



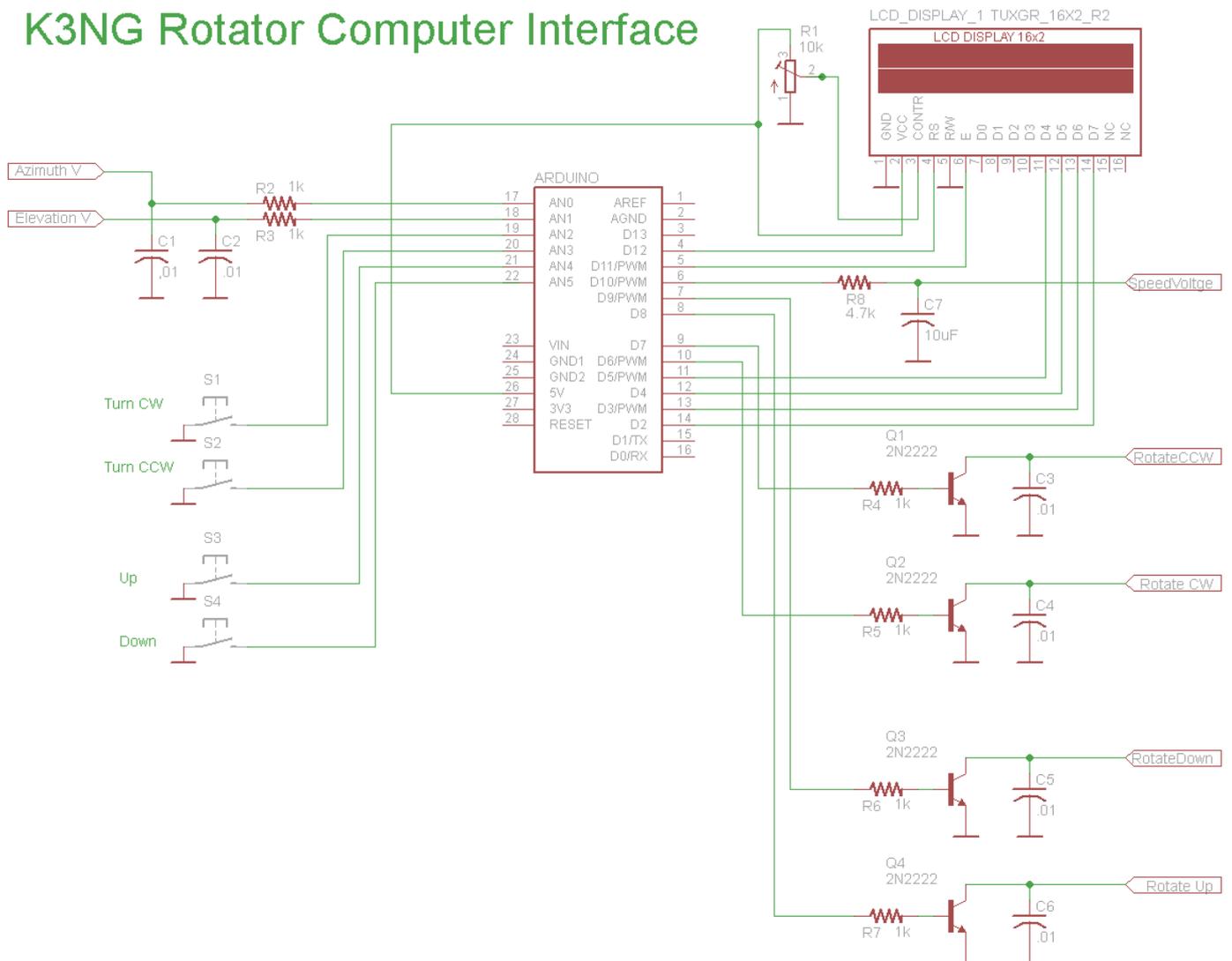
You have purchased a **K3NG Arduino** design rotator controller, constructed by GM6DX. This controller is constructed using an Arduino Uno R3 and controller shield.

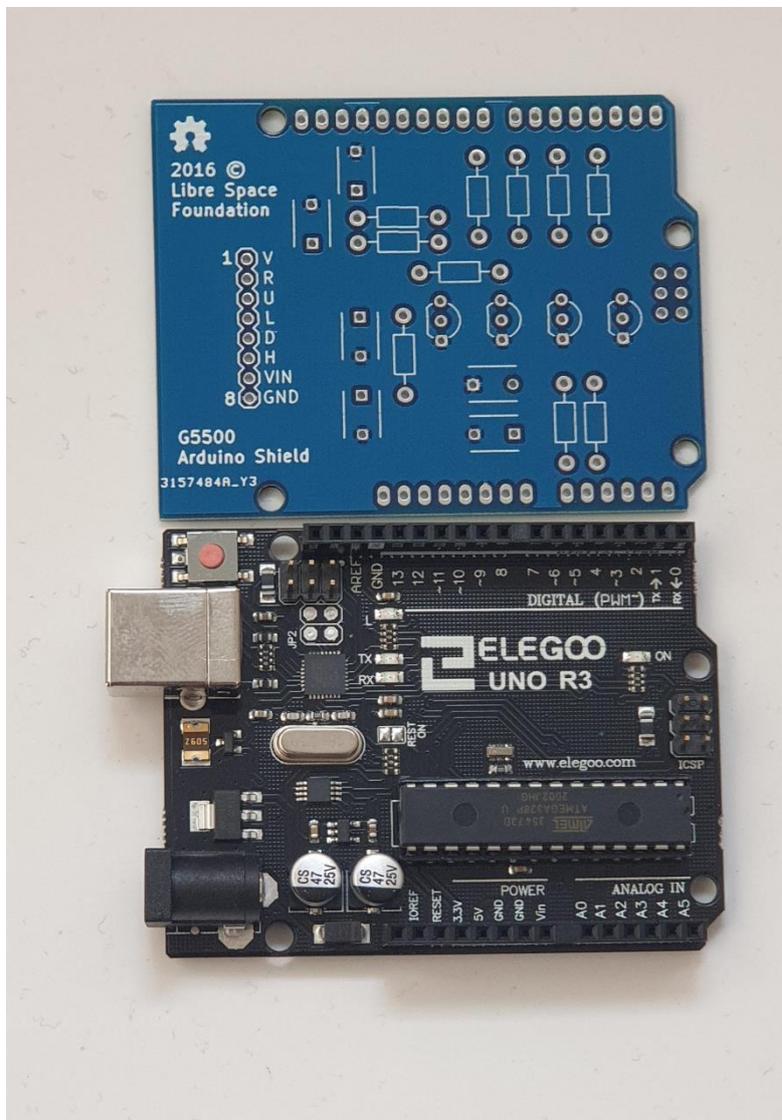
For more technical information please visit:

<https://blog.radioartisan.com/yaesu-rotator-computer-serial-interface/>

Here is the basic schematic of the controller:

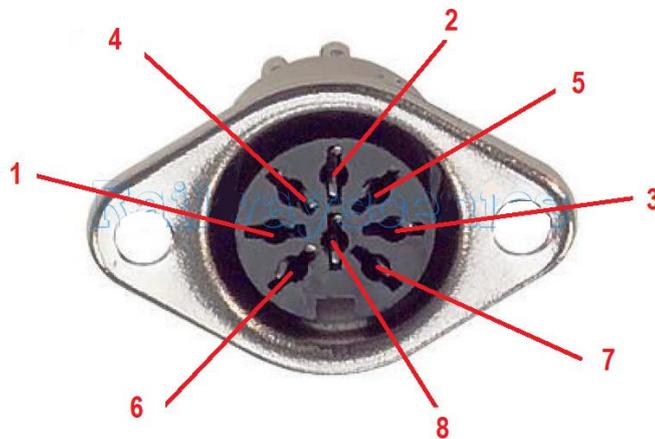
## K3NG Rotator Computer Interface





The Arduino and bare shield above.

When looking at the 8 pin din socket, on the controller, below is the pin numbers.



Pin	Function
6	Provides 2 to 4.5 VDC corresponding to 0 to 450 °
1	Provides 2 to 4.5 VDC corresponding to 0 to 180 °
4	Connect to Pin 8 to rotate left (counterclockwise)
2	Connect to Pin 8 to rotate right (clockwise)
5	Connect to Pin 8 to rotate down
3	Connect to Pin 8 to rotate up
7	Provides DC 13 V to 6 V at up to 200 mA
8	Common ground

This controller works when used with the correct software. The software which I know works very well and has numerous options of different types of controllers is PST rotator software available here:

[https://www.qsl.net/yo3dmu/index\\_Page346.htm](https://www.qsl.net/yo3dmu/index_Page346.htm)

The Arduino Uno drivers should install automatically when connected to the PC, if they don't they can be found here:

<http://www.mediafire.com/file/pk38wysr26mak2f/CH341SER.rar/file>

Or search for your own, it uses the CH340 chip set.

- If you are using this controller for a Yaesu G5500 then just use a standard straight through 8 pin din to 8 pin din cable.
- If you are using this controller for a Yaesu controller which has a 6 pin mini din on the rear (such as the G1000 etc) then please use the supplied cable.

8 PIN DIN

6 PIN MINI DIN

2 -----1

4 -----2

6 -----4

8 -----5

3 & 6 (Soldered together)

- If you are looking to use this on another rotator then please refer to the pin out above.

**Step 1 – Plug the USB to USB-B cable into the controller and into the PC.**

You will see a red light on, indicating that the Arduino board is connected to the PC and is powered.

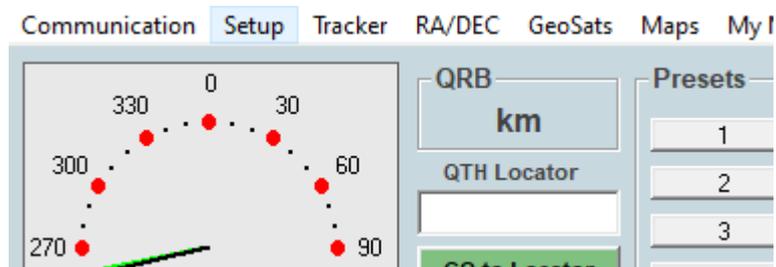


Note the circle cut out allows air to flow into the enclosure enough to keep the board cool during operation.

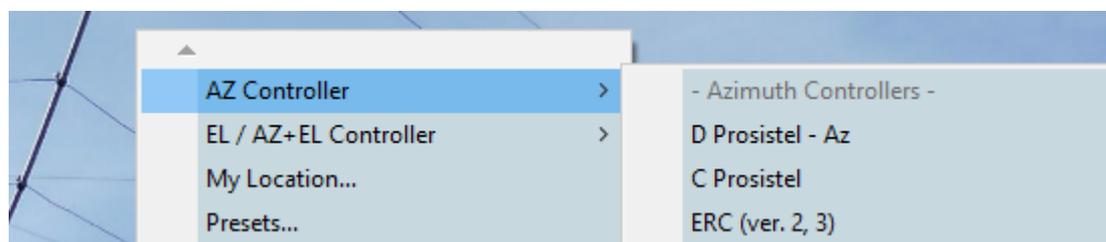
If you do not see a red light, check your USB cable.

**Step 2 – Let your PC install the drivers or have the drivers installed onto your PC via the link above.**

**Step 3 – Set up your controller software for the Arduino K3NG design.**



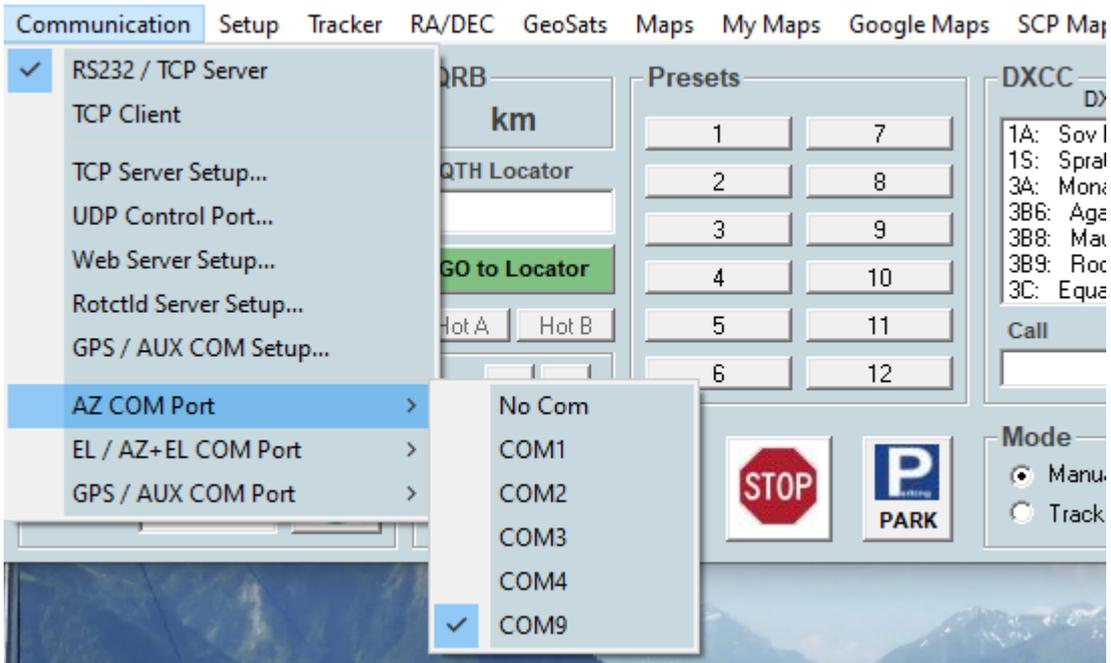
**Select Setup**



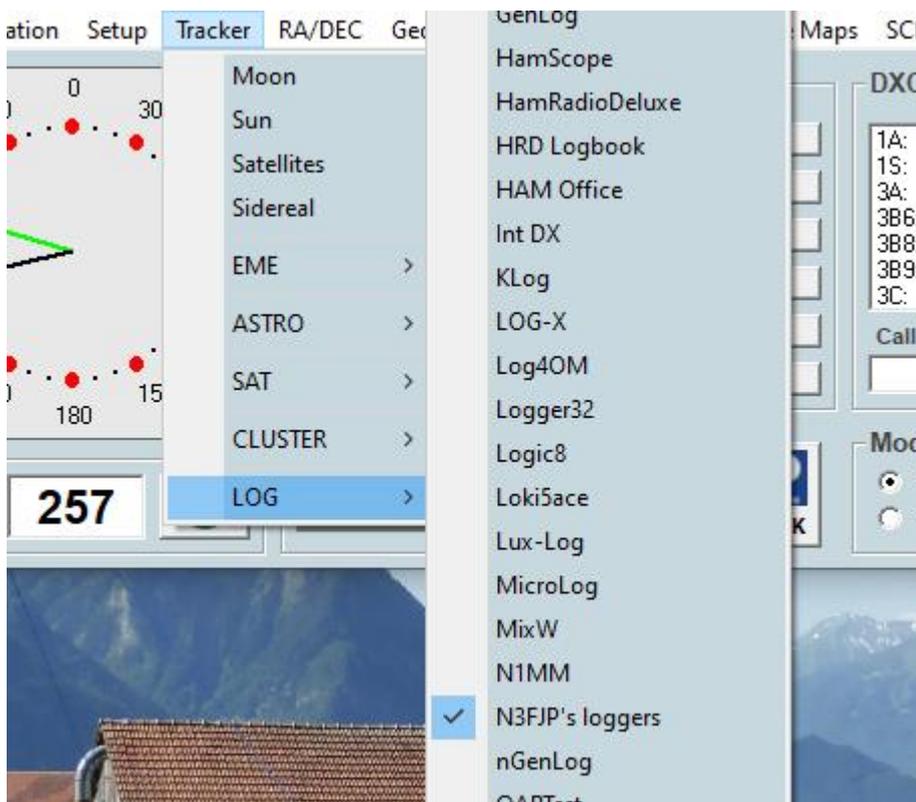
**Select AZ Controller**



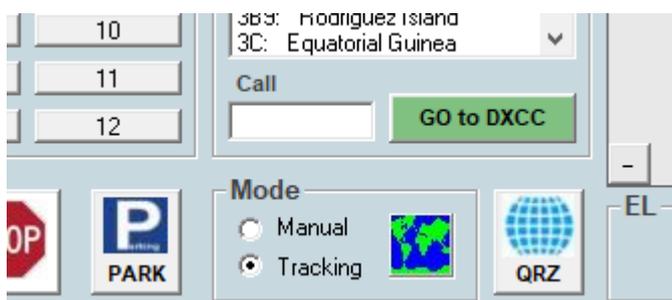
**Select K3NG Arduino (or you can select GS-232 450 deg – as the controller is a Yaesu clone)**



Select the correct COM port for the Arduino 0



Select the tracker - I use my N3FJP ACLOG rather than satellites

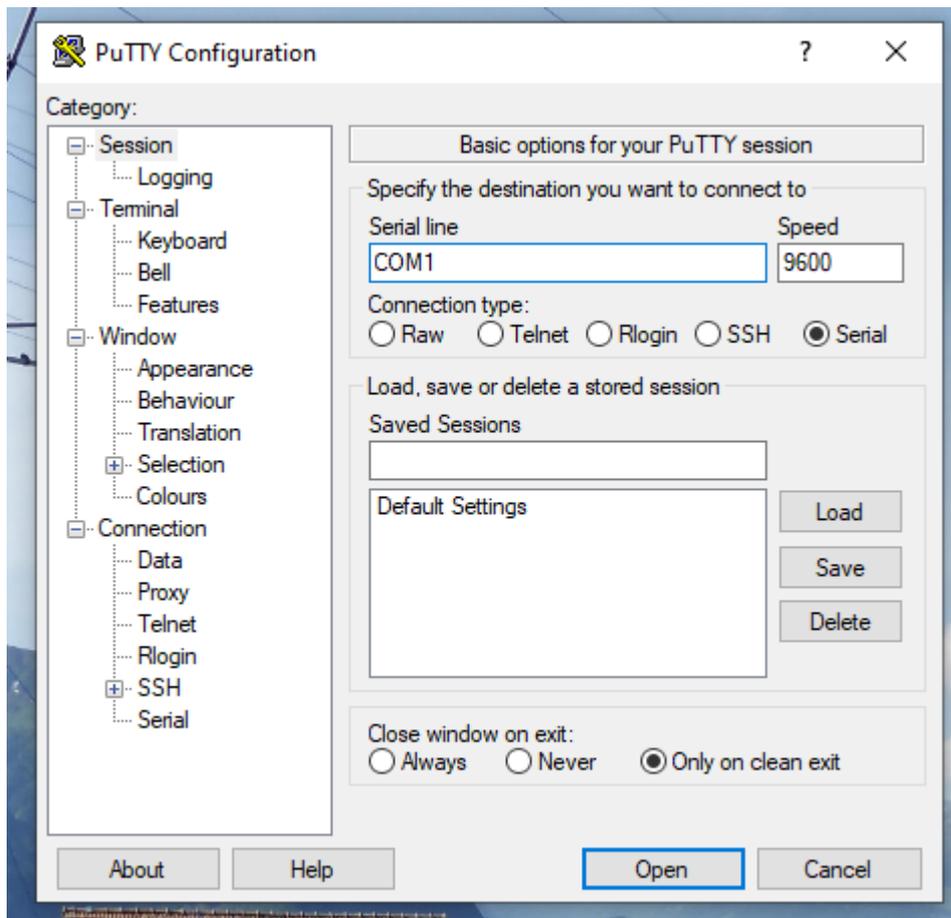


Ensure the tracking button is selected or you will need to put the locator in manually etc.

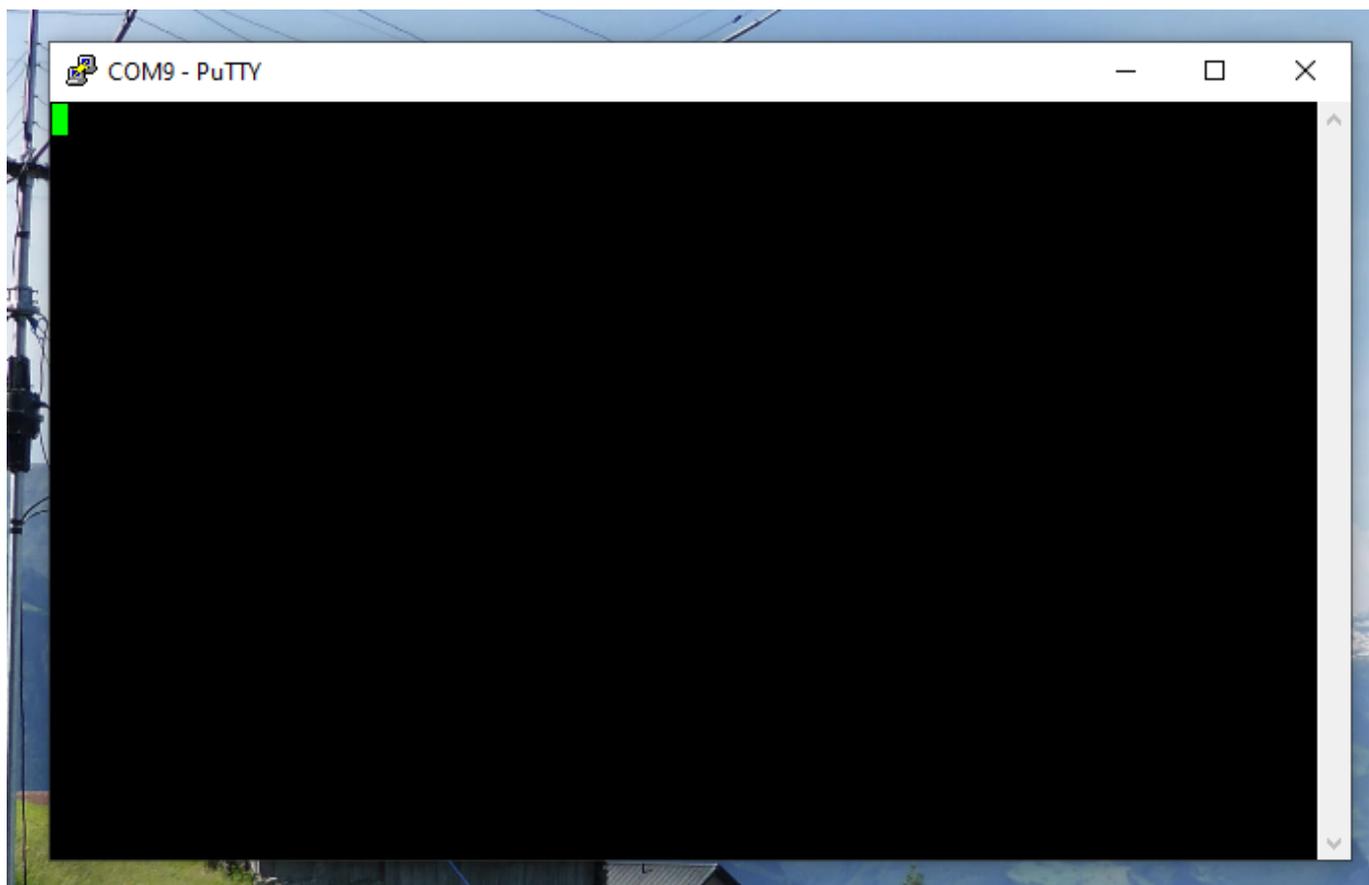
You can calibrate the device by using software called PuTTY

<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

Once you download the software run it



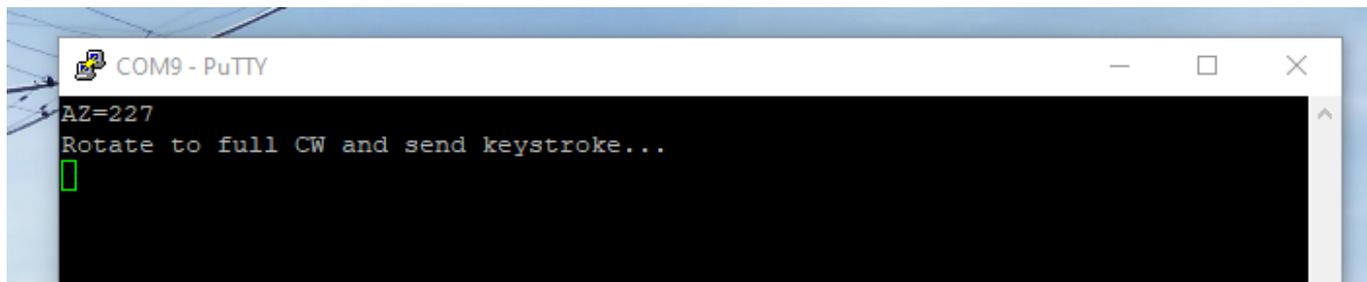
Select serial and the COM port number that the controller uses



Then use the following commands

C

Then you will get a reading something like



Then press F it will tell you to turn the rotator all the way clockwise

Then it will say wrote to memory

Then press O it will tell you to turn the rotator all the way counter clock wise

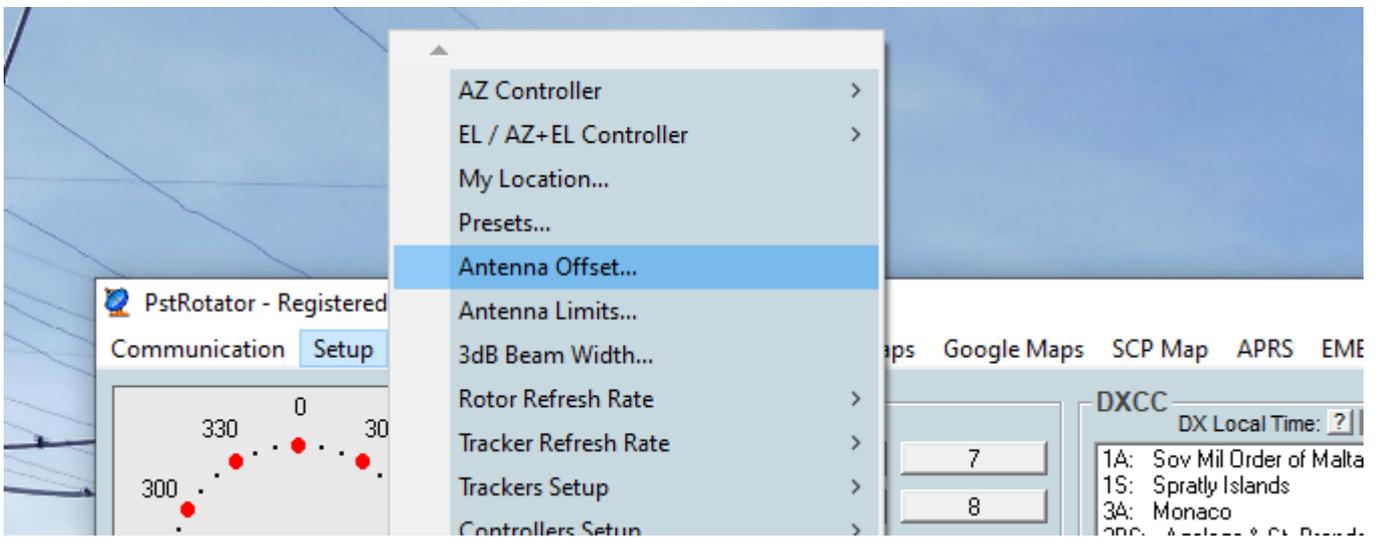
Then press Enter

That should be you done

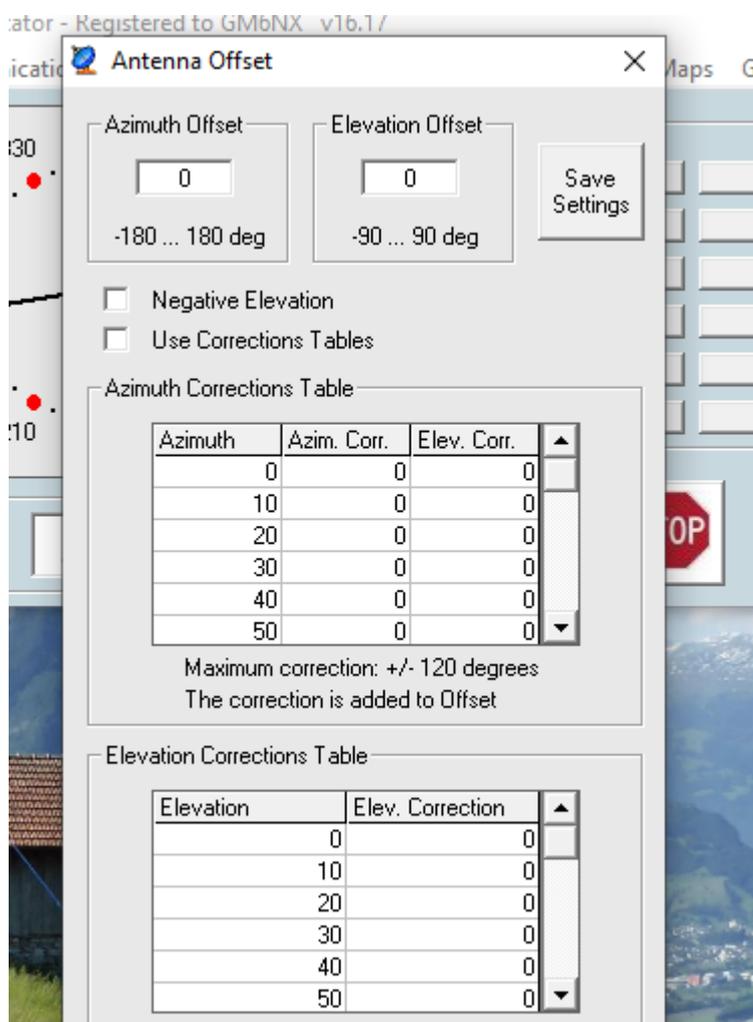
#### FULL LIST OF COMMANDS FOR PUTTY BELOW:

B	- Report elevation
C	- Report azimuth
C2	- Report azimuth and elevation
S	- Stop all rotation
A	- Stop azimuth rotation
E	- Stop elevation rotation
L	- Rotate azimuth left (CCW)
R	- Rotate azimuth right (CW)
D	- Rotate elevation down
U	- Rotate elevation up
Mxxx	- Move to azimuth
Wxxx yyy	- Move to azimuth xxx and elevation yyy
X1	- Change to azimuth rotation speed setting 1
X2	- Change to azimuth rotation speed setting 2
X3	- Change to azimuth rotation speed setting 3
X4	- Change to azimuth rotation speed setting 4
O	- Azimuth offset calibration
F	- Azimuth full scale calibration
O2	- Elevation offset calibration
F2	- Elevation full scale calibration
P36	- Switch to 360 degree mode
P45	- Switch to 450 degree mode
Z	- Toggle north / south centered mode
H	- Help

You can also go **SETUP > ANTENNA OFFSET**



Allowing you to make minor adjustments there



For further instruction on this software refer to the manual. This is a clone of the Yaesu USB controller interface.

The controller is constructed from an aluminium enclosure reducing RFI concerns it also has 4 large rubber feet to ensure it does not scratch any of your surfaces.

I test every unit to ensure they work prior to shipping.

Any further questions please ask

[gm6dx@outlook.com](mailto:gm6dx@outlook.com)

Thanks

**GM6DX**