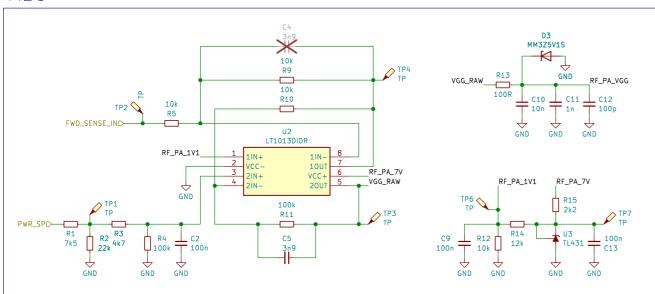
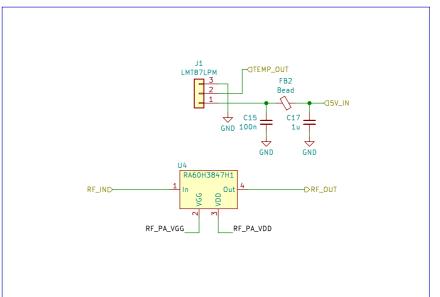
Low power RF tracks: coplanar waveguide Er=4.4, height=0.2104mm 0.25mm track width 0.052mm conductor gap High power RF tracks: coplanar waveguide RF PA RF coupler Circulator Er=4.5, height=1.4858mm 2mm track width RF\_OUT ORF\_IN RF\_OUT[ >RF\_IN RF IN RF\_OUTD 0.52mm conductor gap >PA\_EN\_A >PA\_EN\_B FWD\_SENSE\_IN< >PWR\_SP TEMP\_OUT OREF\_RF >13.8V\_IN 5V\_IN< DFWD\_RF File: rf\_pa.kicad\_sch File: circ.kicad\_sch File: rf\_cpl.kicad\_sch TX\_nCS RX\_nCS TX\_nCSD RX\_nCSD SPI\_SCK SPI\_MOSI SPI\_MISO SPI\_SCKD SPI\_MOSID RF detectors >REF\_RF\_IN TEMP\_SENSE FWD\_RF\_IN PA\_ENG REF\_SENSE\_OUT REF\_SENSE REF\_SENSE< FWD\_SENSE OFWD\_SENSE\_OUT FWD\_SENSE FWD\_SENSE 3V3\_IN< >5V\_IN ВООТО File: rf\_det.kicad\_sch MCU\_TX< File: interface.kicad\_sch MCU\_RX< Power supply воото TEMP\_SENSE< PA\_ENG D5V\_OUT RF\_PWR\_SP[ 013.8V\_0UT 3V3\_IN REF\_SENSE REF\_SENSE< File: psu.kicad\_sch FWD\_SENSE FWD\_SENSE< nRST nRST RF input filter >40M\_IN 3.3V\_IN< RX\_nCS
SPI\_SCK
SPI\_MISO
SPI\_MOSI
RX\_SAMP\_CLK ->nksi ->spi\_ncs ->spi\_sck -dspi\_miso ->spi\_mosi -drx\_samp\_clk RX\_SAMP\_CLK< File: mcu.kicad\_sch File: rx.kicad\_sch File: rf\_in\_flt.kicad\_sch Mechanical Wojciech Kaczmarski, SP5WWP M17 Project Sheet: / File: m17-rru-rf.kicad\_sch Title: Remote Radio Unit - RF board Size: A3 Date: 19-01-2024 KiCad E.D.A. kicad 7.0.8 File: mech.kicad\_sch

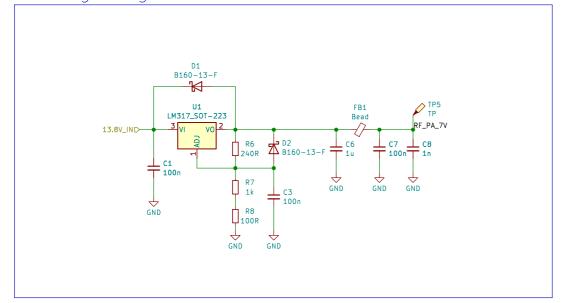
#### ALC



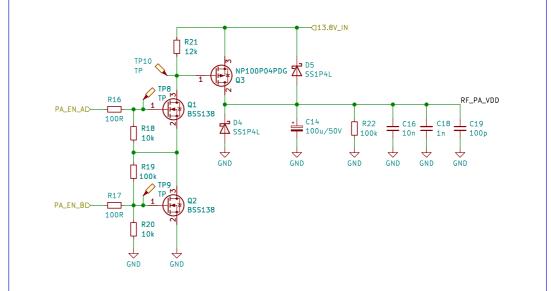
#### RF PA



## Voltage reg.



## Supply switching



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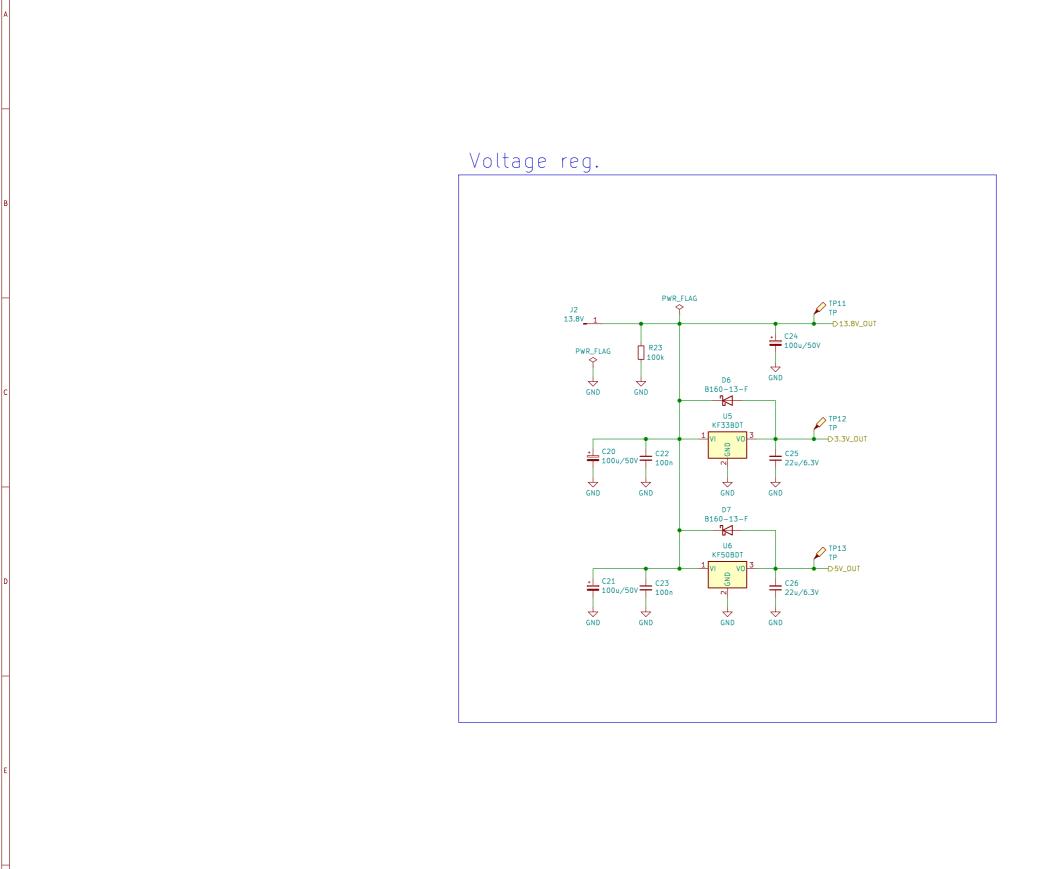
M17 Project

Sheet: /RF PA/
File: rf\_pa.kicad\_sch

Title: Remote Radio Unit - RF board

Size: A3 Date: 19-01-2024 Rev: B

KiCad E.D.A. kicad 7.0.8



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M17 Project

Sheet: /Power supply/
File: psu.kicad\_sch

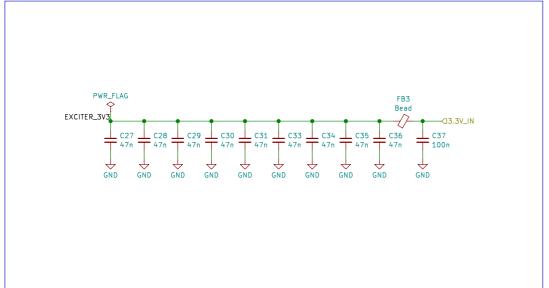
Title: Remote Radio Unit — RF board

Size: A3 Date: 19-01-2024 Rev: B

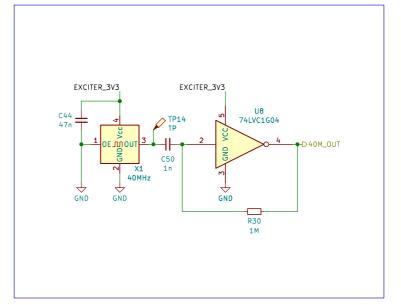
KiCad E.D.A. kicad 7.0.8 Id: 3/12

#### Exciter R24 100R R25 100R R26 100R \_EXCITER\_3V3 SPI\_nCSD— SPI\_SCKD— SPI\_MOSID— SPI\_MISO ()— AVDD\_II AVDD\_IF AVDD\_RF AVDD\_PFD\_CHP AVDD\_XOSC AVDD\_SYNTH1 AVDD\_SYNTH2 TX\_SAMP\_CLK < XOSC\_Q1 DCPL\_VCO EXT\_XOSC DCPL\_PFD\_CHP DCPL\_XOSC \_EXCITER\_3V3 40M\_0UT⊲ R28 56k L4 22n 1n5 C32 39p C42 C47 5p1

# Decoupling



### 40MHz reference



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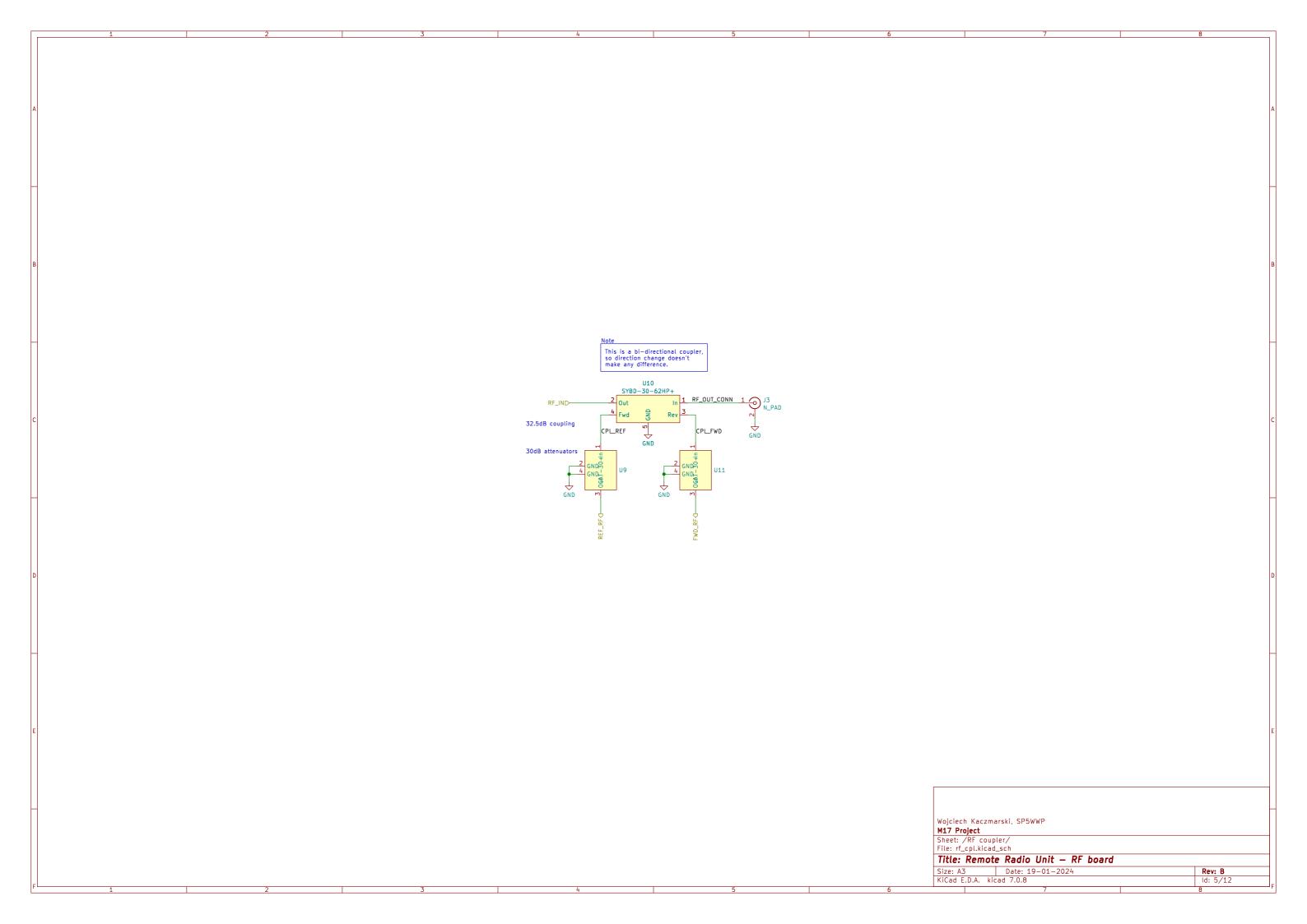
M17 Project

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File: exciter.kicad\_sch

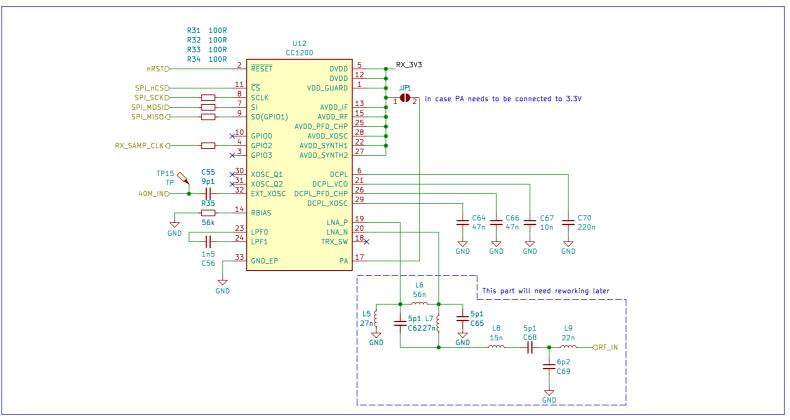
Title: Remote Radio Unit - RF board

Size: A3 Date: 19-01-2024 Rev: B

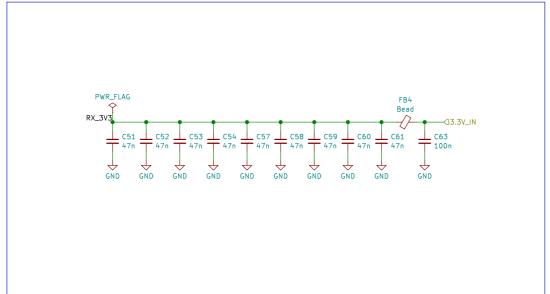
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#### Receiver



## Decoupling

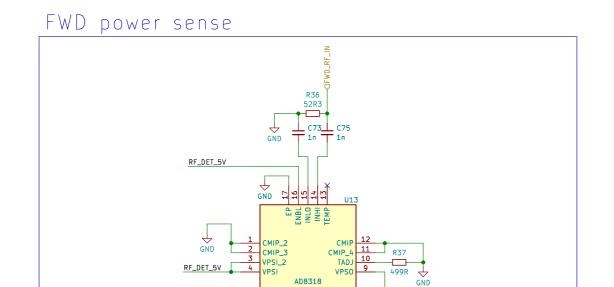


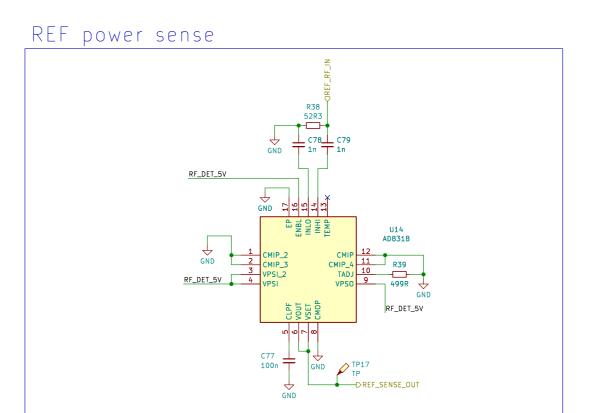
Wojciech Kaczmarski, SP5WWP M17 Project

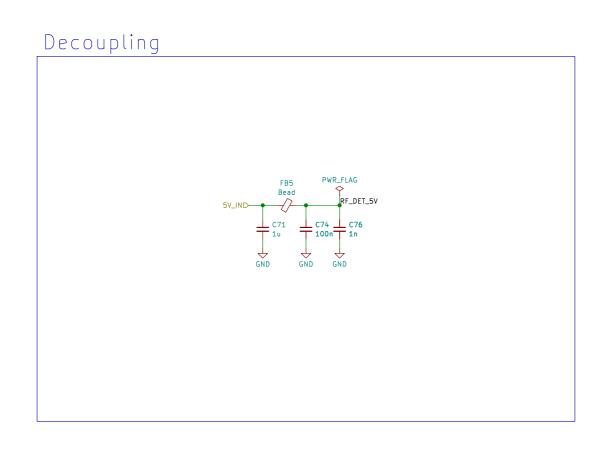
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Title: Remote Radio Unit — RF board

Size: A3 Date: 19-01-2024 KiCad E.D.A. kicad 7.0.8







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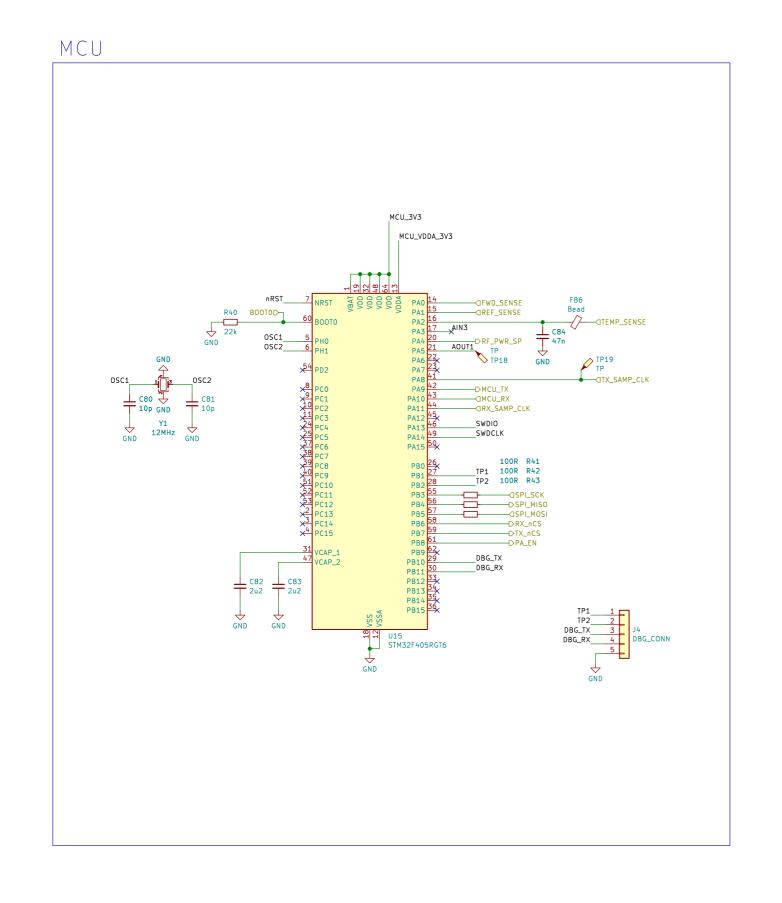
M17 Project

Sheet: /RF detectors/
File: rf\_det.kicad\_sch

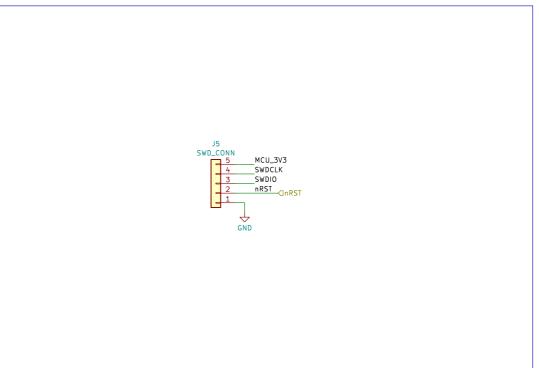
Title: Remote Radio Unit — RF board

Size: A3 Date: 19-01-2024 Rev: B

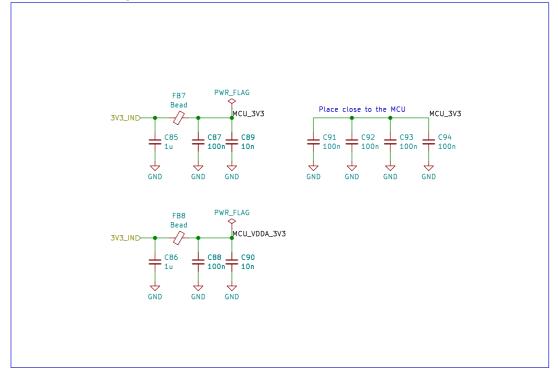
KiCad E.D.A. kicad 7.0.8 Id: 7/12







Decoupling



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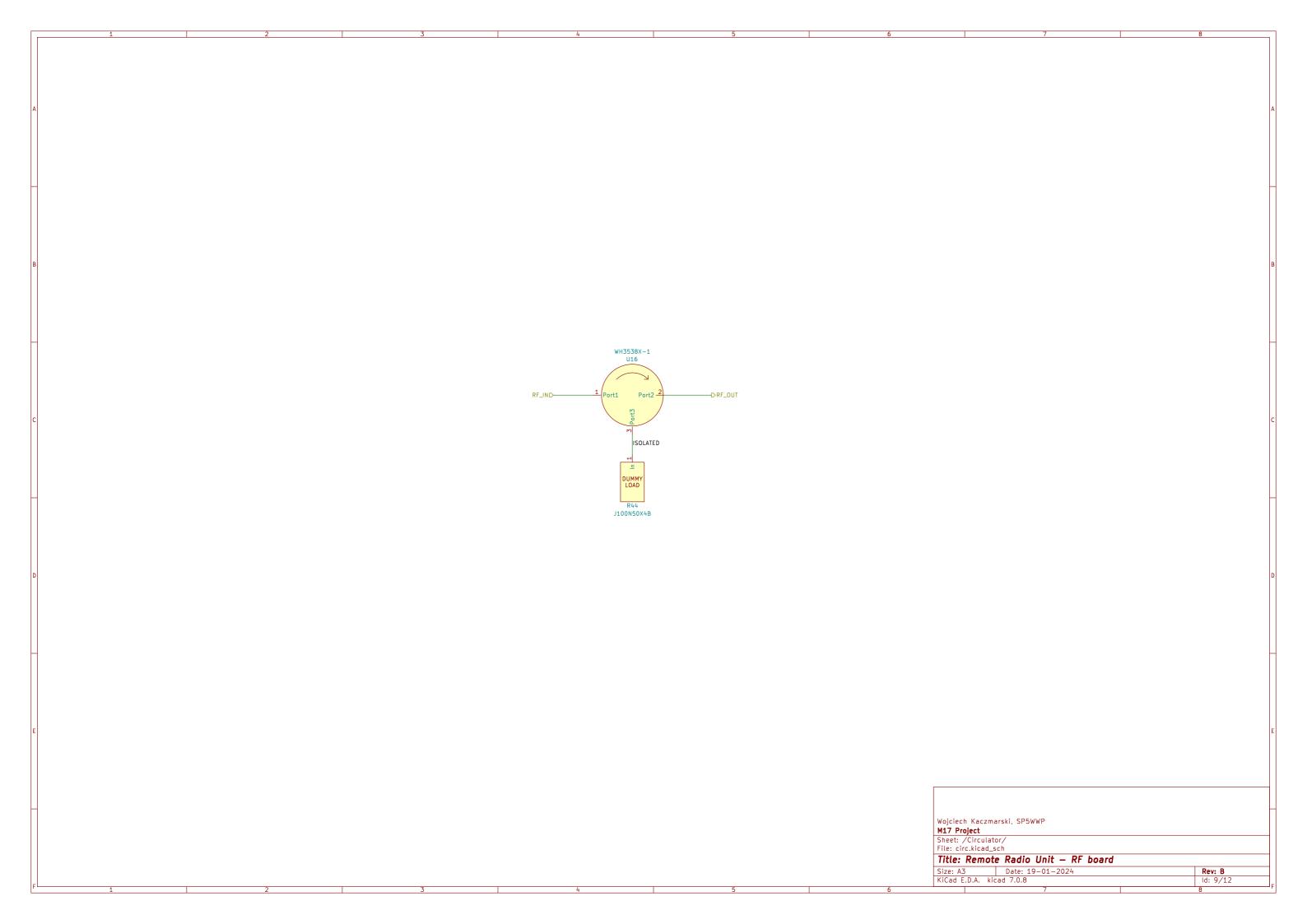
M17 Project

Sheet: /MCU/
File: mcu.kicad\_sch

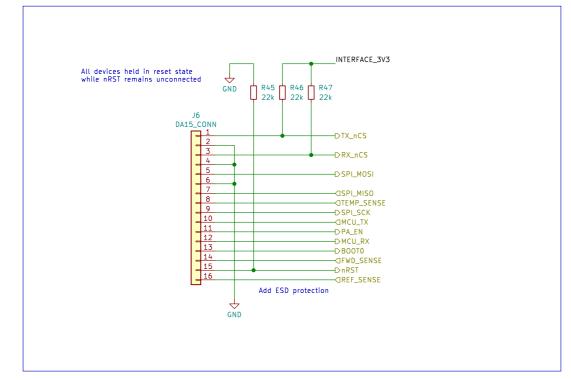
Title: Remote Radio Unit — RF board

Size: A3 Date: 19-01-2024 Rev: B

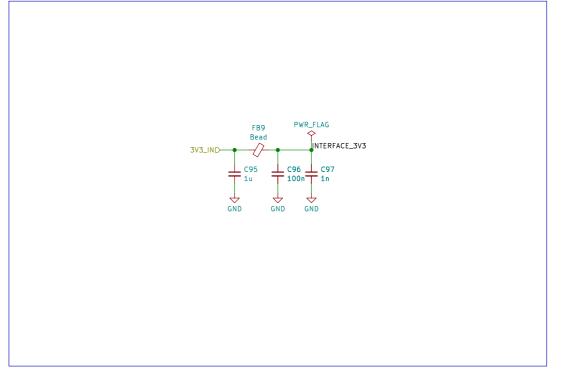
KiCad E.D.A. kicad 7.0.8 Id: 8/12



### External connector



## Decoupling



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M17 Project

Sheet: /Interface/
File: interface.kicad\_sch

Title: Remote Radio Unit — RF board

Size: A3 Date: 19-01-2024 Rev: B

KiCad E.D.A. kicad 7.0.8 Id: 10/12

