PCI-1245
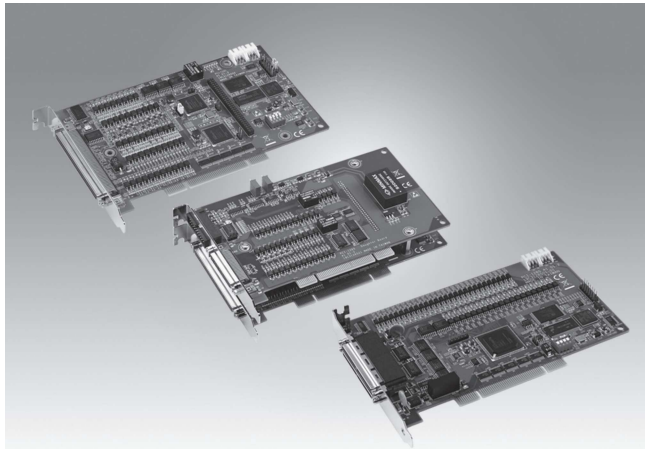# PCI-1265
PCI-1285

DSP-Based 4/6/8-Axis Stepping and Servo Motor Control Universal PCI Card

Features

- Encoder input is 10 MHz for 4xAB mode, 2.5 MHz for CW/CCW mode
- Pulse output up to 5 Mpps
- Memory buffer (up to 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
- 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 & SVON/CMP/CAM-DO/ERC-dedicated output channels are switchable for general input and output purposes

PCI-1245	PCI-1265	PCI-1285

RoHS COMPLIANT 2002/95/EC   CE FCC

Introduction

PCI-1245/65/85 is a 4/6/8-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. PCI-1245/65/85 utilizes high-performance DSP and FPGA to calculate motion trajectories, synchronization timing control for multiple axes, and input/output handling to offer functionality, such as up to 4/6 -axis linear interpolation, 2- axis circular interpolation, helical interpolation, T/S-curve acceleration/deceleration rates and so on. In addition, Advantech supplies a Common Motion API library, graphical utility, and user-friendly examples to help decrease programming workloads.

Specifications

Pulse Type Motion Control

- **Motor Driver Support**   Pulse-type servo/stepping
- **Number of Axes**   PCI-1245: 4
                              PCI-1265: 6
                              PCI-1285: 8
- **Interpolation**   Linear, 2/3-axis circular interpolation, 3-axis helical interpolation
- **Max. Output Speed**   5 Mpps
- **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: CMP
  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/CMP/SVON/ 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/CMP/SVON/ ERC pin to general-purpose output)
                              PCI-1285: 32-ch DI, 32-ch DO (RDY/LTC pin can be switchable to general-purpose input and CAM-DO/CMP/SVON/ ERC pin to general-purpose output)
- **Analog Input**   PCI - 1265: 2

Encoder Interface

- **Input Type**   Quadrature (A/B phase) or up/down
- **Counts per Enc. Cycle**   x1, x2, x4 (A/B phase only)
- **Input Range**   0~10V
- **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
                              PCI-1285: 2 x 100-pin mini-SCSI female connector
- **Dimensions (L x H)**   175 x 100 mm (6.9" x 3.9")
- **Power Consumption**   PCI-1245/1265:
                              Typical: 5 V @ 850 mA
                              Max.:   5 V @ 1 A
                              PCI-1285:
                              Typical: 5 V @ 300 mA
                                         3.3 V @ 1.2 A
                              Max.:   5 V @ 400 mA
                                         3.3 V @ 1.5 A
- **Humidity**   5 ~ 95% RH, non-condensing (IEC 60068-2-3)
- **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
- **PCI-1285-AE**   8-axis Stepping/Servo Control Universal PCI Card

Accessories

- **ADAM-3956-AE**   100-pin DIN-rail SCSI 4-axis Motion Wiring Board
- **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-3920-AE**   20-pin DIN-rail Flat Cable Wiring Board
- **PCL-10120-1E/2E**   IDC-20 Flat Cable, 1m/2m
- **PCL-101100M-1E/2E/3E**   100-pin SCSI Cable, 1m/2m/3m (for PCI-1245/65)
- **PCL-10251-1E/2E/3E**   100-pin SCSI to Two 50-pin SCSI Cable, 1m/2m/3m (for PCI-1245/65 only)
- **PCL-101100SB-1E/2E/3E**   Mini-SCSI-100 Shielded Cable, 1m/2m/3m (for PCI-1285)
- **PCL-20153PA5-S2E**   50-pin Cable to Panasonic A4/A5 Servo, 2 m
- **PCL-20153YS5-S2E**   50-pin Cable to Yaskawa Sigma V/7 Servo, 2 m
- **PCL-20153MJ3-S2E**   50-pin Cable to Mitsubishi J3/J4 Servo, 2 m
- **PCL-20153DA2-S2E**   50-pin Cable to Delta A2 Servo, 2 m