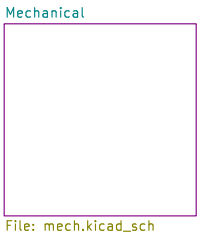
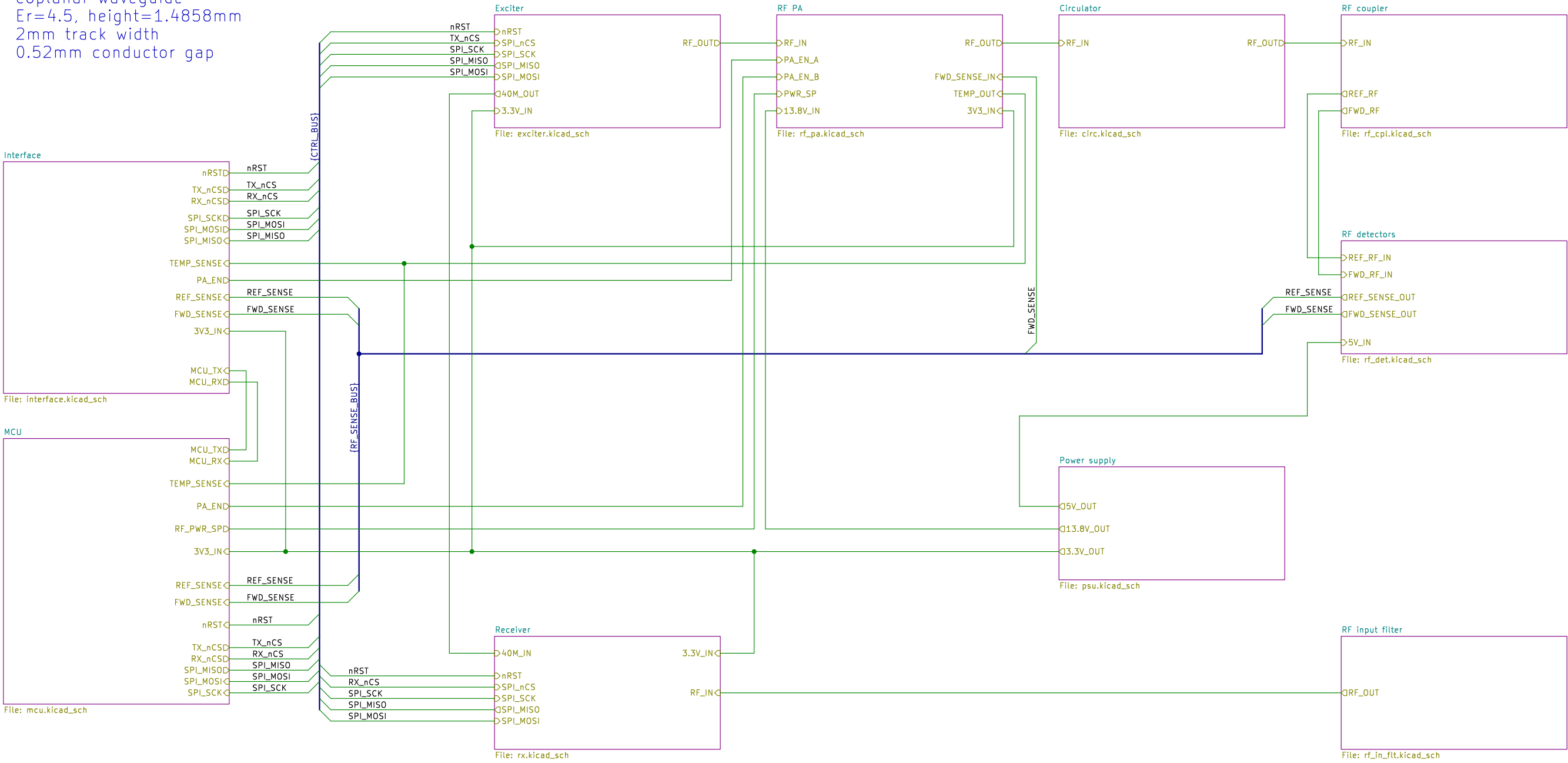


Low power RF tracks:  
coplanar waveguide  
Er=4.4, height=0.2104mm  
0.25mm track width  
0.052mm conductor gap

High power RF tracks:  
coplanar waveguide  
Er=4.5, height=1.4858mm  
2mm track width  
0.52mm conductor gap

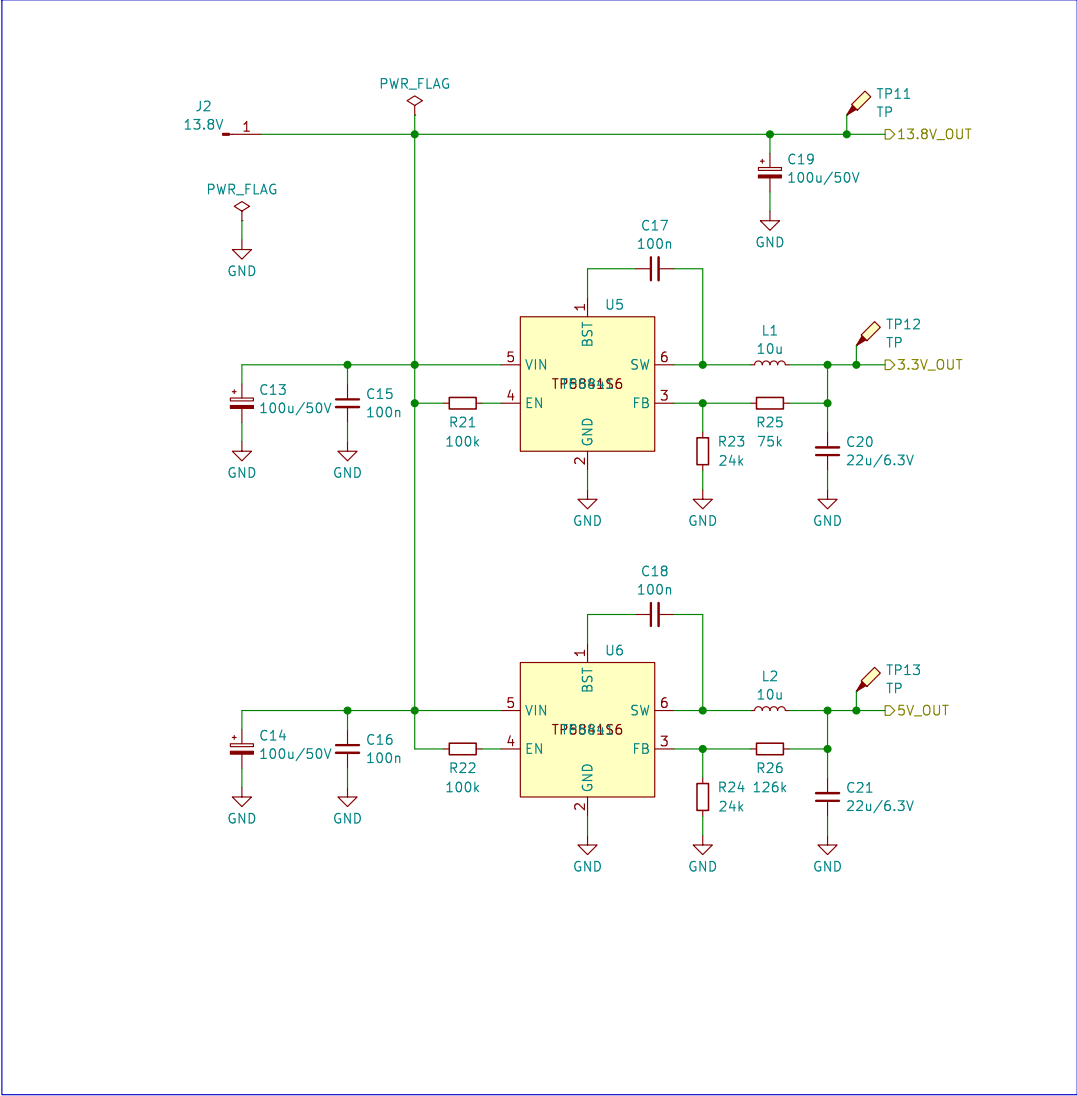


[illegible]

The schematic diagram illustrates the RF front end circuit. It features an LMT87LPM precision centertap diode (J1) connected to a 3V3\_IN supply through a 100nF capacitor (C10) and a 1uF capacitor (C12). The diode's output is connected to the input of the RA60H3847H1 RF front end (U4). The RF front end is powered by RF\_PA\_VGG and RF\_PA\_VDD. The output of the RF front end is RF\_OUT.

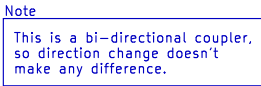
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Voltage reg.



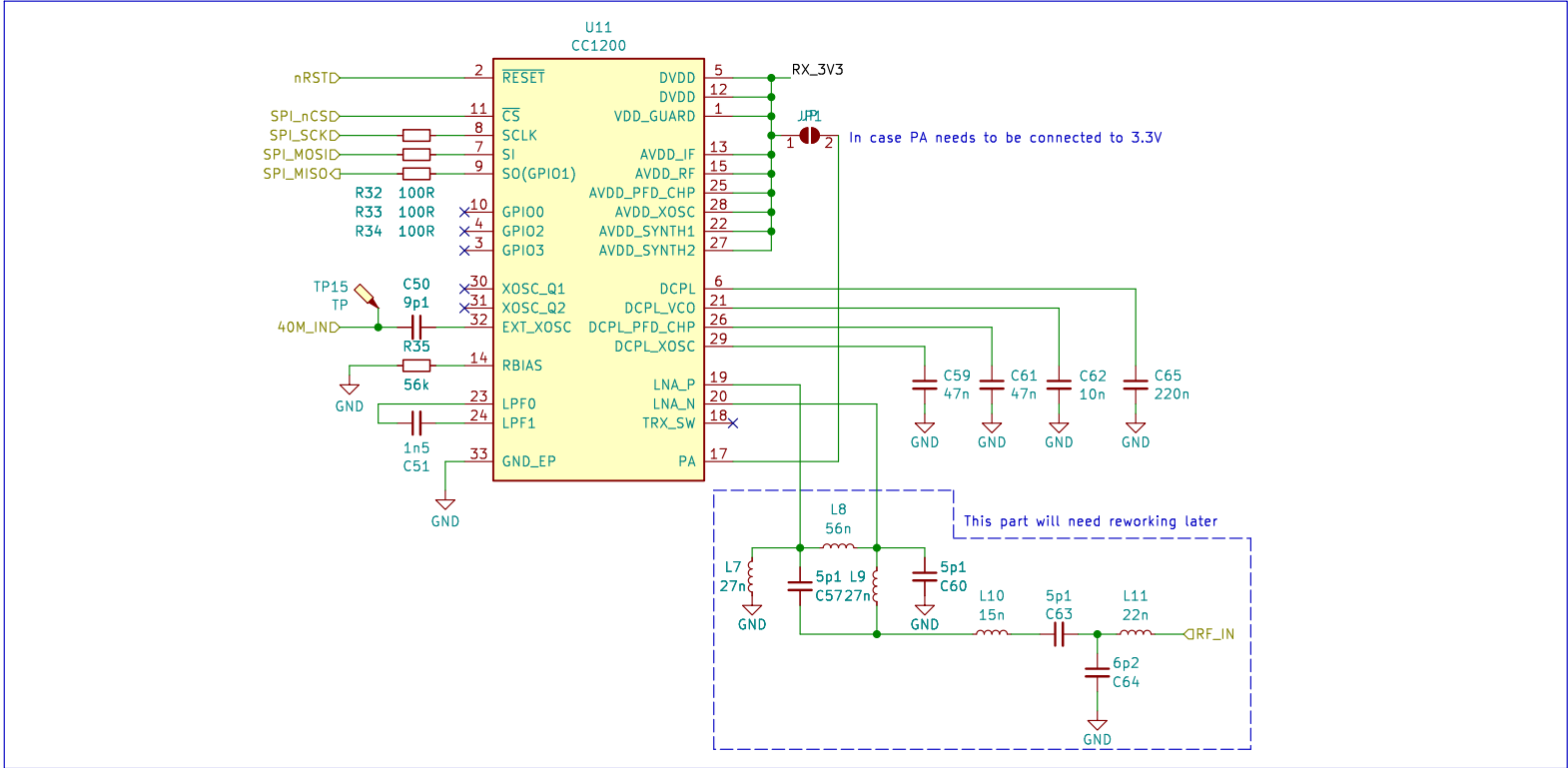
The schematic diagram illustrates the internal components and external connections of the CC1200 module (U7). The module is powered by EXCITER\_3V3 and has various control pins (nRST, SPI, SCL, SI, SO, GPIO) and status pins (DVPD, VDD\_GUARD, AVDD\_IF, AVDD\_RF, AVDD\_PFD\_CHP, AVDD\_XOSC, AVDD\_SYNTH1, AVDD\_SYNTH2). The module includes a 40MHz oscillator (X1) and a 40MHz output filter (L3). The output of the module is connected to a 2.4GHz output filter (L4, L5, L6) and a 2.4GHz output pin (RF\_OUT).

The diagram illustrates a 3.3V power distribution network (PDN) layout. The main power rail is a horizontal green line. At the left end, it is connected to a source labeled 'EXCITER\_3V3'. A 'PWR\_FLAG' is connected to this source. Along the rail, there are several bypass capacitors connected to ground (GND) via red arrows. The capacitors are labeled as follows: C23 (47n), C24 (47n), C26 (47n), C28 (47n), C29 (47n), C30 (47n), C31 (47n), C32 (47n), C33 (47n), and C35 (100n). At the right end of the rail, there is a load labeled 'Q3.3V\_IN'. An 'FB3 Bead' is connected to the rail just before the load. The entire diagram is set against a light blue background with a white grid.

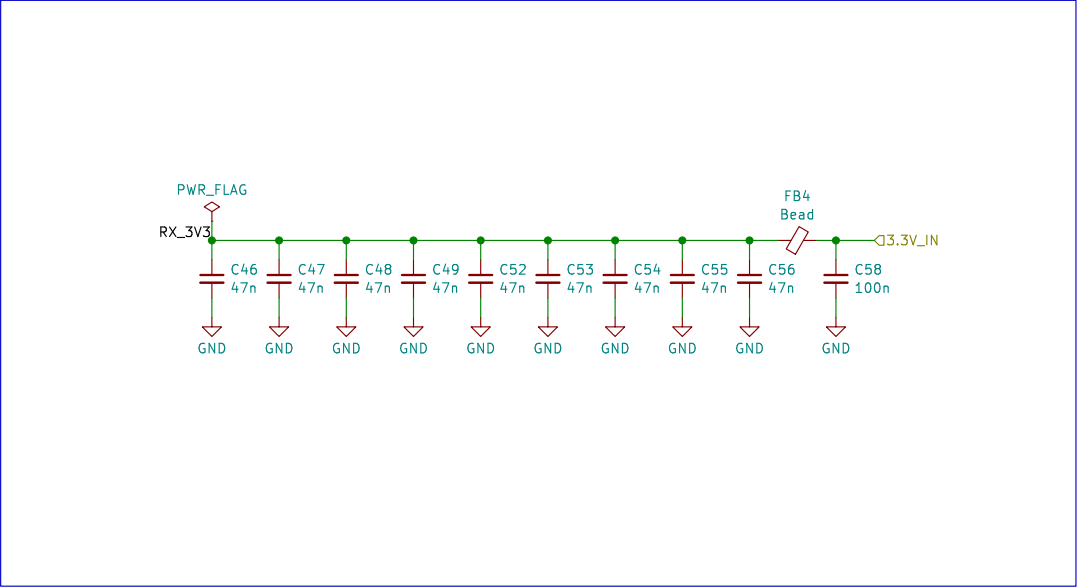


Id: 5/12

Receiver



Decoupling



Wojciech Kaczmarek, SP5WWP

M17 Project

Sheet: /Receiver/

File: rx.kicad\_sch

Title: Remote Radio Unit – RF board

Size: A3

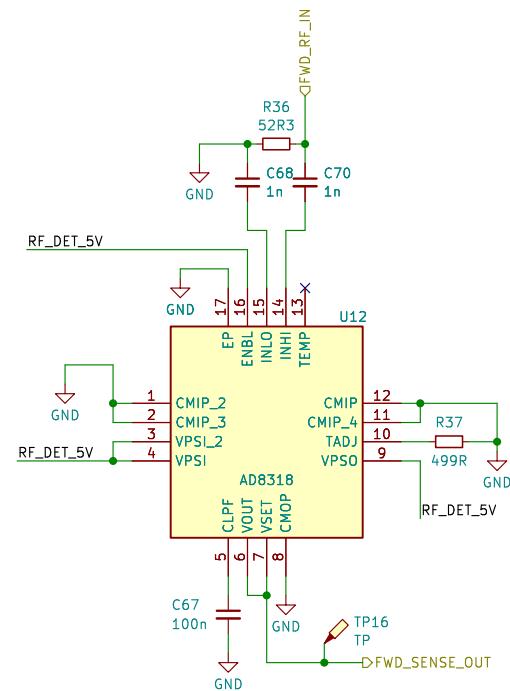
Date: 31–10–2023

Rev: A

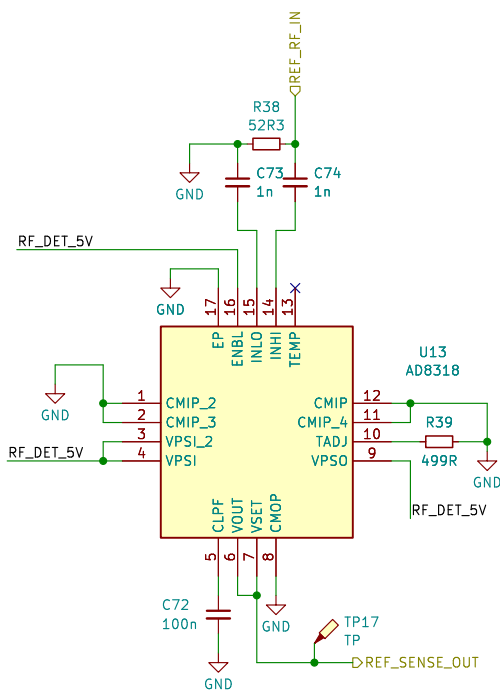
KiCad E.D.A. kicad 7.0.8

Id: 6/12

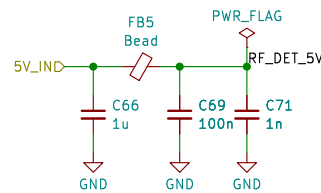
FWD power sense



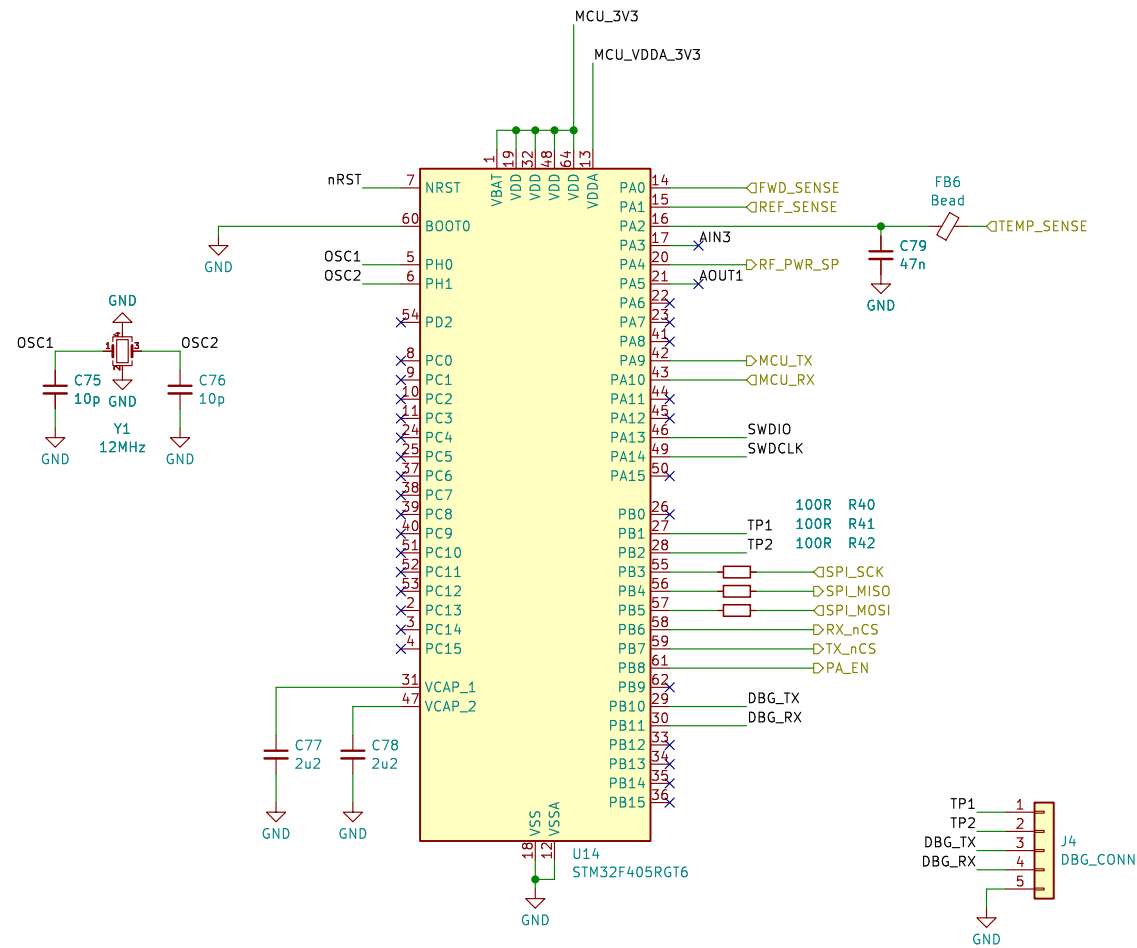
REF power sense



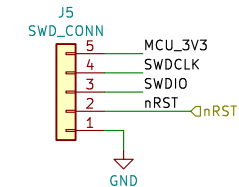
Decoupling



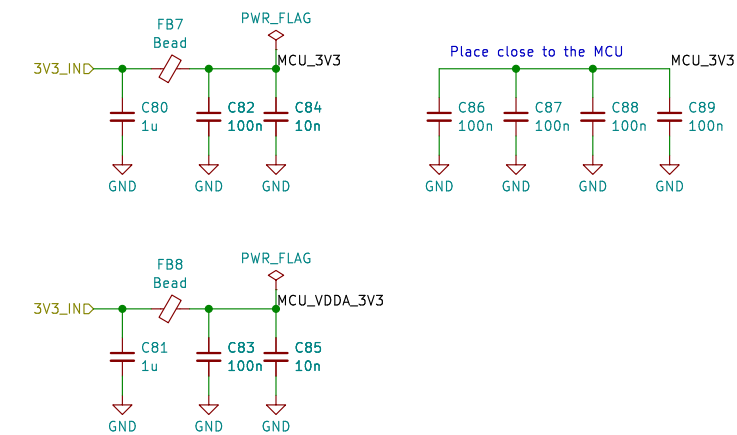
## MCU



## SWD



## Decoupling



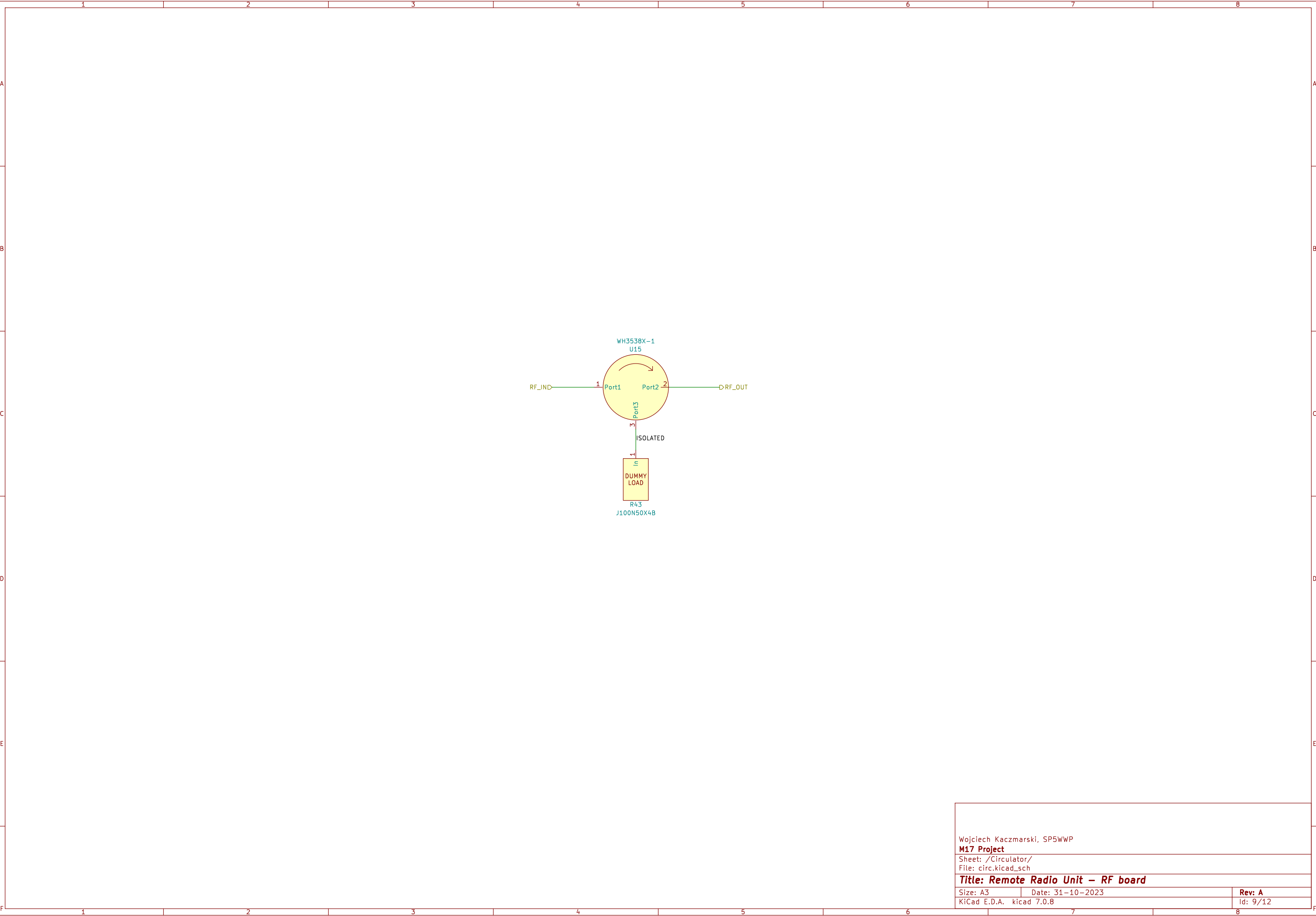
Wojciech Kaczmarek, SP5WWP  
M17 Project  
Sheet: /MCU/  
File: mcu.kicad\_sch

**Title: Remote Radio Unit – RF board**

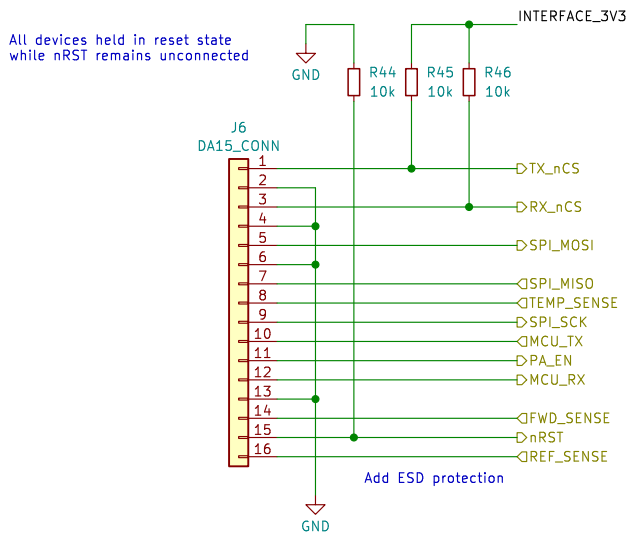
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Rev: A  
Id: 8/12

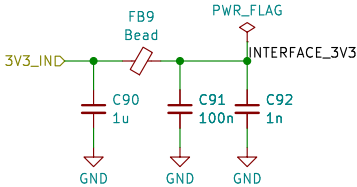


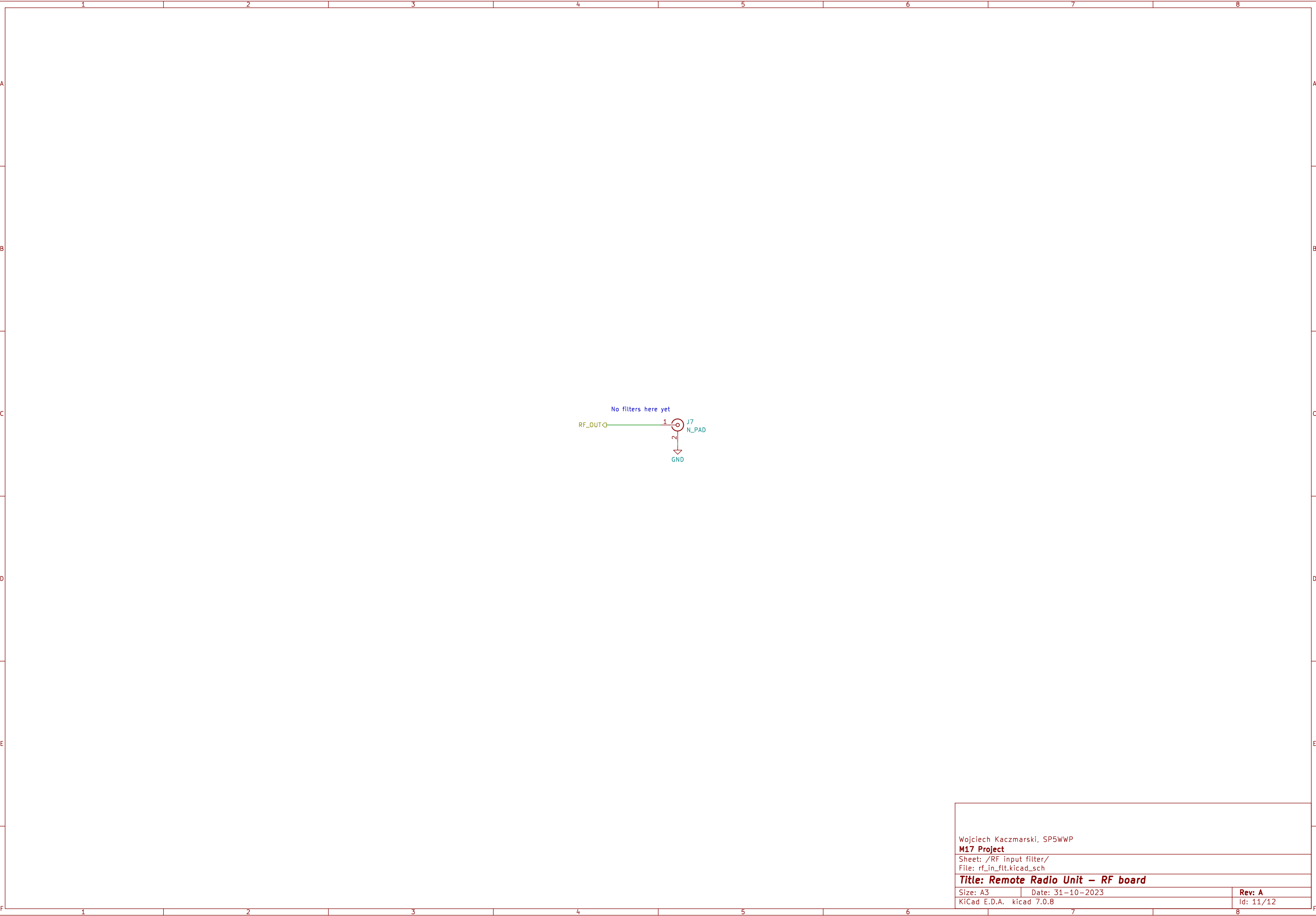


External connector



Decoupling

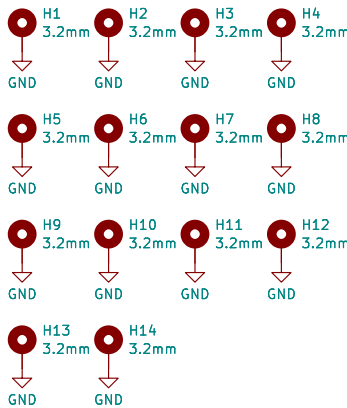




Fiducials



Mounting holes



Graphics



Wojciech Kaczmarek, SP5WWP  
**M17 Project**  
Sheet: /Mechanical/  
File: mech.kicad\_sch

**Title: Remote Radio Unit – RF board**

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| KiCad E.D.A. kicad 7.0.8 |                  | Id: 12/12 |