

## Description

The **USB-232** is an interface module that allows a USB 1.1 or USB 2.0 port to talk to US Digital RS232 devices such as the **X3** MEMS inclinometer. The **USB-232** interface is usually ordered with a US Digital device and comes with the necessary US Digital drivers, DLLs and Demo software designed for the product. This adapter is not intended to talk to non-US Digital devices.

The module has two connectors, J1 and J2. J1 is a standard USB type B receptacle and J2 is a 5-pin finger latching male connector typically used to interface with the CA-FC5-SH-MIC4-6 cable assembly. Note: J2 is not a DB-9 style connector commonly used for RS232; instead, it is a smaller connector that also provides power along with RS232 signals.

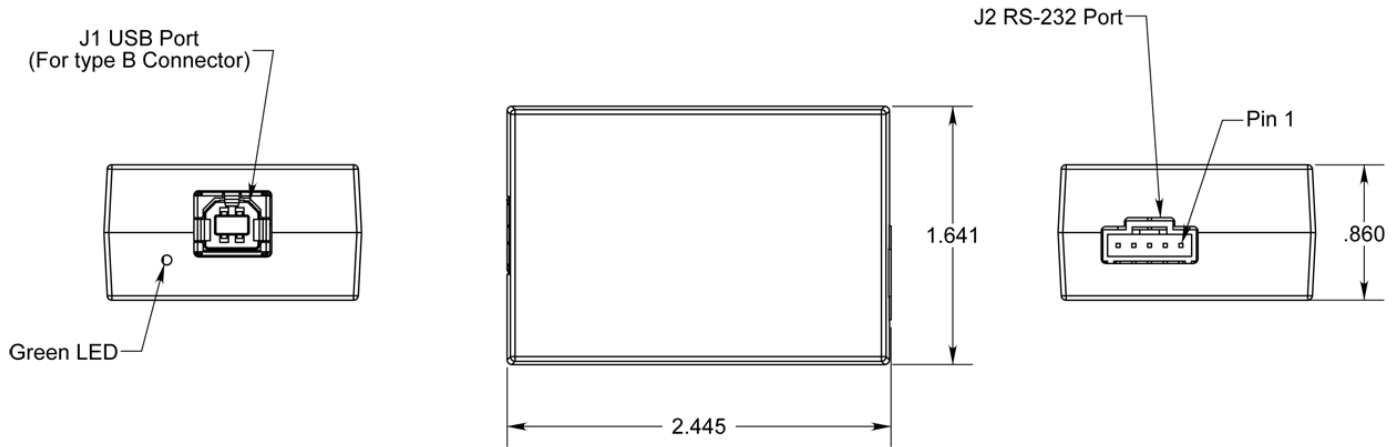
A green LED, next to the USB connector, is lit when the USB connection is established with the host.



## Features

- ▶ USB 1.1 device communicates at 12 Mbit/sec
- ▶ Compatible with USB 2.0 hubs and host adapters
- ▶ USB certified drivers are included for Windows 2000/XP/Vista
- ▶ Supports USB to RS232 two-wire communication and provides 5VDC @ 480 mA to external devices
- ▶ USB Enhanced ESD protection of up to 15 kV (human body model)
- ▶ Supports USB suspend and resume modes
- ▶ US Digital warrants its products against defects in materials and workmanship for two years. See complete warranty for details.

## Mechanical Drawing



### Absolute Maximum Ratings

Parameter	Min.	Max.	Units
Storage Temperature	-40	100	C
Operating Temperature	0	70	C
Humidity (non-condensing)	0	95	%

### Electrical

Parameter	Min.	Typ.	Max.	Units	Notes
USB Port Quiescent Current	20	-	-	mA	1
RS232 PWR Pin Current	-	-	480	mA	3
RS232 Output High Voltage	5.0	5.4	-	V	4
RS232 Output Low Voltage	-5.0	-5.4	-	V	4
RS232 Input Voltage Range	-25	-	25	V	5
RS232 Input Voltage Threshold	±3.0	-	-	V	6
RS232 Input Resistance	3	5	7	kΩ	-

#### Notes

- This is the current drawn from the USD Port by the USB-232 adapter with no devices attached.
- This is the +5 V power as supplied by the USB port per the USB specification.
- This is the +5 V maximum current that may be supplied to the external RS232 device.
- These are the RS232 voltage levels in and out of the RS232 connector.
- This is the maximum useful voltage that the RS232 connector will accommodate.
- These are the minimum RS232 signal voltages necessary for reliable communication.

### Pin-outs

#### J1 USB Port Pin-Out

Pin	Name	Description
1	PWR	USB power input (4.75 V - 5.25 V @ 500 mA, standard high PWR mode)
2	D-	USB data - line
3	D+	USB data + line
4	GND	USB ground

#### J2 RS232 Port Pin-Out

Pin	Name	Description
1	GND	Ground for power and TX/RX lines
2	NC	No Connection
3	RX	RS232 RX signal (input to the USB-232)
4	PWR	+5 V (nominal) power for external RS232 device
5	TX	RS232 TX signal (output from the USB-232)

### Timing Specifications

Parameter	Min.	Typ.	Max.	Units
RS232 Data Rate	1.2	-	115.2	kBaud

### Cables and Connectors

#### Serial Output (sold separately):

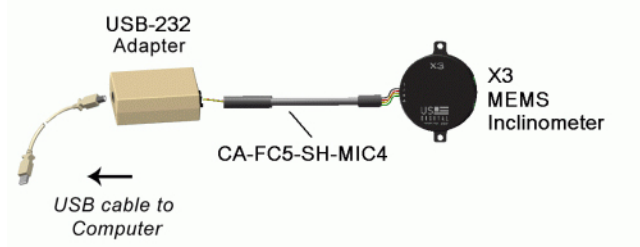
Part #	Description
CA-FC5-SH-MIC4-6	6' shielded cable 4-pin micro connector to 5-pin finger-latching connector.*

\* Note: Other length cables are also available. Maximum length is 200'.

#### USB (sold separately):

Part #	Description
CA-UA-USB-UB-3	3' cable with USB type-A to USB type-B male connectors.
CA-UA-USB-UB-6	6' cable with USB type-A to USB type-B male connectors.
CA-UA-USB-UB-10	10' cable with USB type-A to USB type-B male connectors.
CA-UA-USB-UB-15	15' cable with USB type-A to USB type-B male connectors.

### USB - RS232 Network



### Base Pricing

Quantity	Price
1	\$32.00
10	\$27.20

For volume discounts, please contact us at [sales@usdigital.com](mailto:sales@usdigital.com) or 800.736.0194.