Microchip Atmel ISP programmer instructions.

Should your Kiwitechnics product become unresponsive, and the normal firmware update system is not working, then it may need to be programmed using the ISP socket that is on most Kiwitechnics products. This is the 6 pin socket that is sometimes labelled 'FACTORY'. Most products will have a 10 pin and a 6 pin socket. It is the 6 pin that you will use. The 10 pin socket is for a different programmer type and will not work for ISP programming.

You will need the following to do this.

- 1) A Windows PC or laptop
- 2) A suitable Microchip ATMEL compatable AVRISP MKII programmer with a 6 pin output
- 3) A copy of Microchip AVStudio which can be downloaded from here (https://www.microchip.com/en-us/tools-resources/develop/microchip-studio)
- 4) A 6pin pin header which can either be soldered into the kiwi board or used in a temporary fashon as is described in step 10
- 5) An .ELF file for the product you are programming. Contact Kiwitechnics for the most current version and save it to your hard disk so you know where it is.
- 6) Plug in the ISPMkII compatible programmer to PC USB socket
- If you are using the Olimex programmer you need to use the small adaptor board that is an optional extra for this. Unplug the two cables it comes with and plug in the optional adaptor into the port marked 'ICSP10'. It should look like this.



7) Run Microchip Atmel studio 7 and select the program button on the editor screen



8) You should see the next screen. Pick the Tool drop down and you should see AVRISP as an option with the programmer plugged into the USB port. Press APPLY.



9) You may get an update firmware request if the tool hasn't been used before. Do this and start again.

10) Some programmers will come with a pin header but if not cut a piece of DIL 0.1" Pin header and plug it into the end of the 6 pin programmer. This is a very common part and can be found at any parts store hobby or trade. This way you can just stick it in the ISP port on the board and give it a bit of a push sideways while you program and no soldering is needed. These pictures show a Kiwi106 but the process is the same for all products that have an ISP port fitted.



The Kiwi-3P Matrix has two 6 pin ports. The one to use is near the edge of the board and not inside the 40 pin socket. Pin one is not marked and is nearest C5 and the main cpu chip.

11) Depending on the programmer type you should see a green light on the programmer once it is plugged in and turned on. If you don't or there is a flashing yellow light you have the plug in the Kiwi board reversed.

12) Click on the 'Production File' tab in AVRStudio and browse to the .ELF file sent to you by Kiwitechnics. Do this by clicking on the '...' button next to the 'Program device from ELF production file' box.

Tool Device	Interface	Device signature	Target Voltage		
AVRISP mkll ~ ATmega	2560 • ISP • App	y 0x1E9801 Rea	d 4.8 V Read	\$	
Interface settings Tool information Device information	Program device from ELF pro C:\Users\conta\Desktop\De Flash EEPROM F	duction file velopment\Kiwi106\K106_P20 uses ✔ Lock bits	3_B201\K106_P203_B2	201(locked) ×	
Oscillator calibration Memories	 Verify Device ID Erase memory before provide the programmed cont 	ogramming ent	Progra	am Verify	,

13) Select all the tick boxes that are shown in the screen capture.

14) The synth may make strange and possibly loud noise while programming is happening so turn down the volume or mute the output at the mixer. Press program and the Green light on the programmer should go yellow.

15) When it finished you can turn off the synth and remove the plug you were holding or unplug the programmer if you soldered in the 6 pin header

16) Reprogramming like this deletes all the tones and global settings on some upgrades so you will need to reload these by performing a factory restore.

The factory restore is different for each Kiwi product

KiwiSix - Press and hold WRITE & MANUAL as you power on the synth Kiwi106 - Press and hold WRITE & MANUAL as you power on the synth Kiwi8P - Press and hold WRITE & MIDI PANIC as you power on the synth

The other upgrades will retain the tones