GPIO ASSIGNMENT

PIN	Define	CFG	Function
PA0	UART0_TX	5	DEBUG
PA1	UART0_RX	5	
PA7	PA_SHDN	1	
PA8	RTP-XP	2	RTP/CTP
PA9	RTP-YP	2	
PA10	RTP-XN	2	
PA11	RTP-YN	2	

PIN	Define	CFG	Function
PB0	SPI0-HOLD	3	NAND
PB1	SPI0-WP	3	
PB2	SPI0-CS	3	
PB3	SDC0-MISO	3	
PB4	SDC0-MOSI	3	
PB5	SDC0-CLK	3	

PIN	Define	CFG	Function
PC0	SDC1-D1	2	CARD
PC1	SDC1-D0	2	
PC2	SDC1-CLK	2	
PC3	SDC1-CMD	2	
PC4	SDC1-D3	2	
PC5	SDC1-D2	2	
PC6	SDC1-DET	2	

PIN	Define	Define	CFG	Function
PD6	LCD0-D6	TWI0-SCK/TX1	4/5	TWI0 /UART1
PD7	LCD0-D7	TWI0-SDA/RX1	4/5	
PD8	LCD0-D8	LVDS1-D0N	2/3	LVDS
PD9	LCD0-D9	LVDS1-D0P	2/3	
PD10	LCD0-D10	LVDS1-D1N	2/3	
PD11	LCD0-D11	LVDS1-D1P	2/3	
PD12	LCD0-D12	LVDS1-D2N	2/3	
PD13	LCD0-D13	LVDS1-D2P	2/3	
PD14	LCD0-D14	LVDS1-CKN	2/3	
PD15	LCD0-D15	LVDS1-DKP	2/3	
PD16	LCD0-D16	LVDS1-D3N	2/3	
PD17	LCD0-D17	LVDS1-D3P	2/3	
PD18	LCD0-D18		2	LCD RGB565
PD19	LCD0-D19		2	
PD20	LCD0-D20		2	
PD21	LCD0-D21		2	
PD22	LCD0-D22		2	
PD23	LCD0-D23		2	
PD24	LCD0-DCLK		2	
PD25	LCD0-HS		2	
PD26	LCD0-VS		2	
PD27	LCD0-DE		2	

PIN	Define	CFG	Function
PU0	USB0-DM	2	USB0
PU1	USB0-DP	2	

PIN	Define	CFG	Function
PE0	MAC0-RXD1	6	MAC0 100M
PE1	MAC0-RXD0	6	
PE2	MAC0-CRS-DV	6	
PE3	MAC0-REFCLK	6	
PE4	MAC0-TXD1	6	
PE5	MAC0-TXD0	6	
PE6	ETH0_RST	1	
PE7	MAC0-TXEN	6	
PE8	MAC0-MDC	6	
PE9	MAC0-MDIO	6	
PE10	EPHY0-25M	6	
PE11	SPK1	4	SPEAKER
PE14	USB0-SW	1	UART3去掉改GPIO
PE15	LED-RUN	1	
PE16	CAN0-TX	4	TWI改CAN0
PE17	CAN0-RX	4	
PE18	BUZZER	1	
PE19	LCD_PWR	1	

PIN	Define	CFG	Function
PF0	UART5-TX	5	RS485
PF1	UART5-RX	5	
PF14	DMIC_DATA	4	DMIC /UART4
PF15	DMIC_CLK	4	

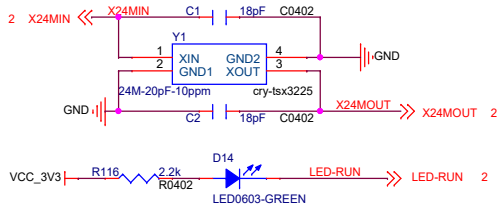
ArtInChip Technology Co.,Ltd

Design Name: D211BB-DEMO

Size: A3 | Page Name: GPIO ASSIGNMENT | Rev: V2.0

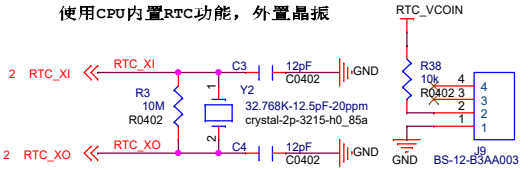
Date: 2023-02-27 | Sheet 1 of 8

PLL



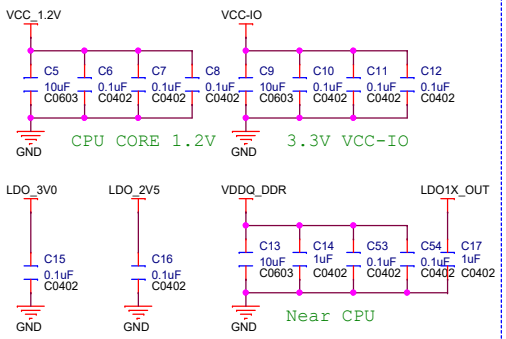
RTC

使用CPU内置RTC功能，外置晶振



改动3：VCOIN串接电阻改为10k，用于测功耗

CPU decouple cap



U1

UART0/ADC/TP/AMIC/CIR

GPA_P0/GPAI0/PSADC0/TWI0_SCK/UART0_TX/AMIC_IN/IR_TX
GPA_P1/GPAI1/PSADC1/TWI0_SDA/UART0_RX/AMIC_BIAS/IR_RX
GPA_P7/GPAI7/PSADC7/TWI1_SDA/UART1_CTS
GPA_P8/RTP_XP/PSADC8/TWI2_SCK/UART2_TX/JTAG_DO
GPA_P9/RTP_YP/PSADC9/TWI2_SDA/UART2_RX/JTAG_DI
GPA_P10/RTP_XN/PSADC10/TWI3_SCK/UART2_RTS/JTAG_MS
GPA_P11/RTP_YN/PSADC11/TWI3_SDA/UART2_CTS/JTAG_CK

6 UART0_TX — UART0_TX_DEBUG 82
6 UART0_RX — UART0_RX_DEBUG 83
7 PA_SHDN — PA_SHDN 84
4,6 RTP_XP_RST — RTP_XP_RST 85
4,6 RTP_YP_INT — RTP_YP_INT 86
4,6 RTP_XN_SCK — RTP_XN_SCK 87
4,6 RTP_YN_SDA — RTP_YN_SDA 88

RTP/CTP

优先使用NAND

EMMC/NAND/NOR

GPB_P0/SDC0_CMD/SPI0_HOLD/TWI1_SCK/UART7_TX
GPB_P1/SDC0_CLK/SPI0_WP/TWI1_SDA/UART7_RX
GPB_P2/SDC0_D3/SPI0_CS
GPB_P3/SDC0_D0/SPI0_MISO
GPB_P4/SDC0_D1/SPI0_MOSI
GPB_P5/SDC0_D2/SPI0_CLK

5 SPI0-HOLD — SPI0-HOLD 47
5 SPI0-WP — SPI0-WP 48
5 SPI0-CS — SPI0-CS 49
5 SPI0-MISO — SPI0-MISO 50
5 SPI0-MOSI — SPI0-MOSI 51
5 SPI0-CLK — SPI0-CLK 52

TF-CARD

LCD/CARD/UART1-6/PWM

GPC_P0/SDC1_D1/LCD_D5/SPI2_CLK/UART1_TX/JTAG_MS/PWM0_A
GPC_P1/SDC1_D0/LCD_D4/SPI2_CS/UART1_RX/JTAG_DI/PWM0_B
GPC_P2/SDC1_CLK/LCD_D3/SPI2_MOSI/UART1_RTS/UART0_TX/PWM1_A
GPC_P3/SDC1_CMD/LCD_D2/SPI2_MISO/UART2_TX/JTAG_DO/PWM1_B
GPC_P4/SDC1_D3/LCD_D1//UART2_RX/UART0_RX/PWM2_A
GPC_P5/SDC1_D2/LCD_D0/UART2_RTS/UART3_TX/JTAG_CK/PWM2_B
GPC_P6/SDC1_DET/CLK_OUT0/DE_TE/UART3_RX/PWM3_A

5 SDC1-D1 — SDC1-D1 33
5 SDC1-D0 — SDC1-D0 34
5 SDC1-CLK — SDC1-CLK R2 33R R0402 35
5 SDC1-CMD — SDC1-CMD 36
5 SDC1-D3 — SDC1-D3 37
5 SDC1-D2 — SDC1-D2 38
5 SDC1-DET — SDC1-DET 39

GPD_P6/LCD_D6/SPI3_MISO/TWI0_SCK/UART1_TX
GPD_P7/LCD_D7/SPI2_MISO/TWI0_SDA/UART1_RX
GPD_P8/LCD_D8/LVDS1_D0N/SPI1_HOLD/UART2_TX
GPD_P9/LCD_D9/LVDS1_D0P/SPI1_WP/UART2_RX
GPD_P10/LCD_D10/LVDS1_D1N/SPI1_CS/UART3_TX
GPD_P11/LCD_D11/LVDS1_D1P/SPI1_MISO/UART3_RX
GPD_P12/LCD_D12/LVDS1_D2N/SPI1_MOSI/UART4_TX
GPD_P13/LCD_D13/LVDS1_D2P/SPI1_CLK/UART4_RX
GPD_P14/LCD_D14/LVDS1_CKN/SPI3_CLK
GPD_P15/LCD_D15/LVDS1_CKP/SPI3_CS
GPD_P16/LCD_D16/LVDS1_D3N/SPI3_MOSI
GPD_P17/LCD_D17/LVDS1_D3P/SPI3_MISO
GPD_P18/LCD_D18/LVDS0_D0N/DSI_D0N/TWI1_SCK
GPD_P19/LCD_D19/LVDS0_D0P/DSI_D0P/TWI1_SDA
GPD_P20/LCD_D20/LVDS0_D1N/DSI_D1N/UART7_TX
GPD_P21/LCD_D21/LVDS0_D1P/DSI_D1P/UART7_RX/CLK_OUT0
GPD_P22/LCD_D22/LVDS0_D2N/DSI_CKN/TWI3_SCK/UART6_TX
GPD_P23/LCD_D23/LVDS0_D2P/DSI_CKP/TWI3_SDA/UART6_RX
GPD_P24/LCD-DCLK/LVDS0_CKN/DSI_D2N/UART5_TX/SPI1_CLK
GPD_P25/LCD-HS/LVDS0_CKP/DSI_D2P/UART5_RX/SPI1_CS
GPD_P26/LCD-VS/LVDS0_D3N/DSI_D3N/PWM3_A/SPI1_MOSI
GPD_P27/LCD-DE/LVDS0_D3P/DSI_D3P/PWM3_B/SPI1_MISO/RTC_32K

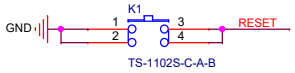
6 TWI0_SCK — TWI0_SCK 32
6 TWI0_SDA — TWI0_SDA 31
4 LCD_B0 — LCD_B0 30
4 LCD_B1 — LCD_B1 29
4 LCD_B2 — LCD_B2 28
4 LCD_B3 — LCD_B3 27
4 LCD_B4 — LCD_B4 26
4 LCD_G0 — LCD_G0 25
4 LCD_G1 — LCD_G1 24
4 LCD_G2 — LCD_G2 23
4 LCD_G3 — LCD_G3 22
4 LCD_G4 — LCD_G4 21
4 LCD_G5 — LCD_G5 19
4 LCD_R0 — LCD_R0 18
4 LCD_R1 — LCD_R1 17
4 LCD_R2 — LCD_R2 16
4 LCD_R3 — LCD_R3 15
4 LCD_R4 — LCD_R4 14
4 LCD_VCLK — LCD_VCLK 13
4 LCD_HS — LCD_HS 12
4 LCD_VS — LCD_VS 11
4 LCD_VDEN — LCD_VDEN 10

改动1：RGB565使用默认配置

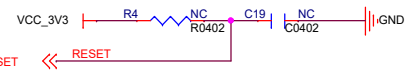
SYS

SYS_RSTN
PLL_XO
PLL_XI

2 RESET — RESET 75
2 X24MIN — X24MIN 76
2 X24MOUT — X24MOUT 77



D211BB-QFN88



EMAC/I2S0/UART3-7/PWM

GPE_P0/DVP_D0/TWI0_SCK//MAC0_RXD1//PWM0_A
GPE_P1//DVP_D1/TWI0_SDA//MAC0_RXD0/PWM0_B
GPE_P2/DVP_D2/UART4_TX/MAC0_CRS_DV//PWM1_A
GPE_P3/DVP_D3/UART4_RX/MAC0_REFCLK/PWM1_B
GPE_P4/DVP_D4/UART5_TX/MAC0_TXD1/PWM2_A
GPE_P5/DVP_D5/UART5_RX/MAC0_TXD0/PWM2_B
GPE_P6/SPK0/DVP_D6/UART5_RTS/UART6_TX/MAC0_TXC
GPE_P7/SPK1/DVP_D7/UART7_RTS/UART6_RX/MAC0_TXEN
GPE_P8/I2S0_MCLK/DVP_CK/UART6_RTS/UART7_TX/MAC0_MDC
GPE_P9/I2S0_BCLK/DVP_HS/UART6_CTS/UART7_RX/MAC0_MDIO
GPE_P10/I2S0_LRCK/DVP_VS/SPK0/CLK_OUT2
GPE_P11/I2S0_DOUT/I2S0_DIN/SPK1/CLK_OUT1
GPE_P14/SPI3_MOSI/UART3_TX
GPE_P15/SPI3_MISO/UART3_RX
GPE_P16/SPI0_CLK/TWI3_SCK
GPE_P17/SPI0_CS/TWI3_SDA
GPE_P18/SPI0_MOSI/PWM3_A
GPE_P19/SPI0_MISO/PWM3_B

EMAC-100M

54 MAC0_RXD1 — MAC0_RXD1 8
55 MAC0_RXD0 — MAC0_RXD0 8
56 MAC0_CRS_DV — MAC0_CRS_DV 8
57 MAC0_REFCLK — MAC0_REFCLK 8
59 MAC0_TXD1 — MAC0_TXD1 8
60 MAC0_TXD0 — MAC0_TXD0 8
61 EPHY0-RST — EPHY0-RST 8
62 MAC0_TXEN — MAC0_TXEN 8
63 MAC0_MDC — MAC0_MDC 8
64 MAC0_MDIO — MAC0_MDIO 8
65 EPHY0-25M — EPHY0-25M 8
66 SPK1 — SPK1 7
67 USB0-SW — USB0-SW 3
68 LED-RUN — LED-RUN 2
69 CAN0_TX — CAN0_TX 6
70 CAN0_RX — CAN0_RX 6
71 BUZZER — BUZZER 7
72 LCD_PWR — LCD_PWR 4

改动5：增加USB0-SW，用于USB HOST切换

改动6：增加LED调试用

USB &Debug

GPN_P0/USB0_DM/UART0_RX/UART1_RX
GPN_P1/USB0_DP/UART0_TX/UART1_TX

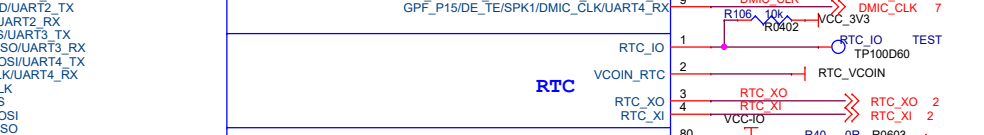
78 USB0-DM — USB0-DM 3
79 USB0-DP — USB0-DP 3

Speaker

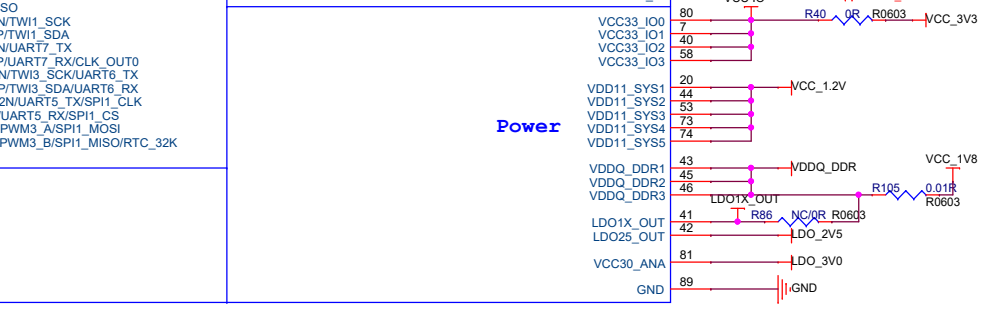
GPF_P0/SDC2_D1/SPI2_CLK/UART5_TX
GPF_P1/SDC2_D0/SPI2_CS/UART5_RX
GPF_P14/I2S1_DIN/SPK0/DMIC_D0/UART4_TX
GPF_P15/DE_TE/SPK1/DMIC_CLK/UART4_RX

5 UART5_TX — UART5_TX 6
6 UART5_RX — UART5_RX 6
8 DMIC_DATA — DMIC_DATA 7
9 DMIC_CLK — DMIC_CLK 7

RTC



Power



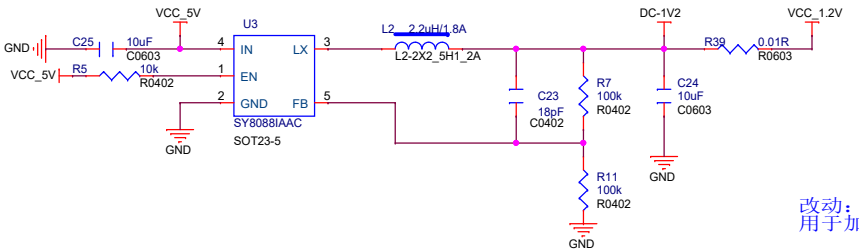
改动2：DRAM电源内外部供电兼容

改动3：RTC-IO上拉10k到3.3V

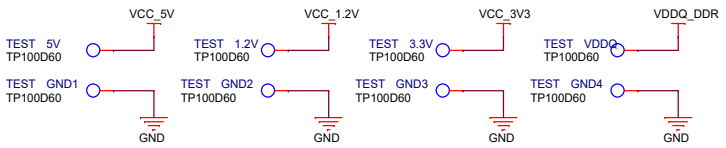
改动4：VCC-IO增加0R，测试分量功耗

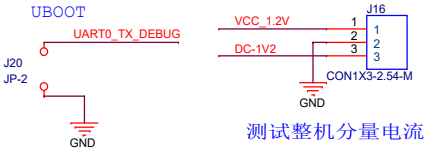
1.2V

Vout = 1.2V



改动：放置于CPU底部GND焊盘
用于加强散热

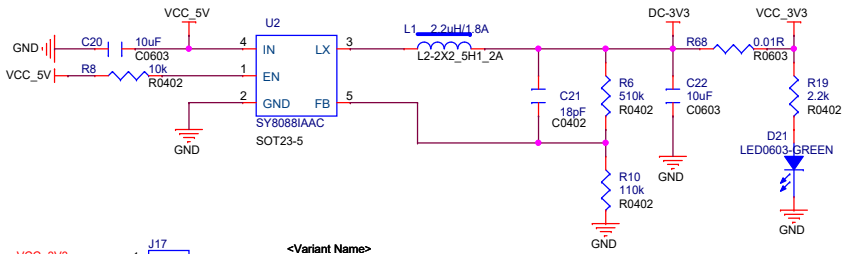


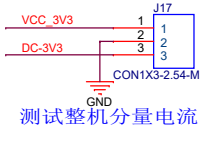


测试整机分量电流

3.3V

Vout = 3.38V



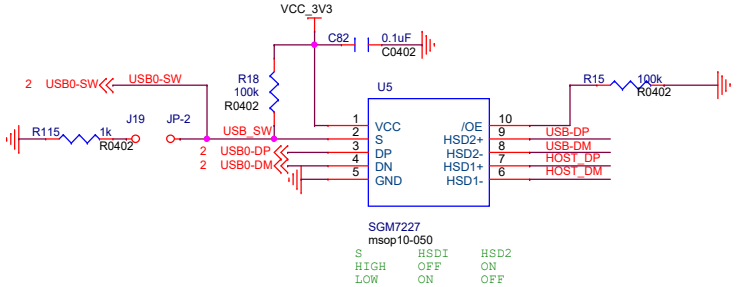


测试整机分量电流

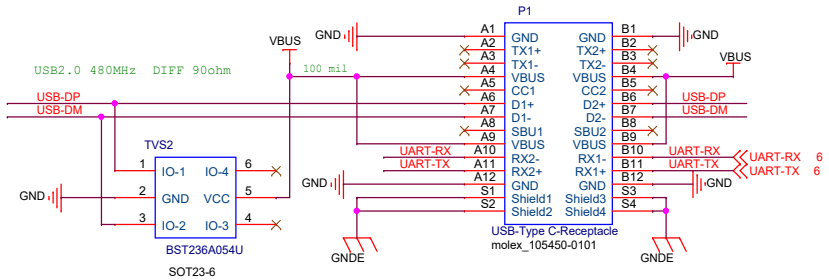
<Variant Name>

ArtInChip Technology Co.,Ltd		
Design Name: D211BB-DEMO		
Size: A3	Page Name: CPU	Rev: V2.0
Date: 2023-02-28	Sheet 2 of 8	

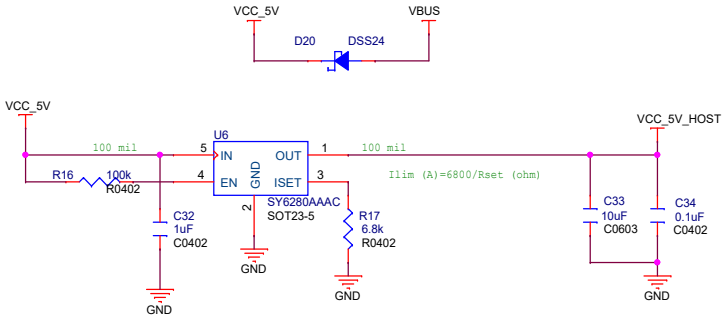
USB SWITCH



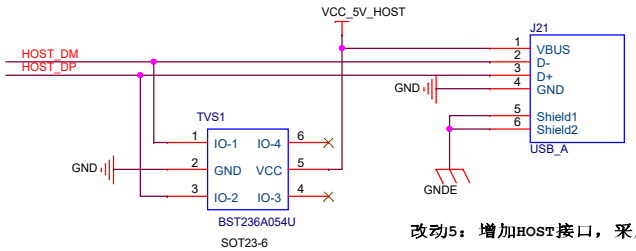
USB0 DEVICE



USB0 HOST



注释1：Ilim(A)=6800/Rset，VBUS按至少1A走线

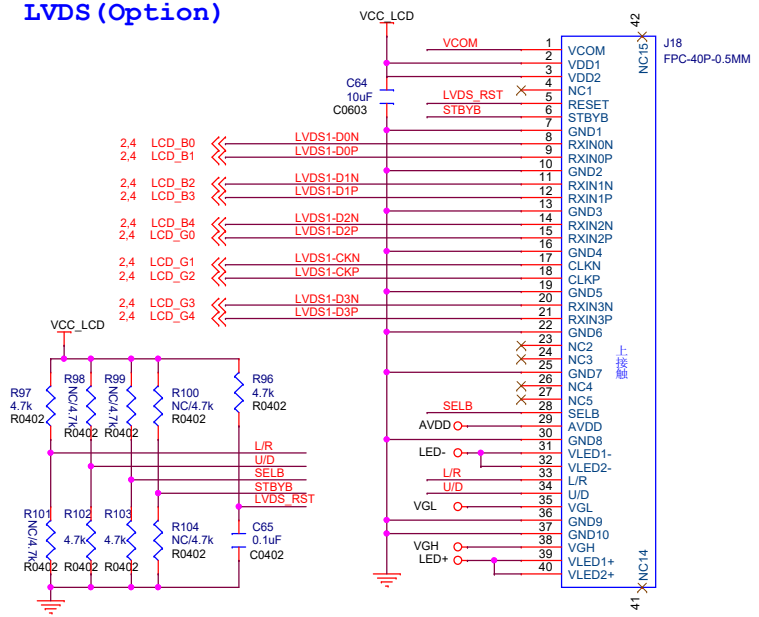


改动5：增加HOST接口，采用模拟开关切换USB信号

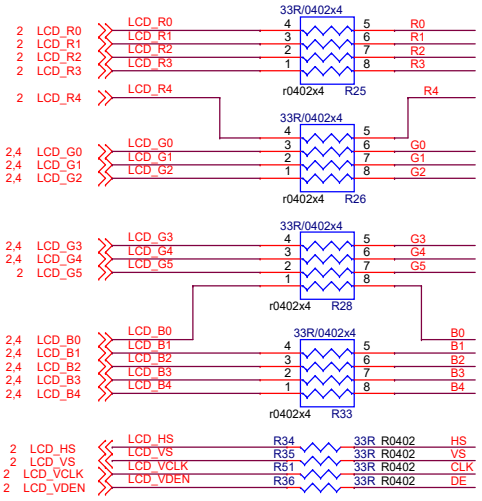
<Variant Name>

ArtInChip Technology Co.,Ltd		
Design Name: D211BB-DEMO		
Size: A3	Page Name: USB	Rev: V2.0
Date: 2023-02-27	Sheet 3 of 8	

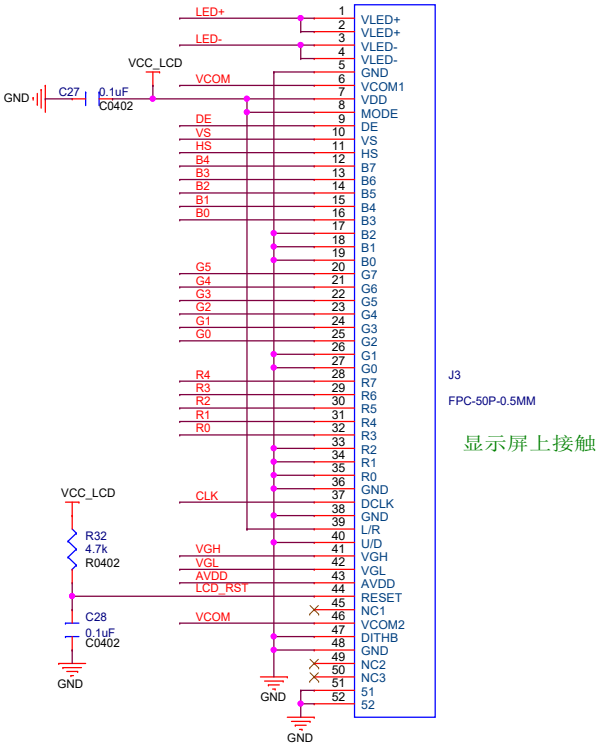
LVDS (Option)



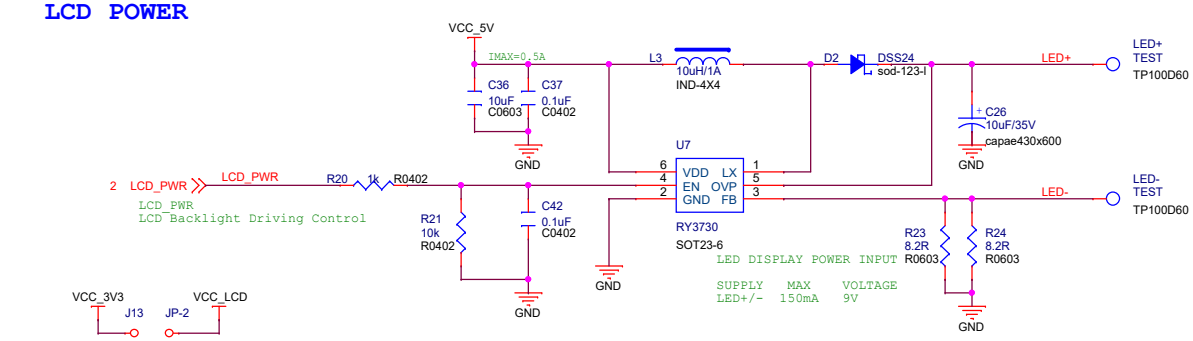
LCD (7" RGB565)



改动9：排阻换成33R



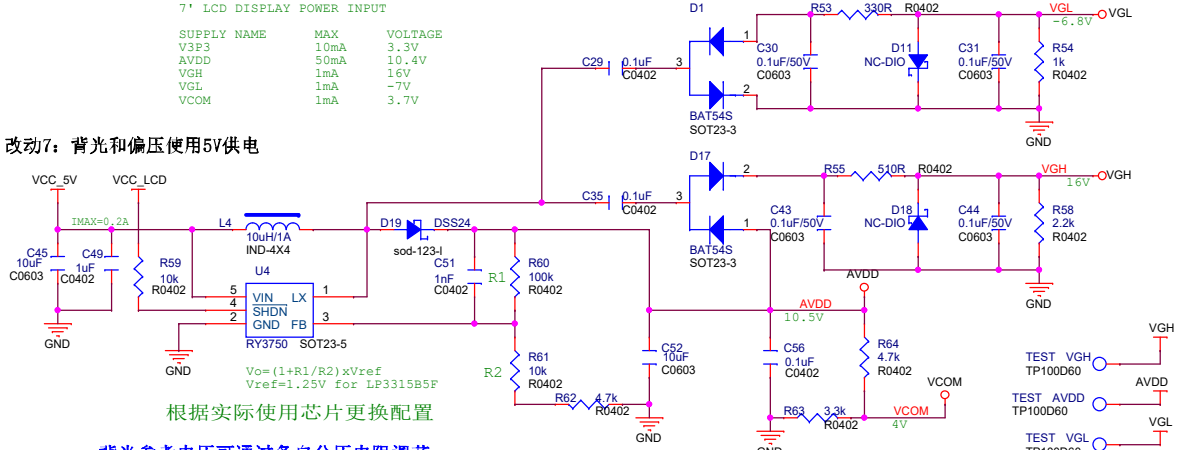
LCD POWER



7' LCD DISPLAY POWER INPUT

SUPPLY NAME	MAX	VOLTAGE
V3P3	10mA	3.3V
AVDD	50mA	10.4V
VGH	1mA	16V
VGL	1mA	-7V
VCOM	1mA	3.7V

改动7：背光和偏压使用5V供电

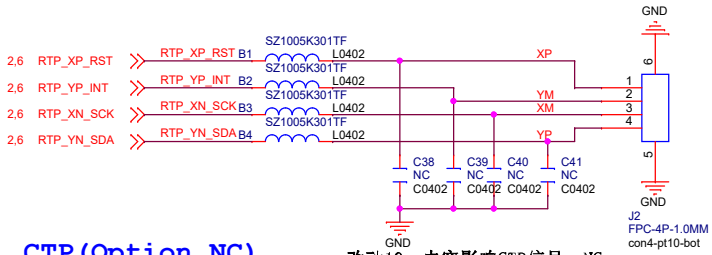


根据实际使用芯片更换配置

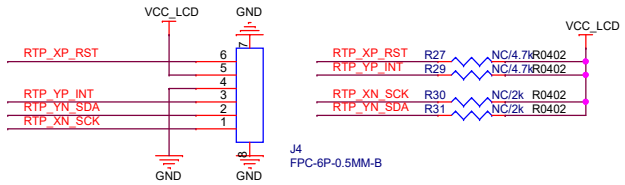
背光参考电压可通过各自分压电阻调节

改动8：修改R63=3.3k，VCOM调整为4V

RTP



CTP (Option NC)

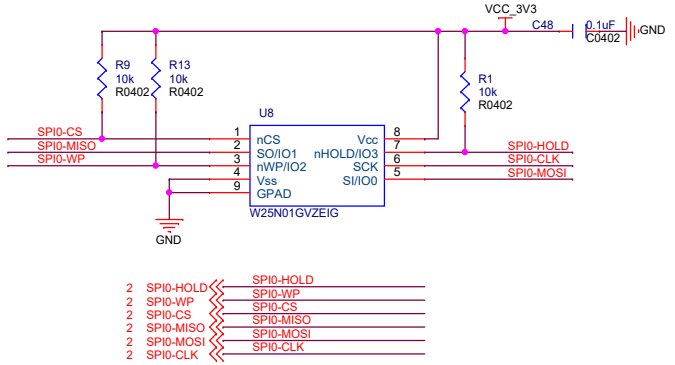


改动10：电容影响CTP信号，NC

<Variant Name>

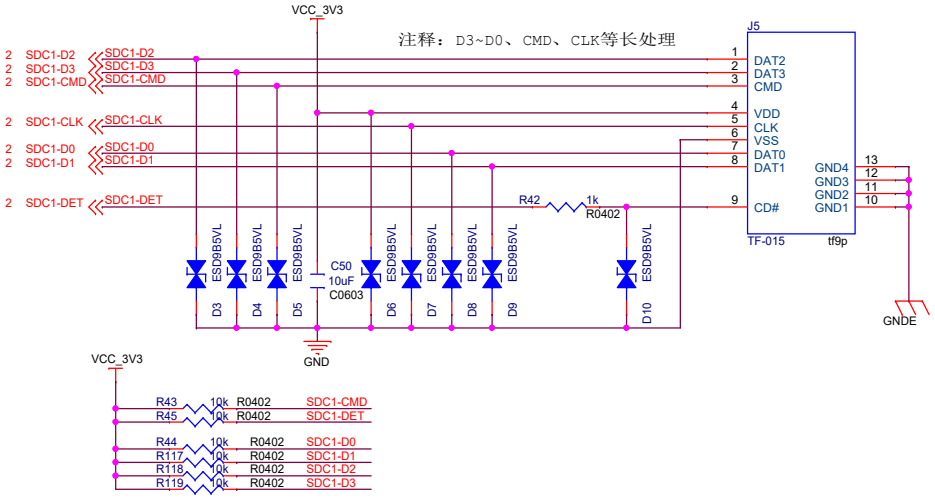
ArtInChip Technology Co.,Ltd		
Design Name: D211BB-DEMO		
Size: A3	Page Name: LCD/TP	Rev: V2.0
Date: 2023-02-27	Sheet 4 of 8	

SPI NAND



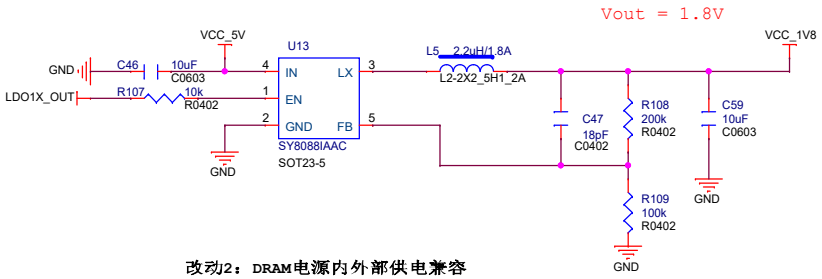
改动11：删除ENAND兼容，优先使用NAND

TF-CARD



改动12：D0~D3增加上拉电阻

1.8V for DRAM(Option)



改动2：DRAM电源内外部供电兼容

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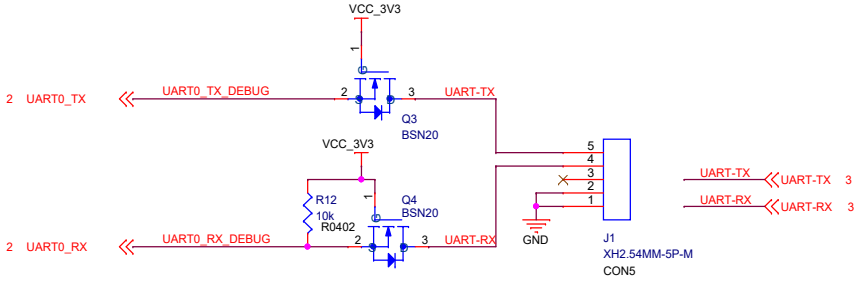
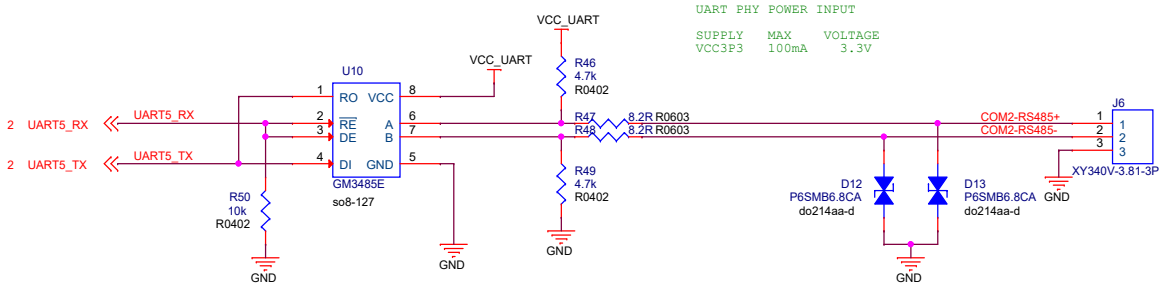
DEBUG

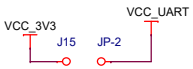


JTAG(Option)

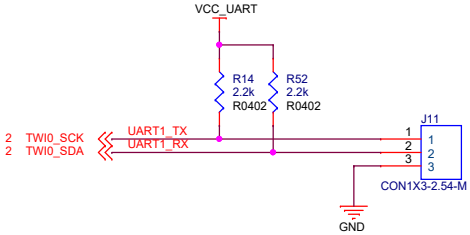
RS485



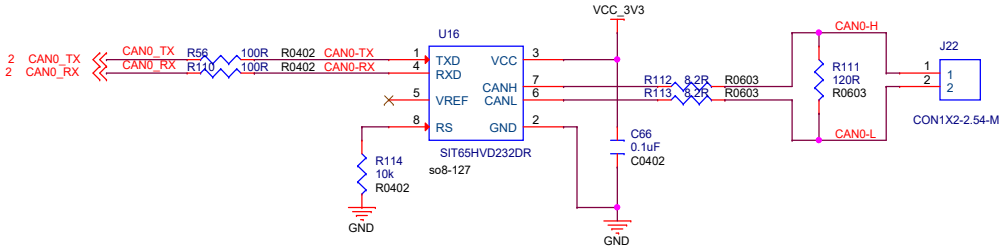
RS485 两线制模式接法，可节省1个PIN，自动控制收发



TWI0/UART1



CAN



改动13：删除RS232，增加CAN

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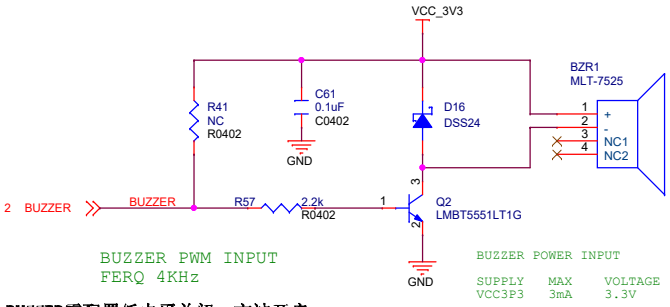
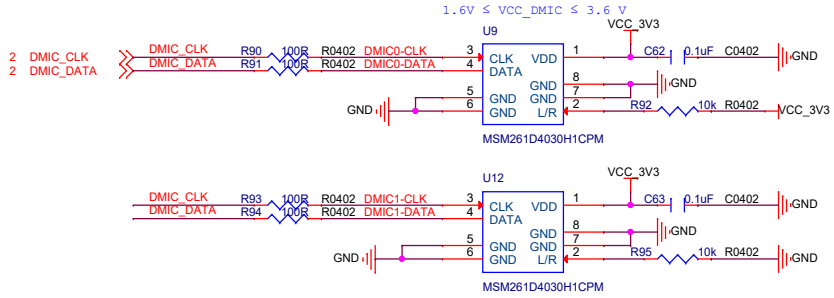
BUZZER



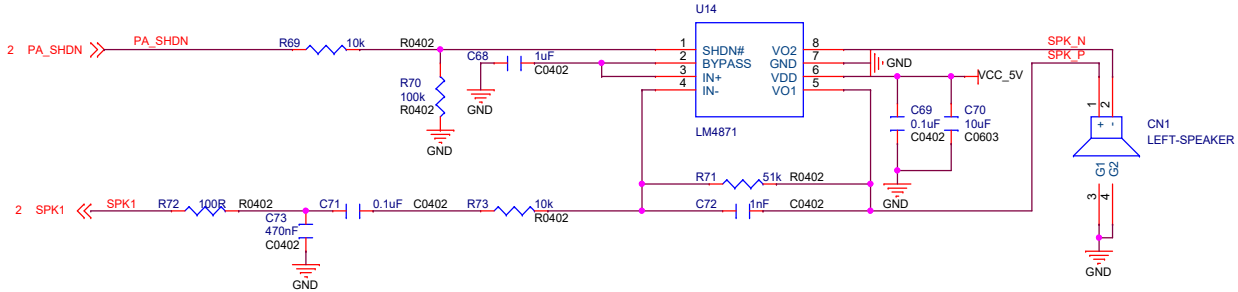
BUZZER需配置低电平关闭，方波开启

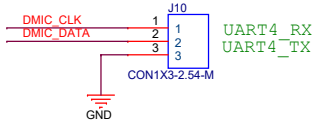
DMIC



注释：单声道只选择一路L或R；立体声选择两路，L/R分别上拉、下拉

SPEAKER





<Variant Name>

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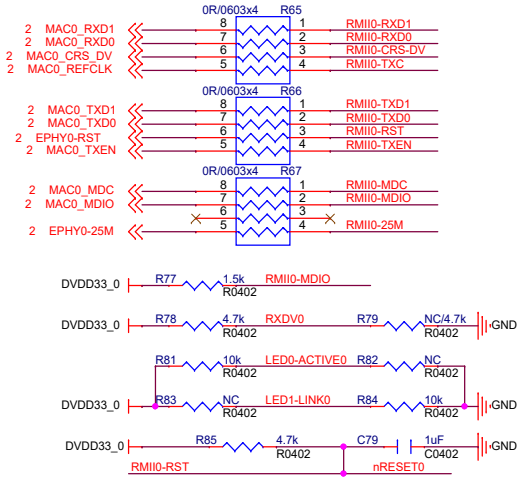
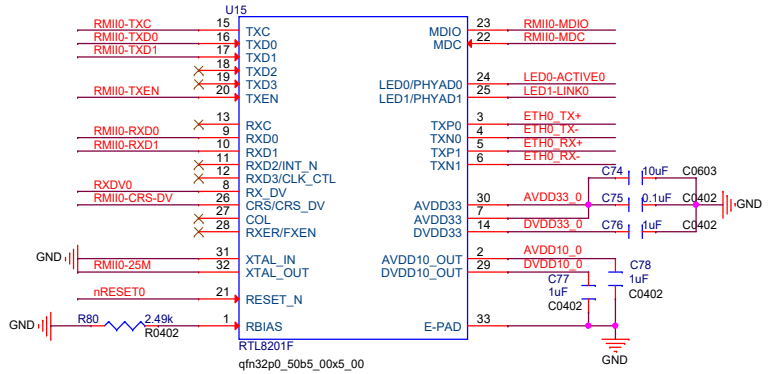
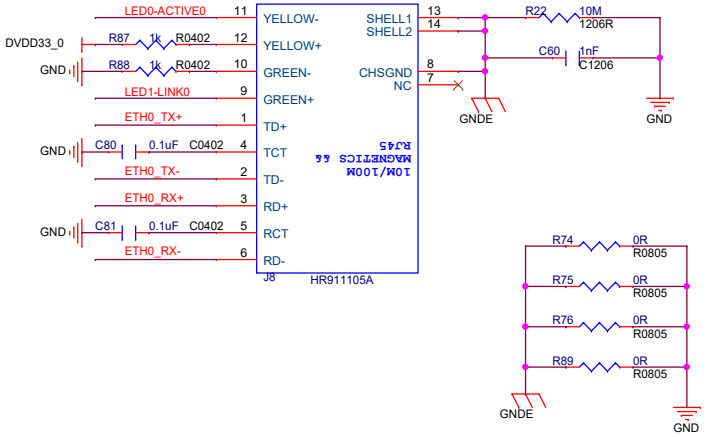
RMII0-100M



	Pull high	Pull down
RXDV	RMII mode	MII mode
RXD3(内部PD)	TXC input	TXC output
RXD1(内部PD)	WOL mode	LED mode

PHY-ADDR	LED1-LINK	LED0-ACTIVE
addr = 5' d0	Pull down	Pull down
addr = 5' d1	Pull down	Pull high
addr = 5' d2	Pull high	Pull down
addr = 5' d3	Pull high	Pull high





<Variant Name>

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