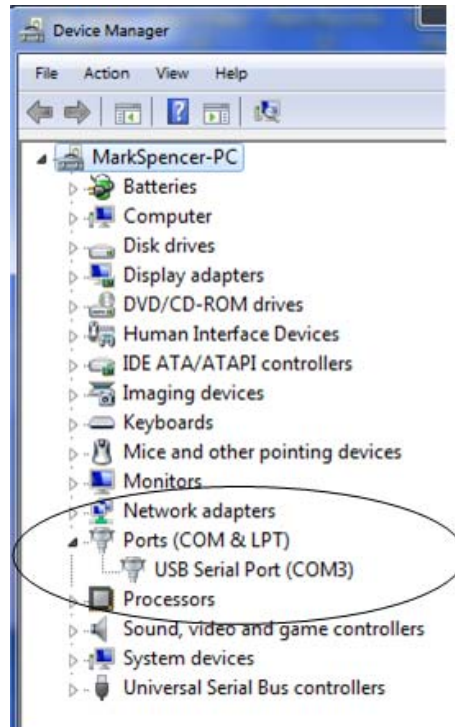
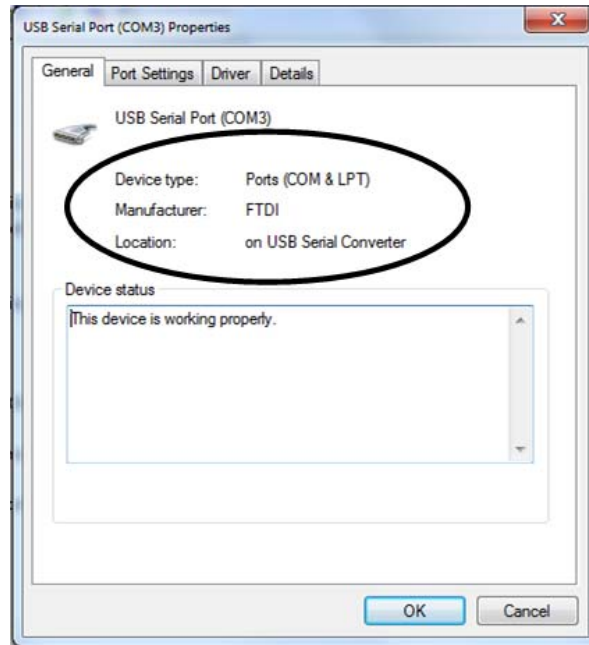


WRAPS ROTOR SETUP GUIDE.

Connect the WRAPS board to your computer USB port (power not required at this point). The USB device in the WRAPS is a standard FDTI device. Allow the computer operating system to find the device and install the driver.

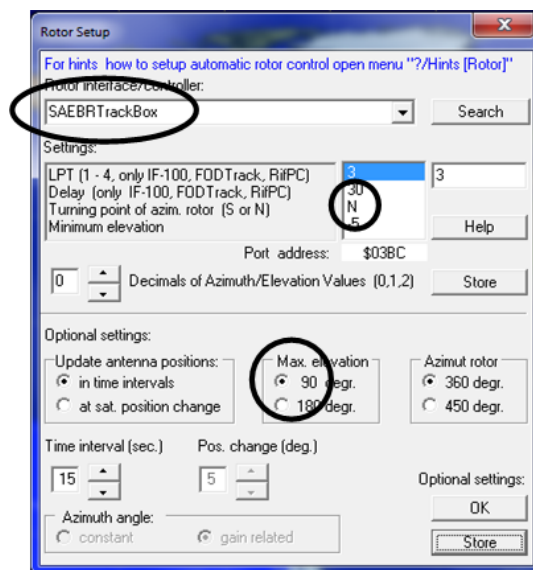


Using My Computer and the Device Manager, locate the comm. port assigned to the WRAPS and change to the port desired for working with SatPC32. Note the port number for later use when setting up SatPC32. The driver installed should be identified as FDTI.

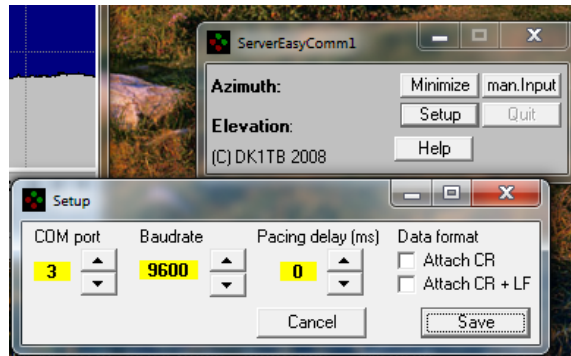


For the initial checkout of the WRAPS with SatPC32, select North as the turn point for the rotor. With the WRAPS connected to the computer, launch SatPC32. Open Rotor Setup. Select SAEBRTrack for the protocol, select North for the turn point, and set the maximum elevation as 90 degrees. You will have to hit Store in both locations on the setup drop down window. Close SatPC32 and then re-launch the program to accept the new values.

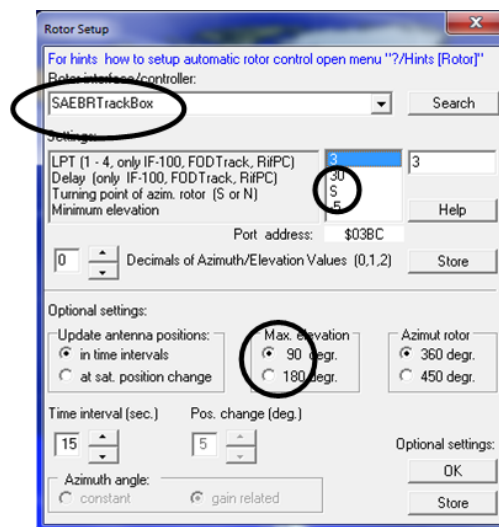
This is the procedure that you will use to setup the WRAPS to work with a satellite that will pass through your Southern Horizon. It will not be necessary to repeat the following step to set up EasyComm, you will only need to do that once.



You will probably have to set up EasyComm for the comm. port and baudrate.

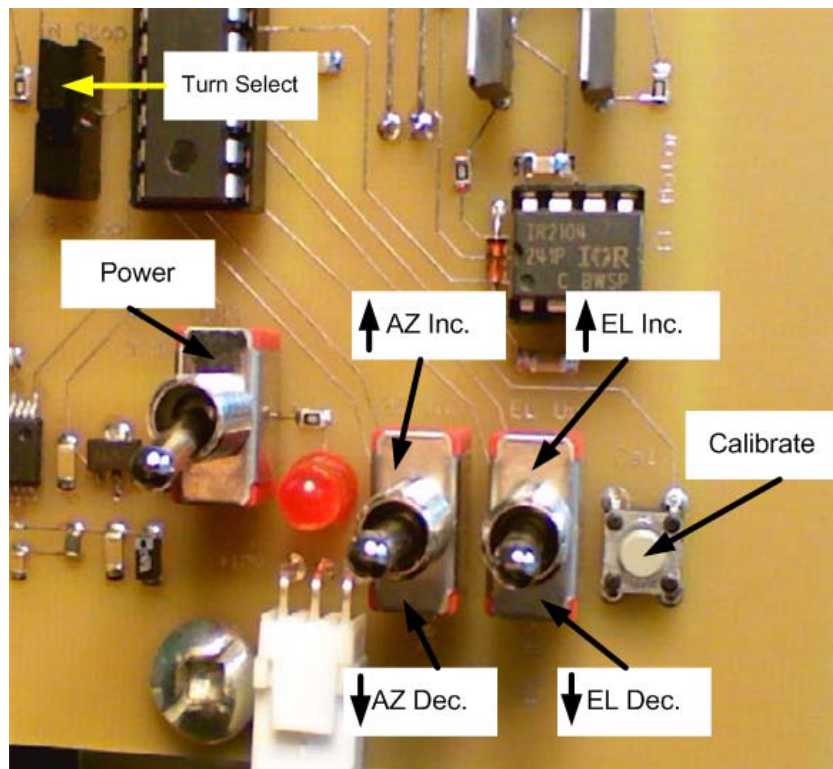
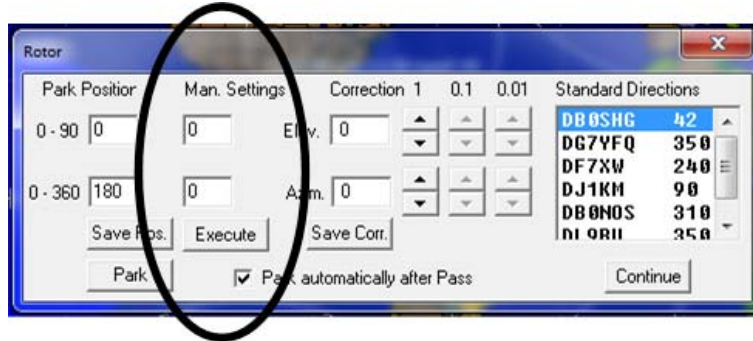


If the satellite will pass through your Northern horizon, you will need to set the turn point to the South, follow this window as a guide. You will need to close then re-launch SatPC32 to accept this change.

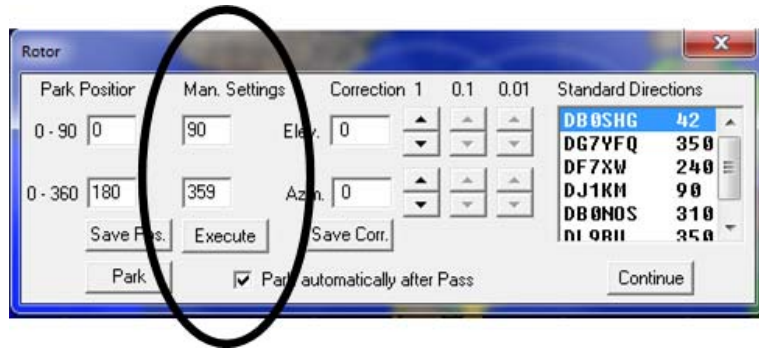


Calibration Check. Your rotor should be calibrated, but if you want to tweak the calibration follow this procedure.

Set up your rotor for a North turn point. Using the manual rotor control within SatPC32, command a position of 0 degrees EL and 0 degrees AZ. Press Execute and the rotor should drive to 0 degrees AZ and 0 Degrees EL. When the rotor stops, you can make minor adjustments to the AZ and EL position with the manual switches. When you have the antenna pointed (relative to the rotor case) the way you would like it, momentarily press the CAL button to store the low position values. Remember, you can pick up the rotor and turn it to the North heading so you don't need to make major adjustments to the calibration values.



Next, use the Manual Rotor command to drive the rotor to 359 degrees AZ and 90 degrees EL. Click on Execute and the rotor will drive to the 359 degrees AZ and 90 degrees EL position. When the rotor stops, make minor corrections using the manual switches, when satisfied, press the CAL button to store the high position values.



If you ever want to start over with the Default values, turn off the rotor, press and hold the CAL button while you turn on power to the WRAPS board. The Data LED will flash until you release the CAL button. The flashing LED (which happens almost instantaneously) indicates the default values for the high and low position values have been recovered and stored.

WRAPS Operation. Now that you have the system calibrated, the operation of WRAPS is pretty straight forward. Note the path of the satellite of interest:

If the path goes through your Southern horizon, you need to set the rotor turn point to North as illustrated above. Select the North turn point using the turn point selector switch on the WRAPS board and apply power to the board. Command the rotor to a position of 180 degrees AZ and 0 degrees EL. Physically pick up and rotate the WRAPS to point South. You are ready to go.

If the path goes through your Northern horizon, you need to set the rotor turn point to South as illustrated above. Select the South turn point using the turn point selector switch on the WRAPS board and apply power to the board. Command the rotor to a position of 0 degrees AZ and 0-degrees EL. Physically pick up and rotate the WRAPS to point North. You are ready to go. (Sorry for being so redundant.)

I prefer to have the rotor in position and ready to go as the satellite comes over the horizon. The technique I use is to set the minimum elevation of the rotor in SatPC32 Rotor Setup to -5 degrees. This will cause SatPC32 to start tracking and driving the rotor with the satellite is -5 degrees below the horizon. It will send a command of 0 degrees EL to the rotor so there is not issue with the limit stops. But the antenna will be at 0 degrees EL and pointed at the right AZ as the bird rises above the horizon and you will not have to wait for the rotor to catch up. Just a hint.