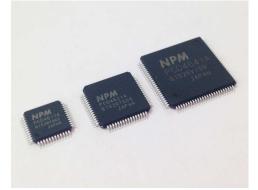
# Nippon Pulse Your Partner in Motion Control

## PCD46x1A Series

Economical Motion Controllers for Stepper Motors



The extremely flexible PCD46x1A series is a low cost, high performance stepper motor controller that is designed for one, two, or four axis control.

It integrates all real-time critical and safety tasks and math intensive operations into a reliable, dedicated ASIC; increasing the speed, safety, and reliability of the system while freeing CPUs resources and bandwidth for other tasks.

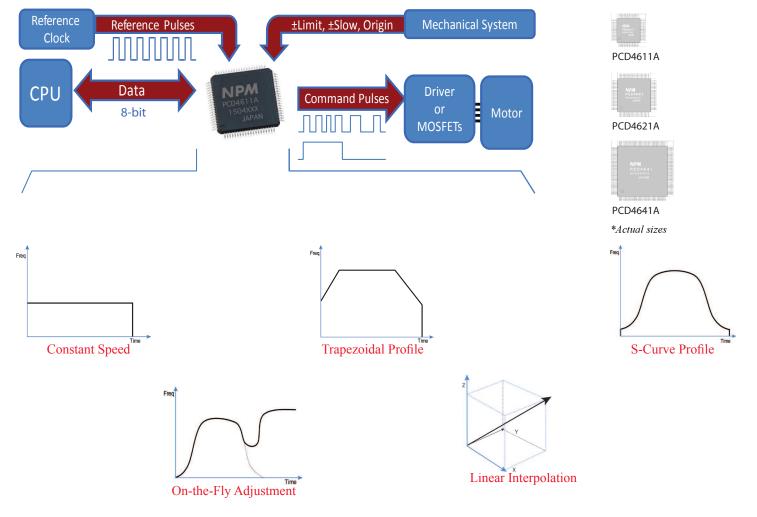
The PCD46x1A Series offers an advanced and economical solution for multiaxial stepper motor control.

#### Features:

- Sequencer output (unipolar/bipolar; half/full step)
- Linear and S-curve acceleration/deceleration control
- On-the-fly override of speed or target position
- Multi-axis synchronization
- Automatic setting for ramping-down point
- · Dedicated end limit, ramp down, and origin reference switch input for each axis
- General-purpose I/O (up to 5 per axis)
- Control software is upward compatible with PCD45x1 series

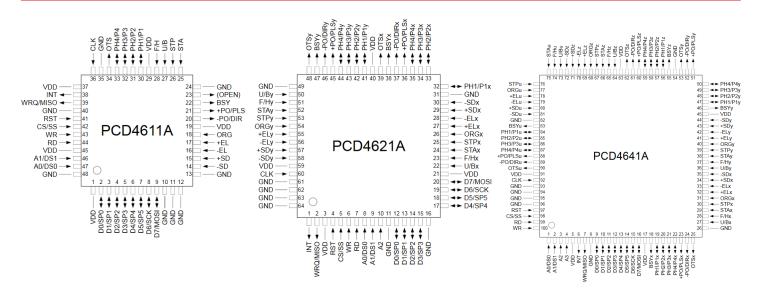
#### **Applications:**

- CCTV, Security
- Office Automation
- ATM, cash recycler, POS
- Lab Automation
- Liquid Handling
- Medical
- Printer and Scanner
- Pumps and Valve
- Heliostat Controller



### **General Specifications**

Item	Description
Available Configurations	1/2/4 axis
Max Output Speed	2.4 Mpps (with max. 10 MHz reference clock)
Position Range per Axis	0 to 16,777,215 pulses (24 bits)
Speed Range per Axis	1 to 8,191 steps (13 bits)
Acceleration Rate Range per Axis	1 to 65,535 (16 bit per axis)
(Common to Acceleration/Deceleration)	
Deceleration Rate Range per Axis	
Mechanical sensor input per Axis	ORG, +EL, -EL,+SD, -SD
Excitation Sequence Output per Axis	Full/Half step Unipolar/Bipolar
Pulse Output	CW/CCW Pulse/Direction
Typical operations	<ul><li>Continuous operation</li><li>Positioning operation</li><li>Timer operation</li></ul>
Typical functions	<ul> <li>Linear acceleration and deceleration</li> <li>S-curve acceleration and deceleration</li> <li>Immediate stop and decelerating stop</li> <li>Speed change</li> <li>External start and external stop function</li> <li>Idling pulse output function</li> <li>Excitation sequencing output for 2-phase stepper motor</li> <li>4 general-purpose IO ports/axis (can also be used as sequence output)</li> <li>6 common ports (available only with serial I/F)</li> </ul>
Number of Registers for Speed Setting per Axis	2 (FL, FH)
CPU Interface	Parallel I/F: 8 bit Serial I/F: synchronous 4-wire serial
Power Supply	3.0 to 3.6 V
Package	PCD4611A:         48 pin QFP         (mold section :7.0× 7.0 mm)           PCD4621A:         64 pin QFP         (mold section :10.0×10.0 mm)           PCD4641A:         100 pin QFP         (mold section :14.0×14.0 mm)
Chip design	CMOS (Complementary Metal-Oxide Semiconductor)



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