sdmay19-32: Sound Effect Devices for Musicians

Week 10 Report

November 1 – November 8

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

Before thanksgiving break we have reached the goal of completing all the circuit designs. Now the testing needs to show that they are valid before the PCB order is sent. The mixer is waiting for the digital potentiometers to test the algorithm for the circuit. Arduinos will be ordered and need to be programmed to run the algorithm. The filters have both made progress and they both need to be constructed and tested on a breadboard. The oscillators have been configured and are working as expected and they are ready to be soldered onto PERF boards. The output amplifier is waiting for the components to arrive and will be tested as soon as they all show up. It is projected that all the testing will be undergoing the week after thanksgiving break.

Something that was completed is the graphics for the first user interface for the user over and IPAD. This communication over Wi-Fi is being worked on and will be making faster progress once all of the digital potentiometers arrive.

Pending Issues

- Need to figure out how to design the envelope
- Complete testing for all of the parts
- Configure the wifi testing to module.

Plans for Upcoming Reporting Period

- Parts should have arrived and the final testing will be done till the end of the semester.
- Start soldering the functional devices onto PERF boards.
- Progress further with the wifi communication.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Tim Day	Remodeled the mixer circuit design to accommodate for being able to adjust the inputs with a potentiometer. Wrote and tested an algorithm on MATLAB that is able to adjust the percent of each input from the user interface. Ordered the parts to arrive after break.	6	59
Eric Fischer	Built lowpass filter on breadboard and started testing using signal express. Ran into software and hardware issues. Need to complete testing for lowpass, and then build and test high pass.	3	38.5
Francisco Alegria	Compiled individual hand-drawn block diagrams on to one full diagram. Finished user interface graphics, first version. Working on completing schematics and redoing code for Wi-Fi communication.	3	60.5
Blake Beyer	Configured oscillators to work from C0-C6. Confirmed and tested accuracy for C0-C6. Updated schematic on Multisim. Started configuring C(-1) for MIDI compatibility. Assisted Eric in testing filters and Travis with searching for output amplifier.	15	44
Travis Gillham	Had a meeting with Geiger about the output amplifier circuit and components inside it. Ordered 10 audio amplifiers for the circuit.	3	44.5