Step-by-Step Installation Instruction

1) Install NV1Q Rotator Control Program.
   During the installation of the PC software a folder will be added onto the desktop. This folder contains all the support documentation to setup and operate the NV1Q Rotator system as well as the Arduino software.

2) If you do not choose the hardware option to interface with the DXLab logging software, download and install VSPE (Virtual Serial Port Emulator) from www.eterlogic.com
   Launch VSPE
   Click on [Devise | Create] select [Pair] *(choose your COM ports; e.g. COM20 & COM21)*

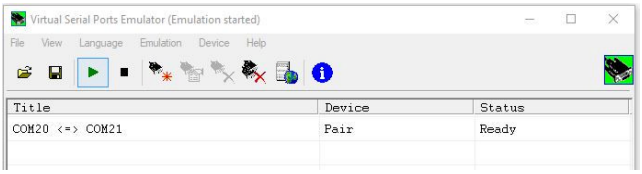


Figure 1 - VSPE, setup example.

3) Download Arduino IDE from the Arduino website: https://www.arduino.cc/en/Main/Software
   Install Arduino IDE on your computer.

   - Connect USB cable to Arduino
   - Select Arduino COM port (Check in Windows 'Devices Manager' which port has been assigned to the Arduino.)
   - Load the Arduino Software located in folder: 'NV1Q_Rotator_Control'.

   Note: When you install the Arduino IDE, it also installs the required USB driver. If you are using an Arduino clone you might have to install a new driver. The driver "CH341SER" that you can find in this folder will most likely work.

4) Launch the Program *(Program will create three new INI-files. Ignore rotator error messages)*

5) Start with setting up and customizing the Rotator Control System.

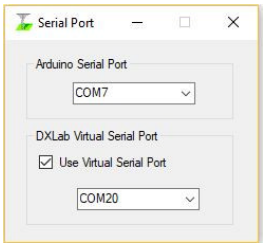
6) [Azimuth], select Show, Hide, or Lock. *('Lock' de-activates the mouse over the map display.)*

7) [SW Buttons], select Show or Hide. *(This is for the relay buttons.)*
   - SW1 to SW6 are interactive.
   - SW7 and SW8 are independent ON/OFF switches.

Note: If you are being asked in your logging software to choose your 'Rotator' you have to select **"YAESU"** even if you are using a different brand.

Setup Instruction

[Setup | ComPort]

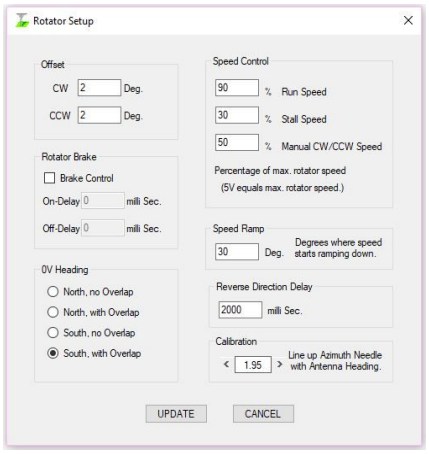


[Arduino Serial Port] (*Same port as used for loading Arduino software)*

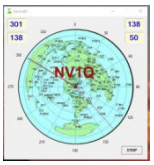
Note: If there is a problem with connecting to the COM port, close the 'NV1Q Rotator' program and start it again.

[DXLap Virtual Serial Port] Mark the 'Check Box' if you are using VSPE and select the port that you have assigned in VSPE.

[Setup | Rotator]



[Calibration]
Turn your antenna north to 0° if you use 180° as 0-position or south to 180° if you use 0° as 0-position. 0-position is where the rotator feedback is 0V.
Increase (>) or decrease (<) the value to calibrate the displayed azimuth reading to the physical direction of the antenna.



[Offset]
The Offset is to compensate for any coasting after the rotator stops.

[0V Heading]
Select whether your rotator uses 0° or 180° as 0-position. (0V)
(Default Setting is 180° with overlap)

[Rotator Brake]
Make a check mark here if your rotator requires manual break control.
Set your 'On-Delay' and 'Off-delay'

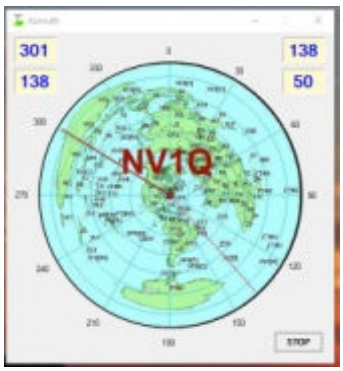
[Speed Control]
All the speed settings will be in percentage of your maximum rotator speed.
Run Speed – Rotator speed when turning to a pre-select position.
Stall Speed –The speed where the rotator decreases to a very low value before stopping completely.
Manual Speed – Rotator speed when using the manual push-buttons.

[Speed Ramp]
Number of degrees where the rotator starts reducing run speed and ramps down to stall speed.

[Reverse Direction Delay]
Time delay, where rotator will stop when set to go in reverse direction while in motion.

Azimuth Display

The default location is centered on grid square “FN32”.



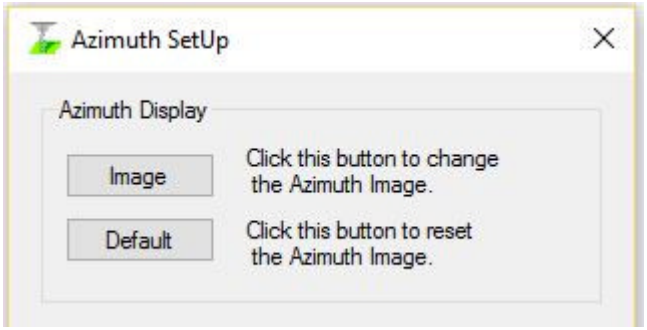
The following steps explain how to customize the display:

Use "Paint" or any imaging software:

- Select any desired image (JPEG)
- Crop image to a square size
- Resize the image to 433 X 433 (Pixels)
- Save the image to a folder

Import the image by going to the Setup menu:

Click on [Setup | Azimuth Display]



Click on [Image] A Dialog Box opens; go to the folder and select the new image.

Click on [Default] to reset the display to its default location (FN32)

Change Azimuth Needle Color.

Click on [Color] A Dialog Box opens; select the desired needle color.