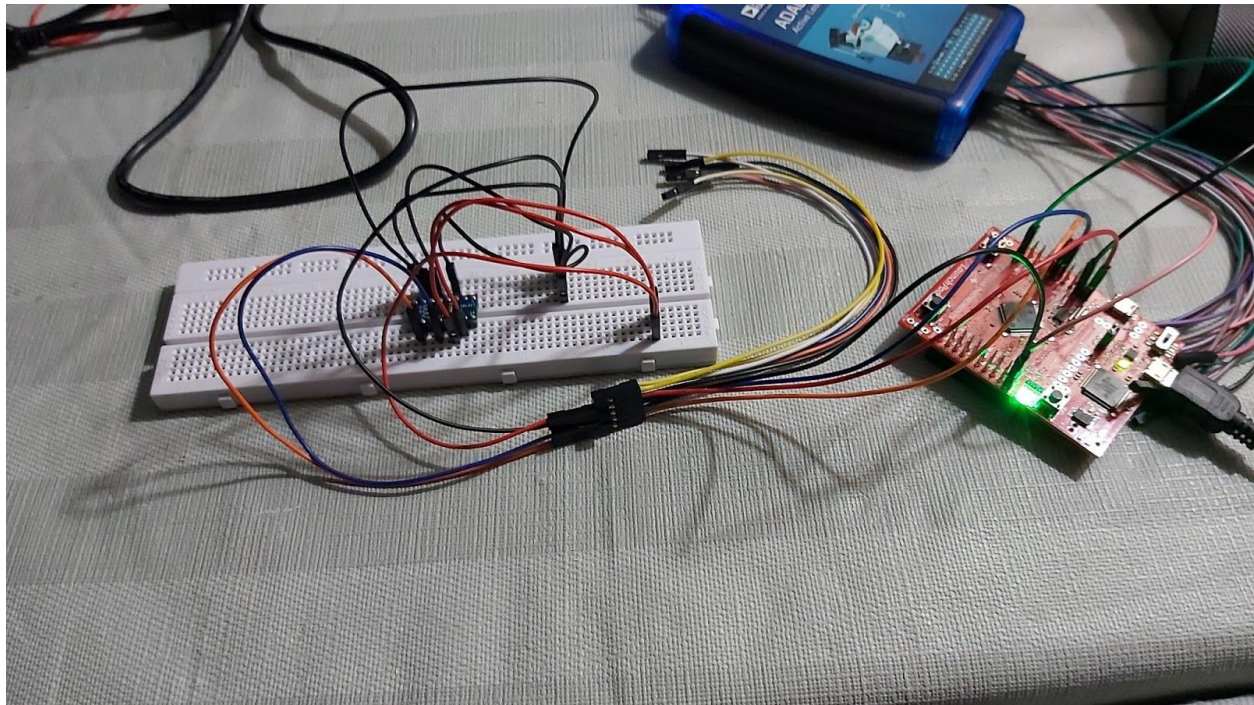CME 331
Microprocessor Based Embedded Systems

Lab 5 - Microcontrollers: Pulse Width Modulation and Watchdog
Timers

Date: 5/12/2020
Author: Ryan Trampe

Green Led operation.

a) From Pg.255 of the datasheet, editable frequency divisors are:

/2 = 8Mhz

/4 = 4Mhz

/8 = 2Mhz

/16 = 1Mhz

/32 = 500 khz

/64 = 250 khz

b) A servo motor will change the position of it's gear bearing based on the width of PWM signal it is receiving. Therefore, changing the width of the signal changes the position of the bearing.

Stepper motors will turn based on the width of the PWM signals. In this case, changing the width of the signals instead changes how many degrees the bearing turns regardless of position.

DC motors will change the speed at which they turn based on width of the PWM signal as different widths will change the strength of the magnetic field produced by the inductors. In this case, changing the width will change the speed of a continuously moving DC motor.