

# CSE 3442: Embedded Systems 1

## Lab 5: Digital to Analog Converter (DAC)

### Objective:

The purpose of this lab assignment is to work with a serial DAC chip (MAX 522). Use the QwikFlash board to generate a variable amplitude and frequency signal using the DAC chip.

### Problem Statement:

Construct the circuit used in the ADC Lab assignment (connect an external 10 k $\Omega$  potentiometer to the QwikFlash board through pin E2 of port E) and also use the 5 k $\Omega$  potentiometer (POT1) on the QwikFlash board.

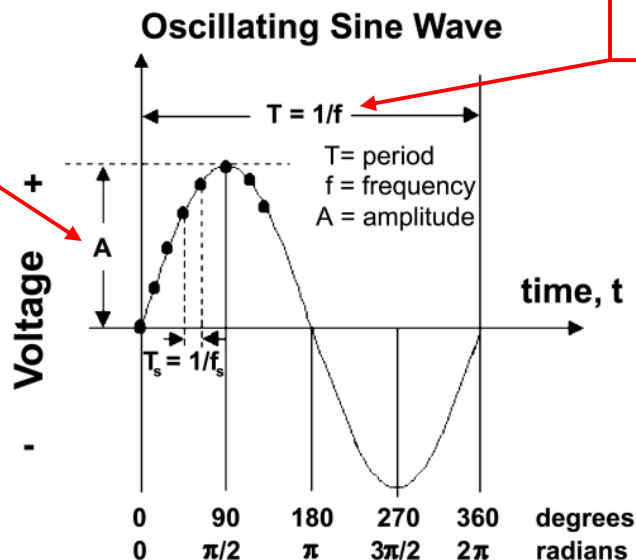
Write a program that will generate a variable amplitude and frequency sine wave using OUT A of the DAC to be displayed on the Oscilloscope.

The generated sine wave's amplitude should be in the range of 0 – 5 V and is controlled using the 10 k $\Omega$  potentiometer.

While POT1 will be used to control the signal's frequency with minimum frequency of 2 Hz and maximum frequency of 100 Hz.

Potentiometer values can be read using the ADC scheme from the previous lab.

Both the selected amplitude and frequency are to be displayed in the LCD.



10 k $\Omega$  potentiometer  
Amplitude (0 – 5V)

POT1 potentiometer  
Frequency (2 – 100Hz)