# USB-4711A

## 150 kS/s, 12-bit, 16-ch Multifunction USB Module



CE FCC RoHS COMPLIANT 2002/95/EC
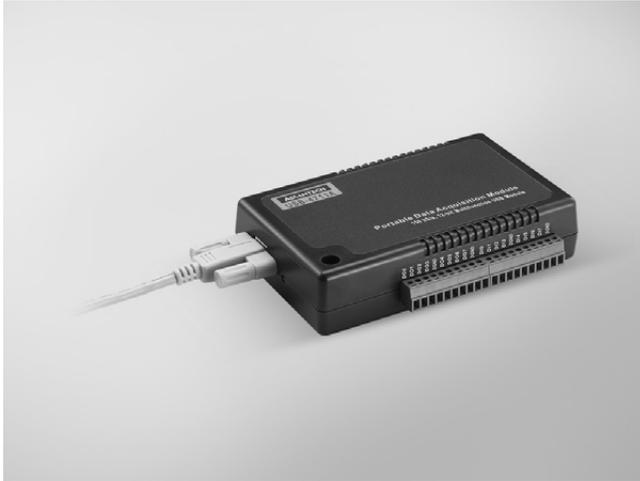
## Features

- Supports USB 2.0
- Portable
- Bus-powered
- 16 analog input channels
- 12-bit resolution AI
- Sampling rate up to 150 kS/s
- 8-ch DI/8-ch DO, 2-ch AO and one 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN-rail mounting
- One lockable USB cable for secure connection included

## Introduction

The USB-4700 series consists of true plug & play data acquisition modules. You no longer need to open the chassis to install DAQ modules. Just plug in the module, then get the data. It's easy and efficient. Reliable and rugged enough for industrial applications, yet inexpensive enough for home projects, the USB-4700 series module is the perfect way to add measurement and control capability to any USB capable computer. The USB-4700 series is fully plug & play and with onboard terminal block for easy usage. It obtains all required power from the USB port, so no external power connection is ever required. USB-4711A is a multifunction module, with 16-ch Analog Input, 2-ch Analog Output, 16-ch Digital I/O and counter channel which is able to output a constant frequency square wave. With the features of USB-4700 series; USB-4711A is your most cost effective choice of lab or production line test & measurement tool.

## 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 for each channels will be affected by used channel number. For example, if 4 channels are used, the sampling rate is 150k/4 = 37.5 kS/s per channel.

- **FIFO Size**             1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance**       1 GΩ
- **Sampling Modes**        Software, onboard programmable pacer, and external
- **Input Range (V, software programmable) & Absolute Accuracy**

| Bipolar | ± 10 | ± 5 | ± 2.5 | ± 1.25 | ± 0.625 |
|---|---|---|---|---|---|
| Absolute Accuracy (% of FSR)* | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 |

*: ±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 | ±5, ±10 |

- **Slew Rate**            0.15 V/μs
- **Driving Capability**   2 mA @ 10 V
- **Output Impedance**     0.5 Ω
- **Operation Mode**       Single output
- **Accuracy**             Relative: ±1 LSB
                           Differential non-linearity: ±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: 0.8 V max.@ 4 mA (sink)
                           Logic 1: 2.0 V min.@ 4 mA (source)

### 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 @ 340 mA
                           Max.: 5 V @ 440 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F) (refer to IEC 68-2-1, 2)
- **Storage Temperature**  -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity**     5 ~ 95% RH non-condensing (refer to IEC 68-2-3)

## Ordering Information

- **USB-4711A-AE**         150 kS/s, 12-bit, 16-ch Multi. USB Module

### Accessories

- **1960004544**           Wallmount Bracket
- **1960005788**           VESA Mount Bracket