

# PXI/CompactPCI Module Selection Guide

- 1 Software Solutions
- 2 PXI/CompactPCI Platforms
- 3 PXI-Based Instruments
- 4 PXI/CompactPCI Modules
- 5 PCI DAQ Cards
- 6 PCI DIO Cards
- 7 PC/104-Plus Products
- 8 ISA DAS/DIO Cards
- 9 Wiring Termination Boards
- 10 Motion Control Cards
- 11 Machine Vision Products
- 12 Remote I/O Modules

	Multi-Function DAQ Modules		Analog Output Modules		
	cPCI-9116/R	cPCI-9112/R	cPCI-6216VR	cPCI-6208V/R	cPCI-6208A/R
3.3 V or 5 V PCI	5 V	5 V	3.3 V / 5 V	3.3 V / 5 V <sup>(5)</sup>	3.3 V / 5 V <sup>(5)</sup>
Bus-mastering DMA	Yes	Yes	Yes	–	–
Rear I/O available <sup>(2)</sup>	●	●	● <sup>(3)</sup>	●	●
<b>Analog Input</b>					
Analog Inputs	64 SE/ 32 DI	16 SE/ 8 DI	–	–	–
Max. Sampling Rate (S/s)	250 k	110 k	–	–	–
Simultaneous Sampling	–	–	–	–	–
AD Resolution (bits)	16	12	–	–	–
FIFO Size (samples)	1 k	1 k	–	–	–
Channel-gain Queue	512	–	–	–	–
Bipolar Input Ranges	±5 V, ±2.5 V, ±1.25 V, ±0.625 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V	–	–	–
Unipolar Input Ranges	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V	–	–	–
<b>Analog Output</b>					
Voltage Outputs	–	2	16	8	8
Current Outputs	–	–	–	–	8
Update Rate (S/s)	–	33 k <sup>(1)</sup>	454 k <sup>(1)</sup>	454 k <sup>(1)</sup>	454 k <sup>(1)</sup>
Simultaneous Update	–	–	–	–	–
DA Resolution (bits)	–	12	16	16	16
FIFO Size (samples)	–	–	–	–	–
Settling Time	–	30 μs	2 μs	2 μs	2 μs
Analog Output Ranges	–	±10 V, ±5 V, ±EXTREF, 0-5 V, 0-10 V, 0-EXTREF	±10 V	±10 V	±10 V
Current Output Ranges	–	–	–	–	0-20 mA, 4-20 mA, 5-25 mA
<b>Digital I/O, Timer/Counter, and External Trigger</b>					
Digital I/O	8 DI, 8 DO	16 DI, 16 DO	4 DI, 4 DO	4 DI, 4 DO	4 DI, 4 DO
Timer/Counter	16-bit	16-bit	–	–	–
Analog Trigger	–	–	–	–	–
Digital Trigger	Yes	Yes	–	–	–
Page No.	4-1	4-2	4-3	4-3	4-3

	Digital I/O Modules									
	cPCI-7300	cPCI-7200	cPCI-7230	cPCI-7248	cPCI-7249R	cPCI-7252	cPCI-7432/R	cPCI-7433/R	cPCI-7434/R	cPCI-8554/R
3.3 V or 5 V PCI	5 V	5 V	5 V	5 V	5 V	5 V	3.3 V / 5 V <sup>(5)</sup>	5 V	5 V	5 V
Bus-mastering DMA	Scatter-gather	Yes	–	–	–	–	–	–	–	–
Rear I/O available <sup>(2)</sup>	–	–	–	–	–	● <sup>(3)</sup>	–	●	●	●
Isolation	–	–	●	–	–	●	●	●	●	–
<b>High Speed Digital I/O</b>										
No. of Channels	2 x 16-bit DIO	32 DI, 32 DO	–	2 x 24-bit 8255 PIO	2 x 24-bit 8255 PIO	–	–	–	–	–
Transfer Rate (Byte/s)	80 M	12 M	–	500 k <sup>(1)</sup>	500 k <sup>(1)</sup>	–	–	–	–	–
FIFO Size (words)	32 k	2 k	–	–	–	–	–	–	–	–
Logic Standard	5 V/TTL	5 V/TTL	–	5 V/TTL	5 V/TTL	–	–	–	–	–
Handshaking Transfer	●	●	–	–	–	–	–	–	–	–
<b>Dedicated Inputs</b>										
No. of Channels	4	4	16 + COS <sup>(4)</sup>	–	–	16	32	64	–	8
Max. Sampling Rate (Hz) <sup>(1)</sup>	500 k	500 k	10 k	–	–	–	10 k	10 k	–	500 k
Logic Standard	5 V/TTL	5 V/TTL	V <sub>IH</sub> = 3-24 V V <sub>IL</sub> = 0-1 V	–	–	V <sub>IH</sub> = 3-24 V V <sub>IL</sub> = 0-1 V	V <sub>IH</sub> = 5-24 V V <sub>IL</sub> = 0-1.5 V	V <sub>IH</sub> = 5-24 V V <sub>IL</sub> = 0-1.5 V	–	5 V/TTL
<b>Dedicated Output</b>										
No. of Channels	4	4	16	–	–	8	32	–	64	8
Max. Update Rate (Hz) <sup>(1)</sup>	500 k	500 k	10 k	–	–	–	10 k	–	10 k	500 k
Output Type	5 V/TTL	5 V/TTL	Darlington	–	–	Relay	Darlington	–	Darlington	5 V/TTL
<b>Timer/Counter</b>										
Timer/Counter	–	–	–	–	–	–	–	–	–	12 x 16-bit
Page No.	4-5	4-6	4-8	4-11	4-11	4-7	4-9	4-9	4-9	4-12

	Serial Communication Modules			
	cPCI-3534/R	cPCI-3538/R	cPCI-3544/R	cPCI-7841/R
3.3 V	5 V	5 V	5 V	5 V
Rear I/O available <sup>(2)</sup>	●	●	●	●
Isolation	● <sup>(6)</sup>	–	●	●
<b>Port Capability</b>				
No. of Ports	RS-232 x 3, RS-422/485	RS-232 x 8	RS-422/485 x 4	CAN x 2
Max. Transfer Rate (bps)	115,200	115,200	115,200	1 M
Page No.	4-15	4-15	4-14	4-16

	Video Capture Module
	cPCI-RTV24
3.3 V or 5 V PCI	3.3 V / 5 V
64-bit, 66MHz	●
<b>Port Capability</b>	
No. of Channels	4
Type	Analog
Max. Frame Rate (fps)	30 (per channel)
Resolution	640x480, 768x576, or broadcast resolution
Area Scan	●
Line Scan	–
Interlaced Scan	●
Progressive Scan	–
Color Format	RGB, YUV
Color Image Formats	NTSC-M, NTSC-Japan, PCL-B, PAL-D, PAL-G, PAL-H, PAL-I, PAM-M, PAL-N, SECAM
Monochrome Image Formats	CCIR, EIA (RS-170)
Scaling	16x
Auto. Chrominance	●
Gain Control	Hue, Contrast, Brightness, Saturation
Image Adjustments	–
<b>Misc.</b>	
Watchdog Timer	●
Page No.	4-13

Legend: ● Supported – Not available

Notes:

- (1) Theoretical maximum update rate supported by hardware, real-time performance is system dependent.
- (2) Rear I/O modules can not be used in PXI platforms due to signal conflicts
- (3) No front I/O modules available
- (4) Change Of State detection
- (5) The front I/O modules support only 5V signaling
- (6) Only the RS-422/485 port is isolated