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

Sheet: Modules

File: Modules.sch

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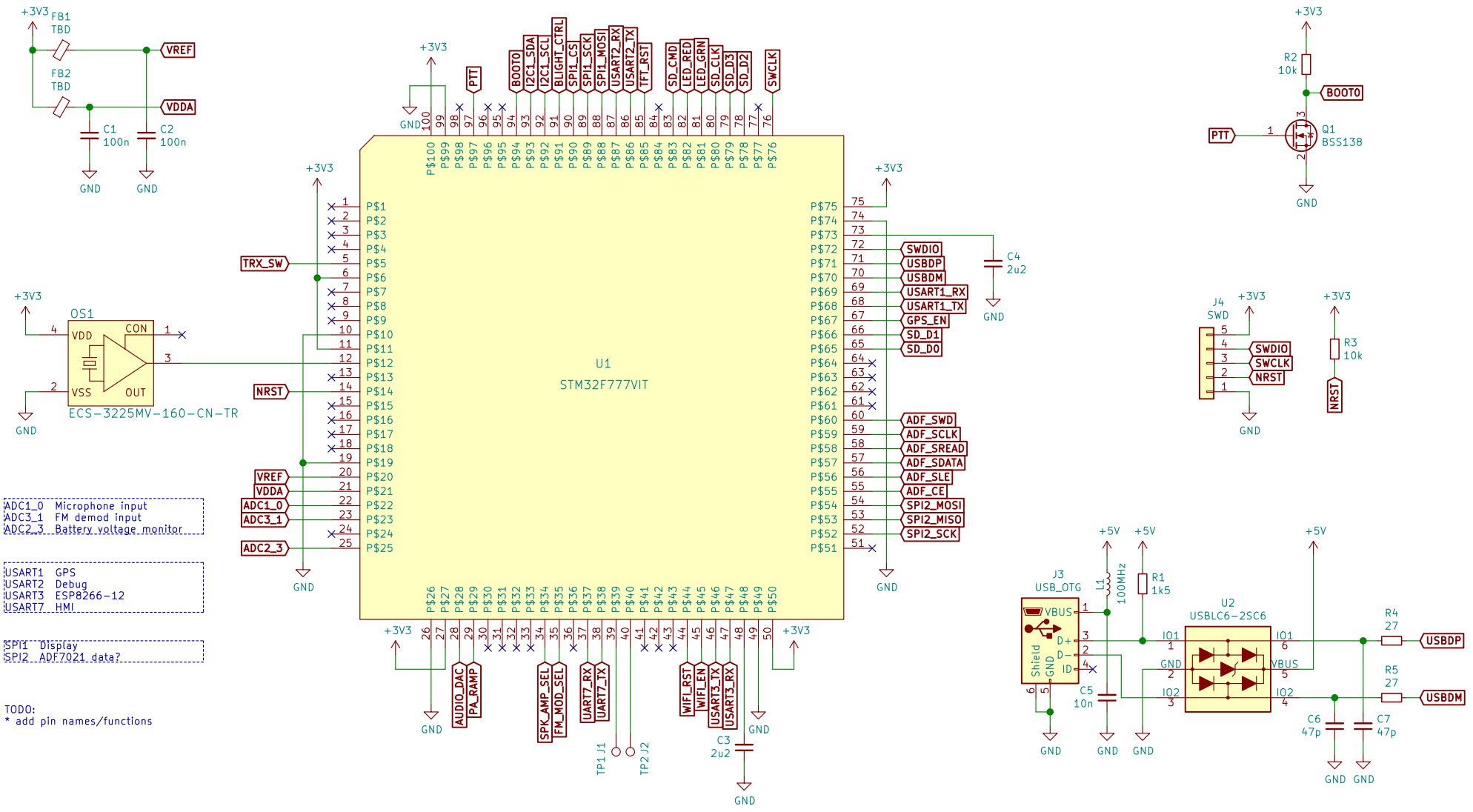
Sheet: /
File: Mainboard.sch

Title: TR-9 Mainboard

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 1/8



ADC1_0 Microphone input
ADC3_1 FM demod input
ADC2_3 Battery voltage monitor

USART1 GPS
USART2 Debug
USART3 ESP8266-12
USART7 HMI

SPI1 Display
SPI2 ADF7021 data?

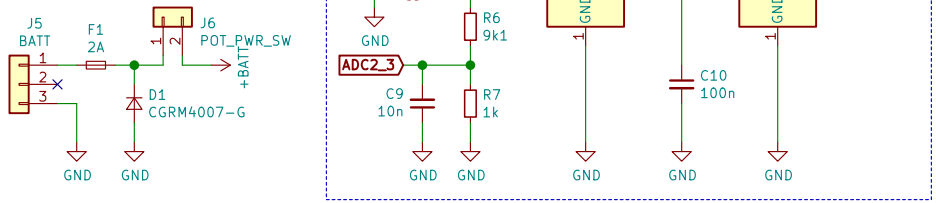
TODO:
* add pin names/functions

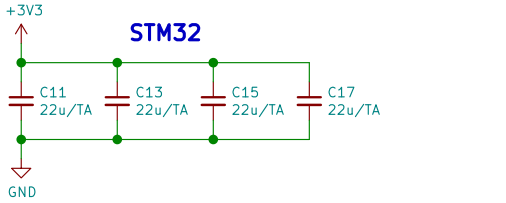
TR-9 Open Source Digital Radio

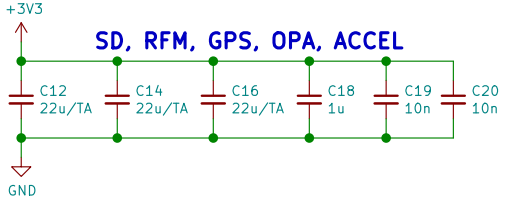
Sheet: /STM32F777/
File: STM32.sch

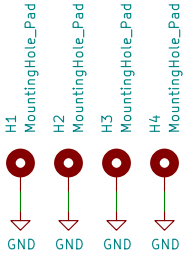
Title: Microcontroller

Size: A4	Date:	Rev:
KiCad E.D.A. kicad (5.1.4)-1		Id: 2/8









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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: 3/8

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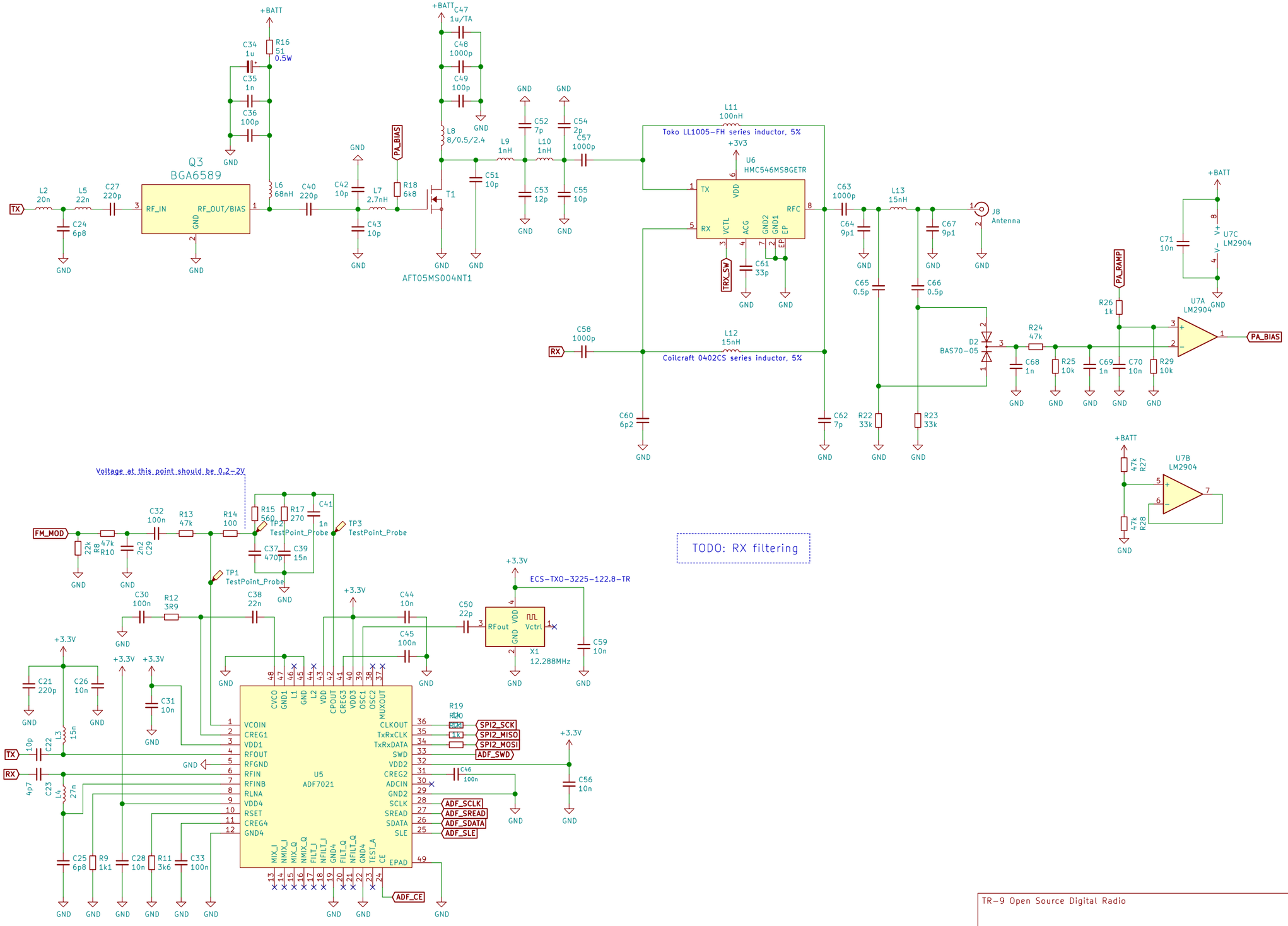
Sheet: /Display/
File: TFT.sch

Title: HMI Board Connector

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 4/8


Q3
BGA6589
AFT05MS004NT1
Toko LL1005-FH series inductor, 5%
Coilcraft 0402CS series inductor, 5%
U6
HMC546MS8GETR
U5
ADF7021
U7A
LM2904
U7B
LM2904
U7C
LM2904
D2
BAS70-05
J8
Antenna
X1
12.288MHz
ECS-TXO-3225-122.8-TR
Voltage at this point should be 0.2-2V
TODO: RX filtering
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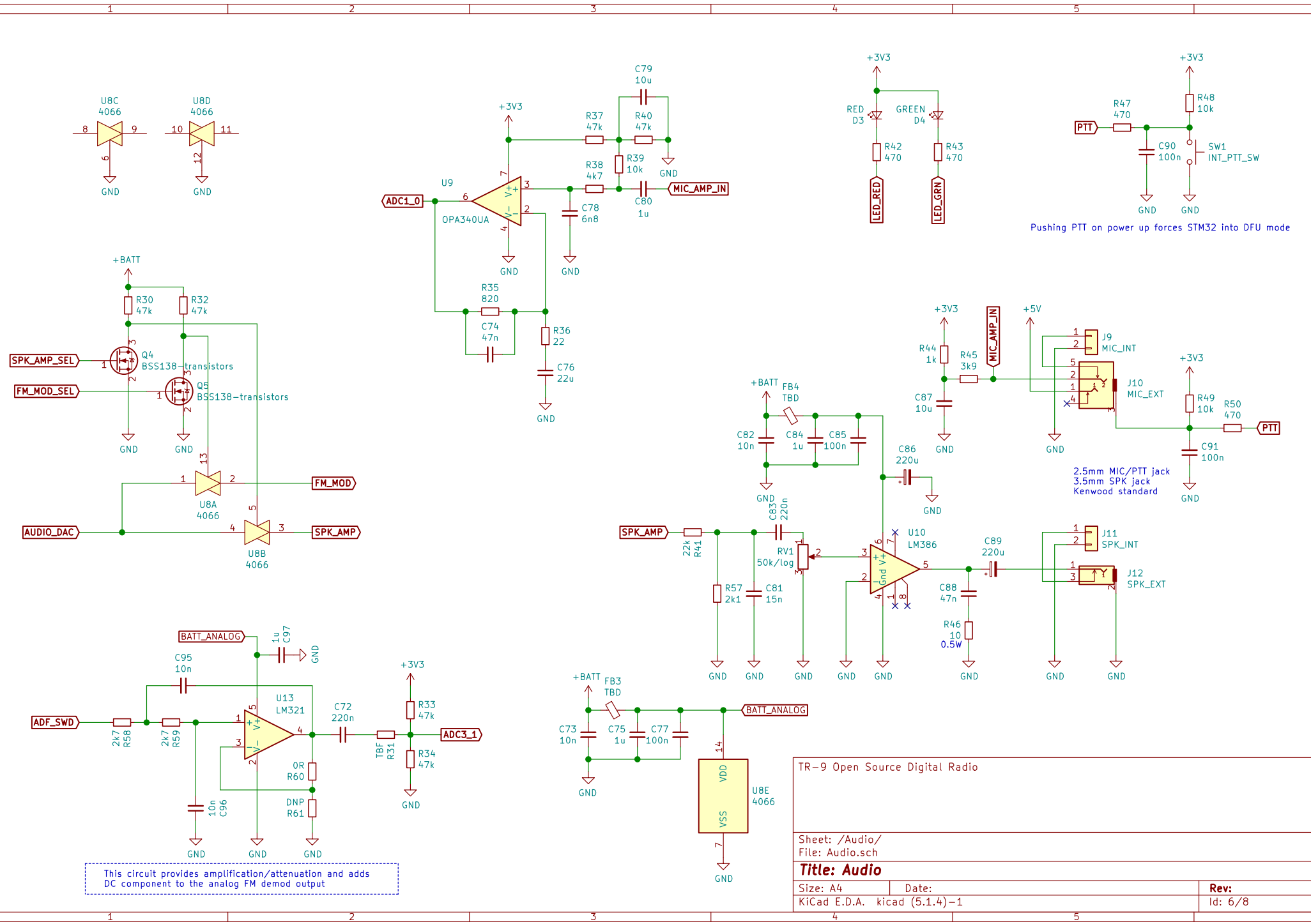
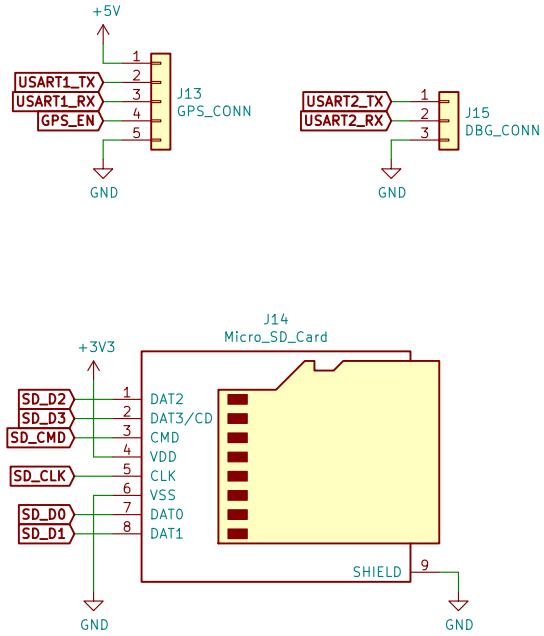
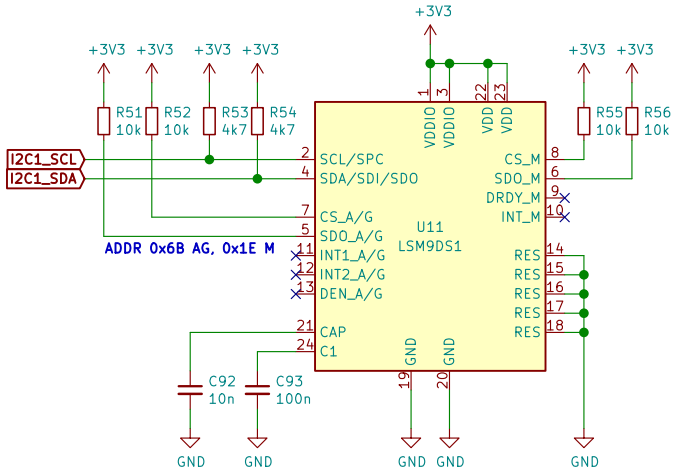
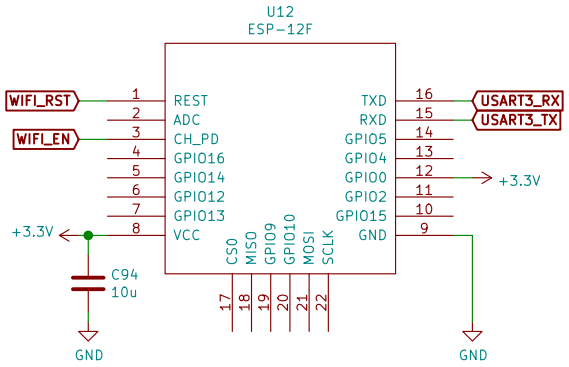
Sheet: /RF/
File: RF.sch
Title: RF circuit
Size: A3
Date:
Rev:
KiCad E.D.A. kicad (5.1.4)-1
Id: 5/8


U8C
4066
U8D
4066
GND
+3V3
U9
OPA340UA
ADC1_0
MIC_AMP_IN
R37 47k
R38 4k7
R39 10k
R40 47k
C78 6n8
C79 10u
C80 1u
R35 820
C74 47n
R36 22
C76 22u
RED D3
GREEN D4
R42 470
R43 470
LED_RED
LED_GRN
PTT
R47 470
R48 10k
C90 100n
SW1 INT_PTT_SW
Pushing PTT on power up forces STM32 into DFU mode
+BATT
R30 47k
R32 47k
SPK_AMP_SEL
FM_MOD_SEL
Q4 BSS138-transistors
Q5 BSS138-transistors
U8A 4066
U8B 4066
AUDIO_DAC
FM_MOD
SPK_AMP
R44 1k
R45 3k9
C87 10u
+5V
J9 MIC_INT
J10 MIC_EXT
R49 10k
R50 470
C91 100n
2.5mm MIC/PTT jack
3.5mm SPK jack
Kenwood standard
FB4 TBD
C82 10n
C84 1u
C85 100n
C86 220u
C83 220n
22k R41
RV1 50k/log
R57 2k1
C81 15n
U10 LM386
C89 220u
C88 47n
R46 10 0.5W
J11 SPK_INT
J12 SPK_EXT
BATT_ANALOG
C95 10n
1u C97
U13 LM321
ADF_SWD
2k7 R58
2k7 R59
C72 220n
TBF R31
R33 47k
R34 47k
ADC3_1
0R R60
DNP R61
10n C96
This circuit provides amplification/attenuation and adds
DC component to the analog FM demod output
FB3 TBD
C73 10n
C75 1u
C77 100n
U8E 4066
VDD
VSS
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: 6/8





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: 7/8



TR-9 Open Source Digital Radio

Sheet: /Modules/
File: Modules.sch

Title: Modules

Size: A4	Date: 2020-01-20	**Rev:**
KiCad E.D.A. kicad (5.1.4)-1		Id: 8/8