Gnarly Grey
A microelectronic architecture company

Instructions to Program UPDuino with RaspberryPi 3 Model B (may work with other models)

Raspberry Pi Setup

Ensure the memory card is inside the Raspberry Pi. Unless the power cable has a button/switch, the Pi should power on once plugged into a power source.

Depending on ur OS, the Pi should automatically boot into the desktop environment. If you are prompted for a login user the default credentials are normally:

Username: pi

Password: raspberry

You will next get the Raspberry pi set up with wireless/wired internet access. It may be necessary to enable the gpio/I2c/serial functionality manually. This is done by:

1. Click the Raspberry Menu from the task bar then click "Preferences" then "Raspberry Pi Configuration"
2. Once the Configuration window opens, click "Interfaces"
3. Enable SPI, I2C, Serial, 1-Wire, Remote GPIO.
4. Click Okay and Reboot the Pi once prompted.

After logging back in, you need to download and install "Wiring Pi"

- Open up a terminal in the environment and enter:
    1. pi@raspberrypi $ git clone git://git.drogon.net/wiringPi
    2. pi@raspberrypi $ cd wiringPi
    3. pi@raspberrypi ~/wiringPi $ git pull origin
    4. pi@raspberrypi pi@raspberrypi ~/wiringPi/wiringPi $ ./build

       At this point you now have access to manipulate the Raspberry Pi GPIO pins.

Download and install the latest version of the bcm2835 C library

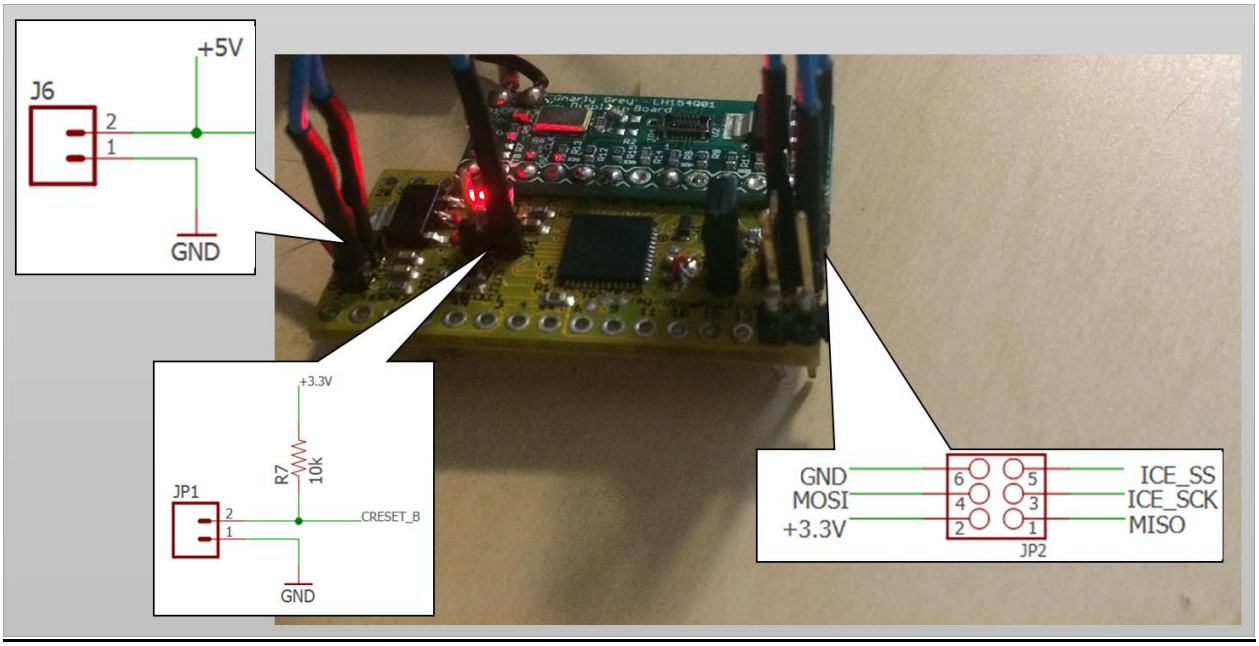
1. Open up a terminal and enter following commands from directory “/home/pi”
2. wget http://www.airspayce.com/mikem/bcm2835/bcm2835-1.50.tar.gz
3. tar xvfz bcm2835-1.50.tar.gz

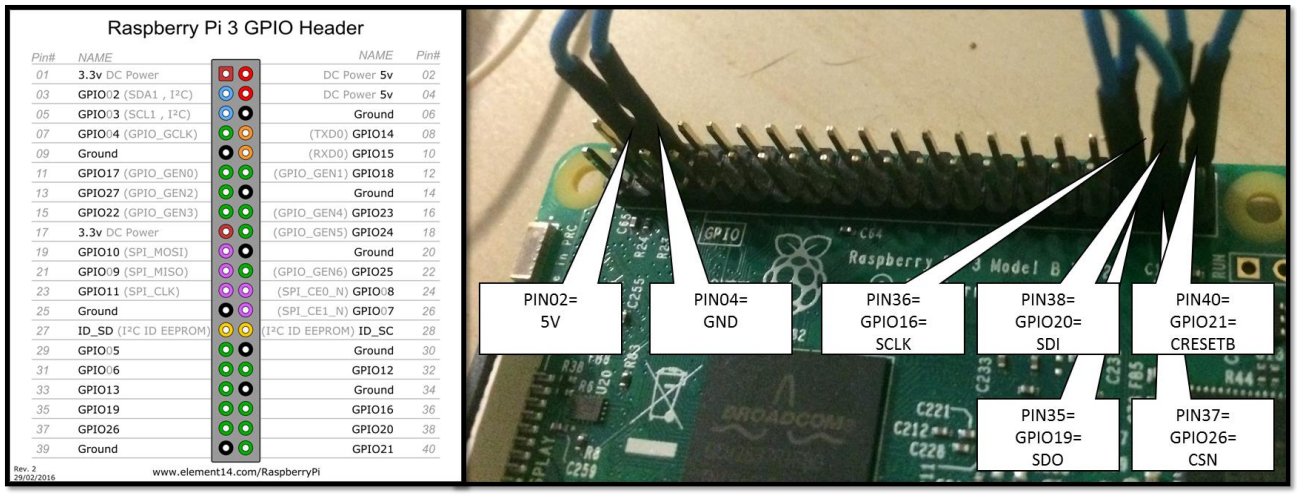
4. cd bcm2835-1.50
5. ./configure
6. make
7. sudo make install

You now have the latest version of the library installed!

Connect the UPDuino board to your RaspberryPi

1. Connect 5V from RaspberryPi to UPDuino J6 header
2. Connect CRESET to JP1 header
3. Connect MOSI, SS, SCK and MISO to JP2 Header





Compile/Run the code

1. Click the Raspberry menu from the task bar
2. Select Programming and open the Geany Programmer's Editor
3. Copy the 3 “*.c”” files onto raspberry pi. Open the files in the Geany Editor (rtest.c, RGB_LED_BLINK.c and raspberryPi_Prog.c).
4. You may make these files into one project by selecting Project then clicking new. Name the project you are wanting these files to be connected in.
5. Click on "Build" Then "Set Build Commands" Then next to the "build" label, u will add

   -l bcm2835 after the “%f”
6. Next you will click compile then build from the Geany menu.
7. Finally, click execute to run the program.

The RGB LED should now be blinking on the UPDuino board!