

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 VRMS optical isolation for digital inputs and outputs
- 2-CH 16-bit general purpose timer/counters
- 5.25" Disk Drive Bay mountable
- **Operating Systems**
 - Windows 98/NT/2000/XP/2003
- **Recommended Software**
 - VB/VC++/BCB/Delphi
 - DAQBench
- **Driver Support**
 - USB-LVIEW for Windows
 - USB-DASK for Windows



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 VRMS
- 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 VRMS
- Data transfer: programmed I/O

General-Purpose Timer/Counter

- Number of channels: 1
- Resolution: 16 bits
- Compatibility: 5 V/TTL
- Base clock available: 2 MHz, external clock to 2MHz

General Specifications

- 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 50°C
- Storage temperature: -20 to 80°C
- Relative humidity: 5 to 95 %, noncondensing
- Power requirements

+12 V
500 mA typical

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



Bundled Accessories

Termination Boards

■ **DIN-68S/1S**

Termination Board with a 68-pin SCSI-II Connector and DIN-Rail Mounting (Including One 1-meter ACL-10569 Cable)

Bundled Accessories

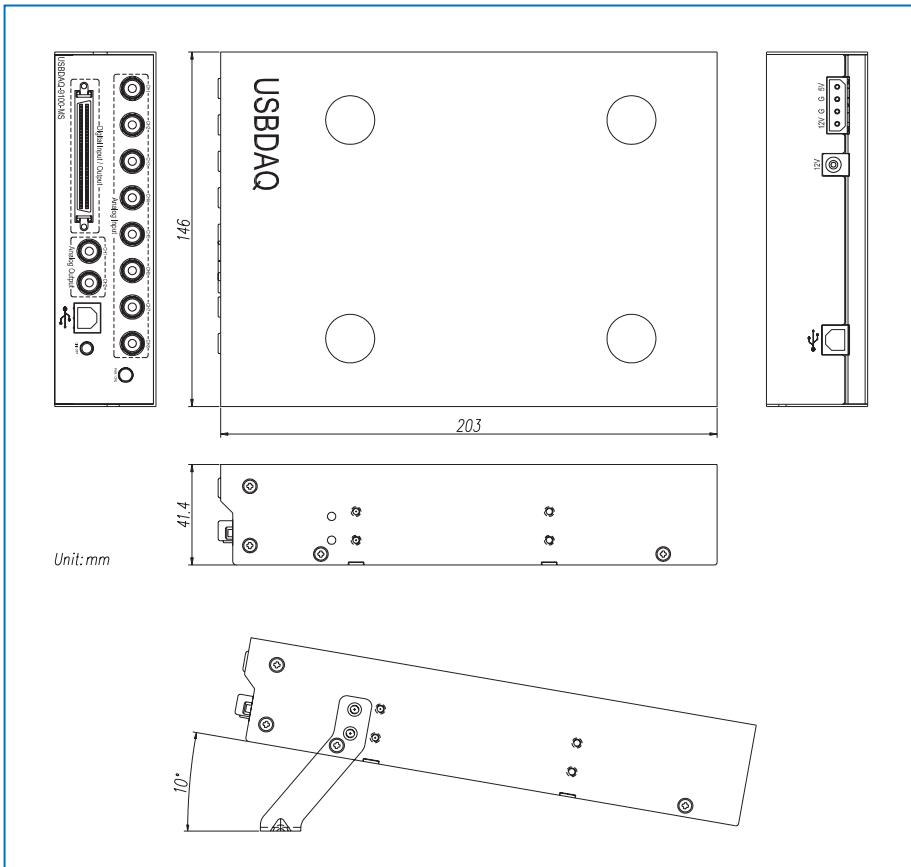
- USB cable (Type A to Type B) x 1
- RCA to crocodile clip cable x 10
- Stand arm x 1
- DIN-68S/1S for digital I/O x 1
- 110 VAC to 12 VDC power adaptor x 1

Pin Assignment

PWR	1	35	OGND
IDO0	2	36	OGND
IDO1	3	37	OGND
IDO2	4	38	OGND
IDO3	5	39	OGND
IDO4	6	40	OGND
IDO5	7	41	OGND
IDO6	8	42	OGND
IDO7	9	43	OGND
N/C	10	44	N/C
N/C	11	45	N/C
N/C	12	46	N/C
N/C	13	47	N/C
N/C	14	48	N/C
N/C	15	49	N/C
N/C	16	50	N/C
N/C	17	51	N/C
IDO10	18	52	IGND
IDI1	19	53	IGND
IDI2	20	54	IGND
IDI3	21	55	IGND
IDI4	22	56	IGND
IDI5	23	57	IGND
IDI6	24	58	IGND
IDI7	25	59	IGND
CLK0	26	60	GND
GATE0	27	61	GND
OUT0	28	62	GND
CLK1	29	63	GND
GATE1	30	64	GND
OUT1	31	65	GND
TGIN	32	66	GND
TGOUT	33	67	GND
N/C	34	68	N/C

Ordering Information

- **USBDAQ-9100MS**
USB 8-CH 12-bit 500 kS/s
Simultaneous-Sampling Multi-Function
DAQ Module



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