

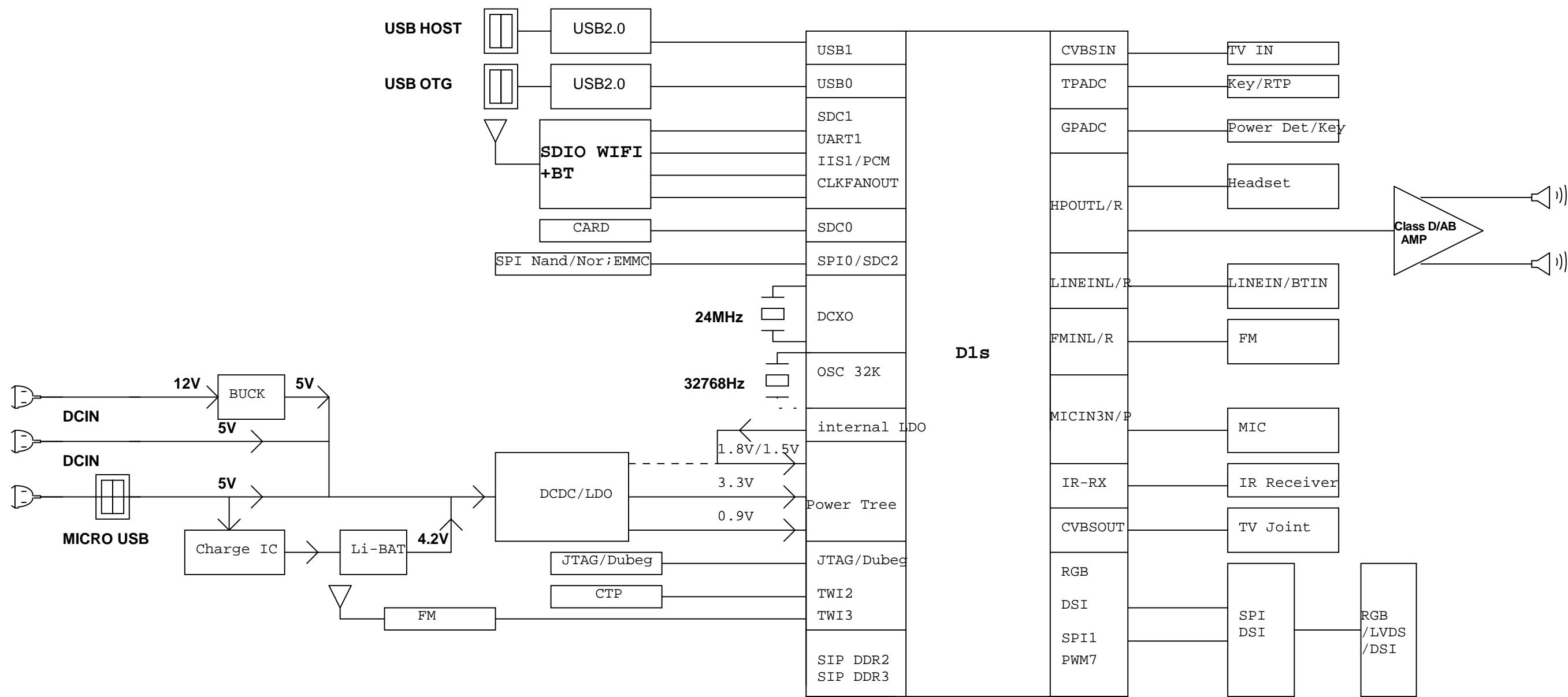
VERSION HISTORY

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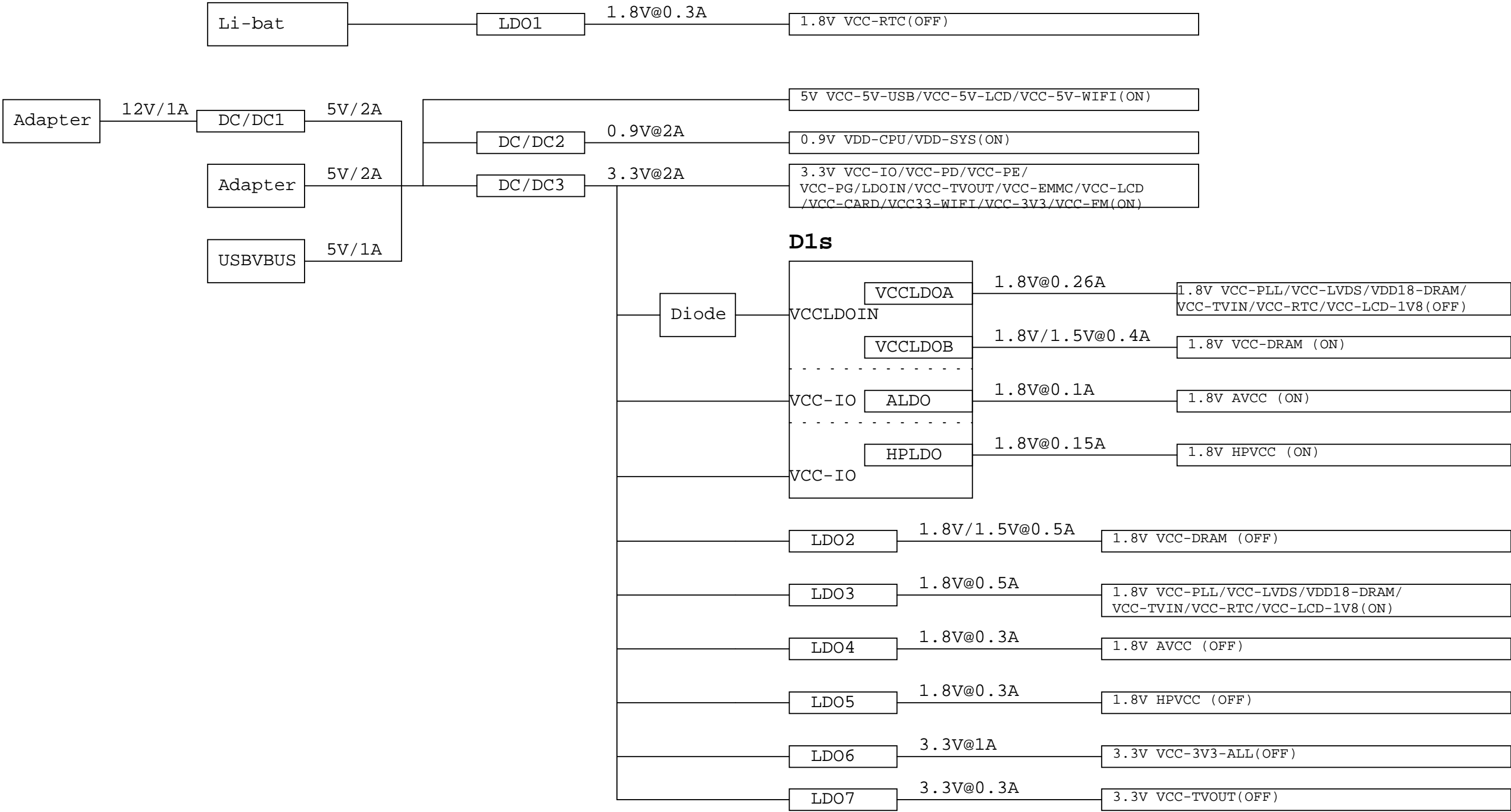
| Revision | Description | Date | Drawn | Checked | Approved |
|----------|-----------------|-----------|-------|---------|----------|
| Ver 2.0 | Release Version | 2020-12-4 | | | |

BLOCK



DEFAULT POWER ON

DEFAULT POWER OFF



GPIO ASSIGNMENT

| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|---|
| 86 | PB2 | LCD0_D0/I2S2_DOUT2/TWI0_SDA/I2S2_DIN2/LCD0_D18/UART4_TX/PB_EINT2 |
| 85 | PB3 | LCD0_D1/I2S2_DOUT1/TWI0_SCK/I2S2_DIN0/LCD0_D19/UART4_RX/PB_EINT3 |
| 84 | PB4 | LCD0_D8/I2S2_DOUT0/TWI1_SCK/I2S2_DIN1/LCD0_D20/UART5_TX/PB_EINT4 |
| 82 | PB5 | LCD0_D9/I2S2_BCLK/TWI1_SDA/PWM0/LCD0_D21/UART5_RX/PB_EINT5 |
| 80 | PB6 | LCD0_D16/I2S2_LRCK/TWI3_SCK/PWM1/LCD0_D22/UART3_TX/CPUBIST0/PB_EINT6 |
| 79 | PB7 | LCD0_D17/I2S2_MCLK/TWI3_SDA/IR_RX/LCD0_D23/UART3_RX/CPUBIST1/PB_EINT7 |

| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|--|
| 19 | PC2 | SPI0_CLK/SDC2_CLK/PC_EINT2 |
| 18 | PC3 | SPI0_CS0/SDC2_CMD/PC_EINT3 |
| 17 | PC4 | SPI0_MOSI/SDC2_D2/BOOT_SEL0/PC_EINT4 |
| 16 | PC5 | SPI0_MISO/SDC2_D1/BOOT_SEL1/PC_EINT5 |
| 15 | PC6 | SPI0_WP/SDC2_D0/UART3_TX/TWI3_SCK/DBG_CLK/PC_EINT6 |
| 14 | PC7 | SPI0_HOLD/SDC2_D3/UART3_RX/TWI3_SDA/TCON_TRIG/PC_EINT7 |

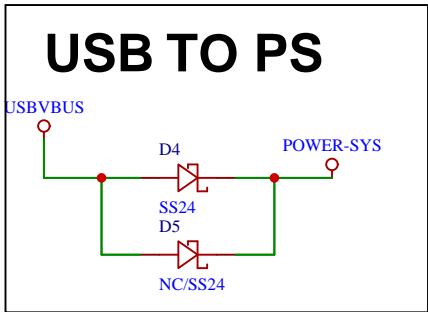
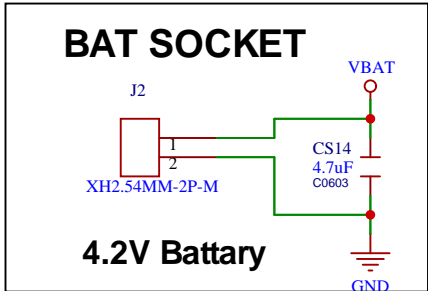
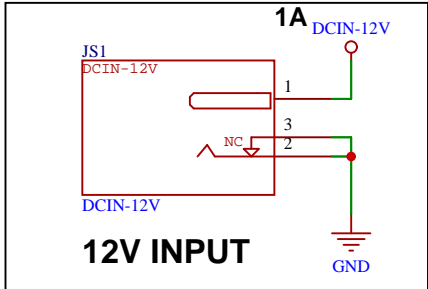
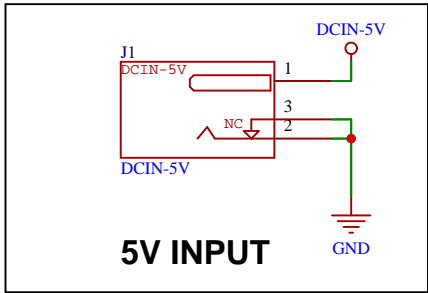
| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|---|
| 55 | PD0 | LCD0_D2/LVDS0_V0P/DSI_D0P/TWI0_SCK/PD_EINT0 |
| 56 | PD1 | LCD0_D3/LVDS0_V0N/DSI_D0N/UART2_TX/PD_EINT1 |
| 57 | PD2 | LCD0_D4/LVDS0_V1P/DSI_D1P/UART2_RX/PD_EINT2 |
| 58 | PD3 | LCD0_D5/LVDS0_V1N/DSI_D1N/UART2_RTS/PD_EINT3 |
| 59 | PD4 | LCD0_D6/LVDS0_V2P/DSI_CKP/UART2_CTS/PD_EINT4 |
| 60 | PD5 | LCD0_D7/LVDS0_V2N/DSI_CKN/UART5_TX/PD_EINT5 |
| 61 | PD6 | LCD0_D10/LVDS0_CKP/DSI_D2P/UART5_RX/PD_EINT6 |
| 62 | PD7 | LCD0_D11/LVDS0_CKN/DSI_D2N/UART4_TX/PD_EINT7 |
| 63 | PD8 | LCD0_D12/LVDS0_V3P/DSI_D3P/UART4_RX/PD_EINT8 |
| 64 | PD9 | LCD0_D13/LVDS0_V3N/DSI_D3N/PWM6/PD_EINT9 |
| 67 | PD10 | LCD0_D14/LVDS1_V0P/SPI1_CS/DBI_CSX/UART3_TX/PD_EINT10 |
| 68 | PD11 | LCD0_D15/LVDS1_V0N/SPI1_CLK/DBI_SCLK/UART3_RX/PD_EINT11 |
| 70 | PD12 | LCD0_D18/LVDS1_V1P/SPI1_MOSI/DBI_SDO/TWI0_SDA/PD_EINT12 |
| 69 | PD13 | LCD0_D19/LVDS1_V1N/SPI1_MISO/DBI_SDI/DBI_TE/DBI_DCX/UART3_RTS/PD_EINT13 |
| 71 | PD14 | LCD0_D20/LVDS1_V2P/SPI1_HOLD/DBI_DCX/DBI_WRX/UART3_CTS/PD_EINT14 |
| 72 | PD15 | LCD0_D21/LVDS1_V2N/SPI1_WP/DBI_TE/IR_RX/PD_EINT15 |
| 73 | PD16 | LCD0_D22/LVDS1_CKP/DMIC_DATA3/PWM0/PD_EINT16 |
| 74 | PD17 | LCD0_D23/LVDS1_CKN/DMIC_DATA2/PWM1/PD_EINT17 |
| 75 | PD18 | LCD0_CLK/LVDS1_V3P/DMIC_DATA1/PWM2/PD_EINT18 |
| 76 | PD19 | LCD0_DE/LVDS1_V3N/DMIC_DATA0/PWM3/PD_EINT19 |
| 54 | PD20 | LCD0_HSYNC/TWI2_SCK/DMIC_CLK/PWM4/PD_EINT20 |
| 53 | PD21 | LCD0_VSYNC/TWI2_SDA/UART1_TX/PWM5/PD_EINT21 |
| 52 | PD22 | SPDIF_OUT/IR_RX/UART1_RX/PWM7/PD_EINT22 |

| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|---|
| 7 | PF0 | SDC0_D1/JTAG_MS/R_JTAG_MS/I2S2_DOUT1/I2S2_DIN0/PF_EINT0 |
| 8 | PF1 | SDC0_D0/JTAG_DI/R_JTAG_DI/I2S2_DOUT0/I2S2_DIN1/PF_EINT1 |
| 9 | PF2 | SDC0_CLK/UART0_TX/TWI0_SCK/LEDC_DO/SPDIF_IN/PF_EINT2 |
| 10 | PF3 | SDC0_CMD/JTAG_DO/R_JTAG_DO/I2S2_BCLK/PF_EINT3 |
| 11 | PF4 | SDC0_D3/UART0_RX/TWI0_SDA/PWM6/IR_TX/PF_EINT4 |
| 12 | PF5 | SDC0_D2/JTAG_CK/R_JTAG_CK/I2S2_LRCK/PF_EINT5 |
| 13 | PF6 | SPDIF_OUT/IR_RX/I2S2_MCLK/PWM5/PF_EINT6 |

| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|--|
| 44 | PE0 | NCSI0_HSYNC/UART2_RTS/TWI1_SCK/LCD0_HSYNC/RGMII_RXCTRL/RMII_CRS_DV/PE_EINT0 |
| 45 | PE1 | NCSI0_VSYNC/UART2_CTS/TWI1_SDA/LCD0_VSYNC/RGMII_RXD0/RMII_RXD0/PE_EINT1 |
| 35 | PE2 | NCSI0_PCLK/UART2_TX/TWI0_SCK/CLK_FANOUT0/UART0_TX/RGMII_RXD1/RMII_RXD1/PE_EINT2 |
| 33 | PE3 | NCSI0_MCLK/UART2_RX/TWI0_SDA/CLK_FANOUT1/UART0_RX/RGMII_TXCK/RMII_TXCK/PE_EINT3 |
| 43 | PE4 | NCSI0_D0/UART4_TX/TWI2_SCK/CLK_FANOUT2/D_JTAG_MS/R_JTAG_MS/RGMII_TXD0/RMII_TXD0/PE_EINT4 |
| 42 | PE5 | NCSI0_D1/UART4_RX/TWI2_SDA/LEDC_DO/D_JTAG_DI/R_JTAG_DI/RGMII_TXD1/RMII_TXD1/PE_EINT5 |
| 41 | PE6 | NCSI0_D2/UART5_TX/TWI3_SCK/SPDIF_IN/D_JTAG_DO/R_JTAG_DO/RGMII_TXCTRL/RMII_TXEN/PE_EINT6 |
| 40 | PE7 | NCSI0_D3/UART5_RX/TWI3_SDA/SPDIF_OUT/D_JTAG_CK/R_JTAG_CK/RGMII_CLKIN/RMII_RXER/PE_EINT7 |
| 39 | PE8 | NCSI0_D4/UART1_RTS/PWM2/UART3_TX/JTAG_MS/MDC/PE_EINT8 |
| 38 | PE9 | NCSI0_D5/UART1_CTS/PWM3/UART3_RX/JTAG_DI/MDIO/PE_EINT9 |
| 37 | PE10 | NCSI0_D6/UART1_TX/PWM4/IR_RX/JTAG_DO/EPHY_25M/PE_EINT10 |
| 36 | PE11 | NCSI0_D7/UART1_RX/I2S0_DOUT3/I2S0_DIN3/JTAG_CK/RGMII_TXD2/PE_EINT11 |
| 32 | PE12 | TWI2_SCK/NCSI0_FIELD/I2S0_DOUT2/I2S0_DIN2/RGMII_TXD3/PE_EINT12 |
| 31 | PE13 | TWI2_SDA/PWM5/I2S0_DOUT0/I2S0_DIN1/DMIC_DATA3/RGMII_RXD2/PE_EINT13 |

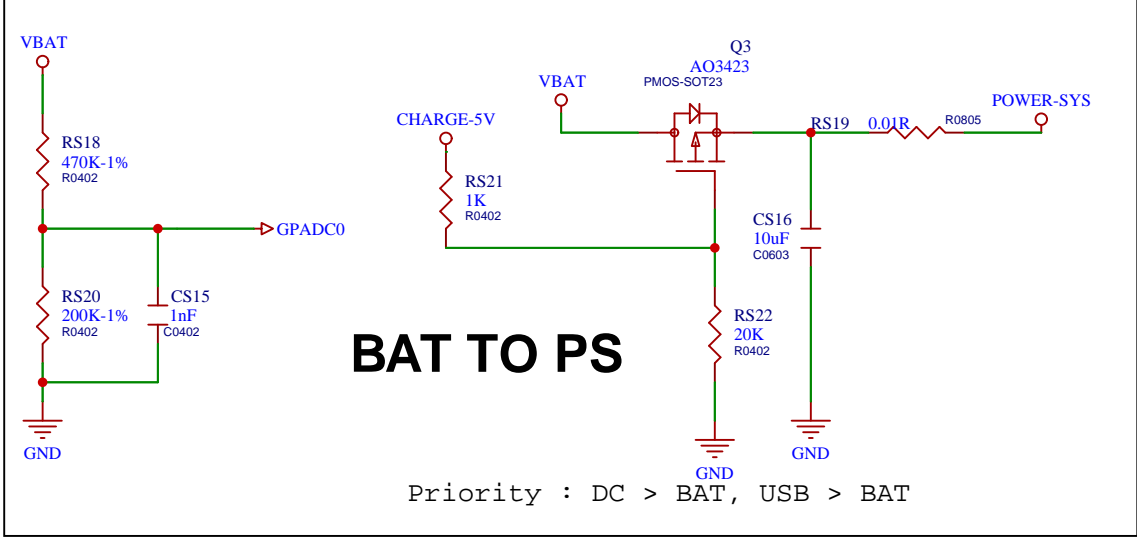
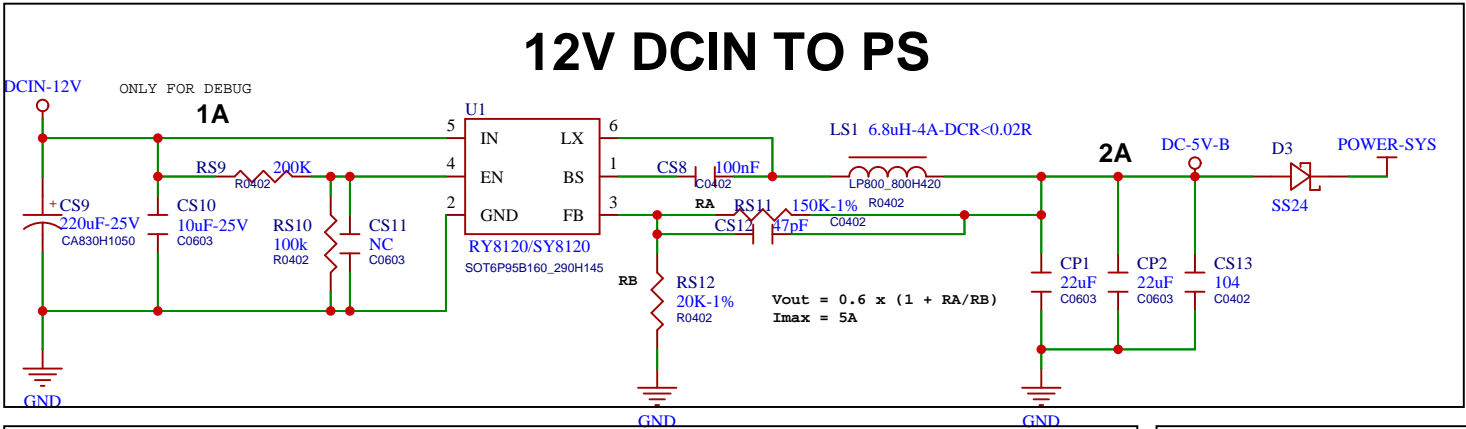
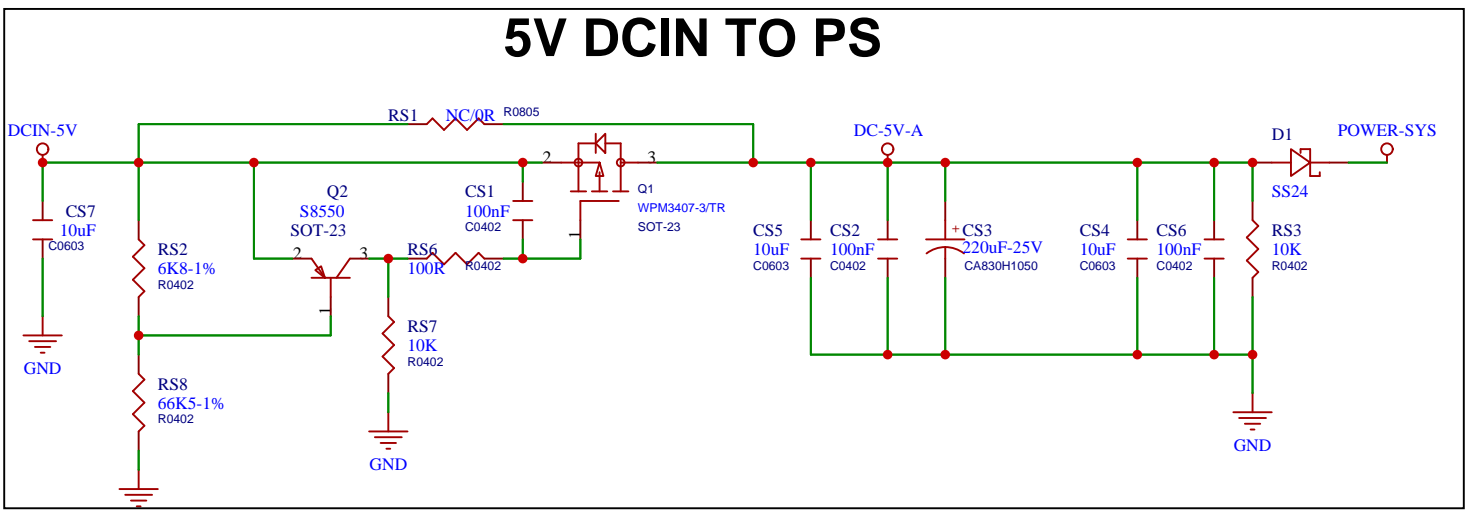
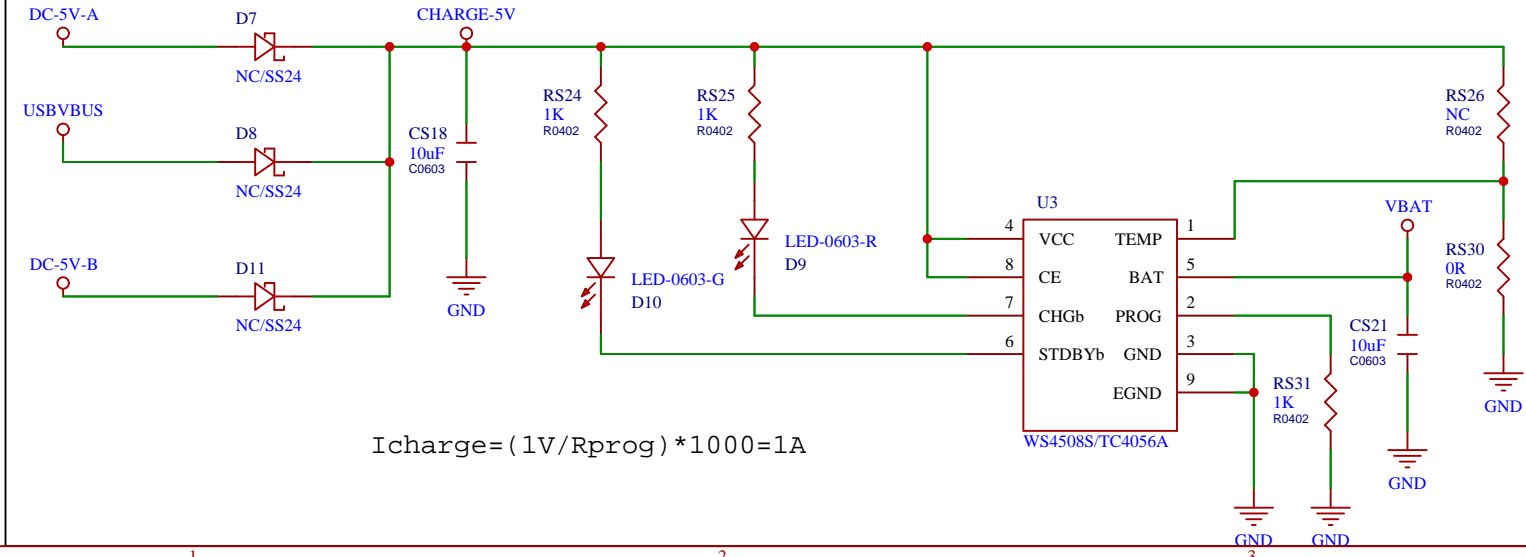
| Pin Number | Pin Name | GPIO Multiplex Function |
|------------|----------|---|
| 120 | PG0 | SDC1_CLK/UART3_TX/RGMII_RXCTRL/RMII_CRS_DV/PWM7/PG_EINT0 |
| 118 | PG1 | SDC1_CMD/UART3_RX/RGMII_RXD0/RMII_RXD0/PWM6/PG_EINT1 |
| 119 | PG2 | SDC1_D0/UART3_RTS/RGMII_RXD1/RMII_RXD1/UART4_TX/PG_EINT2 |
| 121 | PG3 | SDC1_D1/UART3_CTS/RGMII_TXCK/RMII_TXCK/UART4_RX/PG_EINT3 |
| 123 | PG4 | SDC1_D2/UART5_TX/RGMII_TXD0/RMII_TXD0/PWM5/PG_EINT4 |
| 122 | PG5 | SDC1_D3/UART5_RX/RGMII_TXD1/RMII_TXD1/PWM4/PG_EINT5 |
| 1 | PG6 | UART1_TX/TWI2_SCK/RGMII_TXD2/PWM1/PG_EINT6 |
| 2 | PG7 | UART1_RX/TWI2_SDA/RGMII_TXD3/SPDIF_IN/PG_EINT7 |
| 3 | PG8 | UART1_RTS/TWI1_SCK/RGMII_RXD2/UART3_TX/PG_EINT8 |
| 4 | PG9 | UART1_CTS/TWI1_SDA/RGMII_RXD3/UART3_RX/PG_EINT9 |
| 5 | PG10 | PWM3/TWI3_SCK/RGMII_RXCK/CLK_FANOUT0/IR_RX/PG_EINT10 |
| 6 | PG11 | I2S1_MCLK/TWI3_SDA/EPHY_25M/CLK_FANOUT1/TCON_TRIG/PG_EINT11 |
| 124 | PG12 | I2S1_LRCK/TWI0_SCK/RGMII_TXCTRL/RMII_TXEN/CLK_FANOUT2/PWM0/UART1_TX/PG_EINT12 |
| 125 | PG13 | I2S1_BCLK/TWI0_SDA/RGMII_CLKIN/RMII_RXER/PWM2/LEDC_DO/UART1_RX/PG_EINT13 |
| 126 | PG14 | I2S1_DIN0/TWI2_SCK/MDC/I2S1_DOUT1/SPI0_WP/UART1_RTS/PG_EINT14 |
| 127 | PG15 | I2S1_DOUT0/TWI2_SDA/MDIO/I2S1_DIN1/SPI0_HOLD/UART1_CTS/PG_EINT15 |

POWER 1



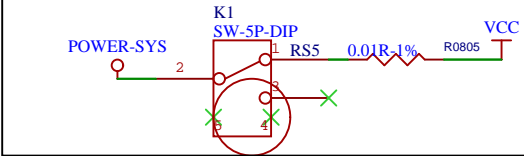
Power Input Option

CHARGE CONTROL

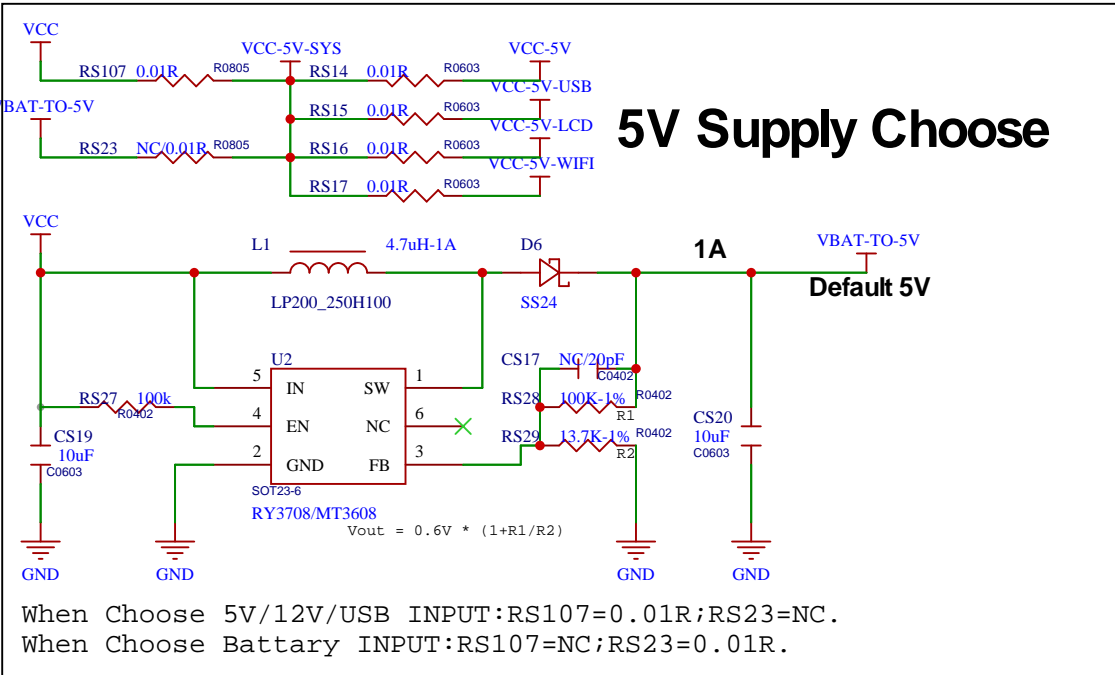
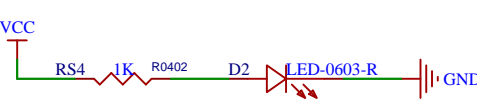


Priority : DC > BAT, USB > BAT

POWER-ON KEY

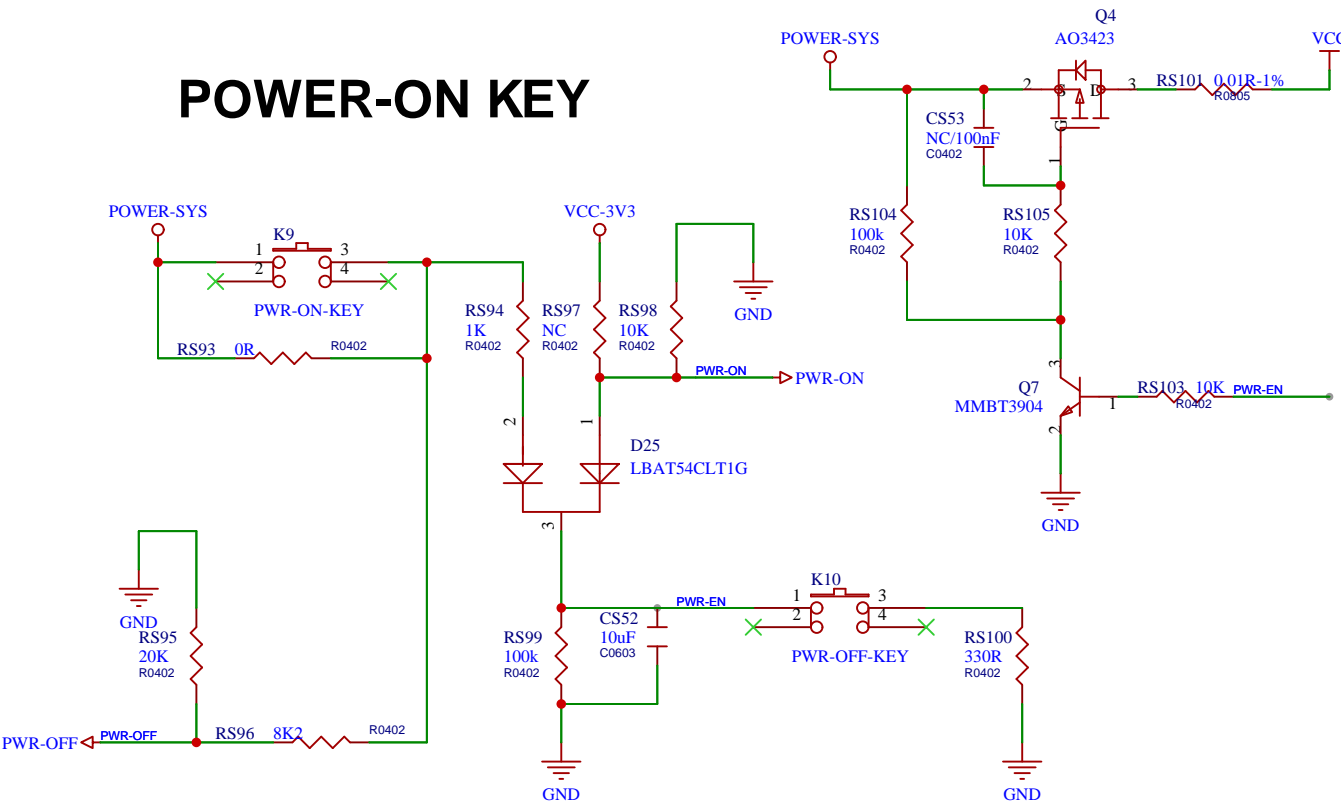


POWER-LED



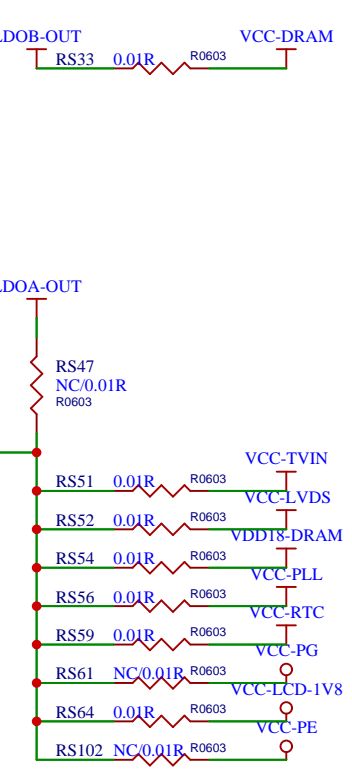
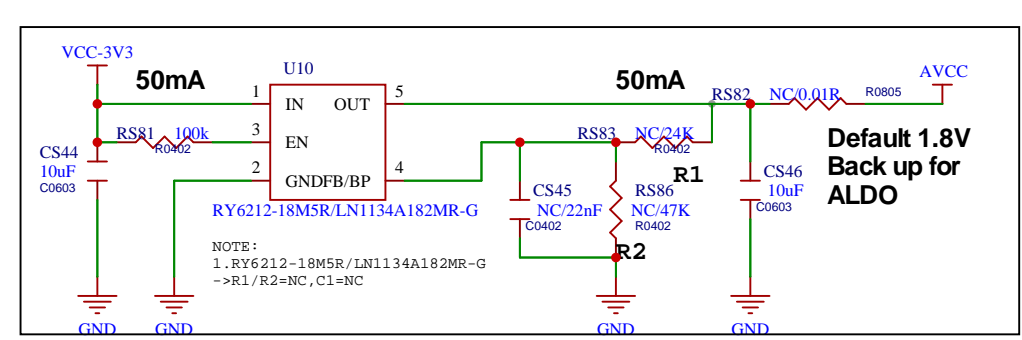
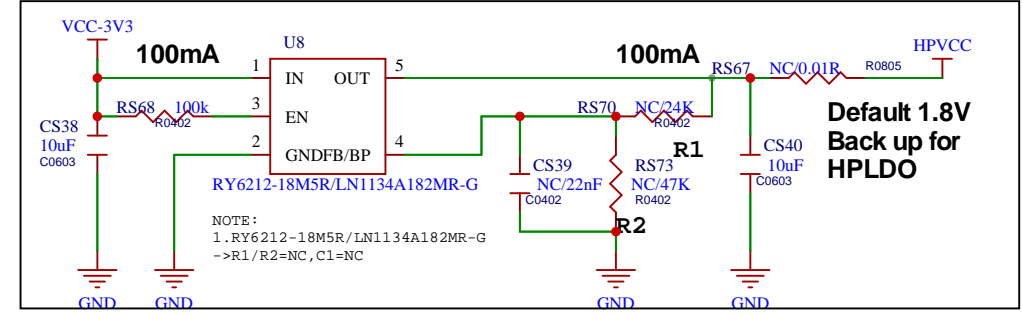
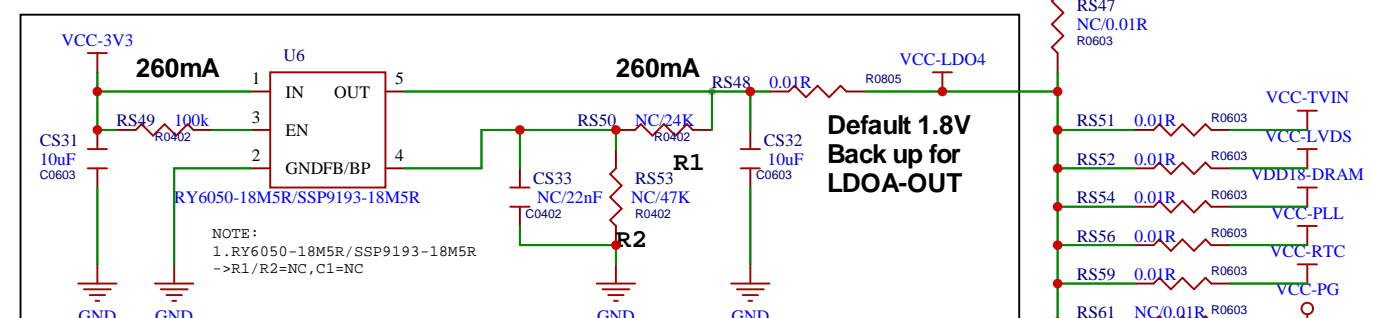
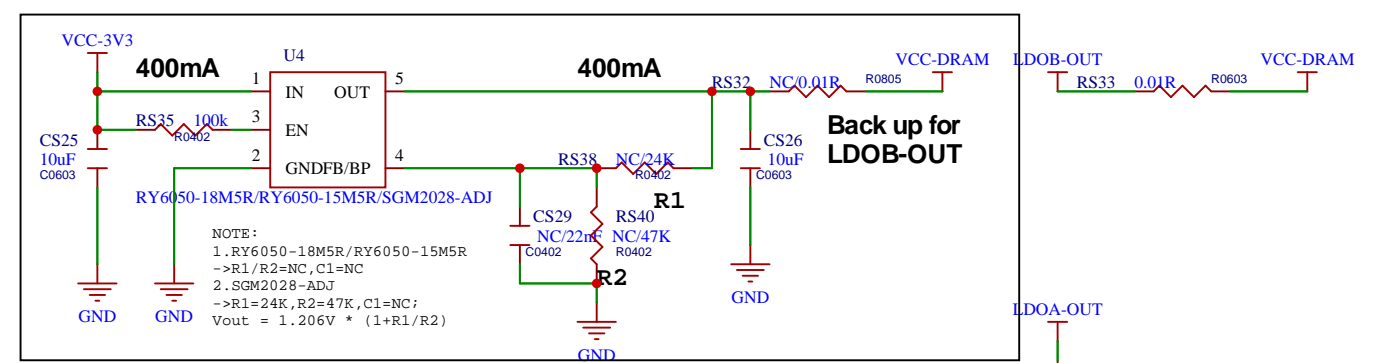
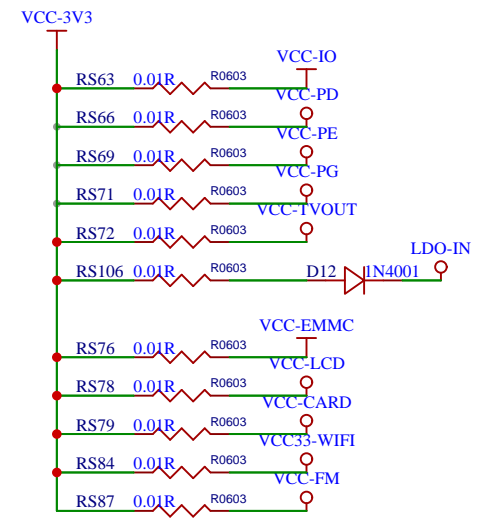
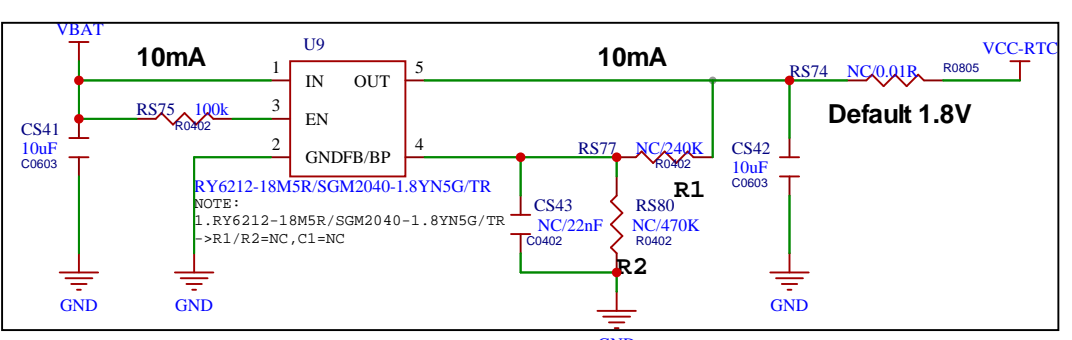
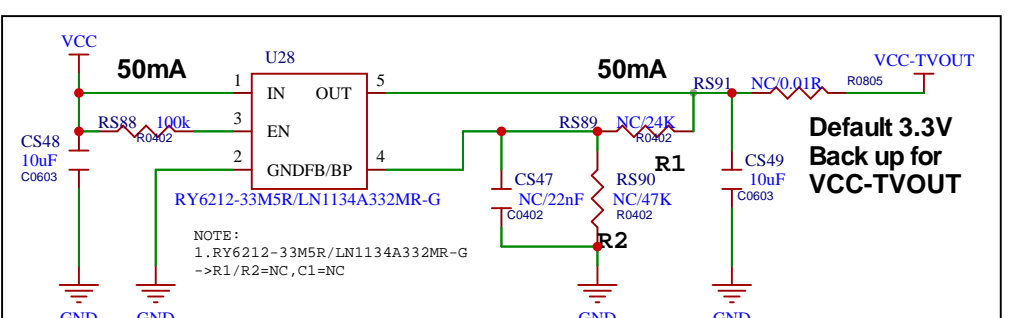
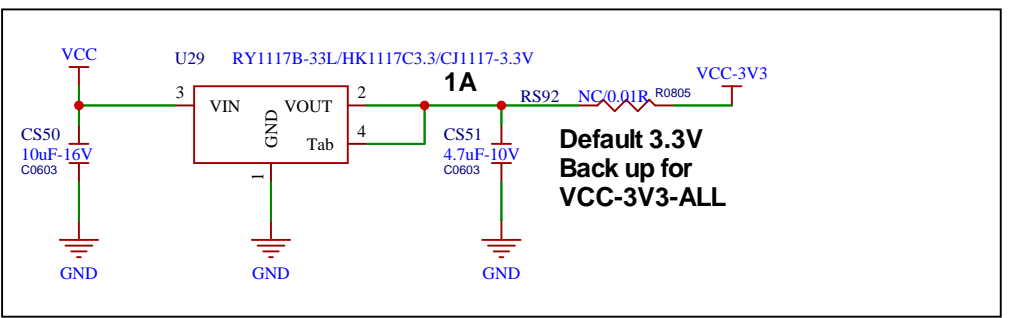
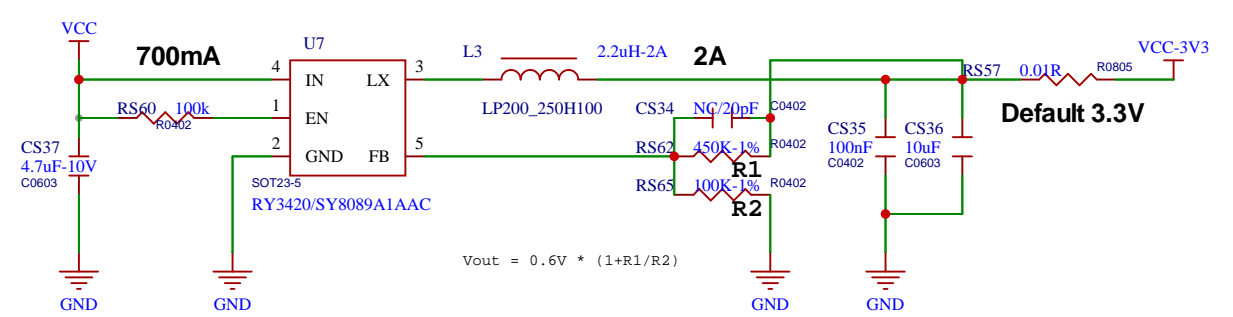
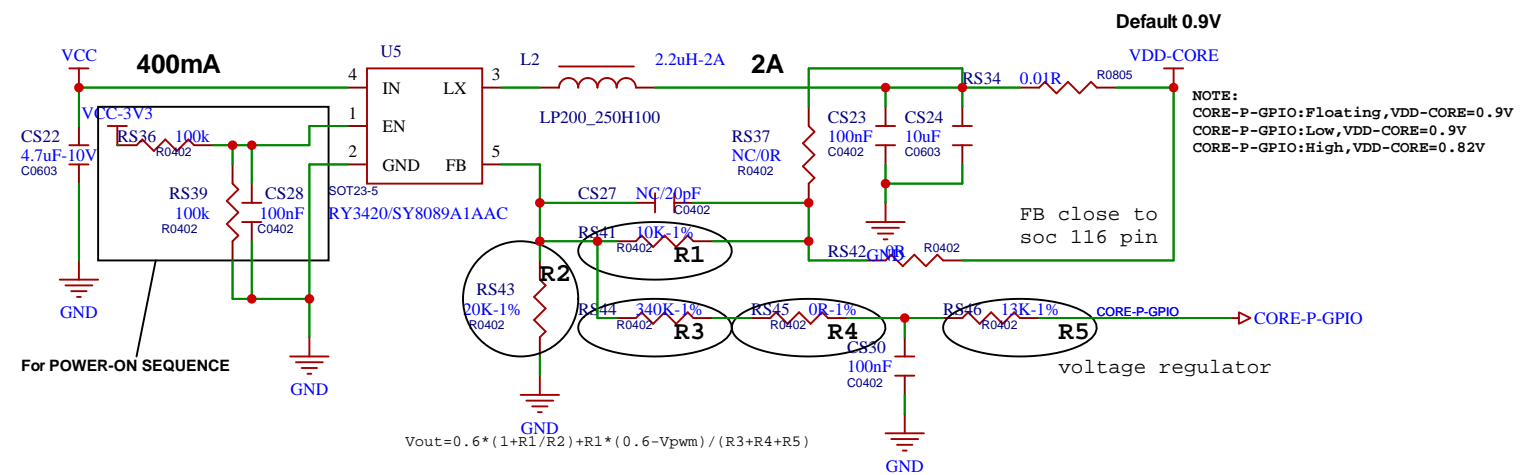
When Choose 5V/12V/USB INPUT:RS107=0.01R;RS23=NC.
When Choose Battery INPUT:RS107=NC;RS23=0.01R.

POWER-ON KEY

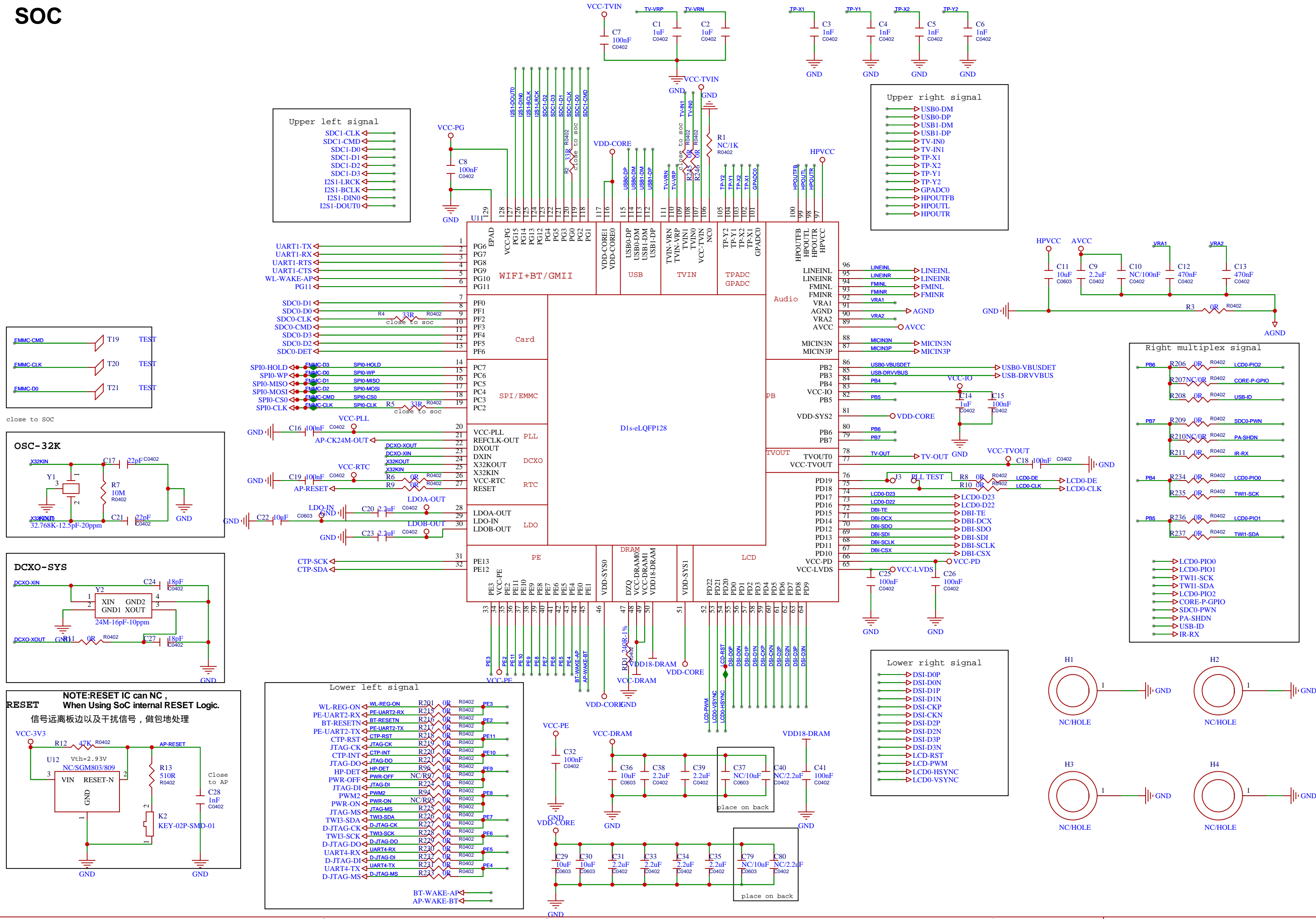


power up :SW KEY on , power down : PWR-EN keep high for 1000ms
Layout Guide : POWER-SW 's ON , OFF silkscreen text needed

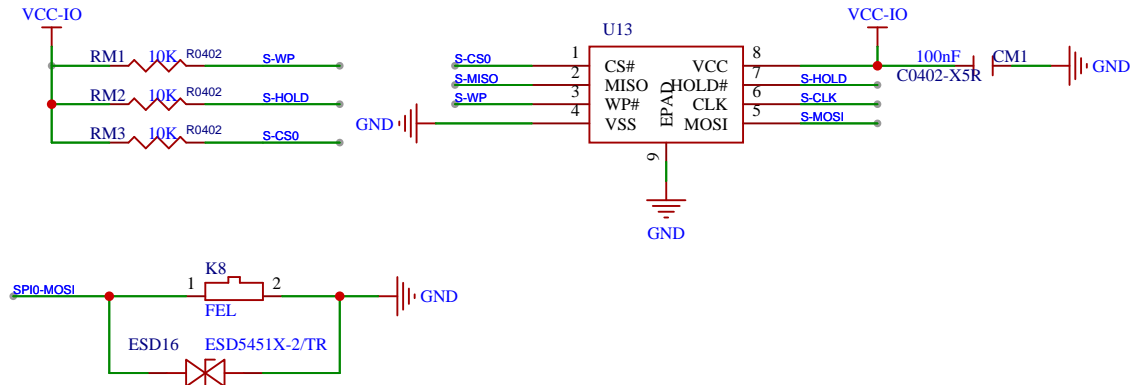
POWER 2



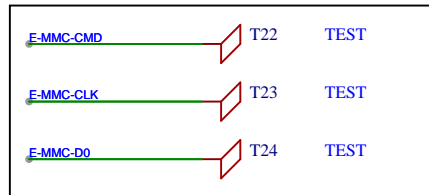
SOC



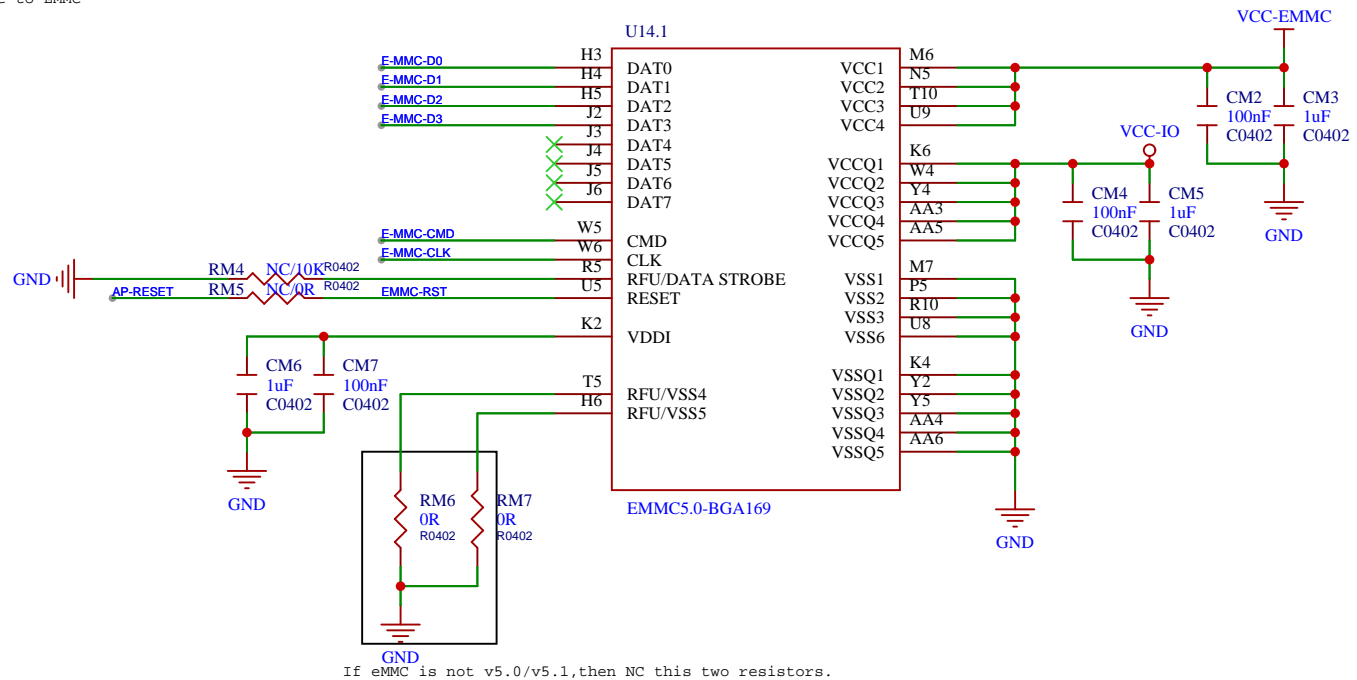
SPI



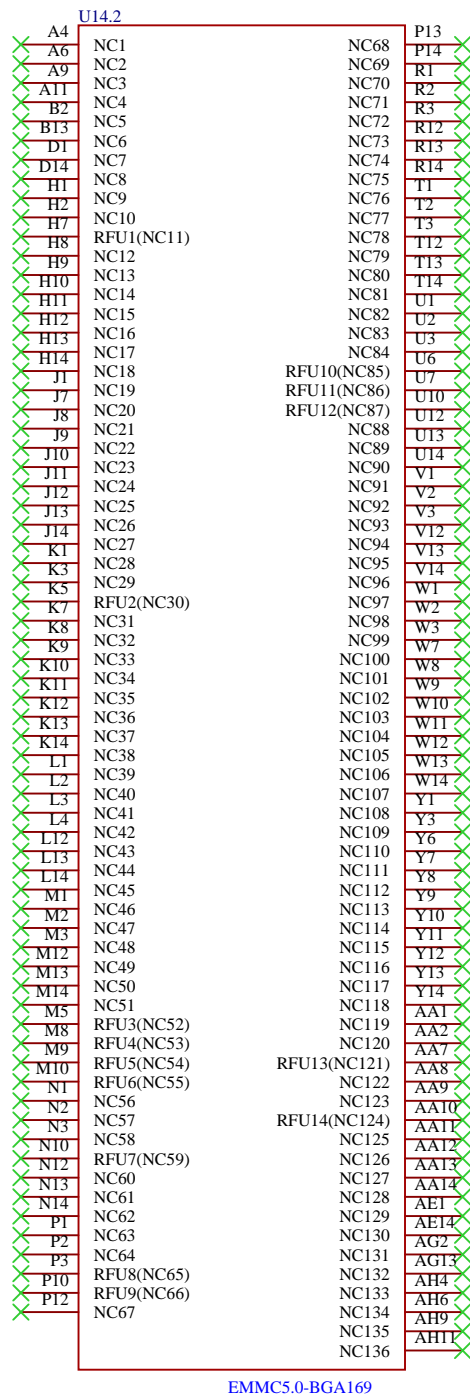
EMMC



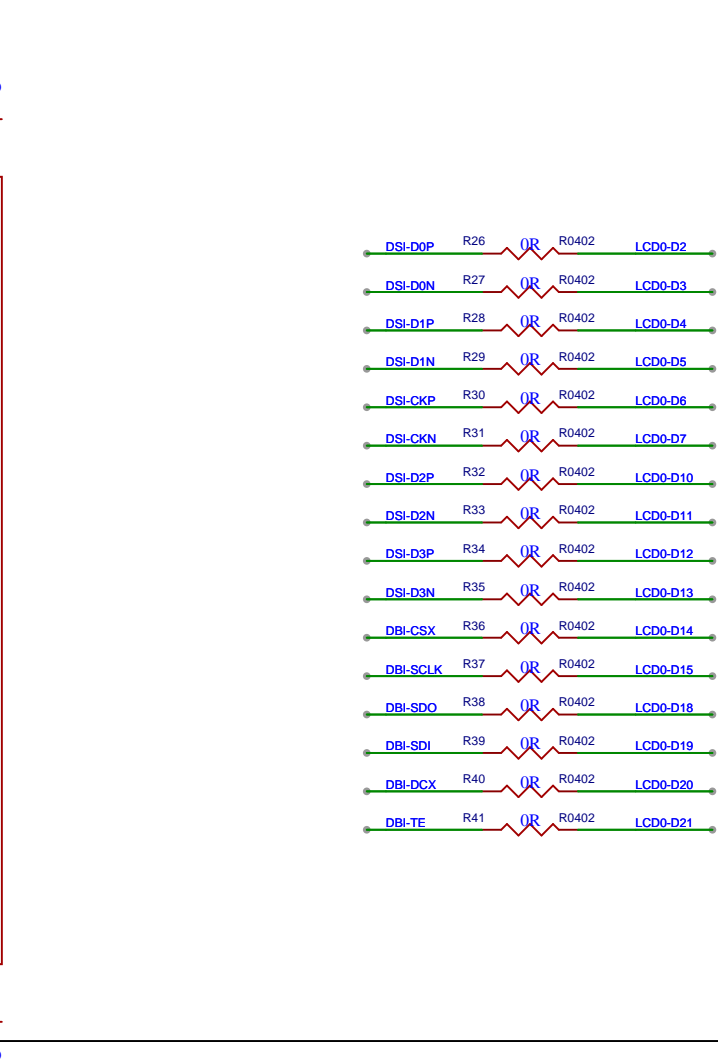
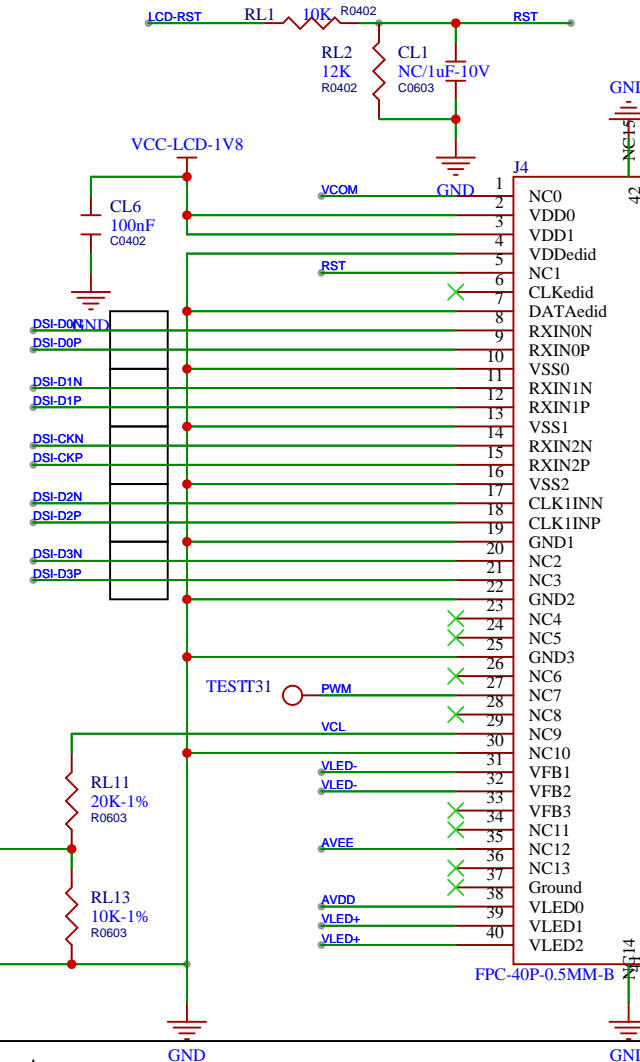
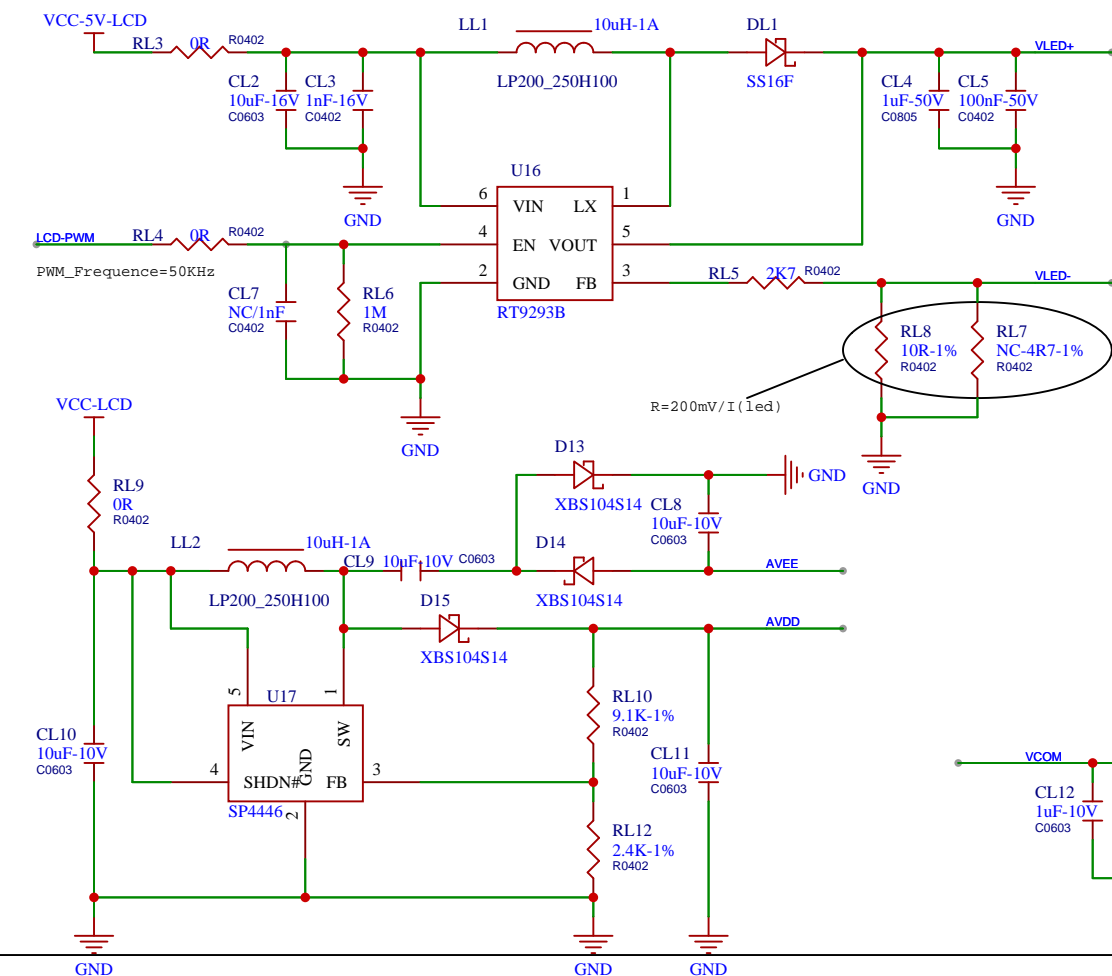
close to EMMC



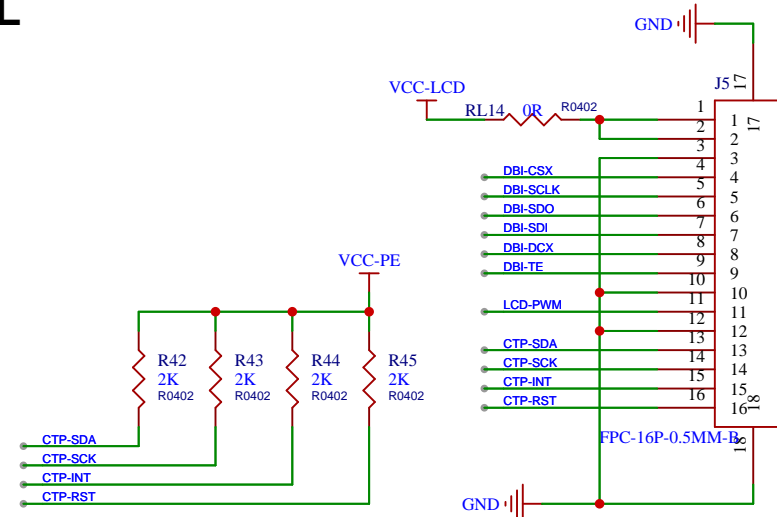
If eMMC is not v5.0/v5.1, then NC this two resistors.



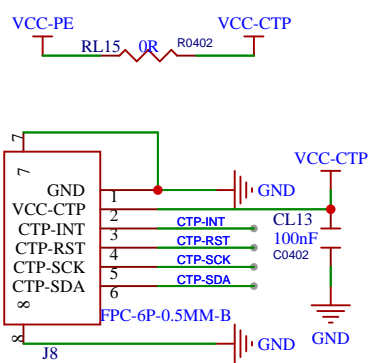
DSI BACK LIGHT



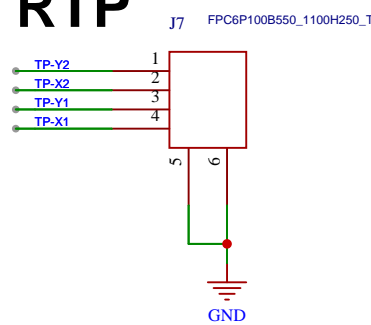
SPI PANEL



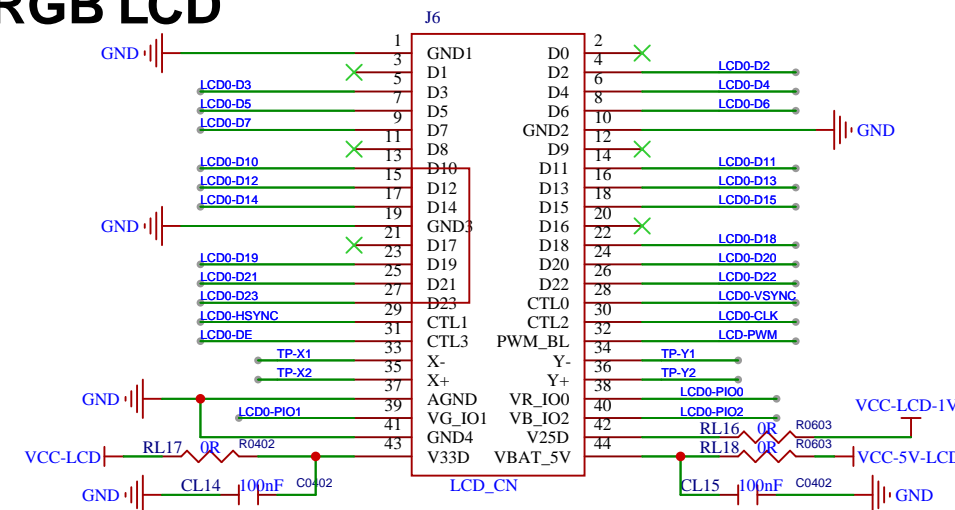
CTP

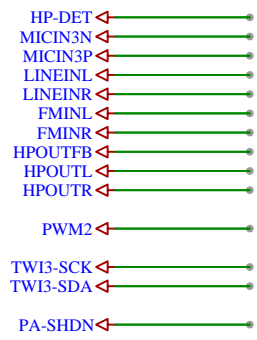


RTP

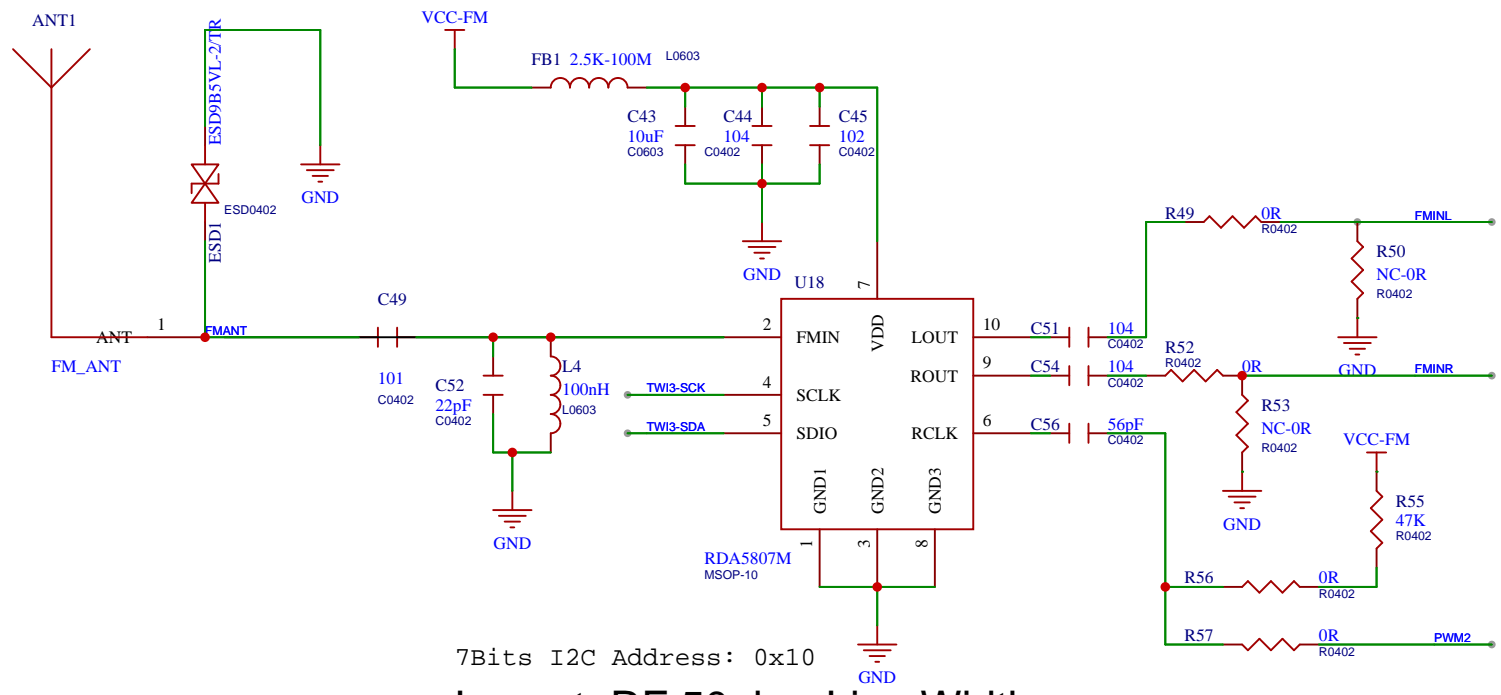


RGB LCD



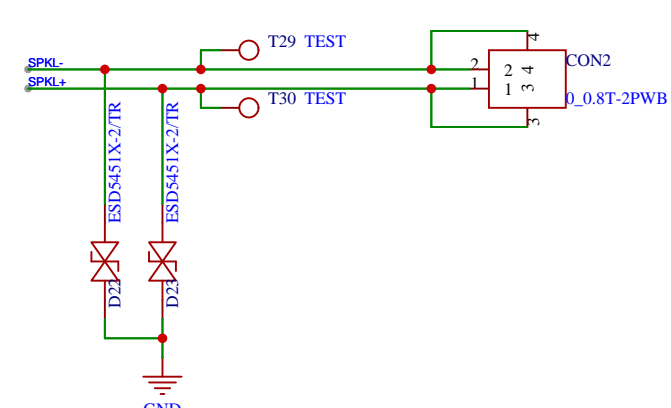
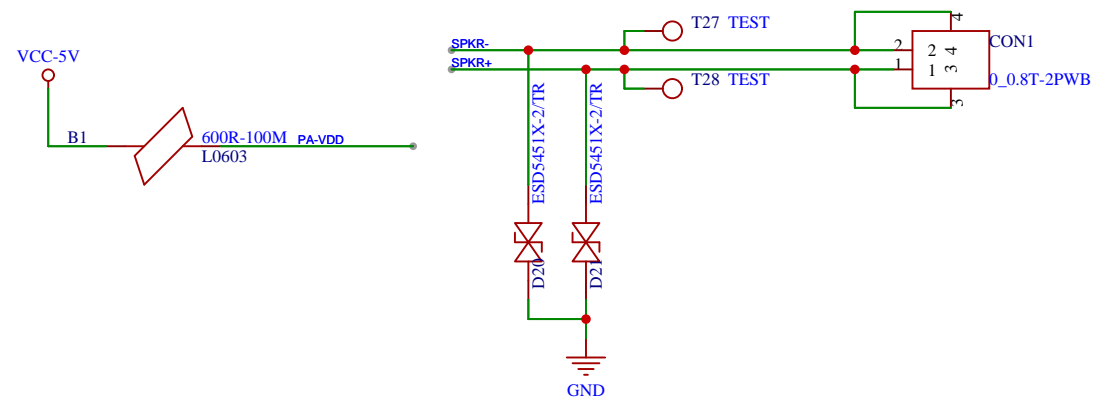
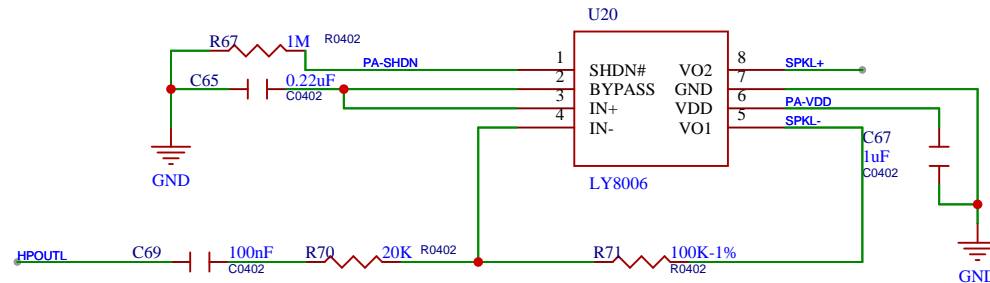
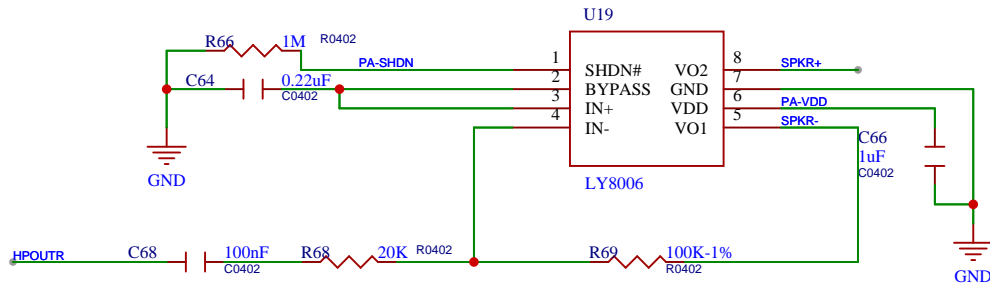
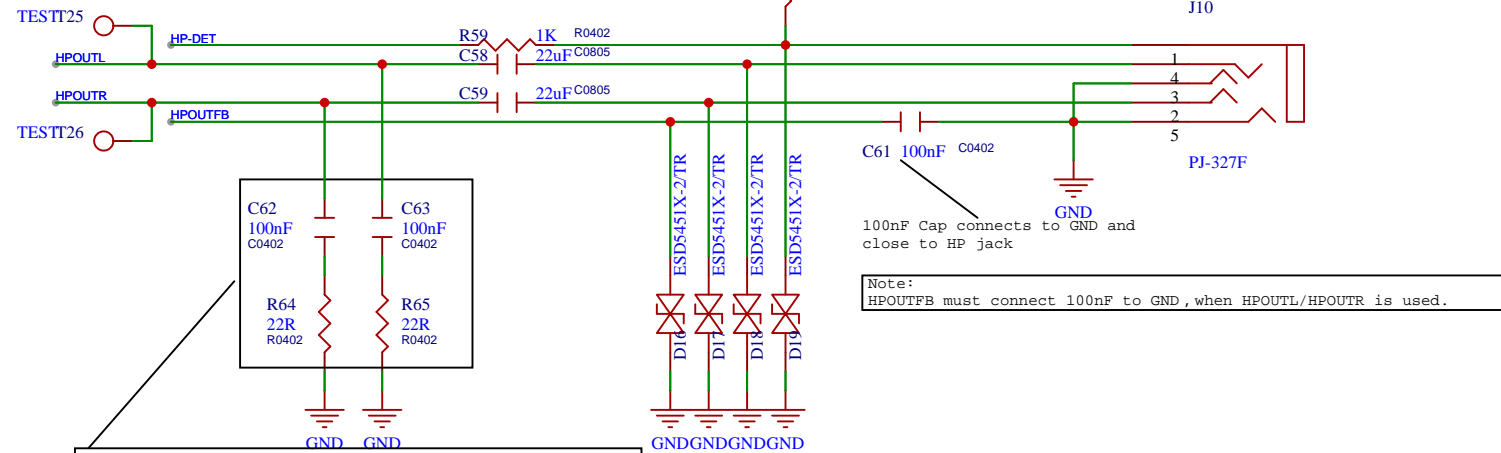
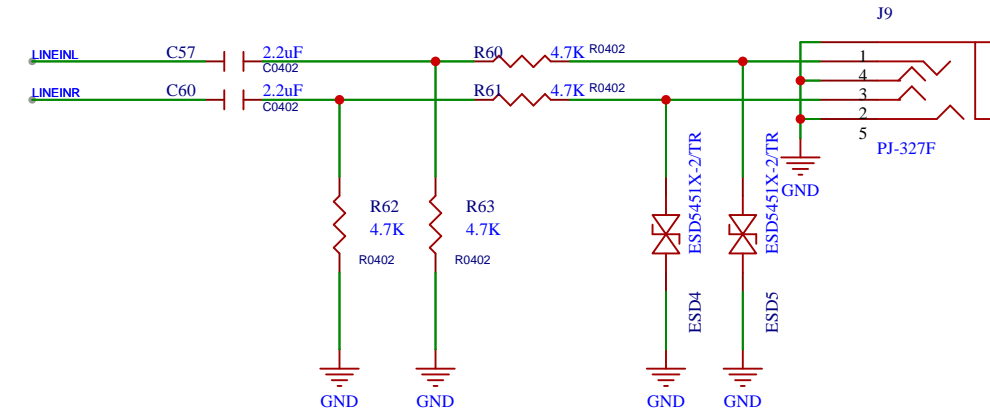
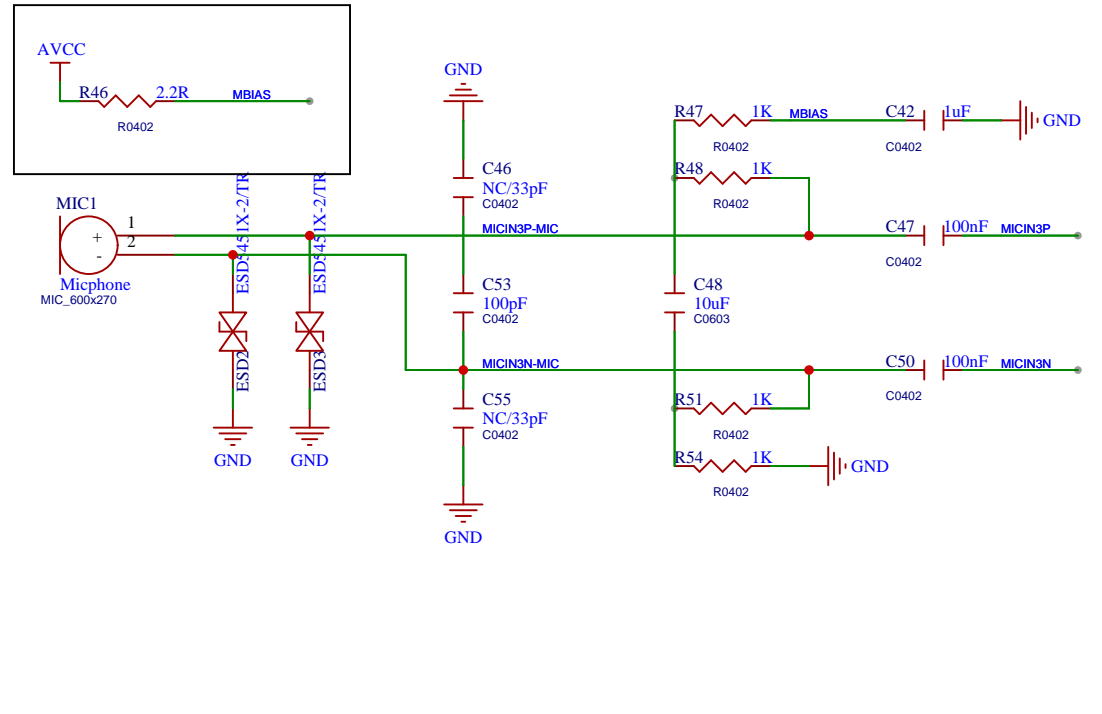


FM



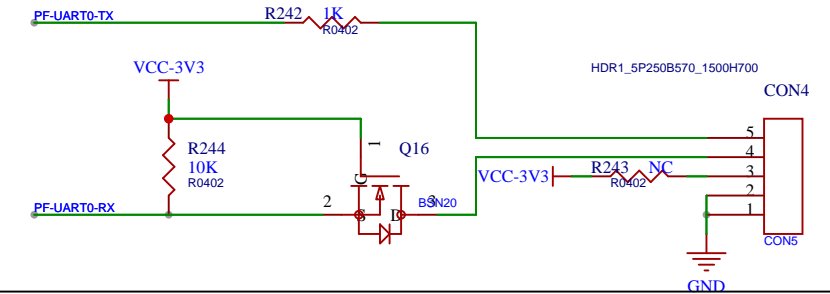
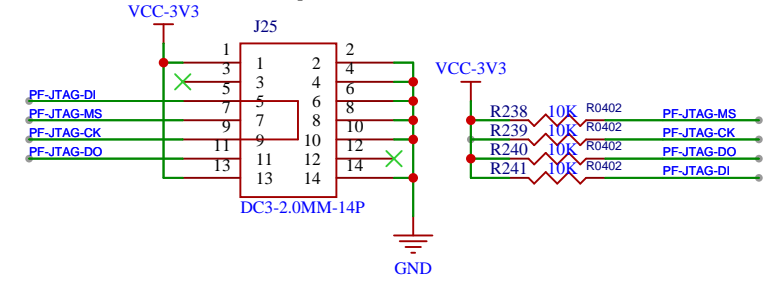
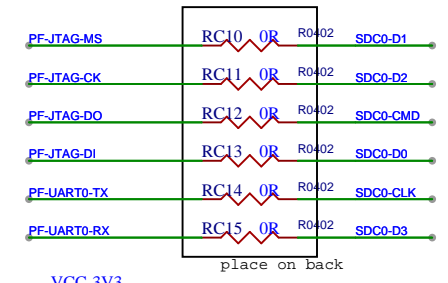
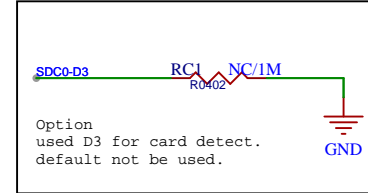
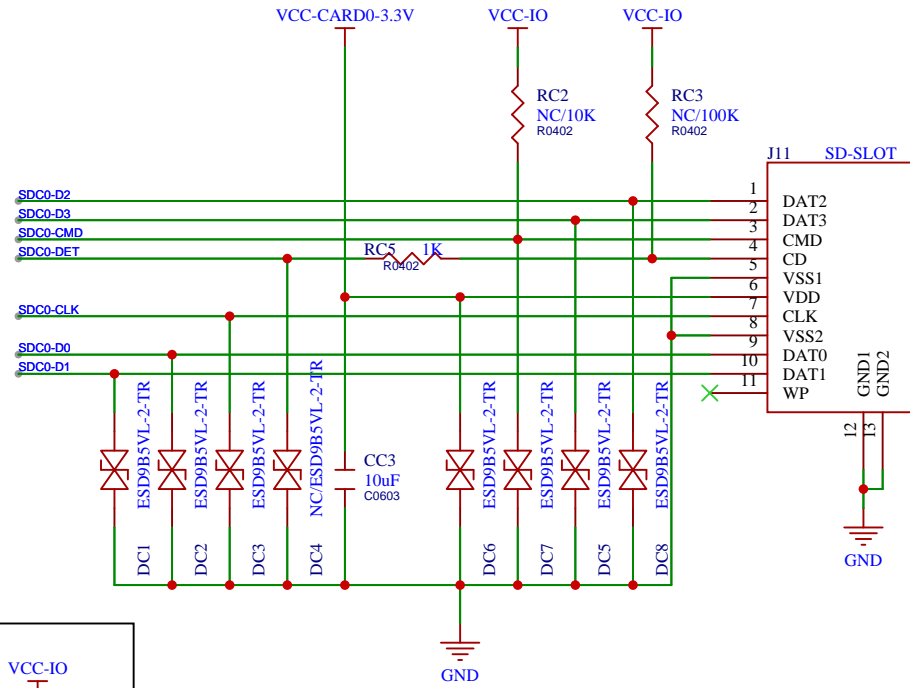
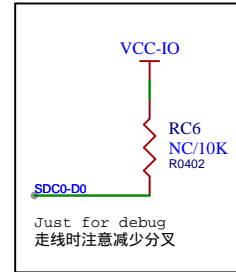
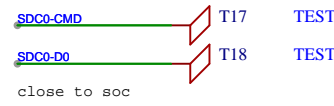
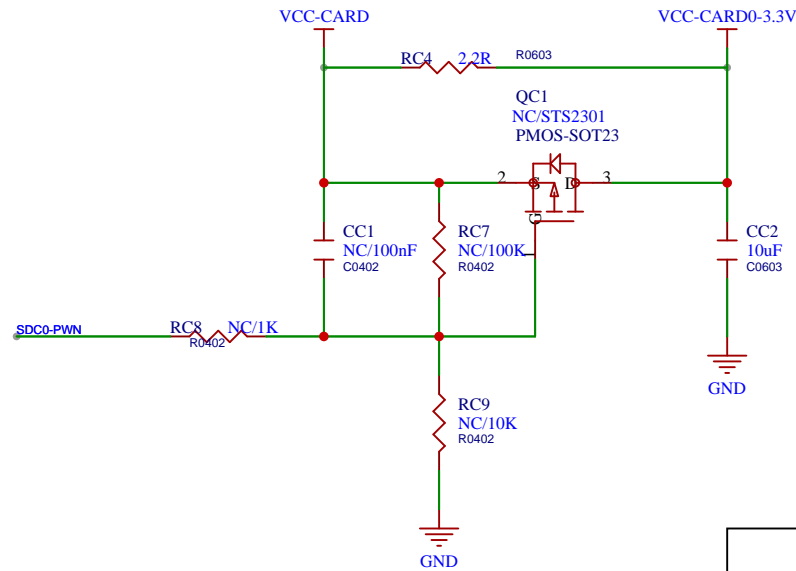
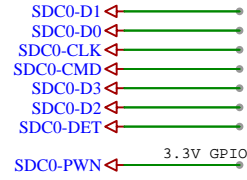
7Bits I2C Address: 0x10

Layout: RF 50ohm Line Width

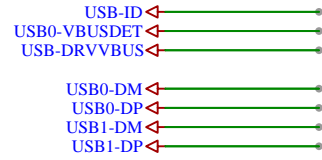


SDC0

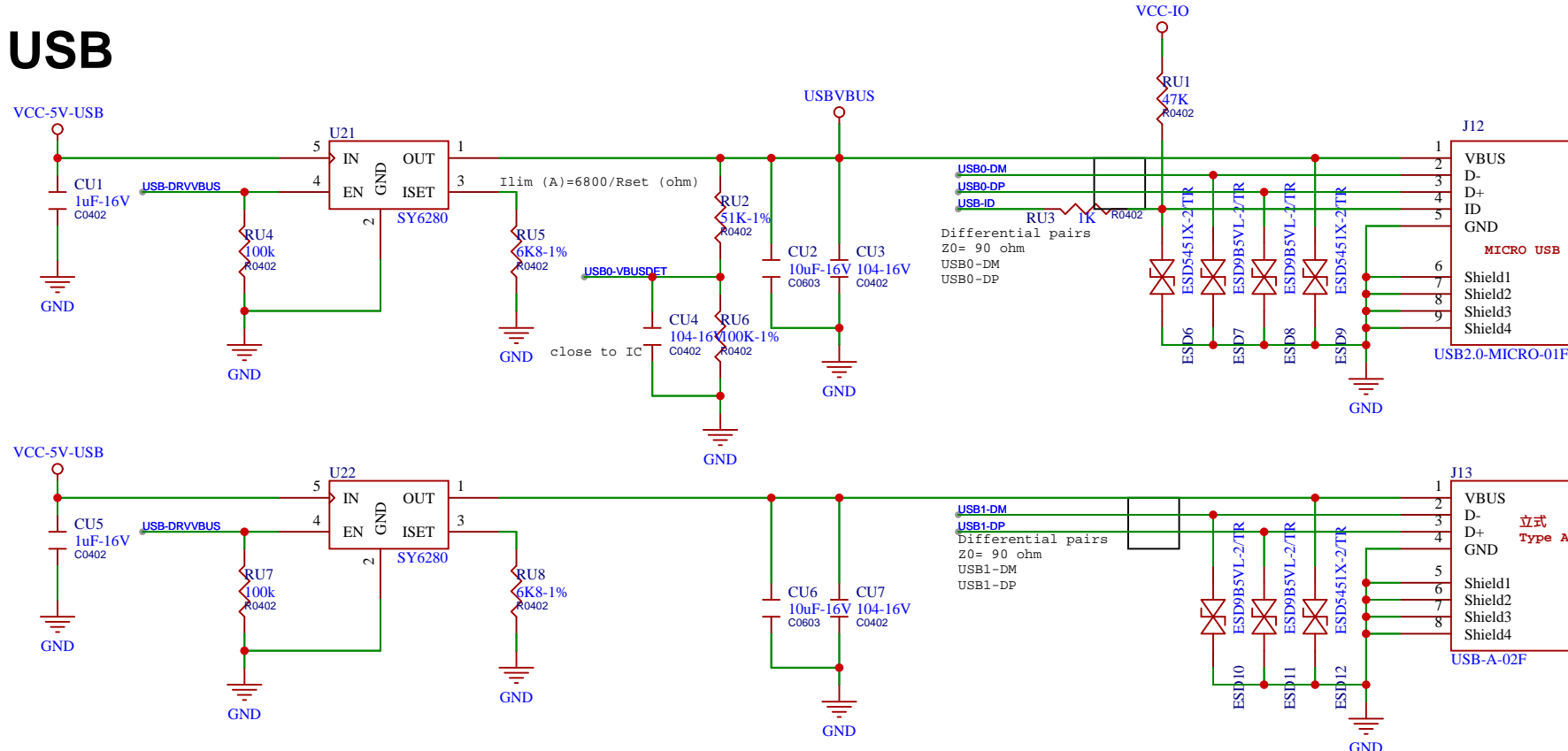
Option
为避免低内阻SD卡引起的卡座烧毁问题，在SD卡的供电电路上增加了开关电路。
为了实现关闭SD电源功能，CARD0-PWROFF必须选择高电平为3.3V的GPIO。



USB



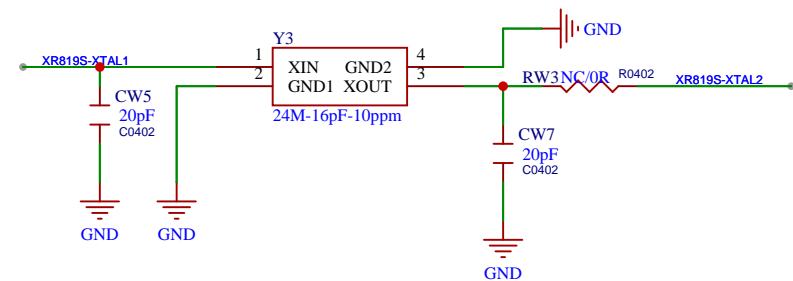
90 ohm



Note:

- 1.When USB0 As device,don't use USB1
- 2.If need use USB1 when USB0 as device,
please short U22 pin 1& pin 5,and USB-DRVVBUS pull low

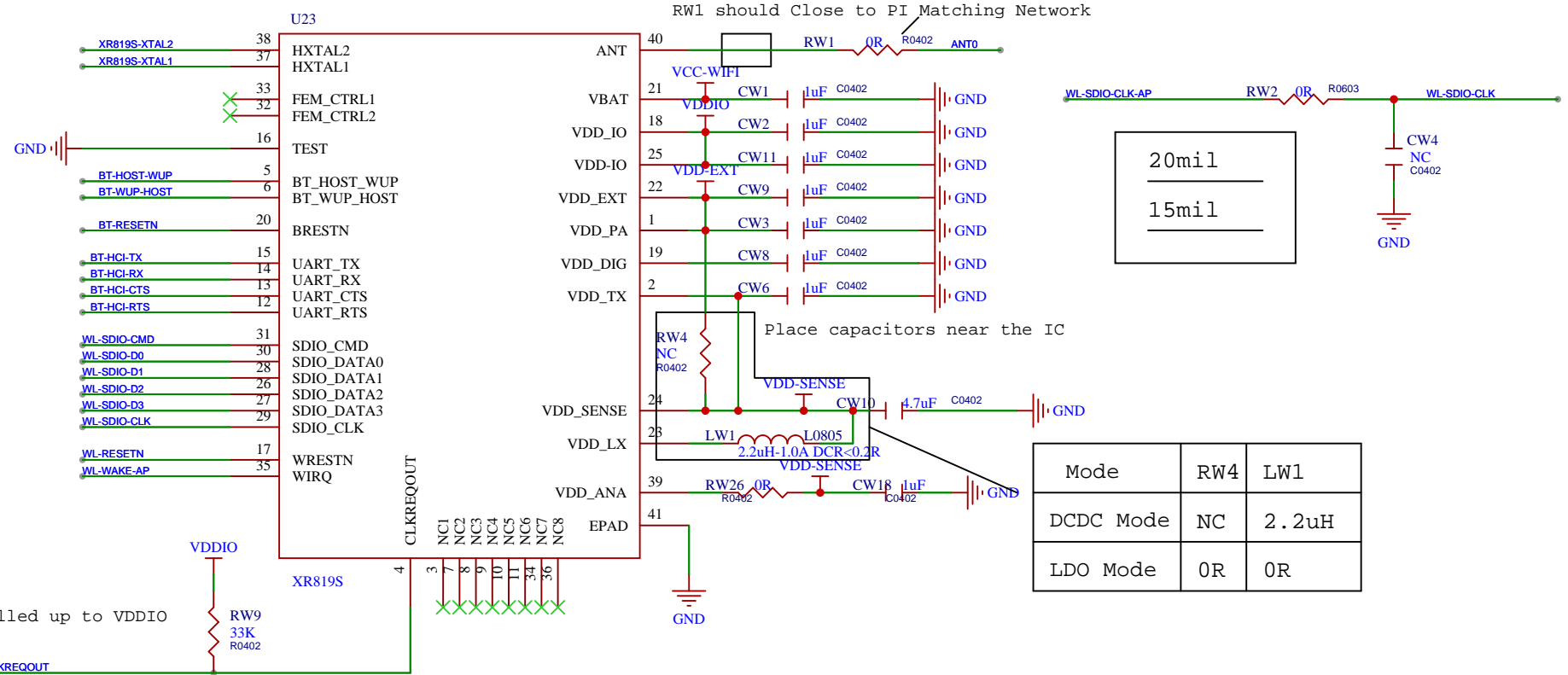
XR819S ON BOARD



| | | | |
|------------------|------|-----|-----|
| Clock Source | CW5 | RW3 | RW7 |
| AP-CLK-OUT | 0R | NC | 0R |
| External Crystal | 20pF | 0R | NC |

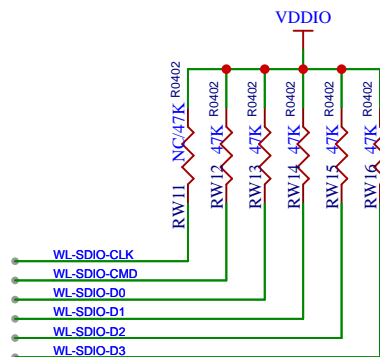
XR819S use AP 24MHz Clock out

CLKREQOUT needs to be pulled up to VDDIO

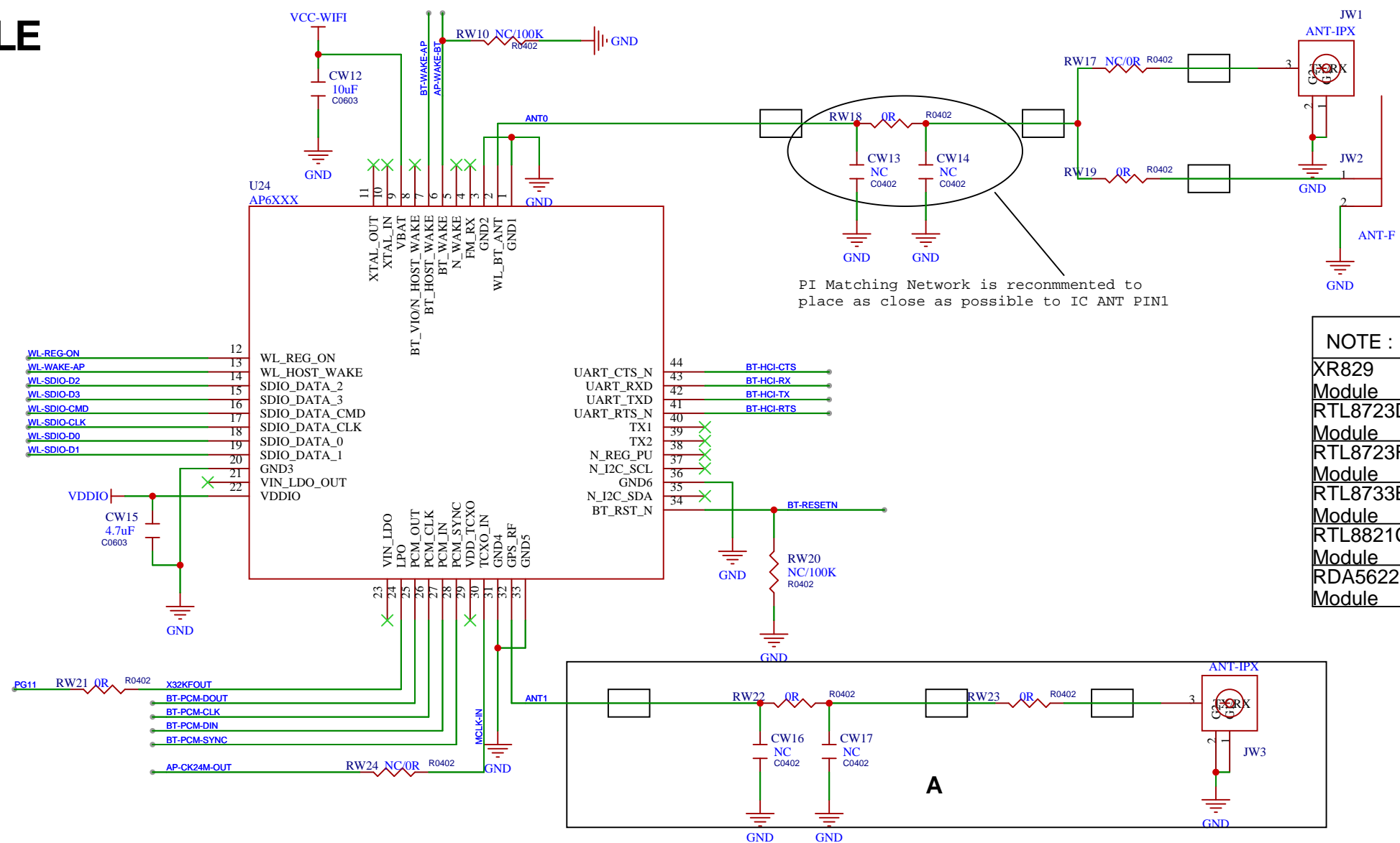


| | | |
|-----------|-----|-------|
| Mode | RW4 | LW1 |
| DCDC Mode | NC | 2.2uH |
| LDO Mode | 0R | 0R |

WIFI MODULE

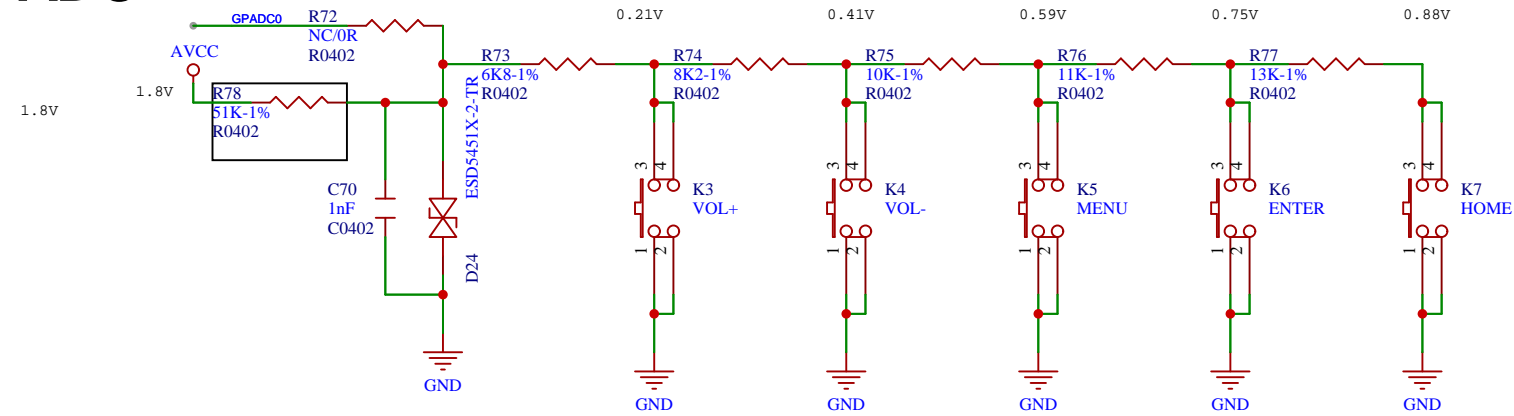


50 ohm

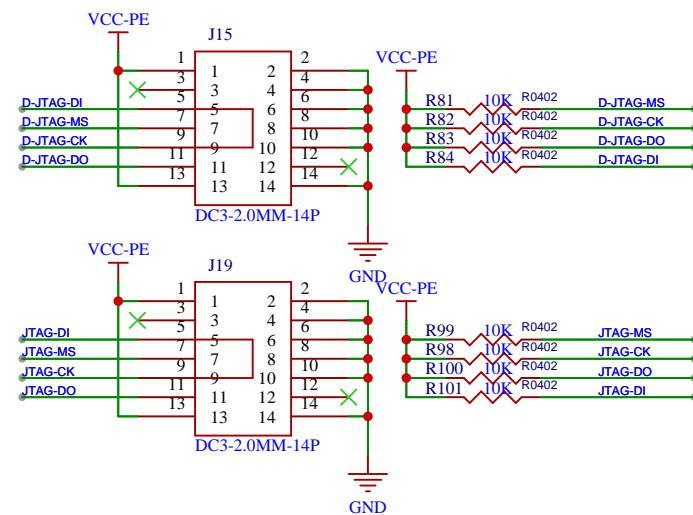


| | | |
|---------------------|----------|--|
| NOTE : | A | |
| XR829 Module | NC | |
| RTL8723DS Module | NC | |
| RTL8723FS Module | Mounting | |
| RTL8733BS Module | Mounting | |
| RTL8821CS Module | Mounting | |
| RDA5622 Module | NC | |

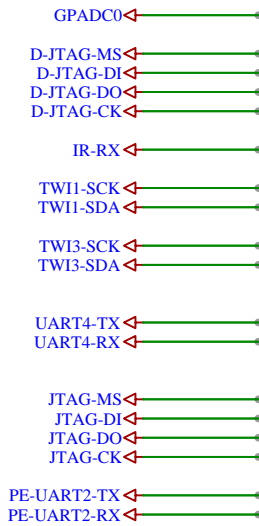
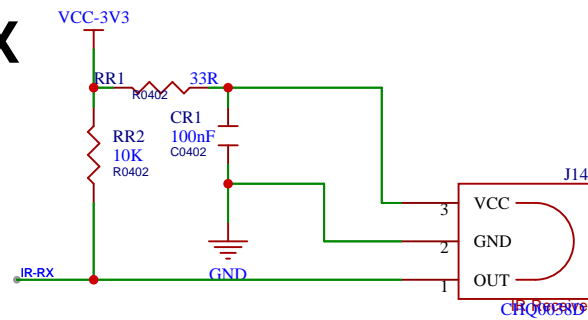
KEY ADC



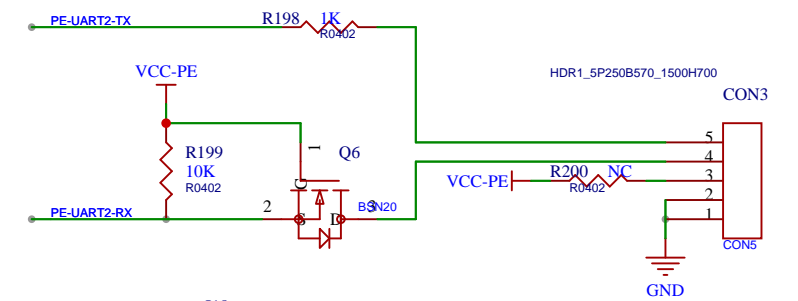
DSP&RISC-V -JTAG



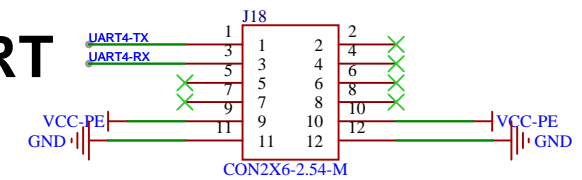
IR-RX



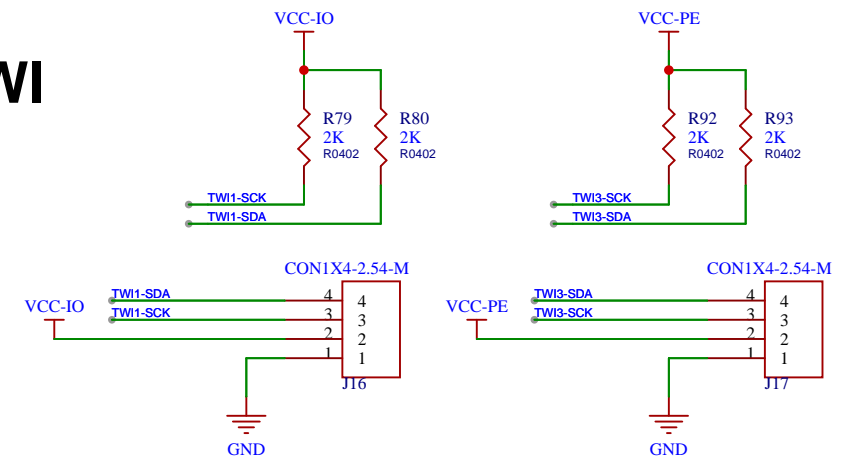
DEBUG



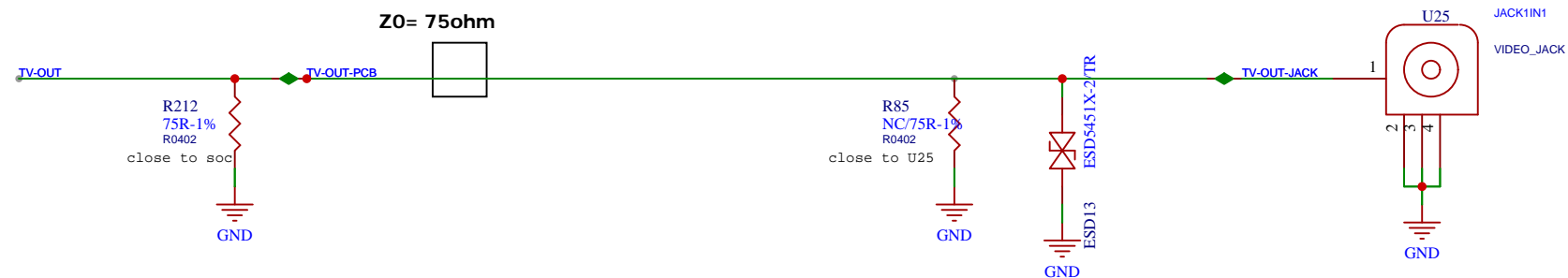
UART



TWI



TV OUT

**TV IN**