ECEN 5613 **Lab #3 Signoff Sheet** **Fall 2022**

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: Anuhya.u

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: Anu K.

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]

10/20/22 **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

10/20/22 **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
- ☑ Correctly enters Power Down mode
- ☑ All other PCA software menu items function correctly
- ☑ Good understanding of PCA modes
- ☑ Good user interface; program is easy to use

Manuel MS 10/22/22 **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

Lab 3 Parts 1 and 2

[+] Debug port functional and good demonstration with the LA. Somehow 4 bytes working after the first corrected output. ? might be associated?

[+] Functional C code with some minor bug.

[+] Reads Mem, Map, RST very well.

[+] Paulmon successfully edits up to 0x~~7~~FFF.

Lab 3 Part 3 Comments

(+) ARM part completed on STM32
- (+) UART
- (+) PWM based on command
- (+) PWM based on push button

(+) 8051 supplemental - PCA mode.
- (+) PWM
- (+) Software timer.
- (-) Missing 3rd PCA mode -

(+) Idle & Power down mode verified.

Challenges

(+) SDCC heap analysis presented.