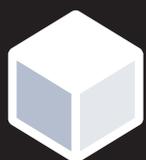


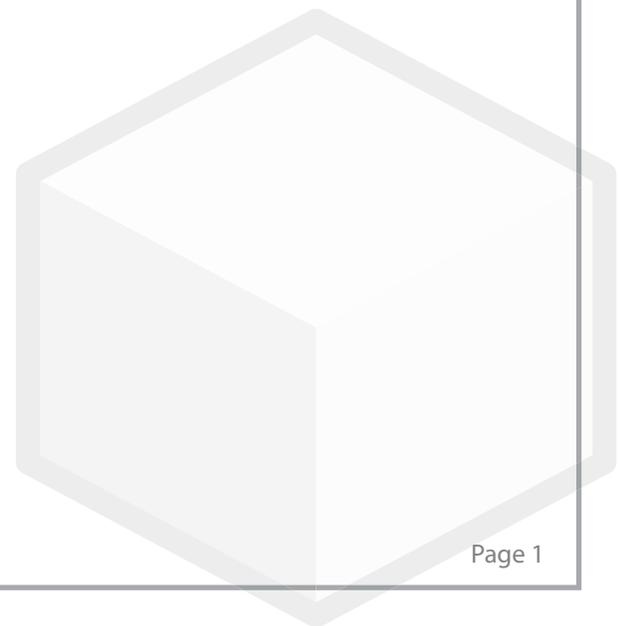
# Quick Start Guide



**WHITE BOX**™  
**ROBOTICS**

# PC-Bot 914

| <b>Chapter</b> |                                     | <b>Pages</b>   |
|----------------|-------------------------------------|----------------|
| <b>1</b>       | Unpacking Your Robot                | <b>2 - 4</b>   |
| <b>2</b>       | Turning Your Robot On               | <b>5 - 7</b>   |
| <b>3</b>       | Connecting Your Peripheral Devices  | <b>8</b>       |
| <b>4</b>       | Software                            | <b>9 - 15</b>  |
| <b>5</b>       | Applications                        | <b>16 - 17</b> |
| <b>6</b>       | Charging Batteries and Auto-shutoff | <b>18</b>      |
| <b>7</b>       | Service                             | <b>19</b>      |





## Getting it out of the box

### Step 1

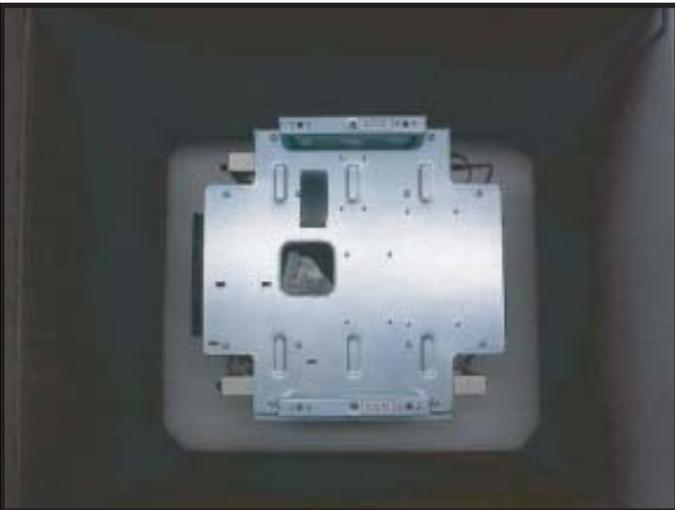


To remove the robot from the box you will first need to remove the top protective foam as shown in the following picture. Gently grab the foam piece from the fins on top and pull straight upwards.



You will now be able to see all the peripheral equipment for your robot and more packing material.

### Step 2

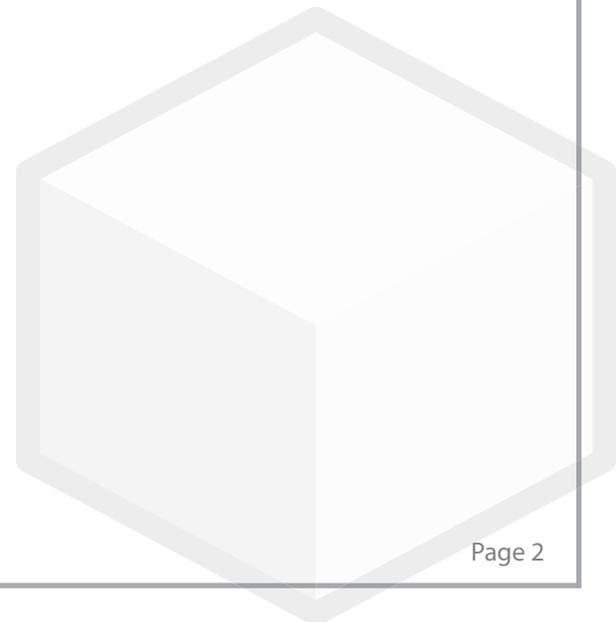


Begin removing all the loose packing material and peripheral equipment.

#### **You should find the following components:**

- VIA Mini-ITX box
- Logitech Web Camera box
- Linksys Wireless Adapter box
- Soneil 12V 3A Lead Acid Intelligent charger box and AC cable.

Once all the material has been removed from the box, there should only be the 914 PC-Bot which is sitting on another piece of white protective foam.



# 1a

## Unpacking your Robot cont.

### Getting it out of the box

#### Step 3



Reach into the box and lift the robot out by the handles.



The handles are **NOT** the metal brackets visible on the top of the robot in the above diagram. The proper handles are located lower on the robot's body at the bottom of the drive bays.

#### Warning Lifting hazard



Grab both handles on the robot.

**Warning!** This robot is heavy. People with back problems should not attempt to lift this robot. Always use proper lifting technique when lifting heavy items. Keep your knees bent and your back straight and lift gently.



Lift the robot straight up out of the box. The foam base will come with robot as it is attached snugly.

## 1b

### Getting it out of the box

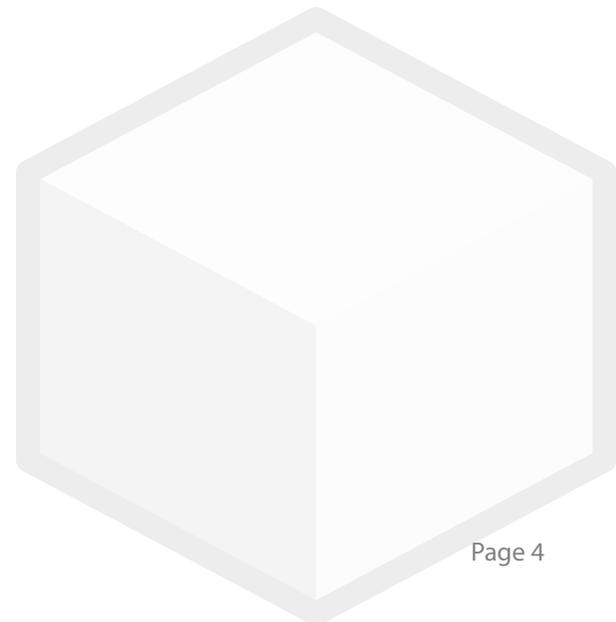
#### Step 4



Place the robot down on the ground, with the foam still attached. Either hold the foam with your feet or have someone hold the foam while you pull the robot free.



Your robot is now fit of its box and ready to be brought to life. PLEASE charge the robot completely before using it.

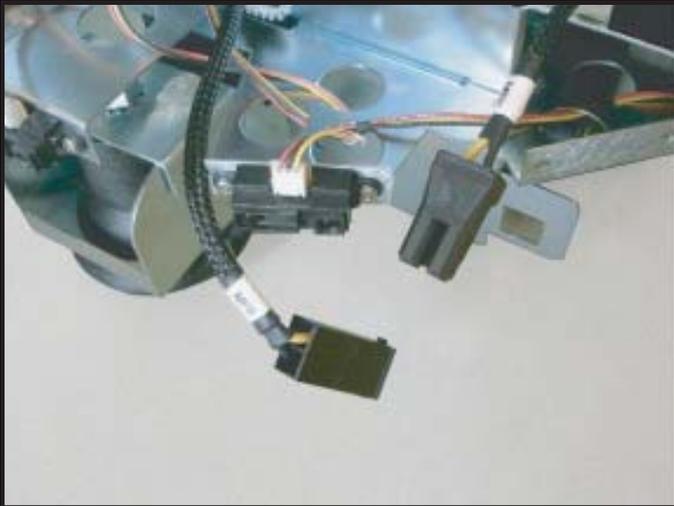


# 2

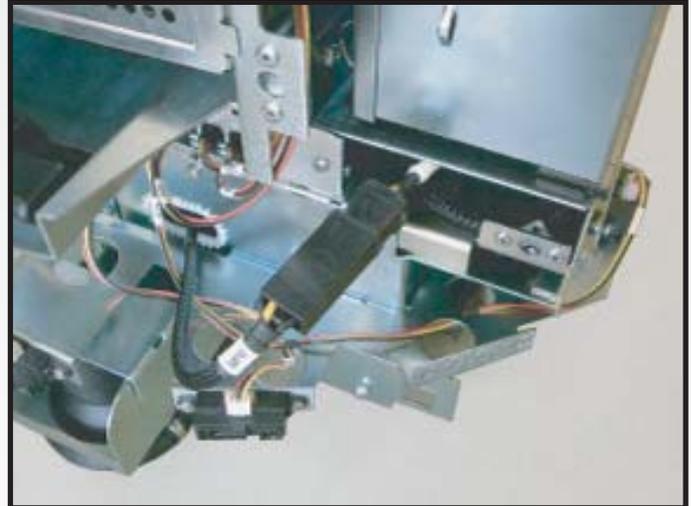
## Turning your robot on

### Starting your system

#### Step 1



BEFORE you can turn on the robot you must connect the batteries to the power supplies.



Plug in the connector that was disconnected during shipment.

#### Step 2



Once the plug is connected, connect your monitor, keyboard and mouse to the back of the Mini-ITX computer located in one of the fold down bays.

#### Step 3



Switch on the Main Power switch on the front of the robot. **WAIT 5 seconds** and the M2-ATX Power Supply will cycle the power to the PC automatically.

When the battery voltage drops to **11.2V** (i.e. when the batteries need recharging, the M2-ATX will cycle the power to the PC again to auto-shutdown before the power is cut (45 seconds later) and the batteries are protected.

This is the same as the user pushing the PC ON switch on the CPU and shutting down the computer.

## Starting your system



The PC power light is now on.

## Step 4



Next turn on the M3 Controller power. If this switch is OFF the M3 will not be able to drive the motors or read the sensors.

**NOTE:** If the robot is sitting on a desk, it might be advisable to turn the M3 switch OFF so that the robot cannot accidentally drive off the table.

## Step 5



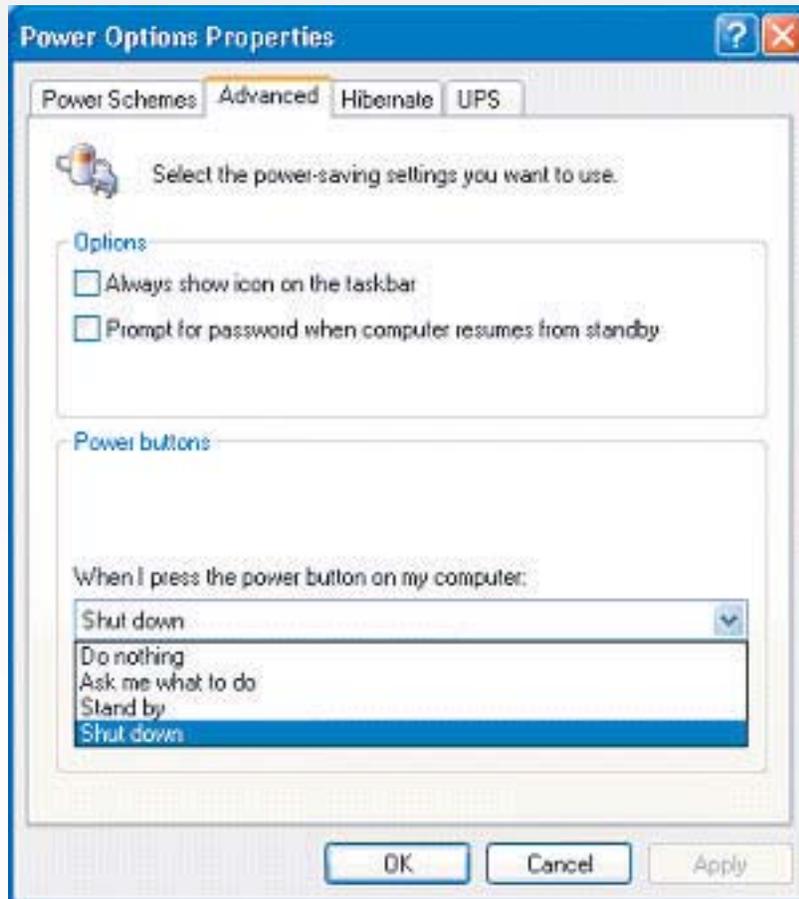
Finally, the switch for PC Power is still available and can still be used by the User by pushing down on the toggle switch. The PC Reset is the same switch, only pushed upwards.



## Getting it out of the box

### Step 3

As with other PCs, you may control the behavior of the "PC Power" button from the Windows Control Panel . It is recommended to configure the power button to "Shut down", your robot's PC should already be set this way when you receive it:



**Note:** If your Control Panel is set to "Category View" (the default), access Start -> Control Panel -> Performance and Maintenance -> Power Options. If your Control Panel is set to "Classic View", access Start -> Control Panel -> Power Options. Then select the "Advanced" tab.

# 3

## Connecting your peripheral devices

### Peripheral connections

We have provided a Wireless USB device and a Logitech Web Camera. The drivers for these devices should already be installed. The CDs have been included in the shipment in any case.

#### Step 1



The Linksys Wireless USB Adapter has a mounting plastic plate on the top of the robot. The device which is in the box can slide onto this plate as shown.

#### Step 2



Once attached rotate the antenna to the upright position.

#### Step 3



The Logitech Web Camera can be placed on top of the robot. Both will have to be plugged into the USB either on the CD-ROM/HDD holder or on the back of the Mini-ITX.

You can now use the robot the same as any computer. For more information, please visit our forums at: <http://www.914pcbots.com/>

## Getting Started - Software

Your 914 PC-BOT comes with Windows XP Home Edition®, and you can use it just like any other PC. While you still have a keyboard, mouse, and monitor connected to your robot, you will want to do the following in order to set it up for "headless" (remote) operation:

### Windows Setup:

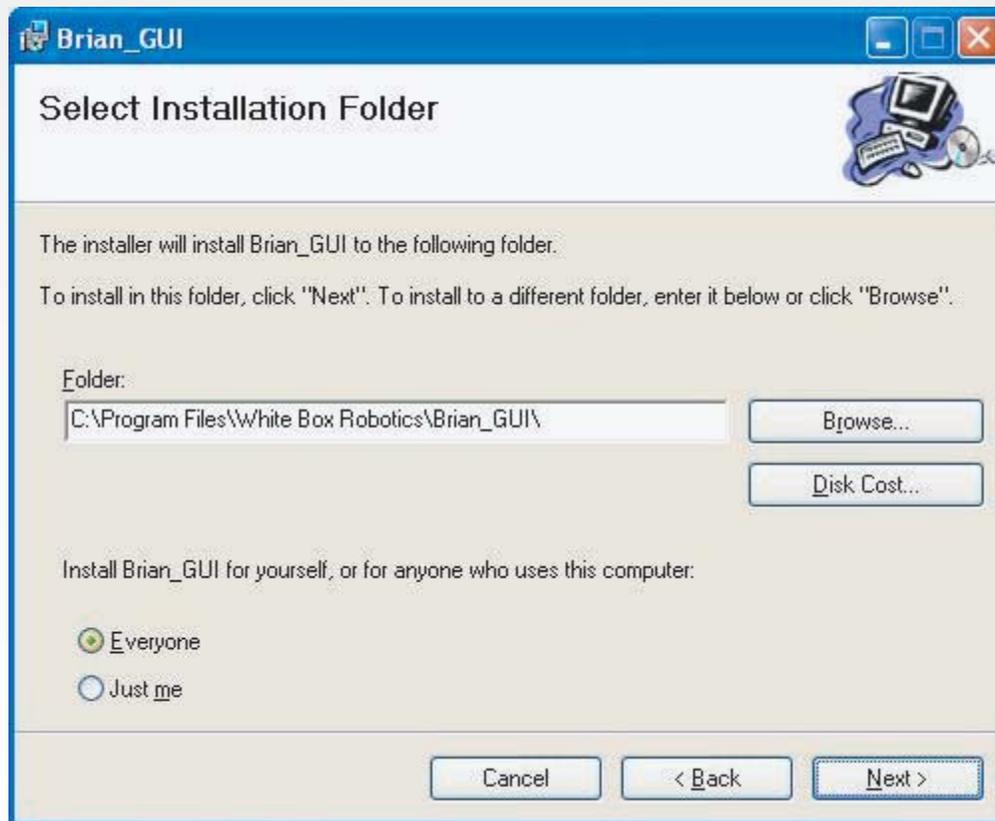
- ❏ Turn off the Windows Firewall, so that a remote BRIAN GUI can connect via TCP/IP to your robot's BRIAN service.
- ❏ Configure your wireless network settings. The recommended configuration is to use a WEP or WPA encrypted wireless network, using a firewall/router box attached to your cable/DSL modem. A Linksys Wireless-G Broadband Router (model number WRT54GS), or any similar product, will work fine.
- ❏ You may wish to configure your robot's PC to participate in your Windows workgroup, which will allow you to use file sharing between the robot and other computers, allow the robot to access networked printers, etc.
- ❏ Run Windows Update to install any critical service patches. You can connect the robot to the internet either using your wireless LAN, or you can plug an Ethernet cable into the robot's PC chassis.
- ❏ You may find it convenient to add a "remote desktop" product such as Microsoft Remote Desktop (requires upgrade to Windows XP Professional Edition®), or there is a shareware product called RealVNC (<http://www.realvnc.com/>). This way you won't have to keep hooking up the keyboard/mouse/monitor when you want to access your robot's PC.

### BRIAN GUI Setup:

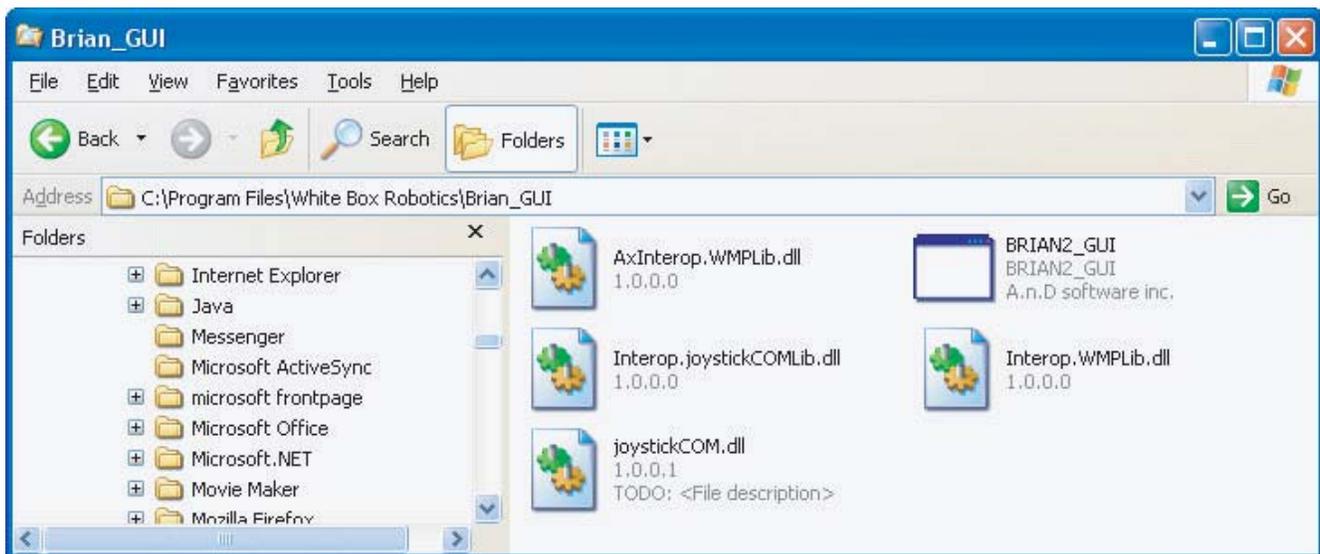
- ❏ The BRIAN GUI comes preinstalled on your robot, you will see a shortcut to it on the robot's Windows desktop.
- ❏ To install the BRIAN GUI on another computer, download BRIAN GUI setup at:  
[http://www.whiteboxrobotics.com/2006/PCBOTs/Support/Brian\\_GUI\\_Setup.zip](http://www.whiteboxrobotics.com/2006/PCBOTs/Support/Brian_GUI_Setup.zip)  
Copy this to any other PC that you want to use to control your robot.  
Run the "setup.exe", after unzipping the file, to install the BRIAN GUI on your remote PC.

## Installing the BRIAN\_GUI (on another computer)

You can install this GUI on client computers in order to control the robot remotely.



This installer will create a shortcut on the Desktop which will run the following BRIAN\_GUI application.





## Running the BRIAN GUI

First run the GUI from the robot directly. Double click the shortcut on the desktop or open the GUI application in the folder it was installed in.

As this GUI is being run from the robot locally, the Robot Name 'localhost' is used to access it.

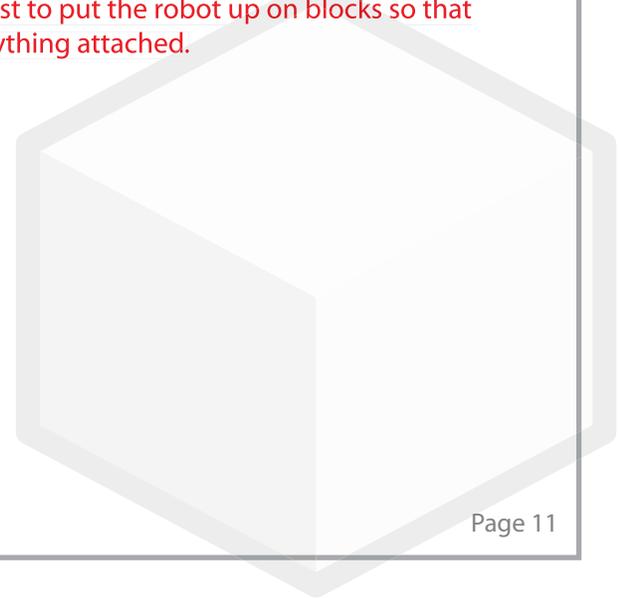
**Note:** DON'T forget the Connection Port # 13000.



Push the Connect button and you should hear that a connection was established if your speaker is turned ON. Push the Disconnect button to break your connection to the robot.



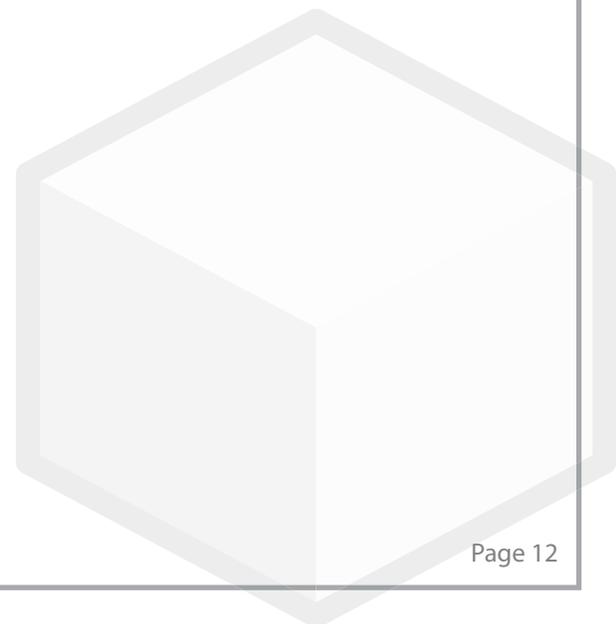
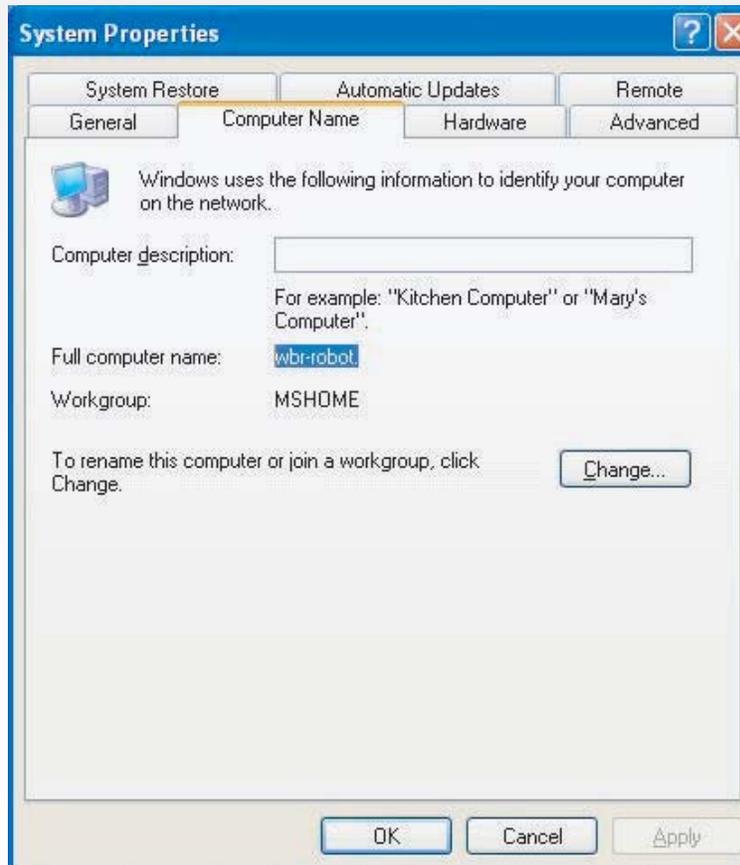
**Warning!** BE CAREFUL as the robot is tethered to the monitor, keyboard, mouse and charger so driving the robot now would be possibly dangerous. It is best to put the robot up on blocks so that the wheels can spin freely and it will not drive off with everything attached.





## Running the BRIAN GUI continued...

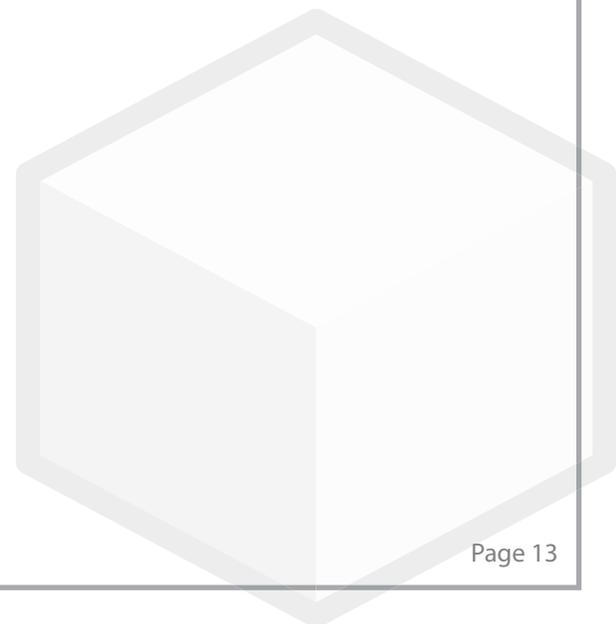
If you are running the application from a client computer, in other words remotely, then the robot will need to be connected to your LAN using either a wireless link or Ethernet. The name of the robot (i.e., the robot computer) will need to be used by the client computer when trying to connect to it. So for the default robot, we use the name WBR-ROBOT. This name can be found and changed under 'System Properties'.





## Running the BRIAN GUI continued...

Now if the GUI is run from the client computer, you can refer to your robot by its "Windows" name (you may need to configure your robot computer and your client computer to both participate in the same Windows workgroup.) Again remember that Port # 13000 should be used.

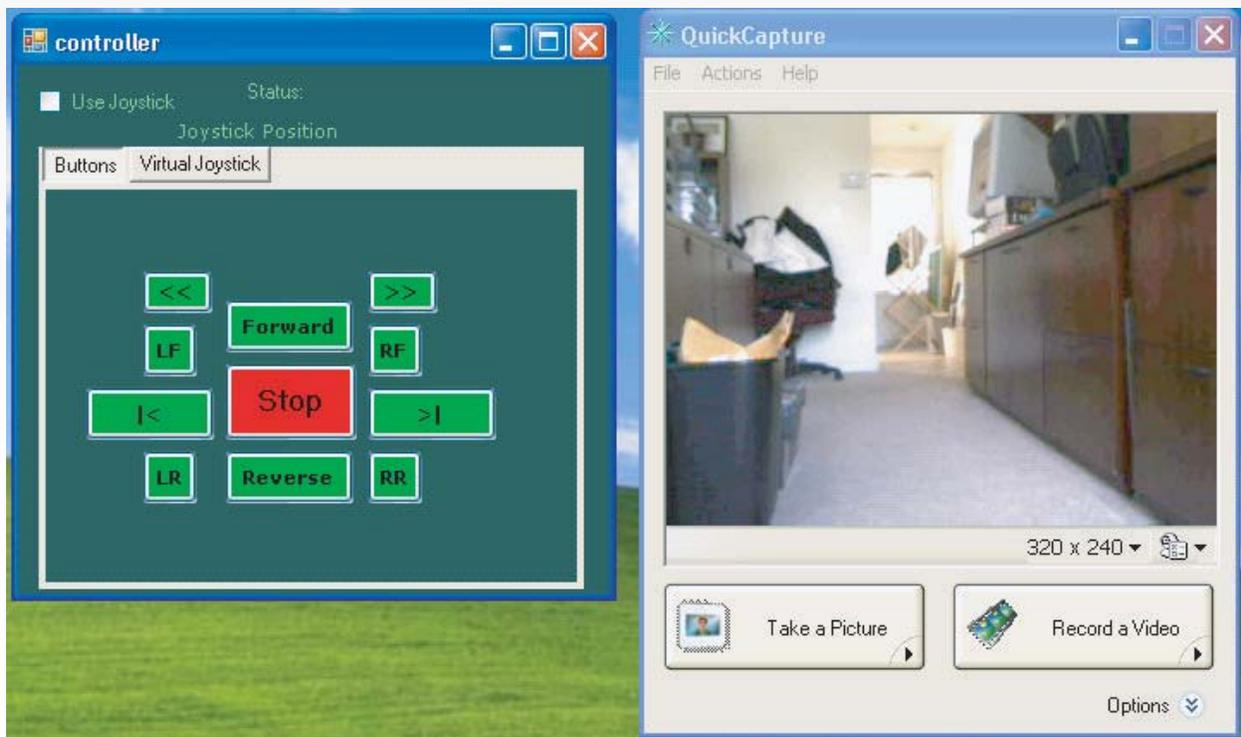


## 5

## Sample Applications

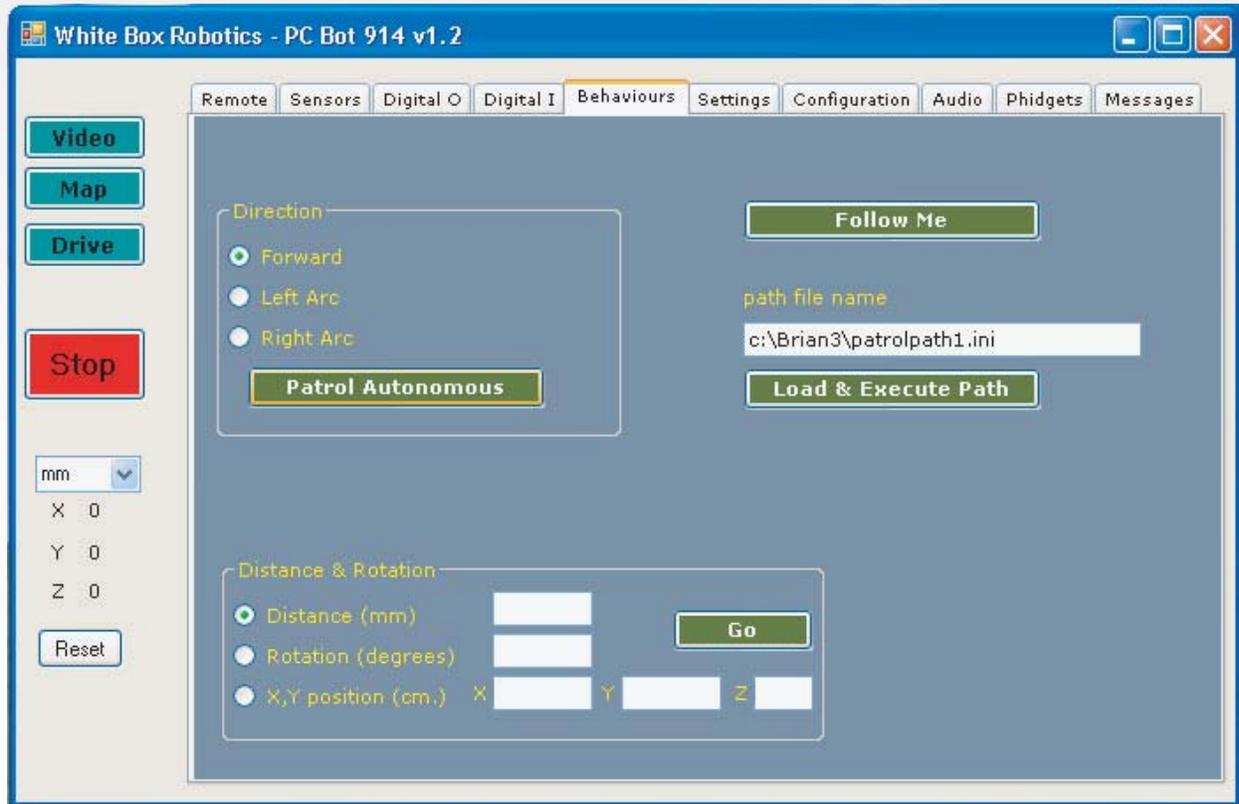
Telepresence can be performed using various combinations of programs. One easy example is shown below. To set it up you'll need:

- 1 The BRIAN GUI running, press the "Drive" button to get the controller window shown on the left. You can drive with a real joystick, a virtual joystick, or the button controls shown in the picture below. You can run the BRIAN GUI on a remote client computer, or use a "remote desktop" application to access the GUI that is preinstalled on the robot.
- 2 Any "remote desktop" application will allow you to run programs such as the Logitech "QuickCapture" application shown below (this application is included on your webcam's install CD.) You can view the video through the remote desktop, and use it to drive your robot around:



## Sample Applications continued...

Open the "Settings" tab and UN-check the 'Sensor Assisted Driving' check box. Now autonomous patrolling can be turned on using the BRIAN GUI, go to the "Behaviours" tab and press "Patrol Autonomous":



You will need to keep an eye on your robot and be ready to press the red "Stop" button until you have properly configured your robot's IR sensors, speed, velocity, acceleration, etc. to your robot's environment. You may even change the positions of the 8 IR sensors that are provided. Consult the BRIAN Developer's Guide for details, and please see our forums at:

<http://www.914pcbots.com/>

# 6

## Charging batteries and Auto - Shutoff

### Charging and shutdown

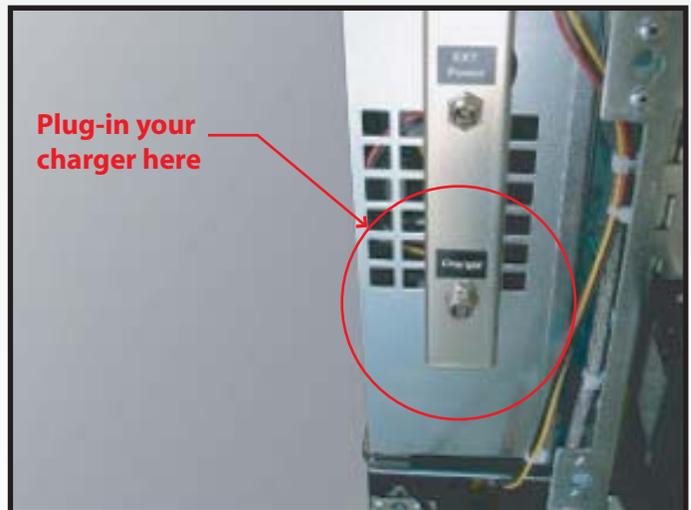
If the battery level goes below 11.2V the robot will auto-shutdown.

Either while you are running the robot, and especially when you are finished with it for the day, PLEASE REMEMBER TO RE-CHARGE THE BATTERIES. This is done by plugging the charger provided into the charger plug located at the back of the robot.

### Step 1



The charger jack is located on the back of the robot on the fold down bays.



Plug-in the power connector.



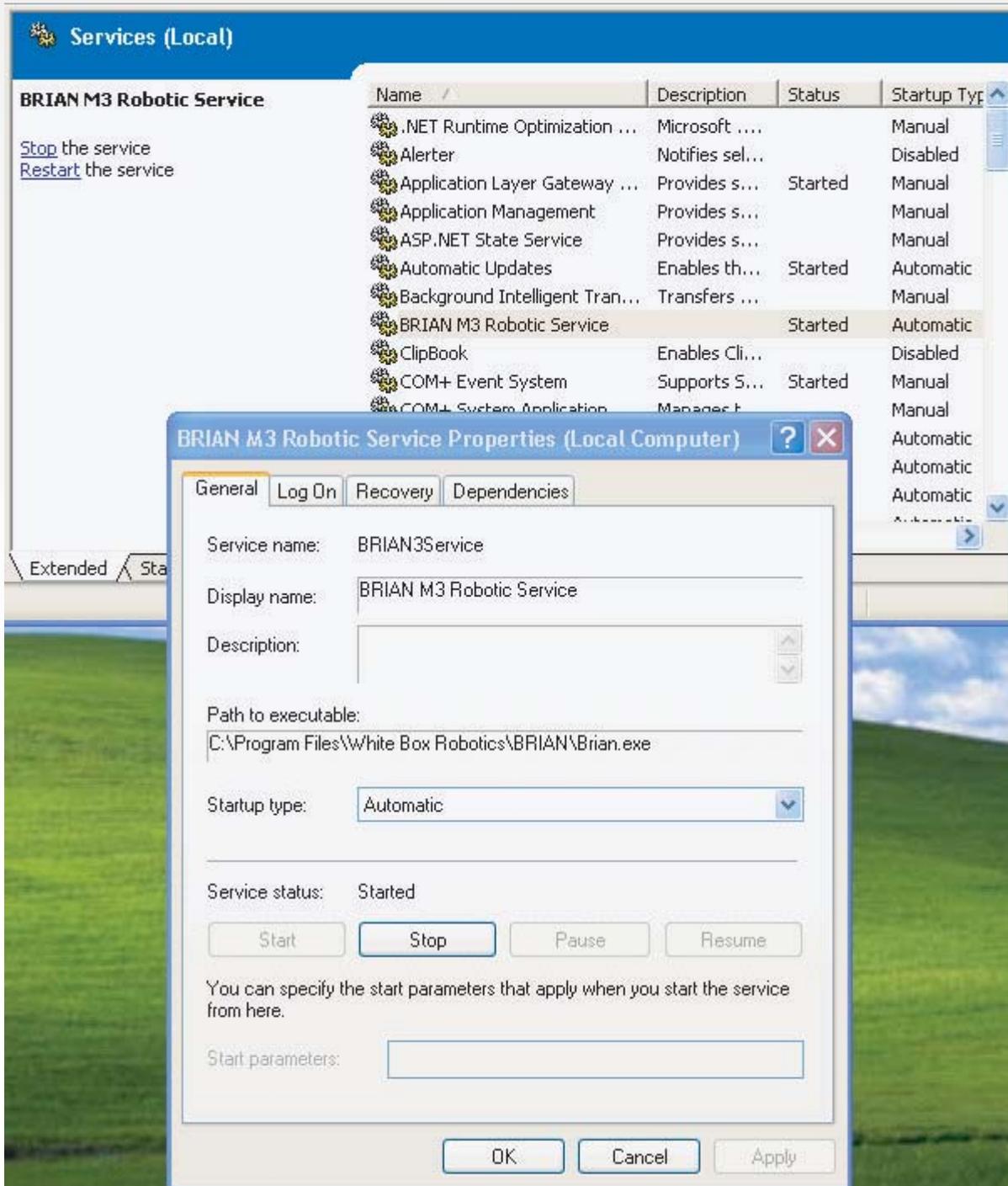
Once the charger is plugged into the robot, the LED will change from GREEN to ORANGE while it is charging. When it is finished it will switch back to GREEN.

Try and leave the robot plugged into the charger at all times unless it is driving.

For the latest hints and tips, please visit our forums at: <http://www.914pcbots.com/> A good place to start: click on "Forums" and then select "914 Owners Tips".

## BRIAN M3 Robotic Service

BRIAN runs as a Windows service. It will start up every time you boot the robot's PC. This can be changed from inside the Control Panel, on the Services list you will find "BRIAN M3 Robotic Service". From this screen you can turn off the BRIAN service and/or prevent it from automatically starting:



Note: If your Control Panel is set to "Category View" (the default), access Start -> Control Panel -> Performance and Maintenance. If your Control Panel is set to "Classic View", access Start -> Control Panel. Then double-click on "Administrative Tools" and then "Services".