

### Features

- Multi-function data acquisition modules attach to computer via Universal Serial Bus (USB)
- USB Specification 1.1 Compliant
- 8 differential analog input channels with 12-bit resolution
- Simultaneously sampling of 4 analog input channels
- On board 4K samples AD FIFO memory
- Up to 500kS/s AD sampling rate
- Up to 100kS/s Continuous AD sampling
- Programmable inputs range
- Two 12-bit monolithic multiplying analog output
- 16-bit pacer timer and two 16-bit general-purpose timer/counter
- 8 isolated digital input and 8 isolated digital output
- Auto calibration—no potentiometers or adjustments required
- LED Indicator
- Windows 98, 2000 support



### Introductions

USBDAQ-9100MS 100kS/s multifunction I/O USB module delivers high performance and reliable data acquisition capabilities to meet wide range application requirements based on the USB interface.

The USB Plug-n-Play makes USBDAQ portable and easy to install. USBDAQ installation is never so easy before. Simply plug in the USB interface of your PC or notebook then follow instruction to install software, your are ready to go. The USBDAQ module offers 8-CH differential analog input channels with 10 programmable ranges, and 4 of the 8 input channels support simultaneous sample, 2-CH 12-bit analog output, 16-CH isolated digital I/O and 2 timer/counter.

### About USB

The Universal Serial Bus (USB) is a new standard for connecting PCs to peripheral devices such as printers, monitors, keyboards and mouse. USB offers several advantages over conventional serial and parallel connections, including higher bandwidth.

USB is ideal for data acquisition applications, only one cable is required to link the data acquisition device to the PC. In addition, the USB's high speed data transfer allows for a real time display of acquired data, while eliminating the need for expensive memory in the

acquisition device.

Backed by the Intel, Microsoft, and hundreds of other computer-related companies, USB is quickly becoming a new interface standard.

### Specifications

#### USB Controller:

- USB Spec. 1.1 compliant
- USB Throughput: 800 Kbyte/s

#### Analog Input:

- Converter: Successive approximation type
- Channels: 8 Differential
- Simultaneous sample channels:
  - CH1, CH3, CH5, CH7 or CH2, CH4, CH6, CH8
- Resolution: 12 bit
- Max. Sampling Rate: 500kS/s
- Input Range: Programmable

| Range | Gain | Input Range |            |
|-------|------|-------------|------------|
|       |      | Bipolar     | Unipolar   |
| 20V   | 0.5  | ±10V        | -          |
| 10V   | 1    | ±5V         | 0 to 10V   |
| 5V    | 2    | ±2.5V       | 0 to 5V    |
| 2.5V  | 4    | ±1.25V      | 0 to 2.5V  |
| 1.25V | 8    | -           | 0 to 1.25V |

- Input Coupling: DC
- Over Voltage Protection: 70V p-p
- FIFO Buffer Size: 4096 samples
- Input Impedance: 10MW
- Trigger Mode: Software, Pacer, External
- Data Transfer: Program Control, Interrupt

#### Analog Output:

- Converter: Equivalent, monolithic multiplying
- Channels: 2
- Resolution: 12 bit
- Max. Update Rate(Polling): 250 S/s, system dependent
- FIFO Buffer Size: 511 Samples
- Settling Time: 2mS(Full range when load is 10K)
- Output Range: ±10V
- Output Coupling: DC
- Protection: Short-circuit to ground
- Output Impedance: 0.1W min.
- Output Driving: ±5mA max.
- Power On State: 0V
- Data Transfer: Program Control, Trigger, Pattern Generate

#### Isolation Digital I/O:

- Channels: 8DI/8DO
- Isolation Voltage: 1500VDC
- External Power or Self-powered
- DO: Darlington Output
- Power On State: Input; High impedance
- Logic Levels:

| Level              | Min.  | Max. |
|--------------------|-------|------|
| Input Low Voltage  | -2.5V | 2.5V |
| Input High Voltage | +3.5V | +24V |

- Data Transfer: Program control

#### Timer/Counter I/O:

- AD Pacer: 16-bit timer with 32MHz time base
- Max. Frequency 500K

# USB-9100-MS

100kS/s Multifunction  
I/O USB Module

- Min. Input Pulse Width (10 us)
- Max DI Sampling Rate 4ms
- General-purpose Up/Down Counter/Timer
- Channels: 2
- Resolution: 16 bit
- Compatibility: 5V/TTL
- Base Clock: 8, 4, 2, 1MHz(Programmable)
- Data Transfer: Program Control,

#### LED Indicator:

- Power
- Operation

#### Connector:

- RCA connector for analog I/O
- SCSI68 for digital I/O and timer/counter
- USB type B (Front and Rear)
- Power jack for external AC to DC Adaptor
- 4 pin PC power connector

#### Dimension:

- 148 (L) x 42 (W) x 198 (H) mm
- Operating Temperature: 0 to 55°C  
Storage Temperature: -20 to 70°C  
Relative Humidity: 5 to 95%

non-condensing

### Software Support

- USBDAQ Utility for setup, acquisition, & real-time display
- DLL driver for Visual Basic®, Delphi™, & C++ for Windows® 98/2000
- MacOS (available soon)

### Accessory

- USB Cable (Type A to Type B)
- AIO Signal Probe
- Stand Arm
- DIN-68S Terminal Board with SCSI-68 Cable
- AC to 12VDC Adaptor Unit

### Optional Accessory

- 5400mAh Battery Pack

### Ordering Information

#### USBDAQ-9100MS

100kS/s Multifunction I/O USB Module  
(Include the accessory and software)

#### USBCAB-1M

USB Type A to Type B Cable 1m

#### USBPRO-1M

RCA Probe Cable 1m

#### DIN-68S

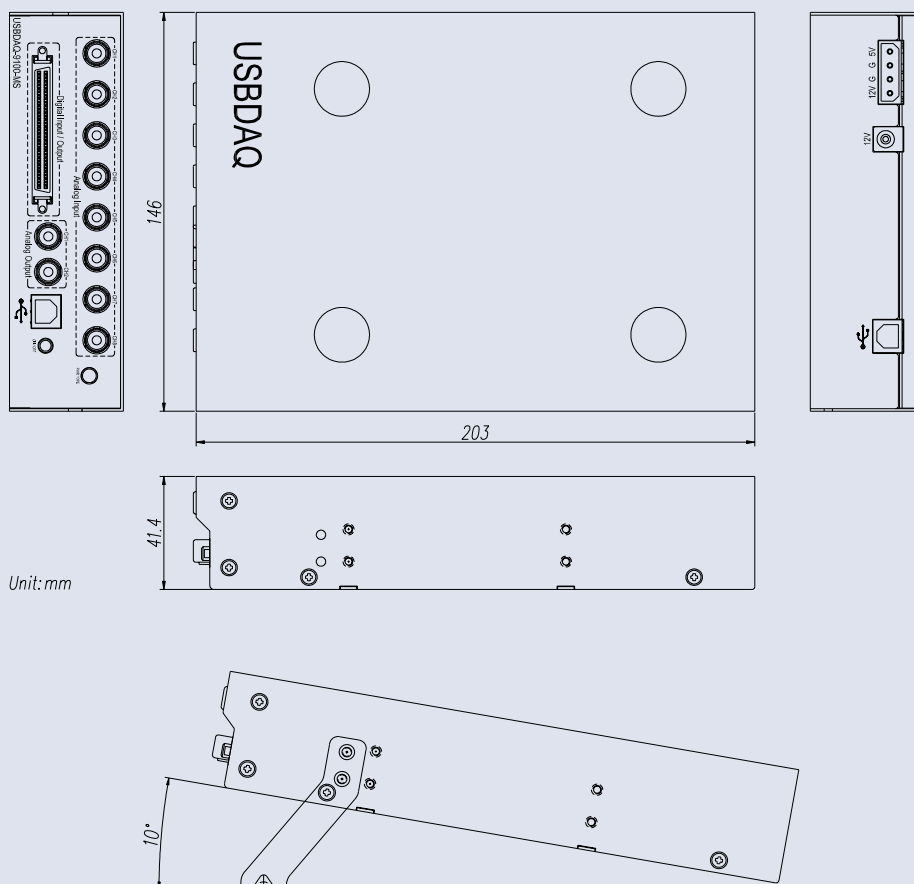
SCSI 68 Terminal Board with SCSI-68 Cable

#### PWRAD-12

AC to 12VDC Adaptor Unit

#### PWBAT-12

5400mAh Re-chargeable Battery Pack



Unit:mm