

sdmay19-32: Sound Effect Devices for Musicians

Week 1 Report

January 24 – January 31

Advisors: Dr. Geiger & Dr. Chen

Team Members

Tim Day — *Analog Engineer*

Eric Fischer — *Test Engineer*

Francisco Alegria — *Chief/ Musical Engineer*

Blake Beyer — *Digital Engineer*

Travis Gillham — *Integration Engineer*

Summary of Progress this Report

This week we started testing all of the modules and started to create algorithms that correspond with the digital potentiometer for testing. There were some problems that did arise those being that the filter and the amplifier were attenuating not amplifying. This should be resolved in the upcoming week. The algorithm for the mixer was completed on MATLAB and needs to be moved over to the Arduino. Test benches were created to help team members learn how to use the digital potentiometers.

Pending Issues

- Need to create Arduino algorithm for mixer.
- Need to test mixer
- Need to create the envelopes
- Need to finish testing filter, amps, & oscillators
- Need to finish GUI

Plans for Upcoming Reporting Period

- Rewrite the Gantt chart to be adjusted for this semester.
- Plan to finish 2nd TB for mixer and start other TBs for remaining modules.
- Write the Arduino algorithm for the mixer
- Filter tests complete
- Amplifier output fixed

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Tim Day	Finished the algorithm for the mixer on Matlab. Finished the circuit design for the mixer. Spent time learning how to use GitHub. Began rewriting the algorithm on to an Arduino to test the circuit for the mixer.	6	6
Eric Fischer	Did partial testing on filters, compared input signal to output signal and looked how the potentiometers changed the output. Need to complete bode plot testing still for both filters.	6	6
Francisco Alegria	Built a test bench circuit for learning how to use digital potentiometers. Wrote code for the 1 st TB circuit. Started making more mixed signal test benches w/Wi-Fi for individual modules. 2 nd TB currently in progress, it is for the mixer.	6	6
Blake Beyer	Tested amplifier circuit with Travis. Researched alternatives to output amplifier Found digipots on digikey for oscillator control and filter control.	6	6
Travis Gillham	Tested circuit trying to figure out the gain equation with the amplifier. Talked with Geiger about possible other paths to go.	6	6