

# USB-4711A

## 150 kS/s, 12-Bit, 16-Ch Multifunction DAQ USB Module



### Features

- Supports USB 2.0
- Portable
- Bus powered
- 16 x Analog input channels
- 12-bit resolution analog input
- Up to 150 kS/s sampling rate
- 8-ch Digital input/8-ch digital output, 2-ch analog output, and 1 x 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN rail mounting
- 1 x Lockable USB cable included for connection security

### Introduction

The USB-4700 series comprises plug-and-play DAQ modules that can be installed without opening the chassis; simply plug in the modules to access collected data. Reliable and rugged enough for industrial applications, yet sufficiently affordable for home systems, USB-4700 series modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers.

USB-4711A is equipped with an onboard terminal block, 16-ch analog input, 2-ch analog output, 16-ch digital I/O, and a counter channel capable of outputting a constant frequency square wave. Additionally, because USB-4711A draws power from the computer via the USB port, no external power connection is required, making this module a most cost-effective solution for diverse testing and measurement applications.

### Specifications

#### Analog Input

- **Channels** 16 Single ended/8 differential (software programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate** 150 kS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be  $150k/4 = 37.5$  kS/s per channel.

- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 1 G $\Omega$
- **Sampling Modes** Software, onboard programmable pacer, and external
- **Input Range and Absolute Accuracy**

Bipolar	$\pm 10$	$\pm 5$	$\pm 2.5$	$\pm 1.25$	$\pm 0.625$
<b>Absolute Accuracy (% of FSR)*</b>	0.1	0.1	0.2	0.2	0.4

\*  $\pm 1$  LSB is added as the derivative for absolute accuracy

#### Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

Internal Reference	Unipolar	0 ~ 5, 0 ~ 10
	Bipolar	$\pm 5, \pm 10$

- **Slew Rate** 0.125 V/ $\mu$ s
- **Driving Capability** 5 mA
- **Output Impedance** 0.1  $\Omega$
- **Operation Mode** Single output
- **Accuracy** Relative:  $\pm 1$  LSB  
Differential non-linearity:  $\pm 1$  LSB

#### Digital Input

- **Channels** 8
- **Compatibility** 3.3 V/5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.

#### Digital Output

- **Channels** 8
- **Compatibility** 3.3 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.@ 6 mA  
Logic 1: 2.6 V min.@ 6 mA

#### Event Counter

- **Channels** 1
- **Compatibility** 3.3 V/TTL
- **Max. Input Frequency** 1 kHz

#### General

- **Bus Type** USB 2.0
- **I/O Connector** Onboard screw terminal
- **Dimensions (L x W x H)** 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 360 mA  
Max.: 5 V @ 450 mA
- **Operating Temperature** 0 ~ 60  $^{\circ}$ C (32 ~ 140  $^{\circ}$ F)
- **Storage Temperature** -20 ~ 70  $^{\circ}$ C (-4 ~ 158  $^{\circ}$ F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

### Ordering Information

- **USB-4711A-AE** 150 kS/s, 12-bit, 16-ch multifunction DAQ USB module

#### Accessories

- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket