

EE 492 Status Report #4

Oct. 6 - Oct. 31

Sddec24_04

Sukup RTD Board Tester Kit

Client: Sukup (Dana Conrad)

Advisor: Nathan Neihart

Weekly Summary: From the time period that we last reported, the team focused on implementing the software portion of our project. We started by creating a software flow diagram and discussing the best methods in which we can communicate our test cases to both the client and host. Once those tasks were identified they were split up among the group members to accomplish. We identified the areas of concern to be the communication between host to our board, microcontroller to secondary board, and DAC interface.

Past week accomplishments:

Team Member 1(Justin): Over the last couple weeks I have been working on becoming more familiar with the MCU we are using. I have also updated the table we made in the past that translates a chosen temperature into a DAC code so we can tell the DAC what voltage drop it needs to output. Finally I worked on writing a script that will initialize the registers needed for using our DAC as well as code for the MCU to tell the DAC what it needs to output.

Team Member 2(Tony): I have been working on creating the UI to interface between the MCU and the host computer. The code I currently have is in C on Code Composer Studio and I can get the code running on a MAC operating system, but not on windows. I have been working on moving the script over to python and being able to run it on both MAC and Windows.

Team Member 3(Sam): This past time period I have been working on the interface between the microcontroller and Sukups board. I have struggled a bit in understanding the msp430s interface since I haven't had much experience coding in C. I was finally able to create a script that communicates with UART from the launchpad. With this script written I made more functions that can transmit the required amount of bytes to and from the microcontroller and computer. My aim is to create more scripts that can make case statements switching between our various required tests. This will require more GPIO pin setup that will be worked on.

Team member 4(Michael): The past few weeks were spent going through the final design revisions of the schematic and circuit board. This included adding on board

switches that the microcontroller would use to switch connections depending on the desired test. The last week was spent re-familiarizing myself with the data sheets to be able to help the team in programming while waiting on the PCBs and components to arrive.

Pending issues:

Team Member 1(Justin): The only issue I have is becoming more familiar with writing in C and using our MCU so I can become faster at writing the scripts we need.

Team Member 2(Tony): The code I have now is in C and only works on MAC. I am in the process of moving it over to python so it can be run from a command terminal. It is a challenge but I'm getting through it.

Team Member 3(Sam): I think that my biggest issues have been related to coding in C and understanding the environment that I am coding in. This is a new experience for me and I'm working to bring myself up to speed on writing in C so that I can produce scripts that are valuable to the project. I think that I have gotten the basics done and am pushing forward to creating the scripts required for the project.

Team Member 4(Michael): The biggest hurdle I have these upcoming weeks in ensuring timely delivery of the PCB assemblies for team members to continue developing and debugging code on.

Individual contributions:

Name	Hours this week	Hours Cumulative
Tony Haberkorn	5	25
Samuel Estrada	9	30
Justin Garden	6	27
Michael Hurley	5	25

Comments and extended discussion

Plans for the upcoming week

The plan for this upcoming week is to have our code written to a point where we can begin integrating it with each other's portion of work. This includes having the code in

python written where it can communicate with the msp430 and send commands. The python code that pairs the user's input to a DAC code should be written as well. We have ordered our PCB and parts arrived recently, this means that we will start our assembly and debug of the board in the upcoming week.

Summary of weekly advisor meeting:

This past week we reviewed the code and software flow with our advisor to get feedback on if this approach still fits within our clients goals. With this feedback we reached out to the client with our plan and code flow to get confirmation to move forward with our plan. We also presented our current progress and difficulties with each of our portions of the project.