

Bootloading RadioBlocks using the JIB, and U2U

Building from the command line

- 1. Down load and install: https://launchpad.net/gcc-arm-embedded
- 2. Make sure you have "make" installed
- 3. Run make like so: ..\SimpleMesh\apps\serial\build> make

Building from within the lpcxpresso Code Red IDE

1. You need to change the properties by removing the "# " comment shown in the properties window below:

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2. Then "clean" and "build" to compile new images. With the "# " removed, lpcxpresso will produce both debug and binary files. If you are building "Debug" versions (this is the default setting in the assembla repository) you'll find both simplemesh serial.axf (debug file that can be downloaded and used for debugging via JTAG) and simplemesh serial.bin. The simplemesh_serial.bin file is used for bootloading!

RadioBlock Bootload

- 1. Python must be installed, we recommend 2.7: http://python.org/download/releases/2.7.3/
- You'll need to install *PySerial:* <u>http://pyserial.sourceforge.net/</u>
 You'll need our *lpc111xisp.py* module:

Run the Python module (lpc111xisp.py) as Follows:

- python lpc111xisp.py simplemesh.bin -p COM3 -b 115200 -e
- python lpc111xisp.py simplemesh.bin -p COM3 -b 115200 -e -d (for debug output)
- Note: Replace COM3 with the COM port your U2U is connected to!
- See example below!

Connecting the pieces

The necessary items needed to bootload binary images into a RadoBlock are:

- 1. RadioBlock (either RBM or RBB)
 - a. RBM = RadioBlock *Mains* powered
 - b. RBB = RadioBlock *Battery* powered
 - i. If bootloading the RBB you will need the connector kit (RBCK)
- 2. USB2UART (U2U)
- 3. JTAG/ISP board (JIB)

Additionally, you'll need the *.bin file you want to load and the CMD lpc111isp.py file that works with Python2.7.x to load that code. This implies that you have installed Python2.7.x and adjusted any PATH variables for your particular OS.

Pieces and parts

Here are some photographs of the necessary pieces. In this example we are using the RBM.



For completeness we show this picture, which shows the parts necessary for bootloading using the RBB:



The RBM J1 and J3 connectors will connect on the bottom side of the JIB like so:



Then, the U2U will connect to the RBM + JIB as shown in the next images:



All connected! Make sure you connect the three boards *before* you connect via USB to your PC. Also, when bootloading the RBB, note the solder jumper on the JIB shown by the red arrow.



Now, plug in your USB cable:



Bootloading the code

Now that you have the HW ready, you just need to run the Python script, l;pc111xisp.py from a command prompt or a terminal. You'll need to know which COM port you are connected to. We presume you know how to find that!

Here is a command line for a Windows based PC:

python lpc111xisp.py your_file_name.bin -p COM3 -e -d

After pressing the enter key you'll see a bunch of text flow by. If you see a series of dots, then you have a connection problem. The images below show example screen shots of the bootload messaging.

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