MultiPort-USB

Multi-1/USB
Multi-2/USB

Ver 1.1

Serial Communication Experts

SystemBase

Since 1987

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Hardware

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Revision History

Revision Date	Document Version	Pages	Description
2/14/2007	1.0	All	Made by mkpark
3/22/2007	1.1	7-8	Add default jumper

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What is MultiPort-USB?

USB is a complex word of "Universal", meaning all peripheral devices use the same connector, and "Serial", meaning devices are connected as a daisy chain through serial transmission. USB is an interface suggesting a solution to inconvenience and inefficiency caused by slow speed and limited device connection of existing external ports(serial or parallel). Compared to external ports that were only used to connect devices such as modems, printers and scanners, USB is powerful in that it connects all types of basic peripheral devices that were each connected via different types. Also, when a new device is plugged, it's auto-detected without any rebooting or setup process, enabling 127 connections maximum. Installation is handy since PnP is perfectly supported. No extra equipment is needed since most of the main-board chipsets include the USB controller. USB to Serial Converter(Multi-1/2 USB) supports 1 or 2 RS-232 ports rooted from one USB port, via DB9/Male connector. USB cable type supported is type A, which can utilize the USB port of the PC or the USB hub. This product obtains power from USB, and this makes the product powerful since no external power supply is required.

Specifications

Hardware :

- Number of Ports : 1, 2
- USB Interface : USB Spec 1.1/2.0
- Serial Interface : RS232
- LED : Tx and Rx per each port
- Serial Connector : DB9 (male)
- Serial Comm. Speed : Up to 921.6Kbps
- External Power : Not needed

Software:

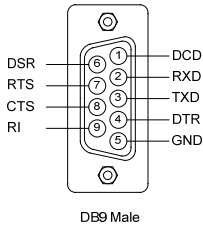- Supports Windows 98/98SE/2000/XP/XP64/2003, and Linux Driver (*1)

*1: If you would like to use USB Multiport on Linux system, please contact us. (tech@sysbas.com)
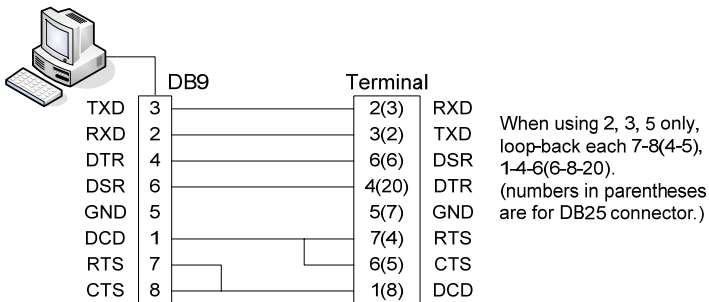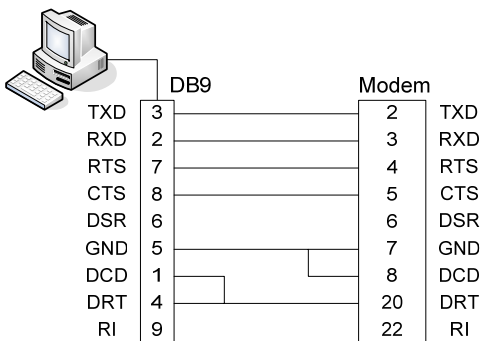
Settings

Multi-1/USB RS232

■ **DB9 male connector**

```
        DSR ──── 6  1 ──── DCD
        RTS ──── 7  2 ──── RXD
        CTS ──── 8  3 ──── TXD
         RI ──── 9  4 ──── DTR
                    5 ──── GND

              DB9 Male
```
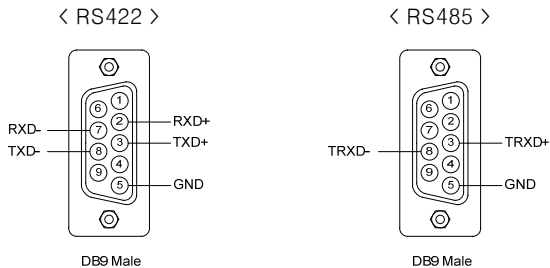
■ **Line Connection for Terminal**

DB9			Terminal	
TXD	3	2(3)	RXD
RXD	2	3(2)	TXD
DTR	4	6(6)	DSR
DSR	6	4(20)	DTR
GND	5	5(7)	GND
DCD	1	7(4)	RTS
RTS	7	6(5)	CTS
CTS	8	1(8)	DCD

When using 2, 3, 5 only,
loop-back each 7-8(4-5),
1-4-6(6-8-20).
(numbers in parentheses
are for DB25 connector.)

■ **Line Connection for Modem**

DB9			Modem	
TXD	3	2	TXD
RXD	2	3	RXD
RTS	7	4	RTS
CTS	8	5	CTS
DSR	6	6	DSR
GND	5	7	GND
DCD	1	8	DCD
DRT	4	20	DRT
RI	9	22	RI

Multi-1/USB Combo (RS422/RS485)

■ DB9 male connector

〈 RS422 〉   〈 RS485 〉

RXD-   RXD+
TXD-   TXD+
        GND

DB9 Male

TRXD-   TRXD+
         GND

DB9 Male

■ JP1 Slew : RS422/RS485 Slew Rate Limit function settings

Slew Rate Limit
Off(default)

Slew Rate Limit
On

10M   250K   10M   250K
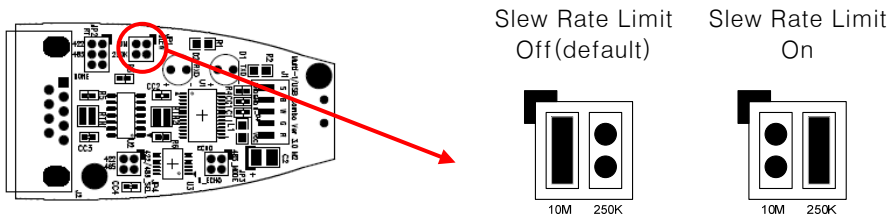
- ▪ Select 'Slew Rate Limit function on' if you want to reduce electromagnetic waves. But in this mode, maximum serial communication speed is restricted under 250Kpbs.

※ What is Slew Rate Limit function?

- Slew Rate function makes the communication clear by activating slew-rate driver to reduce reflection waves and EMI electromagnetic waves. But in this mode, the communication speed is limited.
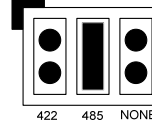
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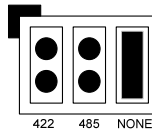
■ JP2 RT : RS422/RS485 Terminal Resistor settings
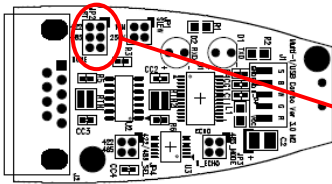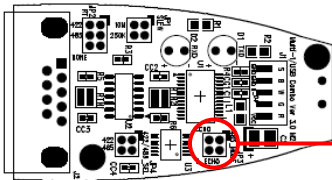
RS422 Terminal Resistor RS485 Terminal Resistor

422   485   NONE   422   485   NONE

Unused(default)

422   485   NONE
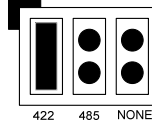
■ JP3 485_MODE : RS485 Echo/Non-echo settings

Echo mode   None-echo mode (default)

ECHO N_ECHO   ECHO N_ECHO
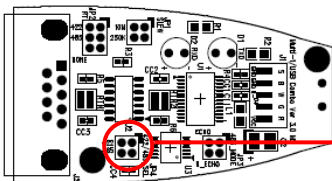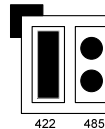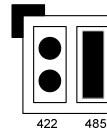
■ JP4 422/485_SEL : RS422/RS485 Interface settings
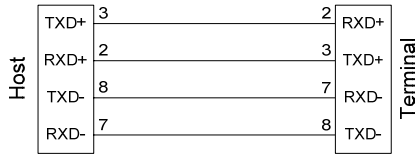
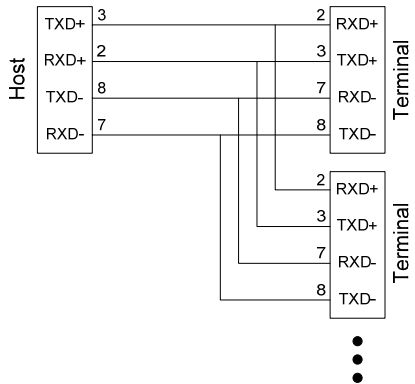RS422(default)   RS485

422   485   422   485

■ RS422 Point-to-Point / Multi-drop settings

– Multi-1/2 USB support Auto-toggling data transfer, so hardware settings are not available.

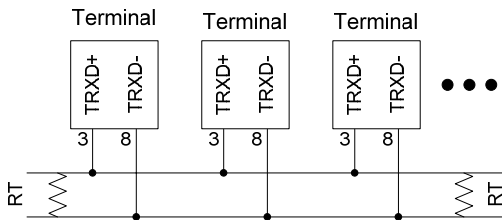■ Line connection for RS422 Point-to-point

Host
TXD+	3		2	RXD+
RXD+	2		3	TXD+
TXD-	8		7	RXD-
RXD-	7		8	TXD-
Terminal

■ Line connection for RS422 Multi-drop

Host
TXD+	3		2	RXD+
RXD+	2		3	TXD+
TXD-	8		7	RXD-
RXD-	7		8	TXD-
Terminal

	2	RXD+
	3	TXD+
	7	RXD-
	8	TXD-
Terminal

■ Line connection for RS485

Terminal   Terminal   Terminal
TRXD+ TRXD- TRXD+ TRXD- TRXD+ TRXD-
3   8   3   8   3   8

RT (Terminal Resistor)   RT

- RT(Terminal Resistor) : 120 Ohm
- In RS485, there is no distinction of Host and Terminal.
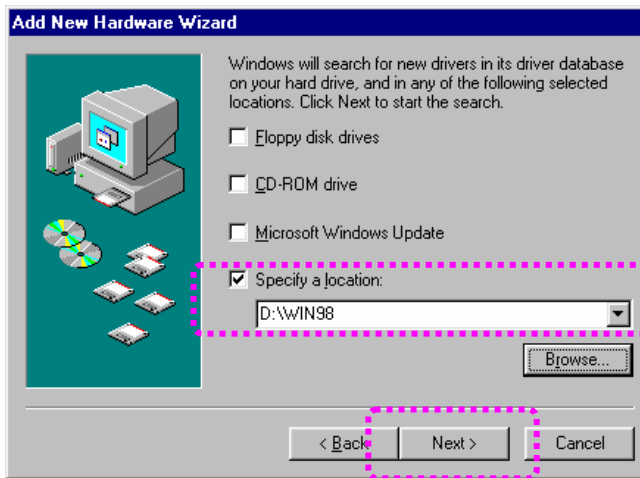
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Windows 98

1. Run Windows 98.

2. Connect Multi-USB to the USB connector of the PC.

3. Click "Next".

4. Click "Next".

5. Check "Specify a location", specify correct location of Windows 98 device driver. If you have the driver CD provided with MultiPort product, put it into the CD-ROM drive and specify the location of the driver like **"[CD-ROM drive letter]:\WIN98"**. Then click "Next".

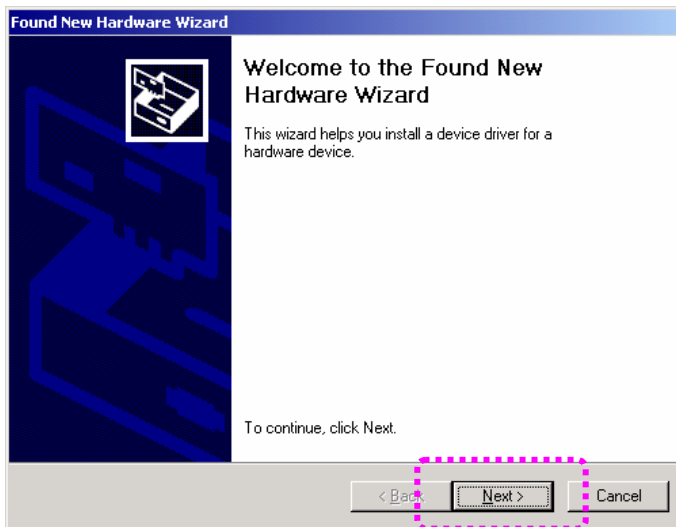6. Click "Next".
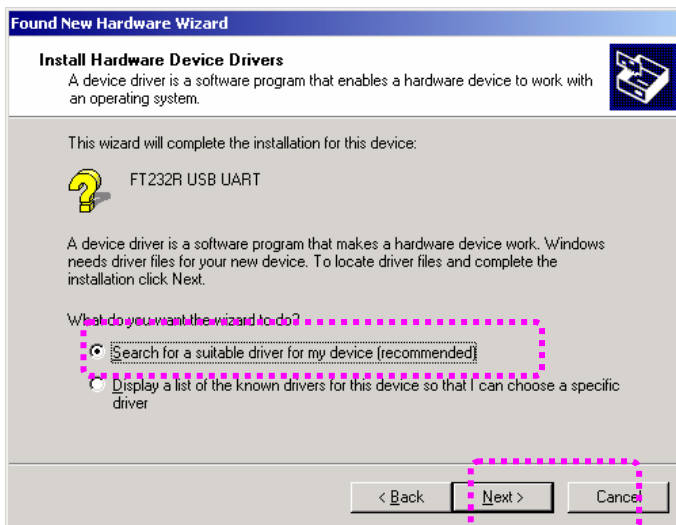
7.　Click "Finish" to complete the installation process.

8.　**Repeat steps 3−7 when "Add New Hardware Wizard" restarts.**

Windows 2000

1. Run Windows 2000.

2. Connect Multi-USB to the USB connect of the PC.

3. Click "Next"
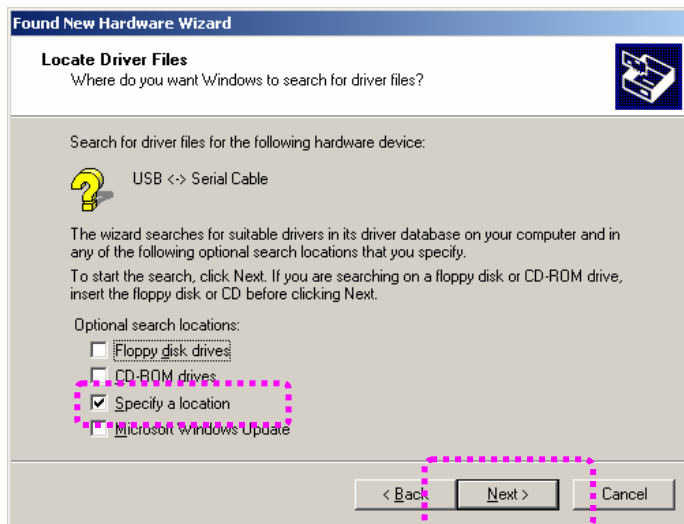
4.   Click "Next"

5.   Select "Specify a location" and Click "Next".

6.   Specify correct location of Windows 2000 device driver like picture above and click "OK" button. If you have device driver installation CD in product package, insert it into your CD-ROM drive. The correct location of device driver in this case is "[CD-ROM drive letter]:\Win2000,XP,2003".

7. Click "Next".

8. Click "Finish".

9. Repeat steps 3-8 when "Add New Hardware Wizard" restarts.

Windows XP

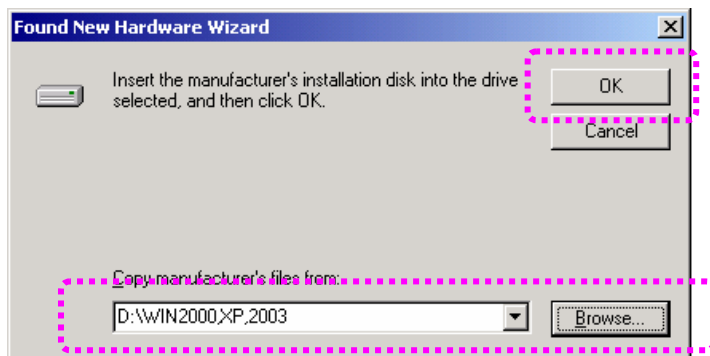1. Run Windows XP.

2. Connect Multi-USB to the USB port of the PC.

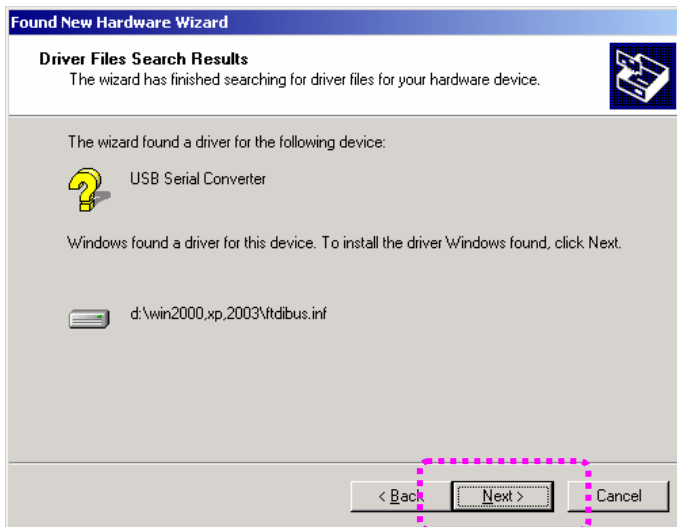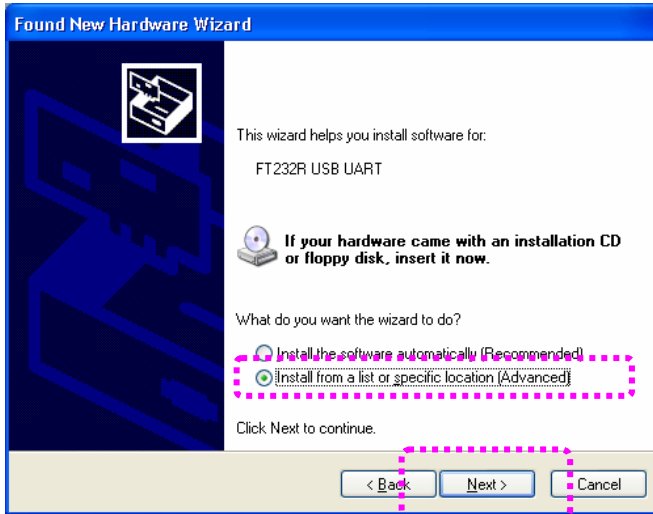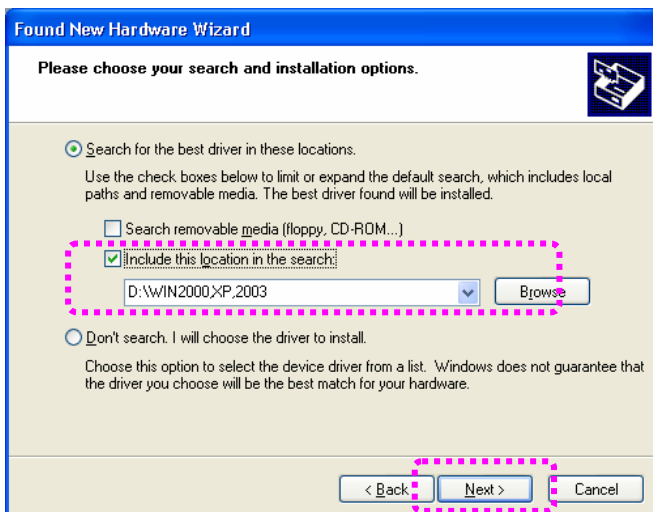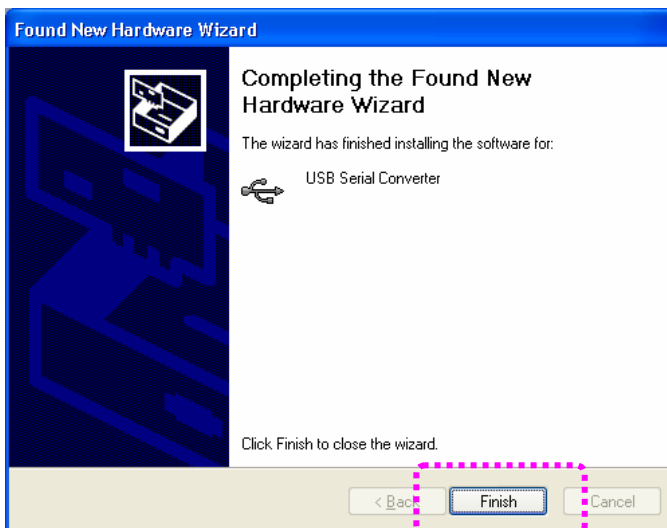3. Select "Install form a list or specific location (Advanced)" and click "Next".

4. Select "Search for the best driver in these locations". On the Search for the best driver field, de-select the "Search removable media" and select "Include this location in the search". And click Browse to select the folder at correct device driver location. If you have device driver installation CD in product package, insert it into your CD-ROM drive. The correct location of device driver in this case is **"[CD-ROM drive letter]:\Win2000,XP,2003"**. The MultiPort-USB device driver for Windows 2000 is compatible with Windows XP. Click "Next" to proceed.

Hardware Installation

⚠ The software you are installing for this hardware:

USB Serial Converter

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

[Continue Anyway]   [STOP Installation]

5. If the message box is appeared like above, click "Continue Anyway".

Found New Hardware Wizard

Completing the Found New Hardware Wizard

The wizard has finished installing the software for:

USB Serial Converter

Click Finish to close the wizard.

[< Back]   [Finish]   [Cancel]

6. Click "Finish".

7. Repeat steps 3-6 several times when "Found New Hardware Wizard" restarts.

Advanced Properties Page

An advanced properties page is available for devices using the device. To access the advanced properties page, open "Device Manager" in Control Panel. Find the USB serial port you want to change the properties of and right-click on it. Select "Properties" from the menu then select the "Port Settings" tab to get the window below.
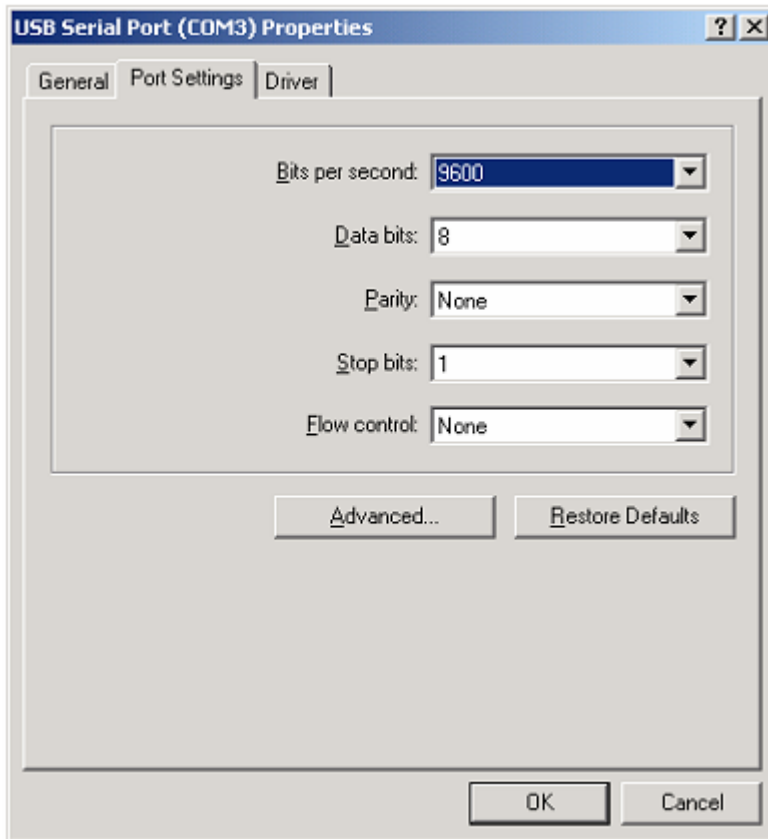
This page allows configuration of the basic device parameters (i.e. Baud rate, data

bits, parity, stop bits and flow control). To access more advanced settings, click on the "Advanced⋯" button to display the advanced properties page (shown below).
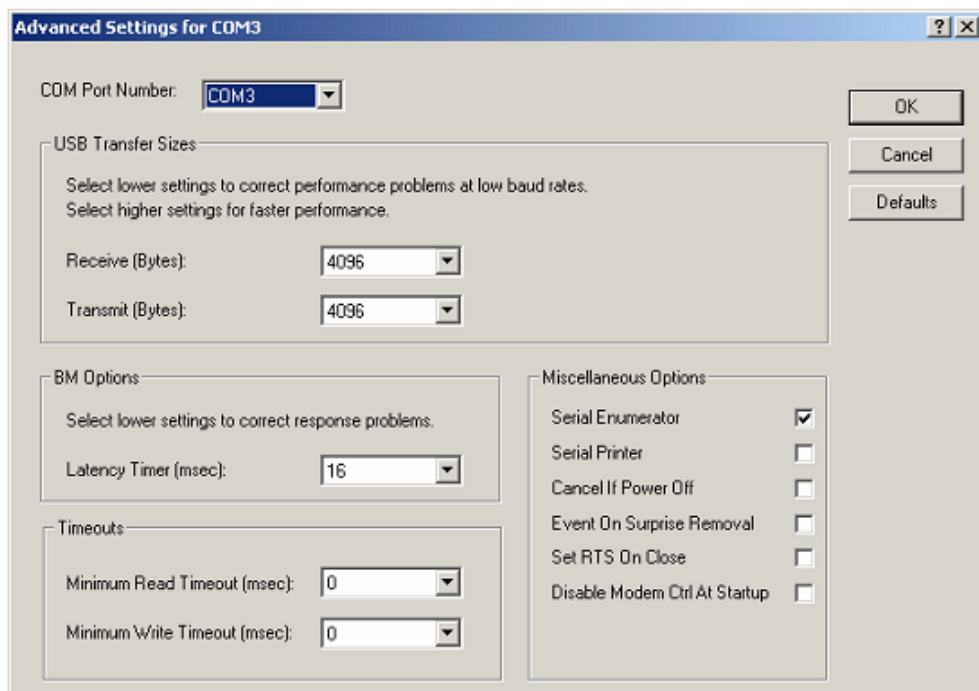
This page will allow the following parameters to be altered:

➢ COM port number

➢ USB buffer sizes

➢ Latency timer

- Alter this to correct compatibility problems for obsolete applications.

➢ Read and write timeout values

- You can alter this for timing of timeout event if there are no more Tx/Rx data.

➢ Miscellaneous options

- *Serial Emulator* : The function of the serial enumerator is to detect a Plug-and-Play enabled device (such as a serial mouse or serial modem) that is attached to the USB serial port.
- *Serial Printer* : If enabled, serial printer will disable timeouts to allow for long

delays associated with paper loading.

－ *Cancel If Power Off* : The Cancel If Power Off　option can be used to assist with problems encountered when going into a hibernate or suspend condition. This will cancel any requests received by the driver when going into hibernate or suspend.

－ *Event on Surprise Removal* : The Event On Surprise Removal option is generally left unselected.　If an application sets SERIAL_EV_EVENT2 (refer Windows DDK) in it's event bitmask and this feature is enabled, the device driver will signal this event on surprise removal.

－ *Set RTS on Close* : Selecting the Set RTS On Close option will set the RTS signal on closing the port.

－ *Disable Modem Control at Startup* : This option is used to control the modem control signals DTR and RTS at startup.　In normal operation, the modem control signals at startup follow the behavior of the legacy port.　However, due to timing differences between a legacy COM port and a virtual COM port, a "spike" on one of these signals in the legacy port can appear as an assertion of the signal in the virtual COM port.

Devices that monitor these signals can enter the wrong state after an unplug－replug cycle on USB. Note that if the "Serial Enumerator" option in the property page is selected, then the enumeration sequence causes the modem control signals to change at startup. So if it is necessary to select "Disable Modem Ctrl At Startup", then it is likely that "Serial Enumerator" should be unchecked in the property page.

Don't adjust these parameters if you can use the device normally. If not, please contact us (mailto:tech@sysbas.com) about these parameters first.