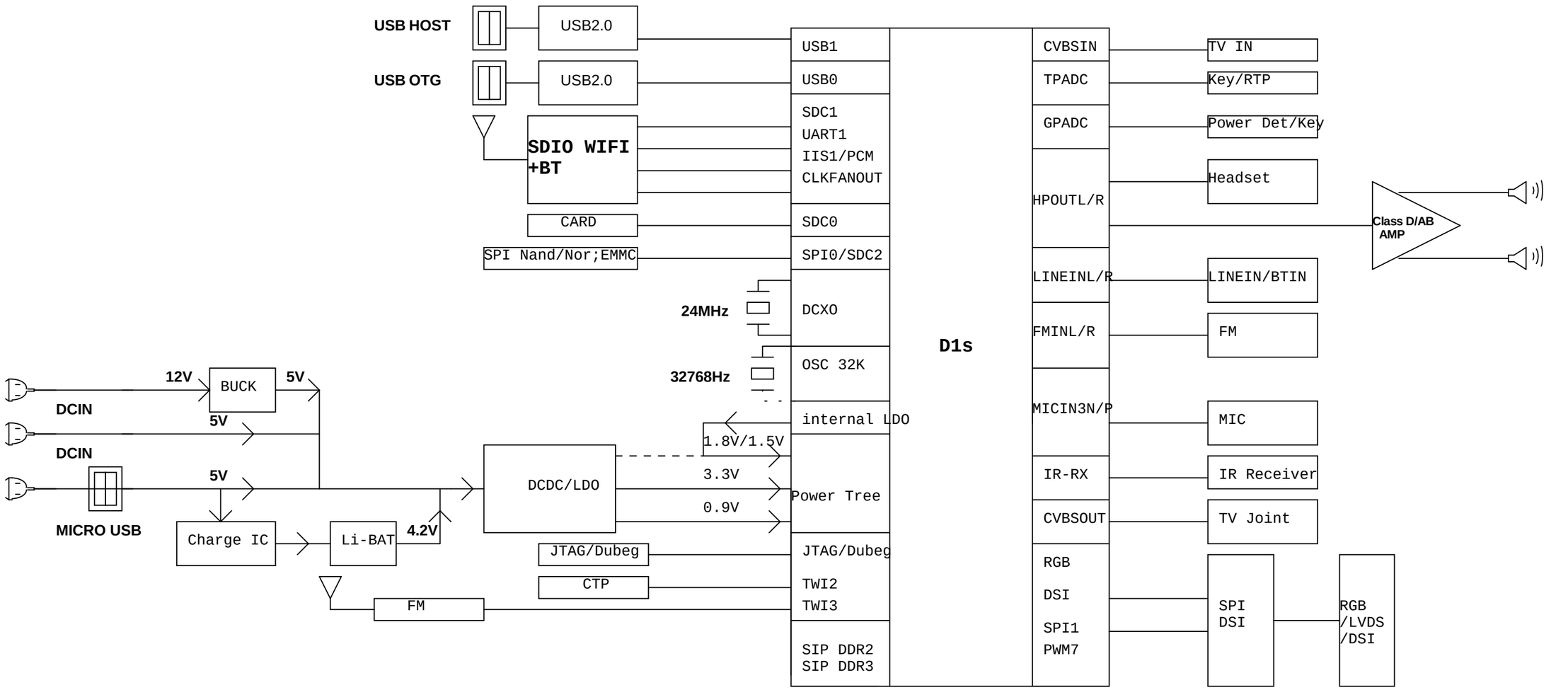
VERSION HISTORY

Index：

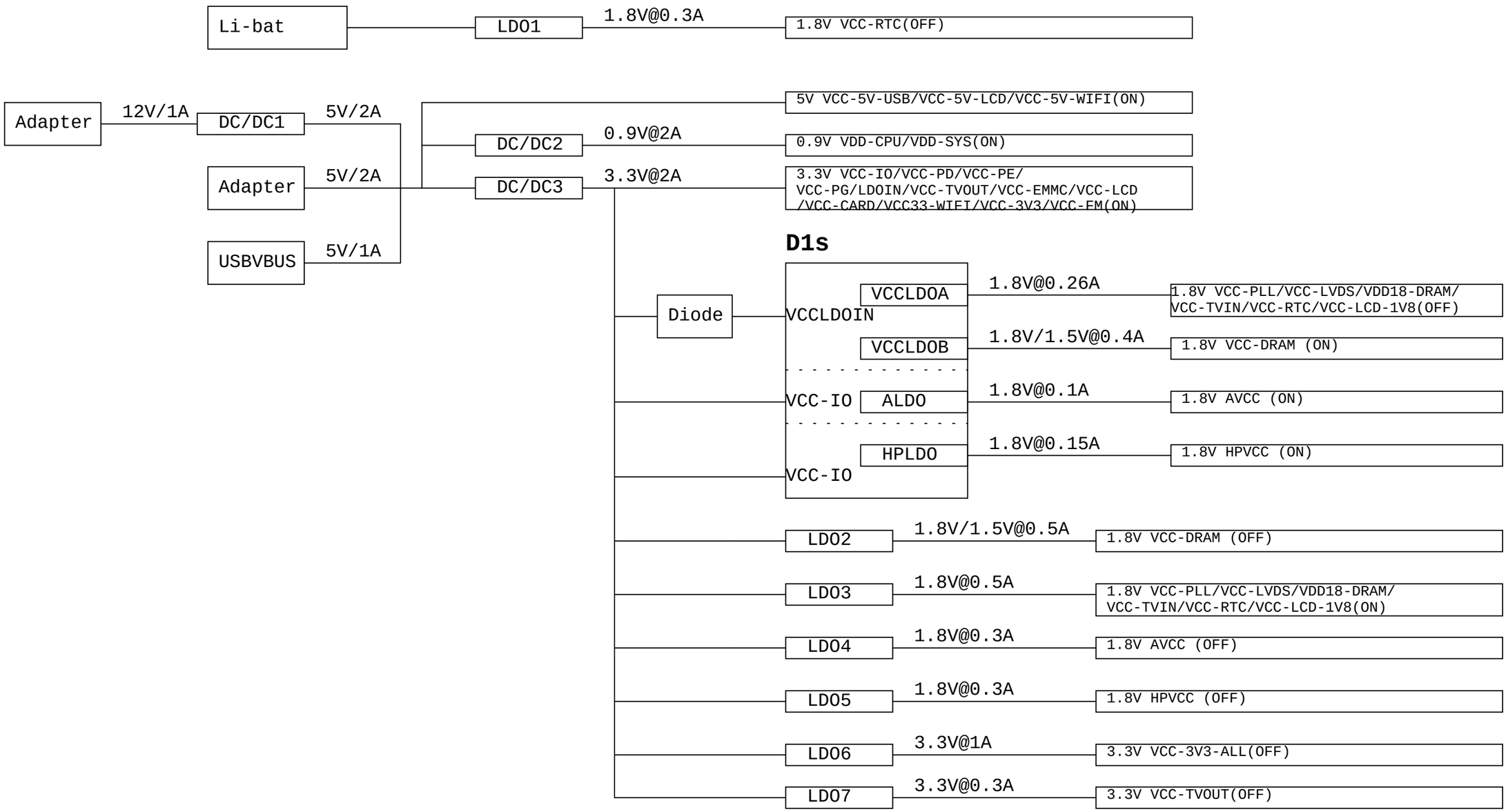
Revision	Description	Date	Drawn	Checked	Approved
Ver 2.0	Release Version	2020-12-4			

BLOCK


USB HOST
USB2.0
USB OTG
USB2.0
SDIO WIFI
+BT
CARD
SPI Nand/Nor;EMMC
24MHz
32768Hz
USB1
USB0
SDC1
UART1
IIS1/PCM
CLKFANOUT
SDC0
SPI0/SDC2
DCXO
OSC 32K
internal LDO
1.8V/1.5V
3.3V
0.9V
Power Tree
JTAG/Dubeg
TWI2
TWI3
SIP DDR2
SIP DDR3
D1s
CVBSIN
TPADC
GPADC
HPOUTL/R
LINEINL/R
FMINL/R
MICIN3N/P
IR-RX
CVBSOUT
RGB
DSI
SPI1
PWM7
TV IN
Key/RTP
Power Det/Key
Headset
Class D/AB
AMP
LINEIN/BTIN
FM
MIC
IR Receiver
TV Joint
SPI
DSI
RGB
/LVDS
/DSI
12V
BUCK
5V
DCIN
5V
DCIN
5V
MICRO USB
Charge IC
Li-BAT
4.2V
DCDC/LDO
JTAG/Dubeg
CTP
FM

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

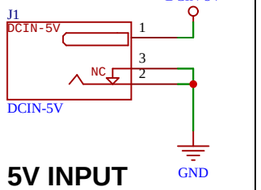
Pin Number	Pin Name	GPIO Multiplex Function
7	PF0	SDC0_D1/JTAG_MS/R_JTAG_MS/I2S2_DOUT1/I2S2_DIN0/PF_EINT0
8	PF1	SDC0_D0/JTAG_DI/R_JTAG_DI/I2S2_DOUT0/I2S2_DIN1/PF_EINT1
9	PF2	SDC0_CLK/UART0_TX/TWI0_SCK/LEDC_DO/SPDIF_IN/PF_EINT2
10	PF3	SDC0_CMD/JTAG_DO/R_JTAG_DO/I2S2_BCLK/PF_EINT3
11	PF4	SDC0_D3/UART0_RX/TWI0_SDA/PWM6/IR_TX/PF_EINT4
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

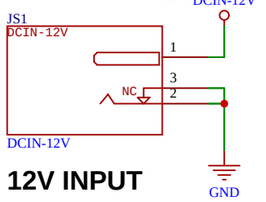
Pin Number	Pin Name	GPIO Multiplex Function
120	PG0	SDC1_CLK/UART3_TX/RGMII_RXCTRL/RMII_CRS_DV/PWM7/PG_EINT0
118	PG1	SDC1_CMD/UART3_RX/RGMII_RXD0/RMII_RXD0/PWM6/PG_EINT1
119	PG2	SDC1_D0/UART3_RTS/RGMII_RXD1/RMII_RXD1/UART4_TX/PG_EINT2
121	PG3	SDC1_D1/UART3_CTS/RGMII_TXCK/RMII_TXCK/UART4_RX/PG_EINT3
123	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

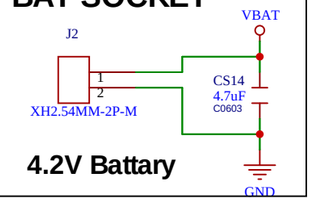
5V INPUT



12V INPUT

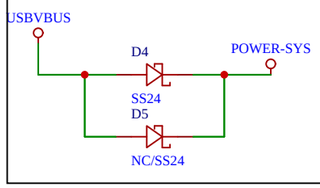


BAT SOCKET



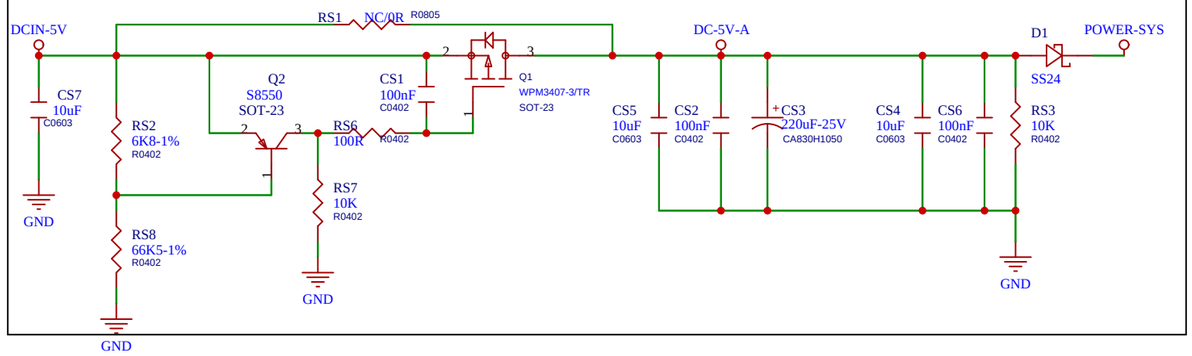
4.2V Battary

USB TO PS

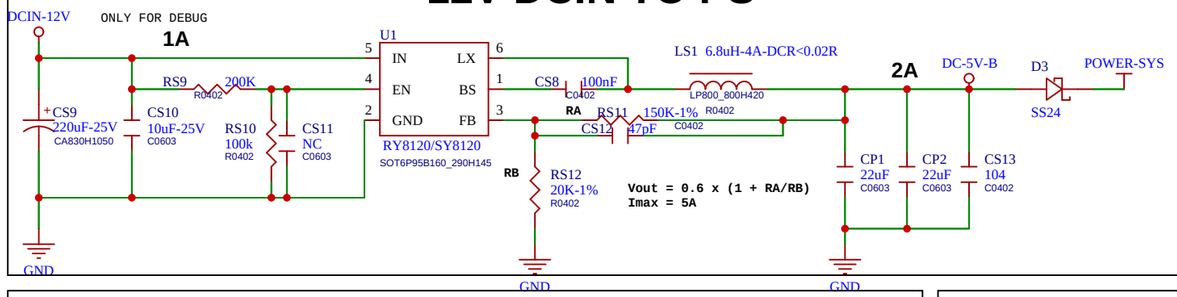


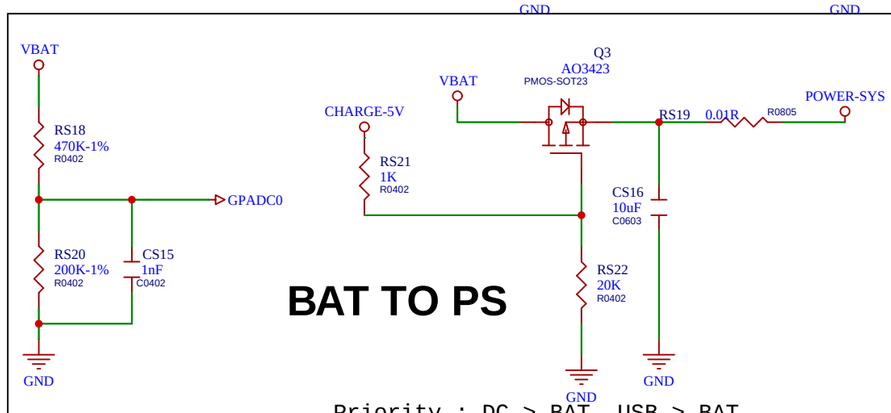
Power Input Option

5V DCIN TO PS



12V DCIN TO PS

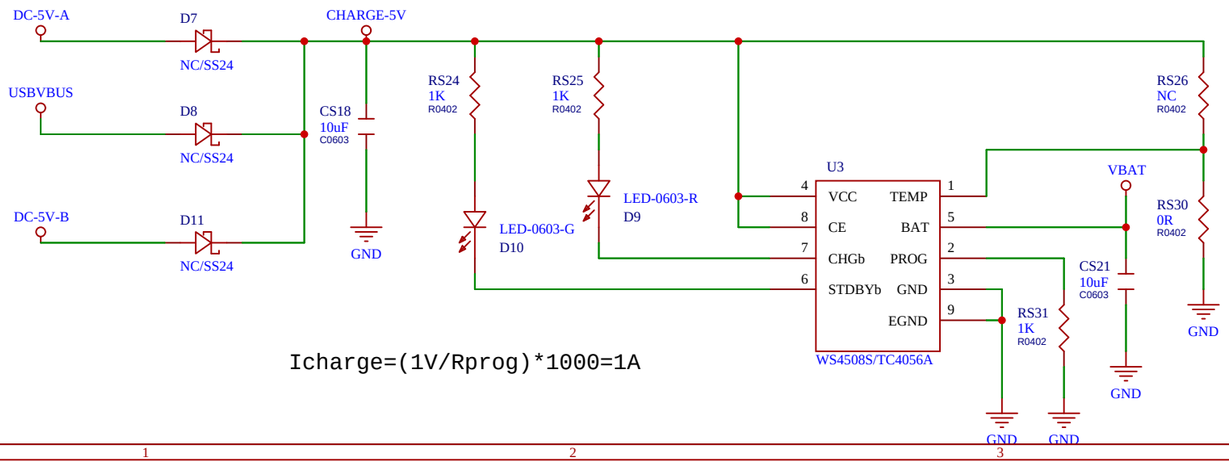




BAT TO PS

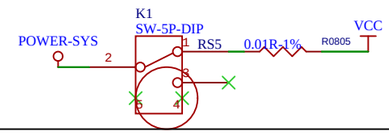
Priority : DC > BAT, USB > BAT

CHARGE CONTROL

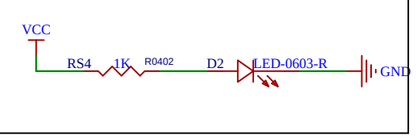


Icharge=(1V/Rprog)*1000=1A

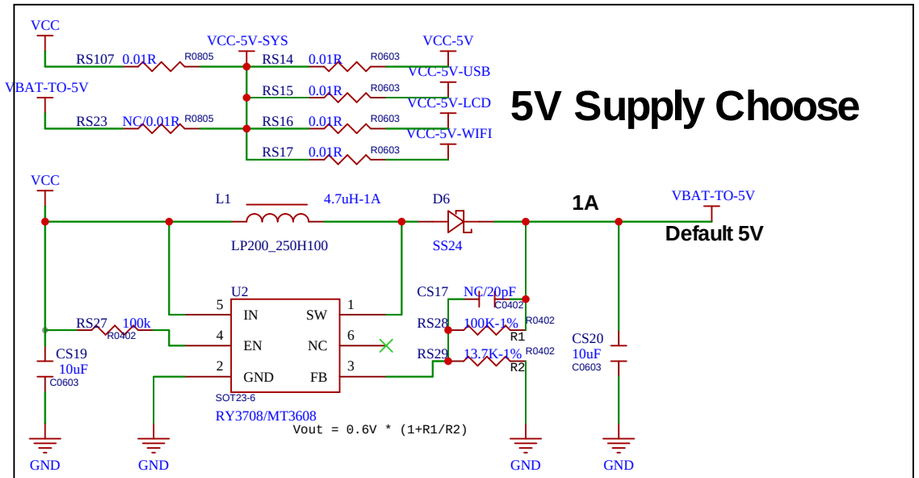
POWER-ON KEY



POWER-LED

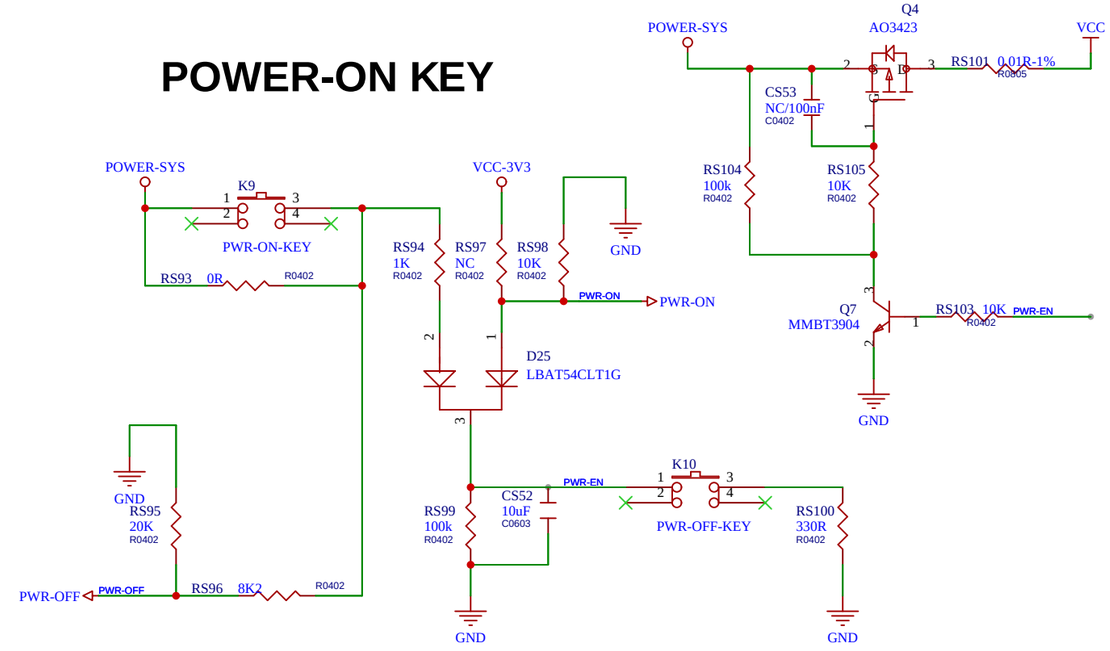


5V Supply Choose



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

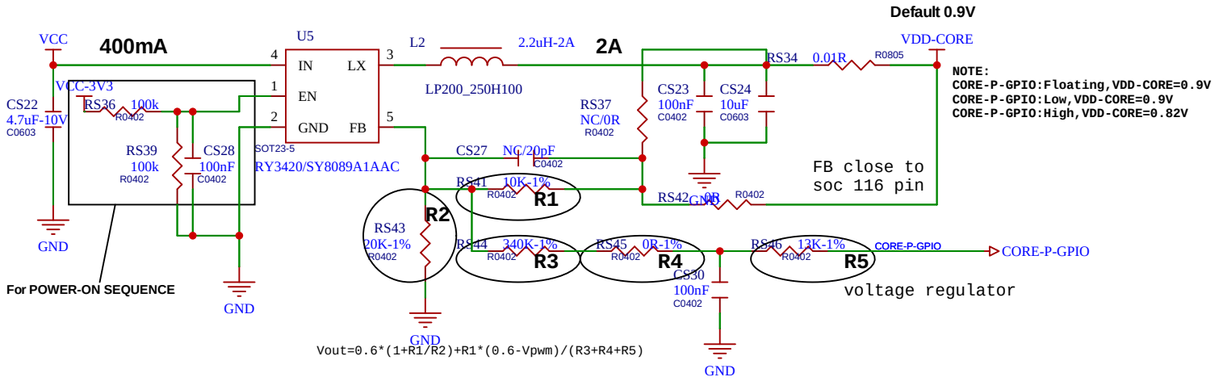
POWER-ON KEY

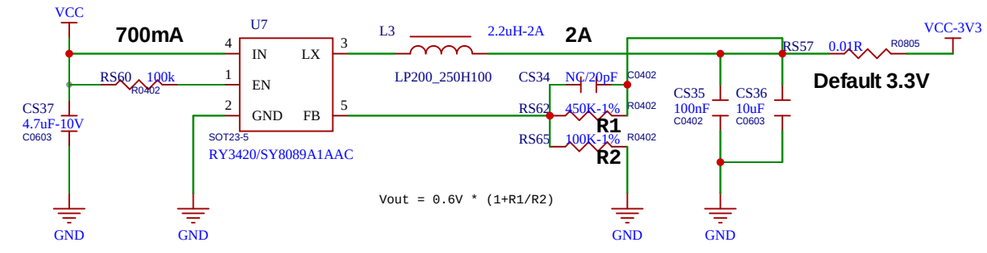


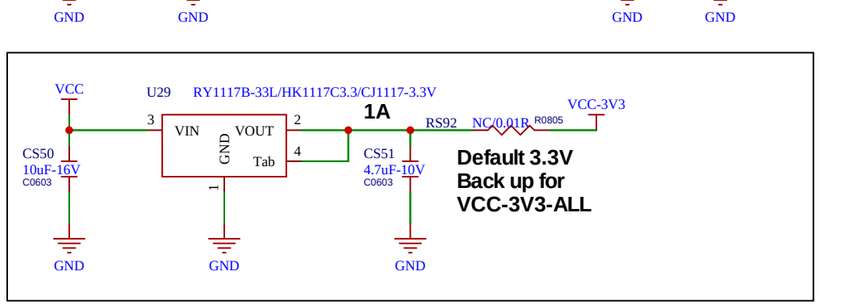
power up :SW KEY on , power down : PWR-EN keep high for 1000ms

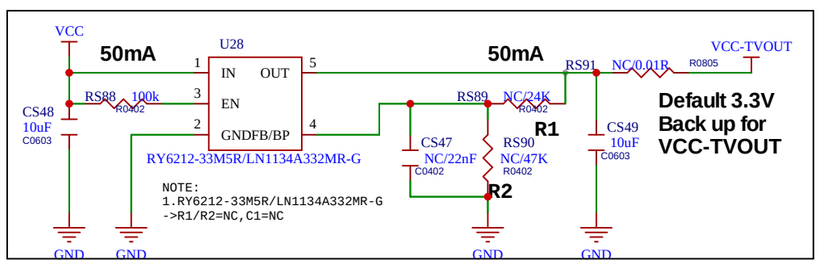
Layout Guide : POWER-SW 's ON , OFF silkscreen text needed

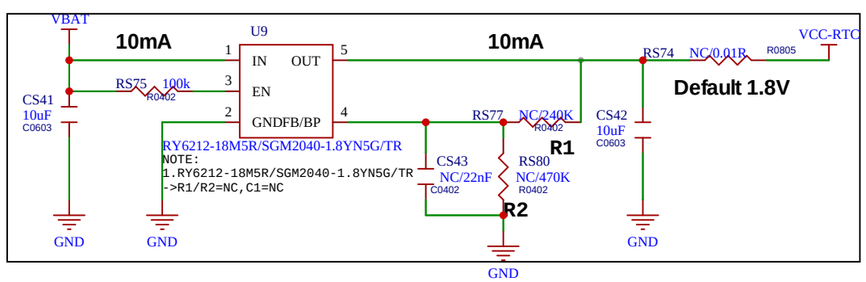
POWER 2

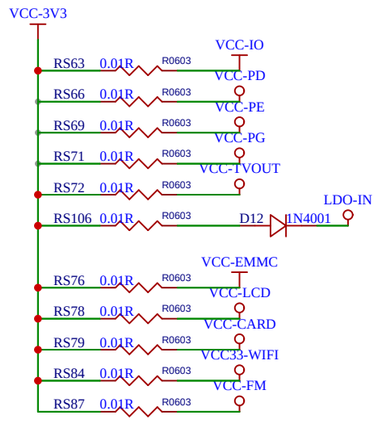

Default 0.9V
VCC
400mA
U5
IN
LX
EN
GND
FB
L2
2.2uH-2A
2A
LP200_250H100
VDD-CORE
RS34 0.01R R0805
NOTE:
CORE-P-GPIO:Floating,VDD-CORE=0.9V
CORE-P-GPIO:Low,VDD-CORE=0.9V
CORE-P-GPIO:High,VDD-CORE=0.82V
VCC-3V3
CS22 4.7uF-10V C0603
RS36 100k R0402
RS39 100k R0402
CS28 100nF C0402
SOT23-5
RY3420/SY8089A1AAC
CS23 100nF C0402
CS24 10uF C0603
RS37 NC/0R R0402
CS27 NC/20pF C0402
RS41 10K-1% R0402
R1
R2
RS43 20K-1% R0402
RS44 340K-1% R0402
R3
RS45 0R-1% R0402
R4
RS46 12K-1% R0402
R5
RS42 0R R0402
CS30 100nF C0402
CORE-P-GPIO
CORE-P-GPIO
FB close to soc 116 pin
For POWER-ON SEQUENCE
voltage regulator
Vout=0.6*(1+R1/R2)+R1*(0.6-Vpwm)/(R3+R4+R5)
GND

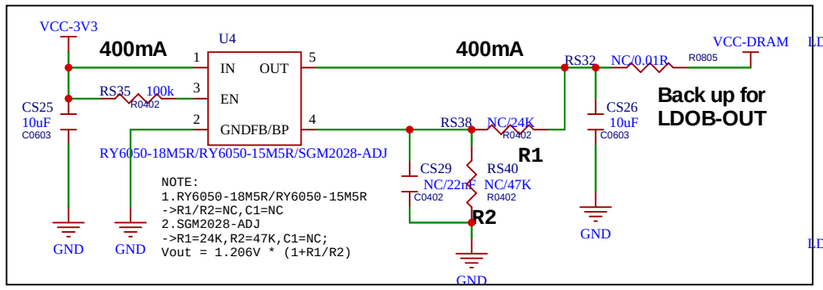

VCC
700mA
U7
IN
LX
EN
GND
FB
L3
2.2uH-2A
2A
LP200_250H100
VCC-3V3
RS57 0.01R R0805
Default 3.3V
RS60 100k R0402
CS37 4.7uF-10V C0603
SOT23-5
RY3420/SY8089A1AAC
CS34 NC/20pF C0402
RS62 450K-1% R0402
R1
RS65 100K-1% R0402
R2
CS35 100nF C0402
CS36 10uF C0603
Vout = 0.6V * (1+R1/R2)
GND

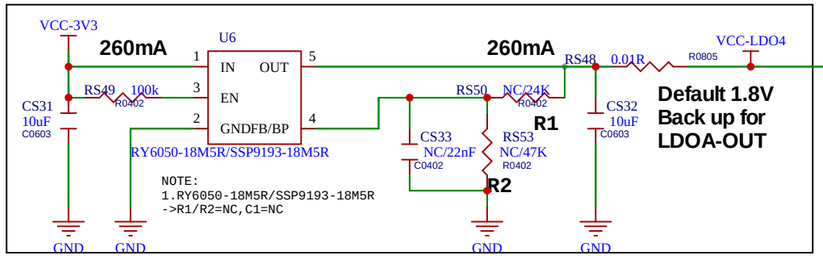

VCC
U29
RY1117B-33L/HK1117C3.3/CJ1117-3.3V
VIN
VOUT
GND
Tab
1A
VCC-3V3
RS92 NC/0.01R R0805
CS50 10uF-16V C0603
CS51 4.7uF-10V C0603
Default 3.3V
Back up for
VCC-3V3-ALL
GND

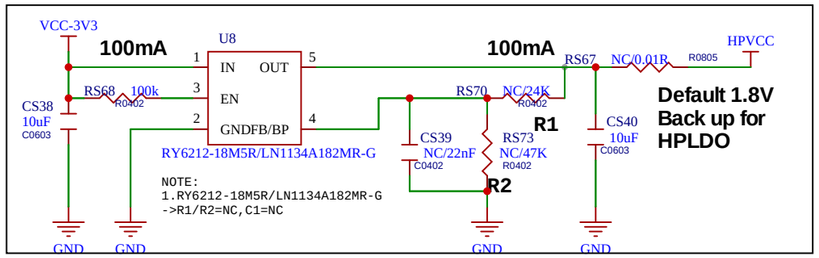

VCC
50mA
U28
IN
OUT
EN
GNDFB/BP
50mA
VCC-TVOUT
RS91 NC/0.01R R0805
RS88 100k R0402
CS48 10uF C0603
RY6212-33M5R/LN1134A332MR-G
NOTE:
1.RY6212-33M5R/LN1134A332MR-G
->R1/R2=NC,C1=NC
RS89 NC/24K R0402
R1
CS47 NC/22nF C0402
RS90 NC/47K R0402
R2
CS49 10uF C0603
Default 3.3V
Back up for
VCC-TVOUT
GND

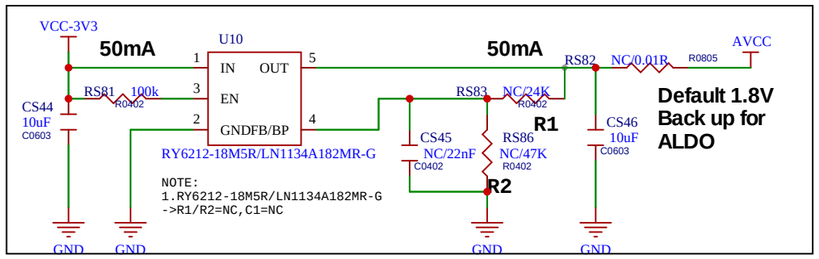

VBAT
10mA
U9
IN
OUT
EN
GNDFB/BP
10mA
VCC-RTC
RS74 NC/0.01R R0805
RS75 100k R0402
CS41 10uF C0603
RY6212-18M5R/SGM2040-1.8YN5G/TR
NOTE:
1.RY6212-18M5R/SGM2040-1.8YN5G/TR
->R1/R2=NC,C1=NC
RS77 NC/240K R0402
R1
CS43 NC/22nF C0402
RS80 NC/470K R0402
R2
CS42 10uF C0603
Default 1.8V
GND

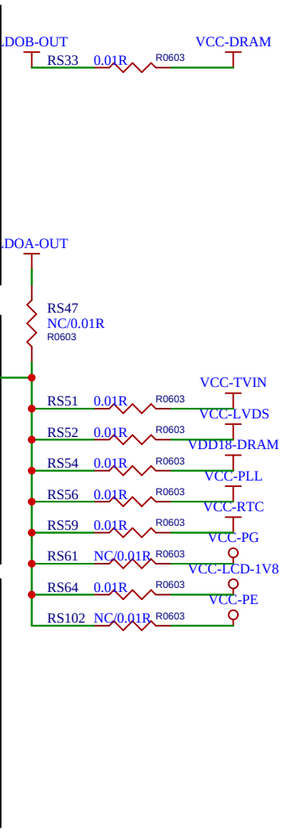

VCC-3V3
RS63 0.01R R0603
VCC-IO
RS66 0.01R R0603
VCC-PD
RS69 0.01R R0603
VCC-PE
RS71 0.01R R0603
VCC-PG
RS72 0.01R R0603
VCC-TVOUT
RS106 0.01R R0603
D12 1N4001
LDO-IN
RS76 0.01R R0603
VCC-EMMC
RS78 0.01R R0603
VCC-LCD
RS79 0.01R R0603
VCC-CARD
RS84 0.01R R0603
VCC33-WIFI
RS87 0.01R R0603
VCC-FM


VCC-3V3
400mA
U4
IN
OUT
EN
GNDFB/BP
400mA
VCC-DRAM
RS32 NC/0.01R R0805
RS35 100k R0402
CS25 10uF C0603
RY6050-18M5R/RY6050-15M5R/SGM2028-ADJ
NOTE:
1.RY6050-18M5R/RY6050-15M5R
->R1/R2=NC,C1=NC
2.SGM2028-ADJ
->R1=24K,R2=47K,C1=NC;
Vout = 1.206V * (1+R1/R2)
RS38 NC/24K R0402
R1
CS29 NC/22nF C0402
RS40 NC/47K R0402
R2
CS26 10uF C0603
Back up for
LDOB-OUT
GND


VCC-3V3
260mA
U6
IN
OUT
EN
GNDFB/BP
260mA
VCC-LDO4
RS48 0.01R R0805
RS49 100k R0402
CS31 10uF C0603
RY6050-18M5R/SSP9193-18M5R
NOTE:
1.RY6050-18M5R/SSP9193-18M5R
->R1/R2=NC,C1=NC
RS50 NC/24K R0402
R1
CS33 NC/22nF C0402
RS53 NC/47K R0402
R2
CS32 10uF C0603
Default 1.8V
Back up for
LDOA-OUT
GND


VCC-3V3
100mA
U8
IN
OUT
EN
GNDFB/BP
100mA
HPVCC
RS67 NC/0.01R R0805
RS68 100k R0402
CS38 10uF C0603
RY6212-18M5R/LN1134A182MR-G
NOTE:
1.RY6212-18M5R/LN1134A182MR-G
->R1/R2=NC,C1=NC
RS70 NC/24K R0402
R1
CS39 NC/22nF C0402
RS73 NC/47K R0402
R2
CS40 10uF C0603
Default 1.8V
Back up for
HPLDO
GND


VCC-3V3
50mA
U10
IN
OUT
EN
GNDFB/BP
50mA
AVCC
RS82 NC/0.01R R0805
RS81 100k R0402
CS44 10uF C0603
RY6212-18M5R/LN1134A182MR-G
NOTE:
1.RY6212-18M5R/LN1134A182MR-G
->R1/R2=NC,C1=NC
RS83 NC/24K R0402
R1
CS45 NC/22nF C0402
RS86 NC/47K R0402
R2
CS46 10uF C0603
Default 1.8V
Back up for
ALDO
GND


LDOB-OUT
RS33 0.01R R0603
VCC-DRAM
LDOA-OUT
RS47 NC/0.01R R0603
VCC-TVIN
RS51 0.01R R0603
VCC-LVDS
RS52 0.01R R0603
VDD18-DRAM
RS54 0.01R R0603
VCC-PLL
RS56 0.01R R0603
VCC-RTC
RS59 0.01R R0603
VCC-PG
RS61 NC/0.01R R0603
VCC-LCD-1V8
RS64 0.01R R0603
VCC-PE
RS102 NC/0.01R R0603

SOC

Upper left signal
SDC1-CLK
SDC1-CMD
SDC1-D0
SDC1-D1
SDC1-D2
SDC1-D3
I2S1-LRCK
I2S1-BCLK
I2S1-DIN0
I2S1-DOUT0

Upper right signal
USB0-DM
USB0-DP
USB1-DM
USB1-DP
TV-IN0
TV-IN1
TP-X1
TP-X2
TP-Y1
TP-Y2
GPADC0
HPOUTFB
HPOUTL
HPOUTR

VCC-TVIN
C7 100nF C0402
C1 1uF C0402
C2 1uF C0402
TV-VRP
TV-VRN
GND
VCC-TVIN
GND
R1 NC/1K R0402
C3 1nF C0402
C4 1nF C0402
C5 1nF C0402
C6 1nF C0402
TP-X1
TP-Y1
TP-X2
TP-Y2
GND

VCC-PG
C8 100nF C0402
GND
VDD-CORE
HPVCC
close to soc
R2 33R R0402
R4 33R R0402
R5 33R R0402
R245 0R R0402
R246 0R R0402

U11
EPAD
WIFI+BT/GMII
PG6 PG7 PG8 PG9 PG10 PG11
VCC-PG PG15 PG14 PG13 PG12 PG4 PG5 PG3 PG0 PG2 PG1
UART1-TX
UART1-RX
UART1-RTS
UART1-CTS
WL-WAKE-AP
PG11

Card
PF0 PF1 PF2 PF3 PF4 PF5 PF6
SDC0-D1
SDC0-D0
SDC0-CLK
SDC0-CMD
SDC0-D3
SDC0-D2
SDC0-DET

SPI/EMMC
PC7 PC6 PC5 PC4 PC3 PC2
SPI0-HOLD
SPI0-WP
SPI0-MISO
SPI0-MOSI
SPI0-CS0
SPI0-CLK
EMMC-D3 SPI0-HOLD
EMMC-D0 SPI0-WP
EMMC-D1 SPI0-MISO
EMMC-D2 SPI0-MOSI
EMMC-CMD SPI0-CS0
EMMC-CLK SPI0-CLK

PLL
VCC-PLL
REFCLK-OUT
DXOUT
DXIN
X32KOUT
X32KIN
VCC-RTC
RESET
VCC-PLL
C16 100nF C0402
AP-CK24M-OUT

DCXO
DCXO-XOUT
DCXO-XIN
X32KOUT
X32KIN
R6 0R R0402
R9 0R R0402

RTC
GND
C19 100nF C0402
VCC-RTC
AP-RESET

LDO
LDOA-OUT
LDO-IN
LDOB-OUT
C20 2.2uF C0402
C22 10uF C0603
C23 2.2uF C0402

CTP-SCK
CTP-SDA

PE
PE13 PE12
PE3 VCC-PE PE2 PE11 PE10 PE9 PE8 PE7 PE6 PE5 PE4 PE0 PE1

VDD-SYS0
DRAM
DZQ VCC-DRAM0 VCC-DRAM1 VDD18-DRAM
RD1 240R-1% R402
VDD18-DRAM
VCC-DRAM
VDD-CORE
VDD-SYS1

LCD
PD22 PD21 PD20 PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7 PD8 PD9
LCD-RST
DSI-D0P
DSI-D0N
DSI-D1P
DSI-D1N
DSI-CKP
DSI-CKN
DSI-D2P
DSI-D2N
LCD-PWM
LCD0-VSYNC
LCD0-HSYNC

D1s-eLQFP128

USB
USB0-DP USB0-DM USB1-DM USB1-DP

TVIN
TVIN-VRN TVIN-VRP TVIN1 TVIN0 VCC-TVIN NC0

TPADC
GPADC
TP-Y2 TP-Y1 TP-X2 TP-X1 GPADC0

Audio
HPOUTFB HPOUTL HPOUTR HPVCC
LINEINL
LINEINR
FMINL
FMINR
VRA1
AGND
VRA2
AVCC
MICIN3N
MICIN3P

PB
PB2 PB3 PB4 VCC-IO PB5 VDD-SYS2 PB6 PB7
USB0-VBUSDET
USB-DRVVBUS
PB4
PB5
VDD-CORE
PB6
PB7
C14 1uF C0402
C15 100nF C0402
GND

TVOUT
TVOUT0
VCC-TVOUT
TV-OUT
C18 100nF C0402
VCC-TVOUT
GND

PD19 PD18 PD17 PD16 PD15 PD14 PD12 PD13 PD11 PD10 VCC-PD VCC-LVDS
LCD0-D23
LCD0-D22
DBI-TE
DBI-DCX
DBI-SDO
DBI-SDI
DBI-SCLK
DBI-CSX
VCC-PD
VCC-LVDS
C25 100nF C0402
C26 100nF C0402
GND
J3 PLL TEST
R8 0R R0402
R10 0R R0402
LCD0-DE
LCD0-CLK
LCD0-DE
LCD0-CLK

HPVCC AVCC
C11 10uF C0603
C9 2.2uF C0402
C10 NC/100nF C0402
VRA1
C12 470nF C0402
VRA2
C13 470nF C0402
R3 0R R0402
AGND

Right multiplex signal
PB6 R206 0R R0402 LCD0-PIO2
R207 NC/0R R0402 CORE-P-GPIO
R208 0R R0402 USB-ID
PB7 R209 0R R0402 SDC0-PWN
R210 NC/0R R0402 PA-SHDN
R211 0R R0402 IR-RX
PB4 R234 0R R0402 LCD0-PIO0
R235 0R R0402 TWI1-SCK
PB5 R236 0R R0402 LCD0-PIO1
R237 0R R0402 TWI1-SDA
LCD0-PIO0
LCD0-PIO1
TWI1-SCK
TWI1-SDA
LCD0-PIO2
CORE-P-GPIO
SDC0-PWN
PA-SHDN
USB-ID
IR-RX

Lower left signal
WL-REG-ON R201 0R R0402 PE3
PE-UART2-RX R215 0R R0402
BT-RESETN R216 0R R0402 PE2
PE-UART2-TX R217 0R R0402
CTP-RST R218 0R R0402 PE11
JTAG-CK R219 0R R0402
CTP-INT R220 0R R0402 PE10
JTAG-DO R221 0R R0402
HP-DET R96 0R R0402 PE9
PWR-OFF NC/R97 0R R0402
JTAG-DI R224 0R R0402
PWM2 R94 0R R0402 PE8
PWR-ON NC/R95 0R R0402
JTAG-MS R225 0R R0402
TWI3-SDA R226 0R R0402 PE7
D-JTAG-CK R227 0R R0402
TWI3-SCK R228 0R R0402 PE6
D-JTAG-DO R229 0R R0402
UART4-RX R230 0R R0402 PE5
D-JTAG-DI R232 0R R0402
UART4-TX R231 0R R0402 PE4
D-JTAG-MS R233 0R R0402
BT-WAKE-AP
AP-WAKE-BT

Lower right signal
DSI-D0P
DSI-D0N
DSI-D1P
DSI-D1N
DSI-CKP
DSI-CKN
DSI-D2P
DSI-D2N
DSI-D3P
DSI-D3N
LCD-RST
LCD-PWM
LCD0-HSYNC
LCD0-VSYNC

VCC-PE
C32 100nF C0402
GND
VCC-DRAM
C36 10uF C0603
C38 2.2uF C0402
C39 2.2uF C0402
C37 NC/10uF C0603
C40 NC/2.2uF C0402
place on back
VDD18-DRAM
C41 100nF C0402
GND
VDD-CORE
C29 10uF C0603
C30 10uF C0603
C31 2.2uF C0402
C33 2.2uF C0402
C34 2.2uF C0402
C35 2.2uF C0402
C79 NC/10uF C0603
C80 NC/2.2uF C0402
place on back
GND

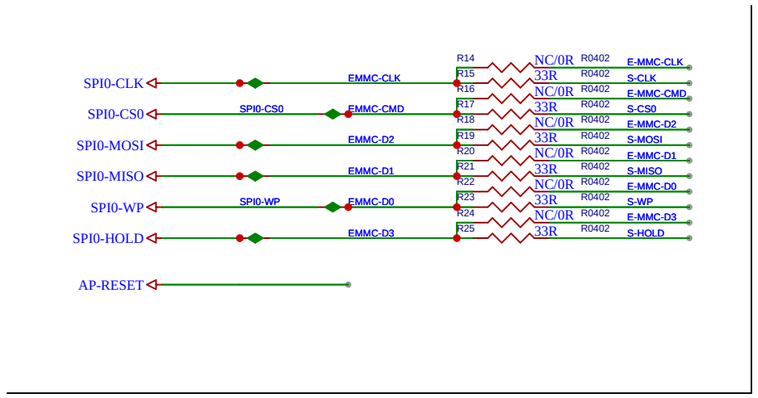
H1 H2 H3 H4
NC/HOLE
GND

EMMC-CMD T19 TEST
EMMC-CLK T20 TEST
EMMC-D0 T21 TEST
close to SOC

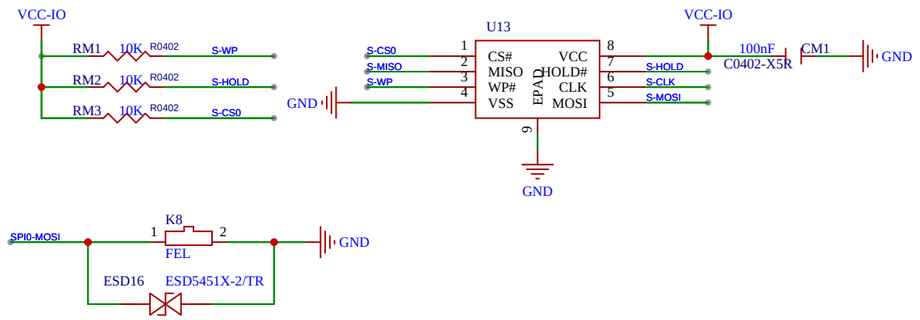
OSC-32K
X32KIN
C17 22pF C0402
Y1 32.768K-12.5pF-20ppm
R7 10M R0402
X32KOUT
C21 22pF C0402
GND

DCXO-SYS
DCXO-XIN
Y2 24M-16pF-10ppm
C24 18pF C0402
XIN GND2 GND1 XOUT
DCXO-XOUT
R11 0R R0402
C27 18pF C0402
GND

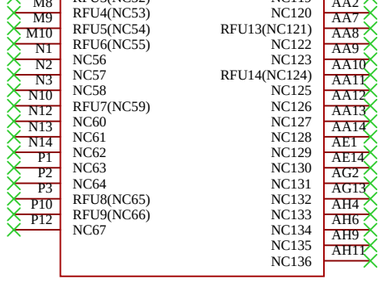
RESET
NOTE:RESET IC can NC ,
When Using SoC internal RESET Logic.
信号远离板边以及干扰信号，做包地处理
VCC-3V3
R12 47K R0402
U12 Vth=2.93V
NC/SGM803/809
VIN RESET-N GND
AP-RESET
R13 510R R0402
Close to AP
C28 1nF C0402
K2 KEY-02P-SMD-01
GND

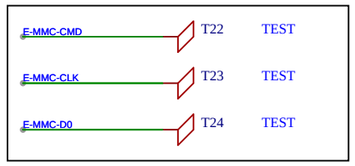


SPI

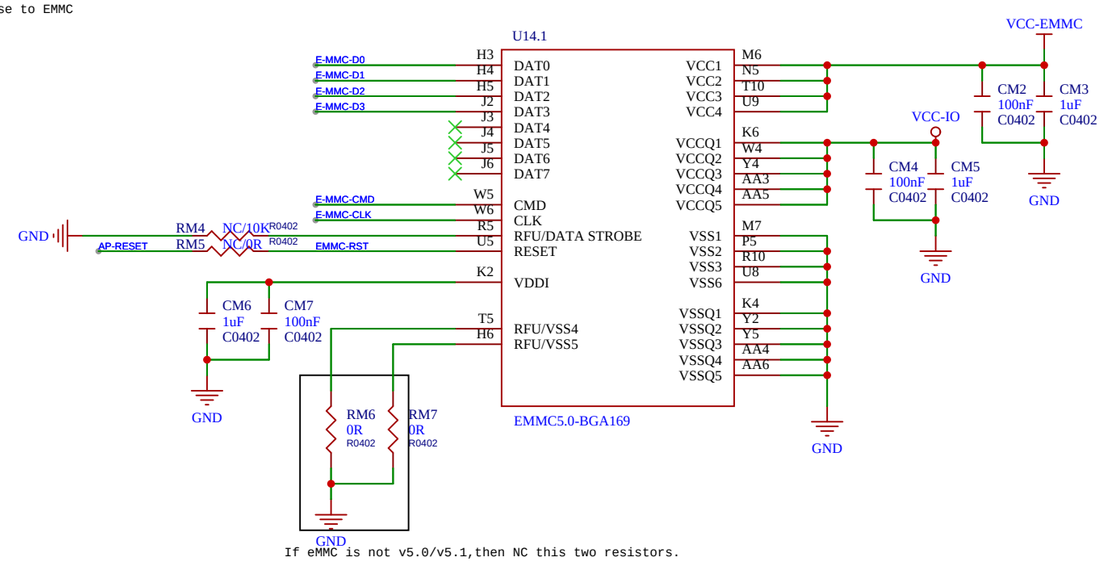


EMMC





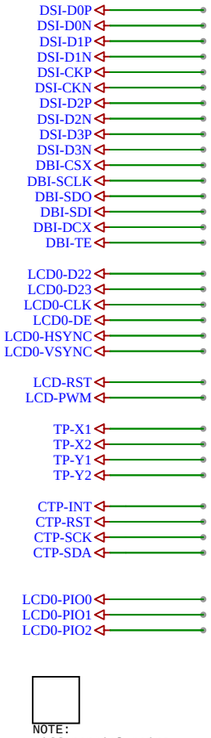
close to EMMC

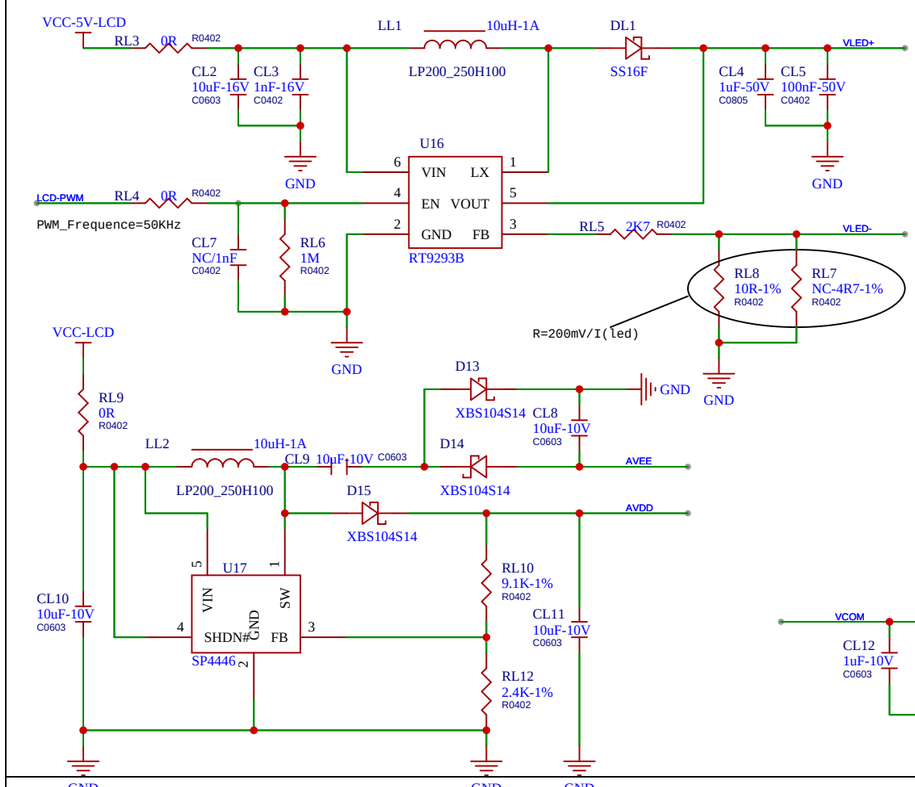


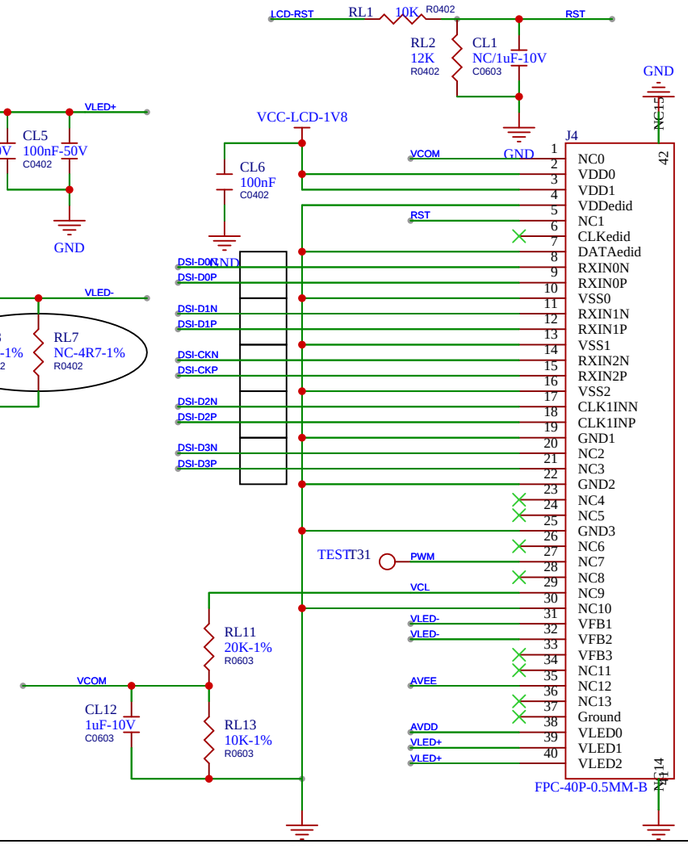
If eMMC is not v5.0/v5.1,then NC this two resistors.

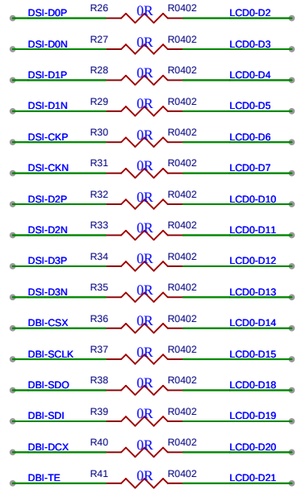
DSI

BACK LIGHT

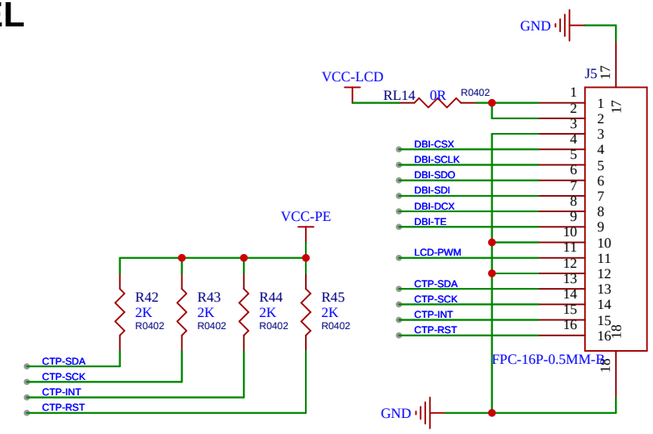




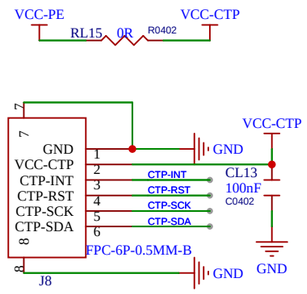




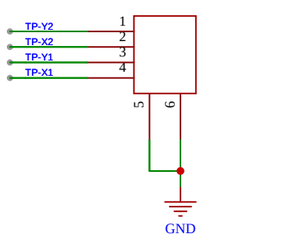
SPI PANEL



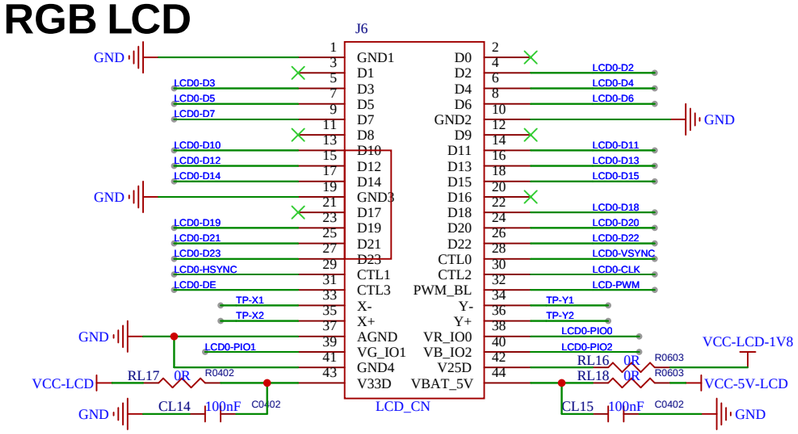
CTP



RTP



RGB LCD



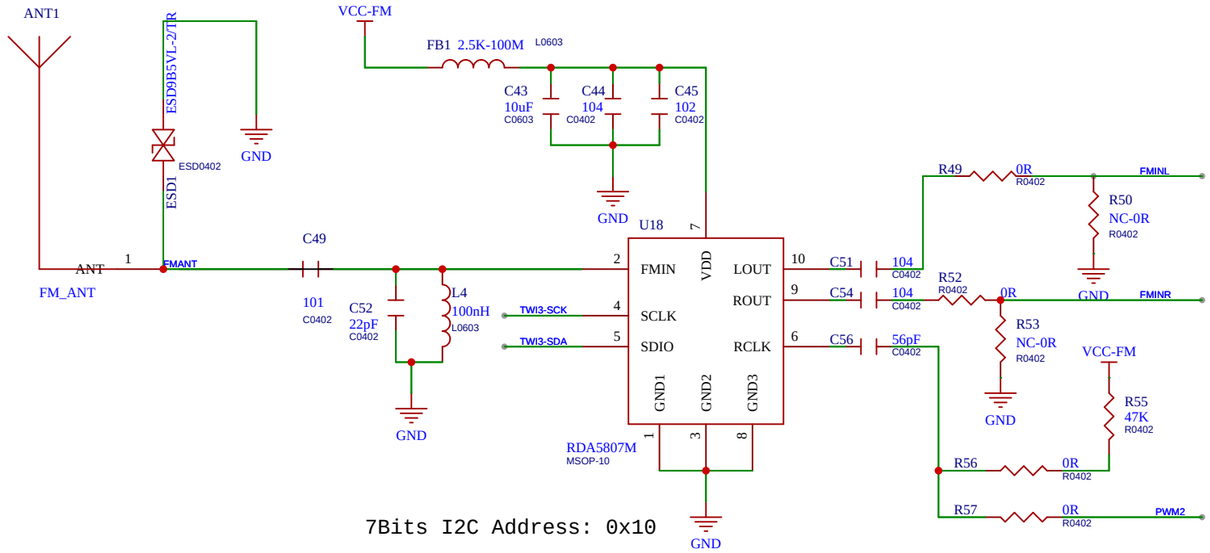
FM

HP-DET
MICIN3N
MICIN3P
LINEINL
LINEINR
FMINL
FMINR
HPOUTFB
HPOUTL
HPOUTR

PWM2

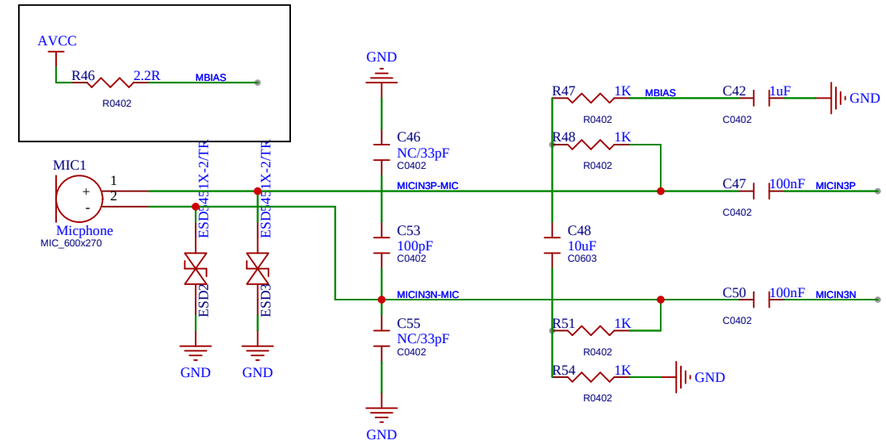
TWI3-SCK
TWI3-SDA

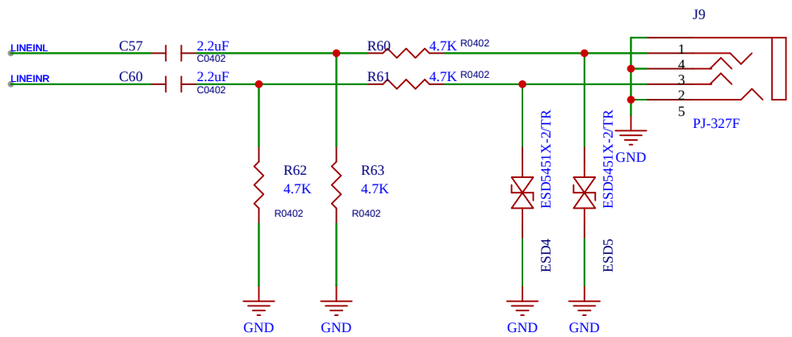
PA-SHDN

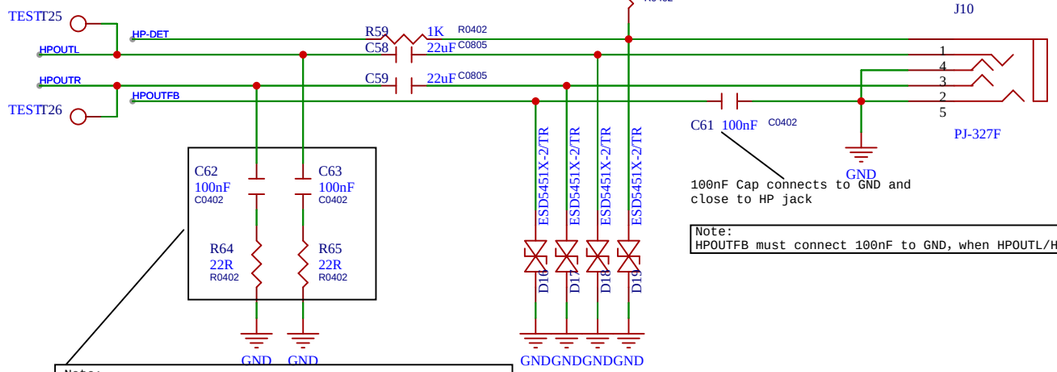


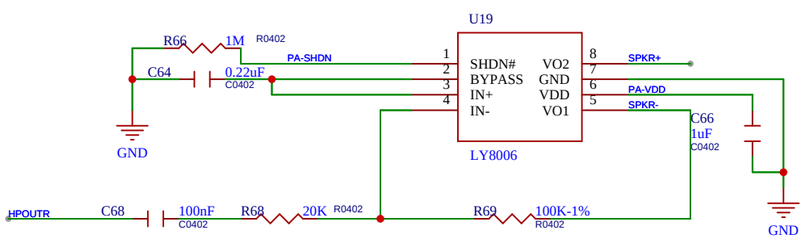
7Bits I2C Address: 0x10

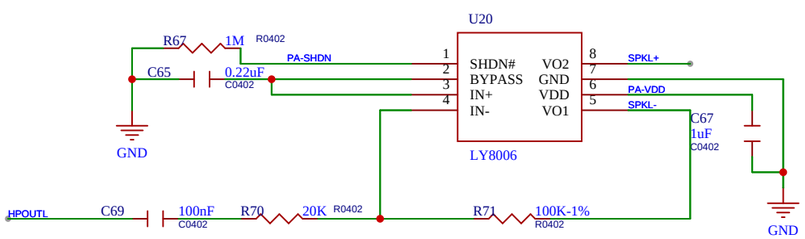
Layout: RF 50ohm Line Width

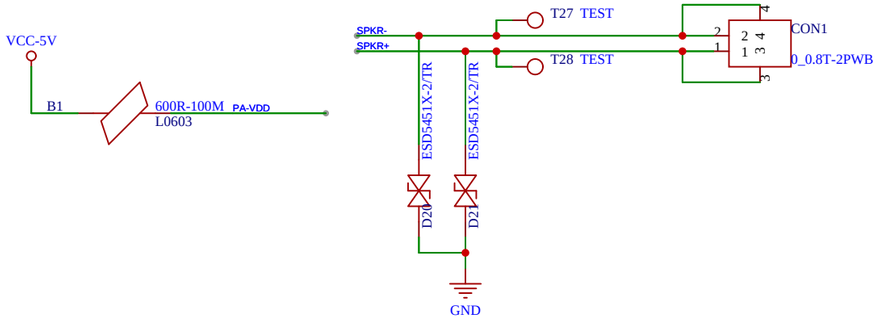


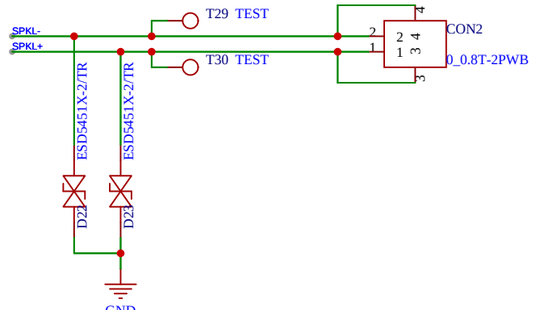












SDC0

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。

SDC0-D1
SDC0-D0
SDC0-CLK
SDC0-CMD
SDC0-D3
SDC0-D2
SDC0-DET
3.3V GPIO
SDC0-PWN

VCC-CARD
VCC-CARD0-3.3V
RC4 2.2R R0603
QC1
NC/STS2301
PMOS-SOT23
CC1 NC/100nF C0402
RC7 NC/100K R0402
CC2 10uF C0603
SDC0-PWN
RC8 NC/1K R0402
RC9 NC/10K R0402
GND

VCC-CARD0-3.3V
VCC-IO
VCC-IO
RC2 NC/10K R0402
RC3 NC/100K R0402
J11 SD-SLOT
SDC0-D2
SDC0-D3
SDC0-CMD
SDC0-DET
RC5 1K R0402
SDC0-CLK
SDC0-D0
SDC0-D1
DAT2
DAT3
CMD
CD
VSS1
VDD
CLK
VSS2
DAT0
DAT1
WP
GND1
GND2
ESD9B5VL-2-TR
DC1
DC2
DC3
DC4
NC/ESD9B5VL-2-TR
CC3 10uF C0603
DC6
DC7
DC5
DC8
GND

PF-JTAG-MS
PF-JTAG-CK
PF-JTAG-DO
PF-JTAG-DI
PF-UART0-TX
PF-UART0-RX
RC10 0R R0402 SDC0-D1
RC11 0R R0402 SDC0-D2
RC12 0R R0402 SDC0-CMD
RC13 0R R0402 SDC0-D0
RC14 0R R0402 SDC0-CLK
RC15 0R R0402 SDC0-D3
place on back

VCC-3V3
J25
DC3-2.0MM-14P
VCC-3V3
R238 10K R0402 PF-JTAG-MS
R239 10K R0402 PF-JTAG-CK
R240 10K R0402 PF-JTAG-DO
R241 10K R0402 PF-JTAG-DI
GND

SDC0-CMD T17 TEST
SDC0-D0 T18 TEST
close to soc

VCC-IO
RC6 NC/10K R0402
SDC0-D0
Just for debug
走线时注意减少分叉

SDC0-D3 RC1 NC/1M R0402
Option
used D3 for card detect.
default not be used.
GND

PF-UART0-TX
R242 1K R0402
VCC-3V3
R244 10K R0402
PF-UART0-RX
Q16
B8N20
VCC-3V3
R243 NC R0402
HDR1_5P250B570_1500H700
CON4
CON5
GND

USB

USB-ID
USB0-VBUSDET
USB-DRVVBUS
USB0-DM
USB0-DP
USB1-DM
USB1-DP

90 ohm

VCC-5V-USB
U21
IN
OUT
EN
GND
ISET
SY6280
CU1 1uF-16V C0402
USB-DRVVBUS
RU4 100k R0402
RU5 6K8-1% R0402
Ilim (A)=6800/Rset (ohm)
RU2 51K-1% R0402
USBVBUS
CU2 10uF-16V C0603
CU3 104-16V C0402
USB0-VBUSDET
CU4 104-16V C0402
RU6 100K-1% R0402
close to IC
GND

VCC-IO
RU1 47K R0402
USB0-DM
USB0-DP
USB-ID
RU3 1K R0402
Differential pairs
Z0= 90 ohm
USB0-DM
USB0-DP
ESD5451X-2TR
ESD9B5VL-2-TR
ESD6
ESD7
ESD8
ESD9
J12
VBUS
D-
D+
ID
GND
MICRO USB
Shield1
Shield2
Shield3
Shield4
USB2.0-MICRO-01F

VCC-5V-USB
U22
CU5 1uF-16V C0402
USB-DRVVBUS
RU7 100k R0402
RU8 6K8-1% R0402
CU6 10uF-16V C0603
CU7 104-16V C0402
USB1-DM
USB1-DP
Differential pairs
Z0= 90 ohm
USB1-DM
USB1-DP
ESD10
ESD11
ESD12
J13
VBUS
D-
D+
GND
立式
Type A
Shield1
Shield2
Shield3
Shield4
USB-A-02F

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

SDC1-CLK — WL_SDIO-CLK-AP
SDC1-CMD — WL_SDIO-CMD
SDC1-D0 — WL_SDIO-D0
SDC1-D1 — WL_SDIO-D1
SDC1-D2 — WL_SDIO-D2
SDC1-D3 — WL_SDIO-D3
WL-REG-ON — WL_RESETN
WL-WAKE-AP — WL-WAKE-AP
AP-CK24M-OUT — AP-CLK-OUT
PG11 — PG11

UART1-TX — BT-HCI-RX
UART1-RX — BT-HCI-TX
UART1-RTS — BT-HCI-CTS
UART1-CTS — BT-HCI-RTS
BT-WAKE-AP — BT-WUP-HOST
AP-WAKE-BT — BT-HOST-WUP
BT-RESETN

I2S1-BCLK — BT-PCM-CLK
I2S1-LRCK — BT-PCM-SYNC
I2S1-DOUT0 — BT-PCM-DIN
I2S1-DIN0 — BT-PCM-DOUT

VCC-5V-WIFI — RW5 NC/0R R0603 — VCC-WIFI
VCC33-WIFI — RW6 0R R0603
VCC-PG — RW8 0R R0603 — VDDIO

VDDIO — RW11 NC/47K R0402; RW12 47K R0402; RW13 47K R0402; RW14 47K R0402; RW15 47K R0402; RW16 47K R0402
WL-SDIO-CLK
WL-SDIO-CMD
WL-SDIO-D0
WL-SDIO-D1
WL-SDIO-D2
WL-SDIO-D3

50 ohm

Y3: XIN GND2 / GND1 XOUT — 24M-16pF-10ppm
XR819S-XTAL1 — CW5 20pF C0402 — GND
XR819S-XTAL2 — RW3 NC/0R R0402 — CW7 20pF C0402 — GND

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

AP-CLK-OUT — RW7 0R R0402 — XR819S-XTAL2
XR819S use AP 24MHz Clock out

U23 XR819S

38	XR819S-XTAL2	HXTAL2	
37	XR819S-XTAL1	HXTAL1	
33		FEM_CTRL1	
32		FEM_CTRL2	
16	GND	TEST	
5	BT-HOST-WUP	BT_HOST_WUP	
6	BT-WUP-HOST	BT_WUP_HOST	
20	BT-RESETN	BRESTN	
15	BT-HCI-TX	UART_TX	
14	BT-HCI-RX	UART_RX	
13	BT-HCI-CTS	UART_CTS	
12	BT-HCI-RTS	UART_RTS	
31	WL-SDIO-CMD	SDIO_CMD	
30	WL-SDIO-D0	SDIO_DATA0	
28	WL-SDIO-D1	SDIO_DATA1	
26	WL-SDIO-D2	SDIO_DATA2	
27	WL-SDIO-D3	SDIO_DATA3	
29	WL-SDIO-CLK	SDIO_CLK	
17	WL-RESETN	WRESTN	
35	WL-WAKE-AP	WIRQ	
4	CLKREQOUT		
3,7,8,9,10,11,34,36	NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8		

40	ANT	RW1 0R R0402	ANT0
21	VBAT	VCC-WIFI; CW1 1uF C0402	GND
18	VDD_IO	VDDIO; CW2 1uF C0402	GND
25	VDD_IO	CW11 1uF C0402	GND
22	VDD_EXT	VDD-EXT; CW9 1uF C0402	GND
1	VDD_PA	CW3 1uF C0402	GND
19	VDD_DIG	CW8 1uF C0402	GND
2	VDD_TX	CW6 1uF C0402	GND
24	VDD_SENSE	VDD-SENSE; CW10 4.7uF C0402	GND
23	VDD_LX	LW1 L0805 2.2uH-1.0A DCR<0.2R	VDD-SENSE
39	VDD_ANA	RW26 0R R0402; CW18 1uF C0402	GND
41	EPAD		GND

RW1 should Close to PI Matching Network
Place capacitors near the IC
RW4 NC R0402

WL-SDIO-CLK-AP — RW2 0R R0603 — WL-SDIO-CLK — CW4 NC C0402 — GND

20mil
15mil

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

CLKREQOUT needs to be pulled up to VDDIO
VDDIO — RW9 33K R0402
PG11 — RW27 0R R0402 — CLKREQOUT

WIFI MODULE

VCC-WIFI — CW12 10uF C0603 — GND
RW10 NC/100K R0402 — GND
BT-WAKE-AP; AP-WAKE-BT

U24 AP6XXX

11	XTAL_OUT	
10	XTAL_IN	
9	VBAT	
8	BT_VIO/N_HOST_WAKE	
7	BT_HOST_WAKE	
6	BT_WAKE	
5	N_WAKE	
4	FM_RX	
3	GND2	
2	WL_BT_ANT	
1	GND1	
12	WL_REG_ON	WL-REG-ON
13	WL_HOST_WAKE	WL-WAKE-AP
14	SDIO_DATA_2	WL-SDIO-D2
15	SDIO_DATA_3	WL-SDIO-D3
16	SDIO_DATA_CMD	WL-SDIO-CMD
17	SDIO_DATA_CLK	WL-SDIO-CLK
18	SDIO_DATA_0	WL-SDIO-D0
19	SDIO_DATA_1	WL-SDIO-D1
20	GND3	
21	VIN_LDO_OUT	
22	VDDIO	VDDIO; CW15 4.7uF C0603 — GND
23	VIN_LDO	
24	LPO	
25	PCM_OUT	
26	PCM_CLK	
27	PCM_IN	
28	PCM_SYNC	
29	VDD_TCXO	
30	TCXO_IN	
31	GND4	
32	GPS_RF	
33	GND5	
44	UART_CTS_N	BT-HCI-CTS
43	UART_RXD	BT-HCI-RX
42	UART_TXD	BT-HCI-TX
41	UART_RTS_N	BT-HCI-RTS
40	TX1	
39	TX2	
38	N_REG_PU	
37	N_I2C_SCL	
36	GND6	
35	N_I2C_SDA	
34	BT_RST_N	BT-RESETN — RW20 NC/100K R0402 — GND

PG11 — RW21 0R R0402 — X32KFOUT
BT-PCM-DOUT
BT-PCM-CLK
BT-PCM-DIN
BT-PCM-SYNC
AP-CK24M-OUT — RW24 NC/0R R0402 — GND
MCLK-IN

ANT0 — RW18 0R R0402 — CW13 NC C0402 — GND; CW14 NC C0402 — GND
RW17 NC/0R R0402 — JW1 ANT-IPX
RW19 0R R0402 — JW2 — GND — ANT-F — GND

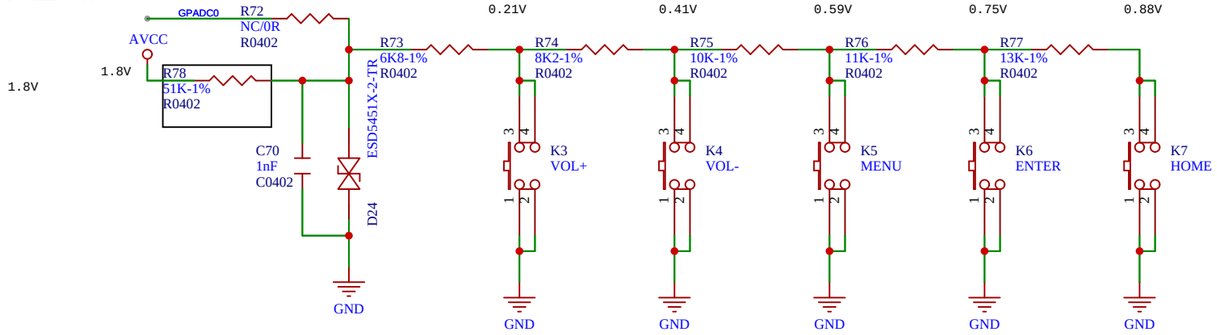
PI Matching Network is recommmented to place as close as possible to IC ANT PIN1

ANT1 — RW22 0R R0402 — CW16 NC C0402 — GND; CW17 NC C0402 — GND
RW23 0R R0402 — ANT-IPX — JW3 — GND
A

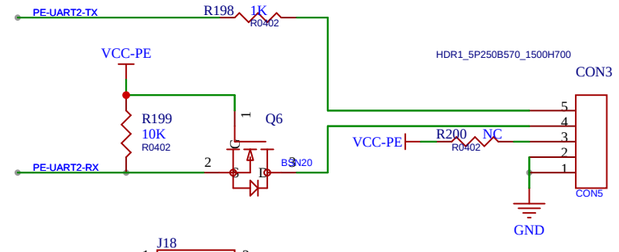
NOTE :	A	
XR829 Module	NC	
RTL8723DS Module	NC	
RTL8723FS Module	Mounting	
RTL8733BS Module	Mounting	
RTL8821CS Module	Mounting	
RDA5622 Module	NC	

GPADC0
D-JTAG-MS
D-JTAG-DI
D-JTAG-DO
D-JTAG-CK
IR-RX
TWI1-SCK
TWI1-SDA
TWI3-SCK
TWI3-SDA
UART4-TX
UART4-RX
JTAG-MS
JTAG-DI
JTAG-DO
JTAG-CK
PE-UART2-TX
PE-UART2-RX

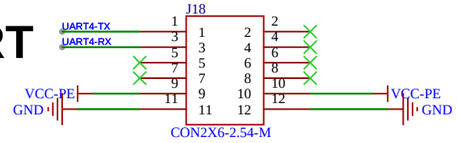
KEY ADC



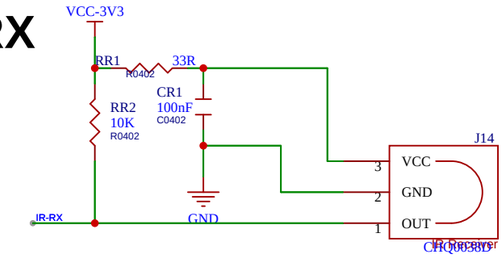
DEBUG



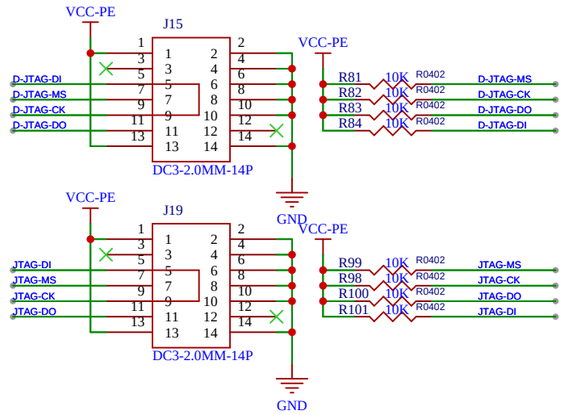
UART



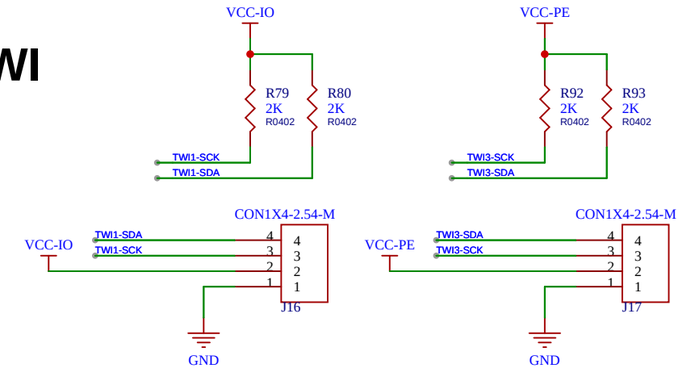
IR-RX



DSP&RISC-V -JTAG

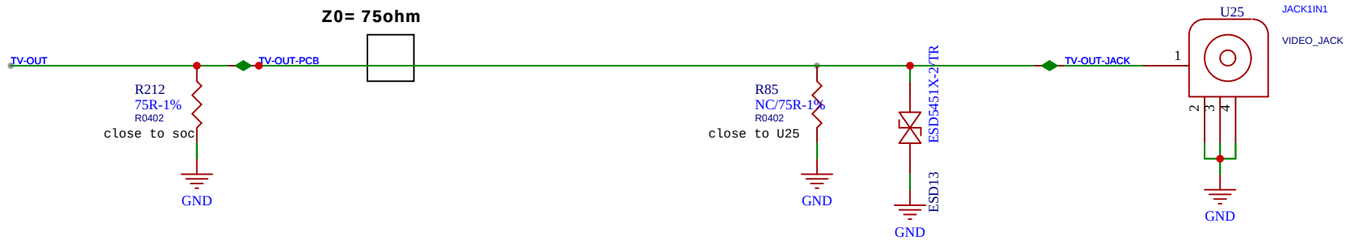


TWI



TV OUT

TV-OUT



TV IN

TV-IN0

TV-IN1