sdmay18-39: Sound Effect Devices for Musicians
Week 5 Report
October 4 - October 17

Team Members
Benjamin Reichert — *Experimentation Team Leader*
Daniel Kroese — *Software Integration Leader*
Garrett Mayer — *Technical Communications Leader*
Thomas Kimler — *Technical Project Manager*
Virginia Boy — *Communications Leader*

Summary of Progress this Report
- Looked into preliminary methods of how to manipulate sound waves using a micro controller
- Looked at using Fourier and inverse Fourier transforms to manipulate signals on micro controllers
- Reached out to some music or musically inclined physics professors on campus who could help understand what makes certain music sound good vs. bad, they were unable to assist
-First data capture of Solid state amp recording was performed
-Collected data was truncated for coherence and analyzed via matlab (fft) and plotted for comparison to the tube recording
-Designed breakout circuit
-Designed, tested and fabricated buffered attenuator for data capture

Pending Issues
-Currently waiting for parts to come in
-Need to build a test bench for collecting data
-Need to develop a system for uniform data collection and analysis

Plans for Upcoming Reporting Period
- Develop test bench to automate characteristic testing
- Begin automated testing in effort to draw conclusions from experiments
- Select a microcontroller for prototype use
- Construct attenuator circuit

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Benjamin Reichert	First data capture of Solid state amp recording performed, data was truncated for coherence and analyzed via matlab (fft) and plotted for comparison to the tube recording, findings prepared for presentation with advisers, worked on design document	8	40
Daniel Kroese	Looked into some preliminary methods of	7	38

	how to manipulate sound waves using a micro controller, Looked into using fourier and inverse fourier transforms to manipulate signals on micro controllers, Reached out to some music or musically inclined physics professors, although they weren't able to answer the technical questions we had, Worked on filling out design document		
Garrett Mayer	Build Matlab functions for fft, note generation, audio write, play note, and plotting waves, Creation of design document, Update team bios & website documents, worked on design document	8	43
Thomas Kimler	Designed breakout circuit, designed tested and fabricated buffered attenuator for data capture, assisted with setting up coherent sampling environment, worked on design document	8	44
Virginia Boy	looked into physics of guitar strings and standing waves, helped analyze data through Matlab, worked on design document	6	30