

PCI-8144



4-axis Stepper Motion Control Card



Features

- 32-bit PCI bus, Rev. 2.2, 33MHz
- Card index switch selection
- Pulse output rate up to 2.4M pps for stepper motor control
- Pulse output options: CW/CCW
- Speed change on-the-fly
- Home return mode with slow down & ORG signal
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profile
- Simultaneously start/stop with external signal control (STA/STP)
- Programmable interrupt control
- Support up to 12 cards in one system
- Security protection for user's program
- General purpose isolated I/O: 8 DI and 8 DO
- Emergency Stop Input via STP pin
- All digital I/O are 2500Vrms isolated
- More than 30 thread safe API functions
- 2-phase stepping motor excitation (Options for users)

Software Support

Windows® Platform

Available for Windows 2K/XP/Vista

VB/VC++/BCB/Delphi/VB.NET/C# are recommended programming environment.

Various sample programs with source codes

Customized API functions are possible

MotionCreatorPro™

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

Linux Platform

Redhat 9, kernel 2.4.x	SUSE 10, kernel 2.6.13
Fedora Core 3, kernel 2.6.9	Fedora Core 5, kernel 2.6.15
Fedora Core 4, kernel 2.6.11	

Ordering Information

PCI-8144	4-Axis Stepper Motion Control Board
DIN-68M0	Termination Board for SCSI connector
Cable	ACL-10569-1

Introduction

4-Axis Stepper Motion Controller

The ADLINK PCI-8144 is a pulse train motion controller ideal for stepper motor control. This controller provides T/S curve control, on-the-fly speed change, non-symmetric acceleration and deceleration profile control, and simultaneous start/stop functions. This controller also offers card index settings for multiple cards in one IPC system and a hardware security function to prevent unauthorized use of in-house developed applications.

Velocity Override

The PCI-8144 offers powerful speed change functions that can be executed while the axis is moving. After motion begins, the target speed can be changed as needed according to the application.

Simultaneously Start/Stop

By using either a software function or external input signal, the PCI-8144 can perform simultaneously starts and stops on multiple axes in a one-card configuration, or multiple axes in a multiple-card application. The simultaneously stop function can be selectively active when an axis (or axes) stops abnormally.

Hardware Emergency Input

The PCI-8144 provides hardware emergency control via the wiring. When the emergency button is pressed, a hardware emergency function is triggered and the motion controller will cease sending pulses.

Application Security

PCI-8144 offers hardware security protection for in-house developed applications to prevent unauthorized use and copying.

Specifications

Motion

Number of channels: 4
Pulse output rate: 0.5 pps-2.4M pps
Max. Acceleration Rate: 737M pps ²
Speed resolution: 16-bit

I/O Signals

I/O signals are optically isolated with 2500Vrms isolation voltage
End limit signal pin: PEL and MEL
Slow down signal pin: PSD and MSD
Home sensor: ORG
GPIO: 8 DI and 8 DO

General Specifications

Connectors: 68-pin SCSI-type connector
Operating Temperature: 0°C - 50°C
Storage Temperature: -20°C - 80°C
Humidity: 5 - 85%, non-condensing

Power Consumption

Power supply (input): +24V DC ±5%
External power supply (output): +5V DC ±5%, 100mA (max)

Pin Assignment

VDD	1	35	VDD
EGND	2	36	EGND
CW+	3	37	CW+
CW-	4	38	CW-
CCW+	5	39	CCW+
CCW-	6	40	CCW-
PEL0	7	41	PEL2
MEL0	8	42	MEL2
PSD0	9	43	PSD2
MSD0	10	44	MSD2
ORG0	11	45	ORG2
EGND	12	46	EGND
CW+	13	47	CW+
CW-	14	48	CW-
CCW+	15	49	CCW+
CCW-	16	50	CCW-
PEL1	17	51	PEL3
MEL1	18	52	MEL3
PSD1	19	53	PSD3
MSD1	20	54	MSD3
ORG1	21	55	ORG3
STP/EMG	22	56	STA
DIN0	23	57	DOUT0
DIN1	24	58	DOUT1
DIN2	25	59	DOUT2
DIN3	26	60	DOUT3
DIN4	27	61	DOUT4
DIN5	28	62	DOUT5
DIN6	29	63	DOUT6
DIN7	30	64	DOUT7
VDD	31	65	DO_COM
VDD	32	66	DO_COM
EGND	33	67	EGND
EX+24V	34	68	EX+24V