

Week 9

Design Journal

z5592274 | Freesia Gaul | 7/11/2024

Overview

Our aim is to create a Dalek which acts as an IR receiver, rotating itself toward the emitting source and signaling that it has been found by saying “Exterminate.”

Weekly Progress:

- SubG-B has successfully implemented a filter with improved stability in noisy conditions, likely to be used in the competitive design
- SubG-A & B have been communicating code designs and how to optimise them so that the circuits of both teams complement each other
- SubG-B has finished the model of the Dalek for the competitive phase

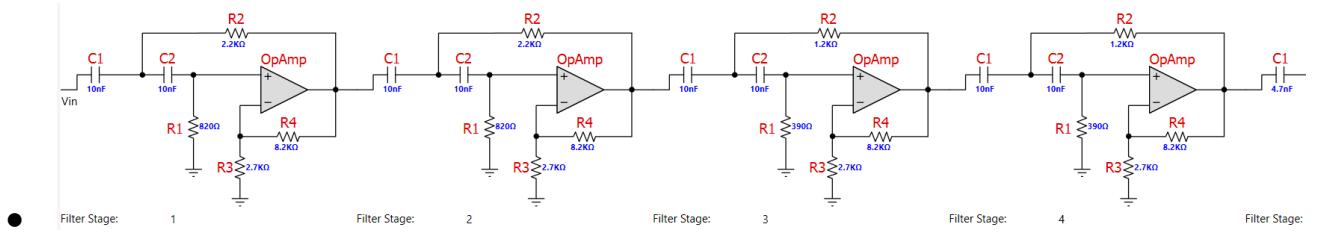


My Tasks:

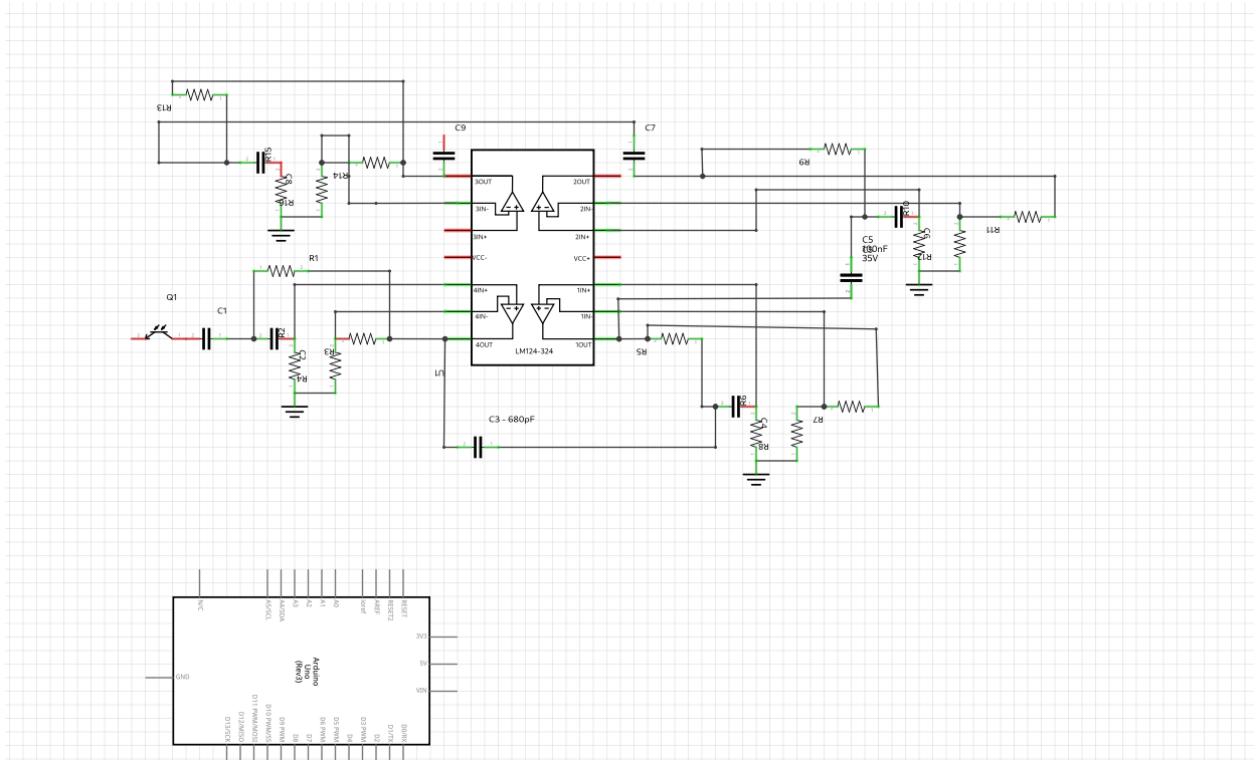
- Solder and wire all of the boards together
- Help Aaron with improving the filter design
- Debug Matthew and Caseys code for voltage regulation
- Paint the new parts of the Dalek for Sean

Personal Progress:

- Understood and wired the perfboard circuit for SubG-A; I am now working on helping with their code
- I have been working on optimizing the filter alongside Aaron, looking at extra components we may be able to take advantage of, from LM555 smoothing to some analogue logic designs for speed
- I have helped (peripherally) with finding sound files for our signal jamming plan involving the speaker, looking into ways to do 'quasi' parallel programming of components connected to the Arduino using the millis() function
- I have helped turn Aarons circuit designs and connected them to larger schematics.

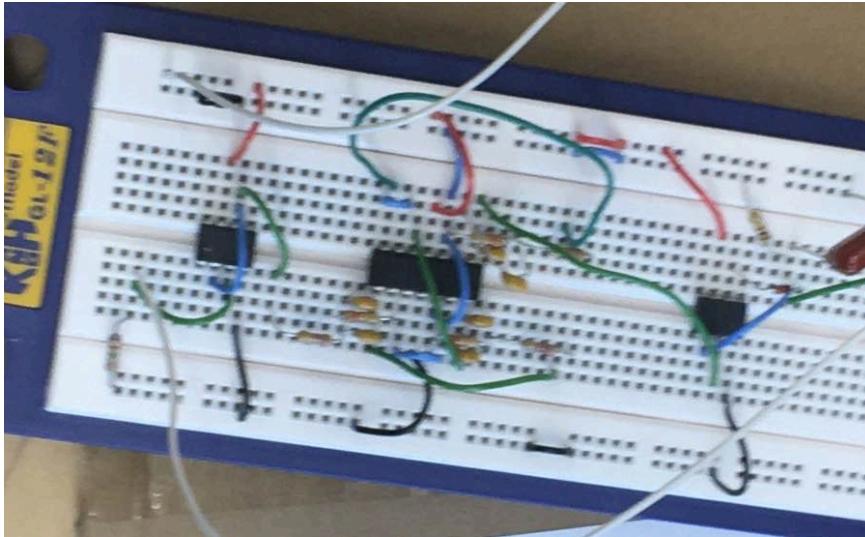


To,



(Example schemating in progress using Fritzing.)

- Current filter-amplifier is below, but were adapting this with our new idea currently:



Lingering Concern(s):

- I have to synthesize all of the circuit designs, but both teams still want to work on them, so they are constantly changing. This is a concern as it will ramp up how much I have to do just before the competition.

