PXI/DAQ/DAQe-2200 Series

64-CH 12/16-Bit Up to 3 MS/s Multi-Function DAQ Cards

PXI-2204

DAQ-2204

DAQe-2204

Features

- **Supports a 32-Bit 3.3 V or 5 V PCI bus (DAQ-2200 series)**
- **x1 lane PCI Express® Interface (DAQe-2200 series)**
- **PXI specification Rev 2.2 compliant (PXI-2200 series)**
- **64-CH single-ended or 32-CH differential analog inputs**
- **Onboard 1 k-sample A/D FIFO**
- **Bipolar or unipolar analog input ranges**
- **Programmable gains:**
  - **x1, x2, x4, x5, x8, x10, x20, x40, x50, x200 (DAQ/DAQe-2204)**
  - **x1, x2, x4, x8 (DAQ/DAQe-2205 & DAQ/DAQe-2206)**
- **512-configuration channel gain queue**
- **Scatter-gather DMA for both analog inputs and outputs**
- **2-CH 12-Bit multiplying analog outputs with waveform generation**
- **Onboard 1 k-sample D/A FIFO**
- **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 or PXI trigger 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

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	Update rate	No. of channels	No. of channels
PXI/DAQ/DAQe-2204	32 DI/64 SE	12 Bit	3 MS/s (Single channel) 1 MS/s (Multi-channel)	±0.05 V to ±10 V	2	12 Bit	1 MS/s	24-CH 8255 PIO	2-CH, 16-Bit
PXI/DAQ/DAQe-2205	32 DI/64 SE	16 Bit	500 kS/s	±1.25 V to ±10 V	2	12 Bit	1 MS/s	24-CH 8255 PIO	2-CH, 16-Bit
PXI/DAQ/DAQe-2206	32 DI/64 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	PXI/DAQ/DAQe-2204	PXI/DAQ/DAQe-2205	PXI/DAQ/DAQe-2206
Analog Input			
Resolution	12 Bit, no missing codes	16 Bit, no missing codes	
Number of channels	64 single-ended or 32 differential (software selectable per channel)		
Channel gain queue size	512		
Maximum sampling rate	3 MS/s (Single channel) 1 MS/s (Multi-channel)	500 kS/s	250 kS/s
Programmable gain	1, 2, 4, 5, 8, 10, 20, 40, 50, 200	1, 2, 4, 8	
Bipolar input ranges	Max. : ±10 V, Min. : ±0.05 V±10 V, ±5 V, ±2.5 V, ±1.25 V±10 V, ±5 V, ±2.5 V, ±1.25 V		
Unipolar input ranges	Max. : 0-10 V, Min. : 0-0.1 V0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V0-10 V, 0-5 V, 0-2.5 V, 0-1.25 V		
Offset error	±2 mV	±1 mV	±2 mV
Gain error	±0.06% of FSR	±0.08% of FSR	±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		
CMRR (gain = 1)	90 dB	83 dB	
Settling time	1 µs to 0.1% error	2 µs to 0.1% error	4 µs to 0.01% error
-3 dB small signal bandwidth (@Bipolar +/-10V Gain=1)	2 MHz	850kHz	600 kHz
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	±1 mV	±2 mV	±1 mV
Gain error	±0.02% of max. output	±0.04% of max. output	±0.02% 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		
Base clock available	40 MHz, external clock up to 10 MHz		
General Specifications			
Auto Calibration	Yes (+5 V, ±2 ppm/°C)		
Dimensions	160 mm x 100 mm (6.24" x 3.9") (not including connectors) (PXI-2200 series) 175 mm x 107 mm (6.82" x 4.17") (not including connectors) (DAQ-2200 series) 168 mm x 107 mm (6.55" x 4.17") (not including connectors) (DAQe-2200 series)		
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 1.3 A typical (PXI/DAQ-2204) +3.3 V 0.9 A, +12 V 0.564 A typical (DAQe-2204)	+5 V 1.2 A typical (PXI/DAQ-2205) +3.3 V 0.81 A, +12 V 0.568 A typical (DAQe-2205)	+5 V 1.2 A typical (PXI/DAQ-2206) +3.3 V 0.756 A, +12 V 0.584 A typical (DAQe-2206)

Terminal Boards & Cables

- DIN-68S-01
- ACL-10568-1
- ACL-SSI-2/3/4

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