

# Pi Platter Firmware Upgrade Instructions

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These instructions describe the process of loading new firmware into the Pi Platter. This process should only be undertaken if you are comfortable using the Microchip programming software and hardware and are capable of creating the necessary wiring harness to connect the programmer to the Pi Platter. Please contact danjuliodesigns, LLC if you are uncomfortable with this process.

## Requirements

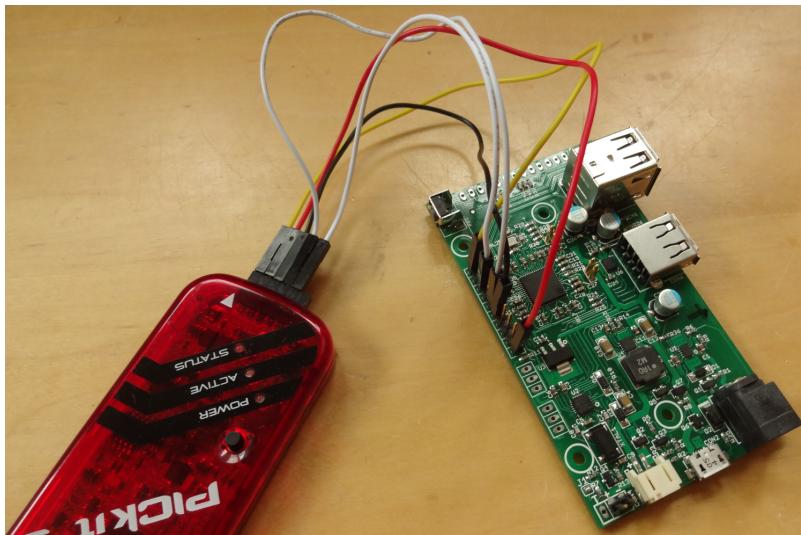
The following items will be required to reprogram a Pi Platter.

1. New firmware hex file from danjuliodesigns, LLC (e.g. "pi\_platter\_2\_production\_v1\_2.hex").
2. Microchip compatible programmer capable of programming the PIC16F1459 micro-controller. Suitable programmers from Microchip include the ICD 3 and PicKit 3.
3. Computer with programmer software loaded.
4. Appropriate connector for your programmer and five short wires (6" / 15cm).
5. Soldering Iron and solder (or other method to make a reliable connection between the wires/programmer and Pi Platter).
6. USB Power supply (may be necessary if your programmer cannot supply enough programming power).

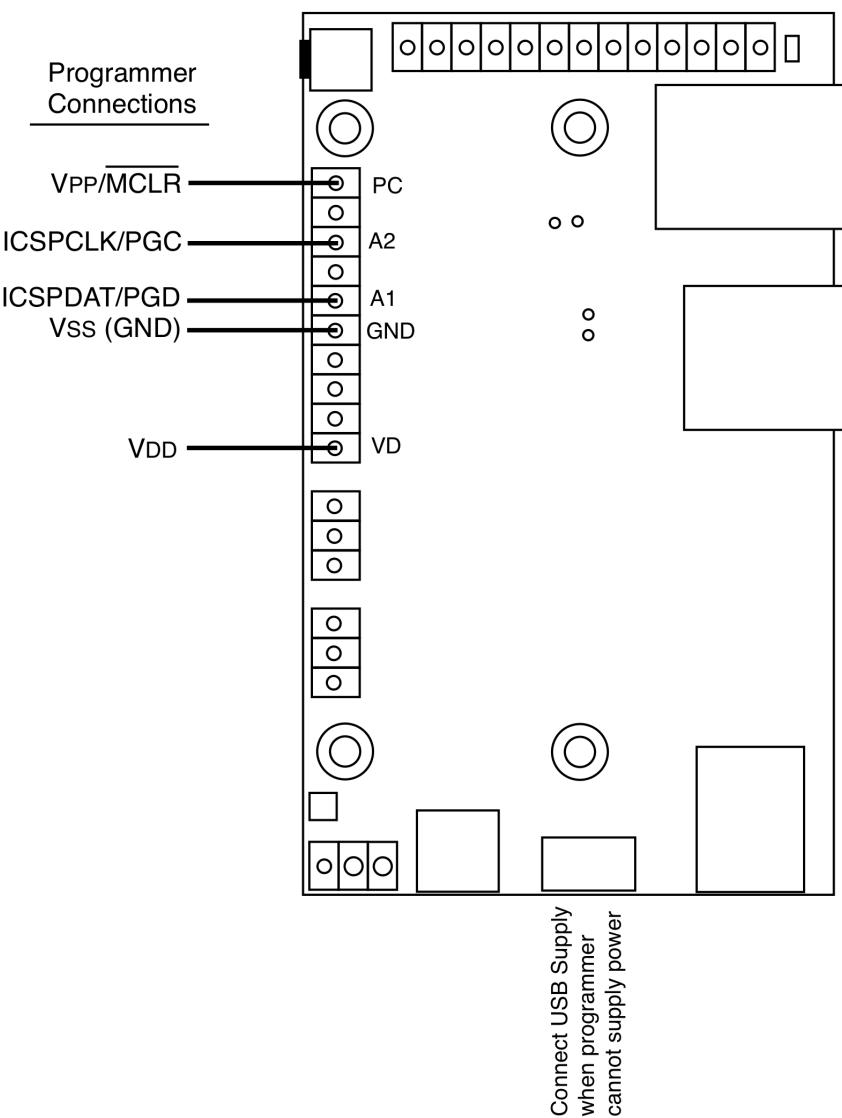
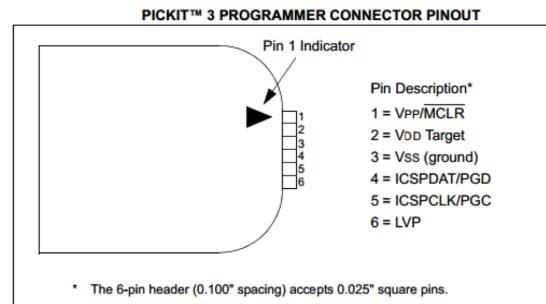
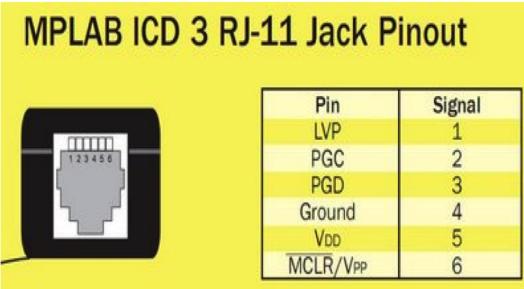
## Hardware Configuration

The programming interface requires five connections to the Expansion Header on the side of the Pi Platter. It is possible to use leads with header pins on each end as shown below connected to a PicKit 3. Make sure the header pins make a good connection to the Pi Platter.

1. Vpp/MCLR connected to Pi Platter "PC"
2. ICSPCLK/PGC connected to Pi Platter "A2"
3. ICSPDAT/PGD connected to Pi Platter "A1"
4. Vss/GND connected to one of the Pi Platter "GND" connections
5. Vdd connected to Pi Platter "VD"



Using a header to temporarily make a connection. A 10-pin header is inserted into the Pi Platter expansion port. The male ends of the test leads are inserted into the programmer connector and the female ends onto the header. You may have to apply pressure while programming to ensure the header makes contact with the Pi Platter.



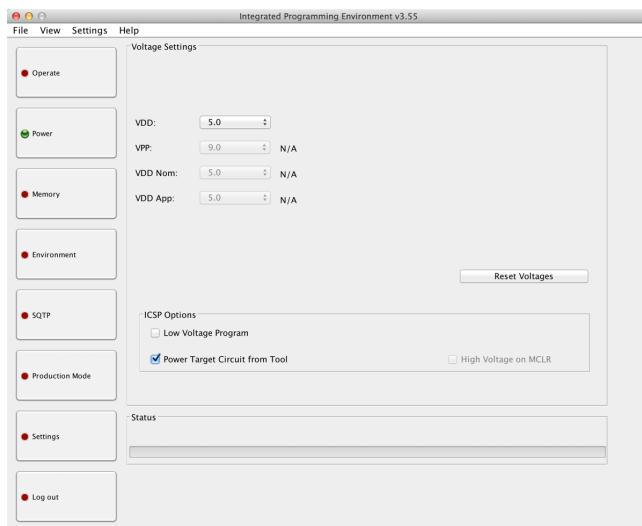
### Power Notes

The programmer should be configured to supply power (+5V) to the PIC being programmed. This should work with all programmers. However if the programmer is unable to supply power it will be necessary to connect a 5V USB Power supply, like a cell-phone charger, to the USB power-in connector.

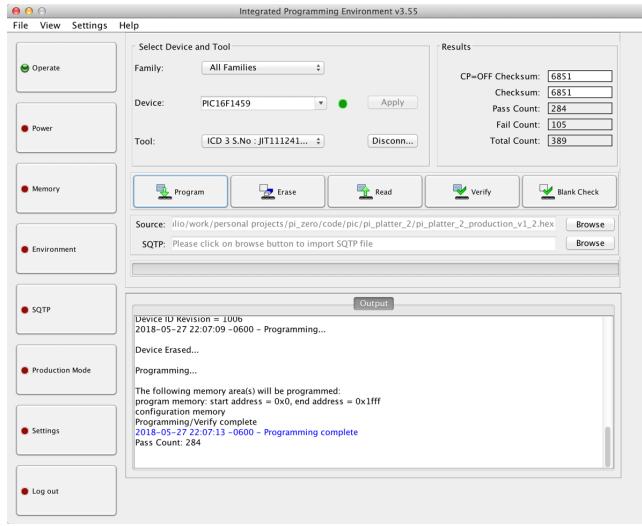
## Software Configuration

Any programming software capable of driving your programmer and programming a Microchip PIC16F1459 micro-controller should work. The platform-independent Microchip mplab\_ipe software is used here. It may be downloaded from from <http://www.microchip.com/mplab/mplab-x-ide>.

1. Set the Device to PIC16F1459.
2. Set the Tool to your programmer (plug the programmer into the computer before starting the program).
3. Configure the programmer to supply 5V power to the PIC being programmed by selecting the “Power” page and clicking “Power Target Circuit from Tool”.
4. Load the firmware hex file (The Source field in the mplab\_ipe software). Click the “Browse” button to load the file downloaded to your computer.
5. Press “Connect” to enable the software to communicate with the programmer (You may be asked if it is ok to program at 5V. Click “OK”).
6. Program the part by pressing the “Program” button.



Configure Programmer Power



Program