

## V06

- 1, Del NFC PN7150, Add CON24, UART1 for GNSS or Debug, SPI2 to CON24, UART2 for BT
- 2, Move SMC\_BOOT0 to Page 22 , TP6.
- 3, HKs Add Pull-up Resistor , And add Read state GPIO.
- 4, TYPE-C U27 LSX no connect.
- 5, Correct Y2, Y3 Connect.
- 6, Add Voltage Test Point , >40 point
- 7, Add SIM DET D6.
- 8, CAMERA Modify. Add LDO for DVDD 1.2 and 1.05.
- 9, TFT con Modify.
- 10, STM32 PA10 NC. UART add Pull-up R108, R135

## V07

- 1, UART1 to LSX, UART2 to GNSS, UART4 to bt, SPI1 to CON24
- 2, U329 19PIN add Pull-up R229 .

## V08

- 1, UART2 to LSX
- 2, HW state IO add resister. R48, R66, R145
- 3, 4G, WIFI ant CON add Debug L.C
- 4, Add shielding Case Hold.
- 5, DEL F12, Modified IO U329 for L9 layer to GND.
- 6, INT\_M/A/G, NFC\_EN, NFC\_IRQ modified IO to E1 for L2 to GND
- 7, ADD R232

## V09

- 1, AUX\_P , AUX\_N swapped.
- 2, Add R236.
- 3, Del R153
- 4, LED\_G to 8M D3 pin. NFC\_IRQ to 8M E1 pin, INT\_M/A/G to 8M L4 pin.
- 5, R122,R58 to 27K, R123 to 47K.
- 6, 4G used SAI6. ADD u5

## V091

- 1, U5 8pin to SAI1\_TXD5, 9pin to SAI1\_RXD5.
- 2, ADD U7 for CAM\_AFVDD, 2.8V 120mA.
- 3, U2 modified USB2642

## V092

- 1, BOOT Resistor Modified.
- 2, EMMC 32G.
- 3, U3 NC.
- 4, PWM IO modify. MOTO E6, PMIC\_5V T7, LED\_B K6.

## V093

- 1, R830 NC, R811 10k.

## V094

- 1, BAT CON Modified for 1000 times.
- 2, ADD L66 L67

## V095

- 1, R115 Modified to 200.

## V096

- 1, ADD R153 for TPS65983B Slave.
- 2, Modified LM36922 to I2C3, J10 to I2C4.

## V097

- 0, CHG\_STATUS\_B connect Red LED.
- 1, Add N-mosfet Q8 on SD2\_NCD.
- 2, TPS65982 LDO\_1V8D Connected BUSPOWERZ.
- 3, VDD\_3V3 add 4x22uF C231....
- 4, VSYS\_3V4\_4V3 add 7x22uF C281....
- 5, U27 TPS65982 F2 UART\_RX 100K R223 connect GND.
- 6, Add NET\_BT\_WAKE
- 7, AUDIO\_POWER\_KEY connect Q2 PIN1.
- 8, ADD U68 NTSX2102
- 9, BOOT\_CFG PU to NVCC\_SNV5\_3V3
- 10, R176 PU to NVCC\_SNV5\_3V3
- 11, R104 10 value.
- 12, R82 0402 0.1%
- 13, R934 100K
- 14, U2 USB2642 27.28 connect GND, 26 connect VDD.
- 15, ADD Q9, Modified WIFI\_REG\_ON, BT\_REG\_ON.
- 16, ADD R238 UART2\_RXD PU USB\_PD\_LDO3V3
- 17, ADD Q10, R239, R240, R241
- 18, Add TYPEC\_HRESET,
- 19, R42 1M ,
- 20, U147 connect TPS65982
- 21, SW3,SW5,SW7 2-3PIN
- 22, J50 modified
- 23, J12 modified

## V098

- 1, 0 ohm jumpers SPI.
- 2, C181 NC
- 3,main board usb 2.0 connector
- 4,PFET pull up UART2\_RX
- 5,red LED powered by VSYS
- 6, TPS65982 I2C2 10K pull-ups
- 7, TPS65982 remove\_usb 2.0
- 8, TP34 connect USB\_VBUS for test
- 9, SPI MISO ADD pull-up 10K
- 10, ADD u50,U51 , C335,C336

## V099

- (11) Battery connector (J20): changed to P / N: BA32-111203-01 3pin
- (12) Cancel J50 (flash holder) and move the flash to the rear camera FPC
- (13) change J22 to P / N: OK-06F034-04
- (14) J9 smartcard (80500122) is changed to SA070112150-105
- (15) Headphone socket (J2) changed to JA-36A1-111
- (16)
- (17) SIM +TF Card changed to SA2101110135-103-01, TF\_NCD and 4G\_SIM\_CD two port exchange (Change to plastic tray)
- (18) R166, R109 changed to 0R
- (19) Connect SMC\_Boot0 to D7 pin of imx8mq
- (20) R41(47K) changed to 0R
- (21) ADD CLOCK Crystal(Y1 )VALUE:32.768K 10pF +/-20ppm
- (22) Use TLV75801PDBVR instead of LCDL015MR for U21 and U37  
Make R33=11.8k  
Make R70=9.09k  
Remove R234 (0)
- (23) add a test point to pin C2 of the TPS65982 (U27's GPIO1\_CFG0)
- (24) add inverter (Q12)
- (25) ADD C339
- (26) ADD C351/352/356/388/396/397/398/399/400/406/407/408/409/410/411/412/413/414/415/416/417//418/  
419/420/421/422/423/424/427/4287/429/430/431/432/433 1UF 6.3V 0201
- (27) C434 C435 NC
- (28) ADD C436/437/439/440/441/442/443/444 0201/1UF  
ADD: C448 C449 C450 22UF 0603 6.3V
- (29) R209 R210 changed to 1.5K
- (30) DEL R1903
- (31) ADD: LNA BGA72SL6 & SAW filter B39162B4327P810, etc
- (32)Bring USB\_PD\_LDO3V3 to pin 23 of J12 on the main board.
- (33)Remove TVS11, TVS30, TVS31, and TVS32 on the main board:
- (34) C343/C377 changed to 220PF
- (35)change the connection of PMIC(U1) Pin49
- (36) Change U101 MIPL\_VDDHA3 connection
- (37) R63/ R64/R100/ R103 NC.
- (38) C379 and C380 = 100nF (0.1uF)
- (39) ADD R251/R252 1M
- (40) ADD :Y2 (32.768K)/C332/C333(6.8Pf)
- (41) ADD :R253/NC
- (42) ADD R254/0 OHM
- (43) Add connection between J4's pin12 and U101's G6
- (44) add R255/0 ohm
- (45) C87/C256 changed to 56pF
- (46) ADD C451/C454 56pF

## V1.02 & V1.03

1. Q12 CHANGE TO BSS138PW
2. R5 CHANGE TO 10R
3. D10 change to PTV516V51UR (USB Board)
4. ADD PTC FUSE :400C1206LR-C (USB Board)
5. DEL R180, R184
6. ADD L9
7. ADD D25(NSR20F30KXTSG);
8. The correction network of R2 and R3 is changed to mvc\_ SNVS\_3V3
9. The 33 and 34pin of PMIC increase 0 ohm resistance (R259/R260)
10. D6 changed to 0 ohm resistor (R261)
11. R55 and R218 connect to VDD\_1V8
12. Add Q13, R263 and related networks
13. J22pin of U101 is connected to TF\_NCD
14. C736 Change to 22uF
15. C740 Change to 10uF
16. J12 PIN define have changed.
17. The value of R118,R126 change to 18R, the value of R132 change to 100R

## V1.06

1. Schematic of V2.0 mainboard is not add new part,only changed net and define of J3 &J12 .
2. USB\_board is add U1,U3,U4,U5,R5,R6,R7,R8,R9,R10,R11,R12,R13,R14,C6,C7,C8,C9,C10,C11,C12,C13,C18,C19,C23,C24
3. USB\_board is add COM4,COM5, COM6; delete fuse F1
4. Changed define of J11 (USB\_board)
5. R100,R103 Change to 100K
6. Mainboard: Add T1,T2
7. USB-C Board: DEL U5,R12,R13,R14,C20,C23,C24,L1,L2
8. USB-C Board: ADD R15 R17

GNU GPLv3+ Copyright 2021 Purism SPC		
Purism		
Drawing Title: Librem 5		
Page Title: VER note		
Rev: v1.0.6	Date:	Design by:
Sheet 1 of 21		

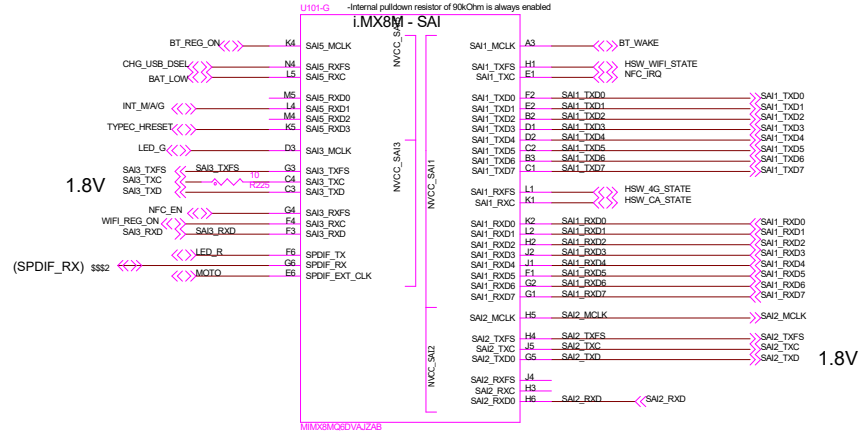
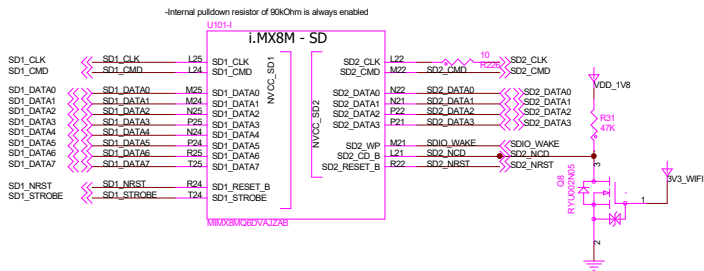
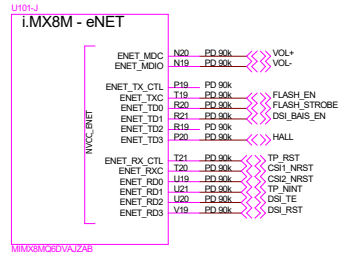
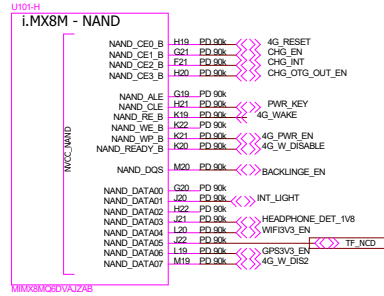




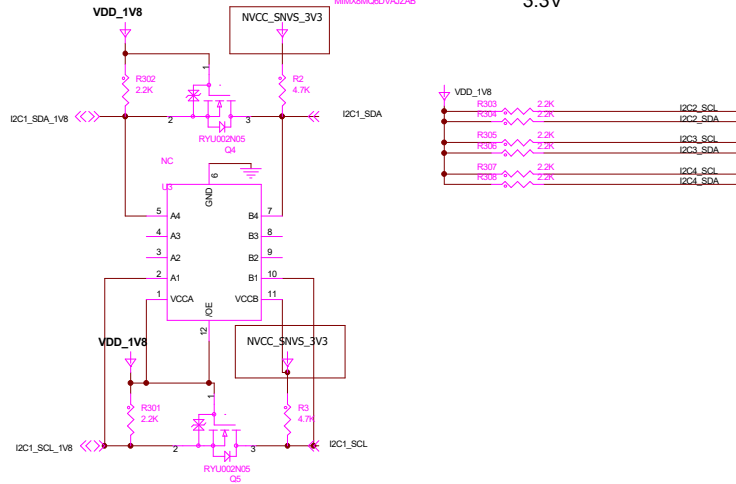
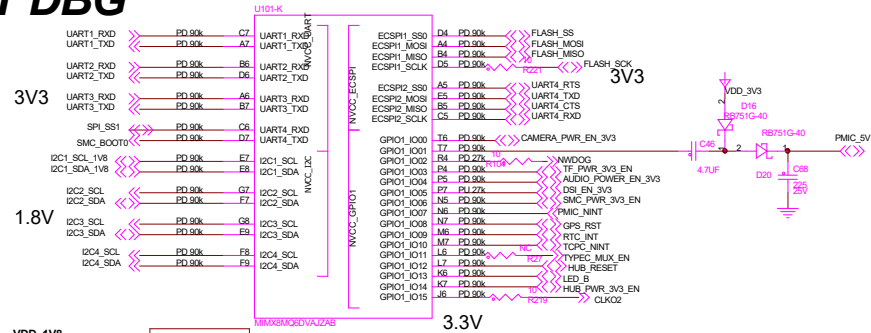
## of 21



# MIMX8MQ6DVAJZAA



## UART DBG



Purism

Drawing Title: Librem 5

Page Title: CPU I/O

Rev: Date: Design by:

v1.0.6

Sheet 5 of 21

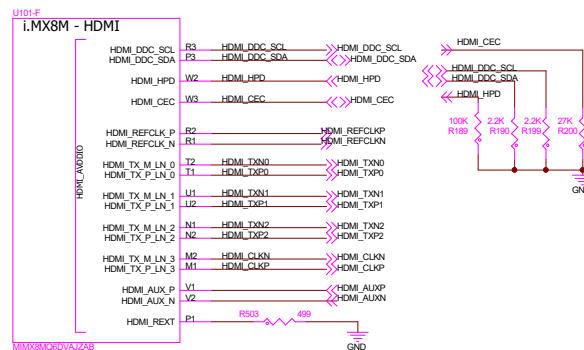
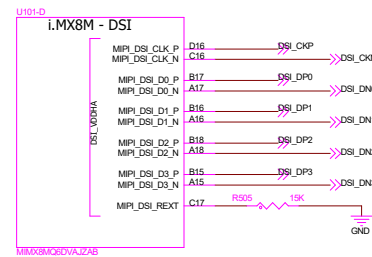
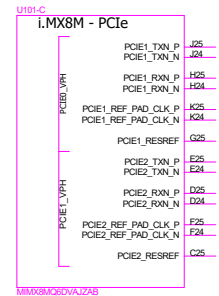
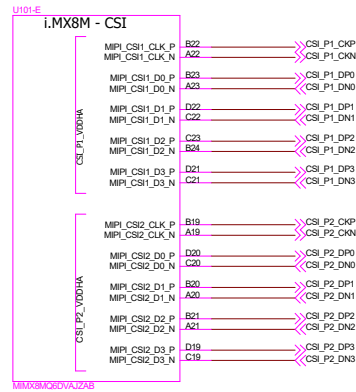
# RTC

## JTAG Debug

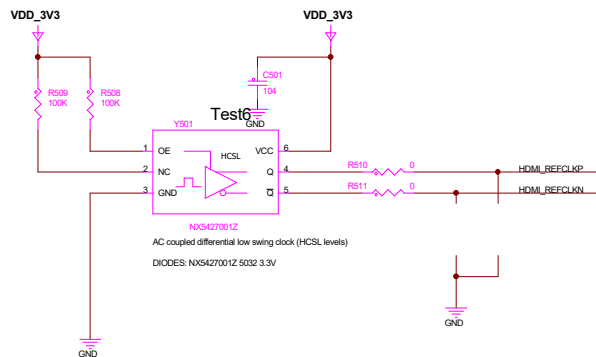
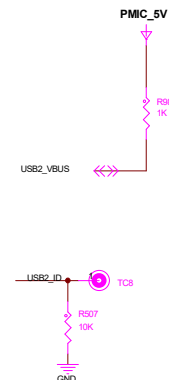
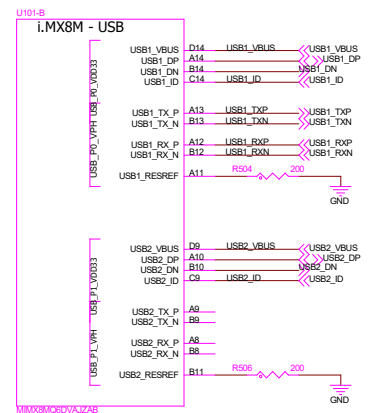


# i.MX8M PHY

USB\_RESREF: Attach a 200 $\pm$ , 1% 100-ppm/C precision resistor-to-ground on the board.  
MIPDSI\_REXT: 15K $\pm$ ,  
PCIe: 200 $\pm$ , 1A1% (A 100 ppm/C) precision resistor-to-ground on the board.  
HDMIa499: (A1% tolerance) resistor-to-ground on the board



AC coupled differential low swing clock (HCSL levels)



Purism

Drawing Title: Librem 5

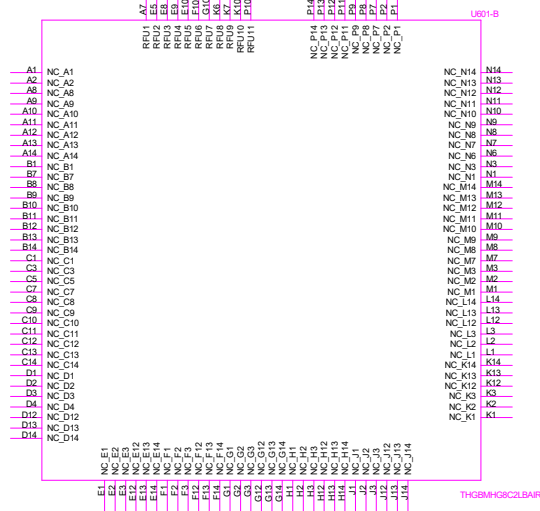
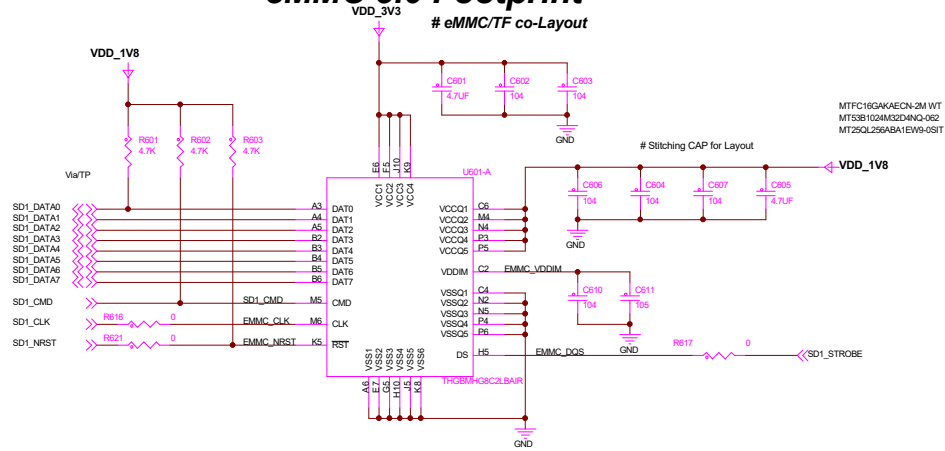
Page Title: CPU PHY

Rev: v1.0.6 Date: Design by:

Sheet 7 of 21

# eMMC 5.0 Footprint

# eMMC/TF co-Layout



Purism

Drawing Title: Librem 5

Page Title: EMMC

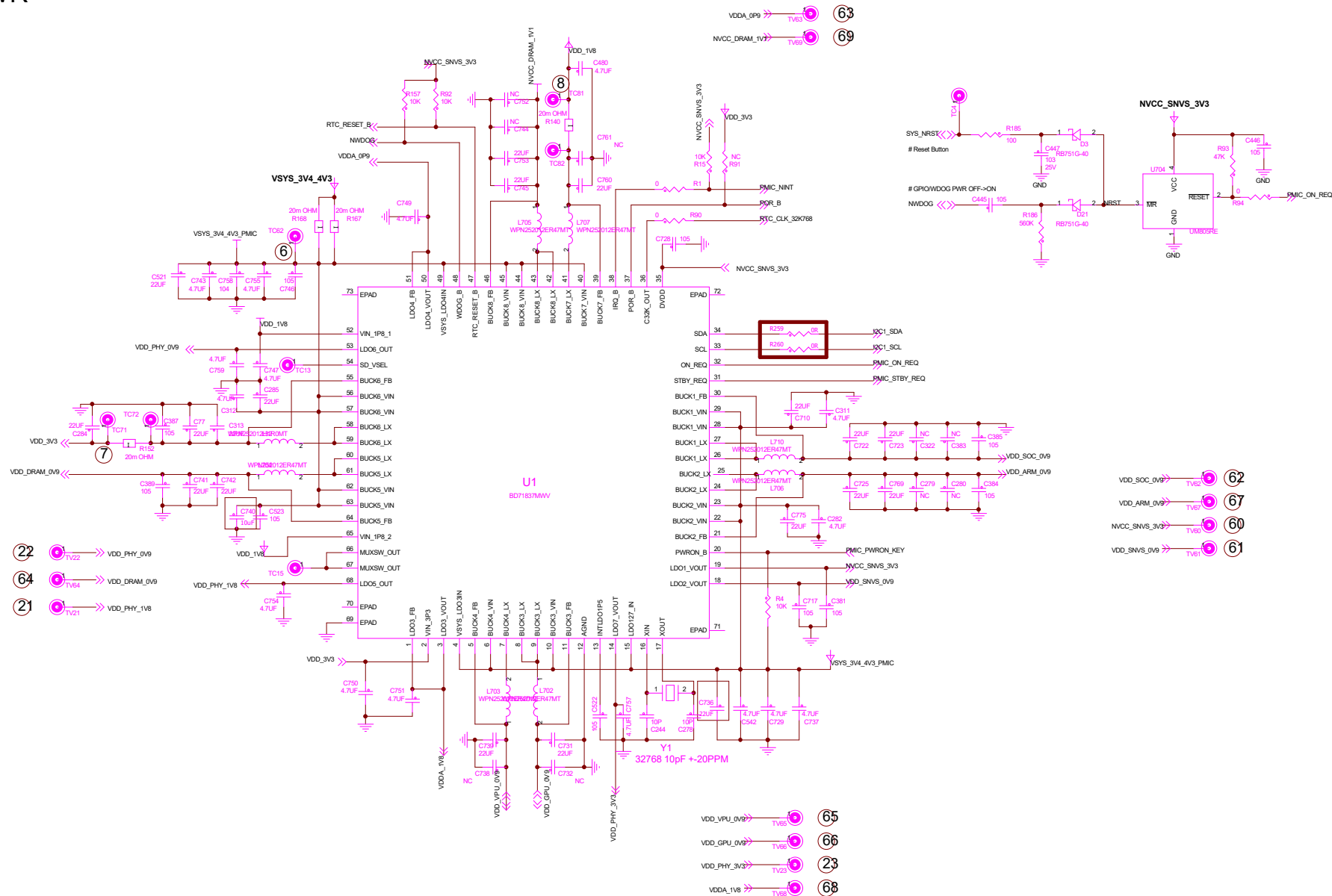
Rev: Date: Design by:

v1.0.6

Sheet 8 of 21

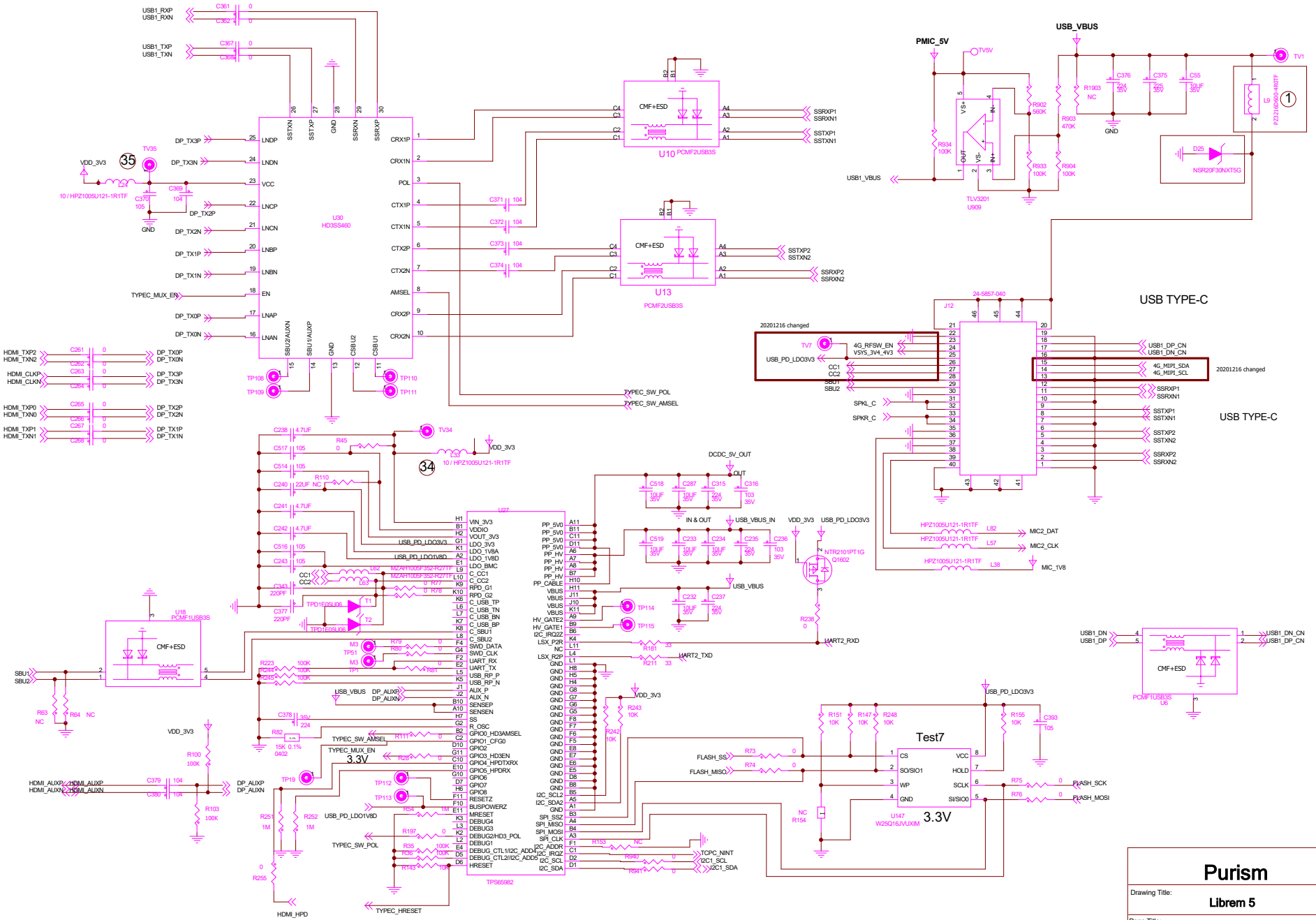


## SYS PMIC/PWR



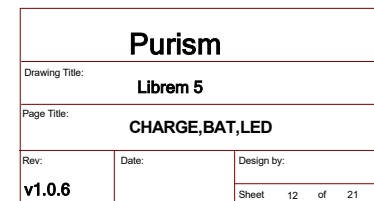
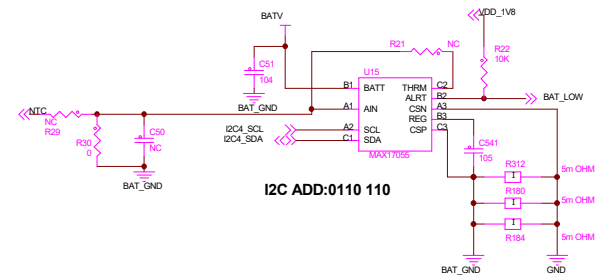


# USB3.0/2.0 TYPE-C/HOST



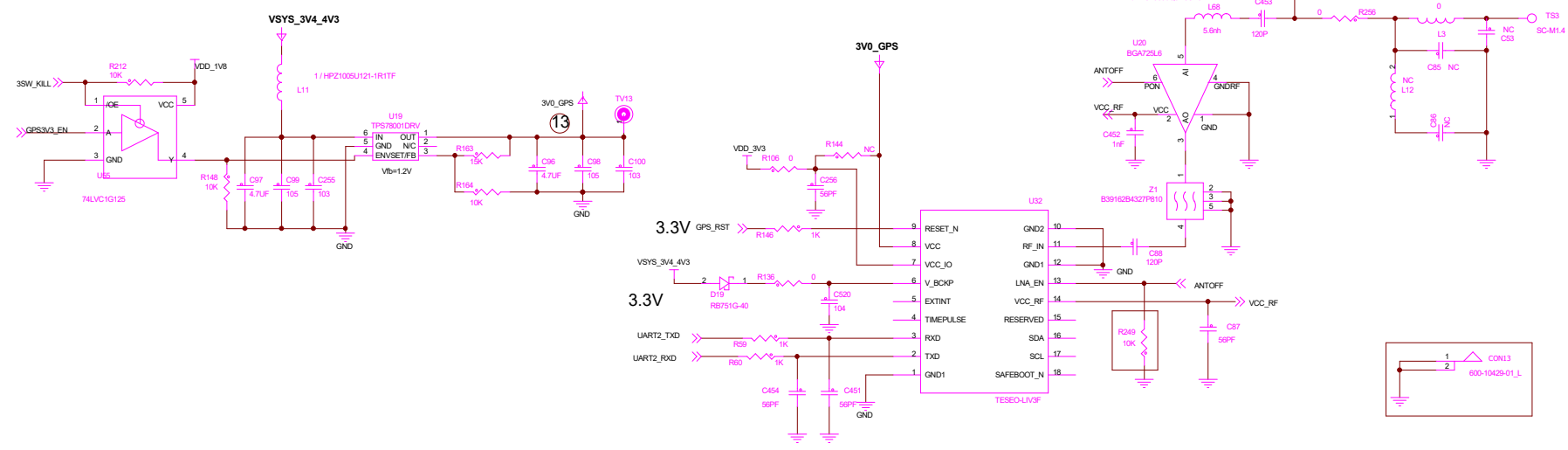
Purism

Drawing Title: <b>Librem 5</b>		
Page Title: <b>USB TYPE C</b>		
Rev: <b>v1.0.6</b>	Date:	Design by:
Sheet 11 of 21		

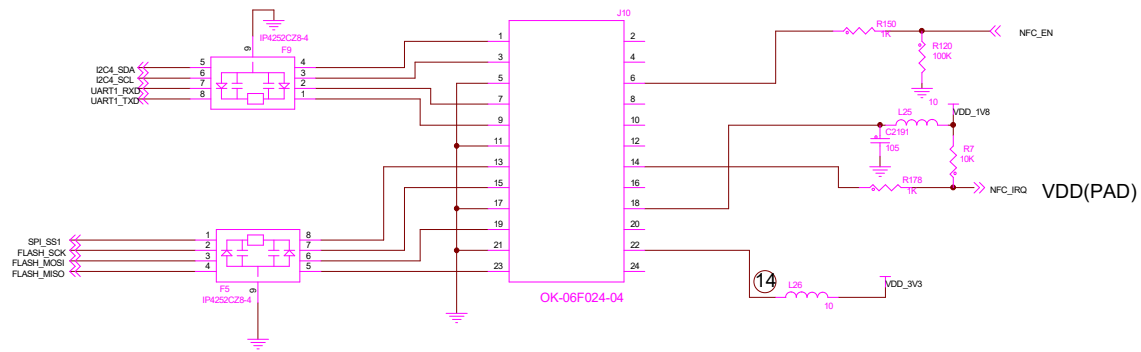




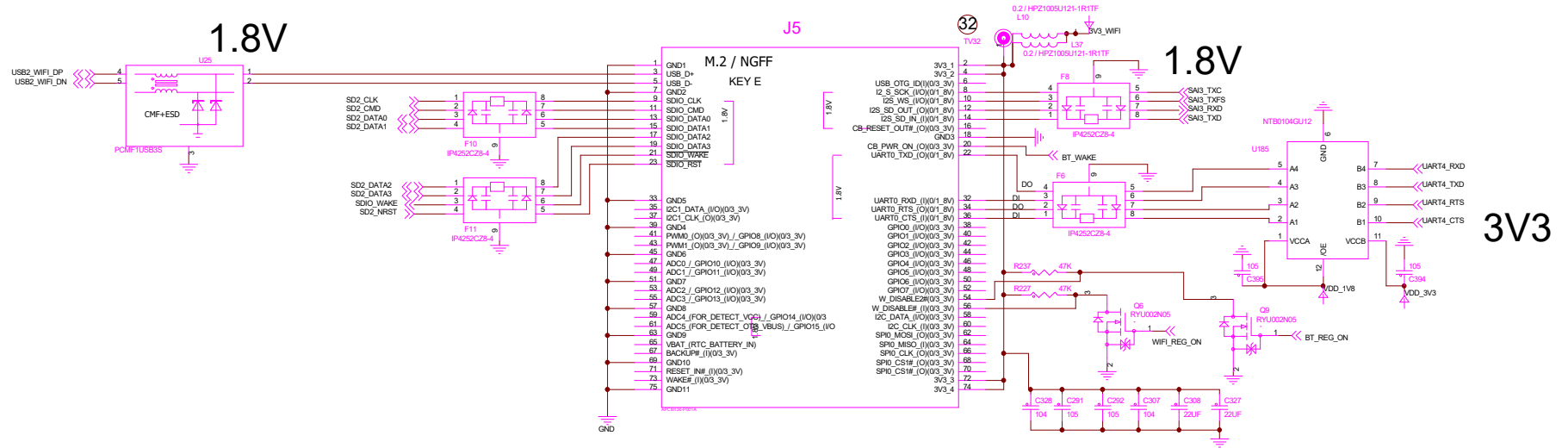
GNSS



EXT CON

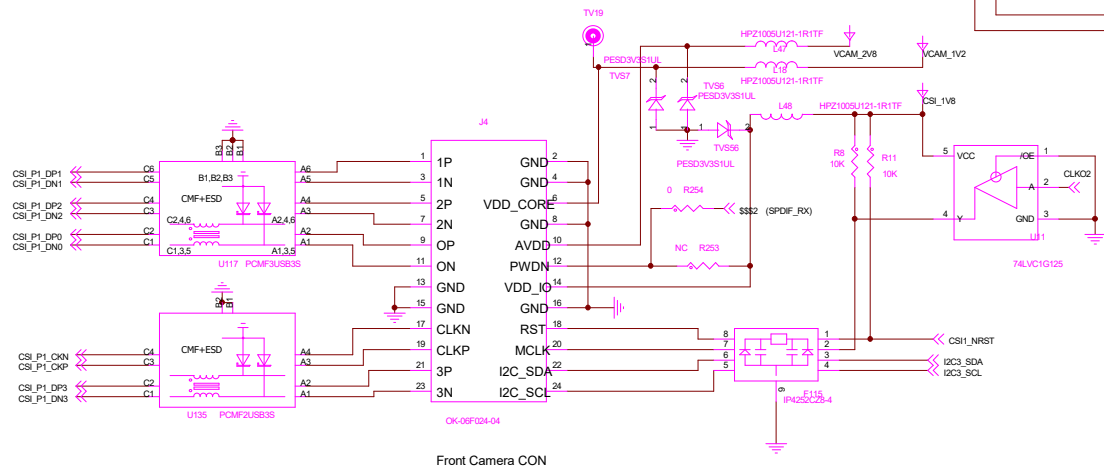
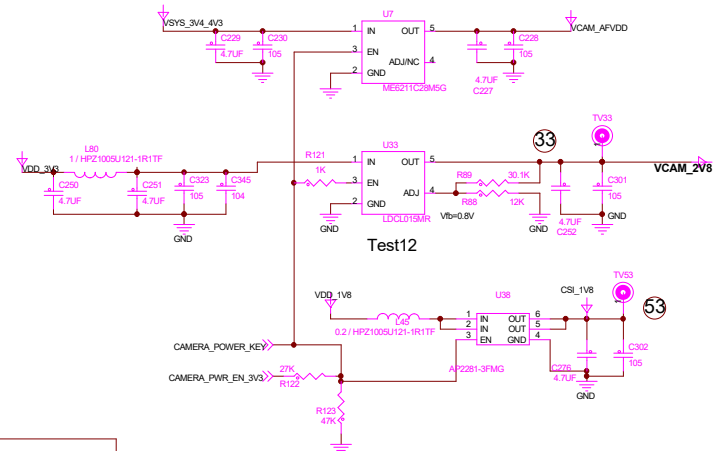
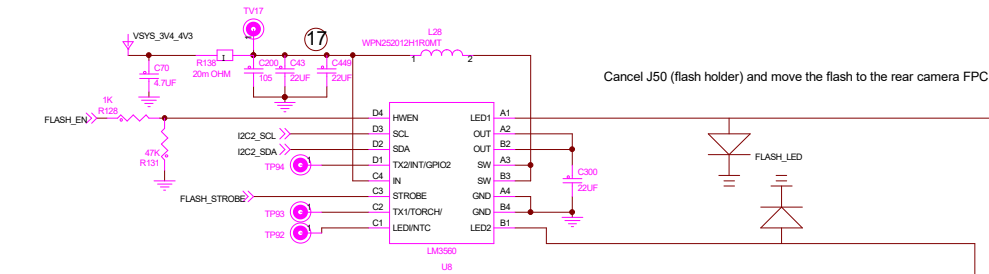


# WiFi/BT 802.11a/b/g/n/ac + Bluetooth 4.1/ EDR

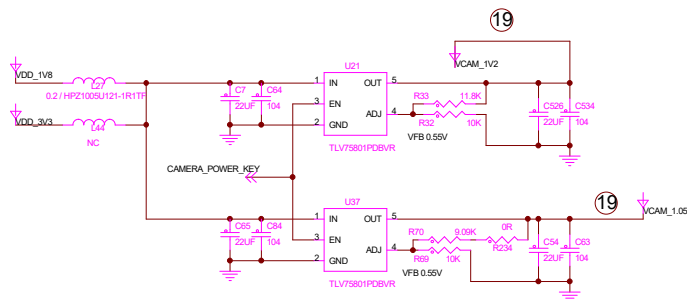
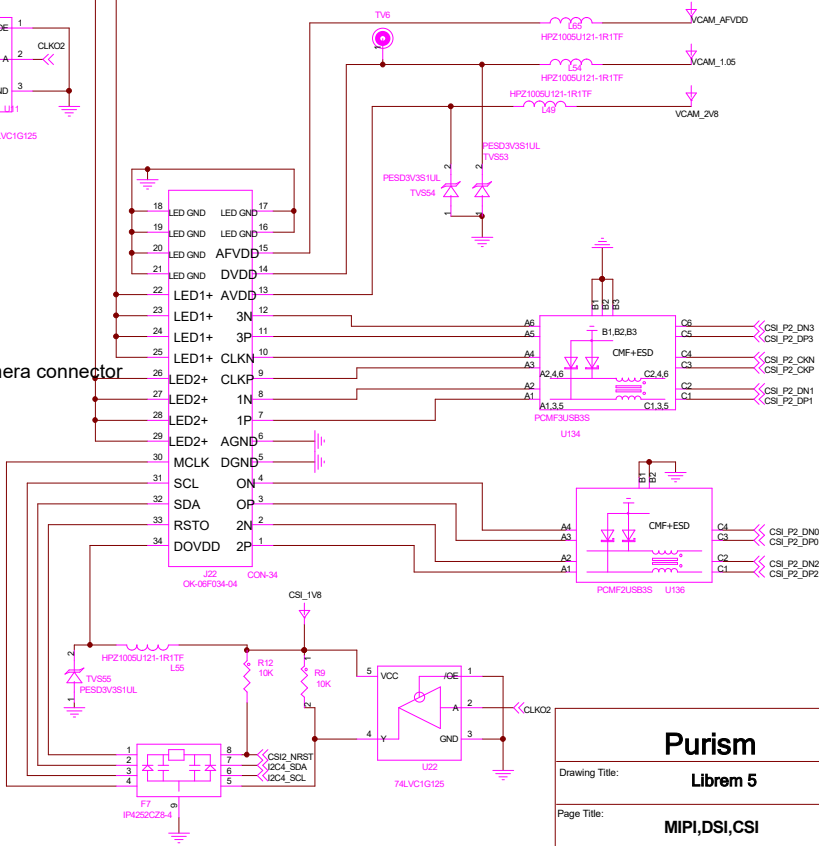






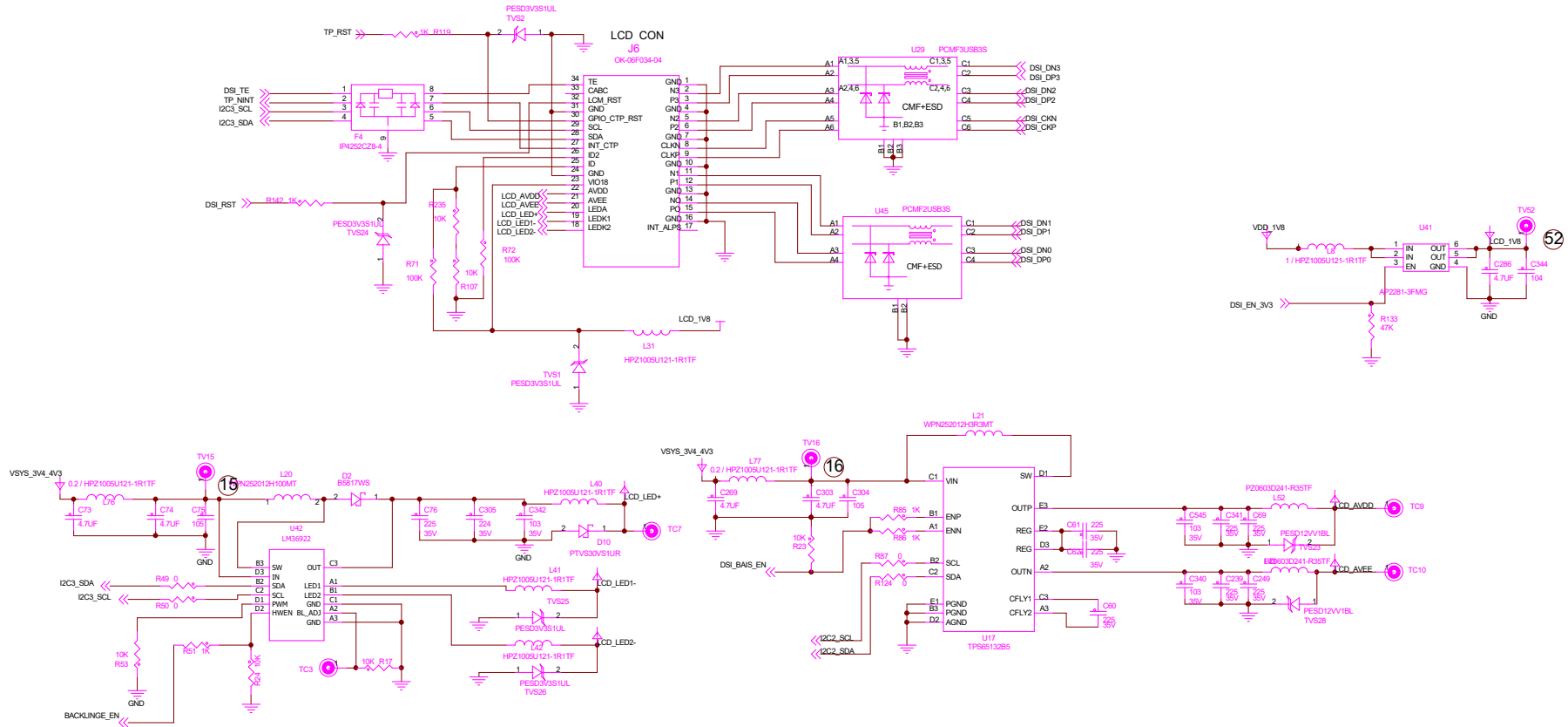


Rear camera connector



Purism		
Drawing Title: Librem 5		
Page Title: MIPI,DSI,CSI		
Rev: v1.0.6	Date:	Design by:
Sheet 17 of 21		

## DSI LCD IF



Purism

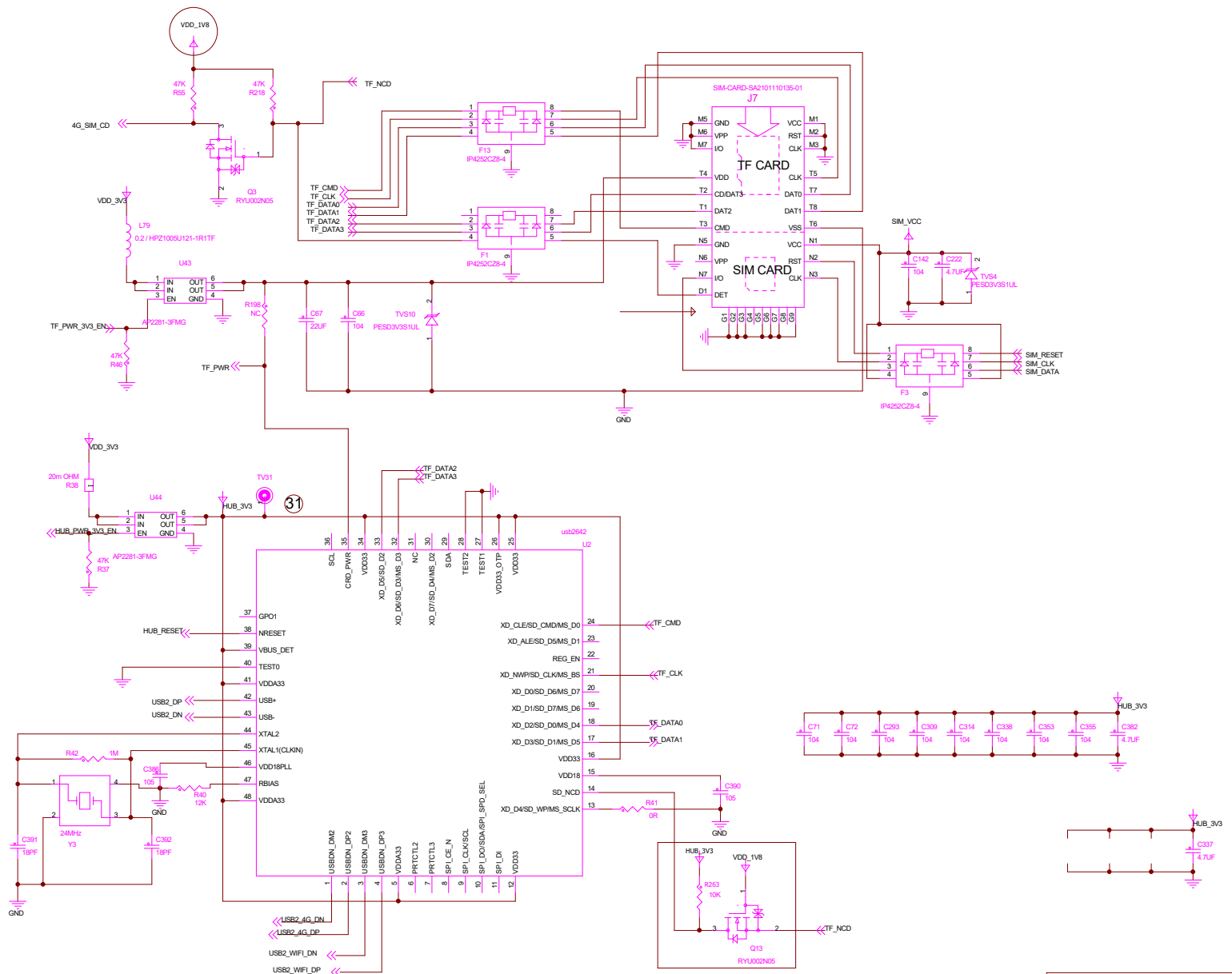
Drawing Title: Librem 5

Page Title: MICROSD,MOTO

Rev: Date: Design by:

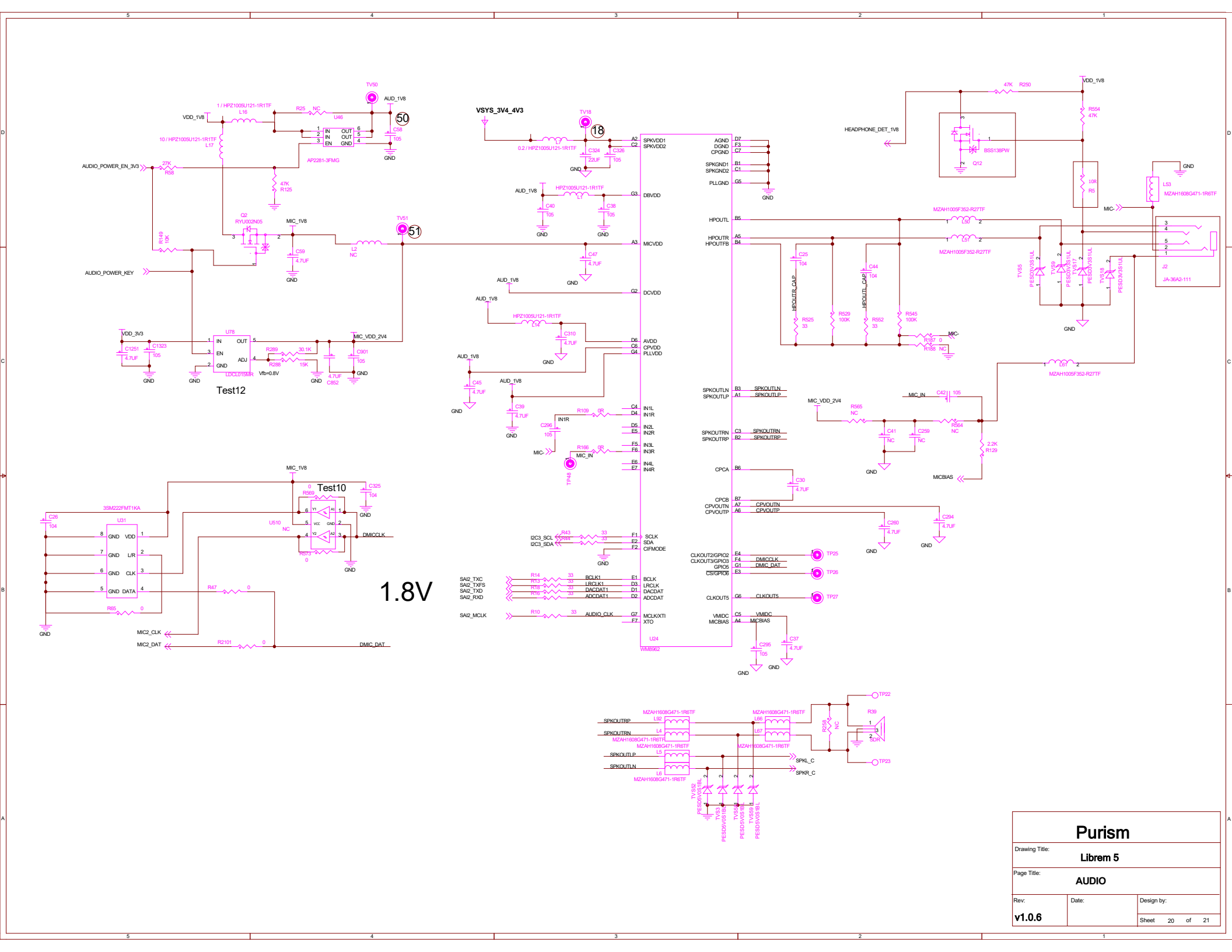
v1.0.6 Sheet 18 of 21

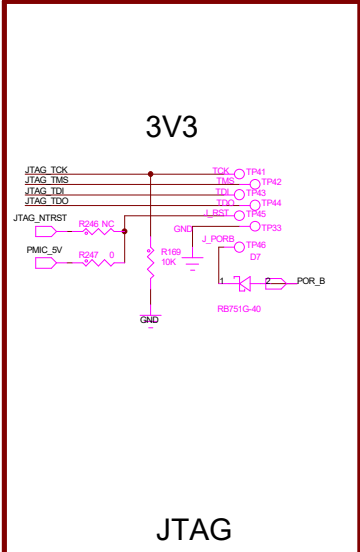
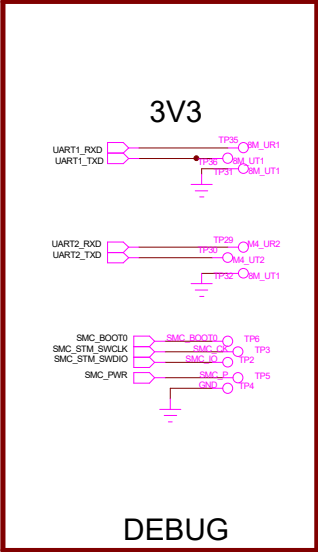
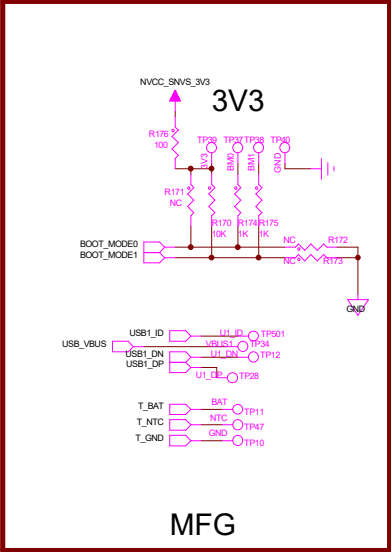
# USB HUB + SDIO BRIDGE



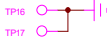
Purism

Drawing Title: <b>Librem 5</b>		
Page Title: <b>USB HUB</b>		
Rev: <b>v1.0.6</b>	Date:	Design by:
Sheet 19 of 21		





M2 module SCREW

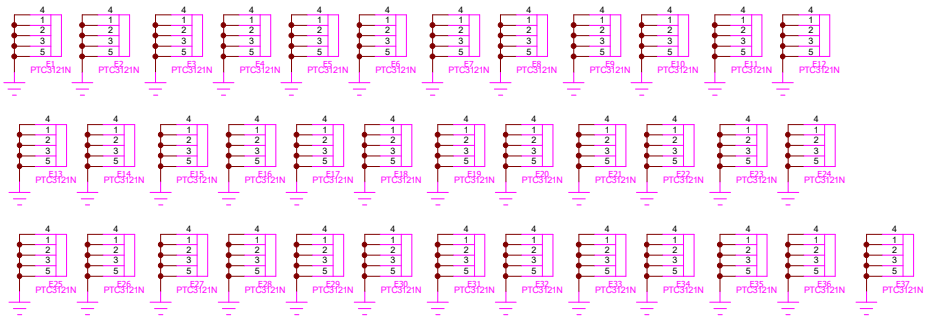
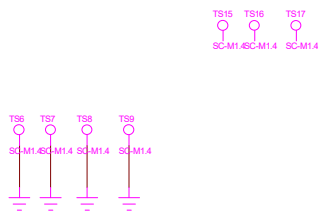


BMODE[1:0]	BOOT TYPE
00	Boot From Fuses
01	Serial Downloader
10	Internal Boot (Development)
11	Reserved

SCREW

Shielding Case

Shielding Case Hold



Purism		
Drawing Title: Librem 5		
Page Title: DEBUG		
Rev: v1.0.6	Date:	Design by:
Sheet 21		of 21