

EE / CprE / SE 492 - sdddec18 - 21
Multi-Effect Sequencing Board
Biweekly Status Report 1

8/27/2018-9/10/2018

Client: Randall Geiger

Team Members:

Calyn Gimse

Charles Rigsby

Derrick Lawrence

Karla Beas-Gutierrez

Tyler McAnally

Summary:

This first two weeks, our goal was to get reacquainted with the project after having a long break between semesters, and to get started on tackling any major issues that had cropped up at the end of last semester, and get a good plan for the rest of the semester. On the hardware side, the main issue had been identified to be the DAC, which had initially been planned on being fixed by ordering a new DAC, but instead will be foregone by using an auxiliary output. On the app side, issues with Bluetooth signals maintaining through the app has been identified, and work has begun with turning that handling into a service to fix the issue. On the board software side, some bugs with the code that were identified last semester have been resolved, and work on adding more support with the app and with the hardware interface has been started.

Past Accomplishments of Last Two Weeks:

- Calyn Gimse:
 - Implemented Signal Handling to communicate between server and program.
 - Improved stability of app and fixed some hanging issues
 - Modified server method to accept downloading/uploading presets on top of changing presets
 - Format for all communication modes established
 - Added code for handling switching presets on button press
- Charles Rigsby:
 - Re-evaluation of circuit from last semester
- Derrick Lawrence:
 - DAC spec & order for testing
 - Circuit prep for implementation & code modifications started
 - Clamp for input protection to ADC
- Karla Beas-Gutierrez:
 - Became re-acquainted with progress and challenges from last semester
 - Studied SPI functions from BCM2835 C library
- Tyler McAnally:

- Setup development environment.
- Worked on turning bluetooth handling into a service.

Pending Issues:

- ~~Formerly used DAC not working, a new DAC has been ordered but will require waiting on part to work on the outputting circuit~~
 - After meeting with advisor, the DAC will not be used, and instead replaced with using auxiliary cable output.
- Abandoned PWM method at output stage, moving to an external DAC for analog output to pre-amp

Individual Contributions:

<u>Name</u>	<u>Individual Contributions</u>	<u>Hours worked</u>	<u>Hours cumulative (this semester)</u>
Calyn Gimse	Server-side signal handler, Implemented downloading/uploading methods on server-side	7	7
Charles Rigsby	Testing/Re-evaluation	3	3
Derrick Lawrence	Spec'd test level DAC, Researched chip input protection methods	4	4
Karla Beas-Gutierrez	Studied BCM2835 C Library	3	3
Tyler McAnally	Worked on bluetooth service	4	4

Plans for upcoming two weeks:

- Calyn Gimse:
 - Assist in getting downloading/uploading presets functionality working app-side
 - Implement ADC audio input, replacing currently used file format
 - Will be outputted through aux/HDMI audio until DAC is fixed
 - Look into better stabilizing the effect sounds
 - Potentially try to find the volume issue
- Charles Rigsby:

- Assist with DAC implementation and testing
 - Assemble parts list and plan for product assembly
 - Create EE492 Presentation for 9/13
- Derrick Lawrence:
 - Finish implementation of DAC and begin testing
 - Prep for hardware and software integration
- Karla Beas-Gutierrez:
 - Assist with hardware and software implementation
- Tyler McAnally:
 - Get bluetooth working as a service.

Summary of Advisor Meeting:

- DAC is possible, although PWM could have still worked
- For the short/potentially long term, use AUX for output as planned