ECEN 5613 **Lab #3 Signoff Sheet** **Fall 2021**

You will need to obtain the signature of your instructor or TA on the following items in order to receive credit for your lab assignment. Print your name below, sign the honor code pledge, circle your course number, and then demonstrate your working hardware & firmware in order to obtain the necessary signatures.

Student Name: Dhiraj Bernadi

Honor Code Pledge: "On my honor, as a University of Colorado student, I have neither given nor received unauthorized assistance on this work. I have clearly acknowledged work that is not my own."

Student Signature: _____

Signoff Checklist

Part 1 Elements

- ☑ Schematic of acceptable quality (all components shown)
- ☑ Pins and signals labeled, decoupling capacitors, and two 28-pin wire wrap sockets present on board
- ☑ Very good knowledge of a terminal emulator
- ☑ Demonstrates all 32KB of XRAM in memory map are functional, including monitor block fill command
- ☑ Using PAULMON2, demonstrates highest baud rate as: 57600
- ☑ Knows how to use SDCC [IDE or make optional]

_____ 10/16/21
TA signature and date

Part 2 Elements

- ☑ Knows how to analyze output files (.RST, .MEM, .MAP) for correct addresses
- ☑ C serial program and virtual debug port functional and code commented
- ☑ Hex display of buffer contents

_____
TA signature and date

Part 3 Required and Supplemental Elements

- ☑ Required ARM code integration and execution
- ☑ 8051 PWM control works correctly, X2 mode
- ☑ Correctly enters Idle mode and exits via external interrupt 1 — not implemented
- ☑ Correctly enters Power Down mode
- ☐ All other PCA software menu items function correctly — not all done
- ☐ Good understanding of PCA modes
- ☐ Good user interface; program is easy to use

_____ 10/22/21
TA signature and date

Instructor/TA Comments: ☐ ☐ ☐

FOR INSTRUCTOR USE ONLY **Part 1 and 2 Elements**	Not Applicable	Below Expectation	Meets Requirements	Exceeds Requirements	Outstanding
Schematics, SPLD code	☐	☐	☑ ✓	☐	☐
Hardware physical implementation	☐	☐	☑	☐	☐
Part 1 Required Elements functionality	☐	☐	☐	☑	☐
Sign-off done without excessive retries		☐	☐ ✓		
Student understanding and skills	☐	☐	☐ ✓	☐	☐
Overall Demo Quality (Part 2 elements)	☐	☐	☐ ✓	☐	☐

FOR INSTRUCTOR USE ONLY **Part 3 Elements**	Not Applicable	Below Expectation	Meets Requirements	Exceeds Requirements	Outstanding
Part 3 Required Elements functionality	☐	☐	☐	☐ ✓	☑ ✓
Supplemental Elements functionality	☐	☐	☐	☑	☐
Student understanding and skills	☐	☐	☐	☐	☐ ✓
Overall Demo Quality (Part 3 elements)	☐	☐	☐	☐	☐ ✓

Comments:

- ☐ Optional Challenge: PAULMON2 RUN command
- ☐ Optional Challenge: ISP API calls
- ☑ Optional Challenge: C and Assembly interfacing
- ☑ Optional Challenge: Serial ISR
- ☑ Optional Challenge: SDCC heap memory management analysis

+ Good GUI
Baudrate 57600 functional
- Debug Port logic for G to be verified
+ Part 2 functions as expected
- Buffer deallocation not executed (Corner case). Other cases works. (Deallocation works, only display wrong)
Buffer 0 print on "?" repeats
~~- Buffer 1 and Buffer 2 allocation address same~~
Label pins on board.
Input to be echoed back on GUI
Buffer 2 allocated even though crosses 5000.
Extra buffer (Invalid size) allocated.
If Buffer deallocated, try to dealloc again crashes the system.
Debug port logic analyser screen captures to be added

Part 3
Supplemental
MSP: Very well implemented, included Kelvin, great period control, RGB not working
PCA - Just PWM
I'd use a timer to set sample rate for temp sampling
Serial ISR challenge: +Nice visual analysis with LED
C+ Assembly challenge: +Complete and working
Heap analysis challenge: +Software implementation working, good understanding
-PCA missing UI
+ Great signoff!