

USB485

USB to RS485 Converter Card



User Manual
Version 1.02

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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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1 Specifications

GENERAL

- UART I/F Supports 7 / 8 Bit 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

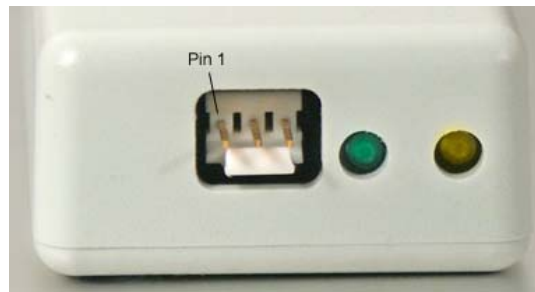
- Windows 98 / 98SE / ME
- Windows 2000 / XP

USB Direct Drivers + DLL Software Interface for

- Windows 98 / 98SE / ME
- Windows 2000 / XP

2 Pin Assignments

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



RS485 Connection View

***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

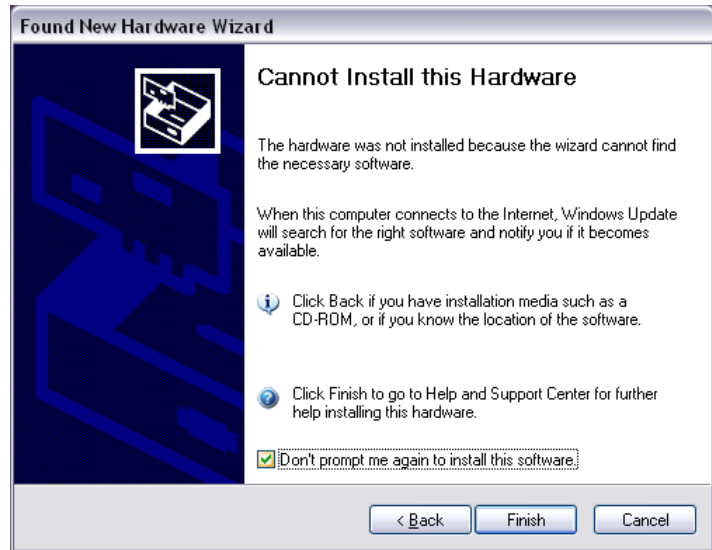
Please make sure you have the following before proceeding:

- RMS Technologies USB485 converter.
- Standard USB Type A to B cable.
- RMS Technologies Manuals and Software CD.

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).

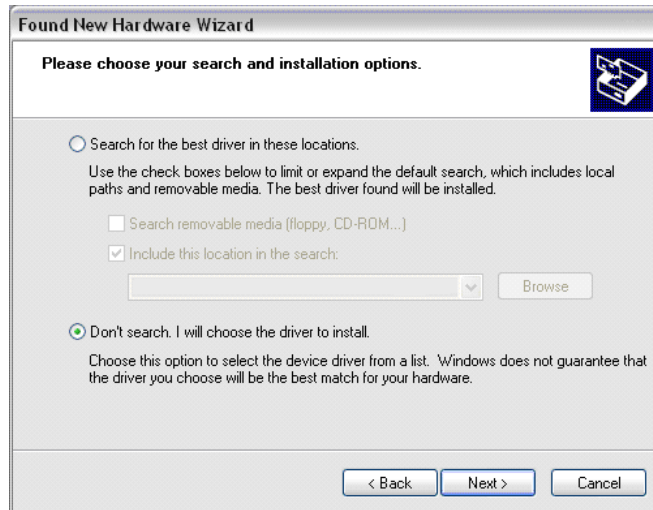
1. Power up the PC and start up Windows.
2. Connect the USB485 converter card to the PC with a USB cable.
3. Windows will detect a new device "RMS Motion Serial Converter"
4. A window may appear with the text "Cannot Install this Hardware." Simply click on the "Back" button.



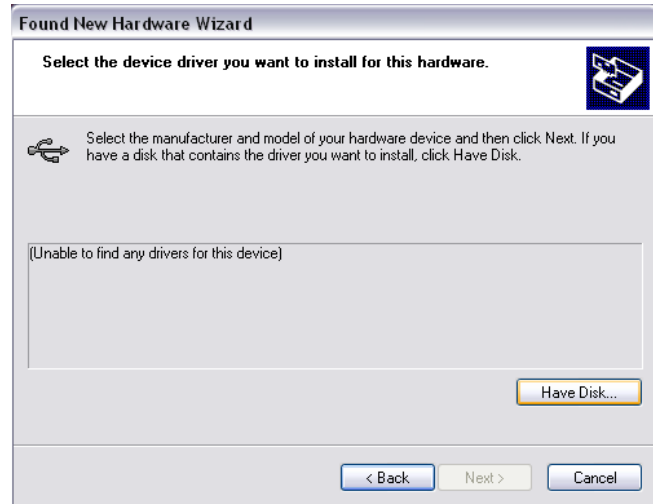
5. A window will prompt you for drivers:
6. Choose "Install from a list or specific location (Advanced)" and click "Next."



7. A window will appear asking you to specify driver location.
8. Choose "Don't search. I will choose the driver to install." Click "Next"



9. Choose "Universal Serial Bus Controller" under Device Type
10. Choose "Have Disk..."



11. Input the location of the driver files. Typically, this will be on the RMS Technologies Software and Manuals CD.

For example: "D:\USB485\DRIVERS" and click "OK."



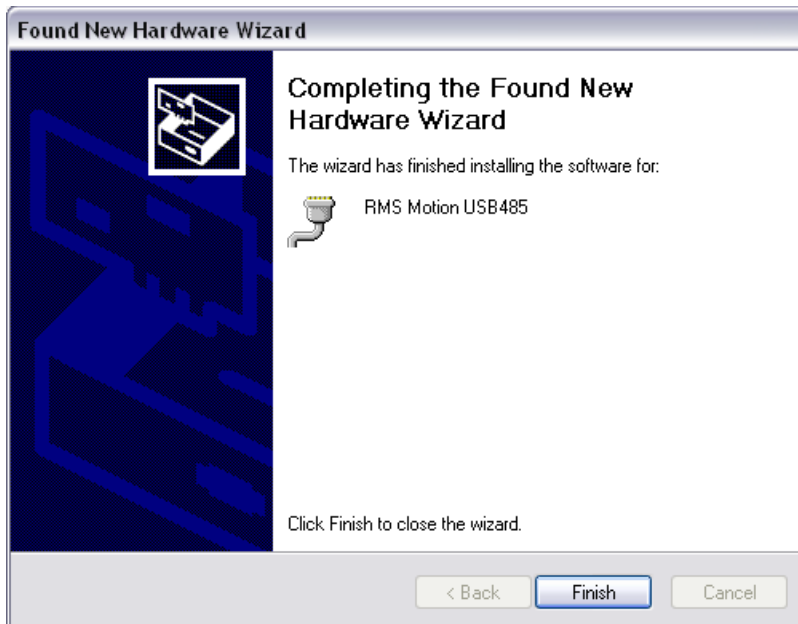
12. Select "RMS Motion Serial Converter" from the device list, click "Next".



13. Select "Continue Anyway" when warned about Windows Logo Testing.



14. Click "Finish." to complete installation.



15. Once you have clicked "Finish," Windows should automatically detect another new device. This will begin the installation of the VCP drivers.

16. Repeat steps 5-14 replacing "RMS Motion Serial Converter" with "RMS Motion USB485."

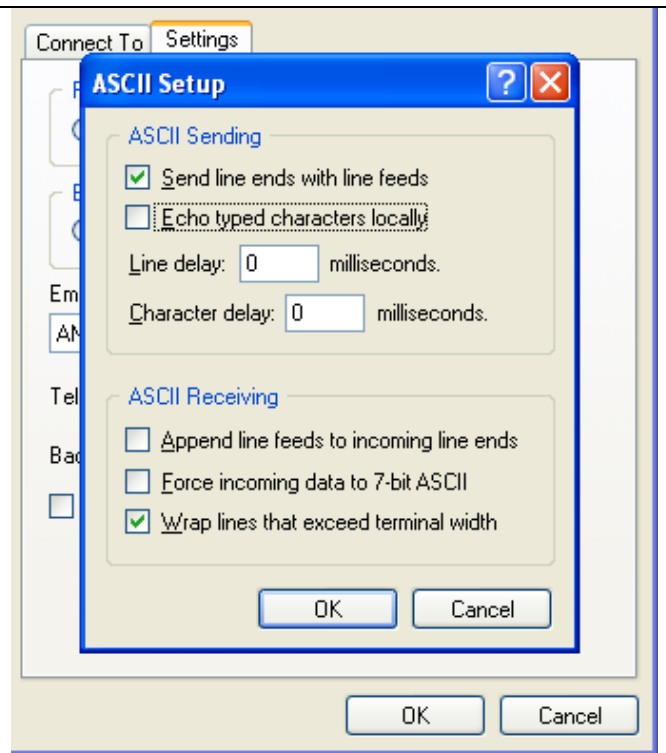
If unit is echoing every character twice:

Simply turn off echo in the Properties section of your communication device.

For example, if you are working in HyperTerminal, go to:

File → Properties → Settings tab → ASCII setup

Uncheck "Echo typed characters locally".

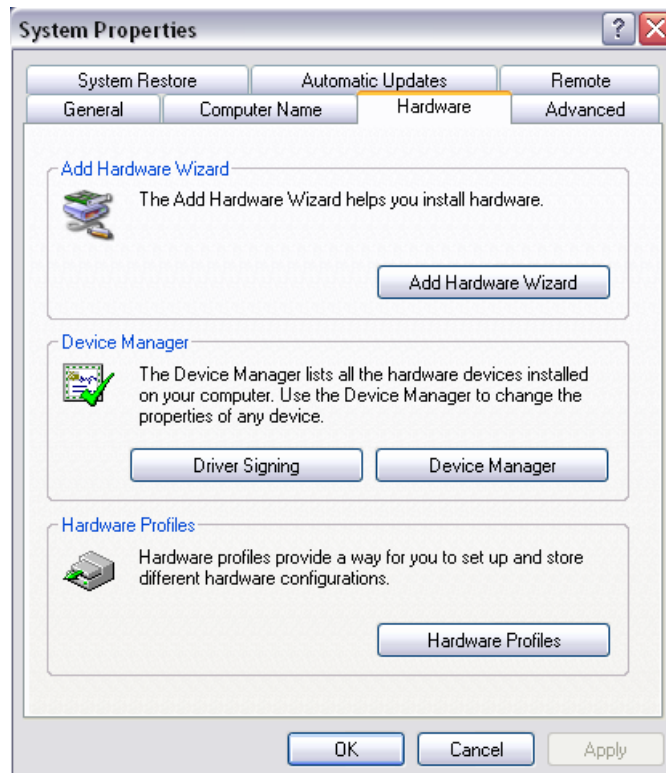


3. Determining Communications Port Number

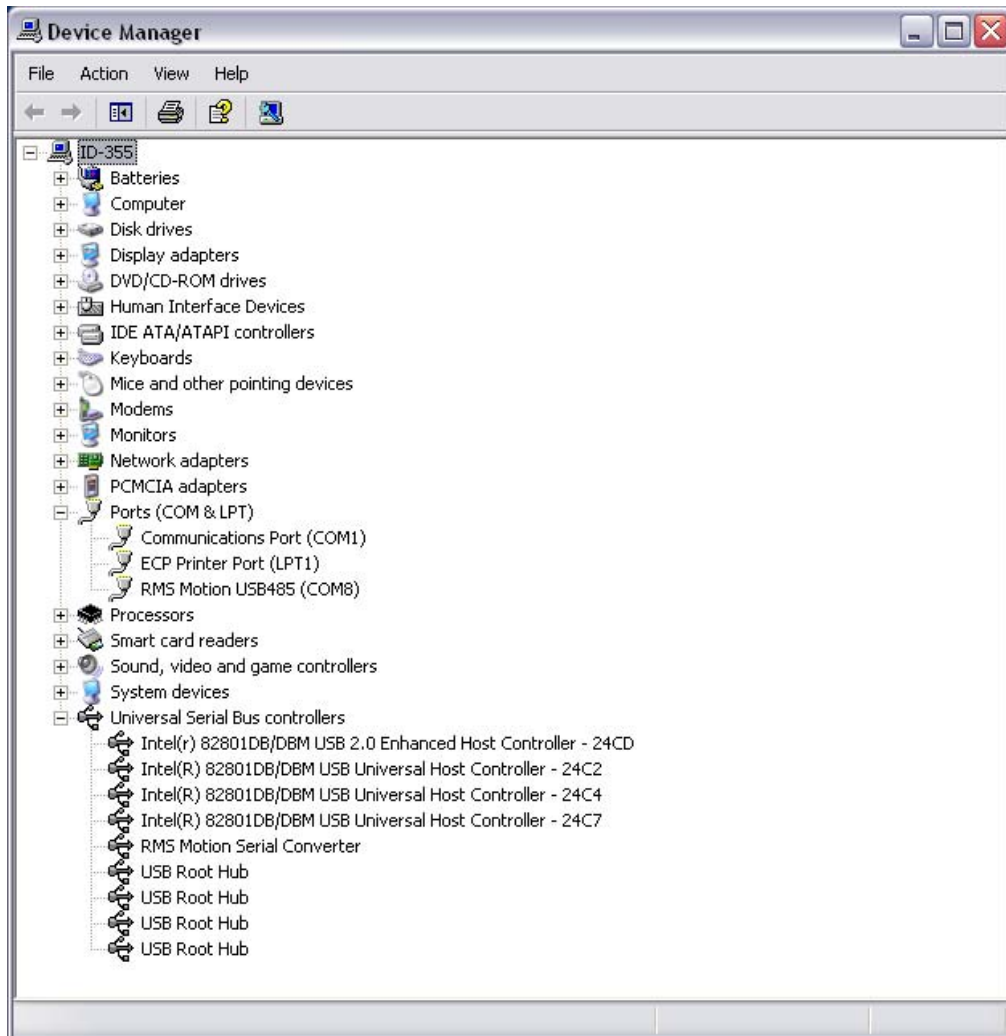
Upon installation, the RMS MOTION USB485 will be assigned a COM PORT number. This number is dependent upon the number of existing COM PORTS already present in your Windows operating system.

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

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, the following should be listed:
 - a. Under Ports (COM & LPT), there should be listed "RMS Motion USB485 (COMX)" where X is the Communications Port # assigned to the device, it is assigned to COM8 in this example. This setting may be changed and will be discussed in the next section.
 - b. Under Universal Serial Bus controllers, there should be listed "RMS Motion Serial Converter."



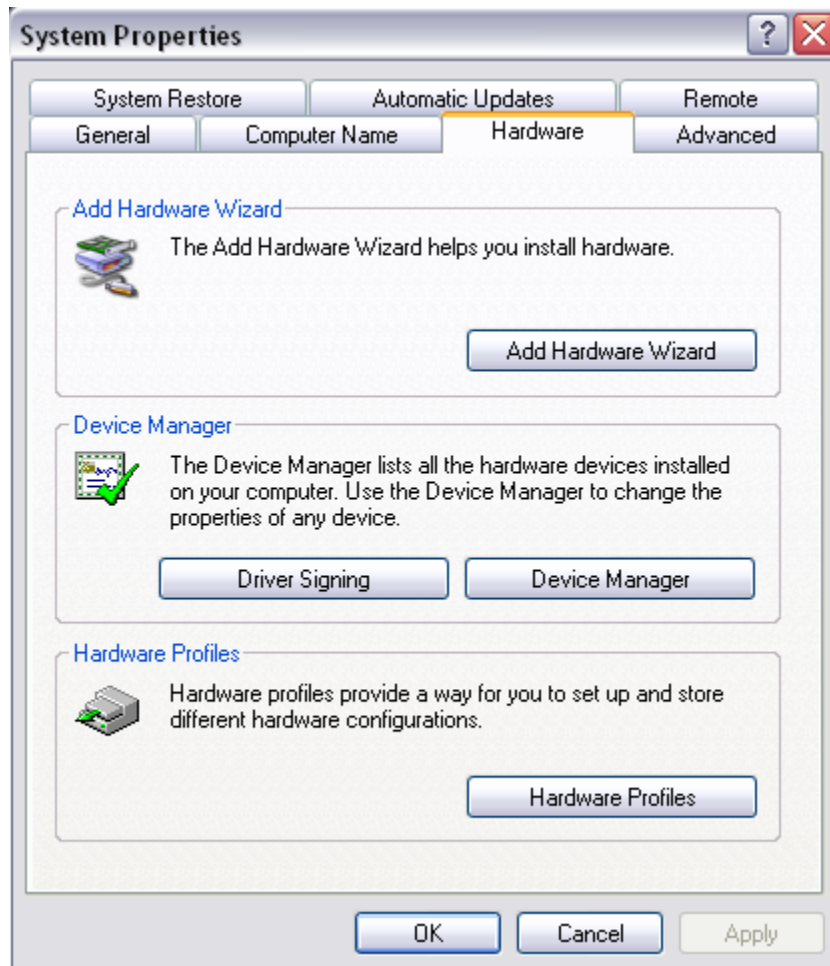
4. Changing the Assigned Communications Port Number

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.

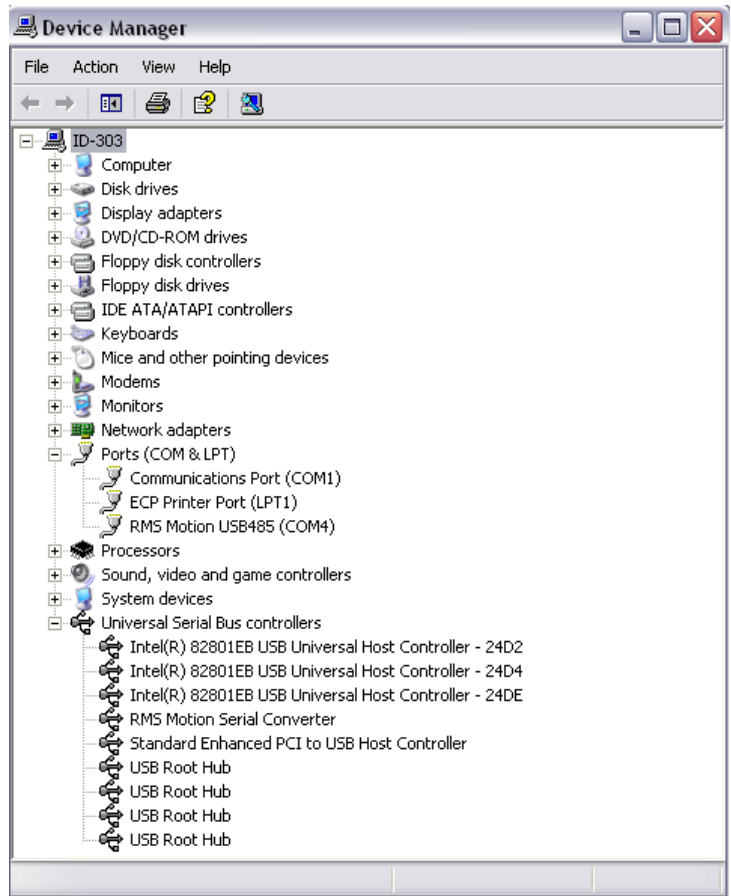
Note: Previously installed devices no longer on the system may cause some COM Ports to be listed as in use. The USB485 may be set to use these numbers, but please be sure that the device previously using the port is disconnected.

To Change the Assigned Com Port Number:

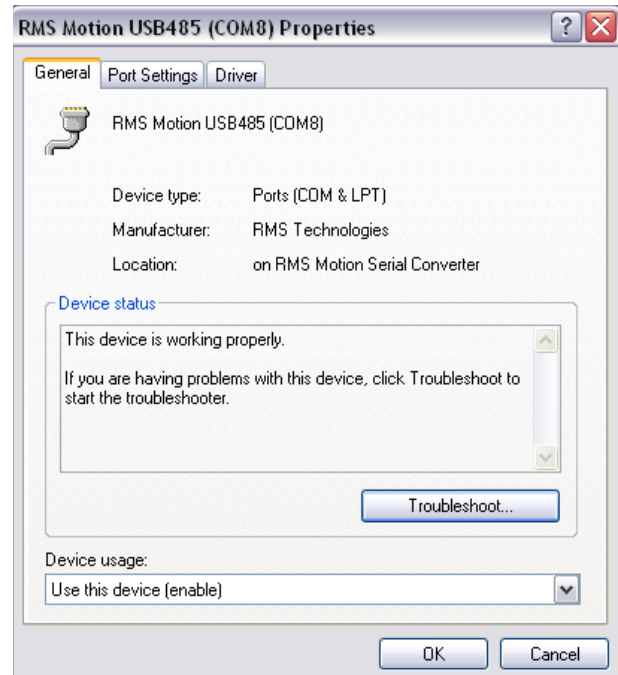
1. Right click your "My Computer" icon and choose "Properties."
2. Select the "Hardware" tab.
3. Click on "Device Manager"



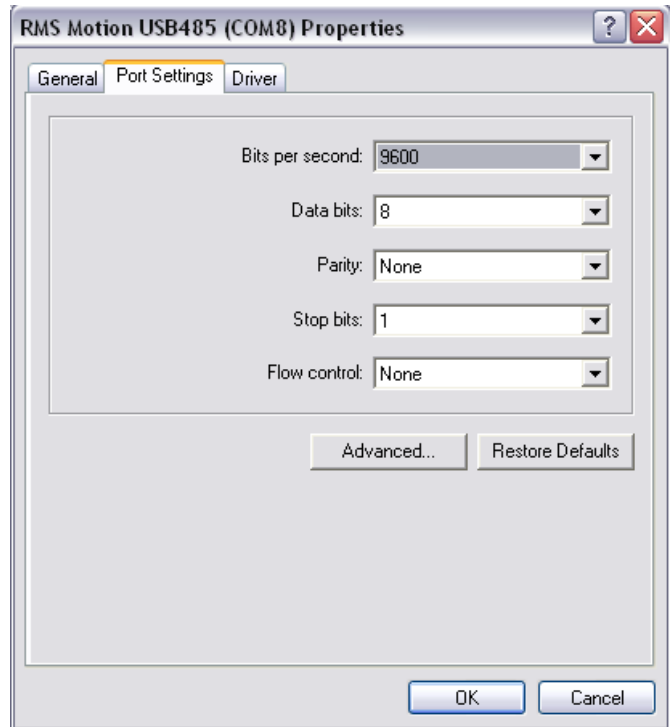
4. In the Device Manager, find “RMS Motion USB485” under “Ports (COM & LPT)”.



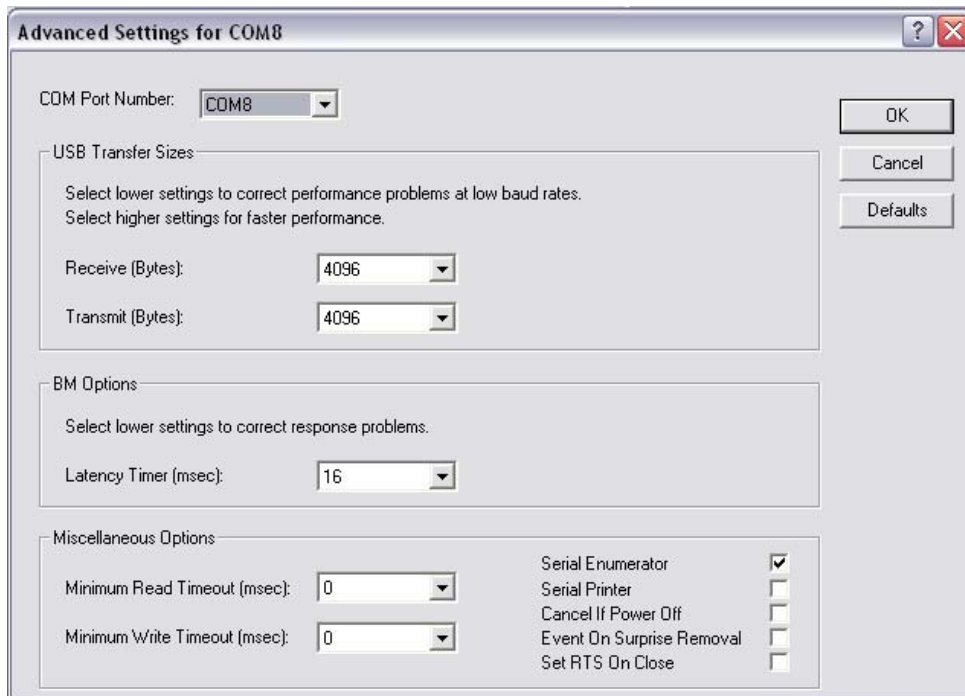
5. Double click on “RMS Motion USB485” to go to Properties.



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 RMS Motion USB485 is changed to the new COM Port Number.



5. 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.