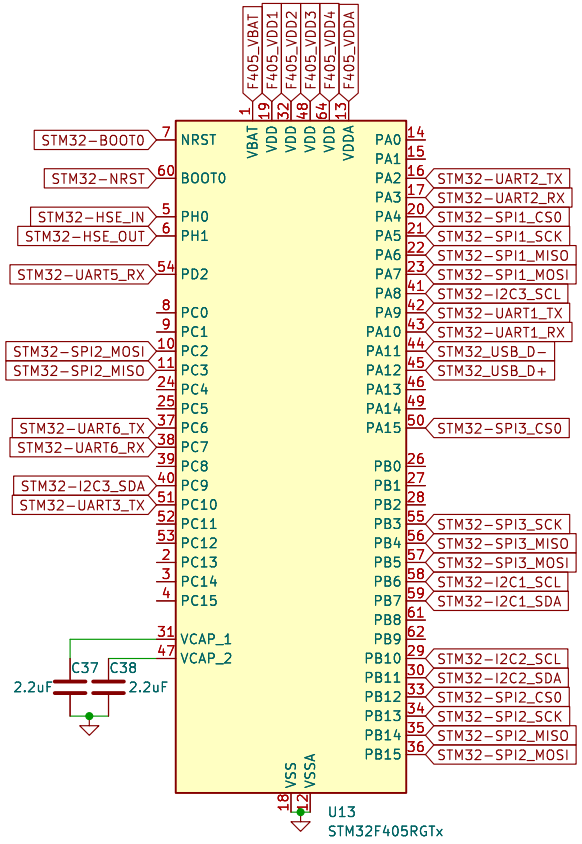
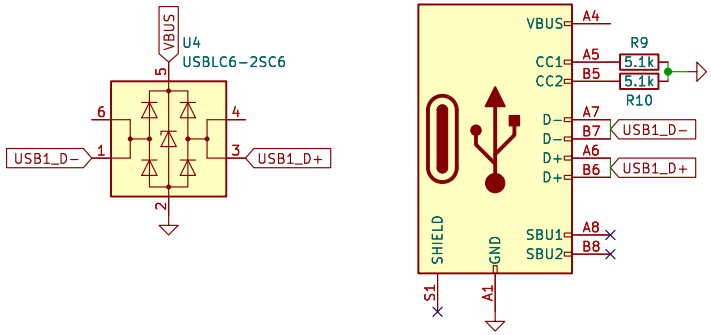
MCU – STM32

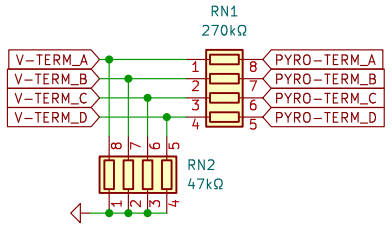


SDO – Serial Data Out –> Microcontroller In Sensor Out
SDI – Serial Data In –> Microcontroller Out Sensor In

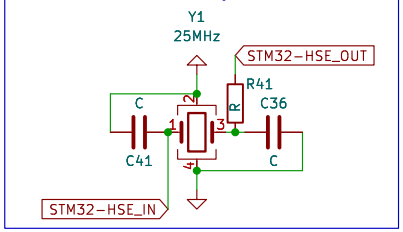
USB–C (STM32)



Pyro Voltage & Cont. (STM32)

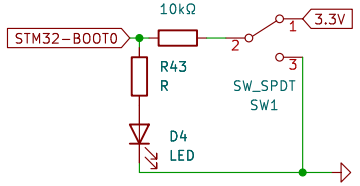


HSE Crystal

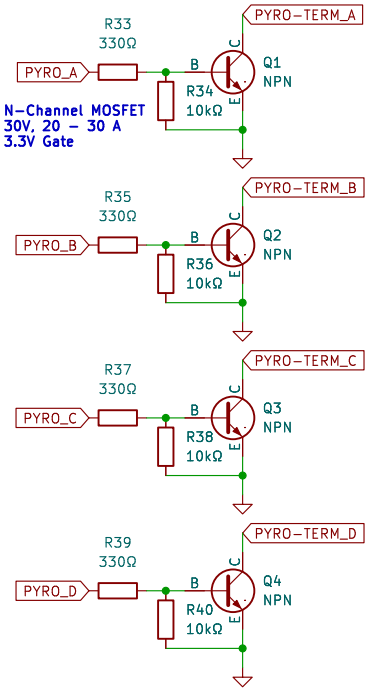


Do Math To Find CAP and R Values

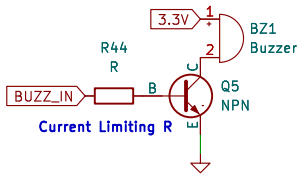
BOOT0 Switch



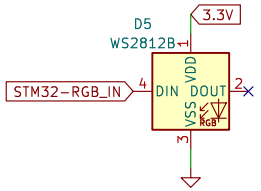
Pyro Terminals (STM32)



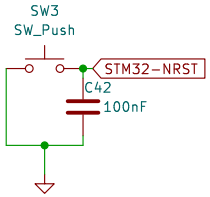
Buzzer



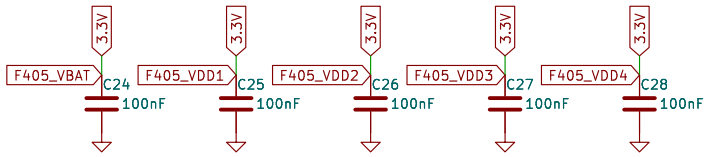
RGB Led



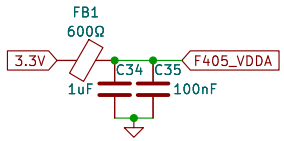
Reset Switch



MCU Decoupling Caps



EMI Filter



Do Math To Find CAP and R Values

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Aether Flight Computer

Sheet: /
File: aether.kicad_sch

Title: MCU – STM32 Schematic

Size: A4	Date:	Rev:
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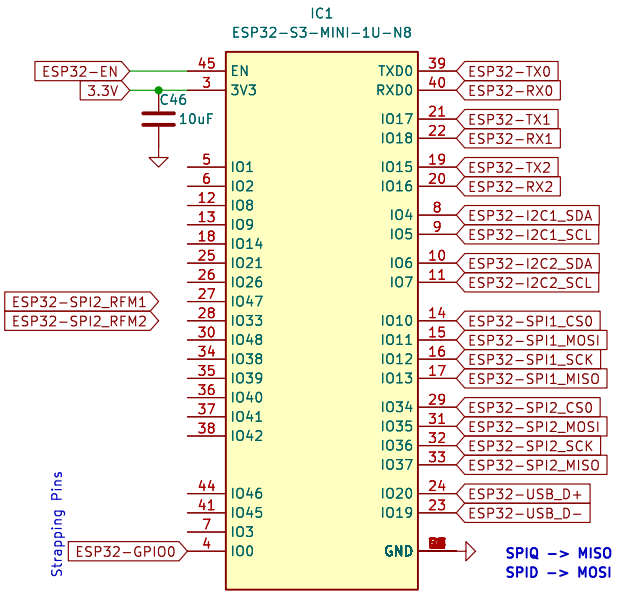
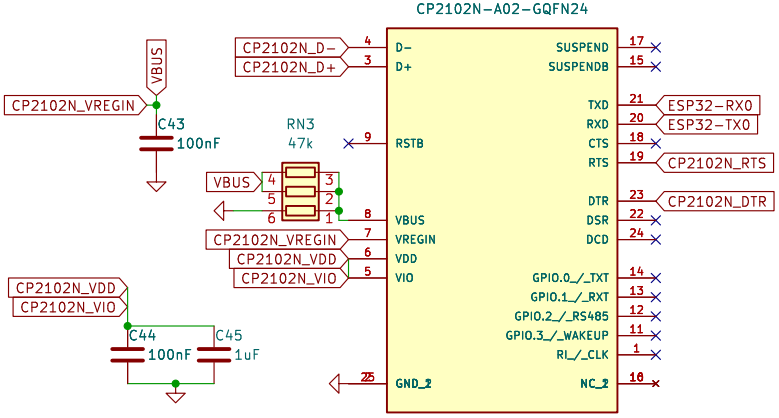
MCU – ESP32

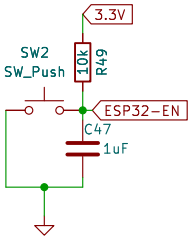


USB to UART Bridge

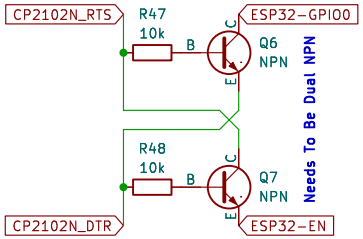


https://dl.espressif.com/dl/schematics/SCH_ESP32-S3-DEVKITM-1_V1_20210310A.pdf

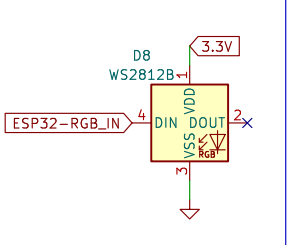
Reset Switch



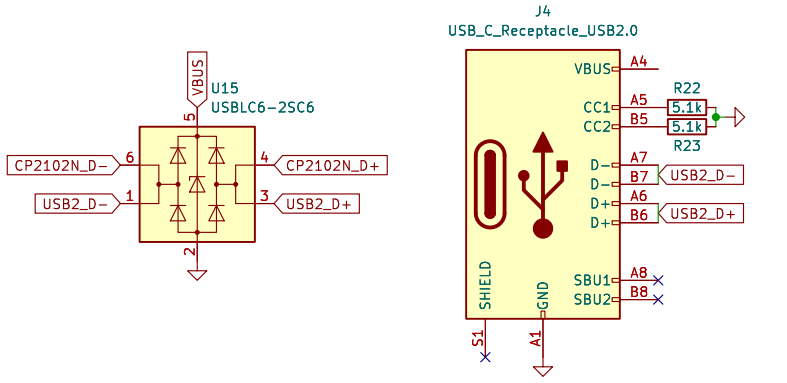
ESP32 Auto Reset



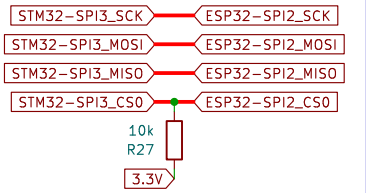
RGB Led



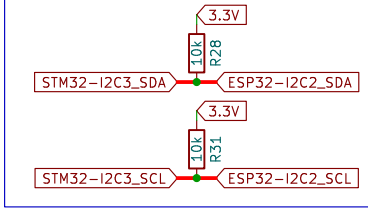
USB-C (ESP32)



SPI 3 (STM32) – SPI 2 (ESP32)



I2C 3 (STM32) – I2C 2 (ESP32)



UART 3 (STM32) – UART 2 (ESP32)

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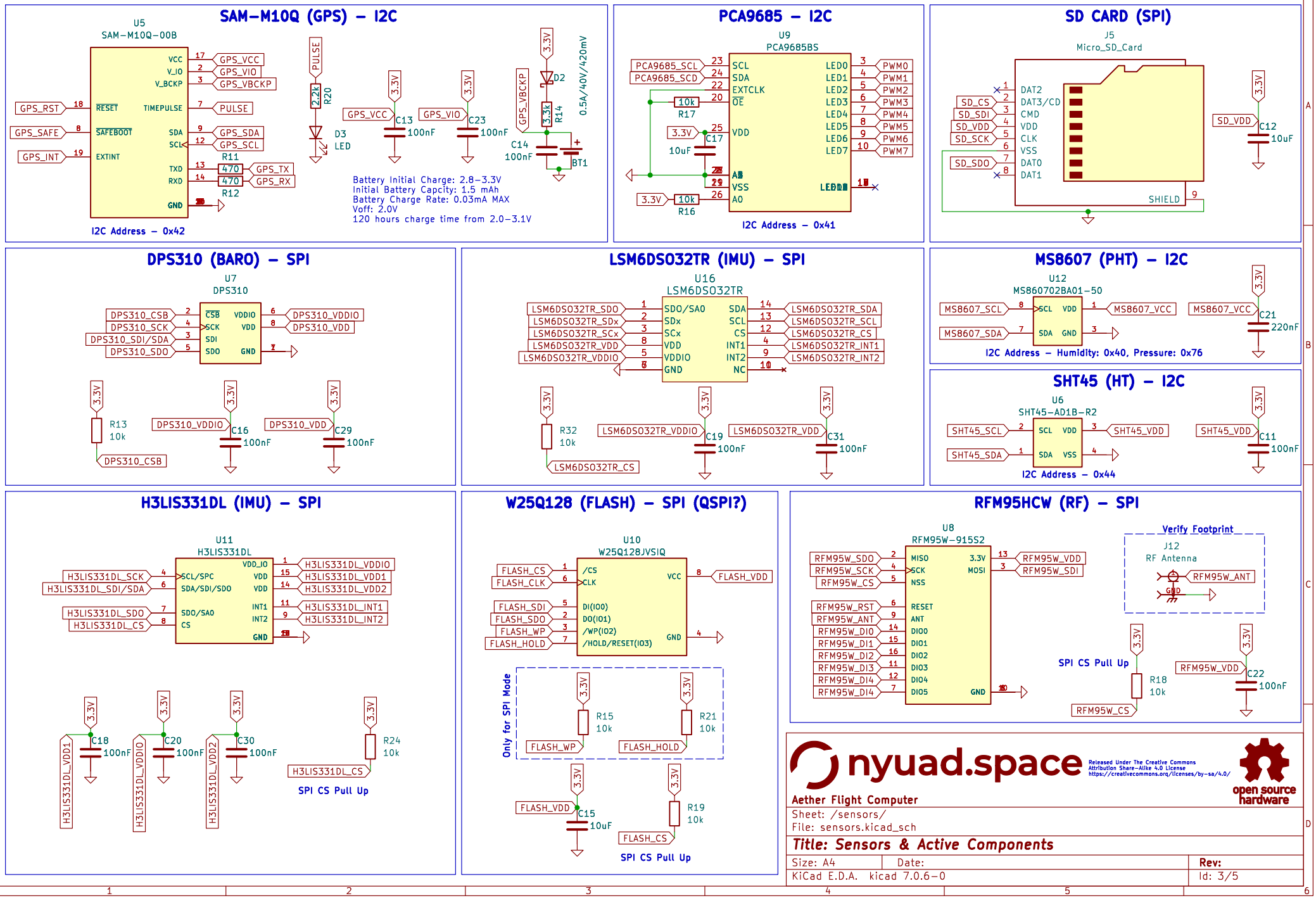
Aether Flight Computer

Sheet: /esp32/
File: esp32.kicad_sch

Title: MCU – ESP32 Schematic

Size: A4	Date:	Rev:
KiCad E.D.A. kicad 7.0.6-0		Id: 2/5


SAM-M10Q (GPS) – I2C
U5
SAM-M10Q-00B
VCC
V_IO
V_BCKP
RESET
TIMEPULSE
SAFEBOOT
SDA
SCL
EXTINT
TXD
RXD
GND
GPS_VCC
GPS_VIO
GPS_VBCKP
GPS_RST
GPS_SAFE
GPS_INT
PULSE
GPS_SDA
GPS_SCL
GPS_TX
GPS_RX
R11
R12
470
I2C Address – 0x42
PULSE
2.2k
R20
D3
LED
C13
100nF
C23
100nF
3.3V
GPS_VBCKP
D2
3.3k
R14
0.5A/40V/420mV
C14
100nF
BT1
Battery Initial Charge: 2.8–3.3V
Initial Battery Capcity: 1.5 mAh
Battery Charge Rate: 0.03mA MAX
Voff: 2.0V
120 hours charge time from 2.0–3.1V
PCA9685 – I2C
U9
PCA9685BS
PCA9685_SCL
PCA9685_SCD
SCL
SDA
EXTCLK
OE
VDD
VSS
A0
LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7
PWM0
PWM1
PWM2
PWM3
PWM4
PWM5
PWM6
PWM7
10k
R17
C17
10uF
R16
I2C Address – 0x41
SD CARD (SPI)
J5
Micro_SD_Card
DAT2
DAT3/CD
CMD
VDD
CLK
VSS
DAT0
DAT1
SHIELD
SD_CS
SD_SDI
SD_VDD
SD_SCK
SD_SDO
C12
10uF
DPS310 (BARO) – SPI
U7
DPS310
DPS310_CSB
DPS310_SCK
DPS310_SDI/SDA
DPS310_SDO
CSB
SCK
SDI
SDO
VDDIO
GND
DPS310_VDDIO
DPS310_VDD
R13
10k
C16
100nF
C29
100nF
LSM6DSO32TR (IMU) – SPI
U16
LSM6DSO32TR
LSM6DSO32TR_SDO
LSM6DSO32TR_SDx
LSM6DSO32TR_SCx
LSM6DSO32TR_VDD
LSM6DSO32TR_VDDIO
SDO/SA0
SDx
SCx
VDD
VDDIO
GND
SDA
SCL
CS
INT1
INT2
NC
LSM6DSO32TR_SDA
LSM6DSO32TR_SCL
LSM6DSO32TR_CS
LSM6DSO32TR_INT1
LSM6DSO32TR_INT2
R32
10k
C19
100nF
C31
100nF
LSM6DSO32TR_CS
MS8607 (PHT) – I2C
U12
MS860702BA01-50
MS8607_SCL
MS8607_SDA
SCL
SDA
VDD
GND
MS8607_VCC
C21
220nF
I2C Address – Humidity: 0x40, Pressure: 0x76
SHT45 (HT) – I2C
U6
SHT45-AD1B-R2
SHT45_SCL
SHT45_SDA
SCL
SDA
VDD
VSS
SHT45_VDD
C11
100nF
I2C Address – 0x44
H3LIS331DL (IMU) – SPI
U11
H3LIS331DL
H3LIS331DL_SCK
H3LIS331DL_SDI/SDA
H3LIS331DL_SDO
H3LIS331DL_CS
SCL/SPC
SDA/SDI/SDO
SDO/SA0
CS
VDD_IO
VDD
INT1
INT2
GND
H3LIS331DL_VDDIO
H3LIS331DL_VDD1
H3LIS331DL_VDD2
H3LIS331DL_INT1
H3LIS331DL_INT2
C18
100nF
C20
100nF
C30
100nF
R24
10k
SPI CS Pull Up
W25Q128 (FLASH) – SPI (QSPI?)
U10
W25Q128JVSIQ
FLASH_CS
FLASH_CLK
FLASH_SDI
FLASH_SDO
FLASH_WP
FLASH_HOLD
/CS
CLK
DI(IO0)
DO(IO1)
/WP(IO2)
/HOLD/RESET(IO3)
VCC
GND
FLASH_VDD
Only for SPI Mode
R15
10k
R21
10k
C15
10uF
R19
10k
SPI CS Pull Up
RFM95HCW (RF) – SPI
U8
RFM95W-915S2
RFM95W_SDO
RFM95W_SCK
RFM95W_CS
RFM95W_RST
RFM95W_ANT
RFM95W_DIO
RFM95W_DI1
RFM95W_DI2
RFM95W_DI3
RFM95W_DI4
MISO
SCK
NSS
RESET
ANT
DIO0
DIO1
DIO2
DIO3
DIO4
DIO5
3.3V
MOSI
GND
RFM95W_VDD
RFM95W_SDI
Verify Footprint
J12
RF Antenna
RFM95W_ANT
GND
SPI CS Pull Up
R18
10k
C22
100nF
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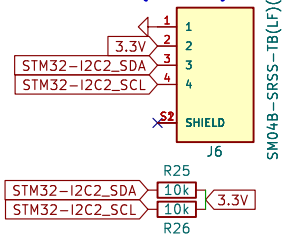
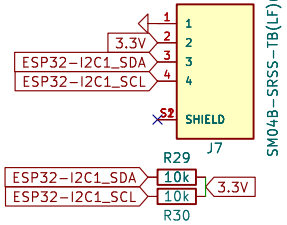
Sheet: /sensors/
File: sensors.kicad_sch
Title: Sensors & Active Components
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 7.0.6-0
Id: 3/5

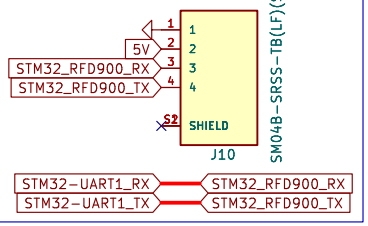
I2C 2 (STM32)



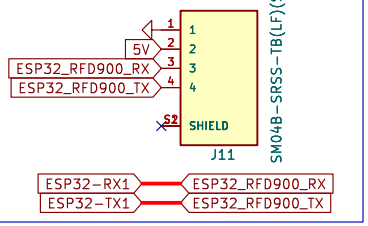
I2C 1 (ESP32)



RFD UART 1 (STM32)

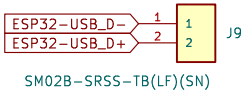


RFD UART 1 (ESP32)



UART2 (STM32)

USB (ESP32)



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File: connectors.kicad_sch

Title: Connectors & Peripherals

Size: A4	Date:	**Rev:**
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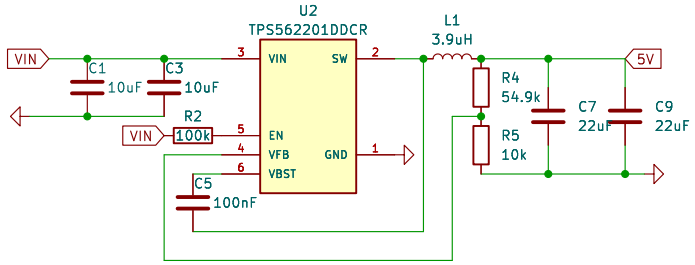
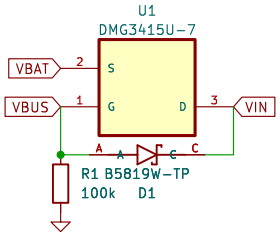
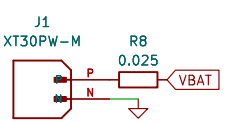
5V Buck Converter



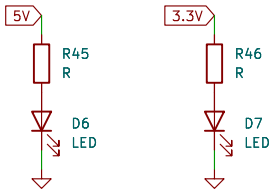
VBAT/VBUS Logic



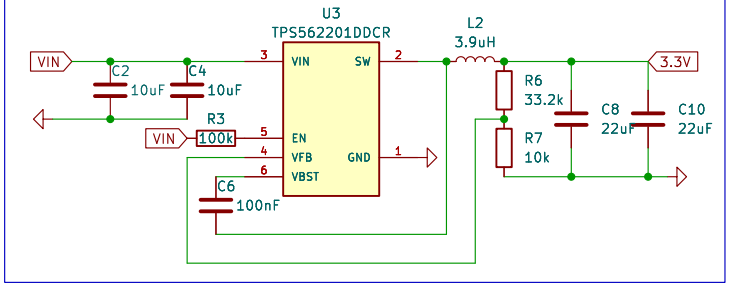
Power Input



Power Leds



3.3V Buck Converter



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Aether Flight Computer

Sheet: /power/
File: power.kicad_sch

Title: Power Schematics

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.6-0		Id: 5/5