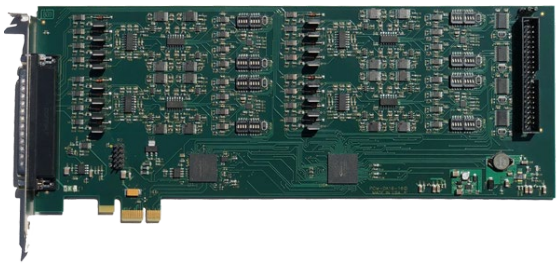
PCIe-DA16-6, 4, 2

6, 4 or 2 Analog Output Cards

FEATURES

- 6-, 4- and 2 channel, 16- or 12-bit digital-to-analog outputs PCI Express card
- Software / Hardware compatible with PCI-DA12-6, 4 & 2, >125k per channel
- Dip-switch selectable analog output ranges of 2.5V, 5V, 10V, ±2.5V, ±5V, ±10V, 4-20mA
- Individual or simultaneous update of the DACs
- DACs restricted at power-on to prevent spurious outputs
- 16-bits of digital I/O
- VCCIO available via 0.5A resettable fuse
- 12VDC available via 0.2A resettable fuse
- RoHS Available
- Wind River VxWorks support available



FUNCTIONAL DESCRIPTION

The PCIe-DA16-6 series are x1 6.6" cards that contain six, four or two digital-to-analog converters (DACs) and 16 bits of digital I/O.

The DACs can be updated individually or simultaneously. The board features a variety of unipolar and bipolar voltage ranges or a 4-20 mA current range (sink) for each DAC giving the user a variety of options. To ensure that there will not be excessive outputs to external circuits when the board is powered on, automatic circuits limit analog outputs to zero volts until initialized via software command.

Analog output ranges available are:

0 to +2.5V	-2.5 to +2.5V
0 to +5V	-5 to +5V
0 to +10V	-10V to +10V
4mA to 20mA (sink)	

Each DIO line is buffered and capable of up to 32mA source/sink. The VCCIO logic level is globally configured via jumper selection as 5V or 3.3V. The two digital I/O ports (A and B) are each configurable as inputs or outputs, and are factory-configured as pulled-up (to the selected VCCIO) through 10kΩ resistor networks. These groups can be configured for pull-down as a factory option.

I/O connections for the DACs and digital I/O lines are made at a 37-pin D-subminiature Male connector on the card mounting bracket.

Calibration is supported with oncard non-volatile memory to hold per-channel per-range mX+B constants.

SOFTWARE

The card is supported for use in most operating systems and includes a free Linux and Windows compatible software package. This package contains sample programs and source code in C#, Delphi, and Visual C++ for Windows. Also provided is a graphical setup program in Windows. Linux support includes installation files and basic samples for programming from user level via an open source kernel driver. Third party support includes a Windows standard DLL interface usable from the most popular application programs. Embedded OS support includes the family of Windows Operating Systems including IoT. ACCES is also now offering a VxWorks driver/library for the ultimate real-time process monitoring and control solution.

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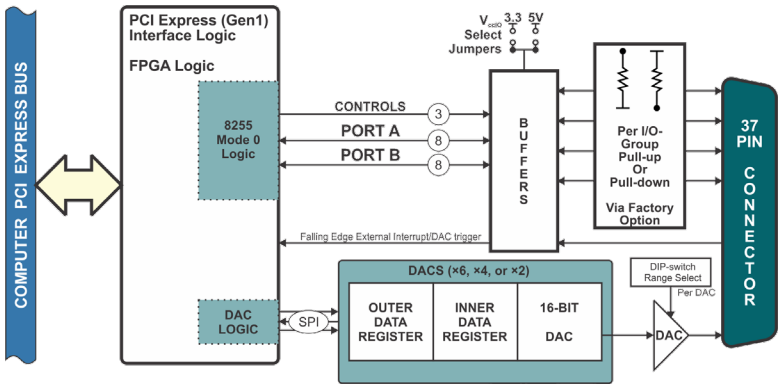

BLOCK DIAGRAM

SPECIFICATIONS

Analog Outputs

- Channels: 6, 4 or 2
- Resolution: 16 bits, 12 bits
- Unipolar Ranges: 0-2.5V, 0-5V, 0-10V
- Bipolar Ranges: ±2.5V, ±5.0V, ±10.0V
- Current Range: 4 to 20 mA (external excitation of 8-36VDC)
- Output Drive: 5 mA maximum
- Output Resistance: Less than 0.1 ohm
- Relative Accuracy: ± 1 LSB max, ± ½ LSB typical
- Diff. Linearity: ± ½ LSB integral non-linearity over rated temperature range
- Monotonicity: 16 bits over operating temp
- Settle time: 5 µsec ¼ to ¾ scale and ¾ to ¼ scale settling time, to ±2 LSB

Digital I/O

- Lines: 16; Ports A & B
- Type: 8255 compatible
- Logic Level: VCCIO jumper selectable
- Pull-up/down: 10k ohm (pulled up by default)

Logic Levels	VCCIO = 5V		VCCIO = 3.3V	
Low Inputs	≤ 1.5V	≤ 2uA	≤ 0.8V	≤ 2uA
High Inputs	≥ 3.5V	≤ 2uA	≥ 2.0V	≤ 2uA
Low Outputs	≤ 0.55V	32mA	≤0.55V	24mA
High Outputs	≥ 3.8V	32mA	≥ 2.4V	24mA

Environmental

- Operating Temp: 0 to +70°C
- Storage Temp: -55 to +150°C
- Humidity: 5% to 95% w/o condensation
- Length: 10.5" (267 mm) long

ORDERING GUIDE

- PCIe-DA16-6 Six 16-Bit Analog Outputs
- PCIe-DA16-4 Four 16-Bit Analog Outputs
- PCIe-DA16-2 Two 16-Bit Analog Outputs
- PCIe-DA12-6 Six 12-Bit Analog Outputs
- PCIe-DA12-4 Four 12-Bit Analog Outputs
- PCIe-DA12-2 Two 12-Bit Analog Outputs

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