

Required Hardware

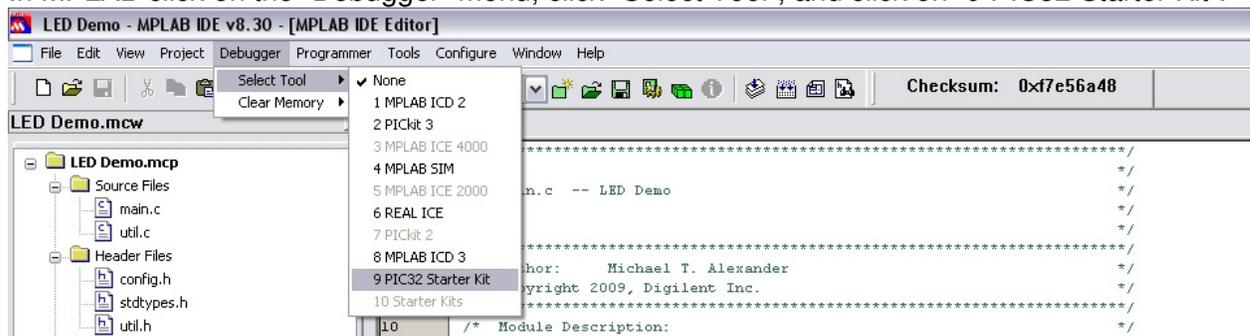
- Digilent Cerebot 32MX4
- USB A to Micro-B Cable
- Digilent Pmod8LD (optional)

Functionality

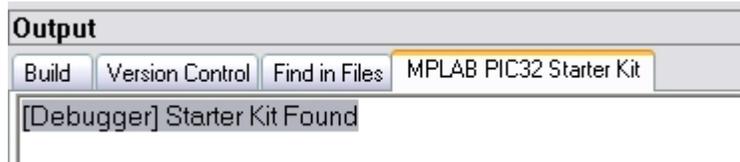
This demo provides an example of how to debounce the on-board push buttons and how to drive the on-board LEDs. It also demonstrates how the Pmod8LD can be used as a binary counter. At power-on the onboard LEDs should be cycled through from left to right at a rate of approximately 8 Hz. Pressing either of the buttons overrides automatic updating of the on-board LEDs. If BTN1 is pressed then LD1 will be illuminated. Likewise, pressing BTN2 illuminates LD2. Upon releasing all buttons the on-board LEDs will be cycled through from left to right automatically. The Pmod8LD acts as a means of displaying a binary counter with a count range of 0 – 255. The Pmod8LD LEDs are updated at a rate of approximately 8 Hz. Pressing the buttons has no effect on the functionality of the Pmod8LD LEDs. Please note that the Pmod8LD is optional and that the LED Demo will function correctly without it.

Programming the Cerebot 32MX4 with the LED Demo

1. Install a jumper in the “USB Debug Port” position of J12 of the Cerebot 32MX4
2. Connect the Cerebot 32MX4 to a PC with MPLAB v8.3 or later installed using a USB A to Micro-B cable
3. Turn on the Cerebot 32MX4 by flipping the power switch (SW1) to the “ON” position
4. Open the demo project in MPLAB by double clicking “LED Demo.mcw”
5. In MPLAB click on the “Debugger” menu, click “Select Tool”, and click on “9 PIC32 Starter Kit”.



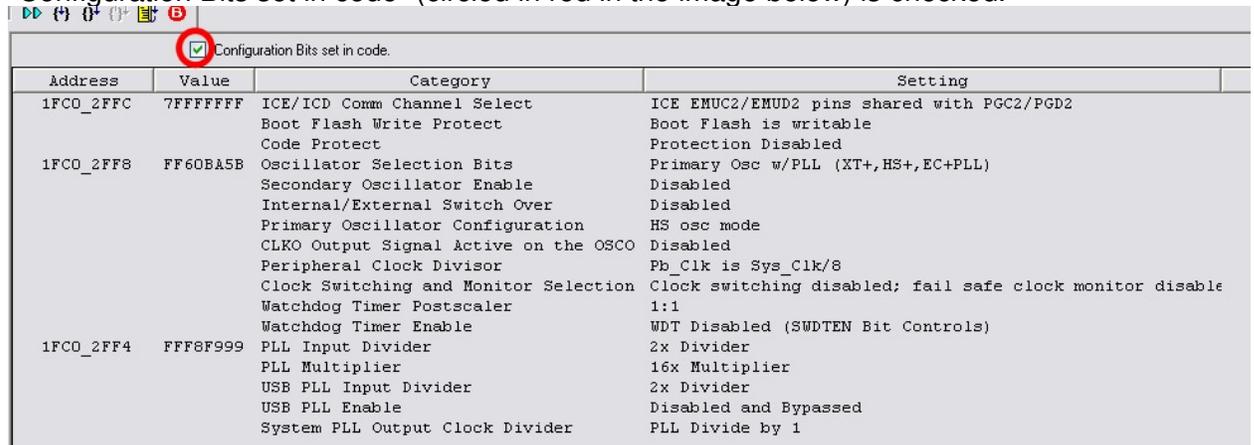
Once MPLAB recognizes the board the Output window should look similar to the one shown below.



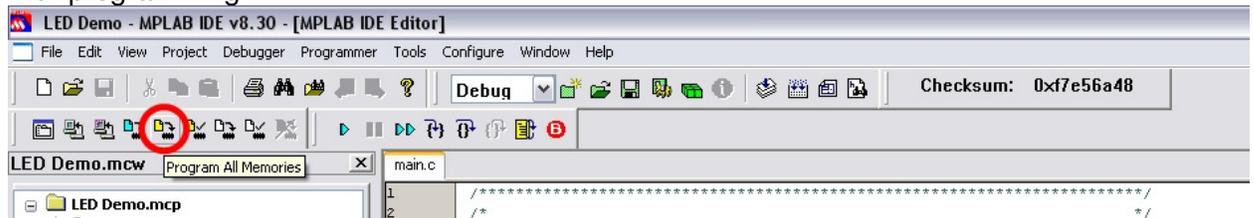
- Click on the “Configure” menu and select “Configuration Bits...”.



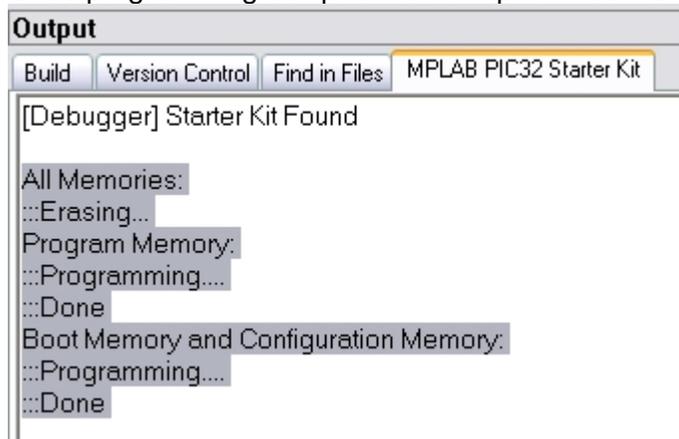
- The configuration bits window should now be displayed. Make sure that the box labeled “Configuration Bits set in code” (circled in red in the image below) is checked.



- Now click on the “Program All Memories” icon (circled in red in the image below). A dialog box titled “Programming Warning” may pop up. If this dialog box pops up click on “Yes” to proceed with programming.



Once programming completes the output window should look similar to the one shown below.



- Now that programming has completed you can use the debugger to run the LED Demo through the debugger by clicking on the play button or you can unload the debugger and run it as a standalone application. In order to run the LED Demo as a standalone application click the "Debugger" menu, then click on "Select Tool", and then click "None".

