

EE 491 Weekly Report **MAY1612** **Week 12 (11/10/15-11/17/15)**

Advisors: Mani Mina, John Pritchard

Client: Minnetronix

Members (roles): Brandon McDonnell, Group Lead; Justin Long, Web Master
Timothy Dee, Key Concepts; Corey Wright, Communications

Project Title: Remotely Connected Electric Field Generator for Particle Separation in a Fluid

Weekly Summary

This week we met in the newer 201 lab on the second level of Coover hall to continue working on the minigen and amplifier circuit. During this time we worked through the two raspberry pi devices to show each of the minigen and amplifier gain change via the potentiometer. The minigen is still having problems creating the 3.3V sine wave that we want. We have narrowed the problem down to improper register writing in one specific bit, bit 23 of the frequency register, and will need to fix that portion. At this time we are able to get half of the frequencies to work correctly. The op amp circuit was a complete failure even though the setup was checked and double checked. The circuit is sound but the components do not seem to work well with each other. The output is almost always clipped and the gain is never where it should be. Further intense study is scheduled for next week.

Meeting notes:

We met as a group in the same lab mentioned above. Brandon, Tim, and Corey were present while Justin was out of town for a job interview. The work progressed well at first in the setup and initial testing but we hit a dead end trying to get the amplifier circuit to work. During this time Tim was refining the web interface before coming over to help on the amplifier. We ultimately could not get the circuit to work and will continue to try to do so next week. We believe that our amplifiers had too small of a gain bandwidth and slew rate to properly work (we were using 741 amplifiers).

Pending issues

1. We have the type of amplifier circuit that we want narrowed down but need to find a commercially manufactured circuit that will fill our needs, ideally.
2. We will then connect the successful minigen and potentiometer programs to our web interface.

Plans for next week

Describe who will do what

1. All: Get the amplifier circuit to work better
2. All: Find a commercial amplifier that will work for our circuit
3. Tim: Finish up the web interface
4. Justin: Possible touchups to the website including a group picture

Individual Contributions (this week)

Brandon McDonnell (4.5 hr)

-modeled op amp in lab

Justin Long (2 hr)

-worked on the website including bios

Tim Dee (4.5 hr)

-worked on the web interface

Corey Wright (3hr)

-modeled op amp in lab

Total contributions for the project

Brandon McDonnell	(28hr)
Justin Long	(20hr)
Tim Dee	(37hr)
Corey Wright	(26hr)