| Revision | Date | Author | Description |
|---|---|---|---|
| 1 | 07-03-2025 | L.Brighenti | First Draft |
| | | | |
| | | | |
| | | | |

01 – BLOCK DIAGRAM

File: block_diagram.kicad_sch

02 – CONNECTORS

File: connectors.kicad_sch

03 – POWER

File: power.kicad_sch

04 – POWER 2

File: power2.kicad_sch

05 – MCU

File: mcu.kicad_sch

06 – GPS–LTE

File: gps–lte.kicad_sch

07 – SENSORS

File: sensors.kicad_sch

08 – SENSORS 2

File: sensors2.kicad_sch

FID1
Fiducial

FID2
Fiducial

FID3
Fiducial

OBJ1
977405151R

1

GND_DIGITAL

OBJ2
KNOB M2.5x4–INOX

MH1
MOUNTING HOLE 3mm

MH2
MOUNTING HOLE 3mm

MH3
MOUNTING HOLE 3mm

MH4
MOUNTING HOLE 3mm

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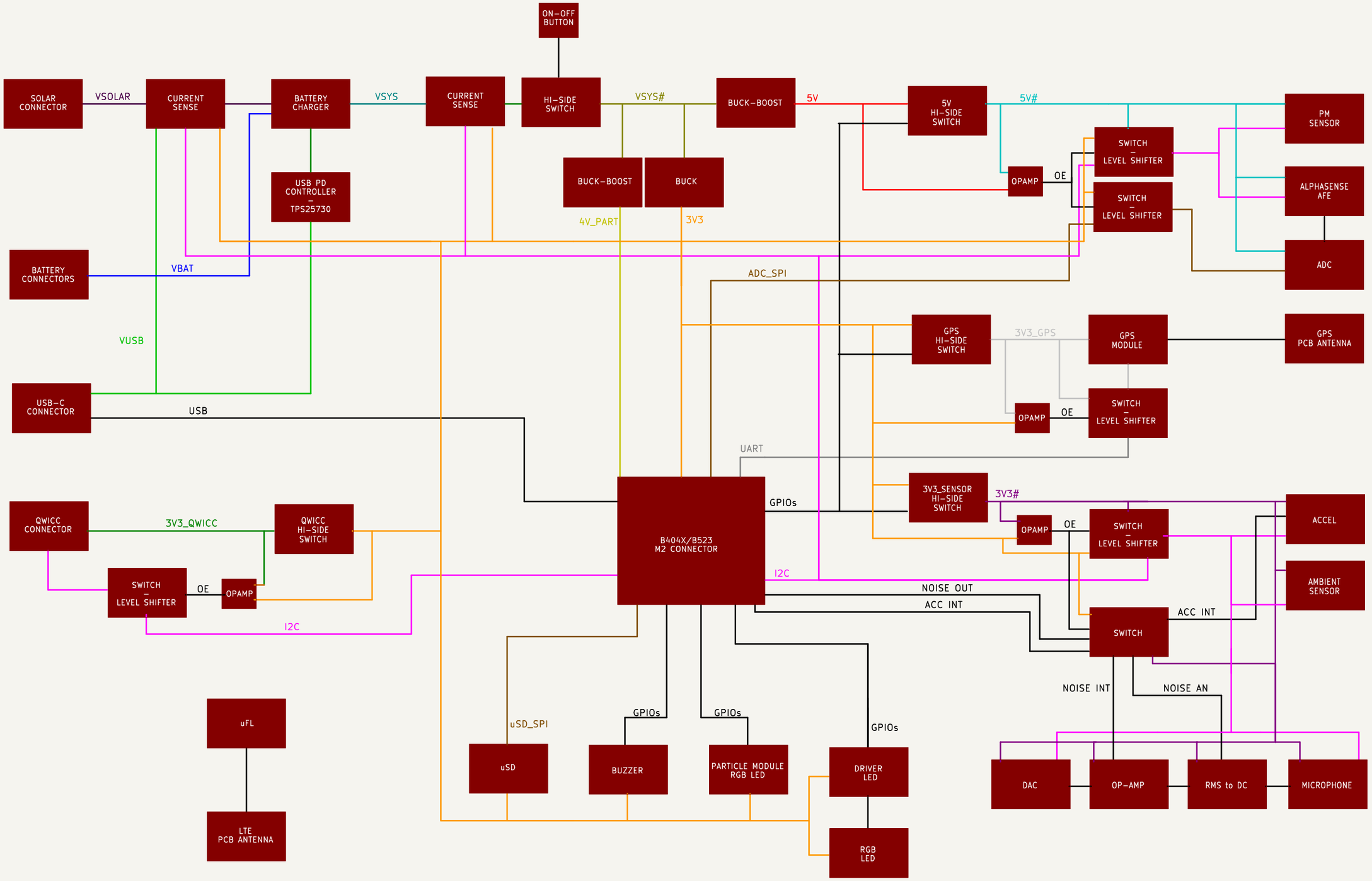
| | | | |
|---|---|---|---|
| Project | **Flatburn_V4** | Page name | **Root** |
| Designer | **Luca Brighenti** | | |
| Internal code | **-** | Customer | **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** / Sheet **1/9** |

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| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
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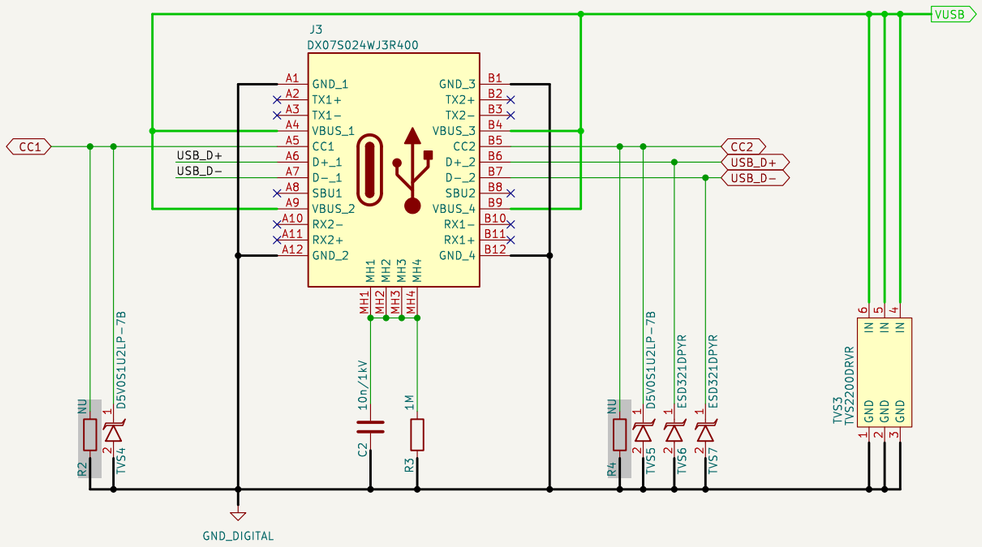
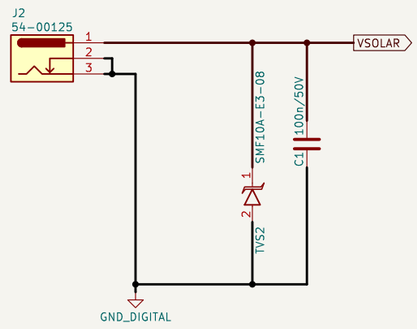
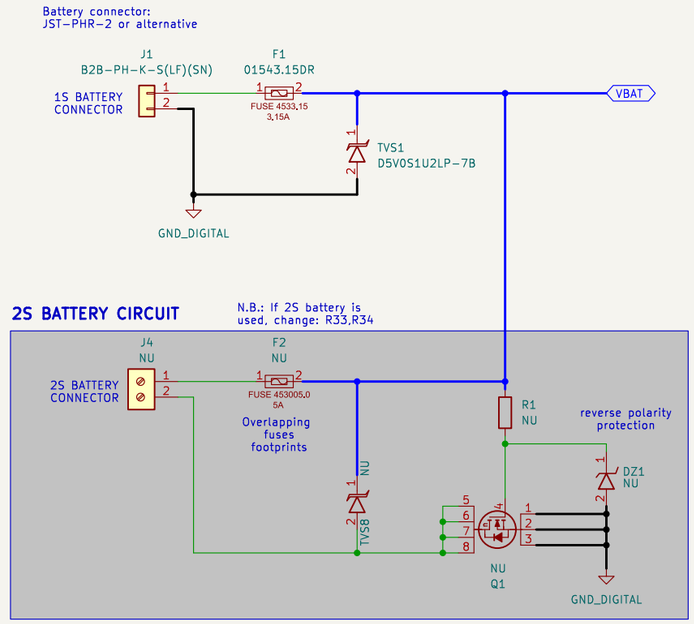
# USB TYPE-C



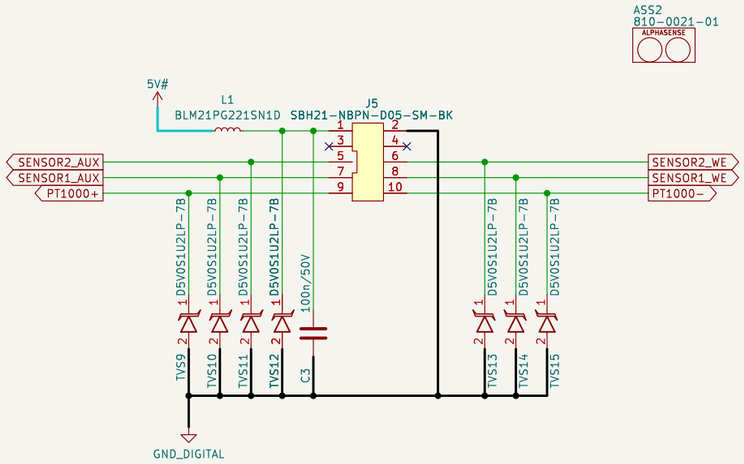

# SOLAR PANEL



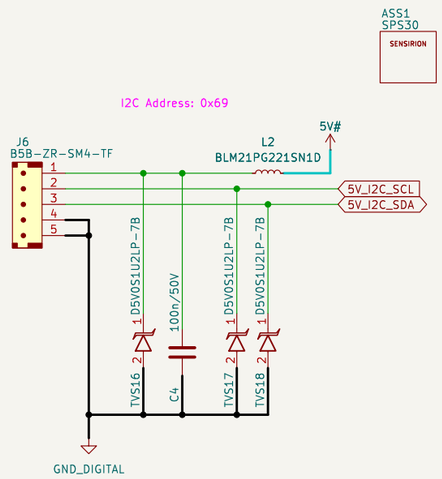

# BATTERY



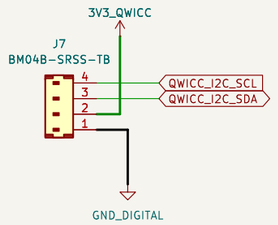

# ALPHASENSE AFE NO2 + CO




# SPS30 SENSOR




# QWICC

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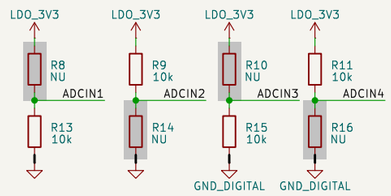
| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** / Sheet **3/9** |

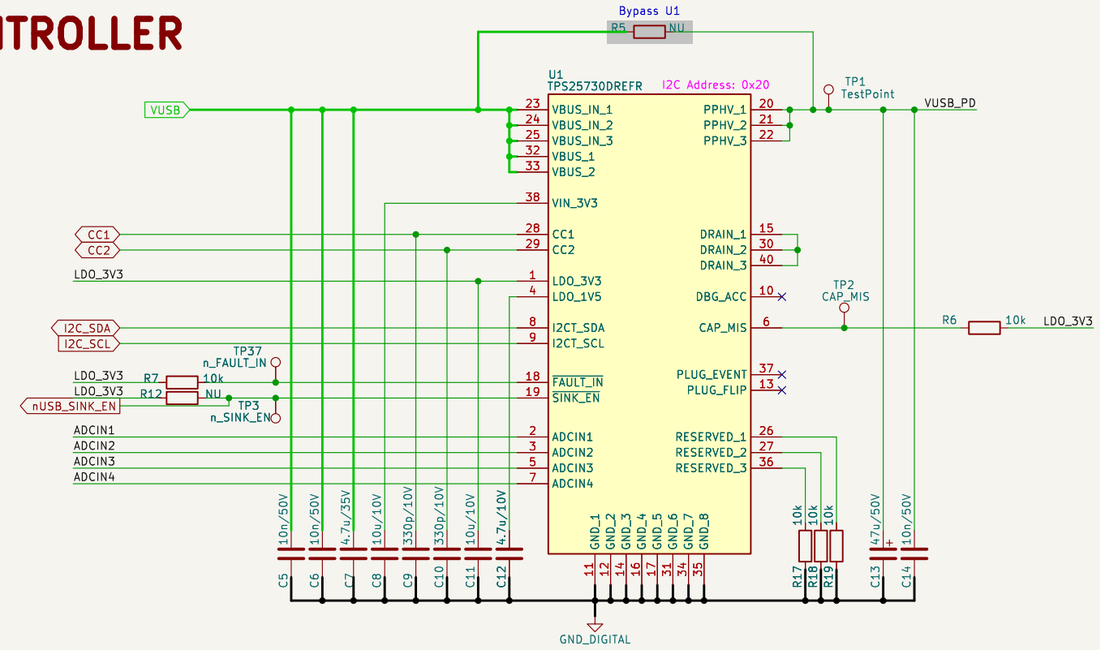
# USB PD CONTROLLER

ADCINx pins Configure Default Behavior,read Datasheet for more info

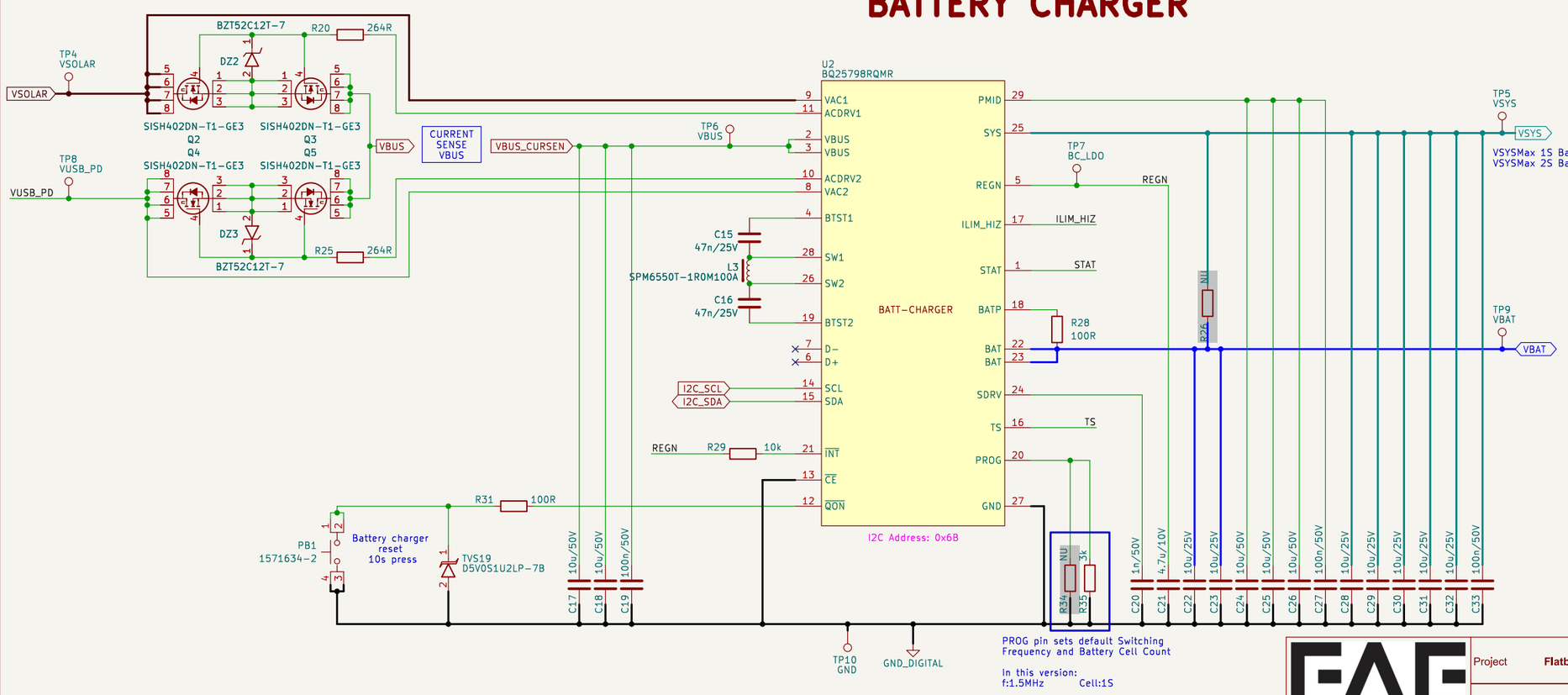
In this version:
5V min 20V max
0,5A min 5A max

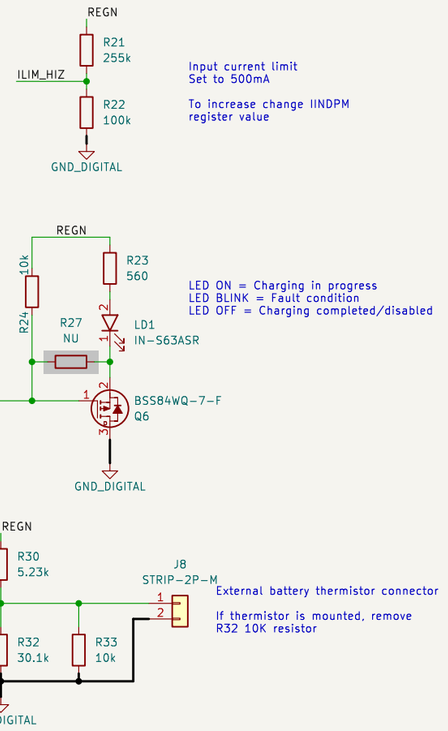
I2C Address: 0x20




# BATTERY CHARGER

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| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
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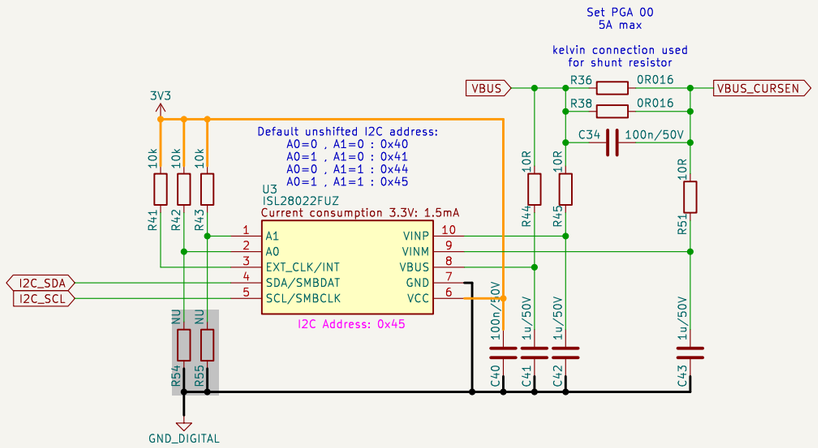
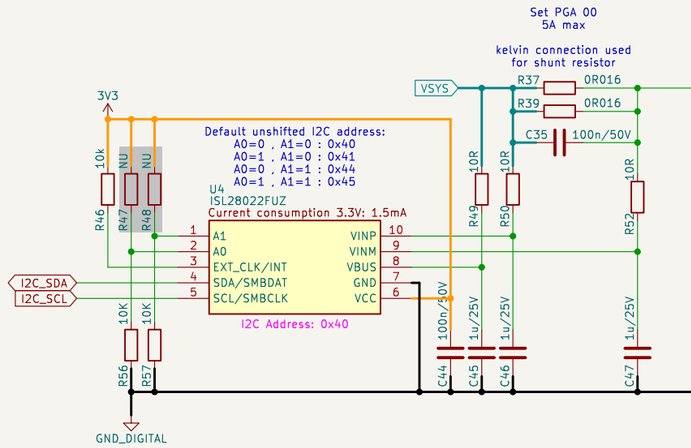
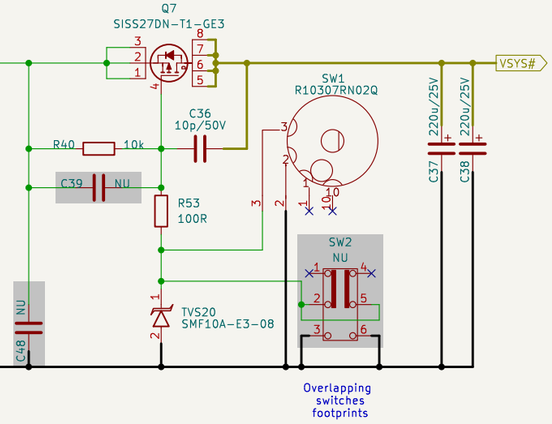
# CURRENT SENSE VBUS



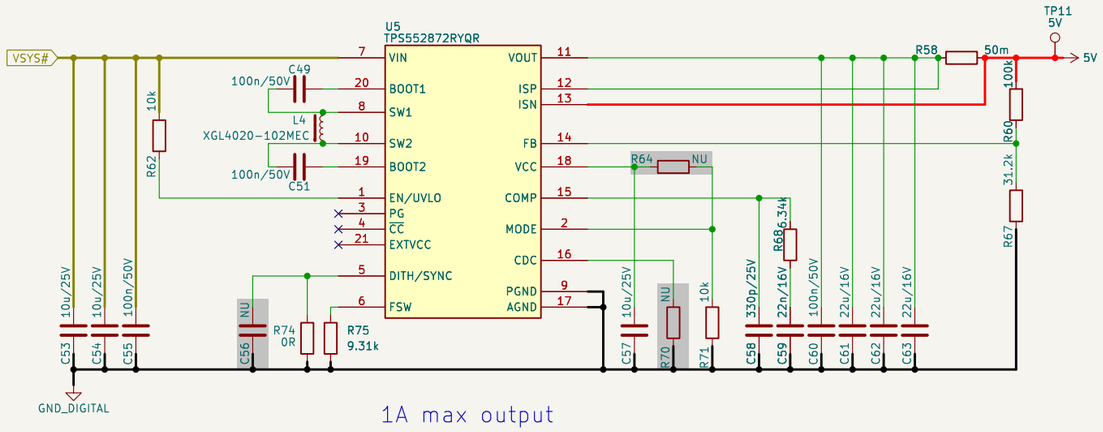

# CURRENT SENSE VSYS



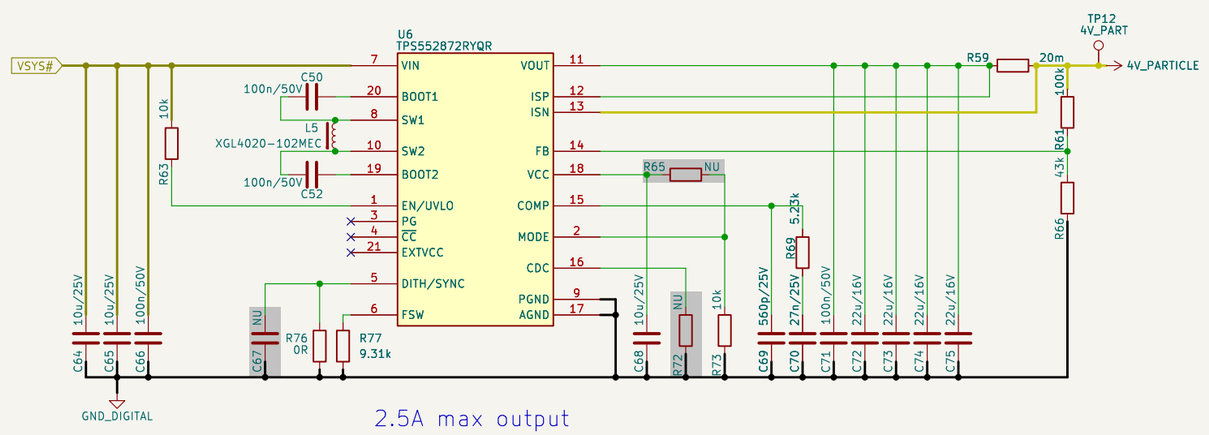

# ON-OFF SWITCH



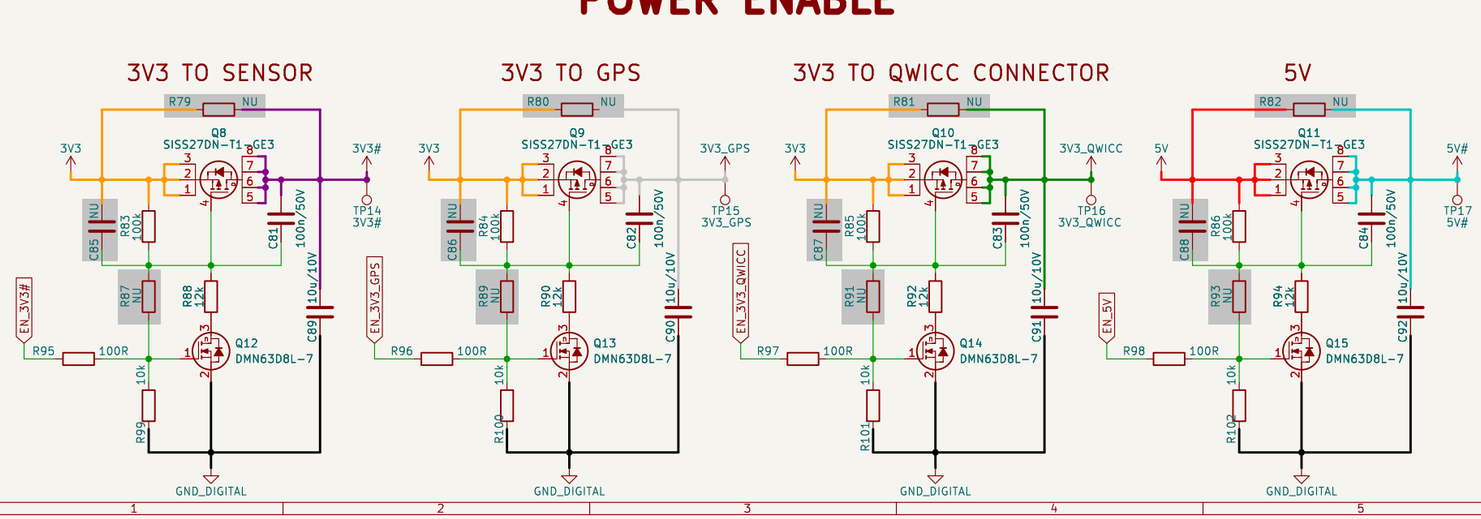

# BUCK-BOOST 5V



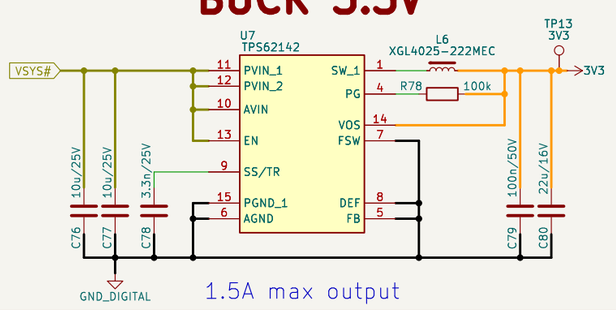

# BUCK-BOOST 4V (PARTICLE MODULE)




# POWER ENABLE




# BUCK 3.3V

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| | Designer **Luca Brighenti** | | |
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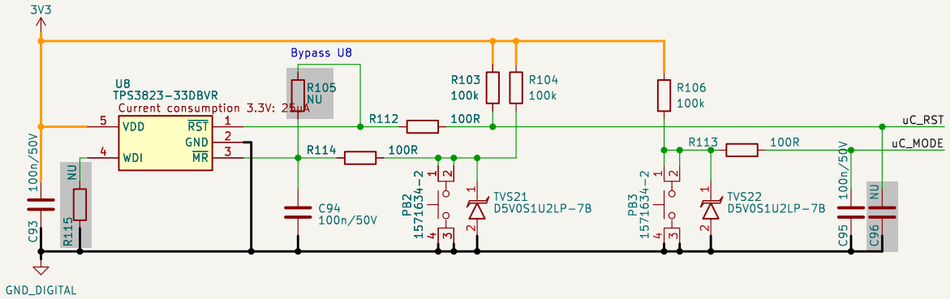
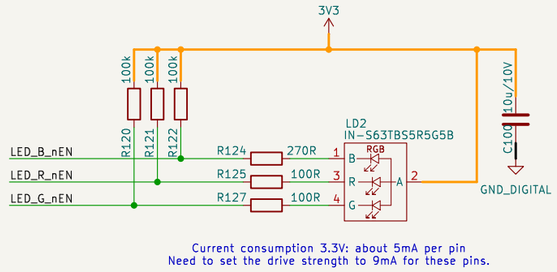
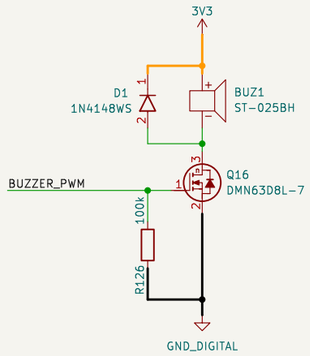
# RESET–MODE BUTTONS



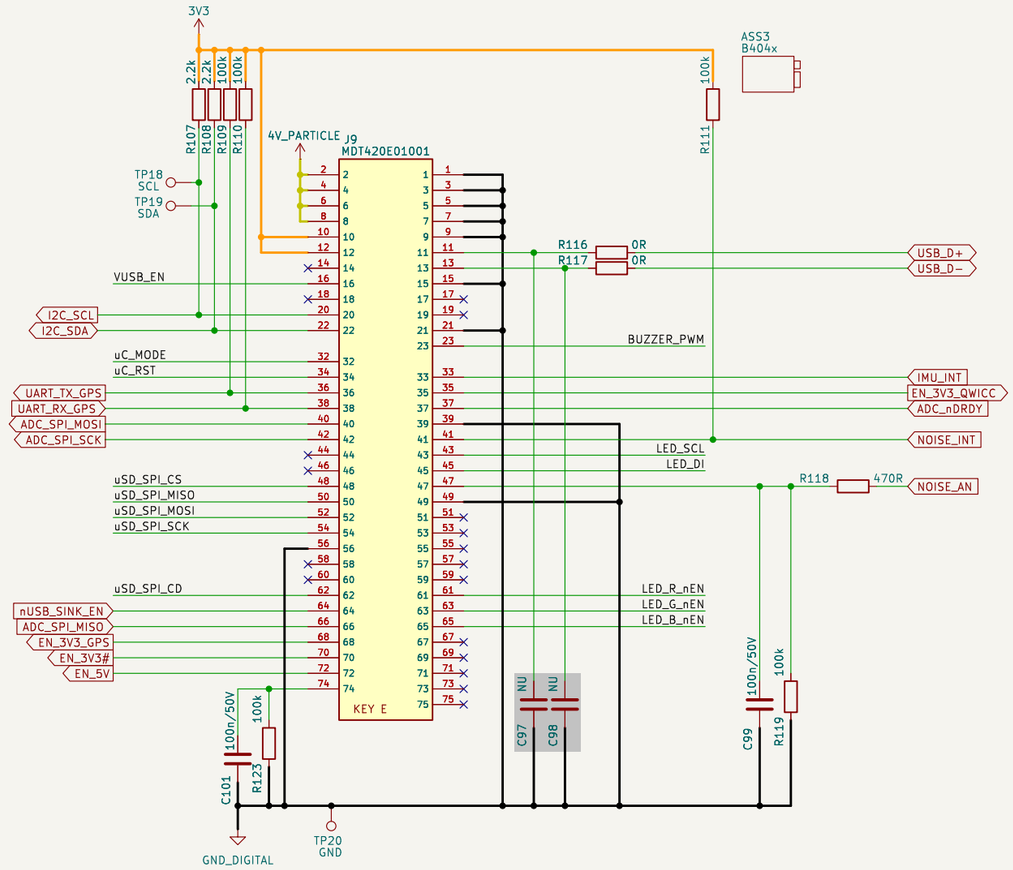

# PARTICLE MODULE STATUS RGB LED



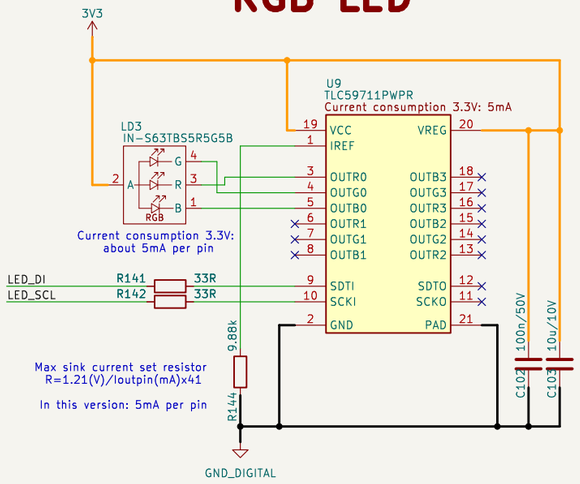

# BUZZER



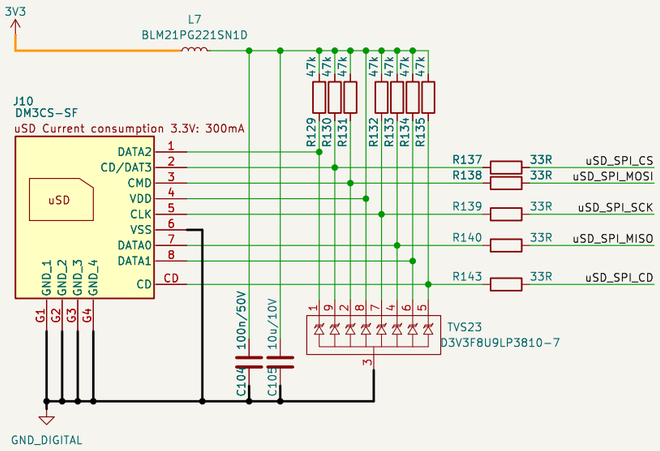

# PARTICLE MODULE BX404X/B523

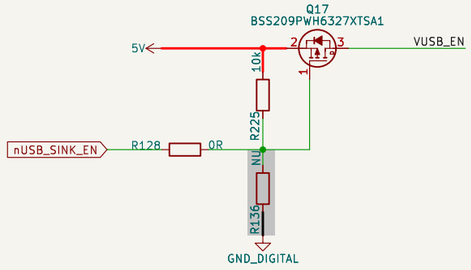



# RGB LED




# uSD–CARD

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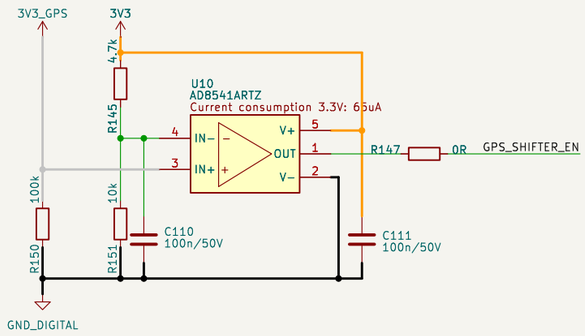
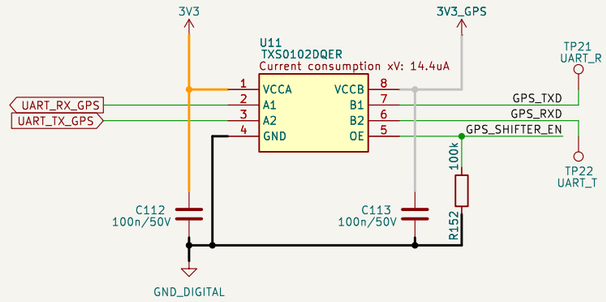
| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** / Sheet **6/9** |

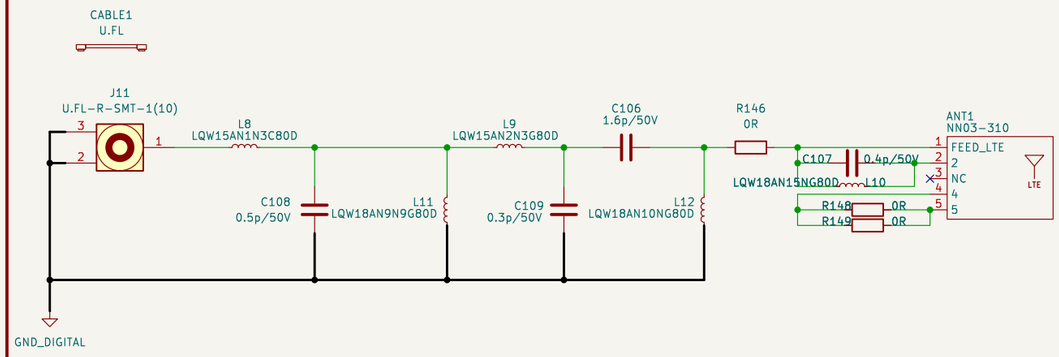
# GPS SIGNAL SWITCH (LEVEL SHIFTER)




# LTE ANTENNA

Supported Bands: 698−960MHz, 1710−2690Mhz




# GPS MODULE

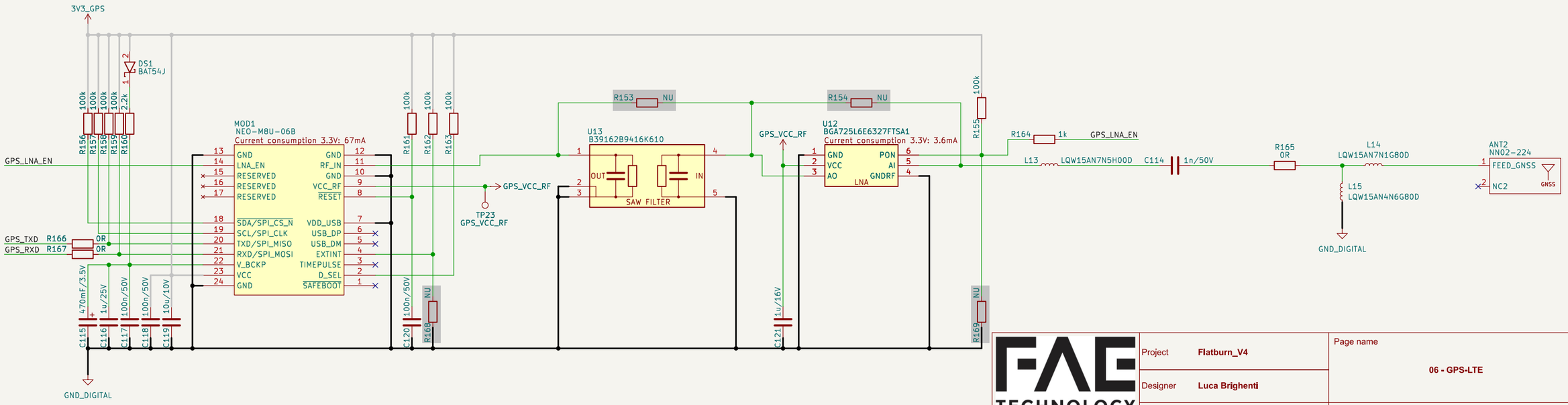
50Ω impedance trace

# GPS SAW+LNA

50Ω impedance trace

# GPS ANTENNA

50Ω impedance trace
Supported Bands: 1559−1610MHz

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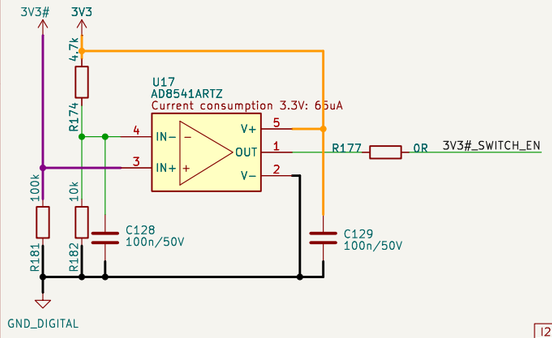
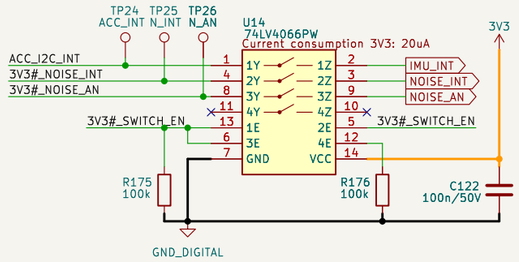
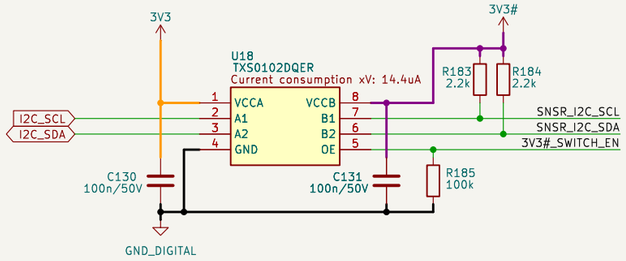
| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** / Sheet **7/9** |

# 3V3 SENSORS SIGNAL SWITCH

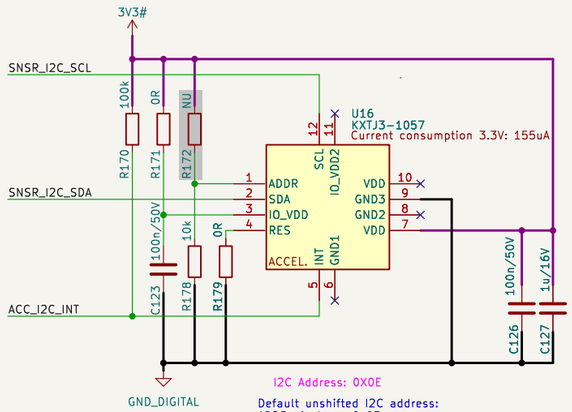


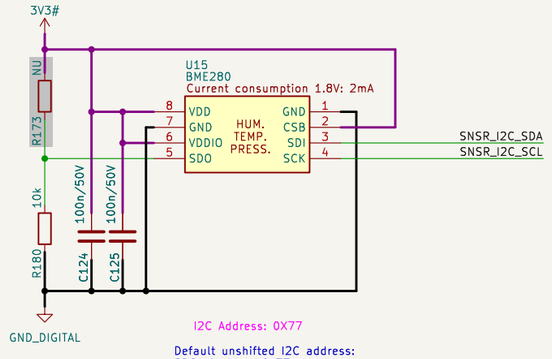

# ACCELEROMETER

Alternative P/N: MXC6655XA
Default unshifted I2C address: 0X15



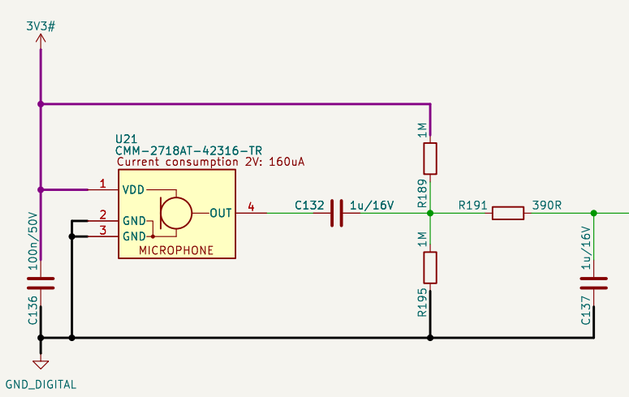

I2C Address: 0X0E
Default unshifted I2C address:
ADDR pin low: 0x0E
ADDR pin high: 0X0F

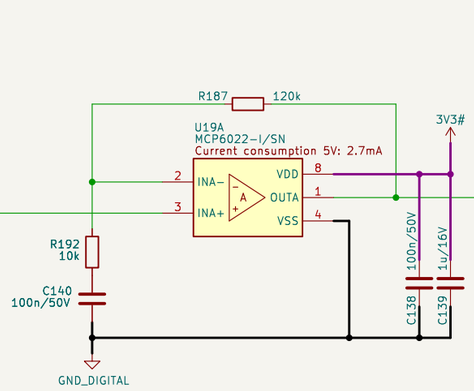
# AMBIENT SENSOR

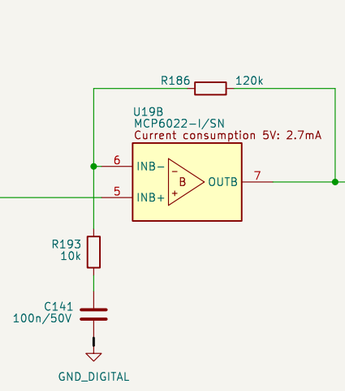


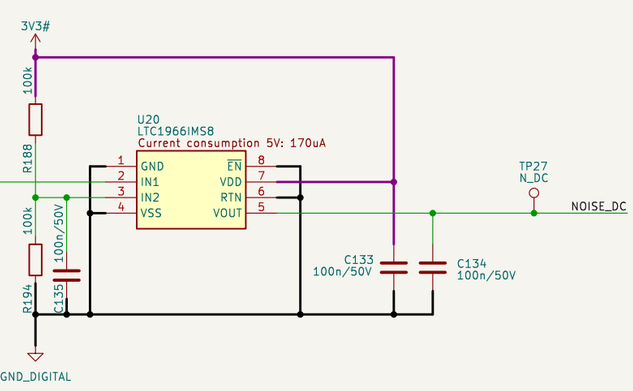

I2C Address: 0X77
Default unshifted I2C address:
SDO pin low: 0x77
SDO pin high: 0X76

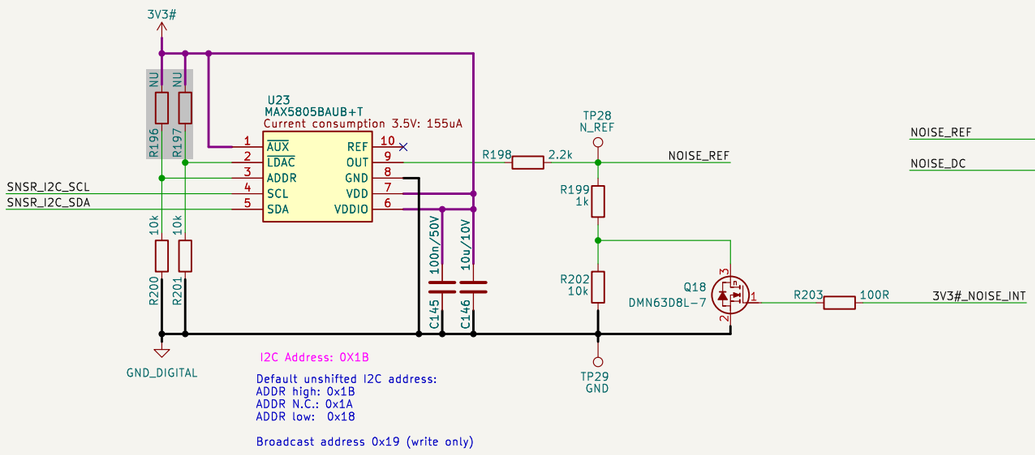
# NOISE DETECTION



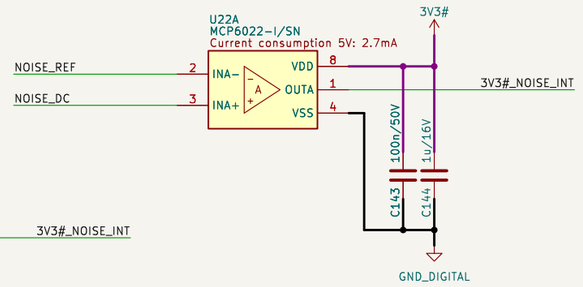



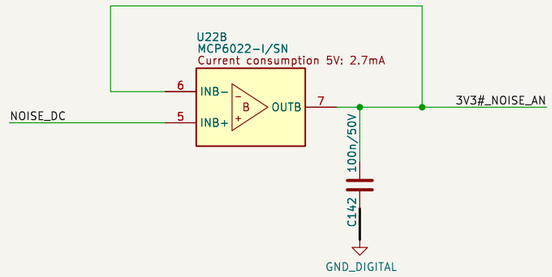




I2C Address: 0X1B
Default unshifted I2C address:
ADDR high: 0x1B
ADDR N.C.: 0x1A
ADDR low: 0x18

Broadcast address 0x19 (write only)





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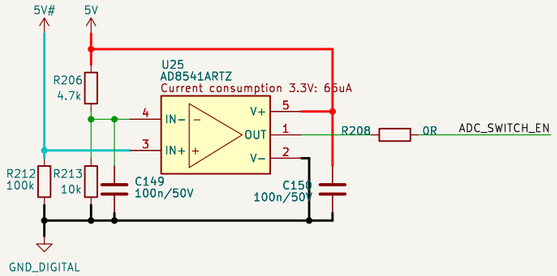
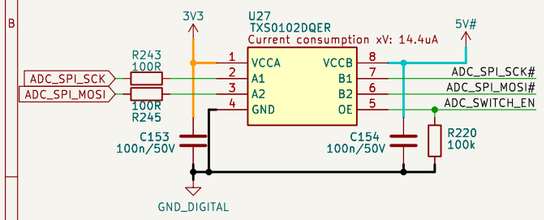
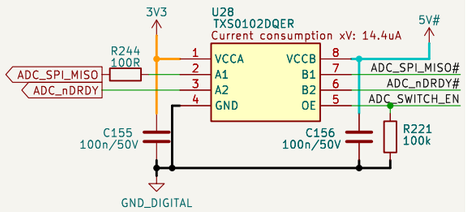
| | | | |
|---|---|---|---|
| Project **Flatburn_V4** | | | Page name **07 - SENSORS** |
| Designer **Luca Brighenti** | | | |
| Internal code **-** | | | Customer **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** — Sheet **8/9** |

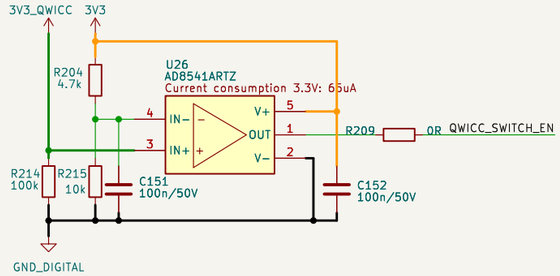
# ADC SIGNAL SWITCH (LEVEL SHIFTER)

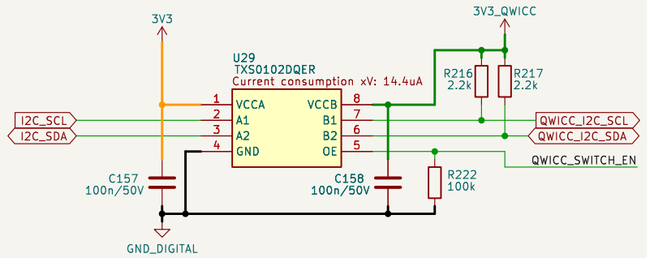


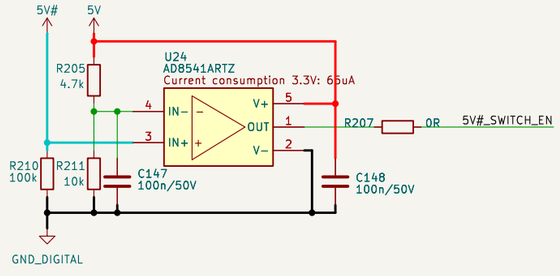



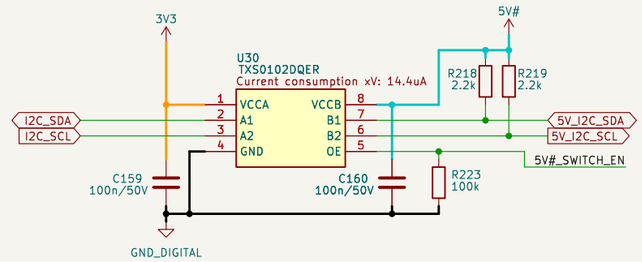

# QWICC SIGNAL SWITCH



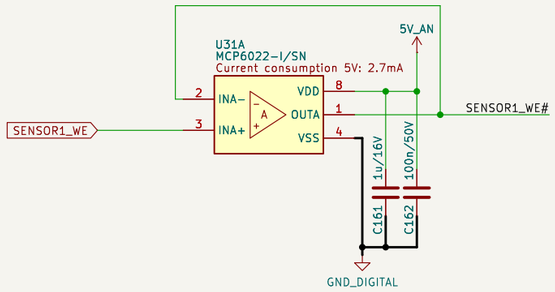



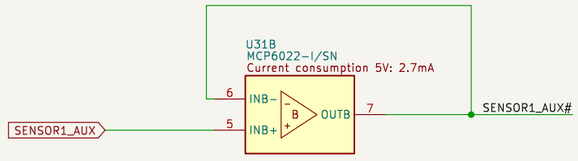

# SPS30 SIGNAL SWITCH

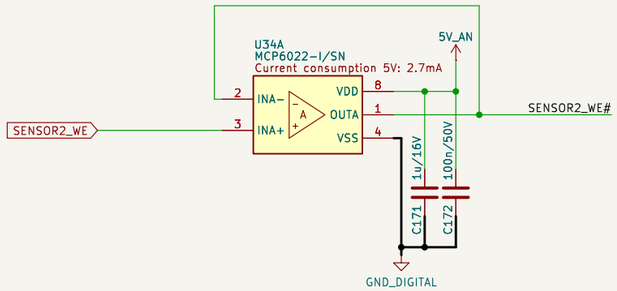


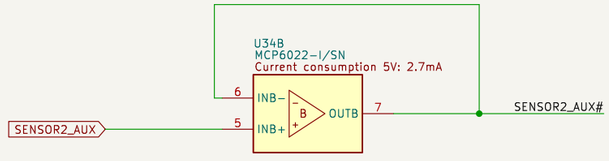




# ALPHASENSE AFE ADC

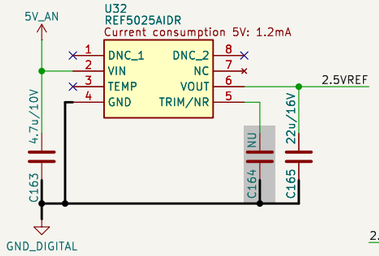


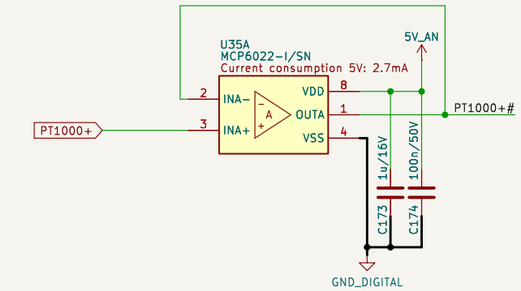



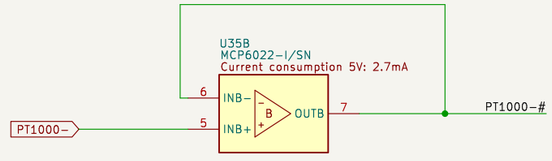



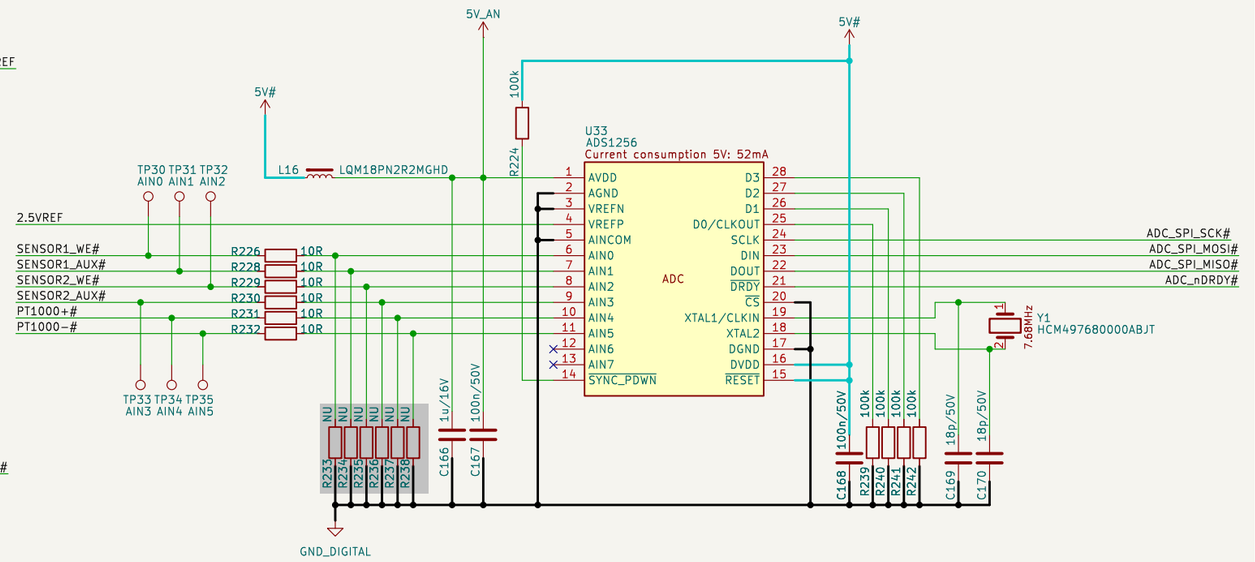




## VOLTAGE REFERENCE

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|---|---|---|---|
| FAE TECHNOLOGY<br>via C.Battisti 136, 24025, Gazzaniga (Bg), Italy<br>Mail: info@fae.technology Tel: +39 035738130 | Project **Flatburn_V4** | | Page name **08 - SENSORS 2** |
| | Designer **Luca Brighenti** | | |
| | Internal code **-** | | Customer **MIT** |
| Date 07-03-2025 | Rev. **1** | Rev. changes See Root Page | Kicad Version **KiCad E.D.A. 9.0.0** / Sheet **9/9** |