

1	2	3	4	5	6
A	STM32				A
B	Sensors				B
C	File: STM32.kicad_sch				C
D	File: Sensors.kicad_sch				D
1	2	3	4	5	6

work-in-progress

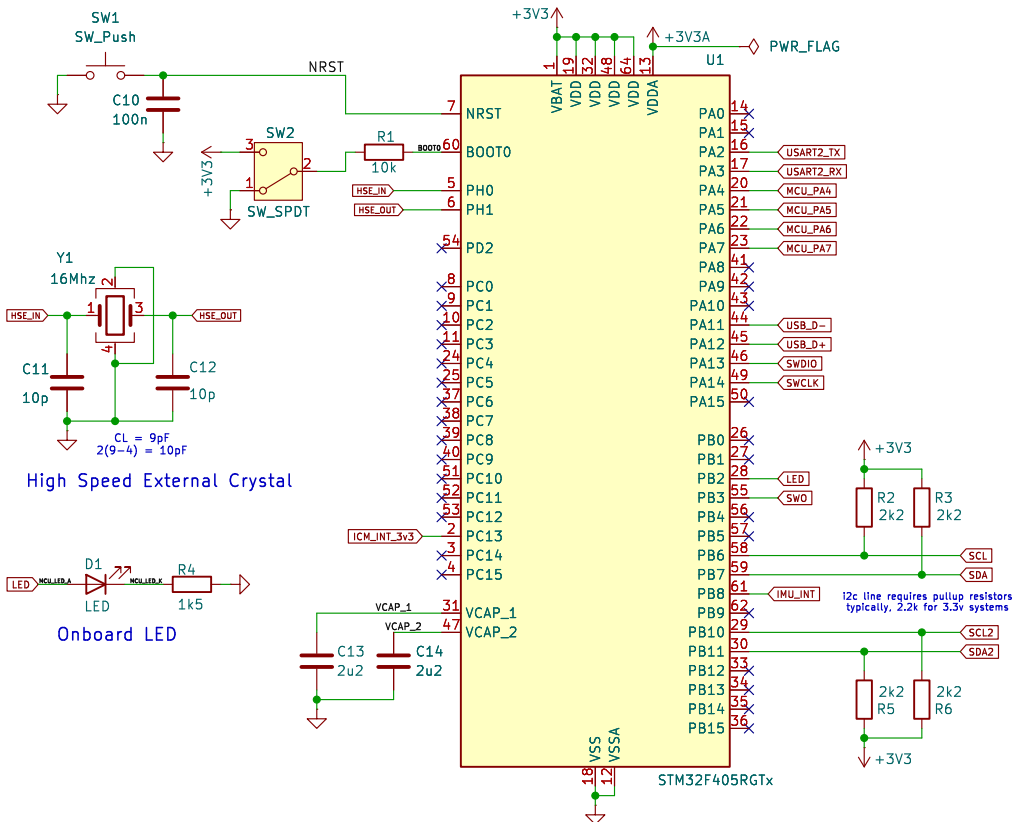
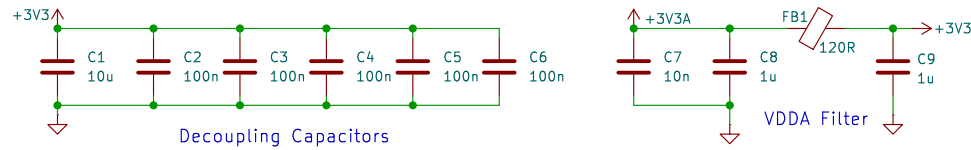
Aadil Naji

Sheet: /
File: HermesFC.kicad_sch

Title: **Hermes Flight Controller**

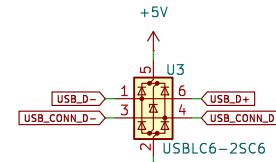
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KiCad E.D.A. 8.0.7	Id: 1/3	

MCU Module

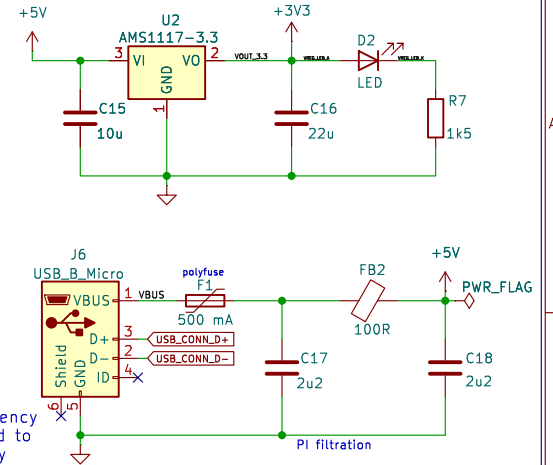


Processes inputs from 3 sensors. MPU-6050 and BMP280 are connected to i2c_1, while ICM20948 is connected to i2c_2 line. This is because the ICM's io runs on 1v8 and its i2c lines are translated to 3v3 by a logic level translator, and I'm not sure if the translator would interfere with the comm of the other 2 sensors

USB + VREG

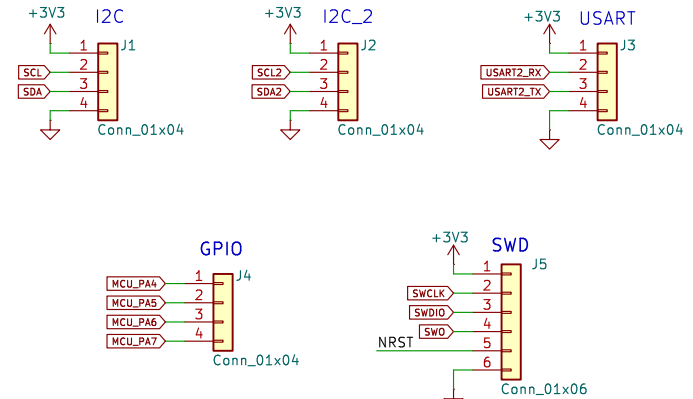


ESD Protection



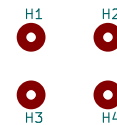
Since this is a prototype board and power efficiency is not of concern the AMS1117 regulator is used to step down the voltage to 3.3v. For future battery powered designs a more efficient reg should be used

Connectors



For programming and extra gpio functionality

M_H



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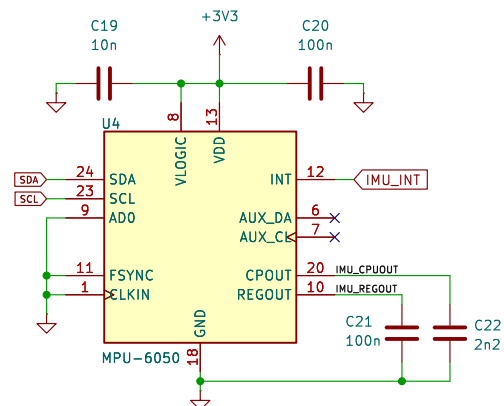
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Title: MCU

Size: A4 Date: 2025-02-25
KiCad E.D.A. 8.0.7

Rev: v0.1
Id: 2/3

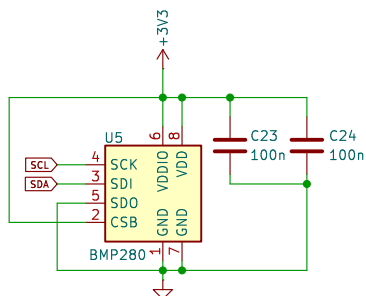
IMU Sensor



i2c address at 0x68

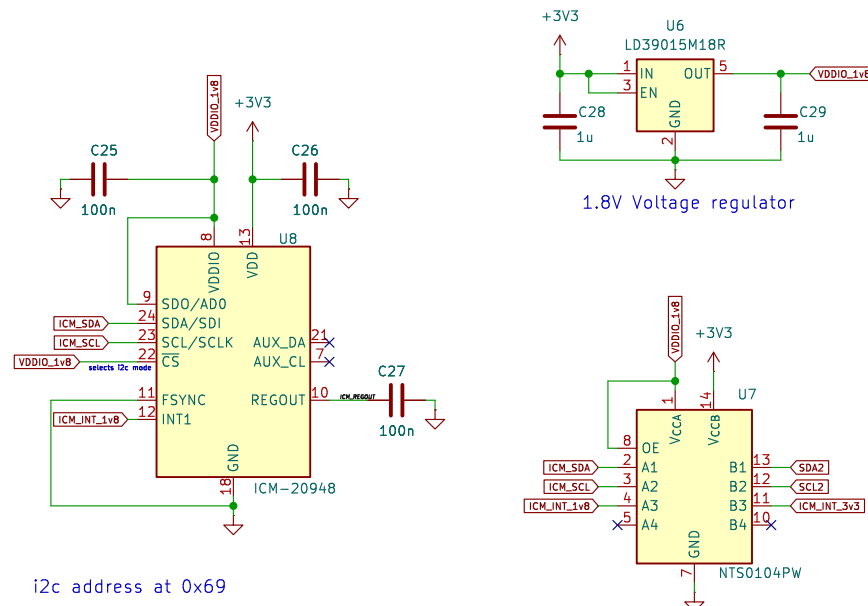
2 IMUs are used on this board to test the functionality. The final design should incorporate only one IMU

Barometer



i2c address at 0x76

9 Axis IMU Sensor



i2c address at 0x69

The ICM's IO works at upto 1.95v, so i2c can't be hooked upto the mcu without a level shifter

NTS0104 has internal 10k pull-up resistors for both A and B ports. However attaching external resistors in parallel overrides the internal resistors

bidirectional voltage level
translator 1.8v/3.3v

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Sheet: /Sensors/
File: Sensors.kicad_sch

Title: Sensors

Size: A4	Date: 2025-02-25
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SIZE: A1	
KiCad E.D.A. 8.0.7	

Rev: v0.1

Id: 3/3