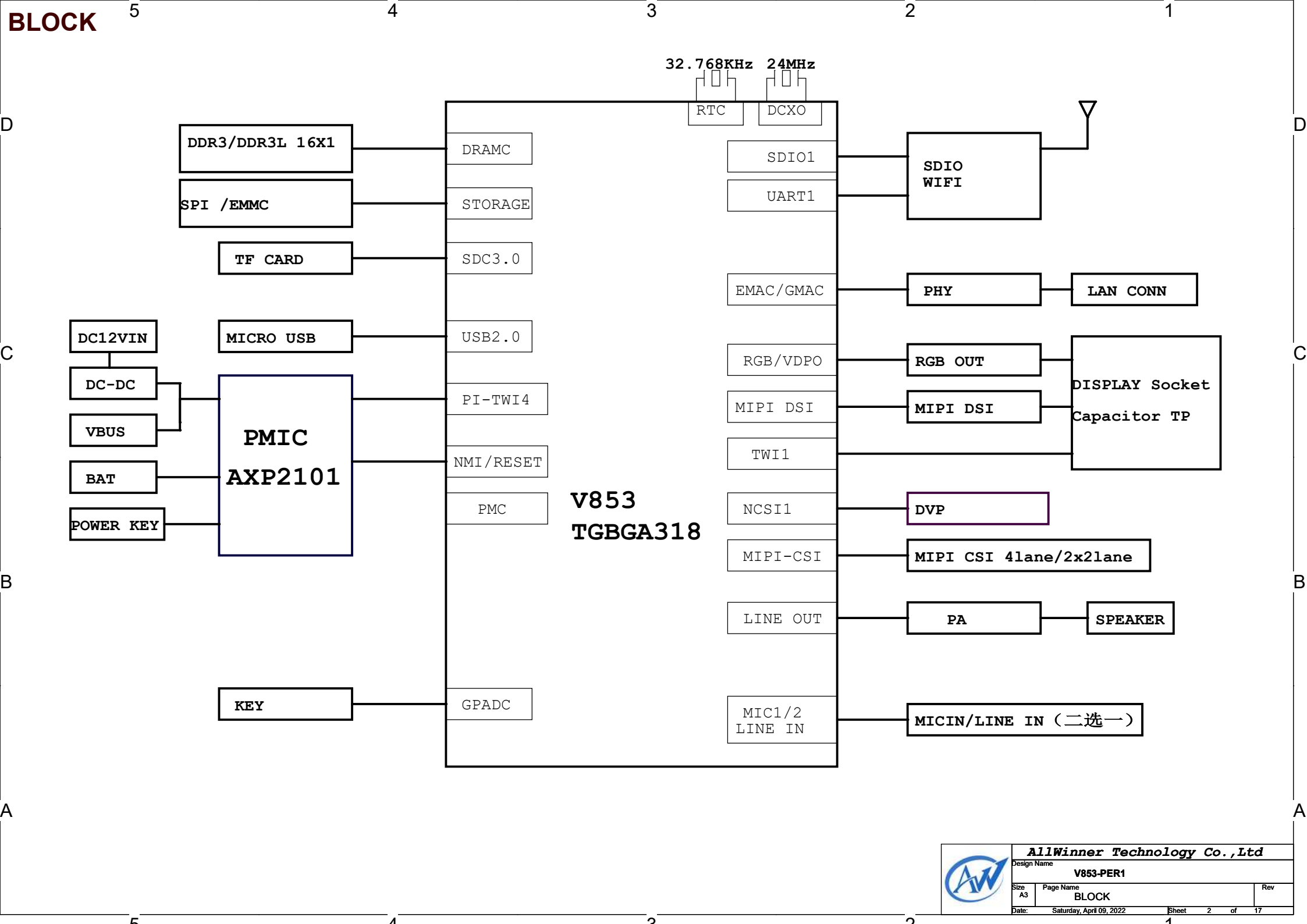


# REVISION HISTORY

## Schematics Index:

- P01: REVISION HISTORY
- P02: BLOCK
- P03: POWER TREE
- P04: GPIO ASSIGNMENT
- P05: POWER
- P06: CPU
- P07: PF/PG/PH/PI
- P08: DDR3 16X1
- P09: eMMC/NOR
- P10: CARD/JTAG/UART
- P11: AUDIO/KEY/ADC
- P12: LCD/CTP/DSI
- P13: MIPI CSI/PI
- P14: CSI/RGMII/RMII
- P15: SENSOR/USB
- P16: WIFI

Revision	Description	Date	Drawn	Checked
Ver 0.1	Initial Version	2021-05-28	ZQ	
Ver 0.2	更新CPU封装	2021-06-01	ZQ	
Ver 0.3	更新VDD-SYS 电容	2021-06-01	ZQ	
Ver 0.4	UART3 串口作为E907 串口使用	2021-06-17	ZQ	
Ver 0.5	DCDC3&DCDC4 增加测试电阻和测试功耗电路 PMU BLDO1 增加功耗测试电阻 修改SOC symbol 增加DDR3 mapping DRAM 部分默认为内部SVREF, 外部分压电阻NC 删除WIFI 板载天线 DCXO-RFCLK增加测试点 LCD串接电阻改为33R PMU I2C 插针改为测试点 增加PF6 测试针, 测试PLL 增加MIPI-DSI-IO供电	2021-06-21	ZQ	
Ver 0.6	DRAM 部分默认使用外部240R 电阻&使用内部SVREF UM3 增加支持8线DTR Flash 去掉H1/H2 固定孔	2021-06-23	ZQ	
Ver 0.7	EPHY-VDD 电容改为1uF, 电容要靠近芯片管脚放置 SOC端增加VCC-RTC 测试电阻 增加VCC-EPHY供电 增加VCC33-PF供电 SD CARD 上拉电阻改为VCC33-PF, 上拉电阻NC	2021-06-25	ZQ	
Ver 0.8	PMU I2C 上拉改为VCC-PI VCC-PI 默认用PMU-ALDO1-1.8V供电	2021-06-25	ZQ	
Ver 0.9	DRAM 增加测试点, 放置于背面过孔处; 增加SOC 3.3V和1.8V功耗测试电路; 增加各路电流标记	2021-06-29	ZQ	
Ver 0.95	根据PI仿真结果更新DRAM&SYS 电容容值	2021-06-30	ZQ	
Ver 0.96	eMMC与SPI之间增加电阻 去掉PF口JTAG 增加SDC0-D0/CMD测试点, 靠近SOC放置	2021-07-2	ZQ	
Ver 0.97	去掉5V DCIN座子 修改音频功放电路, NS4890 单端和增加AW8010差分电路 LINE IN与MICP之间增加电阻靠近分叉点放置 Gsensor增加LGA封装兼容物料	2021-07-16	ZQ	
Ver 0.98	XR819S 只保留LDO模式	2021-07-20	ZQ	
Ver 1.0	CSI 控制信号默认上拉贴片 MIC 输入增加预留0R电阻for test sdc_d0 上拉改为VCC33-PF For TEST	2021-08-09	ZQ	



**BLOCK**

5

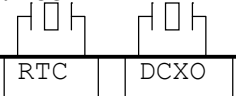
4

3

2

1

32.768KHz 24MHz



DDR3/DDR3L 16X1

SPI /EMMC

TF CARD

DC12VIN

MICRO USB

DC-DC

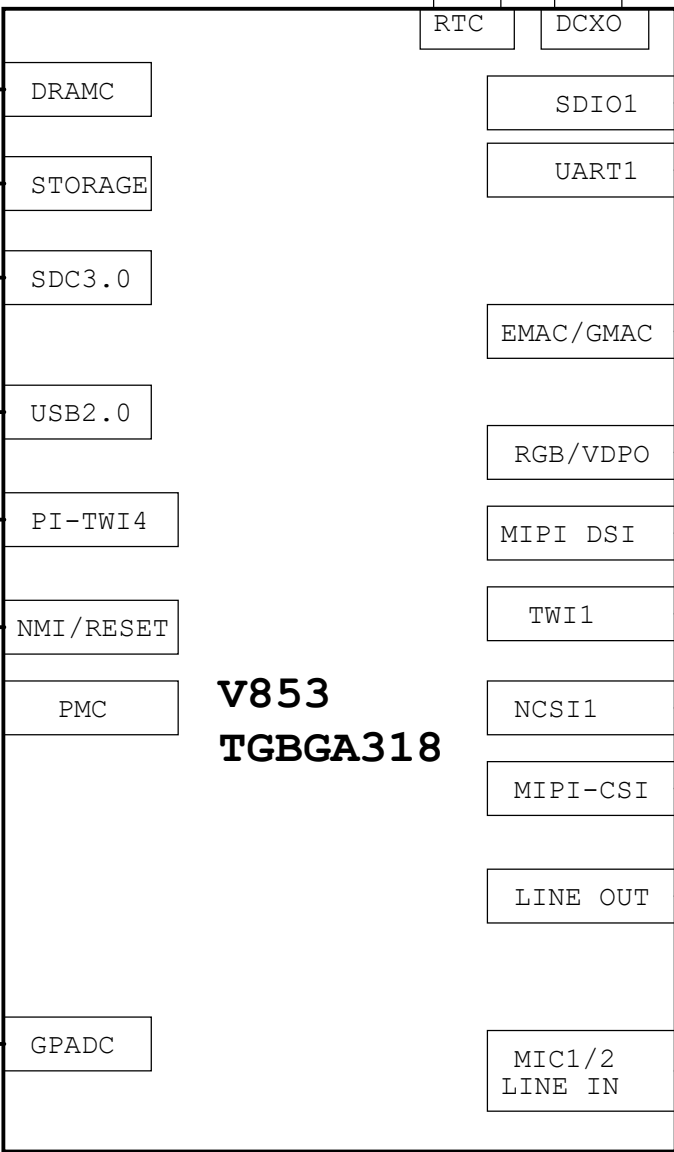
VBUS

BAT

POWER KEY

**PMIC**  
**AXP2101**

KEY



**V853**  
**TGBGA318**

DRAMC

STORAGE

SDC3.0

USB2.0

PI-TWI4

NMI/RESET

PMC

GPADC

SDIO1

UART1

EMAC/GMAC

RGB/VDPO

MIPI DSI

TWI1

NCSI1

MIPI-CSI

LINE OUT

MIC1/2  
LINE IN

**SDIO**  
**WIFI**

**PHY**

**LAN CONN**

**RGB OUT**

**MIPI DSI**

**DISPLAY Socket**  
**Capacitor TP**

**DVP**

**MIPI CSI 4lane/2x2lane**

**PA**

**SPEAKER**

**MICIN/LINE IN (二选一)**

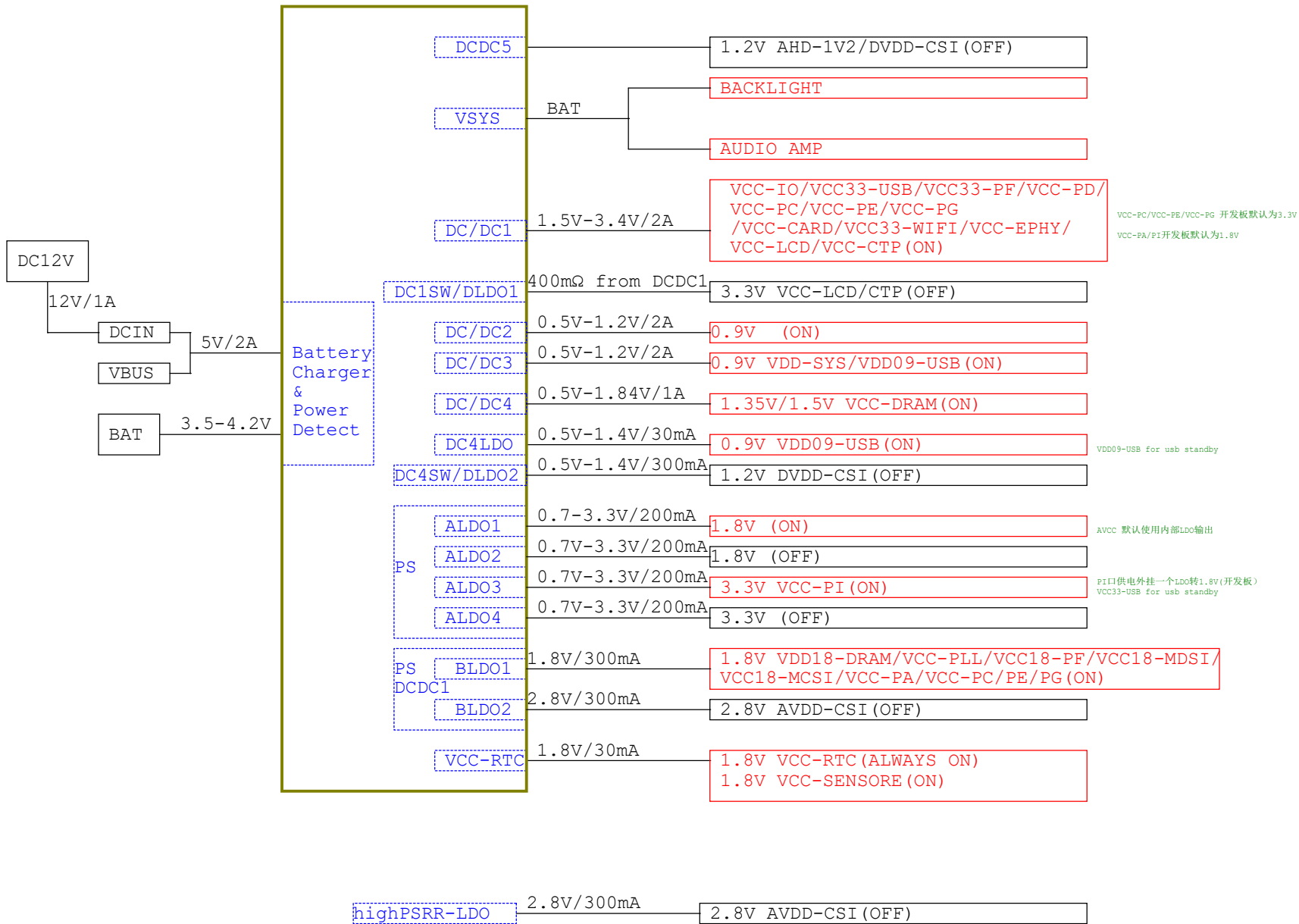


<b>AllWinner Technology Co.,Ltd</b>		
Design Name		
<b>V853-PER1</b>		
Size	Page Name	Rev
A3	<b>BLOCK</b>	
Date:	Saturday, April 09, 2022	Sheet 2 of 17

# POWER TREE

## AXP2101

DEFAULT POWER ON  
 DEFAULT POWER OFF



# GPIO ASSIGNMENT

4

3

2

1

D

D

C


C

B

B

A

A

	<b>AllWinner Technology Co., Ltd</b>		
	Design Name <b>V853-PER1</b>		
	Size A3	Page Name <b>GPIO ASSIGNMENT</b>	Rev
Date: <b>Saturday, April 09, 2022</b>		Sheet <b>4</b> of <b>17</b>	

5

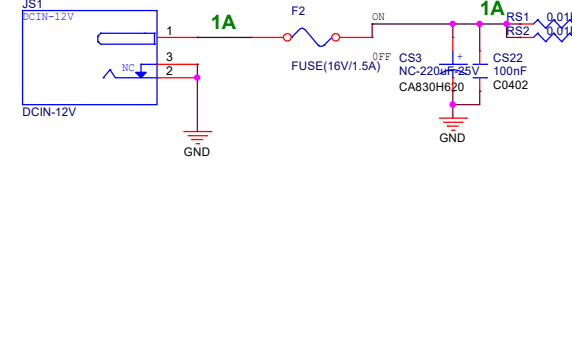
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3

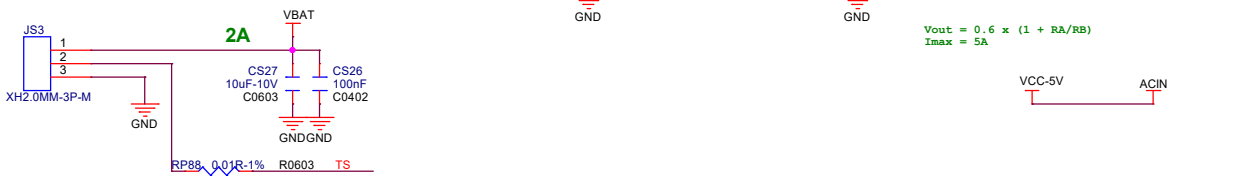
2

1

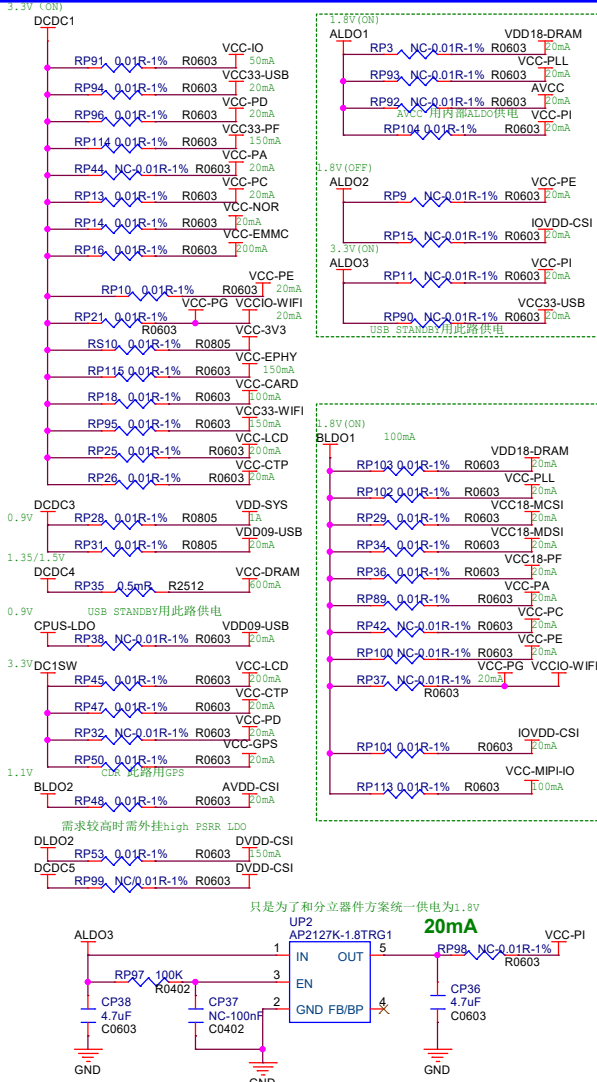
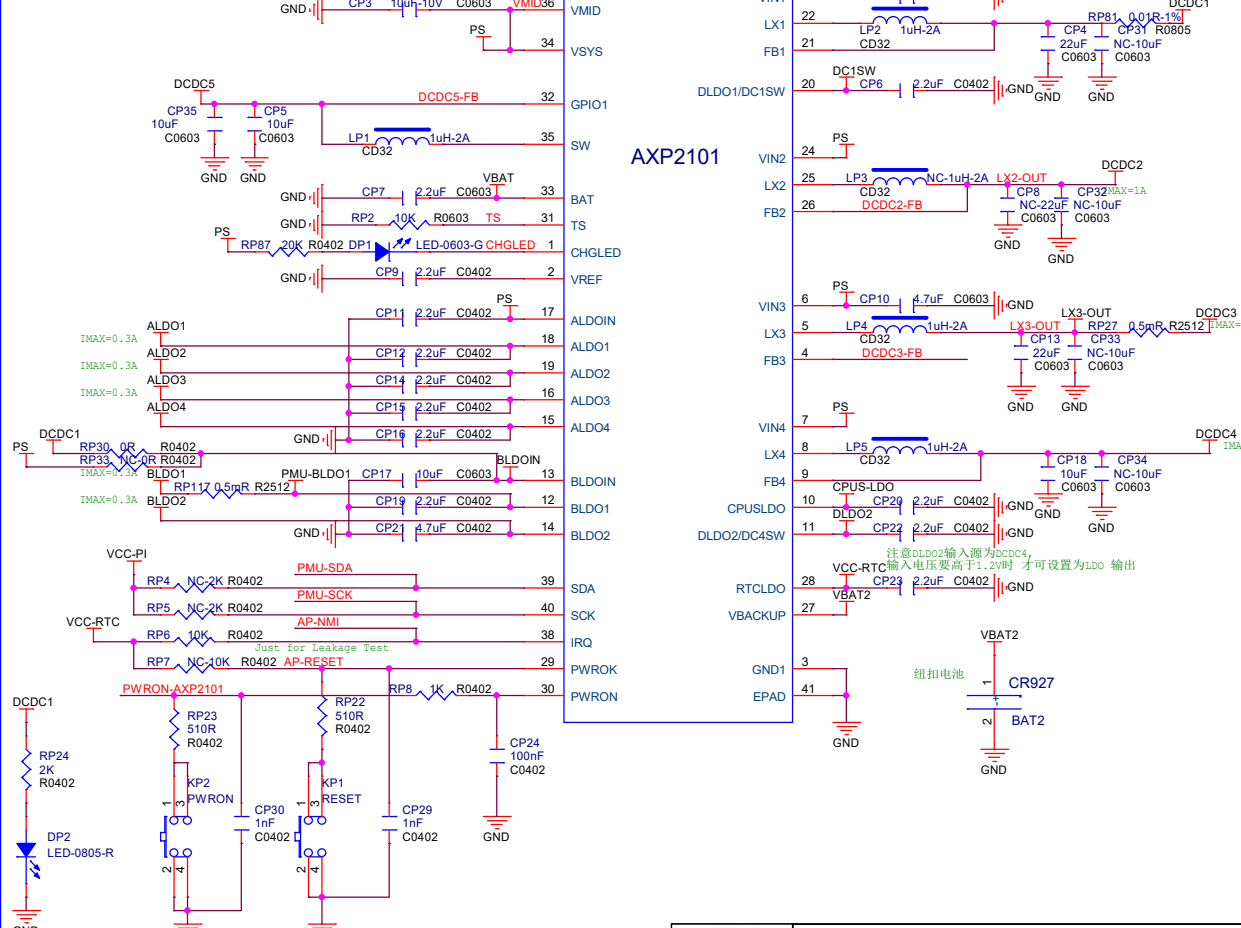
# DC IN-12V



# BAT IN

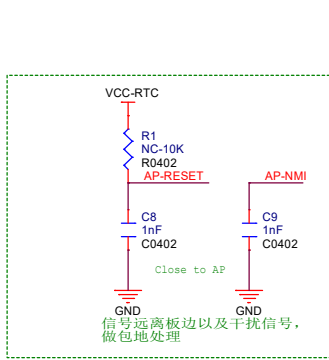


# AXP2101

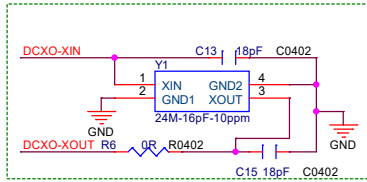


- 6 VDD-SYSFB << DCDC3-FB
- 7.13 PMU-SDA << PMU-SDA
- 7.13 PMU-SCK << PMU-SCK
- 6.15 AP-NMI << AP-NMI
- 6 AP-RESET << AP-RESET
- PWRON-AXP2101 << AP-NMI
- 6.15 IRQ-AXP2101 << AP-NMI

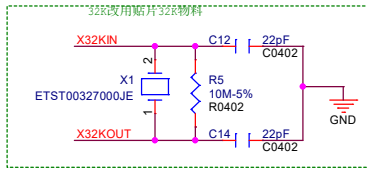
<b>Allwinner Technology Co., Ltd</b>			
Design Name		<b>V853-PER1</b>	
Size	Page Name	Rev	
A3	PMIC		
Date:	Tuesday, December 06, 2022	Sheet	5 of 17



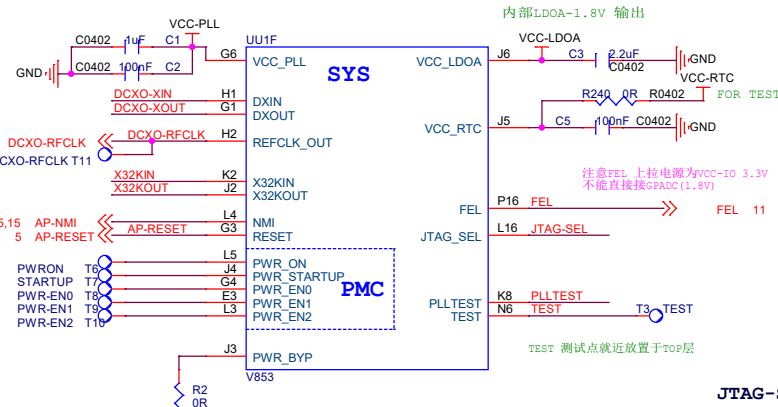
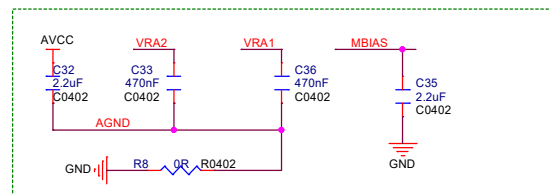
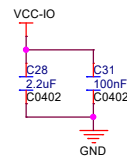
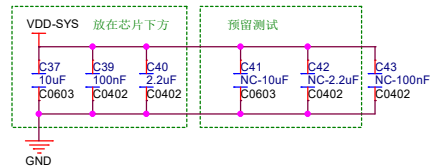
### DCXO-24Mhz



### 32.768KHz



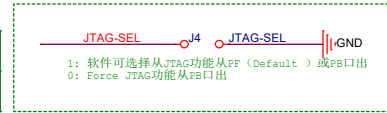
### DECOUPLE CAP



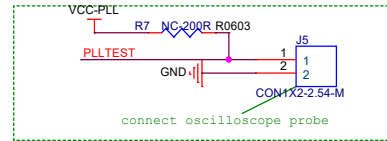
PMC 模块功能由RESET-BYP决定, 配置说明如下:

RESET-BYP	配置	说明
浮空为高电平	1. PMC 功能PIN有效;	
	2. 上电内部复位有效 (需要外接高电平);	
	3. 工作时支持外部复位PMC来复位SOC;	
接地为低电平	1. PMC 功能PIN无效; 只有SWP/RESET信号有效;	
	2. 上电内部复位有效; 也可外接EMD_PWR0K信号复位;	
	3. 工作时支持外部复位;	

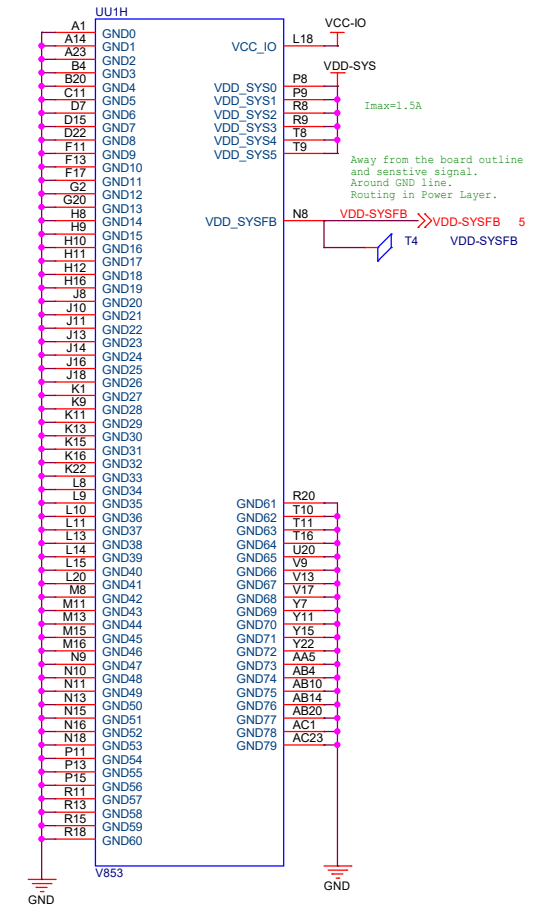
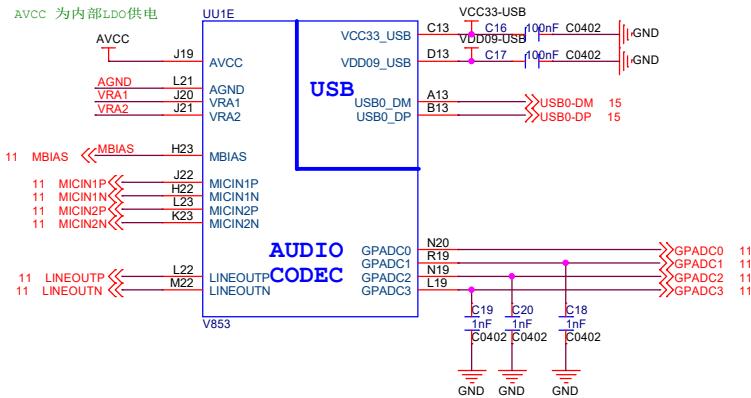
JTAG-SEL PCB上注意用大号字体标注, 放置于板边



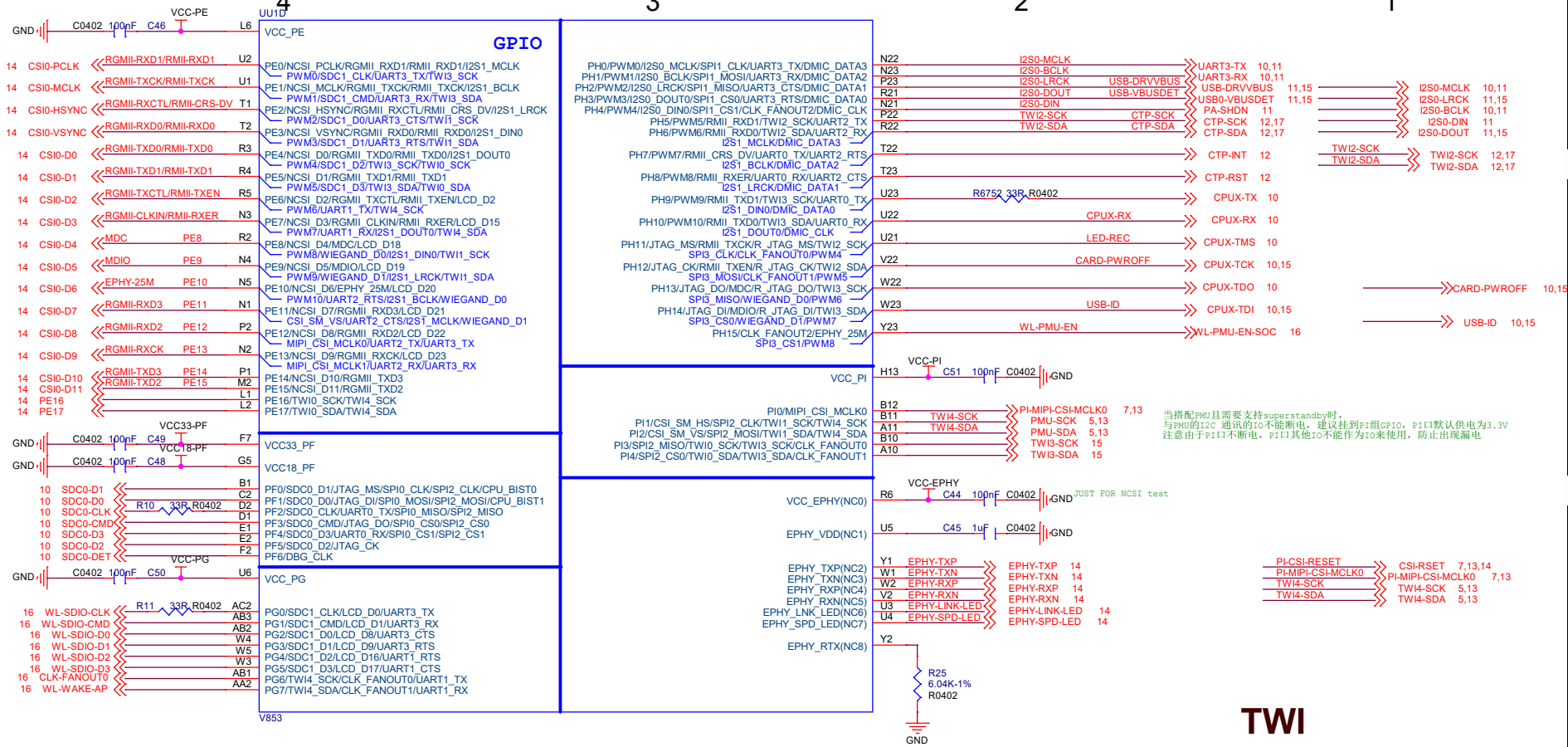
### PLL-TEST



AVCC 为内部LDO供电

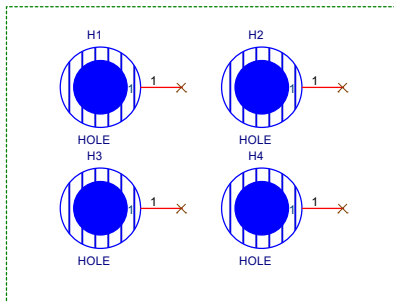
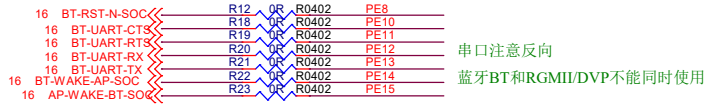


# SOC

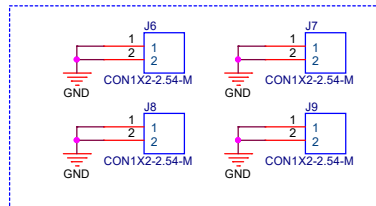


## PE

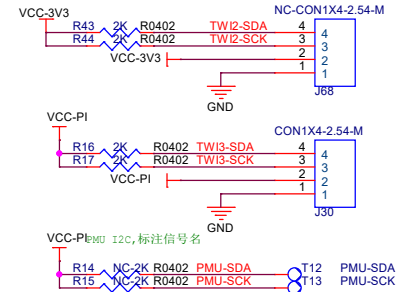
OR 电阻默认贴上, 验证时可将其其他模块电阻去掉



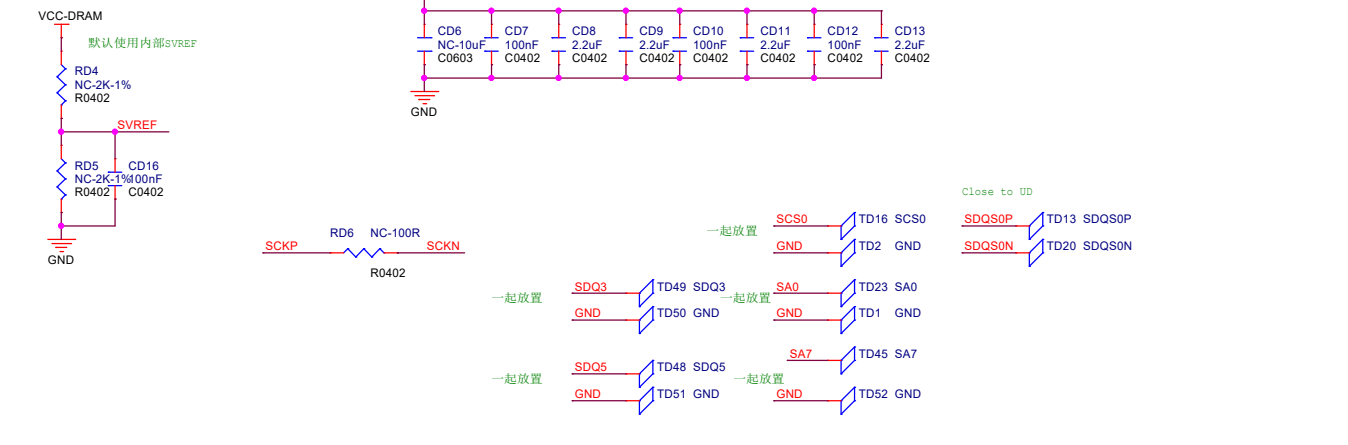
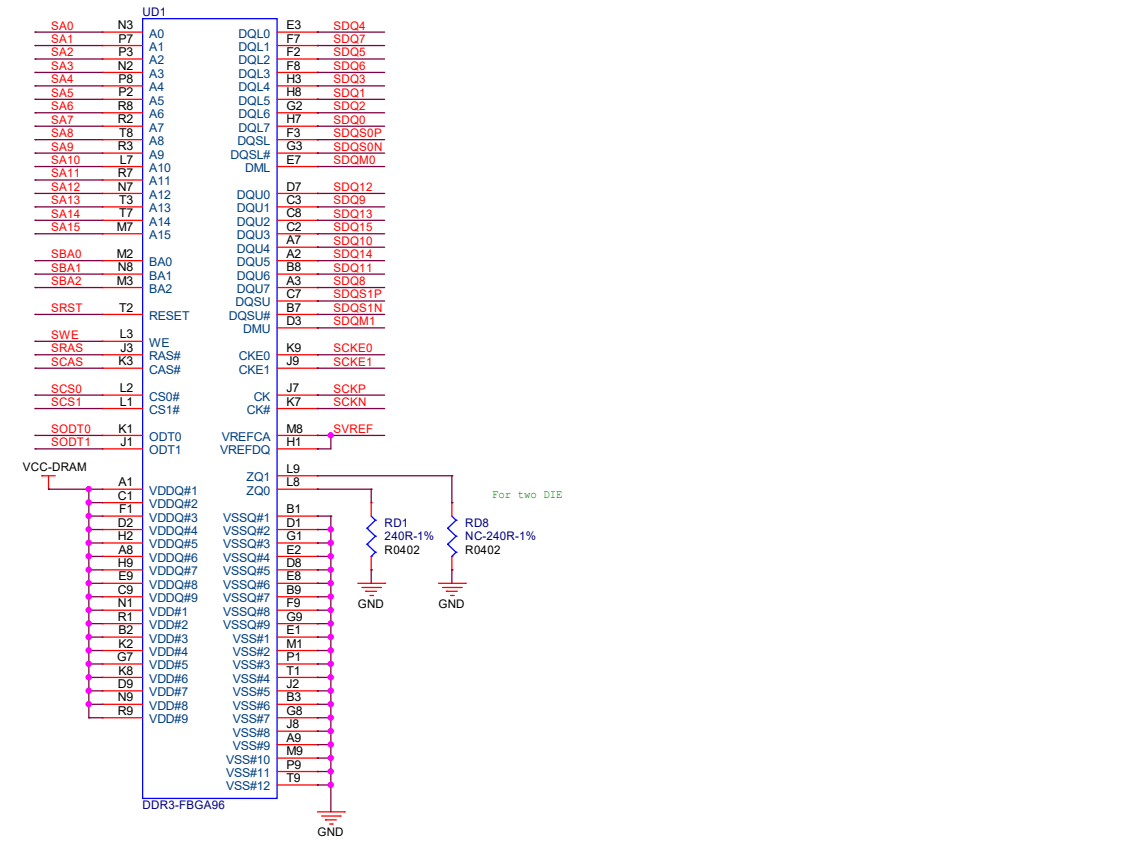
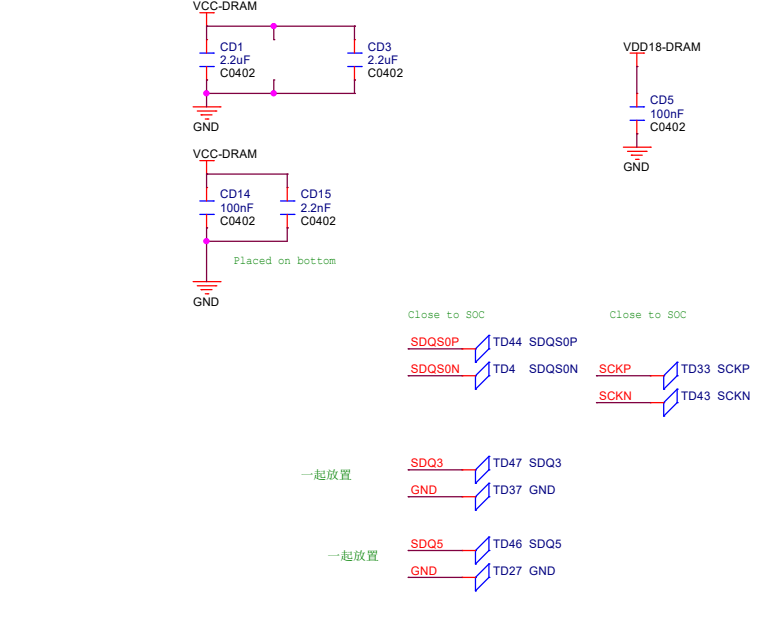
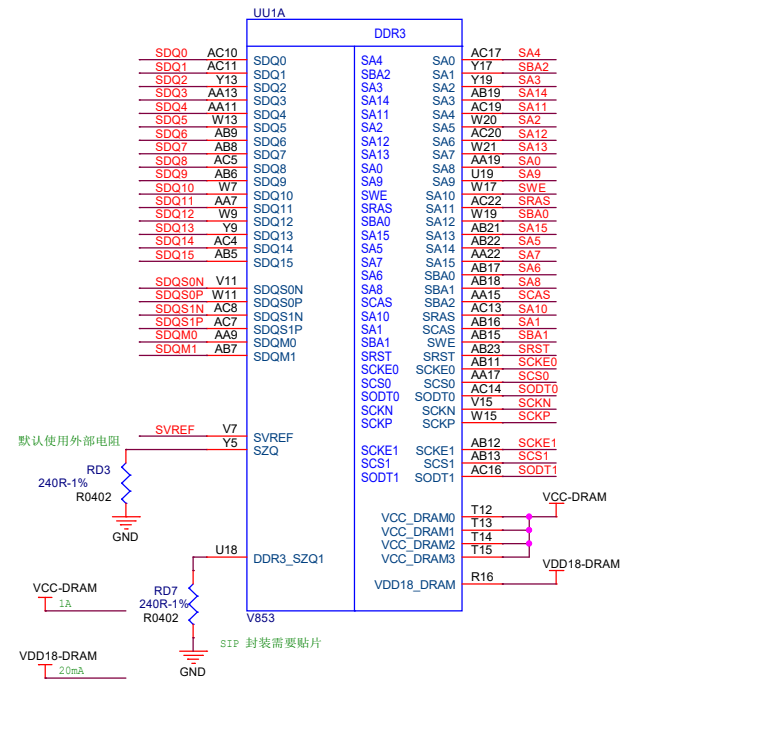
GND TESET 放置于板子四周



## TWI

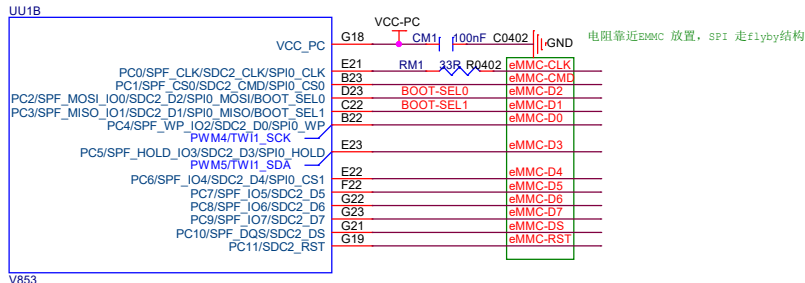


# DDR3 16X1

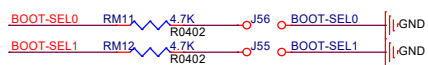




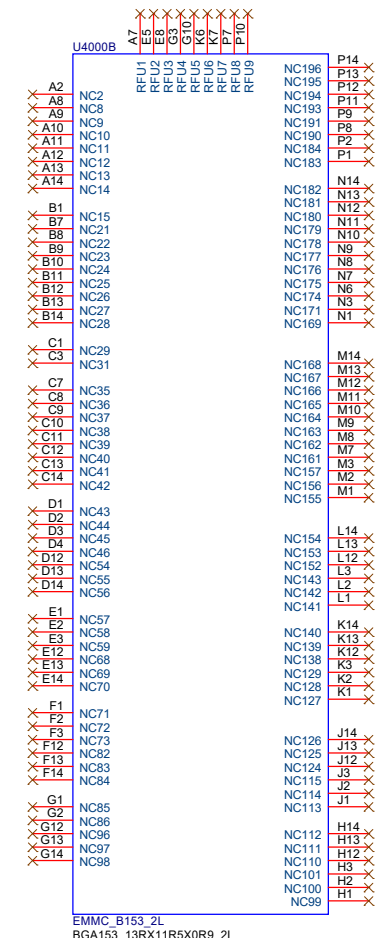
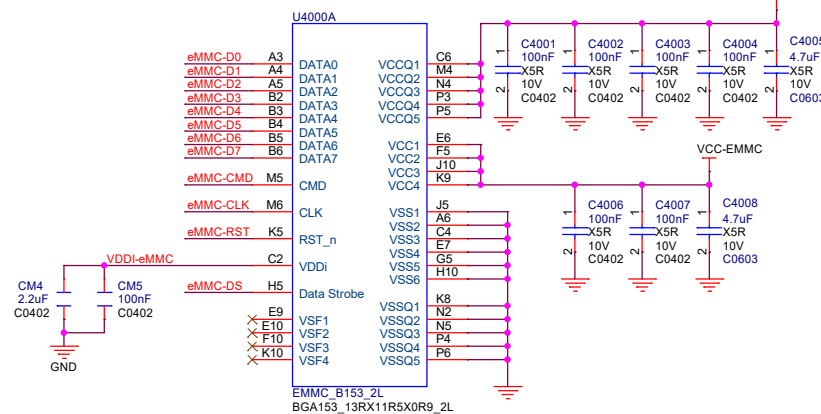
# eMMC



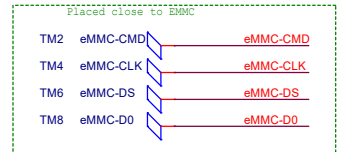
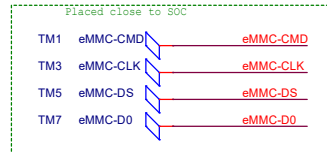
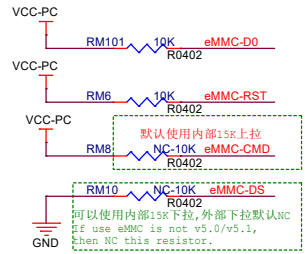
## BOOT-SEL

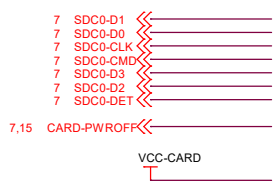


```
boot_sel[1:0]
0 0 SPI NAND->SPI NOR(4线)->SPI NOR(1线)->USB
0 1 SPI NOR(4线)->SPI NOR(1线)->SPI NAND->USB (快起)
1 0 SDC0->SPI NAND->SPI NOR(4线)->SPI NOR(1线)->UART BRUN->USB
1 1 (默认) SDC0->SPI NOR(4线)->SPI NOR(1线)->EMMC2_USR->EMMC2_BOOT->
SPI0 NAND->UART BRUN->USB
```

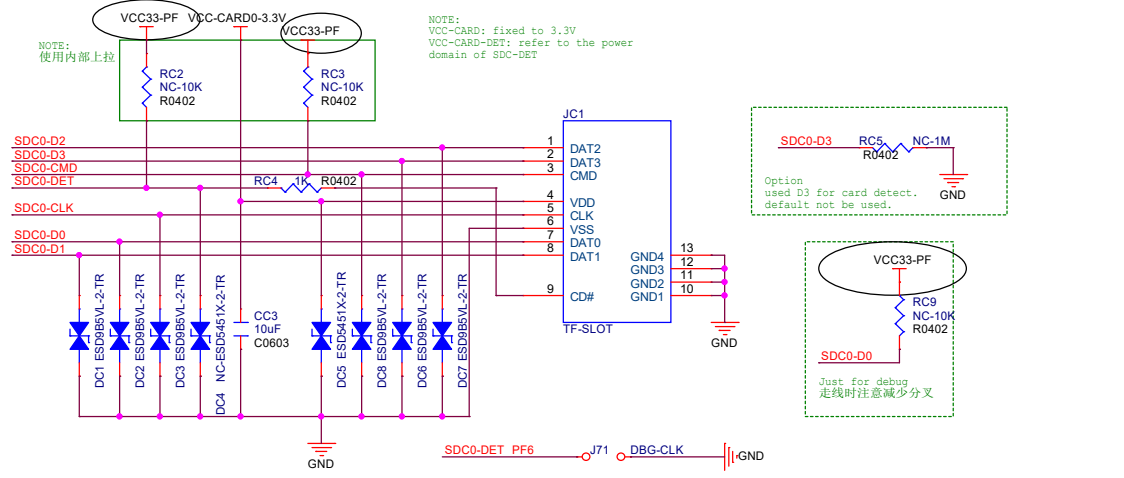
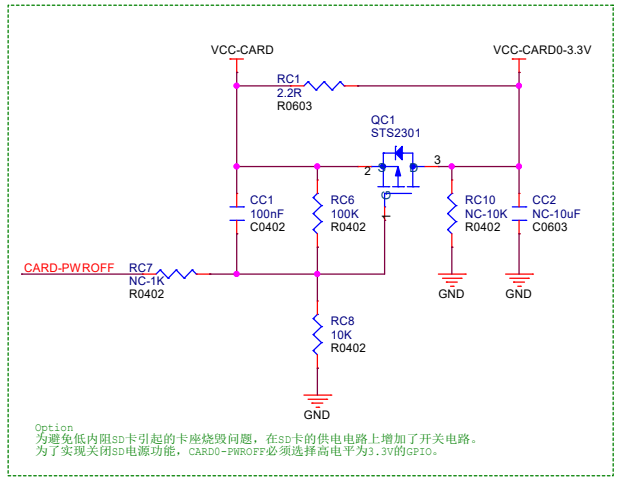


If eMMC is not v5.0/v5.1, then NC this two resistors.



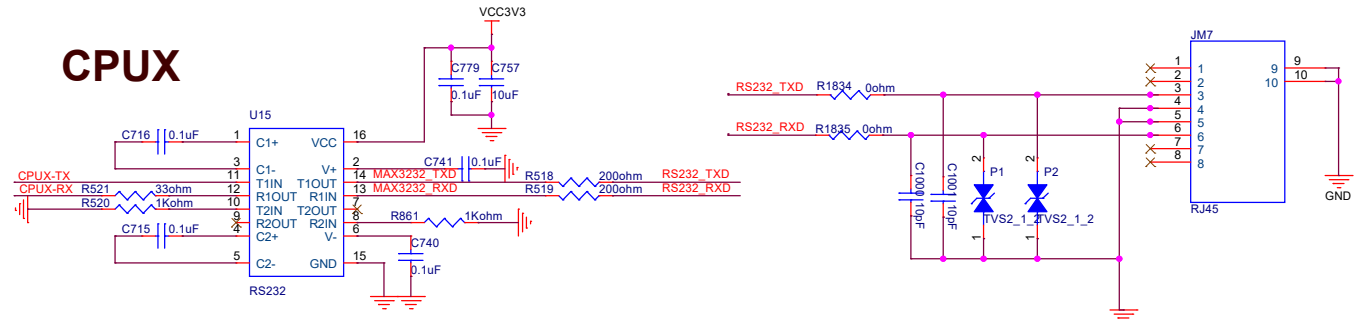


# CARD

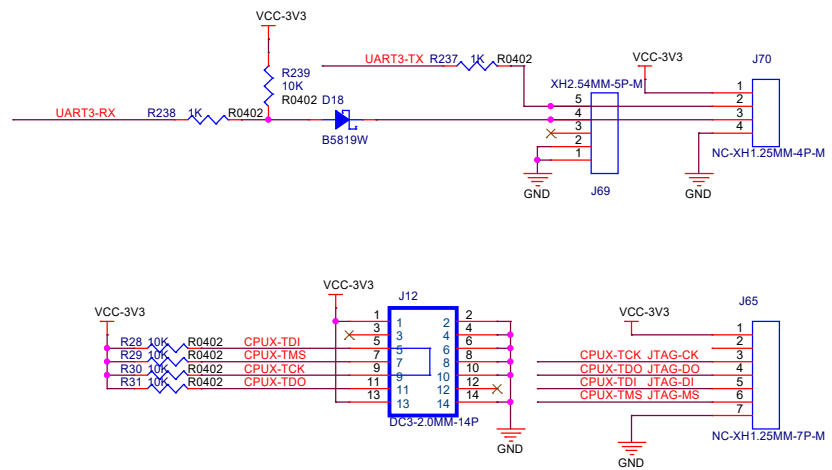
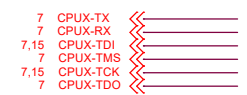


# DEBUG PF-JTAG

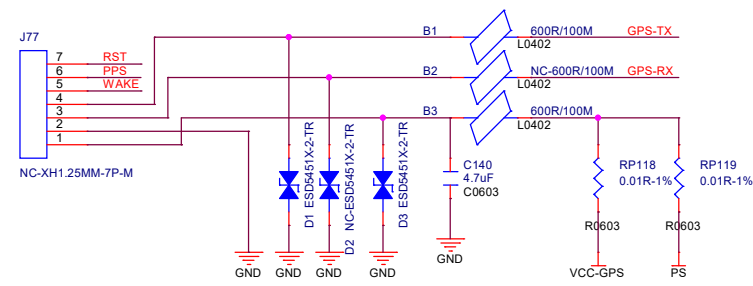
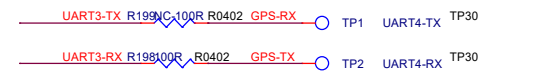
## CPUX



## E907-UART

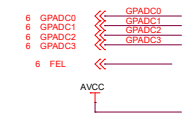
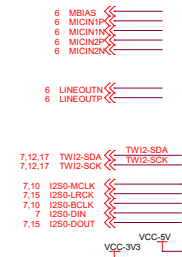


## 4G+GPS

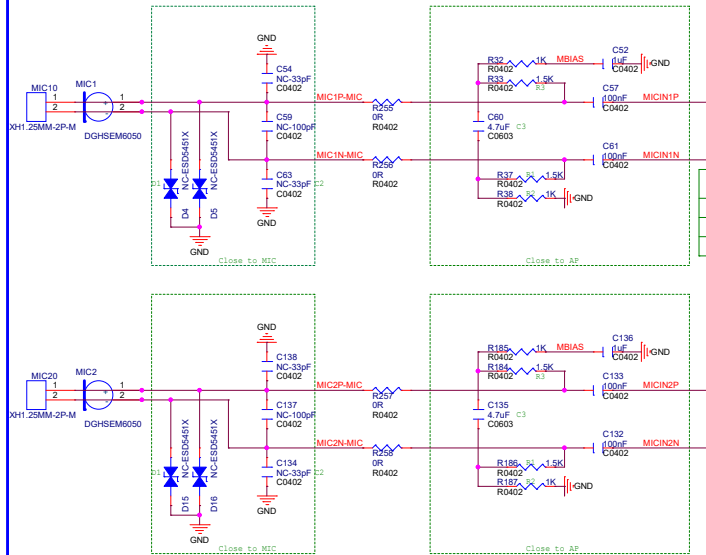


				<b>Allwinner Technology Co., Ltd</b>	
				Design Name <b>V853-PER1</b>	
Size A3	Page Name CARD/USB/JTAG/UART	Rev			
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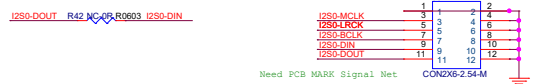
# AUDIO/KEY



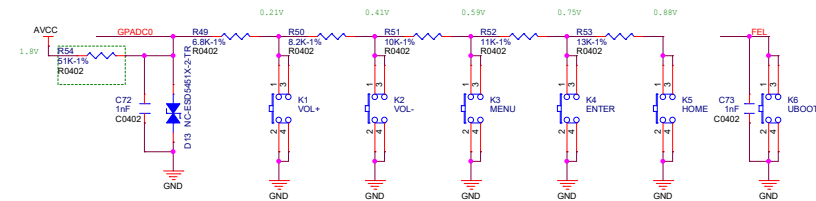
# MIC



# I2S



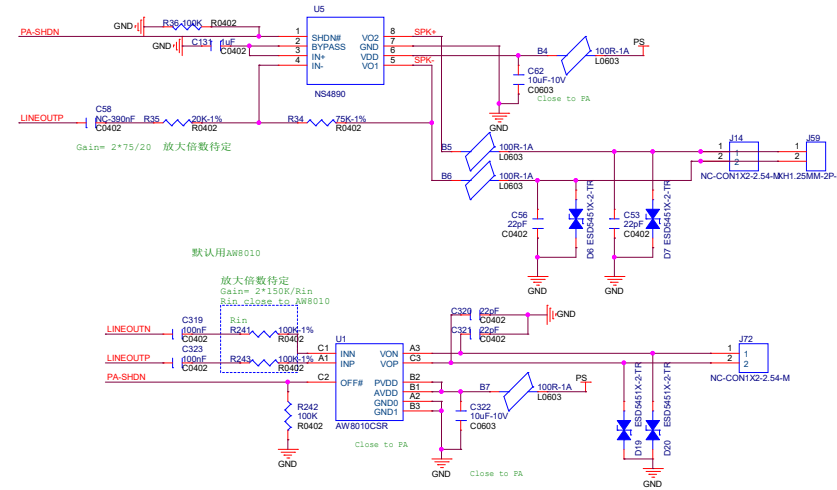
# KEY



# GPADC



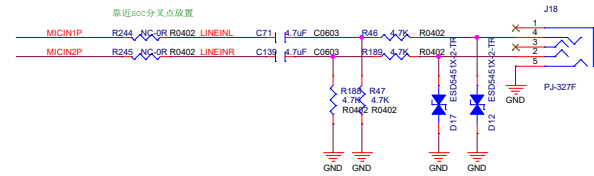
# SPEAKER



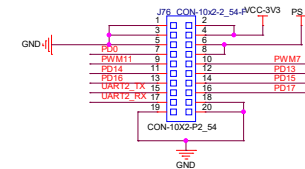
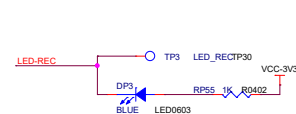
# LINE OUT



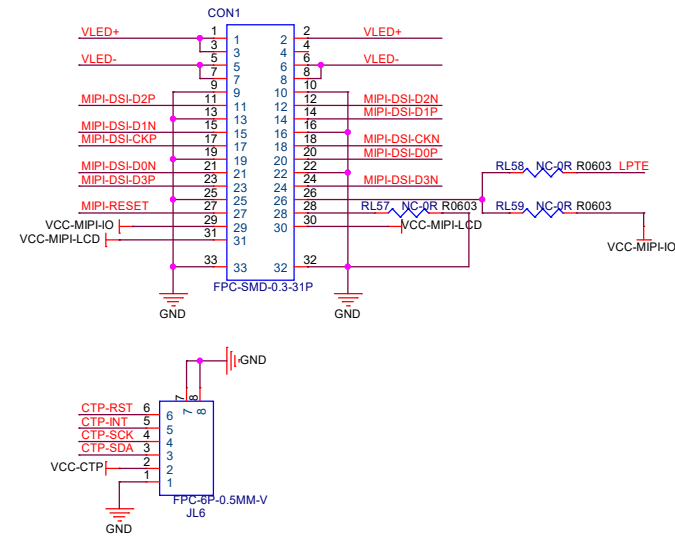
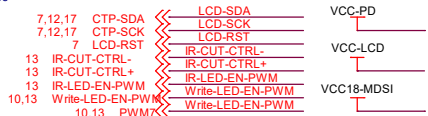
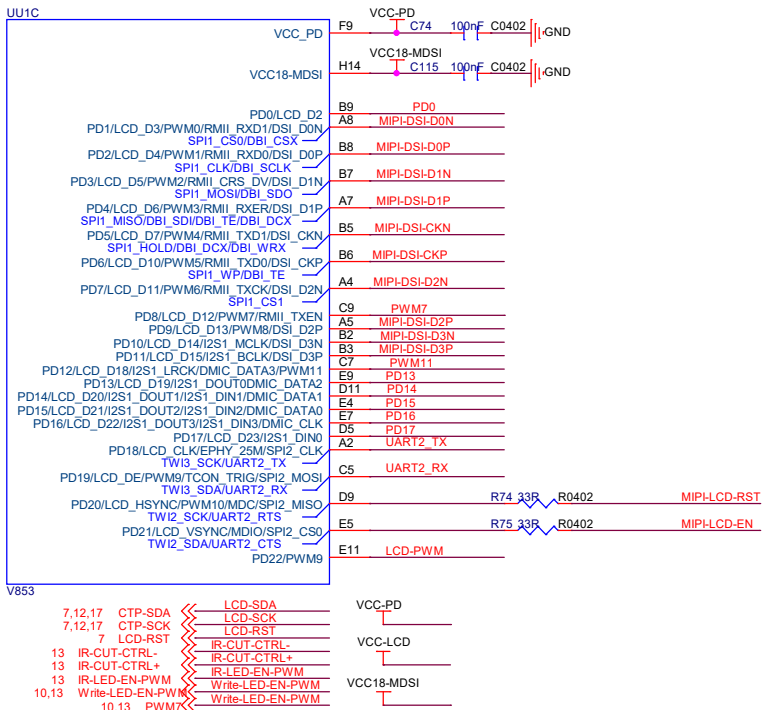
# LINE IN



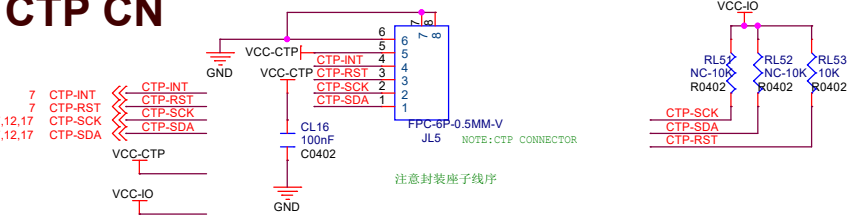
# LED



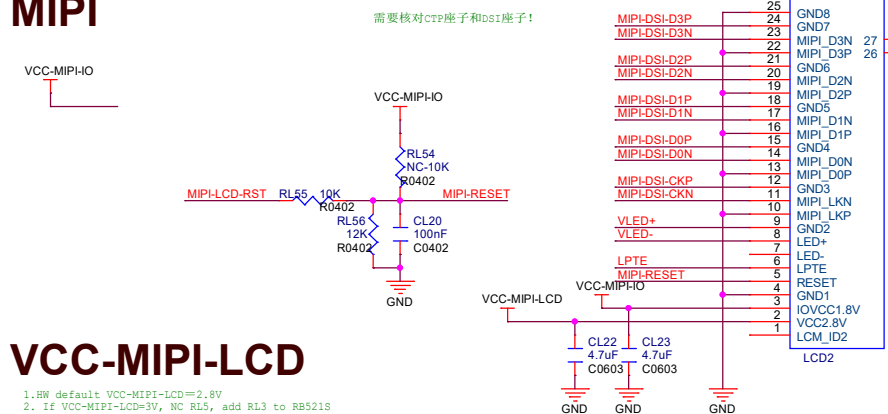
# LCD/PWM



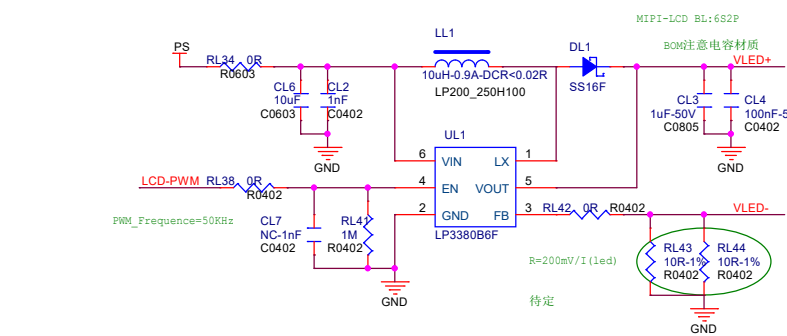
# CTP CN



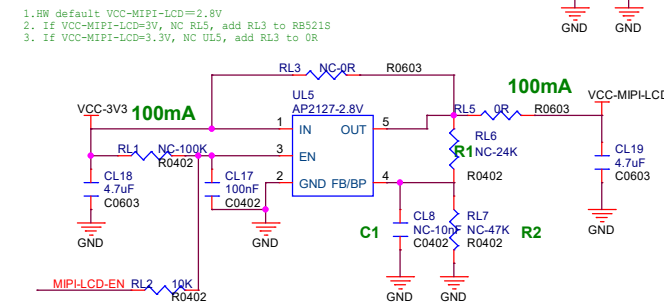
# MIPI



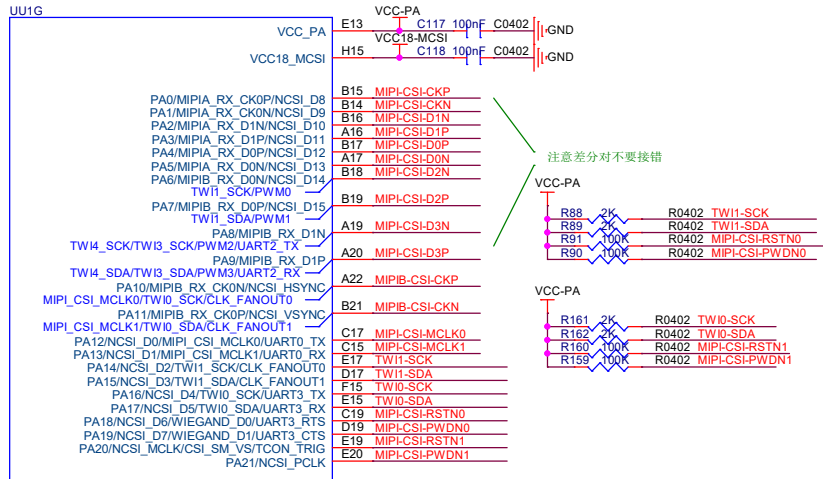
# Backlight



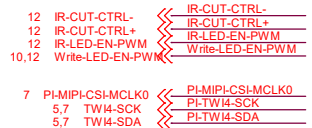
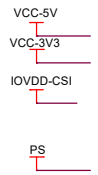
# VCC-MIPI-LCD



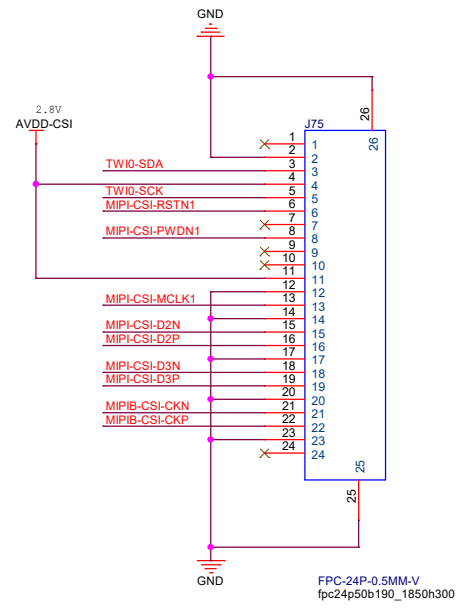
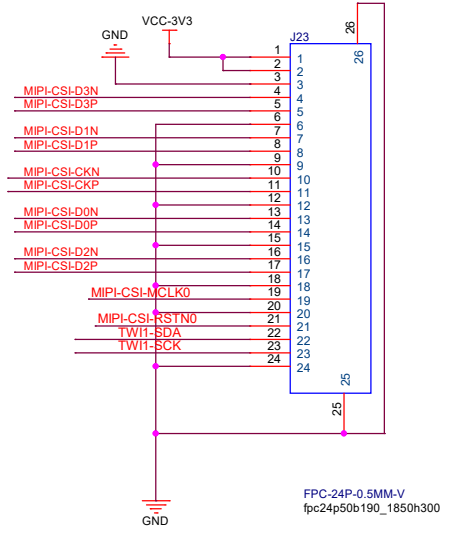
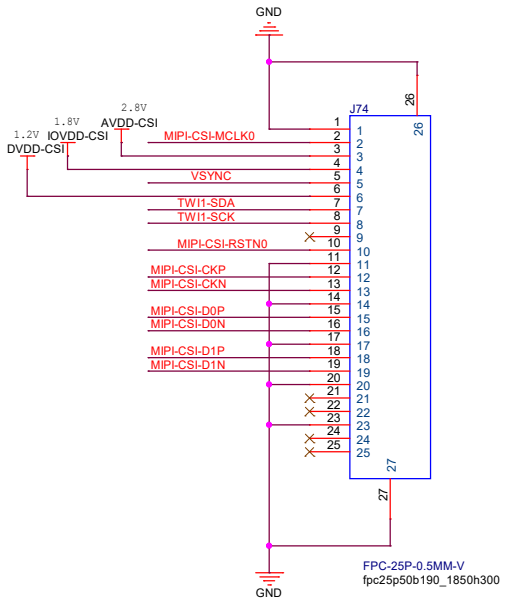
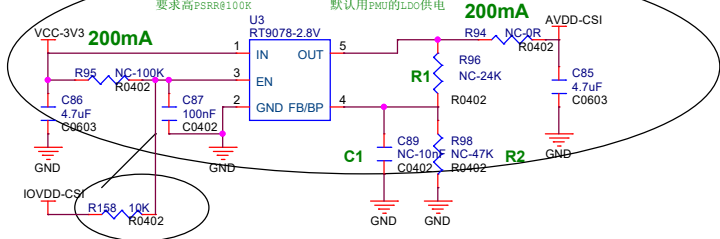
<b>AllWinner Technology Co., Ltd</b>		
Design Name		
<b>V853-PER1</b>		
Size	Page Name	Rev
A3	LCD/DSI	
Date:	Friday, December 09, 2022	Sheet 12 of 17



IO	两组MIPI-2lane	MIPI-4lane
PA0	MIPIA-CST-CK0P	MIPI-CST-CKP
PA1	MIPIA-CST-CK0N	MIPI-CST-CKN
PA2	MIPIA-CST-D1N	MIPI-CST-D1P
PA3	MIPIA-CST-D1P	MIPI-CST-D1N
PA4	MIPIA-CST-D0P	MIPI-CST-D0P
PA5	MIPIA-CST-D0N	MIPI-CST-D0N
PA6	MIPIB-CST-D0N	MIPI-CST-D2N
PA7	MIPIB-CST-D0P	MIPI-CST-D2P
PA8	MIPIB-CST-D1N	MIPI-CST-D3N
PA9	MIPIB-CST-D1P	MIPI-CST-D3P
PA10	MIPIB-CST-CK0N	MIPIB-CSI-CKN
PA11	MIPIB-CST-CK0P	MIPIB-CSI-CKP



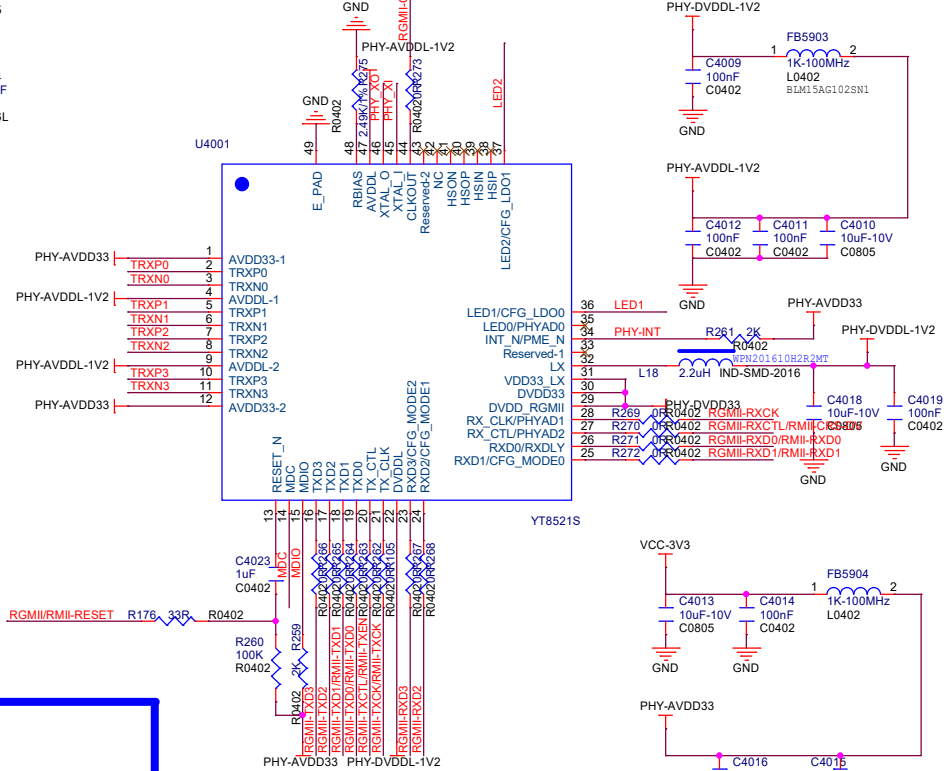
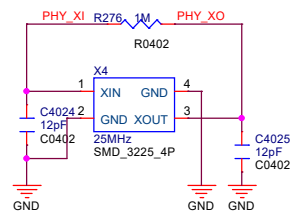
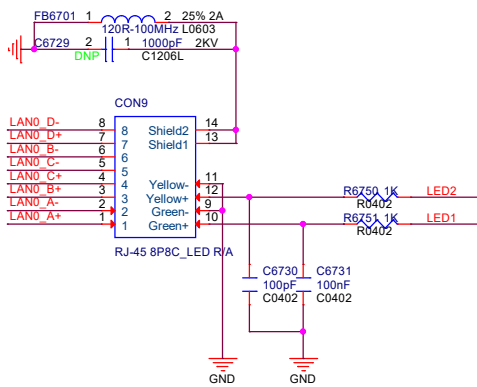
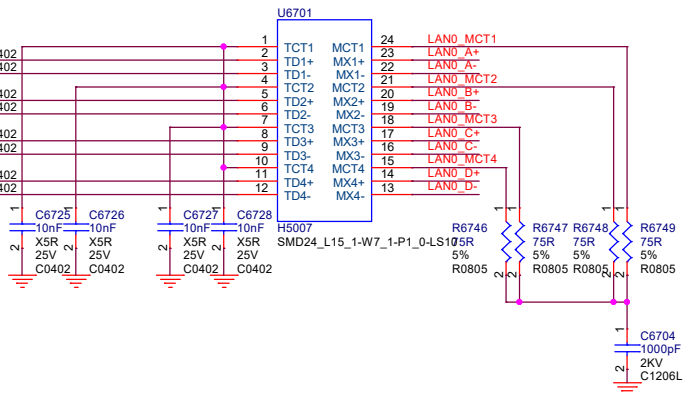
### 前置摄像头AVDD供电



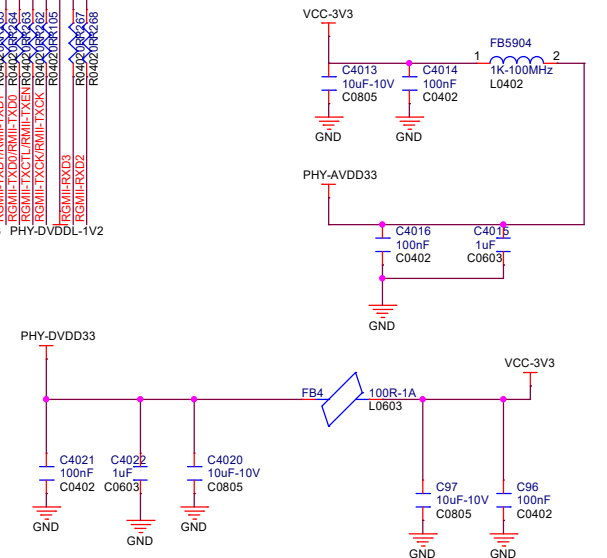
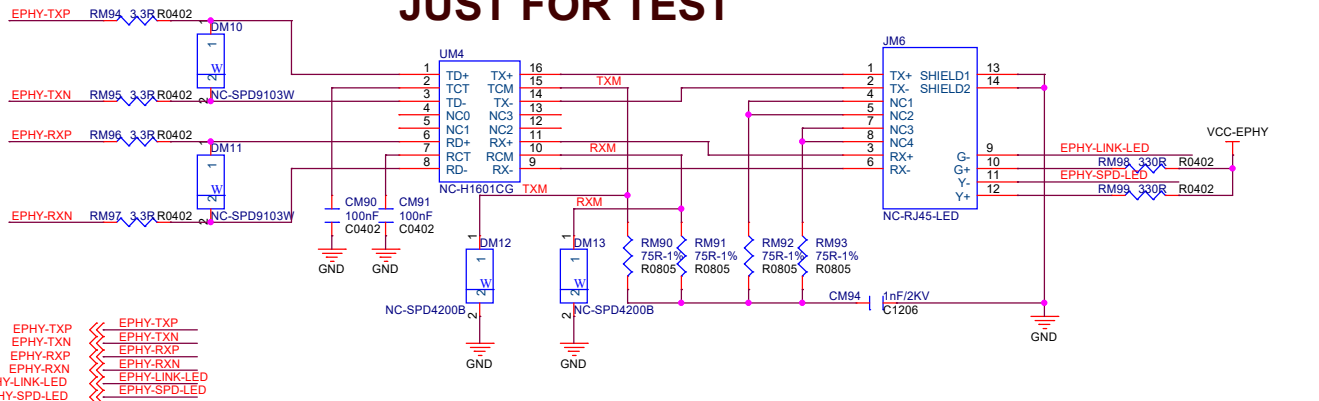
删除了field信号

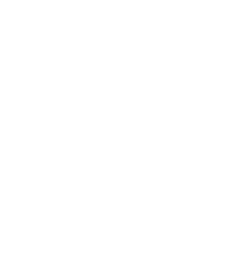
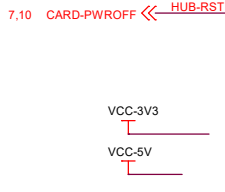
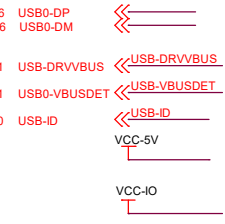
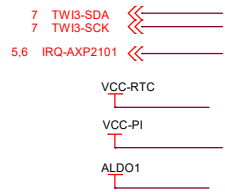
# PE CSI&RGMII

- 7 CSIO-PCLK << RGMII-RXD1/RMII-RXD1
- 7 CSIO-MCLK << RGMII-TXCK/RMII-TXCK
- 7 CSIO-HSYNC << RGMII-RXCTL/RMII-CRS-DV
- 7 CSIO-VSYNC << RGMII-RXD0/RMII-RXD0
- 7 CSIO-D0 << RGMII-TXD0/RMII-TXD0
- 7 CSIO-D1 << RGMII-TXD1/RMII-TXD1
- 7 CSIO-D2 << RGMII-TXCTL/RMII-TXEN
- 7 CSIO-D3 << RGMII-CLKIN/RMII-RXER
- 7 CSIO-D4 << MDC
- 7 CSIO-D5 << MDIO
- 7 CSIO-D6 << EPHY-25M
- 7 CSIO-D7 << RGMII-RXD3
- 7 CSIO-D8 << RGMII-RXD2
- 7 CSIO-D9 << RGMII-RXCK
- 7 CSIO-D10 << RGMII-TXD3
- 7 CSIO-D11 << RGMII-TXD2
- 7 PE16 << CSIO-SDA RGMII/RMII-RESET
- 7 PE17 << CSIO-SCK

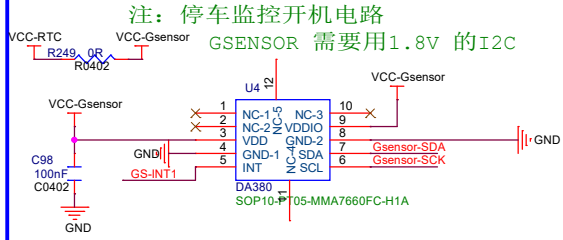


# JUST FOR TEST





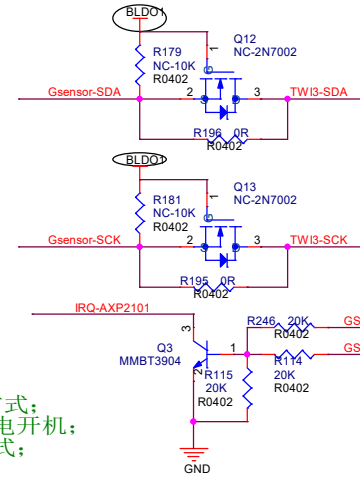
# G-SENSOR (DA380)



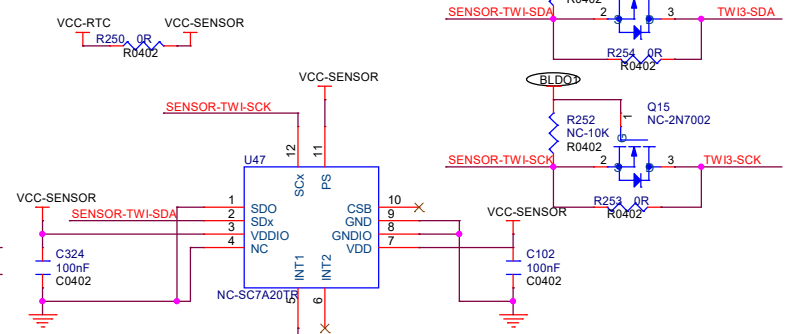
注：停车监控开机电路  
GSENSOR 需要用1.8V 的I2C

G-SENSOR IC与屏平行放置，放在屏的左上方，右上方放置PIN1脚。

- 1、关机前配置为中断输出，采用高电平脉冲中断方式；
- 2、PMU接收到上述产生的16ms以上低电平后快速上电开机；
- 3、开机之后，配置屏蔽中断输出，采用I2C轮询方式；

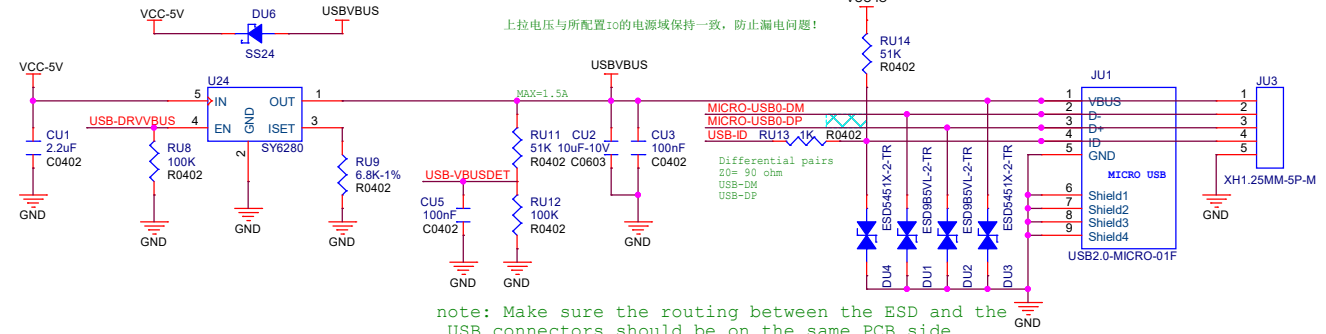


# SC7A20TR/DA217



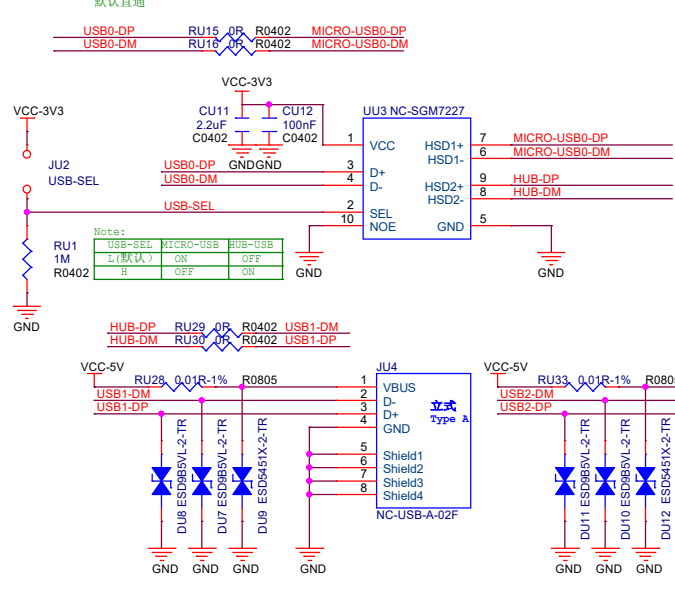
7Bits I2C Address: 0x18  
place PIN1 in the top right, parallel to the screen, and put on the top left of the screen.

# microUSB



note: Make sure the routing between the ESD and the USB connectors should be on the same PCB side

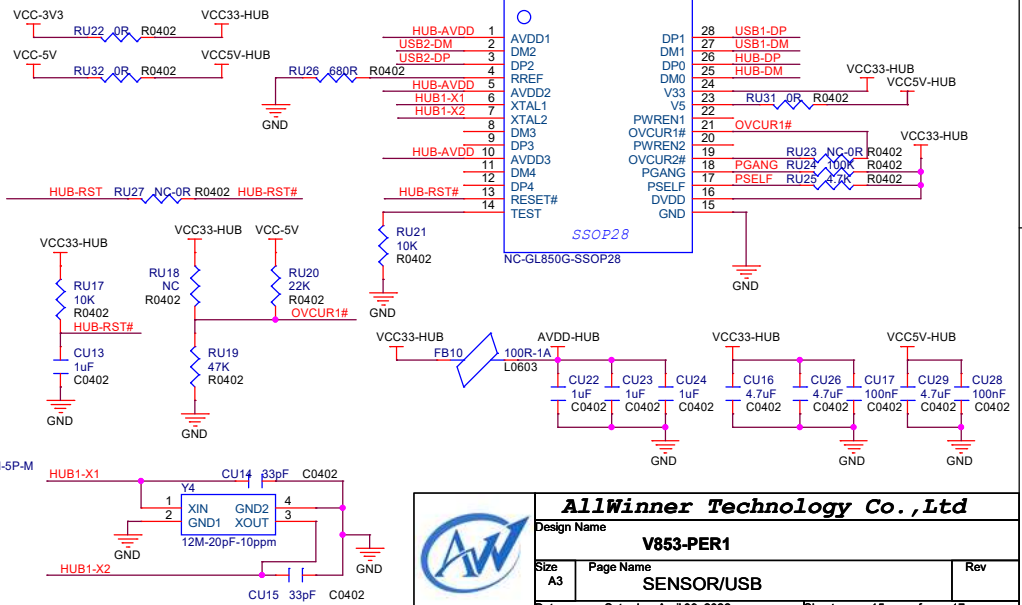
# USB switch



Notes:

USB-SEL	MICRO-USB	HUB-USB
L(默认)	ON	OFF
H	OFF	ON

# HUB



**AllWinner Technology Co., Ltd**

Design Name: **V853-PER1**

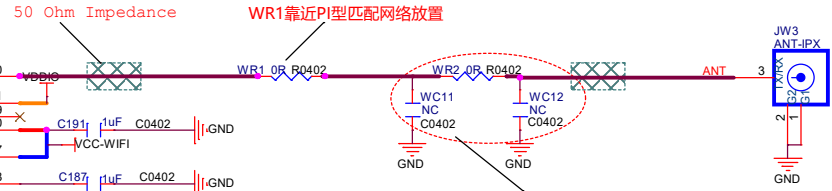
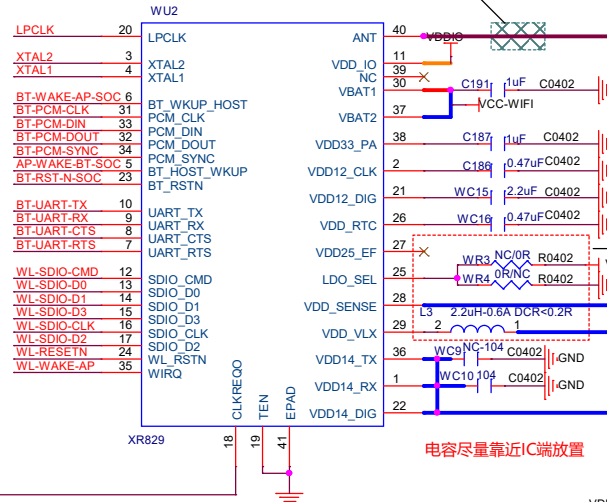
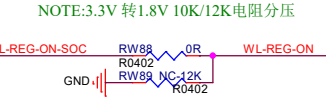
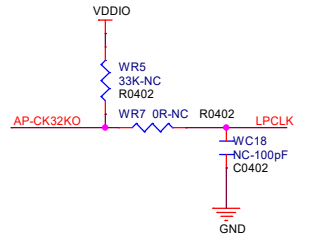
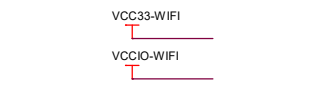
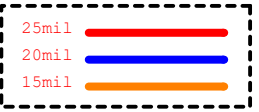
Size: A3 Page Name: **SENSOR/USB** Rev: \_\_\_\_\_

Date: Saturday, April 09, 2022 Sheet: 15 of 17



# SDIOWIFI

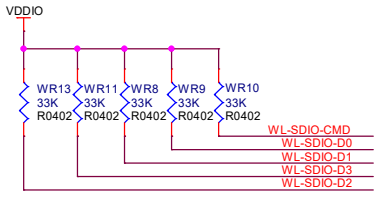
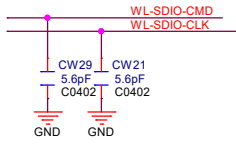
# XR829 XR829S ON BOARD



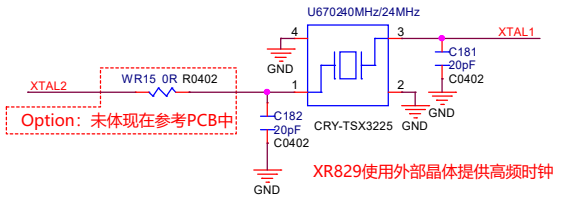
预留PI型匹配电路，尽量靠近C端放置，可用于RF认证时滤除谐波杂散

Mode	WR3	WR4	WL1
LDO Mode	0R	NC	NC
DCDC Mode	NC	0R	2.2uH

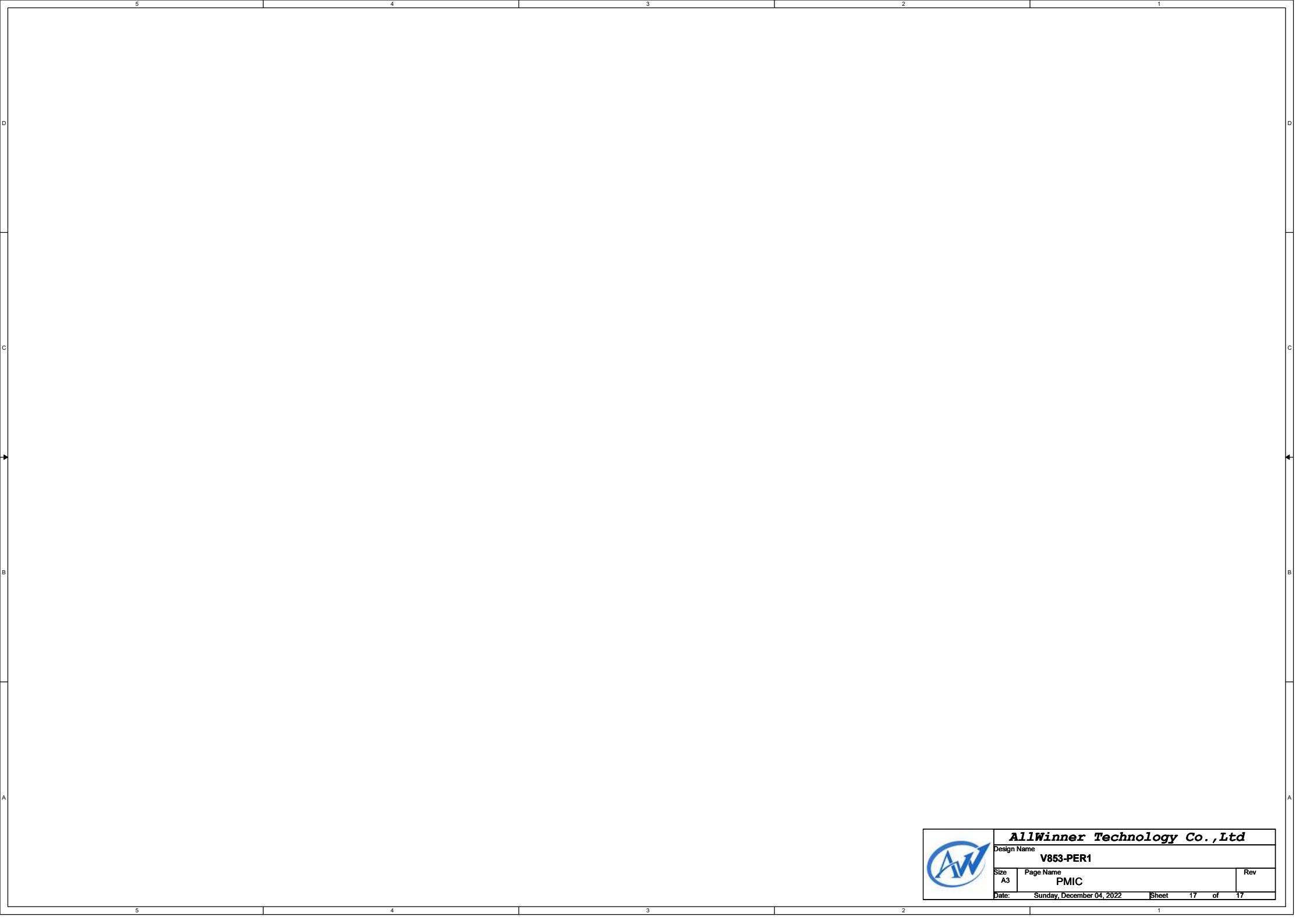
电容尽量靠近C端放置




## Clock







		<b>AllWinner Technology Co., Ltd</b>		
		Design Name <b>V853-PER1</b>		
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A3	PMIC			
Date:	Sunday, December 04, 2022	Sheet	17 of 17	