ch Isolated Digital Input
- 16-ch Isolated Digital Output
- 1-ch Isolated Counter

## Introduction

PEC-3710 is a standalone automation controller that provides 16-ch Analog Input, 4-ch Analog Output, 16-ch Isolated Digital Input and 16-ch Isolated Digital Output. This controller also supports serial communication ports and several other networking interfaces. You can seamlessly integrate your applications into PEC-3710 and speed up your system development with this application ready controller.

## Specifications

### General

- Dimensions (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- Power Consumption** 24 W (Typical)
- Power Requirements** 10 ~ 30 V<sub>DC</sub> (e.g 24 V @ 2 A) (Min. 48 W), AT
- Weight** 2.4 kg (Typical)
- OS Support** Windows CE, Windows XP

### System Hardware

- CPU** AMD LX800 500 MHz
- Memory** 512 MB DDR SDRAM
- Indicators** LEDs for Power, IDE and LAN (Active, Status)
- Keyboard/Mouse** 1 x PS/2
- Storage** 2 x type I/II CompactFlash® slot (one internal)

### Environment

- Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- Operating Temperature** -10 ~ 60° C (14 ~ 140° F) @ 5 ~ 85% RH
- Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)

### I/O Interface

- Serial Ports** 2 x RS-232 with DB9 connectors
- LAN** 2 x 10/100Base-T RJ-45 ports
- USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

### Analog Input

- Channels** 16 single-ended/ 8 differential
- Resolution** 12 bits
- Max. Sampling Rate** 100 kS/s
- FIFO Size** 4,096 samples
- Overvoltage Protection** 30 V<sub>p-p</sub>
- Input Impedance** 1 GΩ
- Input Range** (V, software programmable)

<b>Unipolar</b>	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
<b>Bipolar</b>	±10	±5	±2.5	±1.25	±0.625
<b>Accuracy (% of FSR ±1LSB)</b>	0.1	0.1	0.2	0.2	0.4

### Analog Output

- Channels** 4
- Resolution** 12 bits
- Output Range** (Software programmable)  
Unipolar (V) 0 ~ 5, 0 ~ 10  
Bipolar (V) ±5, ±10  
Current Loop (mA) 0 ~ 20, 4 ~ 20
- Driving Capability** 5 mA
- Accuracy** Relative: ±1 LSB; Differential  
Non-Linearity: ±1 LSB (monotonic)
- Excitation Voltage** 48 V (max.)

### Isolated Digital Input

- Channels** 16
- Input Voltage** Logic 0: 2 V max.  
Logic 1: 5 V min. (30V max.)
- Isolation Protection** 1,000 V<sub>DC</sub>

### Isolated Digital Output

- Channels** 16
- Output Type** Sink Type (NPN)
- Output Voltage** 5~40 V<sub>DC</sub>
- Sink Current** 300 mA max. per channel
- Isolation Protection** 1,000 V<sub>DC</sub>

### Isolated Counter

- Channels** 1
- Resolution** 16 bits
- Input Voltage:** Logic 0: 2 V max.  
Logic 1: 5 V min. (30 V max.)
- Isolation Protection:** 1,000 V<sub>DC</sub>
- Max. Input Frequency** 1 MHz

## Ordering Information

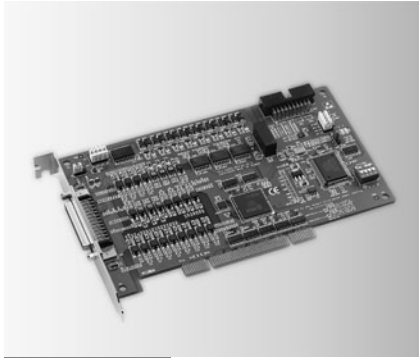
- PEC-3710** AMD LX800 500 MHz Controller w/ AI/O and DI/O

### Accessories

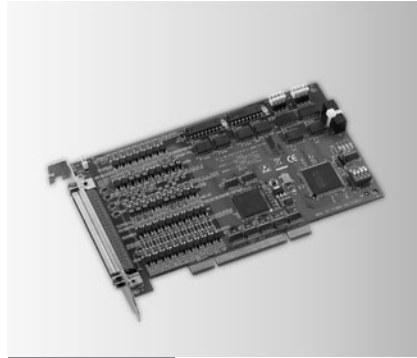
- PCL-10137-1** DB37 Cable, 1m
- PCL-10125-1** DB25 Cable, 1m
- ADAM-3925** DB25 DIN-rail Wiring Board
- ADAM-3937** DB37 DIN-rail Wiring Board

# PCI-1220U PCI-1240U PCM-3240

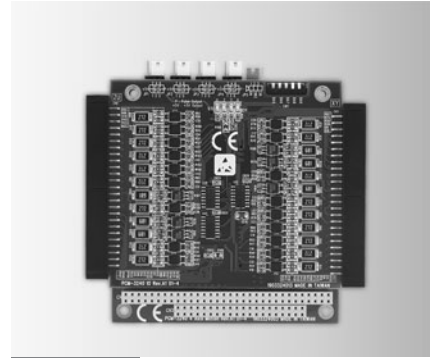
## 2-axis Stepping and Servo Motor Control Universal PCI Card 4-axis Stepping and Servo Motor Control Universal PCI Card 4-axis Stepping and Servo Motor Control PC/104 Card



PCI-1220U



PCI-1240U



PCM-3240



### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** 2
- **Interpolation** 2-axis linear, 2-axis circular
- **Max. Output Speed** 4 Mpps
- **Step Count Range**  $\pm 2,147,483,646$  (32 bits)
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type) or CW/CCW (2-pulse type)
- **Position Counters** Range of command and actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O Interfaces** PEL x 2, MEL x 2, ORG x 2  
Servo Driver Interfaces: ALM x 2, INP x 2  
Position Compare I/O: CMP x 2  
General Input: 6 (X\_IN0 ~ 2, Y\_IN0-2)  
General Output: 8 (X\_OUT4 ~ 7, Y\_OUT4-7)

#### Encoder Interface

- **Input Type** Quadrature (A/B phase) or up/down
- **Counts /Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 0 ~ 2 V<sub>DC</sub> for low; 5 ~ 30 V<sub>DC</sub> for high
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Freq.** 1 MHz

#### General

- **Bus Type** Universal PCI V2.2
- **Certifications** CE, FCC Class A
- **Connectors** 1 x 50-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA  
Max.: 5 V @ 1 A
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temp.** -20 ~ 85° C (-4 ~ 185° F)

### Ordering Information

- **PCI-1220U** 2-axis Stepping and Servo Motor Control PCI Card

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** 4
- **Interpolation** 2-axis linear, 3-axis linear, 2-axis circular
- **Max. Output Speed** 4 Mpps
- **Step Count Range**  $\pm 2,147,483,646$
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type) or CW/CCW (2-pulse type)
- **Position Counters** Range of command and actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O Interfaces** PEL x 4, MEL x 4, ORG x 4  
Servo Driver Interfaces: ALM x 4, INP x 4  
Position Compare I/O: CMP x 4  
General Input: 12 (IN0 ~ 2 of each axis)  
General Output: 16 (OUT4 ~ 7 of each axis)

#### Encoder Interface

- **Input Type** Quadrature (A/B phase) or up/down
- **Counts /Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 5 ~ 25 V
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Freq.** 1 MHz

#### General

- **Bus Type** Universal PCI V2.2
- **Certifications** CE, FCC Class A
- **Connectors** 1 x 100-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA  
Max.: 5 V @ 1 A
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temp.** -20 ~ 85° C (-4 ~ 185° F)

### Ordering Information

- **PCI-1240U** 4-axis Servo Motor Control PCI Card

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** 4
- **Interpolation** 2-axis linear, 3-axis linear, 2-axis circular
- **Max. Output Speed** 4 Mpps
- **Step Count Range**  $\pm 2,147,483,646$
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type), or CW/CCW (2-pulse type)
- **Position Counters** Range of command, range of actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O Interfaces** PEL x 4, MEL x 4, ORG x 4  
Servo Driver Interfaces: ALM x 4, RDY x 4, SVON x 4, INP x 4  
Position Compare I/O: CMP x 4  
General Input: 12  
General Output: 16

#### Encoder Interface

- **Input Type** Quadrature (A/B phase or up/down)
- **Counts /Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 5 ~ 25 V
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Freq.** 1 MHz

#### General

- **Bus Type** PC/104
- **Certifications** CE, FCC Class A
- **Connectors** 2 x IDC 50-pin male connector
- **Dimensions (L x H)** 96 x 90 mm (3.8" x 3.5")
- **Power Consumption** Typical: 5 V @ 850 mA  
Max.: 5 V @ 1 A
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temp.** -20 ~ 85° C (-4 ~ 185° F)

### Ordering Information

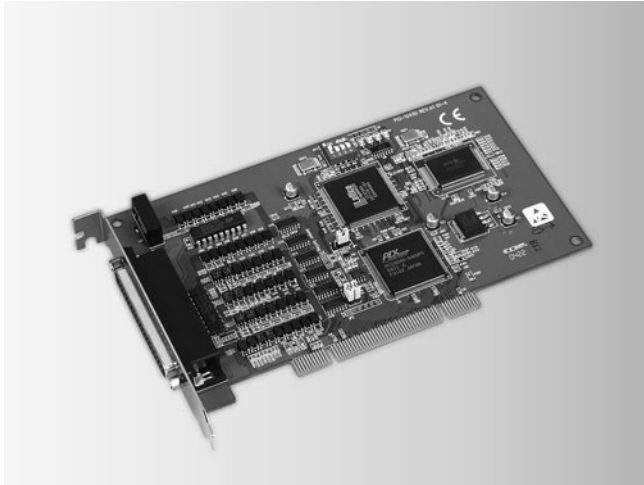
- **PCM-3240** 4-axis Stepping/Servo Motor Control PC/104 Card

# PCI-1243U PCI-1244U

## 4-axis Stepping Motor Control Universal PCI Card

## Entry-level 4-axis Stepping and Servo Motor Control Universal PCI Card

19  
Motion Control  
20  
Serial & Wireless I/O  
21  
Ethernet I/O



PCI-1243U RoHS COMPLIANT PRODUCT CE FCC

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Stepping
- **Number of Axes** 4
- **Max. Output Speed** 400 kpps
- **Step Count Range** 0 ~ 16, 777, 215
- **Pulse Output Type** Pulse/Direction, CW/CCW
- **Position Counters** ±16, 777, 215
- **Home Modes** 4
- **Velocity Profiles** T or S-curve acceleration/deceleration
- **Local I/O Interfaces** PEL x 4, NEL x 4, ORG x 4, SLD x 4, EMG x 1 General Inputs: 8 General Outputs: 8

#### Isolated Digital Input

- **Channels** 8
- **Input Voltage** Logic 0: 1 V  
Logic 1: 12 V (24 V max.)
- **Isolation Protection** 3,750 VRMS
- **Opto-isolator Response** 25µs
- **Input Resistance** 4.7 kΩ

#### Isolated Digital Output

- **Channels** 8
- **Output Type** Sink (NPN)
- **Isolation Protection** 3,750 VRMS
- **Output Voltage** 5 ~ 30 V<sub>DC</sub>
- **Sink Current** 200 mA max./channel; 1.1 A max. total
- **Opto-isolator Response** 25µs

#### General

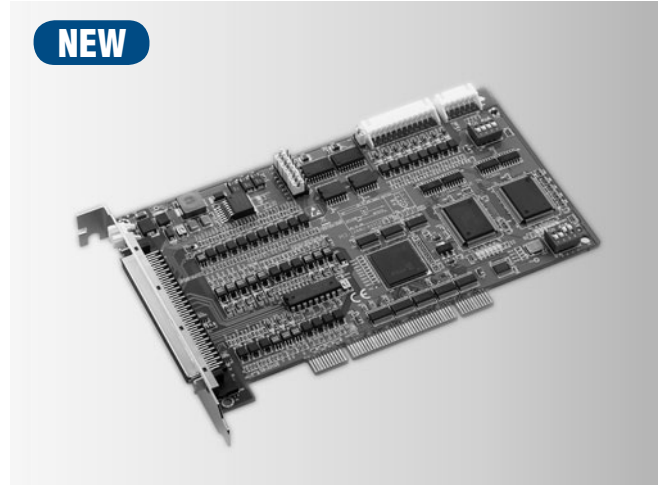
- **Bus Type** PCI V2.2
- **Certifications** CE, FCC Class A
- **Connectors** 1 x DB-62 female
- **Dimensions** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 340 mA Max: 5 V @ 500 mA
- **Storing Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- **Storing Temperature** -20 ~ 80° C (-4 ~ 170° F)

### Ordering Information

- **PCI-1243U** 4-axis Stepping Motor Control Card

#### Accessories

- **PCL-10162-1** DB-62 Cable Assembly, 1 M
- **PCL-10162-3** DB-62 Cable Assembly, 3 M
- **ADAM-3962** DB-62 wiring terminal with DIN-rail mounting
- **ADAM-3943** PCI-1243U wiring board with LED



PCI-1244U RoHS COMPLIANT PRODUCT CE FCC

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** 4
- **Interpolation** 2-axis linear
- **Max. Output Speed** 2.4 Mpps
- **Step Count Range** 0 ~ 268,435,455 (28-bit)
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type) or CW/CCW (2-pulse type)

- **Position Counters** Range of command and actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O Interfaces** PEL x 4, MEL x 4, ORG x 4  
Servo Driver Interfaces: ALM x 4, INP x 4  
General Input: 12 (IN0 ~ 2 of each axis)  
General Output: 16 (OUT4 ~ 7 of each axis)

#### Encoder Interface

- **Input Type** Quadrature (A/B phase) or up/down
- **Counts per Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 5 ~ 25 V
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Frequency** 1 MHz

#### General

- **Bus Type** Universal PCI V2.2
- **Certifications** CE, FCC Class A
- **Connectors** 1 x 100-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** 5 V @ 900 mA max.
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 50° C (32 ~ 122° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)

### Ordering Information

- **PCI-1244U** Entry-level 4-axis Servo Motor Control PCI Card

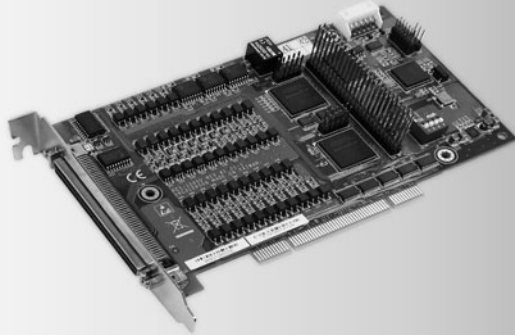
#### Accessories

- **ADAM-39100** 100-pin DIN-rail SCSI Wiring Board
- **PCL-101100M-1** 100-pin SCSI Cable, 1 m
- **PCL-101100M-3** 100-pin SCSI Cable, 3 m

# PCI-1245LT/1265LT

## DSP-based 4/6-axis Stepping and Servo Motor Control Universal PCI Card

NEW



RoHS COMPLIANT PRODUCT CE FCC

### Features

- Up to 10 MHz encoder input to each axis
- Pulse output up to 6 Mpps / axis
- Hardware emergency input
- Watchdog timer
- Position latch via ORG & index signal
- Position compare triggering up to 100 KHz
- Programmable interrupt
- Memory buffer for trajectory planning
- Security function for software protection
- Supports gantry control
- E-CAM, E-Gear support
- Supports helical interpolation

### Introduction

PCI-1245LT/1265LT are a 4/6-axis Universal PCI (supports both 3.3 V and 5 V signal slot) stepping/pulse-type servo motor control cards designed for general-purpose extreme motion applications. PCI-1245LT/1265LT simplifies stepping and pulse-type servo motor control, giving added performance. Each card is bundled with DSP and FPGA controllers which can add a variety of advanced motion control functions, such as 2 to 4/6-axis linear interpolation, 2-axis circular interpolation, T/S-curve acceleration/deceleration rate and more. In addition, the PCI-1245LT/1265LT perform motion control functions without processor loading during driving. For advanced applications, Advantech supplies Windows DLL drivers and user-friendly examples to decrease programming load. Moreover, through a free bundled Advantech common motion utility, users can easily complete configuration and diagnosis.

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo/stepping
- **Number of Axes** 4 (PCI-1245LT)  
6 (PCI-1265LT)
- **Interpolation** 2 to 6-axis linear, 2-axis circular
- **Max. Output Speed** 6 Mbps
- **Step Count Range**  $\pm 2, 147, 483, 646$
- **Pulse Output Type** Pulse/direction (1-pulse, 1-direction type) or CW/CCW (2-pulse type)
- **Position Counters** Range of command and actual position
- **Velocity Profiles** T-Curve, S-Curve
- **Local I/O**
  - Machine Interfaces: PEL x 4, MEL x 4, ORG x 4
  - Servo Driver Interfaces: ALM x 4, INP x 4
  - Position Compare I/O: CMP x 4
  - General Digital Input: 8 (PCI-1245LT), 20 (PCI-1265LT)
  - General Digital Output: 8 (PCI-1265LT)
  - Analog Input: 2 (PCI-1265LT)

#### Encoder Interface

- **Input Type** Quadrature (A/B phase) or up/down
- **Counts per Enc. Cycle** x1, x2, x4 (A/B phase only)
- **Input Range** 5 ~ 25 V
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Frequency** 10 MHz

#### General

- **Bus Type** Universal PCI V2.2
- **Connectors** 1 x 100-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA  
Max.: 5 V @ 1 A
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temperature** -20 ~ 85° C (-4 ~ 185° F)

### Ordering Information

- **PCI-1245LT** 4-axis Stepping/Servo Control Universal PCI Card
- **PCI-1265LT** 6-axis Stepping/Servo Control Universal PCI Card

#### Accessories

- **ADAM-3955** 50-pin DIN-rail SCSI 2-axis motion wiring board
- **ADAM-3952** 50-pin DIN-rail SCSI and Box Header Board
- **ADAM-39100** 100-pin DIN-rail SCSI Wiring Board
- **PCL-101100M-1** 100-pin SCSI Cable, 1 m
- **PCL-101100M-3** 100-pin SCSI Cable, 3 m
- **PCL-10251-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10251-2** 100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **PCL-10251-3** 100-pin SCSI to Two 50-pin SCSI Cable, 3 m

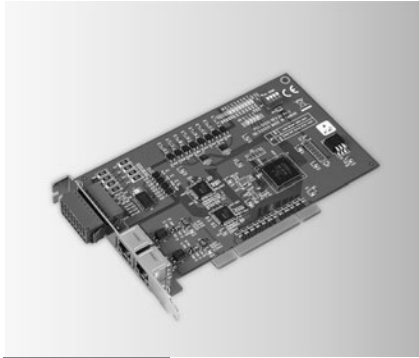
# PCI-1202U PCM-3202I PCM-3202P

2-port AMONet RS-485 PCI Master Card

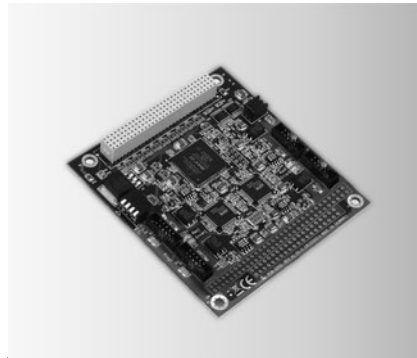
2-port AMONet RS-485 PCI-104 Master Card

2-port AMONet RS-485 PC/104+ Master Card

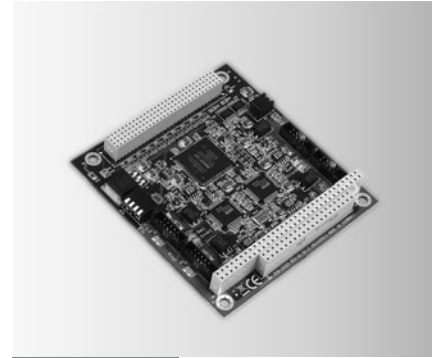
19  
Motion Control  
20  
Serial & Wireless I/O  
21  
Ethernet I/O



PCI-1202U



PCM-3202I



PCM-3202P



## Specifications

### AMONet RS-485 Motion Control

- **AMONet RS-485** 2 rings
- **Interface** Half duplex RS-485
- **Cable Type** CAT5 UTP/STP Ethernet cable and above
- **Surge Protection** 10 kV
- **Transmission Speeds** 2.5, 5, 10, and 20 Mbps
- **Data Flow Control** Automatic
- **Communication** 100 m @ 20 Mbps w/32 slave modules  
Distance (Max.)  
100 m @ 10 Mbps w/64 slave modules
- **Slave Module** Digital I/O, Motion Control, Analog I/O

### Isolated Digital Input

- **Channels** 8
- **Input Voltage** Dry contact (need external voltage source)
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Input Resistance** 2.4 kW @ 0.5 W

### Isolated Digital Output

- **Channels** 4
- **Output Type** Open collector
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Output Voltage** 10 ~ 30 V<sub>DC</sub>
- **Sink Current** 1 ch: Max. 1A  
4 ch: Max. 1.1A (total)

### General

- **Bus Type** Universal PCI V2.2
- **Certifications** CE, FCC Class A
- **Connectors** 2 x RJ45
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** 5 VDC @ 0.5 A typical
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temp.** -20 ~ 85° C (-4 ~ 185° F)

## Ordering Information

- **PCI-1202U** 2-port AMONet RS-485 PCI Master Card

## Specifications

### AMONet RS-485 Motion Control

- **AMONet RS-485** 2 rings
- **Interface** Half duplex RS-485
- **Cable Type** CAT5 UTP/STP Ethernet cable
- **Surge Protection** 10 kV
- **Transmission Speeds** 2.5, 5, 10, and 20 Mbps
- **Data Flow Control** Automatic
- **Communication** 100 m @ 20 Mbps w/32 slave modules  
Distance
- **Slave Module** Digital I/O, Motion Control, Analog I/O

### General

- **Bus Type** PCI-104
- **Certifications** CE, FCC Class A
- **Connectors** 4 x 10-pin box header
- **Dimensions (L x H)** 96 x 90 mm (3.8" x 3.5")
- **Power Consumption** 5 V<sub>DC</sub> @ 0.5 A typical
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temp.** -20 ~ 85° C (-4 ~ 185° F)

## Ordering Information

- **PCM-3202I** 2-port AMONet RS-485 PCI-104 Master Card

## Specifications

### AMONet RS-485 Motion Control

- **AMONet RS-485** 2 rings
- **Interface** Half duplex RS-485
- **Cable Type** CAT5 UTP/STP Ethernet cable
- **Surge Protection** 10 kV
- **Transmission Speeds** 2.5, 5, 10, and 20 Mbps
- **Data Flow Control** Automatic
- **Communication** 100 m @ 20 Mbps w/32 slave modules  
Distance
- **Slave Module** Digital I/O, Motion Control, Analog I/O

### General

- **Bus Type** PC/104+
- **Certifications** CE, FCC Class A
- **Connectors** 10-pin box header x 4
- **Dimensions** 96 x 90 mm (3.8" x 3.5")
- **Power Consumption** +5 V<sub>DC</sub> @ 0.5 A typical
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temp.** 0 ~ 60° C (32 ~ 140° F)
- **Storing Temp.** -20 ~ 85° C (-4 ~ 185° F)

## Ordering Information

- **PCM-3202P** 4-port PC/104+ AMONet RS-485 Master Card

# AMAX-2240 Series

## 4-axis AMONet Motion Slave Modules



### Features

- Max. 20 Mbps transfer rate
- Max. 6.5 MHz, 4-axis pulse output
- 28 bits counter for incremental encoder
- 2 ~ 4-axis linear interpolation
- 2-axis circular interpolation
- T-curve and S-curve velocity profiles support
- Change speed on-the-fly
- Easy installation with RJ45 phone jack and LED diagnostic
- Easy installation for servo or stepping motor driver
- Suitable for DIN-rail mounting

### Introduction

AMAX-2240 series is used to increase the number of axes for an AMONet RS-485 decentralized motion control network. These extension slave modules connect serially by a simple and affordable Cat.5 LAN cable, reducing the wiring between driver and controller. This is very suitable for highly integrated machine automation applications. Please select cable 20-pin SCSI and plug this cable into the motor driver and motion slave module.

### Specifications

#### Pulse Type Motion Control

- **Motor Driver Support** Pulse-type servo
- **Number of Axes** 4
- **Interpolation** Linear or circular
- **Max. Output Speed** 6.5 Mpps
- **Step Count Range**  $\pm 134, 217, 728$
- **Pulse Output Type** OUT/DIR, CW/CCW, A/B phase
- **Position Counter**  $\pm 134, 217, 728$
- **Home Modes** 13
- **Velocity Profiles** T-curve, S-curve
- **Local I/O**
  - Machine Interfaces: EL+ x 4, EL- x 4, ORG x 4, SD x 4
  - Servo Driver Interfaces: ALM x 4, RDY x 4, SVON x 4, INP x 4, ERC x 4
  - Position Compare I/O: LTC x 4, CMP x 4

#### Encoder Interface

- **Input Type** A/B phase, CW/CCW
- **Counts per Enc. Cycle** x1, x2, x4 (AB phase only)
- **Input Range** Compatible with TIA/EIA-422 differential line driver  
I :  $\pm 20$  mA, VOD :  $\pm 2$  V/min
- **Isolation Protection** 2,500 V<sub>RMS</sub>
- **Max. Input Frequency** 2 MHz @ 5 V

#### General

- **Bus Type** AMONet RS-485
- **Certifications** CE, FCC Class A
- **Connectors** 2 x RJ45 and 8 x 20-pin SCSI (AMAX-2242/J2S)  
4 x 50-pin SCSI (AMAX-2241/PMA and AMAX-2243/YS2)
- **Dimensions (L x W x H)** 125 x 47.6 x 151 mm (4.9" x 1.8" x 5.9")
- **Power Consumption** 5 W @ 24 V typical
- **Power Input** 24 V<sub>DC</sub> within 200 mV ripple
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)

### Ordering Information

- **AMAX-2241/PMA** 4-axis AMONet Motion Module for Panasonic Minus A
- **AMAX-2242/J2S** 4-axis AMONet Motion Module for Mitsubishi MR-J2S
- **AMAX-2243/YS2** 4-axis AMONet Motion Module for Yaskawa Sigma-II

#### Accessories

- **PCL-10220M-2** 20-pin SCSI Cable, 2 m
- **PCL-10150M-2** 50-pin SCSI Cable, 2 m
- **ADAM-3940** 40-pin Wiring Board with LED

# AMAX-2750SY Series

## 32-ch Isolated Digital Input/Output Slave Modules



### Features

- Max. 20 Mbps transfer rate
- Onboard terminal for direct wiring
- Easy installation with RJ45 phone jack and LED diagnostic
- LED indicator for each IO channel (switch by SW4)
- Selection of I/O-channel configuration (32-ch DI, 32-ch DO or 16/16-ch Digital I/O)
- 2,500 V<sub>RMS</sub> Isolation voltage
- Suitable for DIN-rail mounting

### Introduction

The AMAX-2750SY series consists of digital slave modules for AMONet RS-485 that extend the digital I/O capacity. All the digital I/O slave extension modules are connected serially with a simple Cat.5 cable. This reduces wiring between driver and controller and is very suitable for highly integrated machine automation applications. High speed, scalability and cost-effectiveness ensures a solid solution for machine builders. There are 3 main types of digital I/O slave modules, 32-ch digital input, 32-ch digital output, and 16/16-ch digital input/output. With these slave modules, you can connect actuators/sensors directly with minimum hassle. You can access I/O points nearby or 100 meters away using simple and low-cost wiring, and the high speed of AMONet RS-485 makes it possible to scan 2,048 I/O channels in 1.04 ms.

### Specifications

#### Isolated Digital Input

- **Channels** AMAX-2752SY: 32 (4 ports)  
AMAX-2756SY: 16 (2 ports)
- **Input Type** Dry contact
- **Isolation Protection** 2,500 V<sub>RMS</sub>
- **Opto-Isolator Response** 18  $\mu$ s
- **Input Resistance** 1 k $\Omega$  @ 0.5 W

#### Isolated Digital Output

- **Channels** AMAX-2754SY: 32 (4 ports)  
AMAX-2756SY: 16 (2 ports)
- **Output Type** Sink (NPN) (open collector Darlington transistors)
- **Isolation Protection** 2,500 V<sub>RMS</sub>
- **Output Voltage** 10 ~ 30 V<sub>DC</sub>
- **Sink Current** 1 ch: 500 mA (1 port)  
150 mA/ea. for multiple-channel usage, total 1.1A max.

#### General

- **Bus Type** AMONet RS-485
- **Certifications** CE, FCC Class A
- **Connectors** 2 x RJ45 and 2 x 40-pin wiring board
- **Dimensions (L x W x H)** 125 x 47.6 x 151 mm (4.9" x 1.8" x 5.9")
- **Power Consumption** AMAX-2752SY: 1.2 W typical, 13 W max.  
AMAX-2754SY: 1.2 W typical, 5 W max.  
AMAX-2756SY: 1.2 W typical, 8 W max.
- **Power Input** 24 V<sub>DC</sub> within 200 mA ripple
- **Power Supply for DIO** 10 ~ 30 V<sub>DC</sub> (Current < 2A)
- **Humidity** 5 ~ 95% RH, non-condensing (IEC 68-2-3)
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)

### Ordering Information

- **AMAX-2752SY** 32-ch Isolated Digital Input AMONet Module
- **AMAX-2754SY** 32-ch Isolated Digital Output AMONet Module
- **AMAX-2756SY** 16/16-ch Isolated Digital I/O AMONet Module

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Motion Control

20  
Serial & Wireless I/O

21  
Ethernet I/O

# Accessories

## DIN-rail Terminal Boards

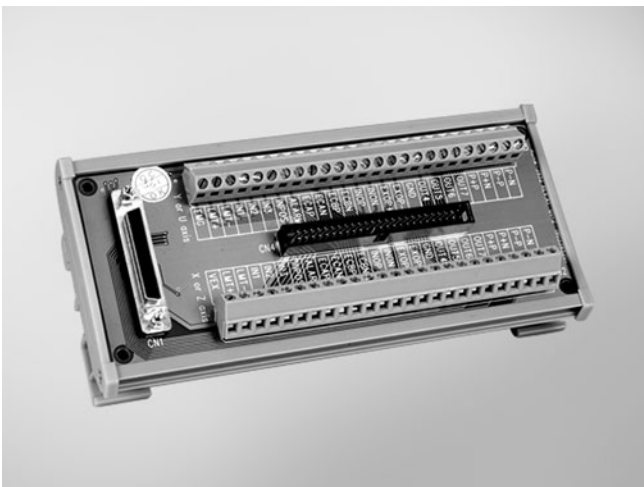


### ADAM-3940

40-pin Wiring Board with LED for AMAX-2241/2242/2243

#### Features

- DIN-rail wiring board for AMAX-2240 series applications
- Dimensions (W x L x H): 160 x 50 x 43 mm (6.3" x 2" x 1.7")
- 40-pin box header connector
- LED indicators

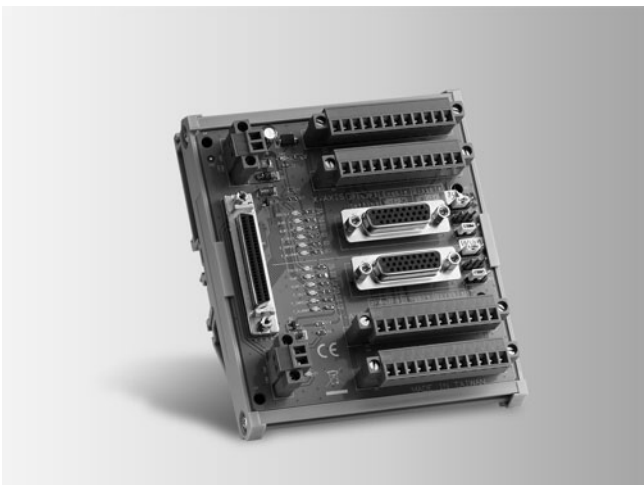


### ADAM-3952

PCI-1240U/PCM-3240 50-pin SCSI and IDC DIN-rail Wiring Board

#### Features

- DIN-rail wiring board for PCI-1240U/PCM-3240 application
- Case dimensions (W x L x H): 77.5 x 179.5 x 41.5 mm (3.1" x 7.1" x 1.6")
- 50-pin SCSI and IDC connectors



### ADAM-3955

50-pin SCSI DIN-rail Motion Wiring Board

#### Features

- DIN-rail wiring board for PCI-1220U/1240U/1245LT/1265LT/PCM-3240/PEC-3240 application
- Dimensions (W x L x H): 103 x 120 x 45 mm (4.12" x 4.8" x 1.8")
- DB-26 and connector
- LED indicators