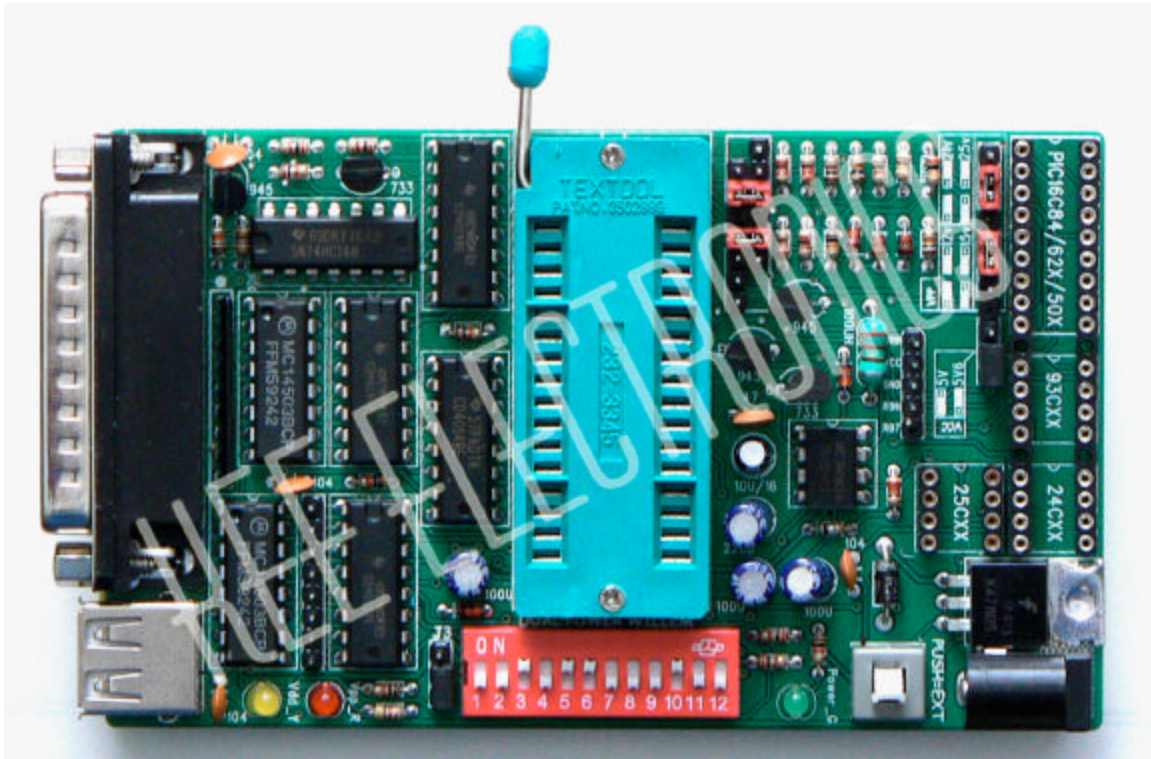


How to program your 12F629 with DualPower Willem programmer

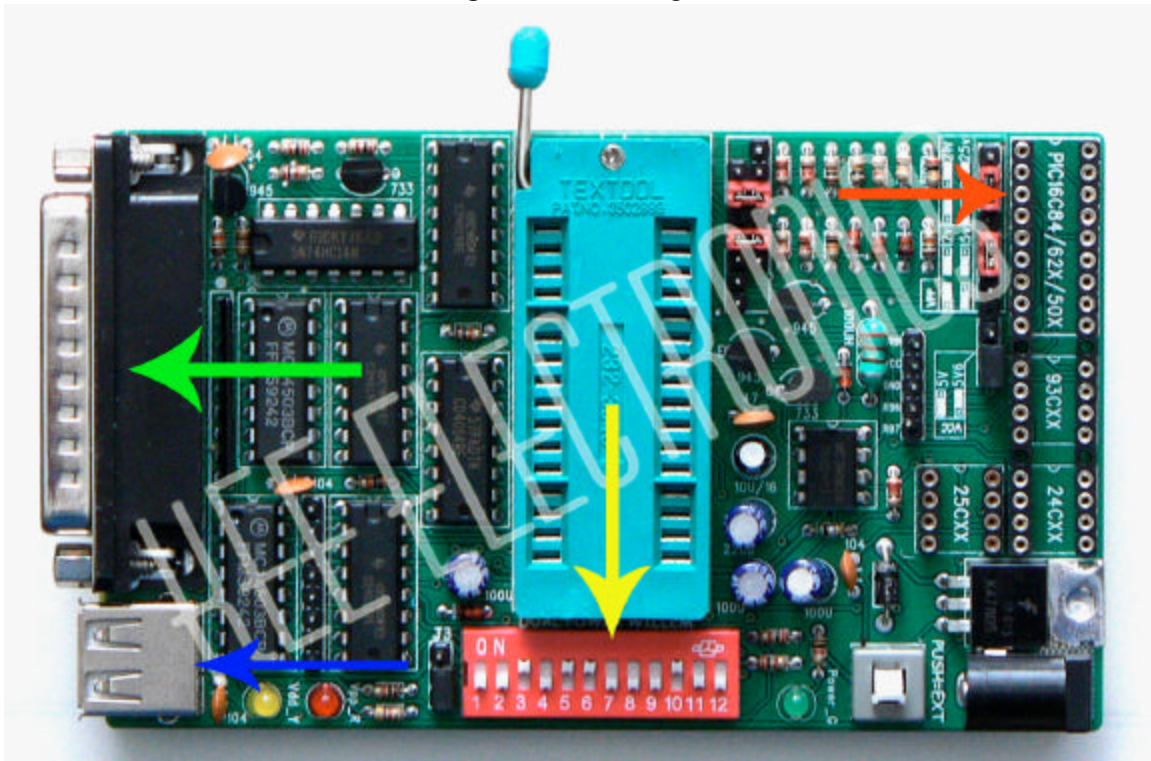


This guide will show you how to programme your PIC using a willem programmer. These are low cost open source programmers which can be built, or bought prebuilt (check E-bay). They are not expensive and can be used to programme a variety of chips. Please note however there are many different versions of the Willem programmer, with many different PCB designs, so the one you buy may not look exactly like the one shown in the picture. You can use any other programmer capable of programming the PIC12F629, the method should not differ that much.

****NOTE****

Under windows XP, you may not be able to gain full access to the I/O ports, you will need to download "USERPORT" and install this on the PC if you get "access violations" or other error messages when trying to run the programmer software.

Programmer Layout



Green arrow = to PC Parallel port

Yellow arrow = Programmers DIP switch bank

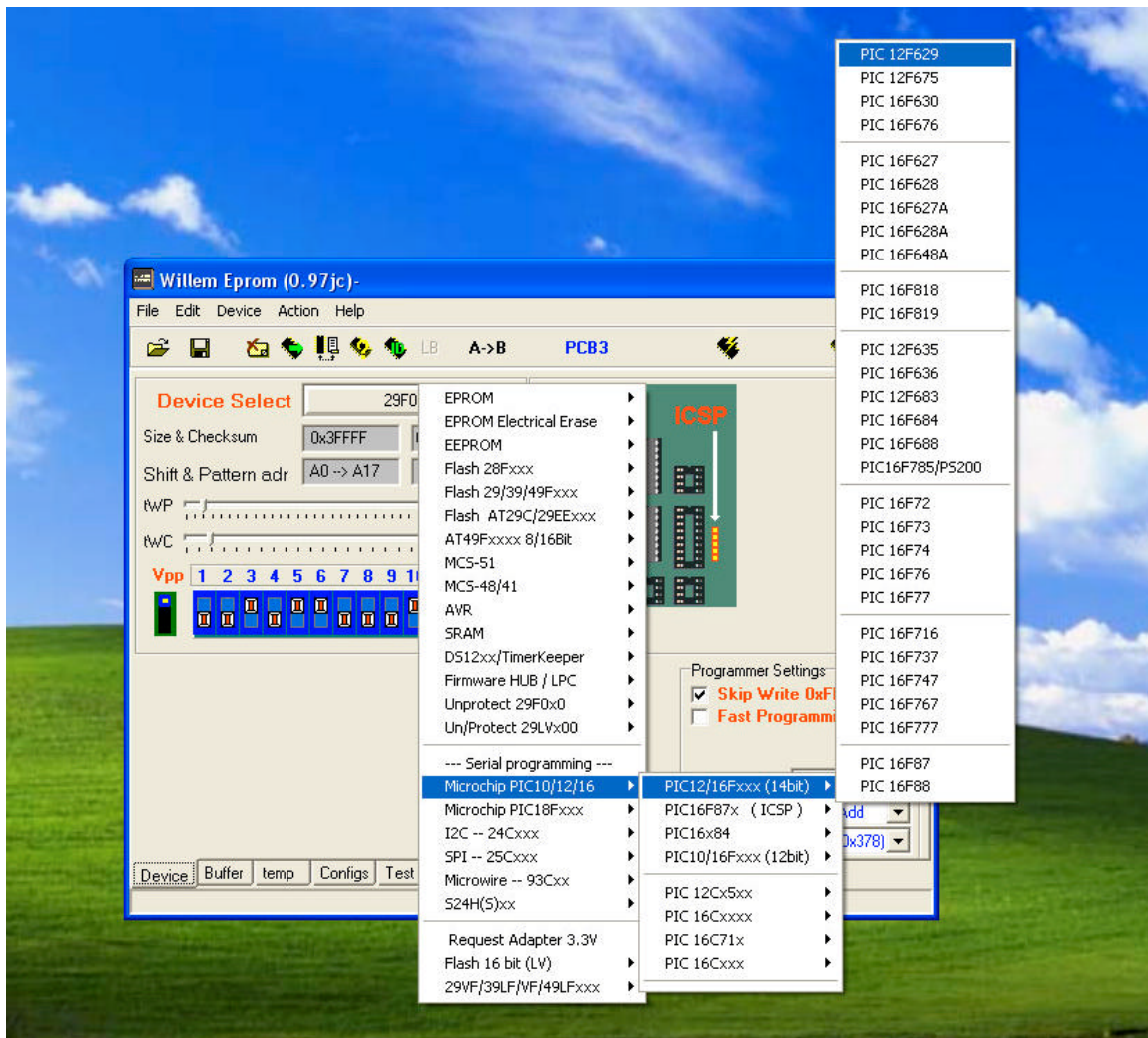
Red arrow = IC socket where PIC12F629 should be placed

Blue arrow = USB port for external power.

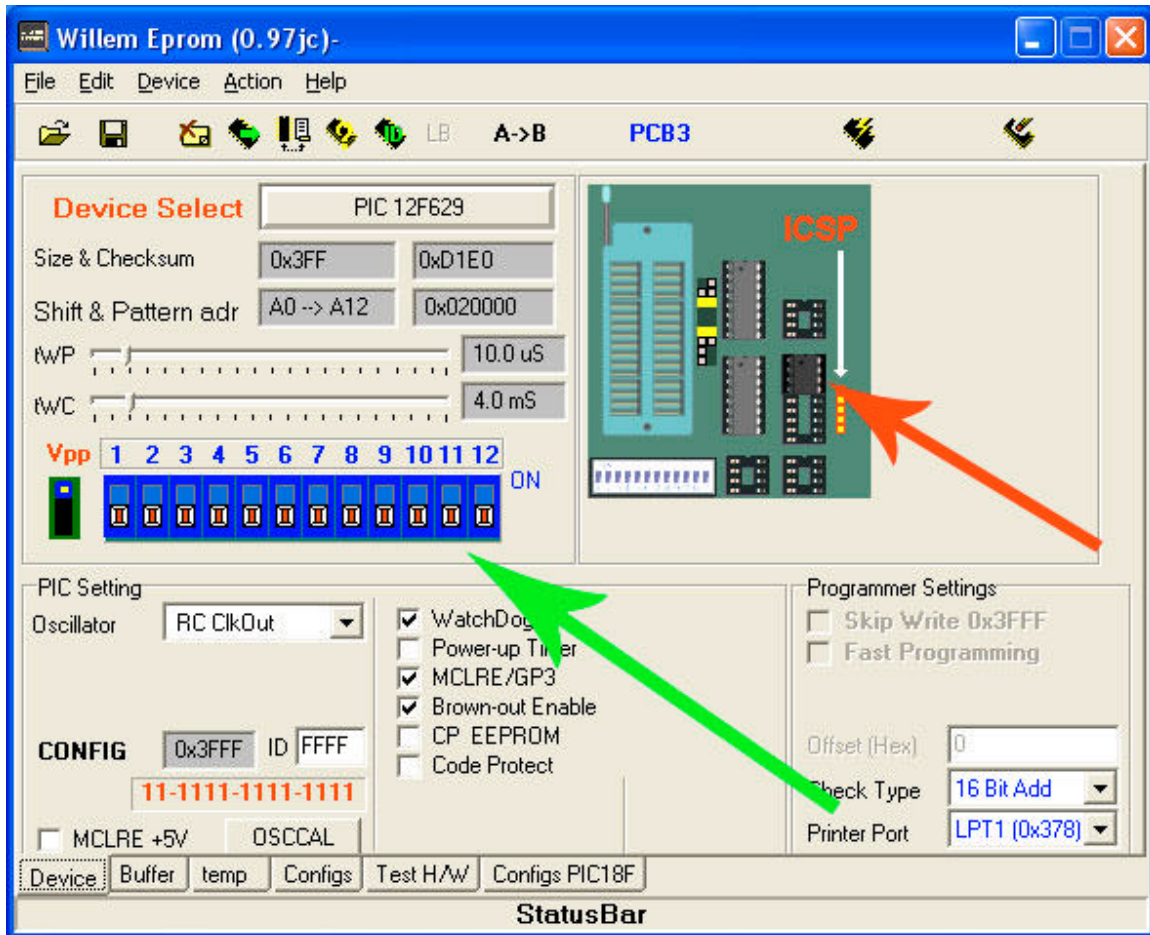
Plug both the parallel lead and USB lead into the PC, or alternatively use the DC power jack (9-12v, 300mA).

Programming the PIC12F629

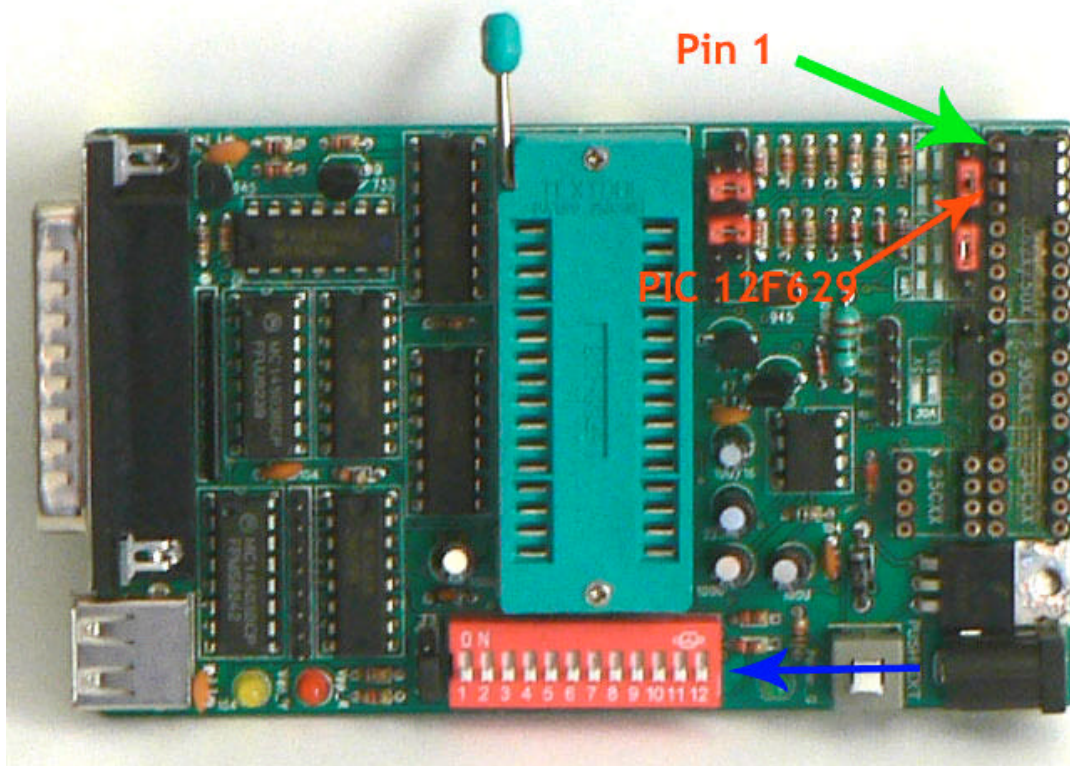
Setting the programmer up for programming is a simple affair, the willem's software will show a diagram of how to set the DIP switches up for whichever device you are working with. The willem software that I use does not support the PIC12F629 however it does show the DIP selection for the PIC12F635 which is very similar. From now on this guide will be made up mainly of screen shots.



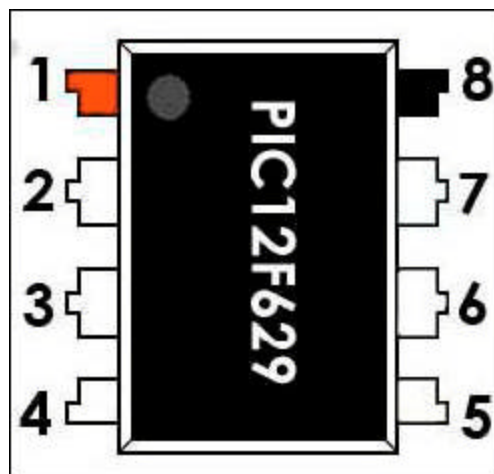
Open the willem programmer's software, go to Device select and choose the PIC12F629 as shown in the screen shot.



By default the DIP switches on your programmer may not be set up correctly for this programming job. Handy that the willem software gives you a diagram of where the chip should reside on the programmer (**Red arrow**) and also the DIP switch selection indicated by the **green arrow**. You show now place the PIC chip into the programmer (shown in further detail in the following diagrams), and also set the DIP switches.

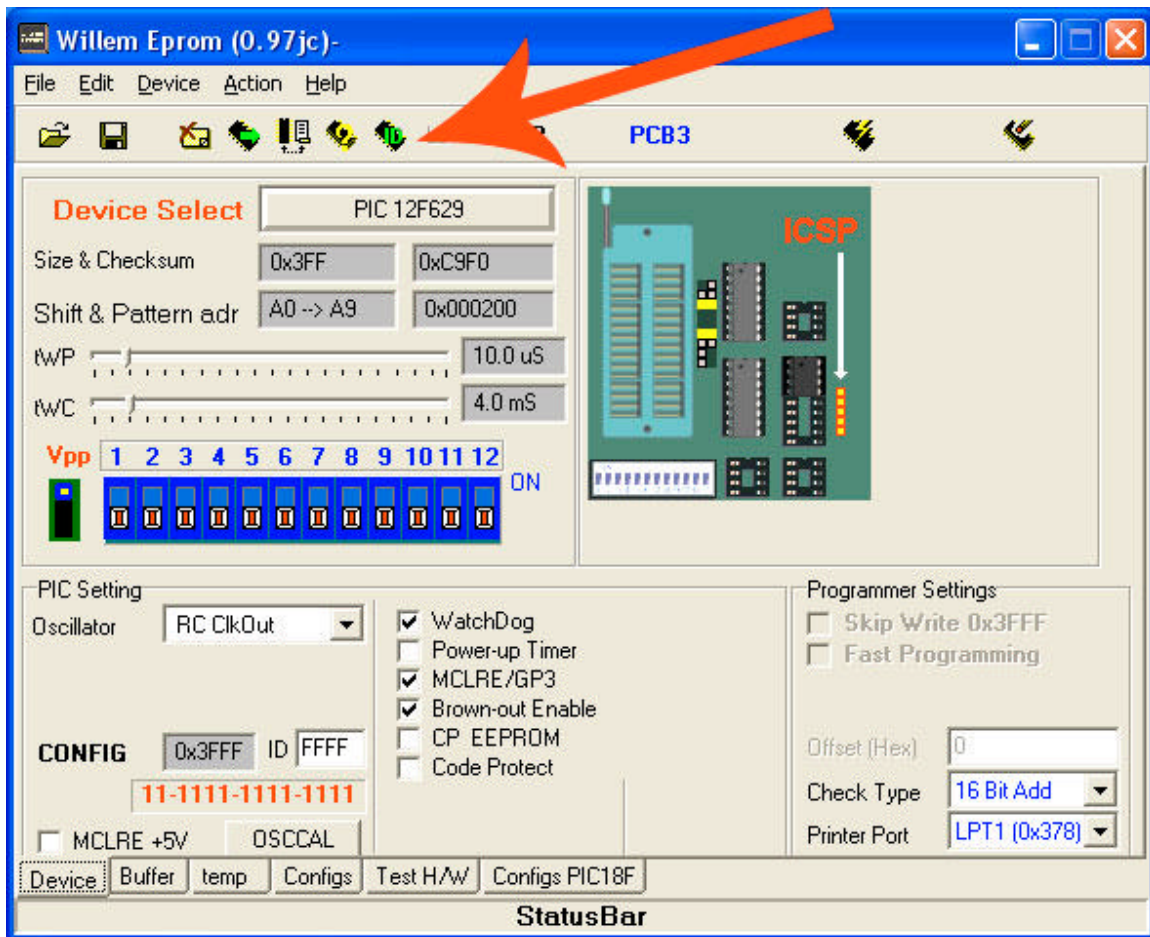


The PIC should be placed as shown by the **red arrow** with PIN 1 on the top left row of the socket as shown by the **green arrow**. It is important that this is inserted correctly, if done wrong you could damage the PIC or the programmer. There is a small circular indent on the PIC, the leg immediately to the left of this is always PIN 1.

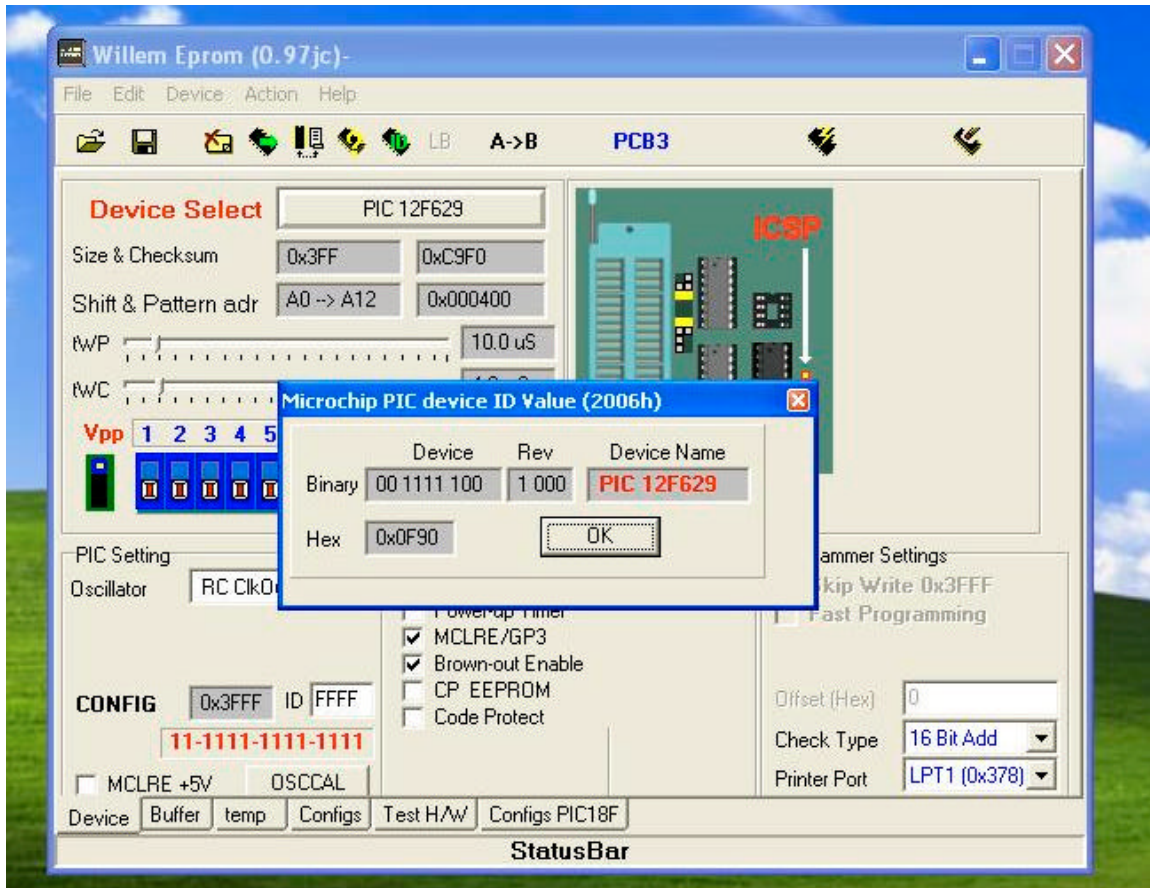


This diagram shows the PIN numbers of the PIC.

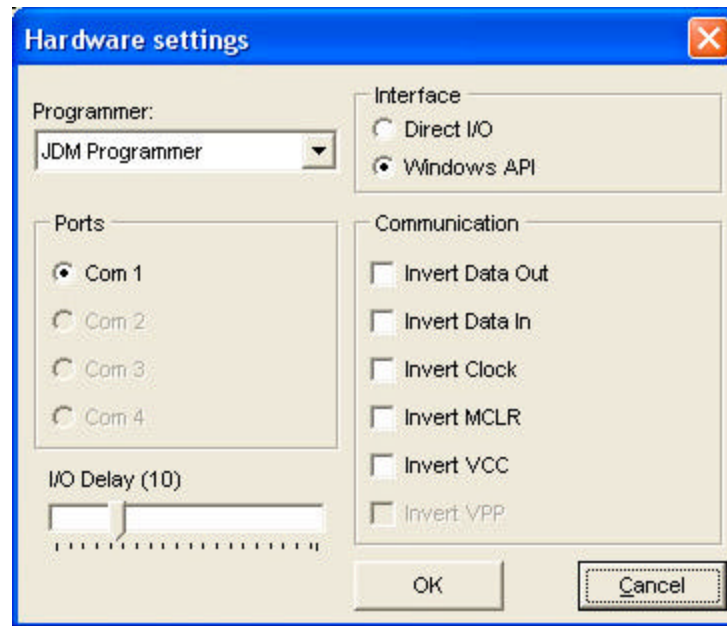
The DIP switches are indicated by the **blue arrow** and all 12 should be in the off position (or down).



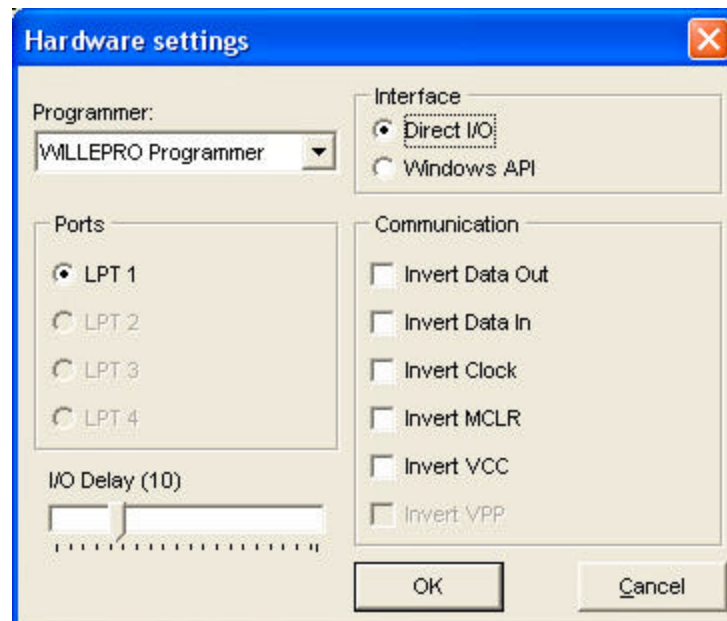
It's a good practice to always check that the programmer can read the Device_ID. Click on the button indicated by the red arrow.



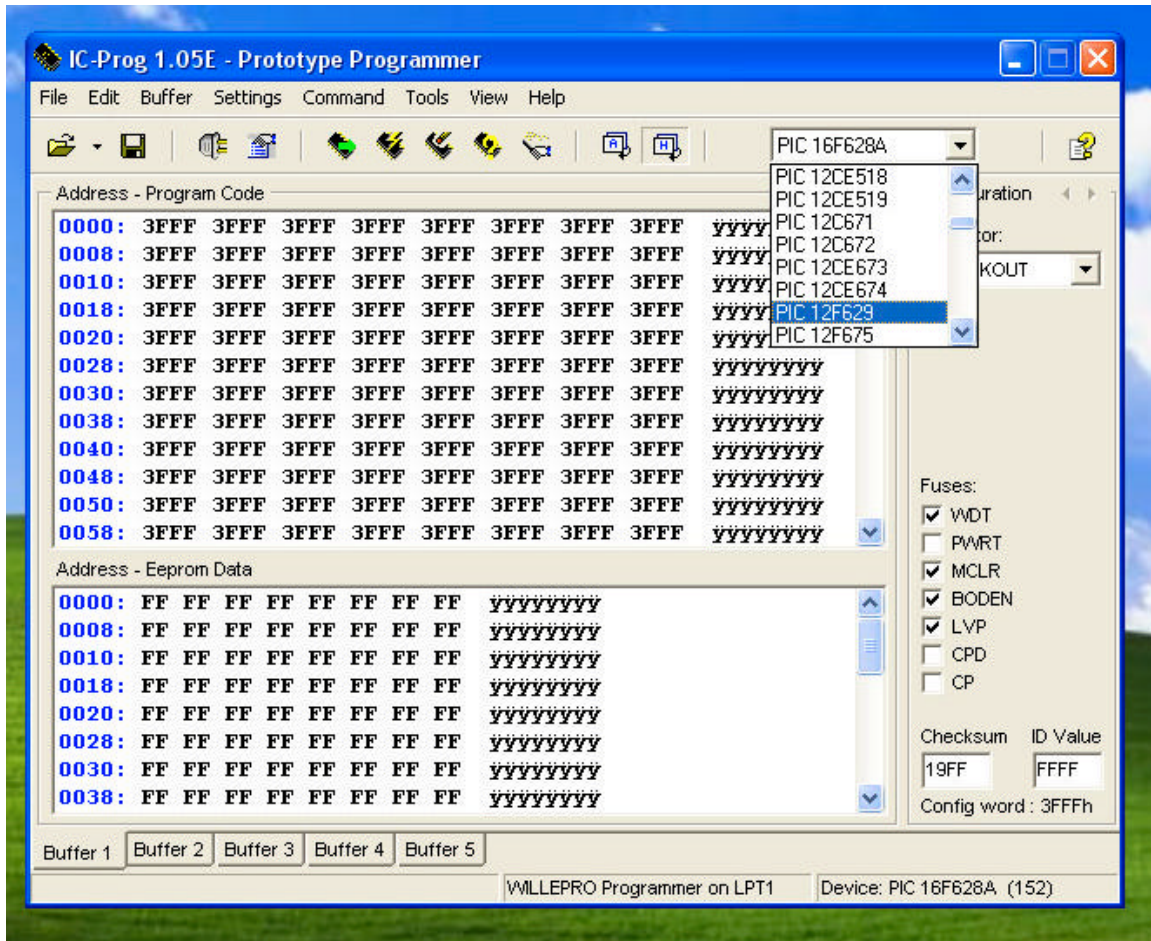
You should now be presented by a small window which will indicate the details of your PIC. If it does not show the Device name, please check that PIC is inserted correctly and try again. If it still will not show the Device name, your PIC may be damaged. If all is good we can now move on to programming your PIC.



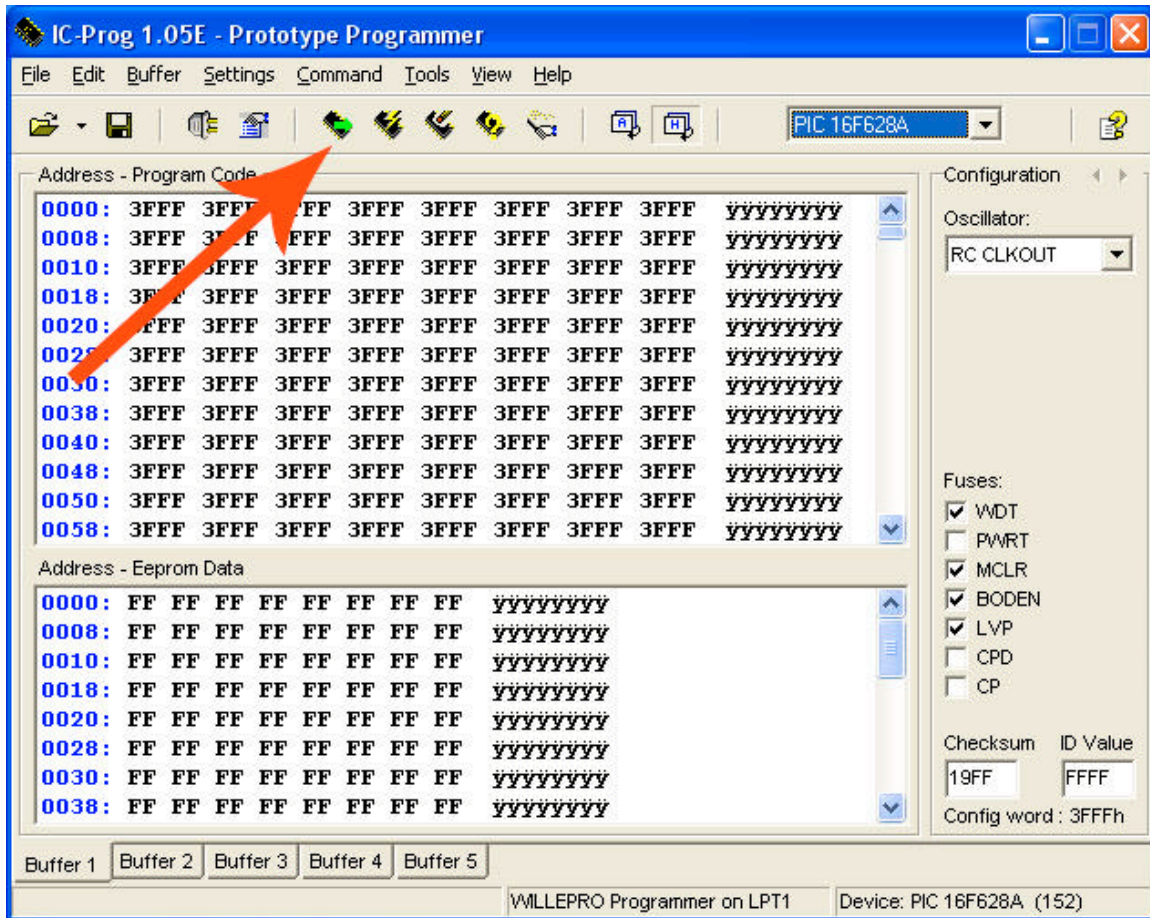
Start the program ICprog. You should now be presented with a screen to set your programmer up. We only need to select the programmer type here.



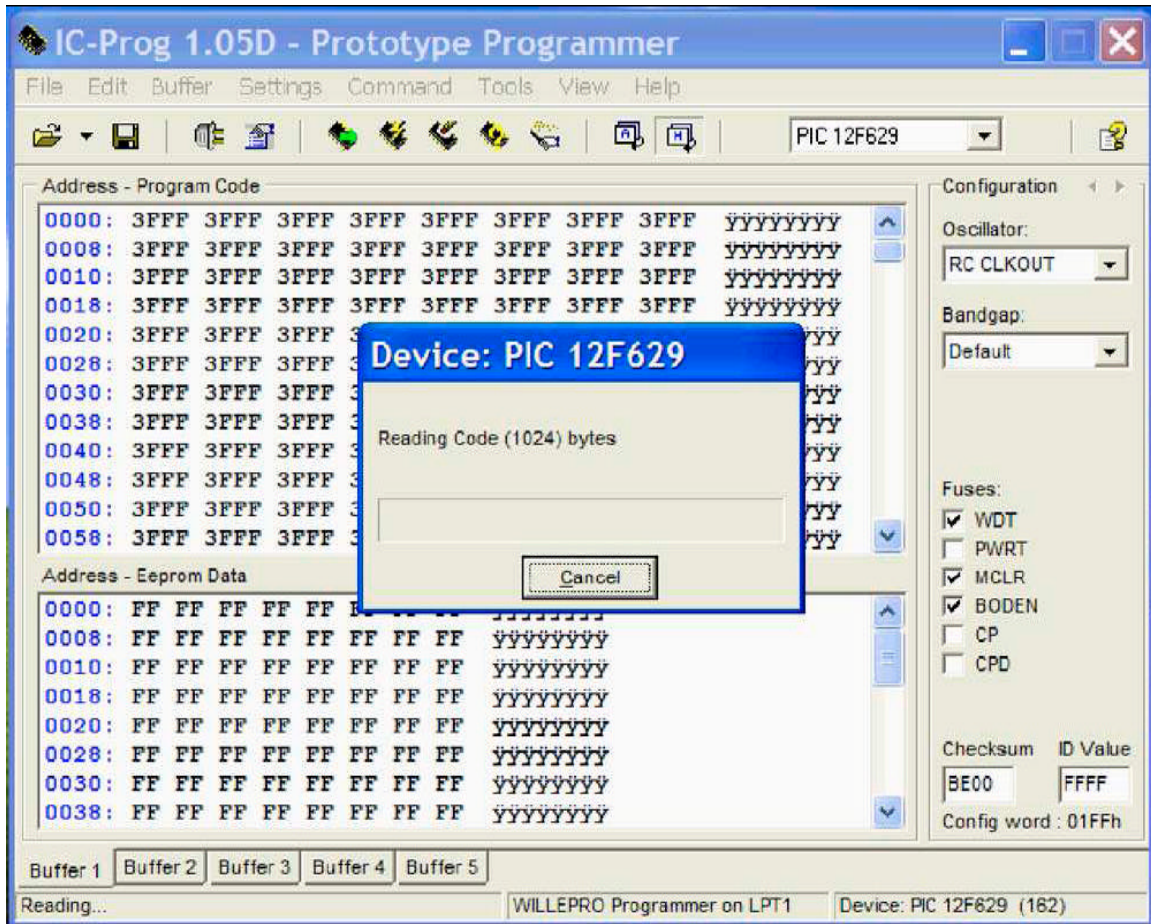
Use the drop down box, and select the "willepro programmer" and then click OK.



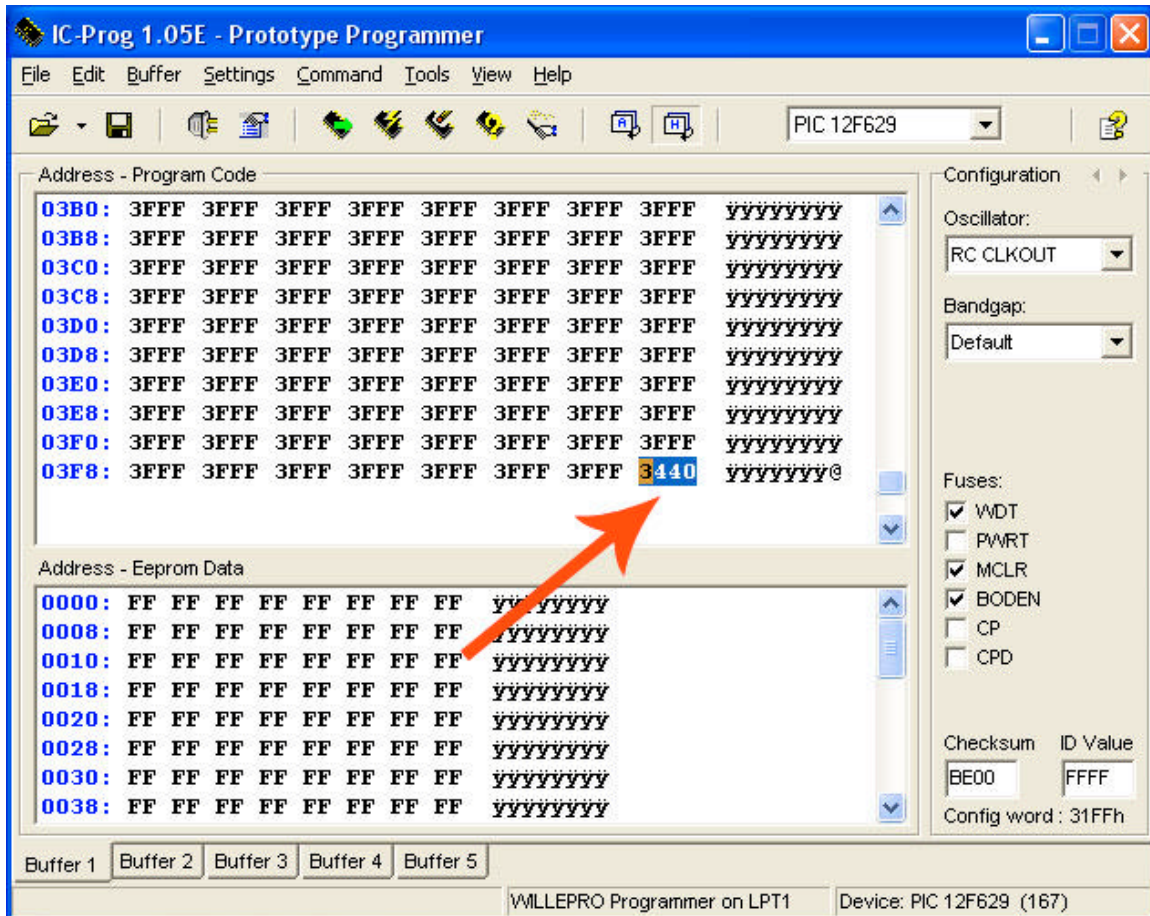
We now need to select the PIC type, use the drop down box and select "PIC12F629".



Your screen should now look like this. We now need to read the chip, press the button as indicated by the red arrow.

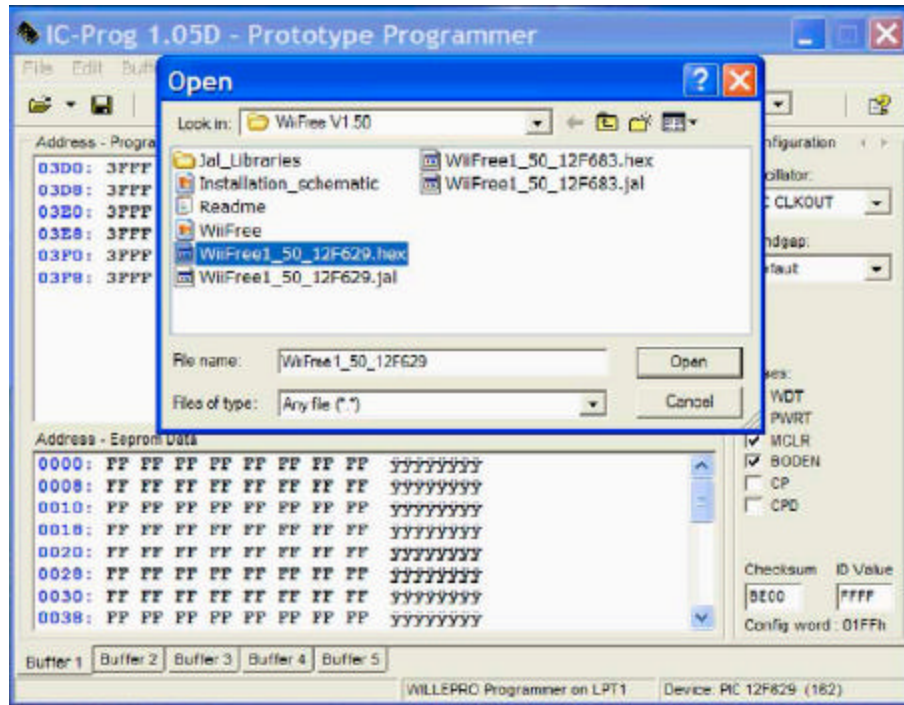


The chip will now be read as shown above.

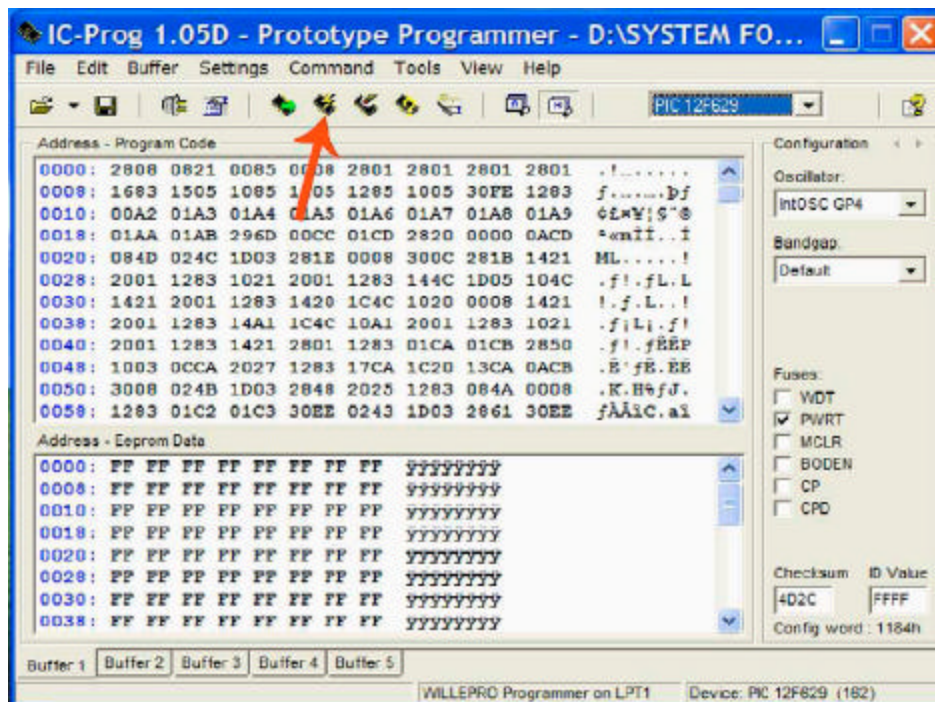


*****IMPORTANT*****

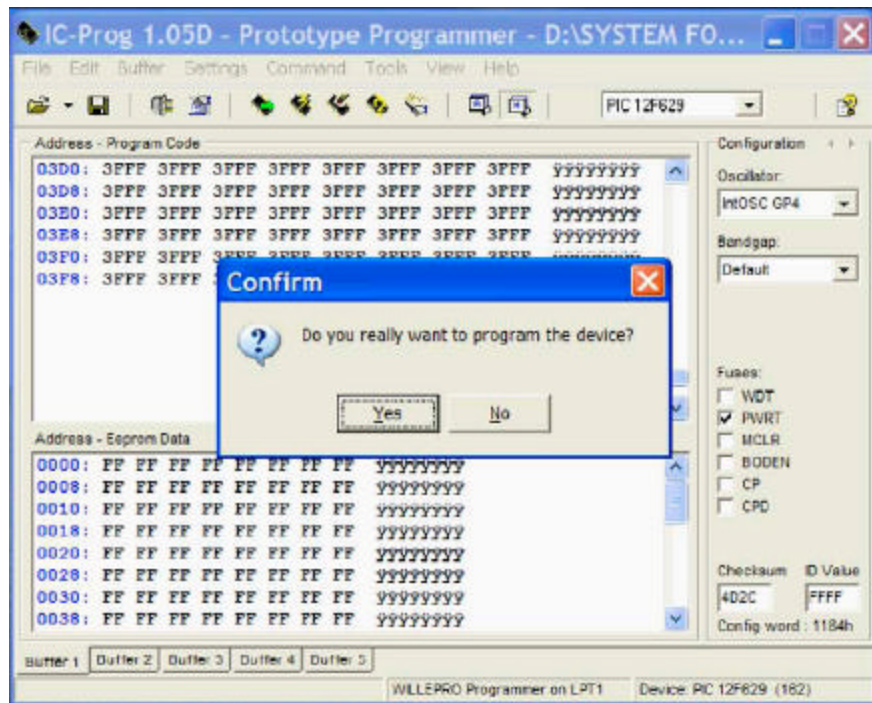
In the "Address - Programme Code" box, scroll down and the last value is the PIC chips Oscillator value (as indicated by the **red arrow**) and is pretty much unique, out of 100 chips few will have the same value, it is imperative that this value is wrote down somewhere, setting the wrong value or blank value will render the chip defective. You can program the value back again, providing that you know it.



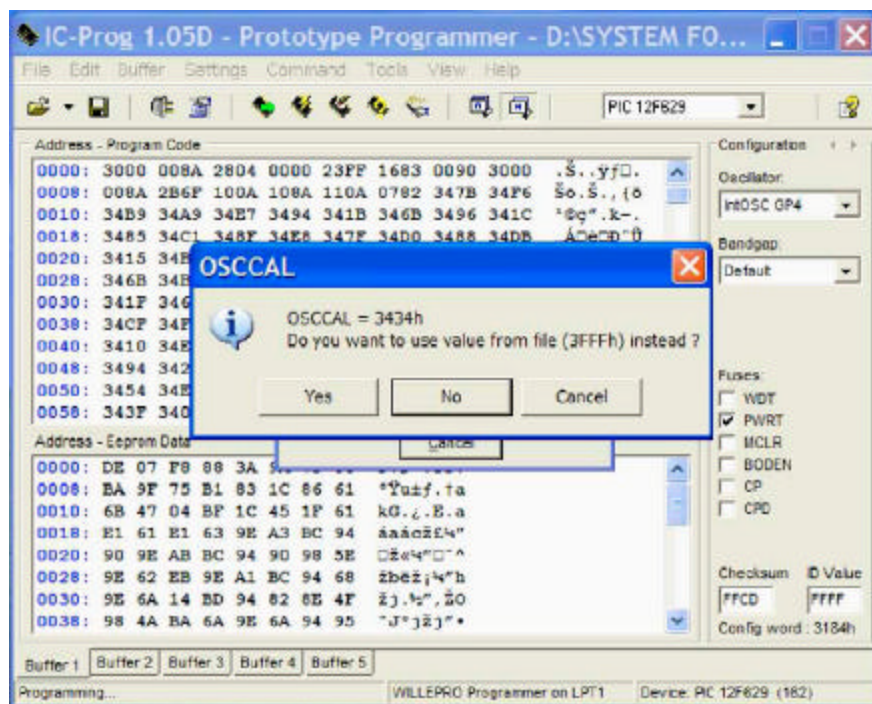
We must now open the Hex file to be programmed. For this guide I am using the Wiifree 1.50 file. Open this file.



You should now be presented by the above. Press the “program all” button indicated by the red arrow.

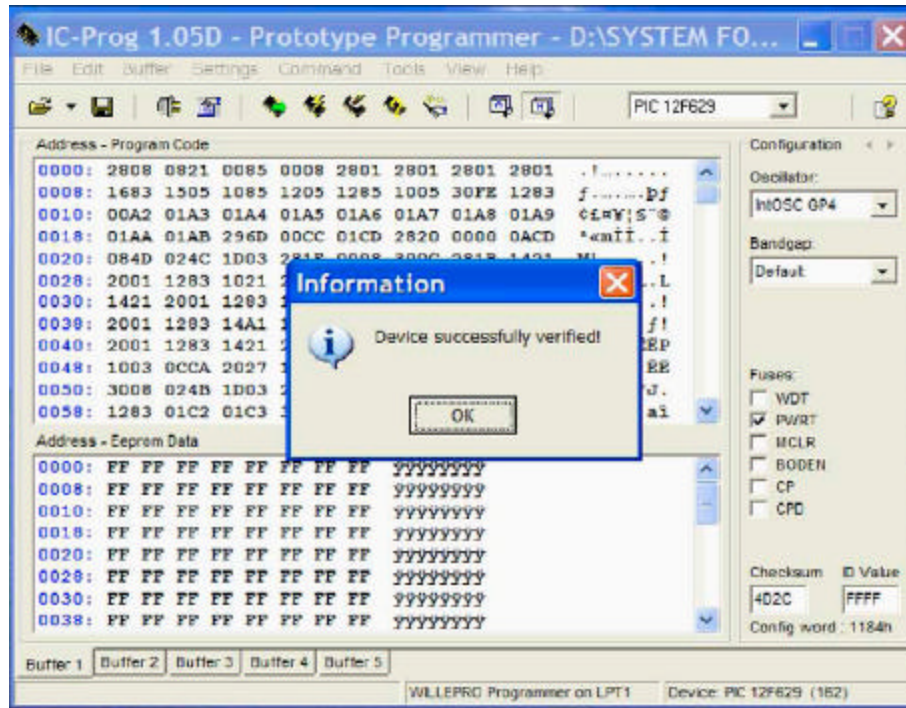


You will be asked to confirm programming the device, select yes. It will now re-read the device.



You should now be presented with another option, you must select NO, else the OSC value will be overwritten. You can always manually re-write the OSC value

if you make a mistake, which is why it is important to make a note of this value for each chip when working with them.



That's it; you can now remove the chip and place it into your socket which you have soldered into your Wii.