EE/CprE/SE 492 WEEKLY REPORT 2 1/31/25 - 2/13/24

sdmay25-16

Project title: Multi-Channel High-Gain Low Noise Amplifier for High-Frequency Ultrasound Signal Acquisition

Client &/Advisor: Manojit Pramanik

Team Members/Role:

Jon Wetenkamp, Yash Gaonkar, Ethan Hulinksy, Ryan Ellerbach

• Bi-Weekly Summary:

During the last week we met with both our Project Contact as well as our client. The main goal of these meetings was to plan for the next couple of weeks. During the meeting with our project contact we did some testing to determine if we could use a resistor to perform impedance matching. These tests showed us that this did not work to replace the impedance matching connector on the oscilloscope. This means that we will still need to have the connector on the oscilloscope. After that we talked about how we want to continue forward. We first looked at some other amplifiers but decided not to use them because the amplifier was very noisy due to crosstalk, and it did not have proper EM shielding. We also started planning how we were going divide the work that had to be done between the group. Ryan was responsible for the Footprints, Ethan was responsible for part selection, Yash was responsible for EM shielding, Jon was responsible for schematics. We also decided to use two halves of an amplifier for gain tuning.

The meeting with our client he gave us some feedback regarding our performance last semster and some things we could do better. We also talked about our future goals for the semester and set up a biweekly meeting time.

• Past week accomplishments

- Yash Gaonkar: Researched EM shielding compatible with the new design. Met with project contact and created a new plan for a single PCB rather than 1 PCB per amplifier pair.
- Ethan Hulinsky: Started researching parts (aside from the IC amplifiers) to be used in the new design. Met with project contact and created a new plan for a single PCB rather than 1 PCB per amplifier pair.
- Ryan Ellerbach: Began creating footprints for components that will be used in the PCB design. Met with project contact and created a new plan for a single PCB rather than 1 PCB per amplifier pair.
- Jon Wetenkamp: Began creating a plan for how the schematic will be laid out and function. Met with project contact and created a new plan for a single PCB rather than 1 PCB per amplifier pair.

• Pending issues

There are no pending issues currently

• Individual contributions

NAME	Individual Contributions (Quick list of contributions. This should be short.)	<u>Hours</u> this <u>week</u>	HOURS cumulative
Jonathan Wetenkamp	Began creating a plan for how the schematic will be laid out and function.	4	30.5
Yash Gaonkar	Researched EM shielding compatible with the new plan for board layout.	4	28.5
Ryan Ellerbach	Began creating footprints for components that will be used in the PCB design.	4	32.5
Ethan Hulinsky	Started researching parts (aside from the IC amplifiers) to be used in the new design.	4	36

• Plans for the upcoming week

We will continue working on our individual tasks and meet with our client.