CPE 1500 Lab 1: Tool Setup and AD2 Usage

1 dedicated lab period, 1 lab period to complete

Objectives

- Setup Quartus software
- Setup AD2 Software
- Practice using the AD2 and a breadboard

Prelab

student check off

Seek help before the lab if you have any problems with these

- Quartus Download and Installation ☐
- AD2 Waveforms installation ☐
- Prewire your breadboard power/gnd crossover ☐

Assignment

Part 1: **Build the Resistor divider circuit from the Lab1 Resistor Divider schematic**

Use the AD2 to power the circuit at 0.5V increments from 1V to 3.5V
Measure the output voltage
Create a table of your results

Part 2: **Build the Resistor-Capacitor circuit from the Lab1 Resistor Capacitor schematic**

Use the AD2 to create a 20ms, 50% duty cycle, 0 - 3.3V square wave for vin
Measure the output voltage using the oscilloscope on the AD2
Plot (print) Vout for 2 full periods

Part 3: **Build the LED Or circuit from the Lab1 LED Or schematic**

Hand wire the inputs to GND or 5V according to the table on the schematic
Complete the table with the LED On/Off results

Check Off

- Prework Checkoff 20%

You must demonstrate parts 1, 2, and 3 prior to submission of your report

- Demo part 1 results and informal report 25%
- Demo part 2 results and informal report 25%
- Demo part 3 results and informal report 30%

Due at 3:00pm on Tuesday following the lab period – in the box