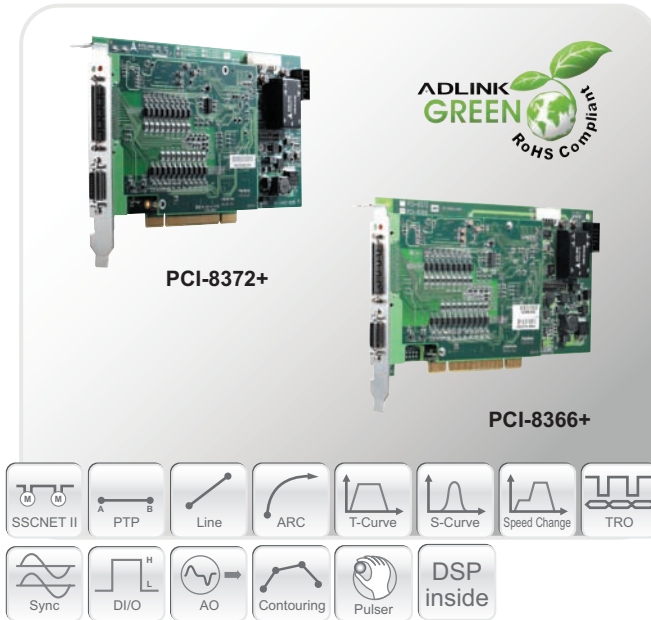


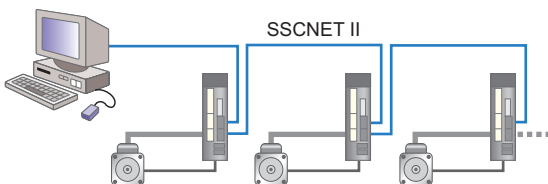
# PCI-8372+/PCI-8366+

## DSP-based SSCNET II 12/6-axis Motion Control Cards •



### Features

- 32-bit PCI bus, Rev 2.2, 33MHz
- Servo Interface: \*SSCNET II protocol
- On-board DSP: TI TMS320C6711 200MHz
- Maximum control axes: 12/6 for PCI-8372+/8366+
- 32-bit position command resolution
- On-line servo tuning and data monitoring
- Easy wiring up to 30 meters for servo drivers connection
- 2 Isolated DI/DO
- 3 external encoder/linear scale interface
- Multiple axes linear interpolation
- Any 2 axes circular interpolation
- Contour following motion with smoothing function
- On-the-fly velocity change
- Programmable interrupt sources
- Hardware synchronization between multiple cards
- Easy-to-use function library
- MotionCreator™ utility for Mitsubishi servo motor setup
- More than 250 thread safe API functions
- Sequence motion control for speed profile timing chart between axes
- Absolute encoder access
- 2-CH 16-bit analog output



### Applications

- Semiconductor front & back end equipment
- TFT/LCD manufacturing equipment
- Electronic Assembly and Testing equipment
- Automatic Optical Inspection Equipment
- Flight/Vehicle Simulator in military and video game
- Dispenser Machinery
- Cutting or Carving Machinery

### Introduction

#### Serial-connection Multi-Axis Motion Controller

ADLINK PCI-8372+/PCI-8366+ is a 12/6-axis motion control cards based on PCI bus. The PCI interface provides plug-and-play feature that is the key to easy maintenance. The maximum number of cards in one system is up to 12 cards, offering users the following advantages.

#### Advantages

- Easy-wiring and time-deterministic
- Command synchronization
- Easy-maintenance
- Maximum motor speed can be achieved under maximum motor resolution (17-bit)
- 32-bit command resolution
- Connecting distance up to 30 meters
- Parameter setting and tuning by software
- Absolute encoder control (ABS position) control

#### Motion Control Principle

The motion command is accomplished by the host PC and the DSP on PCI-8372+/PCI-8366+. DSP accomplished the synchronization between users' program control and SSCNET update cycle. Motion profiles are split into several frames and transferred to the DSP via DPRAM. According to these frames, DSP calculates the absolute position of all axes in one control cycle and send each position to the individual driver via the \*SSCNET II at the same cycle. The PCI-8372+/66+ can also collect data from the servo driver via the \*SSCNET II at the same cycle including servo parameter, position, speed, torque etc. The cycle time is 0.888ms which is defined in \*SSCNET II protocol.

#### Operation Modes

Single axis motion; Linear interpolation; Circular interpolation mode; multi-axis simultaneous start motion; contour motion; change speed on the fly; and home return modes.

#### Mechanism Interface

Dedicated limit switch and origin input points for each axis.

#### General Purpose I/O

2 Isolated DI, 2 open collector output DO are included to provide general purpose I/O.

#### Interrupt Events

The hardware interrupts are transformed into software events or signals. An event driven applications under multi-tasking OS can be realized by this way.

#### Analog outputs

These are two modes for analog: Direct 16 bits +/-10 volts output, velocity command monitoring.

#### Hardware Synchronization

The PCI-8372+/PCI-8366+ can be synchronized via the CN4 connector between every card.

#### Servo Amplifier/Motor Support

ADLINK PCI-8372+/PCI-8366+ is designed for \*SSCNET II series servo amplifier/motor including MR-J2S-B and MR-J2M-B.

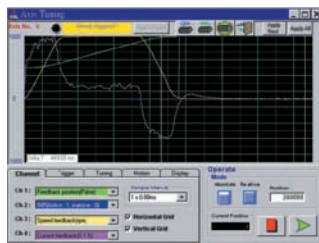
#### \*SSCNET II

Servo System Control Network proposed by Mitsubishi Electric Co.

## MotionCreator™



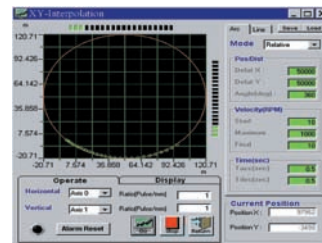
Single Axis Operation



Servo Tuning



Servo Driver Parameters



XY Move Operation

## Specifications

### Motion Control

- Cycle time: 0.888ms
- Number of controllable axes: 12/6 axes for PCI-8372+/PCI-8366+
- Max. number of cards in one system: 12
- Encoder feedback: 3-CH, 32-bit, up/down counter up to 5MHz

### Motion Interface I/O Signals

- External encoder signals input pins: EA and EB
- Encoder index signal input: EZ
- Mechanical limit switch and origin signal input pins: ±EL and ORG

### General-Purposed I/O

- 2 channels isolated digital inputs
  - Input voltage: 0 to 24 V
  - Input resistance: 2.4KΩ @0.5W
- 2 channel open collector output
  - Sink current: 4mA
  - Bandwidth 10KHz

### Analog Output (D/A):

- Resolution: 16 bits
- Output channels: 2 Single-Ended channels
- Output range: ±10V, Bipolar
- Setting Time: 10µs
- Output driving: ±5mA

## Software Support

### Windows® Platform

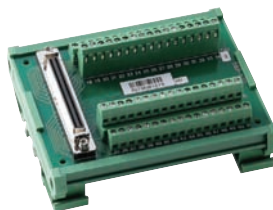
- Available for Windows Vista/XP/2000
- VB/VC++/BCB/Delphi are recommended programming environment.

### MotionCreator™

MotionCreator™ assists the motion system developer to debug any cabling problem, and solve the difficulty of system configuration before programming.

## Termination Board

- Termination board for CN5



DIN-68S-01

## Ordering Information

PCI-8372+	PCI Bus SSCNETII 12 axes motion control card
PCI-8366+	PCI Bus SSCNETII 6 axes motion control card
DIN-68S-01	Termination board for CN5

### CN5 Pin Assignment

A.COM	1	35	DA1
PEL1	2	36	DA2
MEL1	3	37	PEL2
ORG1	4	38	MEL2
PEL3	5	39	ORG2
MEL3	6	40	PEL4
ORG3	7	41	MEL4
PEL5	8	42	ORG4
MEL5	9	43	PEL6
ORG5	10	44	MEL6
IPT_COM	11	45	ORG6
EA1+	12	46	EA2+
EA1-	13	47	EA2-
EB1+	14	48	EB2+
EB1-	15	49	EB2-
EZ1+	16	50	EZ2+
EZ1-	17	51	EZ2-
PEL7	18	52	PEL8
MEL7	19	53	MEL8
ORG7	20	54	ORG8
PEL9	21	55	PEL10
MEL9	22	56	MEL10
ORG9	23	57	ORG10
PEL11	24	58	PEL12
MEL11	25	59	MEL12
ORG11	26	60	ORG12
IPT_COM	27	61	IPT_COM
DO_COM	28	62	D11
EA3+	29	63	D12
EA3-	30	64	EMG
EB3+	31	65	EMG_COM
EB3-	32	66	DO1
EX3+	33	67	DO2
EZ3-	34	68	DO_COM

1 Software

2 GEME Series

3 DPAC

4 Motion Control

5 Vision

6 HSL

7 Industrial Communication

8 CompactPCI system & Industrial Computers

9 NuDAM