

# TACNPR project

Tatu OH2EAT, Lasse OH3HZB & Tommi OH1GJV & SCOMS team  
Special thanks to: Mikko OH2FLO & Vili OH5GE

SUBSHEETS (revB with onboard Ethernet):

cpu

MCU, SRAM,  
SERIAL

File: cpu-sheet.kicad\_sch

radio

Si4463 &  
RF switching

File: radio-sheet.kicad\_sch

RF-PA

RF LNA  
& PA

File: RF-PA-sheet.kicad\_sch

tacbucks

DC/DC  
converters

File: tacbuck-sheet.kicad\_sch

linear-regs

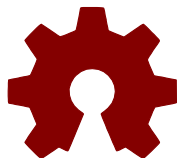
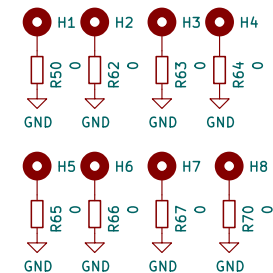
3V3 lin.reg.  
& terminals

File: linreg-sheet.kicad\_sch

ethernet

W5500  
Ethernet

File: ethernet-sheet.kicad\_sch



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## TACNPR project

OH1GJV, OH2EAT, OH2FLO, OH3HZB, OH5GE



Sheet: /  
File: TACNPR.kicad\_sch

**Title: TACNPR**

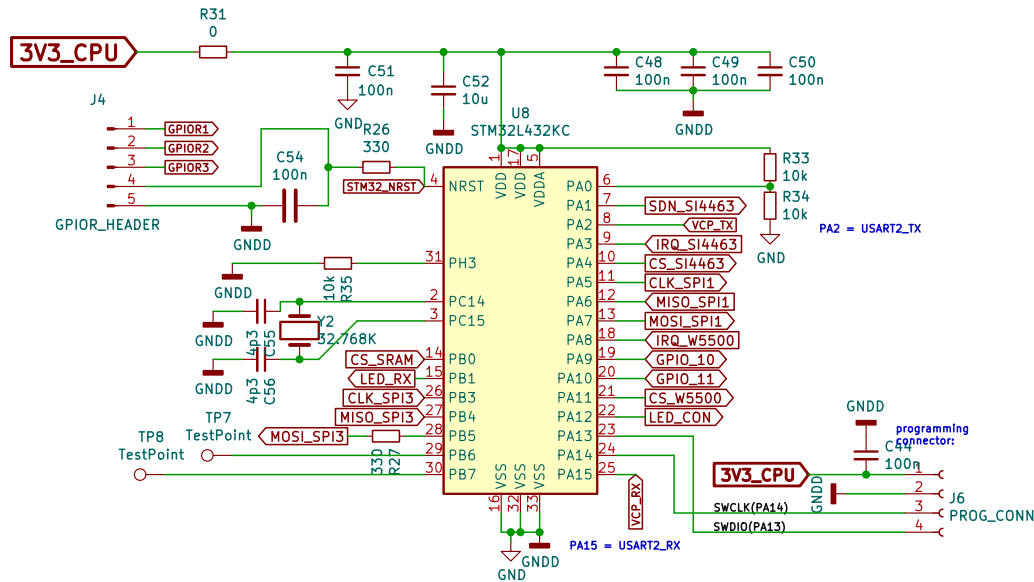
Size: A4 Date: 2021-03-22

KiCad E.D.A. kicad 6.0.2+dfsg-1

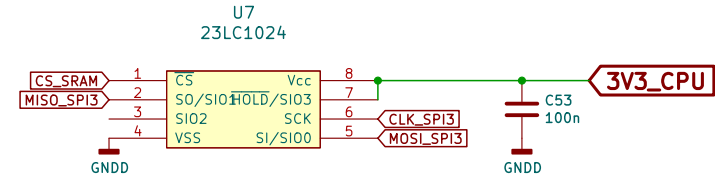
**Rev: A**

Id: 1/7

## MCU: STM32L432KC (256 kB Flash)



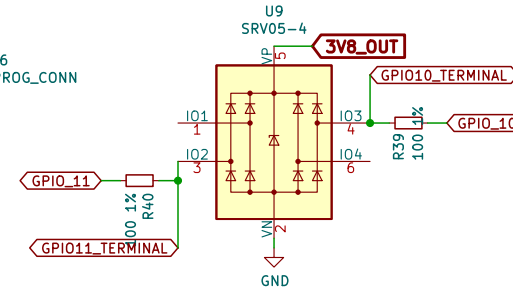
## SRAM (23LC1024, 1Mbit)



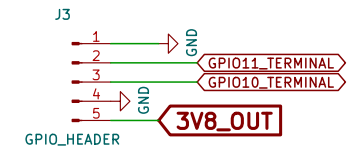
## CONN LEDs



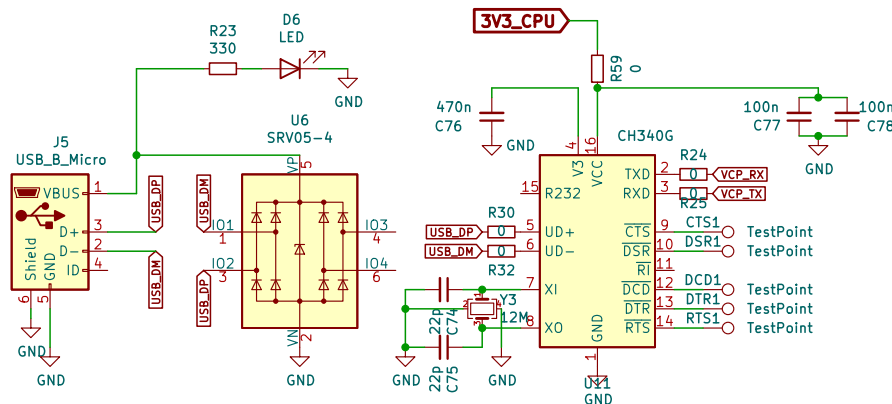
## GPIO ESD protection



## GPIO header



## USB ESD PROTECTION & CH340G SERIAL



## TACNPR / CPU sheet

(CPU, SRAM, GPIO, ETHERNET, USB SERIAL)

Sheet: /cpu/

File: cpu-sheet.kicad\_sch

Title: TACNPR (CPU sheet)

Size: A4

Date:

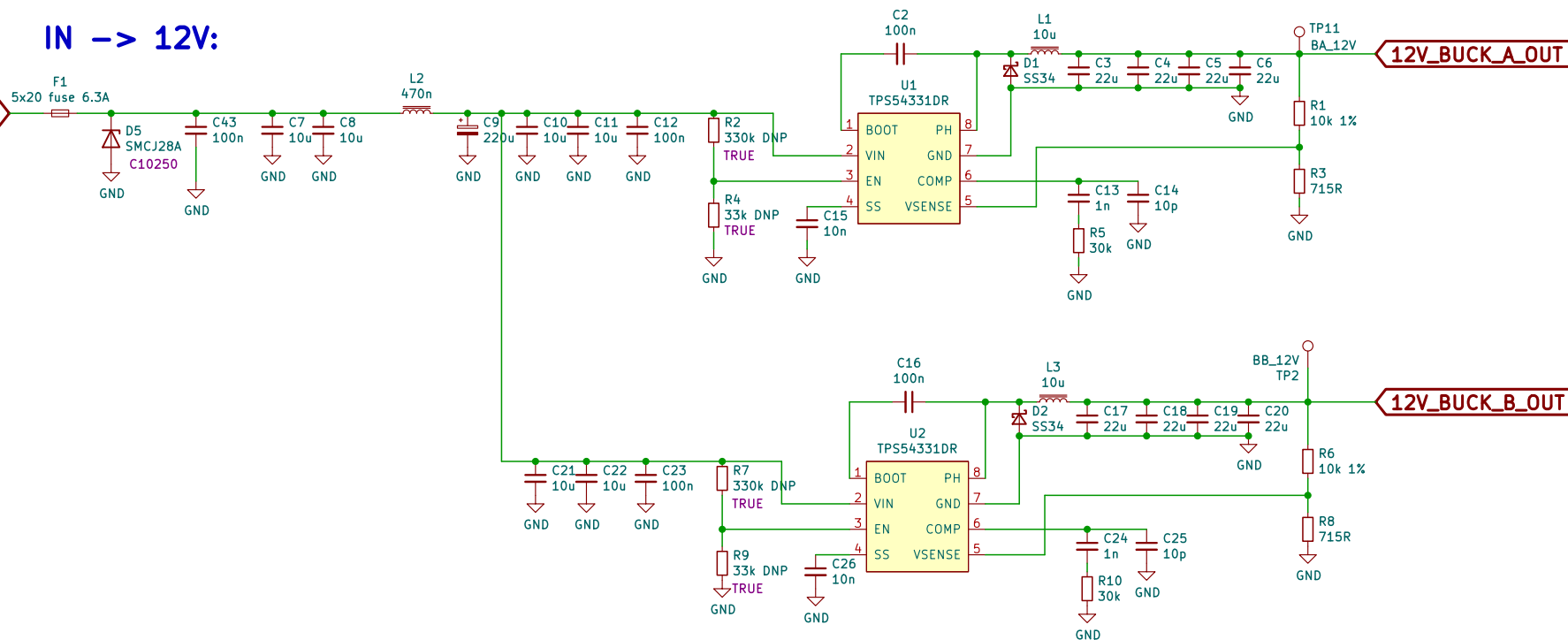
KiCad E.D.A. kicad 6.0.2+dfsg-1

Rev: B

Id: 2/7

IN -> 12V:

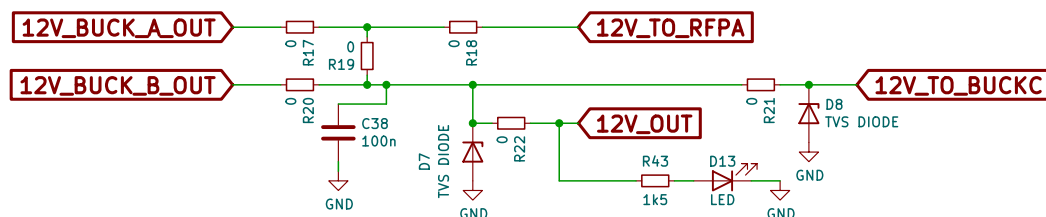
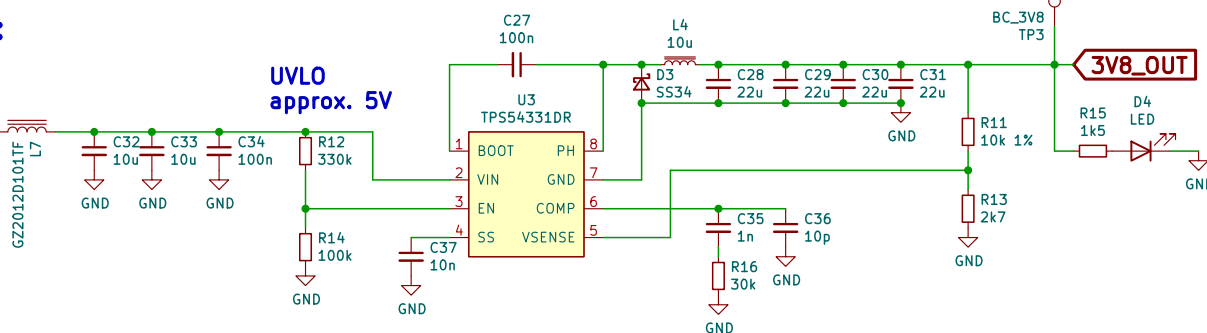
RAW\_PSU\_IN



12V -> 3V8:

12V\_TO\_BUCKC

UVLO approx. 5V



## TACNPR / DC/DC converters

based on TACBUCK-A design by Tommi OH1GJV

Sheet: /tacbucks/

File: tacbuck-sheet.kicad\_sch

Title: TACNPR (TACBUCKs)

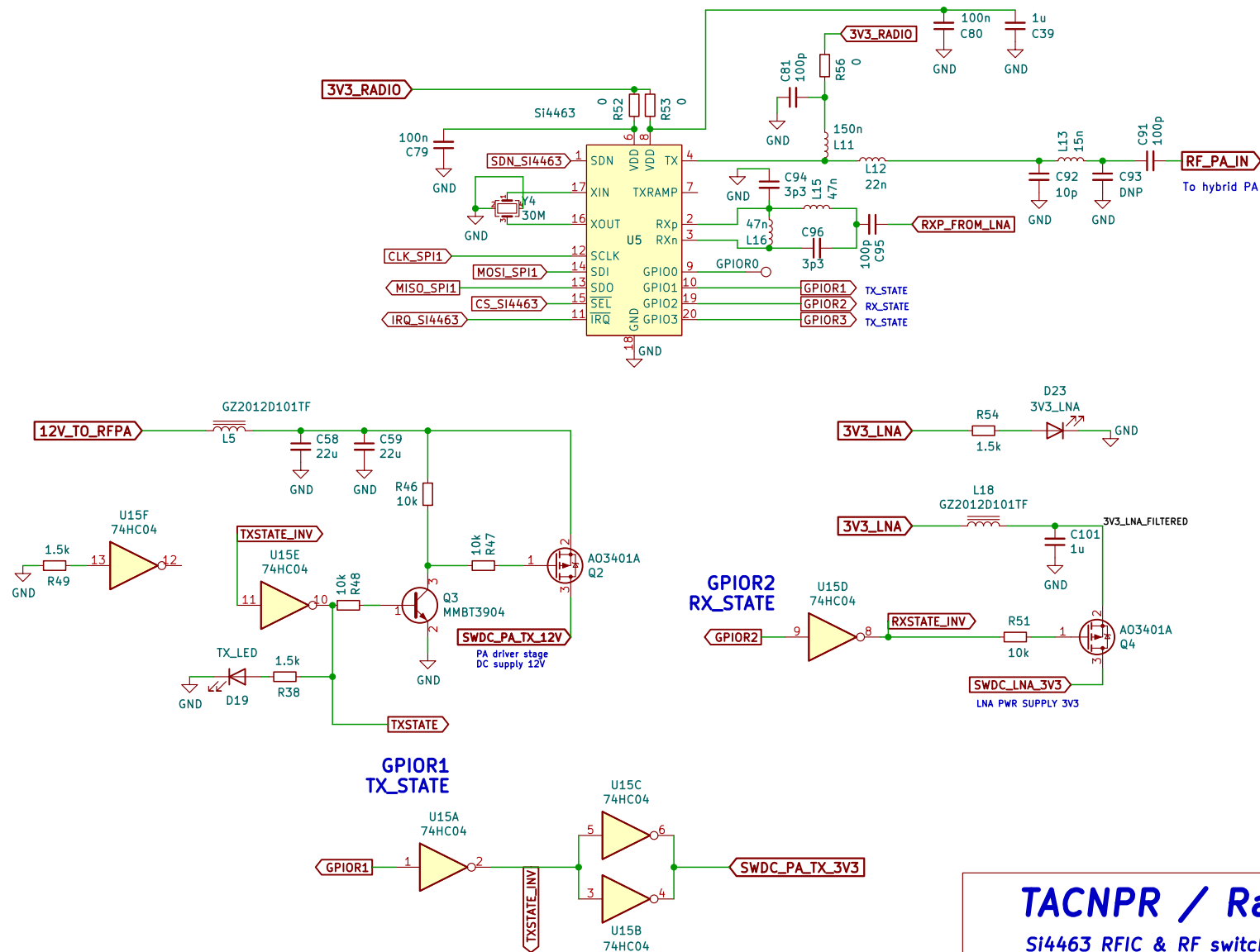
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Date:

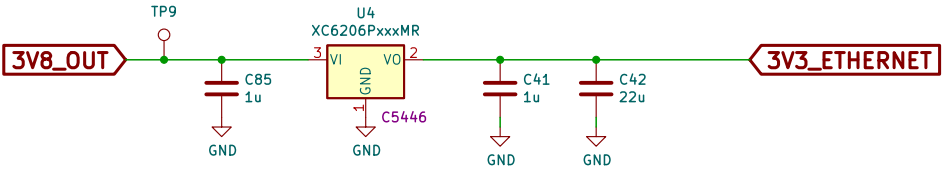
KiCad E.D.A. kicad 6.0.2+dfsg-1

Rev: B

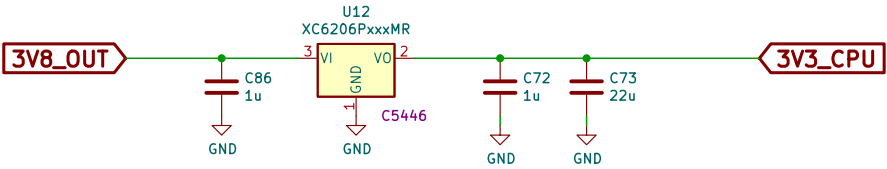
Id: 3/7



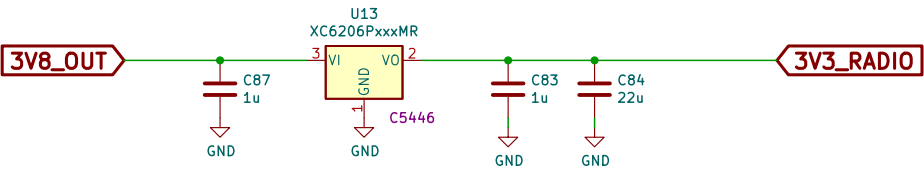
3V3 for Ethernet transceiver



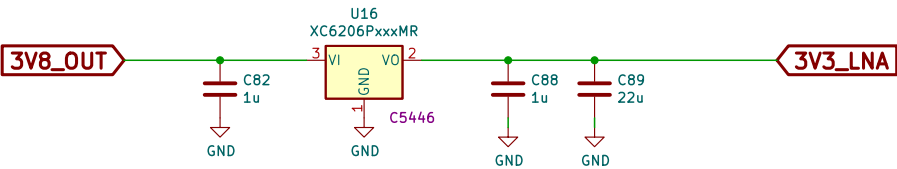
3V3 for STM32 CPU



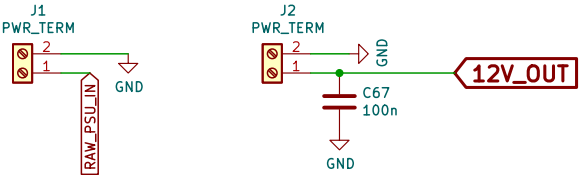
3V3 for Si4463 radio chip



3V3 for LNA



Screw terminals



# TACNPR / regulators & terminals

3V8 -> 3V3 LDO linear regulators & screw terminals

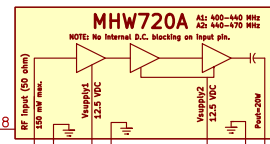
Sheet: /linear-regs/  
File: linreg-sheet.kicad\_sch

Title: TACNPR (linear regulators)

Size: A4 Date:  
KiCad E.D.A. kicad 6.0.2+dfsg-1

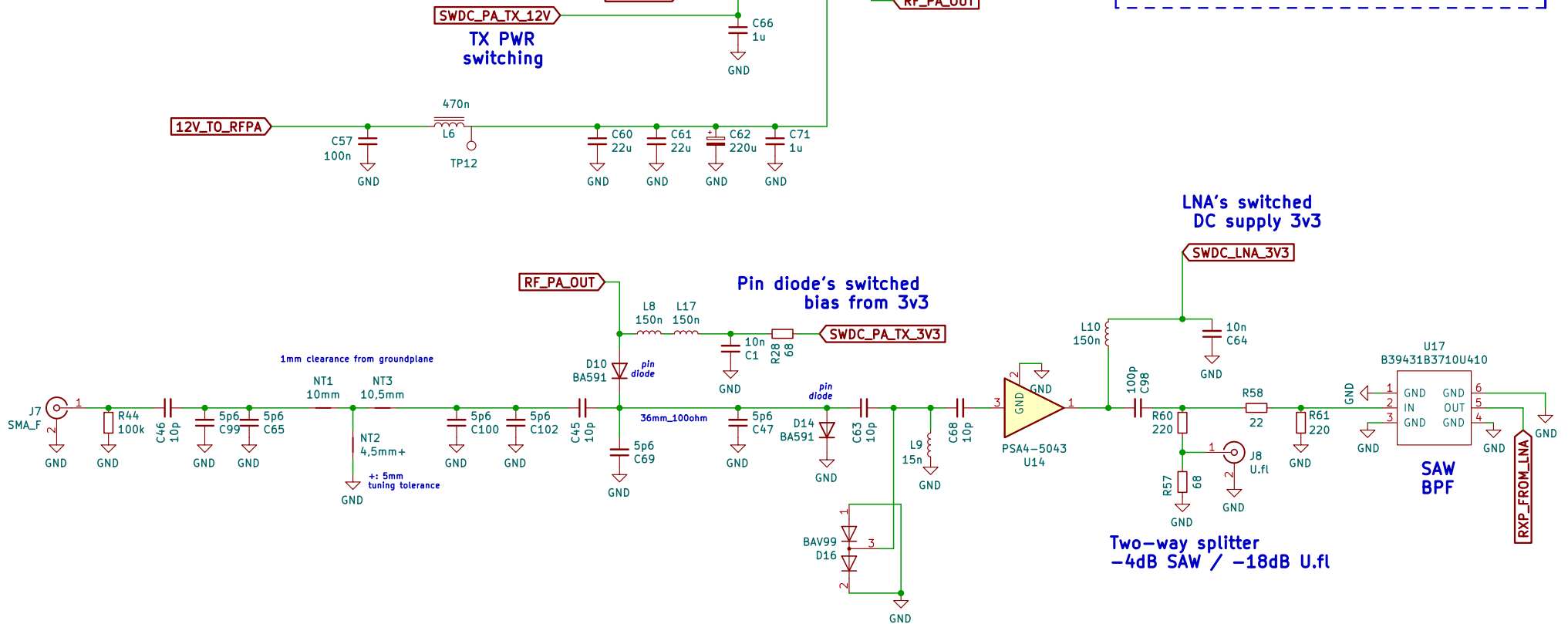
Rev: B  
Id: 5/7

## MHW720A



RF strip widths  
on the keepout area:

50 ohm: 2 mm (millimeters)  
100 ohm: 0,5 mm



## TACNPR / RF PA & TRX switch

Motorola MHW720A 20W RF PA, design & simulations: Tatu OH2EAT

Sheet: /RF-PA/

File: RF-PA-sheet.kicad\_sch

Title: TACNPR (RF PA & LNA)

Size: A4

Date:

KiCad E.D.A. kicad 6.0.2+dfsg-1

Rev: B

Id: 6/7

