Getting Started with the Simulink Blockset for PIC Microcontrollers

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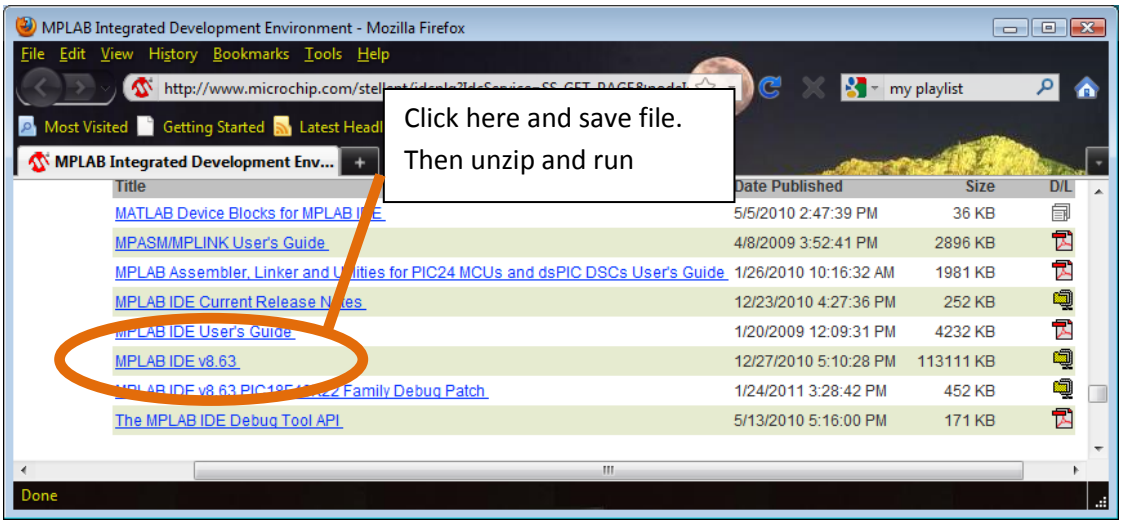
1. Install Matlab.

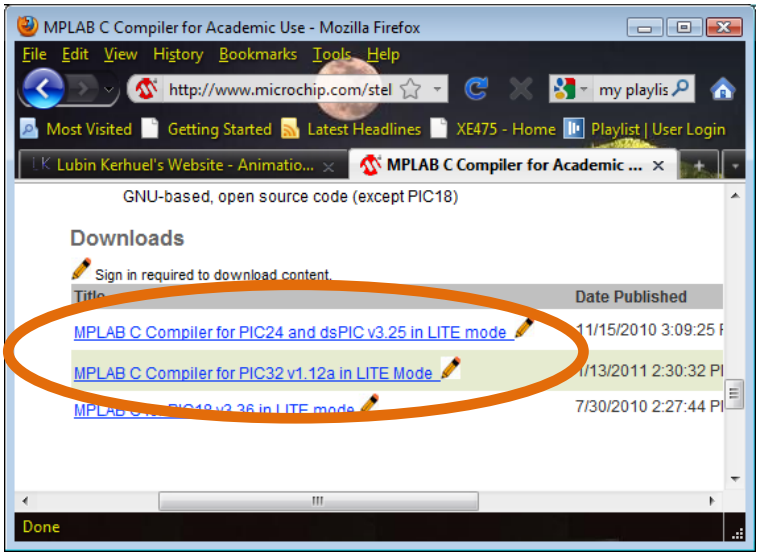
See http://www.kerhuel.eu/wiki/Animation_Installation_Procedure for an animation of the next two steps. See also http://www.kerhuel.eu/wiki/Animation_Compiling_your_first_model for an animation of using the blockset.

2. Download MPLAB latest release from www.microchip.com/mplab/ and Install.

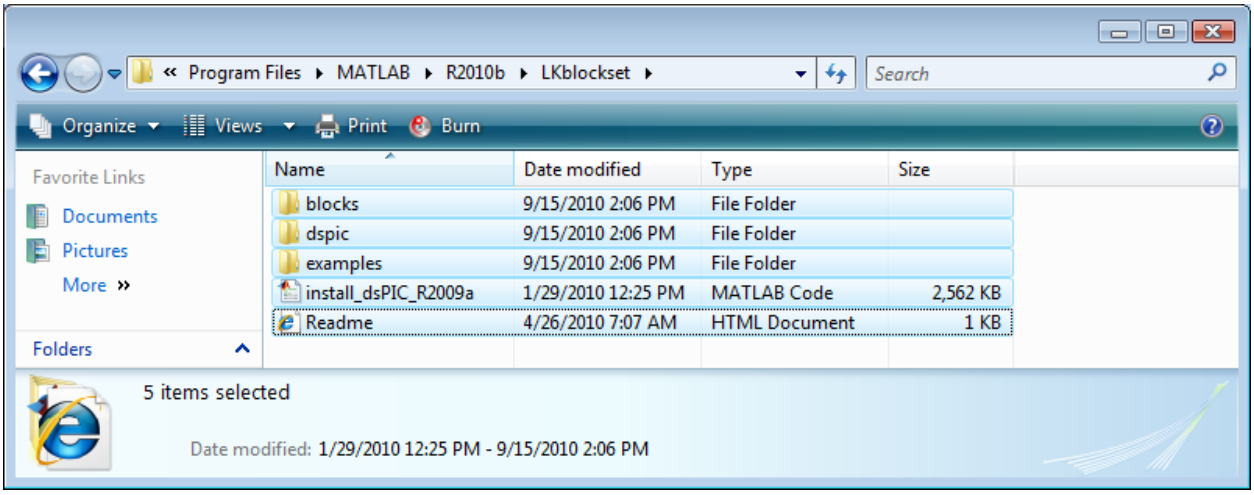


3. Download MPLAB C compilers free for academic use from http://www.microchip.com/stellent/idcplg?IdcService=SS_GET_PAGE&nodeId=1406&dDocName=en536656

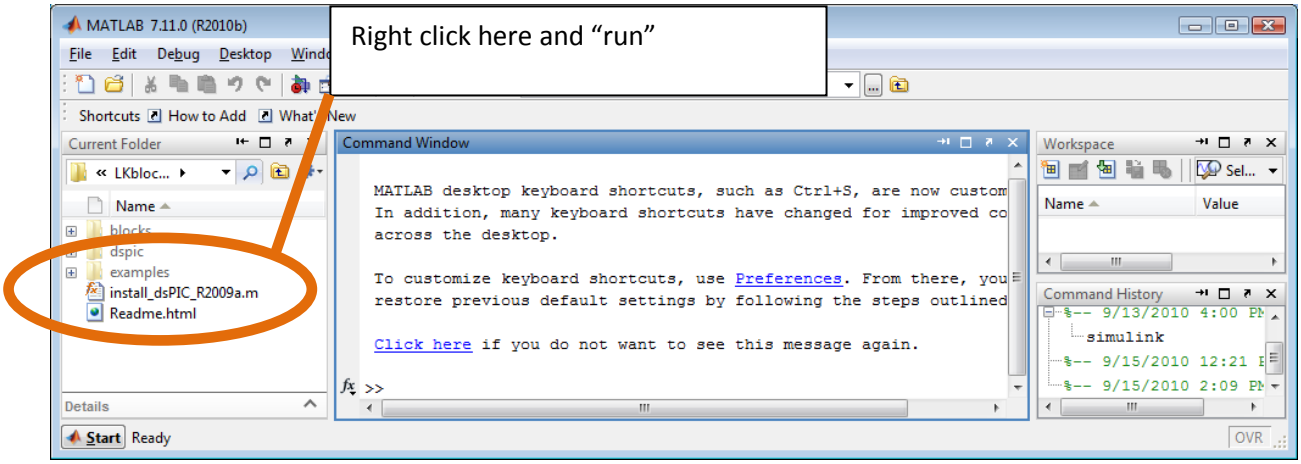
   Select MPLAB C Compiler for PIC32 in LITE mode (formerly C32) and / or MPLAB C Compiler for dsPIC in LITE mode (formerly C30) depending in your microcontroller.



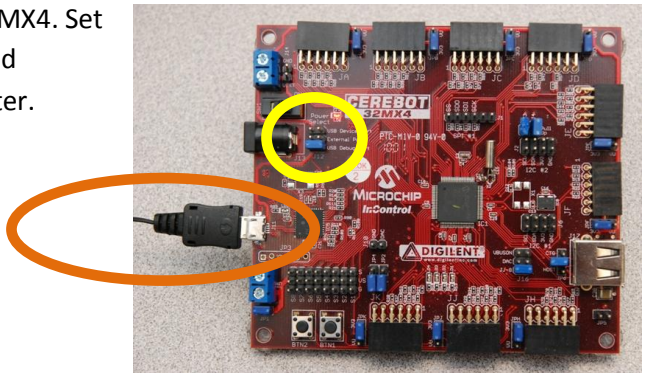
4. Install the Lubin Kerhuel Blockset. See http://www.kerhuel.eu/ for Blockset description, download of free version, tutorial, and Wiki.
   Create a new folder at the Matlab folder in Program files and copy the file and unzip, e.g.:



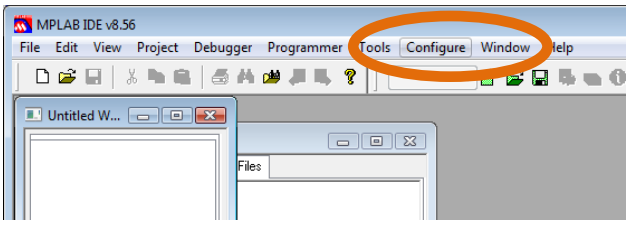
   Set the Matlab working directory to the same location, right click and run



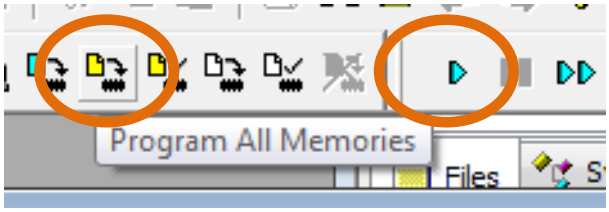
   View the install script at the Matlab Command Window, check for errors.
5. Create a new- or open an existing Simulink model using the blockset. Use LED1.mdl for example. View the blockset repository created.
6. Build the Simulink model (CTRL+B). This generates c-code and the.hex (executable) file.
7. This example is for the Digilent Cerebot 32MX4. Set the power select jumper on the 32MX4, and connect the USB debug port to the computer.



8. Open MPLAB and do the following.
9. Set device (configuration menu). e.g. PIC32MX460F512L



10. Debugger > Select Tool > PIC32 starter kit. See “Starter Kit Found” in the MPLAB output window.
11. File > import the .hex file you generated from the Simulink build, e.g. LED1.hex.
12. Program all memories, then run.



Notes:

You must set up the Master block in the Simulink model to match your quartz crystal frequency, microcontroller, etc.

You must File > Import the .hex file in MPLAB; File > Open does not work.