

# RS-422/485 to USB Serial Adapter

## ICUSB422IS



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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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# Introduction

Thank you for purchasing the ICUSB422IS USB to RS422/485 Converter with Isolation. This unit is an intelligent expansion module that connects to a PC or server via the Universal Serial Bus (USB), providing high-speed serial connectivity. The RS485 port supports Auto-Tranceiver-Turn-Around, to support applications that control the transmitter driver. With the included software kit, it is an ideal solution for the most critical applications.

## Features

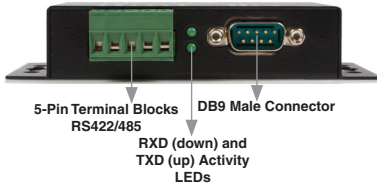
- Compatible with both USB 2.0 and USB 1.1
- Wall mountable design
- Optical Isolation and Surge Protection (2500 Vrms)
- Provides one RS422/485 port while powering the device through USB
- RS-485 mode supports Auto Transceiver Turn Around (ATTA)
- RS422/485 Baud rate up to 921.6 Kbps
- Supports 4-wire RS422 and 2-wire RS485 applications
- Supports DB9 and terminal block connector

## Package Contents

- 1 X 6ft USB A to B Cable
- 1 X Driver CD
- 1 X USB to RS422/485 Converter
- 1 X User Manual

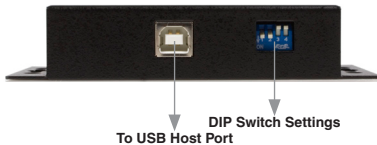
# Hardware Guide

## Front Panel



**Note:** The DB9 Male Connector at the Terminal Blocks are connected to the same signals internally. They are not two individual ports. As such, the signals coming from the Terminal Blocks and the DB9 connector are identical

## Rear Panel



## Switch Settings

The default settings on the ICUSB422IS are set at 2-wire RS-485 mode. If you require RS422, change the mode pin to the “422” position (ON). Maintain all other settings unchanged.

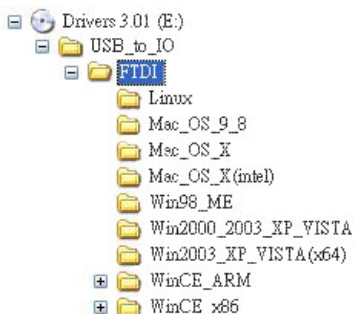
### Switch Description

Switch Pin #	Switch Function	Switch Positions	Description
1	RS-485	(OFF) (Default)	2-wire RS-485 mode
	RS-422	(ON)	4-wire RS-422 mode
2	ECHO	(OFF)	Transmitting data will be echoed back
	NO ECHO	(ON) (Default)	No echo data
3	NO TERM	(OFF) (default)	Termination Resistor is Disabled
	TERM	(ON)	Termination Resistor is Enabled
4	RVD	(OFF)	Reserved for Future Use
		(ON)	Reserved for Future Use

**Note:** If the mode is set to 422, the ECHO setting will take no effect. The echo mode is useful for the program to detect if the RS-485 bus were in a collision. If the echoed data is not equal to the transmitted data, then the bus has been in a collision.

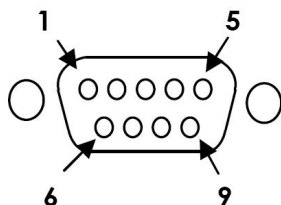
## Installing Drivers

The RS-422/485 Adapter Cable can be hot-plugged to the USB port of your computer according to the USB specifications. It supports Linux, Mac OS 9.8, X, and X (intel), Windows 98 ME, 2000, 2003, XP, and Vista™. The drivers for each can be found in the corresponding folder on the driver CD. If you are installing drivers for Windows 98, ME, 200, 2003, XP, or Vista™, Specify your CD-ROM drive and the location according to the following folder list:



# Male DB9 Pin Assignments and Cable Wiring

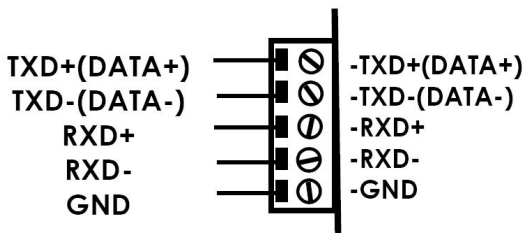
## DB9-Male Pin Assignment



Pins	Signal
1	TXD- (DATA-)
2	TXD+ (DATA+)
3	RXD+
4	RXD-
5	GND
6	NC
7	NC
8	NC
9	NC

NC= No Connection

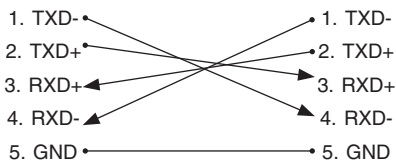
## 5-Pin Terminal Blocks Pin Assignment



## RS-422 Cable Wiring:

### DB9 (RS422 to USB Cable)

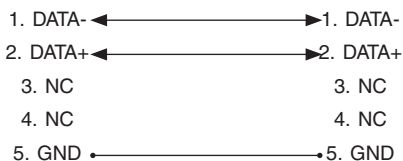
### DB9 (RS422 Device)



## RS-485 Cable Wiring

### DB9 (RS485 to USB Cable)

### DB9 (RS485 Device)



# Specifications

Type	Specifications
<b>Connectors</b>	USB type B, DB9 Male
<b>Number of Ports</b>	1 RS422/485 (for DB9M or Terminal Blocks)
<b>RS-422 Signals</b>	TXD+, TXD-, RXD+, RXD-, GND
<b>RS-485 Signals (2-wire)</b>	DATA+, DATA-, GND
<b>Baud Rate</b>	300 bps to 921.6Kbps
<b>Data Bits</b>	7,8
<b>Stop Bits</b>	1, 2
<b>Parity</b>	None, Even, Odd, Mark, Space
<b>Isolation</b>	2500Vrms
<b>Surge Protection</b>	500Watts
<b>Power Requirements</b>	5V/200mA (USB Bus Powered)
<b>Operating Temperature</b>	0 to 55°C(32 to 132°F)
<b>Operating Humidity</b>	5 to 95% RH
<b>Storage Temperature</b>	-20 to 85°C (-4 to 185°F)

## Technical Support

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## Warranty Information

This product is backed by a one year warranty. In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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