



# LS1B DEMO BOARD

## Schematic Revision 2.0

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## CPU

Loongson 1B

## Onboard Chipset

AUDIO:ALC655

USB HUB:MW7220

NAND Flash:128MB

Flash Rom:SPI 8Mbit

PHY IC:RTL8201EL-GR\*2

## Memory

DDRII 64M/16bit 133MHz

## Expansion Interface

AD:2Channel 12bit

LCD:24bit/40 Pin

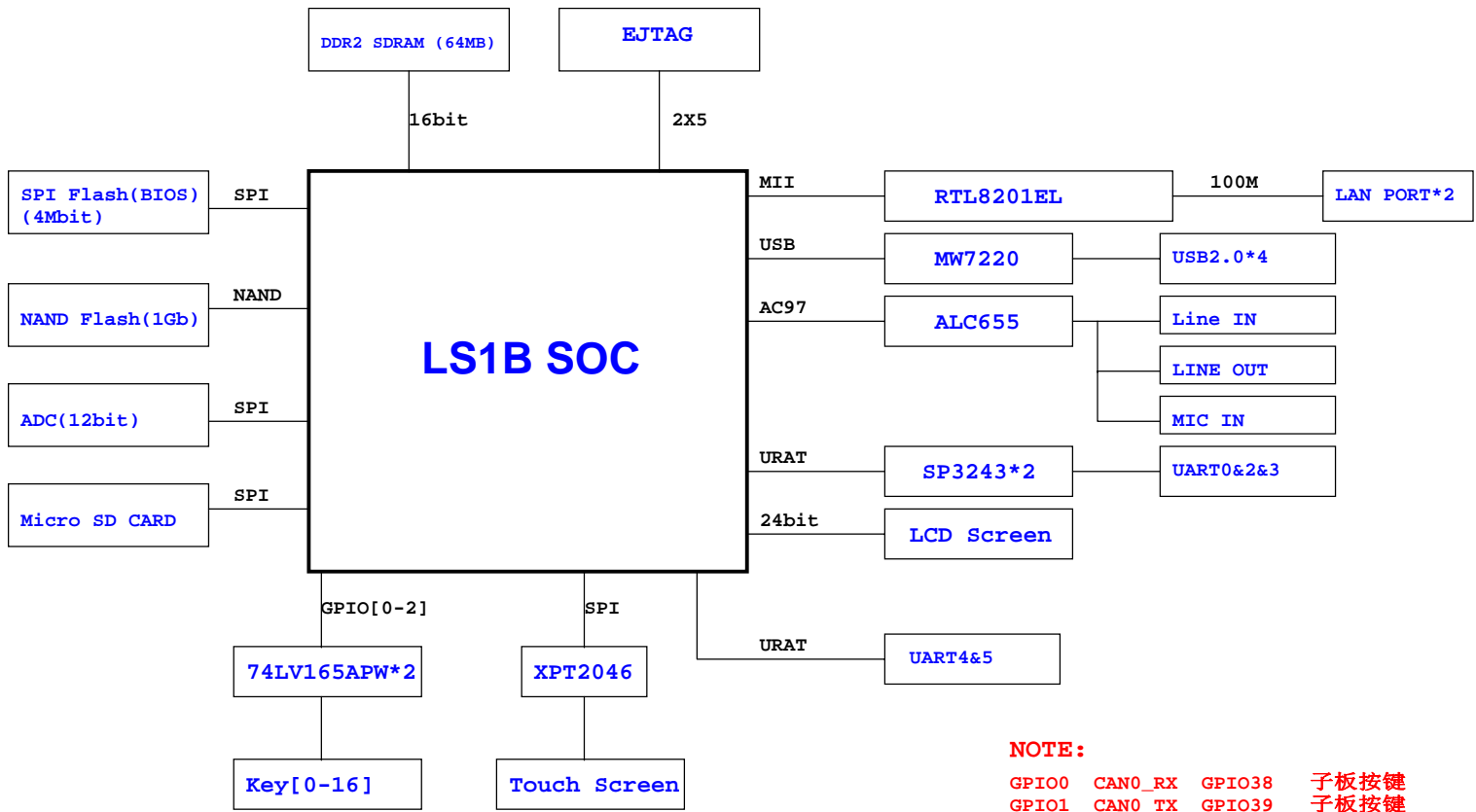
UART:3Line/6

MicroSD:SPI

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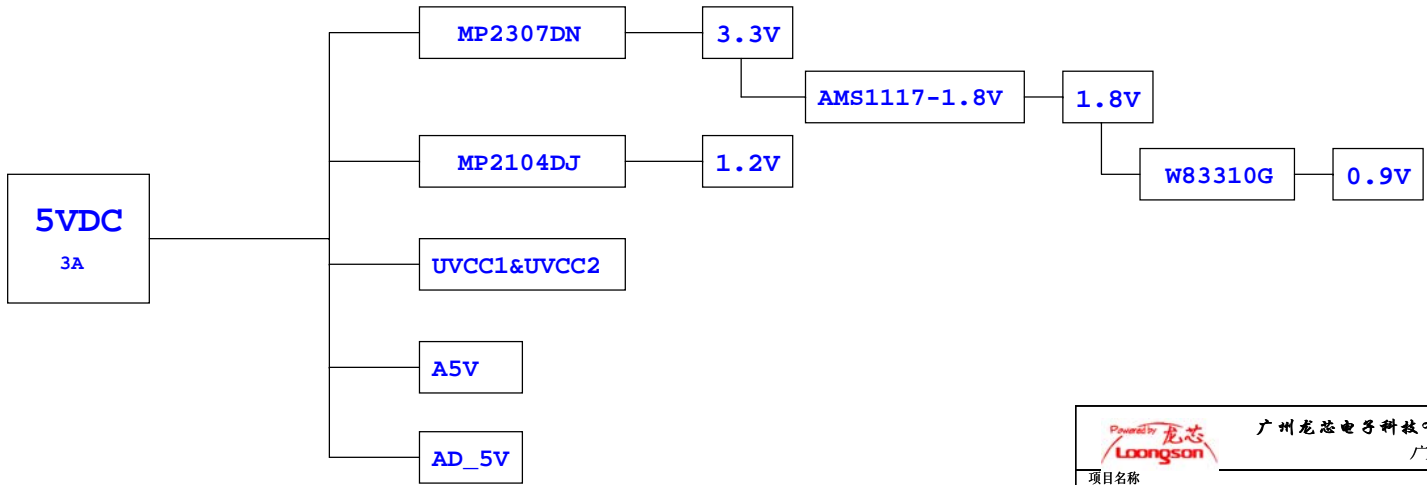
Release Date: 2011.09


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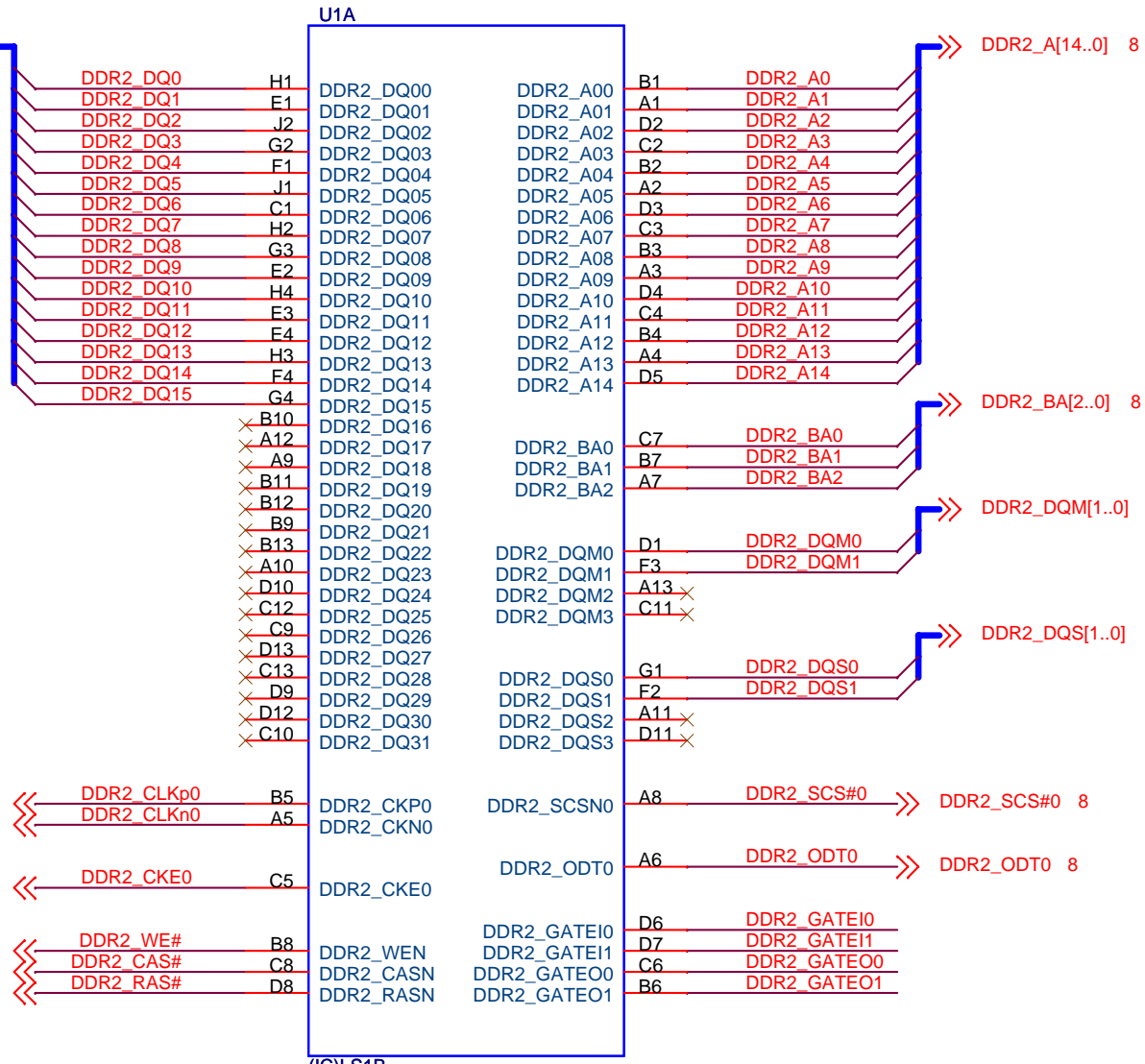
**NOTE:**

- GPIO0 CAN0\_RX GPIO38 子板按键
- GPIO1 CAN0\_TX GPIO39 子板按键
- GPIO2 CAN1\_TX GPIO41 子板按键
- GPIO3 CAN1\_RX GPIO40 BEEP
- GPIO41 CAN1\_TX GPIO41 SD CARD侦测
- GPIO60 UART5\_TX GPIO61 红外接收



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8 DDR2\_DQ[15..0] <<<>>



DDR2\_A[14..0] 8

DDR2\_BA[2..0] 8

DDR2\_DQM[1..0] 8

DDR2\_DQS[1..0] 8

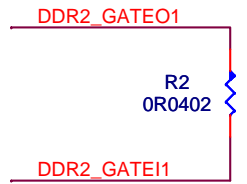
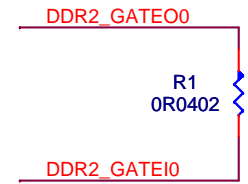
8 DDR2\_CLKp0 <<<>>  
8 DDR2\_CLKn0 <<<>>

8 DDR2\_CKE0 <<<>>

8 DDR2\_WE# <<<>>  
8 DDR2\_CAS# <<<>>  
8 DDR2\_RAS# <<<>>

DDR2\_SCS#0 >>>

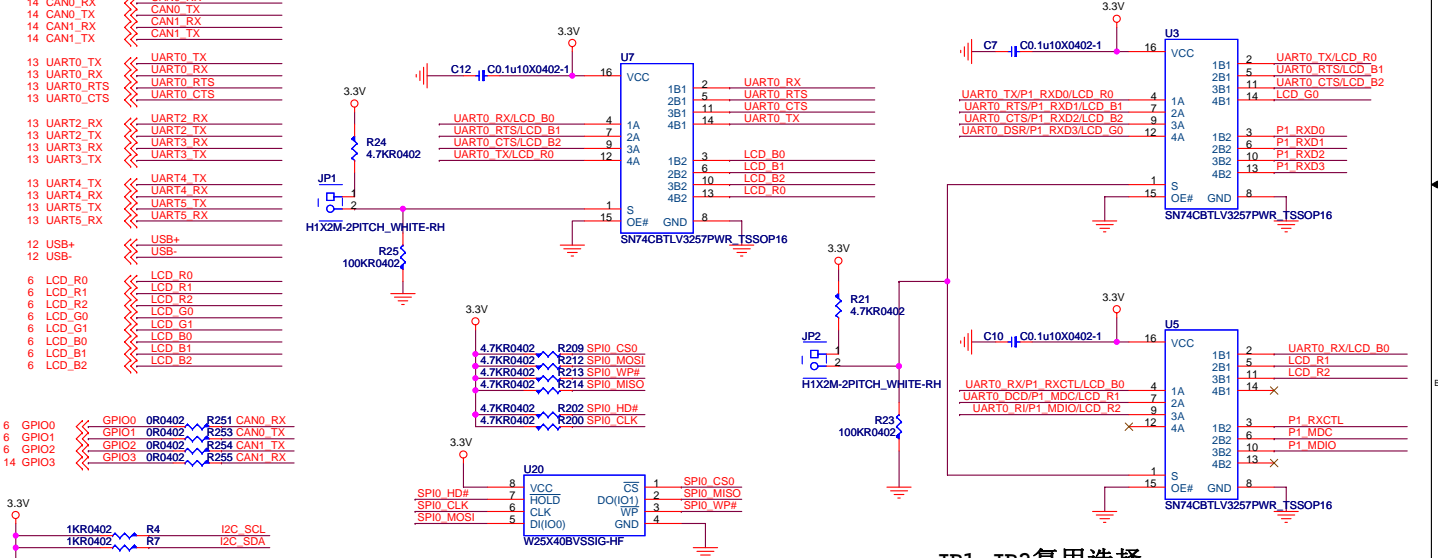
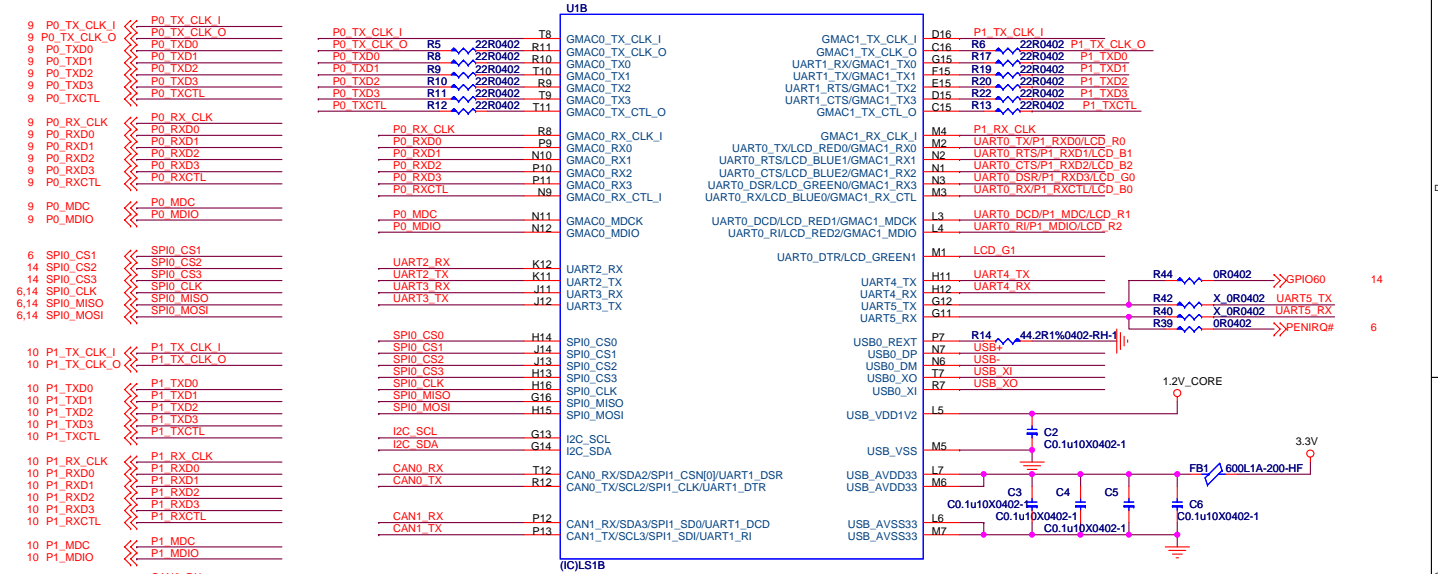
DDR2\_ODT0 >>>



(IC)LS1B

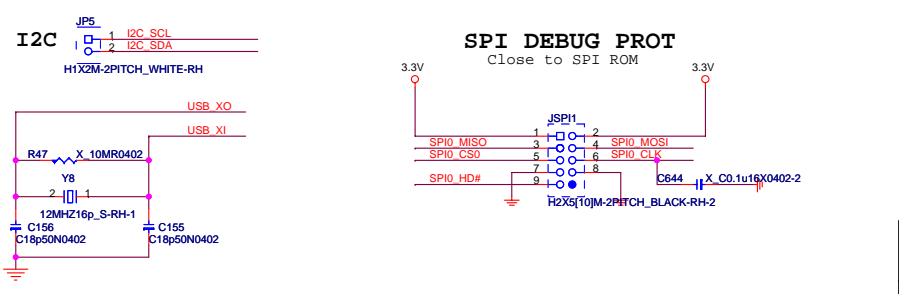

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JP1, JP2复用选择

FUNCTION	JP1	JP2
UART0	0	0
LCD	1	0
MAC1	X	1

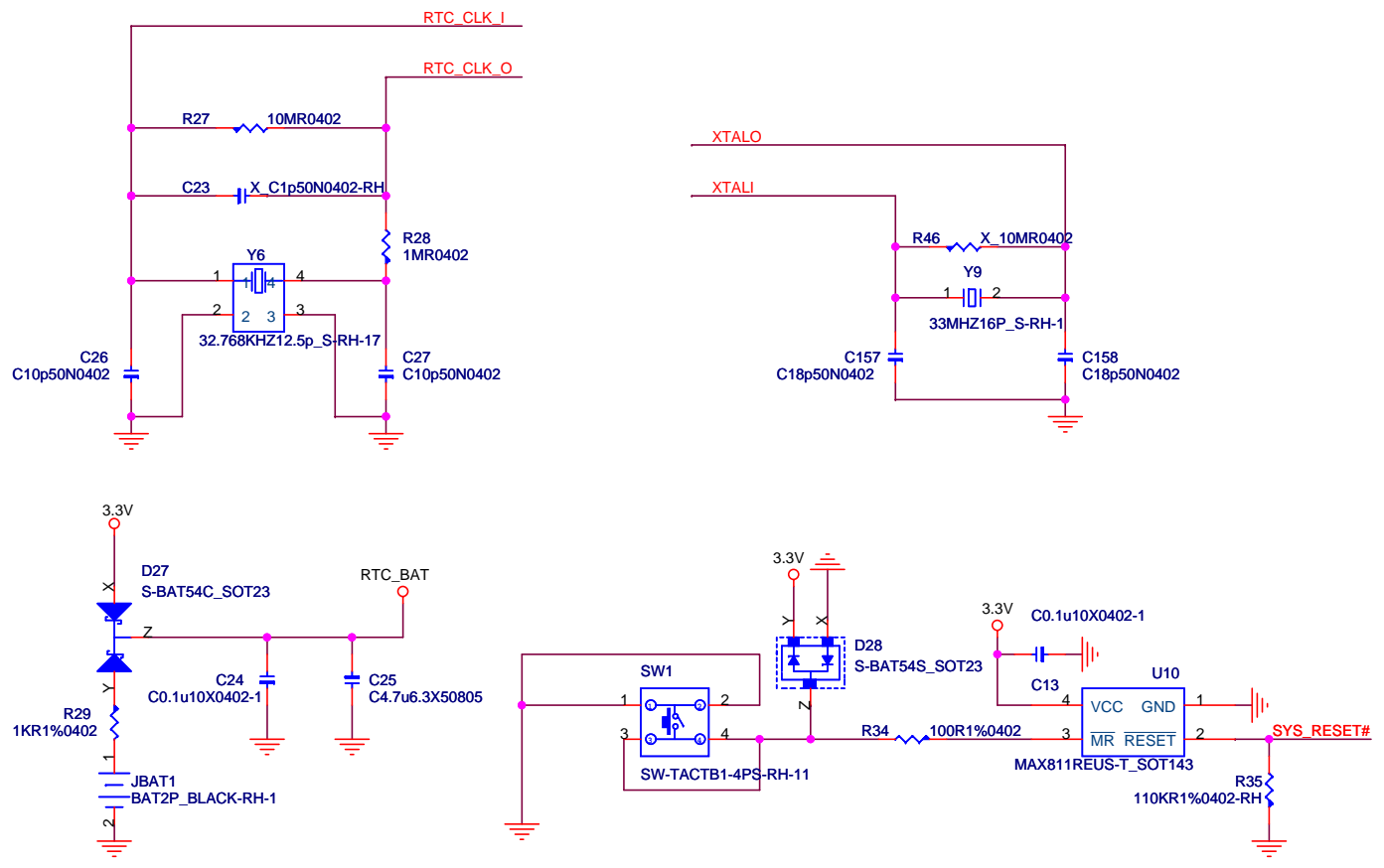
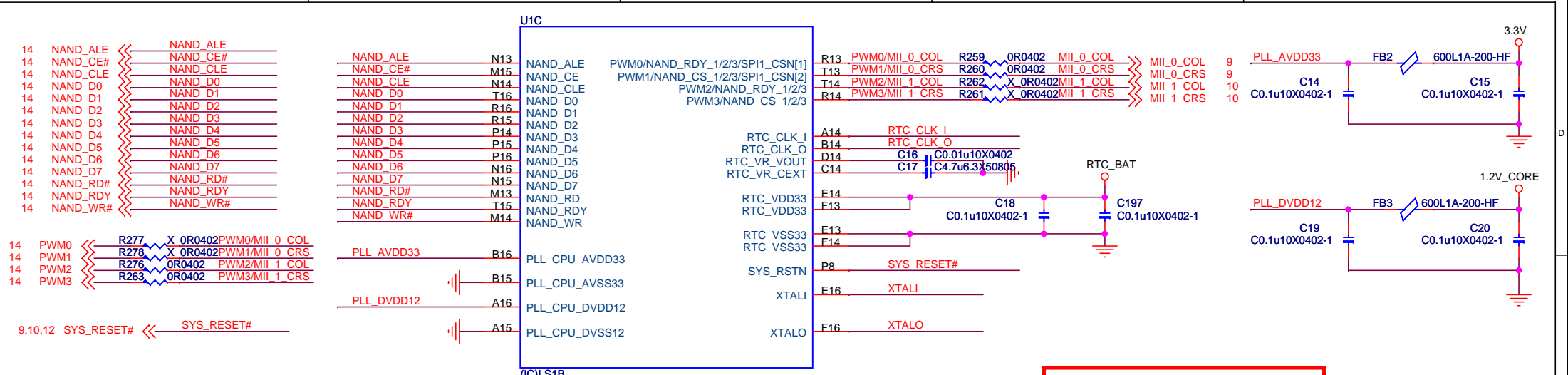


Power by 龙芯 Loongson

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项目名称 LS1B SOC DEMO BOARD

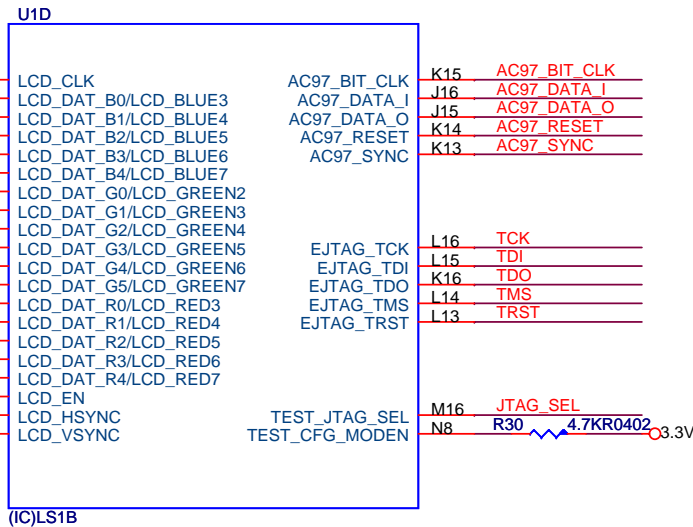
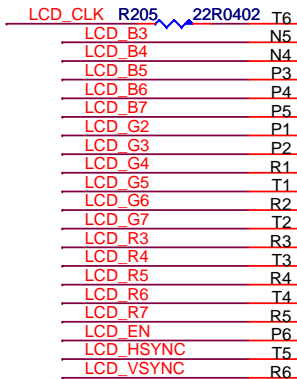
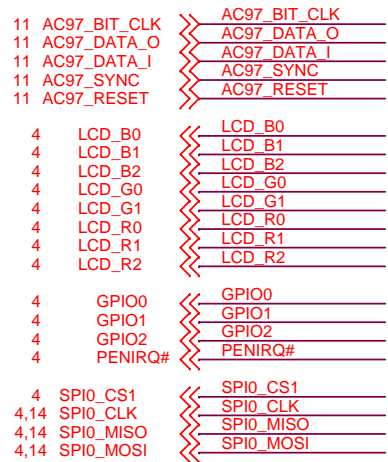
Size Custom	Document Number LS1B MAC&USB&SPI&UART	Rev 2.0
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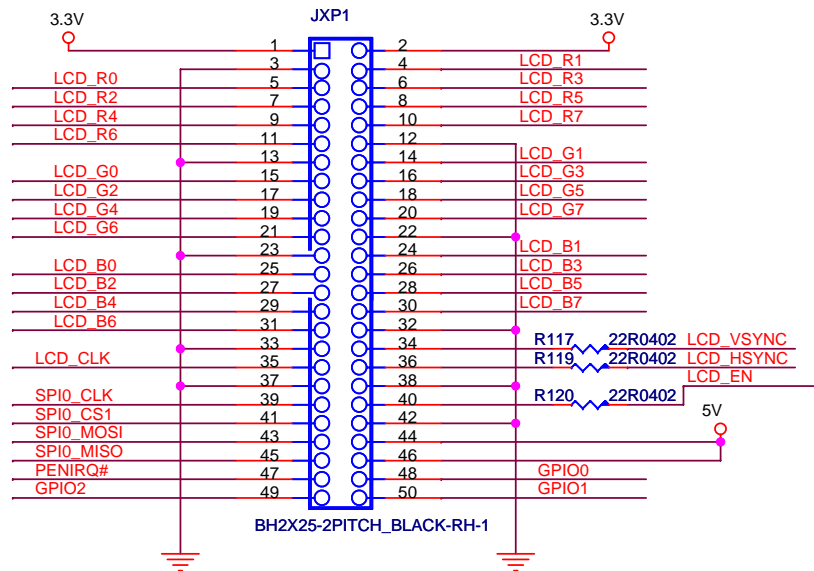
注：系统主频配置



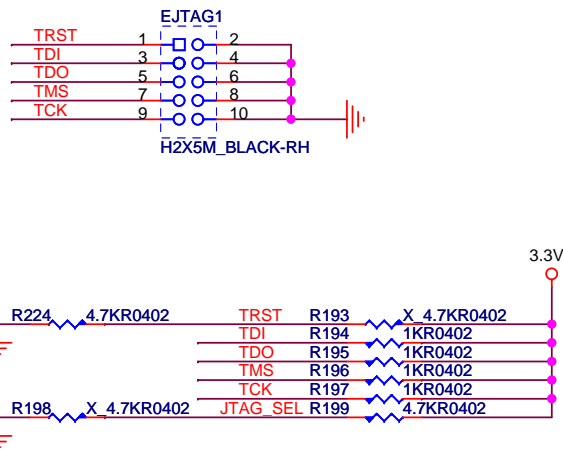
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项目名称 <b>LS1B SOC DEMO BOARD</b>		
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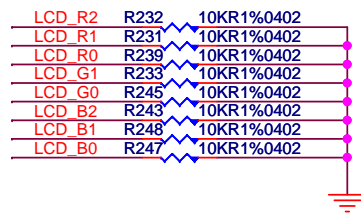
### NATIVE LCD PORT 24bit



### EJTAG

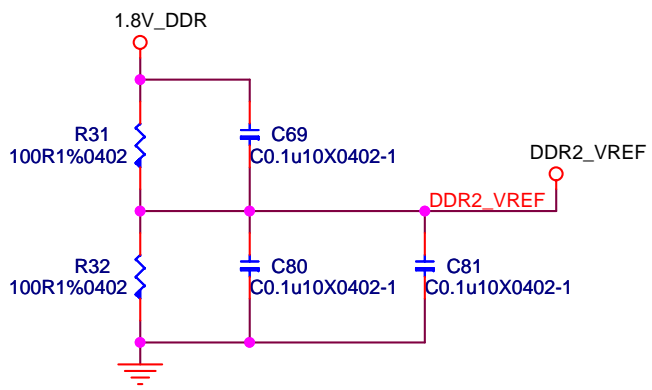
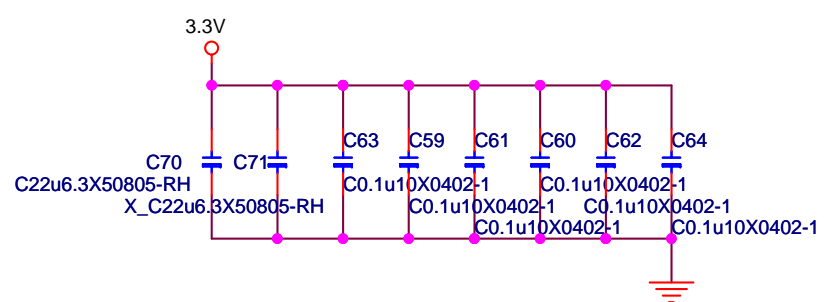
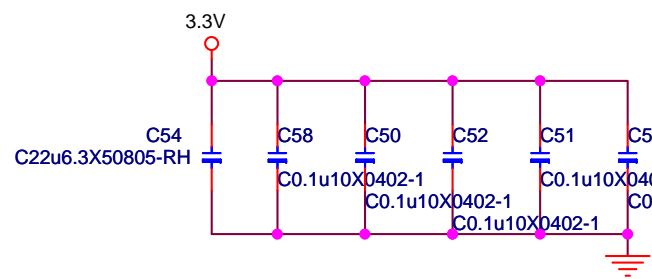
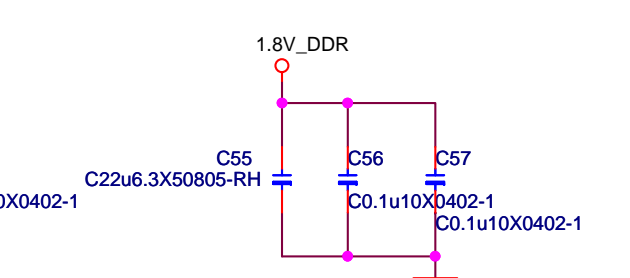
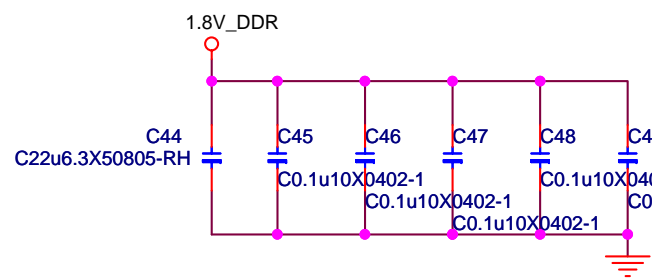
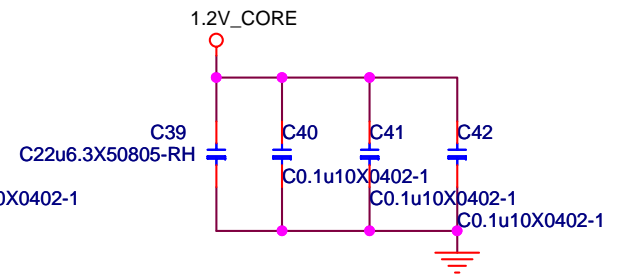
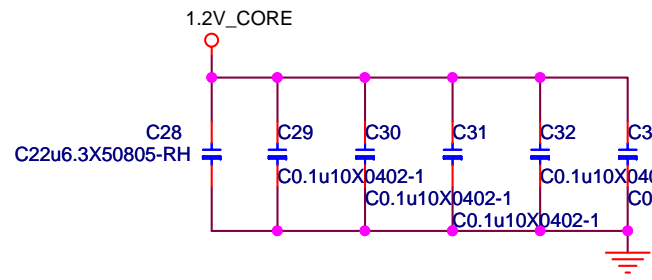
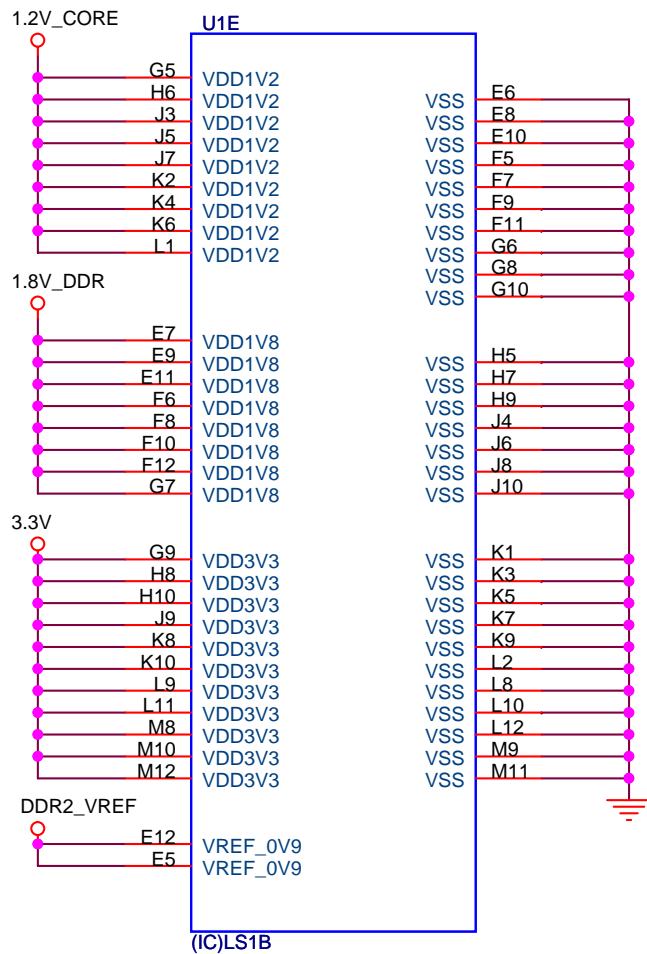


注：低位数据可能会无效，故拉低



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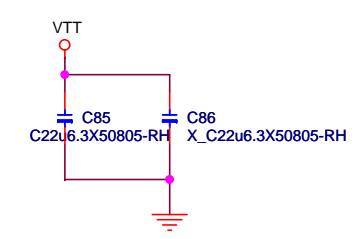
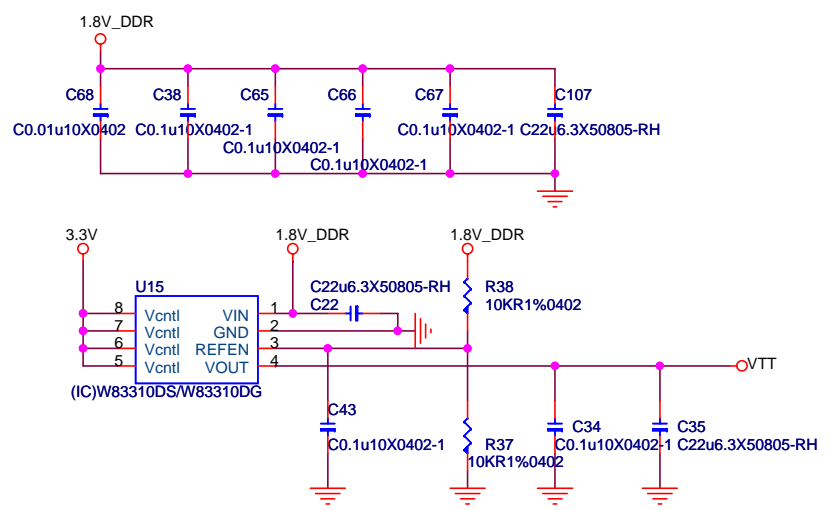
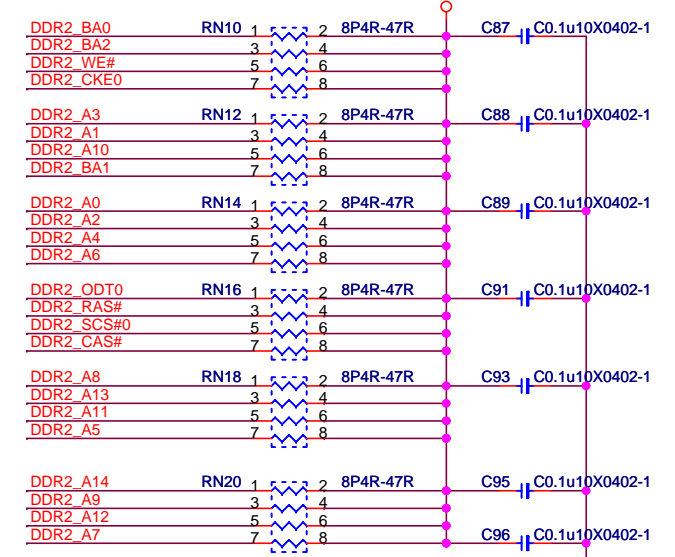
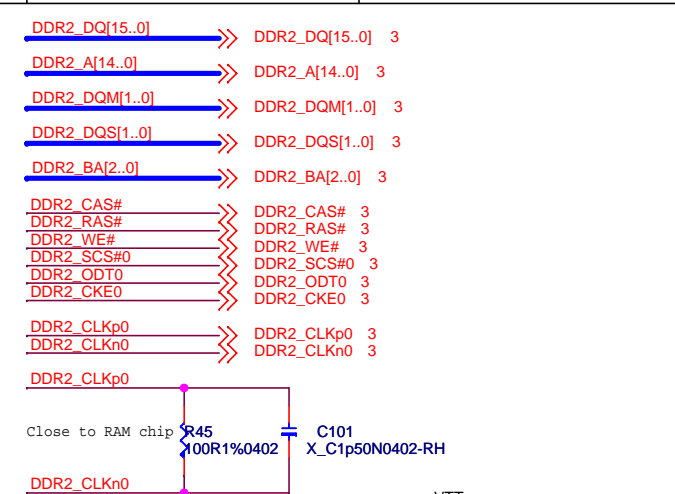
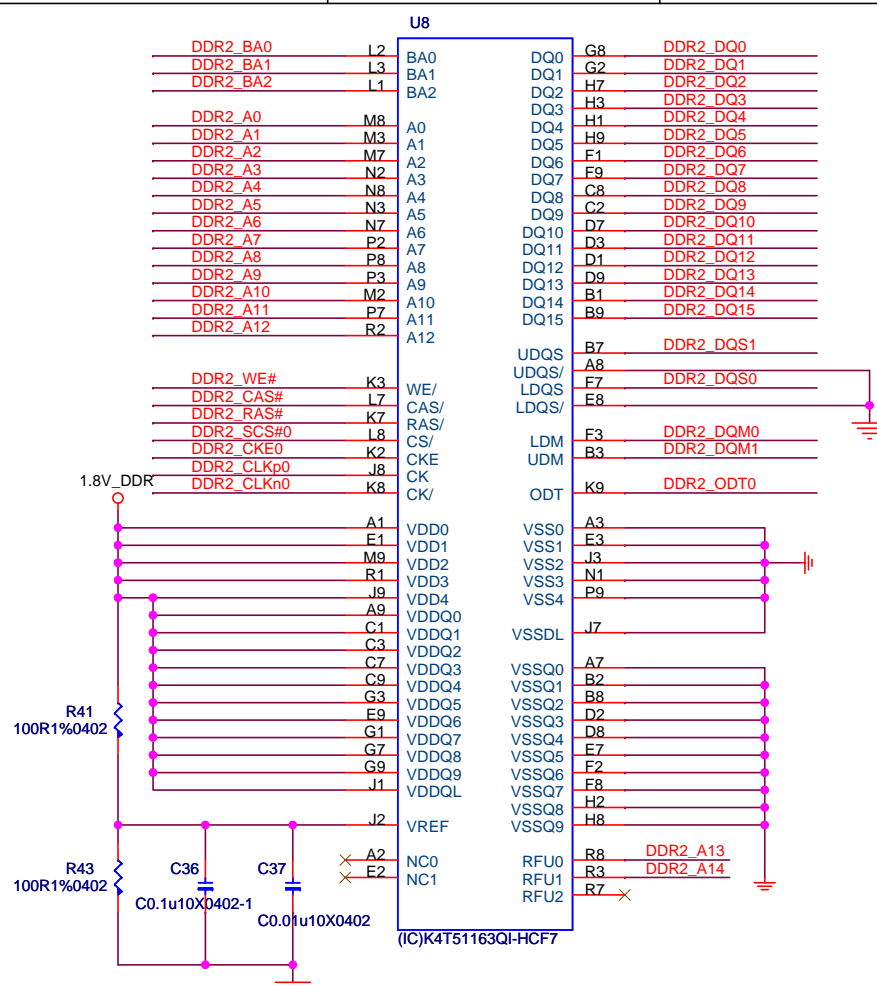
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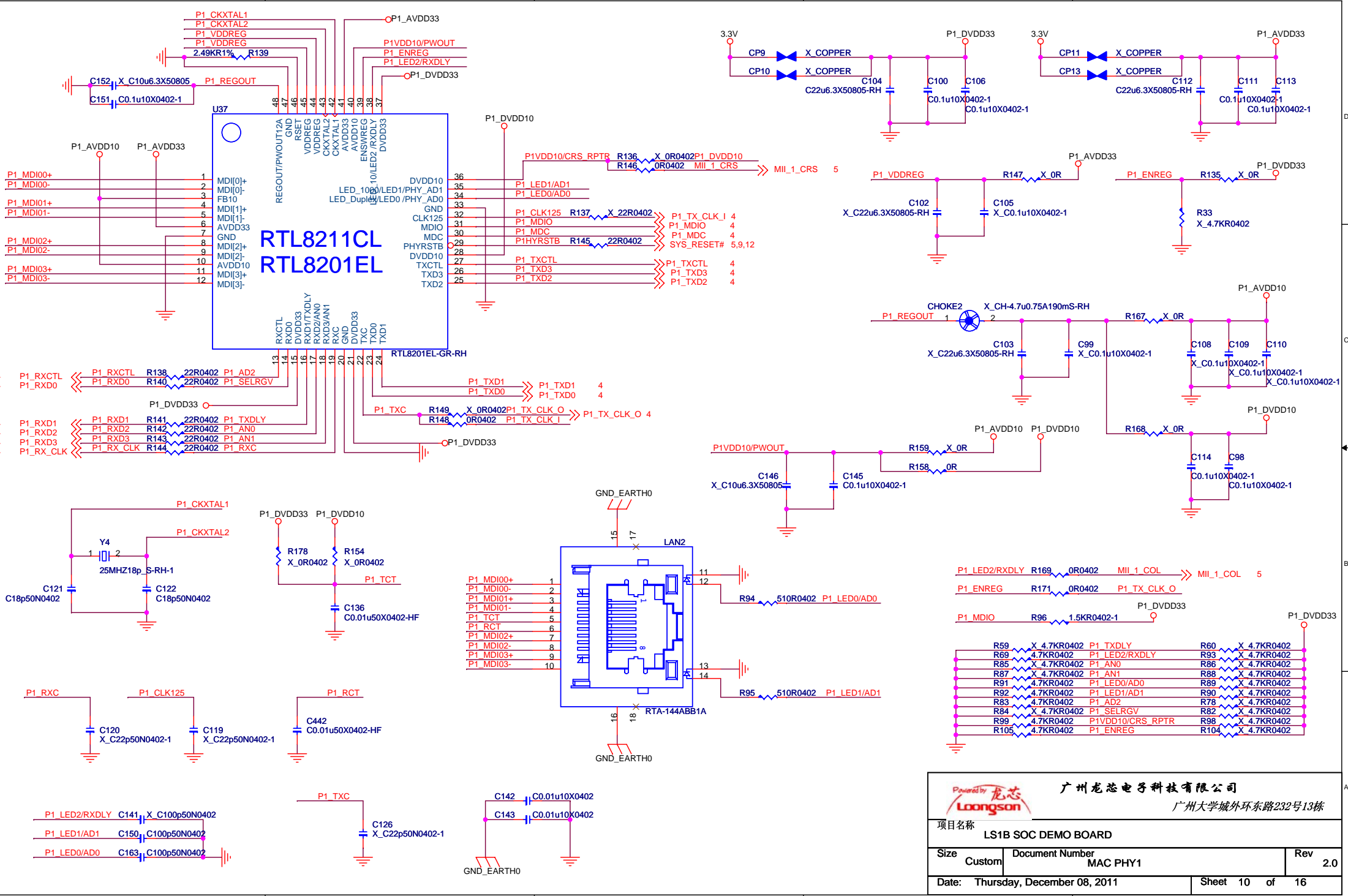
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项目名称: **LS1B SOC DEMO BOARD**

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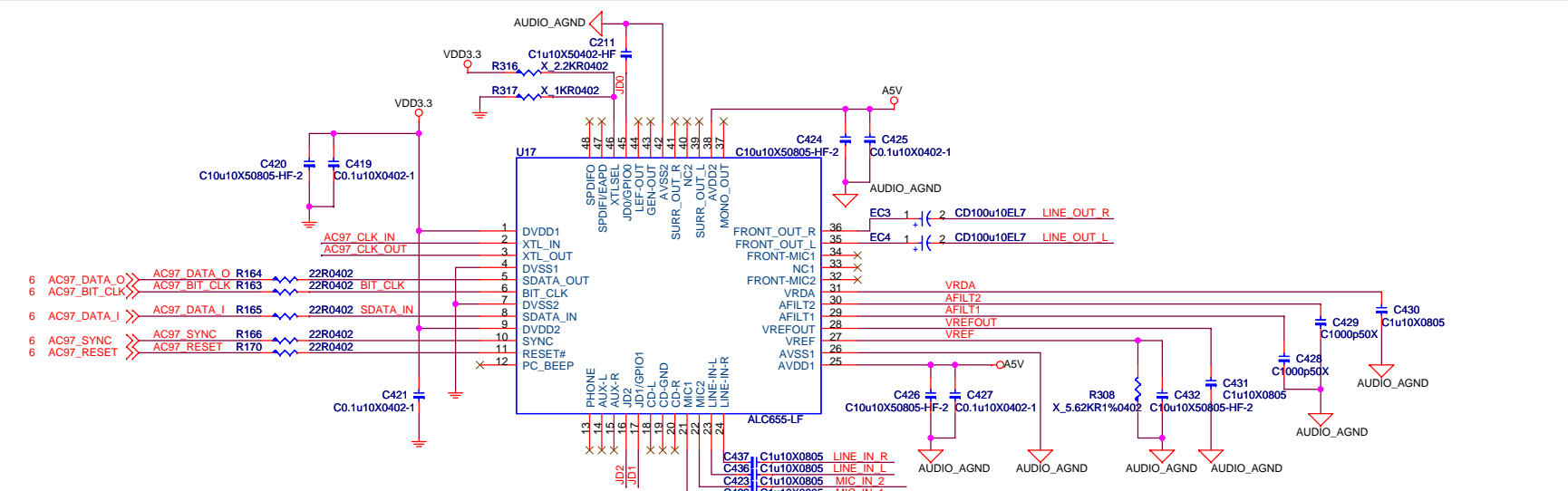




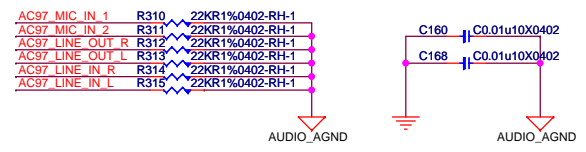
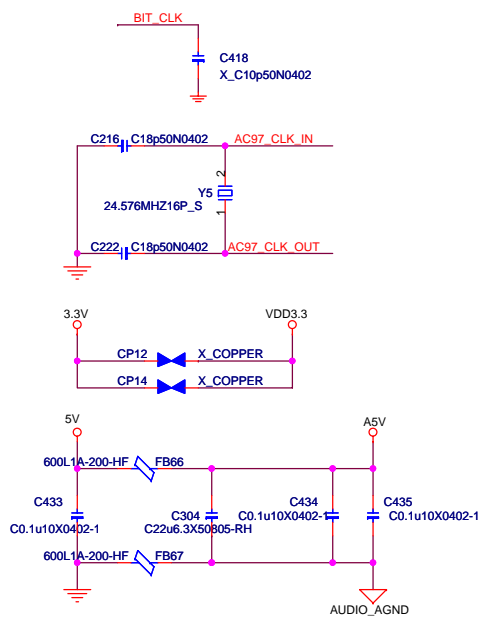
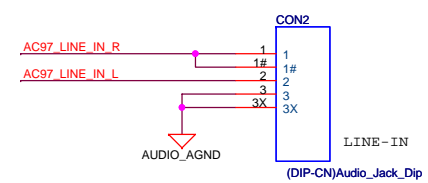
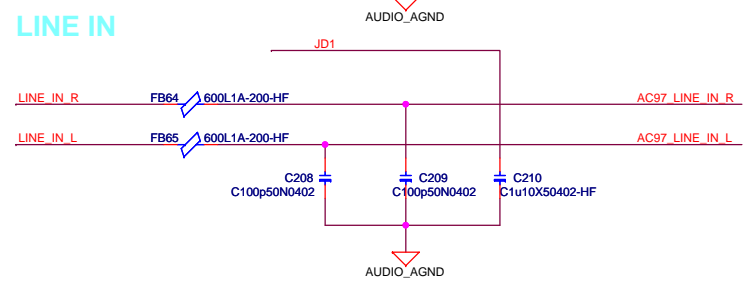
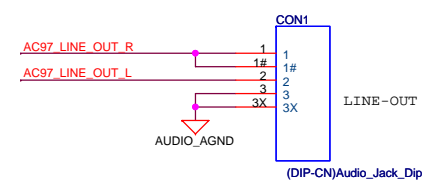
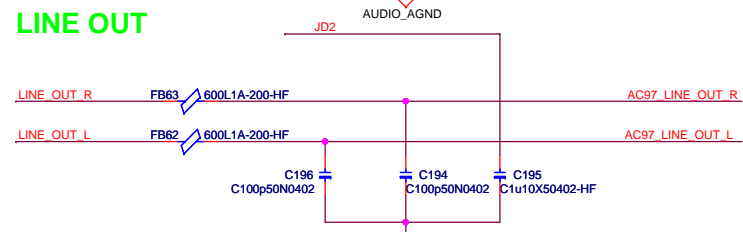
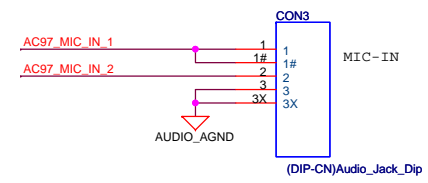
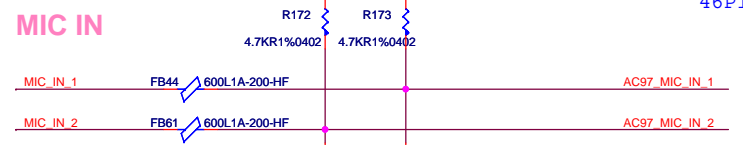




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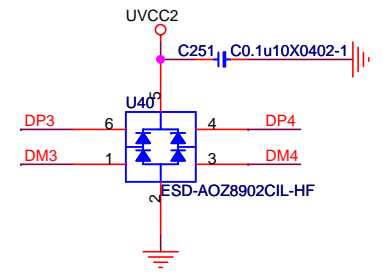
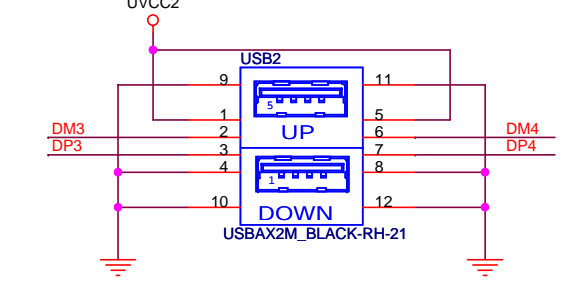
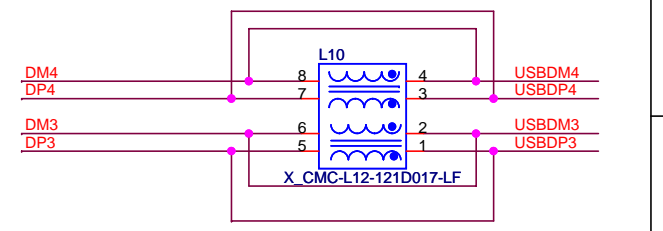
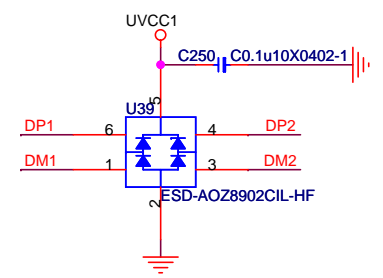
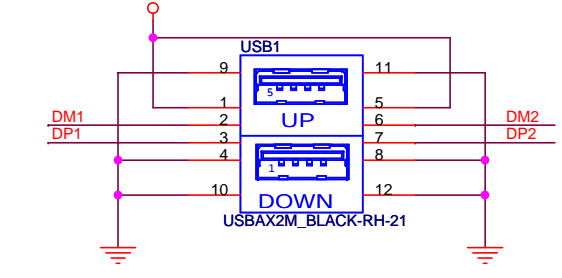
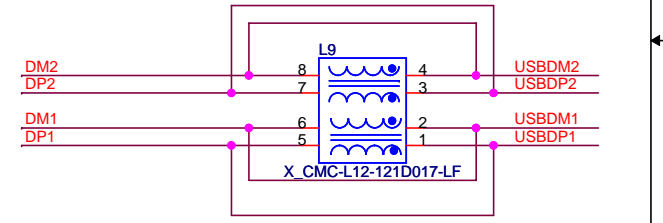
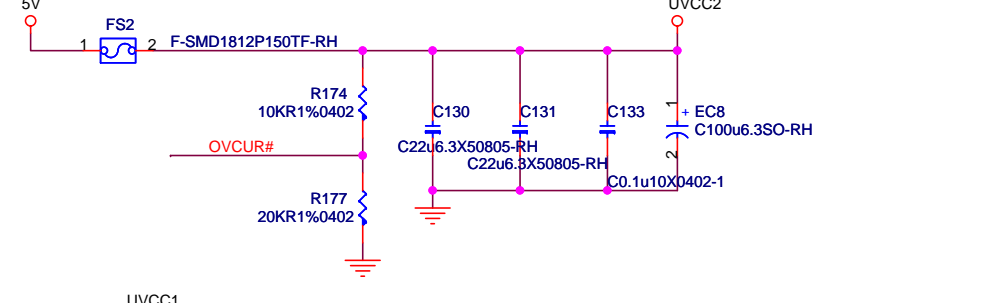
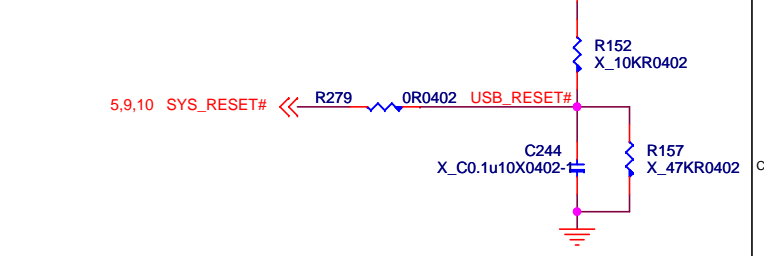
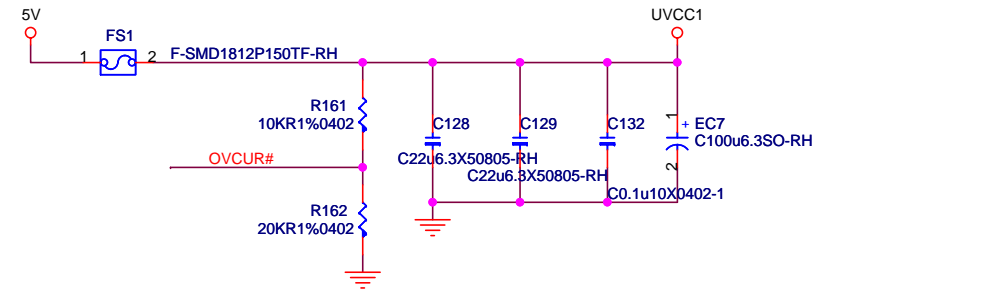
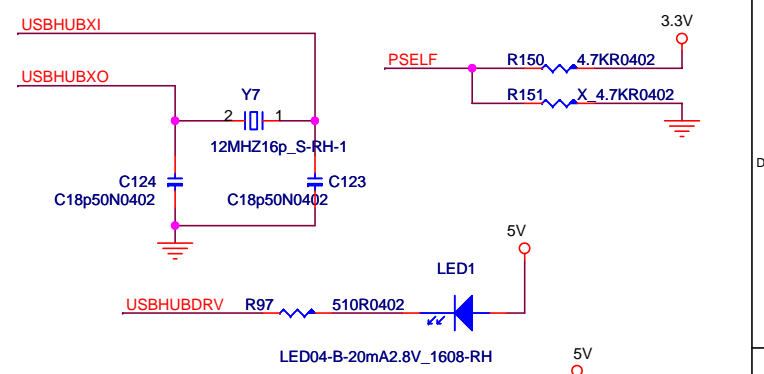
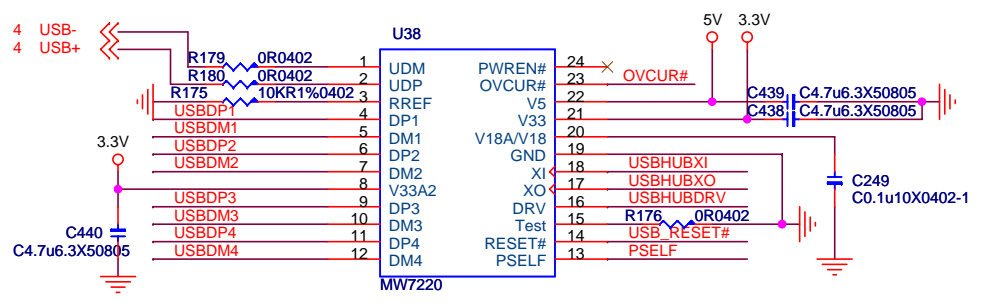



NOTE: R308应预留与C431并联位置  
46PIN 状态会选择Y5用多大频率



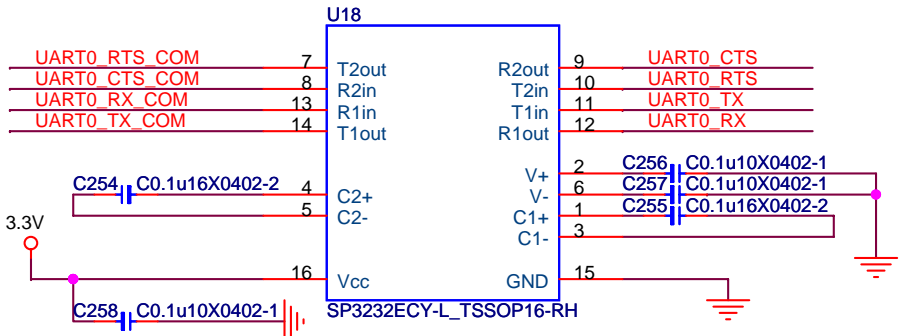
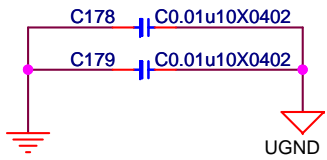
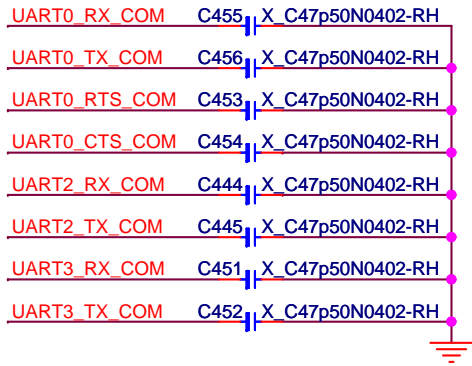
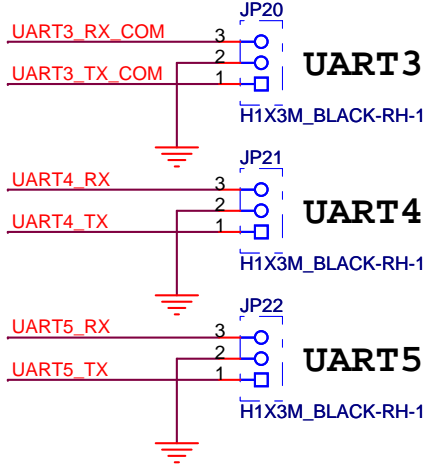
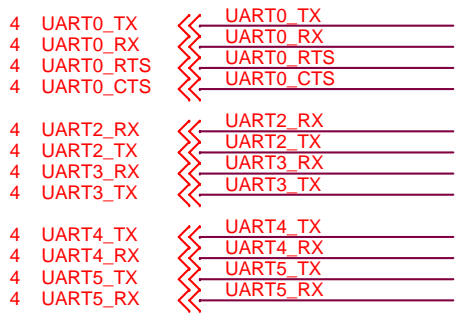

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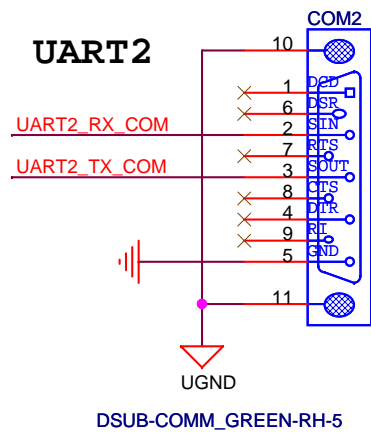
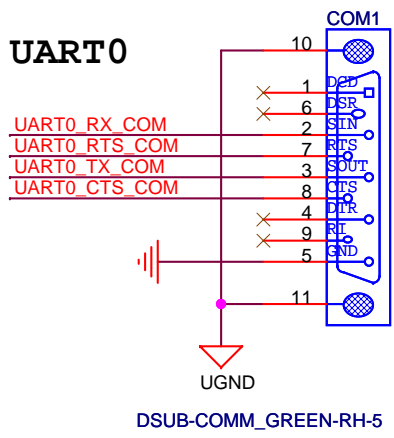
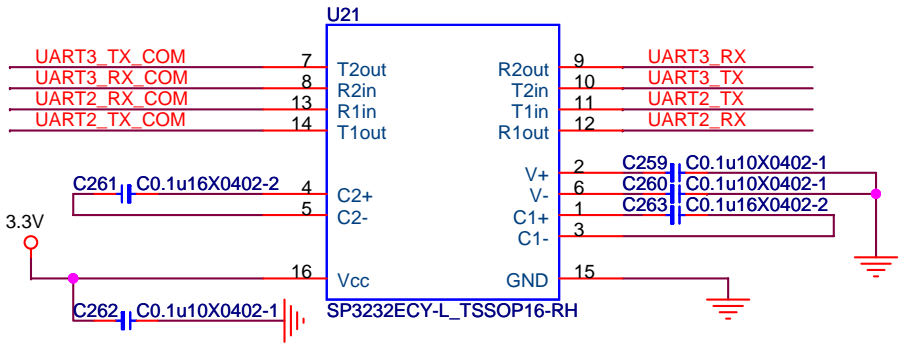



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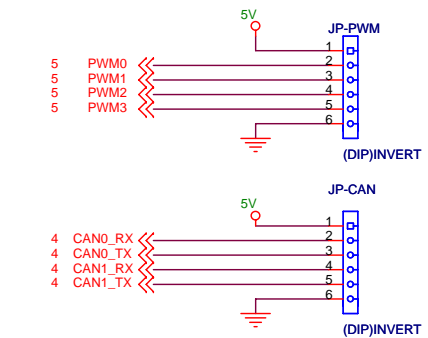
NOTE: IF select uart0 ,shutdown the GMAC1 PHY



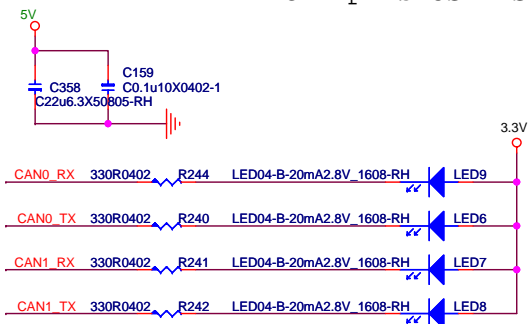
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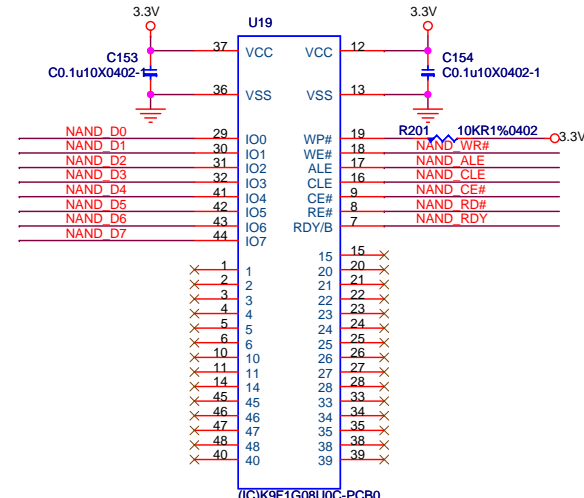
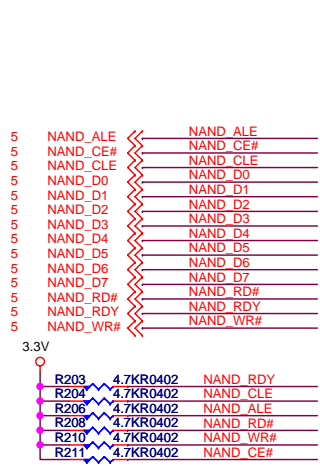
# CAN&PWM



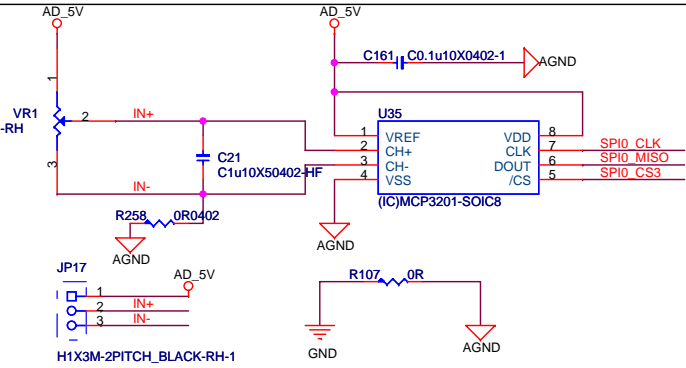
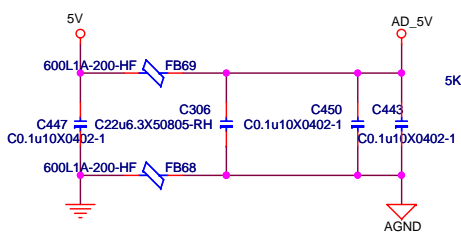
# CAN pins USE AS GPIO



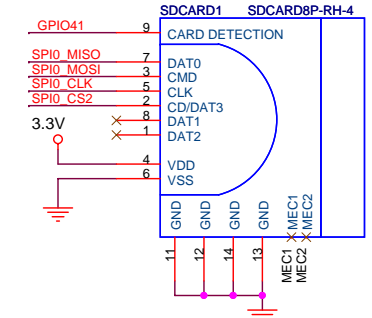
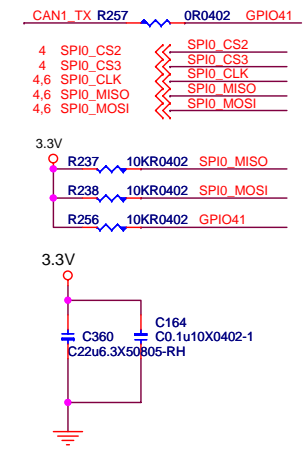
# NAND FLASH



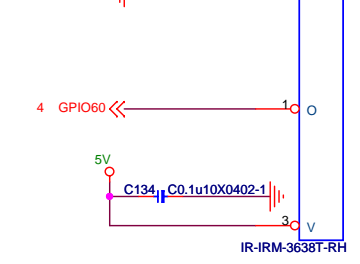
# SPI AD



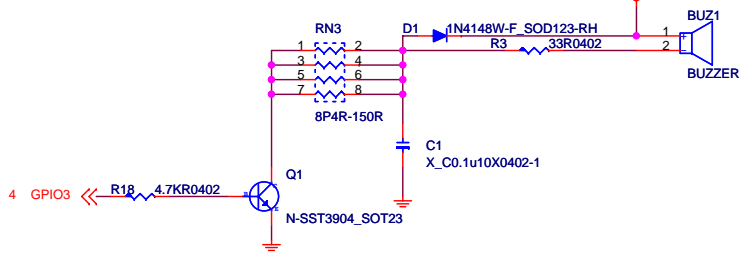
# Micro SD



# IRM



# BEEP



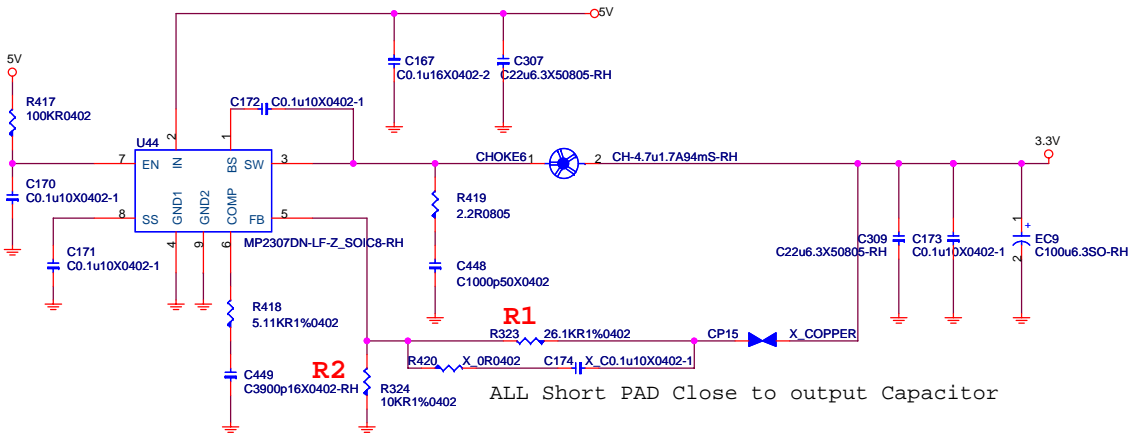
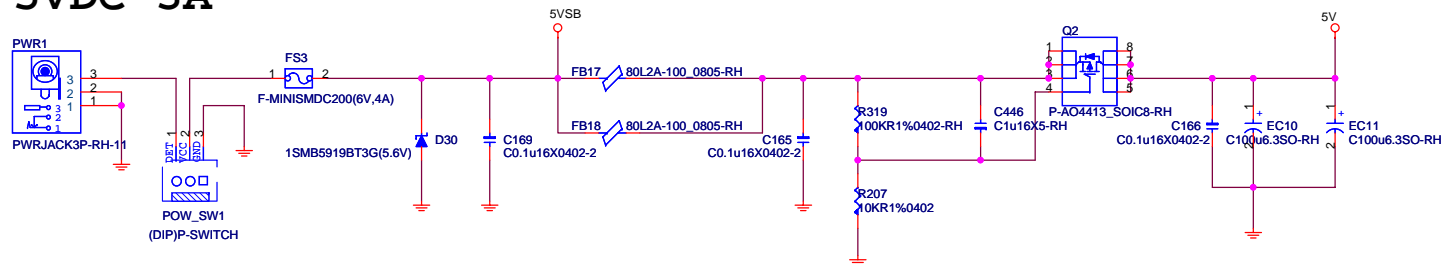
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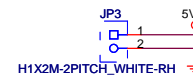
项目名称 LS1B SOC DEMO BOARD

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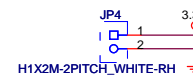
# 5VDC 3A



## 5v电压供电座

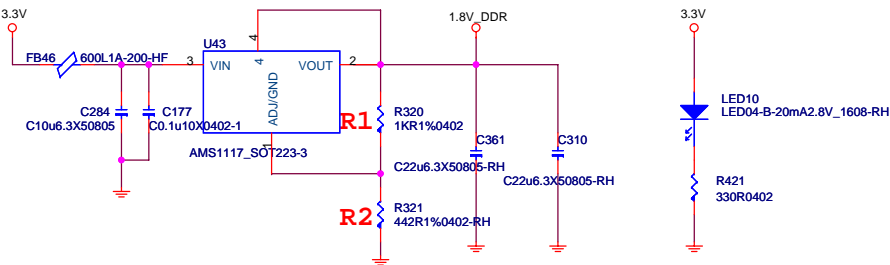


## 3.3v电压供电座

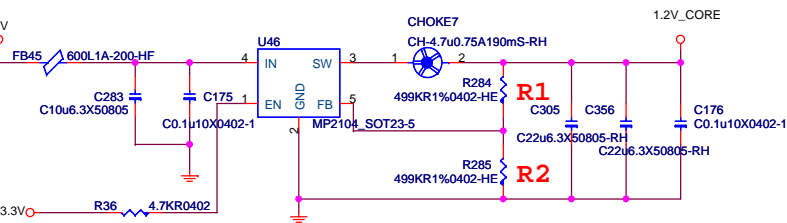


ALL Short PAD Close to output Capacitor

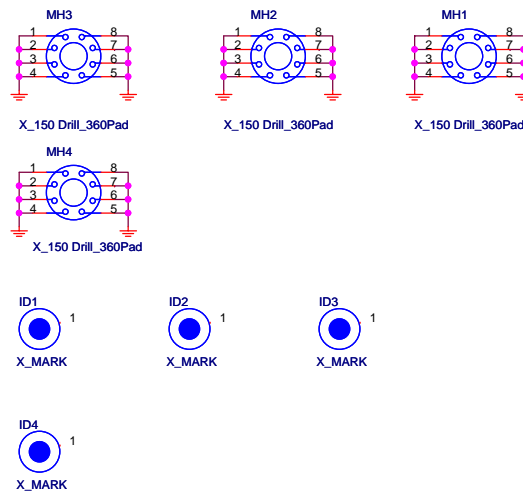
$$V_{out} = 0.925V * (1 + R1/R2) = 3.339V$$




$$V_{out} = 1.25V * (1 + R2/R1) = 1.8025V$$



$$V_{out} = 0.6V * (1 + R2/R1) = 1.200V$$



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# LS1B 2.0 Change List

- 1: DDR2 memory from 2 (16bit/128MB) to 1 (16bit/64MB)
- 2: GMAC0 from RTL8211E to RTL8201EL (100M/MII)
- 3: GMAC1 from RTL8211E to RTL8201EL (100M/MII)
- 4: AUDIO from ALC203E to ALC655
- 5: USB HUB from GL852 to MW7220
- 6: SPI Flash from SST25VF080B to W25X40BVSSIG(512KB)
- 7: GPIO0 CAN0\_RX GPIO38 子板按键  
GPIO1 CAN0\_TX GPIO39 子板按键  
GPIO2 CAN1\_TX GPIO41 子板按键  
GPIO3 CAN1\_RX GPIO40 BEEP  
GPIO41 CAN1\_TX GPIO41 SD CARD侦测  
GPIO60 UART5\_TX GPIO61 红外接收
- 8: 引出的串口 5个 有接电平转换的3个 (UART0, UART2, UART3)
- 9: Touch Screen通过SPI0实现, 片选CS1
- 10: All Power Solution Changed
- 11: Changed to support Mirco SD 卡



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