Sheet: STM32F777

File: STM32.sch

Sheet: Power Supply

File: PSU.sch

Sheet: Display

File: TFT.sch

Sheet: RF

File: RF.sch

Sheet: Audio

File: Audio.sch

Sheet: Connections

File: Connection.sch

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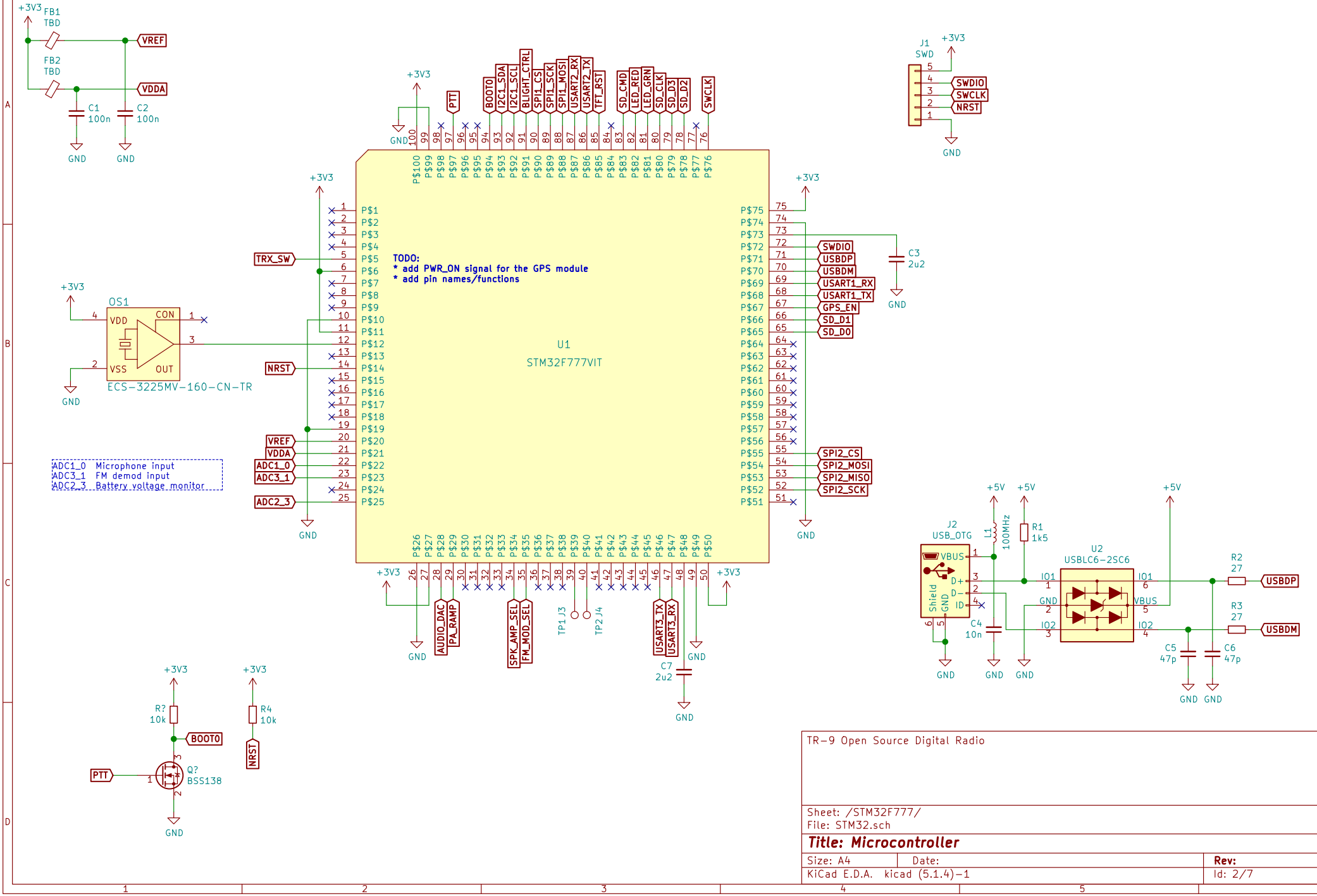
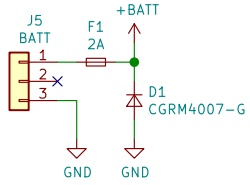
Sheet: /
File: Mainboard.sch

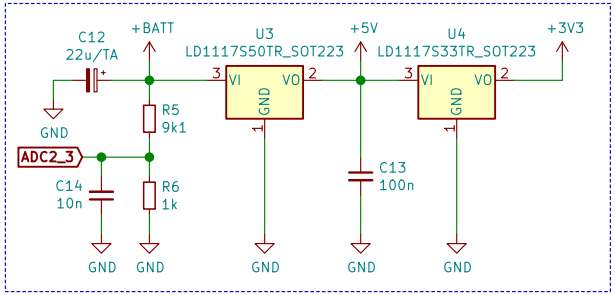
Title: TR-9 Mainboard

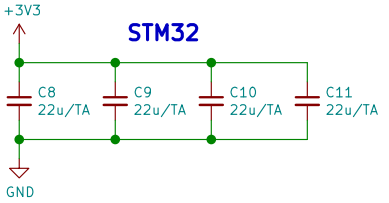
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 1/7

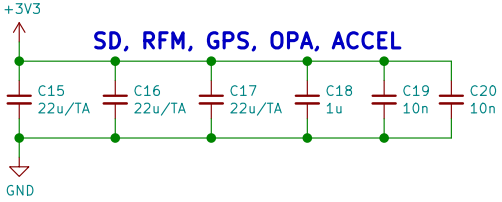

FB1
TBD
FB2
TBD
VREF
VDDA
C1
100n
C2
100n
GND
+3V3
J1
SWD
SWDIO
SWCLK
NRST
U1
STM32F777VIT
TODO:
* add PWR_ON signal for the GPS module
* add pin names/functions
TRX_SW
NRST
VREF
VDDA
ADC1_0
ADC3_1
ADC2_3
ADC1_0 Microphone input
ADC3_1 FM demod input
ADC2_3 Battery voltage monitor
OS1
ECS-3225MV-160-CN-TR
C3
2u2
SWDIO
USBDP
USBDM
USART1_RX
USART1_TX
GPS_EN
SD_D1
SD_D0
SPI2_CS
SPI2_MOSI
SPI2_MISO
SPI2_SCK
BOOT0
I2C1_SDA
I2C1_SCL
BLIGHT_CTRL
SPI1_CS
SPI1_SCK
SPI1_MOSI
USART2_RX
USART2_TX
TFT_RST
SD_CMD
LED_RED
LED_GRN
SD_CLK
SD_D3
SD_D2
SWCLK
PTT
AUDIO_DAC
PA_RAMP
SPK_AMP_SEL
FM_MOD_SEL
USART3_TX
USART3_RX
TP1 J3
TP2 J4
C7
2u2
J2
USB_OTG
L1
100MHz
R1
1k5
C4
10n
U2
USBLC6-2SC6
R2
27
R3
27
C5
47p
C6
47p
R?
10k
R4
10k
Q?
BSS138
TR-9 Open Source Digital Radio
Sheet: /STM32F777/
File: STM32.sch
Title: Microcontroller
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.4)-1
Id: 2/7

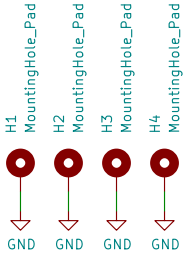


TODO: rework to include
* LiPo charger
* buck/boost for stable 7.5V to PA
* switching regulator to approx. 4V & 3.3V LDO
* more filtering
* Power switch









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Sheet: /Power Supply/
File: PSU.sch

Title: Power Supply

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 3/7

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Sheet: /Display/
File: TFT.sch

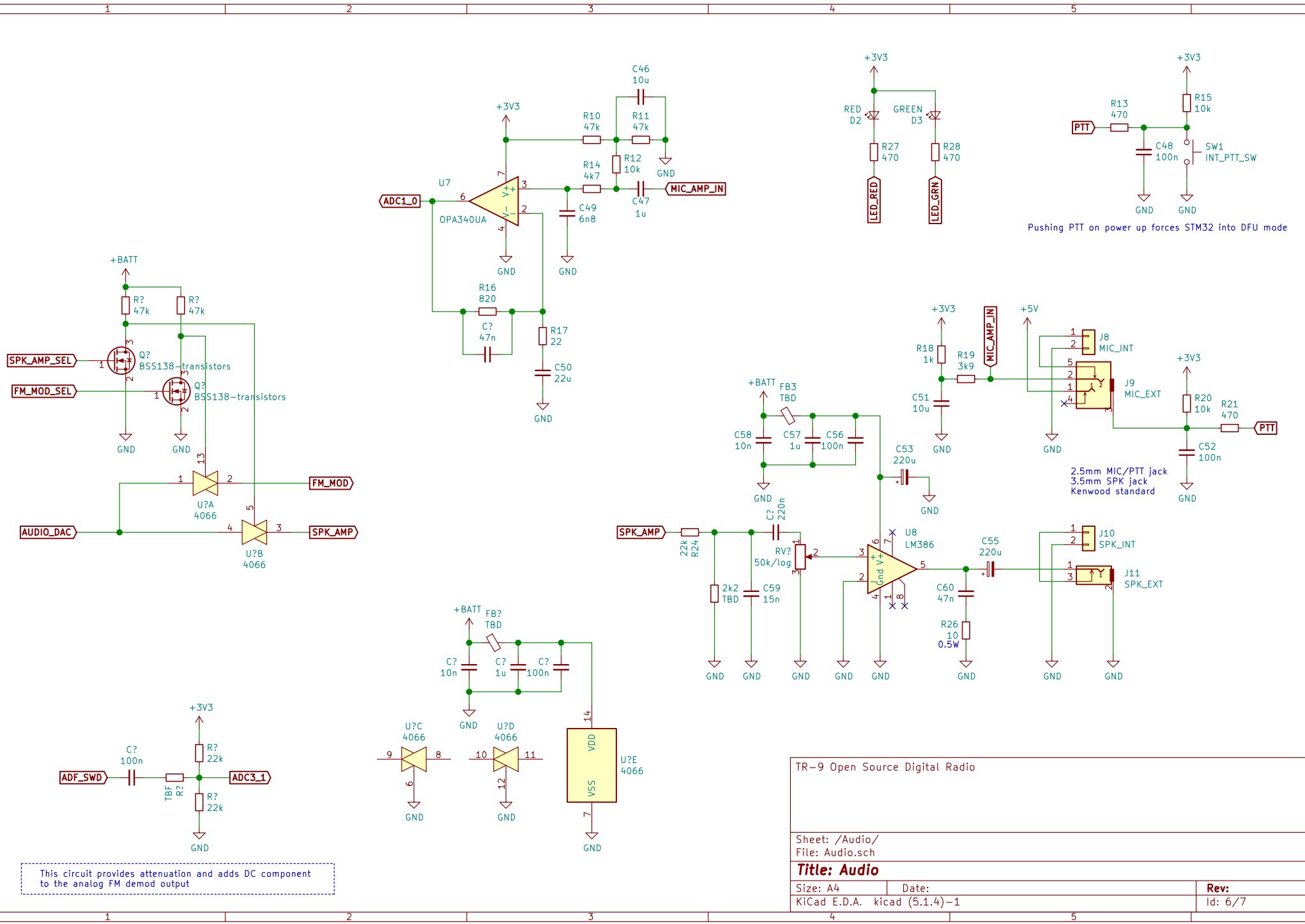
Title: HMI Board Connector

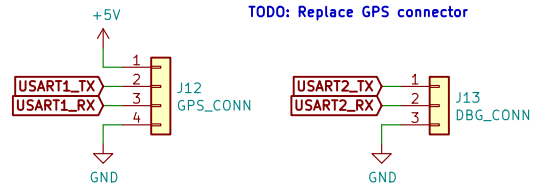
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 4/7

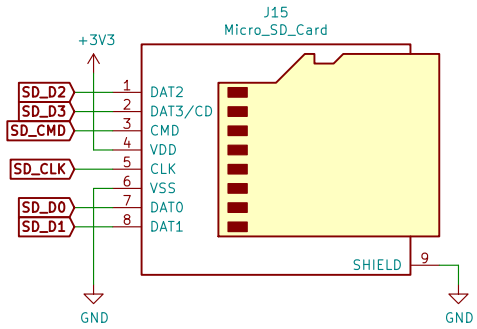
Voltage at this point should be 0.2-2V

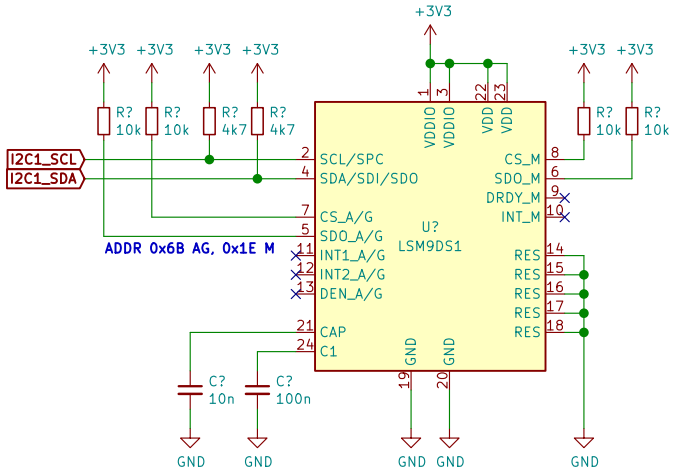
TODO: RX filtering

TR-9 Open Source Digital Radio	
Sheet: /RF/ File: RF.sch	
Title: RF circuit	
Size: A3	Date:
KiCad E.D.A. kicad (5.1.4)-1	Id: 5/7


+3V3
C46
10u
R10
47k
R11
47k
R12
10k
R14
4k7
GND
U7
ADC1_0
OPA340UA
C49
6n8
C47
1u
MIC_AMP_IN
R16
820
C?
47n
R17
22
C50
22u
+BATT
R?
47k
SPK_AMP_SEL
Q?
BSS138-transistors
FM_MOD_SEL
U?A
4066
U?B
4066
FM_MOD
AUDIO_DAC
SPK_AMP
RED
D2
GREEN
D3
R27
470
R28
470
LED_RED
LED_GRN
PTT
R13
470
R15
10k
C48
100n
SW1
INT_PTT_SW
Pushing PTT on power up forces STM32 into DFU mode
FB3
TBD
C58
10n
C57
1u
C56
100n
R18
1k
R19
3k9
C51
10u
+5V
J8
MIC_INT
J9
MIC_EXT
R20
10k
R21
470
C52
100n
C53
220u
2.5mm MIC/PTT jack
3.5mm SPK jack
Kenwood standard
SPK_AMP
22k
R24
C?
220n
RV?
50k/log
2k2
TBD
C59
15n
U8
LM386
C55
220u
C60
47n
R26
10
0.5W
J10
SPK_INT
J11
SPK_EXT
FB?
TBD
C?
10n
C?
1u
C?
100n
U?C
4066
U?D
4066
U?E
4066
VDD
VSS
ADF_SWD
C?
100n
TBF
R?
R?
22k
ADC3_1
This circuit provides attenuation and adds DC component
to the analog FM demod output
TR-9 Open Source Digital Radio
Sheet: /Audio/
File: Audio.sch
Title: Audio
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.4)-1
Id: 6/7







TR-9 Open Source Digital Radio

Sheet: /Connections/
File: Connection.sch

Title: Connections

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 7/7