Lanza Meteorológica – PCB Main

a

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H1 MountingHole

H2 MountingHole

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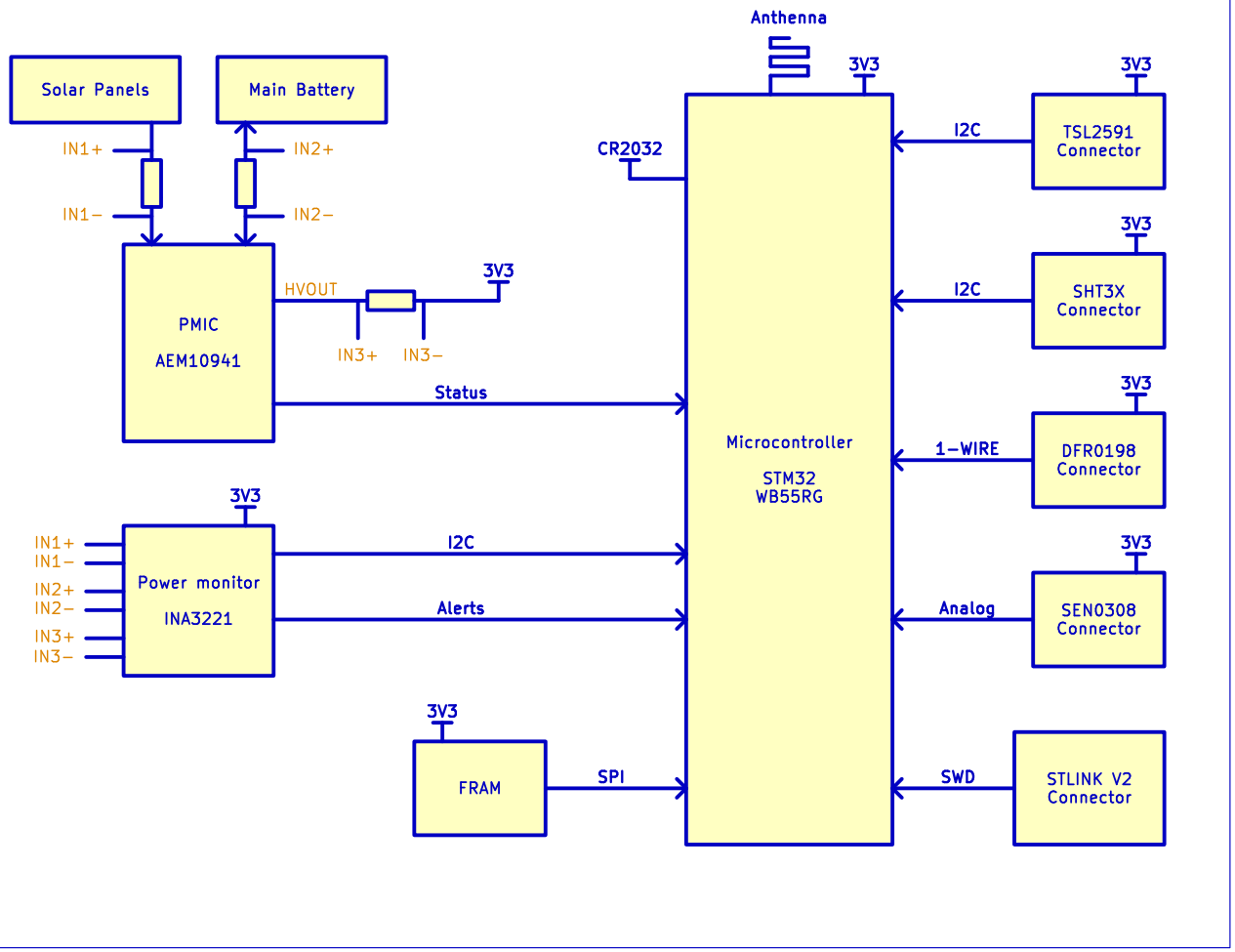
H4 MountingHole

Block Diagram



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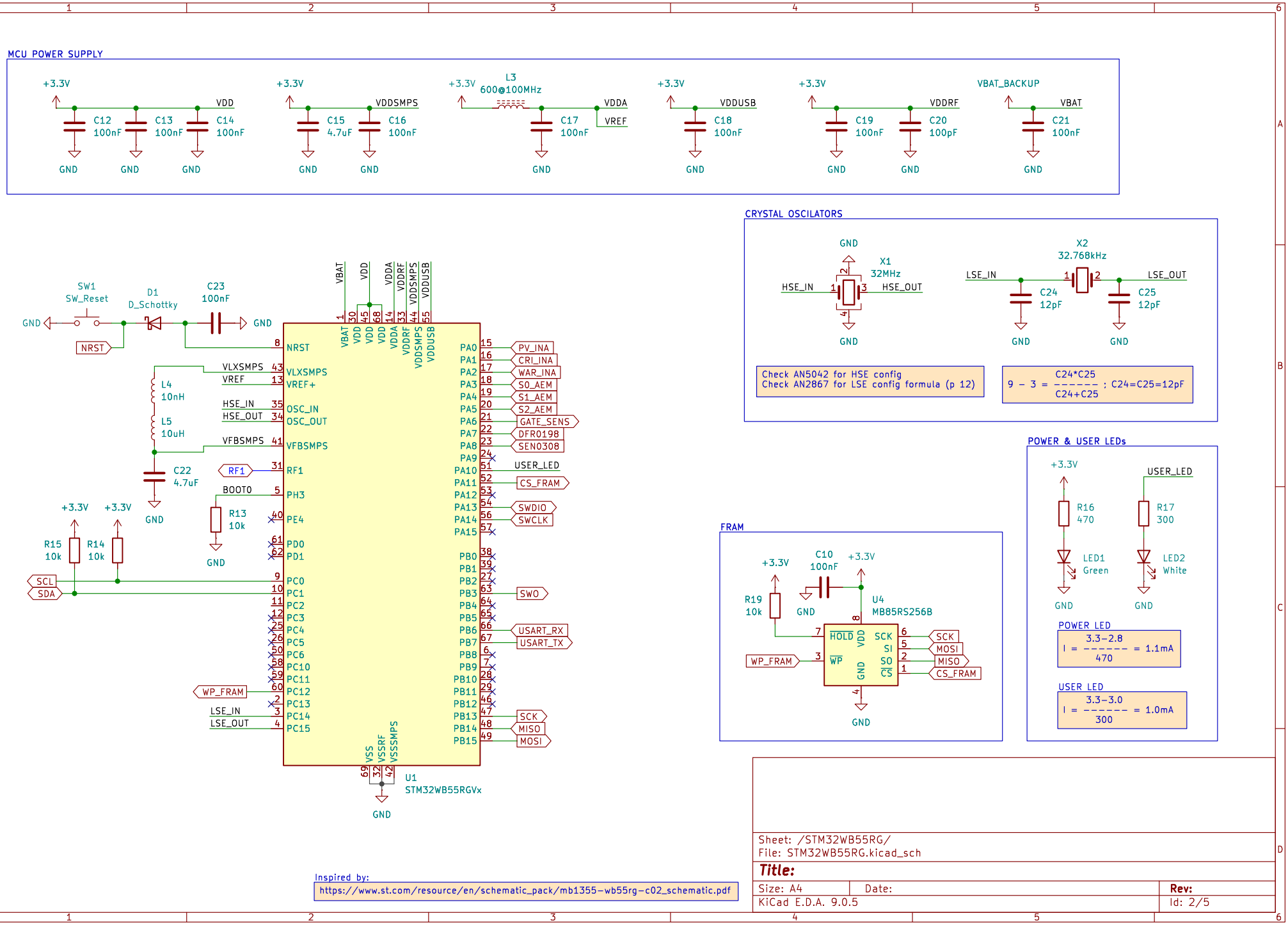
MCU POWER SUPPLY
+3.3V
VDD
C12 100nF
C13 100nF
C14 100nF
GND
VDDSMPS
C15 4.7uF
C16 100nF
L3 600@100MHz
VDDA
VREF
C17 100nF
VDDUSB
C18 100nF
VDDRF
C19 100nF
C20 100pF
VBAT_BACKUP
VBAT
C21 100nF
CRYSTAL OSCILATORS
X1 32MHz
HSE_IN
HSE_OUT
X2 32.768kHz
LSE_IN
LSE_OUT
C24 12pF
C25 12pF
Check AN5042 for HSE config
Check AN2867 for LSE config formula (p 12)
C24*C25
9 - 3 = ------- ; C24=C25=12pF
C24+C25
SW1 SW_Reset
D1 D_Schottky
C23 100nF
NRST
L4 10nH
L5 10uH
C22 4.7uF
VLXSMPS
VREF
VREF+
VFBSMPS
RF1
BOOT0
R13 10k
R15 10k
R14 10k
SCL
SDA
WP_FRAM
LSE_IN
LSE_OUT
VSS
VSSRF
VSSSMPS
U1
STM32WB55RGVx
PA0 PV_INA
PA1 CRI_INA
PA2 WAR_INA
PA3 S0_AEM
PA4 S1_AEM
PA5 S2_AEM
PA6 GATE_SENS
PA7 DFR0198
PA8 SEN0308
PA10 USER_LED
PA11 CS_FRAM
PA13 SWDIO
PA14 SWCLK
PB3 SWO
PB6 USART_RX
PB7 USART_TX
PB13 SCK
PB14 MISO
PB15 MOSI
FRAM
C10 100nF
R19 10k
U4
MB85RS256B
HOLD
VDD
SCK
SI
SO
CS
WP
POWER & USER LEDs
R16 470
R17 300
LED1 Green
LED2 White
POWER LED
3.3-2.8
I = ------ = 1.1mA
470
USER LED
3.3-3.0
I = ------ = 1.0mA
300
Inspired by:
https://www.st.com/resource/en/schematic_pack/mb1355-wb55rg-c02_schematic.pdf
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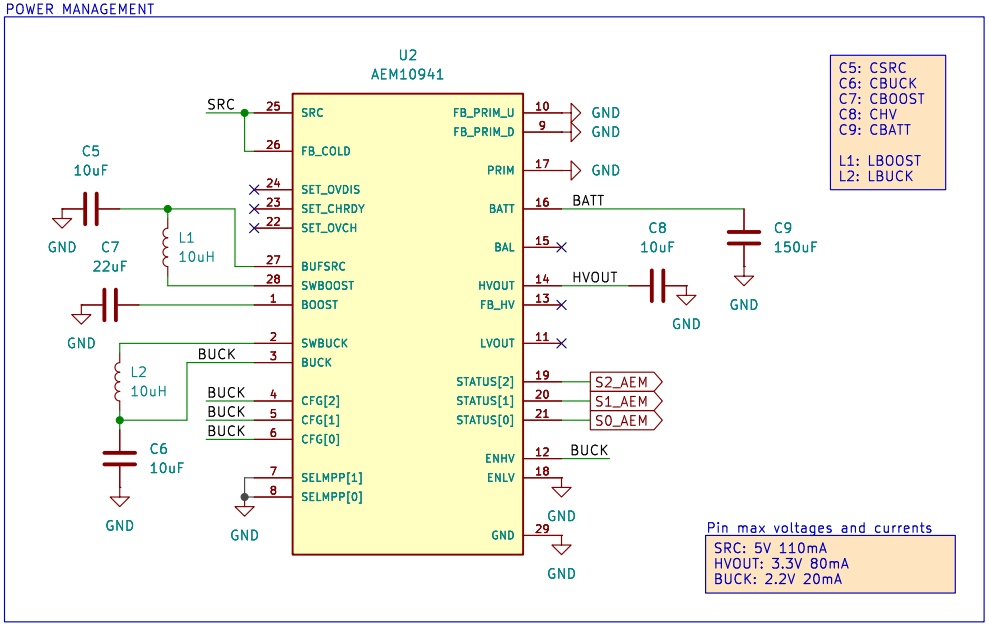
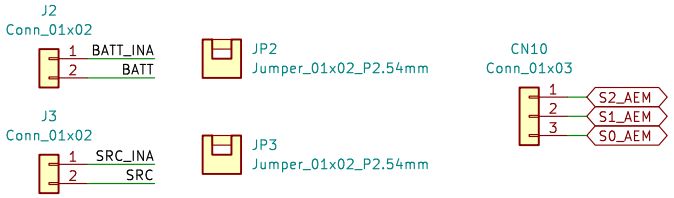
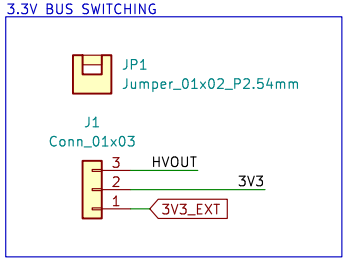
POWER MANAGEMENT

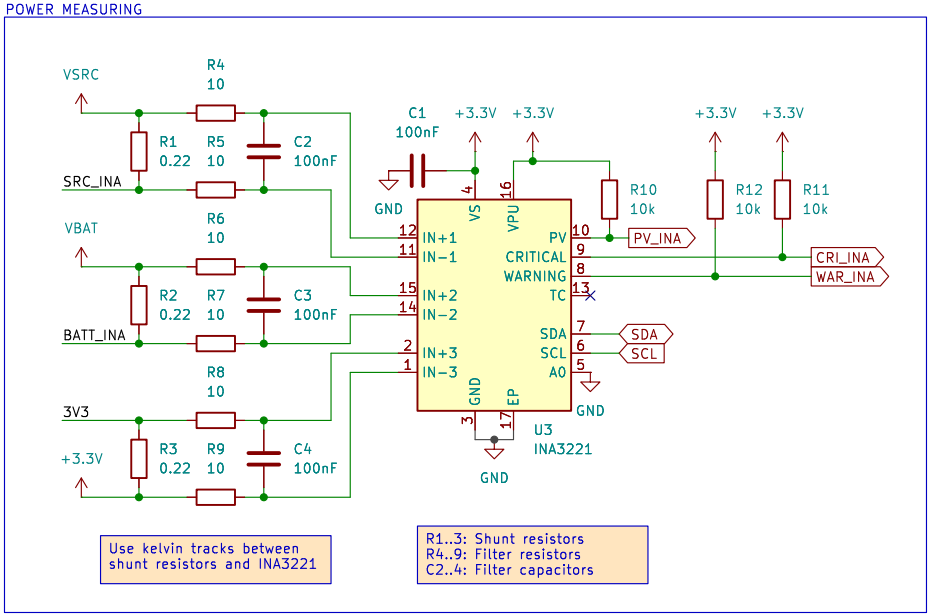




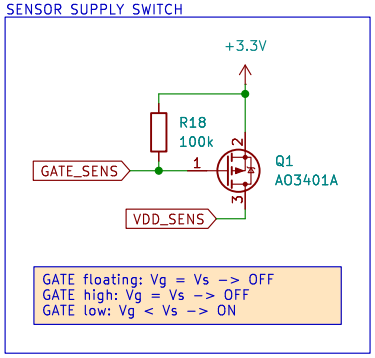
3.3V BUS SWITCHING



POWER MEASURING



SENSOR SUPPLY SWITCH



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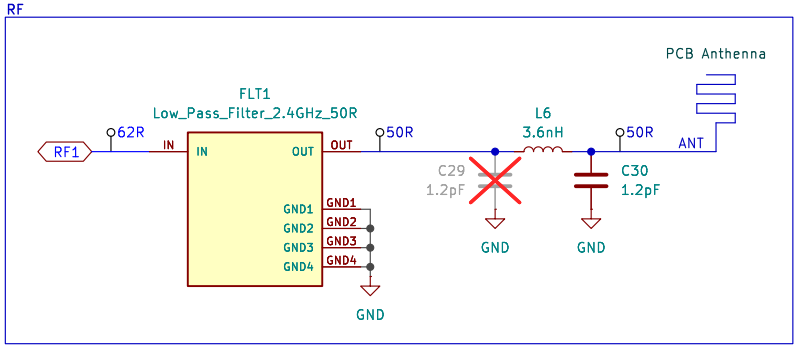
RF



AN5165:
https://www.st.com/resource/en/application_note/an5165-how-to-develop-rf-hardware-using-stm32wb-microcontrollers-stmicroelectronics.pdf

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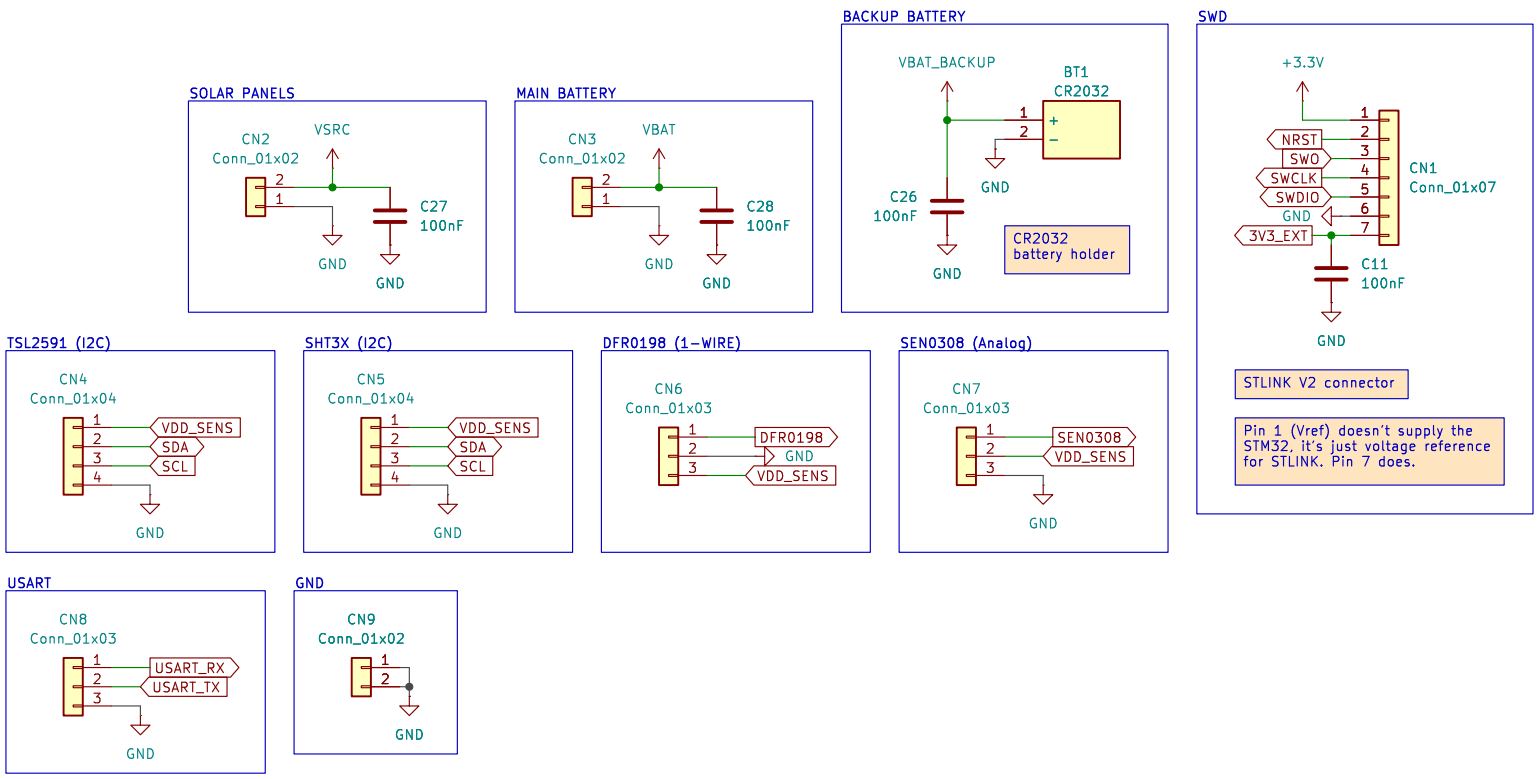

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