Power

D3 BAT54GW SOD123
D4 BAT54GW SOD123
D1 BAT54GW SOD123
EXT_BAT
5V_USB
U3 MCP1810T33ITT SOT23
VIN VOUT GND
Iq 20n typ 50n max
C12 10µ/10V 0603
C13 10µ/10V 0603
R12 10k 0402
Q1 SOT-23 FDN342P
BAT_MEAS
BT1 NMtd SMD
P5 SMD Pads SMD
P8 NMtd SMD
M1 M2
One top, one bottom side PCB

USB

P2 ZX62-B-5PA(33) SMD
VBUS D- D+ ID GND Case GND Case GND
R2 10k 0402
R3 0R 0402 USB_N
R4 0R 0402 USB_P
90 ohm differential
R30 10k 0402
USB_SENSE
U2 RClamp0503F SC70-5L
IO1 IO2 IO3 V+ V-

Program

P4 1.27 pitch Hole
SWDIO SWCLK RESET SWO
Pin order matches Exeger 6p connectors

Serial debug

P3 1.27 pitch Hole
MCU_DEBUG_TX
MCU_DEBUG_RX

Misc patch signals (display?)

P1 1.27 pitch Hole
SPI2_SCK SPI2_MOSI PA15 PH3

MCU

U1A STM32L412CBT6 LQFP-48
Pins that can wake MCU from standby: PA0, PC13, PA2, PC5
X1 32.768 kHz SMD
X2 8 MHz SMD
C1 12p/10V 0402
C2 12p/10V 0402
C3 18p/10V 0402
C4 18p/10V 0402
R1 10k 0402
R7 10k 0402
RESET
BUTTON
PH3
NRST PC14-OSC32_IN PC15-OSC32_OUT PH0-OSC_IN PH1-OSC_OUT PC13 PH3/BOOT0
PA0/CKIN PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 PA10 PA11 PA12 PA13 (SWDIO) PA14 (SWCLK) PA15
PB0 PB1 PB2 PB3 (SWO) PB4 PB5 PB6 PB7 PB8 PB9 PB10 PB11 PB12 PB13 PB14 PB15
USB_SENSE
BAT_MEAS
I_MEAS
V_MEAS
FLASH_SIO3
FLASH_SIO2
MCU_DEBUG_TX
MCU_DEBUG_RX
USB_N
USB_P
SWDIO
SWCLK
SWO
FLASH_SIO1
FLASH_SIO0
ACTIVATE_IV_MEASn
VDD_SENSORS_SLOW
VDD_SENSORS_FAST
VDD_FLASH
LED_Gn
SPI2_SCK
LED_Rn
SPI2_MOSI
R8 0R 0402
R9 0R 0402
R5 4k7 0402
R6 4k7 0402
I2C1_SCL
I2C1_SDA

U1B STM32L412CBT6 LQFP-48
VDD VDD (1.71 - 3.6 V)
VDDA/VREF+ (1.62 - 3.6 V)
VDDUSB (3.0 - 3.6 V)
VBAT (1.55 - 3.6 V)
VSS VSS VSSA/VREF- VSS
C5 10µ/10V 0603
C6 100n/10V 0402
C7 10µ/10V 0603
C8 100n/10V 0402
C9 100n/10V 0402
C10 10µ/10V 0603
C11 100n/10V 0402
C22 100n/10V 0402
L1 600R 0.5A 0603

User "interface"

S1 EVQQ2W02W SMD
A A' B B'
BUTTON
R10 10k 0402

Flash QSPI

U4 MX25R6435F SOIC-8
VCC GND CS# SCLK SI/SIO0 SO/SIO1 WP#/SIO2 HOLD#/SIO3
FLASH_CS FLASH_SCLK FLASH_SIO0 FLASH_SIO1 FLASH_SIO2 FLASH_SIO3
C23 1µ/10V 0603
C14 1µ/10V 0603
C15 100n/10V 0402

D2 KPTBD-3216SURKCGKC SMD
R R11 270R 0402
G R13 270R 0402
LED_Rn
LED_Gn

Mechanical

MH1 MH2
FID1 FID2 FID3 FID4 FID5 FID6

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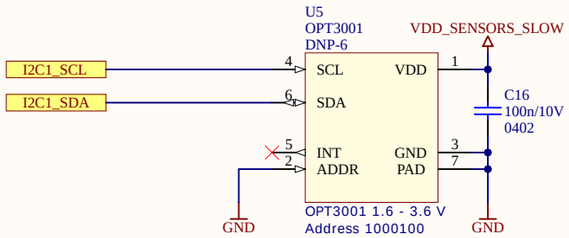
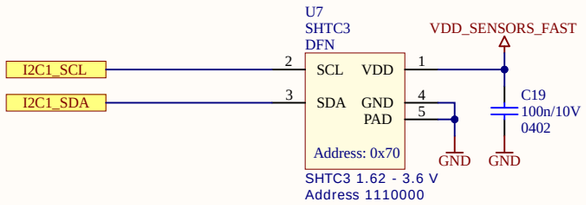
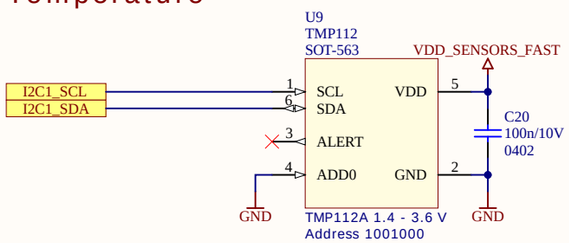
Lux



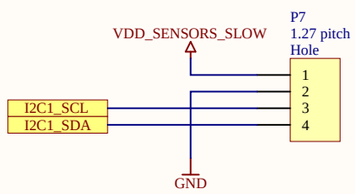
Relative humidity



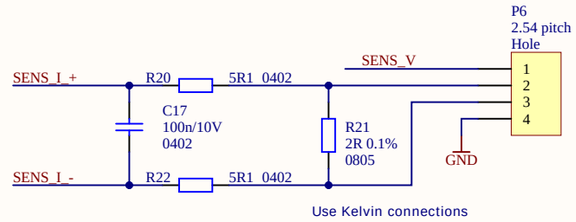
Temperature



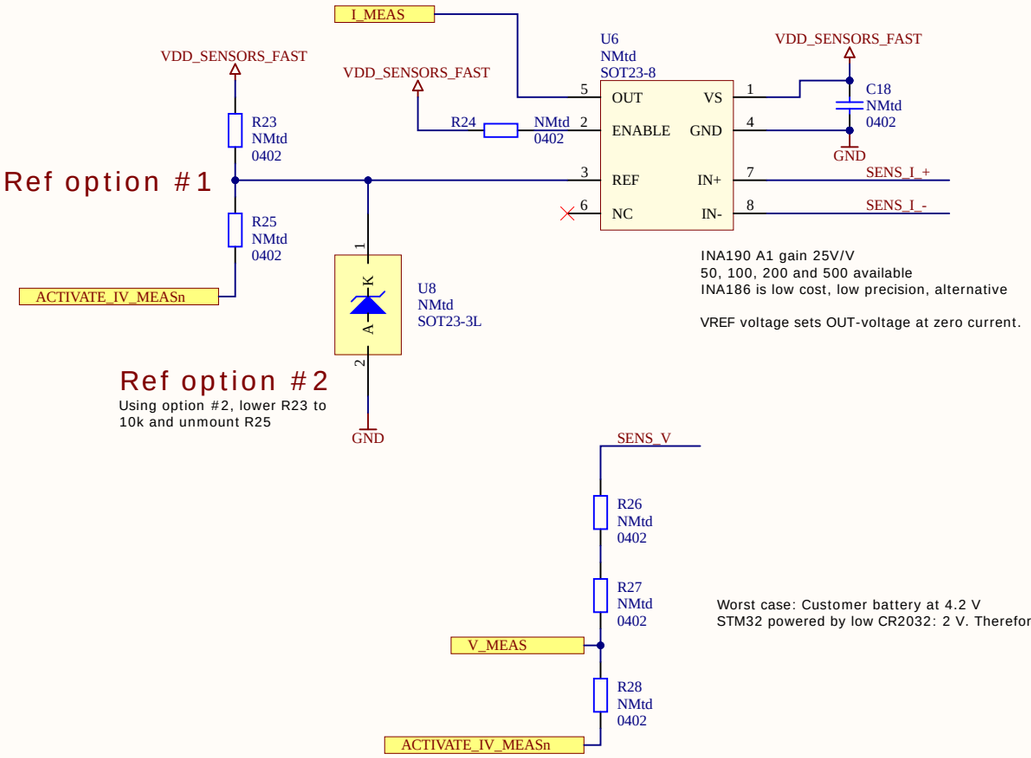
I2C Expansion



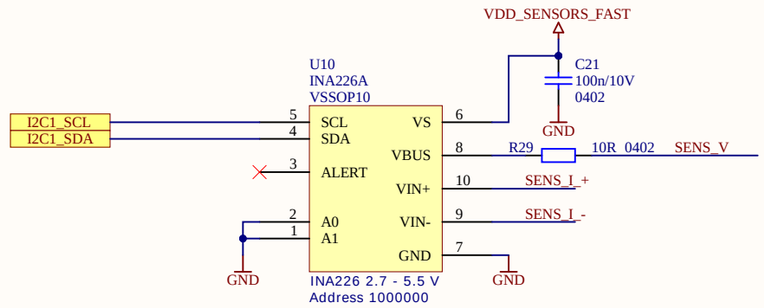
Battery charge / discharge



Option 1: Low voltage supply



Option 2: Trusted INA226



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