

# PXI/DAQ/DAQe-2500 Series

## 4/8-CH 12-Bit 1 MS/s Analog Output Multi-Function DAQ Cards



PXI-2502



DAQ-2502



DAQe-2502

### Ordering Information / Quick Selection Guide

Model Name	Analog Output				Analog Input				DIO	
	No. of channels	Resolution	Update rate	Output range	No. of channels	Resolution	Sampling rate	Input range	No. of channels	No. of channels
PXI/DAQ/DAQe-2501	4	12 Bit	1 MS/s	±10 V, 0 to 10 V	8	14 Bit	400 kS/s	±10 V or 0 to 10 V	24-CH 8255 PIO	2-CH, 16-Bit
PXI/DAQ/DAQe-2502	8	12 Bit	1 MS/s	±10 V, 0 to 10 V	4	14 Bit	400 kS/s	±10 V or 0 to 10 V	24-CH 8255 PIO	2-CH, 16-Bit

### Specifications

Model Name	PXI/DAQ/DAQe-2501	PXI/DAQ/DAQe-2502
<b>Analog Output</b>		
Number of channels	4 voltage outputs	8 voltage outputs
Resolution	12 Bit	
Output ranges	0-10 V, ±10 V, 0-AOEXTREF, ±AOEXTREF	
Maximum update rate	1 MS/s	
Slew rate	20 V/μs	
Settling time	3 μs to ±0.5 LSB accuracy	
Offset error	±8 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	8 k samples	16 k samples
Data transfers	Programmed I/O, scatter-gather DMA	
<b>Analog Input</b>		
Resolution	14 Bit, no missing codes	
Number of channels	8 single-ended	4 single-ended
Maximum sampling rate	400 kS/s	
Gain	1	
Bipolar input ranges	±10 V	
Unipolar input ranges	0-10 V	
Offset error	±4 mV	
Gain error	±0.1% of FSR	
Input coupling	DC	
Overvoltage protection	Power on: Continuous ±30 V, Power off: Continuous ±15 V	
Input impedance	1 GΩ/6 pF	
Trigger sources	Software, external digital/analog trigger, SSI bus	
Trigger modes	Post-trigger, delay-trigger, and repeated trigger	
FIFO buffer size	2 k samples	
Data transfers	Polling, scatter-gather DMA	
<b>Digital I/O</b>		
Number of channels	24-CH 8255 programmable input/output	
Compatibility	5 V/TTL	
Data transfers	Programmed I/O	
<b>Timer/Counter</b>		
Number of channels	2	
Resolution	16 Bit	
Compatibility	5 V/TTL	
Base clock available	40 MHz, external clock up to 10 MHz	
<b>General Specifications</b>		
Auto Calibration	Yes (+5 V, ±2 ppm/°C)	
Dimensions	160 mm x 100 mm (6.24" x 3.9") (not including connectors) (PXI-2500 series) 175 mm x 107 mm (6.82" x 4.17") (not including connectors) (DAQ-2500 series) 168 mm x 107 mm (6.55" x 4.17") (not including connectors) (DAQe-2500 series)	
Connector	68-pin VHDCI female	
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 1.6 A typical (PXI/DAQ-2501) +3.3 V 0.78 A, +12 V 0.66 A typical (DAQe-2501)	+5 V 2.12 A typical (PXI/DAQ-2502) +3.3 V 0.89 A, +12 V 0.76 A typical (DAQe-2502)

### Features

- Supports a 32-Bit 3.3 V or 5 V PCI bus (DAQ-2500 series)
- PXI specification Rev 2.2 compliant (PXI-2500 series)
- x1 lane PCI Express® Interface (DAQe-2500 series)
- Hardware-based arbitrary waveform generation
- Onboard 8 k-sample D/A FIFO (PXI/DAQ/DAQe-2501)
- Onboard 16 k-sample D/A FIFO (PXI/DAQ/DAQe-2502)
- Programmable bipolar or unipolar analog output ranges / internal or external reference sources on per channel basis
- 8-CH 400 kS/s 14-Bit single-ended analog inputs (PXI/DAQ/DAQe-2501) ; 4-CH 400 kS/s 14-Bit single-ended analog inputs (PXI/DAQ/DAQe-2502)
- Onboard 2 k-sample A/D FIFO
- Bipolar or unipolar analog input ranges
- Scatter-gather DMA for both analog inputs and outputs
- 24-CH TTL digital input/output
- 2-CH 16-Bit general-purpose timer/counter
- Analog & 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

### 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.

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