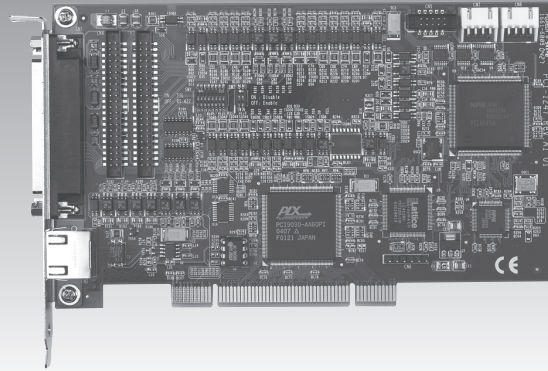# PCI-1247

4-axis Motion Control Card with AMONet™ RS-485 Master

NEW

CE

Features

- Max. 6.5 MHz, 4-axis pulse output
- Linear, circular and continuous interpolation
- High speed position latch function
- Manual pulse generator input interface
- Simultaneously start/stop on multiple axes
- Programmable acceleration and deceleration time
- Programmable pulse output and interrupt
- Position compare and trigger output
- 1 Ring of AMONet™ RS-485 master
- Programmable baud-rate up to 20 Mbps transfer rate
- Max. 64 AMONet digital slave modules support
- Easy installation with RJ45 phone jack and LED diagnostic

Introduction

PCI-1247 is an advanced motion controller with two major functions: 4-axis motion control (ASIC), and high-speed distributed motion control with AMONet™ RS-485.

With its 4-axis motion control functions, PCI-1247 provides 4 axes of liner interpolation, 2 axes of circular interpolation and also continuous interpolation with velocity continuity. There are 13 homing modes for different machine designs, and position compare and trigger output functions are supported to interface with applications such as on-the-fly image acquisition. For applications like tool length measurement, it provides position latch and interrupt functions. PCI-1247 provides digital I/O interfaces that are dedicated to servo drivers/motors, (e.g. ALM, INP, ERC) and also digital I/O interfaces that are dedicated to machines (e.g. ORG, PEL, EMG). These dedicated I/O signals guarantees functionality via hardware and therefore reduces software loading.

AMONet™ RS-485 is a new series of products designed for versatile and distributed automation applications with special motion control requirements. PCI-1247 is equipped with 1 master, that can connect with up to 64 slave modules .There are 2 categories of slave modules, one for motion control, and one for digital I/O. For motion control slave modules, there are 4 types of 1-axis motion modules in the ADAM-3210 Series. For digital I/O slave modules, there are 4 types, 32-IN, 32-OUT, 16-IN & 16-OUT and 24-IN & 8-OUT.

Specifications

Motion Control

- **Pulse Output Modes** ±OUT/DIR, ±CW/CCW
- **Pulse Output Rates** Max. 6.5 Mpps / Min. 0.05 pps
- **Position Range** 28 bits(±134,217,728 pulses)
- **Home Return Modes** 13 types
- **Velocity Profiles** T-curve, S-curve
- **Interpolation Modes** linear, circular and continuous
- **Counter for Encoder Feedback Signals** 28 bits up/down x 4
- **Position Latch Inputs** LTC x 4
- **Position Compare Outputs** CMP x4
- **Incremental Encoder Inputs** ±EA x 4, ±EB x 4
- **Encoder Index Signal Inputs** ±EZ x 4
- **Machine Interfaces** PEL x 4, MEL x 4, ORG x 4, SLD x 4
- **Servo Driver Interface** ALM x 4, RDY x 4, SVON x 4, INP x 4, ERC x 4
- **Simultaneous Start/Stop Motion Inputs** STA, STP
- **General Inputs** IN x 3
- **General Outputs** OUT x 4
- **I/O Pin Type** Optically isolated with 2.5 kVrms on all 68 SCSI pins

General

- **PCI Spec. 2.2** Supports 32-bit, 3.3/5 V_{DC} operation
- **Power Consumption** +5 V_{DC} @ 0.5 A typical
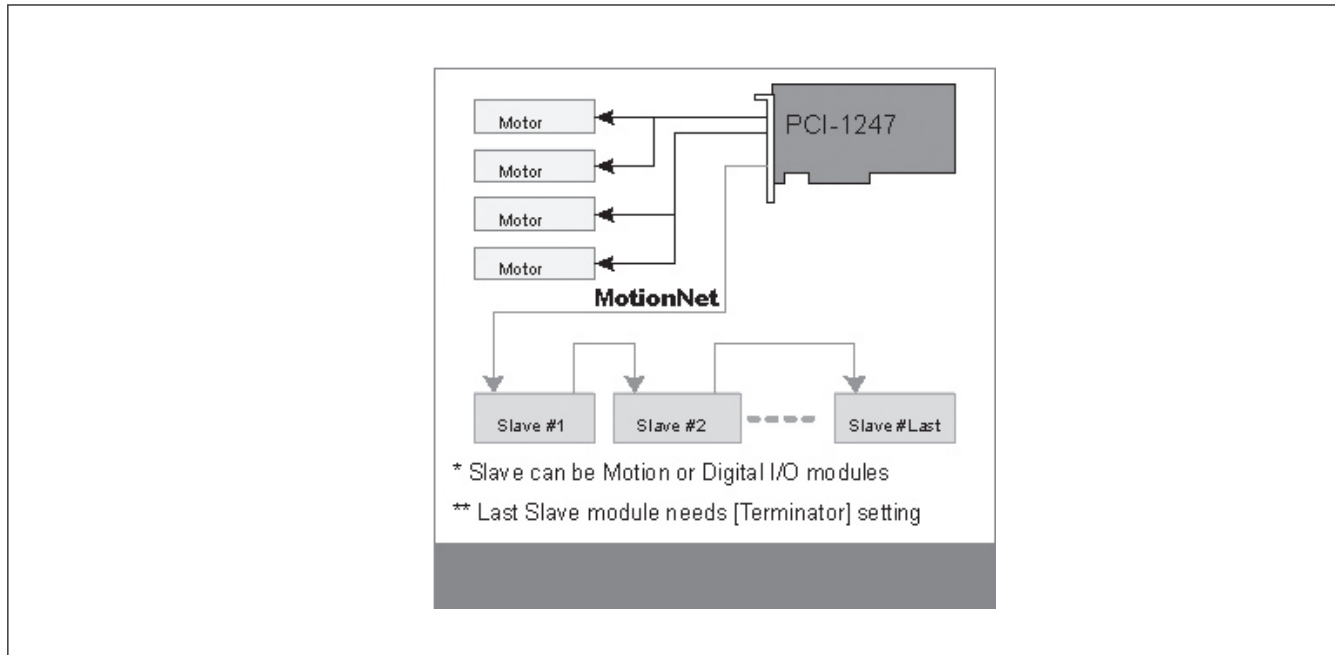- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)

AMONet™ RS-485

- **Number of Rings** 1
- **Serial Interface** Half duplex RS-485 with transformer isolation
- **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 Distance** Max. 100 m (20 Mbps / 64 slave modules)
- **DI/O Slave Refresh Rate** 2048 points in 1.04 ms
- **Slave Module Function** Digital I/O slave module
  Motion slave module

Ordering Information

- **PCI-1247** 4-axis Motion Control Card with AMONet Master

ADVANTECH **Motion Control**

Last updated : 1-Apr-2005

PCI-1247

1
Software

2
IPPC

3
TPC

4
FPM

5
ATM & AWS

6
DA&C

7
cPCI

8
ADAM-3000

9
Motion Control

10
ICOM

11
eConnectivity

12
UNO

13
ADAM-4000

14
ADAM-5000

15
ADAM-6000

16
ADAM-8000

17
BAS

System Architecture

Accessories

- **ADAM-3210**   1-Axis Motion Slave Module
- **ADAM-3211/PMA**   1-Axis Motion Slave for Panasonic® Minas A
- **ADAM-3212/J2S**   1-Axis Motion Slave for Mitsubishi® MR-J2S
- **ADAM-3213/YS2**   1-Axis Motion Slave for Yaskawa® Sigma-II
- **ADAM-3968M**   68-pin Motor Wiring Board
- **ADAM-3968M/PMA**   Terminal Board for Panasonic® Minas A
- **ADAM-3968M/J2S**   Terminal Board for Mitsubishi® MR-J2S
- **ADAM-3968M/YS2**   Terminal Board for Yaskawa® Sigma-II
- **ADAM-3752**   32-ch Digital Input Module
- **ADAM-3754**   32-ch Digital Output Module
- **ADAM-3756**   16-ch/16-ch Digital Input/Output Module
- **ADAM-3758**   24-ch/8-ch Digital Input/Output Module
- **PCL-10168M-2**   68-pin SCSI cable, 2m (One PCI-1247 works with two optional PCL-10168M-2)
- **PCL-10120M-2**   SCSI 20-pin cable, 2m (Optional for ADAM-3212/J2S)
- **PCL-10150M-2**   SCSI 50-pin cable, 2m (Optional for ADAM-3211/PMA and ADAM-3213/YS2)

Software

- **Windows® 2000/XP WDM Driver**
  Supports BCB/VB/VC++ programming on Windows® 2000/XP platforms with DLL
- **MotionNAVI**
  MotionNAVI is a Windows® utility for testing motion control functions
- **AMONet EzLink**
  AMONet EzLink is a Windows® utility for testing AMONet RS-485 configurations