Antenna Rotator System
USB

ARS-USB PST Controller
Calibration guide

March/2014 **Rev 1.1b**

Introduction

This guide will assist you to calibrate the ARS-USB control unit connected to a Prosistel or any rotator that uses a multi-turn potentiometer.

You must know the 2 voltages you are going to use as end limits (CCW/Left and CW/Right). In case you don't know them, you must turn the rotor to those end limits and annotate the feedback voltage for each point. The measurement will be done at the J4 Input: J4-5 is V+ and J4-4 or J4-3 is Ground.

Normally a Prosistel calibrated for a 360º rotation, will use 2.8V (CCW Limit) and 3,3V (CW Limit) but it can change from one to other unit.

The ARS-USB will supply 5Vdc to the Potentiometer so in case the rotor uses a 10 turn Pot (i.e. all Prosistel rotors) each 360º (1 turn) the feedback voltage will be:

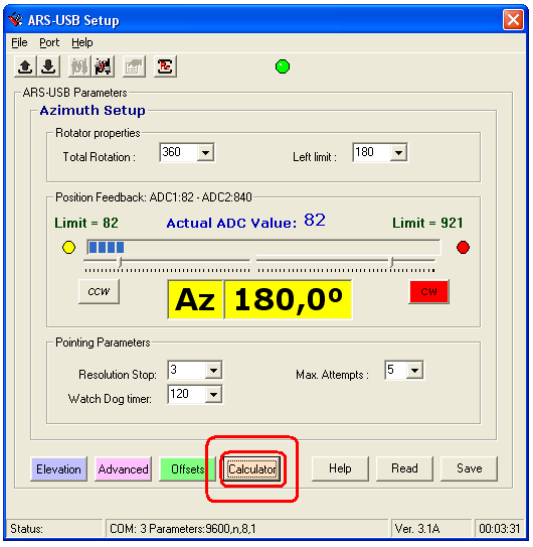
360º = 5V / 10 turns = 0.5V

So it's simple to determinate the voltage at any position, if you know the voltage feedback at a point. For instance if you want to use 2.8V as CCW/Left Limit, after 1 turn or 360º the feedback voltage will be 2.8V + 0.5V = 3.3V

Step 1

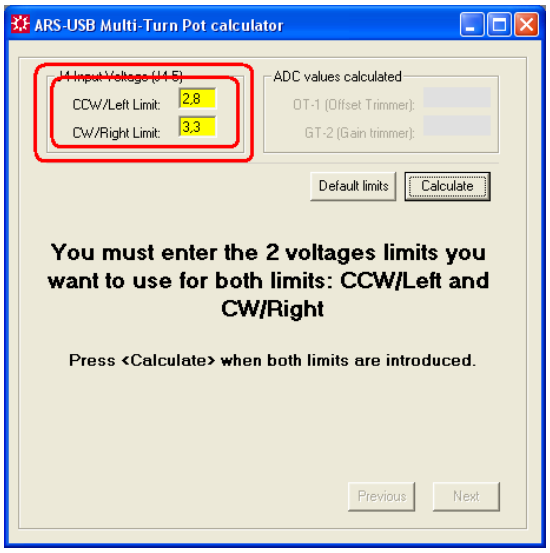
Open the top cover of the ARS-USB and Power On.

Run **ARSConf** program and go to the **Calculator** option:



ARSConf program

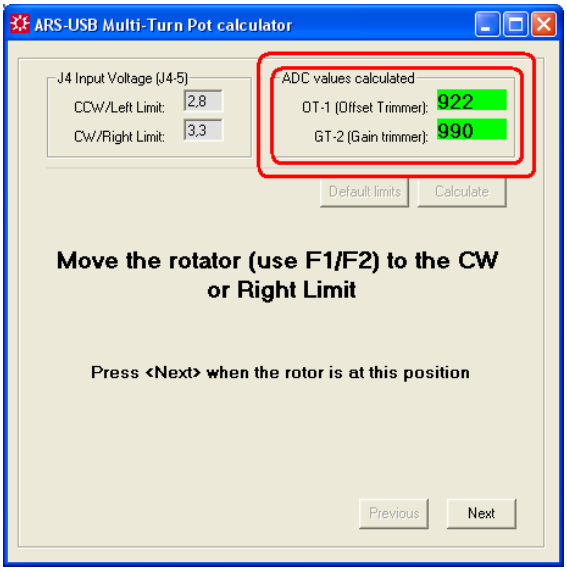
Then enter those 2 Voltage values for both limits and press **Calculate** button.



In this case, 2.8 and 3.3V have been used

Step 2

The program will calculate 2 parameters that will be used later for the hardware adjustement (POT1 and POT2). The parameters are **OT-1** and **GT-2**.



OT1 is 922 and GT-2 is 990

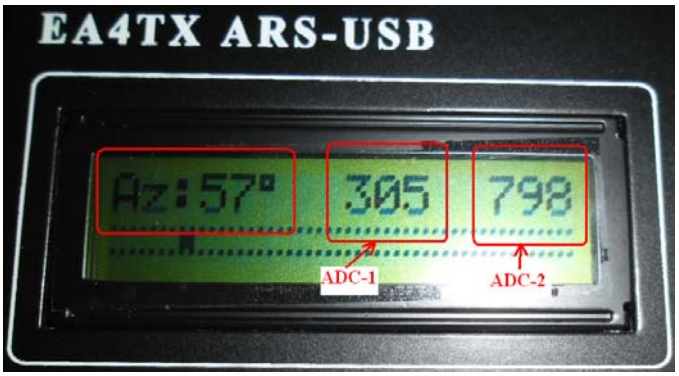
Step 3

Turn the rotator by means of the **F1** (CCW) or **F2** (CW) and stop the rotor at the point you want to be used as a Stop **Right Limit** or CW Limit (usually 360º). This is the CW Limit you want to be used. In this example, the CW limit was at 3.3V

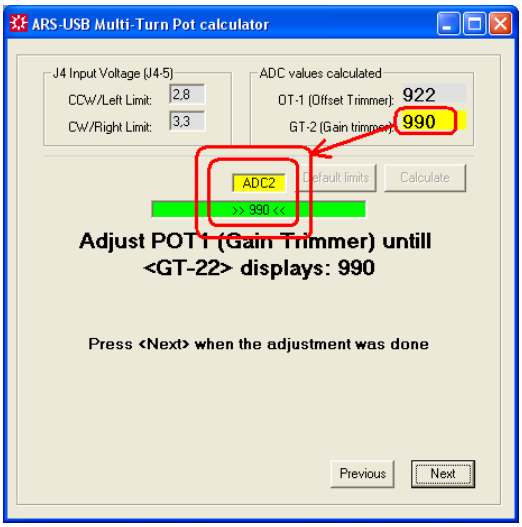
Step 4

With the rotor at this CW Limit position, adjust **POT1** (Gain trimmer) untill **ADC-2** was as close to **GT-2** as possible (any value +/-5 is OK). This ADC-2 value is displayed

on several points. For instance it's available at the ARS-USB LCD Display (right side of the display) or at the ARSConf program.



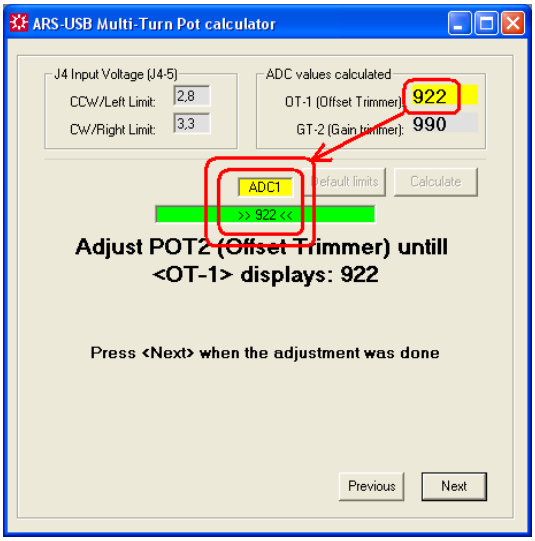
ADC-2 value is displayed at the right part of the Display LCD



ADC-2 value is displayed on the ARSConf program

Step 5

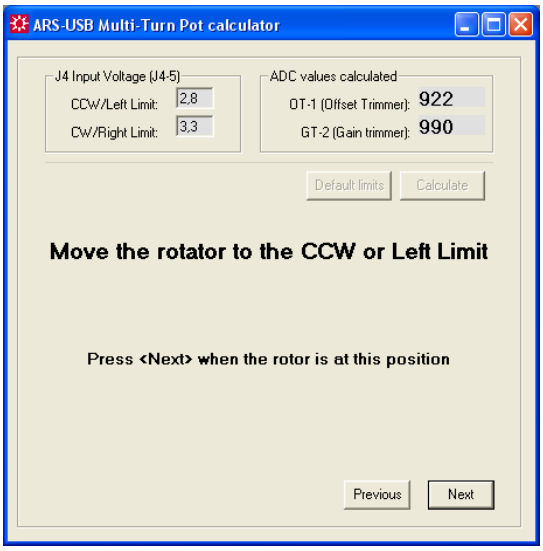
Now adjust **POT2** (Offset trimmer) untill **ADC-1** was as close as possible to **OT-1**.



The ARSConf program includes a bar that works like a wizard and assists to facilitate adjustment.

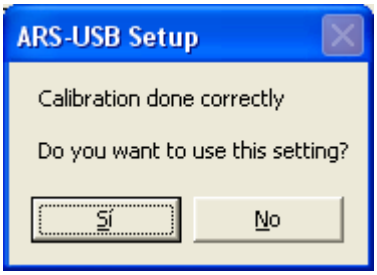
Step 6

Now, press **NEXT** button and move the rotor the Left/CCW Limit



Step 7

As soon as you get the CCW/Left limit, press **NEXT** and the calibration will be finished.



Step 8

The rotor is already calibrated, so you can now press the "**Save**" button on the **ARSConf** main window and the configuration will saved permanently on the Flash.

The ARS-USB unit is ready!