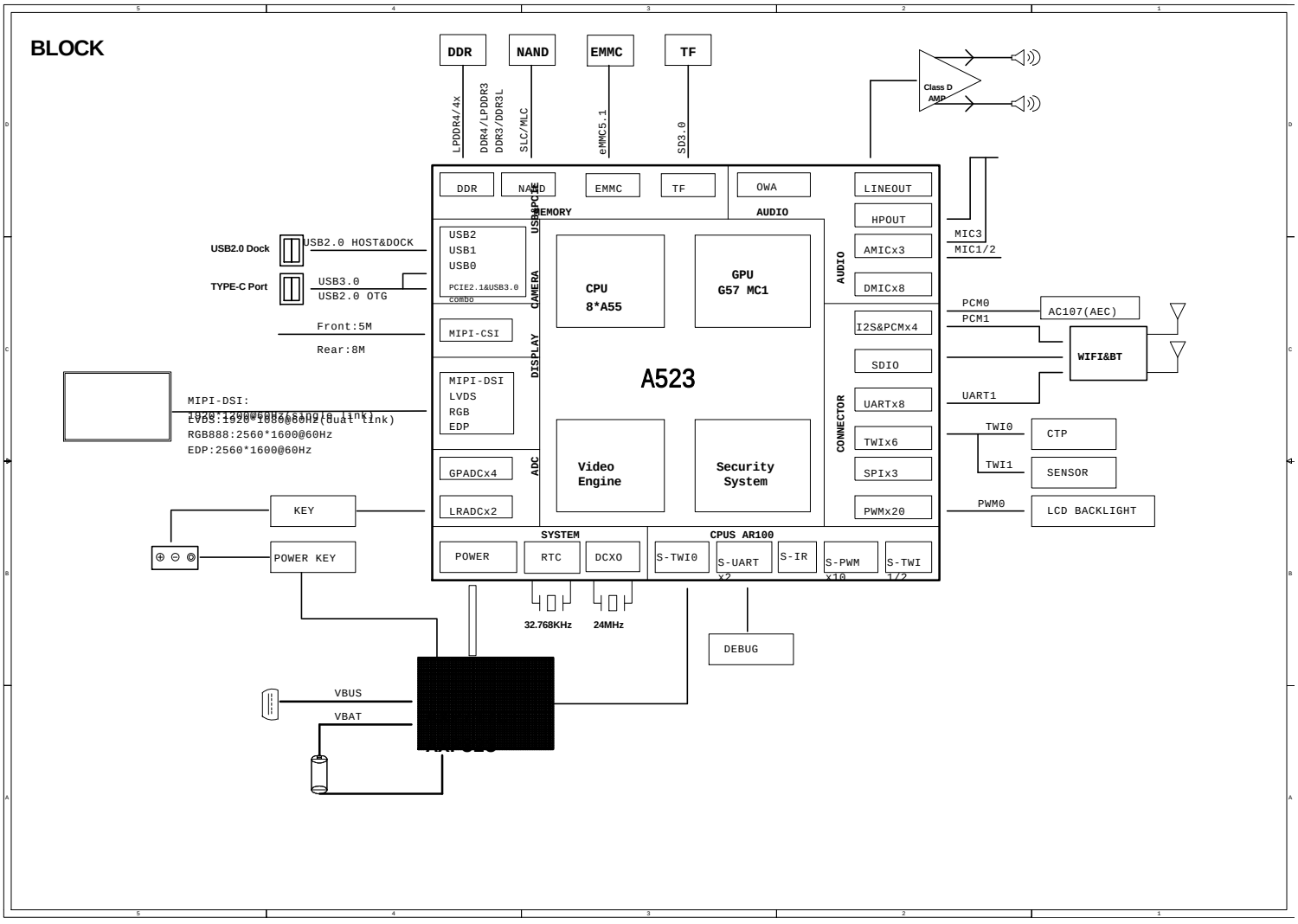
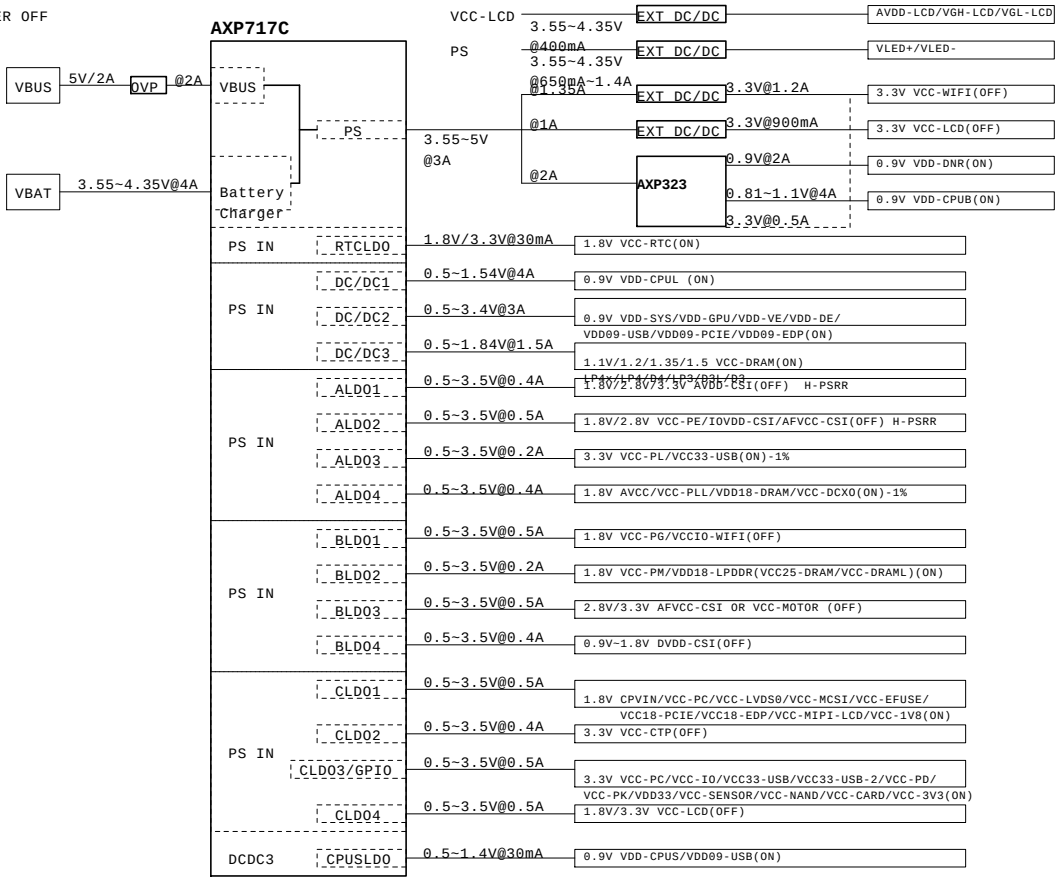

BLOCK
DDR
NAND
EMMC
TF
LPDDR4/4x
DDR4/LPDDR3
DDR3/DDR3L
SLC/MLC
eMMC5.1
SD3.0
Class D AMP
MEMORY
AUDIO
USB/PCIE
CAMERA
DISPLAY
ADC
AUDIO
CONNECTOR
OWA
LINEOUT
HPOUT
AMICx3
DMICx8
I2S&PCMx4
SDIO
UARTx8
TWIx6
SPIx3
PWMx20
USB2
USB1
USB0
PCIE2.1&USB3.0 combo
MIPI-CSI
MIPI-DSI
LVDS
RGB
EDP
GPADCx4
LRADCx2
CPU 8*A55
GPU G57 MC1
A523
Video Engine
Security System
SYSTEM
CPUS AR100
POWER
RTC
DCXO
S-TWI0
S-UART x2
S-IR
S-PWM x10
S-TWI 1/2
32.768KHz
24MHz
DEBUG
USB2.0 Dock
USB2.0 HOST&DOCK
TYPE-C Port
USB3.0
USB2.0 OTG
Front:5M
Rear:8M
MIC3
MIC1/2
PCM0
PCM1
AC107(AEC)
WIFI&BT
UART1
TWI0
CTP
TWI1
SENSOR
PWM0
LCD BACKLIGHT
MIPI-DSI:
RGB888:2560*1600@60Hz
EDP:2560*1600@60Hz
KEY
POWER KEY
VBUS
VBAT

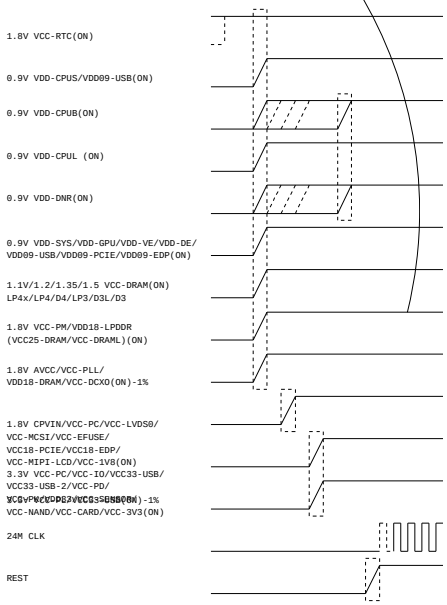
DEFAULT POWER ON

DEFAULT POWER OFF

POWER TREE



POWER SEQUENCE



	AllWinner Technology Co.,Ltd	
	Design Name: A523-STD-AXP717C-AXP323-LPDDR4-4X	
Size: E	Page Name: 04 POWER SEQUENCE	Rev: ?
Date: Wednesday, December 13, 2023	Sheet: 4 of 22	

GPIO ASSIGNMENT

PIN	Define	CFG	Function
PB0	CPUX-TMS	4	DEBUG
PB1	CPUX-TCK	4	
PB2	CPUX-TDO	4	
PB3	CPUX-TDI	4	
PB4	I2S0-MCLK	3	I2S
PB5	I2S0-BCLK	3	
PB6	I2S0-LRCK	3	
PB7			
PB8	I2S0-DIN	3	
PB9	CPUX-TX	2	DEBUG
PB10	CPUX-RX	2	
PB11			
PB12			
PB13			
PB14			

PIN	Define	CFG	Function
PC0	SDC2-DS	3	eMMC
PC1	SDC2-RST	3	
PC2			
PC3			
PC4			
PC5	SDC2-CLK	3	
PC6	SDC2-CMD	3	
PC7			
PC8	SDC2-D3	3	
PC9	SDC2-D4	3	
PC10	SDC2-D0	3	
PC11	SDC2-D5	3	
PC12			
PC13	SDC2-D1	3	
PC14	SDC2-D6	3	
PC15	SDC2-D2	3	
PC16	SDC2-D7	3	

PIN	Define	CFG	Function
PF0	SDC0-D1	2	CARD
PF1	SDC0-D0	2	
PF2	SDC0-CLK	2	
PF3	SDC0-CMD	2	
PF4	SDC0-D3	2	
PF5	SDC0-D2	2	
PF6	SDC0-DET	0	

PIN	Define	CFG	Function
PD0			LCD
PD1			
PD2			
PD3			
PD4			
PD5			
PD6			
PD7			
PD8			
PD9			
PD10	MIPI-DSI1-DP0	4	
PD11	MIPI-DSI1-DN0	4	
PD12	MIPI-DSI1-DP1	4	
PD13	MIPI-DSI1-DN1	4	
PD14	MIPI-DSI1-CKP	4	
PD15	MIPI-DSI1-CKN	4	
PD16	MIPI-DSI1-DP2	4	
PD17	MIPI-DSI1-DN2	4	
PD18	MIPI-DSI1-DP3	4	
PD19	MIPI-DSI1-DN3	4	
PD20			
PD21			
PD22	LCD-RST	1	
PD23	LCD-PWM	3	

PIN	Define	CFG	Function
PG0	WL-SDIO-CLK	2	WIFI/BT
PG1	WL-SDIO-CMD	2	
PG2	WL-SDIO-D0	2	
PG3	WL-SDIO-D1	2	
PG4	WL-SDIO-D2	2	
PG5	WL-SDIO-D3	2	
PG6	BT-UART-RX	2	
PG7	BT-UART-TX	2	
PG8	BT-UART-CTS	2	
PG9	BT-UART-RTS	2	
PG10			
PG11	BT-PCM-CLK	3	
PG12	BT-PCM-SYNC	3	
PG13	BT-PCM-DIN	3	
PG14	BT-PCM-DOUT	3	

PIN	Define	CFG	Function
PM0	WL-WAKE-AP	0	WIFI/BT
PM1	WL-REG-ON	1	
PM2	BT-RESETN	1	
PM3	AP-WAKE-BT	1	
PM4	BT-WAKE-AP	0	
PM5	WL-DIS-N	1	

PIN	Define	CFG	Function
PH0	TWI0-SCK	2	TWI
PH1	TWI0-SDA	2	
PH2	TWI1-SCK	2	
PH3	TWI1-SDA	2	
PH4	PS-EINT	14	GPIO
PH5	OVP-ACOK	0	
PH6	PA-SHDN	1	
PH7	GMA340-SEL	1	
PH8	GMA340-OE	1	
PH9	CTP-INT	14	
PH10	CTP-RST	1	
PH11	GS-INT	14	
PH12	TWI3-SCK	3	TWI
PH13	TWI3-SDA	3	
PH14	3V3-1V8-EN	1	GPIO
PH15			
PH16			
PH17	DDR-PARA-SEL-GPIO	0	
PH18	LCD-BL-EN	1	
PH19			

PIN	Define	CFG	Function
PL0	PMU-SCK	2	CPUS
PL1	PMU-SDA	2	
PL2	USB-VBUSDET	0	
PL3	ACIN-DET	0	
PL4	USB0-EN	1	
PL5	GYRO-INT1	14	
PL6	GYRO-INT2	14	
PL7	VCC-WIFI-PWREN	1	
PL8	USB1-DRVVBUS	1	
PL9	EINT-HAL	14	
PL10	KD-EINT	14	
PL11	LED-EN	1	
PL12	USB-DRVVBUS	1	
PL13	CC-INT	14	

PIN	Define	CFG	Function
PK0	MCSIA-D0N	2	MIPI-CSI
PK1	MCSIA-D0P	2	
PK2	MCSIA-D1N	2	
PK3	MCSIA-D1P	2	
PK4	MCSIA-CKN	2	
PK5	MCSIA-CKP	2	
PK6	MCSIB-D0N	2	
PK7	MCSIB-D0P	2	
PK8	MCSIB-D1N	2	
PK9	MCSIB-D1P	2	
PK10			
PK11			
PK12	MCSIC-D0N	2	
PK13	MCSIC-D0P	2	
PK14	MCSIC-D1N	2	
PK15	MCSIC-D1P	2	
PK16	MCSIC-CKN	2	
PK17	MCSIC-CKP	2	
PK18			
PK19			
PK20			
PK21			
PK22			
PK23			

PIN	Define	CFG	Function
PE0			CAMERA
PE1			
PE2			
PE3			
PE4			
PE5			
PE6	MCSIB-STBY-F	1	
PE7	MCSIB-RST-F	1	
PE8	MCSIA-STBY-R	1	
PE9	MCSIA-RST-R	1	
PE10			
PE11			
PE12			
PE13	MCSI-SCK	2	
PE14	MCSI-SDA	2	
PE15	MCSI-MCLK	2	

AllWinner Technology Co.,Ltd	
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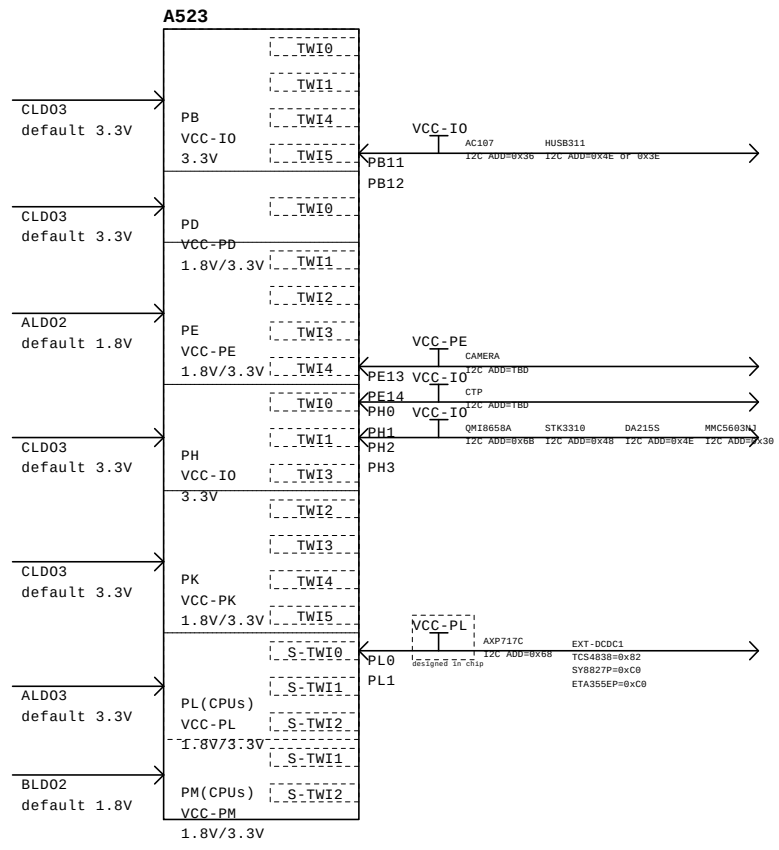
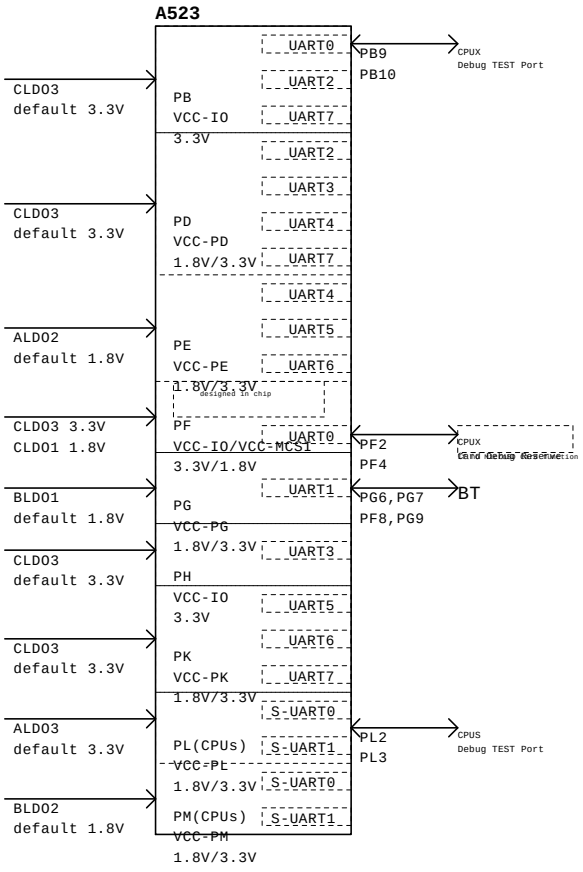
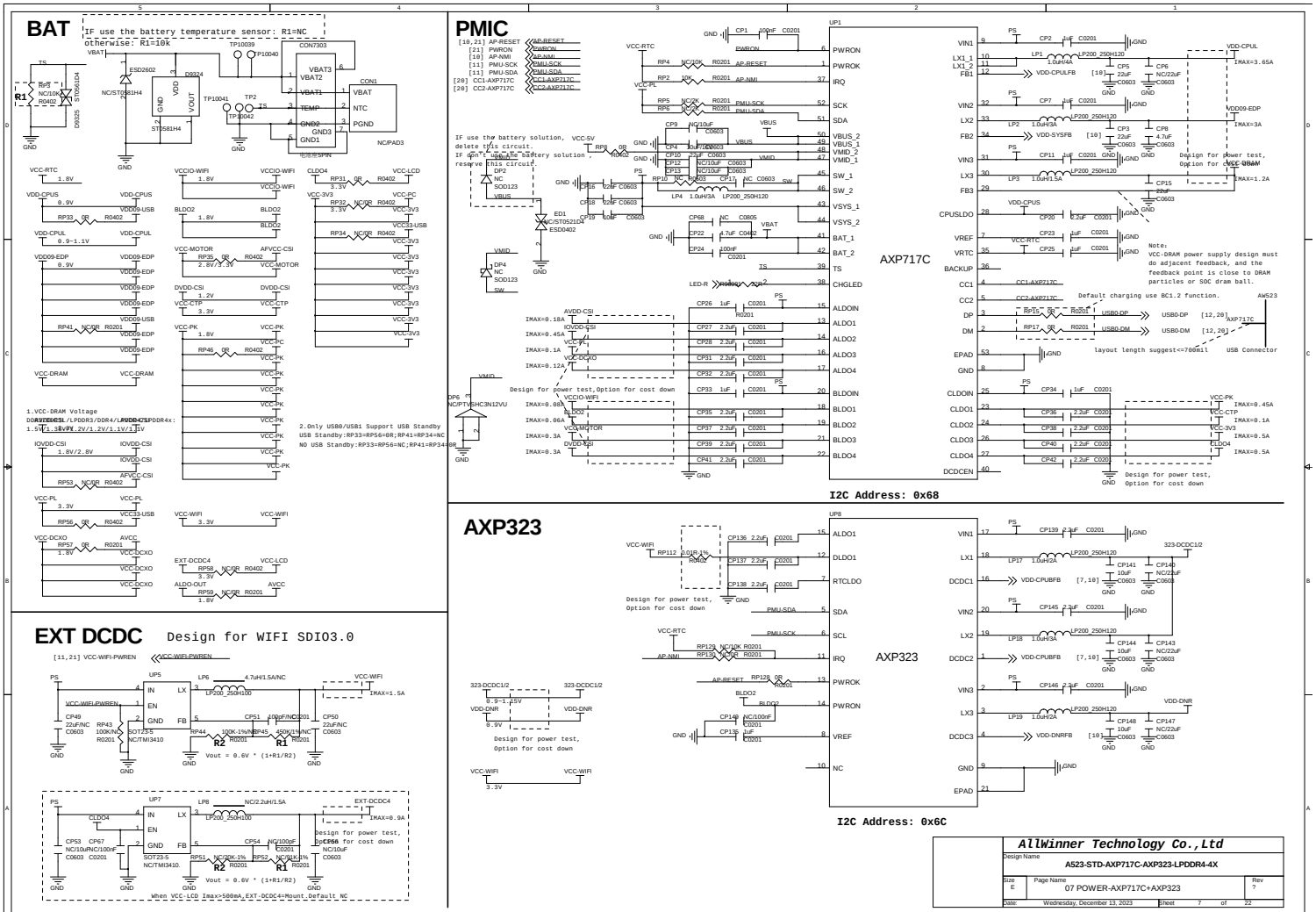
TWI MAP

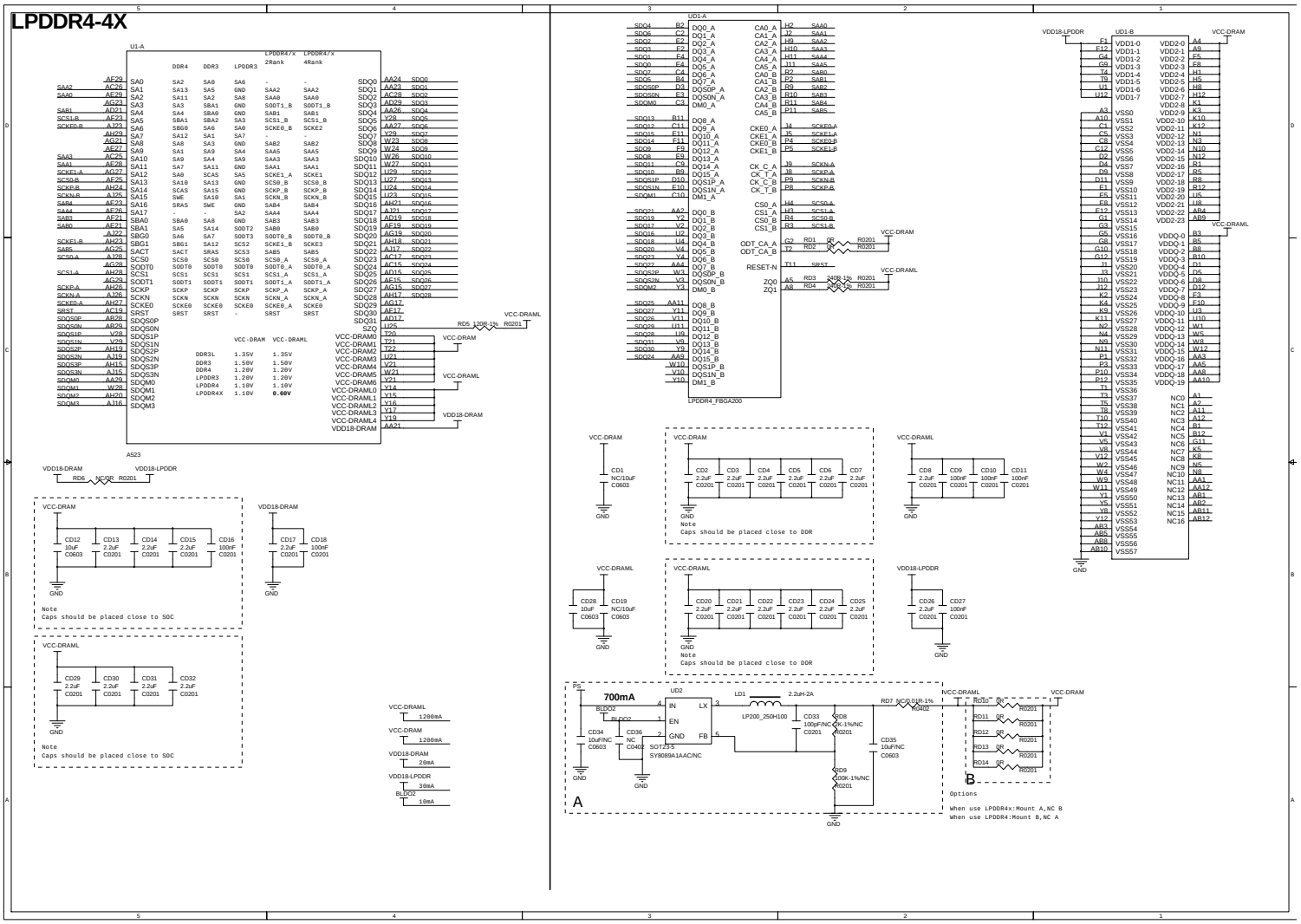


UART MAP

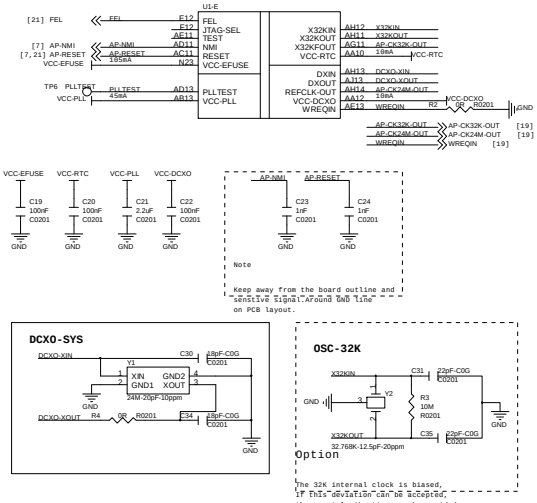



BAT
IF use the battery temperature sensor: R1=NC
otherwise: R1=10k
PMIC
AXP717C
I2C Address: 0x68
AXP323
I2C Address: 0x6C
EXT DCDC
Design for WIFI SDIO3.0
AllWinner Technology Co.,Ltd
A523-STD-AXP717C-AXP323-LPDDR4-4X
07 POWER-AXP717C+AXP323

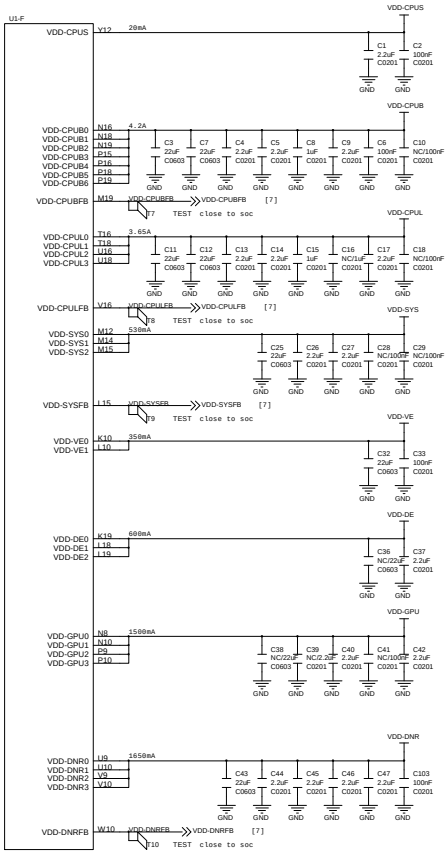
LPDDR4-4X

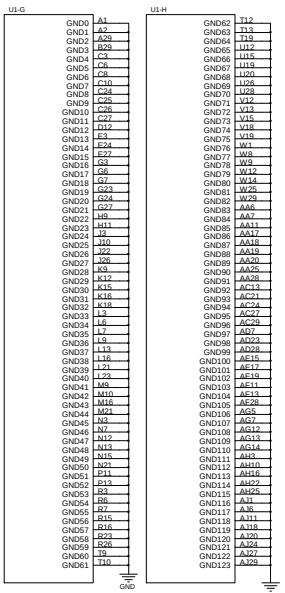

U1-A
AS23
VCC-DRAM
VCC-DRAML
VDD18-DRAM
VDD18-LPDDR
GND
Note
Caps should be placed close to SOC
UD1-A
LPDDR4_FBGA200
UD1-B
700mA
LP200_250H100
SY8089A1AAC/NC
Options
When use LPDDR4x:Mount A,NC B
When use LPDDR4:Mount B,NC A

SYS



CORE POWER





GPIO

U1-B

TP1	J24	PB0/UART2-TX/SPI2-CS0/JTAG-MS/LCD0-D0/PW
TP32	J25	PB1/UART2-RX/SPI2-CLK/JTAG-CK/LCD0-D1/PW
TP33	H27	PB2/UART2-RTS/SPI2-MOSI/JTAG-DI/LCD0-D8/
TP43	H28	PB3/UART2-CTS/SPI2-MISO/JTAG-DI/LCD0-D9/
[20] PA-SHDN	J27	PB4/TWI1-SCK/I2S0-MCLK/TRACE-DATA2/PWM-8
GPIO_LCM_VCC_EN	J28	PB5/TWI1-SDA/I2S0-BCLK/TRACE-CLK/PWM-9/H
	J29	PB6/I2S0-LRCK/TRACE-DATA0/PWM-10/HDMI-CE
LED-G	K27	PB7/OWA-IN/I2S0-DOUT0/I2S0-DIN1/LCD0-D16
LED-B	K28	PB8/OWA-OUT/I2S0-DIN0/I2S0-DOUT1/LCD0-D1
[21] CPUX-TX	L24	PB9/UART0-TX/TWI0-SCK/TRACE-DATA1/I2S0-D
[21] CPUX-RX	L25	PB10/UART0-RX/TWI0-SDA/PWM-1/I2S0-DIN3/I
	L26	PB11/TWI5-SCK/UART7-RTS/SPI1-CS0/PWM-2/P
	L27	PB12/TWI5-SDA/UART7-CTS/SPI1-CLK/PWM-3/P
EINT_RO	L28	PB13/TWI4-SCK/UART7-TX/SPI1-MOSI/PWM-4/P
EINT_A_G	L29	PB14/TWI4-SDA/UART7-RX/SPI1-MISO/PWM-5/P

EMMC-DS	R24	PC0/NAND-WE/SDC2-DS/PC-EINT0
EMMC-RST	T27	PC1/NAND-ALE/SDC2-RST/PC-EINT1
	N26	PC2/NAND-CLE/SPI0-MOSI/SPIF-MOSI/PC-EINT
	N25	PC3/NAND-CE1/SPI0-CS0/SPIF-CS0/PC-EINT3
	N24	PC4/NAND-CE0/SPI0-MISO/SPIF-MISO/PC-EINT
[13] EMMC-DS	T28	PC5/NAND-RE/SDC2-CLK/PC-EINT5
[13] EMMC-RST	R29	PC6/NAND-RB0/SDC2-CMD/PC-EINT6
[13] EMMC-CLK	R25	PC7/NAND-RB1/SPI0-CS1/SPIF-DQS/PC-EINT7
[13] EMMC-CMD	P29	PC8/NAND-DQ7/SDC2-D3/SPIF-D7/PC-EINT8
	P27	PC9/NAND-DQ6/SDC2-D4/SPIF-D6/PC-EINT9
	P28	PC10/NAND-DQS/SDC2-D0/SPIF-D5/PC-EINT10
	P27	PC11/NAND-DQ4/SDC2-D5/SPIF-D4/PC-EINT11
	N29	PC12/NAND-DQS/SPI0-CLK/SPIF-CLK/PC-EINT1
	N28	PC13/NAND-DQ3/SDC2-D1/PC-EINT13
	N27	PC14/NAND-DQ2/SDC2-D6/PC-EINT14
	M28	PC15/NAND-DQ1/SDC2-D2/SPI0-WP/SPIF-WP/PC
	M27	PC16/NAND-DQ0/SDC2-D7/SPI0-HOLD/SPIF-HOL
VCC-PC	N22	VCC-PC

EMMC-CLK — RM1 33R R0201 — T28

	A24	PD0/LCD0-D2/LVDS0-D0P/DSI0-D0P/PWM-0/PD-
	B24	PD1/LCD0-D3/LVDS0-D0N/DSI0-D0N/PWM-1/PD-
	A25	PD2/LCD0-D4/LVDS0-D1P/DSI0-D1P/PWM-2/PD-
	B25	PD3/LCD0-D5/LVDS0-D1N/DSI0-D1N/PWM-3/PD-
	A26	PD4/LCD0-D6/LVDS0-D2P/DSI0-CKP/PWM-4/PD-
	B26	PD5/LCD0-D7/LVDS0-D2N/DSI0-CKN/PWM-5/PD-
	A27	PD6/LCD0-D10/LVDS0-CKP/DSI0-D2P/PWM-6/PD
	B27	PD7/LCD0-D11/LVDS0-CKN/DSI0-D2N/PWM-7/PD
	A28	PD8/LCD0-D12/LVDS0-D3P/DSI0-D3P/PWM-8/PD
	B28	PD9/LCD0-D13/LVDS0-D3N/DSI0-D3N/PWM-9/PD
[14] MIPI-DSI1-DP0	C29	PD10/LCD0-D14/LVDS1-D0P/DSI1-D0P/PWM-10/
[14] MIPI-DSI1-DN0	C29	PD11/LCD0-D15/LVDS1-D0N/DSI1-D0N/PWM-11/
[14] MIPI-DSI1-DP1	D28	PD12/LCD0-D18/LVDS1-D1P/DSI1-D1P/PWM-12/
[14] MIPI-DSI1-DN1	D29	PD13/LCD0-D19/LVDS1-D1N/DSI1-D1N/PWM-13/
[14] MIPI-DSI1-CKP	E28	PD14/LCD0-D20/LVDS1-D2P/DSI1-CKP/PWM-14/
[14] MIPI-DSI1-CKN	E29	PD15/LCD0-D21/LVDS1-D2N/DSI1-CKN/PWM-15/
[14] MIPI-DSI1-DP2	F28	PD16/LCD0-D22/LVDS1-CKP/DSI1-D2P/PWM-16/
[14] MIPI-DSI1-DN2	F29	PD17/LCD0-D23/LVDS1-CKN/DSI1-D2N/PWM-17/
[14] MIPI-DSI1-DP3	G28	PD18/LCD0-CLK/LVDS1-D3P/DSI1-D3P/PWM-18/
[14] MIPI-DSI1-DN3	G29	PD19/LCD0-DE/LVDS1-D3N/DSI1-D3N/PWM-19/U
	G25	PD20/LCD0-HSYNC/PWM-2/UART2-TX/UART7-RTS
	G26	PD21/LCD0-VSYNC/PWM-3/UART2-RX/UART7-CTS
[14] LCD-RST	G27	PD22/PWM-1/SPI1-HOLD/DBI-DCX/DBI-WRX/UAR
[14] LCD-PWM	J23	PD23/PWM-0/SPI1-WP/DBI-TE/UART2-CTS/UART
VCC-PD 150mA		VCC-PD
VCC-LVDS0 60mA	K21	VCC-LVDS0

	J1	PE0/MCSI0-MCLK/PE-EINT0
	J2	PE1/TWI2-SCK/UART4-TX/PE-EINT1
	K2	PE2/TWI2-SDA/UART4-RX/PE-EINT2
	K1	PE3/TWI3-SCK/UART4-RTS/PE-EINT3
	L1	PE4/TWI3-SDA/UART4-CTS/PE-EINT4
	L2	PE5/MCSI1-MCLK/PLL1-LOCK-DBG/I2S2-MCLK/LE
[16] MCSI-STBY-F	M1	PE6/I2S2-BCLK/LCD0-TRIG/NCSI-D8/PE-EINT6
[16] MCSI-RST-F	M2	PE7/I2S2-LRCK/LCD1-TRIG/NCSI-D9/PE-EINT7
[16] MCSI-STBY-R	J4	PE8/I2S2-DOUT0/LCD2-TRIG/NCSI-D10/PE-EIN
[16] MCSI-RST-R	J5	PE9/I2S2-DIN0/NCSI-D11/PE-EINT9
	N1	PE10/MCSI2-MCLK/PWM-3/NCSI-D12/PE-EINT10
	N2	PE11/TWI1-SCK/UART5-RTS/SPI2-CS0/UART6-T
	L4	PE12/TWI1-SDA/UART5-CTS/SPI2-CLK/UART6-R
[16] MCSI-SCK	L5	PE13/TWI4-SCK/UART5-TX/SPI2-MOSI/UART6-R
[16] MCSI-SDA	N4	PE14/TWI4-SDA/UART5-RX/SPI2-MISO/UART6-C
[16] MCSI_MCLK	N5	PE15/MCSI2-MCLK/PWM-2/NCSI-D15/PE-EINT15
VCC-PE RV1 0R 0R0201 60mA	J6	VCC-PE

[20] SDC0-D1	C13	PF0/SDC0-D1/JTAG-MS/TRACE-DATA2/I2S3-DIN
[20] SDC0-D0	B13	PF1/SDC0-D0/JTAG-DI/TRACE-DATA1/I2S3-DOU
[20] SDC0-CLK	B12	PF2/SDC0-CLK/UART0-TX/I2S3-DIN2/I2S3-DOU
[20] SDC0-CMD	A12	PF3/SDC0-CMD/JTAG-DO/TRACE-DATA0/I2S3-LR
[20] SDC0-D3	C11	PF4/SDC0-D3/UART0-RX/I2S3-DIN3/I2S3-DOUT
[20] SDC0-D2	B11	PF5/SDC0-D2/JTAG-CK/TRACE-CLK/I2S3-BCLK/
[20] SDC0-DET	C12	PF6/I2S3-MCLK/PF-EINT6

RC1 0R R0201

PG0/SDC1-CLK/PG-EINT0	B1	RW1 33R R0201 — WL-SDIO-CLK [19]
PG1/SDC1-CMD/PG-EINT1	B2	WL-SDIO-CMD [19]
PG2/SDC1-D0/PCIE0-PERST/N/PG-EINT2	P3	WL-SDIO-D0 [19]
PG3/SDC1-D1/PCIE0-WAKEN/PG-EINT3	P2	WL-SDIO-D1 [19]
PG4/SDC1-D2/PCE0-CLKREQN/PG-EINT4	T3	WL-SDIO-D2 [19]
PG5/SDC1-D3/PG-EINT5	T2	WL-SDIO-D3 [19]
PG6/UART1-TX/PG-EINT6	U5	BT-UART-RX [19]
PG7/UART1-RX/PG-EINT7	T4	BT-UART-TX [19]
PG8/UART1-RTS/PG-EINT8	R4	BT-UART-CTS [19]
PG9/UART1-CTS/PG-EINT9	U4	BT-UART-RTS [19]
PG10/I2S1-MCLK/PG-EINT10	U1	
PG11/I2S1-BCLK/PG-EINT11	U2	BT-PCM-CLK [19]
PG12/I2S1-LRCK/PG-EINT12	V2	BT-PCM-SYNC [19]
PG13/I2S1-DOUT0/I2S1-DIN1/PG-EINT13	V3	BT-PCM-DIN [19]
PG14/I2S1-DIN0/I2S1-DOUT1/PG-EINT14	U6	BT-PCM-DOUT [19]
VCC-PG	N6	70mA VCC-PG

Serial port data signal needs to be reversed.

PH0/TWI0-SCK/RGMII0-RXD1/RMII0-RXD1/PH-E	E10	TWI0-SCK — TWI0-SCK [14,15]
PH1/TWI0-SDA/RGMII0-RXD0/RMII0-RXD0/PH-E	E10	TWI0-SDA — TWI0-SDA [14,15]
PH2/TWI1-SCK/CPU-CUR-W/I2S2-DIN3/RGMII0-	D10	TWI1-SCK [22]
PH3/TWI1-SDA/IR-TX/I2S2-DIN2/RGMII0-CLKI	B10	TWI1-SDA [22]
PH4/UART3-TX/SPI1-CS0/CPU-CUR-W/RGMII0-T	A10	SCP_SPI_CSB2 [22]
PH5/UART3-RX/SPI1-CLK/LED-CTRL/RGMII0-TXD0/R	B8	SCP_SPI_CLK2 [8]
PH6/UART3-RTS/SPI1-MOSI/OWA-IN/RGMII0-TX	C9	SCP_SPI_MO2 [17]
PH7/UART3-CTS/SPI1-MISO/OWA-OUT/RGMII0-T	E8	SCP_SPI_MI2 [20] — R3997 0R R0201 — PA-SHDN [20]
PH8/DMIC-CLK/SPI2-CS0/I2S2-MCLK/I2S2-DIN	D8	R3998 0R R0201 — DMIC_CLK [20]
PH9/DMIC-DATA0/SPI2-CLK/I2S2-BCLK/RGMII0	C8	CTP-INT [14,15]
PH10/DMIC-DATA1/SPI2-MOSI/I2S2-LRCK/RGMI	B8	CTP-RST [14,15]
PH11/DMIC-DATA2/SPI2-MISO/I2S2-DOUT0/I2S	A8	GSENSOR_INT [22]
PH12/DMIC-DATA3/TWI3-SCK/I2S2-DIN0/I2S2-	C7	R0998 0R R0201 — GPIO_LCM_VCC_EN
PH13/TWI3-SDA/I2S3-MCLK/RGMII0-EPHY-25M/	B7	LCM_VDDIO1V8_EN R0994 0R R0201 — DMIC_DATA [20]
PH14/I2S3-BCLK/RGMII0-RXD3/RMII0-NULL/PH	A6	F_RST2
PH15/I2S3-LRCK/RGMII0-RXD2/RMII0-NULL/PH	B6	EINT_PROX
PH16/I2S3-DOUT0/I2S3-DIN1/RGMII0-RXCK/RM	A5	DDR-PARA-SEL-GPIO1 [12]
PH17/I2S3-DOUT1/I2S3-DIN0/RGMII0-TXD3/RM	B5	DDR-PARA-SEL-GPIO0 [12]
PH18/IR-TX/I2S3-DOUT2/I2S3-DIN2/RGMII0-T	D6	F_EINT2 [14]
PH19/IR-RX/I2S3-DOUT3/I2S3-DIN3/LEDC/PCI	E6	SDMMC_PWR [11]
VCC-IO	J12	130mA VCC-IO

PK0/MCSIA-D0N/PK-EINT0	A4	MCSIA-D0N [16]
PK1/MCSIA-D0P/PK-EINT1	B4	MCSIA-D0P [16]
PK2/MCSIA-D1N/PK-EINT2	A3	MCSIA-D1N [16]
PK3/MCSIA-D1P/PK-EINT3	B3	MCSIA-D1P [16]
PK4/MCSIA-CKN/TWI2-SCK/PK-EINT4	B2	MCSIA-CKN [16]
PK5/MCSIA-CKP/TWI2-SDA/PK-EINT5	B1	MCSIA-CKP [16]
PK6/MCSIB-D0N/PK-EINT6	C5	MCSIB-D0N [16]
PK7/MCSIB-D0P/PK-EINT7	C4	MCSIB-D0P [16]
PK8/MCSIB-D1N/PK-EINT8	E5	MCSIB-D1N [16]
PK9/MCSIB-D1P/PK-EINT9	E4	MCSIB-D1P [16]
PK10/MCSIB-CKN/TWI-SCK/PK-EINT10	G5	GPIO_FLASH_STROBE [16]
PK11/MCSIB-CKP/TWI3-SDA/PK-EINT11	G4	GPIO_FLASH_TORCH [16]
PK12/MCSIC-D0N/UART7-TX/TWI4-SCK/NCSI-PC	C2	MCSIC-D0N [16]
PK13/MCSIC-D0P/UART7-RX/TWI4-SDA/NCSI-MC	C1	MCSIC-D0P [16]
PK14/MCSIC-D1N/UART7-RTS/UART5-RTS/NCSI-	D2	MCSIC-D1N [16]
PK15/MCSIC-D1P/UART7-CTS/UART5-CTS/NCSI-	D1	MCSIC-D1P [16]
PK16/MCSIC-CKN/TWI5-SCK/UART5-TX/NCSI-D0	F2	MCSIC-CKN [16]
PK17/MCSIC-CKP/TWI5-SDA/UART5-RX/NCSI-D1	E1	MCSIC-CKP [16]
PK18/MCSID-D0N/MCSI0-MCLK/UART8-TX/NCSI-	F1	
PK19/MCSID-D0P/TWI2-SCK/UART6-RX/NCSI-D3	E2	
PK20/MCSID-D1N/TWI2-SDA/UART6-RTS/NCSI-D	G2	
PK21/MCSID-D1P/MCSI-MCLK/UART6-CTS/NCSI	G1	GPIO_USBSWITCH_EN 13
PK22/MCSID-CKN/TWI3-SCK/PWM-6/NCSI-D6/PK	H2	MOTOR-EN 13
PK23/MCSID-CKP/TWI3-SDA/PWM-7/NCSI-D7/PK	H1	GPIO_BIAS_EN 13
VCC-PK	J7	98mA VCC-PK
VCC-MCSI	H10	25mA VCC-MCSI

PL0/S-TWI0-SCK/S-PL-EINT0	AJ7	PMU-SCK [7]
PL1/S-TWI0-SDA/S-PL-EINT1	AH7	PMU-SDA [7]
PL2/S-UART0-TX/S-UART1-TX/S-PWM-2/S-PL-E	AJ8	TP5
PL3/S-UART0-RX/S-UART1-RX/S-PWM-3/S-PL-E	AH8	TP66
PL4/S-JTAG-MS/S-CAN-TX0/S-PWM-4/I2S0-BCL	AH9	TP7
PL5/S-JTAG-CK/S-CAN-RX0/S-PWM-5/I2S0-LRC	AJ9	TP8
PL6/S-JTAG-DO/S-PWM-6/I2S0-DIN1/I2S0-DOU	AE9	TP9
PL7/S-JTAG-DI/S-PWM-7/I2S0-DOUT1/I2S0-DI	AF9	VCC-WIFI-PWREN R0980 0R R0201 — TP11 — [7,21] DSP-TMS [20,21]
PL8/S-TWI1-SCK/S-DJTAG-MS/S-RJTAG-MS/I2S	AG10	DSP-TMS — TP12 — DSP-TCK [21,22]
PL9/S-TWI1-SDA/S-DJTAG-CK/S-RJTAG-CK/S-P	AC9	DSP-TCK — TP13 — DSP-TDO [20,21]
PL10/S-PWM-0/S-DJTAG-DO/S-RJTAG-DO/DMIC-	AD9	DSP-TDO — TP14 — DSP-TDI [16,21]
PL11/S-IR-RX/S-DJTAG-DI/S-RJTAG-DI/DMIC-	AE7	DSP-TDI
PL12/S-TWI2-SCK/S-PWM-8/S-UART0-TX/DMIC-	AE7	
PL13/S-TWI2-SDA/S-PWM-9/S-UART0-RX/DMIC-	AA9	58mA
VCC-PL		VCC-PL

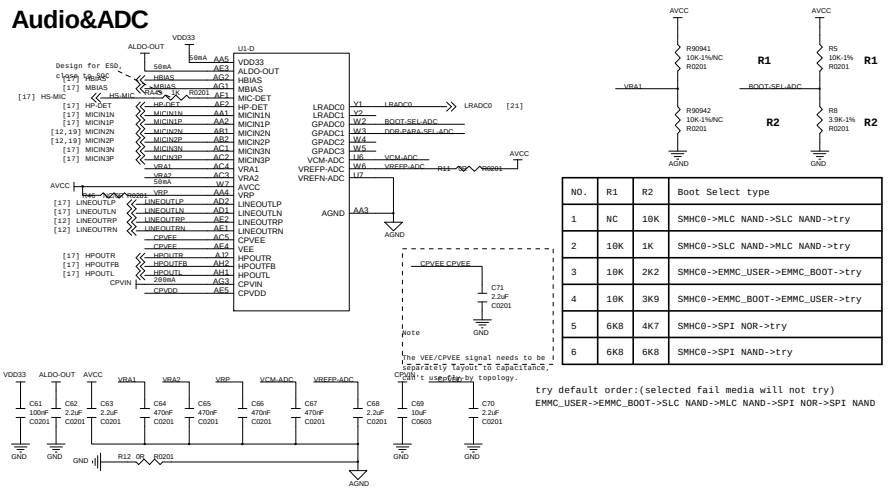
PM0/S-UART0-TX/S-UART1-TX/S-PWM-2/S-PM-E	AJ4	WL-WAKE-AP [19]
PM1/S-UART0-RX/S-UART1-RX/S-PWM-3/S-PM-E	AJ3	WL-REG-ON [19]
PM2/S-TWI1-SCK/S-RJTAG-MS/S-PWM-6/S-PM-E	AH5	BT-RESETN [19]
PM3/S-TWI1-SDA/S-RJTAG-CK/S-PWM-7/S-PM-E	AH4	AP-WAKE-BT [19]
PM4/S-PWM-8/S-RJTAG-DO/S-TWI2-SCK/S-PM-E	AJ5	BT-WAKE-AP [19]
PM5/S-IR-RX/S-RJTAG-DI/S-TWI2-SDA/S-PWM-	AH6	HST_WAK_WF2RESERVED [19]
VCC-PM	AC7	25mA VCC-PM

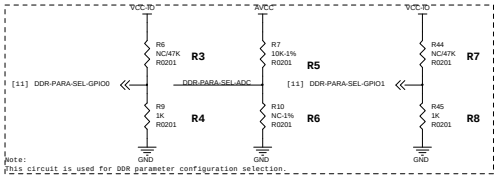
VCC-PC	C48	100nF	C0201	GND
VCC-PD	C49	10uF	C0603	GND
	C50	100nF	C0201	GND
VCC-LVDS0	C51	100nF	C0201	GND
VCC-PE	C52	100nF	C0201	GND
VCC-PG	C54	100nF	C0201	GND
VCC-IO	C55	1uF	C0201	GND
	C56	100nF	C0201	GND
VCC-PK	C57	100nF	C0201	GND
VCC-MCSI	C58	100nF	C0201	GND
VCC-PL	C59	100nF	C0201	GND
VCC-PM	C60	100nF	C0201	GND

GPIO use gide:
1.Note that the voltage of SDC GPIO must matches the external 1D voltage.
2.The pull up voltage of the GPIO is selected to correspond to the power field voltage of GPIO.
3.Power current is PCB layout reference minimum

Size

Audio&ADC



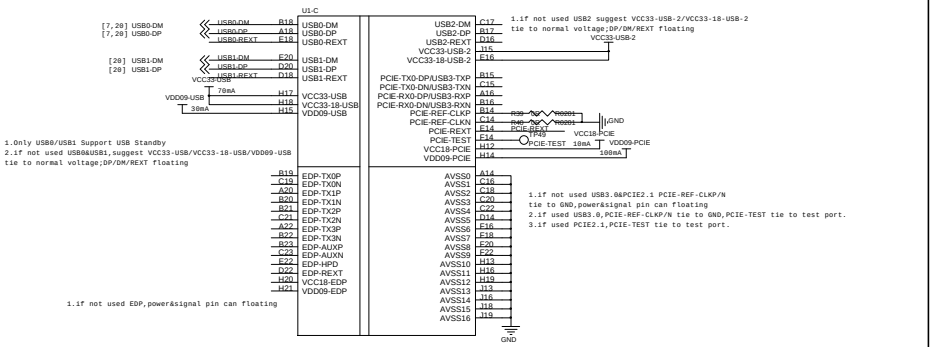


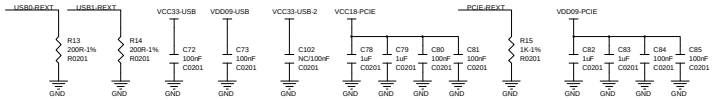
NO.	R1	R2	Boot Select type
1	NC	10K	SMHC0->MLC NAND->SLC NAND->try
2	10K	1K	SMHC0->SLC NAND->MLC NAND->try
3	10K	2K2	SMHC0->EMMC_USER->EMMC_BOOT->try
4	10K	3K9	SMHC0->EMMC_BOOT->EMMC_USER->try
5	6K8	4K7	SMHC0->SPI NOR->try
6	6K8	6K8	SMHC0->SPI NAND->try

try default order:(selected fail media will not try)
EMMC_USER->EMMC_BOOT->SLC NAND->MLC NAND->SPI NOR->SPI NAND

GPIO Level(Set by the R7 pull-up and R8 pull-down resistance of PH16 GPIO)	GPIO Level(Set by the R3 pull-up and R4 pull-down resistance of PH17 GPIO)	GPADC Voltage(Fixed pull-up R5 is 10K-1%,Set the voltage by adjusting pull-down resistance)	DDR PARA
0	0	163mV(1K-1%)	DDR PARA 0
0	0	382mV(2.7K-1%)	DDR PARA 1
0	0	608mV(5.1K-1%)	DDR PARA 2
0	0	811mV(8.2K-1%)	DDR PARA 3
0	0	1050mV(14K-1%)	DDR PARA 4
0	0	1315mV(27K-1%)	DDR PARA 5
0	0	1569mV(68K-1%)	DDR PARA 6
0	0	1800mV(NC)	DDR PARA 7
0	1	163mV(1K-1%)	DDR PARA 8
0	1	382mV(2.7K-1%)	DDR PARA 9
0	1	608mV(5.1K-1%)	DDR PARA 10
0	1	811mV(8.2K-1%)	DDR PARA 11
0	1	1050mV(14K-1%)	DDR PARA 12
0	1	1315mV(27K-1%)	DDR PARA 13
0	1	1569mV(68K-1%)	DDR PARA 14
0	1	1800mV(NC)	DDR PARA 15
1	0	163mV(1K-1%)	DDR PARA 16
1	0	382mV(2.7K-1%)	DDR PARA 17
1	0	608mV(5.1K-1%)	DDR PARA 18
1	0	811mV(8.2K-1%)	DDR PARA 19
1	0	1050mV(14K-1%)	DDR PARA 20
1	0	1315mV(27K-1%)	DDR PARA 21
1	0	1569mV(68K-1%)	DDR PARA 22
1	0	1800mV(NC)	DDR PARA 23
1	1	163mV(1K-1%)	DDR PARA 24
1	1	382mV(2.7K-1%)	DDR PARA 25
1	1	608mV(5.1K-1%)	DDR PARA 26
1	1	811mV(8.2K-1%)	DDR PARA 27
1	1	1050mV(14K-1%)	DDR PARA 28
1	1	1315mV(27K-1%)	DDR PARA 29
1	1	1569mV(68K-1%)	DDR PARA 30
1	1	1800mV(NC)	DDR PARA 31

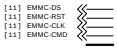
USB&EDP&PCIE





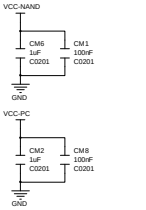
EMMC

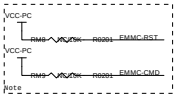
Default:use EMMC



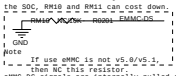
VCC-NAND 200mA

VCC-PC 100mA

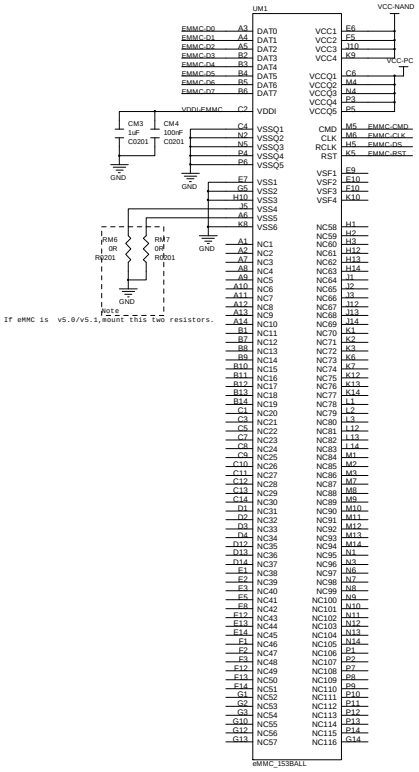




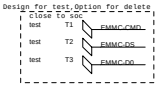
eMMC-RST and eMMC-CMD signals are internally pulled up in the SOC, RM10 and RM11 can cost down.

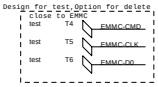


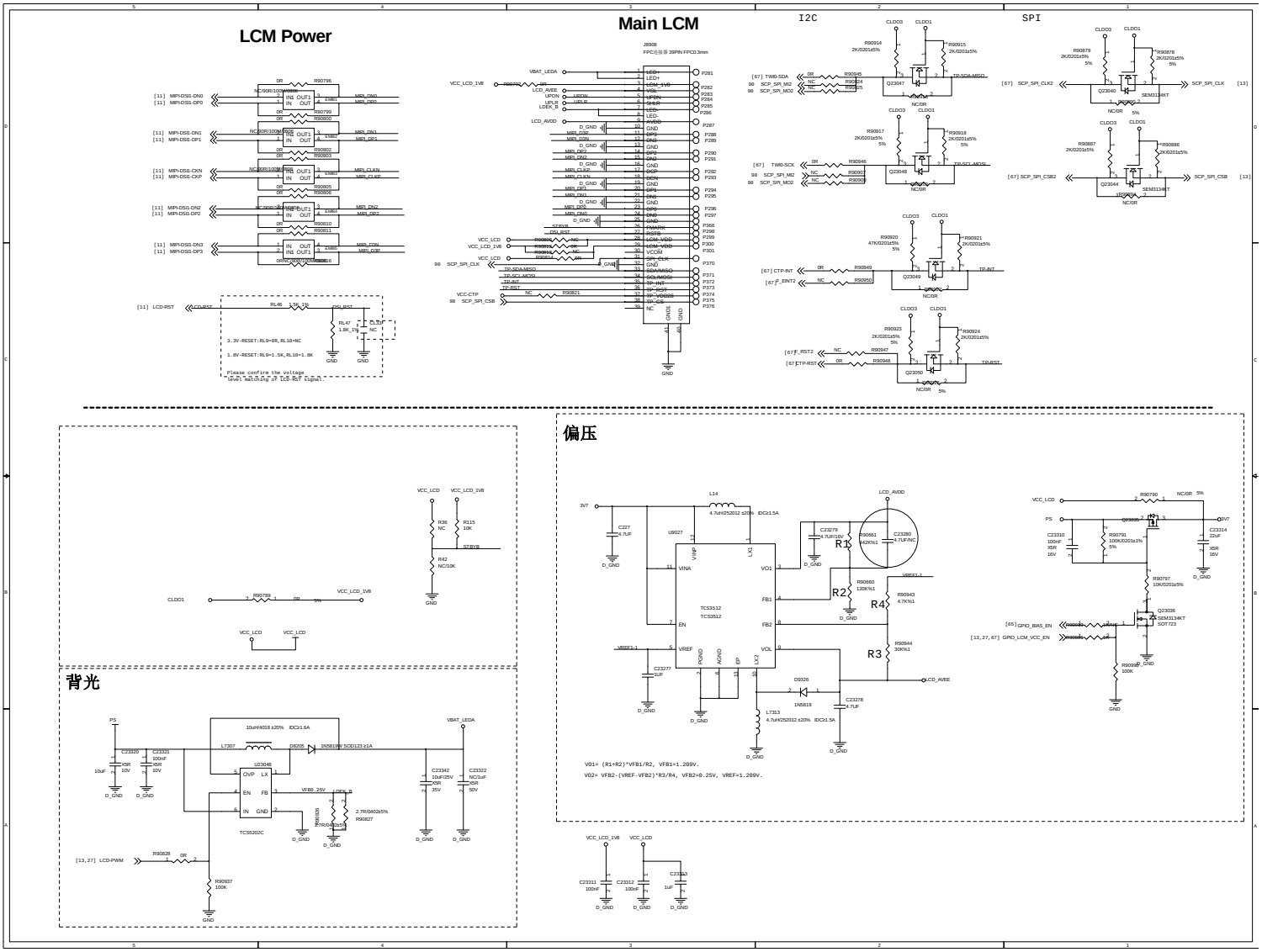
If use eMMC is not v5.0/v5.1, mount this resistor.
eMMC-DS signals are internally pulled down in the SOC, RM10 can cost down.

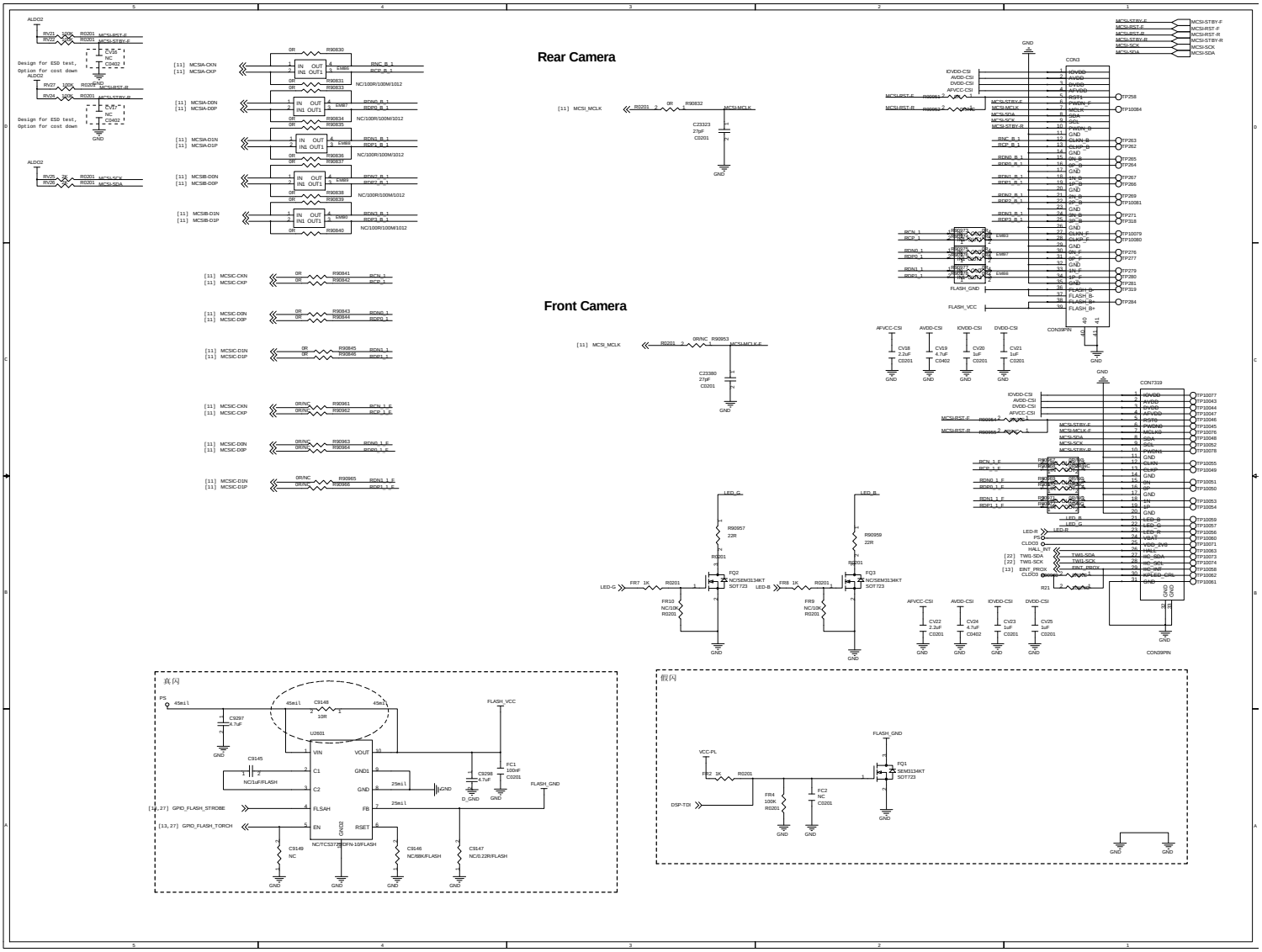


If eMMC is v5.0/v5.1,mount this two resistors.

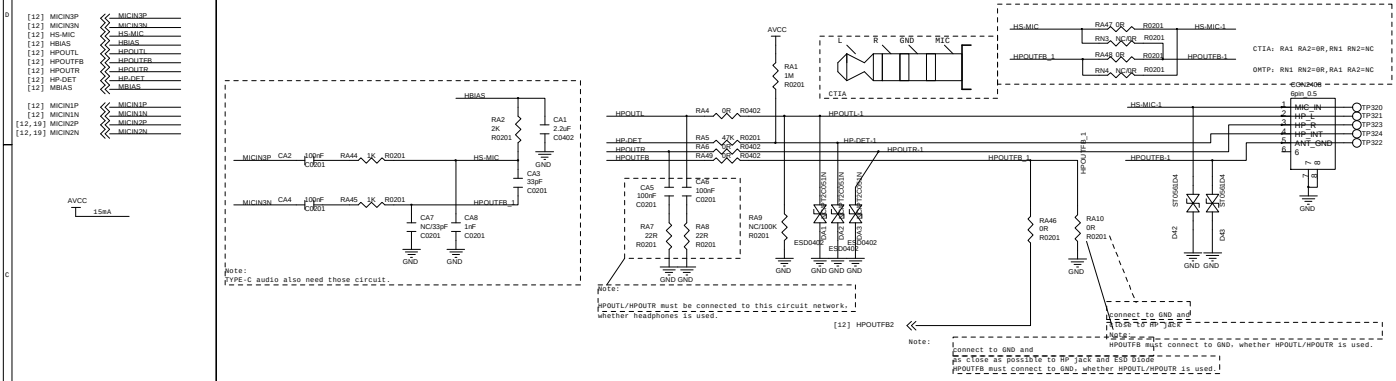




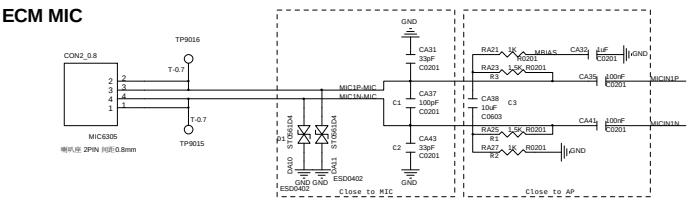

LCM Power
Main LCM
I2C
SPI
背光
偏压
TCS5202C
TCS3512
TCS3512
VO1= (R1+R2)*VFB1/R2, VFB1=1.209V.
VO2= VFB2-(VREF-VFB2)*R3/R4, VFB2=0.25V, VREF=1.209V.

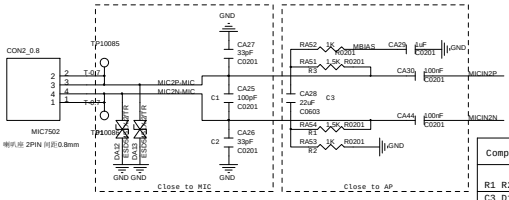

Rear Camera
Front Camera
CON3
CON7319
CON39PIN
真闪
假闪

HEADPHONE



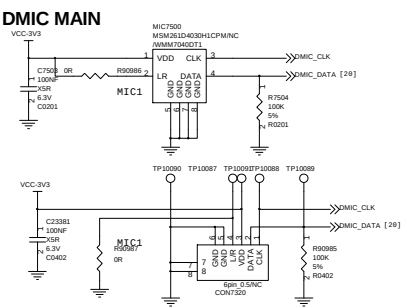
ECM MIC





Component	Diferential	single-ended
R1 R2 C1	USE	NC
C3 D1 C2	33pF	0R
R3	2.2K	1K

DMIC MAIN



HPOUTL 19,30

HPOUTR 19,30

PA-SHDN 12

[12] LINEOUTRP LINEOUTRP

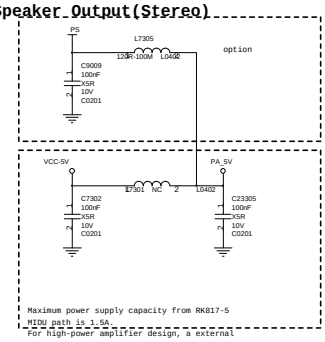
[12] LINEOUTRN LINEOUTRN

[12] LINEOUTLP LINEOUTLP

[12] LINEOUTLN LINEOUTLN

Application Option: 2x Speaker Output

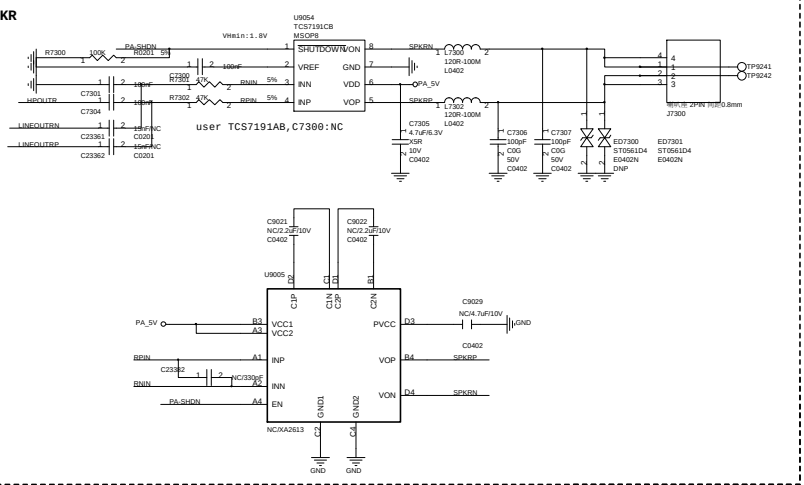
Speaker Output(Stereo)



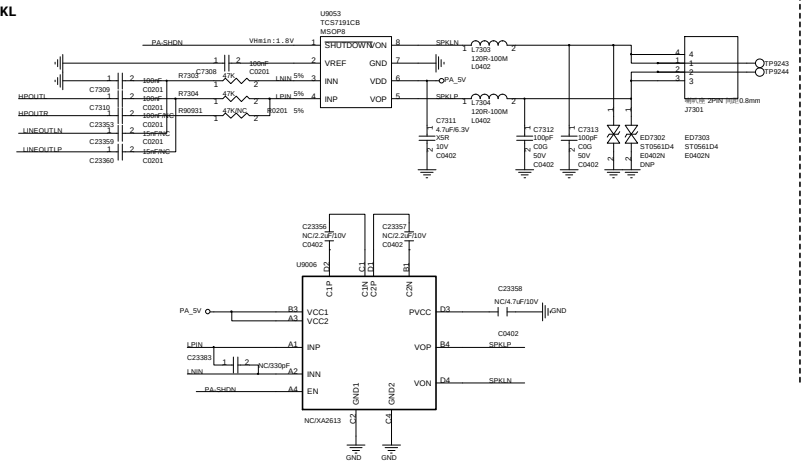
Maximum power supply capacity from RK817-5 MIDU path is 1.5A.

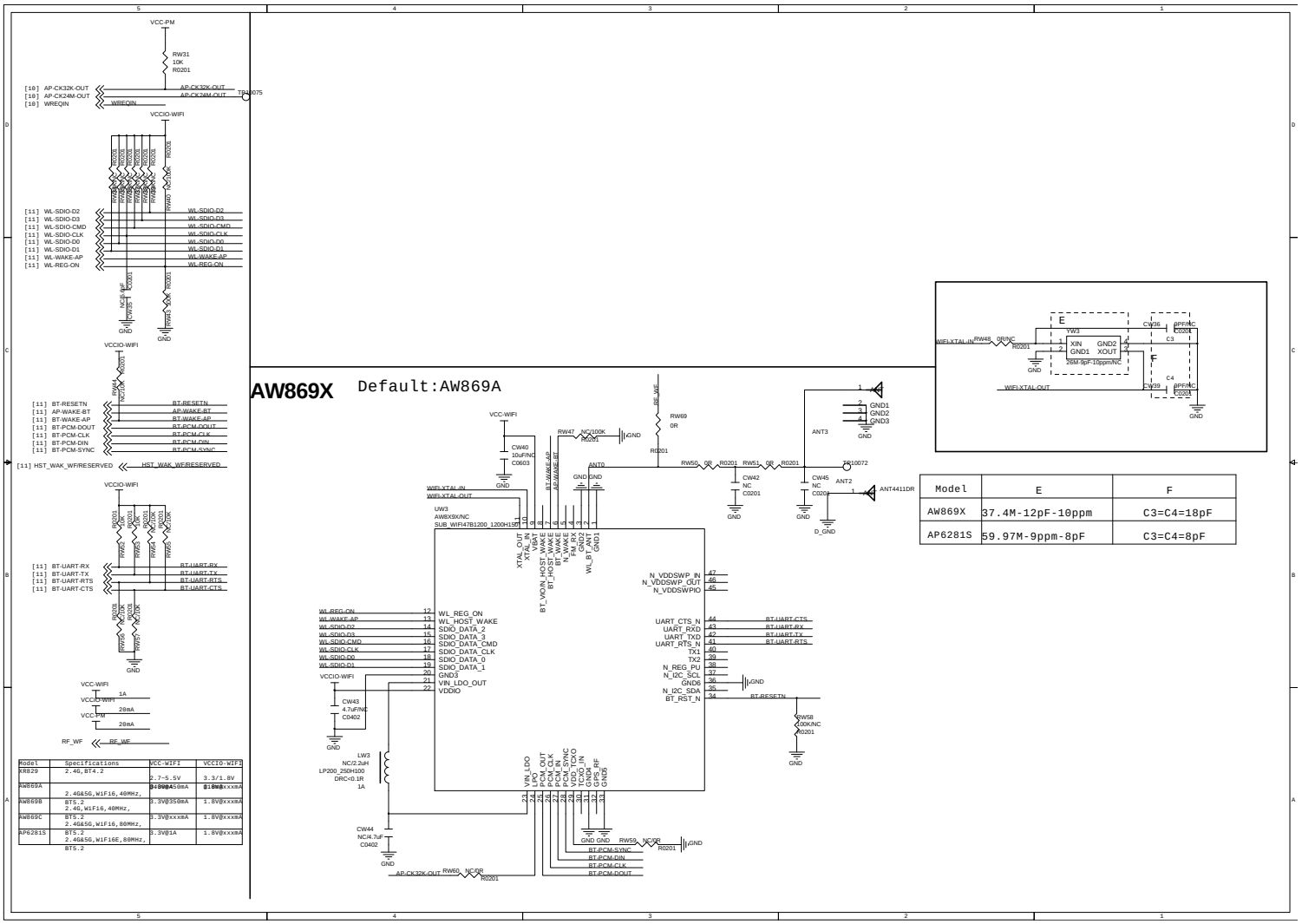
For high-power amplifier design, a external boost circuit is need, and the boost circuit can directly take power from the VBAT.

SPKR



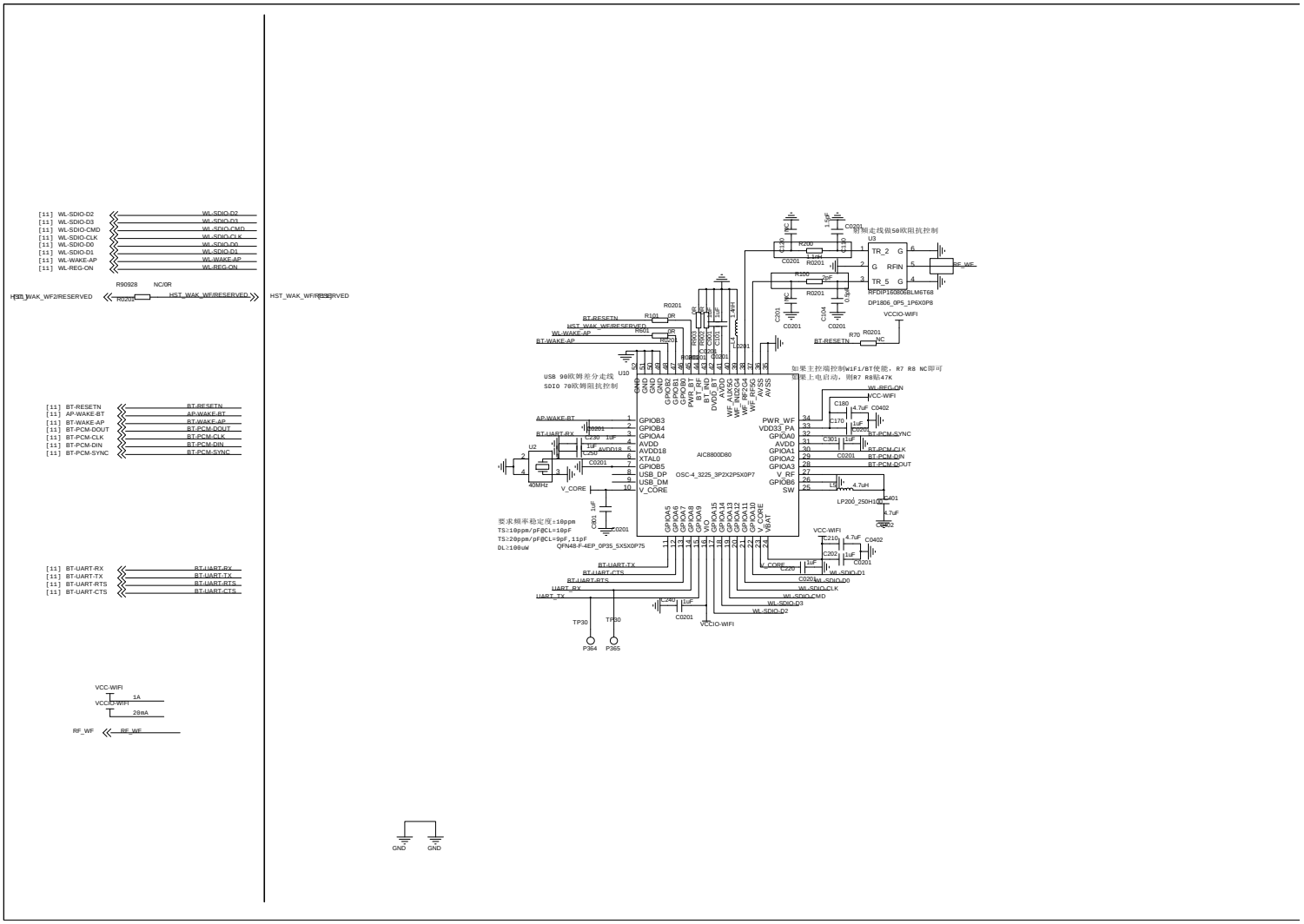
SPKL



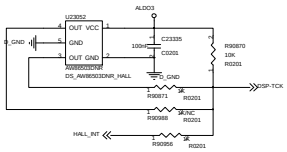


Model	E	F
AW869X	37.4M-12pF-10ppm	C3=C4=18pF
AP6281S	59.97M-9ppm-8pF	C3=C4=8pF

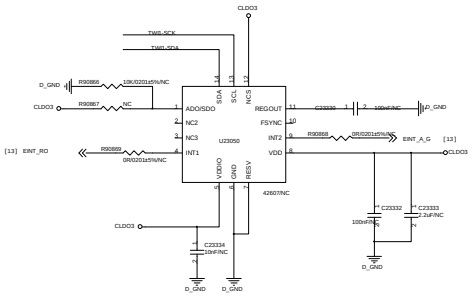
Model	Specifications	VCC-WIFI	VCCIO-WIFI
XR829	2.4G,BT4.2	2.7~5.5V	3.3/1.8V
AW869A	2.4G&5G,WiFi6,40MHz, BT5.2	3.3V@450mA	1.8V@xxxmA
AW869B	2.4G,WiFi6,40MHz, BT5.2	3.3V@350mA	1.8V@xxxmA
AW869C	2.4G&5G,WiFi6,80MHz, BT5.2	3.3V@xxxmA	1.8V@xxxmA
AP6281S	2.4G&5G,WiFi6E,80MHz, BT5.2	3.3V@1A	1.8V@xxxmA


[11] WL-SDIO-D2
[11] WL-SDIO-D3
[11] WL-SDIO-CMD
[11] WL-SDIO-CLK
[11] WL-SDIO-D0
[11] WL-SDIO-D1
[11] WL-WAKE-AP
[11] WL-REG-ON
HST_WAK_WF2/RESERVED
R90928
NC/0R
R0201
HST_WAK_WF/RESERVED
[11] BT-RESETN
[11] AP-WAKE-BT
[11] BT-WAKE-AP
[11] BT-PCM-DOUT
[11] BT-PCM-CLK
[11] BT-PCM-DIN
[11] BT-PCM-SYNC
[11] BT-UART-RX
[11] BT-UART-TX
[11] BT-UART-RTS
[11] BT-UART-CTS
VCC-WIFI
1A
VCCIO-WIFI
28mA
RF_WF
RF_WF
GND
GND
射频走线做50欧阻抗控制
USB 90欧姆差分走线
SDIO 70欧姆阻抗控制
如果主控端控制WiFi/BT使能，R7 R8 NC即可
如果上电启动，则R7 R8贴47K
U10
AIC8800D80
OSC-4_3225_3P2X2P5X0P7
QFN48-F-4EP_0P35_5X5X0P7S
U3
RFDIP160806BLM6T68
DP1806_0P5_1P6X0P8
U2
40MHz
要求频率稳定度±10ppm
TS:±10ppm/pF@CL=18pF
TS:±20ppm/pF@CL=9pF,11pF
DL:±100uW
TP30
TP30
P364
P365

霍尔开关

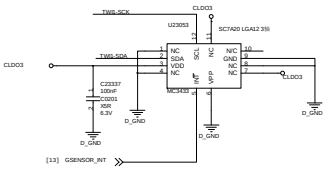


Gyro Sensor

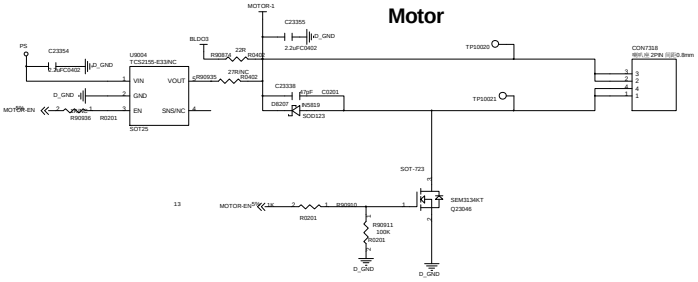


ALS&PROX

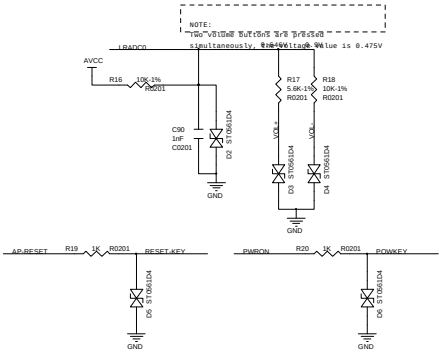
Gsensor

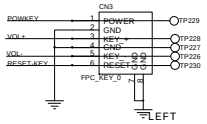


Motor



KEY





AVCC 1mA

VCC-3V3 20mA

[7,10] AP-RESET — AP-RESET

[12] LRADC0 — LRADC0

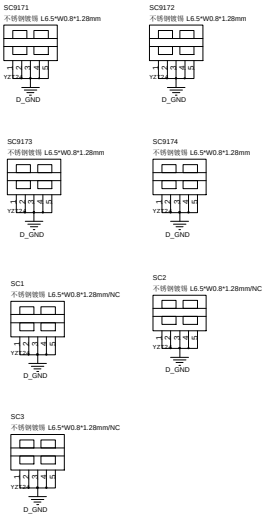
[7] PWRON — PWRON

[10] FEL — FEL

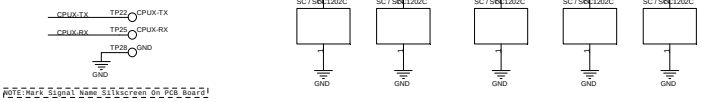
[11] CPUX-TX — CPUX-TX

[11] CPUX-RX — CPUX-RX

SHIELD



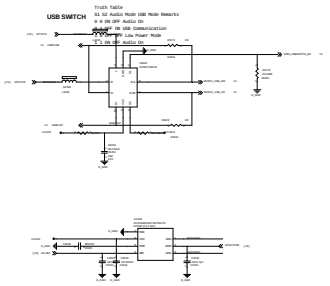
CPUX DEBUG



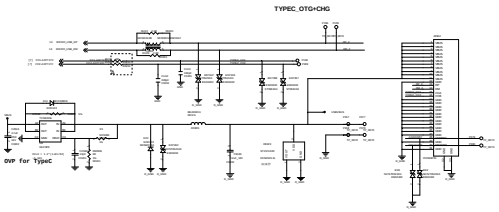
MARK POINT

FEL

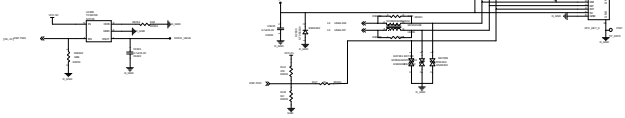
TYPEC耳 机

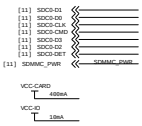


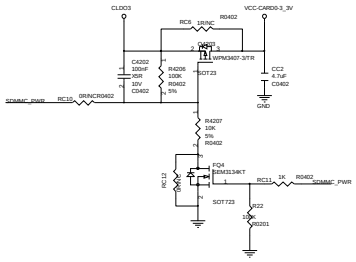
TYPEC USB



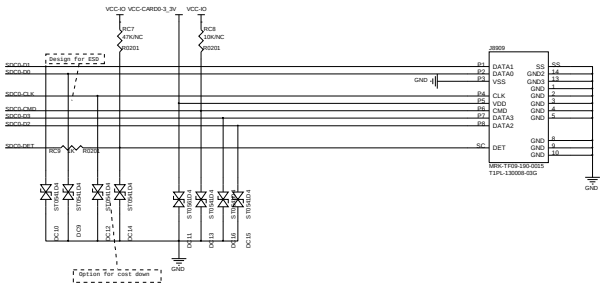
DOCKING OTG




[11] SDC0-D1
[11] SDC0-D0
[11] SDC0-CLK
[11] SDC0-CMD
[11] SDC0-D3
[11] SDC0-D2
[11] SDC0-DET
[11] SDMMC_PWR
SDMMC_PWR
VCC-CARD
400mA
VCC-IO
10mA


CLDO3
VCC-CARD0-3_3V
RC6 1R/NC
R0402
Q4202
WPM3407-3/TR
SOT23
C4202
100nF
20R
10V
C0402
R4206
100K
R0402
5%
CC2
4.7uF
C0402
GND
SDMMC_PWR
RC10
0R/MCR0402
R4207
10K
5%
R0402
EQ4
BSM3134KT
SOT723
RC12
RC11
1K
R0402
SDMMC_PWR
R22
10K
R0201

SD CARD


VCC-IO
VCC-CARD0-3_3V
VCC-IO
RC7
1R/NC
R0201
RC8
10K/NC
R0201
Design for ESD
SDC0-D1
SDC0-D0
SDC0-CLK
SDC0-CMD
SDC0-D3
SDC0-D2
SDC0-DET
RC9
R0201
GND
J8909
DATA1
DATA0
VSS
CLK
VDD
CMD
DATA3
DATA2
DET
SS
GND2
GND3
GND
GND
GND
GND
GND
GND
MRK-TF09-190-0015
TSPL-130008-05G
ST05xLC4
DC10
DC9
DC12
DC14
DC11
DC13
DC16
DC15
Option for cost down
GND