Lanza Meteorológica – PCB Main

a

Table of Contents

STM32WB55RG

File: STM32WB55RG.kicad_sch

Power Management

File: Power Management.kicad_sch

RF

File: RF.kicad_sch

External Connections

File: External Connections.kicad_sch

TODO List

- MOSFET para apagar sensores
- BLE
- Local storage: FRAM

- PV and BATT connection

- Select components

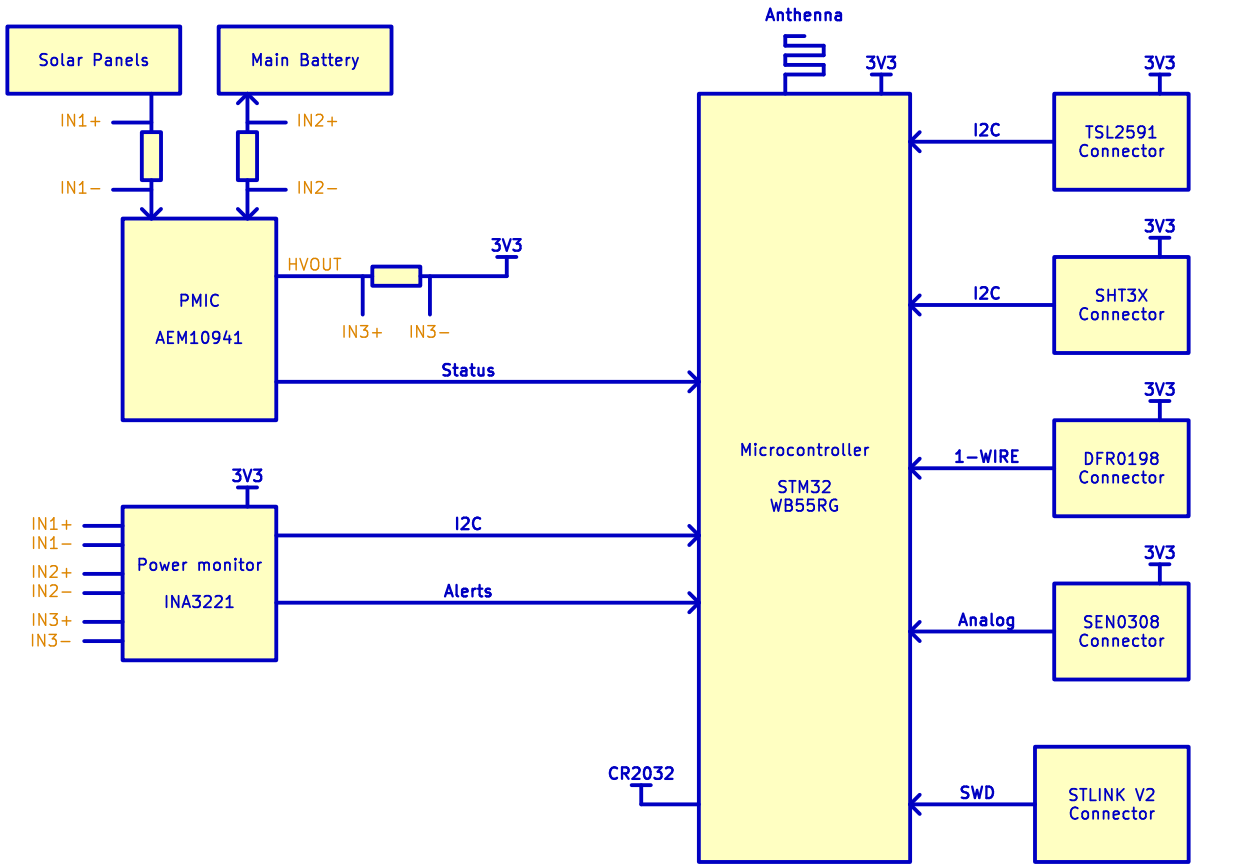
H1
MountingHole

H2
MountingHole

H3
MountingHole

H4
MountingHole

Block Diagram

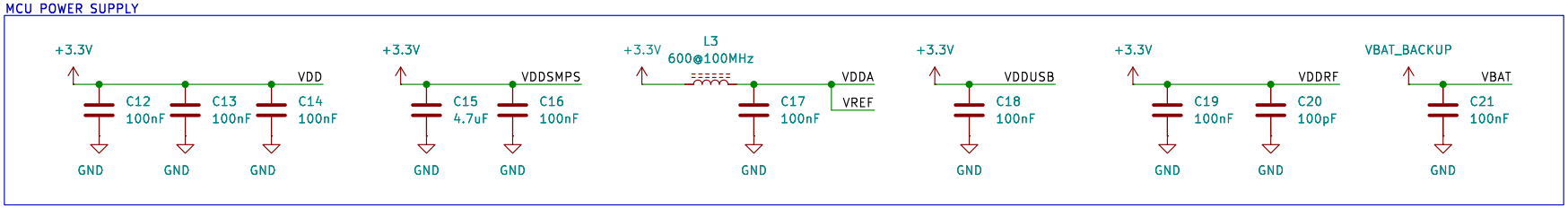


Sheet: /
File: PCB Main.kicad_sch

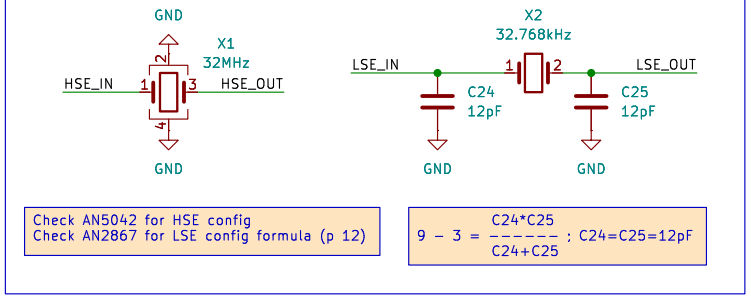
Title: Lanza Meteorológica – PCB Main

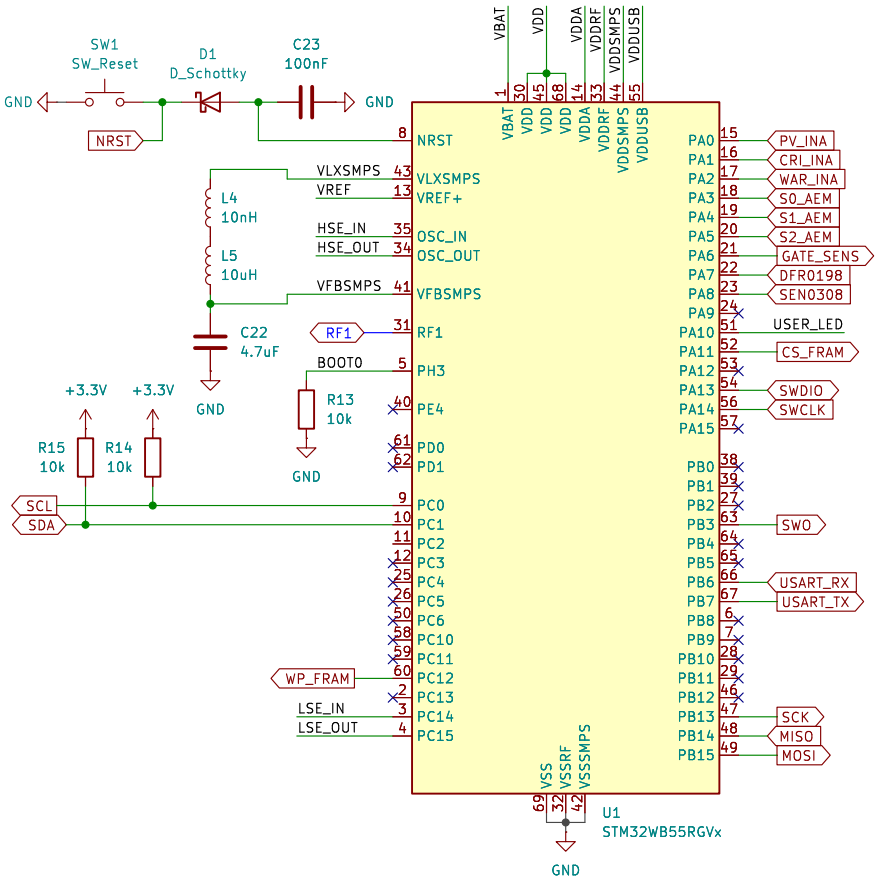
Size: A4	Date:	Rev:
KiCad E.D.A. 9.0.5		Id: 1/5

MCU POWER SUPPLY

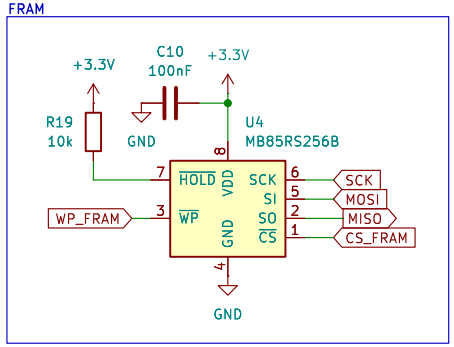


CRYSTAL OSCILATORS

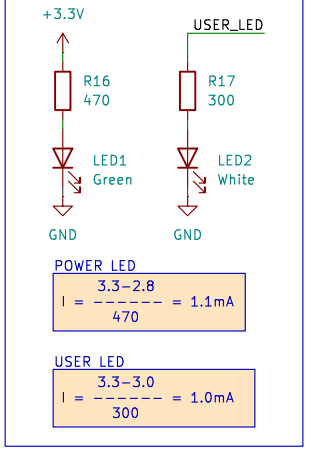




FRAM



POWER & USER LEDs



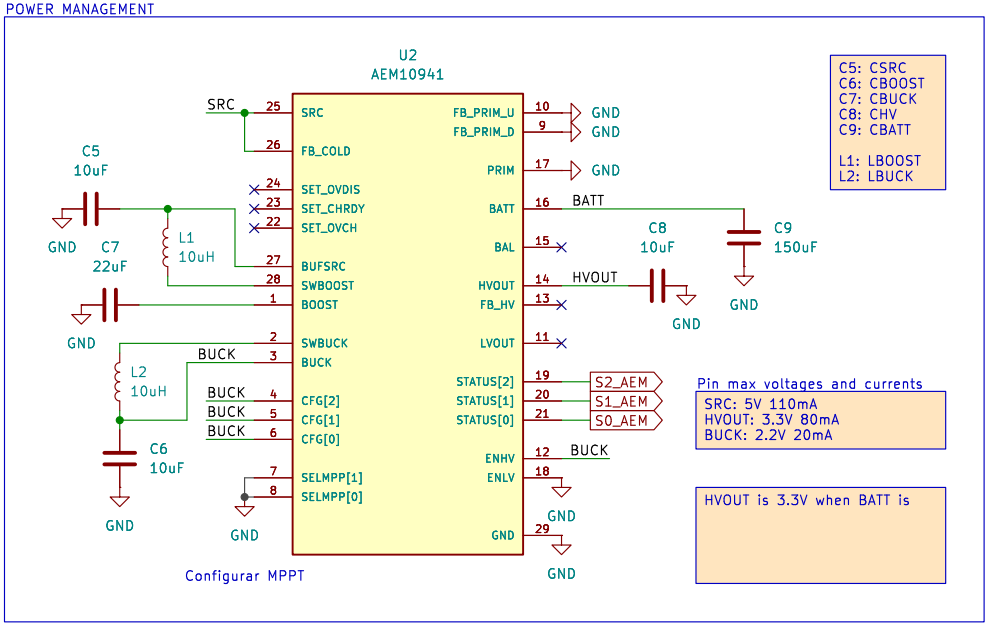
Inspired by:
https://www.st.com/resource/en/schematic_pack/mb1355-wb55rg-c02_schematic.pdf

Sheet: /STM32WB55RG/
File: STM32WB55RG.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.5		Id: 2/5

POWER MANAGEMENT



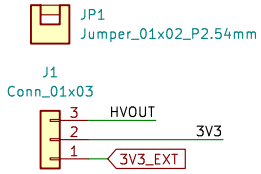
C5: CSRC
C6: CBOOST
C7: CBUCK
C8: CHV
C9: CBATT

L1: LBOOST
L2: LBUCK

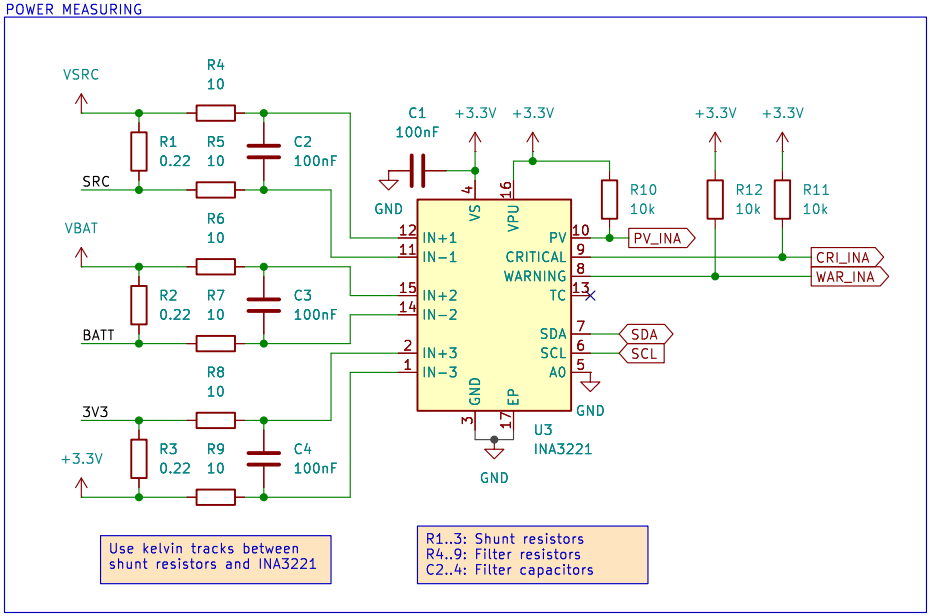
Pin max voltages and currents
SRC: 5V 110mA
HVOUT: 3.3V 80mA
BUCK: 2.2V 20mA

HVOUT is 3.3V when BATT is

3.3V BUS SWITCHING



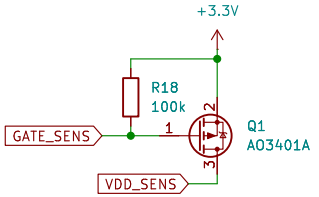
POWER MEASURING



Use kelvin tracks between shunt resistors and INA3221

R1..3: Shunt resistors
R4..9: Filter resistors
C2..4: Filter capacitors

SENSOR SUPPLY SWITCH



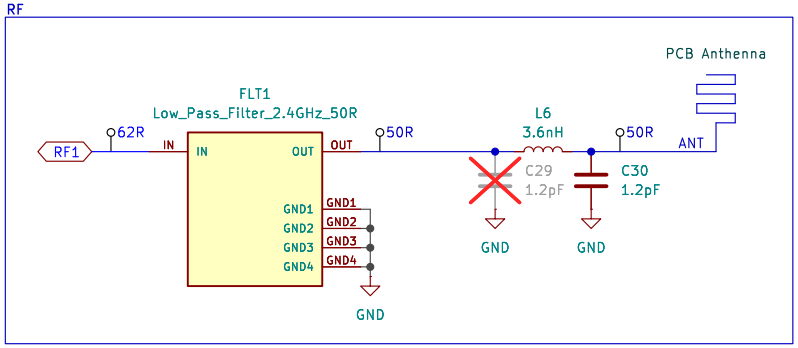
GATE floating: Vg = Vs -> OFF
GATE high: Vg = Vs -> OFF
GATE low: Vg < Vs -> ON

Sheet: /Power Management/
File: Power Management.kicad_sch

Title:

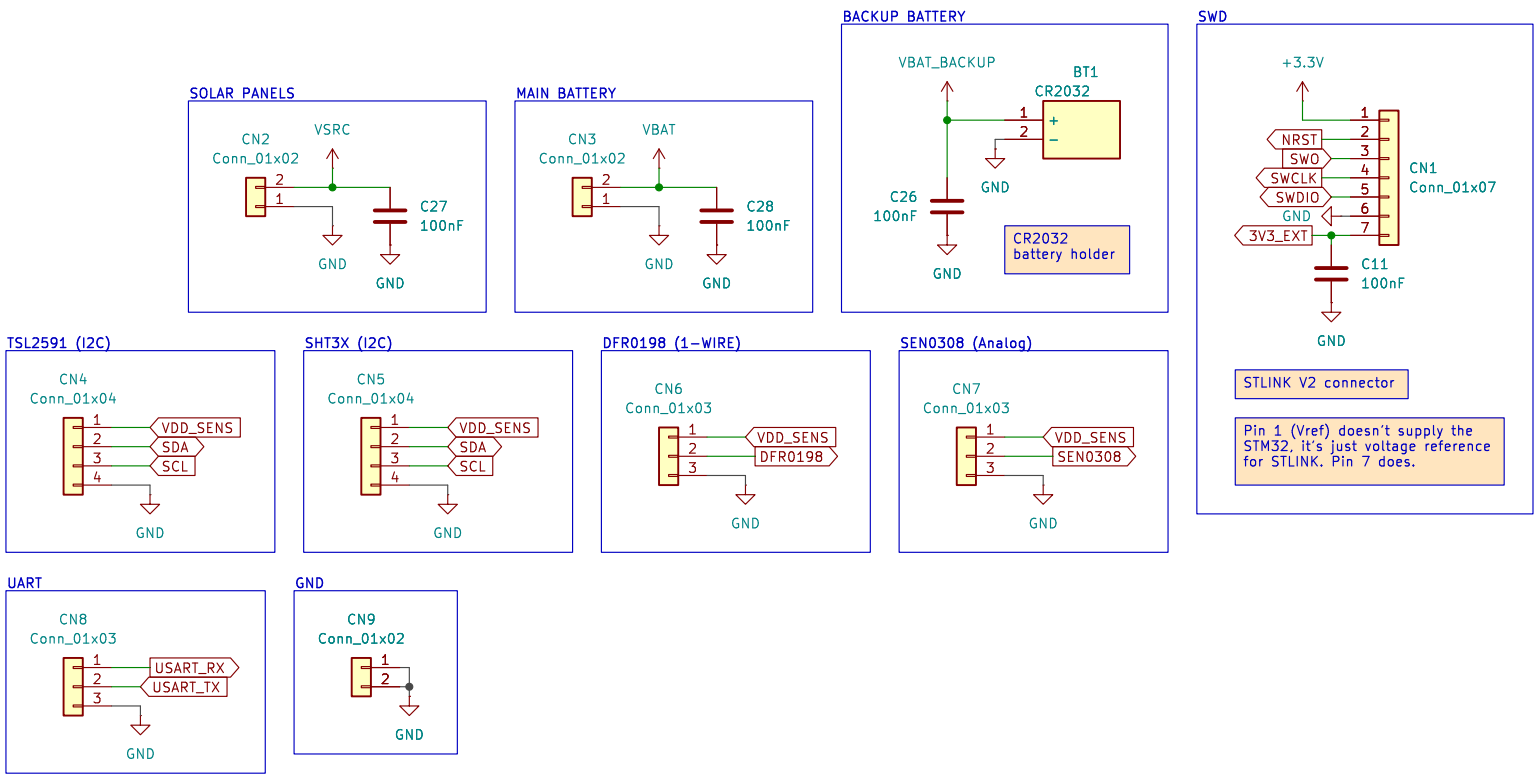
Size: A4 | Date: | **Rev:**
KiCad E.D.A. 9.0.5 | Id: 3/5

RF



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

Sheet: /RF/		
File: RF.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.5		Id: 4/5



Sheet: /External Connections/		
File: External Connections.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.5		Id: 5/5