

We should consider that we NEVER want the CM4 to power the unpowered STM over the TX pin. Found a neat part for that:

<https://www.mouser.ch/ProductDetail/Texas-Instruments/SN74LVC1G126DBVR?qs=pajglaoDUI3T2WgNNfd3w%3D%3D>

## **connections:**

Pin 5: VCC -> CM4\_3V3

Pin 2: A → CM4 TX (PLTX)

Pin 4: Y -> STM\_UART\_RX

Pin 1: OE → STM\_IN\_3.3V

### Pin 3: GND

## ~~0.1uF decoupling cap VCC-GND~~



**Title**

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Author

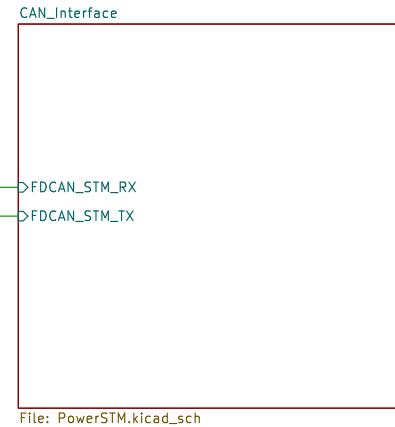
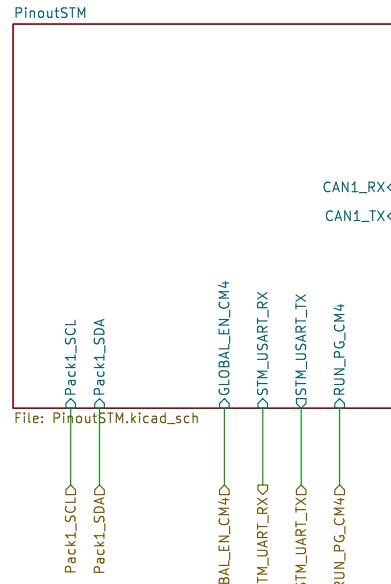
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File: nautilus\_mainboard.kicad\_sch

Rev:

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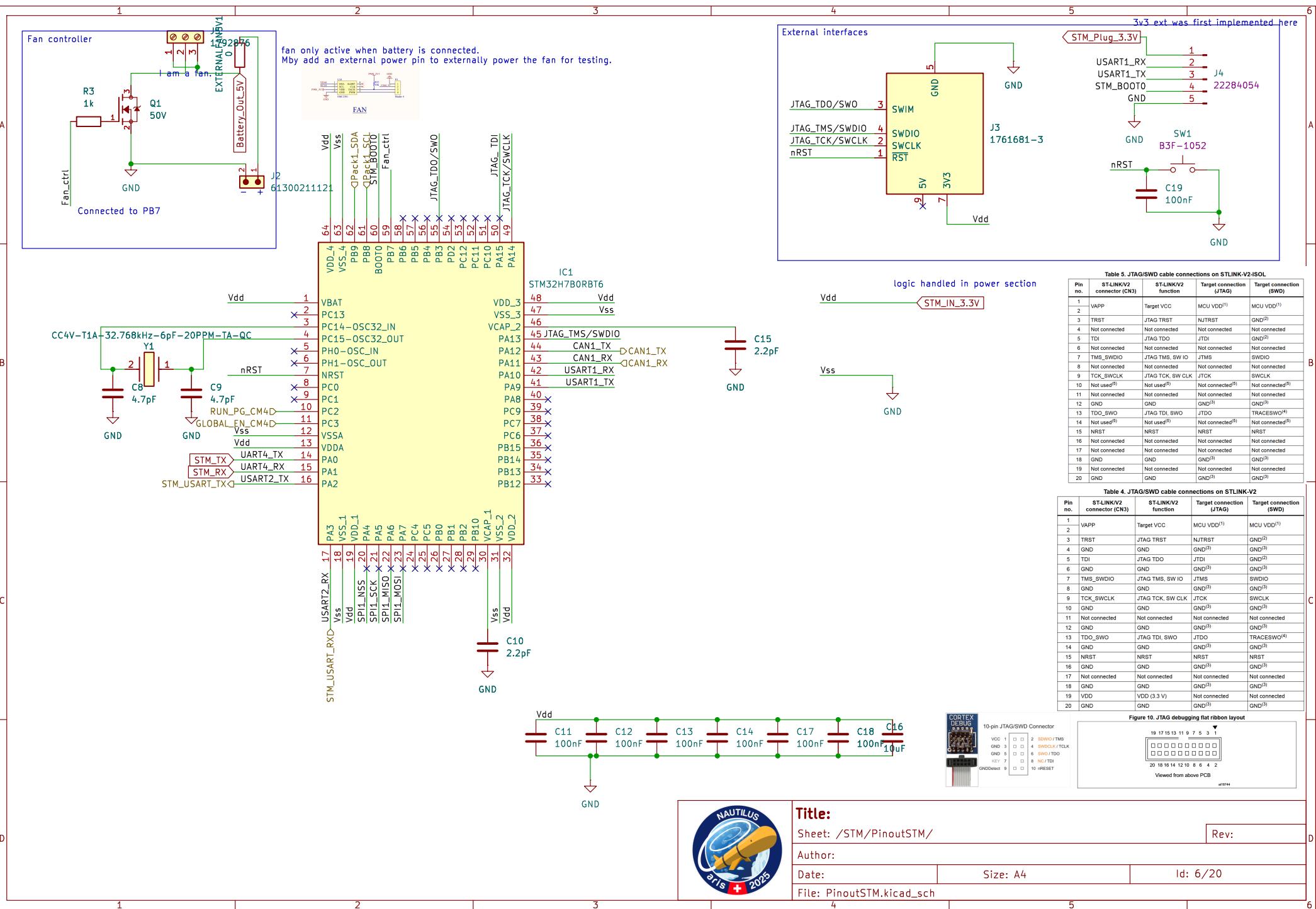
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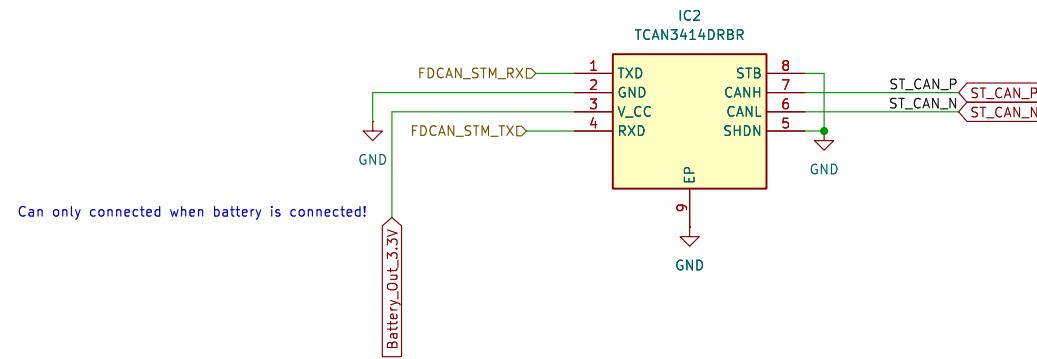
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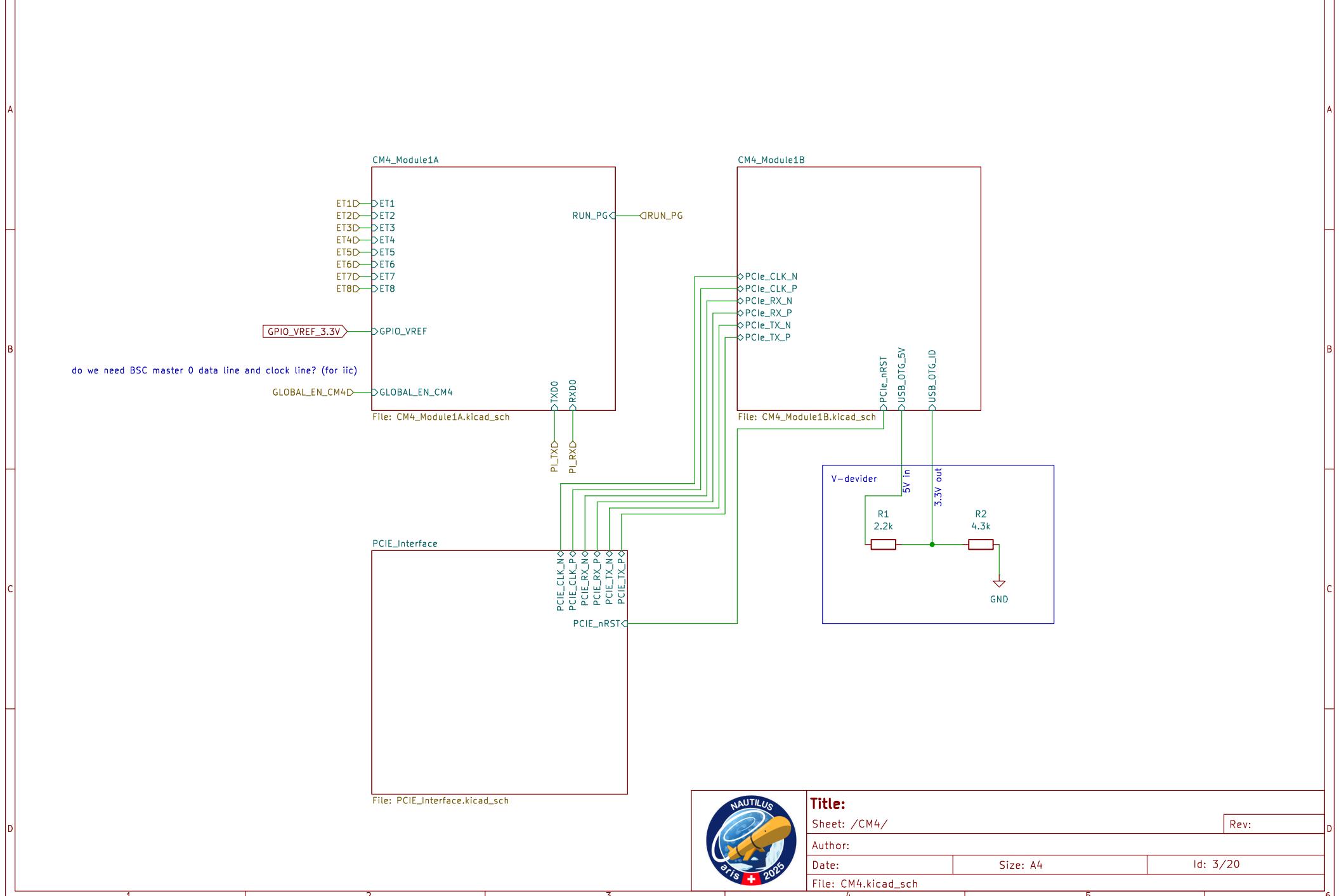
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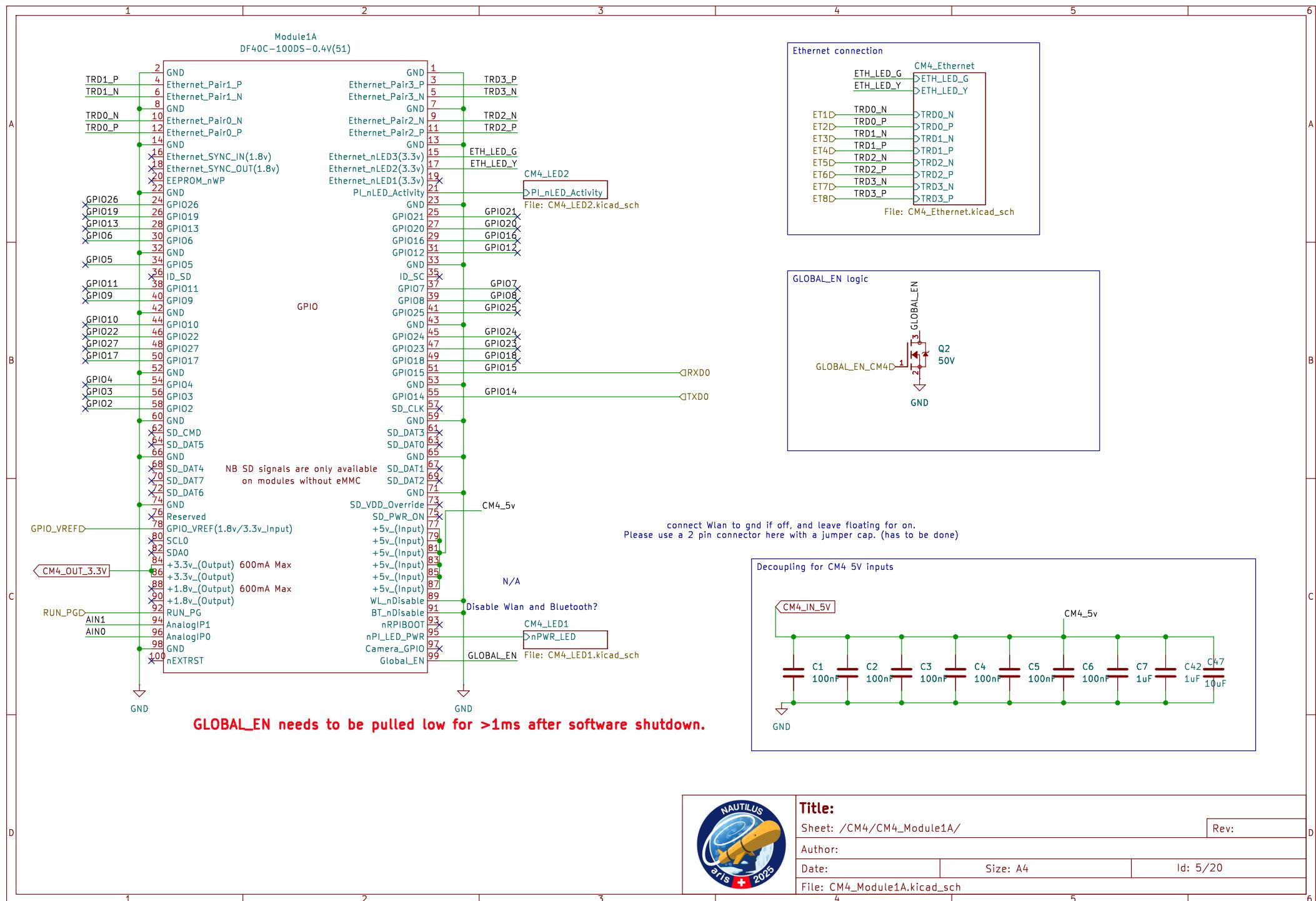
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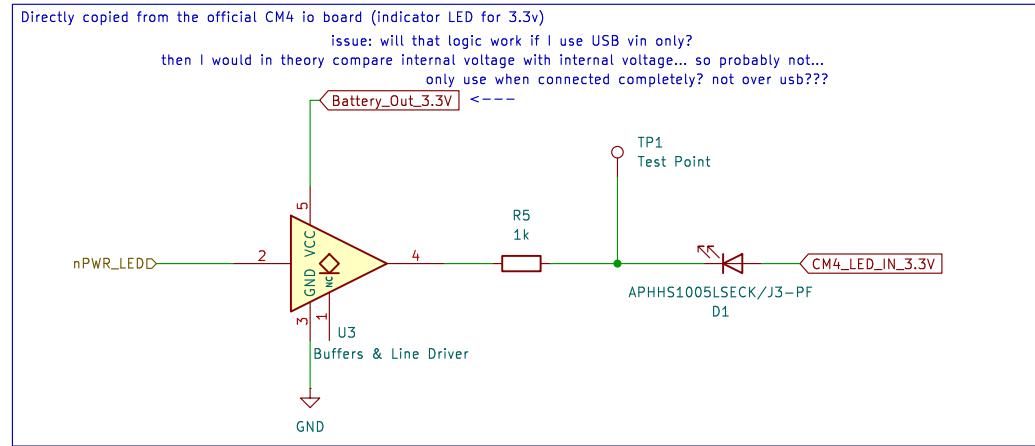
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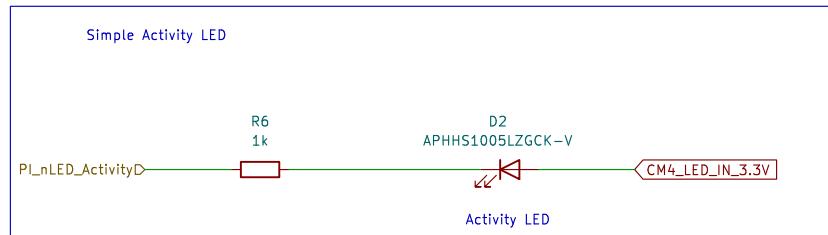
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Rev:

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Date: Size: A4 Id: 9/20

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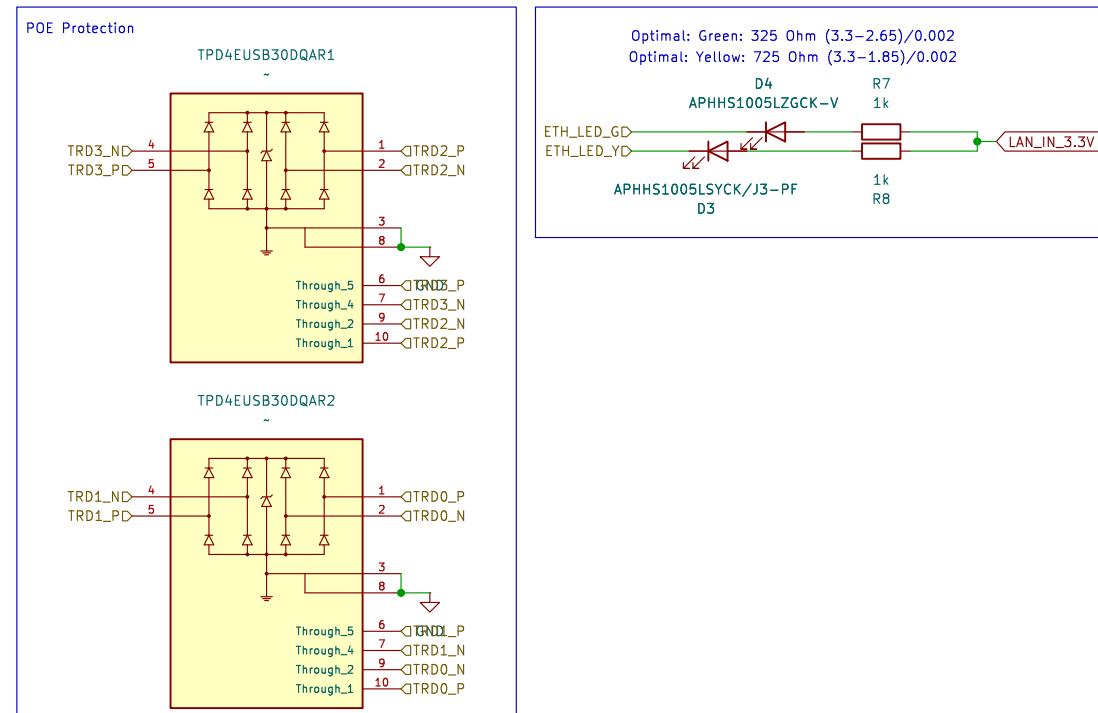
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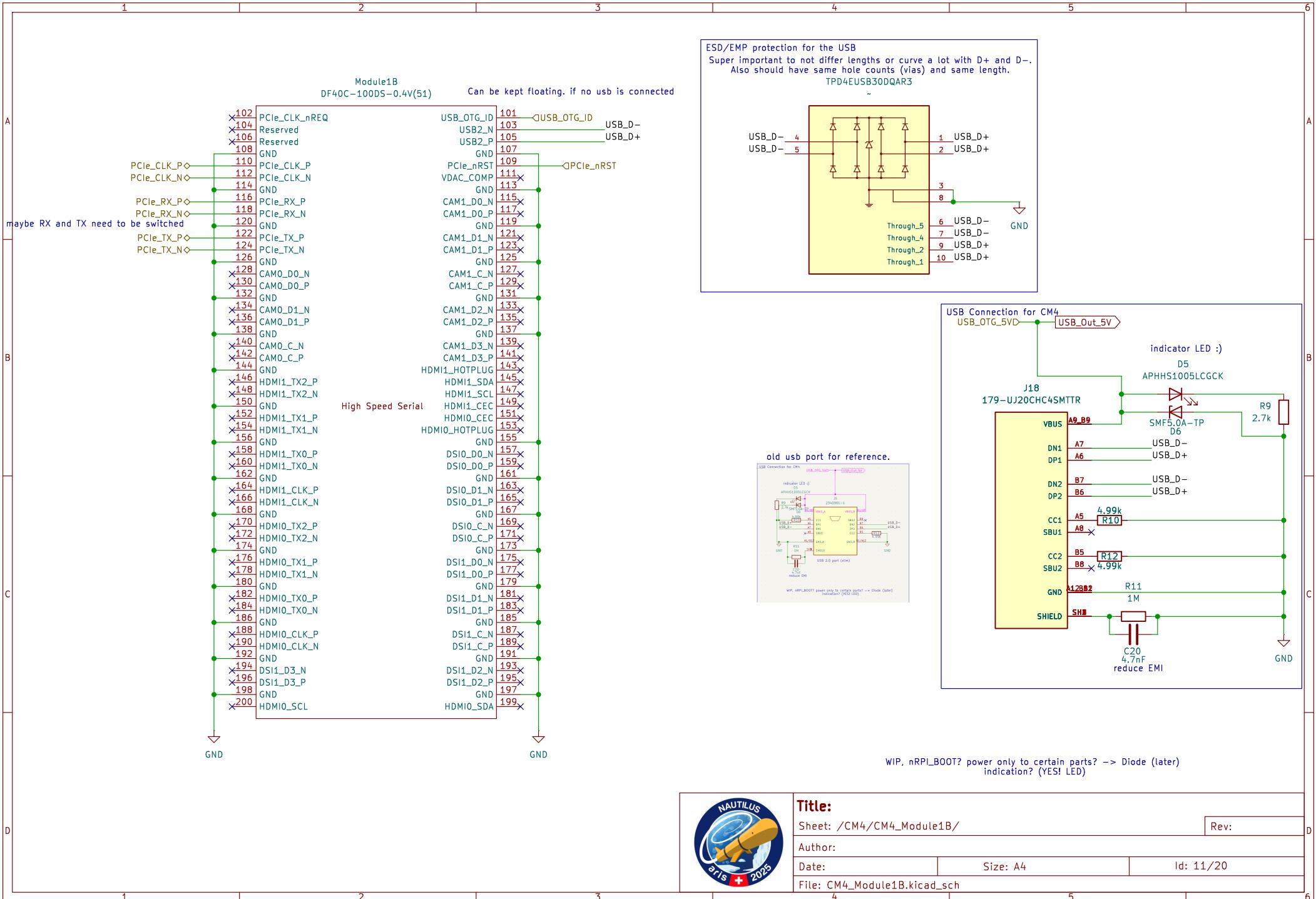
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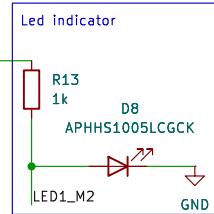
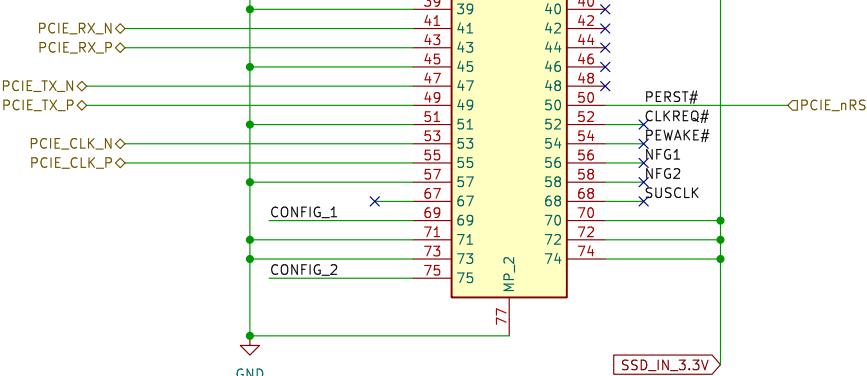
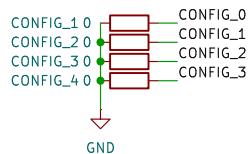
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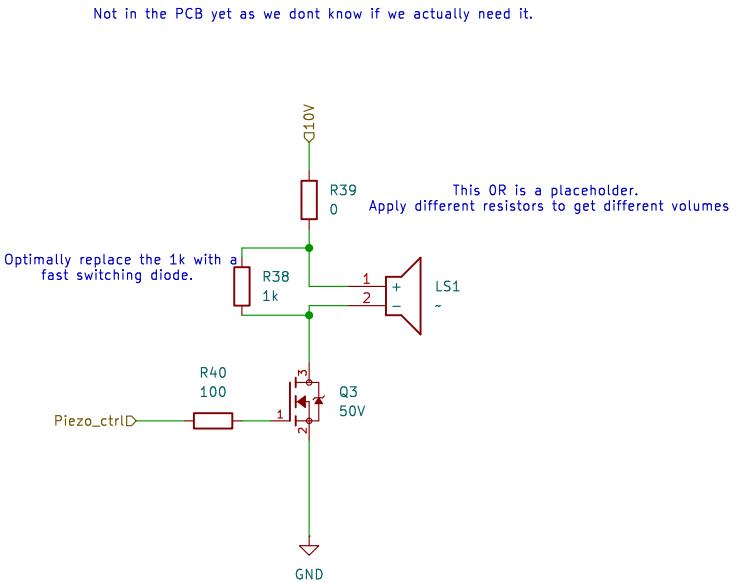
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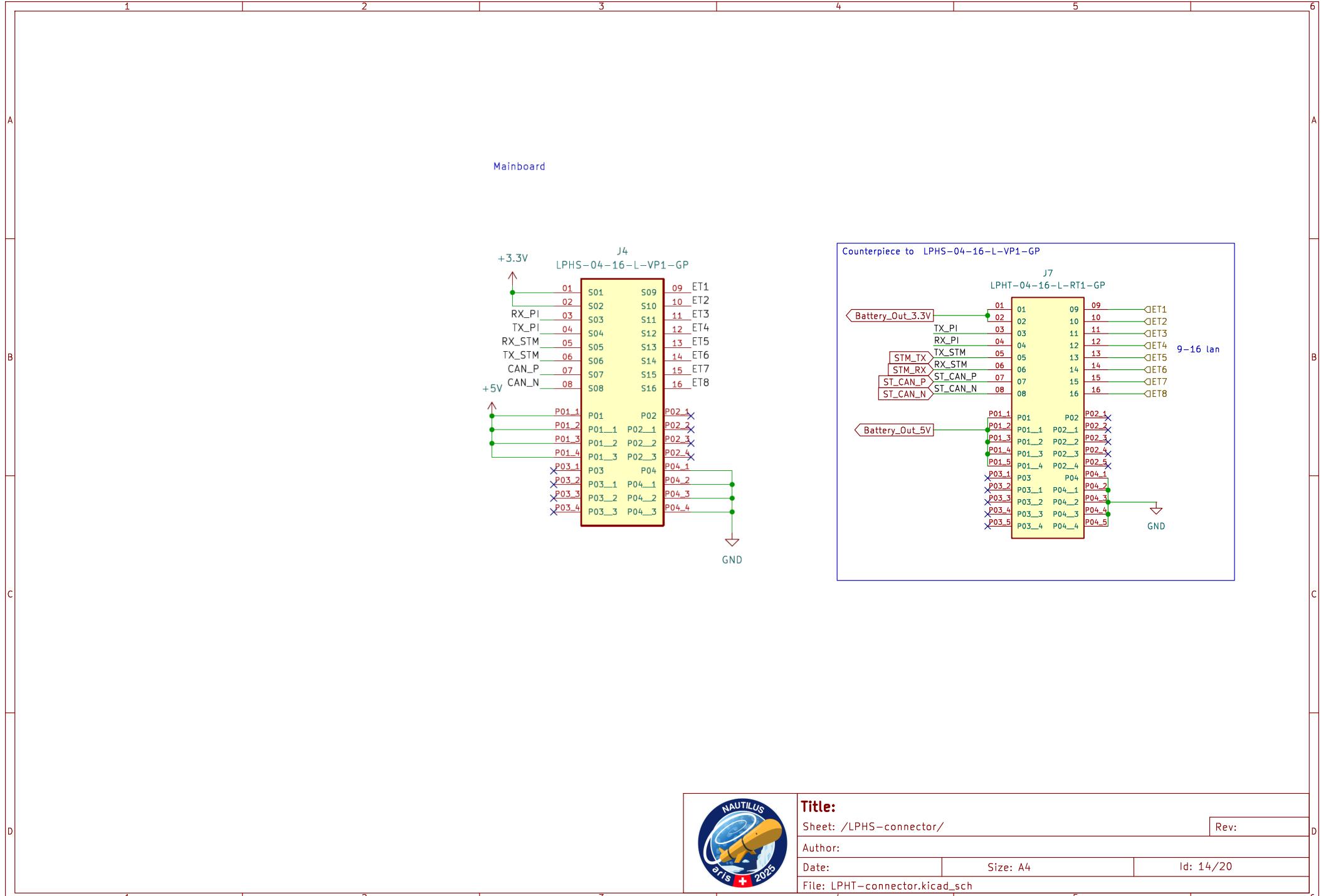
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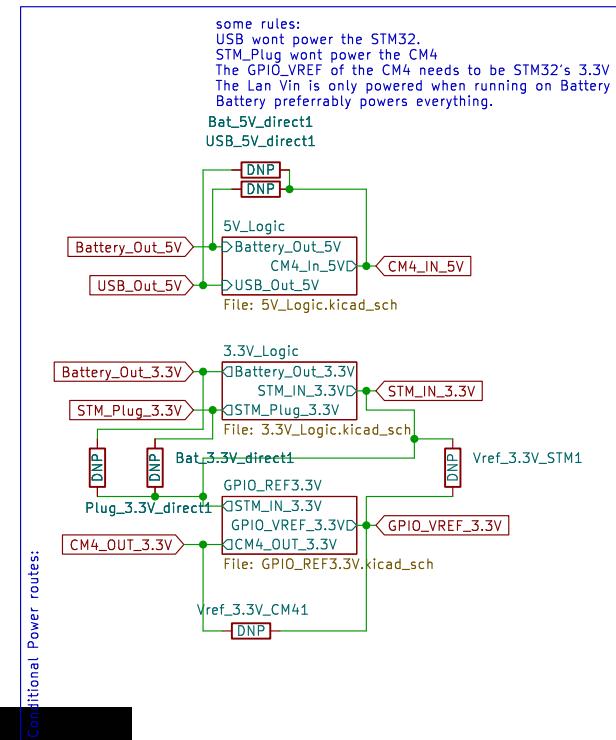
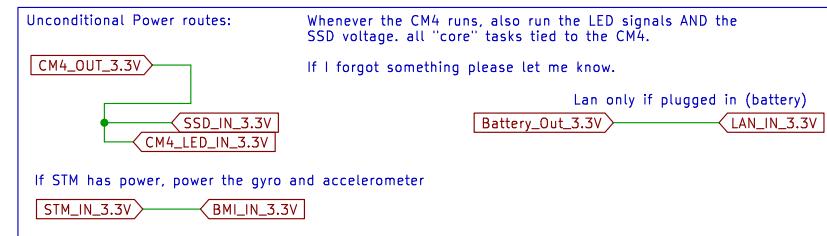
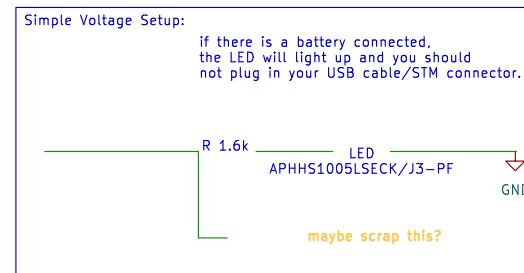
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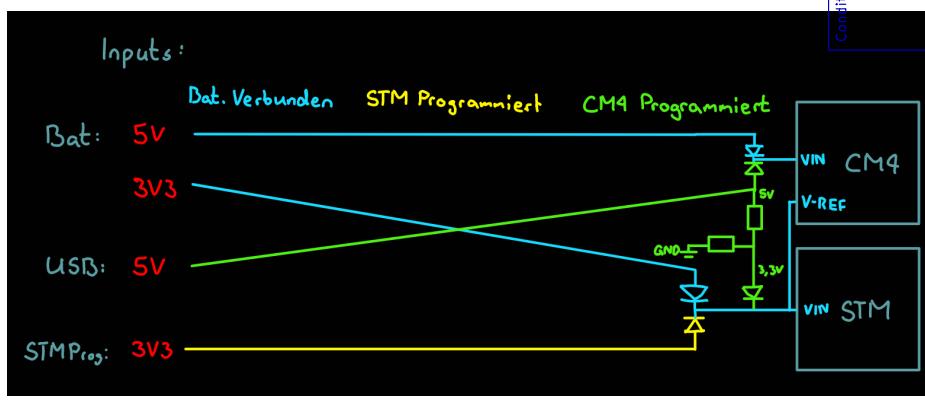
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Wont work... diodes are not perfect...



### Title:

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Date:

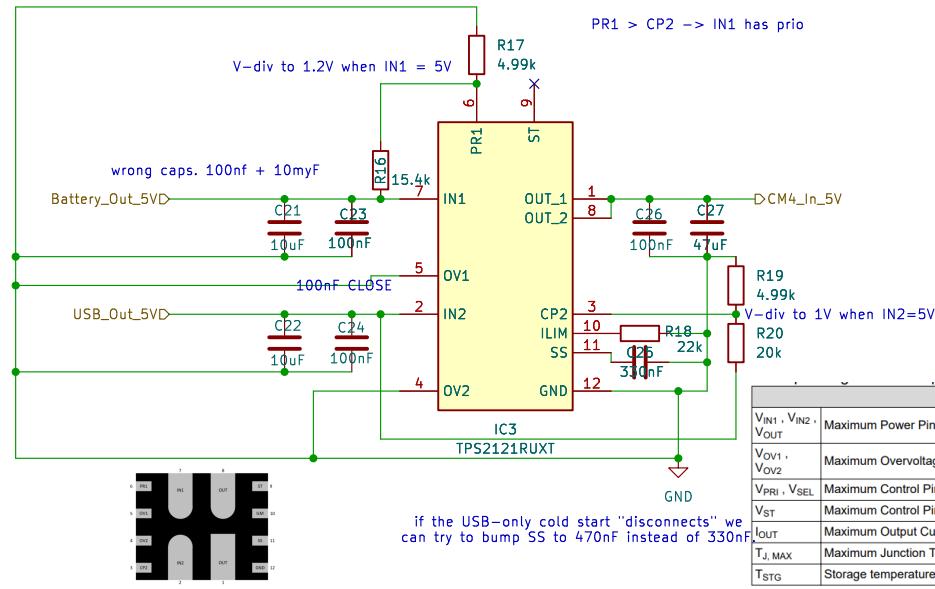
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Id: 14/20

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



		Pins	MIN	MAX	UNIT
$V_{IN1}$ , $V_{IN2}$ , $V_{OUT}$	Maximum Power Pin Voltage	IN1, IN2, OUT	-0.3	24	V
$V_{OV1}$ , $V_{OV2}$	Maximum Overvoltage Pin Voltage	OV1, OV2	-0.3	6	V
$V_{PRI}$ , $V_{SEL}$	Maximum Control Pin Voltage	PRI, SEL	-0.3	6	V
$V_{ST}$	Maximum Control Pin Voltage	ST	-0.3	6	V
$I_{OUT}$	Maximum Output Current	OUT	Internally Limited		
$T_{J, MAX}$	Maximum Junction Temperature		Internally Limited		
$T_{STG}$	Storage temperature		-65	150	°C

Pin Functions			
NAME	PIN	Type	DESCRIPTION
TPFS120	TPS2121	IO	
WCS#	VQFN-44		
IN1	D1, D2, D3	I	Power Input for Source 1
IN2	B3, B4, C4	I	Power Input for Source 2
OUT	C2, C3, D1, D2, D3	I	Power Output
ST	E9	O	Status output indicating which channel is selected. Connect to GND if not required.
ILIM	E2	O	Output Current Limiting for both channels.
GND	E4	—	Ground Reference
PRI	A1	6	Active Input Setting Delay Time and Output Soft Start
OV1	A2	5	Enable Priority Protection. Connect to VDD or set to switch-off voltage. Connect to GND if not required.
OV2	A3	4	Enable Overvoltage Supervisor for OV1 Overvoltage Protection. Connect to GND if not required.
SEL	A4	—	Active low Enable IN1. Allows GPO to override priority operation and manually select IN1. IN1 250mV only.
CP2	—	3	Enables Compensation Operation and is compared to PRI to set switch-off voltage.



**Title**

Sheet: /Power logic/5V Logic/

Rev:

Author:

Date: \_\_\_\_\_

Id: 15/20

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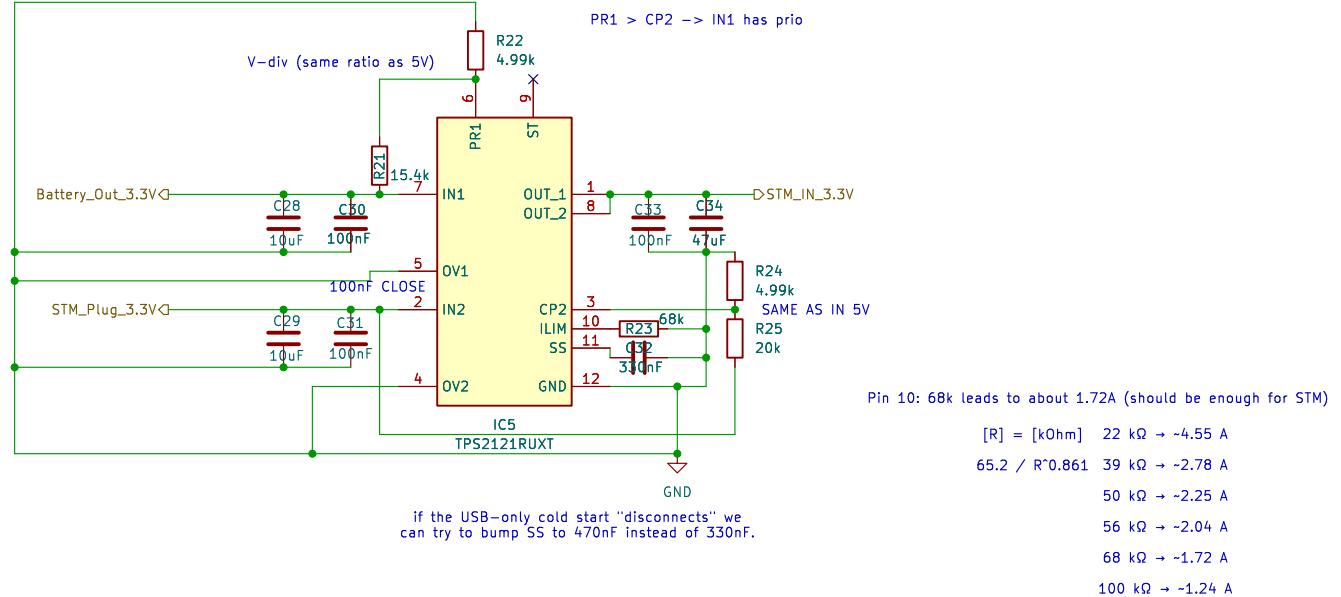
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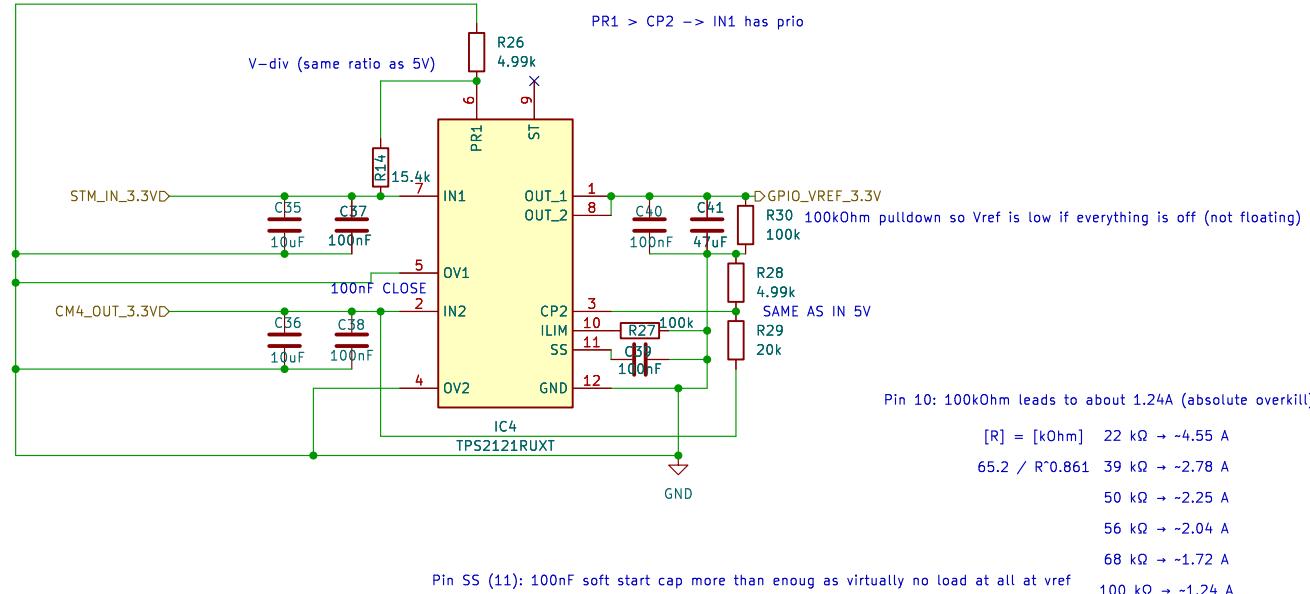
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Sheet: /Power logic/GPIO REF3.3V/

Rev.

Author:

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File: GPIO\_REF3\_3V.kicad.sch

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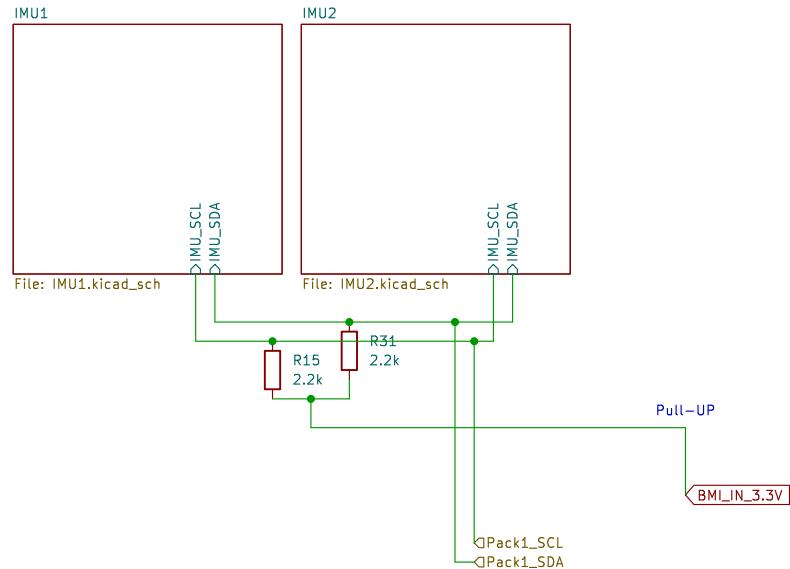
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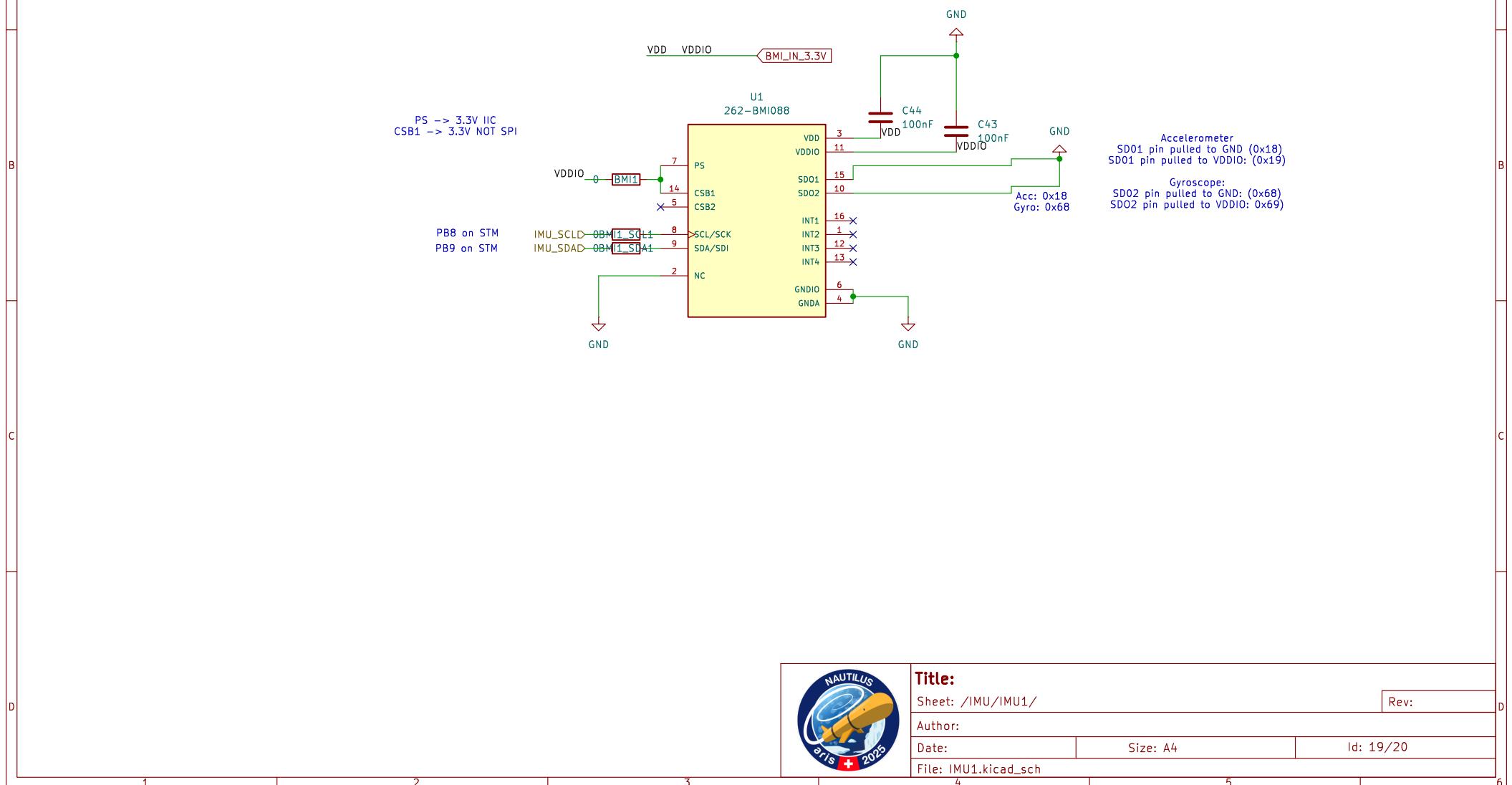
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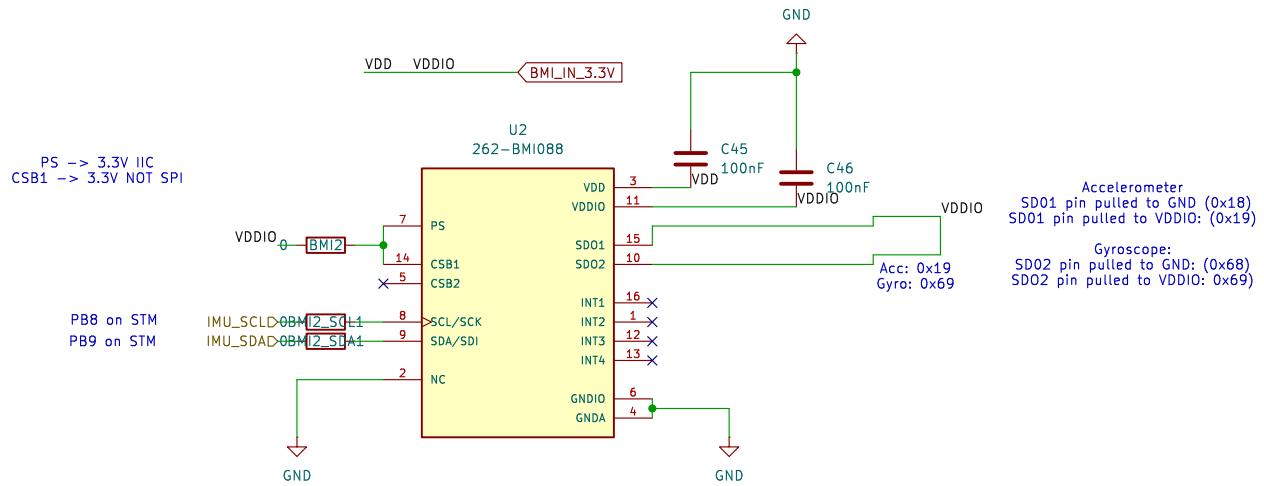
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