Nippon Pulse
Your Partner in Motion Control

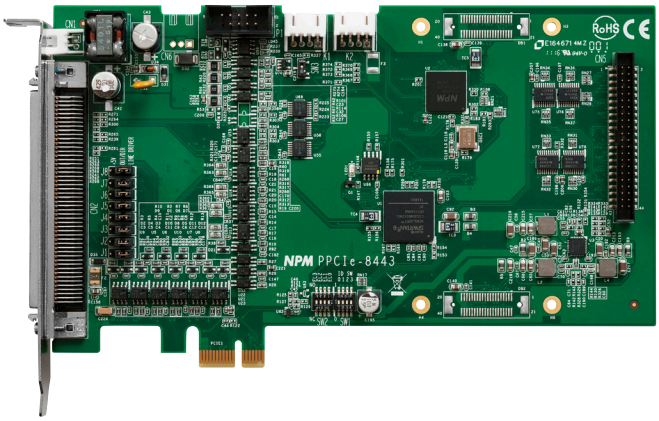
PPCIe-8443
PCI-Express Controller

PPCIe-8443 is a PCI-Express interface 4-axis control board equipped with our pulse control LSI chip, PCL6046. High-speed pulses (6.5 MHz) can be generated by dedicated LSI, and pulse input type stepping motors and servo motors can be controlled.

PPCIe8443 Specifications	
Adaptive motor	Pulse input type servo motor and stepping motor
Bus interface	PCI-Express
Onboard LSI	PCL6046 (manufactured by NPM)
Axis control connector	SCSI-type 100-pin connector
Operating temperature	0°C ~ 50°C
Storage temperature	-20°C ~ 80°C
Humidity	5% ~ 85% with no condensation
Environment/standards compliant	RoHS Directive (2011/65/EU) CE marking (EN 55022: 2010/AC: 2011 EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 55024: 2010)
Bus power supply (input)	±12V DC ± 5%, 250mA Max
External power supply (input)	±24V DC ± 5%, 500mA Max
External power supply (output)	±5V DC ± 5%, 500mA Max
Size	185mm (L) x 98.4mm (H)

Performance Specifications	
Number of control axes	4
Maximum output frequency	6.5Mpps (constant speed operation, linear/S-curve acceleration/deceleration operation)
Reference clock	19.6608MHz
Positioning control range	-2,147,483,648 ~ +2,147,483,647 (32 bit)
Speed range (speed multiplication factor)	0.1pps ~ 6553.5pps (when it is 0.1x) 1pps ~ 65,535pps (when it is 1x) 100pps ~ 6,553,500pps (when it is 100x)

Motion Control I/O Specifications	
Command pulse output	OUT, DIR (each axis)
Incremental type encoder input	EA, EB (each axis)
Encoder Z phase input	EZ (each axis)
Mechanical input	+EL, -EL, SD / PCS, ORG (each axis)
Servo driver I/F	INP, ALM, ERC (each axis)
Position latch input	LTC (Axis 2, Axis 3)
Comparator output	CMP (Axis 0, Axis 1)
General purpose output	SVON (each axis)
General purpose input	RDY (each axis)
Pulser signal input	PA, PB (common to all axes, motion symmetric axis selected by software
Simultaneous start/stop input/ output	STA, STP
Emergency stop input	EMG
Photocoupler insulation, withstand voltage	2500 Vrms (excluding STA, STP, EDI, EDO)
Extended general purpose input/output	Input 16 points, output 16 points (EDI, EDO)



Features of the PPCIe8443

1. Linear/S-curve acceleration/deceleration

2. Arbitrary two-axis circular interpolation, linear interpolation of 2 to 4 axes, and continuous interpolation

3. Override of velocity / position, 13 types of homing, trigger output at the specified position is possible by position comparison using FIFO in the board.

4. Operations requiring complicated operations are internally processed, so the load on the axis control of the CPU is reduced.

5. Utility software that runs on Windows for application development and information on all axes and input/ output signal status are displayed on the PC screen, so it is convenient for system debugging at the initial stage of the project.

6. Function libraries (DLL) that can be used in the Windows development environment, definition files for VC, VB, C # language, and sample programs.