

## USB485

### USB to RS485 Converter Card



User Manual for connecting  
with Windows Vista  
Version 1.00

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Thank you for purchasing the USB485 converter card. This product is warranted to be free of manufacturing defects for one (1) year from the date of purchase.

**DISCLAIMER**

The information provided in this document is believed to be reliable. However, no responsibility is assumed for any possible inaccuracies or omissions. Specifications are subject to change without notice.

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**USB485 Card for Vista User Manual**

Product: USB485 converter card  
Version: 1.00  
Date: 3/9/2009

Version History		
Version	Date	Description of Changes
1.00	3/9/2009	New Manual

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## 1 General Information

- UART I/F Supports 7 / 8 Data, 1 / 2 Stop Bits and odd /even / Mark / Space / No parity
- Data rate 300 => 250K Baud
- 384 Byte Receive Buffer / 128 Byte Transmit Buffer for high data throughput
- Adjustable RX buffer timeout
- Auto Transmit Buffer control
- Integrated Power-On-Reset circuit
- Integrated 6 MHz – 48 MHz clock multiplier PLL
- USB 1.1 and USB 2.0 compatible

**VIRTUAL COM PORT (VCP) DRIVERS for**  
Windows Vista

**USB Direct Drivers + DLL Software Interface for**  
Windows Vista

## 2 Pin Assignments

Pin	Function
1	A Output (-ve)
2	Ground
3	B Output (+ve)



**\*Note:** The Yellow LED will flash when the unit is transmitting data from the computer to the controller. The Green LED will flash when the unit is receiving data from the computer to the controller. There is no power on LED indicator. Look in your Device Manager to see if the USB485 card shows up under one of the COM Ports. This is a clear indication that the unit is in good condition and is ready to communicate.

### 3 Installation

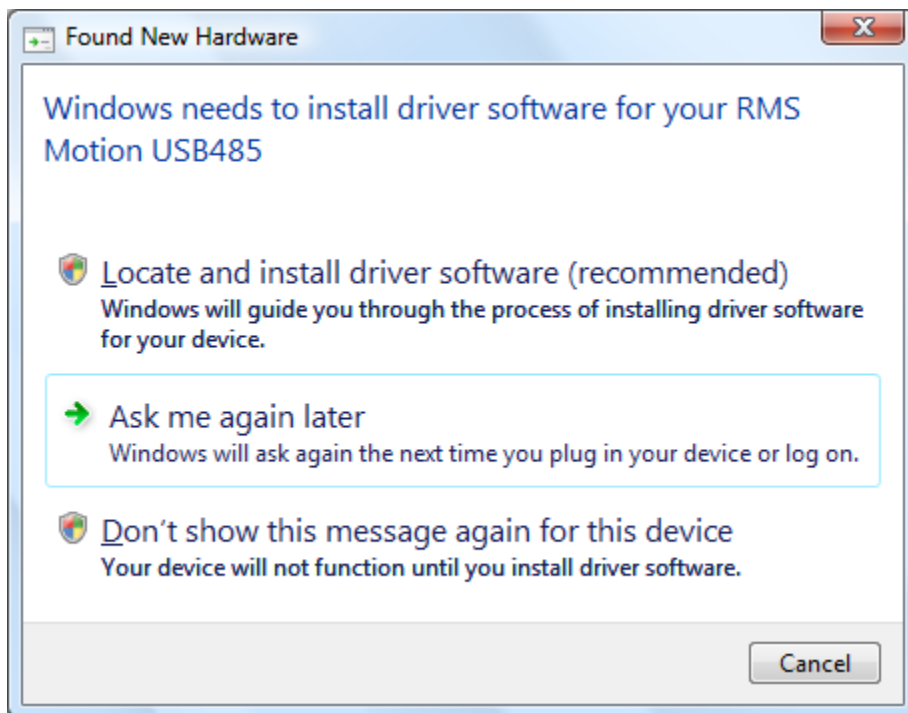
**Please make sure you have the following before proceeding:**

- RMS Technologies USB 485 converter card
- Standard USB Type A to B cable.

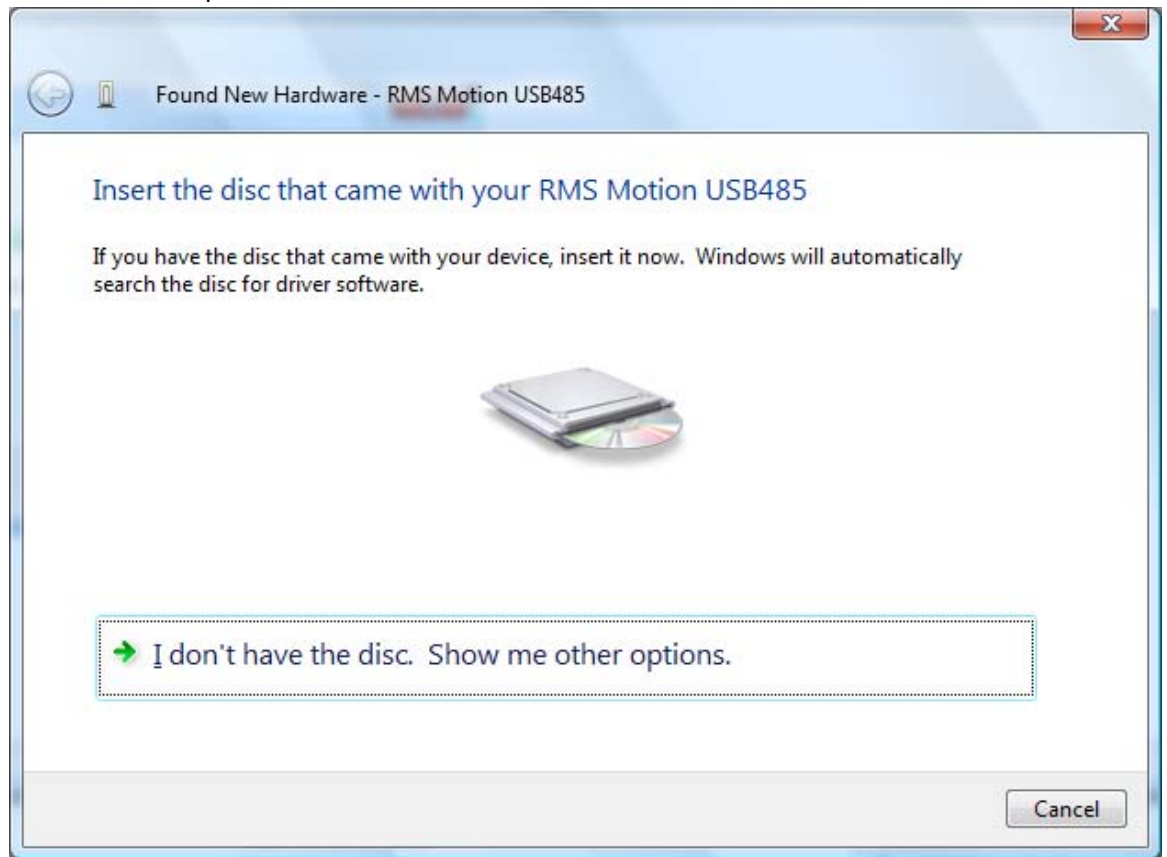
#### **Installing the Unit:**

The USB485 Converter card will install two sets of drivers. One set is for the unit itself, and the second set is for the Virtual Communications Port (VCP).

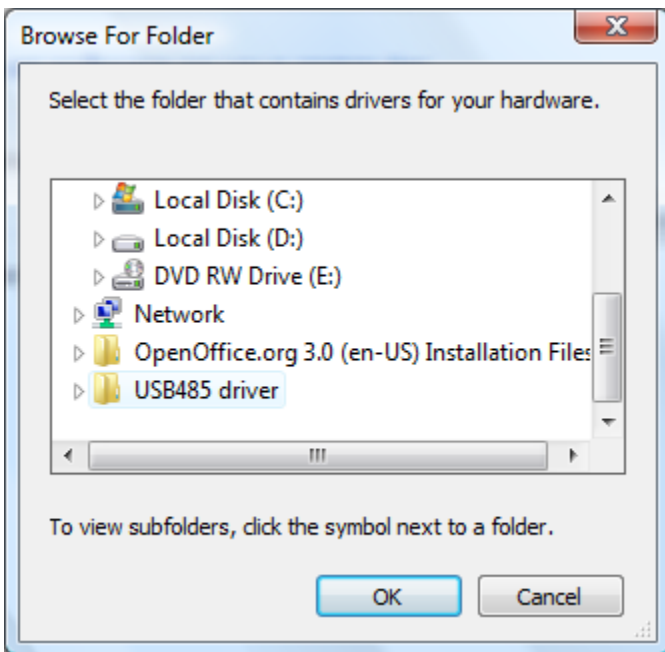
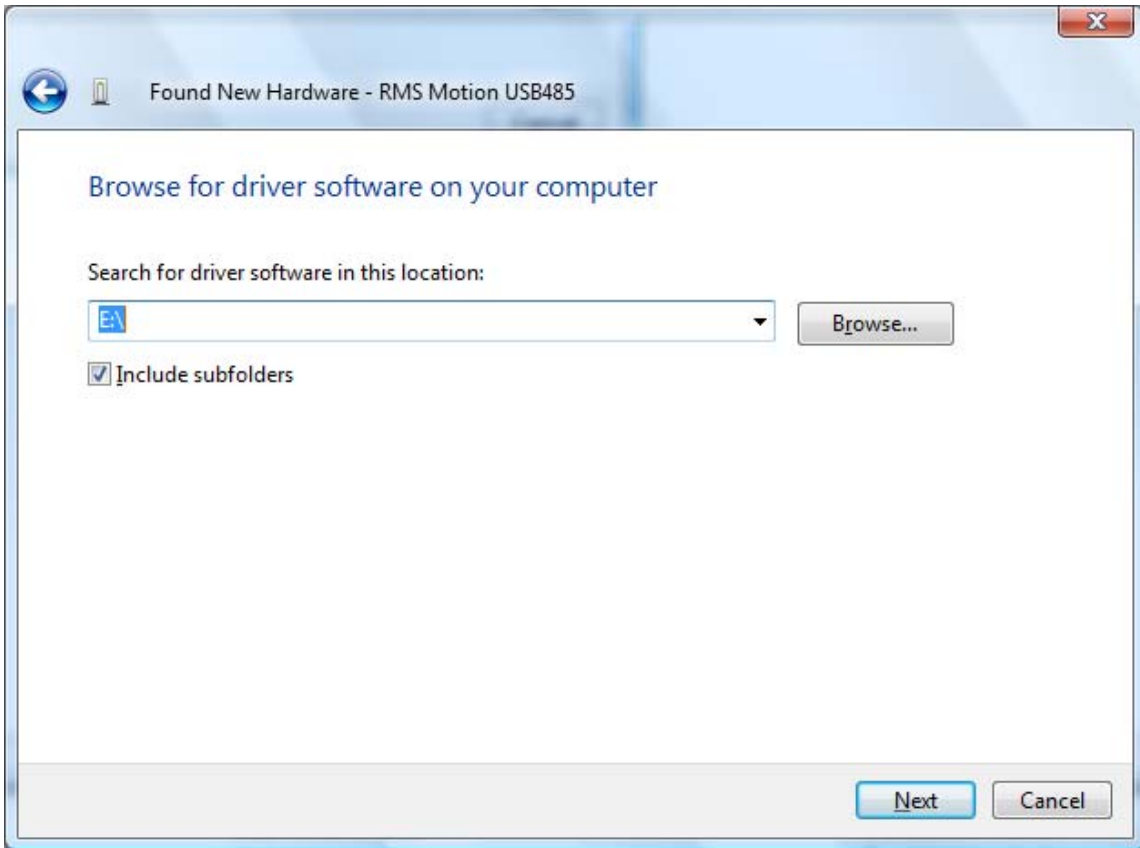
1. Power up the PC and start up Windows.
2. Connect the USB485 converter card to the PC with a USB cable.
3. Windows will detect a new device and produce a window as shown below. Please click on the "Locate and install driver software (recommended)". You might be prompt for permission to continue. Click "continue".

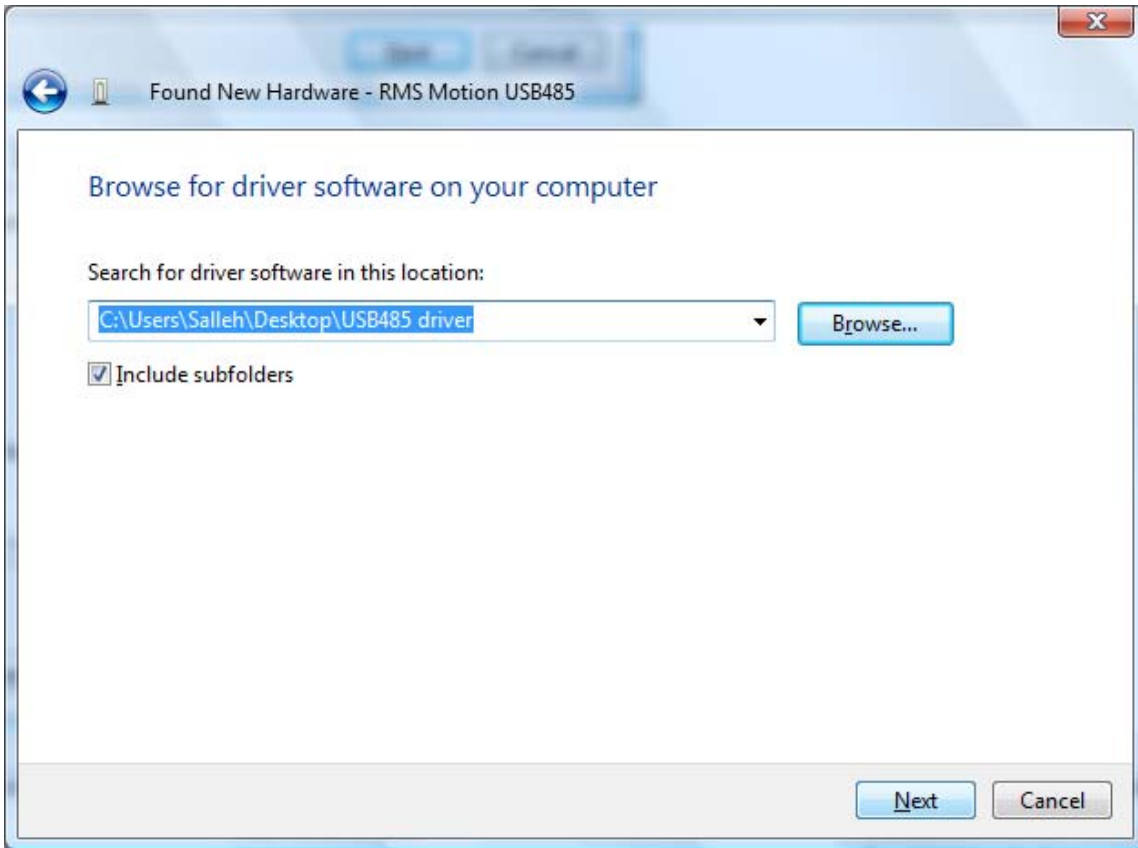


4. A window will appear as below. Please click on the "I don't have the disc. Show me other options."

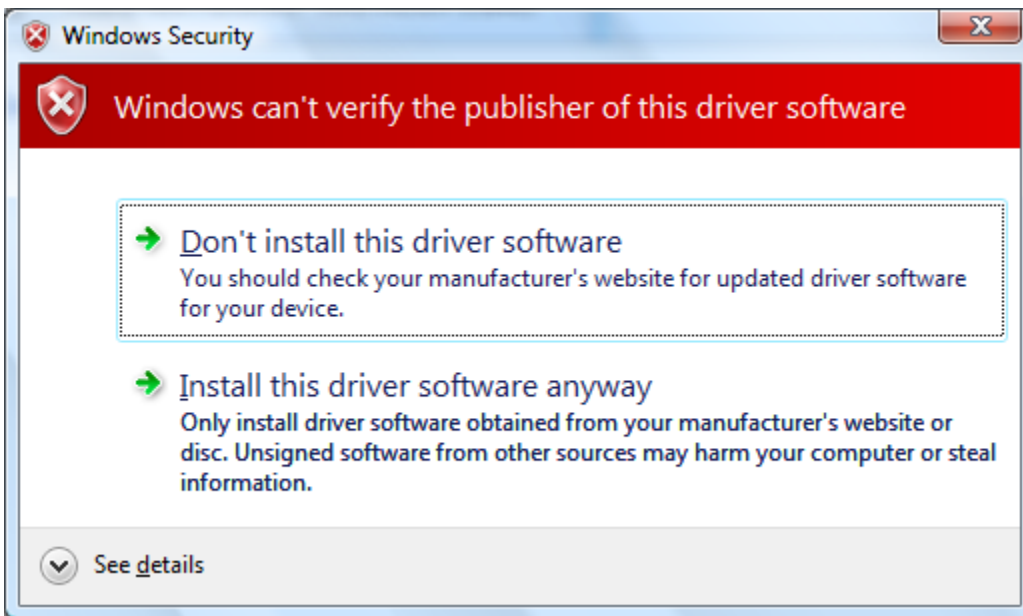


5. A window will prompt you for driver files. Please click on the "Browse" button and select the location of the **folder** for the driver files. Note that this folder needs to be unzipped first if it is still in the zipped format. You may download the driver files from [www.linengineering.com](http://www.linengineering.com) on the USB485 webpage.

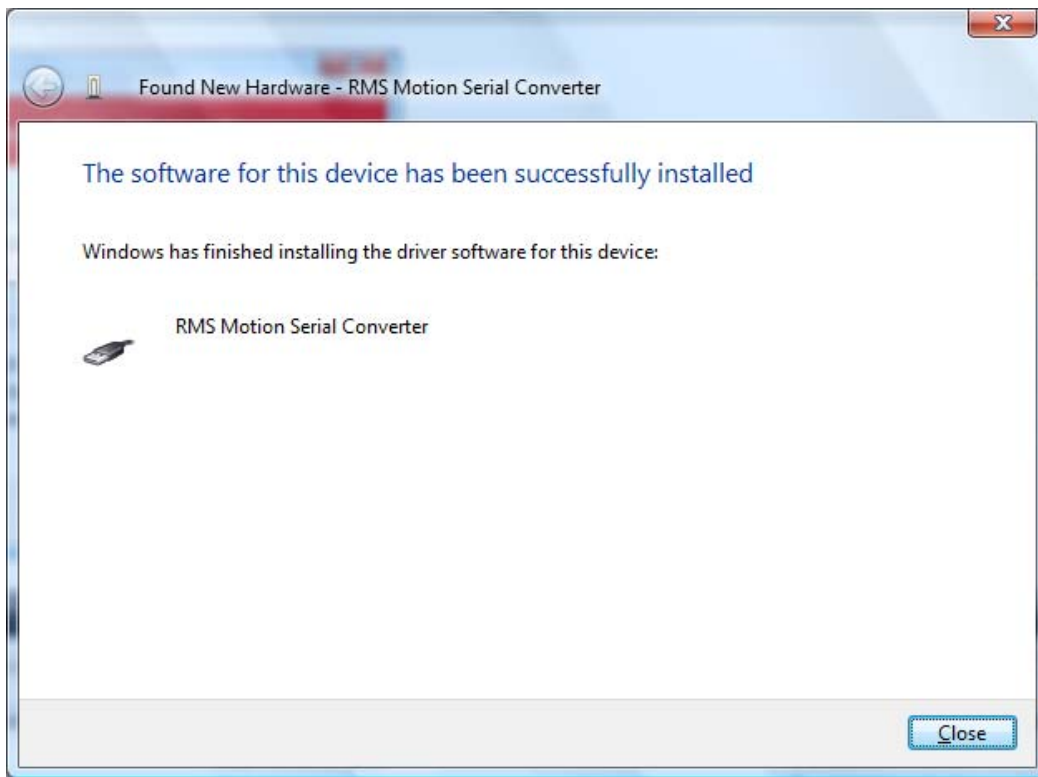




6. A window as shown below will appear. Please click on the "Install this driver software anyway."



7. If all of the required drivers files is located, the installation successful. A window shown below will appear.



8. The step 1 to 7 must be repeated twice before the installation is completed.

#### 4 Turning on Echo

There is a jumper on the PCB inside the case used to turn on and turn off echo. The Default position of the jumper is on Pin 2 and Pin 3, echo off. To turn echo on, move the jumper to Pin 1 and Pin 2.

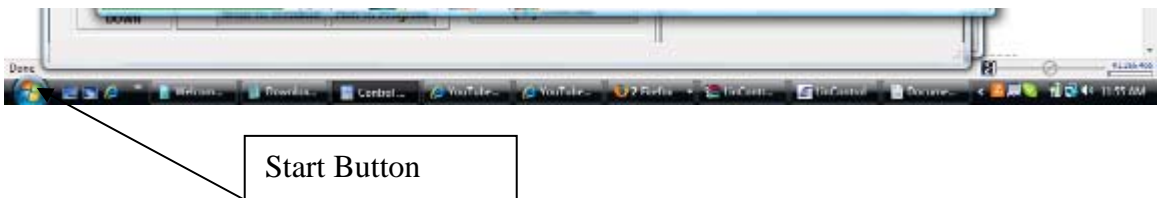


## 5 Determining Communications Port Number

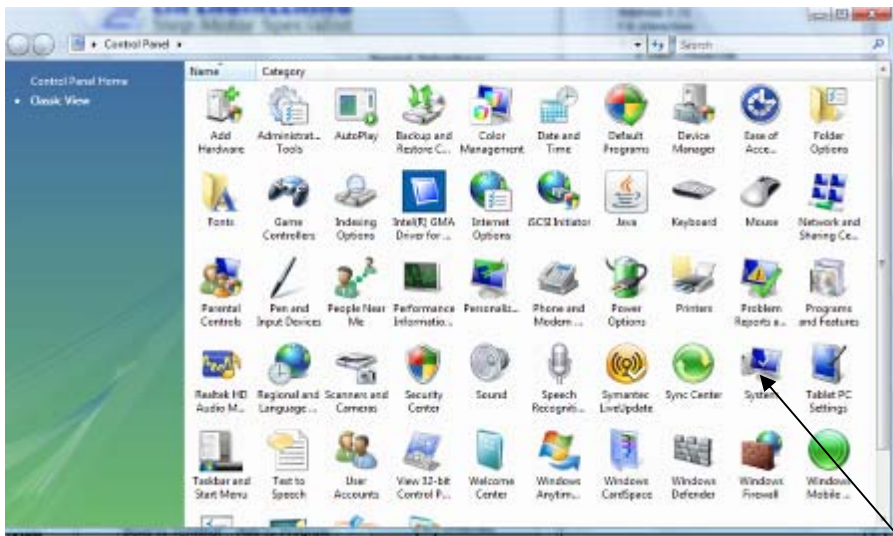
Upon installation, the RMS MOTION USB485 will be assigned a COM PORT number. This number is dependent upon the number of existing COM PORTS already present in your Windows Vista operating system.

To determine what COM PORT number the USB485 has been assigned:

1. Right click your "Start" icon. This is locate on the bottom left of your screen. Choose "Control Panel".



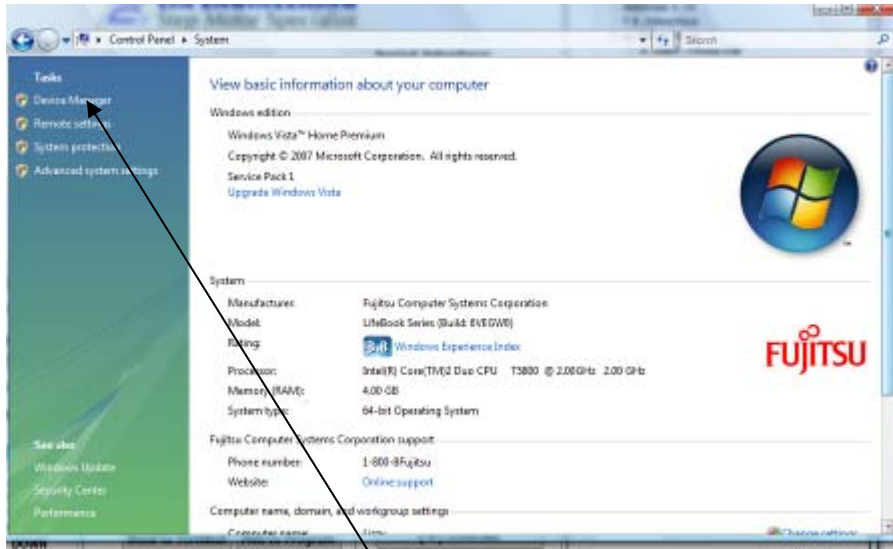
2. If the "Classic View" is chosen, the window will be as shown below.



Double click on the "System" icon.

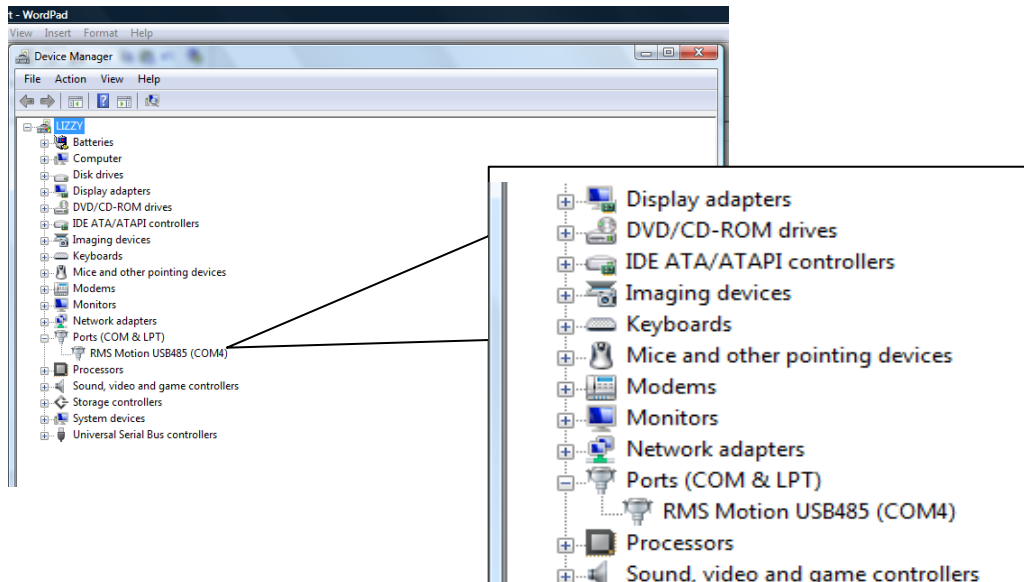
Double Click on this icon.

4. Click on "Device Manager" icon.



Click on "Device Manager" icon

5. If the USB convertor card is plugged in and also if the driver files were successfully installed, the "Device Manager" window will be shown as below. Note the assigned "COM Port".



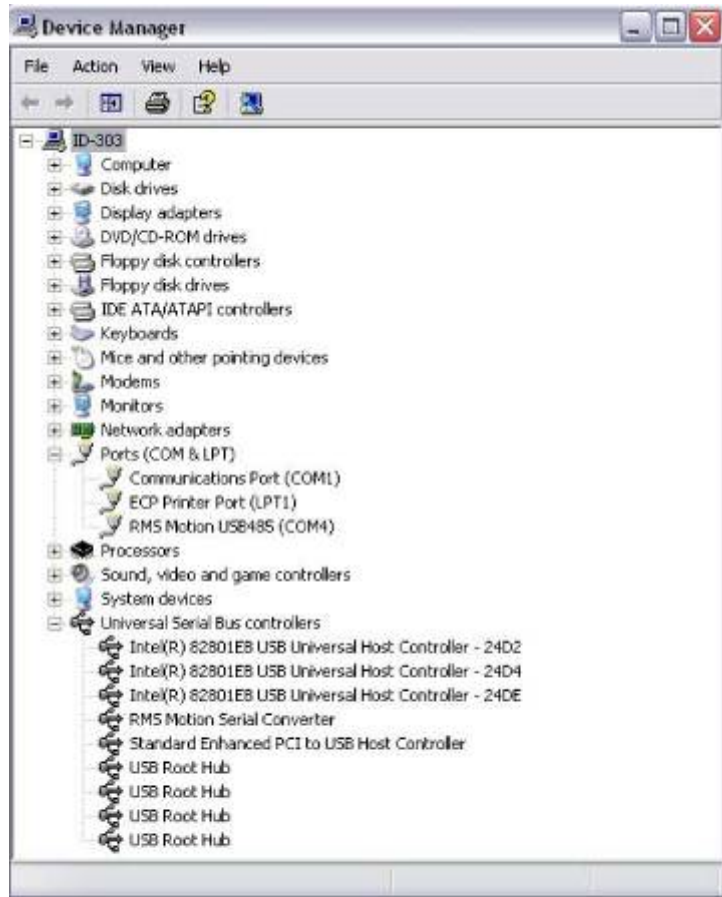
## 6 Changing Assigned Communications Port Number

Upon installation, the USB485 device will assign itself the lowest free Communications Port number. This setting can be changed to any free communications port that is not in use by Windows.

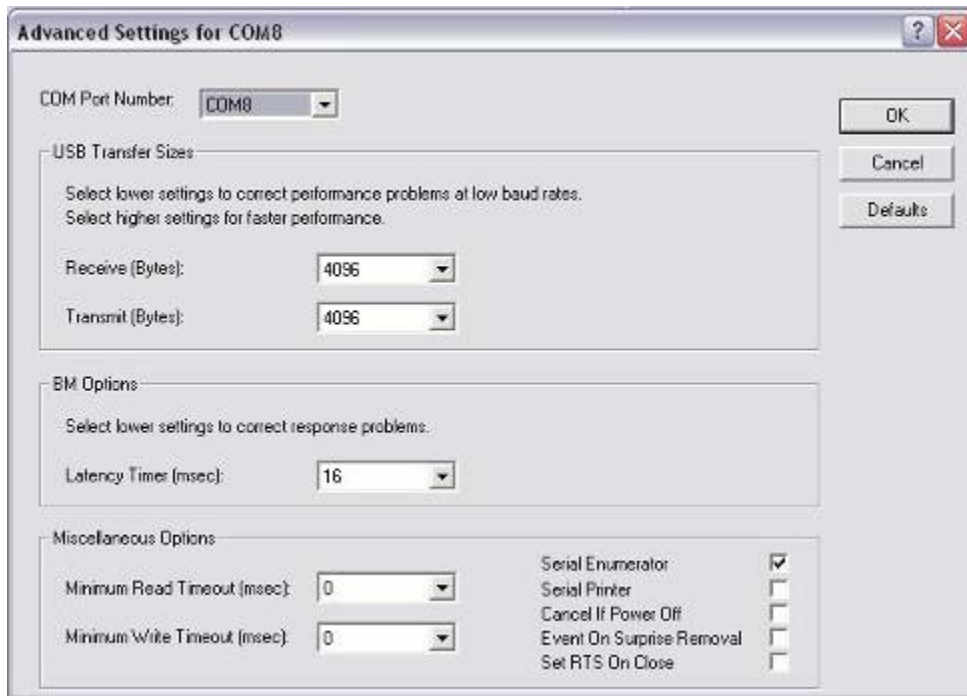
*Note: Previously installed devices no longer on the system may cause some COM Ports to be listed as in use. The USB485 may be set to use these numbers, but please be sure that the device previously using the port is disconnected.*

### **To Change the Assigned Com Port Number:**

1. Right click your "My Computer" icon and choose "Properties."
2. Select the "Hardware" tab.
3. Click on "Device Manager"
4. In the Device Manager, find "RMS Motion USB485" under "Ports (COM & LPT)".
5. Double click on "RMS Motion USB485" to go to Properties.



6. Select the "Port Settings" Tab and click on "Advanced."
7. In the Advanced Settings window you may change the assigned COM port number. Click "OK", and the new COM Port number takes affect.



## 7 RS485 Communication

### The Interface

The EIA specification RS485 defines an integrated circuit that is to be used to connect up to 32 nodes to a two-wire party line bus that does not exceed 4,000 ft. in length, and for use with data rates up to 10M Baud.

The two-wire bus must be terminated at one-end for short wire runs and at both ends if the runs exceed 20 ft. One of the two wires must be biased positive with respect to the other by approximately 700 millivolts.

For wire runs over 20 ft, twisted pair cable with a characteristic impedance of approximately 100 to 200 ohms, and the far end of the run should be terminated by a 150 ohm resistor across the line pair. For runs under 20ft almost any wire can be used.