STM32

File: STM32.kicad_sch

Sensors

File: Sensors.kicad_sch

work-in-progress

Aadil Naji

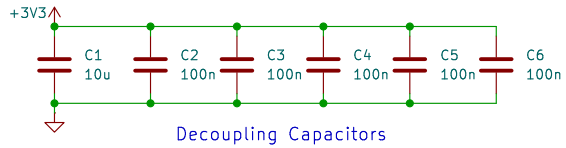
Sheet: /

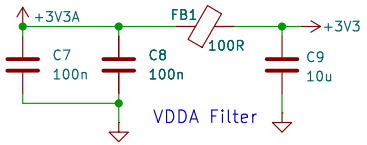
File: Hermes-FlightController-DFM.kicad_sch

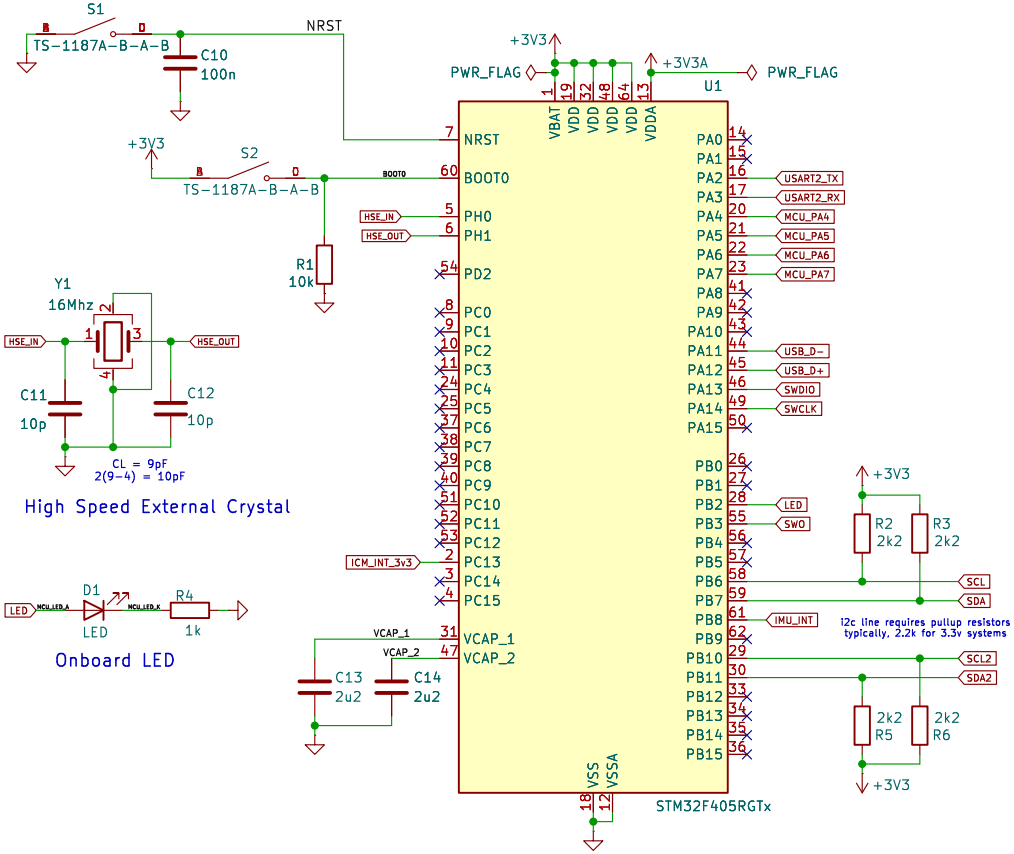
Title: Hermes Flight Controller

Size: A4	Date: 2025-03-02	**Rev: v0.2**
KiCad E.D.A. 8.0.7		Id: 1/3

MCU Module

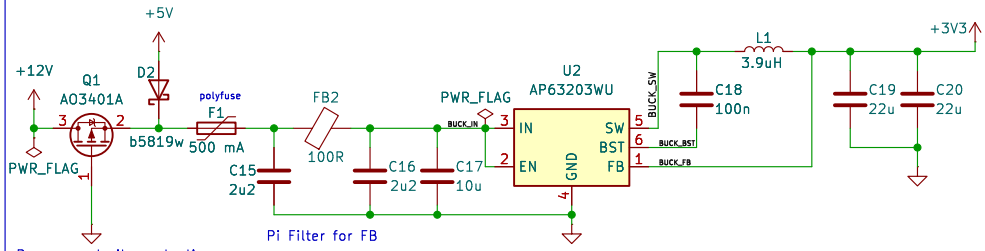


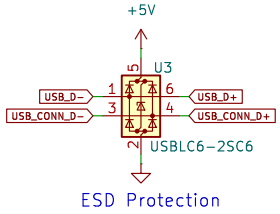


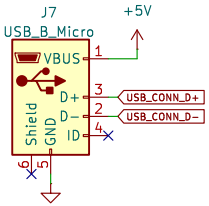


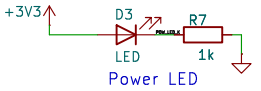
Processes inputs from 3 sensors. MPU-6050 and BMP280 are connected to i2c_1, while ICM20948 is connected to i2c_2 line. This is because the ICM's io runs on 1v8 and its i2c lines are translated to 3v3 by a logic level translator, and I'm not sure if the translator would interfere with the comm of the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

Power + USB



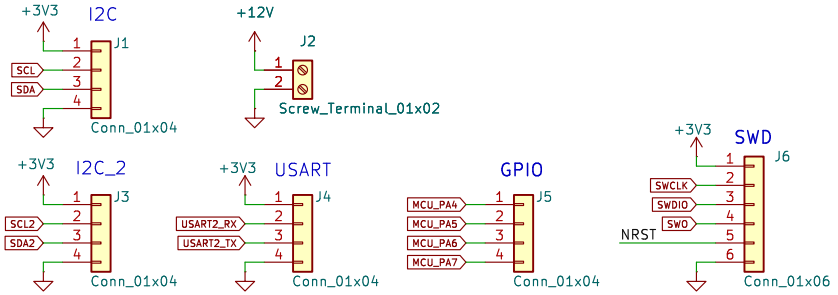






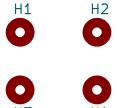
Using a fixed 3.3v buck converter to regulate voltage from battery. Power from USB is connected using a schotky diode, and battery power is connected through a P-channel MOSFET. This circuit chooses the higher voltage source, whichever is present, blocking the other source.

Connectors



For programming and extra gpio functionality

M_H

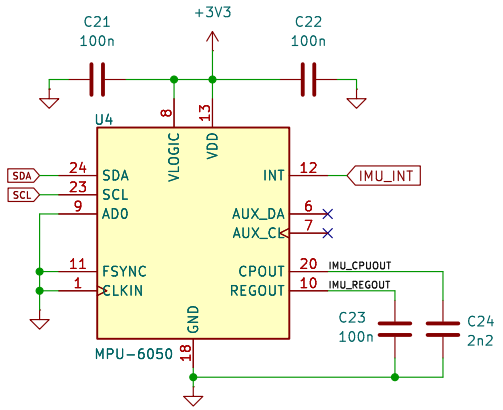


Aadil Naji
Sheet: /STM32/
File: STM32.kicad_sch

Title: MCU

Size: A4	Date: 2025-03-02	**Rev: v0.2**
KiCad E.D.A. 8.0.7		Id: 2/3

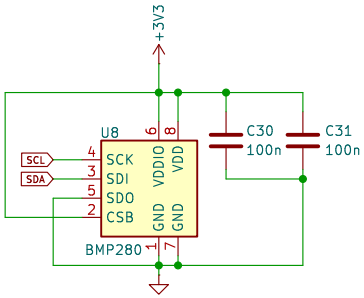
IMU Sensor



i2c address at 0x68

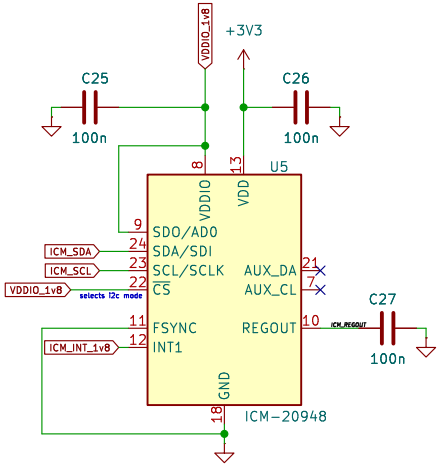
2 IMUs are used on this board to test the functionality. The final design should incorporate only one IMU

Barometer



i2c address at 0x76

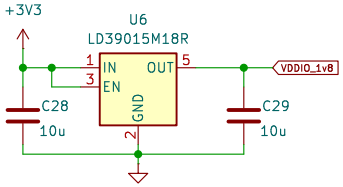
9 Axis IMU Sensor



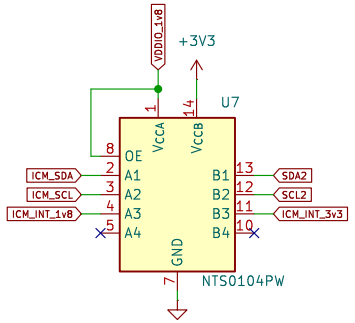
i2c address at 0x69

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



1.8V Voltage regulator



bidirectional voltage level translator 1.8v/3.3v

Aadil Naji

Sheet: /Sensors/
File: Sensors.kicad_sch

Title: Sensors

Size: A4	Date: 2025-03-02	**Rev: v0.2**
KiCad E.D.A. 8.0.7		Id: 3/3