

Chip Number	PCD2112	PCD4511	PCD4521	PCD4541
<i>Specifications</i>				
Reference Clock Input (MHz)	9.8304	4.9152	4.9152	4.9152
Max. Output Frequency (pps)	2.4M	400k	400k	400k
Pulse Rate Resistors	3 (FL, FH1, FH2)	2 (FL, FH)	2 (FL, FH) per axis	2 (FL, FH) per axis
Pulse Rate Resolution	1 ~ 8,191 (13-bit)	1 ~ 8,191 (13-bit)	1 ~ 8,191 (13-bit)	1 ~ 8,191 (13-bit)
Pulse Rate Multiplication	0.5x ~ 300x	1x ~ 50x	1x ~ 50x	1x ~ 50x
Accel/Decel Setting Range	1 ~ 65,535	2 ~ 1,023	2 ~ 1,023	2 ~ 1,023
Positioning Pulse Setting Range	0 ~ 268,435,455	1 to 16,777,215 (24 bit)	1 to 16,777,215 (24 bit)	1 to 16,777,215 (24 bit)
Ramping Down Pulse Setting Range	0 ~ 16,777,215 (24-bit)	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)
<i>Extra Provisions</i>				
Up/Down Counter	-2,147,483,648 ~ 2,147,483,647			
Comparator				
Encoder Input (up to 4x multiplication)				
Multi-Purpose Input/Output Pin(s)	4 output	1 output	2 output	4 output
CPU Interface	SPI (Serial Peripheral Interface)	8-bit bus	8-bit bus	8-bit bus
<i>Additional Functions</i>				
S-Curve Accel/Decel Control	Yes	Yes	Yes	Yes
Prebuffers for Continuous Positioning Control				
Microsteps				
Present Position Counter Reset				
Origin Return with Encoder Connected				
Origin Search/Escape Function				
1-Pulse Output				
Idling Pulse(s) Output	Yes	Yes (0 ~ 7)	Yes (0 ~ 7)	Yes (0 ~ 7)
Repeat Function				
Pulser Input				
Out-of-Step Detector				
Interpolation Function				
Number of Controllable Axes per Chip	1	1	2	4
Exciting Signal Output	Yes (bipolar and unipolar)	Yes (bipolar and unipolar)	Yes (bipolar and unipolar)	Yes (bipolar and unipolar)
<i>Applicable Motor</i>				
DC/AC Servomotor				
Linear Motor				
Direct Drive Motor				
Number of Pins (Package)	48-pin QFP	44 (QFP)	64 (QFP)	100 (QFP)

Chip Number	PCL6025B	PCL6045B	PCL6045BL	PCL6113/6123/6143
<i>Specifications</i>				
Reference Clock Input (MHz)	19.6608	19.6608	19.6608	19.6608 (Max 30)
Max. Output Frequency (pps)	6.5M	6.5M	6.5M	9.8M (Max 15M)
Pulse Rate Resistors	FL, FH, FA (Correction Speed) per each axis	FL, FH, FA (Correction Speed) per each axis	FL, FH, FA (Correction Speed) per each axis	FL, FH
Pulse Rate Resolution	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)	1 to 16,383 (14-bits)
Pulse Rate Multiplication	0.1x ~ 100x	0.1x ~ 100x	0.1x ~ 100x	0.3 ~ 600x
Accel/Decel Setting Range	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)	1 ~ 16,383 (14-bits)
Positioning Pulse Setting Range	-134,217,728 ~ +134,217,727 (28-bit)	-134,217,728 ~ +134,217,727 (28-bit)	-134,217,728 ~ +134,217,727 (28-bit)	-134,217,728 ~ +134,217,727 (28-bit)
Ramping Down Pulse Setting Range	0 ~ 16,777,215 (24-bit)	0 ~ 16,777,215 (24-bit)	0 ~ 16,777,215 (24-bit)	0 ~ 16,777,215 (24-bits)
<i>Extra Provisions</i>				
Up/Down Counter	28-bit x 3 (per axis with 16-bit deviation counter)	28-bit x 3 (per axis with 16-bit deviation counter)	28-bit x 3 (per axis with 16-bit deviation counter)	28-bit x 2 (per axis with 16-bit deviation counter)
Comparator	28-bit x 5 (per axis)	28-bit x 5 (per axis)	28-bit x 5 (per axis)	28-bit x 2 (per axis)
Encoder Input (up to 4x multiplication)	Yes	Yes	Yes	Yes
Multi-Purpose Input/Output Pin(s)	8	8	8	8
CPU Interface	8-bit / 16-bit bus	8-bit / 16-bit bus	8-bit / 16-bit bus	8-bit / 16-bit bus
<i>Additional Functions</i>				
S-Curve Accel/Decel Control	Yes (S-curve / S-curve w/ Linear)	Yes (S-curve / S-curve w/ Linear)	Yes (S-curve / S-curve w/ Linear)	Yes (S-curve / S-curve w/ Linear)
Prebuffers for Continuous Positioning Control	Linear, S-Curve	Linear, S-Curve	Linear, S-Curve	
Microsteps	Yes	Yes	Yes	
Present Position Counter Reset	Yes	Yes	Yes	Yes
Origin Return with Encoder Connected	Yes	Yes	Yes	Yes
Origin Search/Escape Function				Yes
1-Pulse Output				
Idling Pulse(s) Output	Yes (0~7)	Yes (0~7)	Yes (0~7)	
Repeat Function				
Pulser Input	Yes	Yes	Yes	Yes
Out-of-Step Detector	Yes	Yes	Yes	
Interpolation Function	Linear, Circulation	Linear, Circulation	Linear, Circulation	Linear
Number of Controllable Axes per Chip	2	4	4	6113: 1 / 6123: 2 / 6143: 4
Exciting Signal Output				
<i>Applicable Motor</i>				
DC/AC Servomotor	Yes	Yes	Yes	Yes
Linear Motor	Yes	Yes	Yes	Yes
Direct Drive Motor	Yes	Yes	Yes	Yes
Number of Pins (Package)	128-pin QFP	176-pin QFP	176-pin QFP	6113: 80-pin QFP 6123: 128-pin QFP 6143: 176-pin QFP

Board	NPMC6045A-4104	PPCI7443
<i>Specifications</i>		
Bus Type	PC/104 (16-bit)	16-bit PCI
# of Axes	4	4
Core LSI / Reference Clock (MHz)	PCL6045A/19.6608	PCL6045B/19.6608
Type of Output Pulse	CW/CCW or Pulse and Direction	CW/CCW or Pulse and Direction
Linear Interpolation	Yes (any 2-4 axes)	Yes (any 2-4 axes)
Circular Interpolation	Yes (any 2 axes)	Yes (any 2 axes)
Continuous Interpolation	Yes	Yes
Max. Output Frequency (Mpps)	6.5	6.55
Acceleration/Deceleration	1 ~ 65,535 (16-bit)	1 ~ 65,535 (16-bit)
Speed Multiplication Range	0.1 ~ 100x	0.1 ~ 100x
Motion Profiles	Triangular, Trapezoidal, Continuous	Triangular, Trapezoidal, Continuous
Speed Change	On the fly	On the fly, Compare trigger
Position Change	On the fly	On the fly
Encoder Input	5 MHz (at 90-deg. phase difference input)	
Encoder Feedback	28-bit up/down counter	28-bit up/down
Opto-Isolated Inputs	±Limits, Home, SD, INP, EMG	±Limits, Home, SD, INP, ALM
Interrupt Capability	Error, Move, Finish	
Digital Servo Input	MPIN*1, ALM*, INP* per axis	
Digital Servo Output	MPOUT*1, MPOUT*2, ERC per axis	
Supported Software	Test Monitor, VB/VC++, Win98®/NT® with DLL	Test Monitor, VB/VC++, Win98®/NT® with DLL
Idling Pulse(s) Output	Yes (0 ~ 7)	Yes (0 ~ 7)
<i>Operating Environment Conditions</i>		
Temperature Range (°C)	0 ~ 40	0 ~ 50
Humidity	80% RH max.	80% RH max (no dew condensing)
<i>Power Requirements</i>		
Bus Type	+5Vdc ±5%, 400mA max (no load)	+5Vdc ±5%, 900mA max
External	+24Vdc ±5%, 250mA max (from CN1, CN2)	+24Vdc ±5%, 500mA max; +5Vdc ±4%, 500ma max