WiPort and SSC-32 Configuration Tutorial.
By James Frye

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Note, this tutorial was made for WiPort firmware version 6.00. We used the Breakout Board, but you don't have to. All of the connections and steps in this tutorial will still apply if you use the bigger WiPort Board, with the exception of applying power, which has to be provided by a plug.

The WiPort and Breakout Board are no longer available. You can download the files needed to make your own PC board for the WiPort here.

If you are interested in making a similar board for the MatchPort, EddieB from the Lynxmotion forums has provided us with the files needed. You can download them here.

Image of Biped BRAT.

I. Setting up the Breakout Board to communicate with the SSC-32

Step 1.
Line up the pins on the Breakout Board with the sockets on the WiPort, and press down firmly to insert the WiPort onto the Breakout Board. Make sure you get all four of the tabs into the holes before you press them together.

With the WiPort firmly inserted into the Breakout Board, flip the Breakout Board over. Bend the four tabs over so they're lying flat on the board. This will keep the WiPort in place.

Figure 1.

Step 2.
On the SSC-32, remove the TX and RX jumpers.

Note, while these jumpers are not installed you cannot use the serial port on the SSC-32.
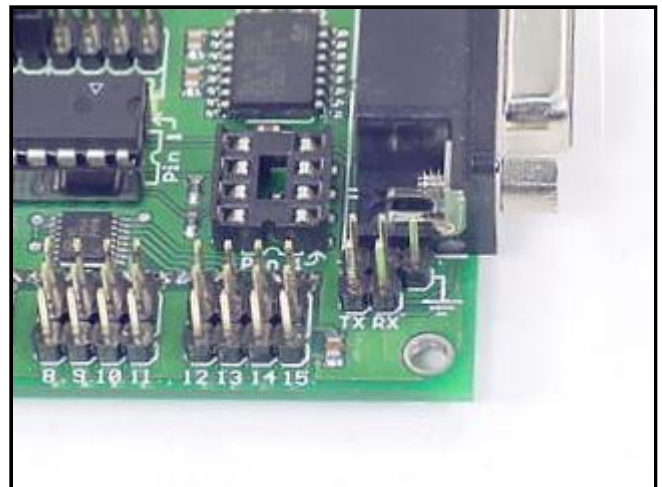

Figure 2.

Step 3.
You need to construct a data cable for the SSC-32 to WiPort connection. Our URSC-01 cable is perfect for modifying for this task. Just use an X-acto knife to gently pry the tabs up so you can pull the wires out of the housings, as shown in Figure 3. Replace the wires according to this table:

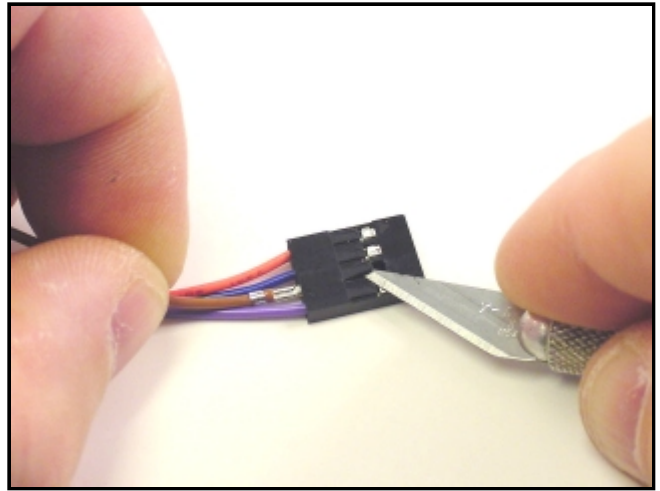| SSC-32 End	[TX][RX][GND]
WiPort End	[ ][TX][ ][RX][GND]

Table 3.

Figure 3.

Step 4.
Plug the 3-position header of your cable onto the SSC-32's TX, RX, and GND pins as shown.
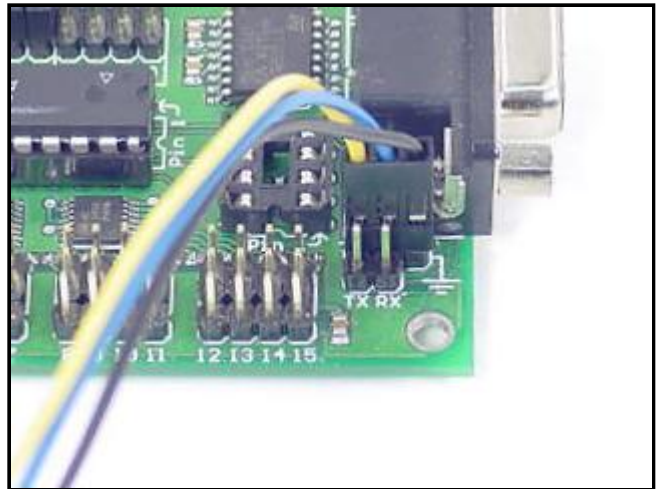

Figure 4.

Step 5.
Plug the 5-position header of your cable onto the WiPort's TX, RX, and GND pins as shown. Make sure to connect the cable in the TTL section of the Breakout Board, not the RS232 section.
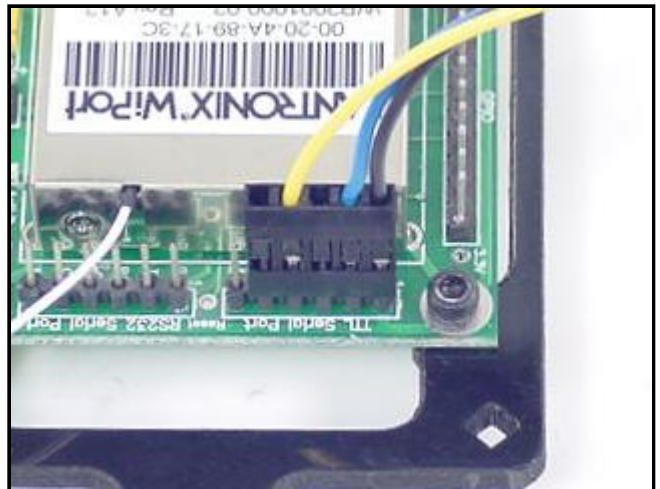

Figure 5.

Step 6.
To power the Breakout Board, you need to connect the board's power cable to the power pins on the Breakout Board and to the VS1 screw terminals on the SSC-32. Make sure the black wire goes to (-) and the red wire goes to (+).
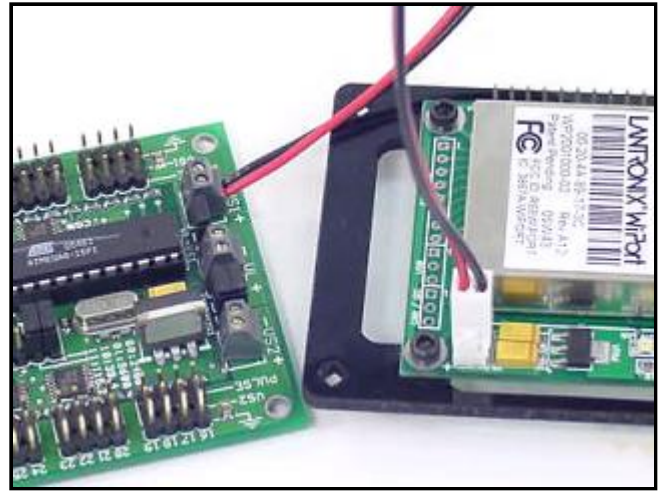

Figure 6.

Step 7.
We attached the antenna base as shown. You can attach the antenna and base wherever you want to on your robot.
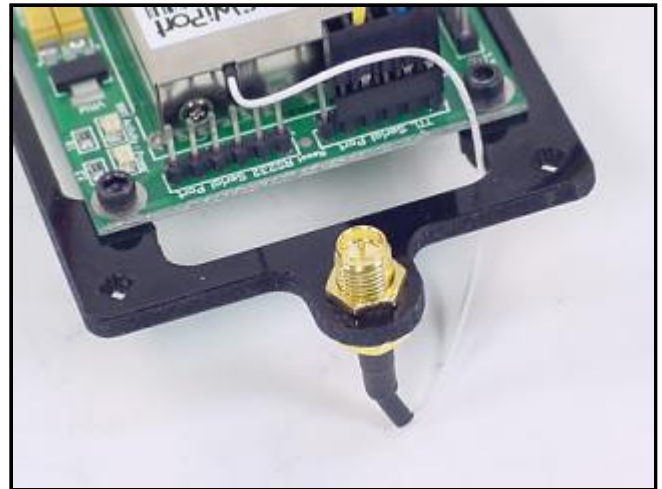

Figure 7.

Step 8.
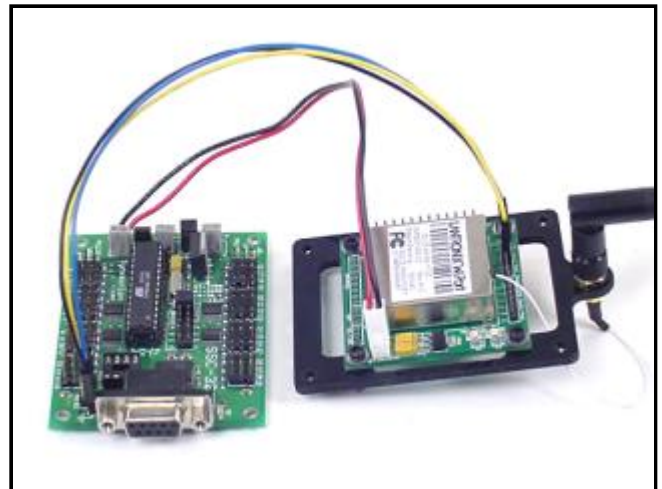Your SSC-32 and WiPort Breakout Board should resemble Figure 8.

Figure 8.

II. Configuring your Computer to communicate with the WiPort

Step 9.
Go to the Wibots.com downloads page and download the "Device Installer" and the "Port Redirector."

Step 10.
Now you need to set your network to automatically acquire an IP and DNS server address. If your network is already configured this way, skip to Step 14.

Click on the Start Menu, then click on "Network Connections."

Figure 10.

Step 11.
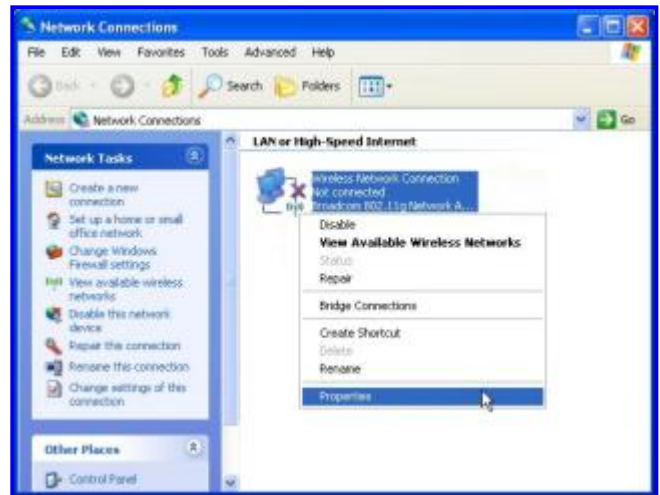Right-click on your wireless network card, and click on "Properties."

Figure 11.

Step 12.
Scroll down until you see "Internet Protocol (TCP/IP)."
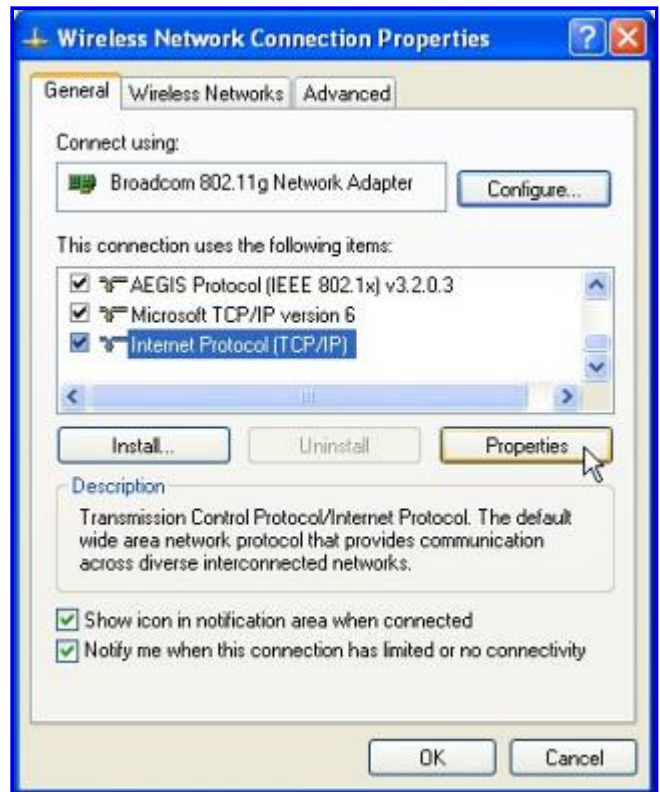Click on it, then click "Properties."

Figure 12.

Step 13.
Write down the values in these boxes, as you will need them to restore your network settings and to set the WiPort to the correct values later.

After you have the values written down, click on "Obtain an IP address automatically" and "Obtain DNS server address automatically."

Click "OK," then click "Close" on the remaining window.

Figure 13.

Step 14.
Now it's time to power the SSC-32. Attach a battery quick connect cable or battery wiring harness to the SSC-32's VS2 screw terminals. Make sure the black wire goes to (-) and the red wire goes to (+). Plug the battery into the quick connect cable.

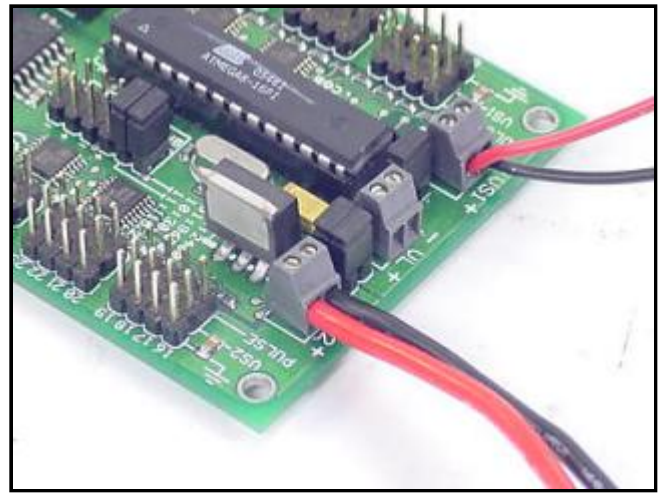Note, the WiPort will get hot after being powered for a while; this is normal.

Figure 14.

Step 15.
Right-click on your wireless network card in the "Network Connections" window, then click on "View Available Wireless Networks."
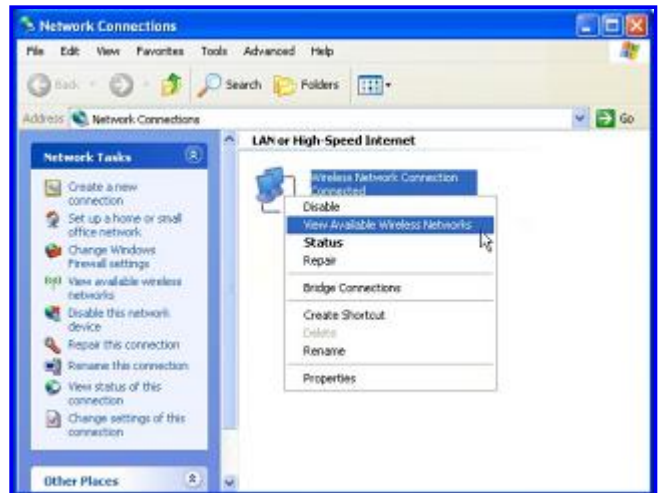

Figure 15.

Step 16.
Click on "LTRX_IBSS" and click on "Connect." After the connection is made, it may take a minute or two to acquire the network address.
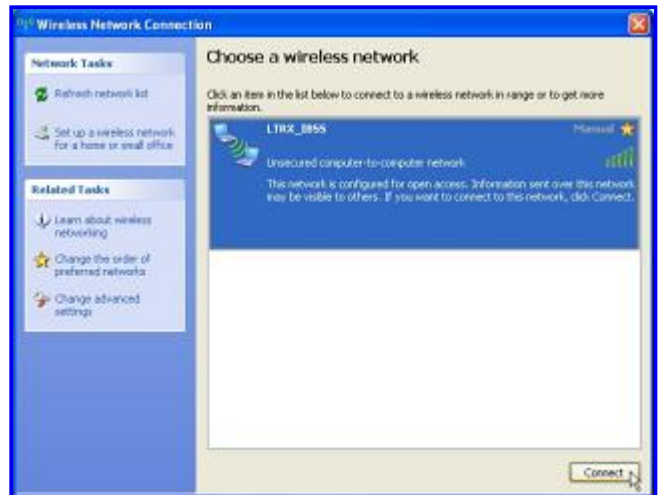

Figure 16.

Step 17.
Now open the "Device Installer" program you downloaded earlier and click on "Search" in the upper left corner. After a few seconds it should finish and it will say "Ready" in the lower left corner.

In the browser on the left, click on the [+] until you see a long string of numbers under "WiPort." This is the default IP address of the WiPort. Click on the IP address and then click on the "Web Configuration" tab, then click on "Go." It will ask you for a user name and password; leave both fields blank and click "OK."
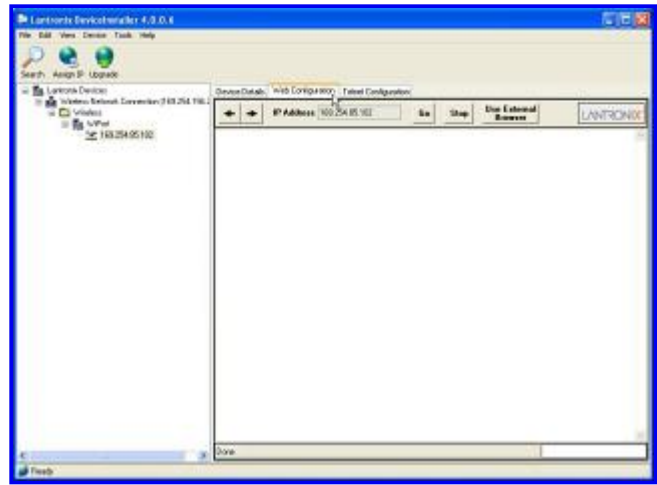
Figure 17.

Step 18.
Click on the "Network" tab in the purple menu. Click on "Use the following IP configuration." Now you need to set a static IP address for the WiPort. Refer to the values you wrote down earlier and Table 18.

IP Address	The first three sets need to be the same as the original value. The last set needs to be an unused value between 1 and 255.
Subnet Mask	This should be exactly the same as the one you wrote down.
Default Gateway	This should be exactly the same as the one you wrote down.

Table 18.

Write down the IP you assign to the WiPort, as you will need it later. When you are done, click "Ok."

Figure 18.

Step 19.
Click on "Apply Settings" near the bottom of the navigation menu. You will see a progress bar. When it is done, you will see a "Network Connectivity settings have been modified" message.

Figure 19.

Step 20.
You now need to change your network settings back to what they were originally. Refer to steps 10-13 to do so. Just click on "Use the following IP address" and "Use the following DNS server addresses" and fill in the information you wrote down.

Step 21.
Go back to the "Device Installer" and click on "Search" again. The WiPort should appear again, but this time it will have the IP address you assigned to it.

Click on "Serial Settings" under Channel 2. Make sure you are using Channel 2! Channel 1 can't connect to the SSC-32!

Set the Baud rate to 115200 and click OK at the bottom of the screen. Click on "Apply Settings" on the side navigation bar.

Figure 21.

III. Configuring a Com Port to communicate with the Sequencer

Step 22.
Open the Lantronix Redirector Configuration program you downloaded earlier. It is labeled "RDCFG."

If you are already using Com3 for something, click on "Com Setup."

Figure 22.

Step 23.
Select an unused port and click the checkbox. We chose Com10, but you can choose any unused com port. If you are not sure, use one of the higher numbers. Click OK when you're done.
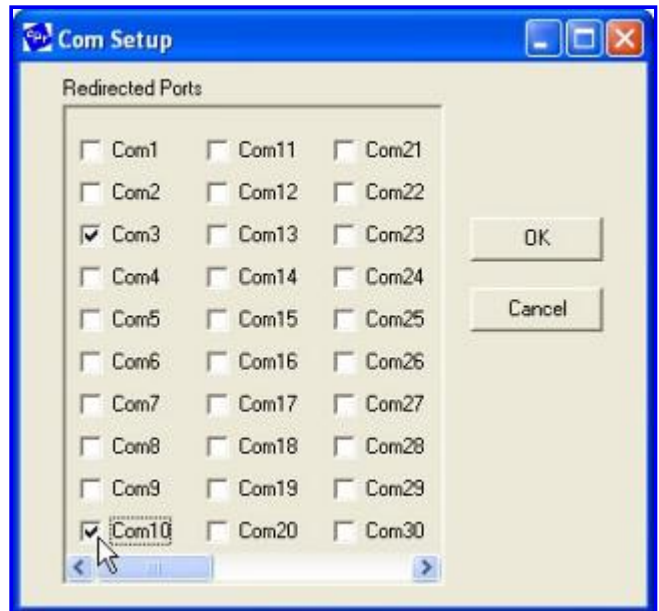

Figure 23.

Step 24.
Click on the drop down menu and select the port you just checked. Then click on "Port Settings." Enable "Raw Mode" then click Ok.
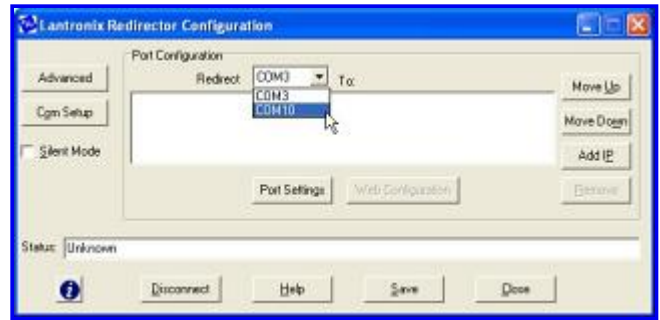

Figure 24.

Step 25.
Now click on "Add IP." Enter the WiPort's IP into the "Host" box, and "10002" into the "TCPPort" box. Then click Ok. Note, if you don't want notifications every time something changes with the Redirector (connects or disconnects from a host) then enable Silent mode.

Click on "Save," and reboot your computer for the changes to take effect.

Figure 25.

IV. Finishing Up

Step 26.
Open the Sequencer and click "Yes" to tell the program to wait for the robot. Click on "Setup" on the right side of the screen.
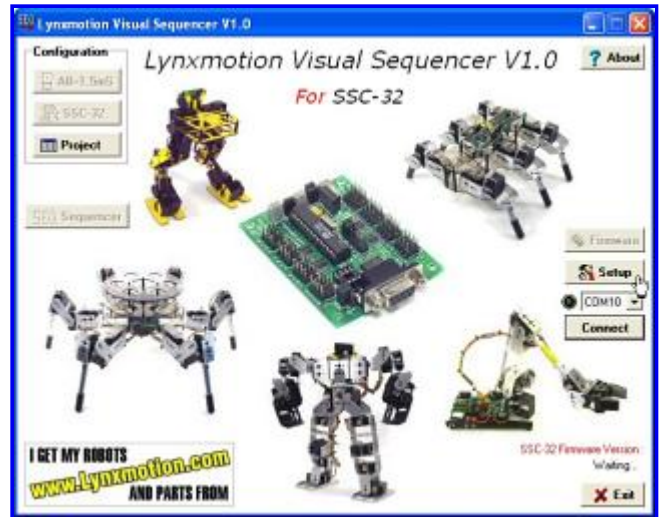

Figure 26.

Step 27.
Select the new port you set up from the drop down list, then click Ok.

Congratulations! You can now control your robots without the annoyance of wires!
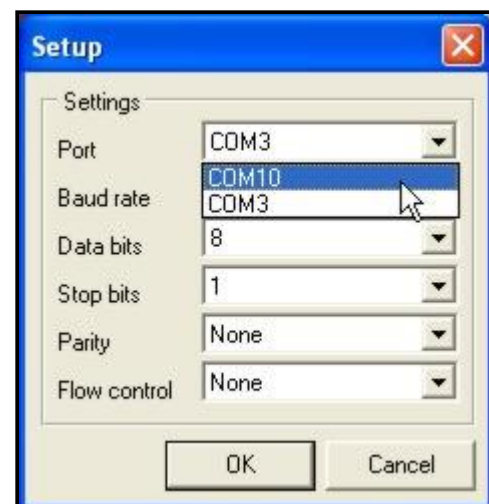

Figure 27.