DAQ/DAQe-2213/2214

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

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)

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)