USB-4702
USB-4704

10 kS/s, 12-Bit, 8-Ch Multifunction DAQ USB Module

48 kS/s, 14-Bit, 8-Ch Multifunction DAQ USB Module



Features

- Supports USB 2.0
- Portable
- Bus powered
- 8 x Analog input channels
- 12-bit (USB-4702), 14-bit (USB-4704) resolution AI
- Sampling rates of up to 10 kS/s (USB-4702), 48 kS/s (USB-4704)
- 8-ch Digital input/8-ch digital output, 2-ch analog output, and 1 x 32-bit counter

Introduction

USB-4702 and USB-4704 are low-cost USB data acquisition 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-4702 and USB-4704 DAQ modules provide an easy and efficient means of adding measurement and control capabilities to USB-capable computers. Additionally, because USB-4702 and USB-4704 draw power from the computer via the USB port, no external power connection is required, making these modules the most cost-effective solution for testing and measurement applications.

Specifications

Analog Input

- **Channels** 8 single ended/4 differential (software programmable)
- **Resolution** USB-4702: single ended: 11 bits
  Differential: 12 bits
  USB-4704: single ended: 13 bits
  Differential: 14 bits
- **Max. Sampling Rate** USB-4702: 10 kS/s max.
  USB-4704: 48 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 10k/4 = 2.5 kS/s per channel.

- **FIFO Size** 512 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 127 kΩ
- **Sampling Modes** Software, onboard programmable pacer, and external
- **Input Range and Absolute Accuracy**

Single Ended		±10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Differential		N/A	±1	±1.25	±2	±2.5	±4	±5	±10	±20
Absolute Accuracy (% of FSR)*	**USB-4702**	0.2	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	USB-4704	0.15	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.15

* ±1 LSB is added as the derivative for absolute accuracy

Analog Output

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** 0 ~ 5 V (software programmable)
- **Slew Rate** 0.7 V/μs
- **Driving Capability** 5 mA
- **Output Impedance** 51 Ω
- **Operation Mode** Single output
- **Accuracy** Relative: ±12 LSB
  Differential non-linearity: ±5 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** TTL
- **Output Voltage** Logic 0: 0.4 V max.@ 4 mA (sink)
  Logic 1: 3.5 V min.@ 4 mA (source)

Counter

- **Channels** 1
- **Resolution** 32 bits
- **Compatibility** 3.3 V/TTL
- **Max. Input Frequency** 5 MHz

General

- **Bus Type** USB 2.0
- **I/O Connector** USB-4702: 1 x DB37, female
  USB-4704: Onboard screw terminal
- **Dimensions (L x W x H)** USB-4702: 70 x 70 mm (2.76" x 2.76")
  USB-4704: 132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
- **Power Consumption** Typical: 5 V @ 100 mA
  Max.: 5 V @ 500 mA
- **Operating Temperature** 0 ~ 55 °C (32 ~ 131 °F)
- **Storage Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **USB-4702-AE** 10 kS/s, 12-bit, 8-ch multifunction DAQ USB module
- **USB-4704-AE** 48 kS/s, 14-bit, 8-ch multifunction DAQ USB module

Accessories

- **PCL-10137-1E** DB37 cable, 1 m
- **PCL-10137-2E** DB37 cable, 2 m
- **PCL-10137-3E** DB37 cable, 3 m
- **ADAM-3937-BE** DB37 DIN rail wiring board
- **1960004544** Wall mount bracket
- **1960005788** VESA mount bracket

All product specifications are subject to change without notice.
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