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Find the *Acces PCI-DA12-6* at our website: ***Click HERE***

ACCES I/O PRODUCTS, INC.
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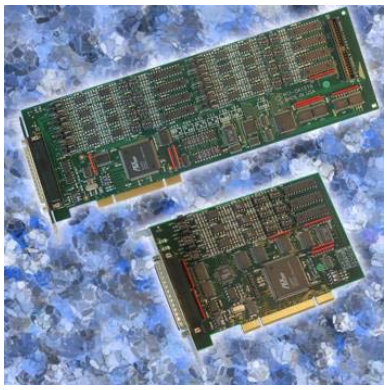
Universal PCI / PCI-X !
Any card, any time!

PCI-DA12-2/4/6 &

PCI-DA12-8/16

12-Bit Analog Output Cards

Features



- Universal PCI, PCI-X, 3.3V and 5V compatible (Call for PCI-Express availability)
- Two, four, six, eight and sixteen (respectively), 12-Bit, double-buffered, digital-to-analog converters
- Program control provides means for either individual update or simultaneous update of the DACs. The 8 and 16 channel models can use the counter-timer to generate DAC updates, and/or IRQs. The 2/4/6 models can use an external signal in this way.
- Unique, automatic control of DAC outputs to prevent spurious outputs at power-on
- 24-bits (PCI-DA12-8/16) or 16-bits (PCI-DA12-2/4/6) digital I/O buffered with tri-stateable transceivers
- Three 16-bit Down counters (models PCI-DA12-8/16 only)
- Resettable-fused +5VDC available for external use
  RoHS Available. Please contact us for ordering information

PCI-DA12-8 and PCI-DA12-16 are full-size cards that can be installed in long slots of PCI-Bus computers. They contain eight and sixteen independent double-buffered, digital-to-analog converters (DACs), and three 16-bit counter/timers. The PCI-DA12-2, -4, and -6 have two, four, and six DACs respectively. All of these cards have 8255 Compatible digital input/outputs, 16bits are available on the PCI-DA12-2/4/6 models, and all 24 bits are available on the PCI-DA12-8/16 models. On the latter card a cable and bracket is provided to bring the 40-pin header signals to a 37-pin DB connector on an adjacent mounting bracket.

DIGITAL-TO-ANALOG CONVERTERS

The DACs are double-buffered and can be updated individually or simultaneously. To assure that there will not be excessive outputs to external circuits when the card is plugged in, automatic circuits limit analog outputs to 15 percent of full scale when the card is powered up. Upon power-up, the DAC reference voltage is set to that low voltage and the card is set in the Simultaneous Update mode. Then, after values are loaded into the DACs, you can use a software command to switch the DACs to their respective full scale ranges.

Analog output ranges available are:

- 0 to +2.5V
- 0 to +5V
- 0 to +10V
- -2.5 to +2.5V
- -5 to +5V
- -10V to +10V
- 4 mA to 20 mA
  Higher drive current available on request

CALIBRATION

Calibration constants are generated and stored in software using a program included with the cards. ZERO (or OFFSET) constants are stored in EEPROM along with SPAN calibration constants. Further, the EEPROM stores a table of ranges that are assigned to each channel.

DIGITAL INPUT/OUTPUT

On the PCI-DA12-8 and PCI-DA12-16, a type 8255 Programmable Peripheral (PPI) IC provides 24 bits of digital input/output. The PPI is operated in Mode 0 and provides three 8-bit ports (A, B, and C). Each port can be individually programmed for input or output. Port C can be further configured as two 4-bit ports. Each digital I/O line is buffered by a type LS245 tristate transceiver that can source 15 mA and sink 24 mA (64 mA on request as a factory-installed option). Pull-ups on the card assure that there are no erroneous outputs at power-up and the buffers are configured for input or output use by direction assignment from a control register in the PPI.
The PCI-DA12-2/4/6 cards use the same 8255 PPI, but bring only ports A and B to the connector, providing 16-bits of DI/O

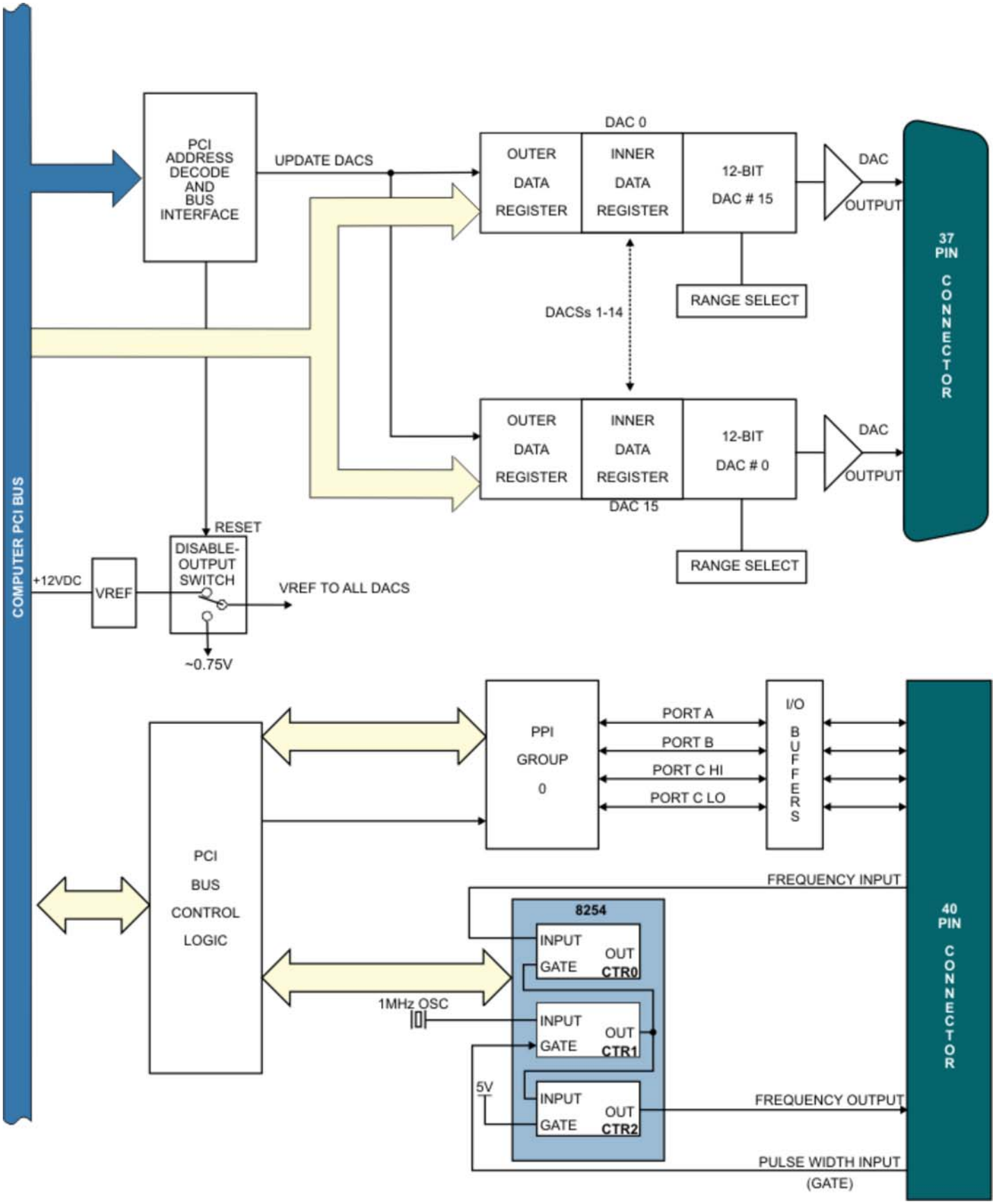
COUNTER/TIMERS

Three 16-bit down counters, in a type 8254 IC, are included on the PCI-DA12-8 and PCI-DA12-16. These are configured as Event counters (See Block Diagram) and can also be used as a frequency source derived from an on-board 1 MHz crystal-controlled oscillator. These counters can generate IRQs at a programmed frequency, and/or initiate DAC updates. This allows for very precise timing of waveform generation.

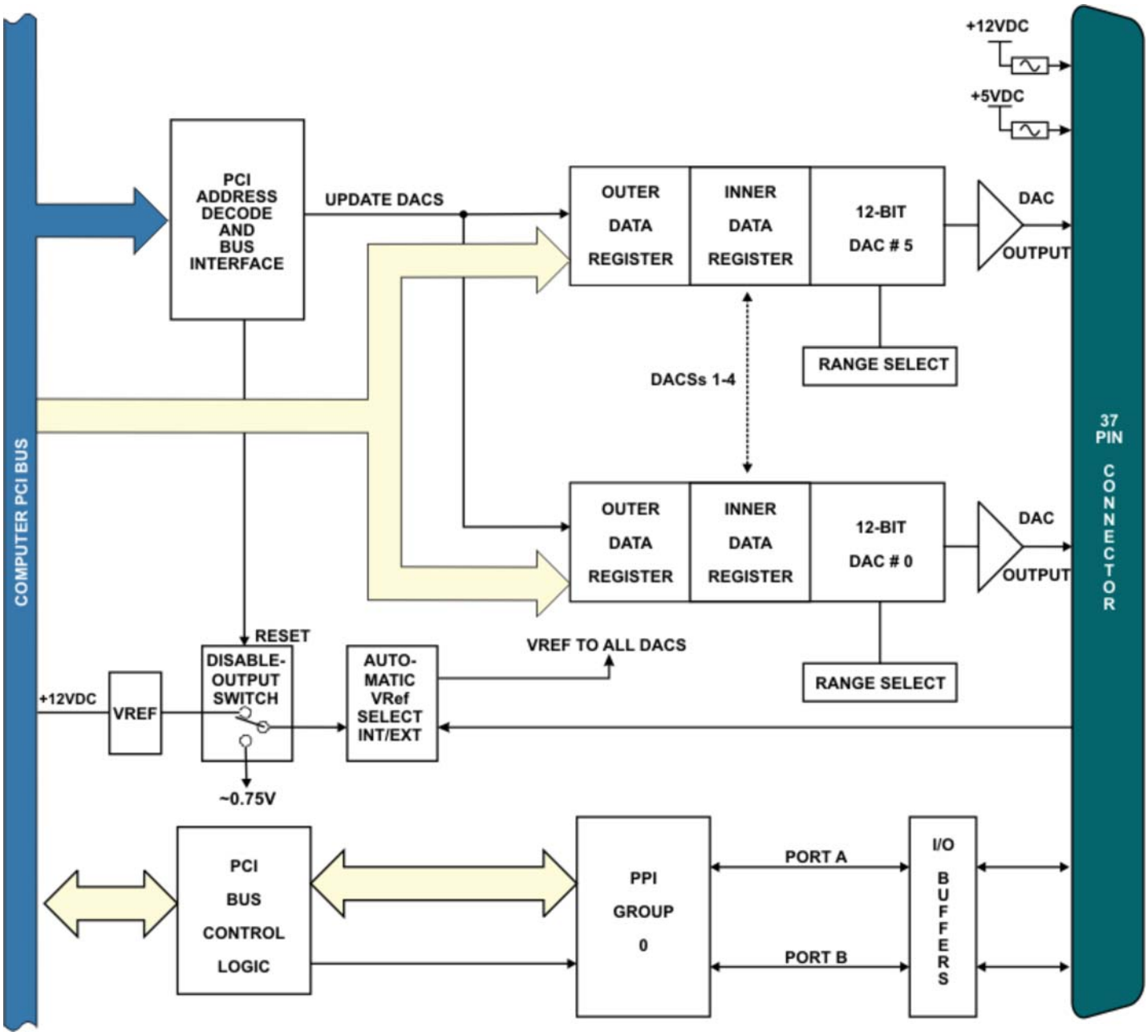
INPUT/OUTPUT CONNECTIONS

I/O connections for the DACs are made at a 37-pin Sub-D Male connector on the card mounting bracket. On the PCI-DA12-8/16 I/O connections for the digital inputs/outputs and the counter/timers are made through a 40-pin insulation displacement header and ribbon cable to a second bracket that can install alongside the first. The PCI-DA12-2/4/6 models bring 16-bits of Digital I/O to the same 37-pin connector as the DAC data.

PCI-DA12-16 and -8 Block Diagram



PCI-DA12-6, -4, and -2 Block Diagram



Specifications

Analog Outputs

- Resolution: 12 bits (0 to 4095 decimal)
- Channels:
  - PCI-DA12-2: Two independent or simultaneous update
  - PCI-DA12-4: Four independent or simultaneous update
  - PCI-DA12-6: Six independent or simultaneous update
  - PCI-DA12-8: Eight independent or simultaneous update
  - PCI-DA12-16: Sixteen independent or simultaneous update
- Voltage Output Ranges:
  0-2.5 VDC, 0-5 VDC, 0-10 VDC, ± 2.5 VDC, ± 5.0 VDC, ± 10.0 VDC
- Current Range: 4 to 20 mA (with external excitation voltage of 8-36VDC)

- Short-circuit Current: 25 mA maximum
- Output Drive Capability: 5 mA maximum
- Output Resistance: Less than 0.1 ohm

Digital to Analog Convertor

- AD7237 monolithic chip, double buffered
- Relative Accuracy: ± 4 LSB max, ± ½ LSB typical
- Linearity: ± ½ LSB integral non-linearity over rated temperature range
- Monotonicity: 12 bits over operating temperature range
- Settle time: 8 usec to 1 LSB for full-scale step input
- Data Format: 12-bit binary, right justified and offset binary for bipolar outputs
- Gain Stability: ± 15 ppm/°C typ.
- Data Format: Right-justified, two bytes (8LSB's and 4MSB's)

Counter/Timers (PCI-DA12-8/16 only)

- Type: 82C54-5 programmable interval counters.
- Output Drive: 2.2 ma at 0.45 VDC (5 LSTTL loads).
- Input Gate: TTL/CMOS compatible
- Clock: On-board, 1 MHz crystal-controlled clock.
- Active Count Edge: Negative Edge.
- Minimum Clock Pulse Width: 30 nS high, 50 nS low.
- Timer Range: 48 bits

Environmental

- Operating Temperature: 0 to +60^{o} C
- Storage Temperature: -20 to +85^{o} C
- Humidity: 5% to 95% without condensation
- Size:
  - PCI-DA12-8/16: 12.2" (310 mm) long
  - PCI-DA12-2/4/6: 6.0" (147 mm) long

Digital I/O

Inputs

- Logic High: 2.0 to 5.0 VDC.
- Logic Low: -0.5 to +0.8 VDC.
- Input Load (High): +20 µA.
- Input Load (Low): -200 µA.

Outputs

- Logic High: 2.0 VDC min., source 32 mA.
- Logic Low: 0.55 VDC max., sink 64 mA.

DC Power Output

- +5 VDC at 500 mA is available on the 37-pin connector.

Regulatory Compliance

- This product is in full compliance with CE requirements. 

Model	Price (USD)
PCI-DA12-2	359.00
PCI-DA12-4	449.00
PCI-DA12-6	529.00
PCI-DA12-8	649.00
PCI-DA12-16	1199.00

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