



PstRotatorAz

Software for Antenna Rotators



User's Manual

Rev. 2.8

© 2018 Codrut Buda – YO3DMU

http://www.gsl.net/yo3dmu/index_Page346.htm



Content

- Introduction.....5
- PstRotatorAz6
- Automatic tracking.....7
- Antenna pointing.....7
- Maps7
- Communication.....10
- RS232 communication.....10
- TCP/IP communication.....10
- UDP Interface11
- DTMF Control12
- Web Server Setup.....12
- Global Beam Display.....13
- Flex-6000 TCP/IP connection.....14
- Setup.....16
- Select the rotator controller from the list.....16
- My Location.....16
- Presets.....16
- Antenna Offset and ANT button.....17
- Antenna Limits18
- 3dB Beam Width18
- Refresh Rate18
- Trackers setup.....19
- Controllers setup.....19
- Distance Unit.....19
- Label.....19
- Parking Setup19
- Shortcuts Setup19
- Google Maps Setup20
- Close by Ext. Program.....20
- Start Ext. Programs.....20
- Start Other Windows.....20
- WX Setup.....20
- WX Info.....21
- Point into the Wind21
- Bidirectionality21
- Start as TCP Client21
- Start in Manual Mode21
- Confirm Imported Data21
- Double Click on Map21
- Use FCC Database.....21
- 11 Meter Prefixes.....22
- Master/Slave Mode.....22
- Master/Slave Counter22
- UDP Control.....22



DTMF Control	22
Web Server	22
SteppIR Controller	22
UltraBeam Controller	22
Loop Ant Controller	22
Relays Board.....	22
COM Link.....	23
GH Everywhere.....	23
Automatic Rotation	23
Tracker.....	25
KST2Me	25
DX Monitor.....	25
CC User.....	25
BBLogger	25
DX4WIN.....	25
DXLab Suite	26
DXLog.net.....	27
HamScope	29
HamRadioDeluxe.....	29
JT65-HF.....	30
KLog.....	30
Logger32.....	30
LOGic8	31
N1MM+	31
Rotor control	31
Rotor Port, Rotor Name	32
Multiple rotors control.....	33
N3FJP's loggers.....	33
nGenLog	33
Swisslog.....	33
TACLog	34
TRX-Manager.....	34
VHFCtest4WIN.....	35
VHFLog	35
VQLog.....	35
Win-Test.....	37
WinREF-HF	38
WinREF-THF.....	39
Wlog2000.....	39
WriteLog.....	39
WSJT-X.....	39
Radio-Eyes.....	40
Sidereal	40
QRZ.com Callsign database.....	40
PstRotatorAz managing more than one rotator (multiple instances)	40
SP/LP and BD buttons.....	41
SteppIR Controller	41
Settings.....	41



Manual Mode.....	42
Tracking Mode.....	42
Using DTR and RTS	43
Remote Control.....	45
ERC-M (dual azimuth controller)	45
Using N1MM Logger and PstRotatorAz with the ERC-M to Control Two Azimuth Rotators.....	45
FT/FTDX + Yaesu DXA rotators.....	48
AlfaSpid USB Controller	48
Run-time error '8020'	49
SUPPORT	49



Introduction

PstRotatorAz handles just almost every controllable rotator in common use:

Controller	Protocol	Speed	Web site
Prosistel D	Prosistel	9800	http://www.prosistel.net
Prosistel C	Prosistel	9800	
ERC (ver.2, 3)	DCU-1	4800	http://www.schmidt-alba.de
ERC-M	GS-232A/B	9600	
ERC-R / ERC (ver.4)	GS-232A/B	9600	
Green Heron RT21	DCU-1	4800	
Green Heron RT20	DCU-1	4800	
MDS RC-1	DCU-1	4800	
Idiom Press Rotor-EZ	DCU-1	4800	
Hy Gain DCU-1	DCU-1	4800	
Hy Gain DCU-2 / DCU3	DCU-2	4800	
Cytrol 5000	DCU-1	4800	
Yaesu GS-232A/B 360deg	GS-232A/B	9600	www.rfhamdesign.com
Yaesu GS-232A/B 450 deg	GS-232A/B	9600	
AlfaSpid RAK / RAU 360 deg	AlfaSpid	1200	
AlfaSpid RAK / RAU 720 deg	AlfaSpid	1200	
AlfaSpid RAK Yaesu PS	GS-232A/B	1200	
AlfaSpid RAS	AlfaSpid RAS (1deg)	600	
AlfaSpid BIG-RAS	AlfaSpid RAS (0.5 deg)	600	
M2 RC2800PX	M2	9600	
M2 RC2800P-A	M2	9600	
Easycomm	Easycomm1	9600	
K4JRG	GS-232A/B	19200	
EA4TX ARSWIN	ARSWIN	Program	http://www.ea4tx.com
EA4TX ARSVCOM	ARSVCOM	Program	
ZL1BPU	ZL1BPU	9600	
SARtek	SARtek	1200	
Zelpro SAK-232	GS-232A/B	9600	
K3NG Arduino	GS-232A/B	9600	
WinRotor FUNKBOX	WinRotor	Program	http://www.funkbox.de
SAEBRTrack	SAEBRTrack	9600	Saebrtrack
Heathkit HD 1780	Heathkit	9600	
Channel Master	USB-UIRT interface	USB	
FT950, FT2000, FTDX5000, FTDX9000	FT/DX CAT (RTS disabled)	38400	
GB127M Rohde-Schwarz	Rohde-Schwarz	9600	
UltraBeam UB-ONE	DCU-1	4800	http://www.ultrabeam.it
TrueNORTH VK3LL/VK3KQ	GS-232A via USB Interface	9600	http://www.emdrc.com.au/
Radant AZ-1	Radant AZ-1	9600	povorotka.ru/
Radant AZ-3	Radant AZ-3	115200	
12PR1A Portable Rotation	GS-232A/B	9600	www.portablerotation.com
DPU-1800-D	DCU-1	2400	

If you need to control an azimuth + elevation rotator, or separate azimuth and elevation rotators, you can use the **PstRotator** program.



PstRotatorAz

The PstRotatorAz program can control not only rotors, but also **SteppIR** <http://www.steppir.com/> , **UltraBeam** <http://www.ultrabeam.it> or **Loop** <http://www.ciromazzoni.com/English/Loop%20Antenna.htm> antennas via RS232, USB to serial adapters, or Ethernet to serial adapters (serial servers).

It is also possible to control some **Relays Boards** for antenna selection, or any other purpose.

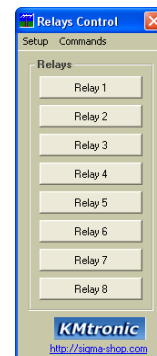
The EA4TX and WinRotor rotor interfaces are controlled communicating via DDE with their own programs.

Connect the rotator interface, antenna controller or relays board to PC using RS232 cables (or USB to serial convertors) and select communication ports from the available COM Ports, in the COM1 to COM16 range.

All these devices can be controlled directly from the PstRotatorAz GUI, or from other programs communicating with PstRotatorAz.



This program includes separate GUIs to control **SteppIR**, **UltraBeam**, **Loop Antennas** and **Relays Boards** interfaces:





Automatic tracking

PstRotatorAz includes automatic tracking for almost all well-known loggers.

- **Logging / Other programs:** BBLogger, CommCat, DM780, DX4WIN, DXLab, EasyLog 5, Fldigi, GenLog, Ham Office, HamScope, Ham Radio Deluxe, JT65-HF, KLog, LOG-X, Log4OM, Logger32, Logic8, Loki5ace, Lux-Log, MicroLog, MixW, N1MM, N3FJP's loggers, nGenLog, Power SDR, QARTest, RCKLog, Swisslog, TACLog, TR4W, TRX-Manager, UcxLog, UR5EQF, VHFCTest4WIN, VHF LOG, VQLog, Win-Test, Win-Contest, Winlog32, WinREF-HF, WinREF-THF, Wlog2000, WriteLog, WSJT-X, XMLog
- **DX Cluster clients:** KST2Me, DX Monitor, CC User, GPcluster
- **Radio Astronomy:** Radio-Eyes

The **Moon** can be tracked also using internal algorithms.

Sidereal tracking of the celestial bodies uses an internal algorithm too.

Antenna pointing

The user interface offers quite a selection of methods for antenna pointing:

- mouse click over the compass rose
- left/right arrows
- setting the azimuth
- setting the QTH locator (4, 6 or 8 digits)
- mouse click on a map
- selecting the DXCC
- writing the country prefix, or the full callsign
- numeric keypad

The numeric keypad can be used also when the PstRotatorAz is NOT the active window. So you will don't need to switch in contests the focus between logger and PstRotatorAz, you can keep the focus on logger.

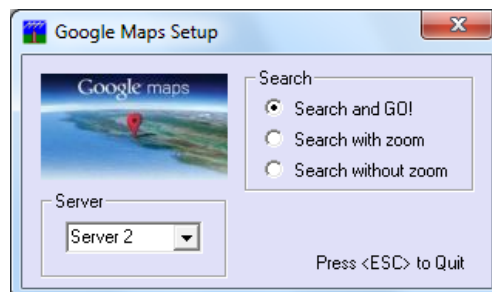
- Ctrl + Up Arrow (8) Move to 0 deg
- Ctrl + Page Up (9) Move to 45 deg
- Ctrl + Right Arrow (6) Move to 90 deg
- Ctrl + Page Down (3) Move to 135 deg
- Ctrl + Down Arrow (2) Move to 180 deg
- Ctrl + End (1) Move to 225 deg
- Ctrl + Left Arrow (4) Move to 270 deg
- Ctrl + Home (7) Move to 315 deg

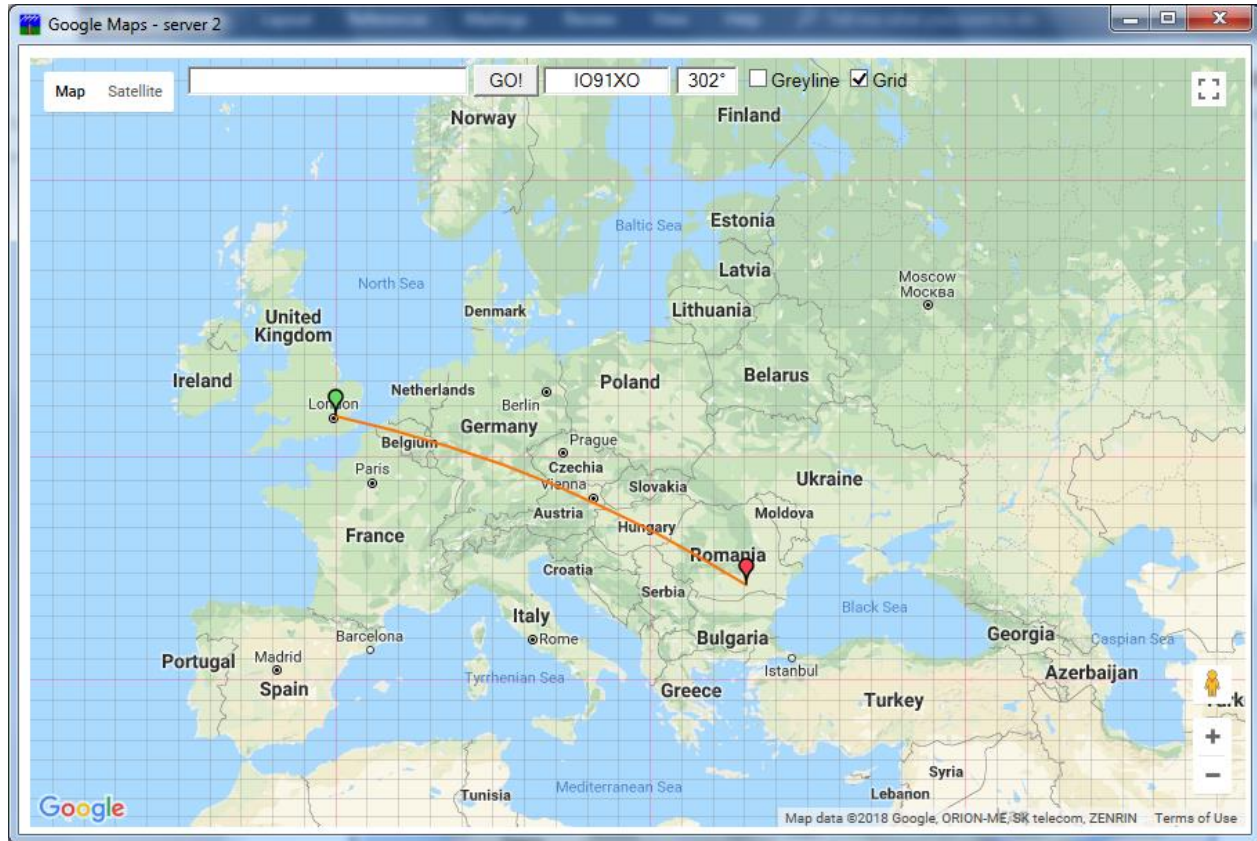
The rotator can be stopped at any moment before to finish the moving. Of course, only if the rotor's interface has implemented the STOP command.

Maps

With Internet connection, just click over a map from [Google Maps](#) and your antenna will be pointed on the DX direction!!!

You can resize the map, and some settings are available (Setup -> Google Maps Setup...)





It is possible to display the greyline and the grid on map. And you can rotate antenna using the “Search and GO!” feature.

You can also use some default maps, or you can add your maps.

APRS maps (like for UI-View application) can be used. Thousands of maps in this format can be found on Internet. Try on Google: UI-View maps. Or try this: <http://sharon.esrac.ele.tue.nl/pub/aprs/maps>
Put both *.jpg (or *.gif or *.bmp) and *.inf files in the \Maps1 folder, and this is all what you have to do. Click on “My Maps” and start to use them.

Or you can just create from program a map (based on Google Maps) and automatically save it. This tool can be found in “**Help > Maps generator**”.

You can add how many maps you want. For the first ten maps you can also use keyboard shortcuts to open them (CTRL+F1 – CTRL+F10).

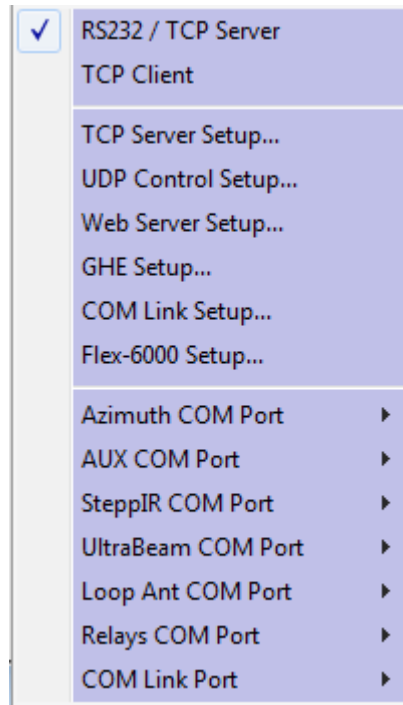




Communication

RS232 communication

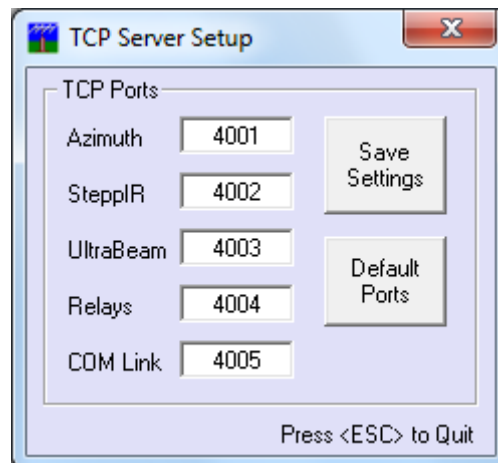
Select RS232 / TCP Server if the rotor controller is connected via RS232 (or a USB to RS232 convertor) to the PC where the PstRotatorAz program is installed.



Select the COM ports used to connect the rotator controllers to PC in the COM1 – COM32 range.

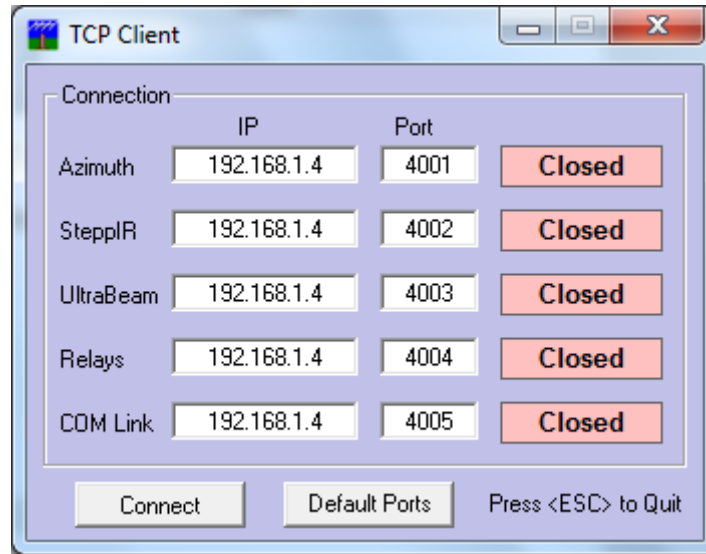
TCP/IP communication

For the TCP server, “RS232 / TCP Server” must be checked.



Open the “TCP Server Setup” and set the IP ports for the server (the PC where the rotator controller is RS232 connected).

For the TCP client, check the “TCP Client” and the following window will be opened:



- Set the IP address (is the network address for the PC where the server runs).
- Set the IP ports (must be the same as for server)
- Press the “**Connect**” button to connect the client to server and remote operation.

In order to not have so much traffic over the network and antenna position to be displayed faster on the client PC, you can set Refresh Rate = None on the client PC, but be careful to have Refresh rate > 0 on the server PC.



If the server is a serial server one (serial to Ethernet convertor) and not a PC running the PstRotatorAz software, you must set Refresh Rate > 0 on the client PC.

UDP Interface

PstRotatorAz can receive commands from other programs and report the antenna position via UDP messages. For this:

- Go to "Communication/UDP Control Port..." and set the UDP port number where the program listens. The default value is 12000.
- The port used for antenna position report is UDP Port + 1. For example, if you set the default UDP Port = 12000, the program reports the antenna position to UDP port = 12001
- Enable UDP Control in Setup



PstRotatorAz can receive commands like these:

<PST><PARK>1</PARK></PST>

- stop rotor, switch to manual mode, park antenna

<PST><TRACK>1</TRACK></PST>

- switch to tracking mode

<PST><TRACK>0</TRACK></PST>

- switch to manual mode

<PST><STOP>1</STOP></PST>

- stop rotor, switch to manual mode

<PST><AZIMUTH>85</AZIMUTH></PST>

- set azimuth to 85 deg

<PST><QRA>KN34BJ</QRA></PST>

- send to program the locator (4/6/8 digits) and set the azimuth

<PST><STF>2824500</STF></PST>

- tune a SteppIR antenna on 28.245MHz

<PST><STR>1</STR></PST>

- select OmniRig (1/2) used by a SteppIR antenna

<PST>AZ?</PST>

- in answer to this command the program will report the position to UDP Port + 1

PstRotatorAz reports the antenna position like this:

AZ:xxx<CR>

Any message must start with <PST> and end with </PST>

You can send many commands in one message:

<PST><STOP>1</STOP><TRACK>0</TRACK><AZIMUTH>85</AZIMUTH></PST>

DTMF Control

The PstRotatorAz program offers the possibility to control the antenna position via DTMF (dual-tone multi-frequency) signaling. To activate this option select **Setup / DTMF Control**.

With this option enabled **Communication / DTMF Setup...** become visible. From here can be selected the audio device and the audio line, set the volume and monitor the DTMF signals received.



To rotate the antenna to 56 deg, PstRotatorAz must receive ***056#** DTMF codes.

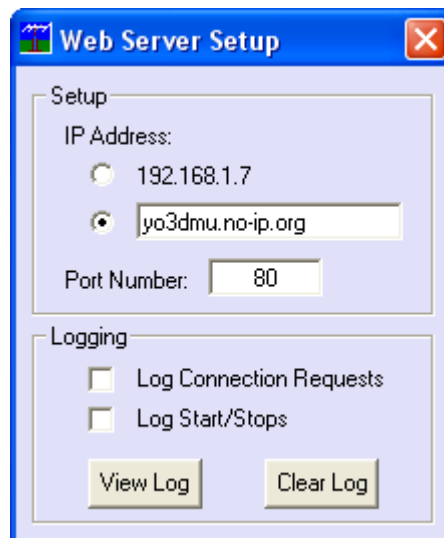
Web Server Setup

PstRotatorAz has an embedded Web server, and this can be used to control the rotor from any Web browser running on a computer or a smartphone.



To use this feature:

- In Communication > Web Server Setup... set the IP address and the port number. If you intend to access the Web server using a computer from the same local network, or you don't use a router, select the first option to use the IP address of the PC. But if you intend to access the Web server from internet and you use a router, select the second option and enter the router IP address. You can set it as xxx.xxx.xxx.xxx or put there a "friendly name". You can keep the default port 80, or use any other port.
- In Setup enable the **Web Server** option
- Restart the program
- Set your router to forward the port set in the Web Server Setup.



Global Beam Display

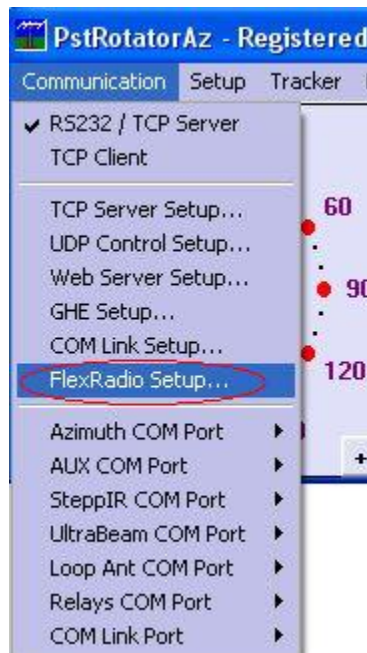
PstRotatorAz can pass the position information received from rotor to a Global Beam Display, using for this the AUX COM Port. So you will have all the features of the PstRotatorAz program, but also a nice electronic display on your wall.



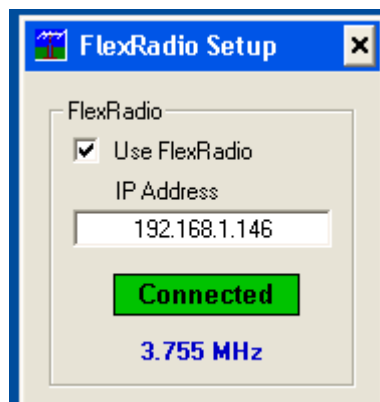
Select the COM port used to connect the Global Beam Display to PC in the COM1 - COM16 range.

Flex-6000 TCP/IP connection

PstRotatorAz supports a Direct Flex connection via TCP/IP (port 4992). You can find the setting under Communication:

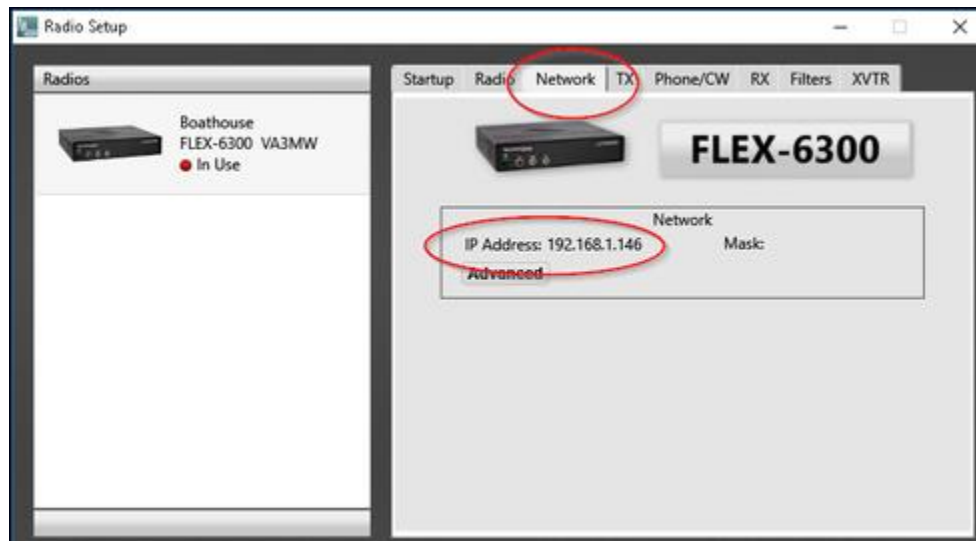


You will need the IP address of the actual radio.





The IP address can be found many ways, the but simplest is in SmartSDR. Highlight the radio and then the Network tab.

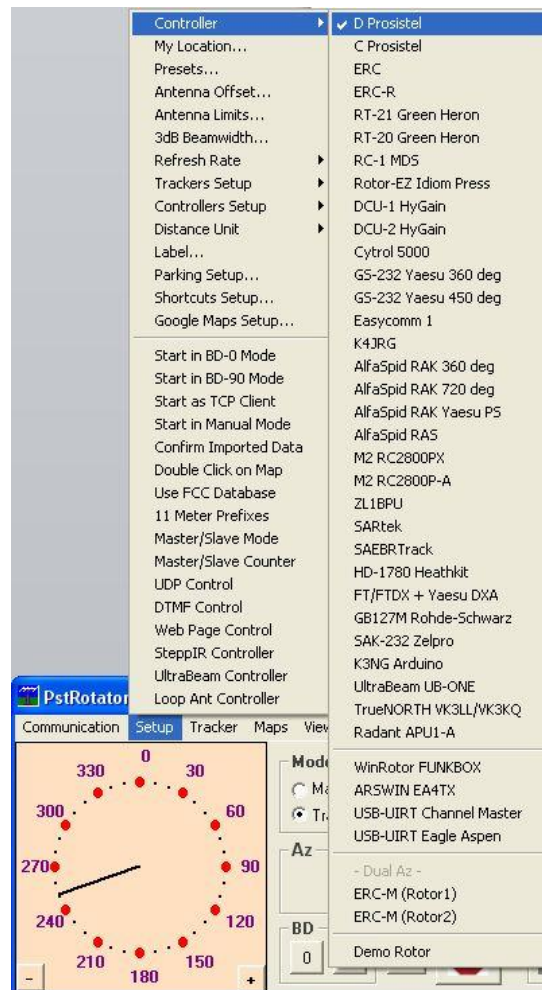


You will then see Connected in PstRotatorAZ and it will start to track frequencies for all configured devices.



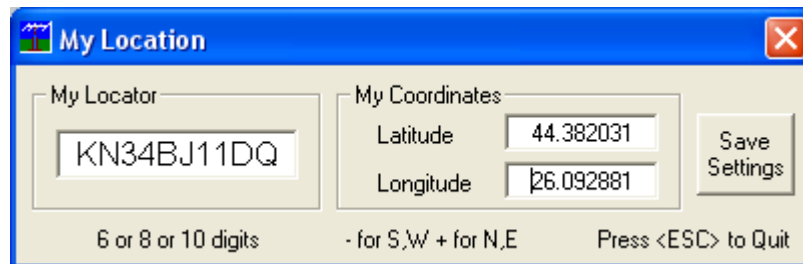
Setup

Select the rotator controller from the list.



My Location

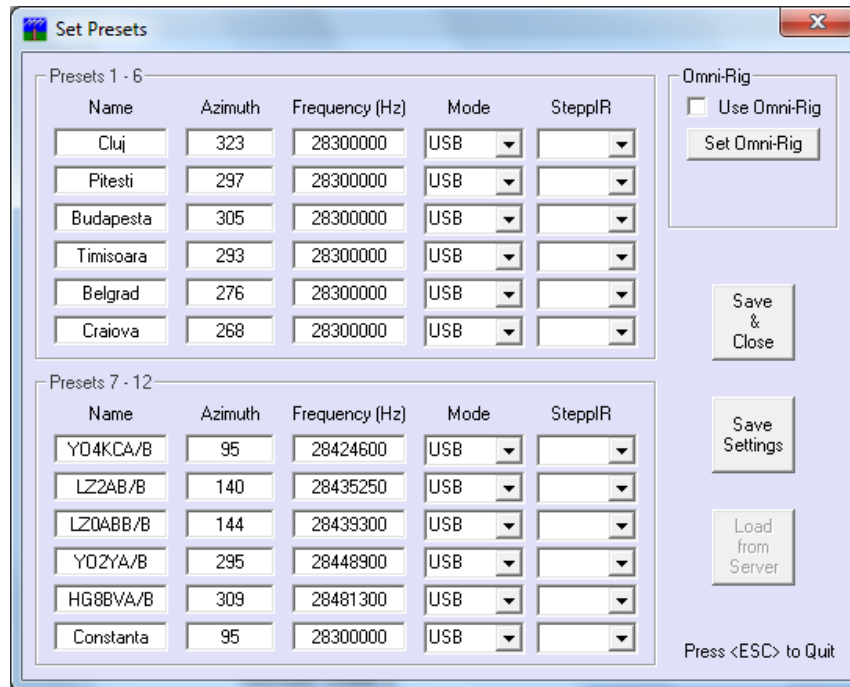
Open the “My Location” window (Setup > My Location...).



Set your QTH locator using for this 6, 8 or 10 digits, or set the latitude and longitude for your location.

Presets

12 position presets are available. Open the “Presets” window (Setup > Presets) and set the preset name, the azimuth and the elevation.



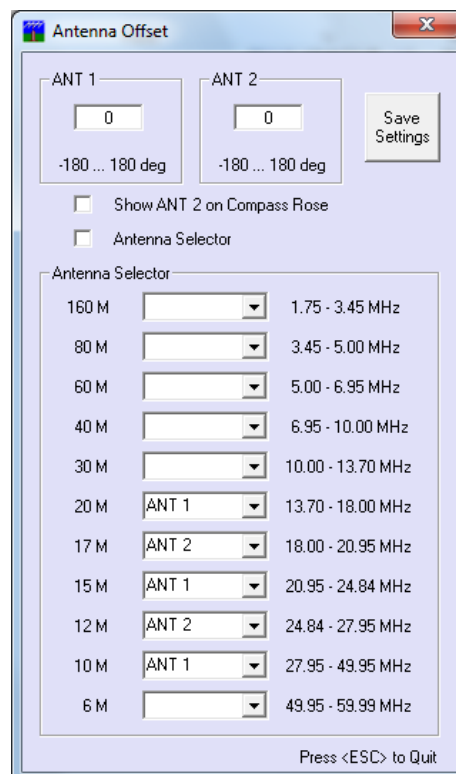
Some other ways to set the Presets: In the main window, a right click over a Preset button will set it with the callsign from **Call** text box and the azimuth/elevation information from Az and El boxes.

Ctrl+1....Ctrl+6 – set Preset 1...Preset 6

Alt+1....Alt+6 – set Preset 7...Preset 12

Antenna Offset and ANT button

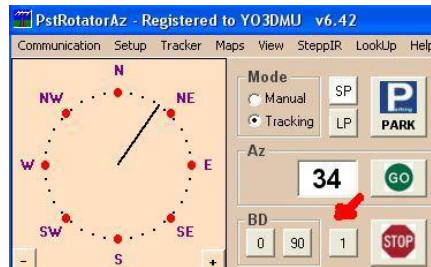
Open the “Antenna Offset” window (**Setup / Antenna Offset**) and you can set the Azimuth Offset 1 and Azimuth Offset 2.





The default values are 0 deg. for both ANT1 and ANT2.

With the 1/2 button you can select between Azimuth Offset 1 and Azimuth Offset 2 (see Setup / Antenna Offset...).



It could be useful if you have two antennas on the same mast, orientated on different directions. Let say that your controller correctly displays the position of the first antenna (Offset 1 = 0 deg.), but you have a second antenna at 60 deg. from the first. Set Offset 2 = 60 deg and use the 1/2 button to point the first or the second antenna on direction.

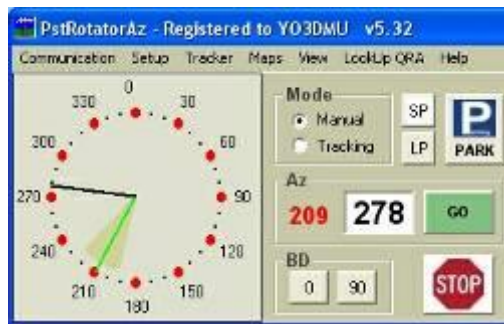
Antenna Limits

End-point limits can be set.



3dB Beam Width

Set the 3dB Beam width of your antenna in order to be displayed on the Compass Rose.



Refresh Rate

The time interval between position requests sent to controller can be adjusted from 0.5 sec to 5 sec. Open the "Refresh Rate" window (Setup > Refresh Rate) and select the time interval value.



The default value is 1 sec.

Trackers setup

Some trackers need special settings. **Don’t forget to set "Tracking" as Mode in the main window!**

Controllers setup

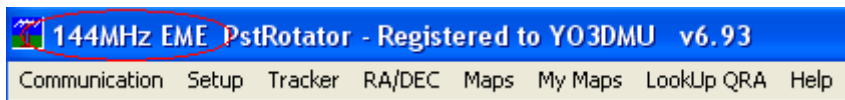
The settings of some controllers can be configured from this menu.

Distance Unit

You can select **Kilometers** or **Miles**.

Label

Use **Setup > Label...** to put different labels.



Parking Setup

Set the position where the antenna will be parked when the “**Park**” button is pressed.

Shortcuts Setup

Set shortcuts for rotor control and customize how these works.



AUDIO shortcut - support for visually impaired

In Setup / Shortcuts Setup... you can set a new shortcut key (Audio). The default shortcut is CTRL+B. Every time when you press this key the program speaks and reports the rotor position.



The rotor control using the left/right arrows was implemented long time ago. So it will be very easy to move the rotor and hear about position pressing only few keys.

Google Maps Setup

The Google maps are located on two servers. It is possible to select which server to be used.

Close by Ext. Program

PstRotatorAz can be automatically closed when another program from computer is closed. Use a significant part of the external program name, exactly like it appears on the title bar (caps sensitive).

Start Ext. Programs

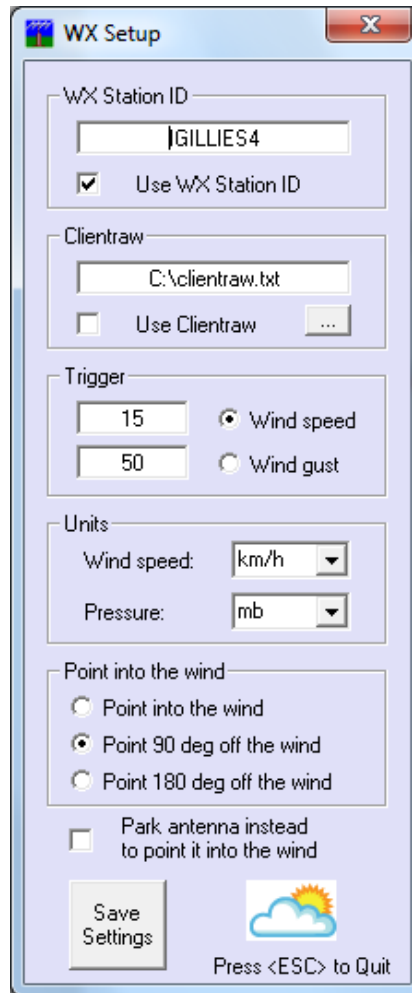
PstRotatorAz can automatically start other programs from when it is opened. You can choose to start up to 5 programs together with PstRotatorAz.

Start Other Windows

Select which other program windows are opened when the program starts.

WX Setup

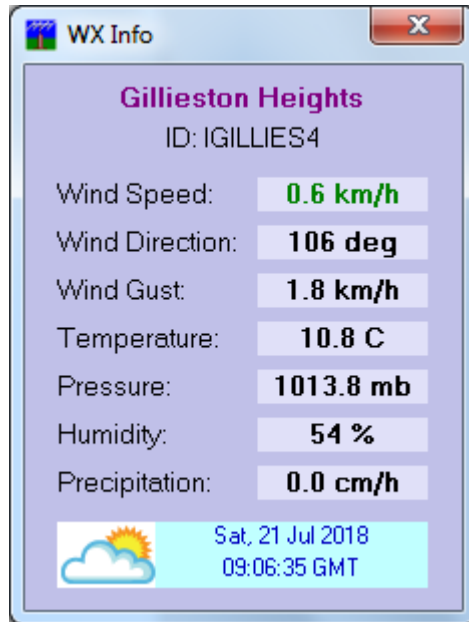
PstRotatorAz can display information about the wind speed, wind direction and temperature in your location, and also can automatically point the antenna into the wind if the wind speed is over the limit. In this window can be set if the program will use a specific weather station connected to www.wunderground.com or will use only the information provided by this site based on your location. It can be set also the wind speed trigger value for automatically pointing antenna into the wind.





WX Info

Open the Wind Info window. The information in this window is refreshed at every 5 minutes.



Point into the Wind

Automatically point the antenna into the wind if the wind speed is over the limit. Click on this button to enable or disable this function.



- The function is enabled.



- The function is disabled.

Bidirectionality

The PstRotatorAz program can control a Yagi and a bi-directional rotary dipole on the same rotator, with the dipole in line with the Yagi's boom (90° offset from Yagi heading). This mode is BD-90.

A second bidirectional mode (BD-0) supports the SteppIR antennas.

With **“Start in Bidirectional-0 Mode”** or **“Start in Bidirectional-90 Mode”** checked the PstRotatorAz program will start in one of these two bidirectional modes.

Or press one of the **BD** buttons to enter in the bidirectional mode.

Start as TCP Client

If **“Start as TCP Client”** is checked, the PstRotatorAz program will start as a TCP Client.

The TCP Client window will be minimized, and the program will automatically connect to the TCP Server

Start in Manual Mode

With this option selected the program will start in Manual Mode, else the program will start in the last mode used before to close the program.

Confirm Imported Data

With this option checked, the callsign, locator or azimuth information is passed in the Tracking mode from logger to PstRotatorAz, but you will need to press the "GO" button to rotate the antenna.

Double Click on Map

Use this option to select between click or double click on map to rotate the antenna.

This feature is available for the embedded maps (Maps), My Maps and the Google Maps.

Use FCC Database

The program checks when a callsign is write in "Call" textbox in:



- cty.dat
- VHF_USA.mdb (or the FCC.mdb when the “Use FCC Database” option is selected)
- VHF_EU.mdb
- Call3.txt

The FCC database contains over **750,000 US and Canadian active callsigns**.

This database is created using the latest EN.dat and HD.dat files from l_amat.zip archive downloaded from the official FCC web page, and the us_zip_codes.mdb file, a database containing the coordinates for almost all US zip codes. A similar technique is used for the Canadian callsigns.

The FCC.mdb database contains callsign, locator, name and state.

If a callsign is found in more than one database, the information is taken from the last database. For example, if a callsign exists in both VHF_EU.mdb and call3.txt, the program will use the information found in call3.txt.

11 Meter Prefixes

With this option selected the **DvPRA.txt** database containing the 11 Meter prefixes is used instead of the **cty.dat** database.

Master/Slave Mode

The Master/Slave mode is useful when you have antennas rotated by different rotors, you use a program instance for every rotor, and you want from one instance to move all of them on the same direction (stacked antennas, or VHF/UHF/SHF antennas on different towers/rotors).

Master/Slave Counter

The Master/Slave Counter mode can be used if you have a tower which turns the antennas that are fixed to it, and a separate rotor turns a mast above the tower.

The rotor position of the tower is passed by the main program instance to the second one and it is used by this instance as an antenna offset. The second rotor will counter rotate when the main rotor is moving.

UDP Control

Select this option to enable the UDP communication with an external program. The external program can stay on the same PC with PstRotatorAz, or on another computer from the local network.

DTMF Control

Select this option to enable the DTMF control. With this option enabled **Communication / DTMF Setup...** become visible.

Web Server

Select this option to start the embedded Web server.

SteppIR Controller

Select this option to open the **SteppIR Controller** window. From this window it is possible to control a SteppIR antenna.

UltraBeam Controller

Select this option to open the **UltraBeam Controller** window. From this window it is possible to control an UltraBeam antenna.

Loop Ant Controller

Select this option to open the **Loop Antenna Controller** window. From this window it is possible to control a Magnetic Loop antenna.

Relays Board

Select this option to open the **Relays Control** window. From this window it is possible to control some relays boards.



Set the COM port used by the relay board in **Communication > Relays COM Port**

If the relays board communicates with the program, the relay buttons become red or green, depending if the relay is ON or OFF. A click over a button switch the relay status (if it is OFF, it becomes ON; if it is ON, it becomes OFF).

In the **Relays Control** window, you can find a **Setup** menu with the next options:

- **Relays Board** – select your relays board model;
- **Refresh Rate** – the time between two relays status requests (default 1 sec);
- **Board Setup** – at this moment only the KMTronic 8 Relays UDP and WEB boards needs some settings (IP address, port number, user, password);
- **Rename Relays** – customize the relays name;
- **Rename Commands** – customize the commands name;
- **Remote PTT** – a footswitch connected between GND and CTS pins of the AUX COM Port can control one or more relays. This feature works also in the TCP client/server mode, for PTT remote control;
- **SteppIR Tuning Lock-out** – the selected relays are switched OFF when the SteppIR antenna is tuning. It could be used to disable PTT / TXing when the motors are moving.
- **Commands Setup** – set the relay status when a **Command** button is pressed. There are three possibilities: 1 – relay go ON, 0 – relay go OFF, nothing – the relay state is not changed;
- **Interlock** – When interlocked, selecting a relay releases all other relays;
- **Automatic Control Setup** – the settings for the **Automatic Control**. Using Omni-Rig or one of the loggers from below, the relays can be automatic controlled from radio, when the bands or the frequency are changed.
(Win-Test, N1MM, Logger32, CommCat, Ham Radio Deluxe, UR5EQF, MixW, DXLab, Log4OM, PowerSDR, Winlog32, Fldigi, DX4WIN, WSJT-X)
- **Automatic Control** – select to use this feature;

COM Link

Select this option in Setup to enable a COM to COM over TCP/IP link between two computers running PstRotatorAz (Client – Server). In the **Communication -> COM Link Setup...** you can set the baudrate, and the serial port number can be selected from **Communication -> COM Link Port** menu.

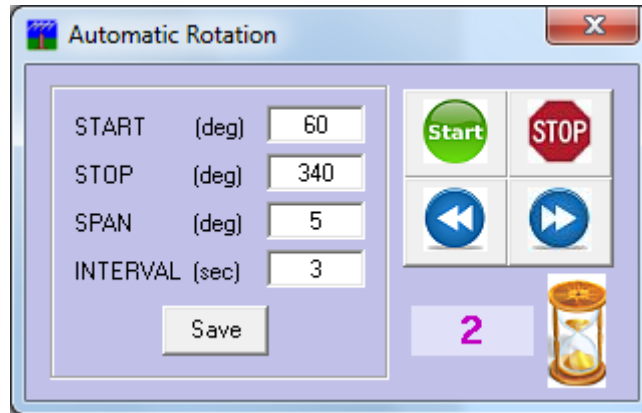
GH Everyware

Select this option to enable an UDP communication with the **Green Heron Everyware** program.



Automatic Rotation

Select this option if you need a tool to automatically rotate the antenna. Some parameter can be set: Start, Stop, Span, Interval.



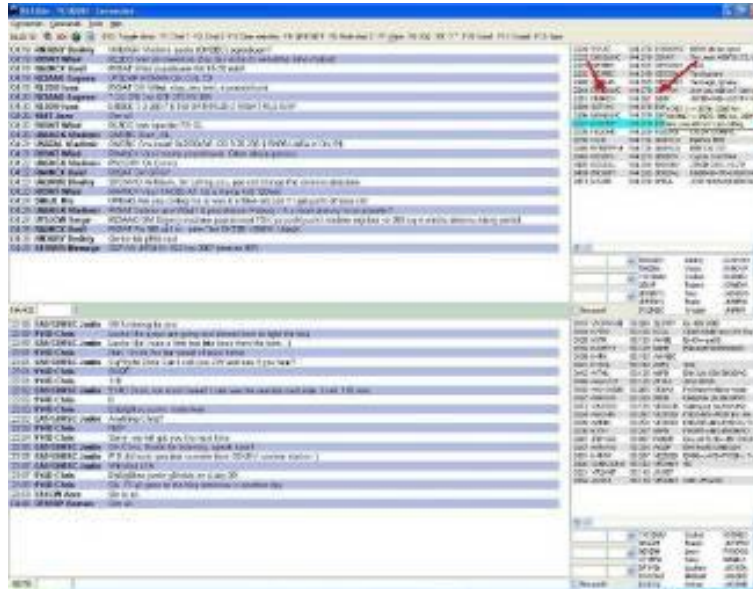


Tracker

KST2Me

KST2Me is a telnet based client for Windows that is tailored to the ON4KST Chats. There is nothing to be configured in the KST2Me.

In the PstRotatorAz, select **KST2Me** as Tracker and set **Tracking** to mode in the main window. With a mouse click over DX or Submitter, the azimuth information computed by KST2Me is sent to PstRotatorAz, and this will rotate the antenna on that direction.



DX Monitor

DX Monitor is a standalone Windows program which monitors the DX announcements available on the internet at DX Summit.

PstRotatorAz is DX Monitor aware. Simply clicking on a callsign or a beam heading in the DX Monitor window will transfer the information to the PstRotatorAz control program, which will automatically turn the rotator.

To use PstRotatorAz with DX Monitor, simply select **DX Monitor** from the **Tracker** menu and change the **Mode** to Tracking.

CC User

CC User is a DX Cluster client program.

There is nothing to be configured in CC User program.

In the PstRotatorAz program select "**CC User**" from the **Tracker** menu and change the **Mode** to Tracking.

An Alt+Click over a callsign in CC User will automatically rotate your antenna.

BLogger

There is nothing to be configured in BLogger program.

In the PstRotatorAz program select **BLogger** as Tracker and set mode to "**Tracking**" in the main window.

The "**AZIMUTH – Short**" information from the **QSO data** window will be sent to PstRotatorAz, and PstRotatorAz will turn the antenna.

DX4WIN

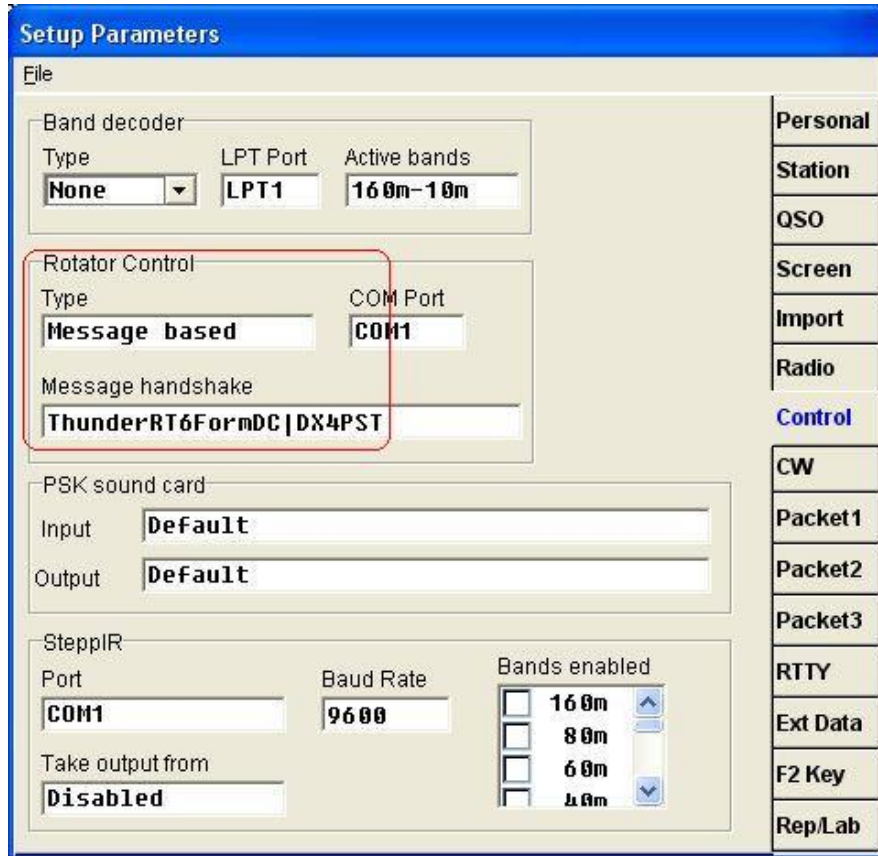
In **DX4WIN** set **File > Preferences > Control > Rotator Control**

- Type = Message Based



- Message Handshake = ThunderRT6FormDC|DX4PST

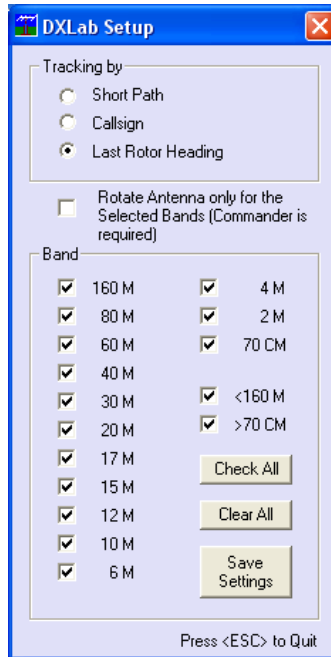
Start the **PstRotatorAz** program, select **DX4WIN** as tracker and set mode to "**Tracking**" in the PstRotatorAz main window **before** to start the **DX4WIN** program.



DXLab Suite

In the PstRotatorAz program select **DXLab** as Tracker and set mode to "**Tracking**" in the main window. There are three different options related to how the PstRotatorAz program uses the information from DXView to turn the rotor.

You can find these options in **Setup > Trackers Setup > DXLab Setup...**

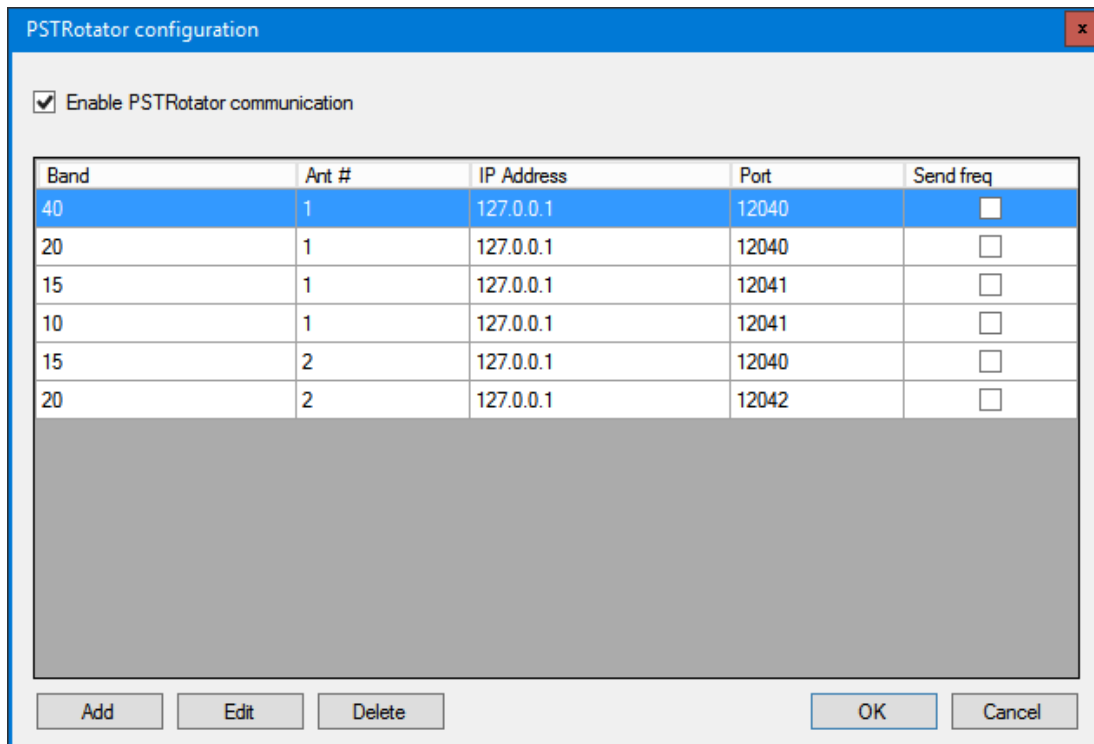


It is possible to select for which bands to control the rotor. For this check the “**Rotate Antenna only for the Selected Bands (Commander is required)**” checkbox.

DXLog.net

DXLog supports rotator control using UDP communications to PstRotatorAz. Configuration steps are as follows:

Select Options -> PSTRotator Configuration from the Option menu. The configuration form will open:





Check the "Enable PStRotator communication" box at the top of the form.

Enter the required data in each column. Use the Add, Edit, and Delete buttons as required. Here are descriptions of each column:

Band: Value in meters for which this rotator is active.

Ant #: The number of the antenna for this band turned by this rotator, beginning at 1. Antennas are numbered in the order shown on the Radio/Ant Status Window.

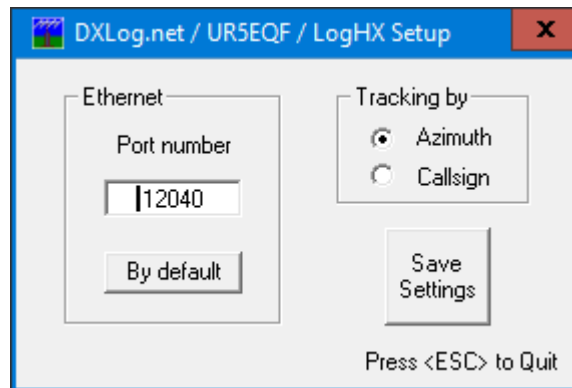
IP Address: If you are running PstRotatorAz on the same machine as DXLog, enter 127.0.0.1. Otherwise enter the IP address of the rotator control server.

Port: The UDP port used to communicate with the rotator interface. Normally PstRotatorAz uses 12040 for the first rotator, 12041 for the second, etc. However, any port that is free can be used. Write down the ports used as they are needed for PstRotatorAz configuration.

Send freq: Check this box if you need the radio frequency to be sent to PstRotatorAz.

When completed, press OK.

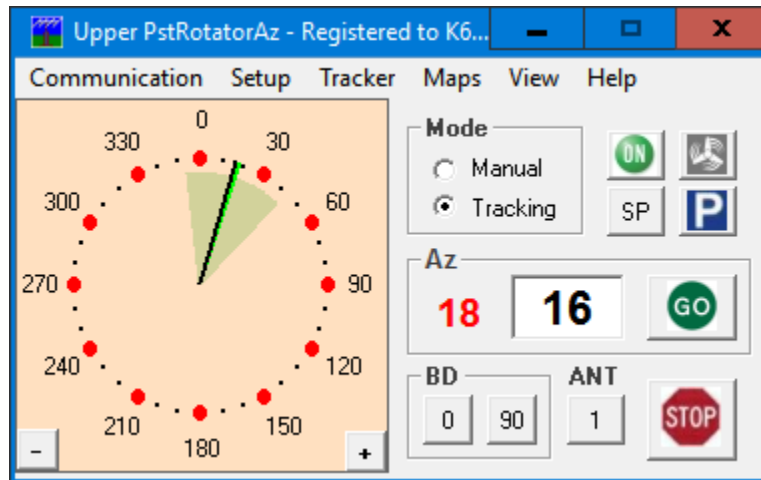
From the PstRotatorAz menu bar, Select Setup -> Trackers Setup -> DXLog.net/UR5EQF/LogHX Setup... The Setup form will be displayed:



Enter the port number used for this rotator in the Ethernet box. Select 'Azimuth' in the "Tracking by" box. Click Save Settings.

Select Tracker -> DXLog.net from the PstRotatorAz menu bar.

In the main display, select 'Tracking' from the Mode box. Depending on the view you have selected, you may need to select View -> Full View to see the Mode box. The following shows the location of the Mode box in PstRotatorAz:



If you have more than one rotator, repeat the steps on each instance of PstRotatorAz, using the appropriate UDP Port number. See the PstRotatorAz documentation to enable multiple instances of PstRotatorAz.

Once you have everything configured, return to DXLog. Ensure you are on the appropriate band (and the proper antenna selected). Enter a callsign or an azimuth value into the callsign field. Press Ctrl-F12. DXLog will show the value sent on the status line, and PstRotatorAz will rotate to the selected azimuth.

Enter a callsign and press Alt-F12. Rotator will move to the long path azimuth.

This completes PstRotatorAz configuration

HamScope

Start the HamScope program before to start PstRotatorAz.

There is nothing to be configured in HamScope program.

In the PstRotatorAz select **HamScope** as tracker and set mode to "**Tracking**" in the main window.

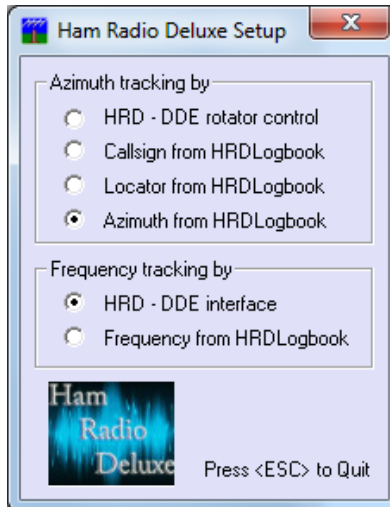
Write a callsign in HamScope, and it will be sent to PstRotatorAz (in the **Call** field). PstRotatorAz will compute the azimuth and turn antenna on that direction.

HamRadioDeluxe

The PstRotatorAz program provides some different possibilities to be interfaced with Ham Radio Deluxe. It can uses the DDE communication between programs (PstRotatorAz will just replace in this case the HRD Rotator), or it can capture and use to rotate the antenna the callsign or the locator from the HRDLogbook.

To choose how the programs will be interfaced, open the window from below ("**Setup >Trackers Setup > HRD Setup...**"))

If you chose to track the Azimuth by Callsign, Locator or Azimuth, you must keep the ALE window opened in HRDLogbook.



In PstRotatorAz, in addition to selecting **HamRadioDeluxe** as the **Tracker**, you also need to select the **Tracking** box in **Mode**.

JT65-HF

There is nothing to be configured in JT65-HF to be interfaced with PstRotatorAz.

In the PstRotatorAz program select **JT65-HF** as Tracker and set mode to "**Tracking**" in the main window. Write a callsign in the JT65-HF ("TX to Call Sign" text box), and the PstRotatorAz will rotate the antenna.

KLog

There is nothing to be configured in KLog to be interfaced with PstRotatorAz.

In the PstRotatorAz program select **KLog** as Tracker and set mode to "**Tracking**" in the main window. Write a callsign in the KLog, and the PstRotatorAz will rotate the antenna.

Logger32

Open both programs PstRotatorAz and Logger32.

In the PstRotatorAz program select **Logger32** as **Tracker**, and set **Tracking** to mode in the main window. Under "**Setup > Trackers Setup**" it can be find "**Logger32 Setup...**". This provides filtering by bands, giving the possibility to manage more than one rotor. Take a look at "PstRotatorAz managing more than one rotator (multiple instances)" chapter. You can select the band (or the bands) in wich PstRotatorAz program will control the antenna.





In the Logger32 program:

- check to enable global capture of **CTL+A** and **ALT+A** keys to turn rotor



- enter a callsign
- use **Ctrl A** to send the azimuth information from Logger32 to PstRotatorAz program

LOGic9

Start the LOGic9 program before to start PstRotatorAz.

In the PstRotatorAz select **Logic9** as tracker and set mode to "**Tracking**" in the main window.

Write a callsign in Logic9 LOG--MAIN window, press TAB, and it will be sent to PstRotatorAz (in the **Call** field). PstRotatorAz will compute the azimuth and turn antenna on that direction.

How to register the logicserver.exe. This is necessary to have PstRotatorAz communicating with LOGic 9.

- Put a copy of logicserver.exe in the LOGic install folder. C:\program files (x86)\LOGic for example.
- Run the DOS command prompt. Type CMD in the Windows search box.
- CD into the LOGIC install folder (C:\program files (x86)\LOGic for instance):
- C:
- CD \program files (x86)\LOGic forexample.

If that doesn't work, try

- C:
- CD \program files\LOGic
- Now, type LOGICSERVER /REGSERVER

N1MM+

The PstRotatorAz program uses the UDP broadcasts of the N1MM+ logger.

PstRotatorAz and N1MM can stay on the same PC or on different PCs in the same local network.

Rotor control

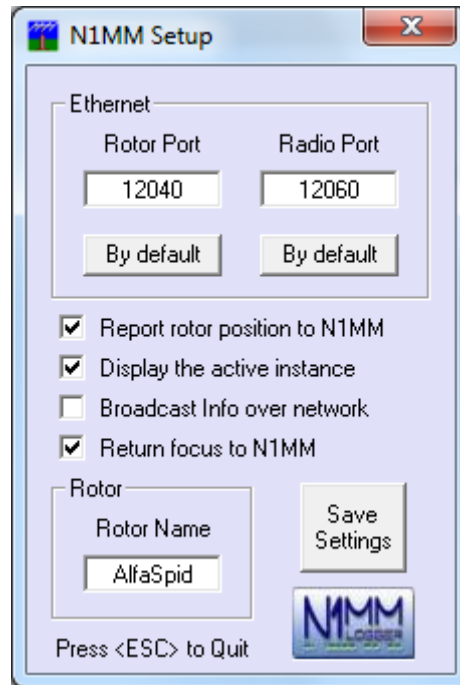
Rotators can be controlled from N1MM logger in several different ways:

- **Entry window:**
 - by entering a beam heading in the callsign field and press Alt+J. The rotor will turn to the entered beam heading
 - Example:**234 Alt+J** will turn the rotor to 234 degrees
 - The number must be numeric, >= 0 and <= 360
 - using the menu items in the Tools menu
 - **Turn Rotor Alt+J** - Turn rotor to bearing for the callsign in the Entry window
 - **Stop Rotor Ctrl+Alt+J** - Stop turning the rotor when turning and no bearing in callsign field in Entry window



- using the short cut keys below:
 - **Alt+J** - Turn rotor to bearing for the callsign in the Entry window or to the callsign in the callframe (when callsign field is empty)
 - **Alt+L** - Turn rotor to long path bearing for the callsign in the Entry window
 - **Ctrl+Alt+J** - Stop turning the rotor when turning and no bearing in callsign field in Entry window
- Bandmap window: by right clicking on a spot and select: 'Turn Rotor'
- Available Mult's and Q's window: by right clicking on a spot and select: 'Turn Rotor'

Rotor Port, Rotor Name

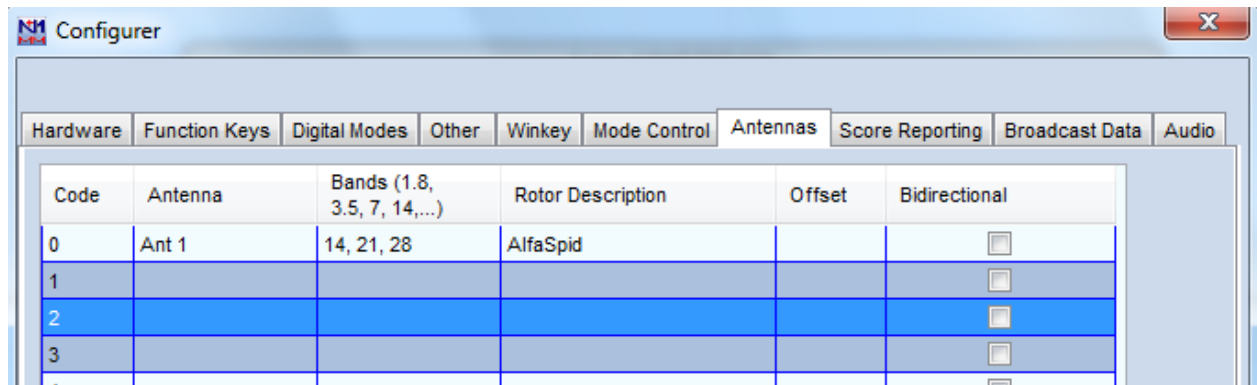


N1MM Setup window in the PstRotatorAz program

In the N1MM program go to “**Config > Configure Ports, Telnet Address, Other > Antennas**”

The Rotor Description in the N1MM Antennas tab can either be a number, or an alphanumeric name for the rotator. If a number or alphanumeric name is entered in the Rotor Port Antenna tab, then the same number or alphanumeric name must be entered in the PstRotatorAz Rotor Setup form.

Setting “**Bands**” and “**Rotor Description**” can be obtained filters for antenna groups. For example, if you have an antenna for 14,21 and 28 and want to turn it only when you work in these bands, use the same Rotor Description / Rotor Name in both programs (N1MM and PstRotatorAz) and 14,21,28 to Bands in N1MM.



N1MM Configurer window
 "Config > Configure Ports, Telnet Address, Other > Antennas"

Multiple rotors control

If you have more than one rotor controllers connected to the same PC you need to run on that PC multiple PstRotatorAz instances (one for every rotor). You can find in this manual how to run multiple PstRotatorAz instances.

But two programs (instances) cannot listen to the same UDP port. To solve this problem, PstRotatorAz broadcast the UDP messages received on **rotor port to rotor port + 1**. So, you must set in PstRotatorAz (Setup > Trackers Setup > N1MM Logger Setup...) the rotor port = 12041 for the second instance, 12042 for the third instance, and so on. Enable "Broadcast Info over Network".

Another solution is to set the N1MM Logger to send the UDP messages to all 12040, 12041, 12042 ports. For this edit the N1MM Logger.ini file like this:

ExternalBroadcast]

BroadcastRotorAddr=127.0.0.1:12040 127.0.0.1:12041 127.0.0.1:12042

"Broadcast Info over Network" must be disabled in this case.

N3FJP's loggers

There is nothing to be configured in AC Log program.

In the PstRotatorAz program select **AC Log** as Tracker and set mode to "**Tracking**" in the main window. Write a callsign in the AC Log and the PstRotatorAz will compute the azimuth and turn antenna.

nGenLog

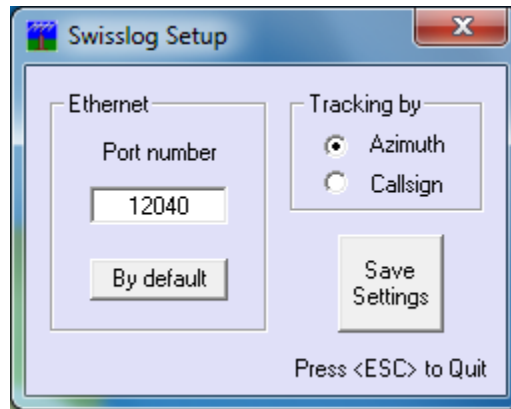
There is nothing to be configured in LOGic8 program.

In the PstRotatorAz program select **nGenLog** as Tracker and set mode to "**Tracking**" in the main window. Write a callsign in the nGenLog - QSO Editor and the PstRotatorAz will compute the azimuth and will turn antenna on that direction.

Swisslog

PstRotatorAz settings:

- Select **Swisslog** as Tracker
- Set mode to "**Tracking**" in the main window
- It is possible to select to track by Azimuth or by Callsign, or to change the default TCP/IP port from Setup -> Trackers Setup -> Swisslog Setup



Swisslog settings:

Go to **Swisslog > Options > Rotor-Interface** and select PstRotator as rotor interface.



TACLog

Upgrade the TACLog program to V2.01. It appears that V1.991 did not include the rotator control feature.

Open the TACLog program, start a contest and press **Alt+A**.

Open the PstRotatorAz program, select **TACLog** as Tracker and set **Tracking** to Mode.

Use **Alt+A** to send the azimuth information from TACLog to PstRotatorAz.

TRX-Manager

In TRX-Manager:

- Select **PstRotatorAz** (or **PstRotatorAz**) to rotor model. (**Parameters > Setup > Rotator 1 > PstRotatorAz**).



- Set **Path** for **PstRotatorAz** (or **PstRotatorAz**).



In PstRotatorAz select **TRX-Manager** as Tracker and set **Tracking** to mode.

VHFCtest4WIN

There is nothing to be configured in VHFCtest4WIN to be interfaced with PstRotatorAz.

In PstRotatorAz select **VHFCtest4WIN** as Tracker and set mode to "**Tracking**" in the main window.

PstRotatorAz captures the information from the locator box of the VHFCtest4WIN, and if a valid value is found, PstRotatorAz calculates the antenna azimuth and rotates it automatically.

VHFLog

There is nothing to be configured in VHFLog to be interfaced with PstRotatorAz.

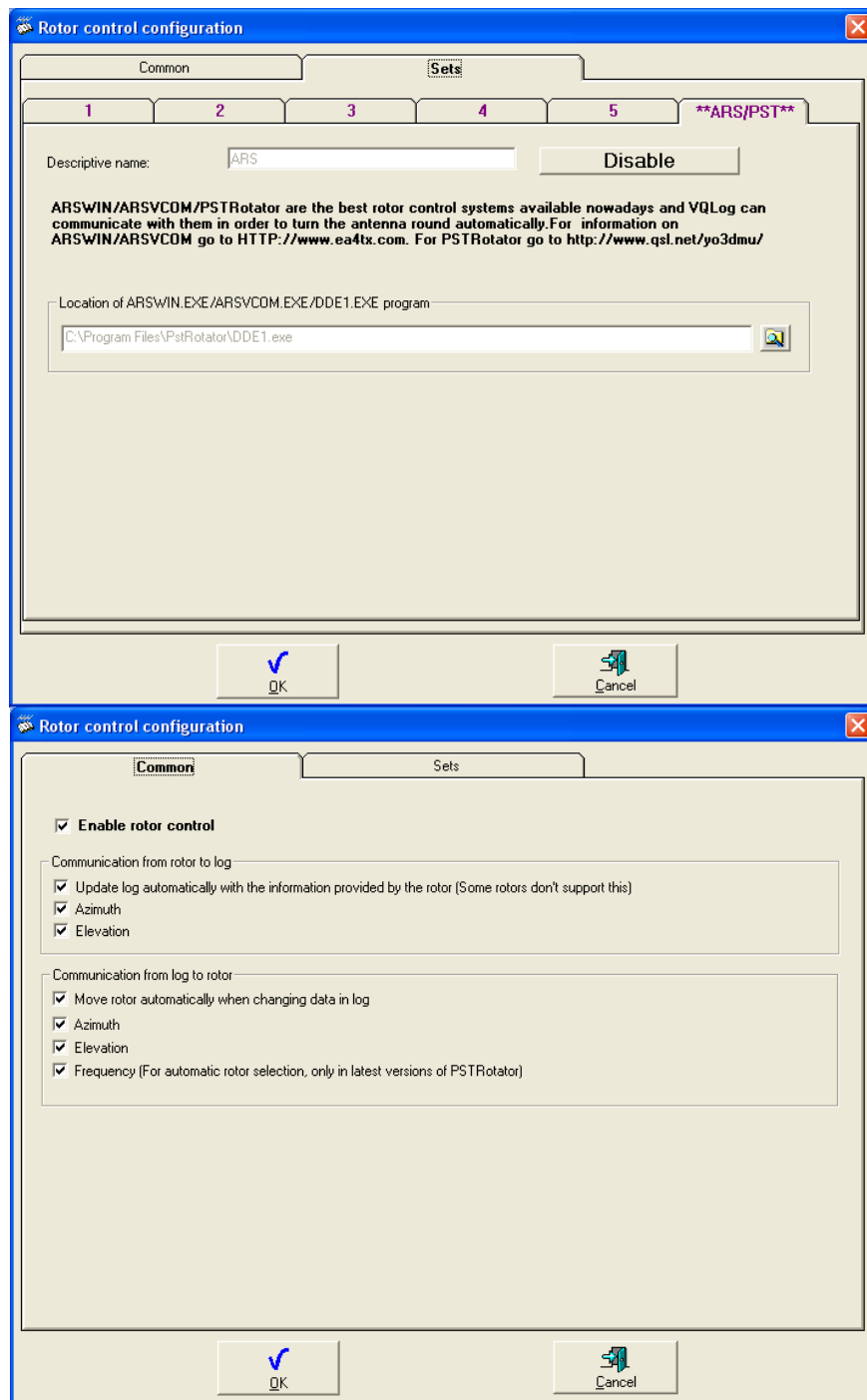
In PstRotatorAz select **VHFLog** as Tracker and set mode to "**Tracking**" in the main window.

PstRotatorAz captures the information from the locator box of the VHFLog, and if a valid value is found, PstRotatorAz calculates the antenna azimuth and rotates it automatically.

VQLog

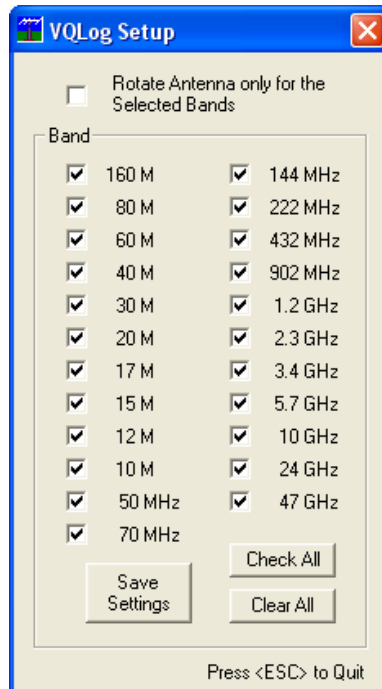
VQLog settings:

- in **Configuration > Rotor Control > Sets** set the location of the **DDE1.exe** file from the PstRotator folder, and press the **Enable** button
- Check all the checkboxes in the **Common** window



PstRotator settings:

- **Select VQLog** as Tracker, and **Tracking** to Mode.
- If you don't need to rotate antenna for all the bands, or you use many PstRotator instances to control more than one antenna rotator, check **Rotate Antenna only for the Selected Bands** checkbox and select the bands where your antenna works.



Win-Test

Type a prefix in Win-Test, press **CTRL+F12** (or **ALT+F12**), and the PstRotatorAz will turn the antenna. You don't need to have wtRotators on your PC. Win-Test sends broadcast the azimuth information via UDP and the PstRotatorAz will receive it.

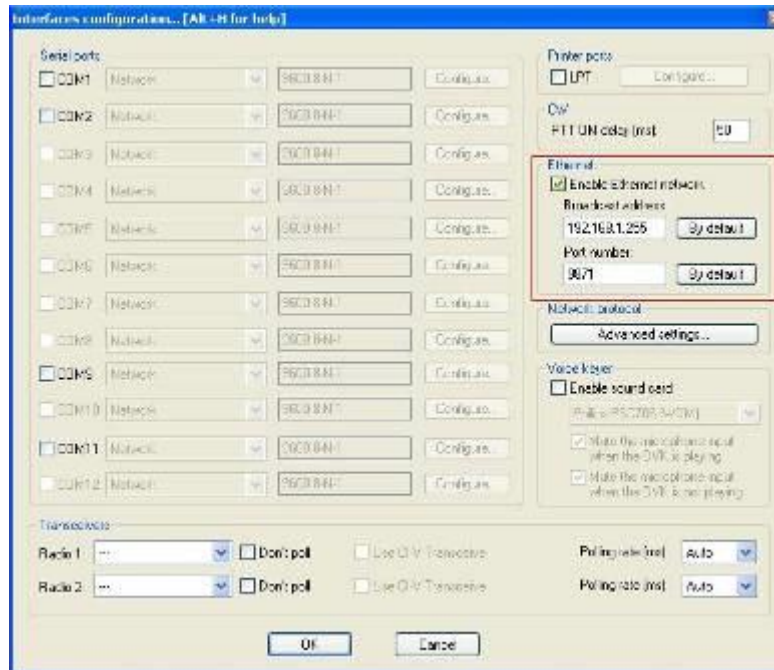
So, you can have the PstRotatorAz on the same PC with Win-Test or on another PC on network.

Or you can have WinTest on a PC and many other PCs with PstRotatorAz installed and every PstRotatorAz will control an antenna (all antennas will be on the same direction).

Win-Test and PstRotatorAz configuration:

In Win-Test go to "**Options>Configure interfaces**", pres "**By default**" buttons for both "**Broadcast address**" and "**Port number**", and check "**Enable Ethernet network**". And press the "**OK**" button.

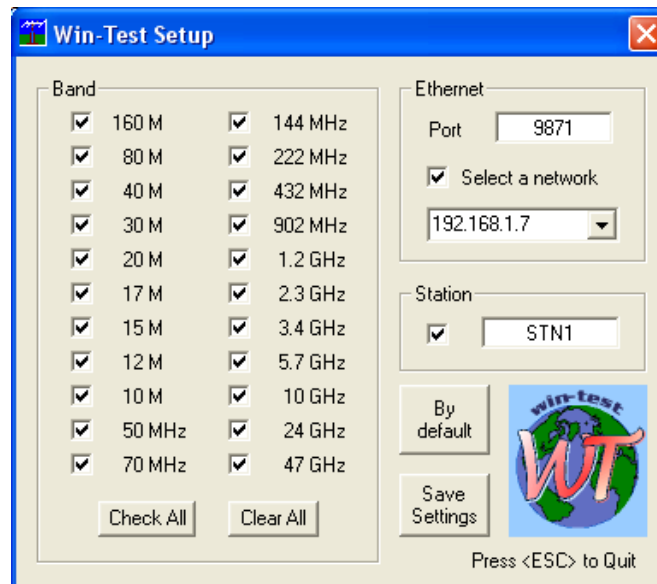
In "**Advanced settings**" press the "**All**" buttons for **Inbound** and **Outbound** protocols.



To send azimuth information from Win-Test to PstRotatorAz, press **Alt+F12** for Long Path, or **Ctrl+F12** for Short Path.

In PstRotatorAz, you must to select **Win-Test** as Tracker and set **“Tracking”** to mode.

PstRotatorAz allows to set the UDP communication port (default value is 9871) and to select the bands as a filter for the position information received from the Win-Test program.



Set the station name "STN1" or "STN2" etc in the **“Station”** field. This is useful when you are in a multi station contest environment and other win-test stations send UDP packets over the network with frequency or azimuth information.

To communicate both programs must to have the same Station name. So don't forget to set this!

WinREF-HF

There is nothing to be configured in WinREF-HF to be interfaced with PstRotatorAz.



In the PstRotatorAz program select **WinREF-HF** as Tracker and set mode to "**Tracking**" in the main window.

Write a callsign in the WinREF-HF, and the PstRotatorAz will rotate the antenna.

WinREF-THF

There is nothing to be configured in WinREF-HF to be interfaced with PstRotatorAz.

In PstRotatorAz select **WinREF-THF** as Tracker and set mode to "**Tracking**" in the main window.

PstRotatorAz captures the information from the locator box of the WinREF-HF, and if a valid value is found, PstRotatorAz calculates the antenna azimuth and rotates it automatically.

Wlog2000

There is nothing to be configured in Wlog2000.

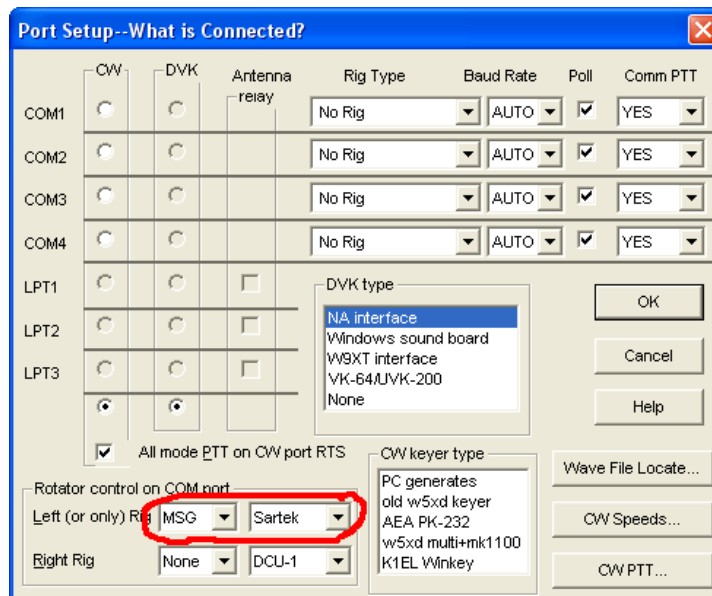
In the PstRotator / PstRotatorAz programs select **Wlog2000** as Tracker and set mode to "**Tracking**" in the main window.

Write a callsign in the Wlog2000 and the PstRotatorAz will compute the azimuth based on the cty.dat file, and will turn antenna on the right direction.

WriteLog

In WriteLog go to **Port Setup** and set **Rotator Control** to **MSG** and **Sartek**

In PstRotatorAz select **WriteLog** as Tracker and set mode to "**Tracking**" in the main window.



Start PstRotatorAz before to start WriteLog. To turn antenna go to **Radio > Antena to ... Azimuth**

WSJT-X

There is nothing to be configured in WSJT-X.

In PstRotatorAz, Setup > Trackers Setup > WSJT-X Setup... you must set the path of the folder which contains the "wsjtx_status.txt" file.

Starting with the WSJT-X v1.4 version, the "wsjtx_status.txt" file is no more placed in the WSJT-X folder.

You can find it in a Temp folder, and only when the WSJT-X program is running. The path could be: C:\Users\\AppData\Local\Temp\WSJT-X. If you have problem to find and set the correct path to this file, the easiest way is:

- open PstRotatorAz
- go to Setup -> Trackers Setup -> WSJT-X Setup...
- delete any path from there and press the Save Settings button.
- close PstRotatorAz
- restart PstRotatorAz

Doing all these the program will try to automatically set the correct path to that file.



Radio-Eyes

There is nothing to be configured in Radio-Eyes 1 to be interfaced with PstRotatorAz. In PstRotatorAz select **Radio-Eyes 1** as Tracker and set mode to "**Tracking**" in the main window. PST just follows whatever is in the desired ALT-AZ text boxes on the main RE window.

Sidereal

The antenna stays pointed on a celestial target that has been manually pointed on, so that the rotation of the earth is eliminated. The functionality could be like described below:

- You point the antenna manually to the desired celestial target, getting the Azimuth and Elevation from a suitable planetarium program.
- You select "**Sidereal**" in the **Tracker** list of PstRotatorAz and press the **Tracking** button in the **Mode** field of the PstRotatorAz window.
- The program now converts the AZ / EL coordinates to RA / DEC coordinates, using the observer's position and the actual time and stores these values internally.
- Each 1 sec. the program takes the stored initial RA / DEC coordinates and converts them back to AZ / EL, using the new actual time. The new AZ / EL values are used to command the antenna rotor controller to correct the antenna position if needed.

The antenna will stay pointed at a constant RA / DEC coordinate, and will track any stationary astronomical object perfectly. Slow moving objects like planets will in practice also be tracked for a very long period before the error exceeds one degree.

All this without any external tracking programs!

QRZ.com Callsign database

Write a callsign in the **Call** text box and press the **QRZ** button in order to search online the QRZ.com callsign database.

When the callsign is found (the color of the callsign in **Call** text box changes from red to green), the program will receive the coordinates (latitude and longitude), and antenna is turned on that direction. A second click will save the callsign and QTH locator information into the **call3.txt** file.

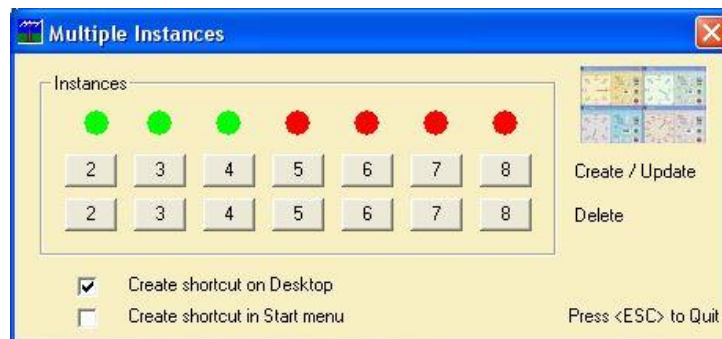
PstRotatorAz managing more than one rotator (multiple instances)

Question:

The station setup is with 4 rotators (each one handling multiple beams/bands), and 3 work positions. Ideally, there will be a dedicated server connected to rotator controllers via RS-232, managing rotators. How can I manage multiple instances of on one computer? Or how can I manage more than one rotator?

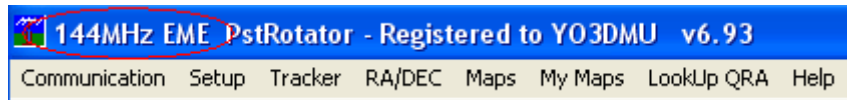
Answer:

To create multiple instances just go to **Help > Create Multiple Instances**. From there you can create/delete another 7 instances.





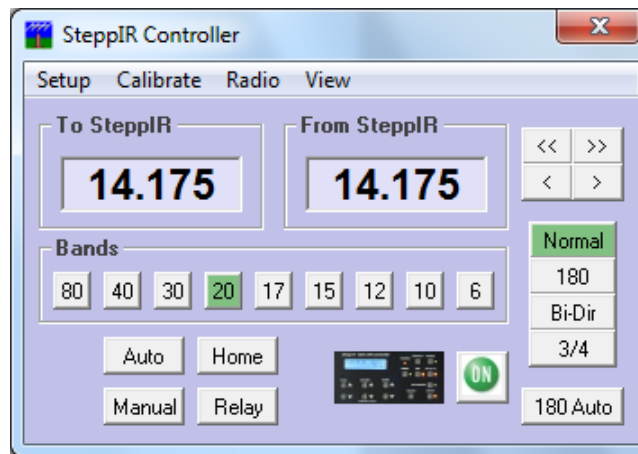
You can use **Setup > Label...** to put different labels to instances.



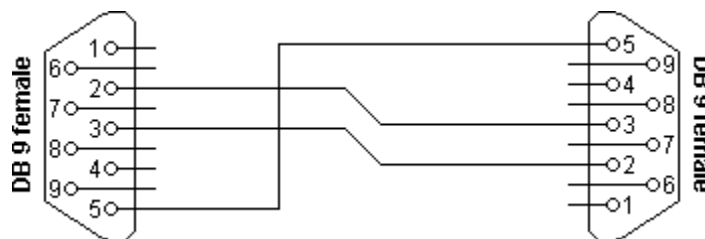
SP/LP and BD buttons

- SP/ LP goes to the short and long-path headings respectively.
- BD-90 goes to a 90deg offset from the heading specified - intended for a bidirectional dipole mounted parallel with the booms of yagis on the same mast.
- BD-0 is intended for the SteppIR antennas.

SteppIR Controller

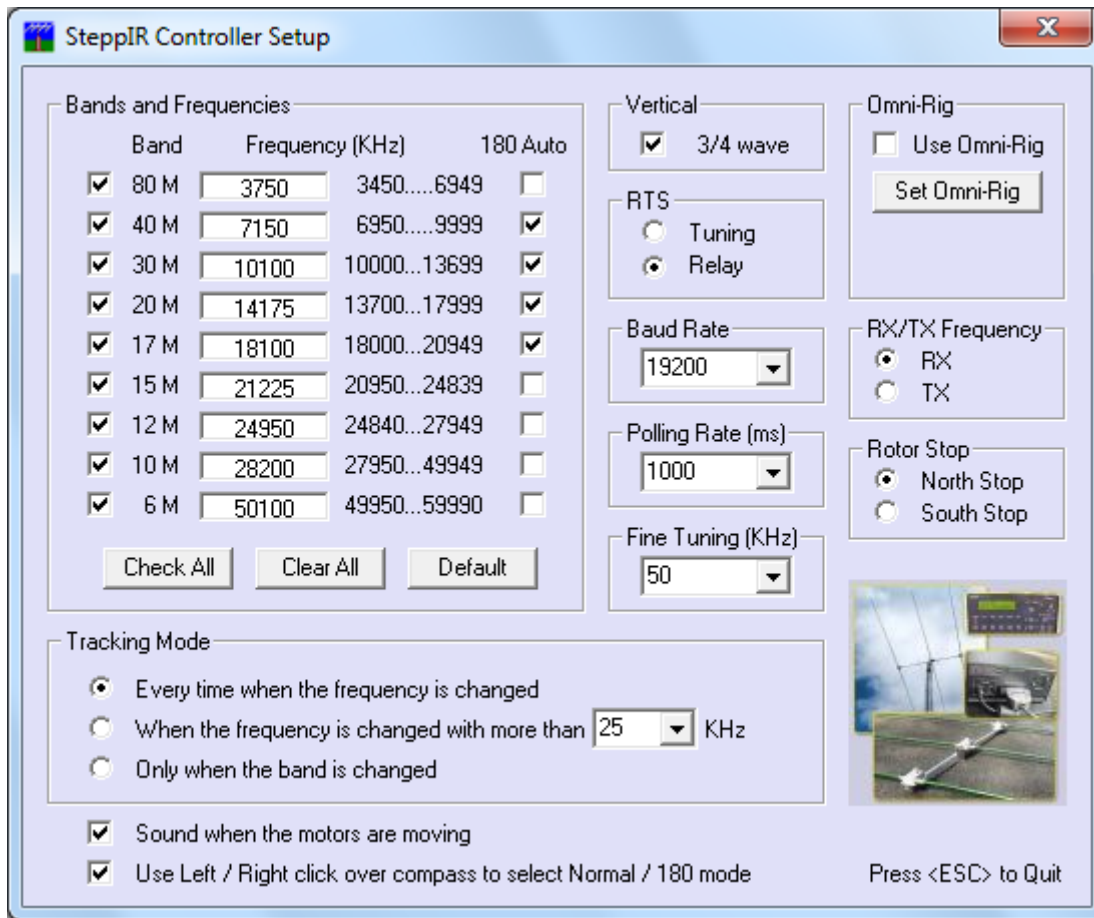


Use a **3-wire ONLY female-to-female null modem serial cable** between computer and the SteppIR controller. The connection is made between the DataOut port on the SteppIR controller and the chosen serial port on the computer. **Don't use a cable with more than 3 wires!!!**



Settings

- Set the serial port: **Communication > SteppIR COM Port.**
- Select **Setup > SteppIR Controller.** A "SteppIR Controller" window will be opened. From there you have all the control over the SteppIR controller.
- In the SteppIR Controller window go to **Setup** and set the **Baud Rate** to be the same as to the SteppIR controller (in the 4800-19200 range), and the **Pooling Rate** (default is 1000 ms).



The SteppIR controller must not be in Amateur mode!

Manual Mode

This mode provides for manual selection of frequency using the **Bands** buttons and <<, <, >, >> buttons.

- << / >> decrease / increase the frequency with 100 kHz
- < / > decrease / increase the frequency with 50 kHz

Tracking Mode

PstRotatorAz receives the frequency information from Omni-Rig, or some of the loggers, and uses this information to control the the SteppIR SDA controller.

Radio > Logger > PstRotatorAz > SteppIR controller

From **Tracking Radio** you can select to track the **Radio1....Radio4**.

SteppIR control is available for the programs from below when these are selected as Tracker:

- **Win-Test**
- **N1MM**
- **Logger32**
- **CommCat**
- **Ham Radio Deluxe**
- **UR5EQF**
- **MixW**



- DXLab
- Log4OM
- PowerSDR
- Winlog32
- Fldigi
- DX4WIN
- WSJT-X

➤ **N1MM settings:**

Select N1MM as Tracker in PstRotatorAz, and Tracking as Mode. The SDA SteppIR controller will automatically track the frequency provided by N1MM contest logger.

Add "IsBroadcastRadio=True" in the N1MMlogger.ini file, and N1MM will broadcast UDP messages (port 12060) containing the frequency information.

```
[ExternalBroadcast]
DestinationIPs=127.0.0.1 192.168.1.255
IsBroadcastRadio=True
```

➤ **DXLab settings:**

Select DXLab as Tracker in PstRotatorAz and Tracking as Mode. The SDA SteppIR controller will automatically track the frequency provided by Commander.

Both the DXView and Commander programs must be opened.

PstRotatorAz works with Commander for up to 4 radios to run the Steppir controller.

➤ **DX4WIN settings:**

Select DX4WIN as Tracker in PstRotatorAz and Tracking as Mode.

Connect a serial cable between two COM ports (let say COM1 and COM2).

Set in PstRotator Communication > AUX COM Port = COM1

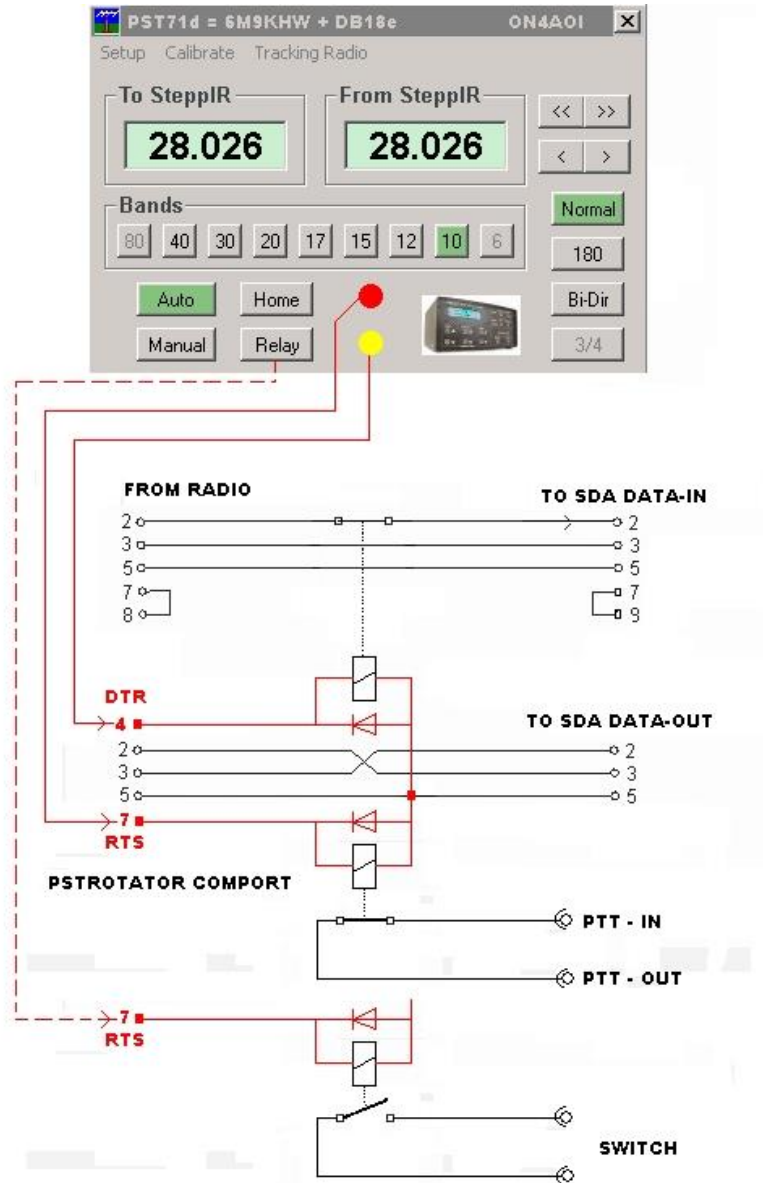
Set in DX4WIN, File > Preferences > Control > SteppIR:

- Port = COM2
- Baudrate = 4800
- Take Output From = Enabled

With these settings the PstRotatorAz will receive the frequency information from DX4WIN, and will use this info to control a SteppIR antenna.

Using DTR and RTS

For PTT disabling when the antenna is tuning, the PstRotatorAz program set the RTS signal to high. This signal can be used to disable PTT with a relay, transistor or optocoupler.



WARNING !!!!! Only use these new futures with home made cable !!!!!
@ PC comport pin 2-3-4-5-7 and @ SDA-OUT comport pin 2-3-5

Depending on serial ports the REED relays need to be 5V/500 Ohm or 12V/1000 Ohm, 12v type = VR05R121C and 5V type = VR05R051C

When "OMNIRIG" is selected in the setup page the external relay connected to the "DTR" pin will get High and disables communication between Radio and SteppIR when PstRotatorAz is running.

For "RTS" there are 2 options now in the setup page, activated when the SteppIR is tuning or a switch that can be used for something else.

RTS = Tuning
 RTS gets HIGH when the RED DOT is ON screen (Antenna is tuning), the relay opens the PTT line between RADIO and AMPLIFIER.

OR

RTS = Relay
 RTS gets High when the "Relay" button is pushed on the screen

73 Guy ON4AOI-OT7K



Remote Control

PstRotatorAz also provides support for remote over IP operation.

- You have to install the same PstRotatorAz in both remote and base station locations.
- Set Communication/TCP Client to the base station.
- Configure the IP address for Client, and the Ports for both Server and Client.

When you work from home set in the Remote site the Pooling Rate to 0 and for the home site Pooling Rate to 1000.

When you work remote from home, you don't need programs from both sides to send status requests to controller. Only from home, is better because keeps the timing between commands and status requests.

In the remote site could be not only a PC running PstRotatorAz as server, but also a serial server (Ethernet to RS232 converter).

ERC-M (dual azimuth controller)

PstRotatorAz supports the ERC-M dual azimuth controller <http://easy-rotor-control.com/> .

DUAL-AZ is a new protocol based on Yaesus GS232-protocol that includes the possibility to control 2 different azimuth-rotators through 1 interface. The protocol was introduced by VE2DX in June 2011.

- Run two PstRotatorAz instances. Those could be on the same PC, or on different PCs in a network. The communication between instances is UDP.
You can find in this User Manual how to put two instances on the same PC.
- Select ERC-M (Rotor1) and set the COM port where is connected the ERC-M controller.
- Select ERC-M (Rotor2) to the second PstRotatorAz instance.

Using N1MM Logger and PstRotatorAz with the ERC-M to Control Two Azimuth Rotators

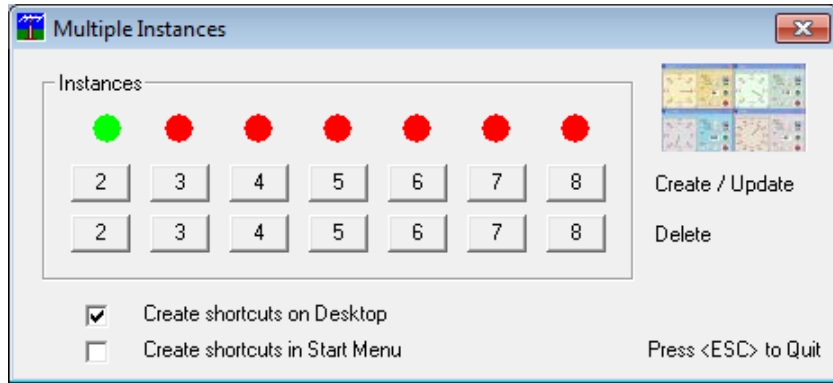
N1MM Logger can control up to 15 rotators on the basis of one rotator per serial port, but is not designed to control two through a single port, which is how the ERC-M works. However, there *is* a workaround. You will need the PstRotatorAz program.

Download the installer and install the PstRotatorAz program. Now start the program, and enter your registration data.

This is where you start. Click **Communication**, then click **Azimuth COM Port** and select the port that is connected to your ERC-M. Now click **Setup**, then **Controller** (the first item on the menu). Scroll way down, off the first page, until you come to **ERC-M Rotor 1**. Select it. Now click on **Tracker**, and select **N1MM**. Go back to **Setup**, select **Trackers Setup**, and then **N1MM Setup**. The pop-up dialog's default settings are correct, so the only thing you need to do is to enter the number or name of the rotator to be controlled. Now click on **Save Settings**.

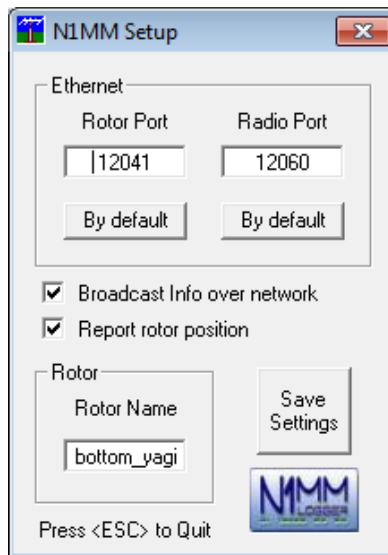
Now click Setup > Label, and enter a distinctive name for the rotator this instance will control. That will help you keep track of which is which by appearing in the title bar.

You're almost done with the first instance. The last step is to click on Help, then Multiple Instances... That pops up this dialog. Click on "2" in the first row, and then press ESC to quit.



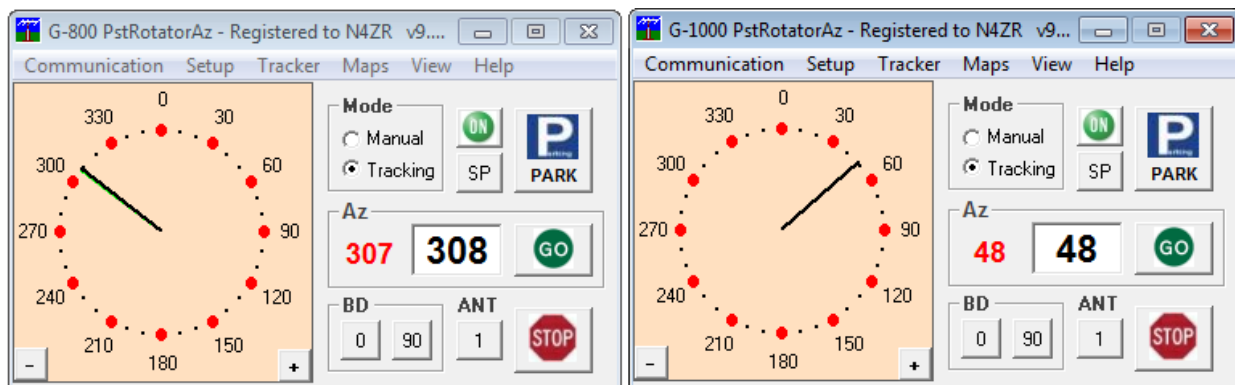
If you want, before going any further, you can click on View and select one of the Compact choices to save some screen real estate.

Now start the second instance. Don't select a COM port for this second instance. After that, all the configuration settings are the same until you reach the N1MM Settings dialog.



Change the rotor port to 12041. Type the number or name of the second rotator (again exactly matching that used on N1MM's Antenna tab) into the shown textbox and click on Save Settings.

At this point, you should have two fairly compact PSTR dialogs on the screen:

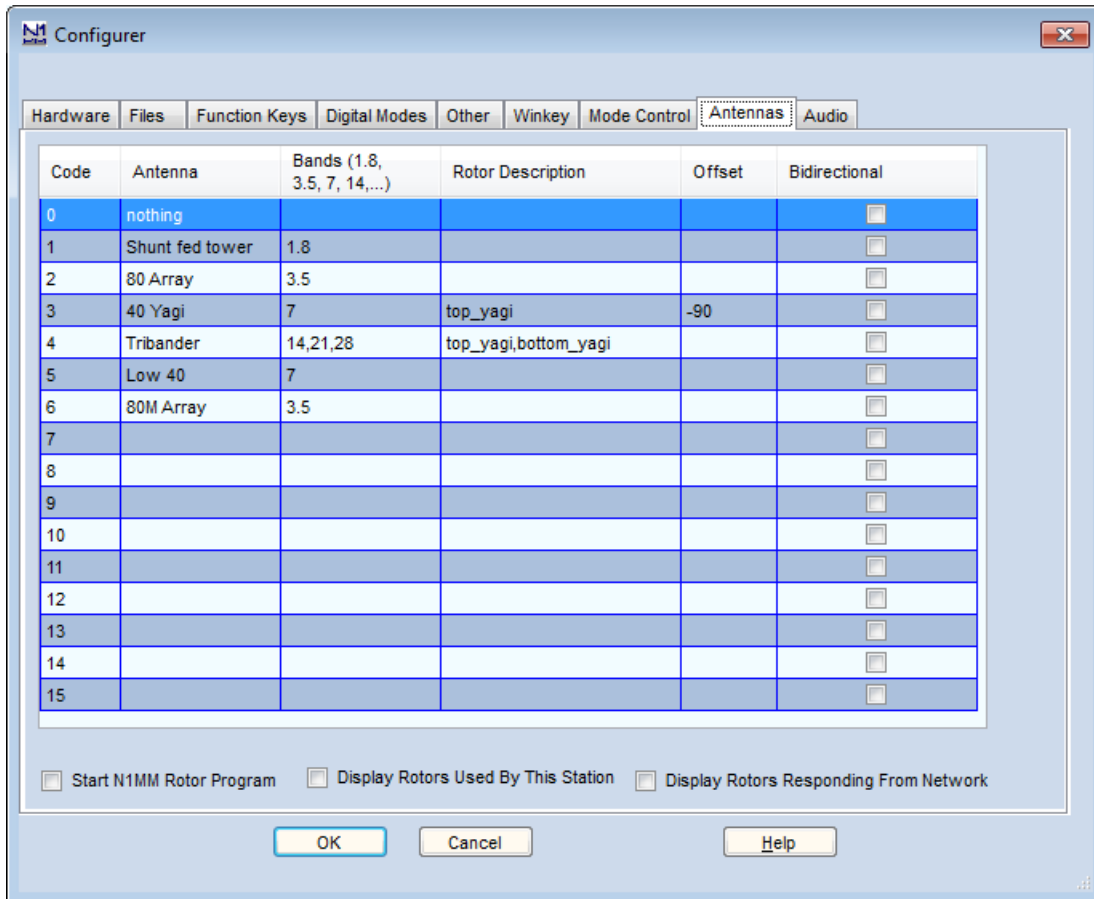




Now you can verify that your two PSTRs are working, and that they each control the proper rotor. Just click anywhere in the light orange area and the antenna should move there. Note the labels that distinguish them.

Just one more thing to do here: Click Tracking under Mode on each of the two instances, to tell PstRotatorAz to follow N1MM Logger's instructions

Now, go on to N1MM Logger+. Open Config > Ports..., Other, and click on the Antennas tab.



In order for your rotators to follow N1MM commands, you need to do only three things:

- Tell N1MM Logger+ what band you are on, either by connecting to a radio or by using manual means such as entering a frequency in the call-sign textbox of the entry window.
- On this tab, fill in exactly the same names for your rotators as you used in the PstRotatorAz setup. Note that on 20, 15 and 10 meters two rotators are named, separated by a comma. This is to simulate a stack using two rotators.
- Fill in any offset between antennas on the same rotator. 40M yagi, for example, is offset 90 degrees clockwise from his top tribander. Clockwise offset is denoted by the “-“ sign; for counterclockwise, just use the positive value.

Now close the Configurer, and go back to the N1MM Entry window. Enter a callsign in the callsign field or click on a call from Telnet in the Available Mults and Qs window. You'll see a bearing and distance appear in the Entry window. Press Alt+J, and the rotator for the current band should turn to that bearing. Press Ctrl+Alt+J to stop rotation.



There are a variety of other ways to control a rotator or rotators from inside N1Mm Logger+, but let's leave that to the N1MM User Manual.

FT/FTDX + Yaesu DXA rotators

PstRotatorAz supports the FT/FTDX rotator controllers directly without the need of external hardware or electronics.

- Connect the FT-950/FT-2000/FTDX-5000/FTDX-9000 *ROT* port with the port on the G-1000DXC rotator (800, 1000 and 2800 models supported). This is a straight 6-wire cable with 6-pins mini din plugs on both sides.
- In the menu on the radio set the Baud-rate to 38400 and disable RTS (RTS OFF)
- Since the PstRotatorAz software will talk with the radio via the RS232 cat interface you have to understand that the com port is occupied and no longer free for logging software. But there are some software programs that let you share a com port with more than one application. Install *VSPE* <http://www.eterlogic.com/downloads/SetupVSPE.zip> (virtual serial port emulator by *Eterlogic*).
- After installing the port emulator, add a device called "splitter" and share the com port (the real device that points to the radio). Let say that the shared com port is com 1 and the virtual shared port was labeled com 7. You need to adjust the baud rate to 38400.
- Set com port 7 in both PstRotatorAz and logger programs.

AlfaSpid USB Controller

The new AlfaSpid Controllers "Rot1Prog_USB" and "Rot2Prog_USB" operate the same as the older Rot1Prog and Rot2Prog controllers with the exception of the serial connection.

In the new USB Versions, the RS232 connection and the internal interface chip have been replaced with a USB "A" Connector and a FTDI FT232RL interface chip. If the computer being used to control the AlfaSpid Controller has already been used with another device that uses the FTDI chip, then it will already have the appropriate drivers loaded. If not, the drivers will need to be loaded the first time the controller USB port is connected to the Computer.

Some Operating systems have FTDI drivers that will automatically load. If your system does not, then go to the FTDI site listed below:

<http://www.ftdichip.com/Support/Documents/InstallGuides.htm>

Follow the installation manual for your computer and operating system. Then go to the following site and download the current driver for your operating system:

<http://www.ftdichip.com/Drivers/VCP.htm>

Follow the instructions and install the proper driver. When complete, go to the Device Manager, expand the "Ports (COM & LPT)", determine which COM port has been assigned to the USB interface, then set-up your controller software with that COM port.

Experimentation done at Alfa Radio Ltd. has determined that no other set-up is required. Ensure that the AlfaSpid Controller is in the "A" mode, run the PC program and enjoy.

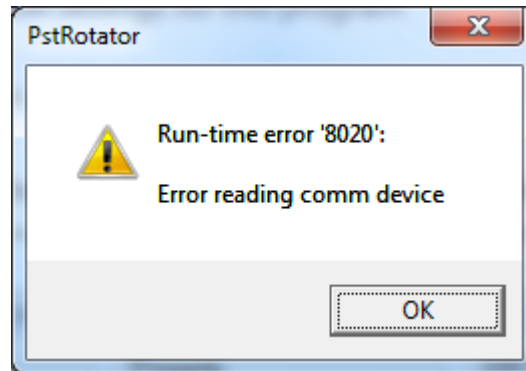


Note 1: The PstRotatorAz program requires a COM port in the COM1-COM32 range. If the COM port which has been assigned to the USB interface is out of this range, you must change its number to be in the 1-32 range from the Device Manager.

Note 2: The baudrate is fixed in PstRotatorAz to 1200 bauds for the Rot1Prog (RAK) controller, and 600 bauds for the Rot2Prog (RAS) controller.

Run-time error '8020'

If when you run the PstRotator software get the following error message:



Uninstall the old drivers and install the latest drivers for your USB to RS232 adapter.

If your addapter uses an FTDI chip, you can download the last driver version from:

<http://www.ftdichip.com/Drivers/VCP.htm>

For an adapter which uses a Prolific chip, the driver can be downloaded from:

http://www.prolific.com.tw/US/ShowProduct.aspx?p_id=225&pcid=41

SUPPORT

Your questions regarding the PstRotatorAz software will be answered fast by codrut.buda@rdslink.ro .



You can also use the support-forum at <http://groups.yahoo.com/group/PstRotatorAz> to answer questions or to exchange with other users.



A second forum can be found at <https://groups.io/g/PstRotator>

Become a member of these groups and you will automatically be informed about improvements and news regarding PstRotatorAz program.

The PstRotatorAz web page is http://www.gsl.net/yo3dmu/index_Page346.htm .