ACCES I/O PRODUCTS, INC.

USB-DA12-8A
8 Channel Analog Output Module with ARB

USB 2.0

FEATURES

- **High-speed USB 2.0 device, USB 1.1 compatible**
- **Up to 125K conversions per DAC per second**
- **Streaming waveform data at over 400,000 DAC outputs per second total**
- **128K Sample buffer on-board, or Infinitely long streaming waveforms!**
- **Buffered waveforms at up to 1 million DAC conversions per second total**
- **ILDA compatible**
- **Small, portable 8-channel, 12-bit, digital to analog outputs**
- **Double-buffered allowing simultaneous update of all DACs**
- **Analog output ranges of 0-2.5V, 0-5V, 0-10V, ±2.5V, ±5V, ±10V**
- **Single-ended and differential outputs on separate connectors**
- **PC/104 module size and mounting compatibility**
- **Small (4"x4"x1.25") rugged industrial enclosure**

FACTORY OPTIONS

- **Resistors in series with differential connector for impedance matching**
- **DIN rail mounting provision**
- **Economy “E” version available without the screw terminal board**
- **OEM (board only) version with PC/104 mounting holes and PCB footprint for added flexibility in embedded applications**

DESCRIPTION

The USB-DA12-8A is an ideal solution for adding portable, easy-to-install analog outputs to any computer with a USB port. The USB-DA12-8A 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-DA12-8A features 8 digital-to-analog converters (DACs) with both differential and single-ended outputs on separate connectors. The board 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 board is plugged in, automatic circuits limit analog outputs to zero volts. The USB-DA12-8A supports Arbitrary Waveform Generation with an on board 256K-byte FIFO. Power is supplied to the board via an external power supply which powers on board DC/DC converters which provide ±12V to the operational amplifiers on the board. The I/O wiring connections for USB-DA12-8A are via an industry standard, IDC type 26-pin, 16-pin, and 10-pin connectors.

The USB-DA12-8A is designed to be used in rugged industrial environments but is small enough to fit nicely onto any desk or testing station. The board is PC/104 sized (3.550 by 3.775 inches) and ships inside a steel powder-coated enclosure with an anti-skid bottom.

OEM USB/104 FORM FACTOR

The OEM (board only) version is perfect for a variety of embedded applications. What makes the OEM option unique is that its PCB size and mounting holes match the PC/104 form factor (without the bus connections). This allows our rugged digital board to be added to any PCI-104 or PC/104 stack by connecting it to a simple USB port usually included on-board with embedded CPU form factors such as EBX, EPIC, and PC/104. This is especially important since many newer CPU chipsets do not support ISA and have plenty of USB ports. The USB-DA12-8A OEM board can also be installed using standoffs inside other enclosures or systems.

ACCESSORIES

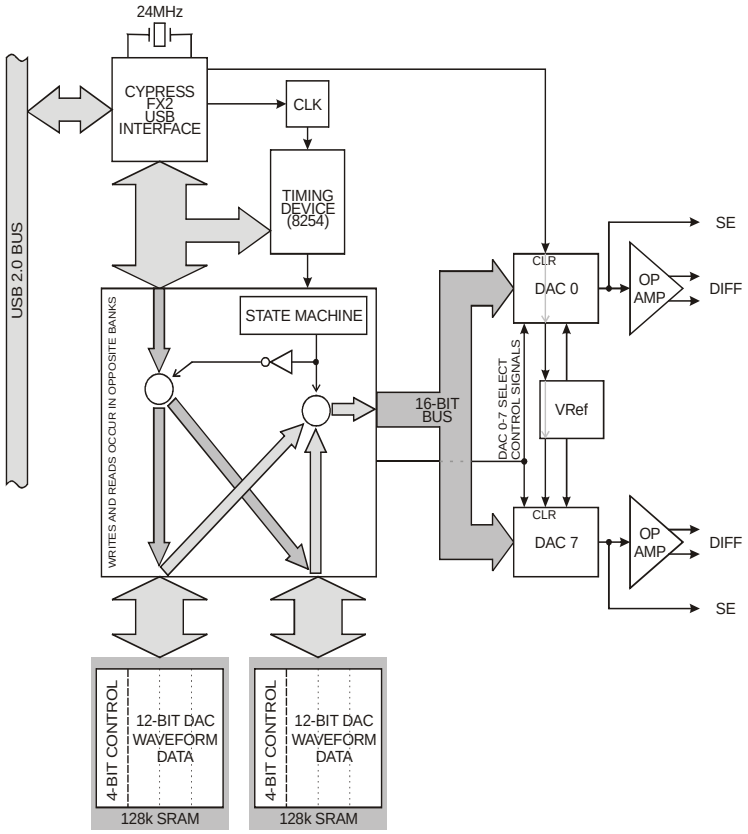
The USB-DA12-8A is available with optional cable assemblies and screw termination boards.

SOFTWARE

The USB-DA12-8A is plug-and-play which allows quick connect or disconnect whenever you need additional I/O on your USB port. The module utilizes a high-speed custom function driver optimized for a maximum data throughput that is 50-100 times faster than the USB human interface device (HID) driver used by many competing products. This approach maximizes the full functionality of the hardware along with capitalizing the advantage of high-speed USB 2.0. The USB-DA12-8A is supported for use in most USB supported operating systems and includes a free Linux and Windows 98se/Me/2000/XP/2003 compatible software package. This package contains sample programs and source code in Visual Basic, Delphi, C++ Builder, and Visual C++ for Windows. Also incorporated is a graphical setup program in Windows. Third party support includes a Windows standard DLL interface usable from the most popular application programs. Embedded OS support include Windows Xpe.

10623 Roselle Street, San Diego, CA 92121 • (858) 550-9559 • Fax (858) 550-7322 • contactus@accesio.com • www.accesio.com

BLOCK DIAGRAM



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(preliminary):	125KBs x 8 channels (non-streaming) 25KBs x 8 channels (streaming)
Relative Accuracy:	±2 LSB typical
Differential Non-linearity:	±0.2 LSB typical
Settling Time:	8us typical, 10us max.
Output Current:	See manual

Bus Type

USB2.0 High-speed, USB1.1 Full-speed compatible

Environmental

Operating Temperature Range:	0^{o} to 70^{o}C.
Storage Temperature Range:	-40^{o} to $+85^{o}$C.
Humidity:	5% to 95% non-condensing
Board Dimension:	3.550 x 3.775 inches
Box Dimension:	3.8L x 1.8H x 4.2W

Power

Power supplied by +5VDC regulated AC/DC power supply
+5VDC @ 520mA, typical (no load)
+/-12VDC supplied from +5VDC through DC/DC Converters

Ordering Guide

USB-DA12-8A	Enclosure, module and screw terminal board

Options

-OEM	Board only version (no enclosure and screw terminal board)
-E	Economy model (no screw terminal board)
-DIN	DIN rail mounting provision
-PR	External power and AC/DC +5VDC regulated adapter

ACCES I/O PRODUCTS, INC.
10623 Roselle Street, San Diego, CA 92121 • (858) 550-9559 • Fax (858) 550-7322 • contactus@accesio.com • www.accesio.com

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

US

sales@assured-systems.com

Sales: +1 347 719 4508
Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050
Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28
Business Registration Number: 07699660