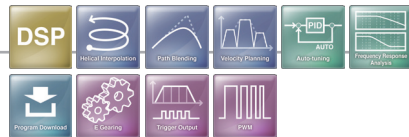


PCI-8254 / PCI-8258

DSP-based 4/8-axis Advanced Motion Controllers



Key Features

- Servo update rate up to 20 KHz through hardware-based PID-FF control loop and second-order filters
- Trajectory cycle time up to 1 KHz
- 4/8 axes hybrid motion command output signals of both ± 10 volts analog command and pulse-train command
- Encoder feedback frequency up to 20 MHz with digital filter design
- Program download can execute up to 8 individual tasks simultaneously
- High speed position latch function via ORG and Index signals
- High-speed position comparison and trigger output up to 1MHz for auto-optical-inspection applications
- 32 additional onboard digital I/O channels (16 DI & 16 DO) can save the cost of a full DI/O card
- Programmable interrupt source control to host PC
- Watchdog timer for safety control
- Manual pulsar interface
- MotionCreatorPro 2 suite of card installation, axis control, auto-tuning, frequency response analysis, and system diagnostic usage
- Support for up to 16 cards in one system

Motion Features

- Jogging mode
- Pre-defined engineering unit
- Any 2-6 axes linear interpolation
- Any 3 axes circular interpolation
- 3 axis spiral interpolation (incl. helical interpolation)
- Motion trajectory & PID parameters can be changed on the fly
- Multi-axis synchronous motion (Master-Slave)
 - Gantry mode
 - Electronic Gear
- Safety level setting to prevent damage to mechanism and operator
- Trapezoidal, S-curve velocity, user-defined profile
- Position & speed override anytime
- Variety of homing modes via ORG and index signals
- Linear and FIFO position comparison for high speed trigger output
- Backlash compensation

Introduction

The PCI-8254 & PCI-8258 are ADLINK's new top-of-the-line advanced motion controllers, providing excellent control performance, time-deterministic trajectory and velocity planning, comprehensive application functions, and powerful easy-to-use diagnostic and control utilities.

Specifications

Motion Control	
■ Positioning Range	4 x 10 ¹⁵ counts
■ Speed Programming Range	32,767,000 count / sec
■ Max. Acceleration Rate	4 x 10 ¹⁵ counts / sec ²
Analog Input / Output Channels	
■ Number of Channels	4-CH for PCI-8254; 8-CH for PCI-8258
■ Analog Output	± 10 volt with 16-bit DAC, Differential/Single-ended types
■ Analog Input	± 10 volt with 12-bit ADC
Pulse Output Channels	
■ Number of Channels	4-CH for PCI-8254; 8-CH for PCI-8258
■ Pulse Output Rate	6.55 Mpps (max.)
■ Pulse Output Mode	CW/CCW, OUT/DIR
Encoder Input Channels	
■ Number of Channels	4-CH for PCI-8254; 8-CH for PCI-8258
■ Max. Encoder Input Frequency	20 MHz under 4xAB mode
■ Encoder Input Modes	OUT/DIR, CW/CCW and 1x/2x/4x AB phase
Trigger Channels	
■ Number of Trigger Output Channels	2-CH for PCI-8254; 4-CH for PCI-8258
■ Position Compared Method	Linear / FIFO
■ FIFO Size	16 per channel (hardware-based) ; 5,000 per channel (software-based)
■ Trigger Pulse Output Frequency	1 MHz for linear comparison 1 MHz for FIFO comparison (hardware-based) 500 Hz for FIFO comparison (software-based)
■ Trigger Pulse Width	0.2 μ s to 167 ms
Motion I/O Interface Signals	
■ I/O Pin	2500 V _{RMS} optically isolated on DIN-825-GP4
■ Incremental Encoder Signals Input Pin	EA and EB
■ Encoder Index Signal Input	EZ
■ Mechanical Limit Switch Signal Input Pin	\pm EL and ORG
■ Servomotor Interface I/O Pin	INP/ZSP, ALM, SVON
■ Miscellaneous Pin	IEMG, TRG (PWM)
General Purpose I/O	
■ Digital Input	20-CH (for PCI-8254) and 24-CH (for PCI-8258) digital input, isolated on DIN-825-GP4
■ Input Voltage	0 to 24 V
■ Input Resistance	4.7 K Ω @ 0.5 W
■ Digital Output	20-CH (for PCI-8254) and 24-CH (for PCI-8258) digital output, isolated on DIN-825-GP4
■ Output Voltage	5 V (Min.); 35 V (Max.)
■ Output Type	NPN open collector
■ Sink Current	90 mA
General Specifications	
■ Connectors	100-pin SCSI-VHDCI type connector
■ Operating Temperature	0 °C to +55 °C (32 °F to 131 °F)
■ Storage Temperature	+20 °C to +80 °C (68 °F to 176 °F)
■ Humidity	5% to 95%, non-condensing