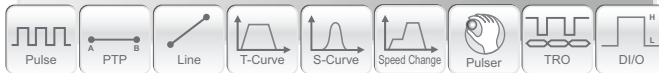
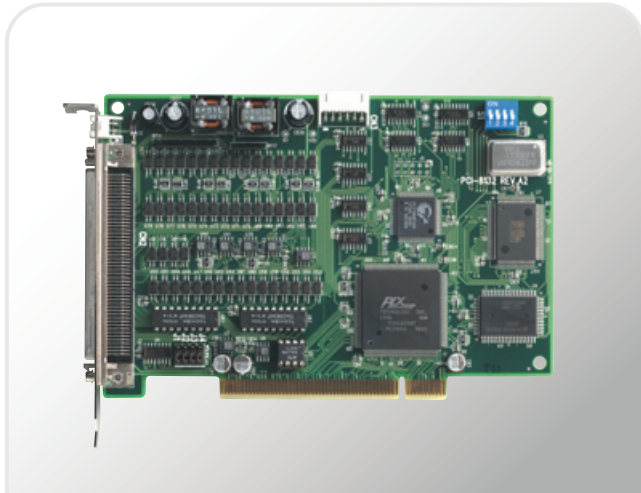


# PCI-8132

## 2-axis Stepper & Servo Motion Controller Card



### Features

- 32-bit PCI bus, plug & play
- Pulse output rate up to 2.4MHz
- Pulse output options: OUT/DIR, CW/CCW
- 2 axes linear interpolation
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profiles
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors which have pulse train input mode
- 28-bit up/down counter for incremental encoder
- All digital inputs and outputs are 2500V<sub>RMS</sub> isolated
- Change speed on-the-fly
- Multi-axis, simultaneous start/stop
- Dedicated I/O interface for PEL, MEL, ORG, EZ, INP, ERC, ALM
- Programmable interrupt sources
- Manual pulser input interface
- Supports up to 12 cards in one system
- Hardware position compare and trigger pulse output
- 16-CH general-purpose input/16-CH general -purpose output

### Software Support

#### Windows Platform

Driver supports for Windows XP/2K/NT/98.  
VB/VC++/BCB/Delphi are recommended programming tools.

#### LabVIEW® VIs

The motion VIs of PCI-8132 for LabVIEW is available.

#### MotionCreator™

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

#### RedHat Linux

RedHat Linux, kernel 2.4.x

### Introduction

#### PCI Interface

ADLINK PCI-8132 is a 2-axis motion control card 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 12 cards with capability of controlling 24 motors.

#### Motion Control Principle

The PCI-8132 can generate high frequency pulse train. The frequency of the pulse train controls the motor speed; the number of pulse controls the motor position. The differential input/output signals reduce noise interference. The command output options, including DIR/OUT mode and CW/CCW mode, provide an easy access to various stepper or servo amplifier.

#### Velocity Profile

The PCI-8132 offers versatile trajectory planning ability. The acceleration and deceleration time are programmable. The S-curve helps to avoid mechanism vibration. The hardware linear interpolation between two axes is powerful to reduce software computation effort.

#### Operation Modes

Various operation modes are available, such as continuous velocity motion, absolute move, relative move, manual pulser mode, simultaneous move, change speed on the fly, linear interpolation, and home return.

#### Encoder Interface

Incremental encoder interface is used for position feedback. The encoder counters provides the position information to correct the position error generated by inaccurate mechanical transmissions. The differential-type encoder feedback avoids noise interference. The 28-bit counters cover the position range for most applications.

#### Mechanism Interface

The pre-defined limit switch sensors on table are widely used to protect the mechanism. The dedicated I/O interface for end-limit, slow-down point, and origin is very useful for system integration.

#### Servo Amplifier Interface & GPIO

Some servo motor drivers provide interfacing signals such as in-position (INP), alarm (ALM), error counter clear (ERC), servo ready signals. These signal interfaces are supported.

#### Pulser Interface

The handle-wheel pulser is widely used in machine applications, such as NC machine. Four pulser interfaces are available through the CN3 connector (10-pin).

#### Interrupt Events

Many hardware status can be used as interrupt events, such as limit switch, alarm, moving home ready, one movement finished, and so on.

### Applications

- Electric Assembly
- Semiconductor, LCD Manufacturing and Measurement
- Laboratory Automation
- Vision & Photocomposition Automation
- Biotech Sampling and Handling



MotionCreator™

Windows DLL



LabVIEW® Motion VIs

## Specifications

### Motion

- Number of controllable axes: 2
- Max. number of cards in one system: 12
- 0.05 pps~2.4Mpps programmable DIR/OUT, CW/CCW pulse command output
- 28-bit Up/Down counter for reading encoder
- Position range: 0~268, 435, 455 pulses (28-bit)
- Position comparator and trigger output
- Encoder Input Frequency: 4MHz @ 1M cable

### Motion Interface I/O Signals

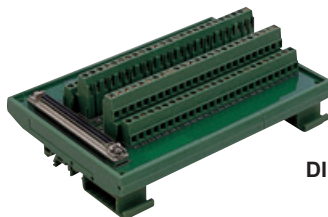
- All I/O pins are 2500V<sub>RMS</sub> optically isolated
- Incremental encoder signals input pins: DIR/OUT, EA/EB
- Encoder index signal input: EZ
- Mechanical Limit/Switch signal input pins: ±EL, ±SD and ORG
- Servomotor Interface I/O pins: INP, ALM, ERC
- General DO pin: SVON
- General DI pin: RDY
- Pulser signal input: PA and PB
- Simultaneous signal I/O pins: STA and STP
- Position compare output pin: CMP

### General-Purposed I/O

- 16-CH Input & 16-CH output

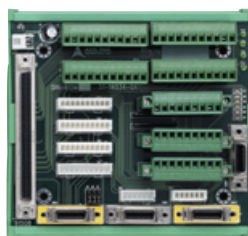
## Termination Board

- DIN-100M15: General Purpose



DIN-100M15

- DIN-812M: For Mitsubishi MR-J2S-A Servo Amplifier



DIN-812M

## Ordering Information

PCI-8132	2 axes motion controller card
DIN-812M	Termination board for Mitsubishi MR-J2S-A servo amplifier with 1M cable
DIN-100M15	Termination board for general purpose with 1.5M cable
DIN-100M30	Terminal board for general purpose with 3M cable

## PCI-8132 Pin Assignment of the 100-pin SCSI-type Connector

VPP+5V	1	51	DO COM+
EXGND	2	52	EXGND
OUT 1+	3	53	DO0
OUT 1-	4	54	DO1
DIR 1+	5	55	DO2
DIR 1-	6	56	DO3
SVON1	7	57	DO4
ERC1	8	58	DO5
ALM1	9	59	DO6
INP1	10	60	DO7
RDY1	11	61	DO8
EXGND	12	62	DO9
EA1+	13	63	DO10
EA1-	14	64	DO11
EB1+	15	65	DO12
EB1-	16	66	DO13
EZ1+	17	67	DO14
EZ1-	18	68	DO15
VPP+5V	19	69	EXGND
EXGND	20	70	EXGND
OUT 2+	21	71	D1 COM+
OUT 2-	22	72	D1 COM-
DIR 2+	23	73	D10
DIR 2-	24	74	D11
SVON2	25	75	D12
ERC2	26	76	D13
ALM2	27	77	D14
INP2	28	78	D15
RDY2	29	79	D16
EXGND	30	80	D17
EA2+	31	81	D18
EA2-	32	82	D19
EB2+	33	83	D110
EB2-	34	84	D111
EZ2+	35	85	D112
EZ2-	36	86	D113
PEL1	37	87	D114
MEL1	38	88	D115
PSD1	39	89	EXGND
MSD1	40	90	EXGND
ORG1	41	91	PA+
EXGND	42	92	PA-
PEL2	43	93	PB+
MEL2	44	94	PB-
PSD2	45	95	EXGND
MSD2	46	96	CMP1
ORG2	47	97	CMP2
EXGND	48	98	EXGND
EXGND	49	99	VPP+24V
EXGND	50	100	VPP+24V