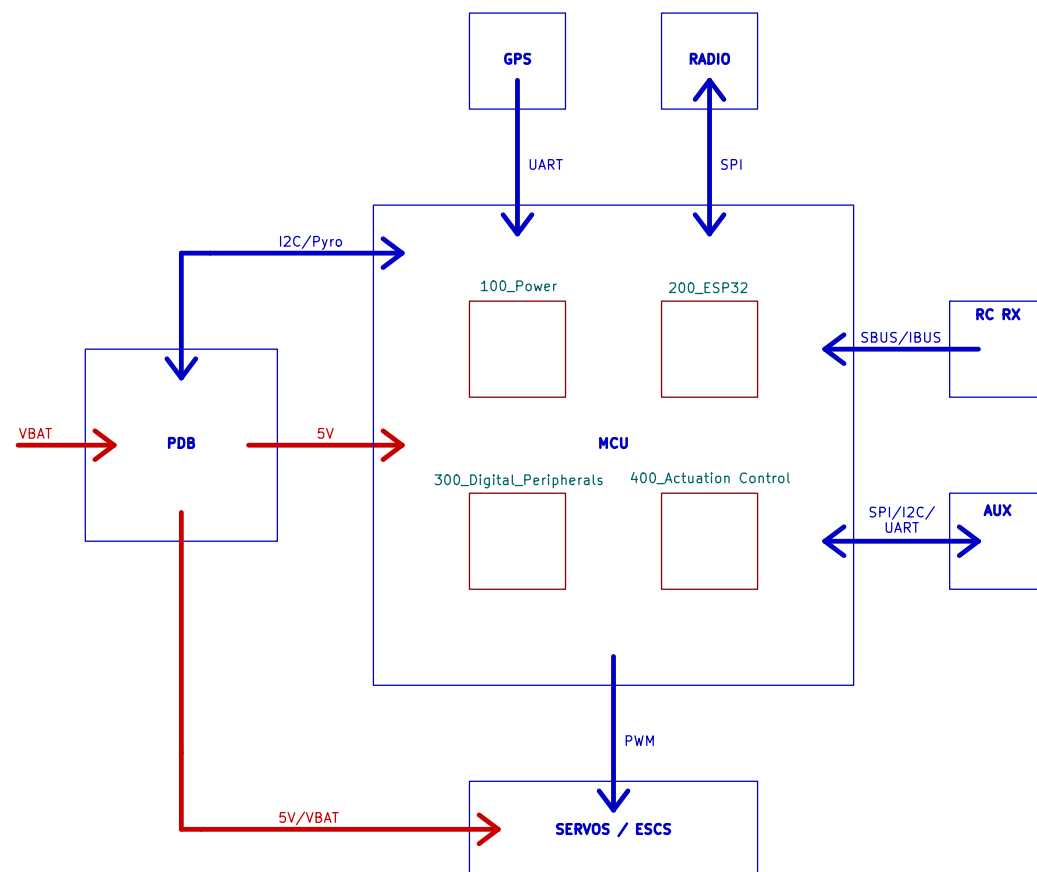


Project Block Diagram



Project Goals:

- Be able to power 12 servos plus all on board electronics.
- Have power switching between USB and Battery.
- Have long range radio for communication.
- Use GPS, barometer, magnetometer, gyroscope, and accelerometer to perform sensor fusion.
- Use JTAG for debugging embedded software.
- Be programmable through the ESP-IDF programming framework.
- Able to be used in a variety of robotic systems: quadrupeds, drones, rockets, and fixed wings.

Sheet: /
File: MCU_AURA.kicad_sch

Title: MCU AURA

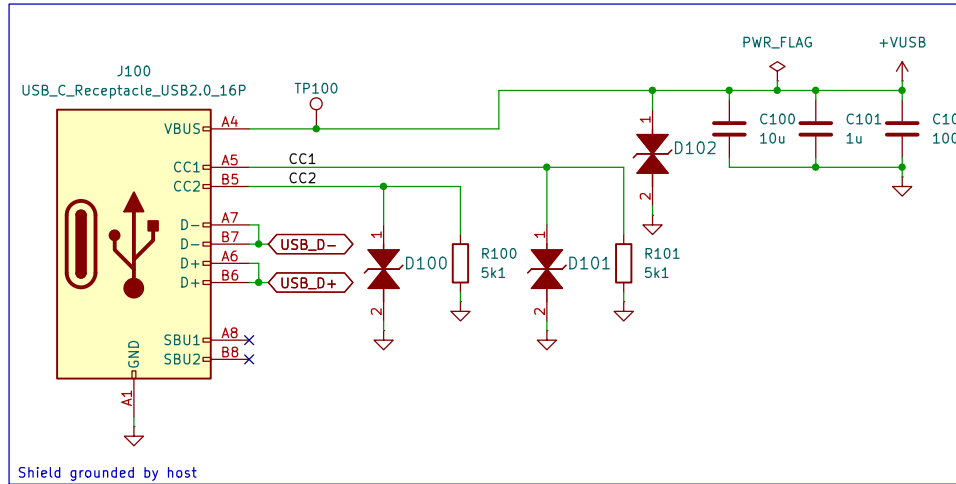
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KiCad E.D.A. 9.0.2

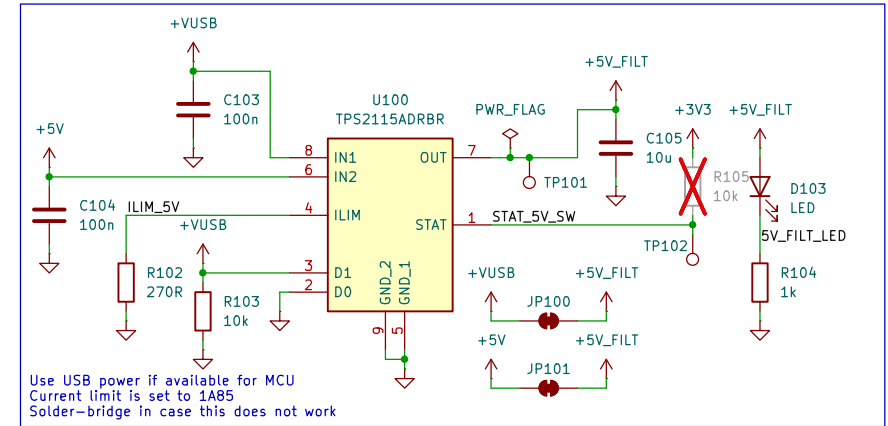
Rev: 0.0.1

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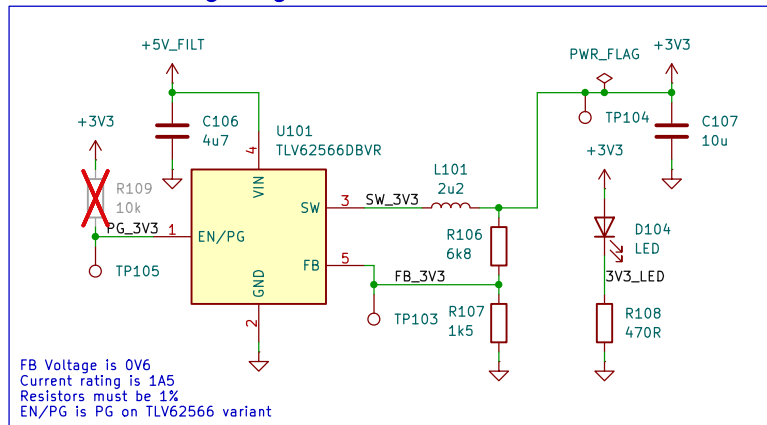
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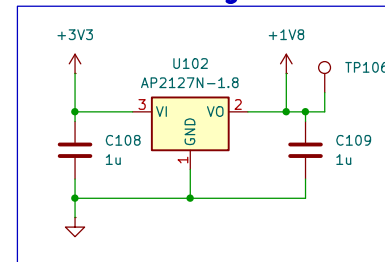
5V Power switching



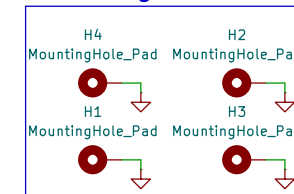
3V3 Switching Regulator



1V8 Linear Regulator



Mounting



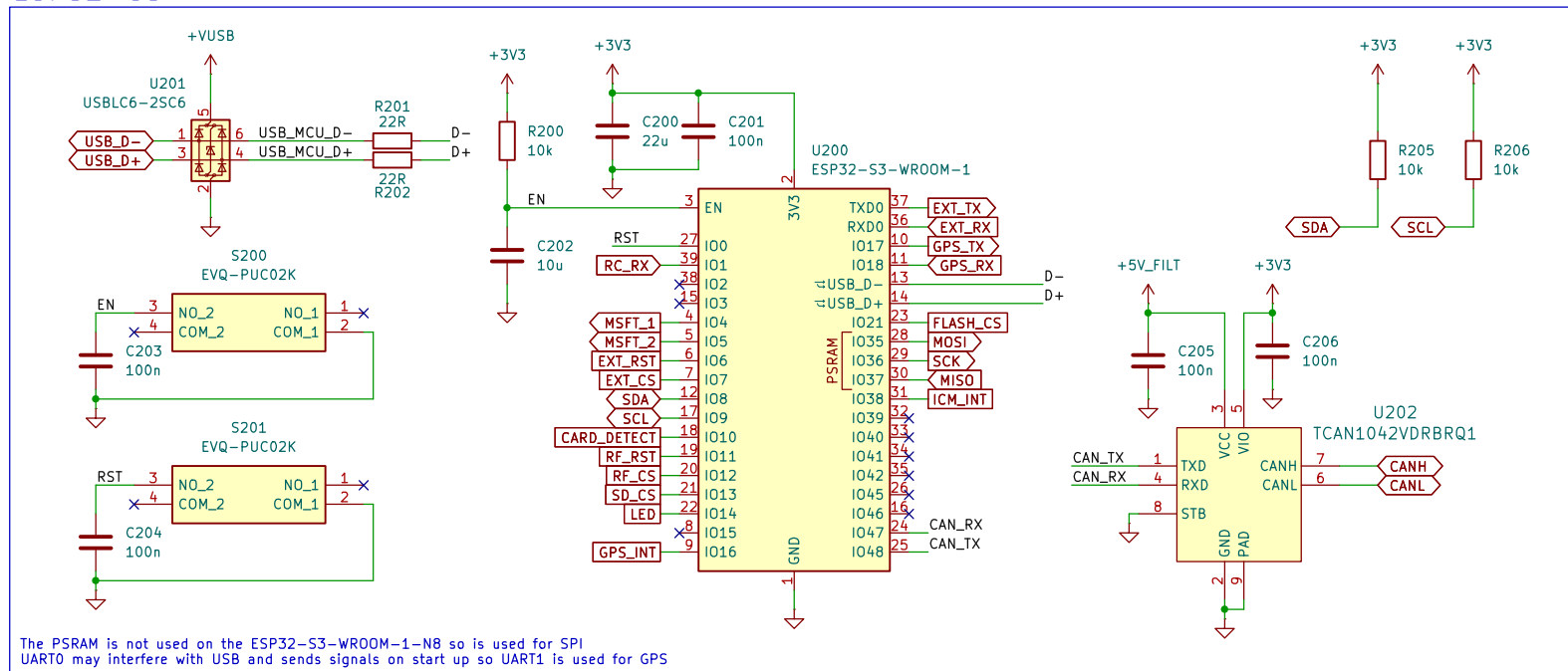
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Size: A4 Date: 07-05-2025
KiCad E.D.A. 9.0.2

Rev: 0.0.1
Id: 2/5

ESP32-S3



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Size: A4

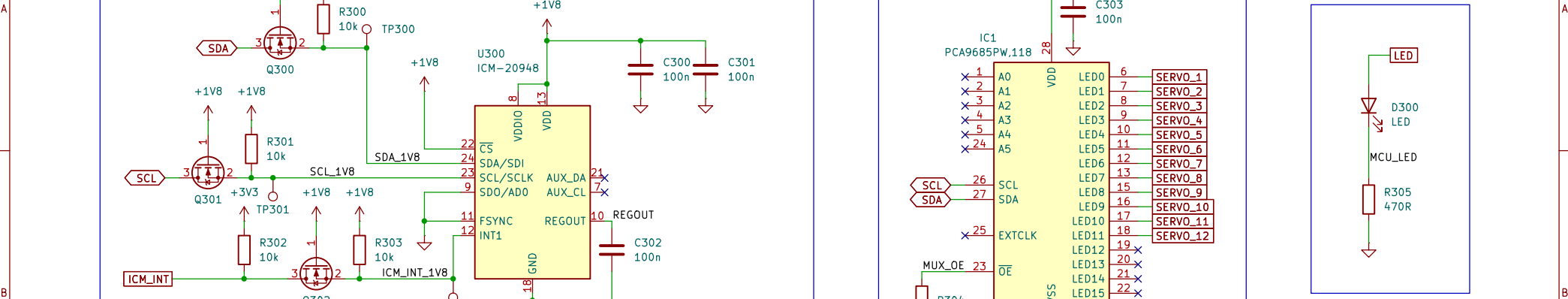
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Rev: 0.0.1

KiCad E.D.A. 9.0.2

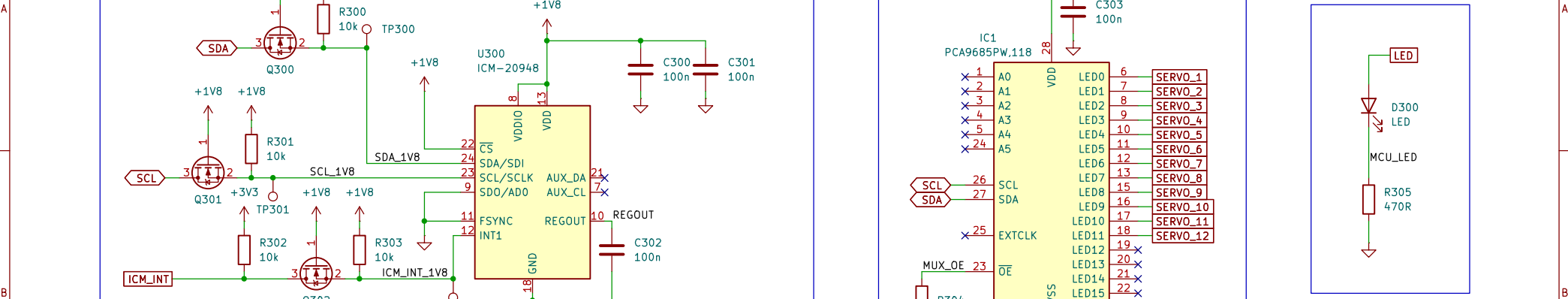
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1	2	3	4	5	6
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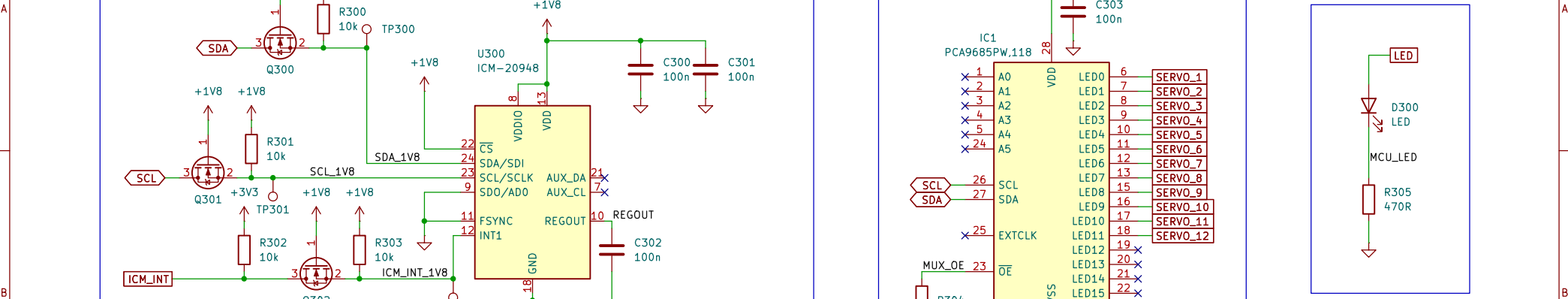
ICM-20948 uses 1V8 logic NOT 3V3 I2C address is 0x68	I2C address is 0x68
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1	2	3	4	5	6
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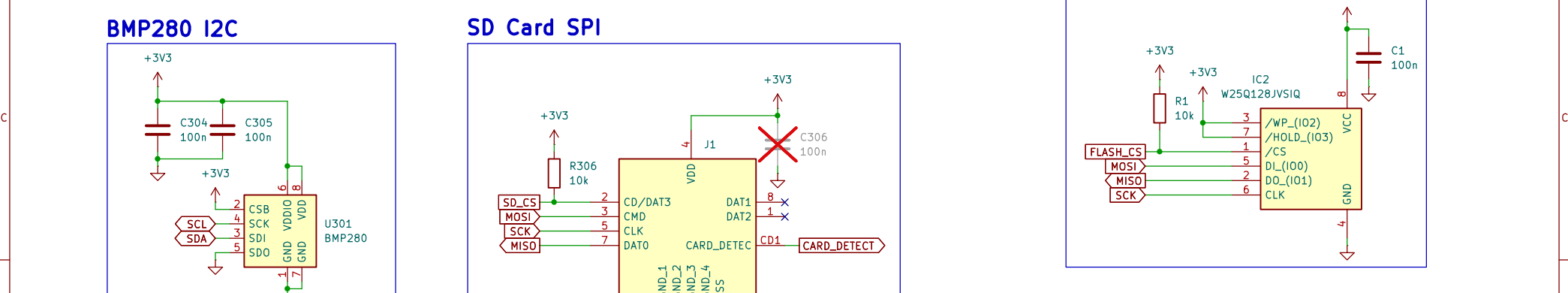


ICM-20948 uses 1V8 logic NOT 3V3 I2C address is 0x68	I2C address is 0x68
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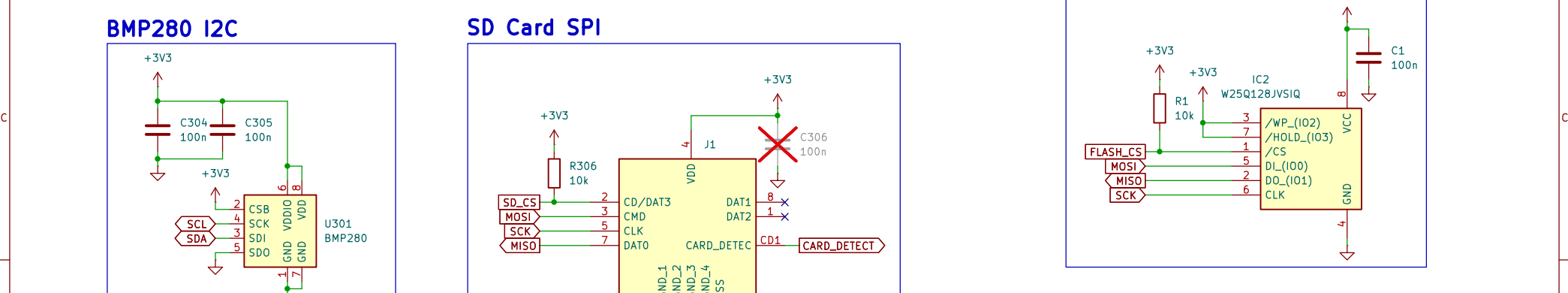


	+3V3
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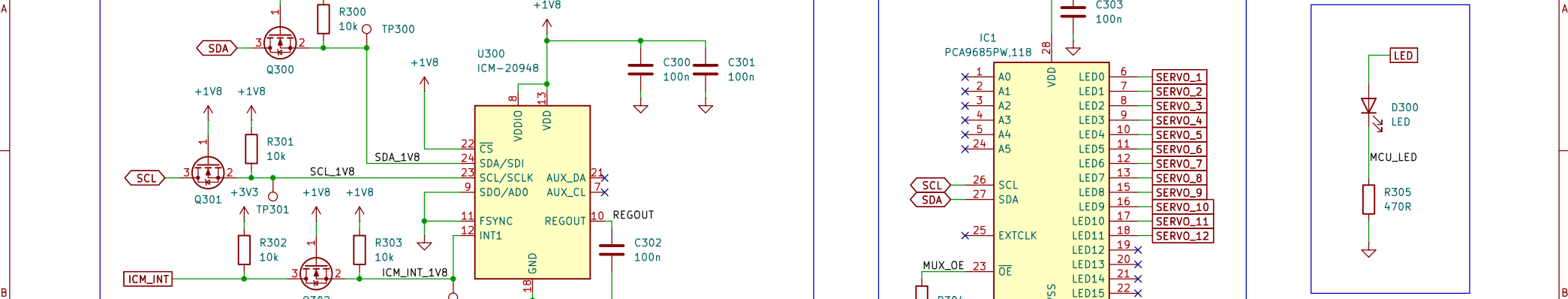


I2C address is 0x76

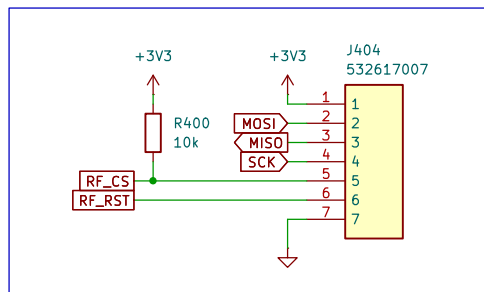
		+3V3
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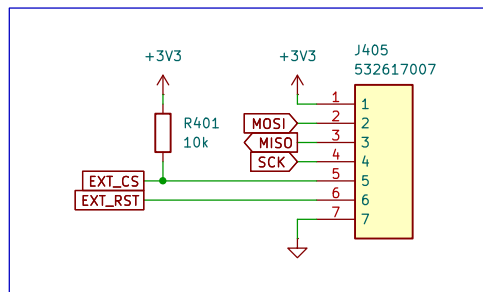
1	2	3	4	5	6
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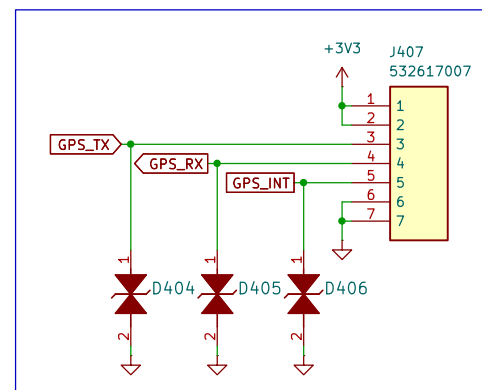
RF Connector



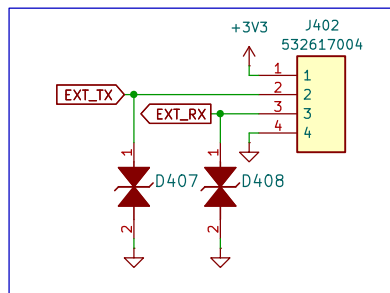
SPI Connector



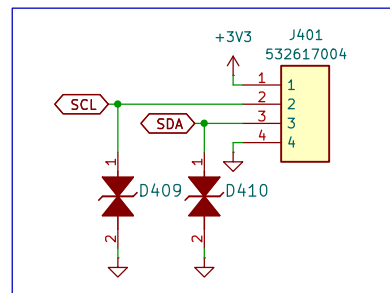
GPS Connector



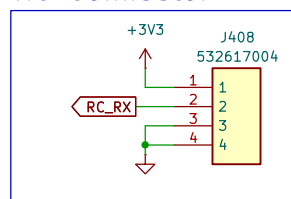
UART Connector



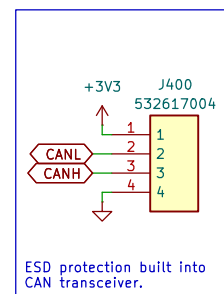
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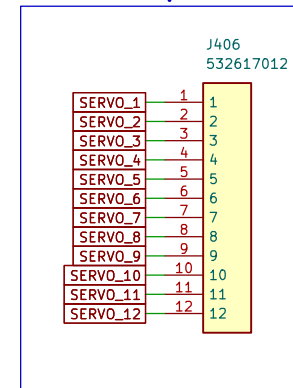
RC Connector



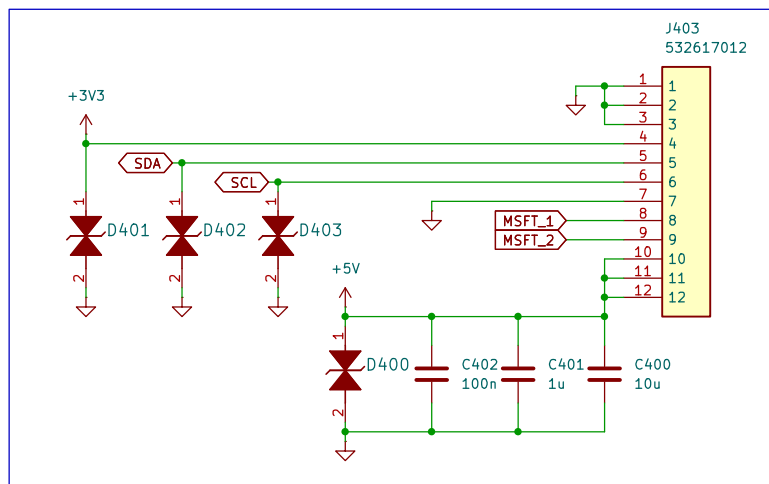
CAN Connector



Servo Outputs



PDB Connector



Sheet: /400_Actuation Control/
File: Connectors.kicad_sch

Title: Actuator Outputs

Size: A4

Date: 08-05-2025

Rev: 0.0.1

KiCad E.D.A. 9.0.2

Id: 5/5