## 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_SNVS_3V3
10, R176 PU to NVCC_SNVS_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 modifed

## 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_ (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=11.8kΩ
Make R70=9.09kΩ
Remove R234 (0Ω)
(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 BGA725L6 & 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 MIPI_ 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 PTVS16VS1UR (USB Board)
4. ADD PTC FUSE :400CC1206LR-C (USB Board)
5. DEL R180, R184
6. ADD L9
7. ADD D25(NSR20F30NXT5G);
8. The connection network of R2 and R3 is changed to nvcc_ 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

## V1.03.1

1. R100 and R103 = 100k
2. R163 = 16k
3. R106 = NC
4. R144 = 0
5. R136 = 22nH
6. Change U38 from AP2281-3FMG to AP2281-1FMG



| Purism | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: VER note | | |
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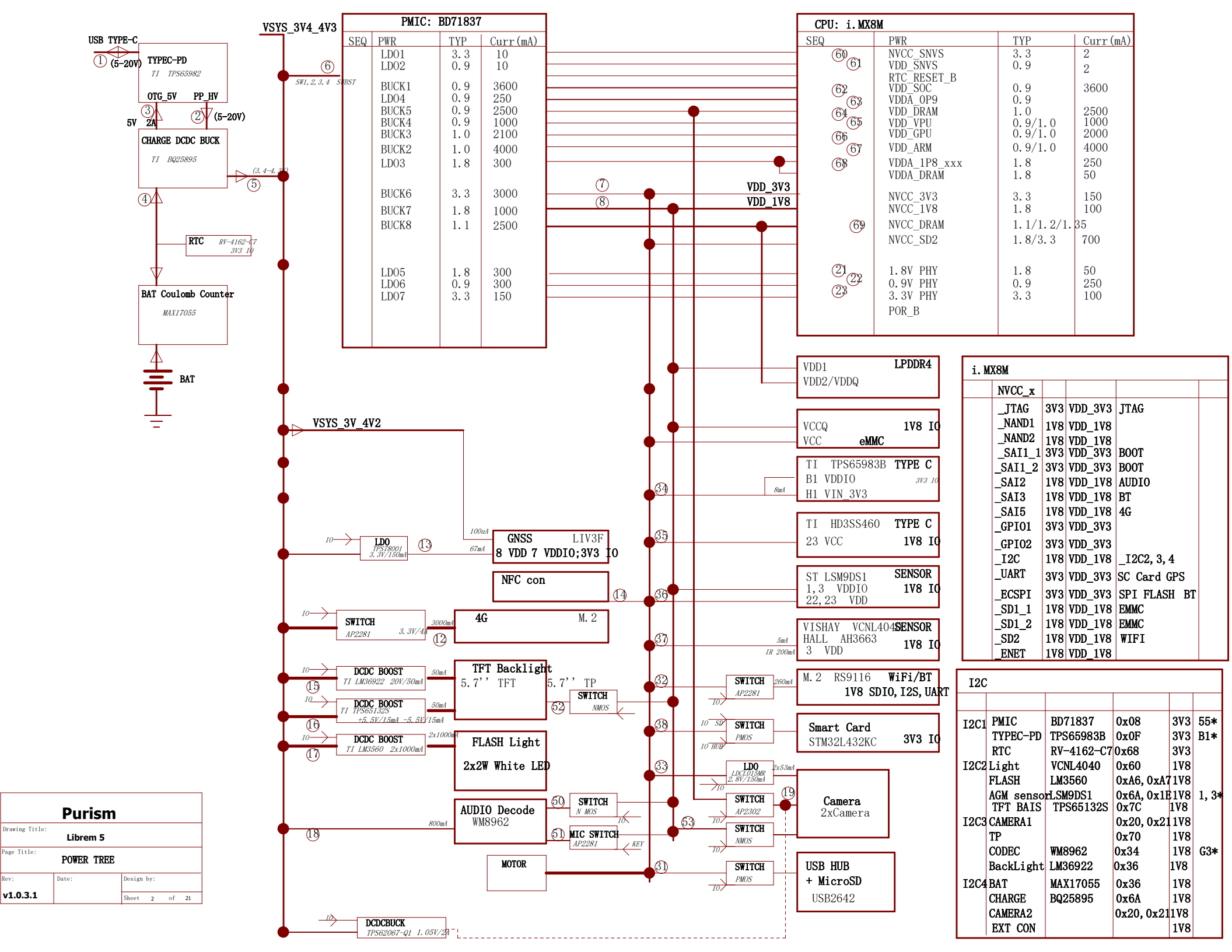


i.MX8M

| | NVCC_x | | | |
|---|---|---|---|---|
| | _JTAG | 3V3 | VDD_3V3 | JTAG |
| | _NAND1 | 1V8 | VDD_1V8 | |
| | _NAND2 | 1V8 | VDD_1V8 | |
| | _SAI1_1 | 3V3 | VDD_3V3 | BOOT |
| | _SAI1_2 | 3V3 | VDD_3V3 | BOOT |
| | _SAI2 | 1V8 | VDD_1V8 | AUDIO |
| | _SAI3 | 1V8 | VDD_1V8 | BT |
| | _SAI5 | 1V8 | VDD_1V8 | 4G |
| | _GPIO1 | 3V3 | VDD_3V3 | |
| | _GPIO2 | 3V3 | VDD_3V3 | |
| | _I2C | 1V8 | VDD_1V8 | _I2C2,3,4 |
| | _UART | 3V3 | VDD_3V3 | SC Card GPS |
| | _ECSPI | 3V3 | VDD_3V3 | SPI FLASH BT |
| | _SD1_1 | 1V8 | VDD_1V8 | EMMC |
| | _SD1_2 | 1V8 | VDD_1V8 | EMMC |
| | _SD2 | 1V8 | VDD_1V8 | WIFI |
| | _ENET | 1V8 | VDD_1V8 | |

I2C

| | | | | | |
|---|---|---|---|---|---|
| I2C1 | PMIC | BD71837 | 0x08 | 3V3 | 55* |
| | TYPEC-PD | TPS65983B | 0x0F | 3V3 | B1* |
| | RTC | RV-4162-C7 | 0x68 | 3V3 | |
| I2C2 | Light | VCNL4040 | 0x60 | 1V8 | |
| | FLASH | LM3560 | 0xA6,0xA7 | 1V8 | |
| | AGM sensor | LSM9DS1 | 0x6A,0x1E | 1V8 | 1,3* |
| | TFT BAIS | TPS65132S | 0x7C | 1V8 | |
| I2C3 | CAMERA1 | | 0x20,0x21 | 1V8 | |
| | TP | | 0x70 | 1V8 | |
| | CODEC | WM8962 | 0x34 | 1V8 | G3* |
| | BackLight | LM36922 | 0x36 | 1V8 | |
| I2C4 | BAT | MAX17055 | 0x36 | 1V8 | |
| | CHARGE | BQ25895 | 0x6A | 1V8 | |
| | CAMERA2 | | 0x20,0x21 | 1V8 | |
| | EXT CON | | | 1V8 | |

**Purism**

Drawing Title: Librem 5

Page Title: POWER TREE

Rev: v1.0.3.1

Date:

Design by:

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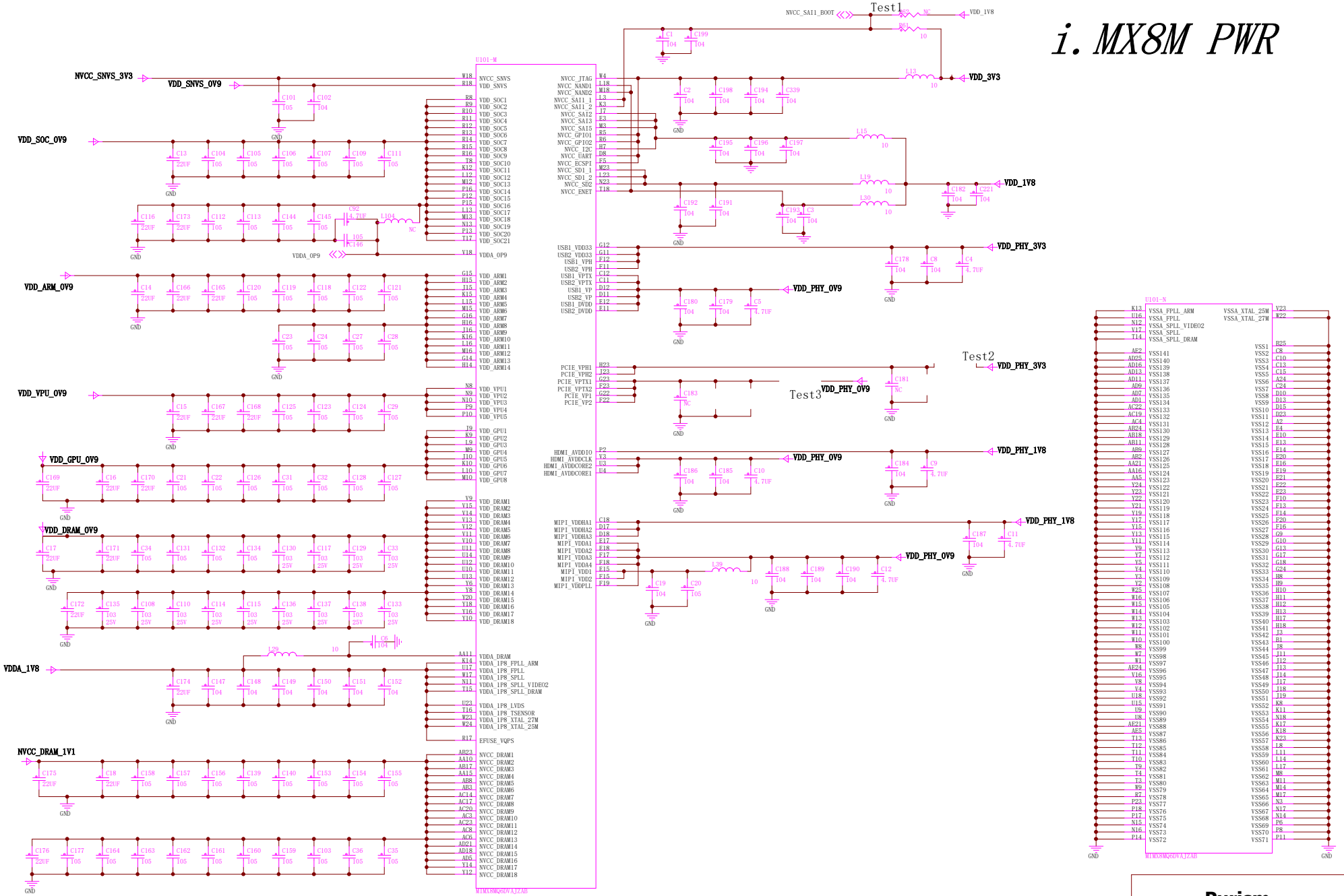
# i.MX8M PWR

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| Page Title: **CPU POWER** | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
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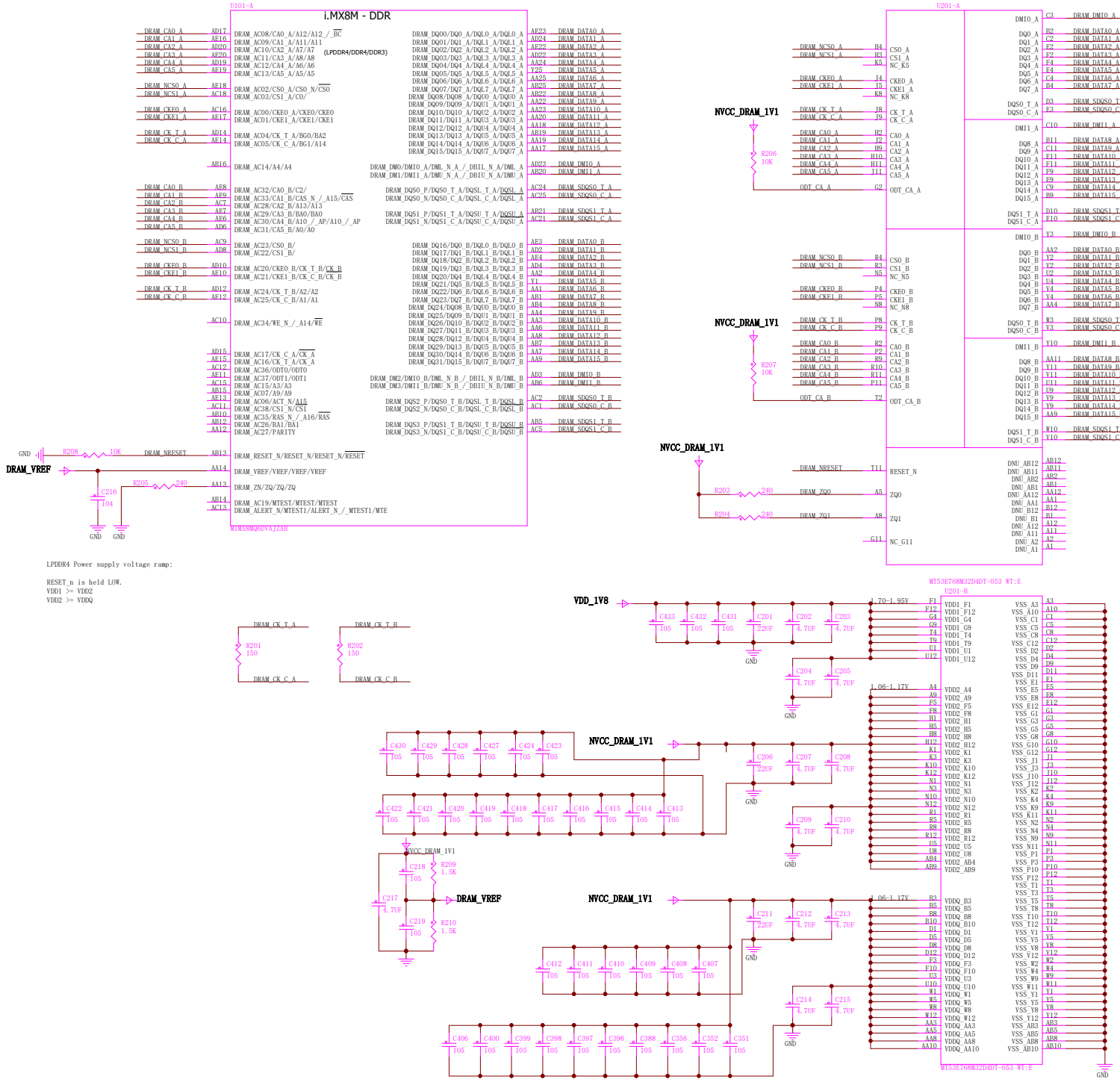
# LPDDR4




**Purism**

Drawing Title: **Librem 5**

Page Title: **LPDDR4**

| Rev: | Date: | Design by: |
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| v1.0.3.1 | | |

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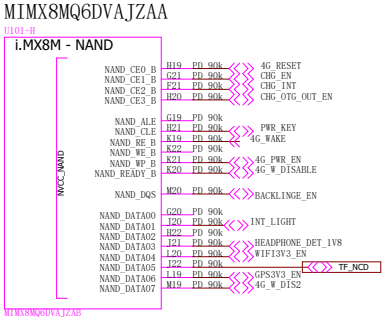
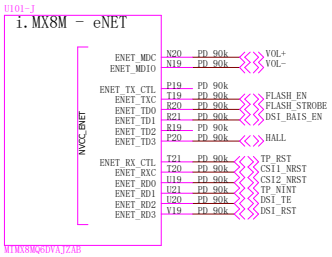
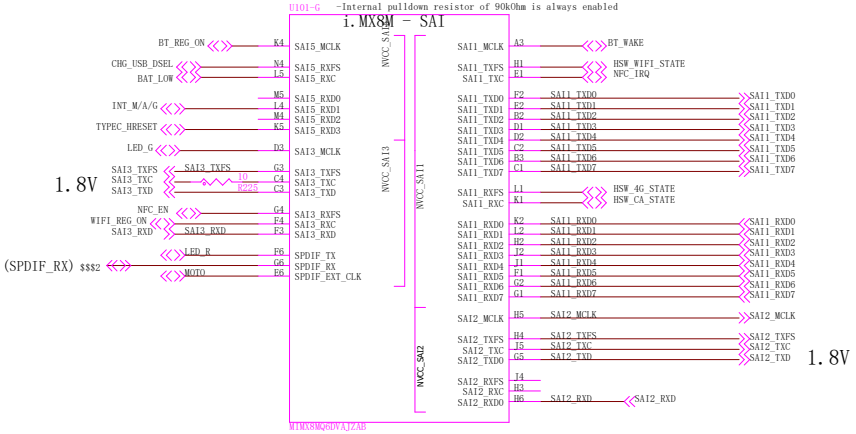
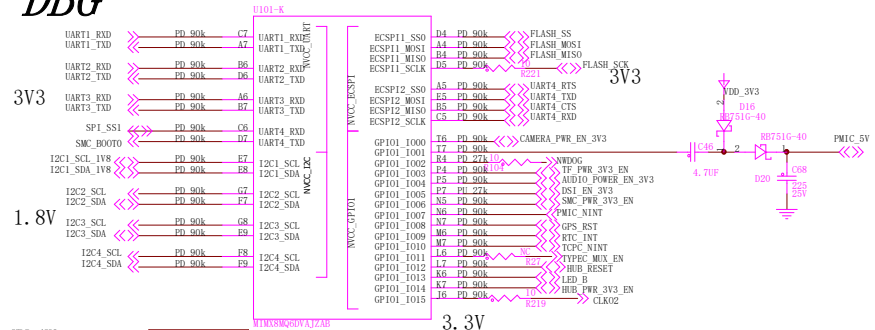
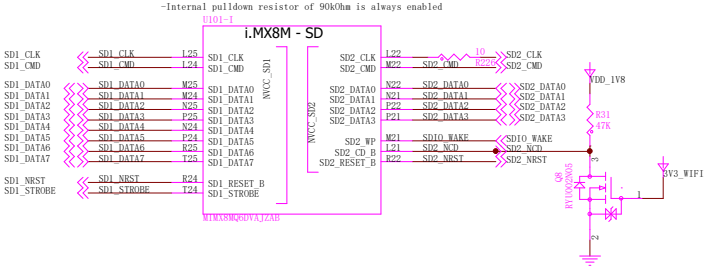


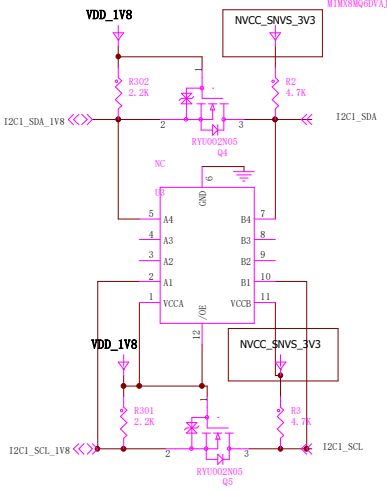



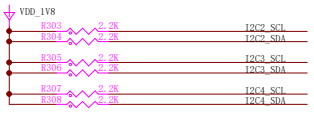




# UART DBG







| Purism | | |
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| Page Title: CPU IO | | |
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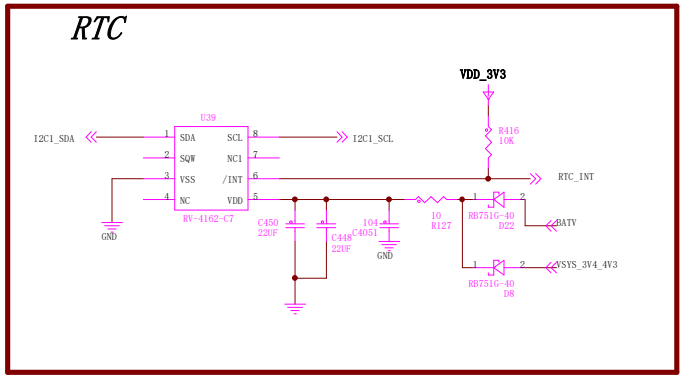
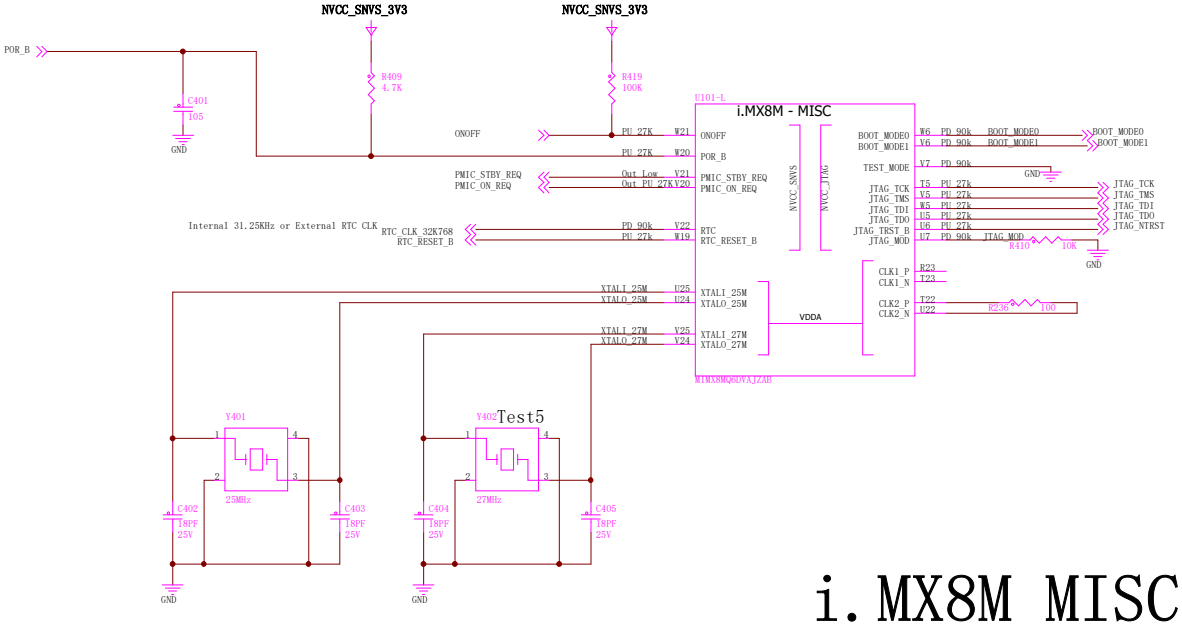



JTAG Debug




# i.MX8M MISC

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| **Purism** | | |
| Drawing Title: **Librem 5** | | |
| Page Title: CPU MISC, RTC | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
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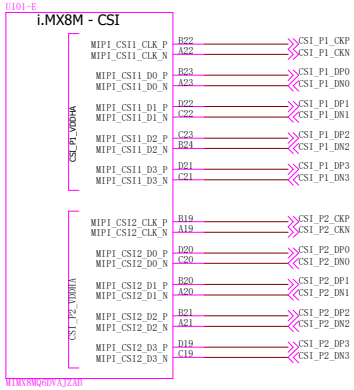
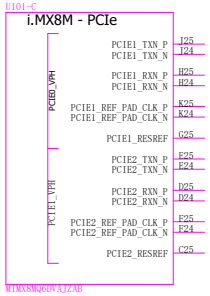
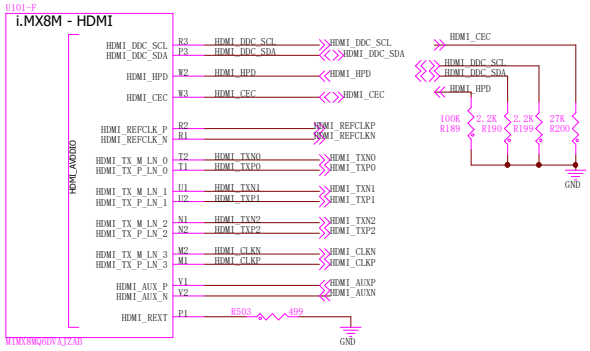
# i.MX8M PHY

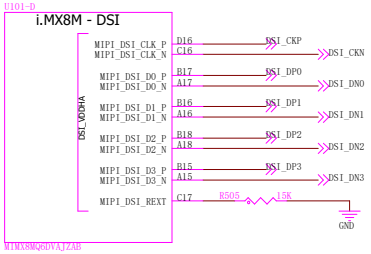
USB_RESREF: Attach a 200-Ω 1% 100-ppm/C precision resistor-to-ground on the board.
MIPIDSI_REXT: 15K-Ω
PCIE: 200-Ω±1% ± 100 ppm/° C precision resistor to-ground on the board.
HDMI:a 499Ω (±1% tolerance) resistor to-ground on the board

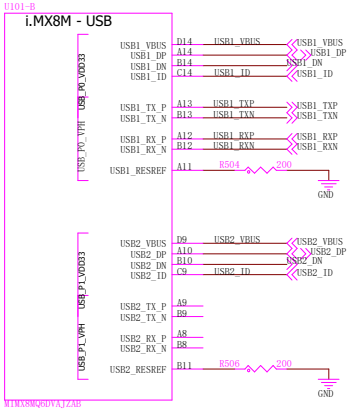


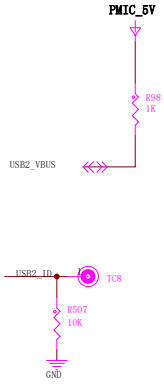



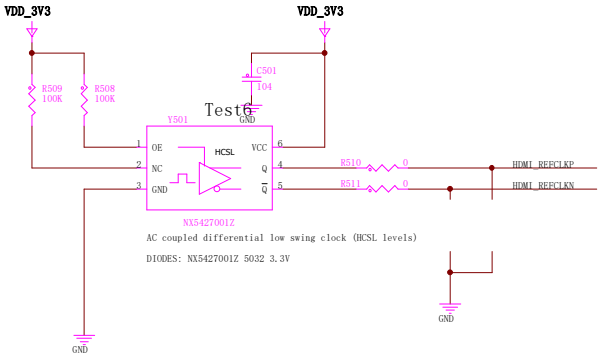




AC coupled differential low swing clock (HCSL levels)




AC coupled differential low swing clock (HCSL levels)

DIODES: NX5427001Z 5032 3.3V

| | | |
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| **Purism** | | |
| Drawing Title: **Librem 5** | | |
| Page Title: **CPU PHY** | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
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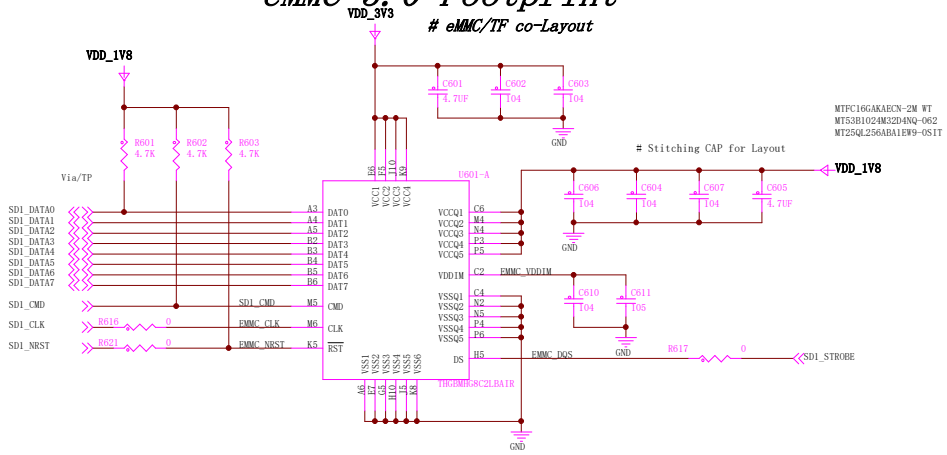
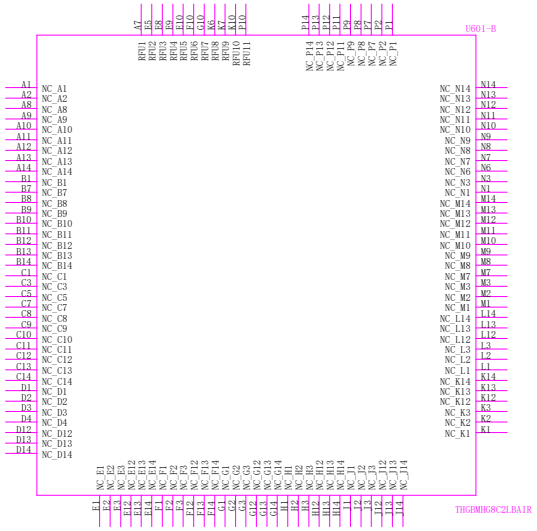
# eMMC 5.0 Footprint

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| Purism | |
| Drawing Title: | Librem 5 |
| Page Title: | EMMC |
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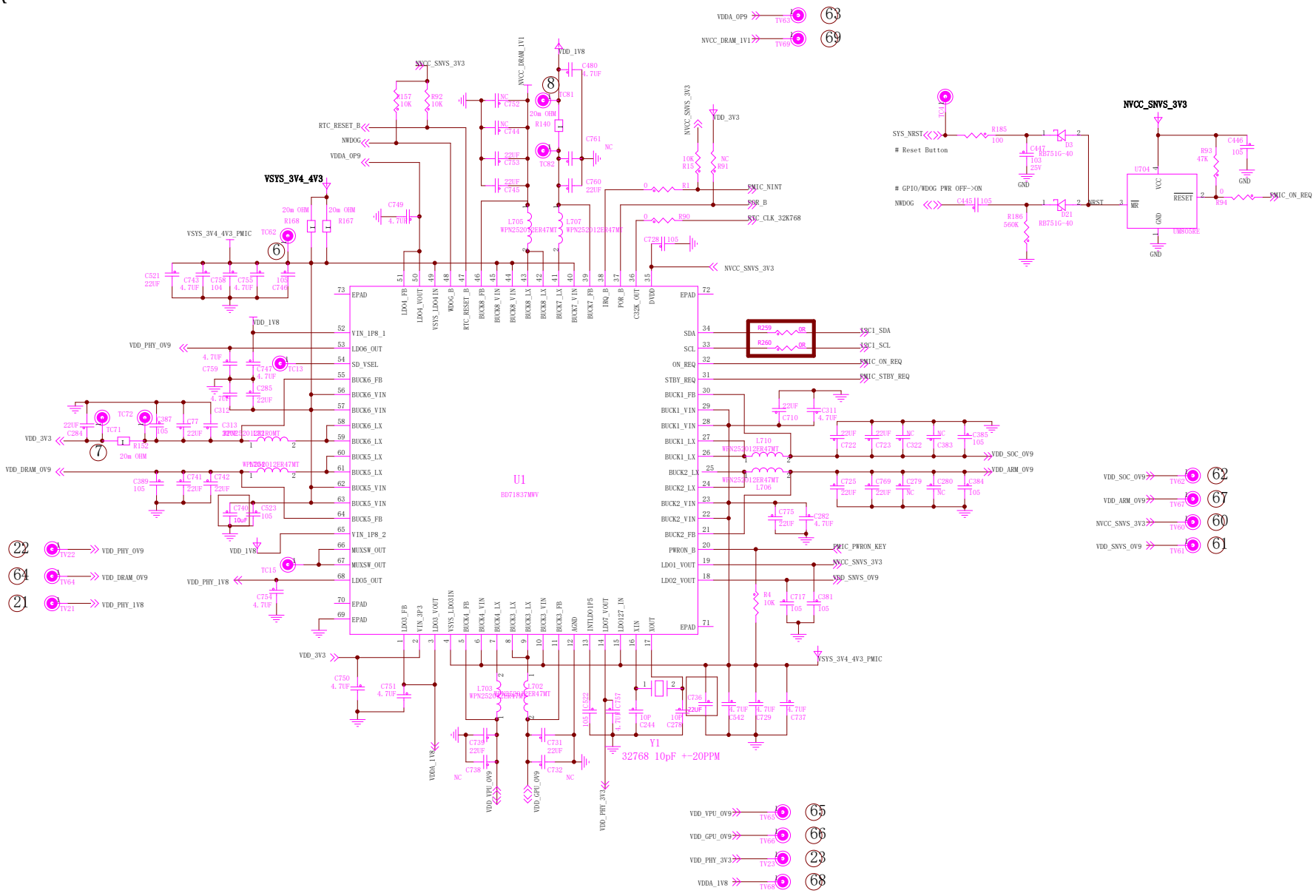
# SYS PMIC/PWR

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|---|---|
| Drawing Title: | **Librem 5** |
| Page Title: | PMIC |
| Rev: | v1.0.3.1 |
| Date: | |
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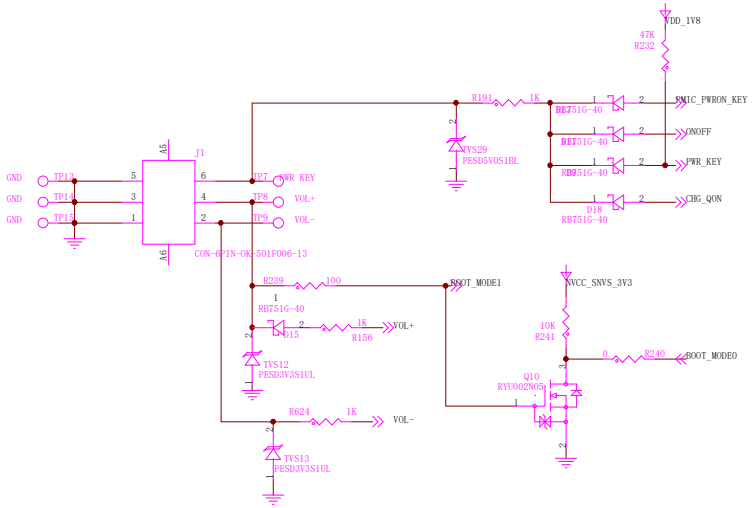
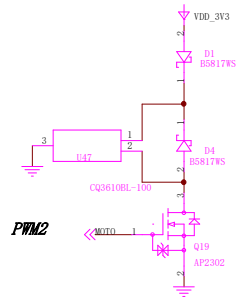
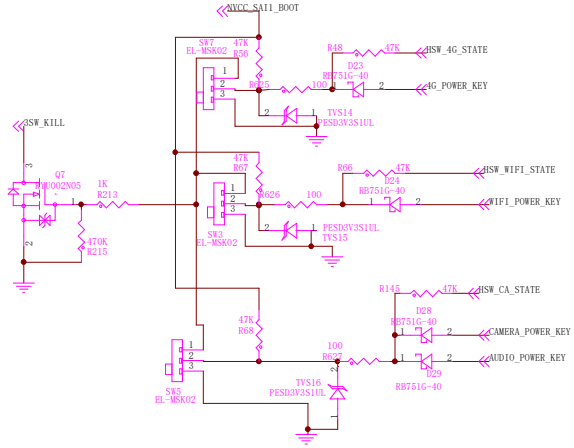
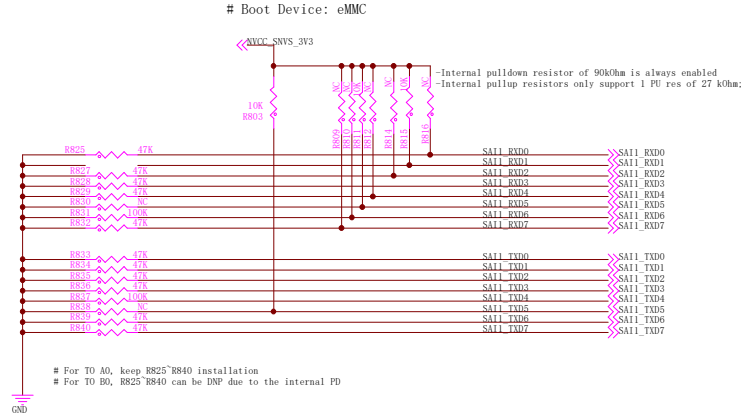
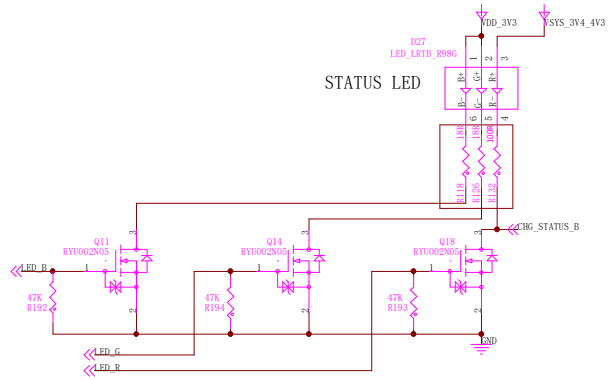
**Purism**



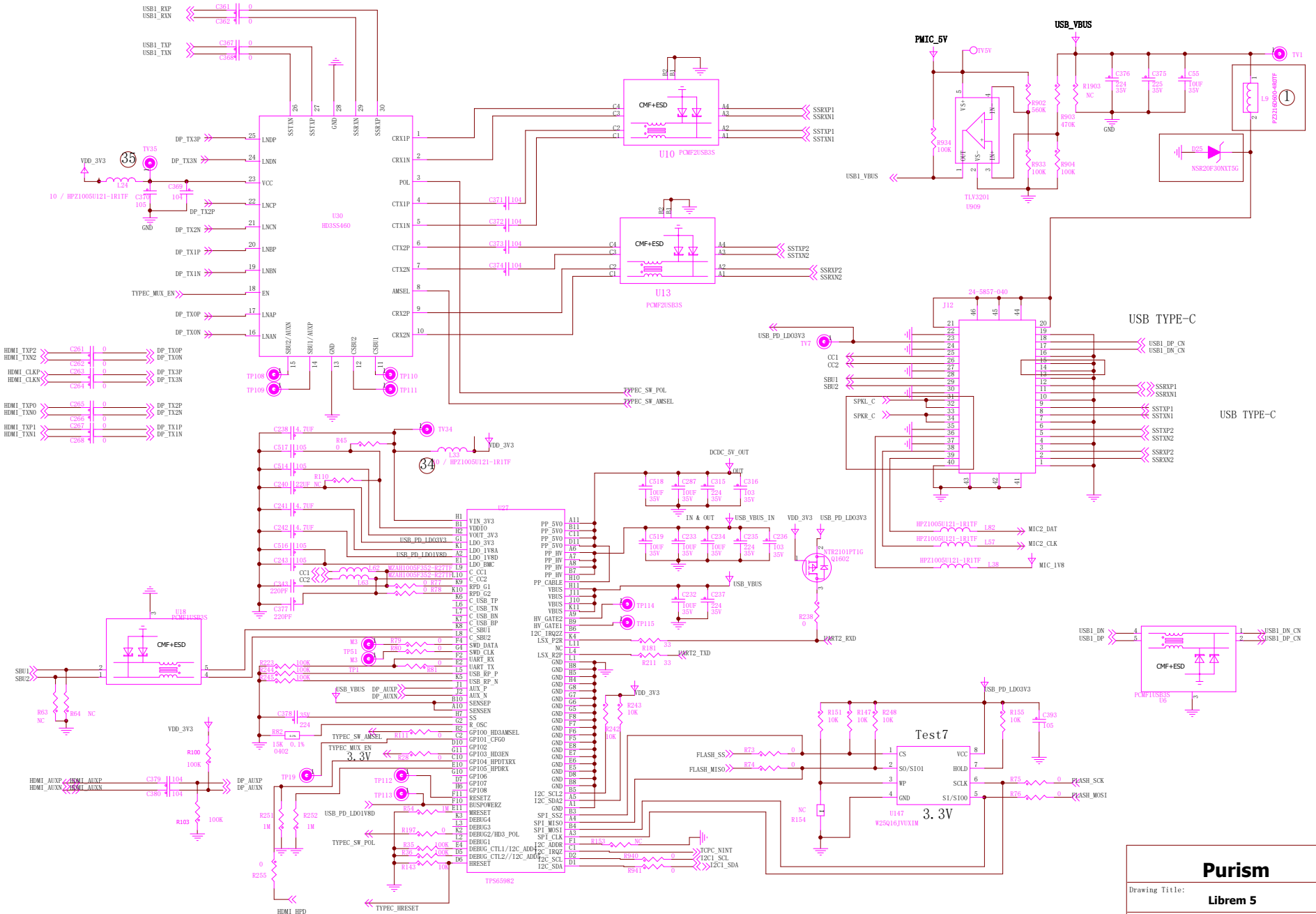



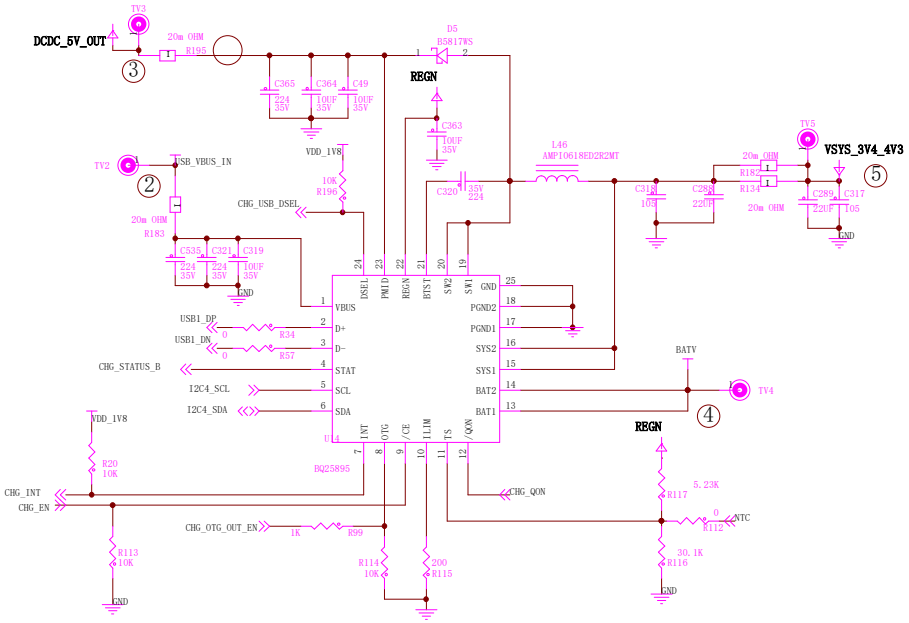



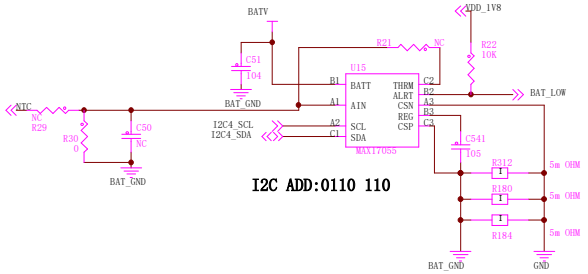

# Purism

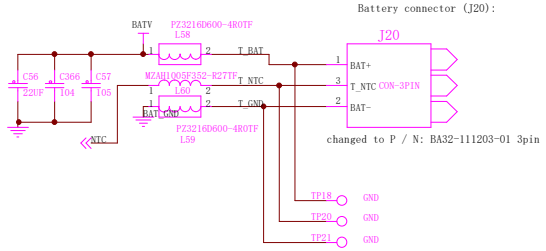
| | | |
|---|---|---|
| Drawing Title: **Librem 5** | | |
| Page Title: **BOOT CFG** | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
| | | Sheet 10 of 21 |

# USB3.0/2.0 TYPE-C/HOST





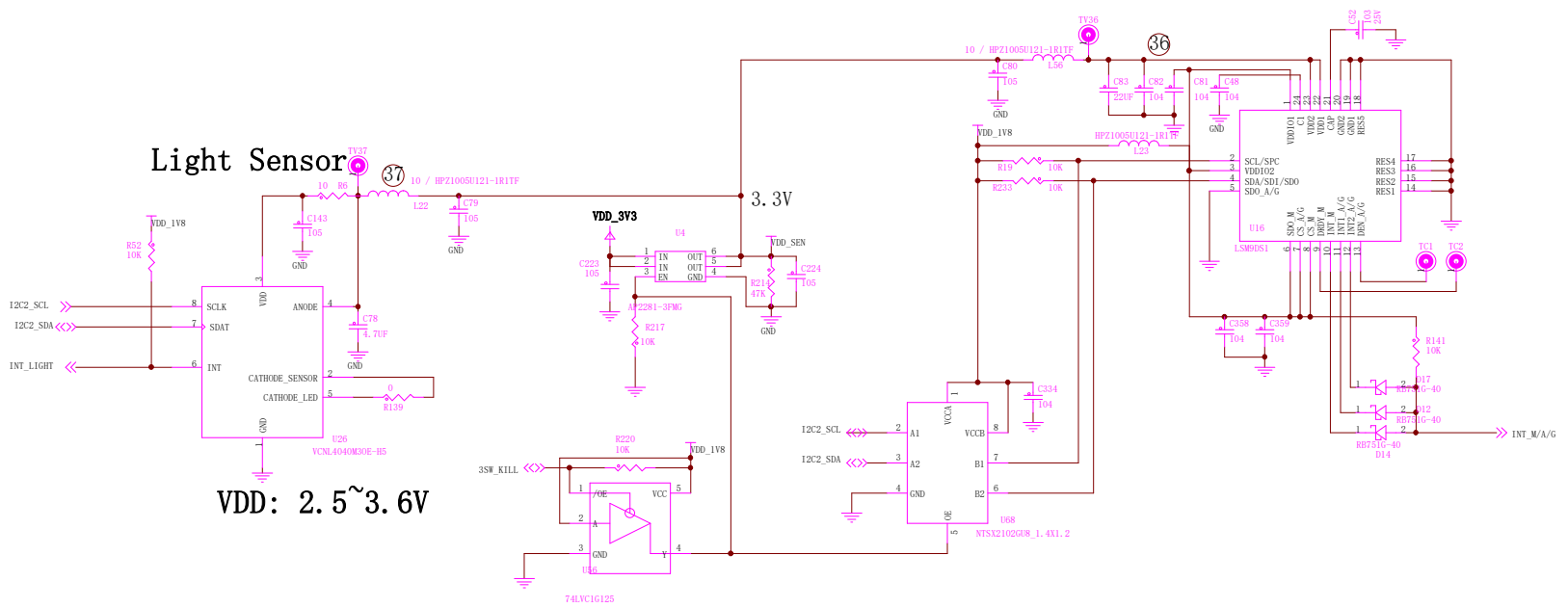



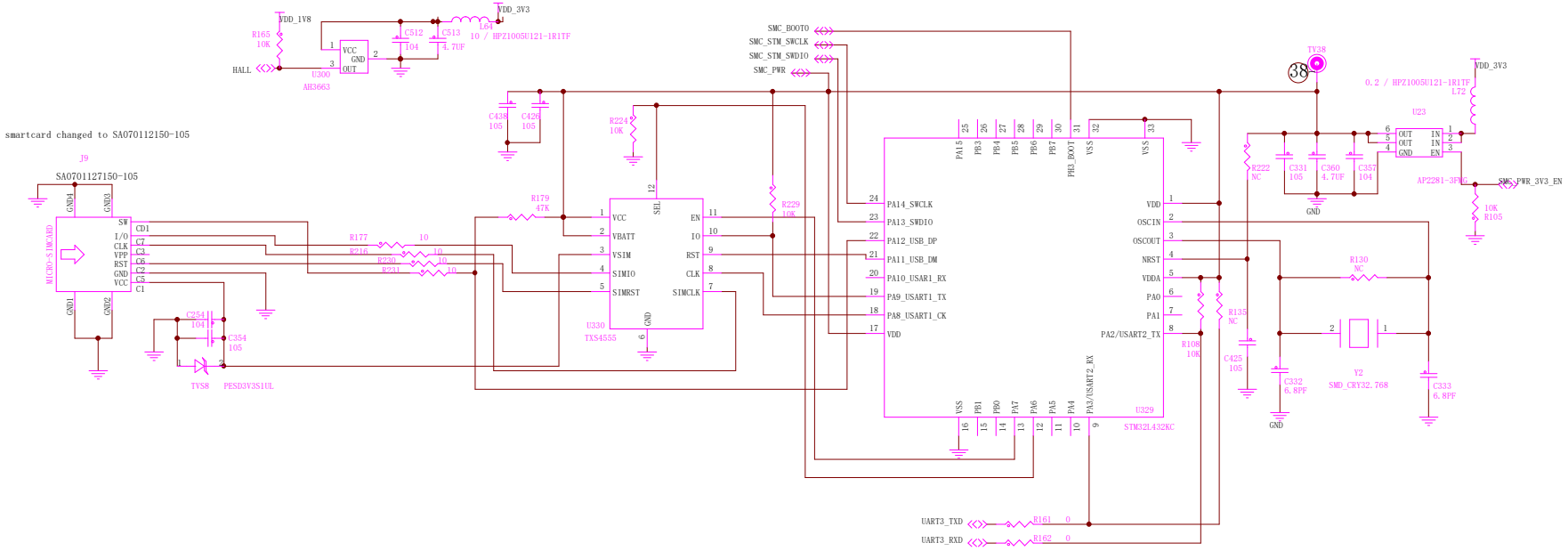




# Purism

| | |
|---|---|
| Drawing Title: | Librem 5 |
| Page Title: | CHARGE, BAT, LED |
| Rev: | v1.0.3.1 |
| Date: | |
| Design by: | |
| Sheet | 12 of 21 |

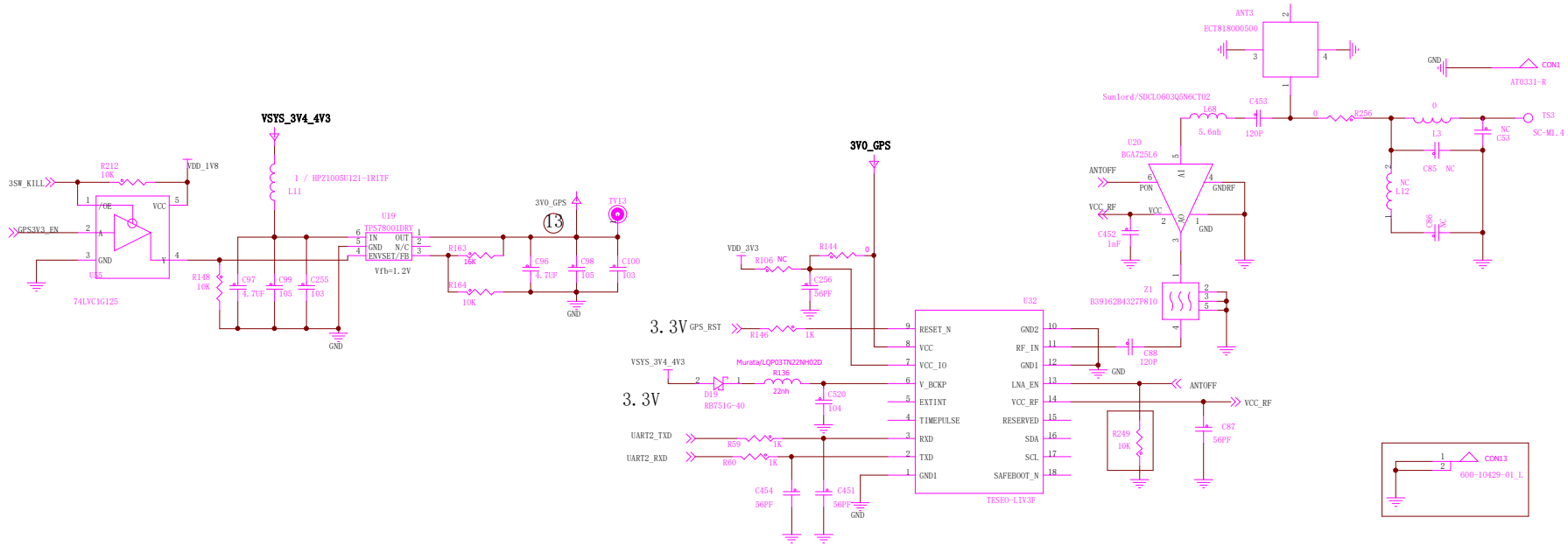
# Sensor



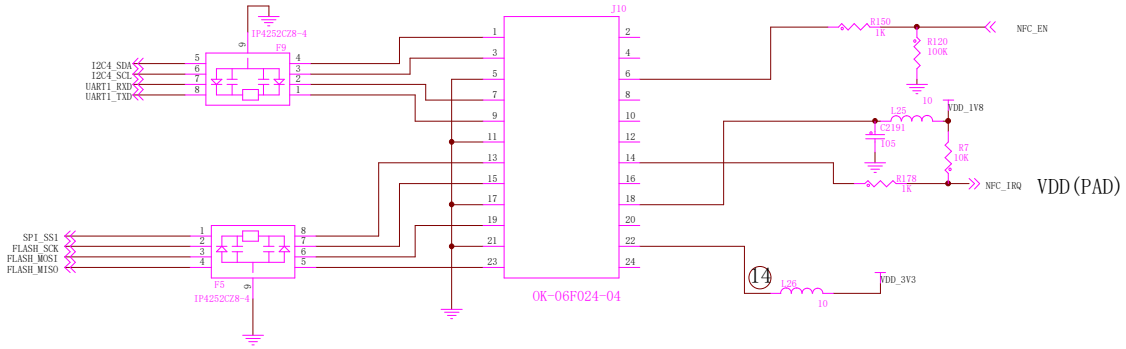




| Purism | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: SENSOR, SMART CARD | | |
| Rev: v1.0.3.1 | Date: | Design by: |
| | | Sheet 13 of 21 |

# GNSS

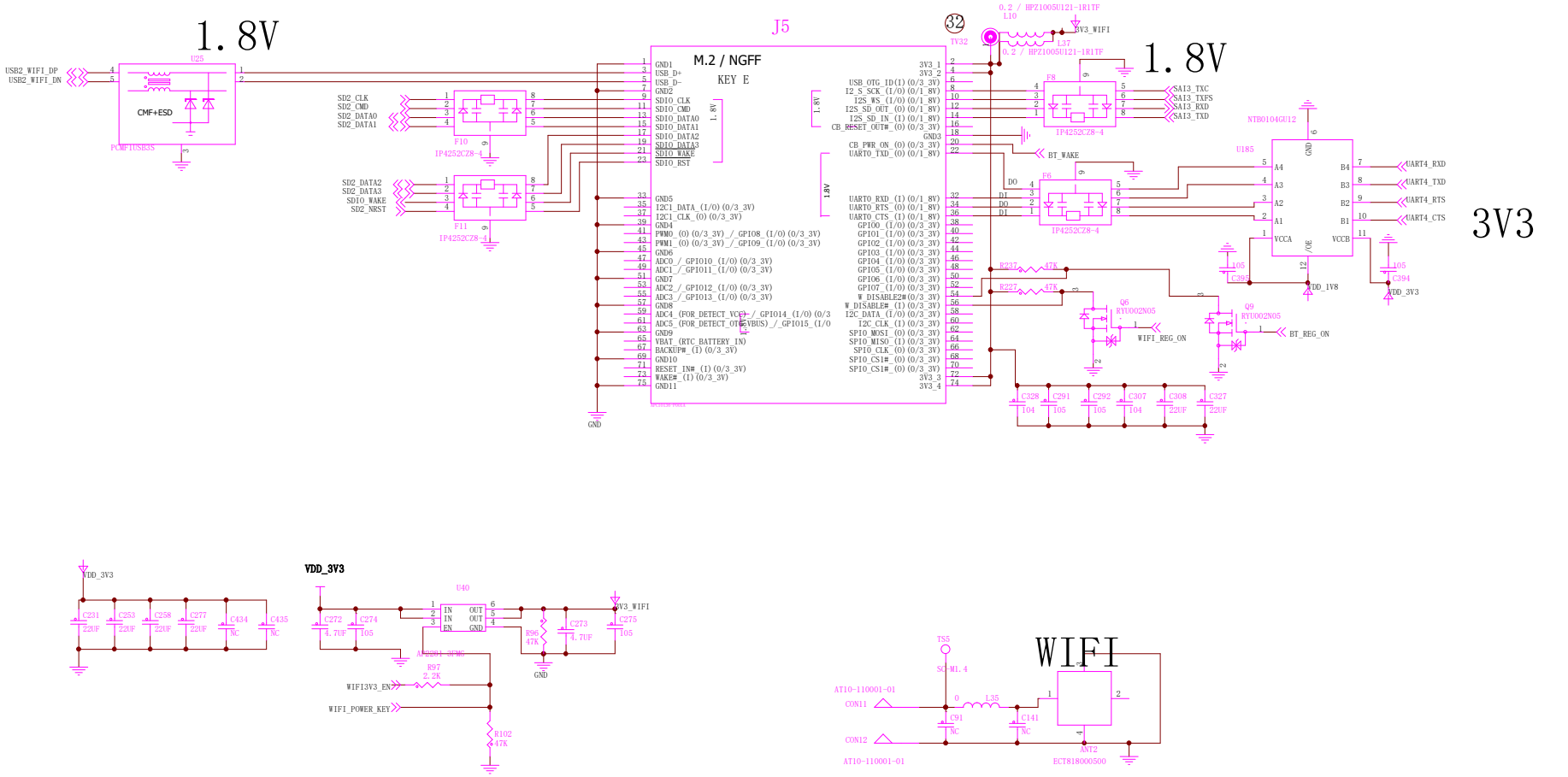



# EXT CON

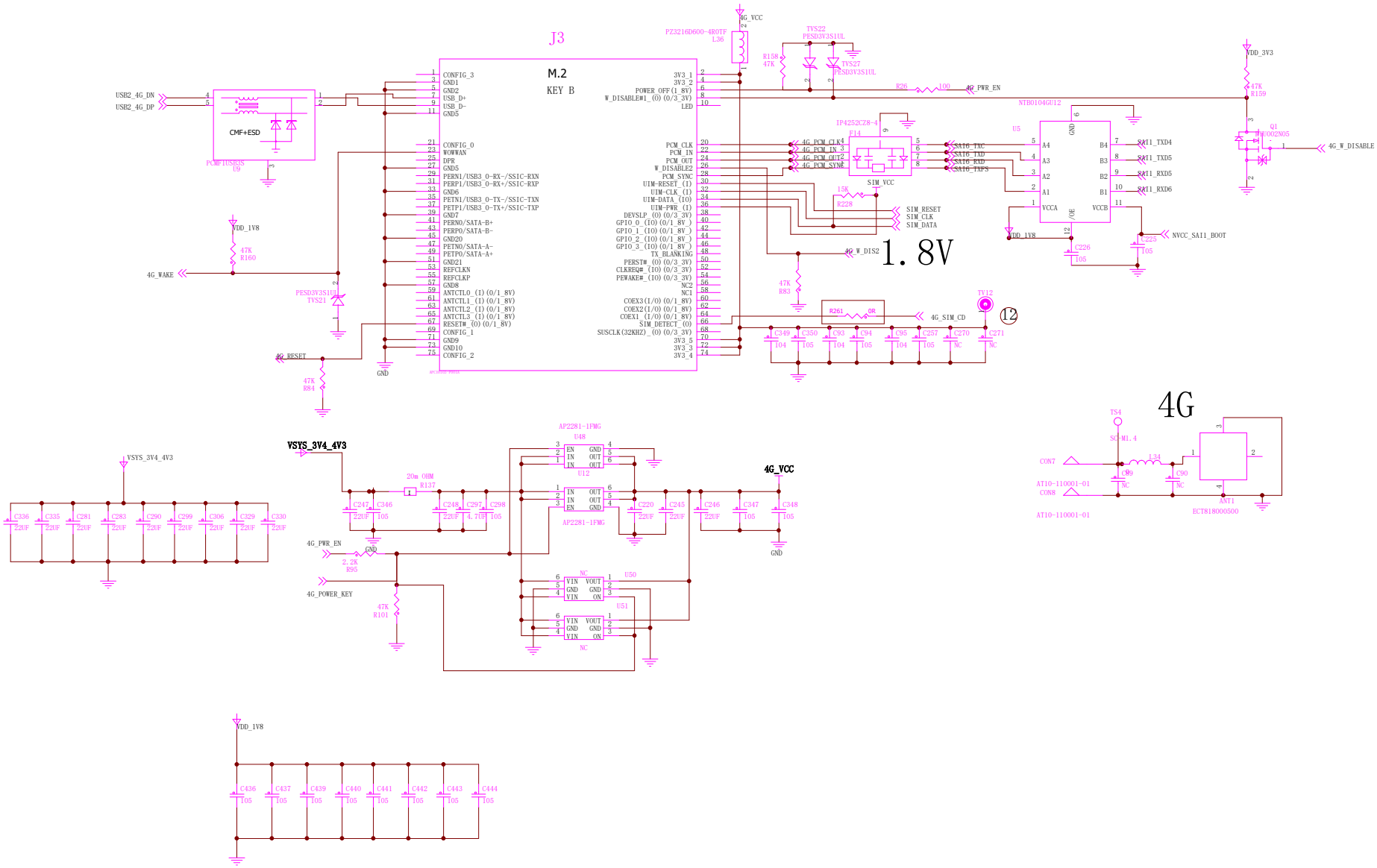



| | |
|---|---|
| **Purism** | |
| Drawing Title: | **Librem 5** |
| Page Title: | GNSS |
| Rev: **v1.0.3.1** | Date: |
| Design by: | |
| Sheet 14 of 21 | |

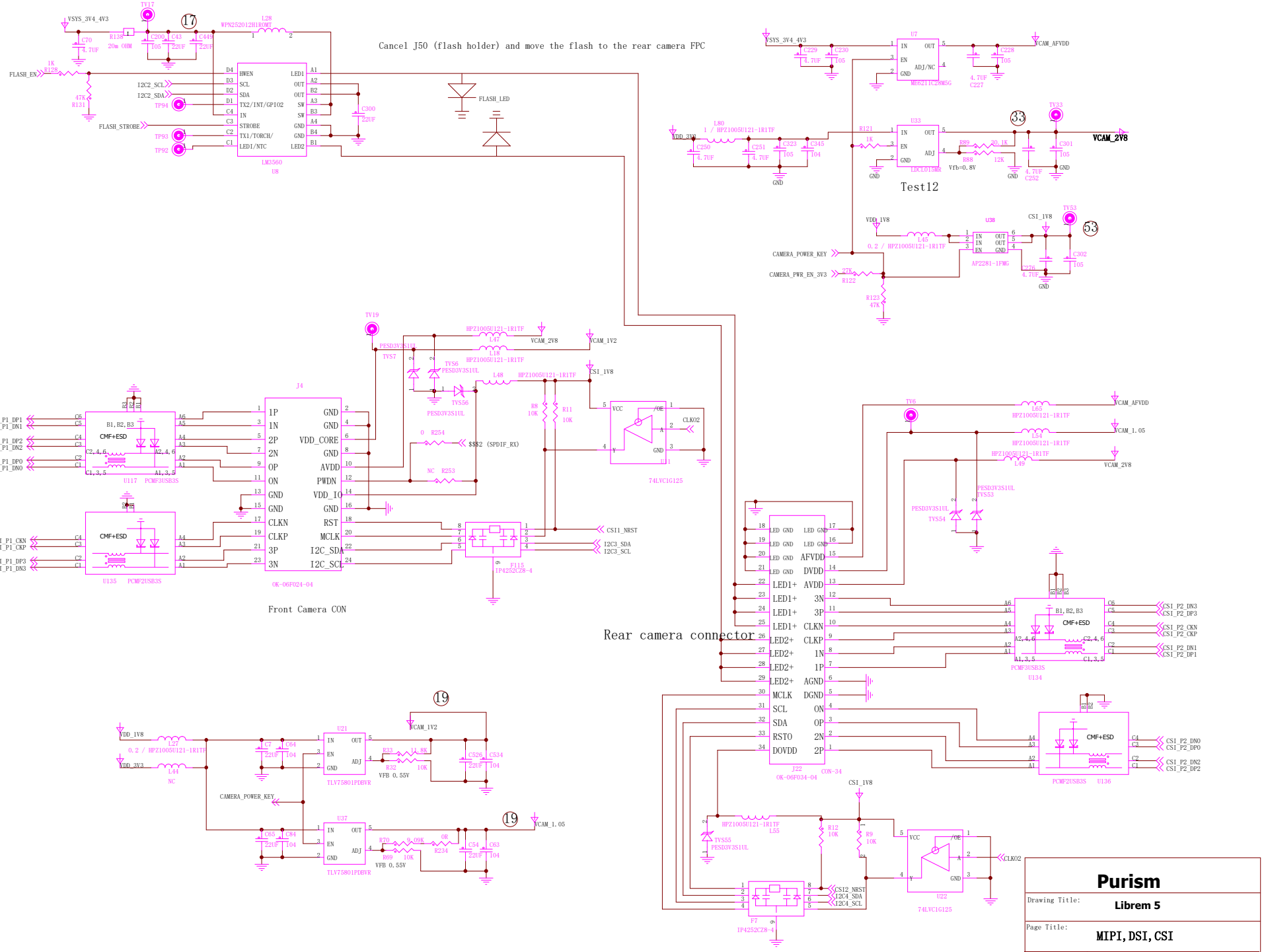
# WiFi/BT 802.11a/b/g/n/ac + Bluetooth 4.1/ EDR




| | | |
|---|---|---|
| **Purism** | | |
| Drawing Title: **Librem 5** | | |
| Page Title: **WIFI, BT** | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
| | | Sheet 15 of 21 |




| | | |
|---|---|---|
| **Purism** | | |
| Drawing Title: **Librem 5** | | |
| Page Title: **4G** | | |
| Rev: **v1.0.3.1** | Date: | Design by: |
| | | Sheet 16 of 21 |


Cancel J50 (flash holder) and move the flash to the rear camera FPC
Test12
Front Camera CON
Rear camera connector
LM3560
U8
OK-06F024-04
J4
J22
OK-06F034-04
CON-34
U117 PCMF3USB3S
U135 PCMF2USB3S
U134 PCMF3USB3S
U136 PCMF2USB3S
74LVC1G125
TLV75801PDBVR
MER2ITC28M5G
LDCL015MR
AP2281-1FMG
IP4252CZ8-4
VSYS_3V4_4V3
VDD_3V3
VDD_1V8
VCAM_AFVDD
VCAM_2V8
VCAM_1V2
VCAM_1.05
CSI_1V8
FLASH_LED
FLASH_EN
FLASH_STROBE
I2C2_SCL
I2C2_SDA
CAMERA_POWER_KEY
CAMERA_PWR_EN_3V3
CSI1_NRST
I2C3_SDA
I2C3_SCL
CSI2_NRST
I2C4_SDA
I2C4_SCL
CLKO2
$$82 (SPDIF_RX)
VFB 0.55V
VFB=0.8V
Purism
Librem 5
MIPI,DSI,CSI
v1.0.3.1
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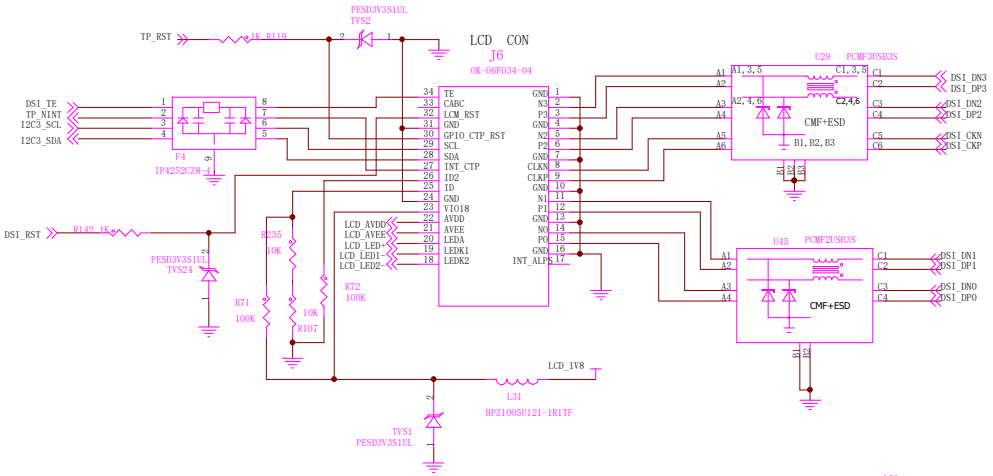
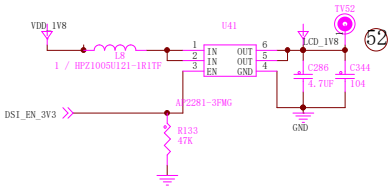
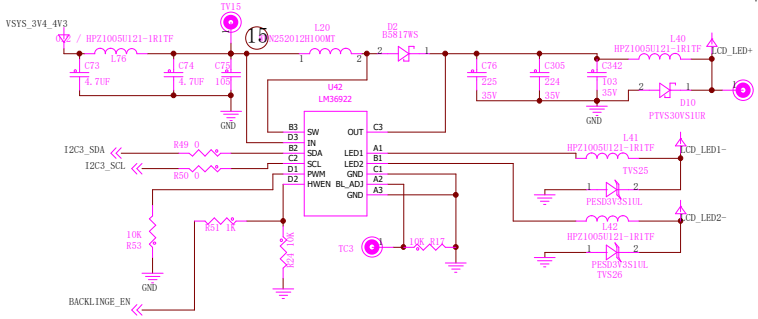
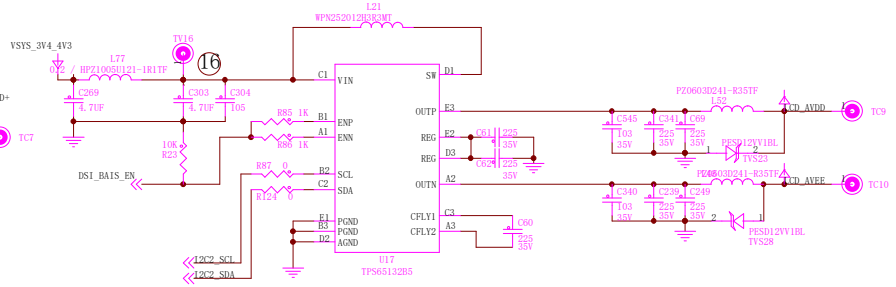
# DSI LCD IF



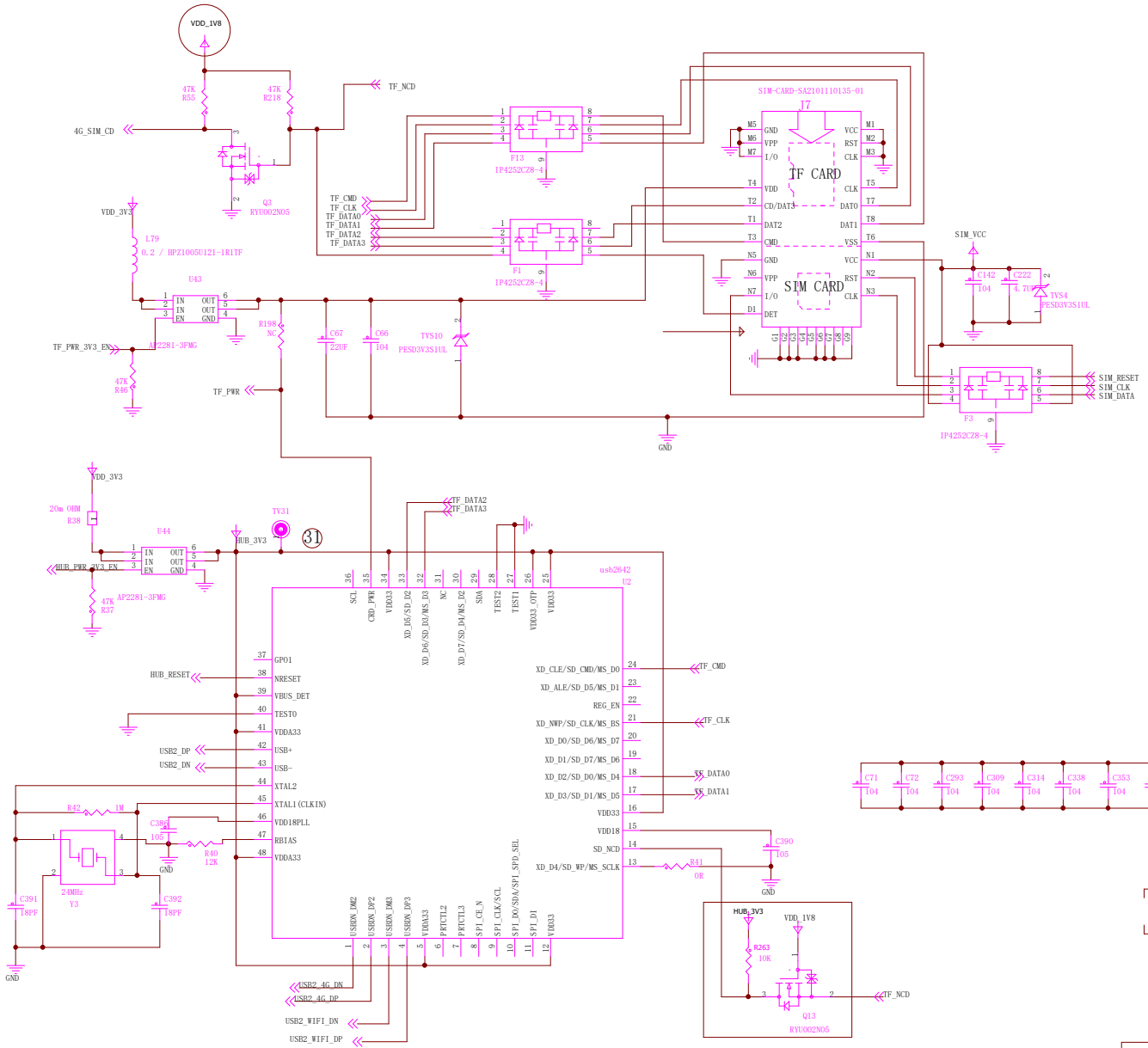



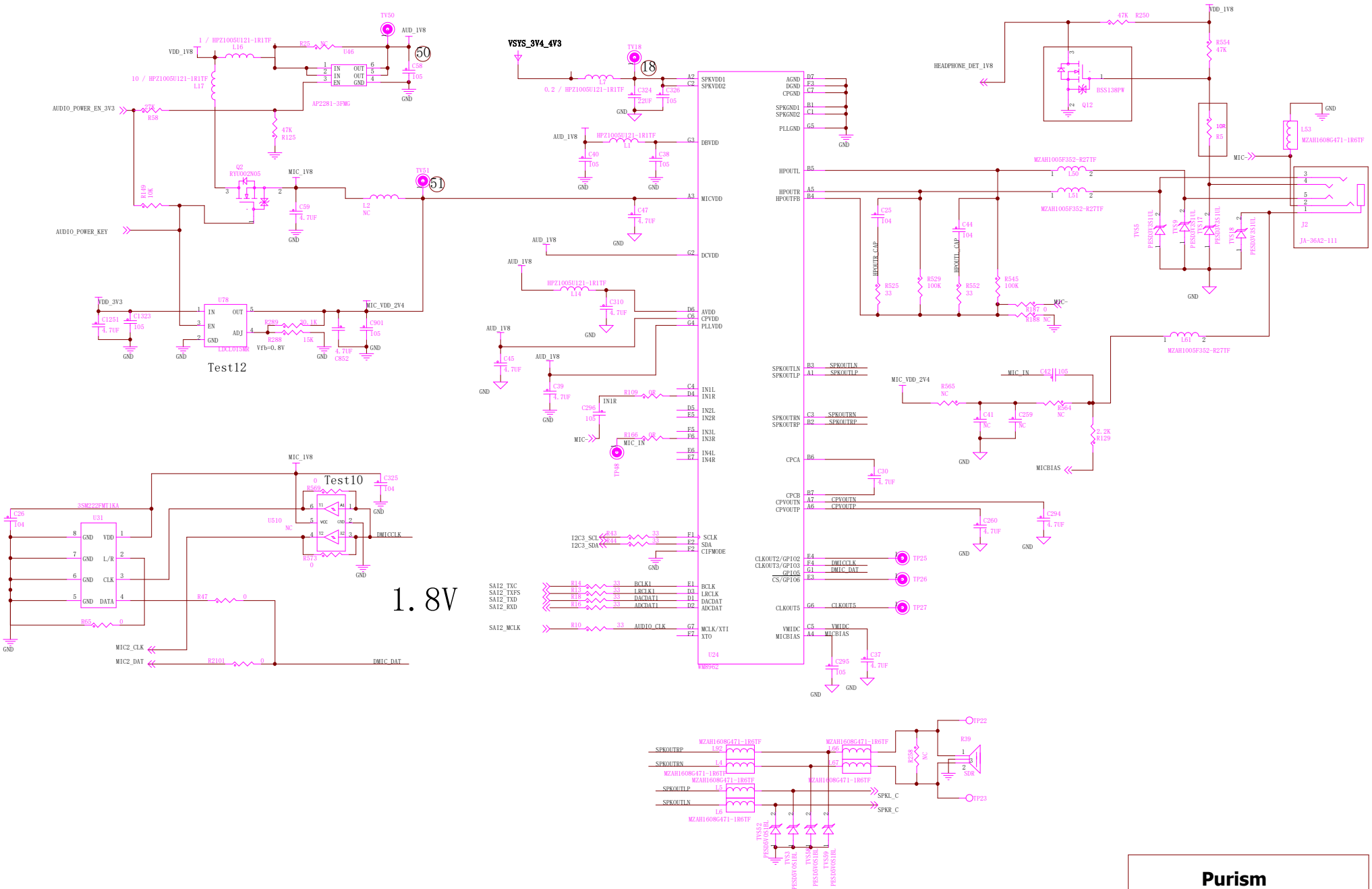

| Purism | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: MICROSD,MOTO | | |
| Rev: v1.0.3.1 | Date: | Design by: |
| | | Sheet 18 of 21 |

# USB HUB + SDIO BRIDGE



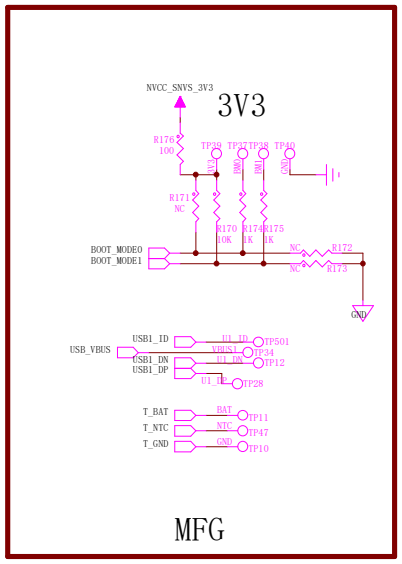

**Purism**

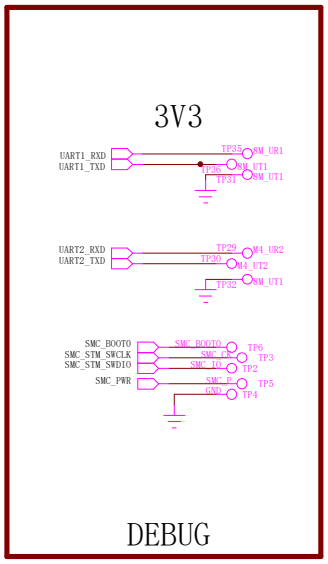
| | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: USB HUB | | |
| Rev: v1.0.3.1 | Date: | Design by: |
| | | Sheet 19 of 21 |

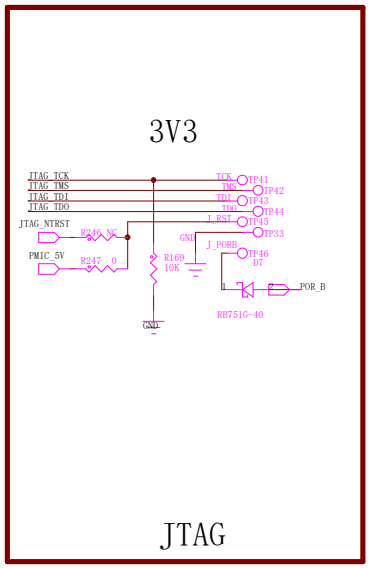



# Purism

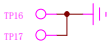
| | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: AUDIO | | |
| Rev: v1.0.3.1 | Date: | Design by: |
| | | Sheet 20 of 21 |



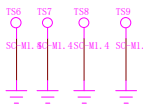

M2 module SCREW



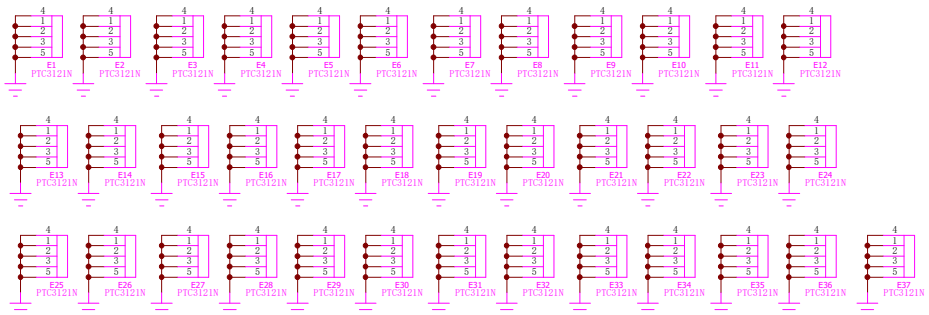
| BMODE[1:0] | BOOT TYPE |
|---|---|
| 00 | Boot From Fuses |
| 01 | Serial Downloader |
| 10 | Internal Boot (Development) |
| 11 | Reserved |

SCREW


Shielding Case

Shielding Case Hold




| Purism | | |
|---|---|---|
| Drawing Title: Librem 5 | | |
| Page Title: DEBUG | | |
| Rev: v1.0.3.1 | Date: | Design by: |
| | | Sheet 21 of 21 |