University of Massachusetts Amherst
College of Engineering
Department of Electrical and Computer Engineering
ECE 416 - Senior Design Project II
Spring 2021

SDP21 Progress Report for Check-In #5 (Week of March 8, 2021)

Date: 3/7/2021

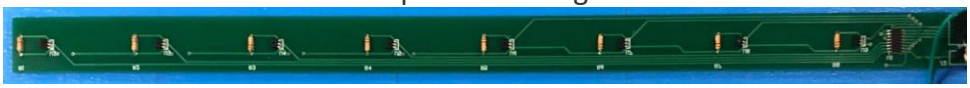
Team member: Sai Thuta Kyaw

Team number: 10

	Schematic Circuit Diagram	Hardware Testing	Parts Ordering	PCB Layout	PCB Ordering	PCB Populating	PCB Debugging
Sam							
Sai							
Wei							
Jack							

1. **What have you done since Check-In #4?**

Ordering parts, Populating PCBs, PCB Testing, Assembly of Sensor Board for Sam to work on (Figure 2). Jack assembled the Sensor Control PCB and ½ of Sensor Board PCB. I did the remainding ½ and assembled Gantry Control PCB (Figure 1).

PCB	Description	Who?
Sensor Board	Contains 8 sensors and 1 multiplexor that'll go under the chess board. 	Sam
Sensor Control	Connects to 8 sensor board, process the information, and communicate with Raspberry Pi. Contains connectors, Atmega328p, crystal, reset switch and capacitors. (See Sam's document for PCB photo)	Sam
Gantry Control	Connects to stepper motor drivers, H-Bridge, RFID and contact switches. Communicates with Raspberry Pi via UART. Contains connectors, Atmega328p, crystal, reset switch, capacitors, level shifters, LEDs and extra ports.	Sai

Tested the PCB I was responsible for. Everything is functioning as planned. Replacing the breadboard setup with the PCB sometime next week.

2. **What are you working on right now?**

Still testing out different surface finishes for the final chess board. Migrating the PCB to the gantry control system from a breadboard setup. And also working on this document. Next steps are to test out RFID and electromagnet with the Sensor Board PCBs installed on the chessboard.

Figure 1: Gantry Control PCB

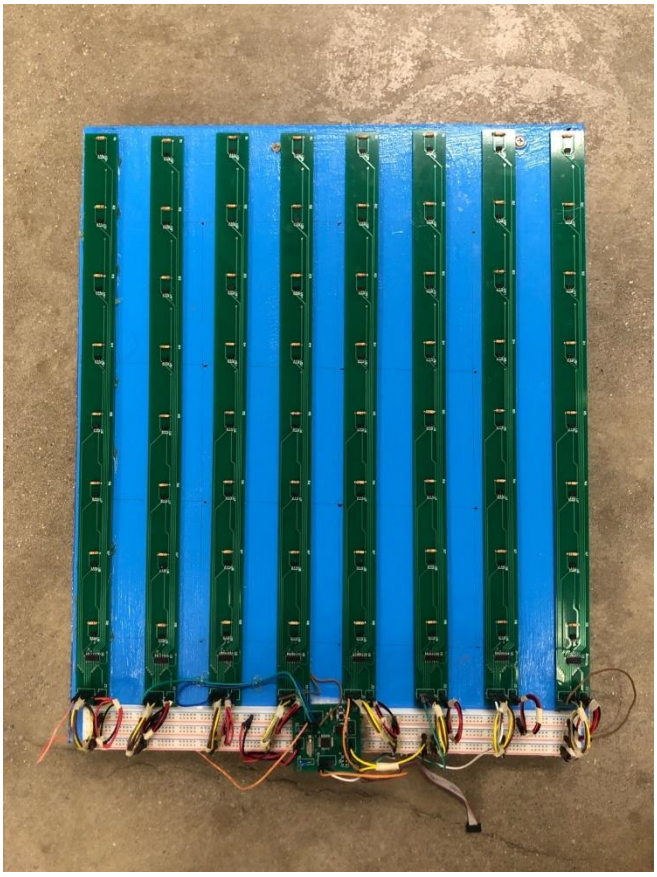
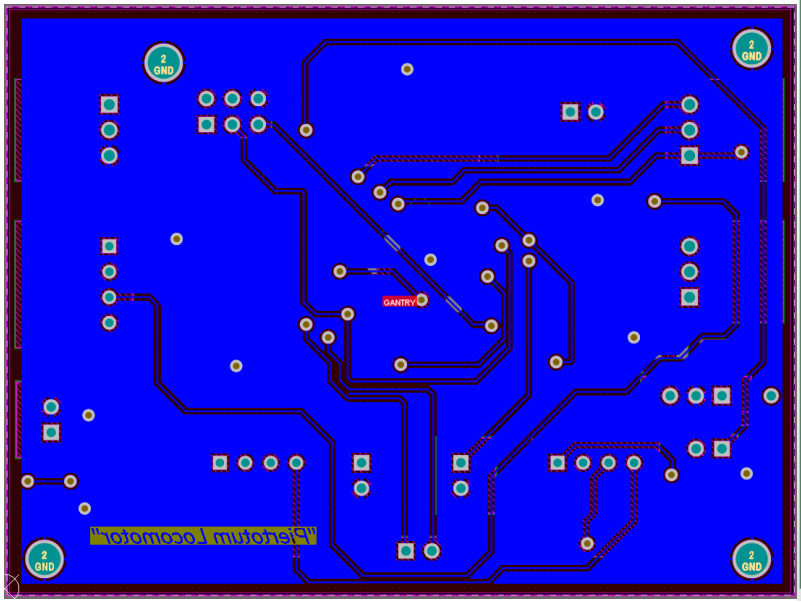
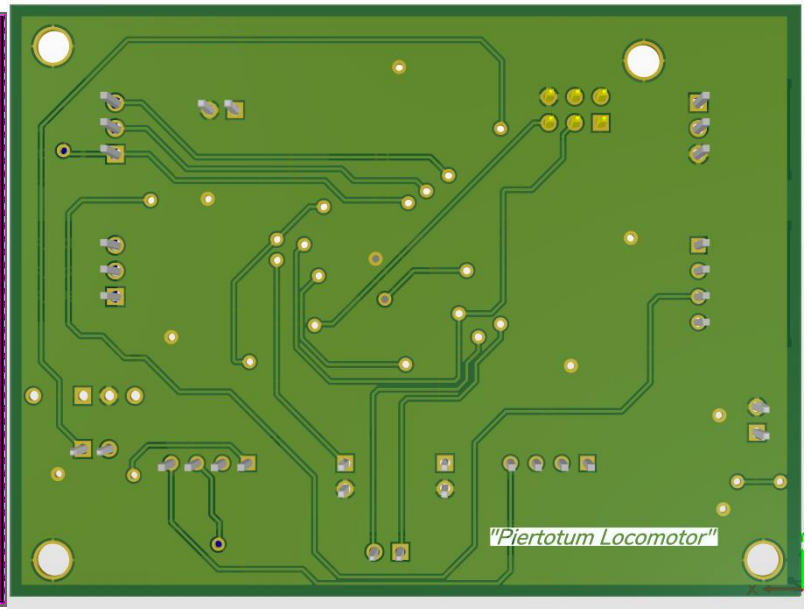
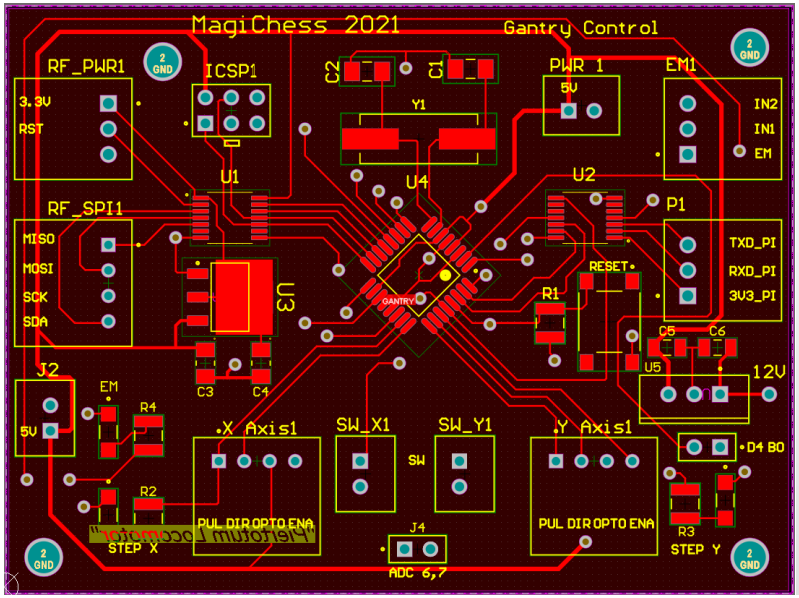


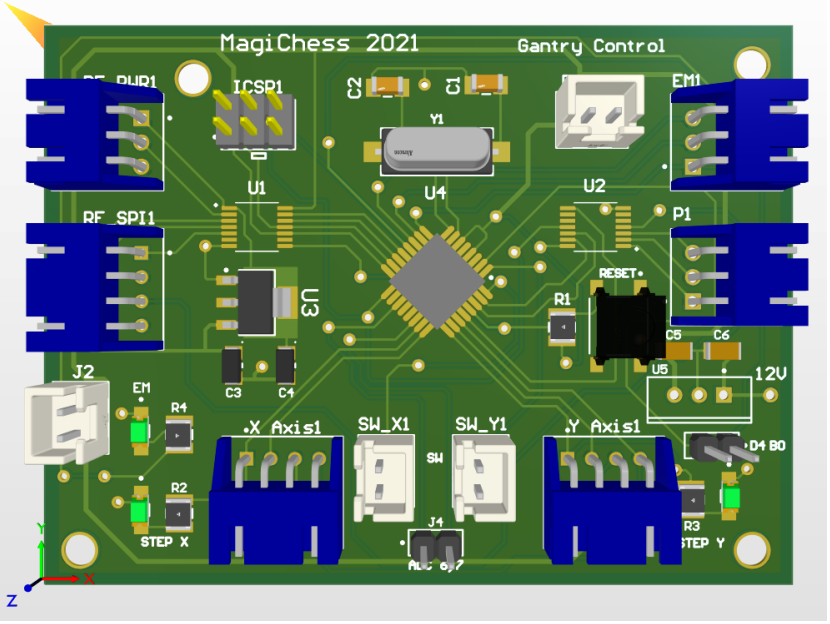
Figure 2: Assembled Sensor Board

GANTRY CONTROL PCB

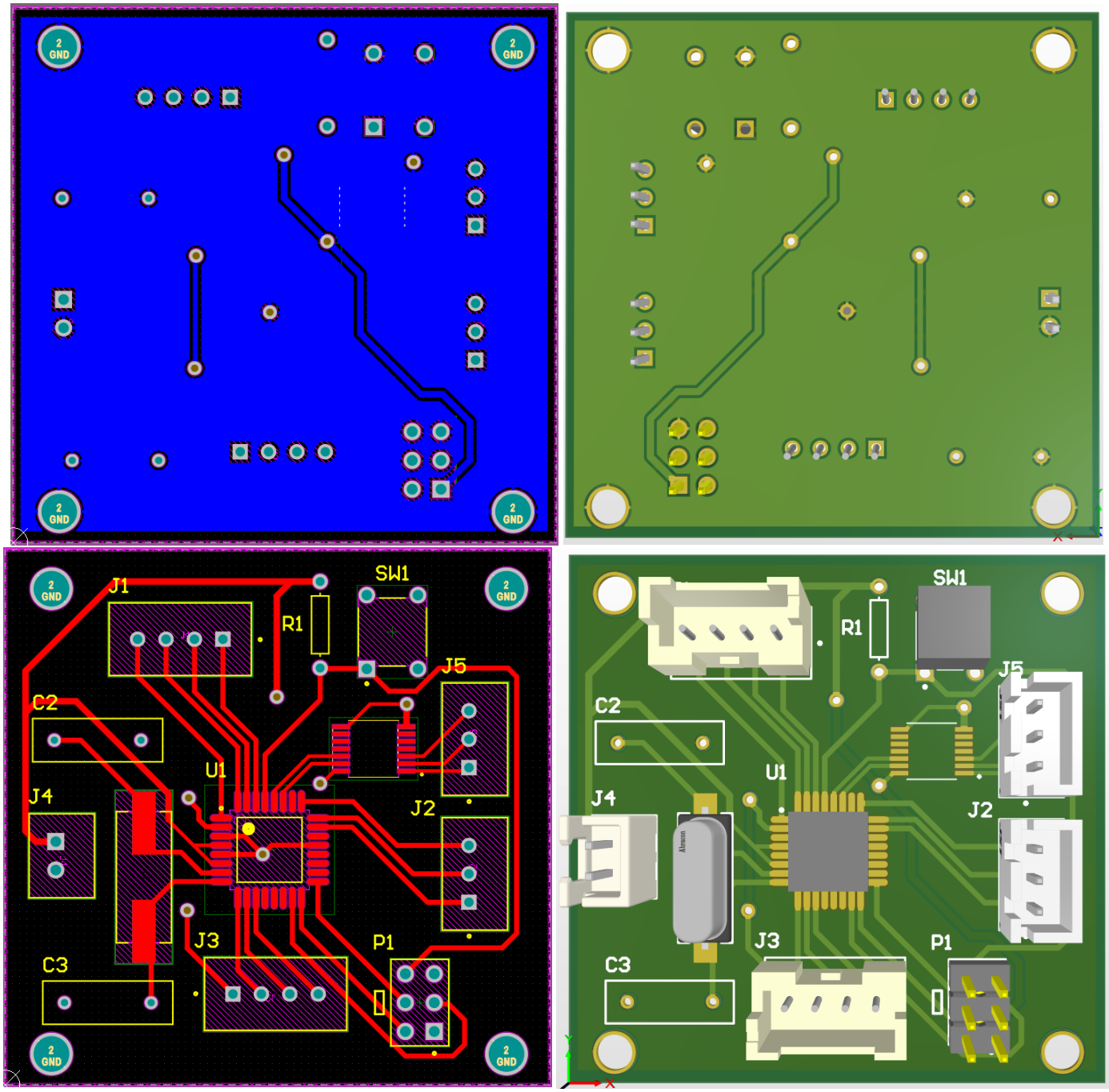




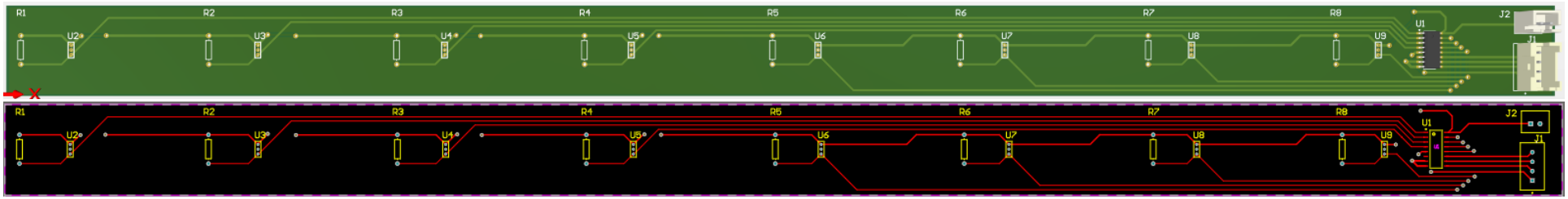


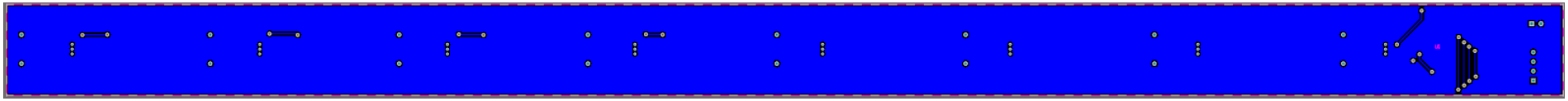


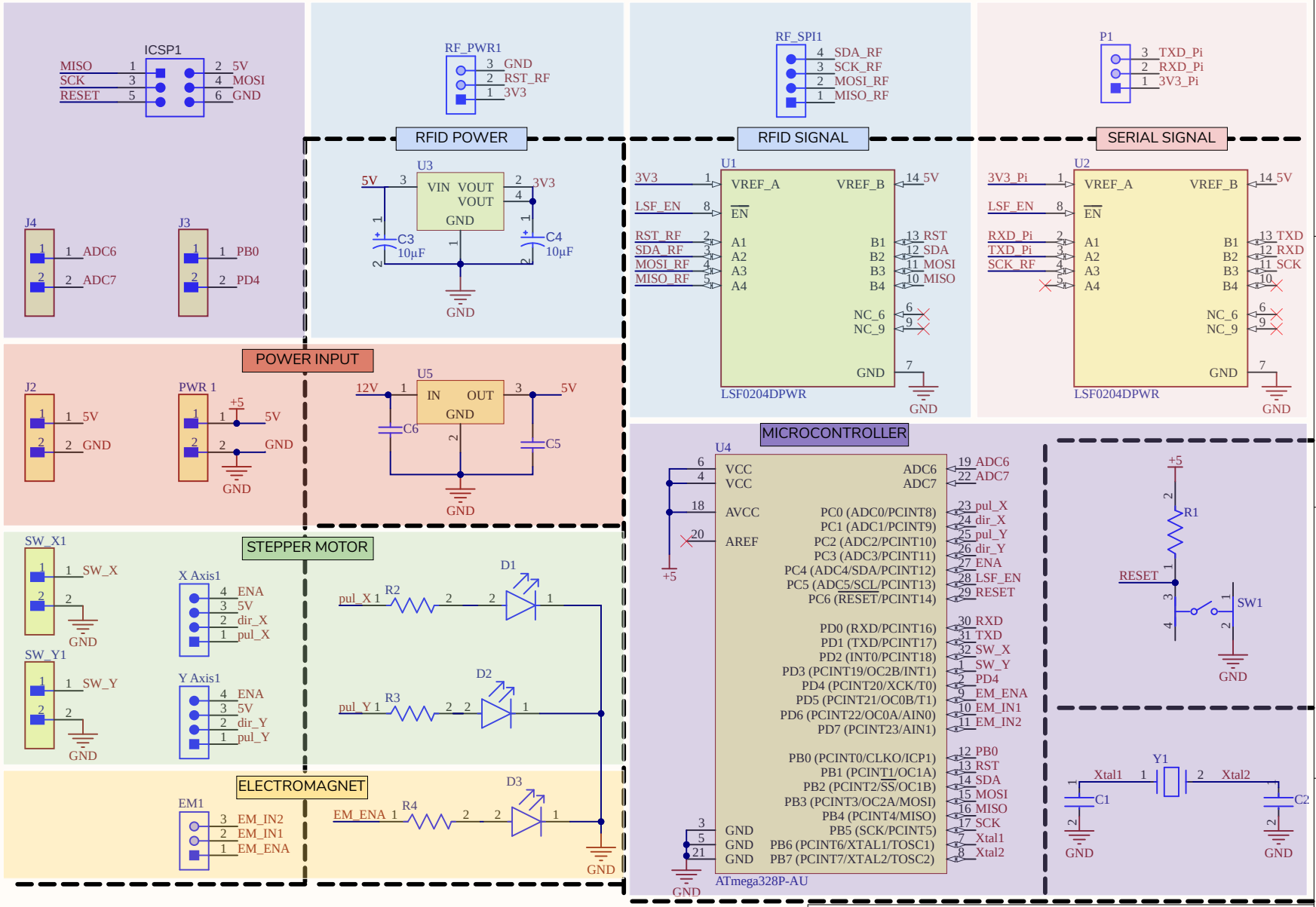
SENOR CONTROL PCB



SENSOR BOARD PCB







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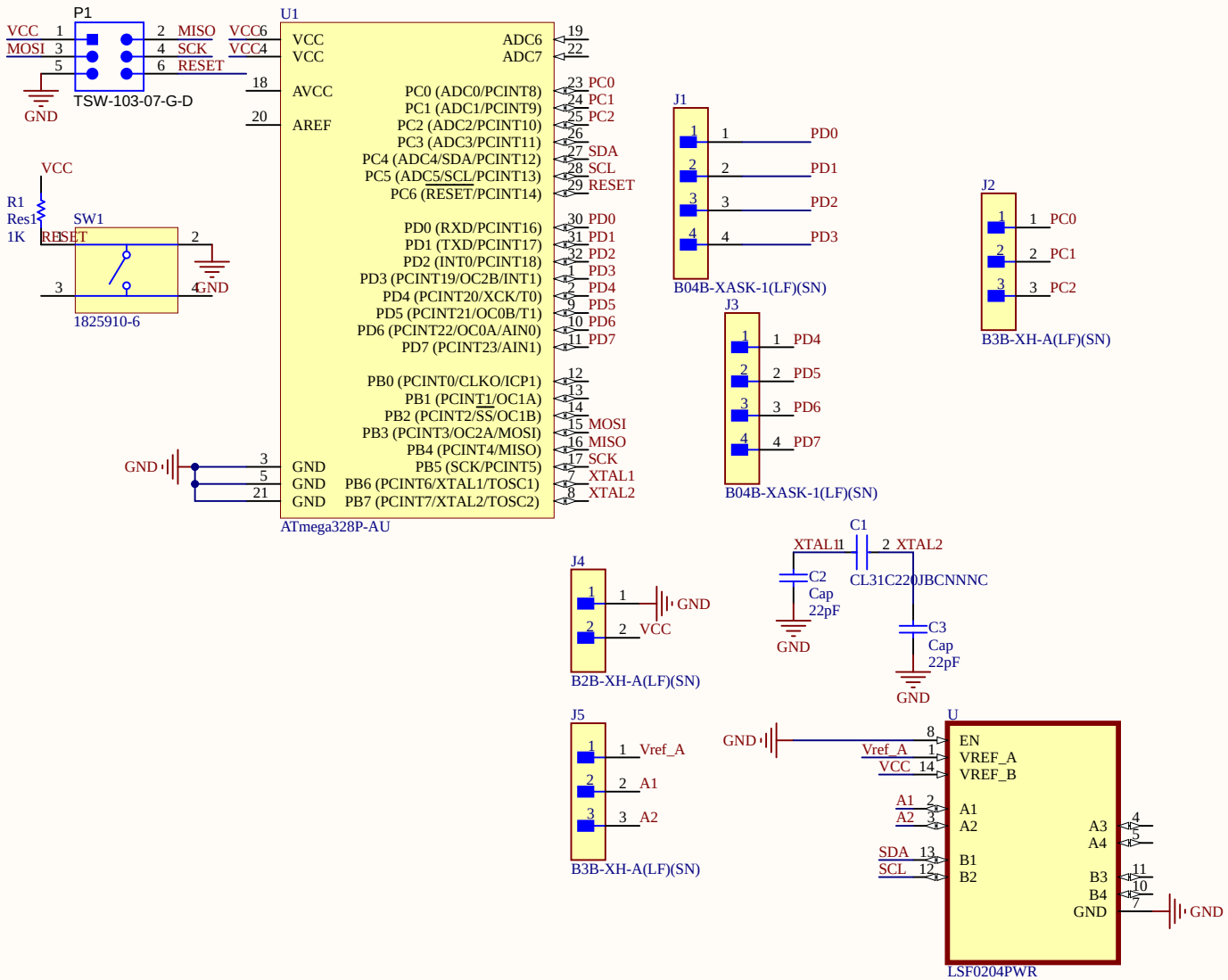

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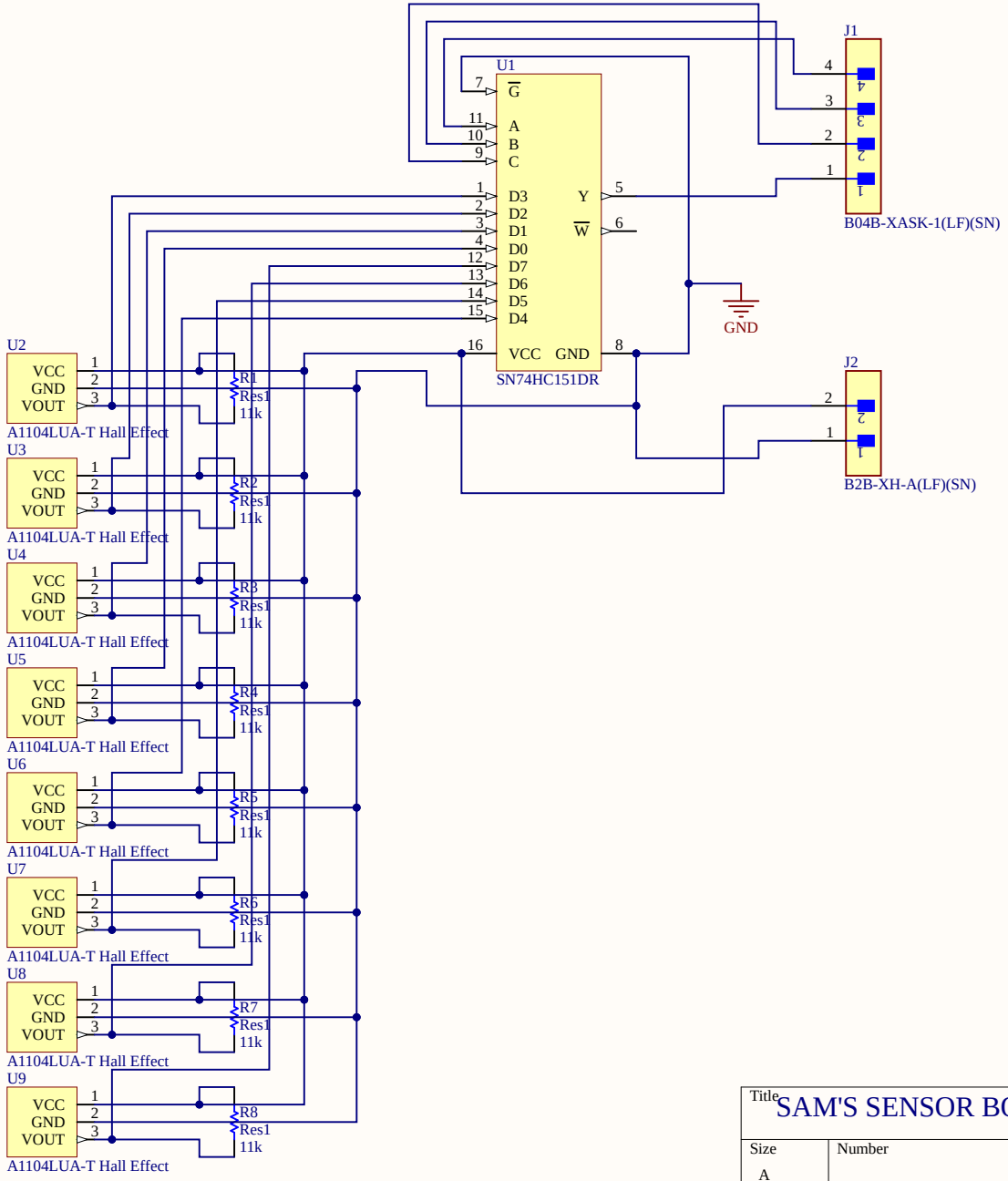

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