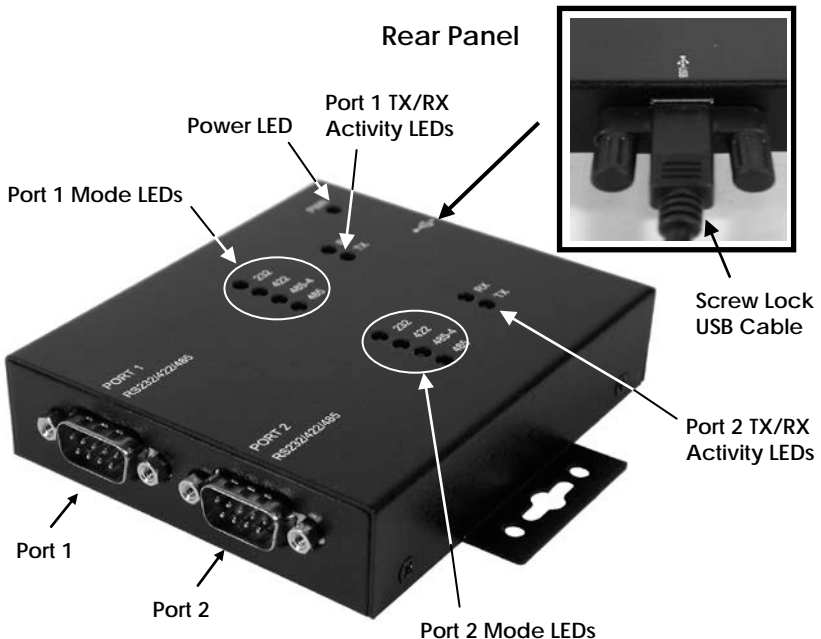# 2-Port RS232/422/485 Combo Serial to USB2.0 Adapter (w/ Metal Case and Screw Lock Mechanism)
Installation Guide

1. Introduction

Thank you for purchasing this 2-Port RS232/422/485 Combo Serial to USB Adapter. It is an intelligent expansion module that connects to a PC or server via the Universal Serial Bus (USB), providing high-speed serial connectivity. The serial ports are fully compatible with RS232/422/485 standard by the bundled virtual COM port drivers. With its rigid metal case and USB Screw Lock Mechanism, it is an ideal solution for most critical applications.

2. Connector Layout

Rear Panel

Power LED

Port 1 TX/RX Activity LEDs

Port 1 Mode LEDs

Screw Lock USB Cable

Port 2 TX/RX Activity LEDs

Port 1

Port 2

Port 2 Mode LEDs

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Features:

- ✓ Provides 2 RS232/422/485 Serial Ports over USB Port
- ✓ Provides 2 DSUB-9 Connectors
- ✓ Supports USB2.0 High Speed (480Mbps) Data Rate
- ✓ Supports USB Screw Lock Mechanism Enhances Reliability
- ✓ Baud Rate from 300 bps to 921.6Kbps
- ✓ Supports 7,8 Data Bits
- ✓ Odd, Even, Mark, Space, or None parity mode
- ✓ Supports 1, or 2 Stop Bits
- ✓ Supports USB Bus Power
- ✓ Optional Model Supports 2,500Vrms Isolation and 15KV ESD Protection
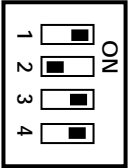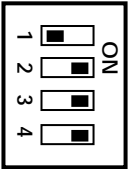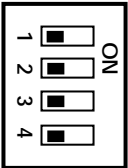- ✓ Supports Win98, Me, XP, CE, 2K, 2K3, Vista and Windows 7

3. Mode Switch Settings

There are two 4-pin DIP switches on the back side of the box for Port 1 and Ports 2. Each of them has 4 switch pins on it. Pin 1 to 2 (marked as M1 and M0) were used to set the RS232, RS422 or RS485 modes. The Pin 3 and 4 (marked as TERM ON) are used to Enable(ON) or Disable(OFF) the termination resistors for RS422/485 modes.

Port 1, 2 DIP Switches:
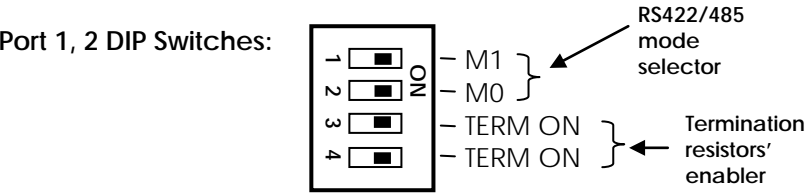
Mode Settings:

Switch Settings	Description
	RS485 2-wire mode (Default)

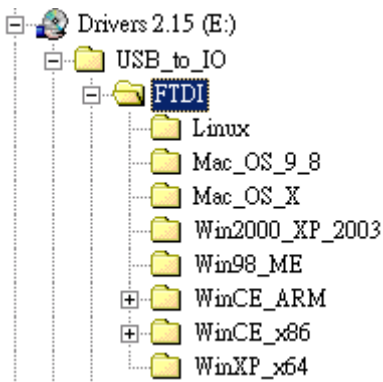|	
1 — M1 2 — M0 3 — TERM ON 4 — TERM ON (ON)	RS485 4-wire mode
1 — M1 2 — M0 3 — TERM ON 4 — TERM ON (ON)	RS422 mode
1 — M1 2 — M0 3 — TERM ON 4 — TERM ON (ON)	RS232 mode (**Note:** Both Pin 3 and 4 have to be set at OFF to work in RS232 Mode)
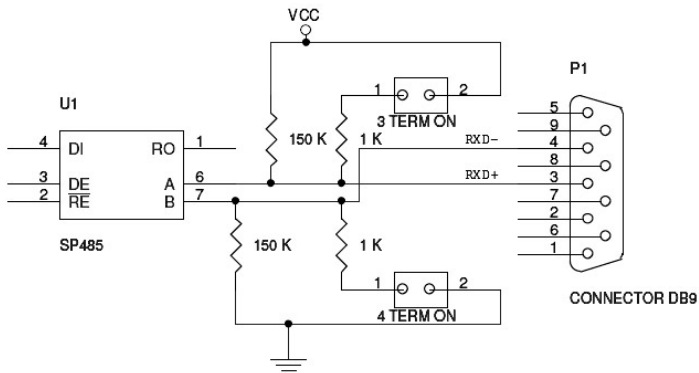
The image above shows how the TERM ON pins modifies the circuit
The TERM ON pins can apply 1K pull-up & pull-down resistors

3

4. Installing Drivers

The RS-232 Multi Serial Adapter can be hot-plugged to the USB port of your computer due to the specifications of USB. It supports the following operating systems. The drivers are shipped in the following folder on the supplied driver CD.

1. Driver Locations on the CD

These instructions are for installing the drivers from the CD supplied with the product. If you are installing drivers for Win98, ME, 2000 or XP, when prompted for the location of the drivers, specify your CD-ROM drive and the locations according to the following table:

```
Drivers 2.15 (E:)
  USB_to_IO
    FTDI
      Linux
      Mac_OS_9_8
      Mac_OS_X
      Win2000_XP_2003
      Win98_ME
      WinCE_ARM
      WinCE_x86
      WinXP_x64
```

- Linux
- Mac OS 9.x, 8.x
- Mac OS X
- Windows 2000, XP, Server 2003
- Windows 98, 98SE, ME
- Windows CE for ARM
- Windows CE for ix86
- Windows XP, 64bit

2. Installing Serial Port Drivers for Win98, ME, 2000,XP

- Insert the Driver CD supplied with the Adapter
- Connect the USB cable, the "Add New Hardware Wizard" appears. Click **Next**.
- Select "Search for the best driver for your device" and click **Next**.

■ Assume the CD-ROM is drive E:, select "Specify a location" and browse to the following folder:
**E:\USB_to_IO\FTDI\Win2000_XP_2003**

E:\USB_to_IO\FTDI\Win98_ME

For Win2000, XP or Server 3003,

For Win98, ME

■ Click **Next**. Windows will then copy the driver files.

■ Click **Finish** to complete the driver installation.

■ After installing the drivers, Windows will detect the new COM ports and will begin to initialize them. Your new COM ports, numbered sequentially following the existing ports in your system, and they are now ready!

5. RS232 Mode Male DB9 Pin Assignments and
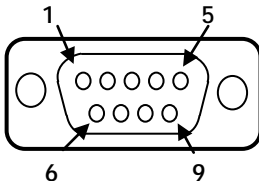
9 Pins	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

DB9(Male) to DB9(Male) Wiring

DB9(USB Adapter)	DB9(Serial Device)
1 DCD	1 DCD
2 RXD	2 RXD
3 TXD	3 TXD
4 DTR	4 DTR
5 GND	5 GND
6 DSR	6 DSR
7 RTS	7 RTS
8 CTS	8 CTS

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6. RS422/485 Modes Male DB9 Pin Assignments and

DB9-Male Pin Assignment:

```
  1        5
 ┌─────────────┐
 ○  ○○○○○  ○
 │   ○○○○    │
 └─────────────┘
  6        9
```
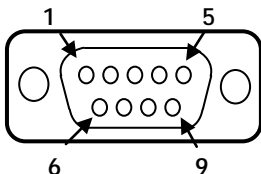
```
9 Pins    Signal
  1       TXD- (DATA-)
  2       TXD+ (DATA+)
  3       RXD+
  4       RXD-
  5       GND
  6       NC
  7       NC
  8       NC
  9       NC
```
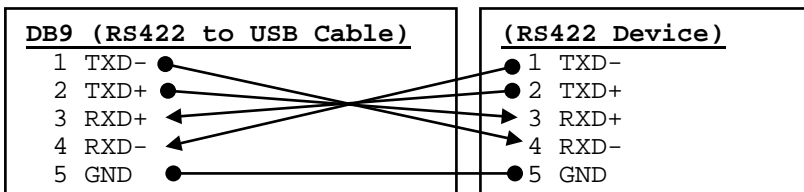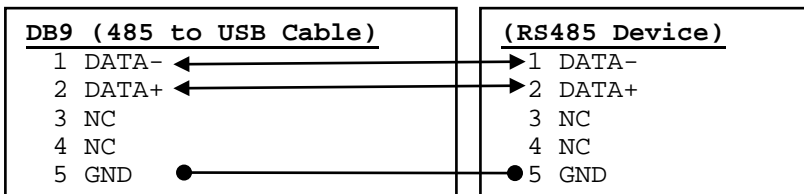
```
NC = No connection
```

RS422 Cable Wiring:

```
┌──────────────────────────┐   ┌──────────────────┐
│ DB9 (RS422 to USB Cable)  │   │ (RS422 Device)   │
│   1 TXD-  ●                │   │       ● 1 TXD-   │
│   2 TXD+  ●                │   │       ● 2 TXD+   │
│   3 RXD+  ◄                │   │       ► 3 RXD+   │
│   4 RXD-  ◄                │   │       ► 4 RXD-   │
│   5 GND   ●────────────────│───│───────● 5 GND    │
└──────────────────────────┘   └──────────────────┘
```

RS485 (2-wire) Cable Wiring:

```
┌──────────────────────────┐   ┌──────────────────┐
│ DB9 (485 to USB Cable)    │   │ (RS485 Device)   │
│   1 DATA-  ◄──────────────│───│─────► 1 DATA-    │
│   2 DATA+  ◄──────────────│───│─────► 2 DATA+    │
│   3 NC                     │   │       3 NC       │
│   4 NC                     │   │       4 NC       │
│   5 GND    ●───────────────│───│──────● 5 GND     │
└──────────────────────────┘   └──────────────────┘
```

5. Environmental Specifications

Power requirements: 5V DC, 385mA (max)

Operating temp.:   0 to 55°C (32 to 131°F)

Operating humidity: 5 to 95% RH

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