IEEE MICROMOUSE

Workshop Week 1:

Soldering your micromouse kit

Objective:

Solder the micromouse kit with your teammates. No experience required to solder the micromouse, do not be afraid to ask for assistance.

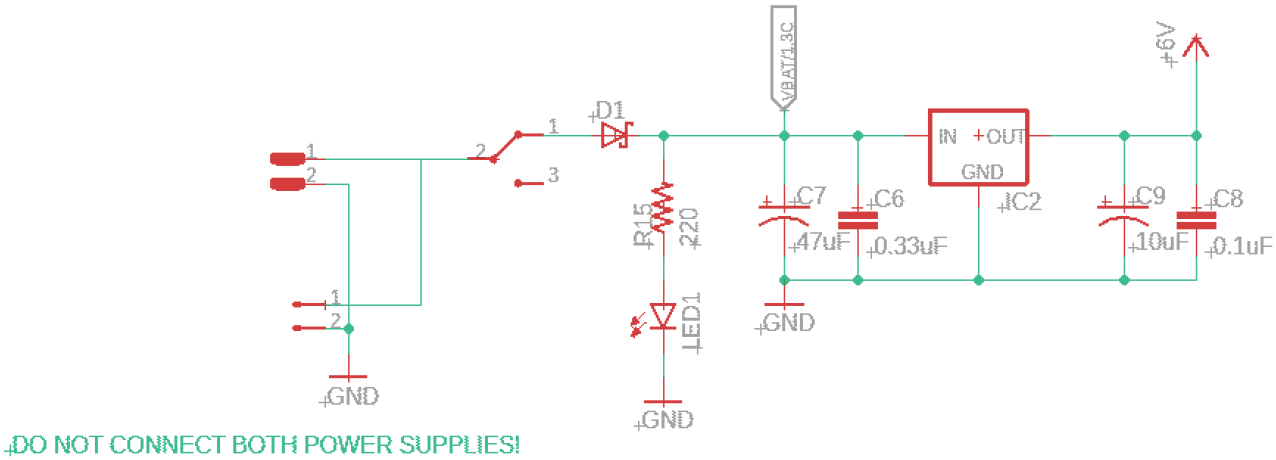
Background Information:

Today you will be soldering your micromouse with your teammates. All the components along with a soldering station will be provided to your team. The soldering workshop is the first step towards getting to know the components and skills required to assemble a micromouse. Within this document, you will find images of intermediate soldering steps as well as schematics of the entire micromouse board. No written instructions will be given inside of this document, so you must carefully read the schematics and look at the images to properly solder the micromouse board. You can solder the micromouse in any order you like, but we encourage to solder the components as they appear in this document. If you have any questions, please do not hesitate to ask any officer at the workshop.

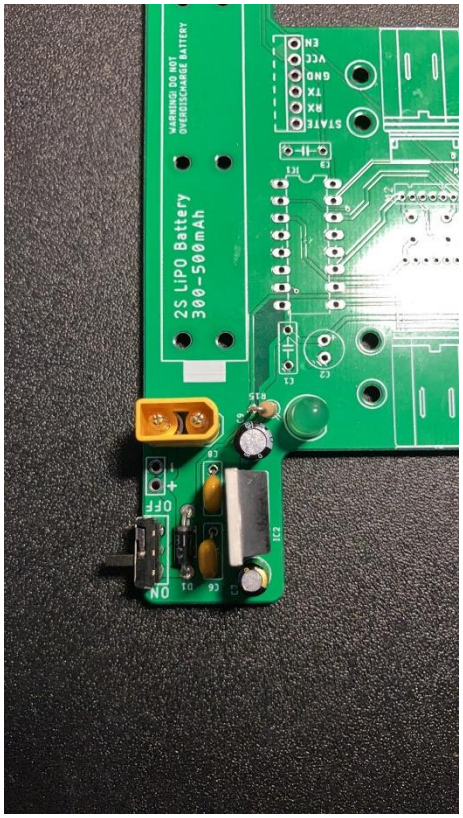
Some stuff to watch out for:

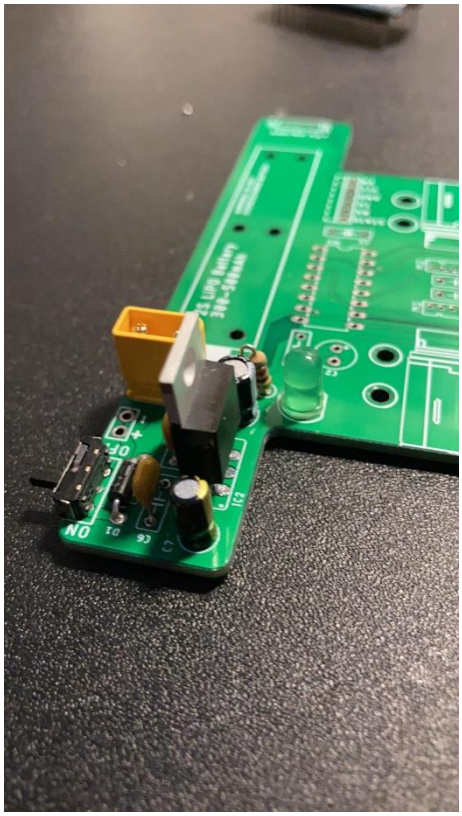
1. LED, capacitor, and diode polarity. Long lead is positive, short is negative. Only round capacitors have polarity.
2. Resistors will be bent according to the pictures
3. Pay special attention to the assembly of the Infrared (IR) sensors. They come in a separate pair of LEDs and have polarity. You should have an emitter and a receiver; you can identify them by their color. The emitter will have a lighter shade of blue than the emitter.
4. Be patient with the mechanical assembly. Wait for the tools to become available if someone else is using them. Ask for help if you don't know how to assemble the motors, battery, or caster wheel.
5. Be careful with the orientation of the motor connector. You should see the connector cover the markings where the connector goes. If you can partially see the markings, you have the wrong orientation.

Power Supply:

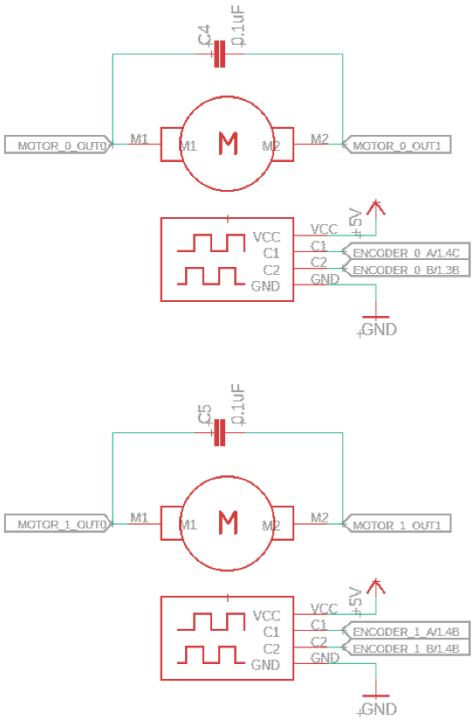


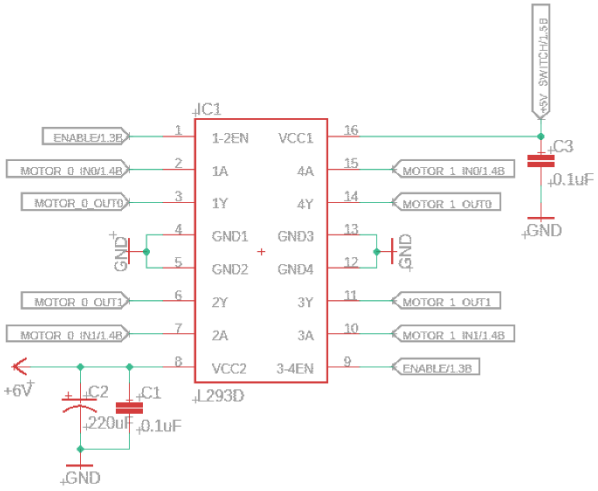
DO NOT CONNECT BOTH POWER SUPPLIES!

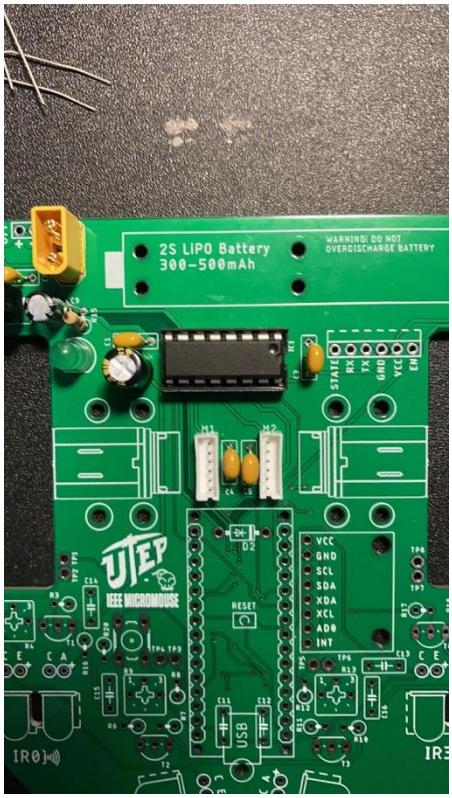


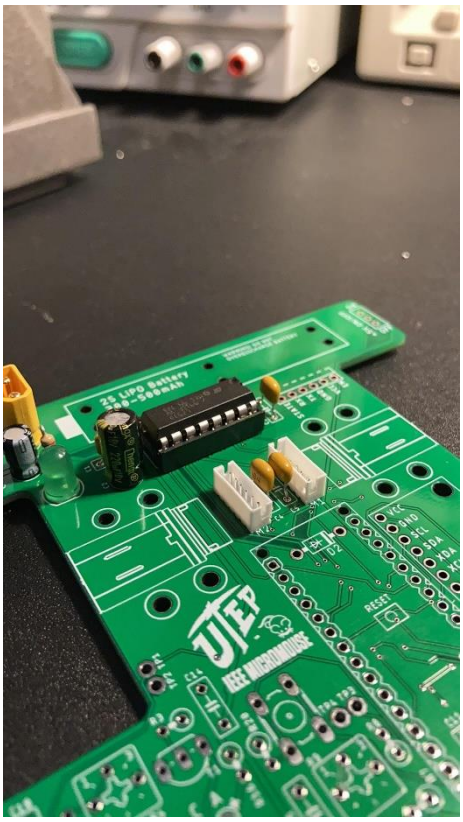


Motor Drivers:

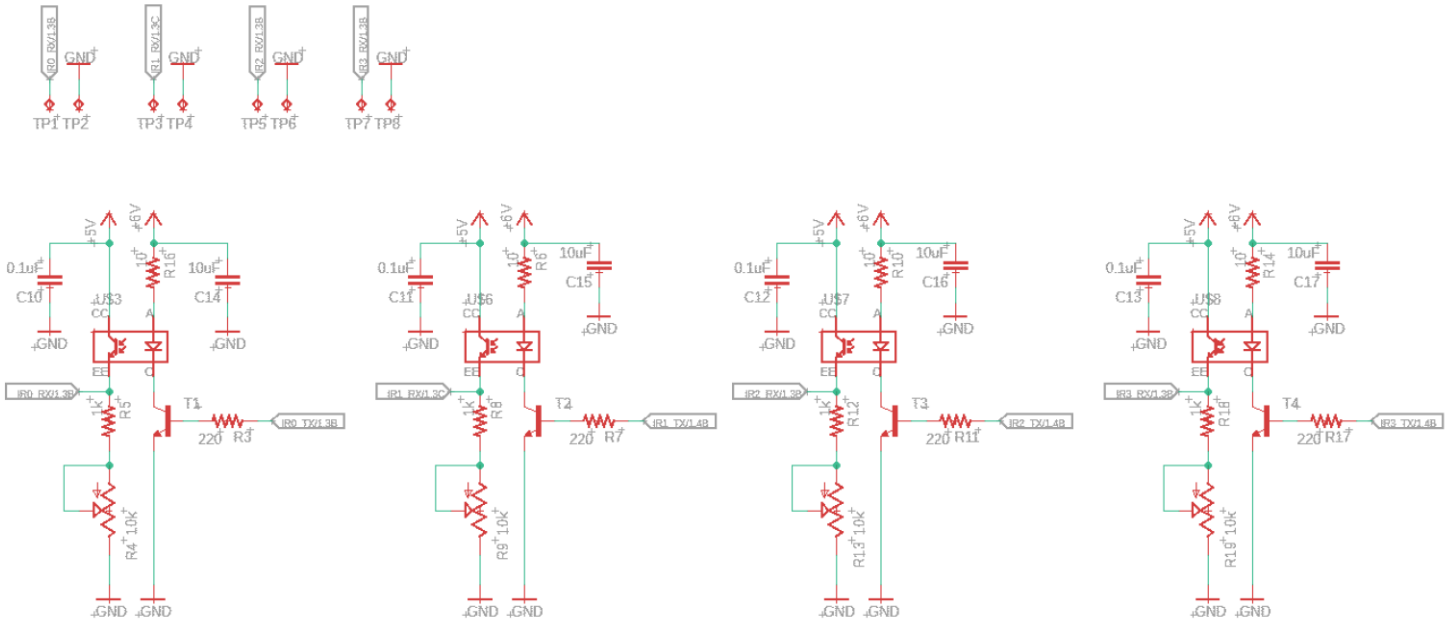


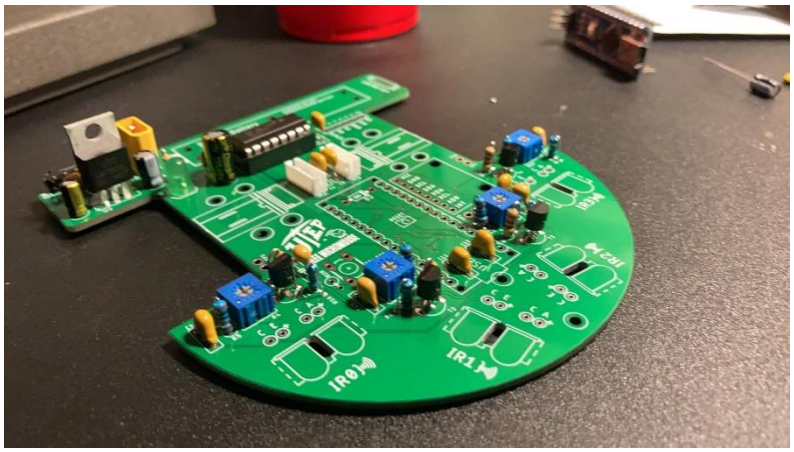


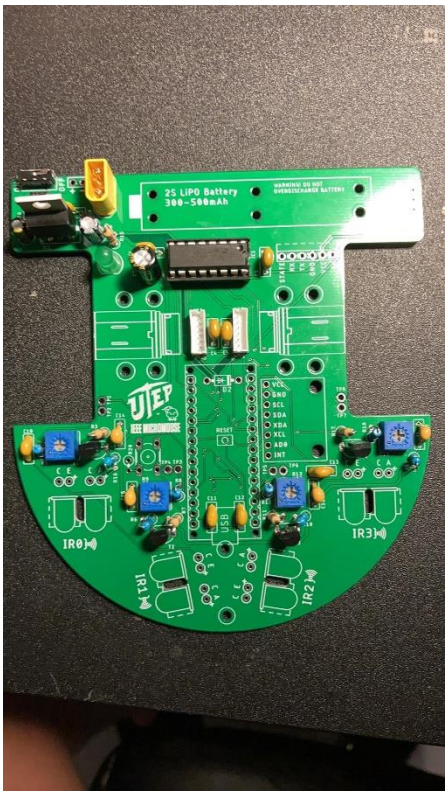




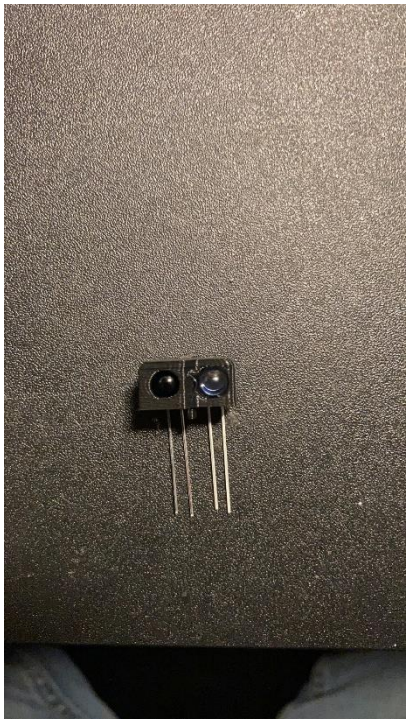
Infrared (IR) Sensors:

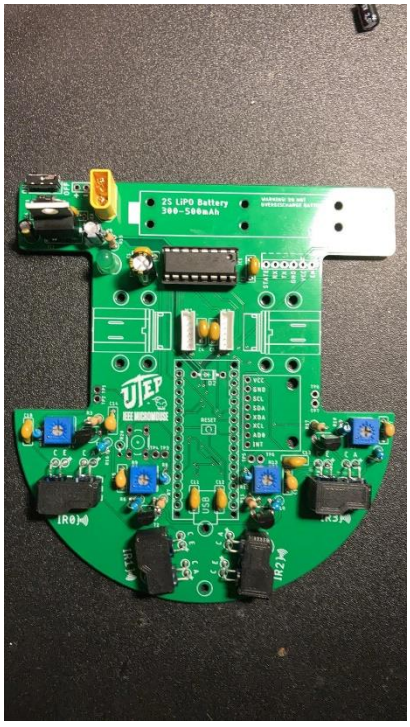




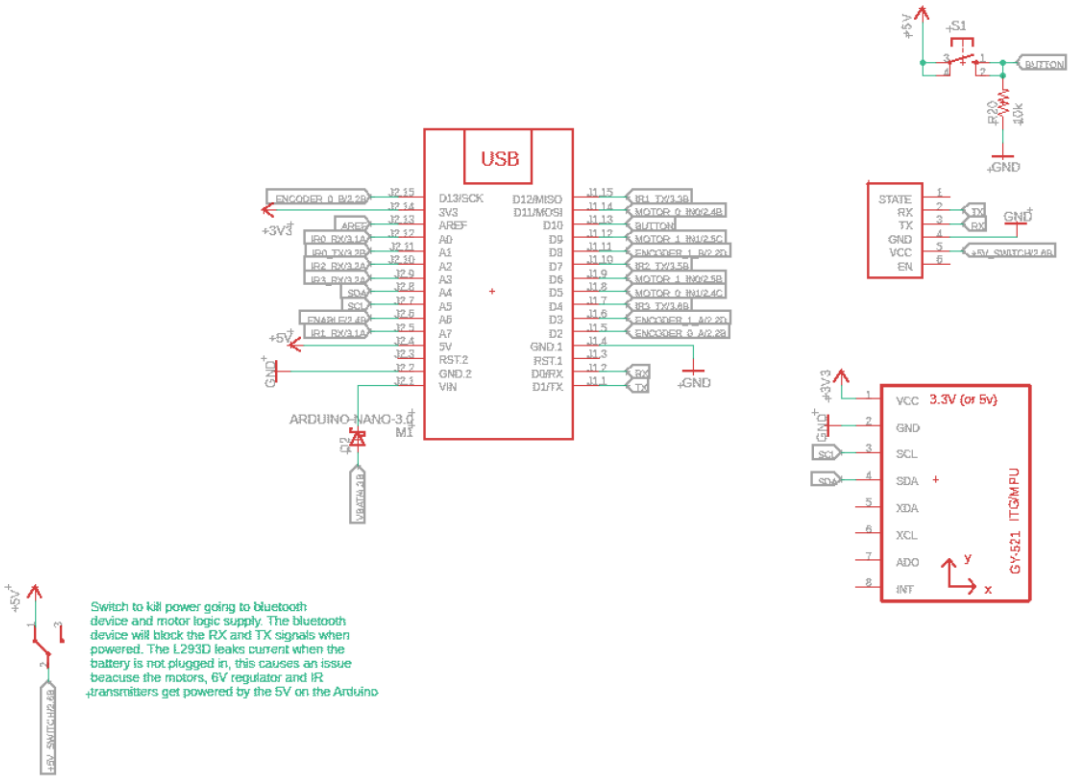


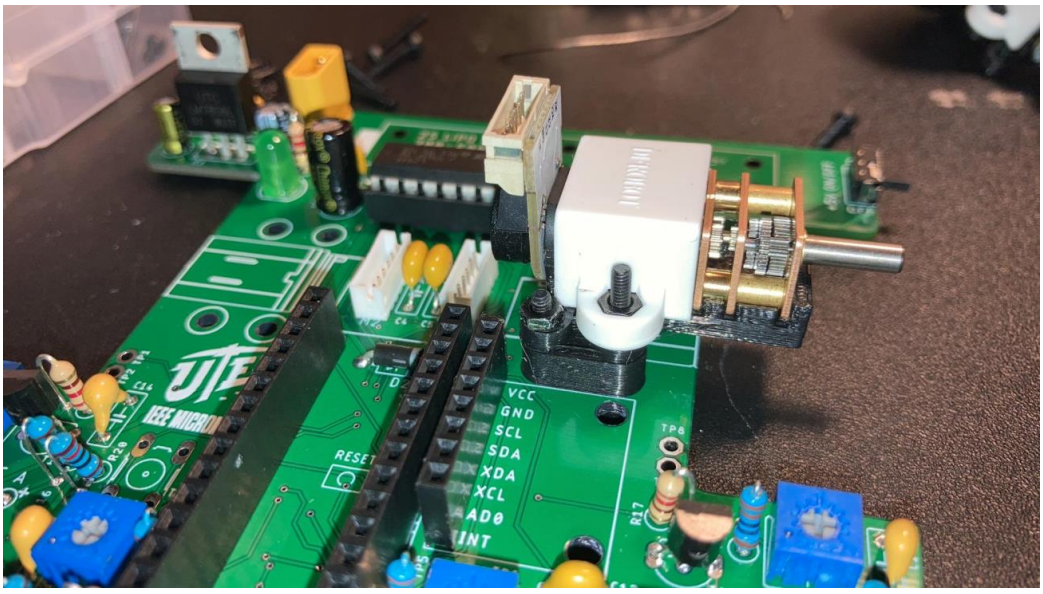
Infrared (IR) Sensors continued:



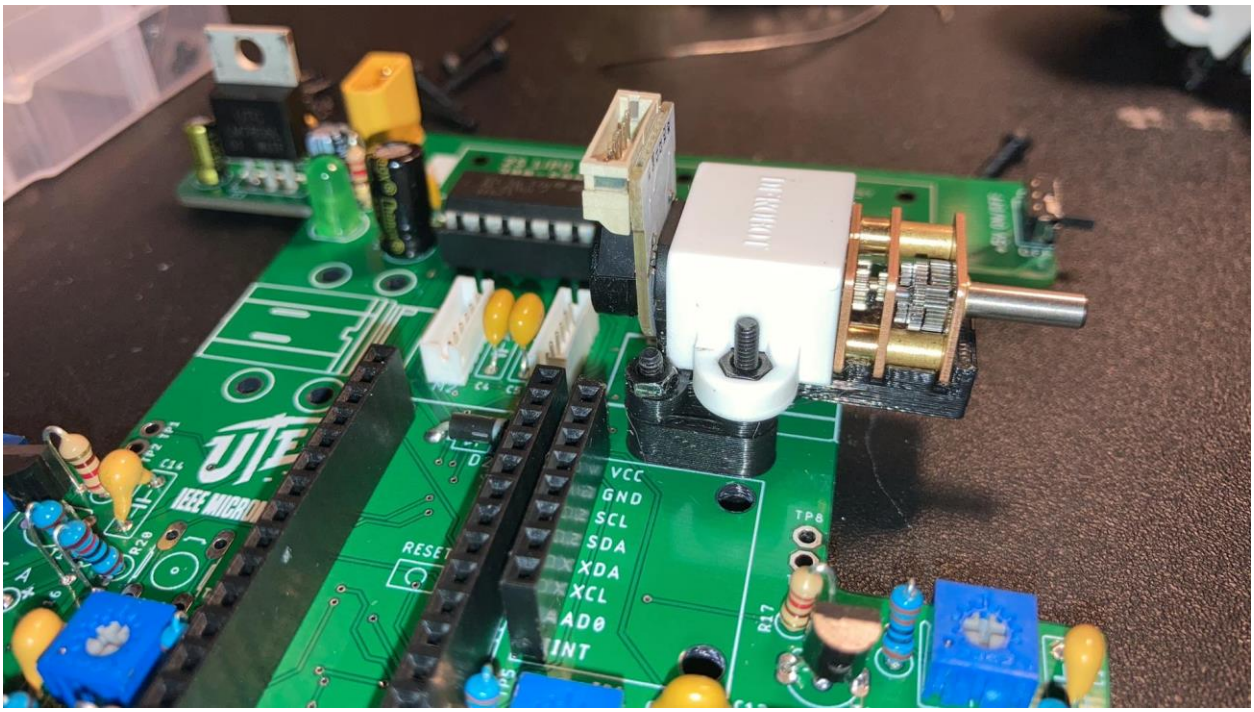


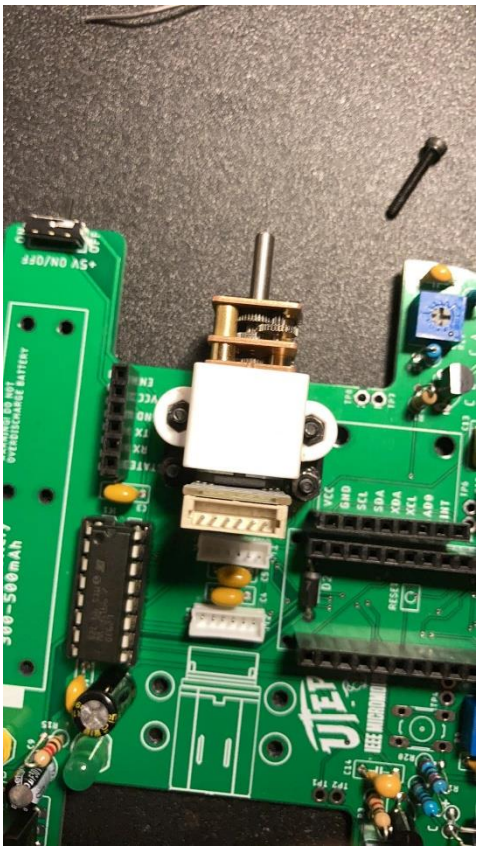
Arduino and Extras:

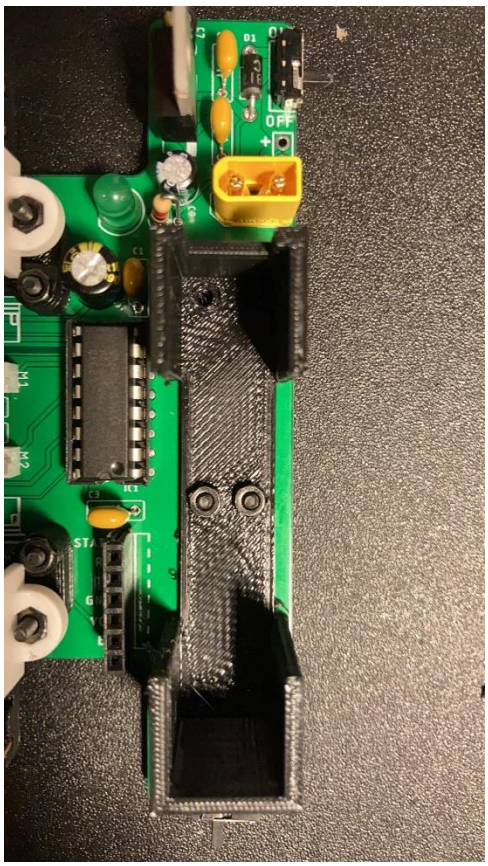


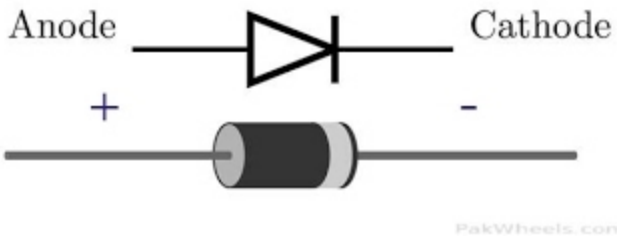


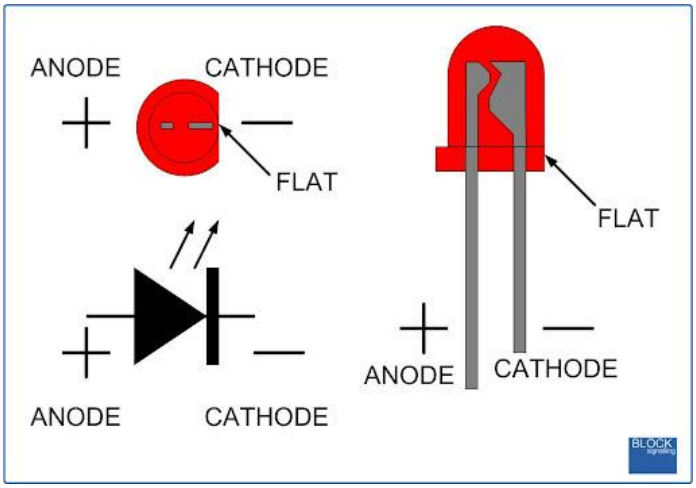
Mechanical Assembly:

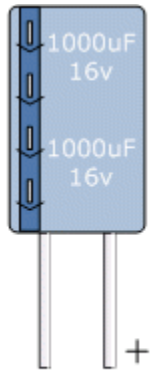




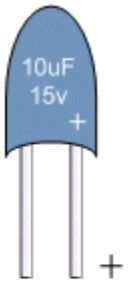




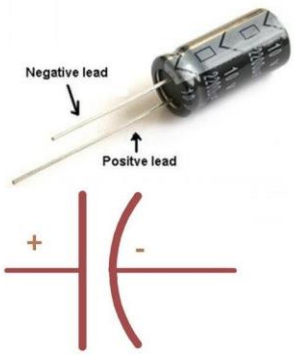




Aluminium Electrolytic



Tantalum Electrolytic



Polarized Electrolytic Capacitor and its electric Symbol