

EE 445L – Lab 8 (Software and Prototype Lab)

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November 4th, 2016

1.0 OBJECTIVES

See the requirements document.

2.0 HARDWARE DESIGN

See the schematic file

3.0 SOFTWARE DESIGN

See the software files

4.0 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

5.0 ANALYSIS AND DISCUSSION

None