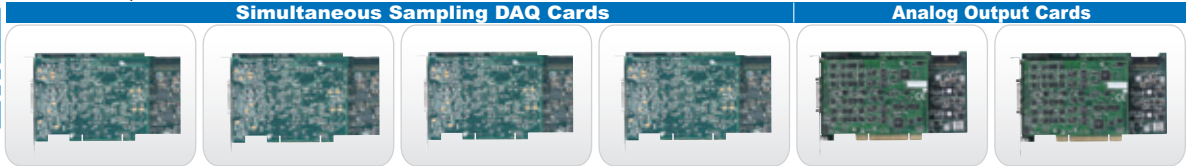


PCI/PCI Express® Smart DAQ Solutions

DAQ-2000/DAQe-2000 Series

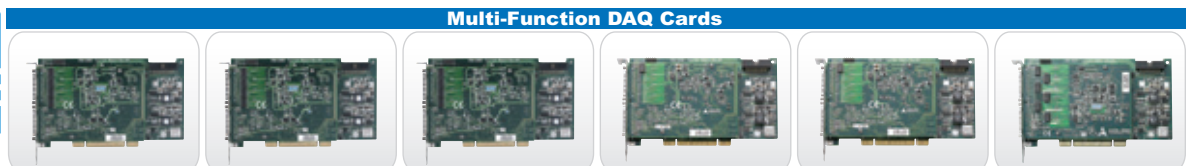
Simultaneous Sampling DAQ Cards



Analog Output Cards

Model Name	DAQ-2010/DAQe-2010	DAQ-2016/DAQe-2016	DAQ-2005/DAQe-2005	DAQ-2006/DAQe-2006	DAQ-2501/DAQe-2501	DAQ-2502/DAQe-2502
Bus Type	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®
Bus-mastering DMA	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather
Auto Calibration	●	●	●	●	●	●
Analog Input						
Analog Inputs	4 DI	4 DI	4 DI	4 DI	8 SE	4 SE
Max. Sampling Rates (S/s)	2 M	800 k	500 k	250 k	400 k	400 k
Simultaneous Sampling	●	●	●	●	-	-
AD Resolution (bits)	14	16	16	16	14	14
FIFO Size (samples)	8 k	512	512	512	1 k	1 k
Channel gain Queue	-	-	-	-	-	-
Bipolar Input Ranges (V)	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V	±10 V
Unipolar Input Ranges (V)	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V	0-10 V
Analog Output						
Voltage Outputs	2 + AWG ⁽²⁾	2 + AWG ⁽²⁾	2 + AWG ⁽²⁾	2 + AWG ⁽²⁾	4 + AWG ⁽²⁾	8 + AWG ⁽²⁾
Update Rate (S/s)	1 M	1 M	1 M	1 M	1 M	1 M
Simultaneous Update	●	●	●	●	●	●
DA Resolution (bits)	12	12	12	12	12	12
FIFO Size (samples)	2 k	2 k	2 k	2 k	8 k	16 k
Settling Time	3 μs	3 μs	3 μs	3 μs	3 μs	3 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, ±EXTREF, 0-10 V, 0-EXTREF	±10 V, ±EXTREF, 0-10 V, 0-EXTREF	±10 V, ±EXTREF, 0-10 V, 0-EXTREF
Digital I/O, Timer/Counter, and External Trigger						
Digital I/O	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO
Timer/Counter	16-bit x2	16-bit x2	16-bit x2	16-bit x2	16-bit x2	16-bit x2
Analog Trigger	●	●	●	●	●	●
Digital Trigger	●	●	●	●	●	●
Page Number	7-4	7-4	7-4	7-4	7-10	7-10

Multi-Function DAQ Cards



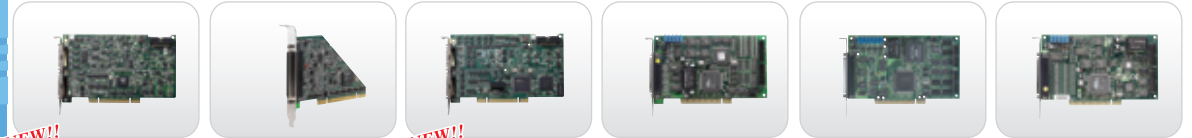
Model Name	DAQ-2204/DAQe-2204	DAQ-2205/DAQe-2205	DAQ-2206/DAQe-2206	DAQ-2213/DAQe-2213	DAQ-2214/DAQe-2214	DAQ-2208/DAQe-2208
Bus Type	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®	PCI ⁽¹⁾ / PCI Express®
Bus-mastering DMA	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather	Scatter-gather
Auto Calibration	●	●	●	●	●	●
Analog Input						
Analog Inputs	64 SE/32 DI	64 SE/32 DI	64 SE/32 DI	16 SE/8 DI	16 SE/8 DI	96 SE/48 DI
Max. Sampling Rates (S/s)	3 M	500 k	250 k	250 k	250 k	3 M
Simultaneous Sampling	-	-	-	-	-	-
AD Resolution (bits)	12	16	16	16	16	12
FIFO Size (samples)	1 k	1 k	1 k	1 k	1 k	1 k
Channel gain Queue	512	512	512	512	512	1024
Bipolar Input Ranges (V)	±10 V ~ ±0.05 V	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V ~ ±1.25 V	±10 V ~ ±0.05 V
Unipolar Input Ranges (V)	0-10 V ~ 0-0.1 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-1.25 V	0-10 V ~ 0-0.1 V
Analog Output						
Voltage Outputs	2 + AWG ⁽²⁾	2 + AWG ⁽²⁾	2 + AWG ⁽²⁾	-	2 + AWG ⁽²⁾	-
Update Rate (S/s)	1 M	1 M	1 M	-	1 M	-
Simultaneous Update	●	●	●	-	●	-
DA Resolution (bits)	12	12	12	-	12	-
FIFO Size (samples)	1 k	1 k	1 k	-	1 k	-
Settling Time	3 μs	3 μs	3 μs	-	3 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, ±EXTREF, 0-10 V, 0-EXTREF	-
Digital I/O, Timer/Counter, and External Trigger						
Digital I/O	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO	24-bit 8255 PIO
Timer/Counter	16-bit x2	16-bit x2	16-bit x2	16-bit x2	16-bit x2	-
Analog Trigger	●	●	●	●	●	●
Digital Trigger	●	●	●	●	●	●
Page Number	7-8	7-8	7-8	7-12	7-12	7-6

Legend:
● Supported - Not available

Note:
(1) Support 3.3 V/ 5 V PCI (2) Analog outputs with hardware-based arbitrary waveform generation.

PCI Multi-Function DAQ Cards

Multi-Function DAQ Cards



Model Name	PCI-9222/PCI-9223	PCI-9221	PCI-9524	PCI-9114(A)-DG/-HG	PCI-9112/LPCI-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	3.3 V/5 V ⁽²⁾	5 V
Bus-mastering DMA	●	●	●	—	●	—
Auto Calibration	●	●	●	—	—	—
Analog Input						
Analog Inputs	32 SE/16 DI (PCI-9223) 16 SE/8 DI (PCI-9222)	16 SE/8 DI	4 + 4 (4-ch load cell inputs & 4-ch general purpose AD)	32 SE/16 DI	16 SE/8 DI	16 SE
Max. Sampling Rates (S/s)	500 k (PCI-9223) 250 k (PCI-9222)	250 k	up to 30 k (For details, refer to page 7-17)	250 k (PCI-9114A-DG/-HG) 100 k (PCI-9114DG/-HG)	110 k	100 k
AD Resolution (bits)	16	16	24	16	12	12 (PCI-9111DG) 16 (PCI-9111HR)
FIFO Size (samples)	1 k	1 k	256 k	1 k	8	1 k
Channel gain Queue	●	●	—	—	—	—
Bipolar Input Ranges (V)	±10 V ~ ±0.25 V	±5 V ~ ±0.2 V	For details, refer to page 7-17	±10 V ~ ±1.25 V (PCI-9114(A)-DG/ ±10 V ~ ±0.1 V (PCI-9114(A)-HG)	±10 V ~ ±0.625 V	±10 V ~ ±0.625 V
Unipolar Input Ranges (V)	—	—	For details, refer to page 7-17	—	0-10 V ~ 0-1.25 V	—
Analog Output						
Voltage Outputs	2	2	2	—	2	1
Update Rate (S/s)	1 M	Static	5 k	—	33 k ⁽¹⁾	33 k ⁽¹⁾
DA Resolution (bits)	16	16	16	—	12	12
Settling Time	3 μs	Static	3 μs	—	30 μs	30 μs
Analog Output Ranges	±10 V	±5 V	±10 V	—	0-5 V, 0-10 V, 0-EXTREF	±10 V, 0-10 V
Digital I/O, Timer/Counter, and External Trigger						
Digital I/O	16 DI, 16 DO ⁽³⁾	8 DI, 4 DO ⁽³⁾	8 DI, 8 DO (Isolated)	16 DI, 16 DO (Isolated)	16 DI, 16 DO	16 DI, 16 DO
Timer/Counter	32-bit x 4	32-bit x 2	—	16-bit	16-bit	—
Analog Trigger	—	—	—	—	—	—
Digital Trigger	●	●	●	●	●	●
Page Number	7-14	7-16	7-17	7-18	7-19	7-20

Legend:

● Supported — Not available

Notes:

(1) Actual maximum update rate is dependent on system performance.
(3) Programmable Function I/O

(2) The PCI-9112 supports a 5 V PCI bus, and the LPCI-9112 supports a 3.3 V or 5 V PCI bus.

- 1 Software Solutions
- 2 PXI/CompactPCI Platforms
- 3 Modular Instrument
- 4 PXI/CompactPCI Modules
- 5 Bus Interface
- 6 GPIB Interface
- 7 PCI/PCI Express® DAQ Cards

- 8 PCI/PCI Express® DIO Cards
- 9 PC/104-Plus Modules
- 10 ISA DAS/DIO Cards
- 11 System Product
- 12 Wiring Termination Boards
- 13 Motion, HSL, Vision, COM & GEME
- 14 Remote I/O Modules
- 15 Industrial Computers

PCI AI/AO Cards

Analog Input Cards



Model Name	PCI-9118 DG/L, HR/L	PCI-9118 HG/L	PCI-9113A
3.3 V or 5 V PCI	5 V	5 V	5 V
Bus-mastering DMA	●	●	—
Analog Input			
Analog Inputs	16 SE/8 DI	16 SE/8 DI	32 SE/ 16 DI
Max. Sampling Rate (S/s)	333 k (PCI-9118DG/L) 100 k (PCI-9118HR/L)	333 k	100 k (Isolated)
AD Resolution (bits)	12 (PCI-9118DG/L) 16 (PCI-9118HR/L)	12	12
FIFO Size (samples)	1 k	1 k	1 k
Channel gain Queue	256	256	—
Bipolar Input Ranges	±5 V ~ ±0.625 V	±5 V ~ ±0.05 V	±10 V ~ ±0.05 V
Unipolar Input Ranges	0-10 V ~ 0-1.25 V	0-10 V ~ 0-0.1 V	0-10 V ~ 0-0.1 V
Digital I/O, Timer/Counter, and External Trigger			
Digital I/O	4 DI, 4 DO	4 DI, 4 DO	—
Timer/Counter	—	—	—
Analog Trigger	—	—	—
Digital Trigger	●	●	—
Page Number	7-21	7-21	7-22

Analog Output Cards



Model Name	PCI-6202	PCI-6216V/PCI-6208V	PCI-6208A	PCI-6308V	PCI-6308A
3.3 V or 5 V PCI	3.3 V/5 V	5 V	5 V	3.3 V/5 V	3.3 V/5 V
Bus-mastering DMA	●	—	—	—	—
Analog Output					
Voltage Outputs	4	16 (PCI-6216V) 8 (PCI-6208V)	8	8	8
Current Outputs	—	—	8	—	8
Update Rate (S/s)	1 M	454 k ⁽²⁾	454 k ⁽²⁾	250 k (Isolated) ⁽²⁾	250 k (Isolated) ⁽²⁾
Simultaneous Update	●	—	—	●	●
DA Resolution (bits)	16	16	16	12	12
FIFO Size (samples)	512	—	—	—	—
Settling Time	3 μs	2 μs	17 μs	16 μs	17 μs
Voltage Output Ranges	±10 V	±10 V	±10 V	±10 V, 0-10 V, 0-EXTREF0	±10 V, 0-10 V, 0-EXTREF
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	16 DI, 16 DO (Isolated)	4 DI, 4 DO	4 DI, 4 DO	4 DI, 4 DO (Isolated)	4 DI, 4 DO (Isolated)
Timer/Counter	32-bit x 4	—	—	—	—
Analog Trigger	—	—	—	—	—
Digital Trigger	●	—	—	—	—
Page Number	7-23	7-24	7-24	7-25	7-25

Legend:

● Supported — Not available

Notes: (1) Supports 144-pin SODIMM SDRAM modules, up to 256 M-sample storage size
(2) Actual maximum update rate is dependent on system performance.