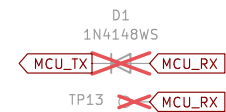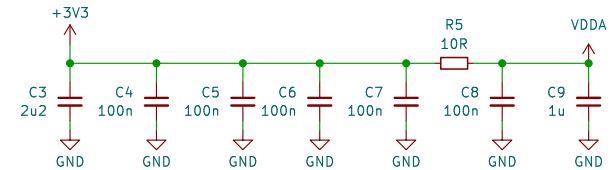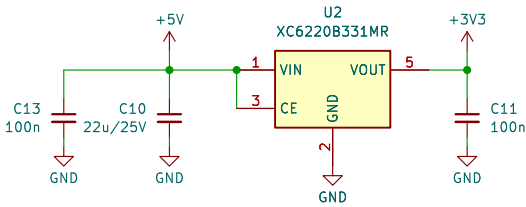MCU

File: mcu.kicad_sch

Power supply

File: psu.kicad_sch

Filtering

File: fltrs.kicad_sch

Pins

File: pins.kicad_sch

Title: Micro17 – OpenRTX on a Module for ICOM radios

| Size: A4 | Date: 2024-04-04 | Rev: A |
| KiCad E.D.A. 8.0.4 | | Id: 1/5 |

Schematic

Y1 8 MHz
C1 2p2
C2 2p2
GND
X1 X2
GND

+3V3
RST
SWCLK
SWDIO
J1 Conn_01x05
GND

+3V3
R5 10R
VDDA
C3 2u2
C4 100n
C5 100n
C6 100n
C7 100n
C8 100n
C9 1u
GND

VDDA
R1 36k
VERSION_SET
R2 12k
GND

PA1:ADC12_IN2
PA2:ADC1_IN3
PA3:ADC1_IN4,
PB13:ADC3_IN5

PA4:DAC1_OUT1
PA5:DAC1_OUT2

TP11
+3V3
VDDA

VREF+
VDDA
20 VREF+   PA0   8
7   PG10   PA1   9   BASEBAND_IN_FILT
RST   PA2   10   AUDIO_IN_FILT
5   PF0   PA3   11   VERSION_SET
X1 6   PF1   PA4   12   BASEBAND_OUT
X2   PA5   13   AUDIO_OUT
16 PC4   PA6   14   PTT_OUT
29 PC6   PA7   15   BASEBAND_BYPASS
39 PC10   PA8   30
40 PC11   PA9   31   MCU_TX   USART1
GND   PA10 32   MCU_RX
R29 12k   PA11 33   USB_DN
2   PC13   PA12 34   USB_DP
PTT_IN 3   PC14 PA13 36   SWDIO
R4 10k 4   PC15 PA14 37   SWCLK
17 PB0   PA15 38   I2C_SCL
AUDIO_OUT_MUTE 18 PB1
19 PB2
41 PB3
42 PB4
43 PB5
44 PB6
45 PB7
46 PB8
47 PB9   I2C_SDA
R3 10k 22 PB10   USART3_TX
BOOT0   24 PB11   USART3_RX
GND   TP14
USART3_RX R30 25 PB12
10k   26 PB13   TP12
27 PB14
28 PB15
VSS 49
U1 STM32G473CCUx
GND

VBAT VDD VDD VDD VDDA
23   53 55 48 21

D1 1N4148WS
MCU_TX   MCU_RX
TP13   MCU_RX

J4 USB_B_Micro
VBUS → +5V
USB_DP
USB_DN
Shield
ID
GND GND
VDDA

Mutlu TA1MD
Mano ON6RF
M17 Project, OpenRTX
Wojciech SP5WWP, Mano ON6RF, Mutlu TA1MD et al.

Sheet: /MCU/
File: mcu.kicad_sch

Title: Micro17 — OpenRTX on a Module for ICOM radios

Size: A4	Date: 2024-09-10		**Rev: B**
KiCad E.D.A. 8.0.4			Id: 2/5

U2
XC6220B331MR

+5V

+3V3

VIN
VOUT 5

1

CE
GND

3

2

GND

C13
100n

C10
22u/25V
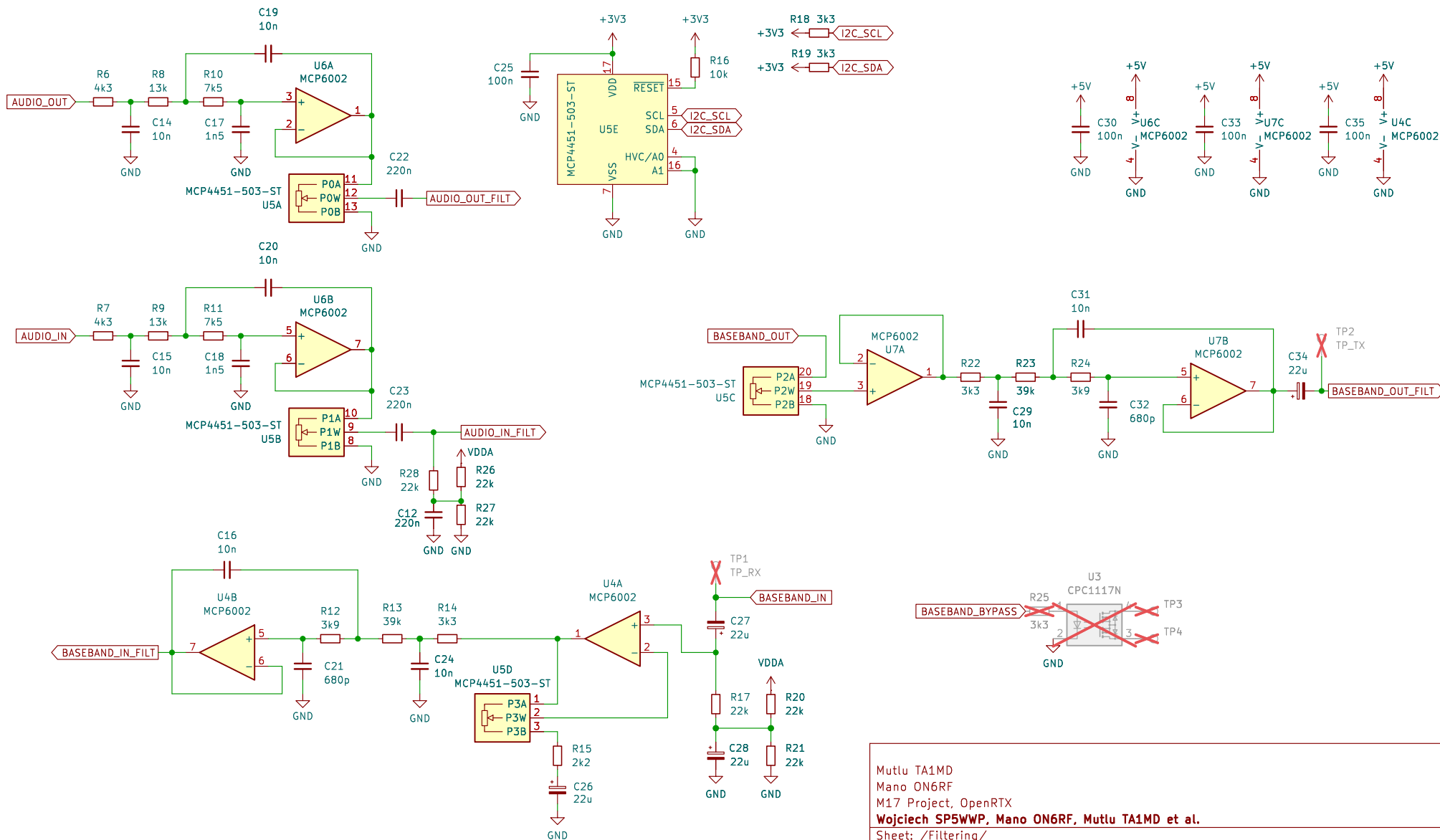
C11
100n

GND

GND

GND

GND

Mutlu TA1MD
Mano ON6RF
M17 Project, OpenRTX
Wojciech SP5WWP, Mano ON6RF, Mutlu TA1MD et al.

Sheet: /Power supply/
File: psu.kicad_sch

Title: Micro17 — OpenRTX on a Module for ICOM radios

Size: A4 | Date: 2024-04-04 | Rev: A
KiCad E.D.A. 8.0.4 | Id: 3/5

This page is a KiCad schematic diagram.
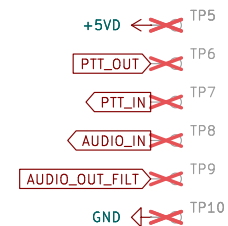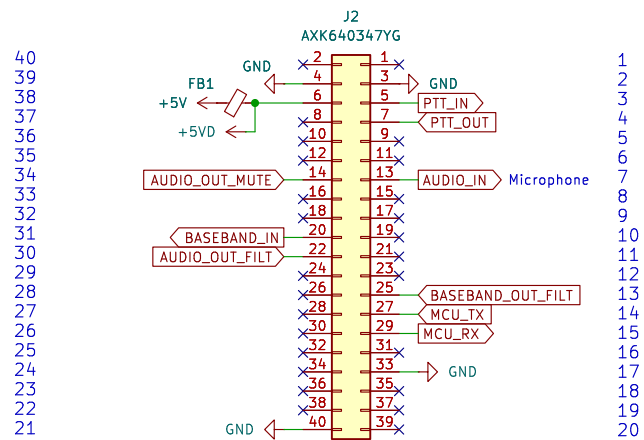

Title block:

Mutlu TA1MD
Mano ON6RF
M17 Project, OpenRTX
Wojciech SP5WWP, Mano ON6RF, Mutlu TA1MD et al.

Sheet: /Filtering/
File: fltrs.kicad_sch

Title: Micro17 — OpenRTX on a Module for ICOM radios

Size: A4	Date: 2024-04-04	**Rev: A**
KiCad E.D.A. 8.0.4		Id: 4/5

Component labels and values:

- AUDIO_OUT — R6 4k3, R8 13k, R10 7k5, C14 10n, C17 1n5, C19 10n, U6A MCP6002, C22 220n
- U5A MCP4451-503-ST: P0A 11, P0W 12, P0B 13 — AUDIO_OUT_FILT
- C25 100n — U5E MCP4451-503-ST: VDD 17, RESET 15, SCL 5, SDA 6, HVC/A0 4, A1 16, VSS 7 — I2C_SCL, I2C_SDA
- R16 10k, +3V3
- R18 3k3 — I2C_SCL, R19 3k3 — I2C_SDA
- +5V: C30 100n, U6C MCP6002; C33 100n, U7C MCP6002; C35 100n, U4C MCP6002
- AUDIO_IN — R7 4k3, R9 13k, R11 7k5, C15 10n, C18 1n5, C20 10n, U6B MCP6002, C23 220n
- U5B MCP4451-503-ST: P1A 10, P1W 9, P1B 8 — AUDIO_IN_FILT
- R28 22k, R26 22k, C12 220n, R27 22k, VDDA
- BASEBAND_OUT — U5C MCP4451-503-ST: P2A 20, P2W 19, P2B 18 — U7A MCP6002, R22 3k3, R23 39k, R24 3k9, C29 10n, C31 10n, C32 680p, U7B MCP6002, C34 22u — BASEBAND_OUT_FILT
- TP2 TP_TX
- BASEBAND_IN_FILT — U4B MCP6002, C16 10n, R12 3k9, R13 39k, R14 3k3, C21 680p, C24 10n, U5D MCP4451-503-ST: P3A 1, P3W 2, P3B 3, R15 2k2, C26 22u, U4A MCP6002 — TP1 TP_RX, BASEBAND_IN
- C27 22u, R17 22k, R20 22k, C28 22u, R21 22k, VDDA
- BASEBAND_BYPASS — R25 3k3, U3 CPC1117N, TP3, TP4

J2
AXK640347YG

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21

GND

FB1
+5V
+5VD

AUDIO_OUT_MUTE

BASEBAND_IN
AUDIO_OUT_FILT

GND

2   1
4   3   GND
6   5   PTT_IN
8   7   PTT_OUT
10 9
12 11
14 13   AUDIO_IN   Microphone
16 15
18 17
20 19
22 21
24 23
26 25   BASEBAND_OUT_FILT
28 27   MCU_TX
30 29   MCU_RX
32 31
34 33   GND
36 35
38 37
40 39

1
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+5VD ⬌ ⬍ TP5

PTT_OUT ⬌ ⬍ TP6

PTT_IN ⬌ ⬍ TP7

AUDIO_IN ⬌ ⬍ TP8

AUDIO_OUT_FILT ⬌ ⬍ TP9

GND ⬌ ⬍ TP10

Mutlu TA1MD
Mano ON6RF
M17 Project, OpenRTX
Wojciech SP5WWP, Mano ON6RF, Mutlu TA1MD et al.

Sheet: /Pins/
File: pins.kicad_sch

Title: Micro17 — OpenRTX on a Module for ICOM radios

Size: A4 | Date: 2024-04-04 | Rev: A
KiCad E.D.A. 8.0.4 | Id: 5/5