USB-DA12-8E
8 Channel Analog Output Board

FEATURES

- 8 channel, 12-bit, digital to analog outputs
- Double-buffered allowing simultaneous update of all DACs
- Computer generated outputs up to 5kHz simultaneous (up to 40kHz total)
- Analog output ranges of 0-2.5V, 0-5V, 0-10V, ±2.5V, ±5V, ±10V
- Single-ended and differential outputs on separate connectors
- Connector conforms to ILDA standard for laser applications with optional cable
- USB 2.0 device
- Jumper selectable power provided via external AC/DC power supply or USB power
- Board is PC/104 size (3.550 x 3.775 in.)

FACTORY OPTIONS

- DB25 cable with ILDA pinout for laser applications
- Terminal block wiring for +/- 12V supply to DAC's
- Resistors in series with differential connector for impedance matching
- External +5V regulated power supply

DESCRIPTION

The USB-DA12-8E is an ideal solution for adding portable, easy-to-install analog outputs to any computer with a USB port. The USB-DA12-8E is a USB 2.0 device, offering the highest speed available with the USB bus. It is fully compatible with both USB 1.1 and USB 2.0 ports. The board is plug-and-play allowing quick connection whenever you need additional I/O on a USB port.

The USB-DA12-8E features 8 digital-to-analog converters (DACs) with both differential and single-ended outputs. The card features a variety of unipolar and bipolar ranges for each DAC giving the user a variety of options. The DACs can be updated individually or simultaneously. To ensure that there will not be excessive outputs to external circuits when the card is plugged in, automatic circuits limit analog outputs to zero volts. Power is supplied to the card via an external power supply which powers on board DC/DC converters which provide ±12V to the operational amplifiers on the card. The I/O wiring connections for USB-DA12-8E are via an industry standard, IDC type 26-pin, 16-pin, and 10-pin connectors.

The USB-DA12-8E is designed to be used in rugged industrial environments but is small enough to fit nicely onto any desk or testing station. The card is PC/104 sized (3.550 by 3.775 inches).

ACCESSORIES

The USB-DA12-8E is available with optional cable assemblies, screw termination boards, and an optional external AC/DC power supply.

UTILITY SOFTWARE

The USB-DA12-8E is supported by all operating systems and include a free Windows 98se/Me/2000/XP compatible software package. This includes sample programs and source code in Visual Basic, Delphi, C++ Builder, and Visual C++ for Windows. Also included is a graphical setup program in Windows. Linux support includes installation files and basic samples for programming from any user level via an open source kernel driver.

SPECIFICATIONS

Analog Outputs

Number of Outputs:	8 channels
Type of Outputs:	Single-ended or differential
Resolution:	12-bit resolution
Unipolar Ranges:	0-2.5V, 0-5V, 0-10V
Bipolar Ranges:	±2.5V, ±5V, ±10V
Conversion Rate:	5kHz, all channels simultaneous
Relative Accuracy:	±2 LSB typical
Differential Nonlinearity:	±0.2 LSB typical
Settling Time:	8us typical, 10us max.
Output Current:	

Environmental

Operating Temperature Range:	0^{O} to 70^{O}C.
Storage Temperature Range:	-40^{O} to $+85^{O}$C.
Humidity:	Maximum 90% RH, without condensation
Board Dimension:	3.550 x 3.775 inches

Power

+5 VDC from external power supply depending on user configuration. USB bus is specified to provide 500mA to desktop environments. If using more than 500mA, use +5VDC regulated external power supply (2.0mm post on board) and **remove** VUSB jumper and place jumper on VEXT. Then plug in external power before plugging into USB port .

Connector Pin Assignments

USB-DA12-8E has a 26-pin differential connector, a 16-pin single-ended connector, and a 10-pin control I/O connector.

Differential outputs 26-pin connector pin
Single-ended outputs 16-pin connector pin
Control I/O 10-pin connector pin