

## Appendix-Command List

As it was explained at the “ARS-USB\_EN.PDF” manual, the ARS-USB adds a COM port to the computer every time it’s plugged. Via this COM Port the communication with the board it’s possible. You can use a HyperTerminal (or any similar program) for communicate with the interface and send/get commands.

### ARS-USB COMMAND LIST

<b>CMD</b>	<b>Meaning</b>
C	Return Azimuth Angle
C2	Return Azimuth and Elevation Angle
CB	Return Azimuth and Elevation ADC Values (0-1023)
CE	Return Azimuth plus Overlap Flag (+xYYY where x:overlap Flag YYY:Az. position)
R	Activate <b>RIGHT</b> Relay (Clockwise rotation)
L	Activate <b>LEFT</b> Relay (Counter Clockwise rotation)
U	Activate <b>UP</b> Relay (Up Direction rotation)
D	Activate <b>DOWN</b> Relay (Down Direction rotation)
S	Stop all rotation (Azimuth & Elevation relays)
A	Stop Azimuth rotation
E	Stop Elevation rotation
Mxxx	Antenna Direction Setting (xxx = Azimuth angle). Example: M025
Nyyy	Antenna Direction Setting (yyy = Elevation angle). Example: N025
Wxxx yyy	Antenna Direction Setting (xxx = Azim. Angle; yyy = Elev. Angle). Example: W350 163
X	Trace ON/OFF. Enable/Disable trace messages
FW	Write or Save calibration parameters to EEPROM
FR	Read parameters from EEPROM
FS	Show calibration parameters
FBxx	Set the Brake delay to xx (1/10 seconds) Example: FB12 (Delay to 1.2 seconds)
FAS	Set azimuth START Limit
FAE	Set azimuth END Limit
FAOxxx	Azimuth OFFSET Setting (xxx = Azimuth Offset). Example: FAO000
FAAxxx	Azimuth ROTATION ANGLE Setting (xxx = Rotation Setting). Example: FAA450
FARxxx	Azimuth RESOLUTION Setting (xxx = Resolution Setting). Example: FAR005
FATxxx	Azimuth RETRAY Setting (xxx = Retray Setting). Example: FAT010
FES	Set elevation START Limit
FEE	Set elevation END Limit
FEOyyy	Elevation OFFSET Setting (yyy = Elevation Offset). Example: FEO000
FEAyyy	Elevation ROTATION ANGLE Setting (yyy = Rotation Setting). Example: FEA180
FERyyy	Elevation RESOLUTION Setting (yyy = Resolution Setting). Example: FER010
FETyyy	Elevation RETRAY Setting (yyy = Retray Setting). Example: FET005

- **Control and Requesting** Commands
- **Appointment** Commands
- **Calibration** Commands

## Example: Azimuth calibration

- Power off the ARS-USB Unit.
- Power On in in ABSOLUTE MODE (see manual ARS-USB\_EN.pdf chapter 3.3B). You enter into this special mode, pressing F2 button and power On the ARS-USB unit
- Now turn manually the rotator to the CW (clockwise) or Right limit (or the position you will to be used as the right limit)
- Run Hyperterminal (or a similar program) and select the COM port assigned to the interface..
- Send the command: **CB<Enter>** So you get the ADC Value of the rotator
- This command gets the ADC value (0-1022) for Azimuth and Elevation.  
Example: +ADC-B: 1012 980 (where Azimuth ADC = 1012 and Elevation ADC = 980) Note: An Azimuth model, will return 0 as the Elevation ADC value.
- If the Azimuth value is < 1000, adjust POT1 trimmer (Azimuth Gain) in CW direction till you get that ADC value as close as possible to 1020-1021. Repeat the CB command as many times as you need for adjust POT1.
- If the Azimuth value is > 1021, adjust POT1 trimmer in CCW direction till you get the ADC value as close as possible to 1020-1021.
- Once you have done the adjustment for this CW limit, you must indicate this position value, so send the command: **FAE** In this way, the ARS-USB will know this ADC value for the CW limit.
- Now you must do the same for the other limit. So turn manually the antenna to the CCW or Left limit.
- When the rotator is at this limit, send the command: **FAS**. In this way, the interface will know that this ADC value is the CCW/Left limit.
- Now you should indicate which the left limit is. If your rotator turns from 0-360 (most Yaesu rotors work so) this left limit is 0. HAMIV or T2X use to work from 180-180 (360° rotation from south to south). In this case, the CCW/Left limit is 180.
- Example: **FAO000** (left limit = 0°) or **FAO180** (left limit = 180°)
- Finally, you must supply the total rotation angle. Most rotors use 360°, some rotors as Yaesu can turn 450°.
- Example: **FAA360** (rotation = 360°) or **FAA450** (rotation = 450°).

### Note

All those parameters are stored in RAM, so if the ARS-USB is power off, all changed will be lost. You must save any modified parameter with the command: **FW**

The **RESOLUTION** parameter is used for indicate which is the range valid for an appointing. If this parameter is as low as 0 or 1, it will provide a fine appointing, however the interface will overload the motor. So for middle-high load antenna systems, a reasonable value could be 5. For small load antenna systems, you could use 1-2. Only when you need a very high precision on the appointing (i.e. EME), you should select = 0.

The **RETRY** is the maximum number of direction changes that the ARS-USB can use during an appointing phase. When you set this value to **X**, the ARS-USE can use as maximum **X** changes of direction. A high value (>3) will overload the motor too much.