

# DATA ACQUISITION PLUG-IN CARDS

## PCI Bus 14-Bit 16/8/4 Channel Analog Output Boards

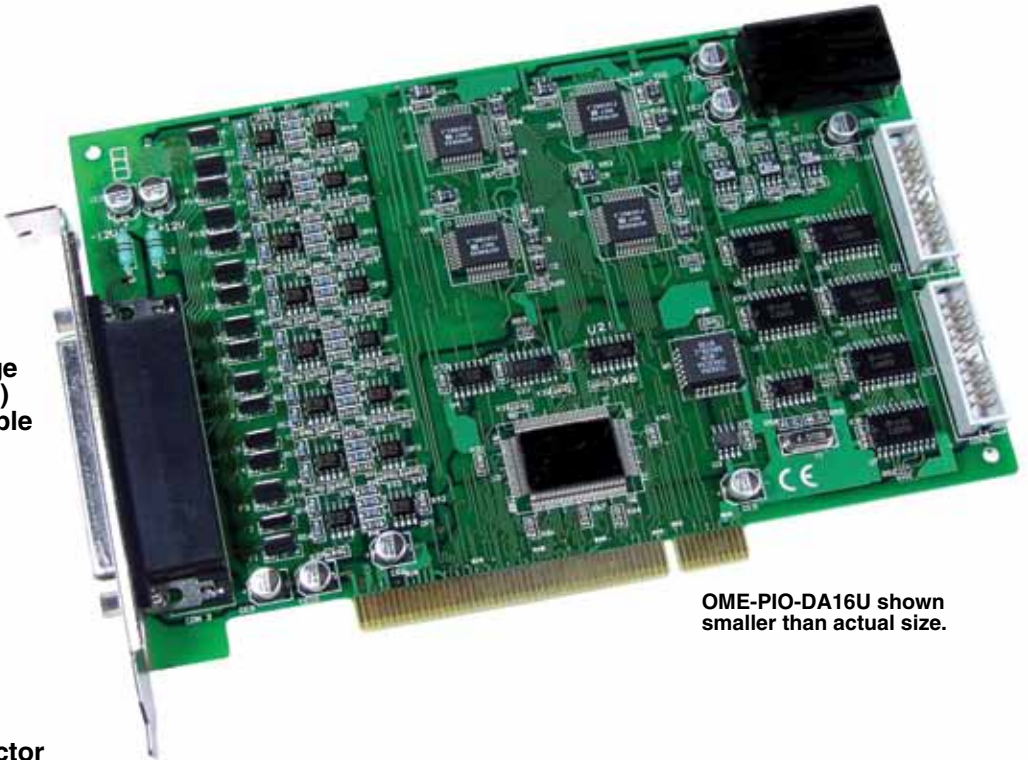
OME-PIO-DA16U/  
OME-PIO-DA8U/  
OME-PIO-DA4U



- ✓ PCI Bus
- ✓ 16/8/4 Channels, 14-Bits Analog Output
- ✓ Unipolar or Bipolar Outputs Available
- ✓ Output Type (Unipolar or Bipolar) and Output Range (0-5 V,  $\pm 5$  V, 0-10 V,  $\pm 10$  V) are Software Programmable
- ✓ 4 to 20 mA or 0 to 20 mA Current Sink to Ground for Each Channel
- ✓ Two Pacer Timer Interrupt Sources
- ✓ Double-Buffered D/A Latches
- ✓ Software Calibration
- ✓ 16 Digital Inputs
- ✓ 16 Digital Outputs
- ✓ One 37-Pin D-Sub Connector for Analog Outputs
- ✓ Two 20-Pin Flat Cable Connectors for Digital I/O
- ✓ Connects Directly to OME-DB-16P, OME-DB-16R, OME-DB-24C, OME-DB-24PR and OME-DB-24POR
- ✓ Automatically Detected by Windows XP/VISTA/7
- ✓ No base Address or IRQ Jumper to Set

The OME-PIO-DA16U, OME-PIO-DA8U and OME-PIO-DA4U are multi-channel D/A boards for the PCI bus for IBM or compatible PC.

The OME-PIO-DA16U/8U/4U offer 16/8/4 channels of double-buffered analog output. The outputs may be configured in different ranges:  $\pm 10$  V,  $\pm 5$  V, 0 to 10 V, 0 to 5 V voltage output or 4 to 20 mA, 0 to 20 mA current loop sink. The innovative design improves several drawbacks of conventional D/A boards.



OME-PIO-DA16U shown smaller than actual size.

**For example:** 1. No jumper or trim-pots on the board. 2. The calibration is performed under software control eliminating manual trim-pot adjustments. The calibration data is stored in EEPROM. 3. Each channel can be selected as voltage or current output. 4. High channel count output can be implemented in a half size card.

**Note:** This card needs  $\pm 12$  V power supply. This can be found in regular or Industrial PC's.

### Software Development Kit

All boards are supplied with a standard software development kit for Windows XP/VISTA/7 (32-bit). The software development kit includes dll files for programming in C, C++ or other high level languages and OCX files for Visual Basic or Active X programming. LabView drivers are also included.

### Specifications

#### PCI BUS TYPE

3.3 V/5V universal

#### DIGITAL INPUTS/OUTPUTS (TTL COMPATIBLE)

**Logic High Voltage VIH:**

2.4 V (min)

**Logic Low Voltage VIL:**

0.8 V (max)

**Sink Current IOL:** 8 mA max

**Source Current IOH:** 0.4 mA max

#### ANALOG OUTPUTS

##### D/A Converter:

Quad 14 bits MDAC

**Channels:** 16/8/4 independent

**Resolution:** 14-bits

**Type:** Double-buffered, multiplying

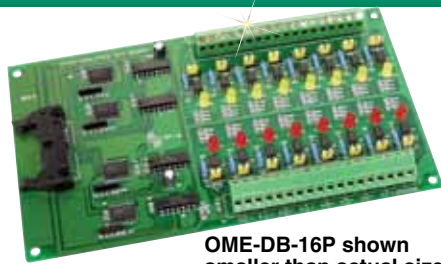
**Integral Linearity:**

0.006% FSR (typical)

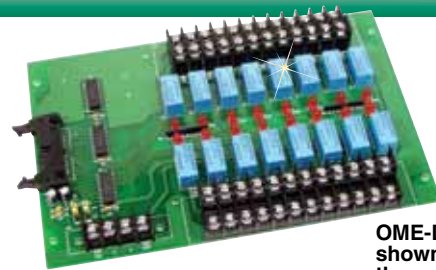
**Differential Linearity:**

0.006% FSR (typical)

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OME-DB-16P shown smaller than actual size.



OME-DB-16R shown smaller than actual size.

## VOLTAGE OUTPUT RANGE

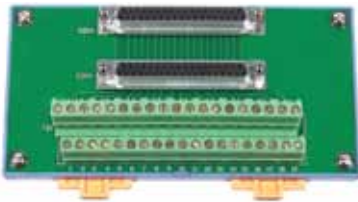
**Unipolar:** 0 to 5 V or 0 to 10 V  
**Bipolar:**  $\pm 10$  V or  $\pm 5$  V  
**Current Drive:**  $\pm 5$  mA  
**Absolute Accuracy:** 0.01% FSR (typical)  
**Current Output Range:** 0 to 20 mA or 4 to 20 mA  
**Absolute Accuracy:** 0.1% FSR (typical)  
**Excitation Voltage Range:** +7 V to +40 V

## ENVIRONMENTAL

**Operating Temperature:** 0 to 60°C (32 to 140°F)  
**Storage Temperature:** -20 to 80°C (-4 to 176°F)  
**Humidity:** 0 to 90% RH non-condensing  
**Dimensions:** 115 H x 180 mm W (4.5 x 7.1")  
**Connector:** Analog outputs, 37-pin D-Sub; digital I/O, two 20-pin headers

## POWER CONSUMPTION

**OME-PIO-DA4U:** +5 Vdc @ 600 mA  
**OME-PIO-DA8U:** +5 Vdc @ 800 mA  
**OME-PIO-DA16U:** +5 Vdc @ 1400 mA



OME-DN-37 shown smaller than actual size.



OME-ADP-20/PCI shown smaller than actual size.



OME-DB-37 shown smaller than actual size.



OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.

## To Order

Model No.	Description
OME-PIO-DA16U	16-channel PCI bus (3.3V/5V) D/A board with 16 digital inputs and 16 digital outputs
OME-PIO-DA8U	8-channel PCI bus (3.3V/5V) D/A board with 16 digital inputs and 16 digital outputs
OME-PIO-DA4U	4-channel PCI bus (3.3V/5V) D/A board with 16 digital inputs and 16 digital outputs
OME-PIO-DA16U/S	OME-PIO-DA16U 16-channel PCI board plus OME-DN-37 terminal panel
OME-PIO-DA8U/S	OME-PIO-DA8U 8-channel PCI board plus OME-DN-37 terminal panel
OME-PIO-DA4U/S	OME-PIO-DA4U 4-channel PCI board plus OME-DN-37 terminal panel
<b>Accessories</b>	
OME-DN-37	DIN-rail mount I/O connector block with 37-pin D-sub connector, includes 1 m (3') cable (OME-CA-3710)
OME-DB-37	Direct connect 37-pin terminal board
OME-DB-16P	16-channel isolated digital input board, includes 1 m (3') cable (OME-CA-2010)
OME-DB-16R	16-channel SPDT relay board, includes 1 m (3') cable (OME-CA-2010)
OME-DB-24PR/12	24-channel power relay board, 12 V (only 16-channels used), includes 1.5 m (5') 50-pin cable (OME-CA-5015)
OME-DB-24POR	24-channel Photo Mos relay output board, includes 1.5 m (5') 50-pin flat cable (only 16-channels used) (OME-CA-5015)
OME-DB-24C	24-channel open-collector output board, includes 1.5 m (5') 50-pin flat cable (only 16-channel used) (OME-CA-5015)
OME-ADP-20/PCI	20-pin extender (extends the dual 20-pin digital I/O flat cable connectors on the board to the PC slot window, includes two 20-pin cables (OME-CA-2002))

Each OME-PIO-DA16U/8U/4U analog output board includes complete operator's manual and software development kit on CD ROM.  
**Ordering Example:** OME-PIO-DA16U, 16-channel PCI bus D/A board and OMEGACARE<sup>SM</sup> 1 year extended warranty for OME-PIO-DA16U (adds 1 year to standard 1 year warranty).