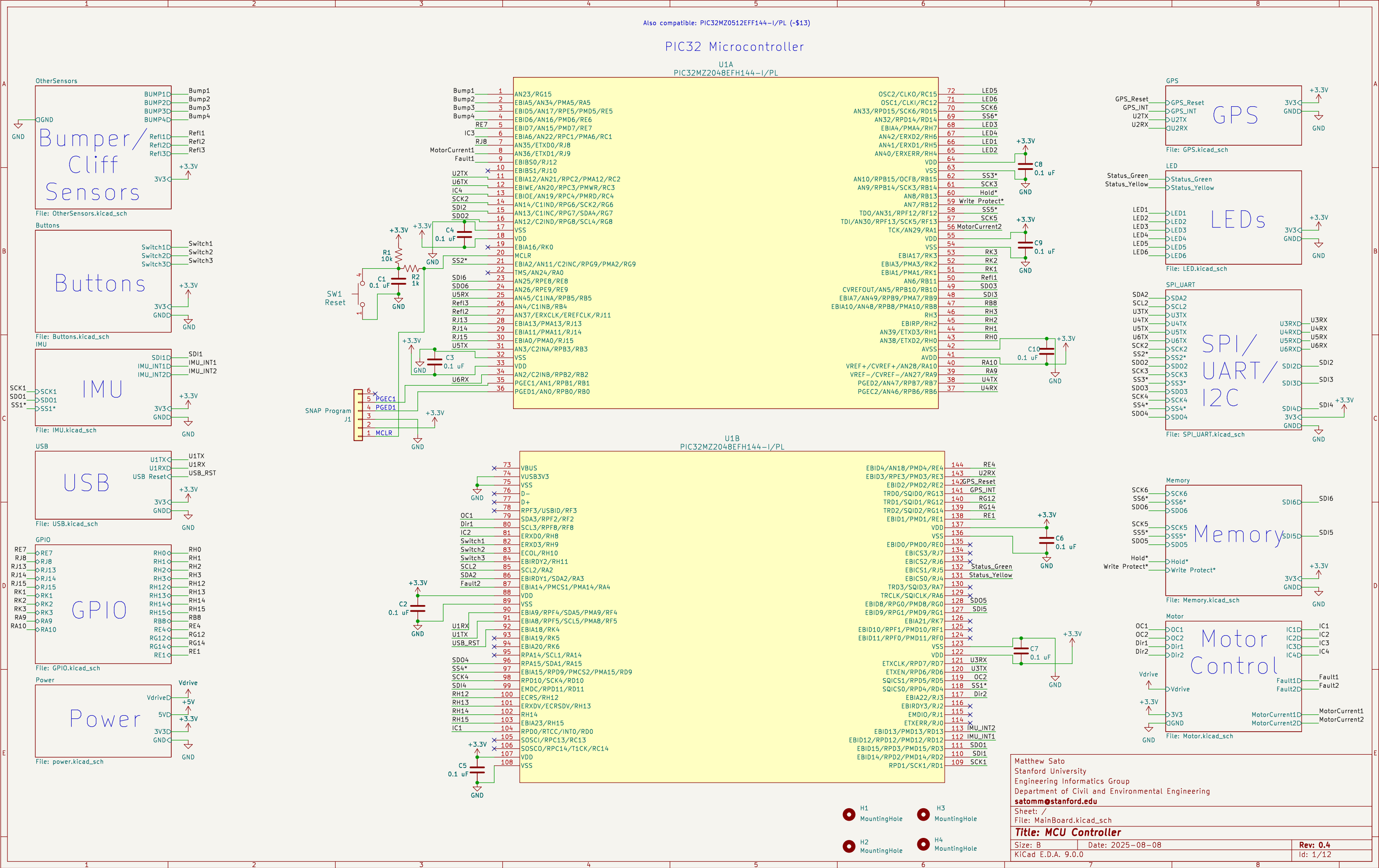
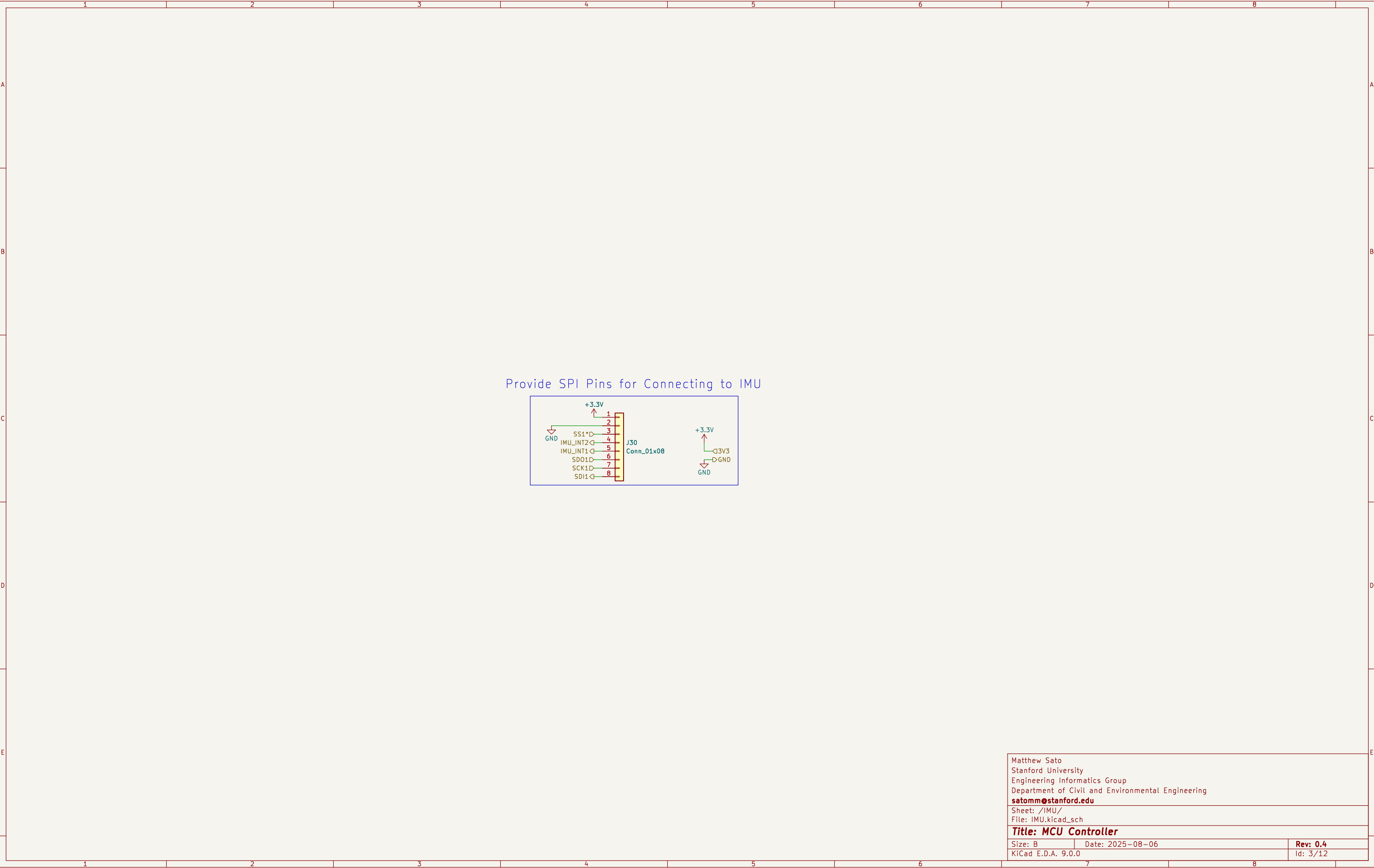
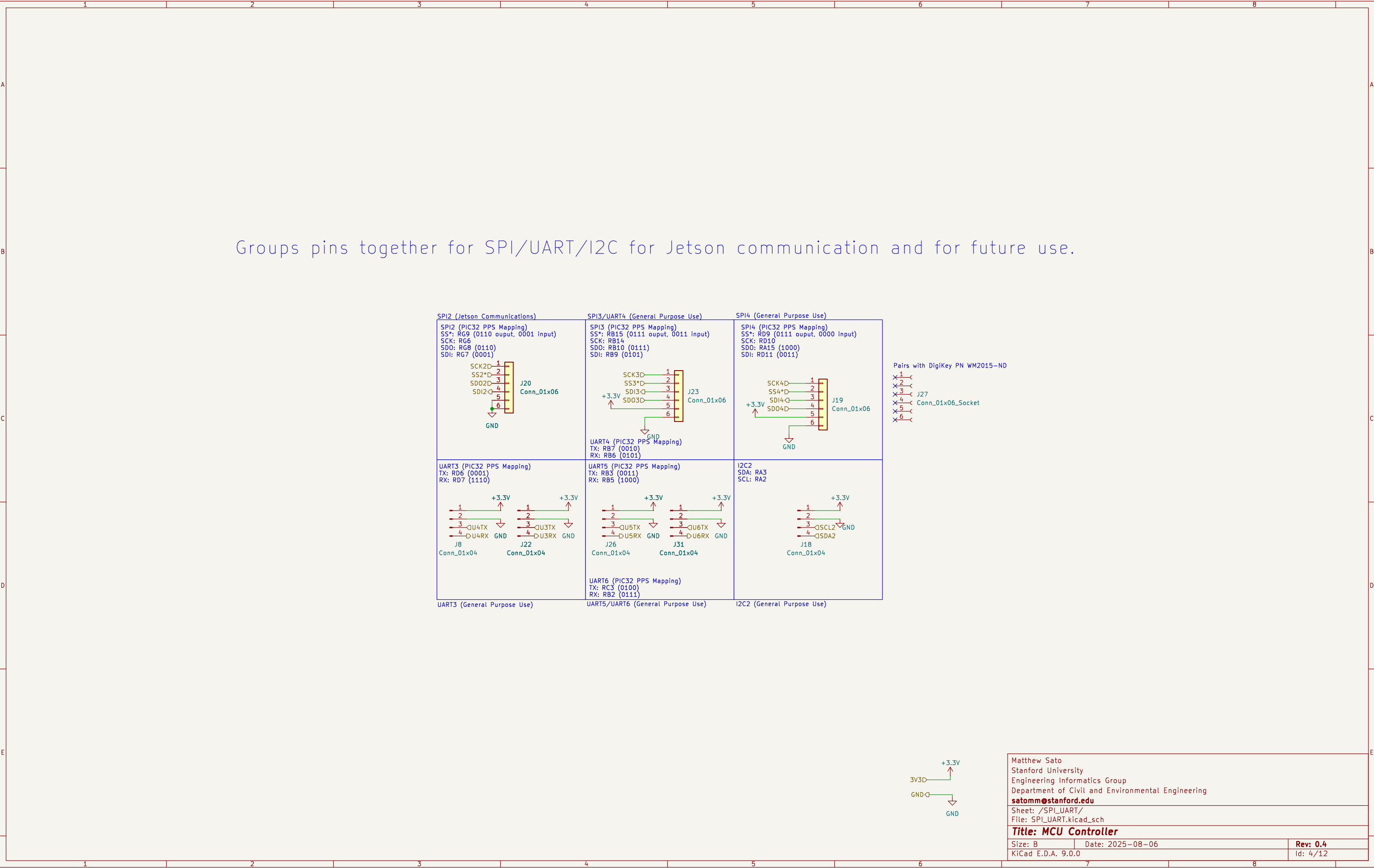
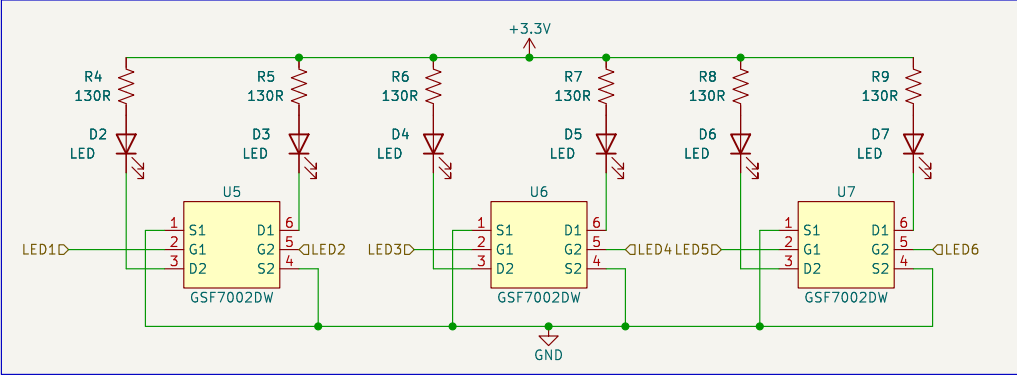




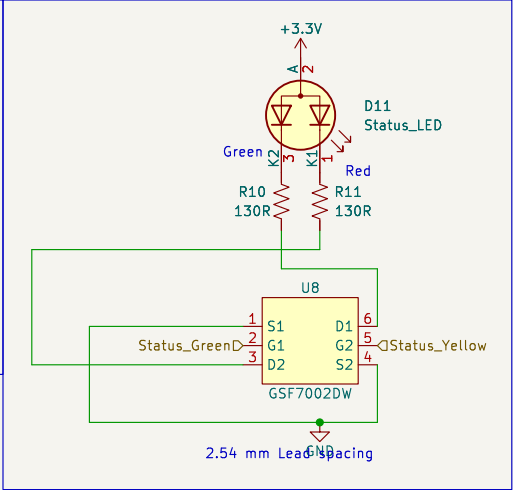




General Purpose LEDs

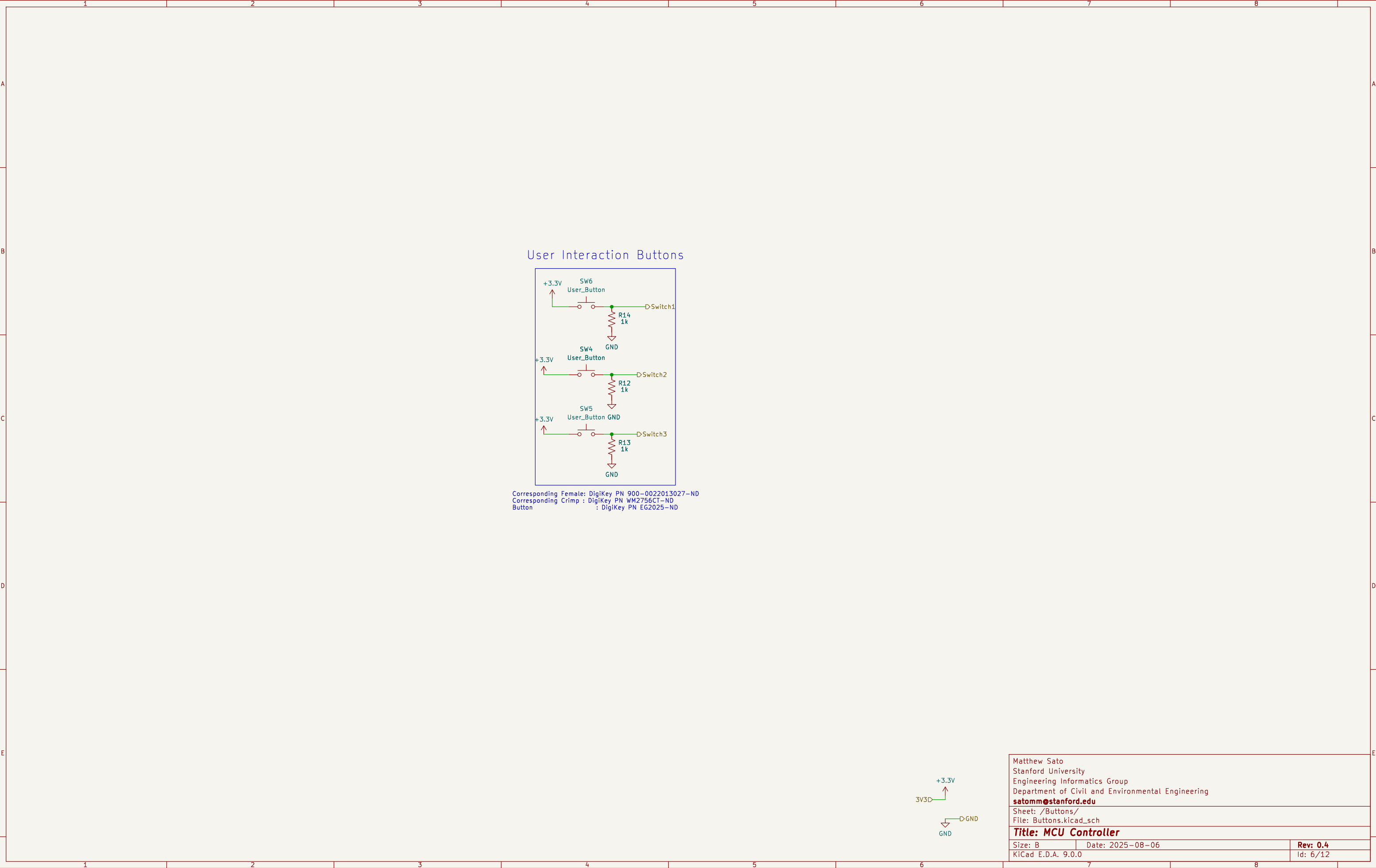


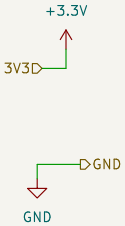
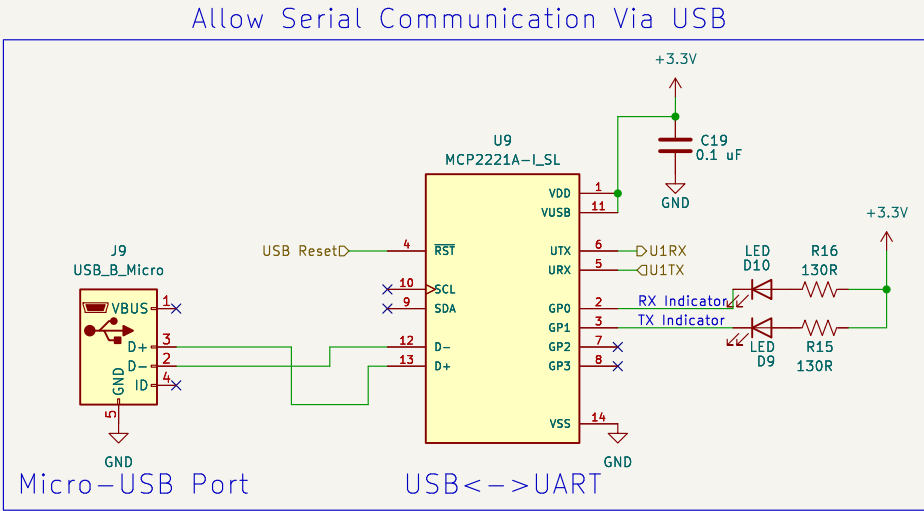
Robot Active/Inactive LED



Corresponding Male : DigiKey PN WM4201-ND
Corresponding Female: DigiKey PN 900-0022013037-ND
Corresponding Crimp : DigiKey PN WM2756CT-ND

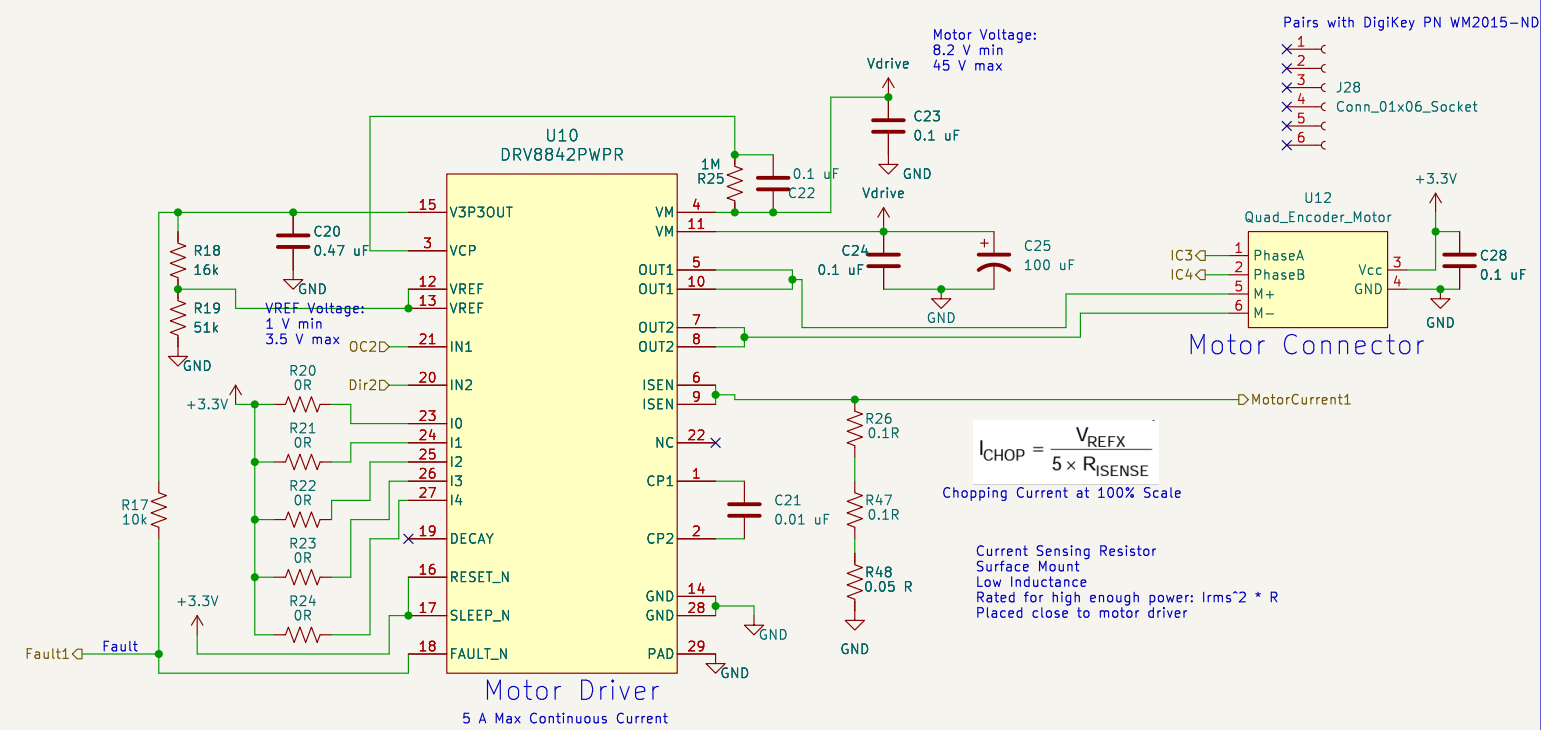




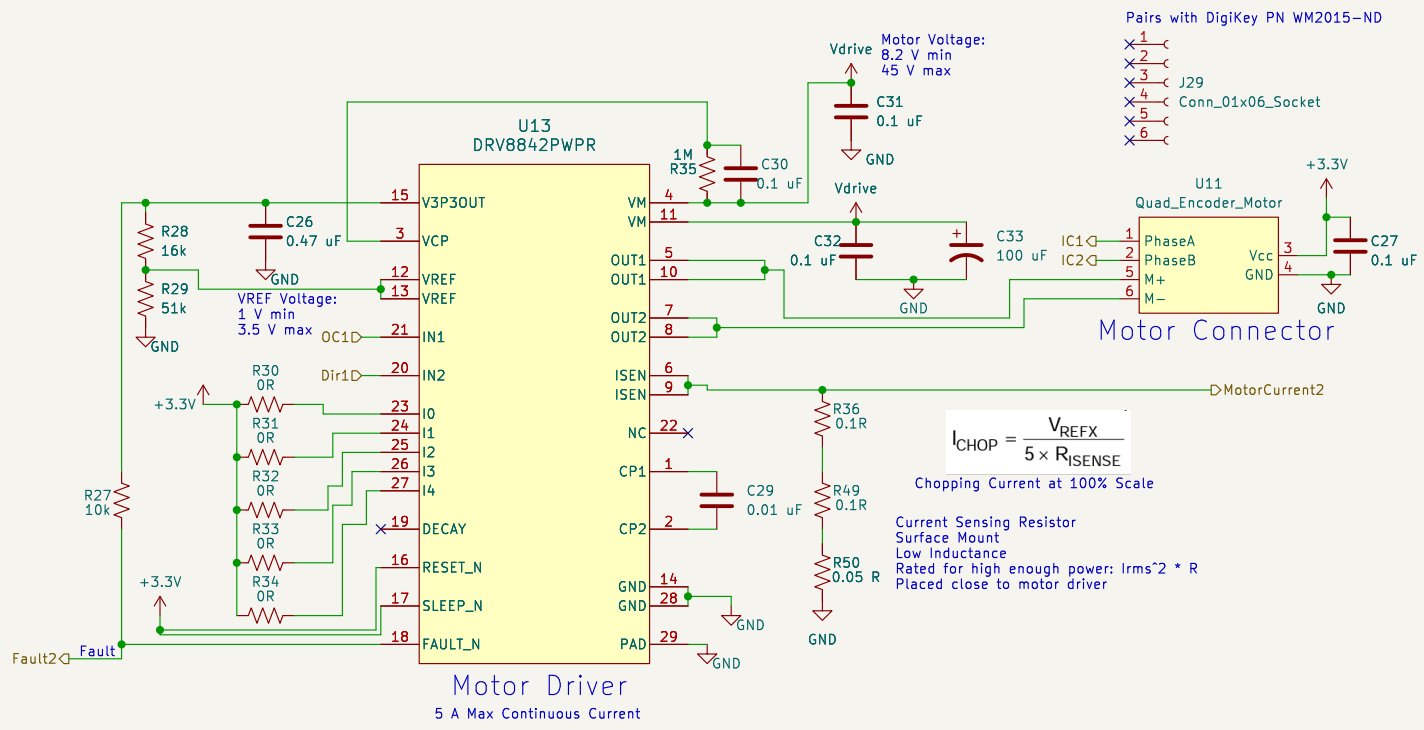


Matthew Sato Stanford University Engineering Informatics Group Department of Civil and Environmental Engineering satomm@stanford.edu		
Sheet: /USB/ File: USB.kicad_sch		
Title: MCU Controller		
Size: B	Date: 2025-08-06	Rev: 0.4
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Left Motor Driver



Right Motor Driver



Corresponding Molex for Motor Connector:
Corresponding Female: DigiKey PN WM2002-ND
Corresponding Crimp : DigiKey PN WM2756CT-ND

xIN1	xIN2	xOUT1	xOUT2
0	0	L	L
0	1	L	H
1	0	H	L
1	1	H	H

PWM Frequency:
100 kHz max

Slow Decay: Logic low
Mixed Decay: Open
Fast Decay: Logic high

I0 - I4 Function

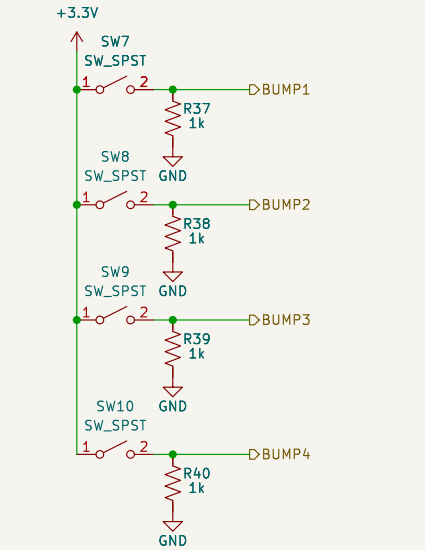
I[4..0]	RELATIVE CURRENT (% FULL-SCALE CHOPPING CURRENT)
0x00h	0%
0x01h	5%
0x02h	10%
0x03h	15%
0x04h	20%
0x05h	24%
0x06h	29%
0x07h	34%
0x08h	38%
0x09h	43%
0x0Ah	47%
0x0Bh	51%
0x0Ch	56%
0x0Dh	60%
0x0Eh	63%
0x0Fh	67%
0x10h	71%
0x11h	74%
0x12h	77%
0x13h	80%
0x14h	83%
0x15h	86%
0x16h	88%
0x17h	90%
0x18h	92%
0x19h	94%
0x1Ah	96%
0x1Bh	97%
0x1Ch	98%
0x1Dh	99%
0x1Eh	100%
0x1Fh	100%



Matthew Sato
Stanford University
Engineering Informatics Group
Department of Civil and Environmental Engineering
satomm@stanford.edu
Sheet: /Motor/
File: Motor.kicad_sch
Title: MCU Controller

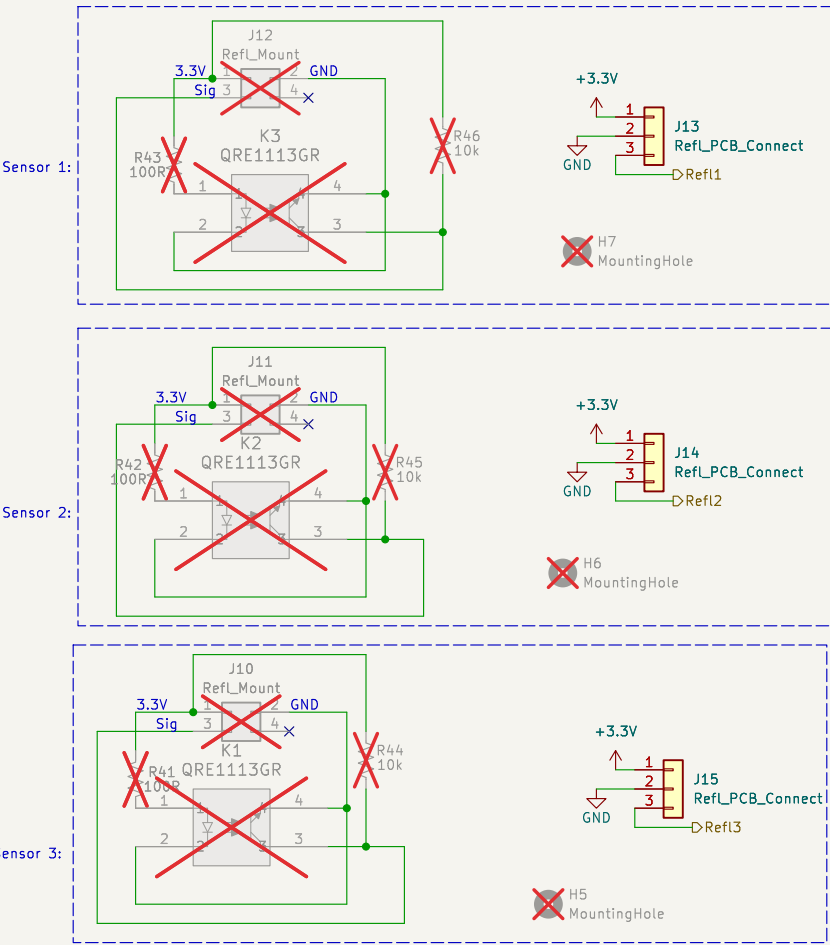
Size: B	Date: 2025-08-06	Rev: 0.4
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Bumper Sensors



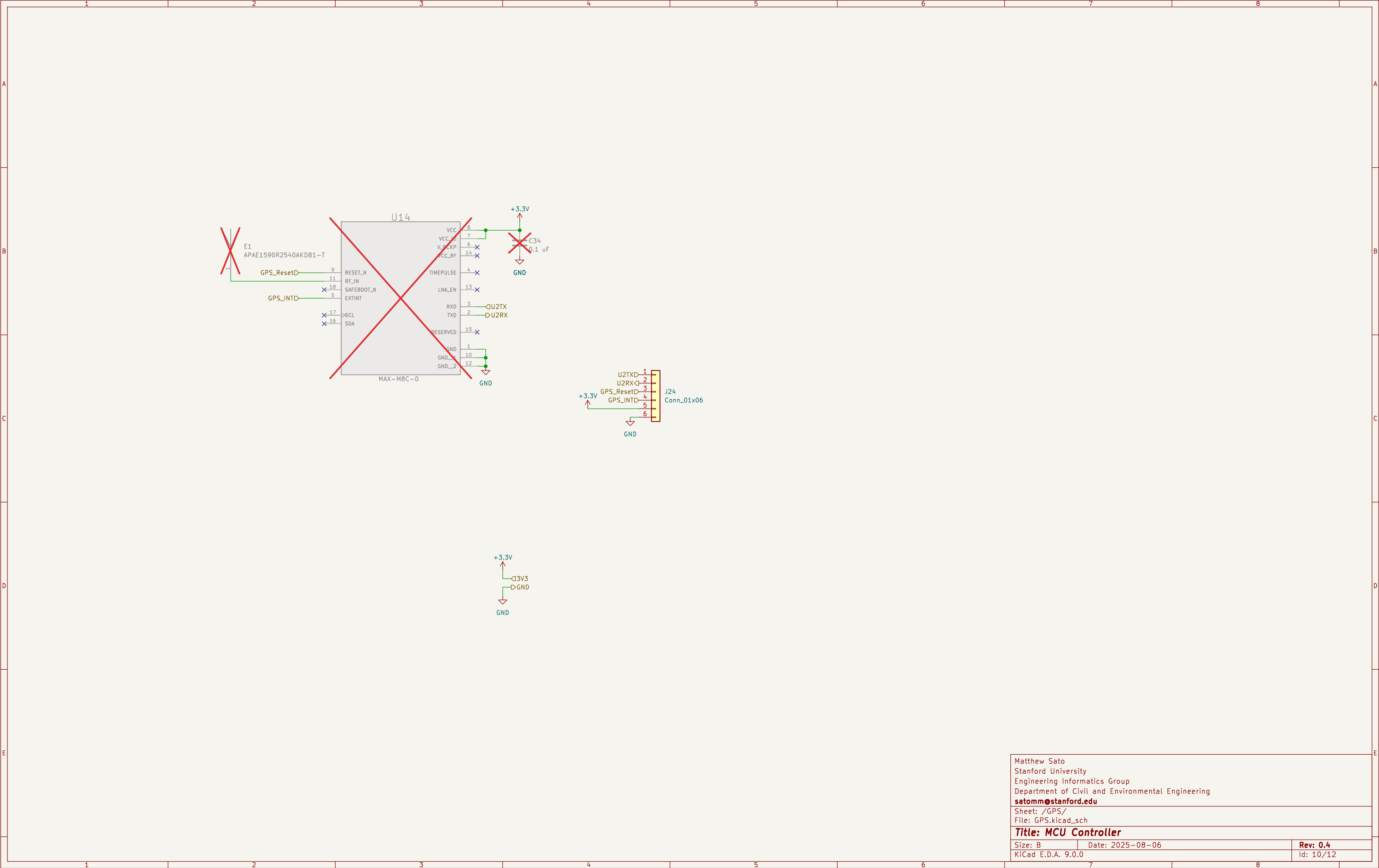
Corresponding Female: DigiKey PN 900-0022013027-ND
Corresponding Crimp : DigiKey PN WM2756CT-ND
Limit Switch : DigiKey PN _____

Reflective Optical Sensors
(Cliff Sensor)

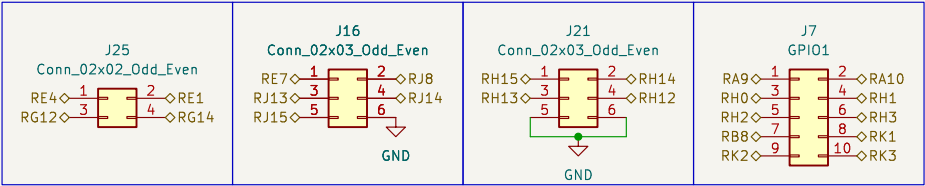


Corresponding Female: DigiKey PN 900-0022013037-ND
Corresponding Crimp : DigiKey PN WM2756CT-ND

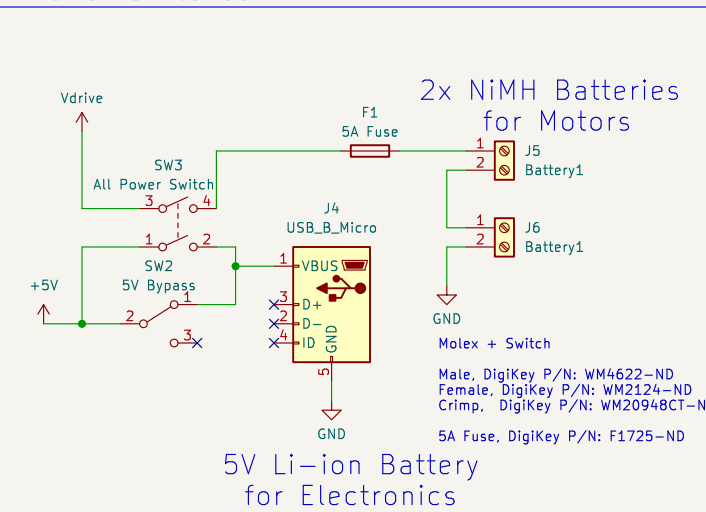
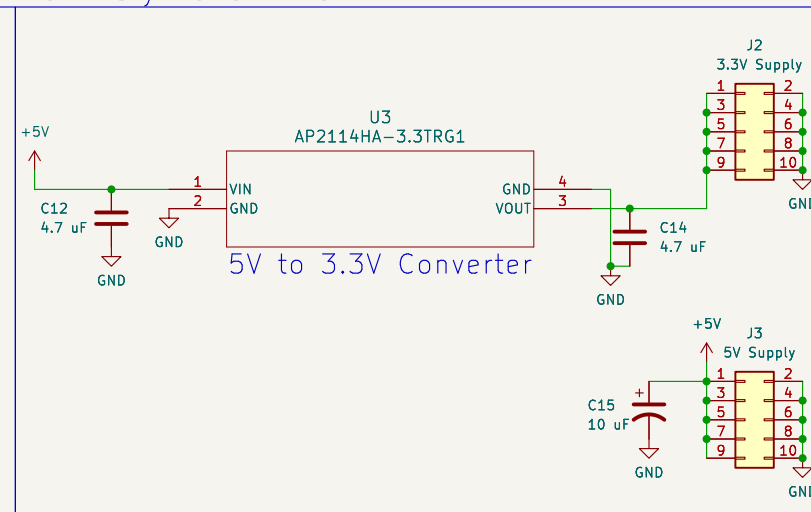
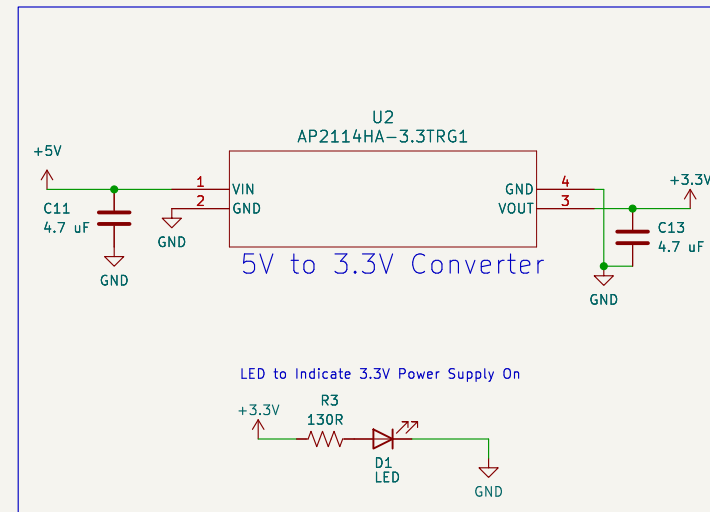




Provide Access to Unused Pins

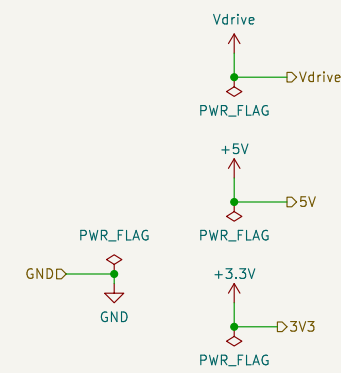


Matthew Sato Stanford University Engineering Informatics Group Department of Civil and Environmental Engineering satomm@stanford.edu		
Sheet: /GPIO/ File: GPIO.kicad_sch		
Title: MCU Controller		
Size: A4	Date: 2025-08-06	Rev: 0.4
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Inputs:

- 1) Motor Battery: 2x NiMH Battery, 7.2 V Each
- 2) Battery for MCU: 5 V



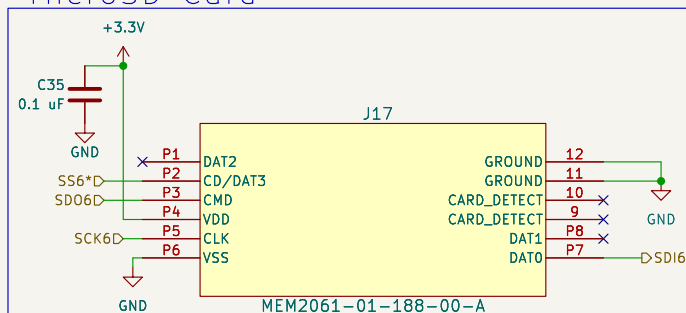
Matthew Sato
Stanford University
Engineering Informatics Group
Department of Civil and Environmental Engineering
satomm@stanford.edu
Sheet: /Power/
File: power.kicad_sch

Title: MCU Controller

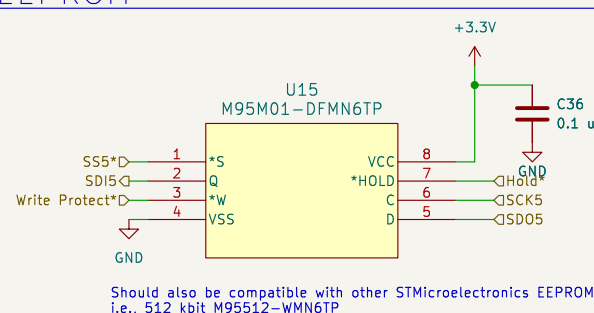
Size: B	Date: 2025-08-06
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MicroSD Card



EEPROM



Matthew Sato
Stanford University
Engineering Informatics Group
Department of Civil and Environmental Engineering
satomm@stanford.edu

Sheet: /Memory/
File: Memory.kicad_sch

Title: MCU Controller

Size: A4 Date: 2025-08-06

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Rev: 0.4

Id: 12/12