WSPRPi: Reprogramming PIC32 from Raspberry Pi Zero

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Anything written in this font is instructional text.

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Anything written in this font should be typed in exactly into the terminal on the Pi. Each item st
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- Make sure we're in the user directory:

  ```
  $ cd
  ```

- Git clone Pic32prog utility:

  ```
  $ git clone https://github.com/majenkotech/pic32prog-autotools.git
  ```

- Install gettext and autoconf:

  ```
  $ sudo apt install gettext autoconf
  ```

- Navigate to pic32prog-autotools directory:

  ```
  $ cd pic32prog-autotools
  ```

- Install (these instructions take a while and don't print anything so be patient)

  ```
  $ autoreconf -fi
  $ ./configure
  $ make
  ```

WSPRpi has two bootloaders, one of which should be programmed onto the PIC: Standard uses UART to program which is supplied from the Raspberry Pi. Developer option allows programming over the Mini USB port (sorry, can't do both) If you're following these instructions, you're probably using the Raspberry Pi. If you want to install the developer version, just use the other hex file.

- Flash UART hex file to the PIC using MPLAB IPE

  See the main instructions for full instructions on how to do this.

- Put the WSPRpi into bootloader mode

  While holding the "Menu" button on the front panel, press and release the "Reset" button on the main PCB. The front panel LED should blink rapidly.

- Download a test hex file Change directory back to your home directory and download a test hex file.

  ```
  $ cd
  $ wget https://github.com/M0WUT/WSPR_PIC/tree/master/Bootloader/test.hex
  ```

- Program the PIC

  ```
  $ pic32prog -d /dev/ttyAMA0 -b 115200 test.hex
  ```

  Hopefully, the result will look something like shown below. Note that I hadn't written the code for test.hex yet so I used WSPR_TCVR.ino.hex. This should be replaced with the name of the hex file you are uploading. Note that the number of # symbols are an indication of program size so you may have more or less depending on the complexity of the file you're uploading.

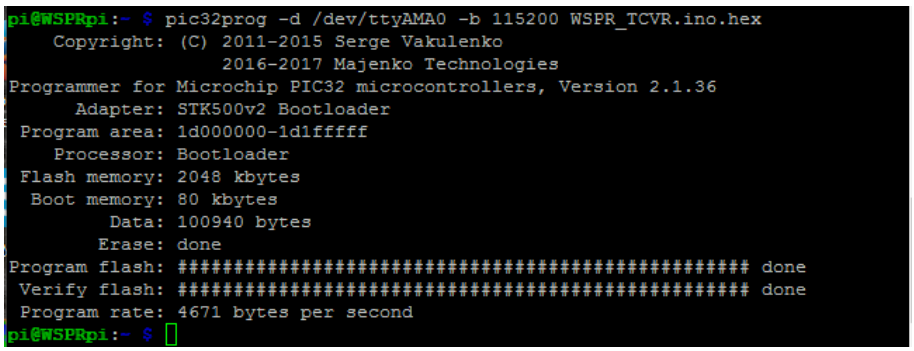

Figure 1: Successful upload of WSPR_TCVR.ino.hex

If you haven't put the PIC into bootloader mode or there is a communication error, you will probably get a screen as below:

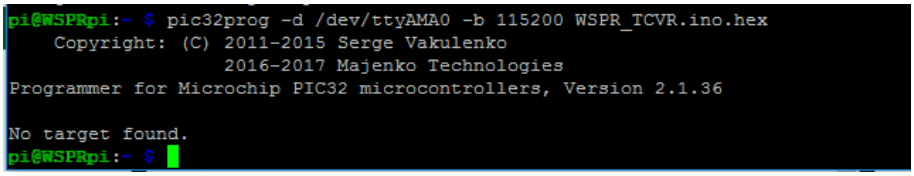

Figure 2: Failed upload of WSPR_TCVR.ino.hex

Check that the PIC was in bootloader mode (LED blinking rapidly), other than that, it is probably poor solder joints.

- Admire the pretty lights If everything has gone well, the front panel LED (and the TX LED on the main PCB) should be repeatedly flashing M0WUT in Morse.

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