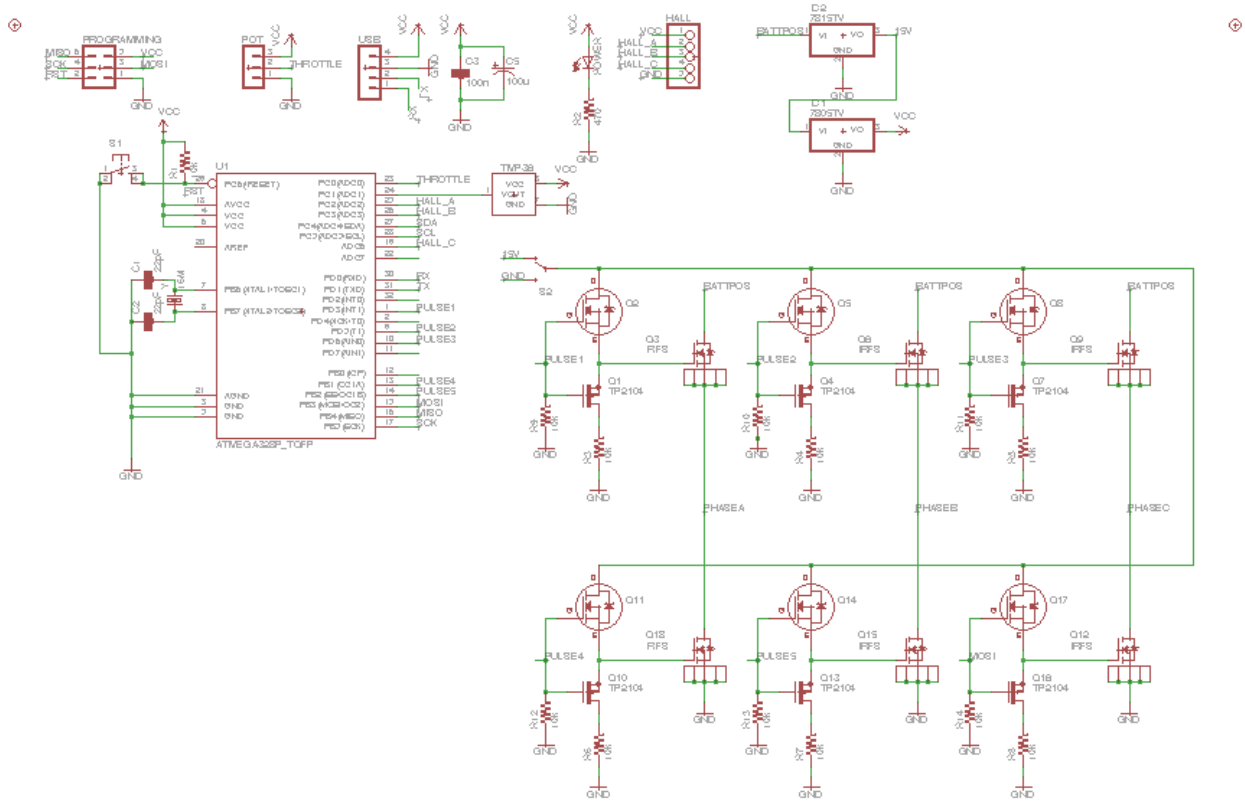
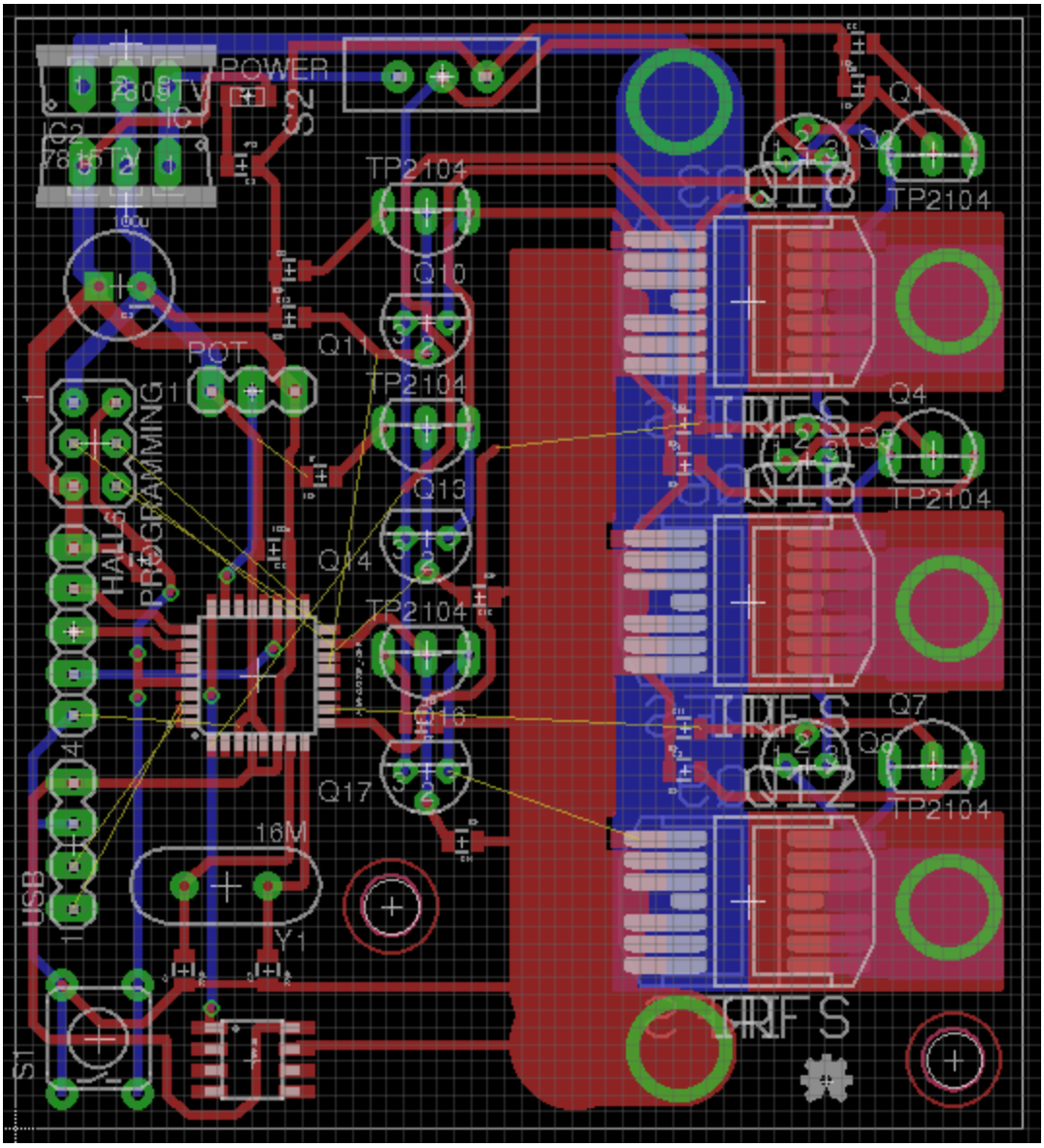
Forrest Kaminski
11/1/16
Group 12

What did I do this week:

This last week I primarily spent time working on our schematic and board layout. I have updated the schematic to incorporate Andrew's suggestions. Currently our board will incorporate a 15V regulator feeding the 5V power supply and driving the mosfet gates. I'm investigating the use of an IFRS style mosfet, which is a high power high current surface mount versus our through hole IRFB horizontal mosfets on our prototype board. I also met with my manufacturing engineering friend over the weekend down at OSU for some advice and assistance with the mechanical design of our scooter. During the MECOP event on Thursday we all intend to meet with him as a group so we can maybe think about getting some 3D models drawn up.



Updated Schematic



Updated Board (In progress)

What I need to do:

I still need to add a way to sense the voltage of the battery, which I will likely do with a simple voltage divider on an ADC. I also need to actually finish the board, as well as test the pmos and nmos configuration I intend to use to flip the mosfet gates from active low to active high, which will be much safer. I also plan on making a atMega breakout board so we can test that we can bring up a processor correctly. We will also be updating our documentation as we go.

Over the course of this week, we will be working on and physically testing a BLDC motor driver algorithm that we can eventually port over to the final board.

Obstacles:?

Currently my only obstacle is time, but after the MECOP event this week and some work for my robotics class, we should be able to get our motor running, test a processor and perhaps make a second prototype board using surface mount mosfets and a non-arduino processor.