

LAB # 11**PIC18F COMPARE MODE USING C**

1. Title: PIC18F Compare mode using C

2. Objective:

The purpose of this lab is to build hardware and write a C-program for illustrating the concept of PIC18F compare mode using C.

3. Prelab:

Write a C-program to generate a waveform with a 100 ms period and a 75% duty cycle on the CCP1 pin of the PIC18F4321. Use Compare mode, Timer3, and one MHz crystal.

4. Equipment, Software, and Components required:

-Microchip's MPLAB C18 Compiler /Debugger

-Parts List

- PICKit3 and PIC18F4321 chip from Microchip
- push button
- Breadboard
- Resistors
- Power Supply, Oscilloscope

5. Description (corresponding topics covered in the textbook):

Section 11.1.4 (Pages 326-327)

6. Prerequisites:

Example 11.2 (Pages 327-328)

7. Procedure:

-Compile the C language program using the MPLAB.

-Download the compiled program into the PIC18F4321 on the breadboard from your Personal Computer or Laptop using the PICKit3™ and MPLAB following the steps provided in Appendix H of the book.

-Use the default clock of the PIC18F4321 and connect the appropriate RESET circuit to the PIC18F4321 $\overline{\text{MCLR}}$ pin.

-Connect the reset circuit, display the waveform on the oscilloscope, and demonstrate the lab as a PIC18F4321-based stand-alone system.

8. Deliverables:

i) Postlab

Write a PIC18F assembly language program to write the program for the Prelab.

ii) Lab report

- Submit a final Lab report (Staple Signed prelab, postlab, and the schematic (if any) using Word, p-spice, Wordpro or other software tools, at the end of the quarter or semester).

9. Concluding remarks:

- Complete each prelab before coming to the lab. Please get it signed.