# Programming the 858 sequencer

This is done in 3 stages.

## 1) Install the driver and programmer software

- Install the drivers supplied / downloaded from USBAsp.
- Plug in the USBAsp **BEFORE** installing **extreme Burner - AVR version 1.1**
- Click "cancel" if Windows "finds new hardware" during the install process.

*Note: it is good programming practice to turn on file extensions when using a PC for micro work.*
*If you don't know what a file extension is of how to show them, Wiki is your friend…*

## 2) Install the firmware

**Stage A** is the programmer / PC to AVR communications test firmware.
This just flashes an LED on the sequencer board.

- Start eXtreme Burner - AVR.

- On the **Chip** menu, select "**ATMega8**"

- Open the file "Test_100"

- Click the "Write All" toolbar button.

Choose the "Fuse bits / settings" tab.

Set the fuses as below:

- Low fuse: Write **E4**
- High fuse: Write **D9**
- Lock fuse: Write **FF**
- Calibration: Write **B5B5B5B5**

Click on "Write".   **Warning: Getting any of the above wrong can brick (destroy) the IC!**

If OK, the LED on the sequencer board should be flashing about once per second.
*If it's a lot slower than this, your fuses are set incorrectly.*

**Stage B** is the sequencer firmware version 1.00.

Open the file "Seq_100"

Click the "Write All" toolbar button.

Check the fuse bit values have not changed.

If OK, the LED will blink when the encoder is turned **in one direction only**.

<u>3) Configure the sequencer</u>

Power up the board.    All outputs should be low.
LED should flash when the encoder ONLY when turned **clockwise**.

If it flashes only when turned **anticlockwise**, reverse the 2 connections (i.e. swap over PC0 and PC1 lines) to the encoder.

Turn off power.
Ground pins 17 and 28.
Turn on power.
Turn the encoder switch to set the LOWEST frequency desired.

Turn off power.
Open pin 17, and ground pins 18 and 28.
Turn on power.
Turn the encoder switch to set the HIGHEST frequency desired.

Turn off power.
Open pin 18, and ground pins 19 and 28.
Turn on power.
Turn the encoder switch to set the HOME frequency desired.

*Note: The home frequency is the startup and the instant recall frequency.*

Turn off power.
Open pins 19 and 28.

This concludes the configuration of the sequencer board.