CS2021/CS3D2

Laboratory 0 — Getting Started

January 26, 2018

Summary

The purpose of this lab is to allow you to get familiar with some of the tools and information sources you need. The trickiest part initially will be getting your PC, board and connections all set up and definitely working — see the suggestion on page 2. In the last 45 minutes of the lab, your progress will be evaluated. The lab is worth 2% of your year-end mark.

Task

The task is to download, assemble, flash and run our standard sample program.

- Once you have the program running, vary the time delay in it to see what happens, and to ensure that it really is your program the board is executing.
- What can you say about when the time delay is very short?
- Can you vary the direction of the "movement" of the LEDs?

Notes

- *Documentation Sources.* Look on the course web page in Blackboard.
- *Board Configuration.* We will be programming the board via its 'ISP Mode' and you should ensure the board's jumpers are set up correctly. Refer to Figure 1 to see the correct jumper settings.
- *Serial Link Drivers.* The USB cable that connects the PC to the board in fact connects the PC to an USB-to-serial converter on the board, (made by FTDI). The PC has drivers for the converter, but has to install them. When they are installed, the PC has extra ports.

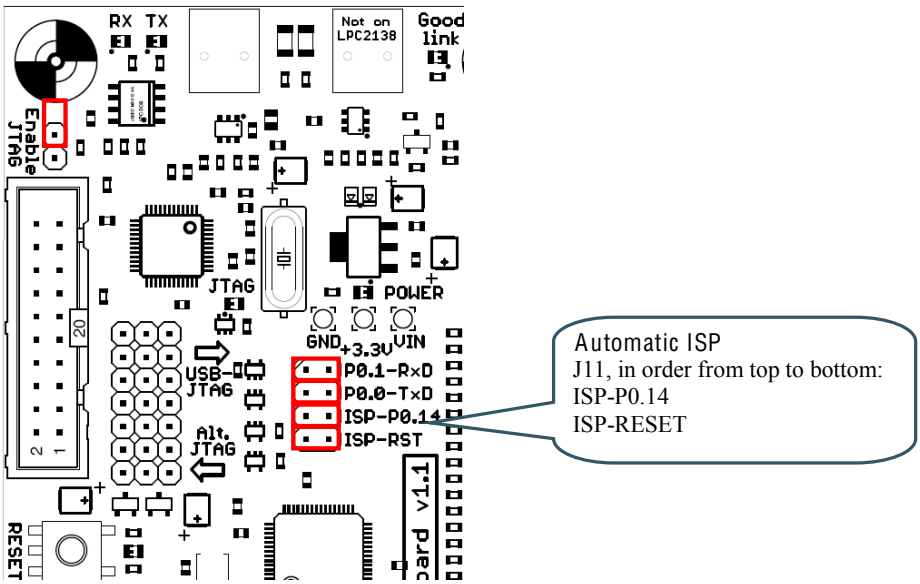

Figure 1: Jumper settings to enable ISP mode. (Diagram © Embedded Artists.)

Suggestion

To get started, do the following, in order,

1. Install USB-to-serial drivers as follows:
   - Plug in board to a USB port.
   - allow drivers to be installed.
2. Go to the course pages on Blackboard.Download a sample program to your Documents folder. Compile and load it (see Figure 2). If you have problems flashing, check the settings under Flash > Configure Flash Tools, and ensure they look like Figure 3. Also, it may be that the COM port needs to be checked and changed – please refer to the guide to locating the COM ports on the Blackboard information page.

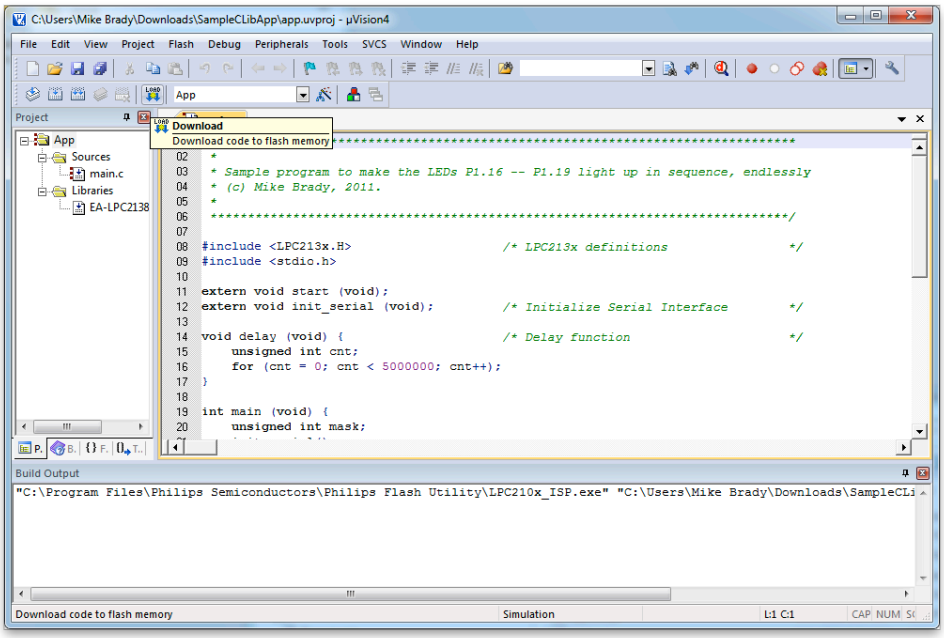

Figure 2: T he Load button for flashing the board

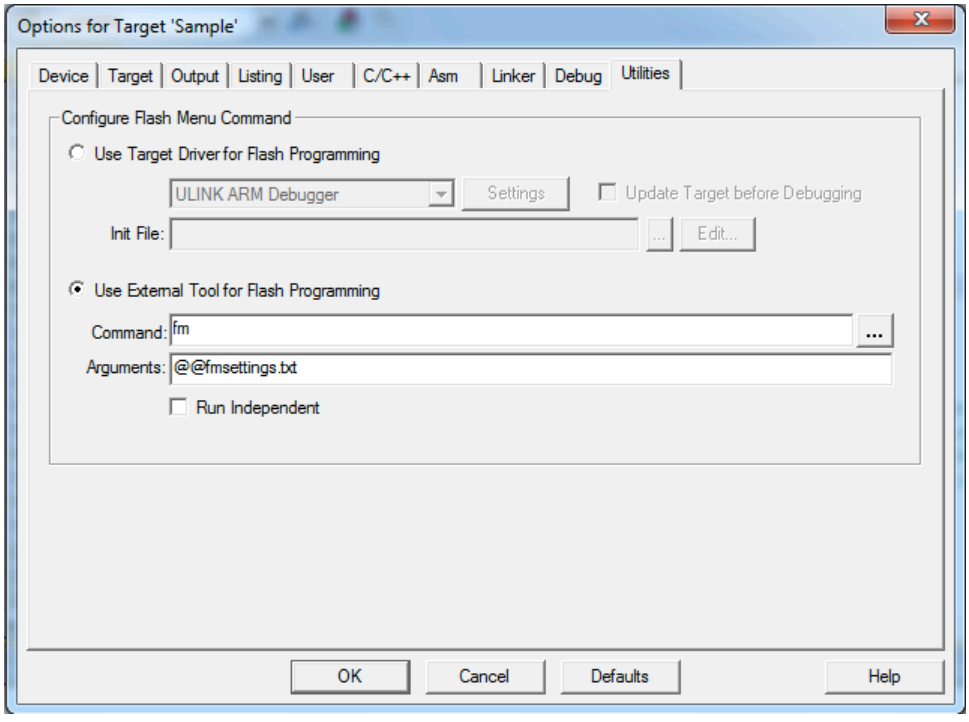

Figure 3: μVision 4 Project Utility options for using Flash Magic.