# PCI-1245/1265

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

**NEW**



PCI-1245     PCI-1265

RoHS COMPLIANT 2002/95/EC   CE FCC
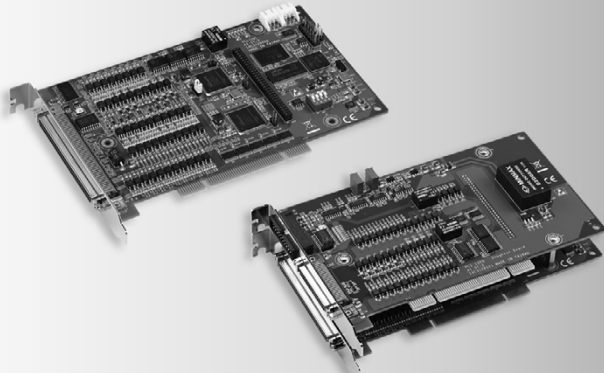
## Features

- Encoder input is 10 MHz for 4xAB mode, 2.5 MHz for CW/CCW mode
- Pulse output up to 5 Mpps
- Memory buffer (10K points) for trajectory planning which is designed in DSP
- Supports E-Gear, and helical interpolation
- Supports E-CAM providing 256 points to describe the CAM profiles which buffers located in DSP
- Hardware emergency input
- Watchdog timer
- Position latch via ORG & index signal
- Position compare triggering up to 100 KHz, and memory buffer is up to 100 K points in DSP
- Programmable interrupt
- Supports gantry mode by semi-closed loop pulse train control
- RDY/LTC-dedicated input channels & SVN/TrigP/CAM-DO/ERC-dedicated output channels are switchable for general input and output purposes

## Introduction

PCI-1245/1265 is a 4/6-axis universal PCI (supporting both 3.3 V and 5 V signal slot) stepping/pulse-type servo motor control card designed for applications which need to control interpolation, synchronization among multiple axes, continuous contouring and high speed triggering to integrated machine vision solution. PCI-1245/1265 utilizes the high-performance DSP and FPGA to calculate the motion trajectories, synchronization timing control for multiple axes and input/output handling to offer functionality, such as up to 4-axis linear interpolation for PCI-1245 and up to 6-axis linear interpolation for PCI-1265, 2-axis circular interpolation, helical interpolation, T/S-curve acceleration/deceleration rate and so on. In addition, Advantech supplies a Common Motion API library, graphical utility and user-friendly examples to decrease programming load, helping users complete configuration and diagnosis easily.

## Specifications

### Pulse Type Motion Control

- **Motor Driver Support**     Pulse-type servo/stepping
- **Number of Axis**     PCI-1245: 4
                          PCI-1265: 6
- **Interpolation**     2 to 6-axis linear, 2-axis circular, X-Y plane with Z thread helical interpolation
- **Max. Output Speed**     5 Mbps
- **Step Count Range**     ±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:     LMT+, LMT-, ORG
  Servo Driver Interfaces:     ALM, INP
  Position Compare I/O:     TrigP
  General Digital I/O:     PCI-1245: 16-ch DI, 16-ch DO (RDY/LTC pin can be switchable to general-purpose input and CAM-DO/TrigP/SVN/ERC pin to general-purpose output)
  PCI-1265: 32-ch DI, 32-ch DO (RDY/LTC pin can be switchable to general-purpose input and CAM-DO/TrigP/SVN/ERC pin to general-purpose output)
  Analog Input:     2 (PCI-1265 only)

### 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 ~ 15 V
- **Isolation Protection**     2,500 $V_{DC}$
- **Max. Input Frequency**     10 MHz under 4xAB mode

### General

- **Bus Type**     Universal PCI V2.2
- **Connectors**     PCI-1245: 1 x 100-pin SCSI female connector
                      PCI-1265: 1 x 100-pin SCSI female connector & 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 Temperature**     0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature**     -20 ~ 85°C (-4 ~ 185°F)

## Ordering Information

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

### Accessories

- **ADAM-3955-AE**     50-pin DIN-rail SCSI 2-axis Motion Wiring Board
- **ADAM-3952-AE**     50-pin DIN-rail SCSI and Box Header Board
- **ADAM-39100-AE**     100-pin DIN-rail SCSI Wiring Board
- **PCL-101100M-3E**     100-pin SCSI Cable, 3 m
- **PCL-10251-1E**     100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10251-2E**     100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **PCL-10251-3E**     100-pin SCSI to Two 50-pin SCSI Cable, 3 m
- **PCL-10153PA5-2E**     50-pin Cable from ADAM-3955 to Panasonic A4 and A5 Servo, 2 m
- **PCL-10153YS5-2E**     50-pin Cable from ADAM-3955 to Yaskawa Sigma V Servo, 2 m
- **PCL-10153MJ3-2E**     50-pin Cable from ADAM-3955 to Mitsubishi J3 Servo, 2 m

**Online Download** www.advantech.com/products     **ADVANTECH**