1. **OBJECTIVES**

The objectives for lab 9 were to study ADC conversion, the Nyquist Theorem, aliasing, analog amplifiers, low pass filters, data acquisition systems, and to develop a temperature measurement system using a thermistor.

1. **HARDWARE DESIGN**

See the schematic file

1. **SOFTWARE DESIGN**

See the software files

1. **MEASUREMENT DATA**

Total estimated EE 445L cost: $27.02

Total estimated real people cost: $155.58

Max current: 180 mA

Thumbstick

* Digital output for y-direction when stationary ~ 1960
* Digital output for x-direction when stationary ~ 2124
* Digital output range (same for both x & y direction) ~ 0 – 4050

Accelerometer

* Digital output for z-direction when stationary ~ 2485
* Digital output for y-direction when stationary ~ 2012
* Digital output for x-direction when stationary ~ 2050
* Digital output range (same for both x & y direction) ~ 1650 – 2450

DAC and Amp

* Retested the DAC and Amp circuit with our song from lab 5

ESP

* Moving the thumbstick connected to board A moves the image on the LCD connected to board B

LCD

* Quadtree seems to work since the screen seems to display the projectiles and ships correctly

Buttons

* Working and debounced

Timers

* Working

Regulator

* Outputs 3.3 volts when connected to the battery

1. **ANALYSIS AND DISCUSSION**

None