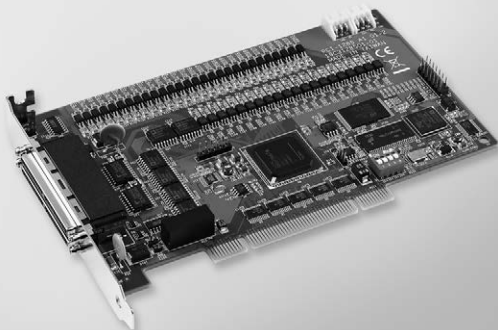


# PCI-1285

## DSP-based 8-axis Stepping and Servo Motor Control Universal PCI Card

NEW



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
- 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

### Introduction

PCI-1285 is a 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 to integrated machine vision solution. PCI-1285 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 8-axis linear interpolation, 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 Axes** 8
- **Interpolation** 2 to 8-axis linear, 2-axis circular, X-Y plane with Z thread helical interpolation
- **Max. Output Speed** 5 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: LMT+, LMT-, ORG
  - Servo Driver Interfaces: ALM, INP
  - Position Compare I/O: CMP
  - General Digital I/O: 32-ch DI, 32-ch DO

#### 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 ~ 10 V
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Max. Input Frequency** 10 MHz under 4xAB mode

#### General

- **Bus Type** Universal PCI V2.2
- **Connectors** 2 x 100-pin mini-SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption**
  - 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 68-2-3)
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)

### Ordering Information

- **PCI-1285-AE** 8-axis Stepping/Servo Control Universal PCI Card

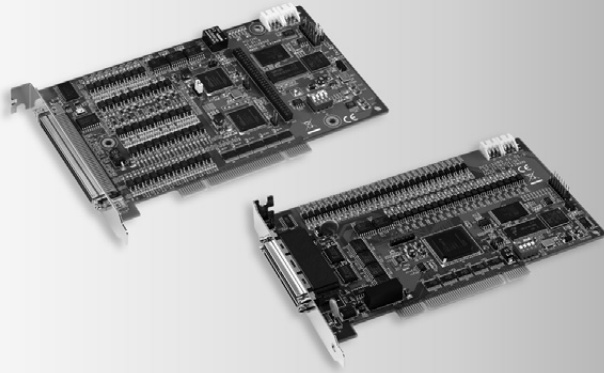
#### Accessories

- **ADAM-3956-AE** 100-pin DIN-rail SCSI 4-axis Motion Wiring Board
- **ADAM-39100-AE** 100-pin DIN-rail SCSI Wiring Board
- **PCL-101100SB-1E** Mini-SCSI-100 Shielded Cable, 1m
- **PCL-101100SB-2E** Mini-SCSI-100 Shielded Cable, 2m
- **PCL-101100SB-3E** Mini-SCSI-100 Shielded Cable, 3m
- **PCL-10153PA5-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Panasonic A4 and A5 Servo, 2 m
- **PCL-10153PA5LS-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Panasonic MINAS A Servo, 2 m
- **PCL-10153YS5-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Yaskawa Sigma V Servo, 2 m
- **PCL-10153MJ3-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Mitsubishi J3 Servo, 2 m
- **PCL-10153DA2-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Delta A2 Servo, 2 m

# PCI-1245E PCI-1285E

## Economic DSP-based 4/8-axis Stepping and Servo Motor Control Universal PCI Card

**NEW**



PCI-1245E

PCI-1285E



### Features

- Encoder input is 10 MHz for 4xAB mode, 2.5 MHz for CW/CCW mode
- Pulse output up to 5 Mpps
- Memory buffer for trajectory planning (circular trajectory and auto blending are not supported)
- Supports E-Gear (only for PCI-1245E)
- Hardware emergency input
- Watchdog timer
- Position latch via ORG & index signal
- Programmable interrupt
- RDY/LTC-dedicated input channels & SVON/CMP/CAM-DO/ERC-dedicated output channels are switchable for general input and output purposes

### Introduction

PCI-1245E/1285E is a 4/8-axis economic universal PCI (supporting both 3.3 V and 5 V signal slot) stepping/pulse-type servo motor control card designed for entry-level applications which need to control linear interpolation, electronic gear, continuous contouring (circular trajectories and auto blending are excluded). PCI-1245E/1285E 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 2–8-axis linear interpolation, E-Gear (only for PCI-1245E), T/S-curve acceleration/deceleration rate, speed override, 16 home modes 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-1245E: 4  
PCI-1285E: 8
- Interpolation** PCI-1245E: 2 to 4-axis linear  
PCI-1285E: 2 to 8-axis linear
- 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  
General Digital I/O: PCI-1245E: 16-ch DI, 16-ch DO  
PCI-1285E: 32-ch DI, 32-ch DO

#### 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 ~ 10 V
- Isolation Protection** 2,500 V<sub>oc</sub>
- Max. Input Frequency** 10 MHz under 4xAB mode

#### General

- Bus Type** Universal PCI V2.2
- Connectors** PCI-1245E: 1 x 100-pin SCSI female connector  
PCI-1285E: 2 x 100-pin mini-SCSI female connector
- Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")

- Power Consumption** PCI-1245E: Typical: 5 V @ 850 mA  
Max.: 5 V @ 1 A  
PCI-1285E: Typical: 5 V @ 530 mA  
3.3 V @ 160 mA  
Max.: 5 V @ 500 mA  
3.3 V @ 1 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-1245E-AE** Economic 4-axis Stepping/Servo Control Universal PCI Card
- PCI-1285E-AE** Economic 8-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-3956-AE** 100-pin DIN-rail SCSI 4-axis Motion Wiring Board (for PCI-1285E)
- ADAM-39100-AE** 100-pin DIN-rail SCSI Wiring Board
- PCL-101100M-3E** 100-pin SCSI Cable, 3 m
- PCL-10251-1E/2E/3E** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m/2m/3m
- PCL-10152-1E/3E** 50-pin SCSI Male-Male Shielded Cable, 1m/3m
- PCL-101100SB-1E/2E/3E** Mini-SCSI-100 Shielded Cable, 1m/2m/3m (for PCI-1285E)
- PCL-10153PA5-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Panasonic A4 and A5 Servo, 2 m
- PCL-10153PA5LS-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Panasonic MINAS A Servo, 2 m
- PCL-10153YS5-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Yaskawa Sigma V Servo, 2 m
- PCL-10153MJ3-2E** 50-pin Cable from ADAM-3955/ADAM-3956 to Mitsubishi J3 Servo, 2 m