Configuration of JVL-EW4 modules

All JVL wireless modules are preconfigured with the same simple standard configuration that will run and offer a wireless link from a basic wireless network to a JVL motor.

These configurations include a specific IP address in the module and no encryption.
The EW4 modules can be configured to meet local IT policies regarding encryption etc.

Basic configuration of EW4 modules:

SSID:	JVL_EW4
Encryption:	NO
IP:	192.168.1.152
Subn. Mask:	255.255.255.0
GateWay:	192.168.1.1
Ch:	11
DHCP:	Disabled

Note! If the module is configured with a different IP address the address is written on a sticker attached to the antenna.

With the above mentioned parameters it is possible to configure a wireless access point or another device to access the EW4 module.

If the WLAN network is setup correctly it is possible to “PING” the JVL_EW4 module by Following these steps:

Open the ***“RUN”*** –dialog in windows:

Start->Run

Enter ***command*** or ***cmd***

An new screen opens with a DOS prompt, enter the following:

Ping 192.168.1.152

If the connection is correctly setup it should be possible to ping the module and the following appears in the DOS window:

```
H:\>ping 192.168.1.152
PING 192.168.1.153 (192.168.1.152): 56 data bytes
64 bytes from 192.168.1.152: icmp_seq=0 ttl=255 time=0 ms
64 bytes from 192.168.1.152: icmp_seq=1 ttl=255 time=0 ms
```

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To stop the Pinging process, press <CTRL> + <PAUSE>

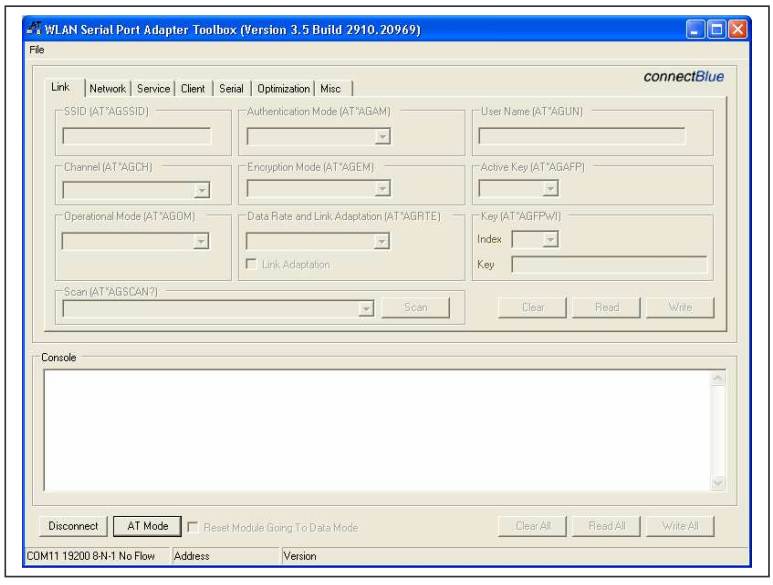
Although the EW4 module is pre-configured when leaving JVL it is sometimes critical that a module can be set up to meet local administration rules etc.

To make these configurations install and run the ***WLAN Serial Port Adapter Toolbox*** supplied. To do this installation please run the: **Setup_Toolbox_v3.5.exe**

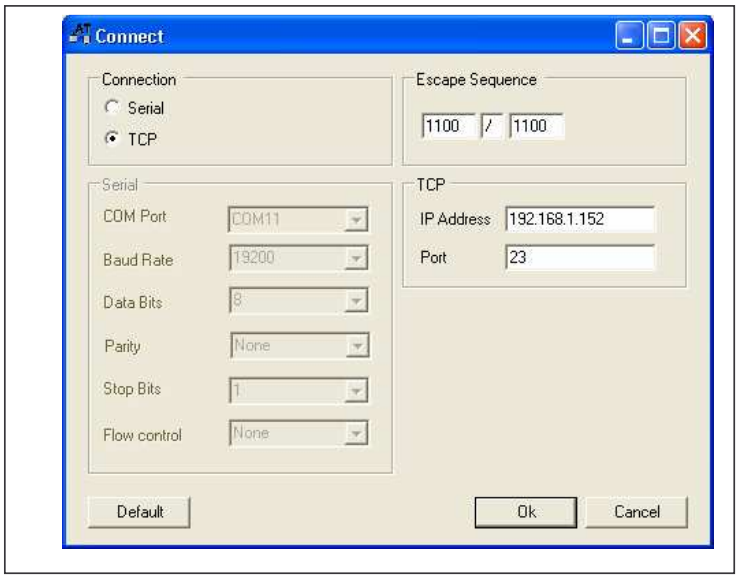
.NET v2.0
To run the connectBlue Toolbox, ".NET Framework v2.0" must be installed on your computer. It can be downloaded from "http://www.microsoft.com/downloads".

Initialisation
When the toolbox is run the first time it creates a "Toolbox.ini" file in the same directory as the "Serial Port Adapter Toolbox.exe" file. If the user does not have full access to that directory, the file is not created. This means that the toolbox will always be started with default settings and not the previously used settings.

Network
The toolbox can, by default, not be run over a network for .NET security reasons. To do this, the security level for the requested zone (e.g. local intranet) must be changed to "Full Trust". This can be done using an administrative program called "Microsoft .NET Framework 2.0 Configuration". It is recommended that it is not changed without consulting your IT administrator.



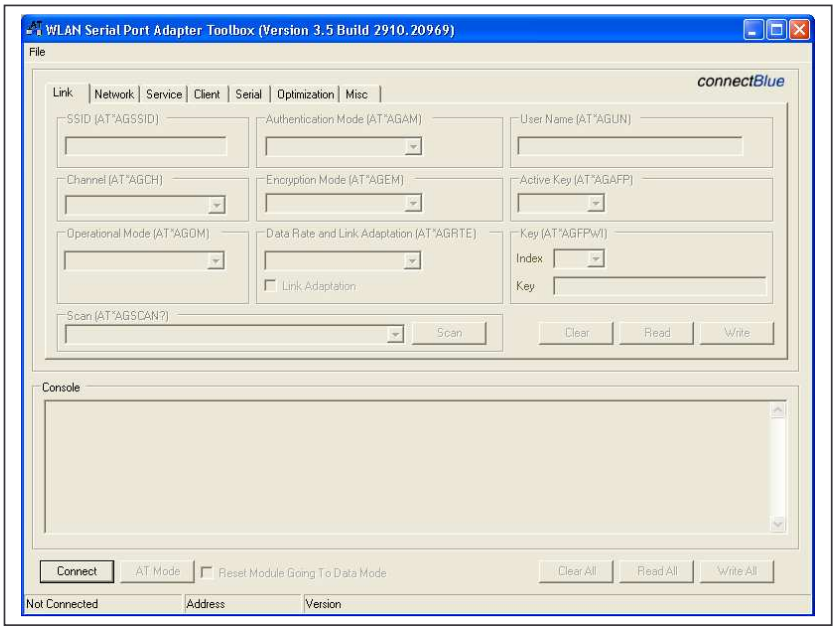
When S.P.A.T is executed the following screen appears.



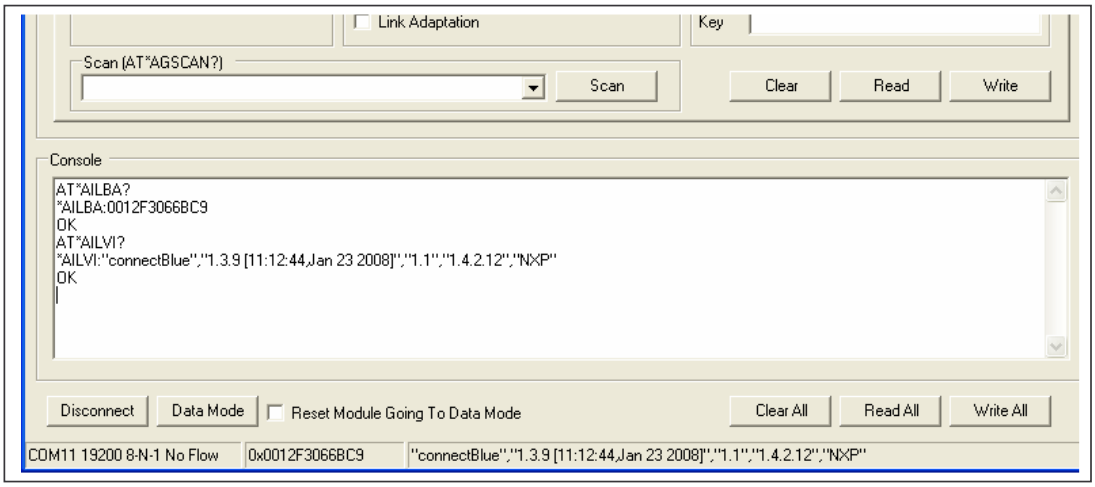
- Select ***Wireless LAN SPA*** and click ***ok***

- Select ***TCP*** connection and enter the follwing IP address: **192.168.1.152 (***if the IP address differs from standard, the correct IP address is entered here* **)**

- Enter port: **23** and click ***ok***



Press the ***AT Mode*** -button to enter configuration mode



When the module enters configuration mode the ***Console*** box is updated with various information. Now the module is ready to be configured.

- Press the ***Read All*** –button to retrieve all parameters from the module.

Remember to press the Write button to save the changed data in the module Some changes only work when the module is rebooted (IP addresses, port no. etc), that is power recycling.

Remember to put the module in Data mode(by pressing the Data mode button) and then Disconnect the module before power down. At power up the new changes will have effect.

Please observe that some changes may affect the ability to make a connection to the module afterwards ex. IP address changes etc. so it is very important to be very careful when making such changes.

All settings are accessable through AT commands, for a complete set of AT command please refer to the supplied .pdf document.

Communication with MACTALK

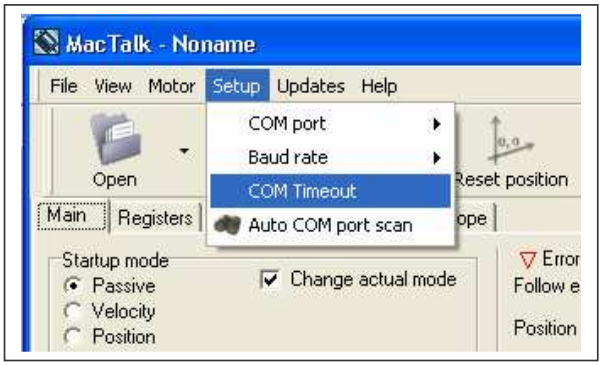
If the JVL OCX module is to be used, please start the installation of Mactalk prior to the installation of the OCX module.

Communication with the motor is done by establishing a virtual serial port and configuring this port to use the IP address and port number of the wireless module.

On the CD supplied is the ***HW virtual serial port*** application that makes this possible.

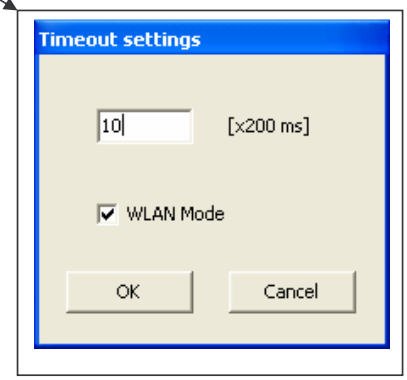
VISTA Please note For applications with more than one motor in the network or application running on Windows Vista, select a product that supports configurations with as many virtual serial ports as the amount of motors in the network. The Mactalk software and the OCX object from JVL works by communicating through a serial port.
The ***Serial port redirector*** product from ***www.fabulatech.com*** supports this and has been tested on VISTA.

From Mactalk make sure that the special timeout is enabled



When running with wireless equipment higher timeout values are necessary. To enable the higher timeout settings, please check the ***WLAN Mode*** and enter the timeout value. Default the Timeout value is 10.

The OCX module (if used) uses the same timeout value as Mactalk.



Quick guide to setting up HW-Group Virtual Serial Port

HW-Group's Virtual Serial Port driver software (VSP for short) is only one of several possible software solutions for interfacing with the EW4 module. However, VSP is widely used, both due to its ease of use, and because HW-Group provides this software free of charge, both for private and commercial applications. For more information, visit HW-Groups website at http://www.hw-group.com/products/hw_vsp/index_en.html

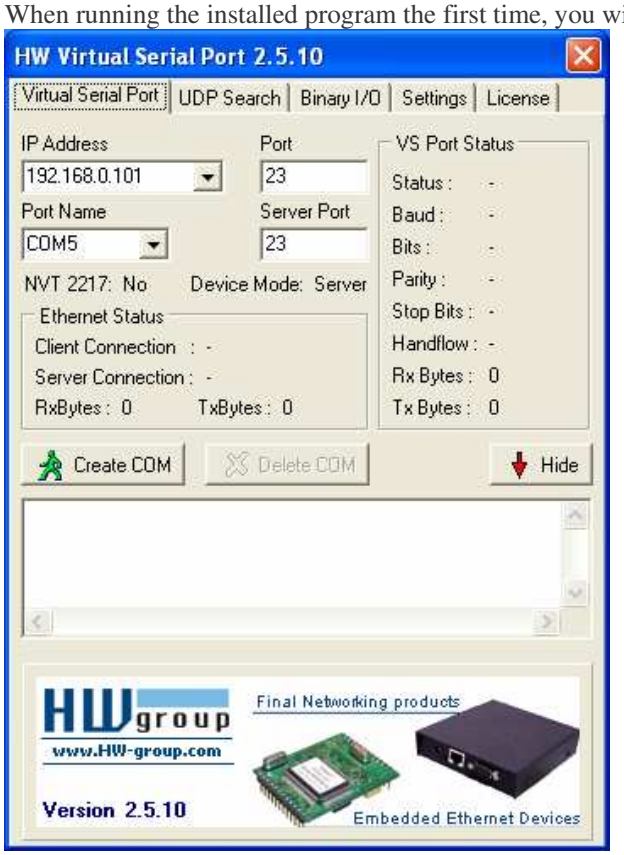
Prerequisites

It is assumed that
a working wireless LAN (WLAN) has been set up, that
you have access to this WLAN, and that
the EW4 module has been set up to work with the WLAN.

Downloading and installing the driver

Go to HW-Groups website, at http://www.hw-group.com, and locate the latest version. At the time of writing, a compressed archive with version 2.5.10 is located at http://www.hw-group.com/download/sw/HW_VirtualSerialPort.zip. Download and unpack this file, and run the installation program.

Running VSP the first time
When running the installed program the first time, you will see something like this:

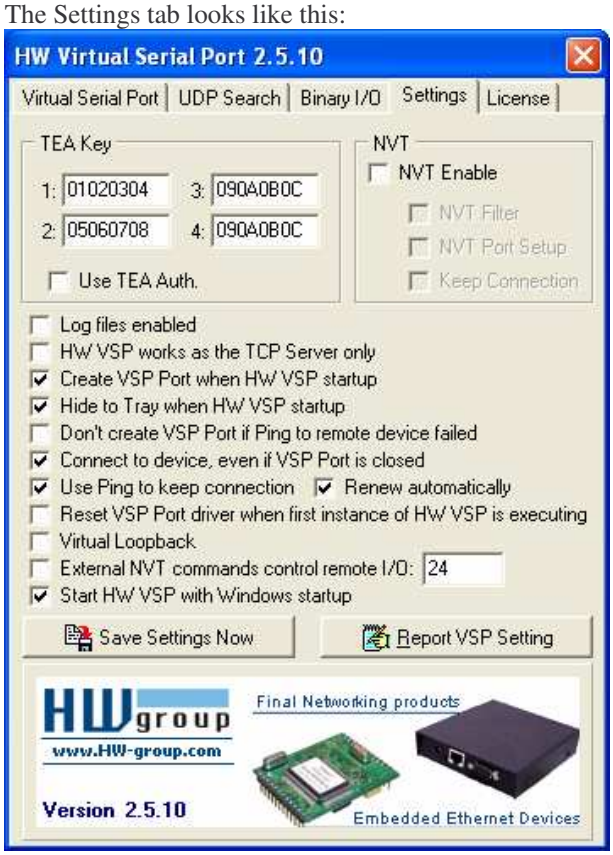


This tab is where you set up each of the EW4 modules you will control from your PC. You will need the following information about the EW4 module:

IP Address assigned to the module (default: 192.168.1.152)
Port number that the module responds to (default: 23)
You can choose:
the COM Port Name the module will appear as, on your PC

Before you can create the virtual COM port, however, you will to set the right settings for VSP.

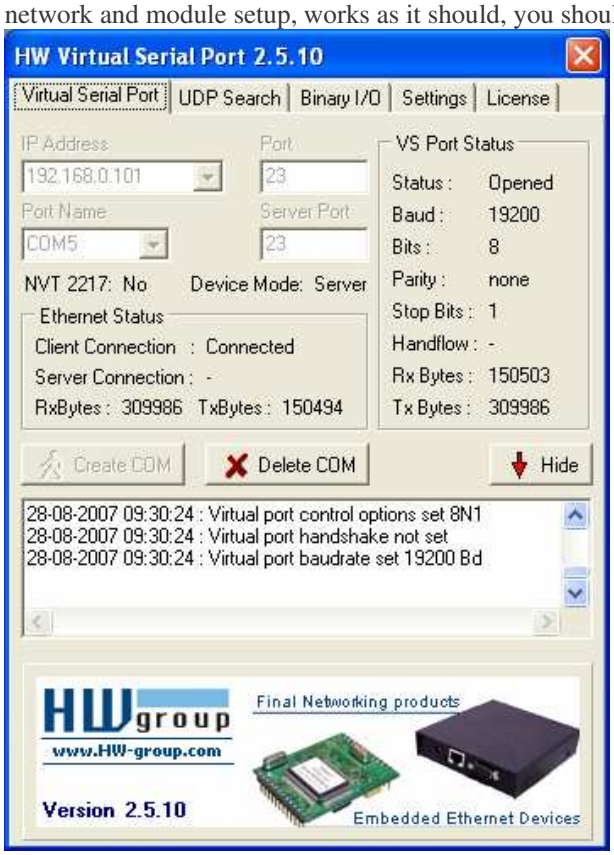
Setting up VSP
The Settings tab looks like this:



You should set up VSP like this, to make it work with the EW4 module. In particular, it is important that:
the checkbox Use TEA Auth. is NOT checked
the checkbox NVT Enable is NOT checked
the checkbox HW VSP works as the TCP Server only is NOT checked
The rest of the checkbox options automate various control tasks. The selected options, shown in the screenshot, sets up VSP to start automatically, run silently in the background, and reestablish the connection automatically. These are the recommended settings.

When you are satisfied with your setup, click on Save Settings Now. Then start the virtual serial port.

Starting the virtual serial port for the first time
Go back to the Virtual Serial Port tab and click on the Create COM button. If everything, including network and module setup, works as it should, you should see this:



You can repeat these steps at any time. When VSP runs in the background, you can find it in the System Tray.

WatchDog implemented in the RxP –module

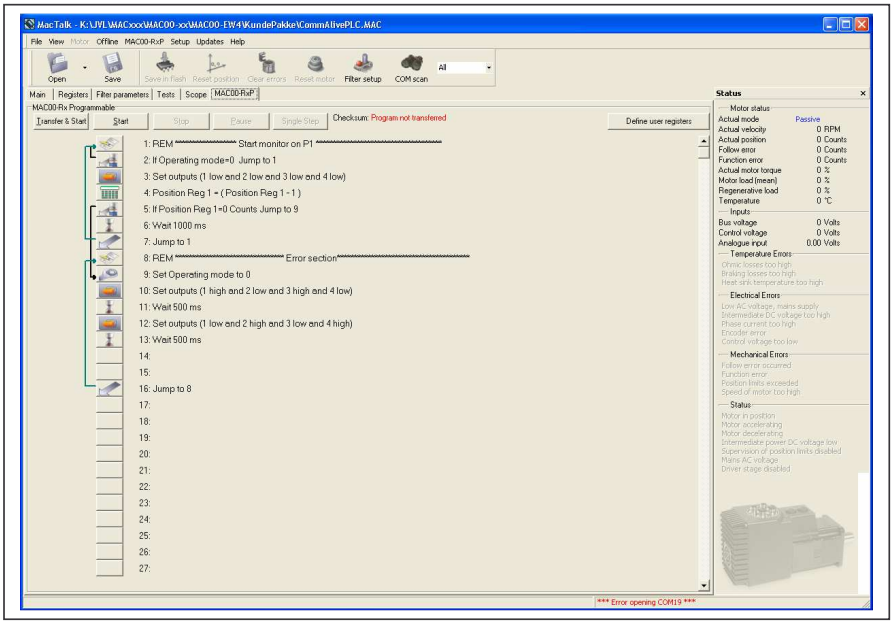
Since a wireless network is very prone to communication errors it is very essential to monitor the state of the transmission and do communication retry's if necessary.

It is also strongly recommended that a simple communication "watchdog" is implemented to prevent a total loss of communication leaving the motor running out of control.

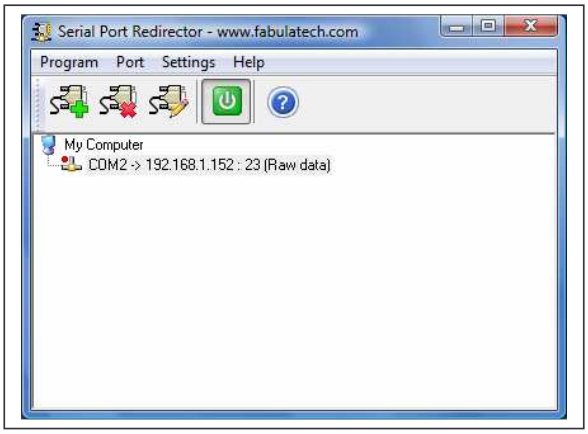
A very simple way of implementing a communication watchdog, is to use the NanoPLC build in the JVL-EW4 module. This is a very simple programmable logic device where simple programs can be executed. Please refer to the manual for further details regarding programming and use of the RxP module.

With the accompagning CD a MAC-program is supplied with an implemented example showing this communication watchdog.

This example uses the register P1 in the motor as the "watchdog" register here a timeout value is written within a certain time if this register is not updated due to a communication error or something else preventing this register to be written to, the value is down counted to 0 and the motor is stopped.
This down count is done with a fixed timing interval of appx. 1000 ms.



Configuration for Windows VISTA

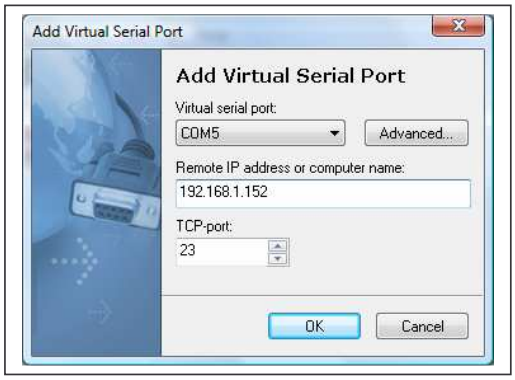


The ***serial port redirector*** from ***Fabulatech*** has been used for test with Windows Vista.

Visit www.fabulatech.com and download the latest serial port director software.

To setup a virtual serial port follow these guidelines:

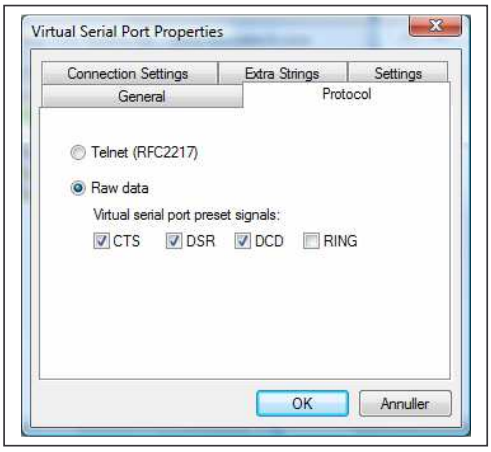
- Select the ***Port->add*** menu



Select the desired COM number and enter the IP settings

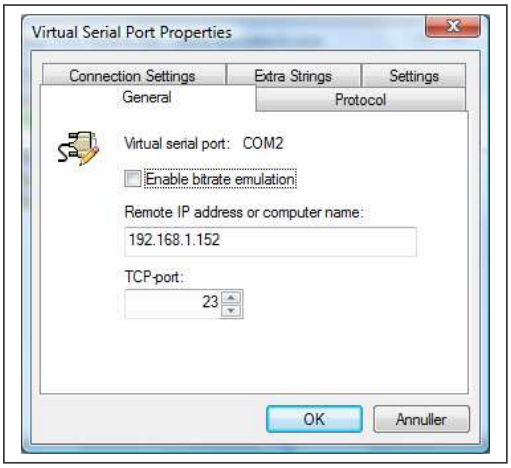
Illustrated IP settings are the default configuration from JVL

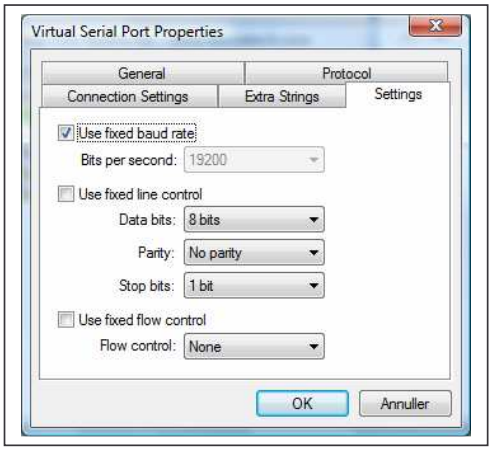
- Click the ***Advanced*** button and select the ***Protocol*** Tab select the ***RAW*** data format



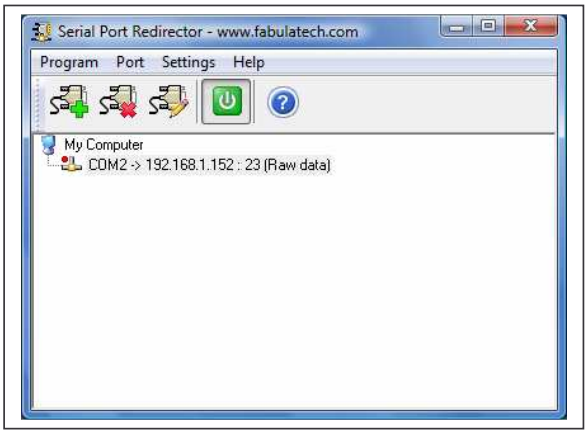
Configure the port as illustrated

Select the General tab and make sure that the Enable bitrate emulation is **NOT** selected see ill.





Now the port is ready is ready for use, and can be selected from MacTalk.



Please Note the mentioned software from Fabulatech and HW is not supported by JVL and is only included in this document as a suggestion.
Please contact the relevant vendor for further support.

Electronic Documents supplied

JVL_WLANConfiguration_v1.0.pdf (.doc)	*This document general guidelines etc.*
AT_Command_Set_OWSPA311g_V1.13.pdf	*Complete set of AT commands for configuration using AT commands.*
EM_Datasheet_OWSPA311g_V1.12.pdf	*Datasheet covering the WLAN module*
LB0051-06GB MACComm OCX.pdf	*JVL OCX manual*