

# ***Eme\_contr\_jfl\_v77.hex***

## **1) Introduction**

As many of us are getting QRV on the higher bands it might be a great feature to have manual speed control on both azimuth and elevation motors for alignment or testing your antenna system.

Until now the OE5JFL antenna controller only has soft start and soft stop when operating in "AUTO" mode

The idea came to implement some variable speed control on the manual antenna movement.

## **2) Implementation:**

When using the OE5JFL antenna controller in its default hardware configuration, the PWM signal controlling both AZ (JP6) and EL (JP7) H-bridges (L6203 IC1 & IC2 of the motor/encoder interface board) is pulled to VCC by R15 & R16.

When used in "AUTO" mode PWM is applied for speed control.

When used in "MANUAL" the speed is always 100%

As the Atmel 89C51ED2 has some spare I/O pins left, the idea came to add 2 buttons and 2 pullup resistors in order to add PWM in "MANUAL" Mode

## **3) How does it work:**

When you "power on" the controller, the speed or PWM for both motors is 100% in "MANUAL" mode (as default)

Each time you push the AZ or EL speed button the PWM speed is reduced by 1 step. (Total 30 steps) After reaching minimum speed it jumps to 100% again.

It remembers its value if you switch to "AUTO" mode and back to "MANUAL"

If you "power on" the controller the PWM is reset to default 100%

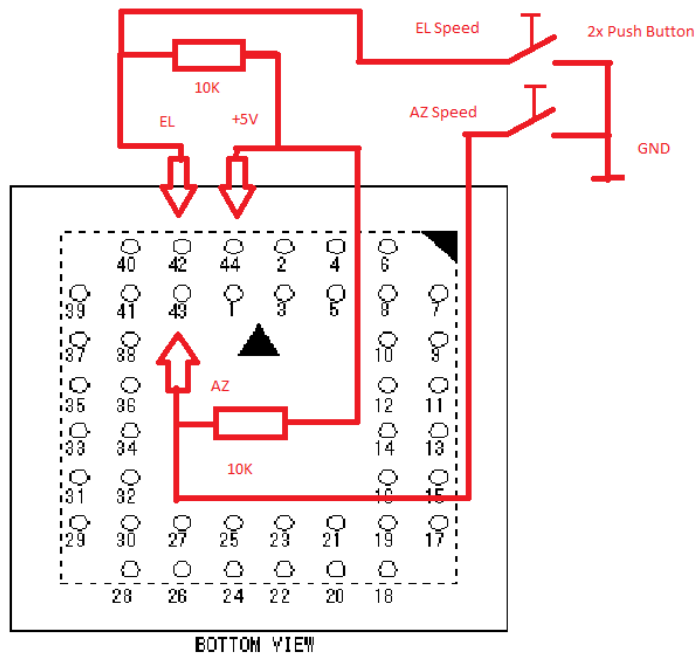
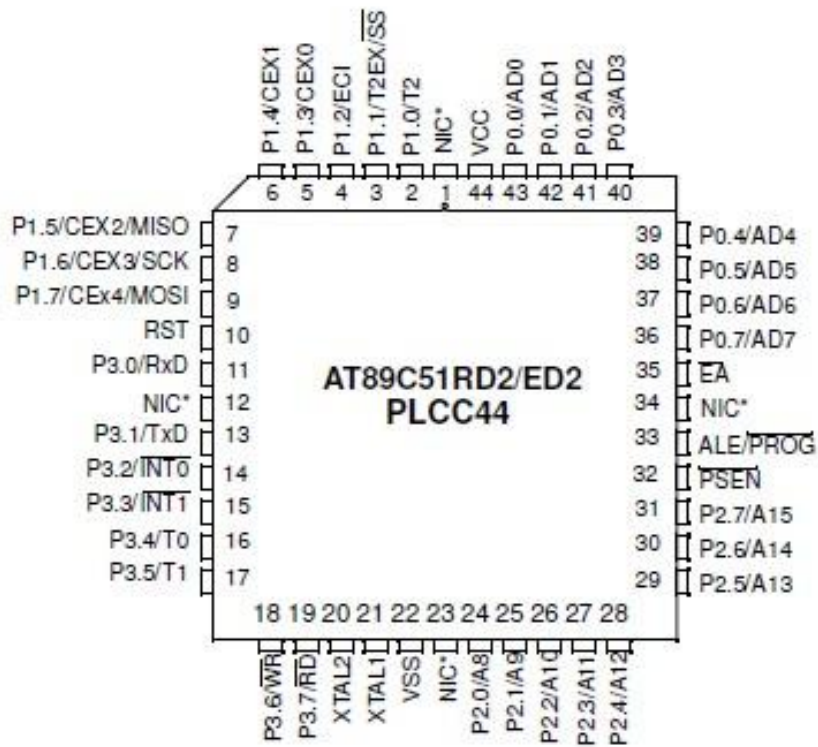
## **4) Hardware modification:**

The free pins which are used on the 89C51ED2 are:

P0.0 for azimuth pin 43

P0.1 for elevation pin 42

You MUST !!! pull-up these pins if you use this firmware version



The pins are close to a 100nF capacitor and the 20 pin flat cable connector.