

### Title: Nautilus\_Mainboard

Sheet: /STM/

Rev: 0

Author: Evan

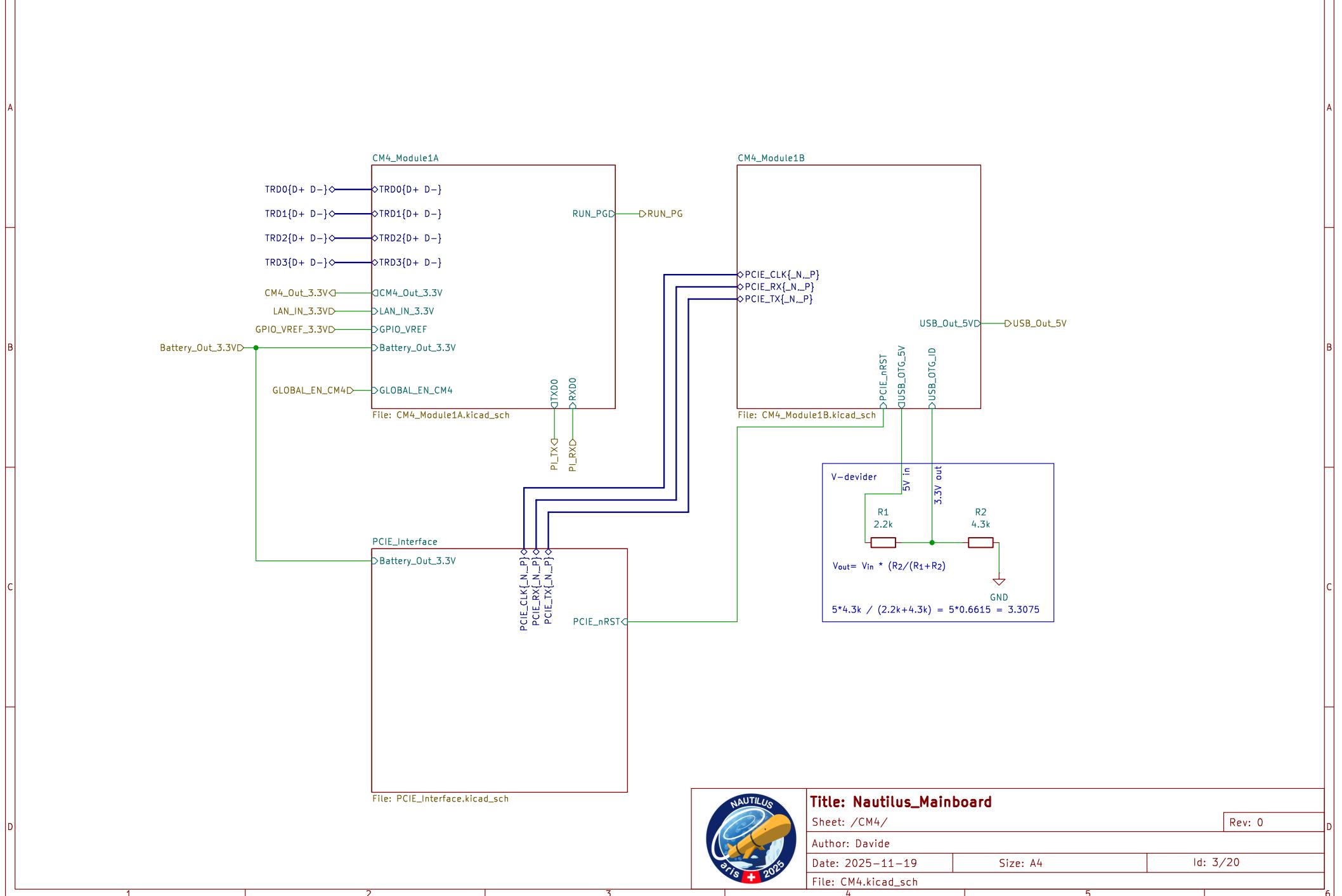
Date: 2025-11-19

Size: A4

Id: 2/20

File: STM.kicad\_sch

1 2 3 4 5 6



1 2 3 4 5 6

A

A

B

B

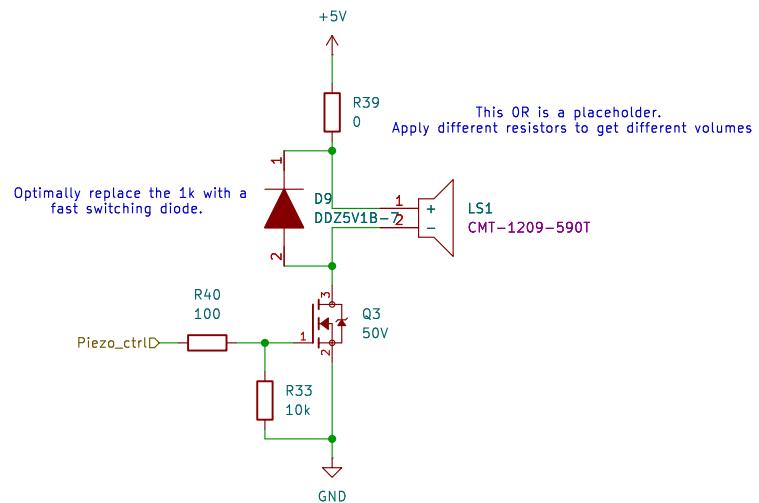
C

C

D

D

Not in the PCB yet as we dont know if we actually need it.



### Title: Nautilus\_Mainboard

Sheet: /Piezzo/  
Rev: 0

Author: Evan

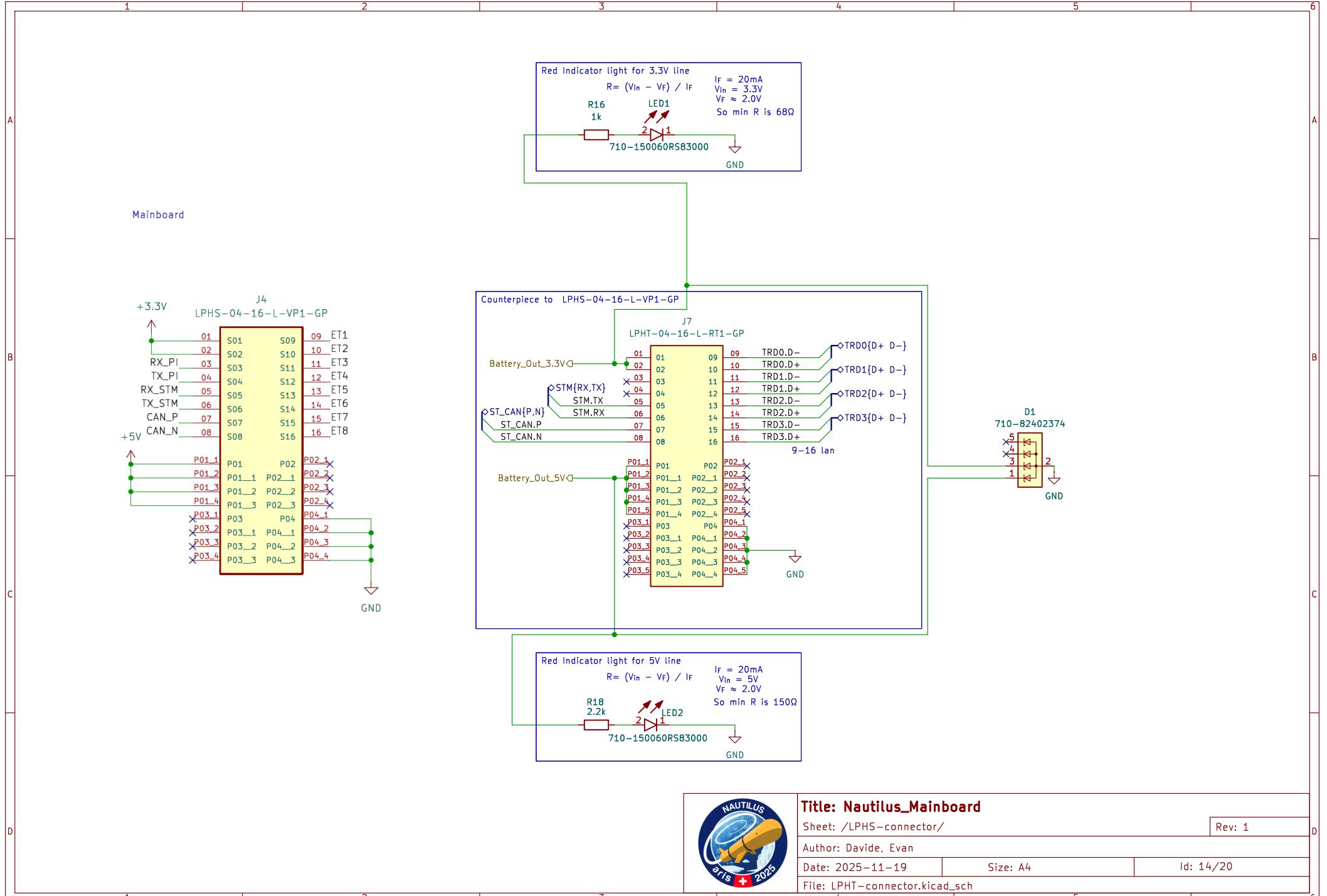
Date: 2025-11-19

Size: A4

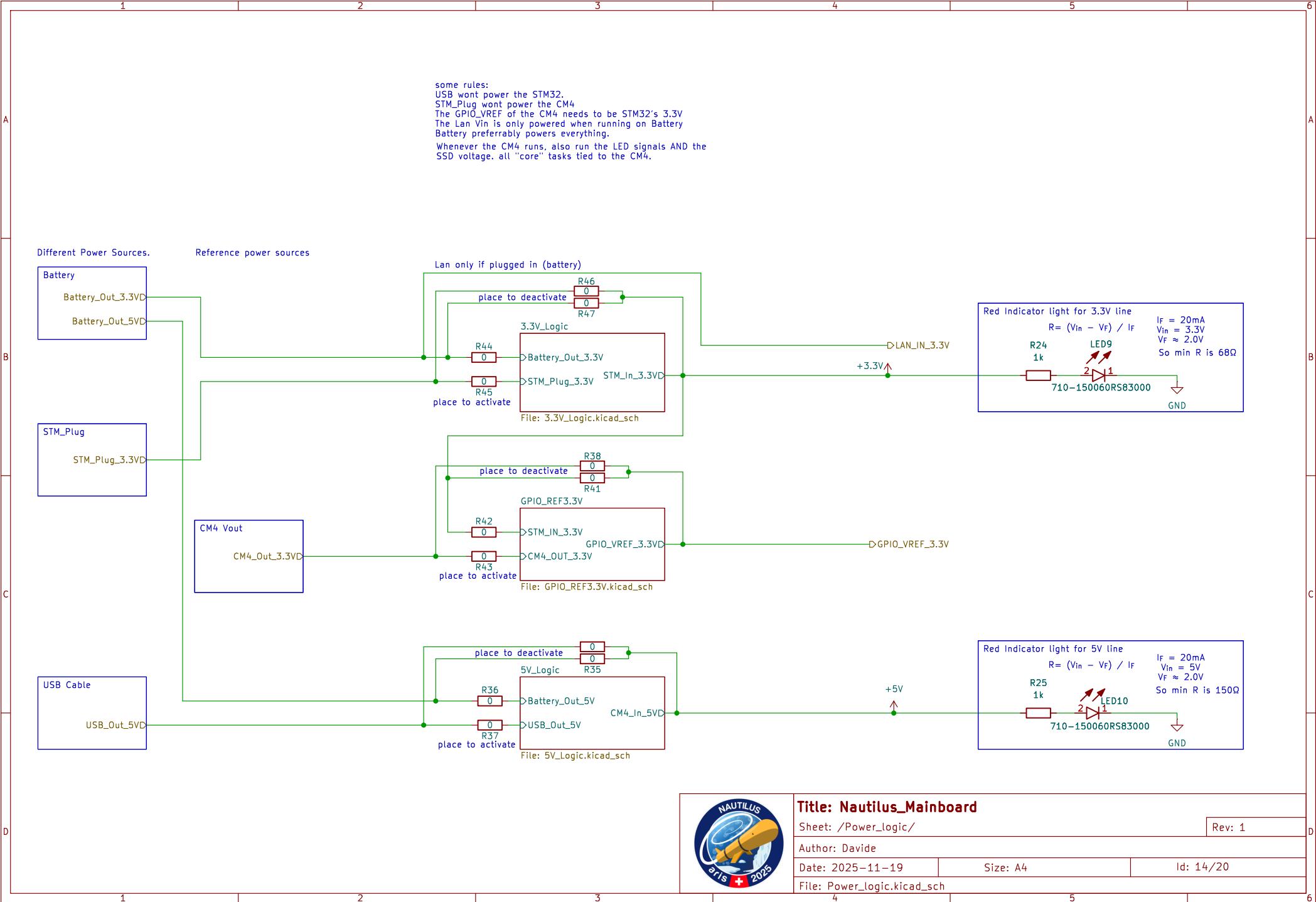
Id: 4/20

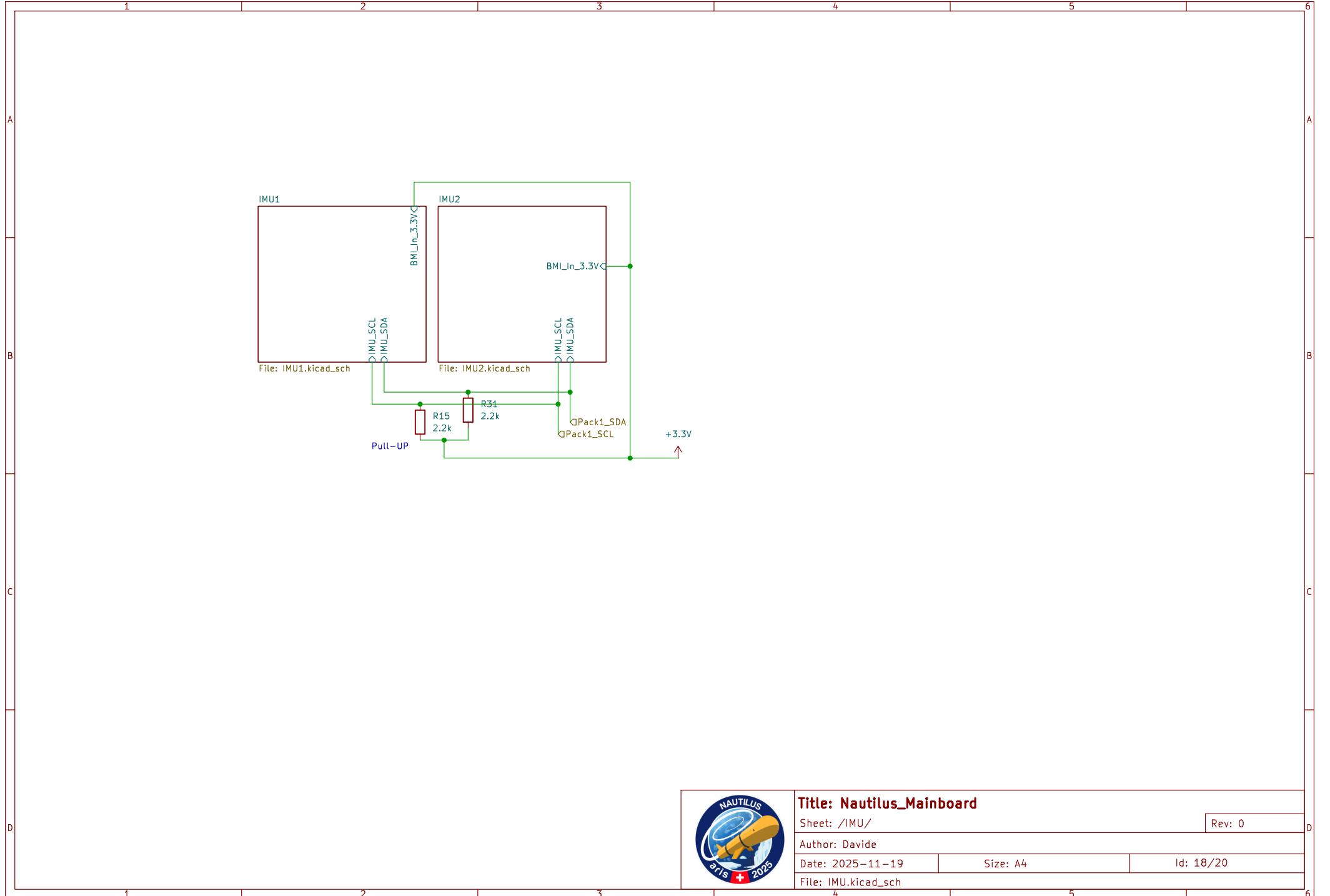
File: Piezzo.kicad\_sch

1 2 3 4 5 6



1 2 3 4 5 6





### Title: Nautilus\_Mainboard

Sheet: /IMU/

Rev: 0

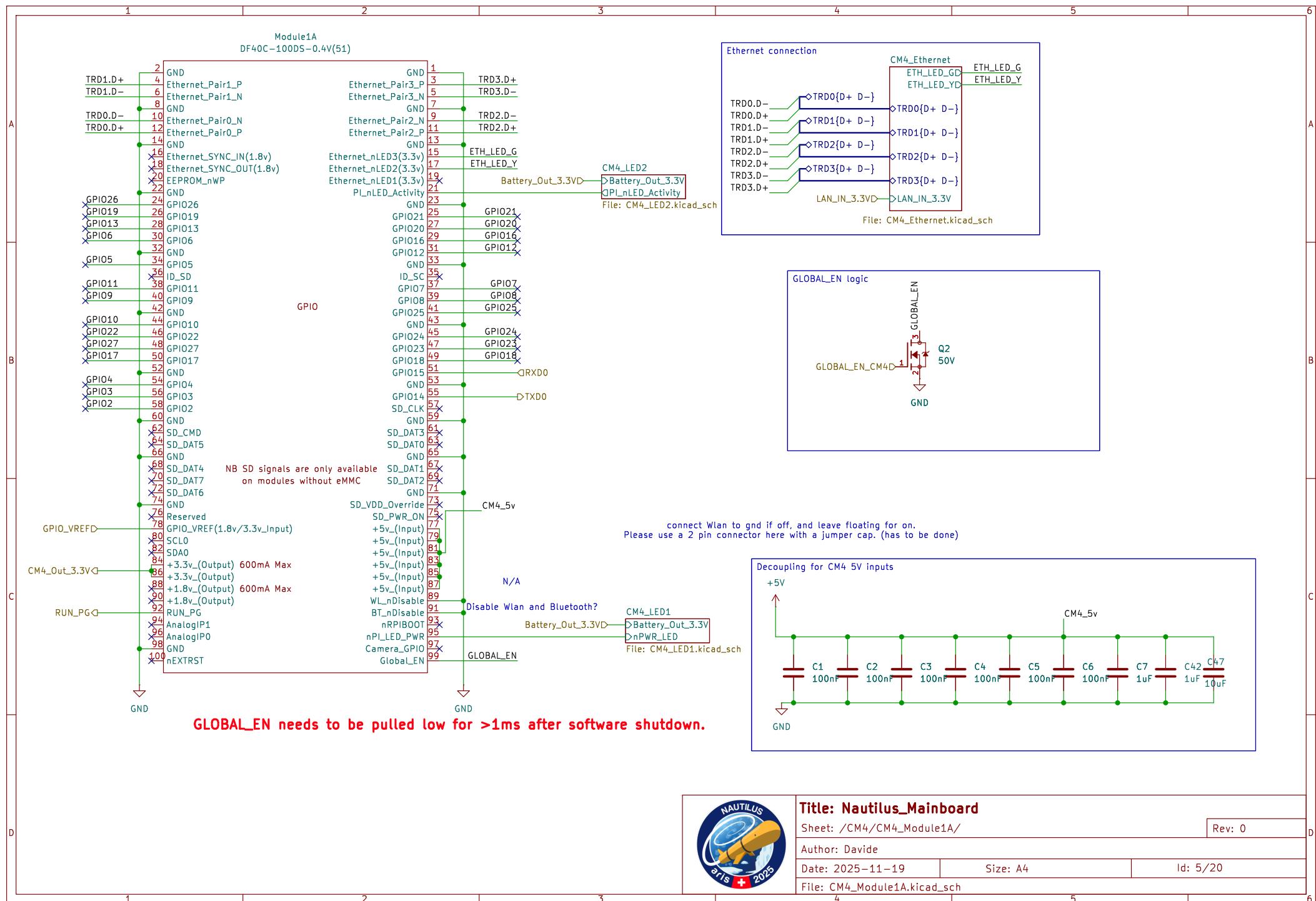
Author: Davide

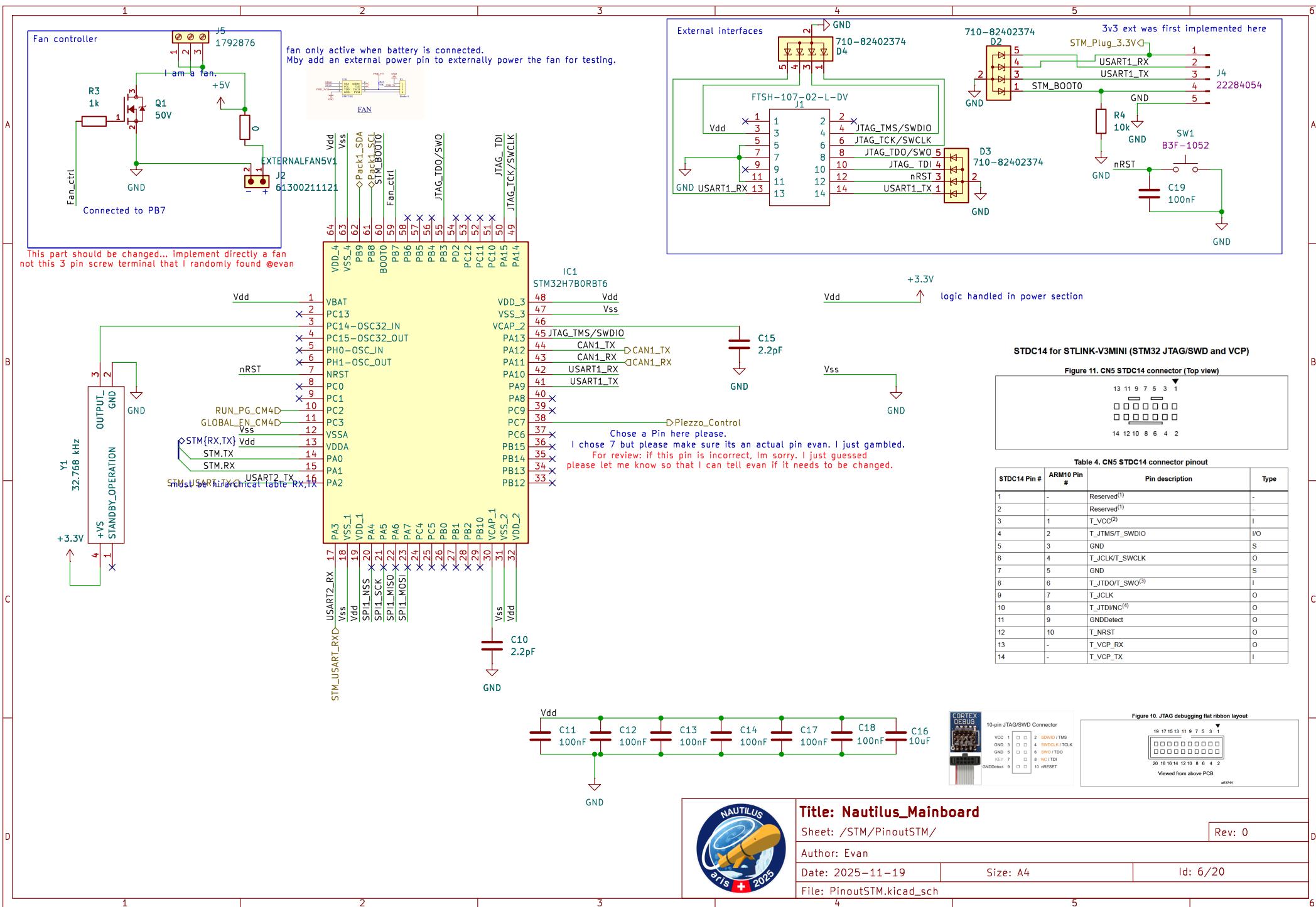
Date: 2025-11-19

Size: A4

Id: 18/20

File: IMU.kicad\_sch





A

A

B

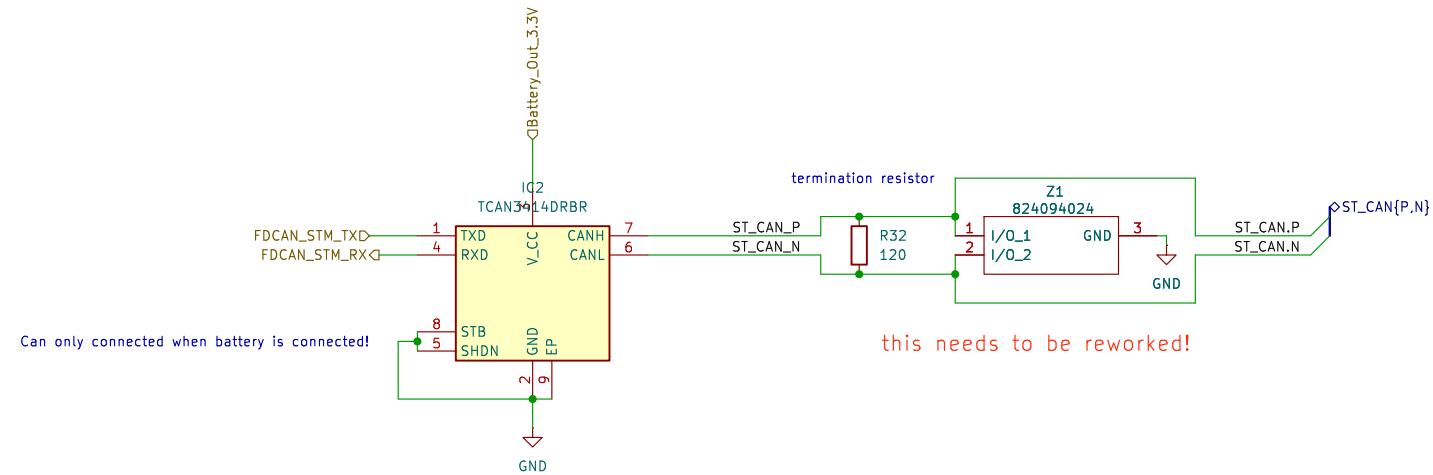
B

C

C

D

D



### Title: Nautilus\_Mainboard

Sheet: /STM/CAN\_Interface/

Rev: 1

Author: Evan & Davide

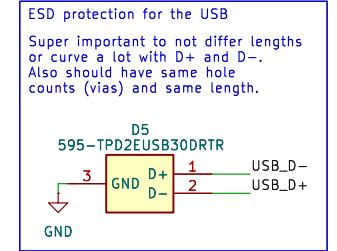
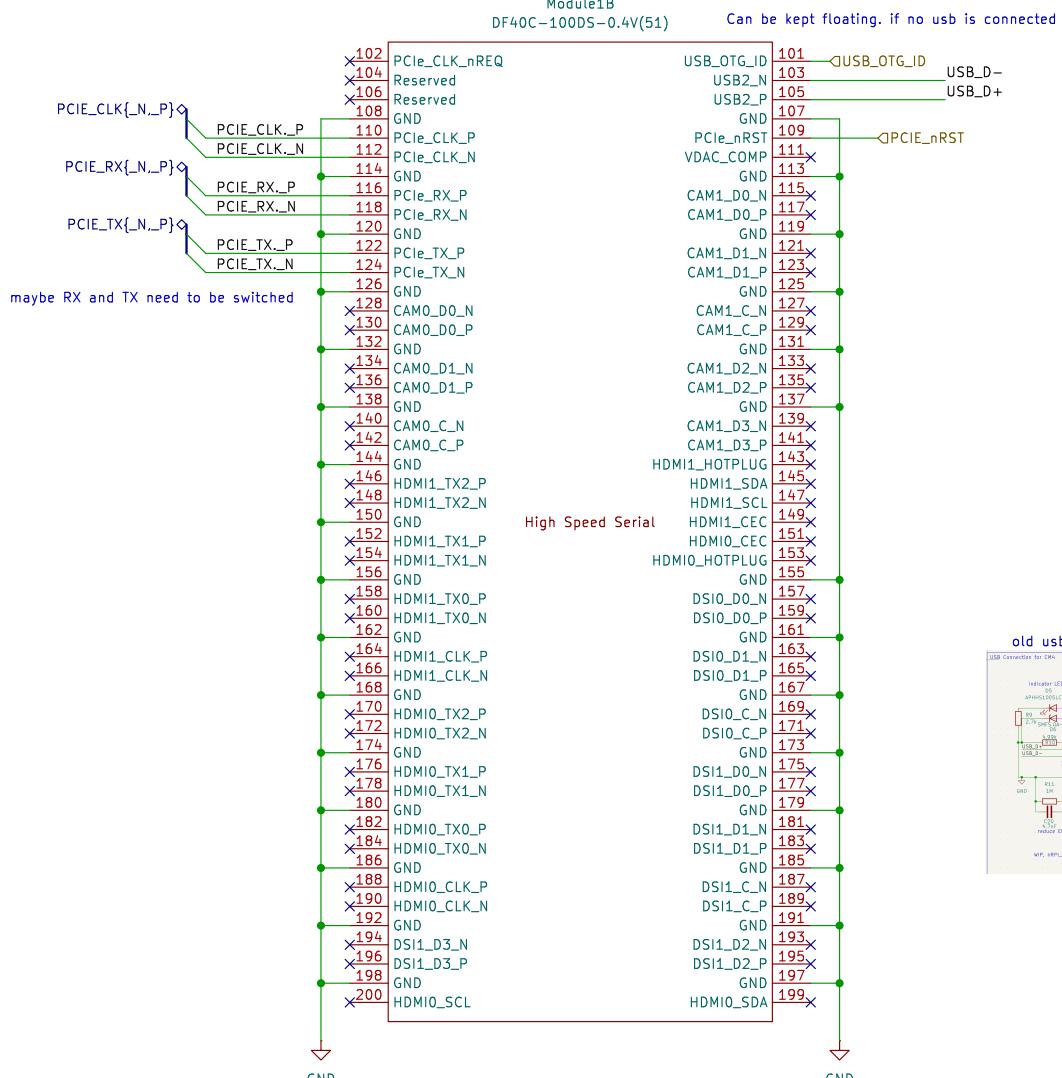
Date: 2025-11-19

Size: A4

Id: 7/20

File: PowerSTM.kicad\_sch

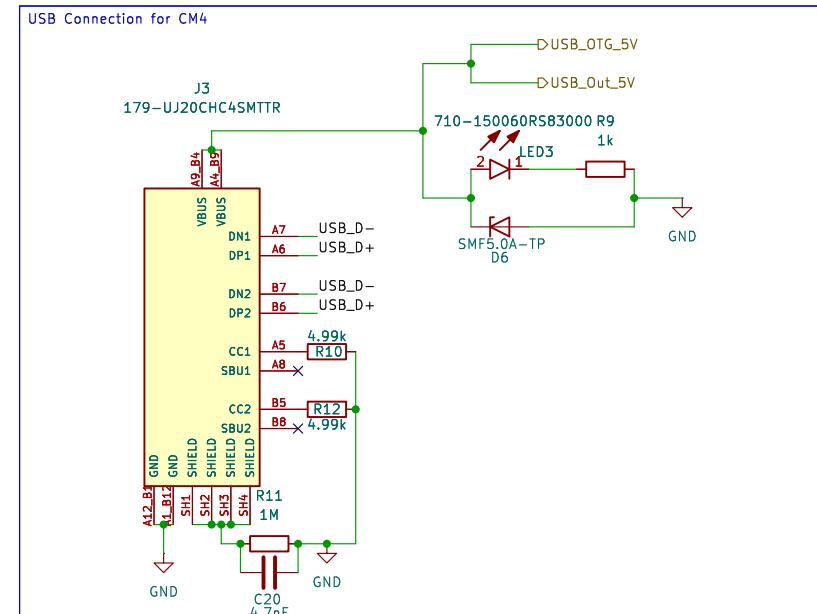
A



B

C

D



WIP, nRPI\_BOOT? power only to certain parts? -> Diode (later)  
indication? (YES! LED)



## Title: Nautilus\_Mainboard

Sheet: /CM4/CM4\_Module1B/

Rev: 0

Author: Davide

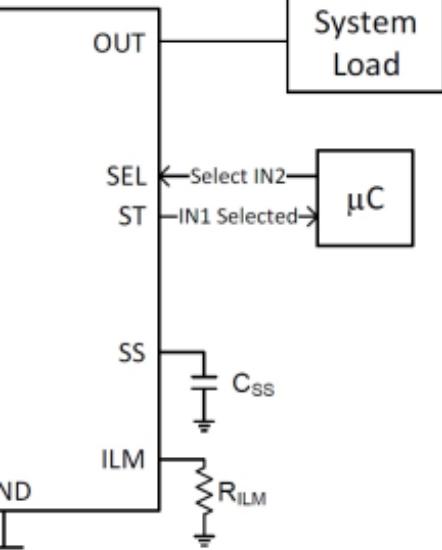
Date: 2025-11-19

Size: A4

Id: 11/20

File: CM4\_Module1B.kicad\_sch

212x



for questions about wiring etc please consult the datasheet...  
<https://www.ti.com/lit/ds/symlink/tps2120.pdf?ts=1761678178328>

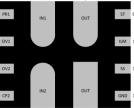
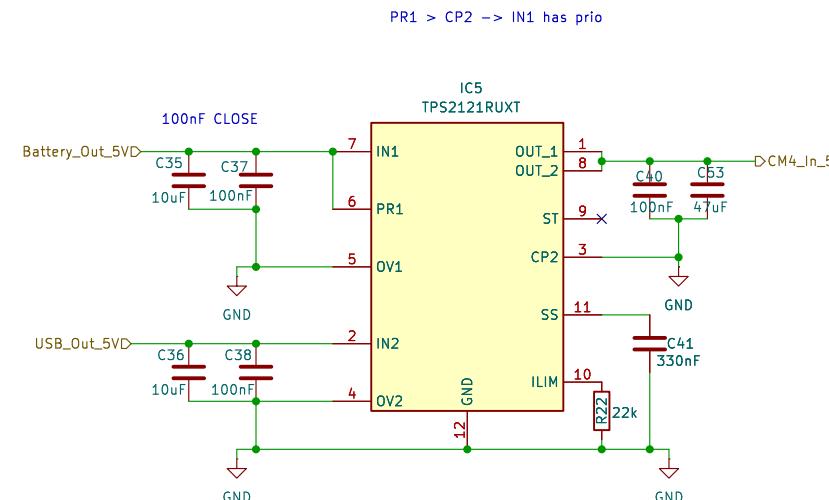


Figure 6-2. TPS2121 (RUX) Package 12-Pin VQFN-HR Bottom View

Pin Functions		
NAME	TPS2120	TPS2121
	WICSP	VQFN-HR
IN1	B1, B2, C1	7
IN2	B3, B4, C2	2
OUT	C2, C3, D1, 1, 8	1
ST	E1, E2	9
ILM	E2	10
SS	E3	11
GND	E4	12
PR1	A1	6
OV1	A2	5
OV2	A3	4
SEL	A4	—

CP2 — 3 i Enables Comparator Operation and is compared to PR1 to set switchover voltage. Connect to GND if not required. TPS2120 only.

if the USB-only cold start "disconnects" we can try to bump SS to 470nF instead of 330nF.

Pins	MIN	MAX	UNIT
V <sub>IN1</sub> , V <sub>IN2</sub> , V <sub>OUT</sub>	-0.3	24	V
V <sub>OV1</sub> , V <sub>OV2</sub>	-0.3	6	V
V <sub>PRI</sub> , V <sub>SEL</sub>	-0.3	6	V
V <sub>ST</sub>	—	6	V
I <sub>OUT</sub>	Internally Limited		
T <sub>J, MAX</sub>	Internally Limited		
T <sub>STG</sub>	-65	150	°C



## Title: Nautilus\_Mainboard

Sheet: /Power\_logic/5V\_Logic/

Rev: 0

Author: Davide

D

Date: 2025-11-19

Size: A4

Id: 12/20

File: 5V\_Logic.kicad\_sch

1 2 3 4 5 6

A

A

B

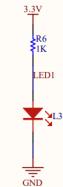
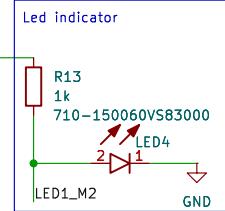
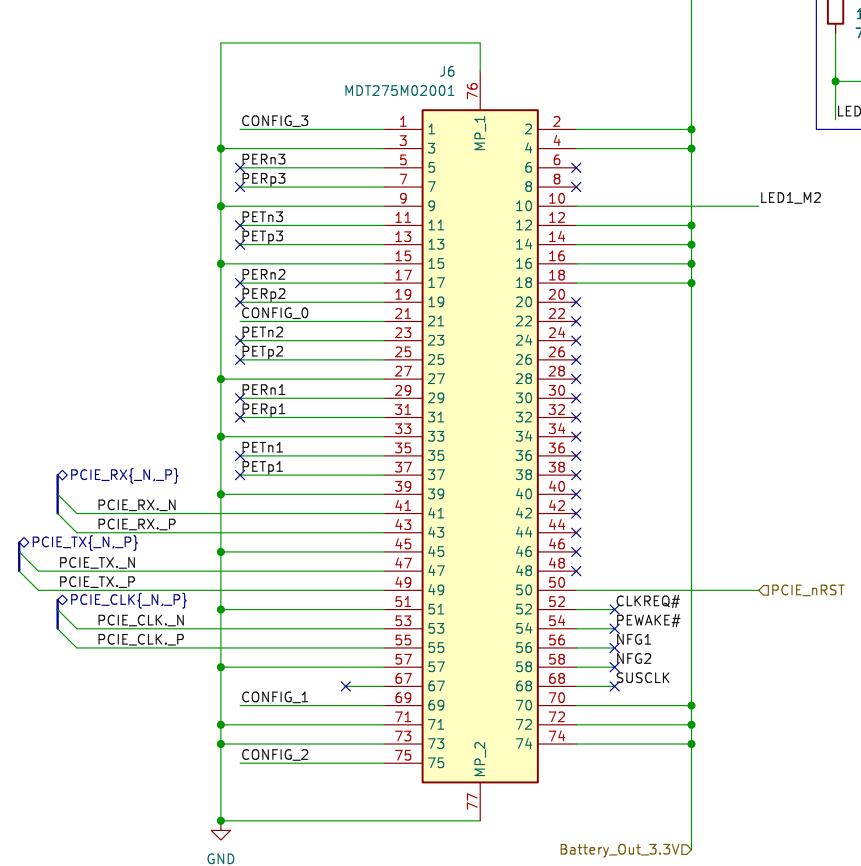
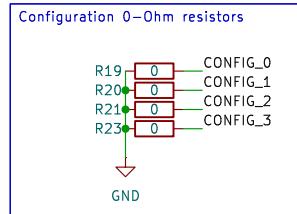
B

C

C

D

D



### Title: Nautilus\_Mainboard

Sheet: /CM4/PCIE\_Interface/

Rev: 0

Author: Davide

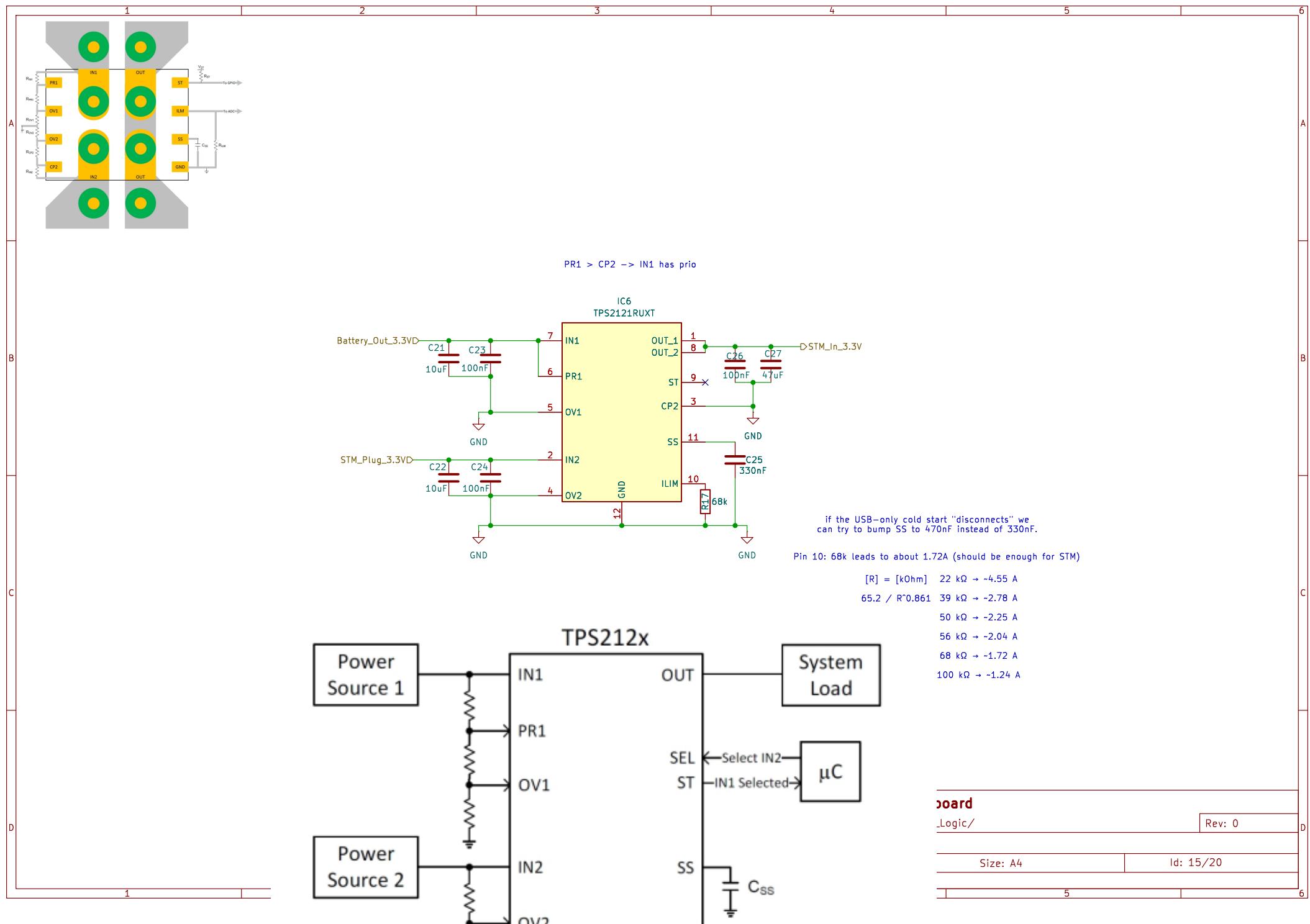
Date: 2025-11-19

Size: A4

Id: 13/20

File: PCIE\_Interface.kicad\_sch

1 2 3 4 5 6



1 2 3 4 5 6

A

A

B

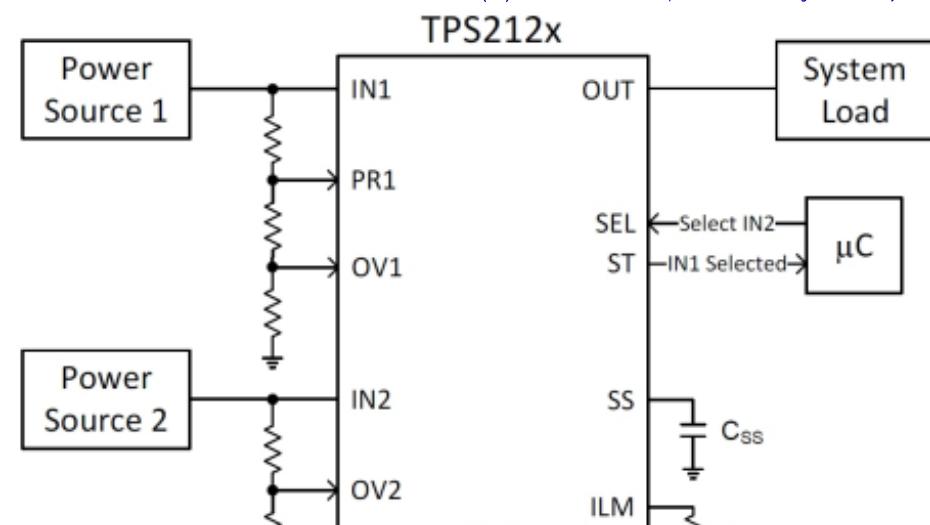
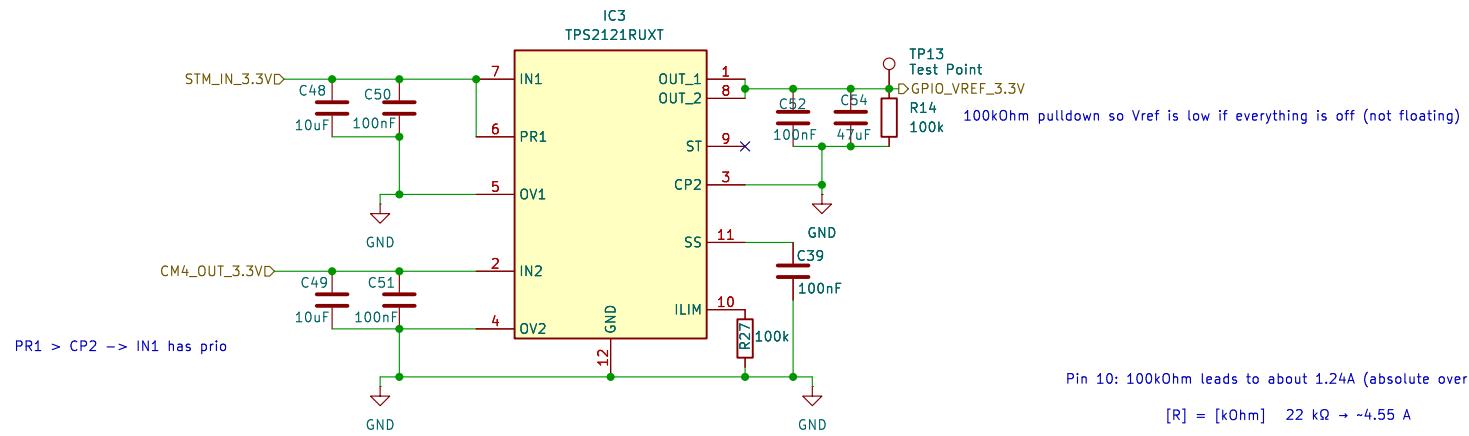
B

C

C

D

D



3V/

Rev: 0

Size: A4

Id: 16/20

5

6

1 2 3 4 5 6

A

A

B

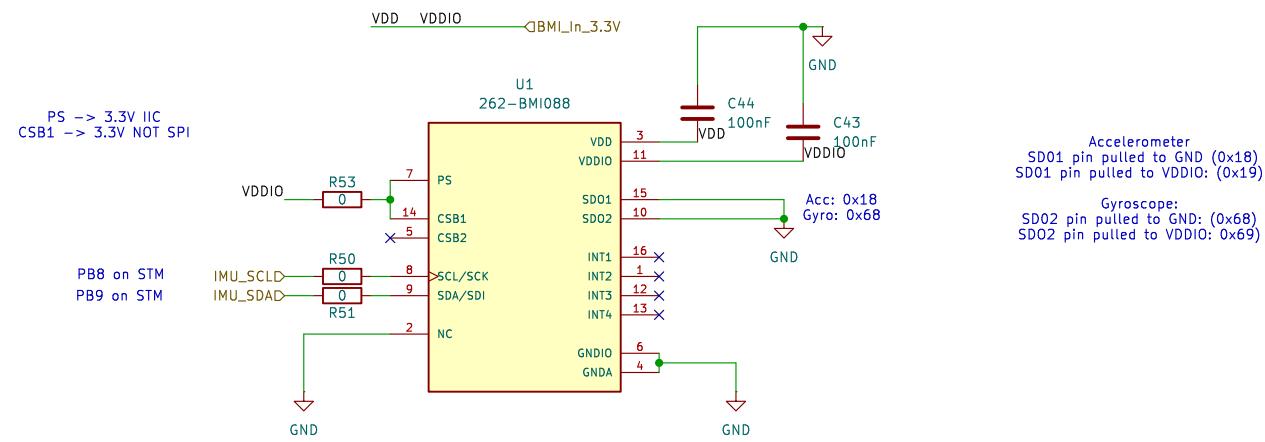
B

C

C

D

D



## Title: Nautilus\_Mainboard

Sheet: /IMU/IMU1/

Rev: 0

Author: Davide

Date: 2025-11-19

Size: A4

Id: 19/20

File: IMU1.kicad\_sch

1 2 3 4 5 6

A

A

B

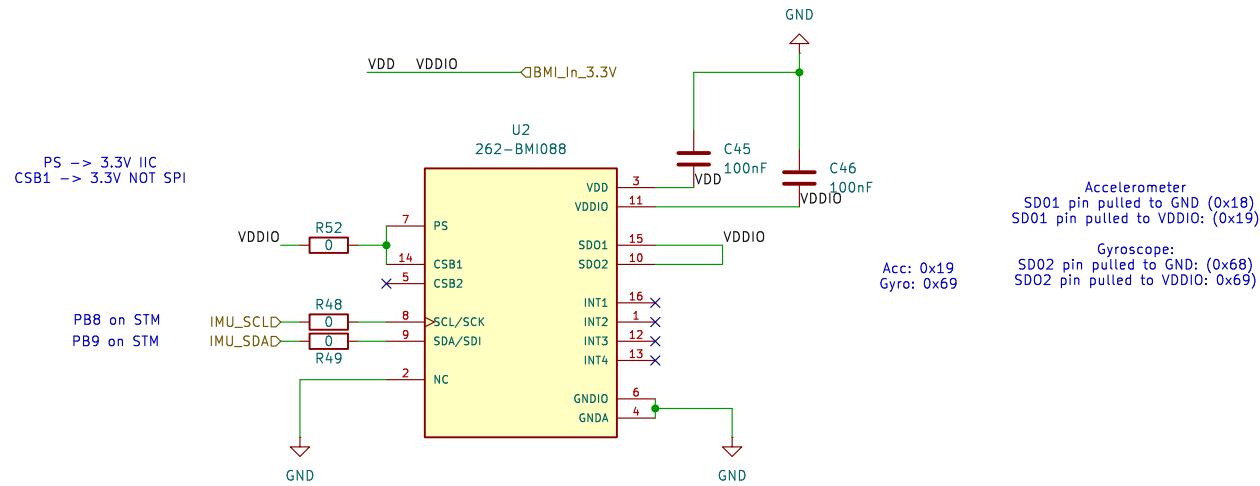
B

C

C

D

D



### Title: Nautilus\_Mainboard

Sheet: /IMU/IMU2/

Rev: 0

Author: Davide

Date: 2025-11-19

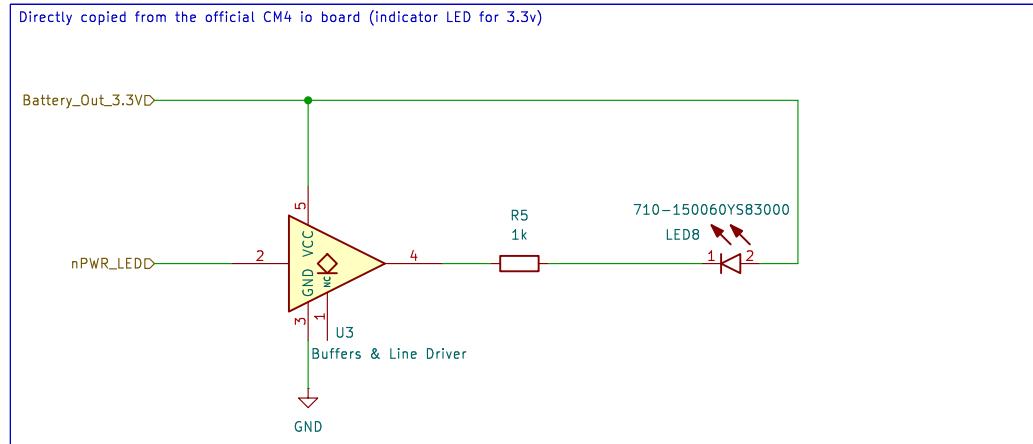
Size: A4

Id: 20/20

File: IMU2.kicad\_sch

A

A



B

B

Screenshot  
From the CM4 io board

C

C

D

D



### Title: Nautilus\_Mainboard

Sheet: /CM4/CM4\_Module1A/CM4\_LED1/

Rev: 0

Author: Davide

Date: 2025-11-19

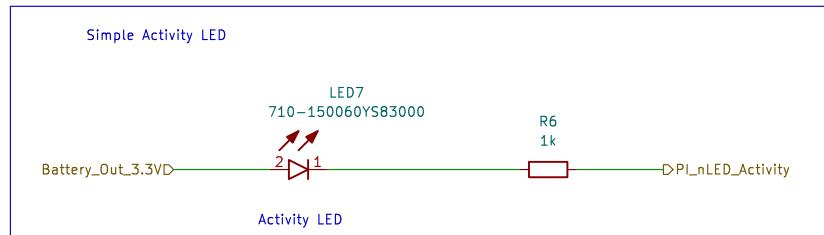
Size: A4

Id: 8/20

File: CM4\_LED1.kicad\_sch

A

A



B

B

C

C

D

D

**Title: Nautilus\_Mainboard**

Sheet: /CM4/CM4\_Module1A/CM4\_LED2/

Rev: 0

Author: Davide

Date: 2025-11-19

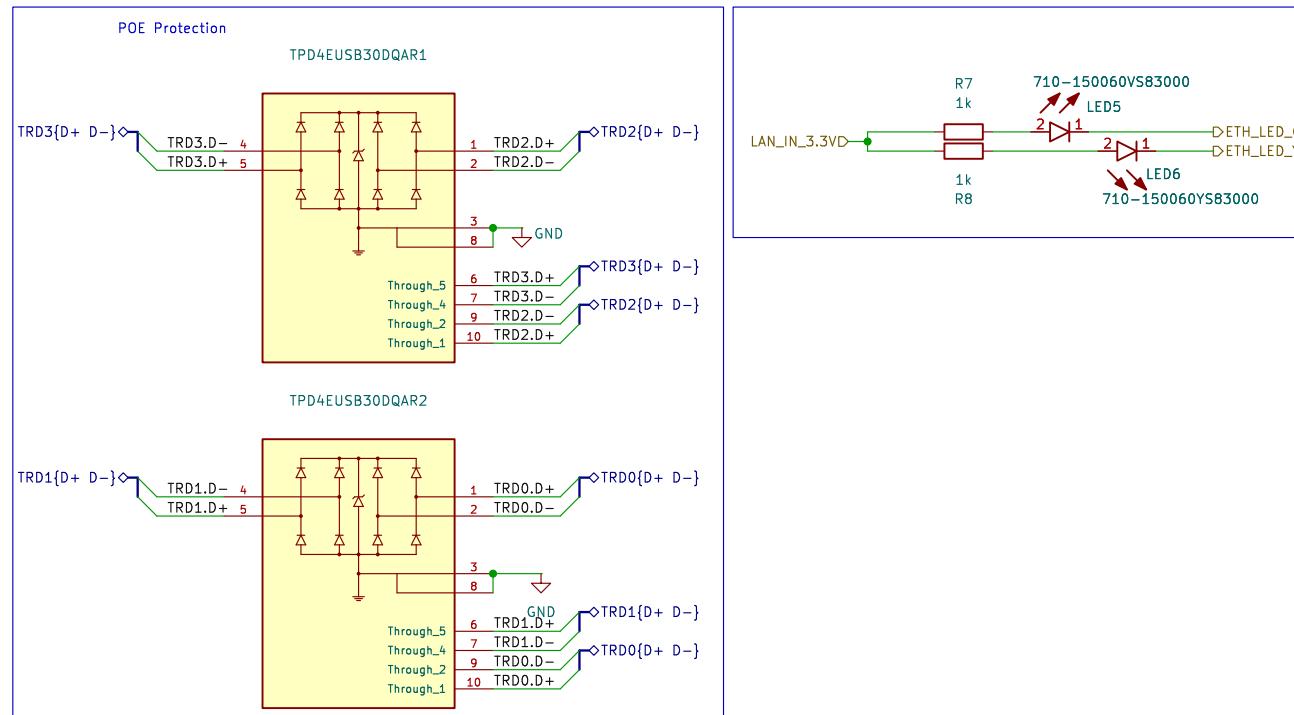
Size: A4

Id: 9/20

File: CM4\_LED2.kicad\_sch

A

A



B

B

C

C

D

D



### Title: Nautilus\_Mainboard

Sheet: /CM4/CM4\_Module1A/CM4\_Ethernet/

Rev: 0

Author: Davide

Date: 2025-11-19

Size: A4

Id: 10/20

File: CM4\_Ethernet.kicad\_sch