

sdmay19-32: Sound Effect Devices for Musicians

Week 4 Report

February 14 – February 21

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 progress was made on all the modules. For the noise generator a spectral analysis was done to see if it was constant power level at all frequencies. An automatic gain controller for the mixer was made to keep the output at 2.5V. The filters and ADSR algorithm are in progress. The wifi connection is being debugged.

Pending Issues

- Need to test the system with all the modules placed together.
- Need the digi-pods for the filter and amplifier.
- All the code needs to be placed onto one device.
- All the algorithms need to be tested.

Plans for Upcoming Reporting Period

- Test some modules placed together.
- Better represent the data from the noise generator.
- Have the code written for the analog digital converter.
- Have the filter code complete.

Individual Contributions

| Team Member | Contribution | Weekly Hours | Total Hours |
|--------------------|--|---------------------|--------------------|
| Tim Day | Worked on creating a spectral analysis of the spectral analysis of noise. Came up with a method of keeping the output voltage at 2.5Vpp. Developed an automatic gain controller. Modified the algorithm for the mixer. | 9 | 40 |
| Eric Fischer | Working through the filter algorithm. Familiarizing myself with how to use arduino code. Ordered digipots for the filter circuits. | 8 | 35.5 |
| Francisco Alegria | Finished debugging WiFi connectivity. Started compiling code for micro controller that handles WiFi connectivity. | 6 | 22 |
| Blake Beyer | Found ADC. Developed ADC code. | 6 | 35.5 |
| Travis Gillham | Worked on fixing the amplifier circuit when the headphones are plugged in and when speakers are plugged in. Modified the ADSR code that will be working with the amplifier circuit. | 10.5 | 29.5 |