

# USBDAQ-9100MS

## USB 8-CH 12-bit 500 kS/s Simultaneous-Sampling Multi-Function DAQ Module

### Features

- Supports a USB 1.1 Interface
- 12-bit A/D resolution
- Up to 500 kS/s sampling rate
- 8-CH differential inputs
- 4-CH simultaneous-sampling capability
- On-board 4 k-sample A/D FIFO
- Bipolar and unipolar analog input ranges
- Programmable gains of x0.5, x1, x2, x4, x8
- 2-CH 12-bit multiplying analog outputs with waveform generation
- On-board 511-sample D/A FIFO per channel
- Bipolar analog output ranges
- Fully auto-calibration
- 8-CH isolated digital inputs and 8-CH isolated digital outputs
- 2500 V<sub>RMS</sub> optical isolation for digital inputs and outputs
- 2-CH 16-bit general purpose timer/counters
- 5.25" Disk Drive Bay mountable

### Operating Systems

- Windows 2000/NT/XP/9x

### Recommended Software

- VB/VC++/BCB/Delphi

### Driver Support

- USB-DASK for Windows 2000/NT/XP/9x



### Introduction

ADLINK USBDAQ-9100MS is an 8-CH, 12-bit, 500 kS/s Simultaneous-sampling Multi-function DAQ Module with USB 1.1 compliant interface. Eight analog input channels are differential, with software programmable gain of x0.5, x1, x2, x4, x8 and can accept bipolar or unipolar signals. In addition to traditional automatic analog input scanning, four of the eight channels can be sampled simultaneously up to 500 kS/s, or 100 kS/s for continuous acquisition.

The analog outputs of the USBDAQ-9100MS feature up to 500 kS/s update rate at 12-bit resolution. With hardware-base waveform generation and the on-board 511 samples D/A FIFO, it is capable of generating continuous waveforms without taking up USB bandwidth.

The USBDAQ-9100MS also features 8-CH isolated digital inputs and 8-CH isolated digital outputs, as well as 2-CH 16-bit general-purpose timer/counters. These enhancements make the USBDAQ-9100MS ideal for standalone data acquisition applications.

The mechanical design makes the USBDAQ-9100MS easy to be mounted in a PC 5.25" disk drive bay for desktop applications, or can be converted to a powerful portable data acquisition module with the optional 5400 mAh battery pack.

ADLINK USBDAQ-9100MS delivers cost-effective and reliable data acquisition capabilities for sensor monitoring, data logging, signal generation and control applications, no matter in the lab or in the field.

### Specifications

#### Analog Input

- Number of channels: 8 differential
- Number of simultaneous sampling channels: 4 differential
- Resolution: 12 bits
- Maximum sampling rate: 500 kS/s
- Maximum continuous sampling rate: 100 kS/s
- Input signal ranges: (software programmable)

Gain	Input Range	
	Bipolar	Unipolar
0.5	±10 V	--
1	±5 V	0 to 10 V
2	±2.5 V	0 to 5 V
4	±1.25 V	0 to 2.5 V
8	--	0 to 1.25 V

- Input coupling: DC
- Overvoltage protection: continuous ±35 V
- Input impedance: 1 GΩ
- Trigger modes: software, pacer, and external trigger (5 V/TTL compatible)
- FIFO buffer size: 4 k samples
- Data transfers: polling, interrupt

#### Analog Output

- Number of channels: 2 voltage outputs
- Resolution: 12 bits
- Maximum update rate: 500 kS/s
- Output range: ±10 V
- Output driving capacity: ±5 mA max
- Settling time: 2 μs
- FIFO buffer size: 511 samples per channel
- Data transfer: programmed I/O

#### Isolated Digital Input

- Number of channels: 8
- Maximum input range: 24 V, non-polarity
- Digital logic levels
  - Input high voltage: 10 to 24 V
  - Input low voltage: 0 to 1.5 V
- Input Resistance: 4.7 kΩ @ 0.5 W
- Isolation voltage: 2500 V<sub>RMS</sub>
- Data transfer: programmed I/O

#### Isolated Digital Output

- Number of channels: 8
- Output type: open collector Darlington transistor
- Sink current
  - Max. 500 mA for only one Darlington pair
  - 500 mA for all Darlington pair @ 20% duty
- Power dissipation:
  - Max. 2.25 W per chip (8 DO channels)
- Supply voltage: 5-35 V
- Isolation voltage: 2500 V<sub>RMS</sub>
- Data transfer: programmed I/O

#### General-Purpose Timer/Counter

- I/O connectors:
  - RCA jacks x 10 for analog inputs & outputs
  - 68-pin SCSI-II female for digital I/O
  - USB type B connector x 2 (front and rear)
  - Power jack for the external AC/DC adapter or the battery pack
  - 4-pin PC power connector
- Operating temperature: 0 to 55 °C
- Storage temperature: -20 to 80 °C
- Relative humidity: 5 to 95 %, noncondensing
- Power requirements

<b>+12 V</b>
500 mA typical

- Dimensions (not including connectors)  
203 mm x 146 mm x 42 mm (L x W x H)