sddec18-21: Multi-Effect Sound Pedal Sequencer for Performing Musicians
Week 9 Report
April 8 - April 14

Team Members

Calyn Gimse — *Test Engineer*
Tyler McAnally — *App Developer*
Karla Beas — *Facilitator / Hardware Assistance*
Charles Rigsby — *Hardware Assmebly*
Derrick Lawrence — *Report Manager / Hardware Assistance*
Professor Randall Geiger — *Adviser / Client*
Professor Joseph Zambreno — *Course Instructor*

Summary of Progress this Report

This week included progress in construction of breadboard prototype, implementation of clean processing, parsing of files sent from the android device, debugging code representing the digital effects, and successfully transmitting data to change the current, active effect configuration. We are able to use the app to send data to the Pi to select one of 10 presets stored on the Pi. We had successfully processed audio through the Pi, however a rather large amount of audible noise was present at the output.

Pending Issues

A major set back from this week came while investigating the cause of the audible noise at the output. After having to move labs and setting up power supplies again, the pins previously used to generate the resulting signal were no longer producing any sort of signal. Per the datasheet of the ADC, the chip includes input protection, so this cause has been decided as unlikely. The GPIO functionality of the output pins works as normal and can pull the pin high (3.3V) or low (0 V) with commands. However, with using the alternate function of each pin (PWM), we are unable to send any duty cycle through the output. With little research into peripherals, this is the suspected cause, but will need to be investigated further.

Plans for Upcoming Reporting Period

The plan for the upcoming period is to prepare integration of each aspect of the project for demonstration during the final presentation for the course. The circuit will be tested further in order to produce a demo of the hardware. The DSP code will be integrated with the app to prepare for a smooth demo.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Calyn Gimse	Implemented file parsing, storing of data in transmitted data, and debugged DSP code	6	46
Tyler McAnally	Implemented file transfer to Pi to activate an effect	5	37
Karla Beas	Assisted with input circuit troubleshooting and slight rework	4	34
Charles Rigsby	Assisted with circuit testing	2	33.5
Derrick Lawrence	Completed breadboard prototype and began testing of Pi for the cause of loss of functionality	8	39