THE CITY COLLEGE OF NEW YORK
Department of Electrical Engineering
EE425 Computer Engineering Laboratory - Spring 2020

Exp. 2: Square Wave Generation

Objective: The experiment is designed to exhibit some of the capabilities of generating pulses at the ports of the PIC18F4520.

Specific Tasks:

1. Program the microcontroller so that it produces a square wave, or pulse train, with duty cycle=50% and with a 0.5ms half-period, at any pin of any of the output registers.

2. Program the microcontroller so that it produces a square wave with a different duty cycle (other than 50% and chosen by the students).

Note: Do not use the Prescaler option, do not call the LoopTime subroutine more than once, and do not create a second subroutine similar to LoopTime to complete this experiment.

Guidelines:

There are four distinct phases for the square wave generation:

1. Configure the pins of the PORT as outputs.
2. Send your pulse to the configured pins using appropriate commands (review the following commands: btg, bsf, bcf).
3. Put the program into a wait state for a calculated amount of time to satisfy the frequency and the duty cycle of the pulses.
4. Loop around indefinitely to generate a continuous pulse train.