DAQ/DAQe-2213/2214

16-CH 16-Bit 250 kS/s Low-Cost Multi-Function DAQ Cards

PCI EXPRESS®

DAQ-2213 / 2214

DAQe-2213 / 2214

Ordering Information / Quick Selection Guide

Model Name	Analog Input				Analog Output			DIO	Timer/Counter
	No. of channels	Resolution	Sampling rate	Input range	No. of channels	Resolution	Sampling rate	No. of channels	No. of channels
DAQ/DAQe-2213	8 DI/16 SE	16 Bit	250 kS/s	±1.25 V to ±10 V	-	-	-	24-CH 8255 PIO	2-CH, 16-Bit
DAQ/DAQe-2214	8 DI/16 SE	16 Bit	250 kS/s	±1.25 V to ±10 V	2	12 Bit	1 MS/s	24-CH 8255 PIO	2-CH, 16-Bit

Specifications

Model Name	DAQ/DAQe-2213	DAQ/DAQe-2214
Analog Input		
Resolution	16 Bit, no missing codes	
Number of channels	16 single-ended or 8 differential (software selectable per channel)	
Channel gain queue size	512	
Maximum update rate	250 kS/s	
Programmable gain	1, 2, 4, 8	
Bipolar input ranges	±10 V, ±5 V, ±2.5 V, ±1.25 V	
Unipolar input ranges	0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V	
Offset error	±1 mV	
Gain error	±0.06% of FSR	
Input coupling	DC	
Overvoltage protection	Power on: Continuous ±30 V, Power off: Continuous ±15 V	
Input impedance	1 GΩ /100 pF	
Trigger sources	Software, external digital/analog trigger, SSI bus	
Trigger modes	Pre-trigger, post-trigger, middle-trigger, delay-trigger, and repeated trigger	
FIFO buffer size	1 k samples	
Data transfers	Polling, scatter-gather DMA	
Analog Output		
Number of channels	-	2 voltage outputs
Resolution	-	12 Bit
Output ranges	-	0-10 V, ±10 V, 0-AOEXTREF, ±AOEXTREF
Maximum update rate	-	1 μs
Slew rate	-	20 V / μs
Settling time	-	3 μs to ±0.5 LSB accuracy
Offset error	-	±2 mV
Gain error	-	±0.04% of max. output
Driving capacity	-	±5 mA
Stability	-	Any passive load, up to 1500 pF
Trigger sources	-	Software, external digital/analog trigger, SSI bus
Trigger modes	-	Post-trigger, delay-trigger, and repeated trigger
FIFO buffer size	-	1 k samples
Data transfers	-	Programmed I/O, scatter-gather DMA
Digital I/O		
Number of channels	24-CH 8255 programmable input/output	
Compatibility	5 V/TTL	
Data transfers	Programmed I/O	
General-Purpose Timer/Counter		
Number of channels	2	
Resolution	16 Bit	
Compatibility	5 V/TTL	
Base clock available	40 MHz, external clock up to 10 MHz	
General Specifications		
Auto Calibration	Yes (+5 V, ±2 ppm/˚C)	
Dimensions	175 mm x 107 mm (6.82" x 4.17") (not including connectors) (DAQ-2213/2214) 168 mm x 107 mm (6.55" x 4.17") (not including connectors) (DAQe-2213/2214)	
Connector	68-pin VHDCI female x 2	
Operating temperature	0˚C to 55˚C (32˚F to 131˚F)	
Storage temperature	-20˚C to 70˚C (-4˚F to 158˚F)	
Humidity	5 to 95%, non-condensing	
Power requirements	+5 V 1.2 A typical (DAQ-2213) +3.3 V 0.84 A, +12 V 0.604 A typical (DAQe-2213)	+5 V 1.2 A typical (DAQ-2214) +3.3 V 0.77 A, +12 V 0.572 A typical (DAQe-2214)

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Features

- Supports a 32-Bit 3.3 V or 5 V PCI bus (DAQ-2213, DAQ-2214)
- x1 lane PCI Express® Interface (DAQe-2213, DAQe-2214)
- Onboard 1 k-sample A/D FIFO
- Bipolar or unipolar analog input ranges
- Programmable gains: x1, x2, x4, x8
- 512-configuration channel gain queue
- Scatter-gather DMA
- 2-CH 12-Bit multiplying analog outputs with waveform generation (DAQ/DAQe-2214)
- Onboard 1 k-sample D/A FIFO (DAQ-2214, DAQe-2214)
- 24-CH TTL digital input/output
- 2-CH 16-Bit general-purpose timer/counter
- Analog and digital triggering
- Fully auto calibration
- Multiple cards synchronization through SSI (System Synchronization Interface) bus

Supported Operating System

- Windows 7/8 x64/x86, Linux

Driver and SDK

- LabVIEW, MATLAB, C/C++, Visual Basic, Visual Studio.NET

Software Utility

- AD-Logger

Terminal Boards & Cables

- DIN-68S-01
- ACL-10568-1
- ACL-SSI-2/3/4 (for DAQ/DAQe-2214)

* For more information on mating terminal board and cables, please refer to P3-48/49.

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