

PCI DAQ Selection Guide

Multi-Function DAQ Cards									
	DAQ-2000 Series	DAQ-2205/2206	DAQ-2204	PCI-9118DG/HR	PCI-9118HG	PCI-9114(A)-DG	PCI-9114(A)-HG	PCI-9112	PCI-9111DG/HR
3.3 V or 5 V PCI	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V	5 V	5 V	5 V	5 V	5 V	5 V
Bus-mastering DMA	Scatter-gather	Scatter-gather	Scatter-gather	Yes	Yes	–	–	Yes	–
Auto Calibration	●	●	●	–	–	–	–	–	–
Analog Input									
Analog Inputs	4 DI	64 SE/ 32 DI	64 SE/ 32 DI	16 SE/ 8 DI	16 SE/ 8 DI	32 SE/ 16 DI	32 SE/ 16 DI	16 SE/ 8 DI	16 SE
Max. Sampling Rate (S/s)	2 M (DAQ-2010) 500 k (DAQ-2005) 250 k (DAQ-2006)	500 k (DAQ-2205) 250 k (DAQ-2206)	3 M	330 k (PCI-9118DG) 100 k (PCI-9118HR)	100 k	250 k (PCI-9114A-DG) 100 k (PCI-9114DG)	250 k (PCI-9114A-HG) 100 k (PCI-9114HG)	110 k	100 k
Simultaneous Sampling	●	–	–	–	–	–	–	–	–
AD Resolution (bits)	14 (DAQ-2010) 16 (DAQ-2005/2006)	16	12	12 (PCI-9118DG) 16 (PCI-9118HR)	12	16	16	12	12 (PCI-9111DG) 16 (PCI-9111HR)
FIFO Size (samples)	8 k (DAQ-2010) 512 (DAQ-2005/2006)	1 k	1 k	1 k	1 k	1 k	1 k	8	1 k
Channel-gain Queue	–	512	512	256	256	–	–	–	–
Bipolar Input Ranges	±10 V, ±5 V, ±2.5 V, ±1.25 V	±10 V, ±5 V, ±2.5 V, ±1.25 V	±10 V, ±5 V, ±2.5 V, ±1 V, ±1.25 V, ±1 V, ±0.5 V, ±0.25 V, ±0.2 V, ±0.05 V	±5 V, ±2.5 V, ±1.25 V, ±0.625 V	±5 V, ±0.5 V, ±0.05 V	±10 V, ±5 V, ±2.5 V, ±1.25 V	±10 V, ±1 V, ±0.1 V	±10 V, ±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	0-10 V, 0-5 V, 0-4 V, 0-2.5 V, 0-2 V, 0-1 V, 0-0.5 V, 0-0.4 V, 0-0.1 V	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V	0-10 V, 0-1 V, 0-0.1 V	–	–	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V	–
Analog Output									
Voltage Outputs	2 + AWG ⁽¹⁾	2 + AWG ⁽¹⁾	2 + AWG ⁽¹⁾	2	2	–	–	2	1
Current Outputs	–	–	–	–	–	–	–	–	–
Update Rate (S/s)	1 M	1 M	1 M	222 k ⁽²⁾	222 k ⁽²⁾	–	–	33 k ⁽²⁾	33 k ⁽²⁾
Simultaneous Update	●	●	●	–	–	–	–	–	–
DA Resolution (bits)	12	12	12	12	12	–	–	12	12
FIFO Size (samples)	2 k	1 k	1 k	–	–	–	–	–	–
Settling Time	3 μs	3 μs	3 μs	4.5 μs	4.5 μs	–	–	30 μs	30 μs
Analog Output Ranges	±10 V, ±EXTREF 0-10 V, 0-EXTREF	±10 V, ±EXTREF 0-10 V, 0-EXTREF	±10 V, ±EXTREF, 0-10 V, 0-EXTREF	±10 V	±10 V	–	–	0-5 V, 0-10 V, 0-EXTREF	±10 V, 0-10 V
Current Output Ranges	–	–	–	–	–	–	–	–	–
Digital I/O, Timer/Counter, and External Trigger									
Digital I/O	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	4 DI, 4 DO	4 DI, 4 DO	16 DI, 16 DO (Isolated)	16 DI, 16 DO (Isolated)	16 DI, 16 DO	16 DI, 16 DO
Timer/Counter	16-bit x 2	16-bit x 2	16-bit x 2	–	–	16-bit	16-bit	16-bit	–
Analog Trigger	Yes	Yes	Yes	–	–	–	–	–	–
Digital Trigger	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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	Analog Input Cards				Analog Output Cards						Portable DAQ
	New! PCI-9820	PCI-9812(A) PCI-9810	New! DAQ-2208	PCI-9113A	DAQ-2500 Series	PCI-6216V	PCI-6208V	PCI-6208A	PCI-6308V	PCI-6308A	USBDAQ-9100MS
3.3 V or 5 V PCI	3.3 V / 5 V	5 V	3.3 V / 5 V	5 V	3.3 V / 5 V	5 V	5 V	5 V	5 V	5 V	USB 1.1
Bus-mastering DMA	Scatter-gather	Yes	Scatter-gather	–	Scatter-gather	–	–	–	–	–	–
Auto Calibration	●	–	●	–	●	–	–	–	–	–	●
Analog Input											
Analog Inputs	2 SE	4	96 SE/ 48 DI	32 SE/ 16 DI	8 SE (DAQ-2501) 4 SE (DAQ-2502)	–	–	–	–	–	8 DI
Max. Sampling Rate (S/s)	120 M	20 M	3 M	100 k (Isolated)	400 k	–	–	–	–	–	500 k
Simultaneous Sampling	●	●	–	–	–	–	–	–	–	–	● (4-CH)
AD Resolution (bits)	14	12 (PCI-9812) 10 (PCI-9810)	12	12	12	–	–	–	–	–	12
FIFO Size (samples)	256 M (SDRAM) ⁽³⁾	32 k (PCI-9810/9812) 128 k (PCI-9812A)	1 k	1 k	1 k	–	–	–	–	–	4 k
Channel-gain Queue	–	–	1024	–	–	–	–	–	–	–	–
Bipolar Input Ranges	±5 V, ±1 V	±5 V, ±1 V	±10 V, ±5 V, ±2.5 V, ±2 V, ±1.25 V, ±1 V, ±0.5 V, ±0.25 V, ±0.2 V, ±0.05 V	±10 V, ±1 V, ±0.1 V	±10 V	–	–	–	–	–	±10 V, ±5 V, ±2.5 V, ±1.25 V
Unipolar Input Ranges	–	–	0-10 V, 0-5 V, 0-4 V, 0-2.5 V, 0-2 V, 0-1 V, 0-0.5 V, 0-0.4 V, 0-0.1 V	0-10 V, 0-1 V, 0-0.1 V	0-10 V	–	–	–	–	–	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V
Analog Output											
Voltage Outputs	–	–	–	–	4 + AWG (DAQ-2501) ⁽¹⁾ 8 + AWG (DAQ-2502) ⁽¹⁾	16	8	8	8	8	2 + AWG
Current Outputs	–	–	–	–	–	–	–	8	–	8	–
Update Rate (S/s)	–	–	–	–	1 M	454 k ⁽²⁾	454 k ⁽²⁾	454 k ⁽²⁾	250 k (Isolated) ⁽²⁾	250 k (Isolated) ⁽²⁾	500 k
Simultaneous Update	–	–	–	–	●	–	–	–	●	●	●
DA Resolution (bits)	–	–	–	–	12	16	16	16	12	12	12
FIFO Size (samples)	–	–	–	–	8 k (DAQ-2501) 16 k (DAQ-2502)	–	–	–	–	–	511
Settling Time	–	–	–	–	3 μs	4 μs	4 μs	17 μs	16 μs	17 μs	2 μs
Voltage Output Ranges	–	–	–	–	±10 V, ±EXTREF 0-10 V, 0-EXTREF	±10 V	±10 V	±10 V	±10 V, 0-10 V, 0-EXTREF	±10 V, 0-10 V, 0-EXTREF	±10 V
Current Output Ranges	–	–	–	–	–	–	–	0-20 mA, 4-20 mA, 5-25 mA	–	0-20 mA, 4-20 mA, 5-25 mA	–
Digital I/O, Timer/Counter, and External Trigger											
Digital I/O	–	3 DI	24-bit 8255 PIO	–	24-bit 8255 PIO	4 DI, 4 DO	4 DI, 4 DO	4 DI, 4 DO	4 DI, 4 DO (Isolated)	4 DI, 4 DO (Isolated)	4 DI, 4 DO (Isolated)
Timer/Counter	–	–	–	–	16-bit x 2	–	–	–	–	–	16-bit x 2
Analog Trigger	Yes	Yes	Yes	–	Yes	–	–	–	–	–	–
Digital Trigger	Yes	Yes	Yes	–	Yes	–	–	–	–	–	Yes
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Legend:
● Supported – Not available

Notes:
(1) Analog outputs with hardware-based arbitrary waveform generation.
(2) Theoretical maximum update rate supported by hardware, real-time performance is system dependent.
(3) Supports 144-pin SODIMM SDRAM modules, up to 256M-sample storage size with a 512MB SDRAM module.

* All specifications are subject to change without further notice.

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