

# 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)<br>175 mm x 107 mm (6.82" x 4.17") (not including connectors) (DAQ-2500 series)<br>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)<br>+3.3 V 0.78 A, +12 V 0.66 A typical (DAQe-2501)   | +5 V 2.12 A typical (PXI/DAQ-2502)<br>+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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