Notes: Unless Otherwise Stated

Scheme Spec:

FLASH: MLC, 3V
DRAM: DDR3, 1.5V
Key: Vol+,Vol-,MENU,SEARCH,HOME,ESC,ENTER
Power: DCIN, 5V, 2A; BAT, 4.2V
USB0: OTG
USB2: WIFI
WIFI: USB WIFI&SDIO WIFI+BT
Card: TFcard
Other: Headphone, MIC, G-Sensor,Camera

Power Supply:

电源名称	输出电压	最大供电能力	预计谁在用
AXP209 DCDC2	1.25V	1600mA	CPU
AXP209 DCDC3	1.2V	1200mA	CORE
AXP209 LDO11.3V		30mA	RTC
AXP209 LDO2	3V	200mA	AVCC
AXP209 LDO3	2.8V	400mA	CSI0-IO
AXP209 LDO4	2.8V	200mA	CSI1-IO
AP2125 LDO	1.8V	300mA	CSI-DVDD
AP3410 DCDC	1.5V	1200mA	DRAM
AP3410 DCDC	3V	1200mA	VCC/LCD/NAND//WIFI
SY7208	5V	1000mA	HDMI/USB
AP2125 LDO	3.3V	300mA	WIFI
AP3032 DCDC		1400mA	LCD
AP3032 DCDC		1400mA	LCD

Schematics Index:

Description	Date	Drawn	Checked		Apped
A20TPAV1.0		2013-01-30			

AllWinner Technology Co.,Ltd

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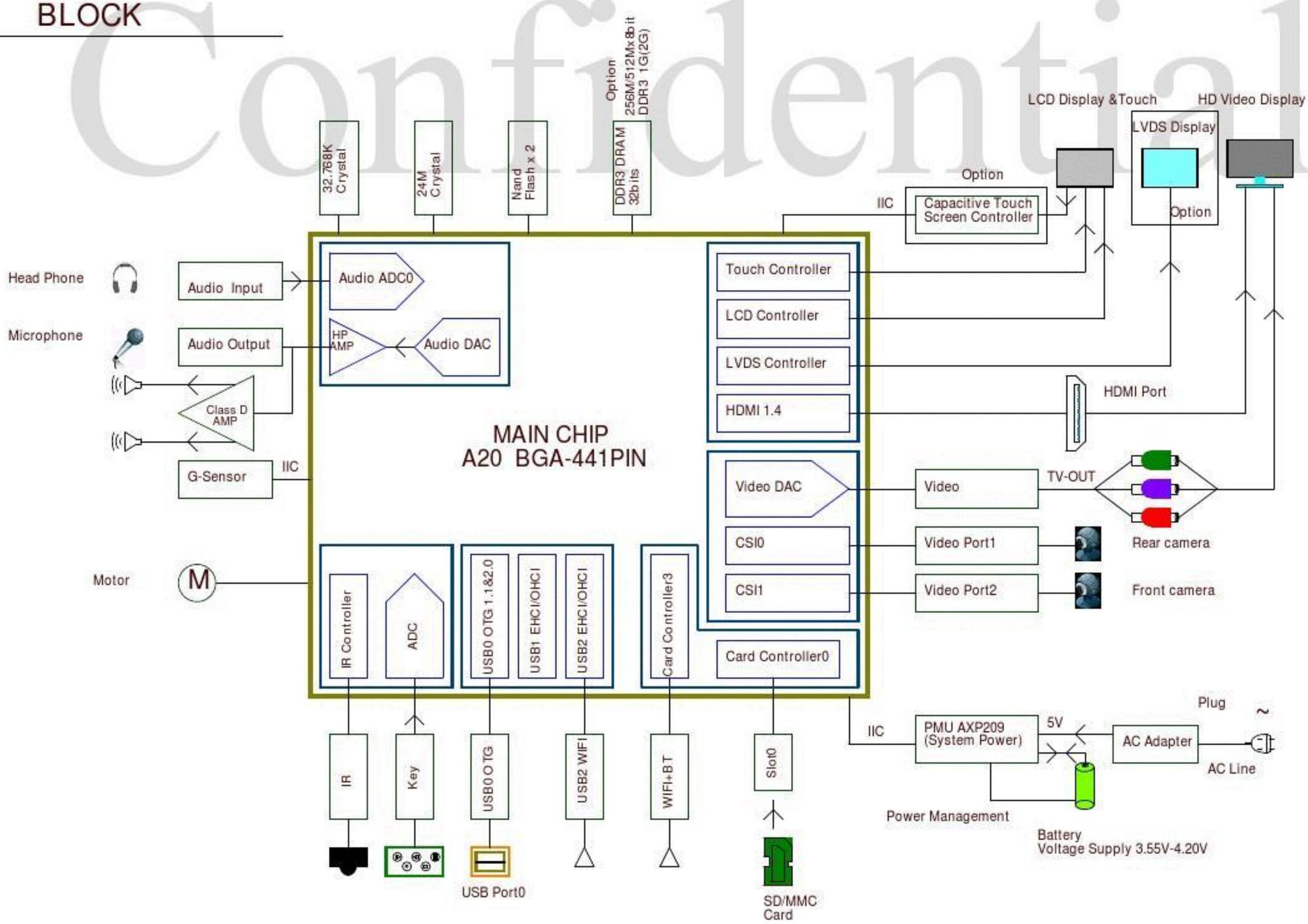
BLOCK



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PIO ASSIGNMENT

Pin Group	Pin Name	Define	Function
PA(18)	PA0	GPIO-OUT	
	PA1	GPIO-OUT	
	PA2	GPIO-OUT	
	PA3	GPIO-OUT	
	PA4	ETXD3	
	PA5	ETXD2	
	PA6	ETXD1	
	PA7	ETXD0	
	PA8	ERXCK	
	PA9	ERXERR	
	PA10	ERXDV	
	PA11	EMDC	
	PA12	EMDIO	
	PA13	ETXEN	
	PA14	ETXCK	
	PA15	ECRS	
	PA16	ECOL	
	PA17	GPIO_OUT	
PB(24)	PB0	TWI0_SCK	PMU
	PB1	TWI0_SDA	
	PB2	PWM0	PWM
	PB3	GPIO_OUT	MT-C
	PB4	IR0_RX	IR
	PB5	GPIO_OUT	BT-RST
	PB6	I2S_BCLK	BT-PCM-CLK
	PB7	I2S_LRCK	BT-PCM-SYNC
	PB8	I2S_DOD	BT-PCM-OUT
	PB9	GPIO_OUT	OSB0-DRV
	PB10	GPIO_OUT	
	PB11	GPIO_OUT	
	PB12	I2S_DI	BT-PCM-IN
	PB13	GPIO_OUT	ID-WAKEUP
	PB14	JTAG_MSU	JTAG
	PB15	JTAG_CKU	
	PB16	JTAG_DOU	
	PB17	JTAG_DIU	
	PB18	TWI1_SCK	TWI1
	PB19	TWI1_SDA	
	PB20	TWI2_SCK	TWI2
	PB21	TWI2_SDA	
	PB22	UART0_TX	UART (DBUG)
	PB23	UART0_RX	

Pin Group	Pin Name	Define	Function
PC(25)	PC0	NWE#	NAND
	PC1	NALE	
	PC2	NCLE	
	PC3	NCE1	
	PC4	NCE0	
	PC5	NRE#	
	PC6	NRB0	
	PC7	NRB1	
	PC8	NDQ0	
	PC9	NDQ1	
	PC10	NDQ2	
	PC11	NDQ3	
	PC12	NDQ4	
	PC13	NDQ5	
	PC14	NDQ6	
	PC15	NDQ7	
	PC16	NWP	
	PC17	NCE2	
	PC18	NCE3	
	PC19	GPIO_OUT	
	PC20	GPIO_OUT	
	PC21	GPIO_OUT	
	PC22	GPIO_OUT	
	PC23	GPIO_OUT	
	PC24	NDQS	
PD(28)	PD0	LCD0_D0	LCD
	PD1	LCD0_D1	
	PD2	LCD0_D2	
	PD3	LCD0_D3	
	PD4	LCD0_D4	
	PD5	LCD0_D5	
	PD6	LCD0_D6	
	PD7	LCD0_D7	
	PD8	LCD0_D8	
	PD9	LCD0_D9	
	PD10	LCD0_D10	
	PD11	LCD0_D11	
	PD12	LCD0_D12	
	PD13	LCD0_D13	
	PD14	LCD0_D14	
	PD15	LCD0_D15	
	PD16	LCD0_D16	
	PD17	LCD0_D17	

Pin Group	Pin Name	Define	Function
PD(28)	PD18	LCD0_D18	LCD
	PD19	LCD0_D19	
	PD20	LCD0_D20	
	PD21	LCD0_D21	
	PD22	LCD0_D22	
	PD23	LCD0_D23	
	PD24	LCD0_CLK	
	PD25	LCD0_DE	
	PD26	LCD0_HSYNC	
	PD27	LCD0_VSYNC	
PE(12)	PE0	CSI0_PCLK	CSI0
	PE1	CSI0_MCLK	
	PE2	CSI0_HSYNC	
	PE3	CSI0_VSYNC	
	PE4	CSI0_D0	
	PE5	CSI0_D1	
	PE6	CSI0_D2	
	PE7	CSI0_D3	
	PE8	CSI0_D4	
	PE9	CSI0_D5	
	PE10	CSI0_D6	
	PE11	CSI0_D7	
PF(6)	PF0	SDC0_D1	SDC0
	PF1	SDC0_D0	
	PF2	SDC0_CLK	
	PF3	SDC0_CMD	
	PF4	SDC0_D3	
	PF5	SDC0_D2	
PG(12)	PG0	CSI1_PCLK	CSI1
	PG1	CSI1_MCLK	
	PG2	CSI1_HSYNC	
	PG3	CSI1_VSYNC	
	PG4	CSI1_D0	
	PG5	CSI1_D1	
	PG6	CSI1_D2	
	PG7	CSI1_D3	
	PG8	CSI1_D4	
	PG9	CSI1_D5	
	PG10	CSI1_D6	
	PG11	CSI1_D7	

Pin Group	Pin Name	Define	Function
PH(28)	PH0	EINT0	USB-ICTRL
	PH1	GPIO_IN	USB-DET
	PH2	GPIO_IN	
	PH3	GPIO_OUT	USB2-DRV
	PH4	GPIO_IN	USB0-IDDET
	PH5	GPIO_IN	USB0-VBUSDET
	PH6	GPIO_OUT	USB1-DRV
	PH7	GPIO_OUT	LCD-BL-EN
	PH8	GPIO_OUT	LCD-PWR
	PH9	GPIO_OUT	WIFI-SHDN
	PH10	GPIO_IN	WIFI-HOST-WAKE
	PH11	GPIO_OUT	
	PH12	GPIO_OUT	
	PH13	GPIO_OUT	CAM-R-RESET#
	PH14	GPIO_OUT	CAM-F-RESET#
	PH15	GPIO_OUT	FA-SHDN#
	PH16	GPIO_OUT	CAM-PWR-EN
	PH17	GPIO_OUT	CAM-F-PWR-EN
	PH18	EINT18	CAM-R-STBY-EN
	PH19	EINT19	CAM-F-STBY-EN
	PH20	EINT20	
	PH21	EINT21	TP-INT
	PH22	SDC1_CMD	
	PH23	SDC1_CLK	
	PH24	SDC1_DO	
	PH25	SDC1_D1	
	PH26	SDC1_D2	
	PH27	SDC1_D3	
PI(22)	PI0	GPIO	
	PI1	GPIO	
	PI2	GPIO	
	PI3	PWM1	
	PI4	SDC3_CMD	WIFI
	PI5	SDC3_CLK	
	PI6	SDC3_D0	
	PI7	SDC3_D1	
	PI8	SDC3_D2	
	PI9	SDC3_D3	
	PI10	SPI0_CS0	
	PI11	GPIO_OUT	
	PI12	SPI0_MOSI	CLK-32K
	PI13	SPI0_MISO	
	PI14	GPIO_OUT	

Pin Group	Pin Name	Define	Function
PI(22)	PI15	GPIO_OUT	
	PI16	UART2_RTS	
	PI17	UART2_CTS	
	PI18	UART2_TX	
	PI19	UART2_RX	
	PI20	GPIO_OUT	
	PI21	GPIO_OUT	

AllWinner Technology Co.,Ltd

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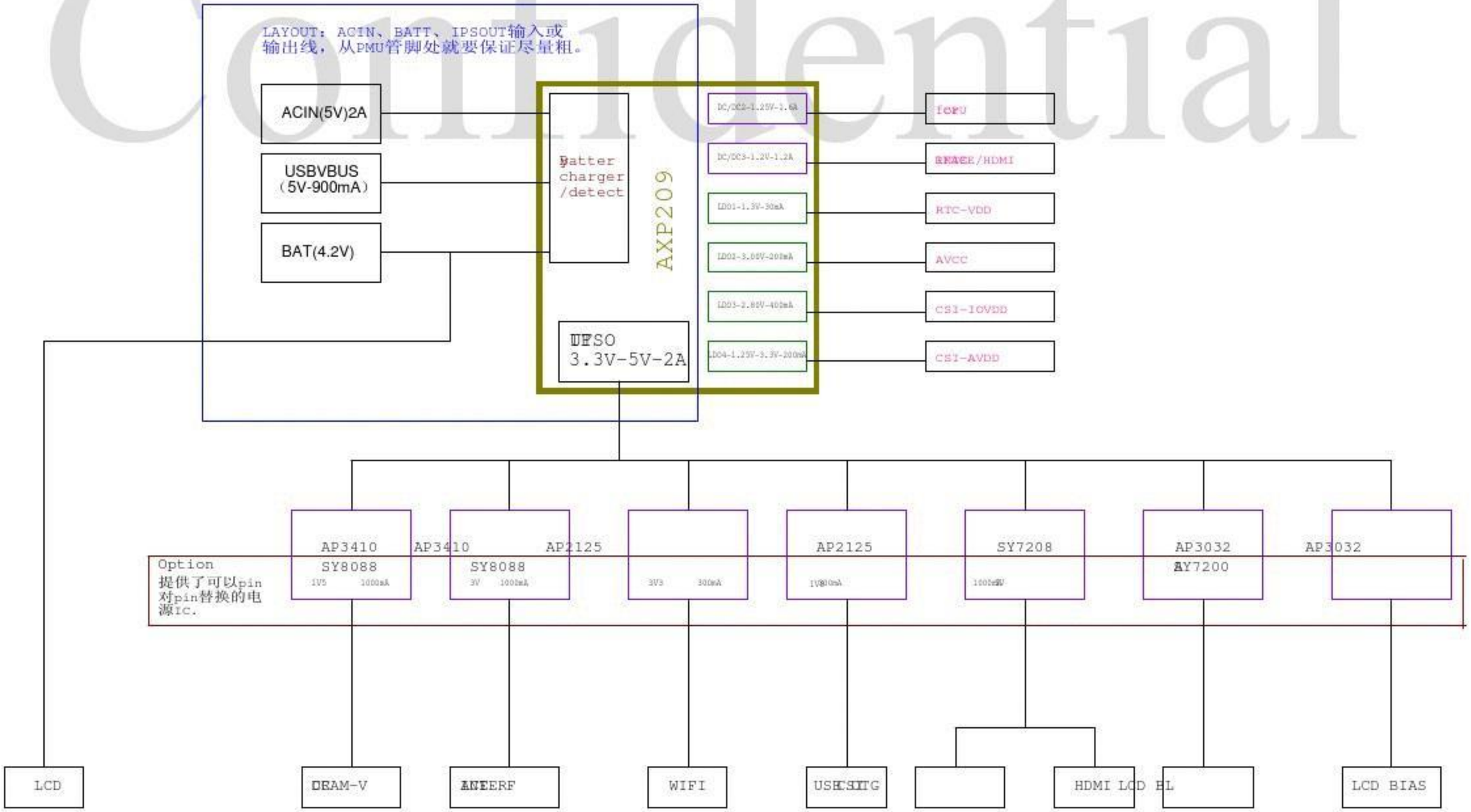
POWER TREE



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CPU1

U1-1

U1-2

FBGA441-A20_42

FBGA441-A20_42

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CPU2

注意：PA剩余口全部
过孔接地，用于散热。

U1-3

MISC

D5 RXD3/SPI1_CS0/UART2_RTS/PA0
E5 RXD2/SPI1_CLK/UART2_CTS/PA1
D6 RXD1/SPI1_MOSI/UART2_TX/PA2
E6 RXD0/SPI1_MISO/UART2_RX/PA3
D7 TXD3/SPI1_CS1/PA4
E7 TXD2/SPI3_CS0/PA5
D8 TXD1/SPI3_CLK/PA6
E8 TXD0/SPI3_MOSI/PA7
D9 RXCK/SPI3_MISO/PA8
E9 ERXERR/SPI3_CS1/I2S1_MCLK/PA9
D10 ERXDV/GRXCTL/UART1_TX/PA10
E10 MDC/UART1_RX/PA11
D11 MDIO/UART6_TX/UART1_RTS/PA12
E11 ETXEN/GTXCTL/UART6_RX/UART1_CTS/PA13
D12 ETXCK/UART7_TX/UART1_DTR/I2S1_BCLK/PA14
E12 ECRS/GTXCK/UART7_RX/UART1_DSR/I2S1_LRCK/PA15
D13 ECOL/GCLKIN/CAN_TX/UART1_DCD/I2S1_DO/PA16
C13 ETXERR/CAN_RX/UART1_RING/I2S1_DI/PA17
GND

TWI

A15 TWI0_SCK/PB0
B15 TWI0_SDA/PB1
A8 TWI1_SCK/PB18
B8 TWI1_SDA/PB19
C8 TWI2_SCK/PB20
C7 TWI2_SDA/PB21
A20 TWI3_SCK/PI0
B20 TWI3_SDA/PI1
A19 TWI4_SCK/PI2
B19 PWM1/TWI4_SDA/PI3
10 PMU-SCK
10 PMU-SDA
9,13,15 TWII-SCK
9,13,15 TWII-SDA
9,16 TWI2-SCK
9,16 TWI2-SDA

SPI

C17 SPI0_CS0/UART5_TX/EINT22/PI10
D17 SPI0_CLK/UART5_RX/EINT23/PI11
C16 SPI0_MOSI/UART6_TX/CLK_OUT_A/EINT24/PI12
D16 SPI0_MISO/UART6_RX/CLK_OUT_B/EINT25/PI13
17 CLK-32K

PS2

C15 PS2_SCK1/TCLKIN0/EINT26/SPI0_CS1/PI14
D15 PS2_SDA1/TCLKIN1/EINT27/SPI1_CS1/PI15

UART

A7 UART0_TX/IR1_TX/PB22
B7 UART0_RX/IR1_RX/PB23
15 UART0-TX
15 UART0-RX

IR

B14 IR0_TX/SPDIF_MCLK/STANBYWFI/PB3
A13 IR0_RX/PB4
14 MT-C
14 IR-RX

SYS_CTRL

A10 JTAG_MS0/SPI2_CS0/PB14
B10 JTAG_CK0/SPI2_CLK/PB15
A9 JTAG_DO0/SPI2_MOSI/PB16
B9 JTAG_DI0/SPI2_MISO/PB17
15 JTAG-MS
15 JTAG-CK
15 JTAG-DO
15 JTAG-DI

W8 UBOOT_SEL
T10 JTAG_SEL
F5 NMI#
C14 RESET#
T9 VDDQE
H16 TEST
14 UBOOT
15 JTAG-SEL
10 NMI#
9,10 RESET#

CLK_SRC

F1 X32KI
F2 X32KO
N23 X24MI
N22 X24MO
9 CLK32K-IN
9 CLK32K-OUT
9 OSC24MI
9 OSC24MO

T15 PLLTEST
T16 PLLDV
R15 PLLVREG
P16 VCC-PLL
K8 VDD-RTC
P15 PLLGND
PLLVP
RTCVDD

GND

FBGA441-A20_42

CARD0

M20 SDC0_D1/JTAG_MS1/PF0
M19 SDC0_D0/JTAG_DI1/PF1
L20 SDC0_CLK/UART0_TX/PF2
L19 SDC0_CMD/JTAG_DO1/PF3
K20 SDC0_D3/UART0_RX/PF4
K19 SDC0_D2/JTAG_CK1/PF5
SD0-D1 15
SD0-D0 15
SD0-CLK 15
SD0-CMD 15
SD0-D3 15
SD0-D2 15

CARD3

A18 SDC3_CMD/PI4
B18 SDC3_CLK/PI5
A17 SDC3_D0/PI6
B17 SDC3_D1/PI7
A16 SDC3_D2/PI8
B16 SDC3_D3/PI9
SD3-CMD 17
SD3-CLK 17
SD3-D0 17
SD3-D1 17
SD3-D2 17
SD3-D3 17

EINT

E17 EINT28/SPI1_CS0/UART2_RTS/PI16
E16 EINT29/SPI1_CLK/UART2_CTS/PI17
E15 EINT30/SPI1_MOSI/UART2_TX/PI18
D14 EINT31/SPI1_MISO/UART2_RX/PI19
BT-RTS 17
BT-CTS 17
BT-TXD 17
BT-RXD 17

AUDIO INT

B13 I2S_MCLK/AC97_MCLK/PB5
A12 I2S_BCLK/AC97_BCLK/PB6
B12 I2S_LRCK/AC97_SYNC/PB7
A11 I2S_DO0/AC97_DO/PB8
C12 I2S_DO1/PB9
C11 I2S_DO2/PB10
C10 I2S_DO3/PB11
C9 I2S_DI/AC97_DI/SPDIF_DI/PB12
B11 SPI2_CS1/SPDIF_DO/PB13
BT-REST 17
BT-PCM-CLK 17
BT-PCM-SYNC 17
BT-PCM-OUT 17
USB0-DRV 10,18
BT-PCM-IN 17
TP-WAKEUP 16

AUDIO CODEC

AC23 PHOUTN
AC22 PHOUTP
Y20 FMINL
Y21 FMINR
AA21 VMIC
AC20 MICIN1
AC21 MICIN2
AB20 LINEINL
AB21 LINEINR
W19 HPOUTR
AA19 HPCOM
AA20 HPCOMFB
AB19 VCC-HP
AC19 HPBP
Y19 HPOUTL
V19 HPGND
VMIC 19
MICIN1 19
HPR 19
HPCOM 19
HPCOMFB 19
HPVCCIN
HPBP 9
HPL 19 17

T19 AVCC
W21 VRP
V20 VRA2
W20 VRA1
U19 AGND
AVCC
VRP 9
VRA2 9
VRAI 9

GND

USB

N20 DM0
N21 DP0
P20 DM1
P21 DP1
R20 DM2
R21 DP2
DM0 18
DP0 18
DM2 17
DP2 17

U1-4

TVIN

GND AC18 TVIN0
AB18 TVIN1
AA17 TVIN2
Y17 TVIN3
AA16 VRP_TVIN
Y16 VRN_TVIN
AC16 TVOUT0
AB16 TVOUT1
AC17 TVOUT2
AB17 TVOUT3
14 TVOUT0
14 TVOUT1
14 TVOUT2

SATA

T20 TXP_SATA
T21 TXM_SATA
U21 RXP_SATA
U20 RXM_SATA
V21 REXT_SATA
R19 CLKP_SATA
P19 CLKM_SATA

HDMI

13 HTX0P V23 TX0P_HDMI
13 HTX0N V22 TX0N_HDMI
13 HTX1P U23 TX1P_HDMI
13 HTX1N U22 TX1N_HDMI
13 HTX2P T23 TX2P_HDMI
13 HTX2N T22 TX2N_HDMI
13 HTXCP W23 TXCP_HDMI
13 HTXCN W22 TXCN_HDMI
T14 TXCN_HDMI
R23 VREG1_HDMI
13 HSCL R22 SCL_HDMI
13 HSDA P22 SDA_HDMI
13 HHPD P23 HPD_HDMI
13 HCEC CEC_HDMI

PWM

16 PWM0 A14 PWM0/PB2

LRADC

BT-WAKE E14 HSCL/UART7_TX/PS2_SCK0/PI20
BT-HOST-WAKE E13 HSDA/UART7_RX/PS2_SDA0/PI21
9,14 LRADC0 AB23 LRADC0
AB22 LRADC1

TP

Y22 X1_TP
AA22 X2_TP
Y23 Y1_TP
AA23 Y2_TP

FBGA441-A20_42

LCD0

LCD0_D0/LVDS0_VP0/PD0 AB15 LCD0-D0 16
LCD0_D1/LVDS0_VN0/PD1 AC15 LCD0-D1 16
LCD0_D2/LVDS0_VP1/PD2 AB14 LCD0-D2 16
LCD0_D3/LVDS0_VN1/PD3 AC14 LCD0-D3 16
LCD0_D4/LVDS0_VP2/PD4 AB13 LCD0-D4 16
LCD0_D5/LVDS0_VN2/PD5 AC13 LCD0-D5 16
LCD0_D6/LVDS0_VPC/PD6 AB12 LCD0-D6 16
LCD0_D7/LVDS0_VNC/PD7 AC12 LCD0-D7 16
LCD0_D8/LVDS0_VP3/PD8 AB11 LCD0-D8 16
LCD0_D9/LVDS0_VN3/PD9 AC11 LCD0-D9 16
LCD0_D10/LVDS1_VP0/PD10 Y15 LCD0-D10 15
LCD0_D11/LVDS1_VN0/PD11 AA15 LCD0-D11 15
LCD0_D12/LVDS1_VP1/PD12 Y14 LCD0-D12 15
LCD0_D13/LVDS1_VN1/PD13 AA14 LCD0-D13 15
LCD0_D14/LVDS1_VP2/PD14 Y13 LCD0-D14 15
LCD0_D15/LVDS1_VN2/PD15 AA13 LCD0-D15 15
LCD0_D16/LVDS1_VPC/PD16 Y12 LCD0-D16 16
LCD0_D17/LVDS1_VNC/PD17 AA12 LCD0-D17 16
LCD0_D18/LVDS1_VP3/PD18 Y11 LCD0-D18 16
LCD0_D19/LVDS1_VN3/PD19 AA11 LCD0-D19 16
LCD0_D20/CSI1_MCLK/PD20 Y10 LCD0-D20 16
LCD0_D21/SMC_VPPEN/PD21 AA10 LCD0-D21 16
LCD0_D22/SMC_VPPPP/PD22 AB10 LCD0-D22 16
LCD0_D23/SMC_DET/PD23 AC10 LCD0-D23 16
LCD0_CLK/SMC_VCCEN/PD24 Y9 LCD0-CLK 16
LCD0_DE/SMC_RST/PD25 AA9 LCD0-DE 16
LCD0_HSYNC/SMC_SLK/PD26 AB9 LCD0-HSYNC 16
LCD0_VSYNC/SMC_SDA/PD27 AC9 LCD0-VSYNC 16

LCD1

LCD1_D0/UART3_TX/EINT0/CSI1_D0/PH0 A6 USB-ICTRL 18
LCD1_D1/UART3_RX/EINT1/CSI1_D1/PH1 B6 SD0-DET 15
LCD1_D2/UART3_RTS/EINT2/CSI1_D2/PH2 C6
LCD1_D3/UART3_CTS/EINT3/CSI1_D3/PH3 A5 USB2-DRV 17
LCD1_D4/UART4_TX/EINT4/CSI1_D4/PH4 B5 USB0-IDDET 10,18
LCD1_D5/UART4_RX/EINT5/CSI1_D5/PH5 C5 USB0-VBUSDET 18
LCD1_D6/UART5_TX/MS_BS/EINT6/CSI1_D6/PH6 A4
LCD1_D7/UART5_RX/MS_CLK/EINT7/CSI1_D7/PH7 B4 LCD-BL-EN 16
LCD1_D8/ERXD3/KP_IN0/MS_D0/EINT8/CSI1_D8/PH8 C4 LCD-PWR 16
LCD1_D9/ERXD2/KP_IN1/MS_D1/EINT9/CSI1_D9/PH9 D4 WIFI-SHDN 17
LCD1_D10/ERXD1/KP_IN2/MS_D2/EINT10/CSI1_D10/PH10 A3 WIFI-HOST-WAKE 17
LCD1_D11/ERXD0/KP_IN3/MS_D3/EINT11/CSI1_D11/PH11 B3
LCD1_D12/PS2_SCK1/EINT12/CSI1_D12/PH12 C3
LCD1_D13/PS2_SDA1/SMC_RST/EINT13/CSI1_D13/PH13 A2 CAM-R-RESET# 13
LCD1_D14/ETXD3/KP_IN4/SMC_VPPEN/EINT14/CSI1_D14/PH14 B2 CAM-F-RESET# 13
LCD1_D15/ETXD2/KP_IN5/SMC_VPPPP/EINT15/CSI1_D15/PH15 A1 PA-SHDN# 19
LCD1_D16/ETXD1/KP_IN6/SMC_DET/EINT16/CSI1_D16/PH16 B1 CAM-PWR-EN 13
LCD1_D17/ETXD0/KP_IN7/SMC_VCCEN/EINT17/CSI1_D17/PH17 C1
LCD1_D18/ERXCK/KP_OUT0/SMC_SLK/EINT18/CSI1_D18/PH18 C2 CAM-R-STBY-EN 13
LCD1_D19/ERXERR/KP_OUT1/SMC_SDA/EINT19/CSI1_D19/PH19 D1 CAM-F-STBY-EN 13
LCD1_D20/ERXDV/CAN_TX/EINT20/CSI1_D20/PH20 D2
LCD1_D21/EMDC/CAN_RX/EINT21/CSI1_D21/PH21 D3 TP-INT 16
LCD1_D22/EMDIO/KP_OUT2/SDC1_CMD/CSI1_D22/PH22 E1
LCD1_D23/ETXEN/KP_OUT3/SDC1_CLK/CSI1_D23/PH23 E2
LCD1_CLK/ETXCK/KP_OUT4/SDC1_D0/CSI1_PCLK/PH24 E3
LCD1_DE/ECRS/KP_OUT5/SDC1_D1/CSI1_FIELD/PH25 E4
LCD1_HSYNC/ECOL/KP_OUT6/SDC1_D2/CSI1_HSYNC/PH26 F3
LCD1_VSYNC/ETXERR/KP_OUT7/SDC1_D3/CSI1_VSYNC/PH27 F4

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DDR3-8BITX4

Please copy DRAM PCB template and follow PCB layout guide. The circuit is only for single-side PCB layout.

5,8 SDQ[31:0] SDQ[31:0]
5,8 SDQSB[3:0] SDQSB[3:0]
5,8 SDQS[3:0] SDQS[3:0]
5,8 SDQM[3:0] SDQM[3:0]
5,8 SA[15:0] SA[15:0]
5,8 SBA[2:0] SBA[2:0]
5,8 SCK-N
5,8 SCK
5,8 SCKE
5,8 SWE
5,8 SCAS
5,8 SRAS
5,8 SCS
5,8 SRST
5,8 SODT

DRAM-VCC
R2 2K-1% R0402
C1 104 C0402
5,8 CPU-REF DREF
R3 2K-1% R0402
C2 104 C0402
GND

SCK R8 24R R0402 DSCK
C3 NC-10pF C0402
SCK-N R9 24R R0402 DSCK-N

DRAM-VCC
C20 10uF CC0603
C21 1uF C0402
C22 104 C0402
C23 104 C0402
C24 104 C0402
GND

U2 DDR3x8
U3 DDR3x8
U4 DDR3x8
U5 DDR3x8

	U2	U3	U4	U5
SA0–SA15	K3, L7, L3, K2, L8, L2, M8, M2, N8, M3, H7, M7, K7, N3, N7, J7	same	same	same
SDQM	B7	B7	B7	B7
SDQS	C3	C3	C3	C3
SDQSB	D3	D3	D3	D3
SODT	G1	G1	G1	G1
SBA0–SBA2	J2, K8, J3	same	same	same
SCAS	G3	G3	G3	G3
SRAS	F3	F3	F3	F3
SCS	H2	H2	H2	H2
DSCK	F7	F7	F7	F7
DSCK-N	G7	G7	G7	G7
SCKE	G9	G9	G9	G9
SWE	H3	H3	H3	H3
SRST	N2	N2	N2	N2
DREF	E1	E1	E1	E1
R4 / R5 / R6 / R7	240-1% R0402	240-1% R0402	240-1% R0402	240-1% R0402
DQ0–DQ7	B3, C7, C2, C8, E3, E8, D2, E7	B3, C7, C2, C8, E3, E8, D2, E7	B3, C7, C2, C8, E3, E8, D2, E7	B3, C7, C2, C8, E3, E8, D2, E7
DQ0	SDQ8	SDQ15	SDQ19	SDQ31
DQ1	SDQ9	SDQ11	SDQ20	SDQ27
DQ2	SDQ1	SDQ9	SDQ17	SDQ24
DQ3	SDQ0	SDQ13	SDQ16	SDQ25
DQ4	SDQ3	SDQ14	SDQ23	SDQ29
DQ5	SDQ7	SDQ10	SDQ18	SDQ30
DQ6	SDQ6	SDQ12	SDQ22	SDQ26
DQ7	SDQ5		SDQ21	SDQ28

DRAM-VCC
VDD1 A2, A9, D7
VDD2
VDD3 G2
VDD4 G8
VDD5 K1
VDD6 K9
VDD7 M1
VDD8 M9
VDD9
VDDQ1 B9, C1
VDDQ2 E2
VDDQ3
VDDQ4 E9
VSS1 A1, A8, B1, D8, F2, F8, J1, J9, L1, L9, N1, N9
VSS2
VSS3
VSS4
VSS5
VSS6
VSS7
VSS8
VSS9
VSS10
VSS11
VSS12
VSSQ1 B2, B8, C9, D1, D9
VSSQ2
VSSQ3
VSSQ4
VSSQ5
GND

NC1 A3, NC2 F1, NC3 F9, NC4 H1, NC5 H9

DRAM-VCC
C4 1uF C0402
C5 104 C0402
C6 104 C0402
C7 104 C0402
GND
DREF C25 104 C0402 GND

DRAM-VCC
C8 1uF C0402
C9 104 C0402
C10 104 C0402
C11 104 C0402
GND
DREF C26 104 C0402 GND

DRAM-VCC
C12 1uF C0402
C13 104 C0402
C14 104 C0402
C15 104 C0402
GND
DREF C27 104 C0402 GND

DRAM-VCC
C16 1uF C0402
C17 104 C0402
C18 104 C0402
C19 104 C0402
GND
DREF C28 104 C0402 GND

AllWinner Technology Co.,Ltd

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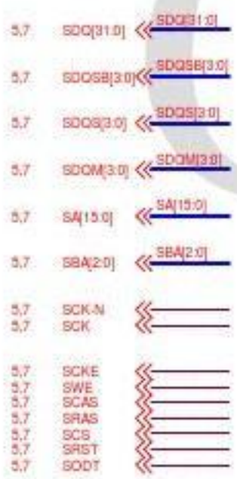
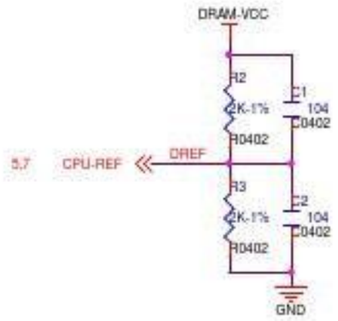
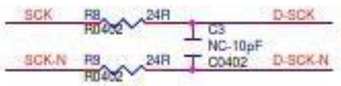
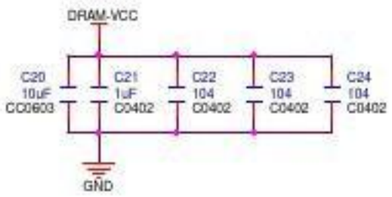
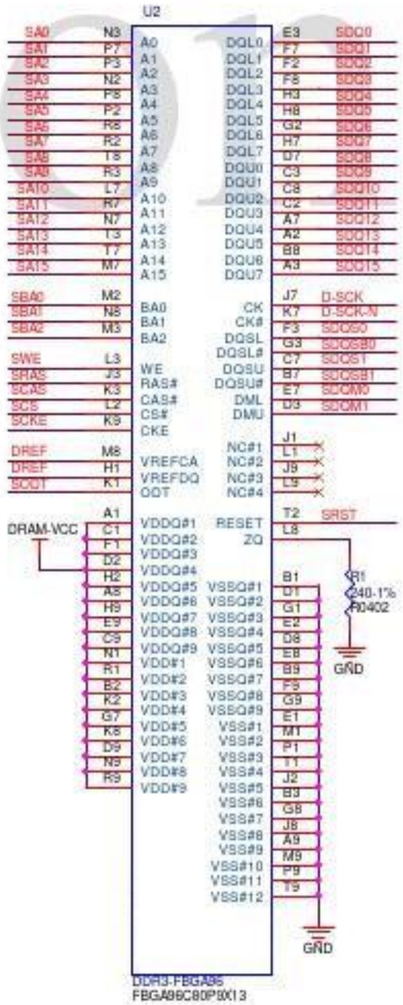
DDR3-16BITX2

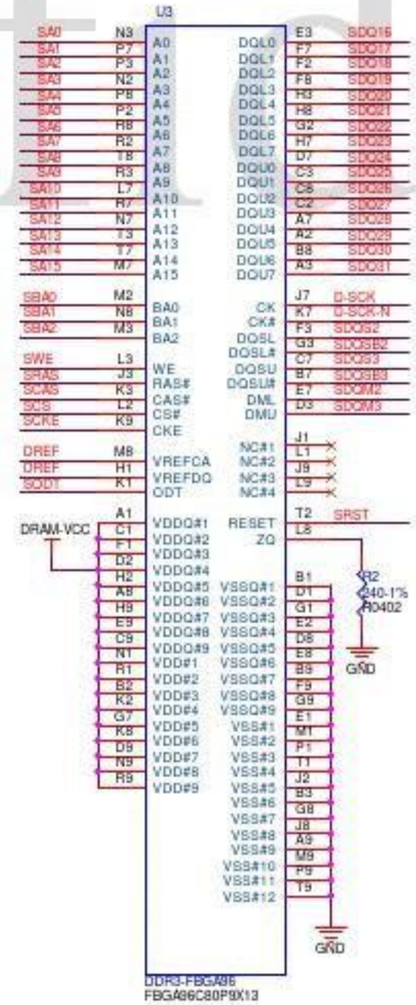


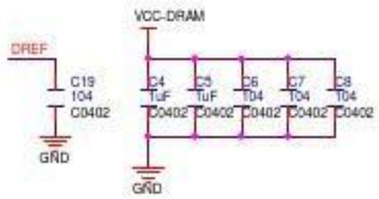


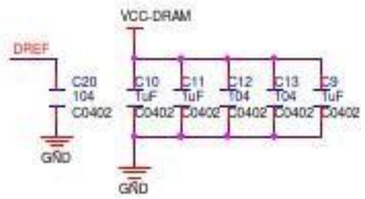












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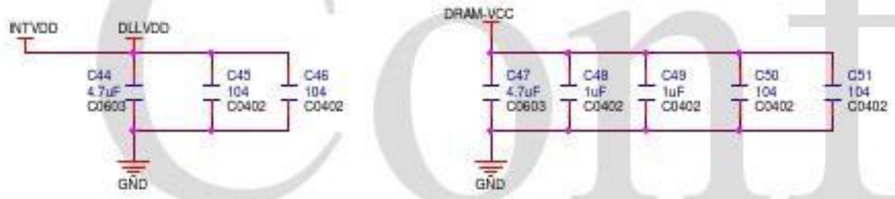
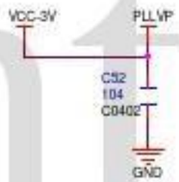
BESIDE CPU

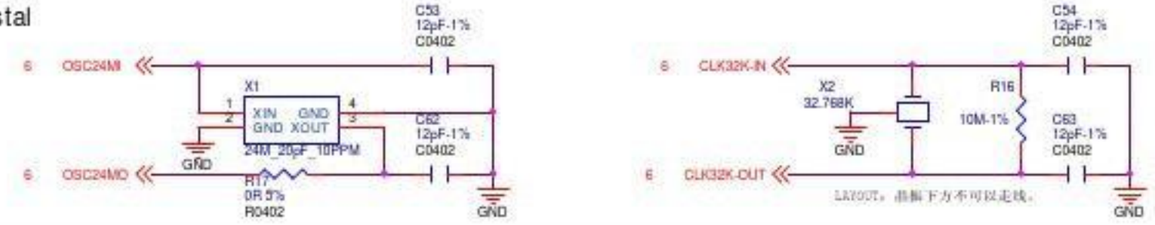
DRAM



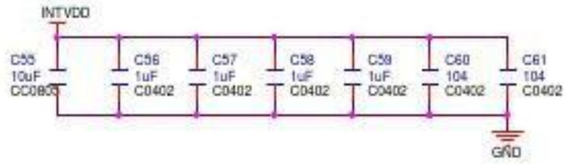
PLL



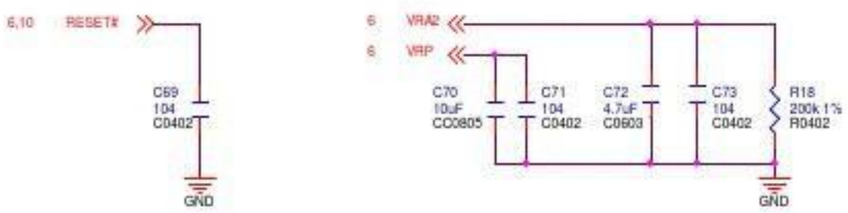
Crystal

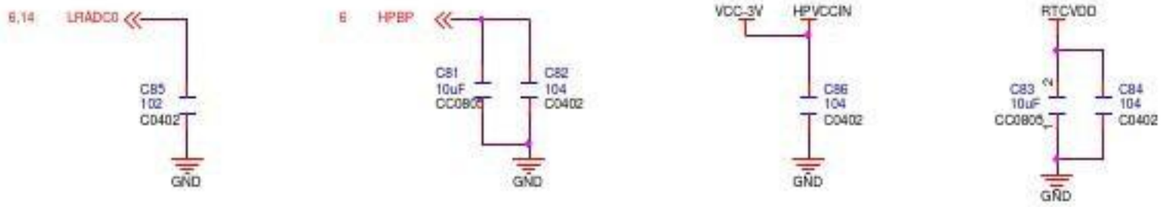


CORE

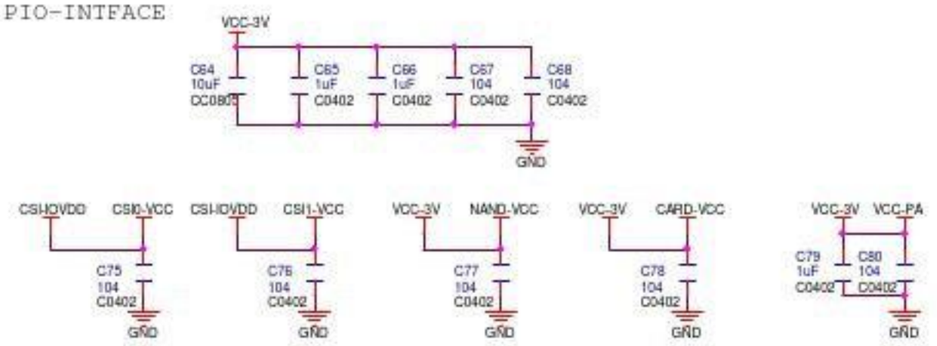


AUDIO&SYS&TP

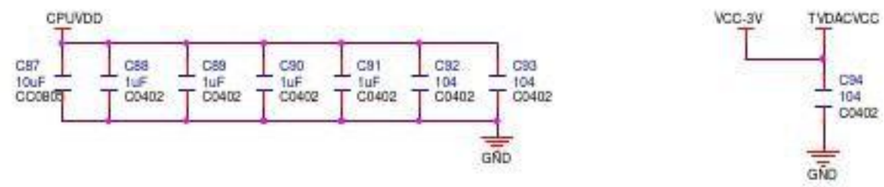




PIO-INTFACE



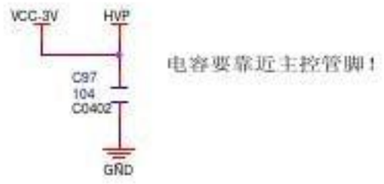
CPU&TV



USB

TWI-PULLUP

HDMI



电容要靠近主控管脚！

AllWinner Technology Co.,Ltd

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POWER-PMU

5 NMI# → NMI#
6 PMU-SDA → PMU-SDA
6 PMU-SCK → PMU-SCK
6,18 USB0-DRV → USB0-DRV
11 EXTEN → EXTEN
6,9 RESET# → RESET#
18 USBVBUS → VBUS

1. ACIN电源网络保留给LCD供电。
2. 在ACIN、VBUS上靠近PMU放10uF电容对地。

POWER LINE:Width>=80mil

POWER LINE:Width>=40mil

POWER INPUT

J1 ACIN POWER-JACK — ACIN — R29 1R R0402 — C111 10uF CC0805 — GND

CON3 CON3P254 J2 — BAT — C121 4.7uF C0603 — GND

此时不支持电池温度检测

注意：
1、在没有ACIN插座，只使用USB供电时，把A部分器件贴上；
2、有ACIN时A部分器件不贴。

R38 NC R1206 — USBVBUS — ACIN
A
R39 NC/510K R0402 — Q1 NC/AO3423 SOT-23
6,18 USB0-IDDET — R40 NC/47K R0402 — Q2 NC/MMBT3904 SOT-23 — GND

靠近LDO3IN放置
靠近VIN1放置
VBAT-CH — BAT — R30 0R0805 — L1 2.2uH@1.5A DCR<0.1R CD43 — C1121uF C0402 — C116 10uF CC0805 — C117 10uF CC0805 — GND
R26 100R R0402 — IPSOUT
C106 10uFCC0805 — C107 4.7uRC0603 — C108 4.7uRC0603 — 1.8V CSI-IOVDD
BATSENSE — CHSENSE — NMI# — R3 1K R0402 — C118 102 C0402
R32 47K R0402 — D1 1N4148 DO-35 — R33 2K R0402 — R34 2K R0402 — VCC-3V
SW1 PWRON SW4_SMD — GND
所选用的二极管在环境温度75摄氏度时反向漏电要小于5uA。

AXP209 (QFN48)
TS, BAT1, BAT2, LDO3IN, LDO3, BATSENSE, CHSENSE, VIN1, LX1, PGND1, PWRON, IRQ, TMA, SCL, SDA, GPIO3, N_OE, GPIO2, N_VBUSEN, VIN2, LX2, PGND2, DCDC2, DCDC4, LDO4, LDO2
CHGLED/GPIO, PS2, PS1, ACIN2, ACIN1, VBUS, BACKUP, DCSET, LDO1, LDO1SET, VINT, PWROK
VREF, BIAS, AGND, APS, EXTEN, GPIO0/LDO, GPIO1, DCDC3, PGND3, LX3, VIN3, LDO24IN

GND — ACIN — GND — GND — GND — GND — VCC-3V
C102 10uF CC0805 — C99 10uF — C98 10uF — C100 1uF C0402 — R25 2K2 R0402 — C101 1uF C0402 — R24 47K R0402
USBVBUS — ACIN — RESET#
CHGLED — PSOUT — VBUS — LDO1 — LDO1SET
C103 1uF C0402
C106 1uF C0402 — R27 200K/1% R0402 — C107 102 C0402 — C104 4.7uF C0603 — R28 22R R0402 — IPSOUT
EXTEN — C1101uF — GND
DCDC3网络为反馈网络，Lay板时走细线即可。
L2 2.2uH@1.5A DCR<0.1R CD43 — INT-1V2 — C113 10uF CC0805 — C114 102 C0402
IPSOUT — C115 10uF CC0805
U9 — AVCC-3V — C119 4.7uF C0603 — C120 4.7uF C0603 — 2.8V CSI-AVDD
DCDC2网络为反馈网络，lay板时走细线即可。
L3 2.2uH@1.5A DCR<0.1R CD43 — CPU-1V2 — C122 10uF CC0805 — C123 102 C0402
USB0-DRN — IPSOUT — PMU-SDA — PMU-SCK
SW2 RESET SW4_SMD — IPSOUT — C124 10uF CC0805 — R37 510R R0402

CPU-1V2 — CPUVDD
VCC-3V — VCC-3V
INT-1V2 — INTVDD
AVCC-3V — AVCC
LDO1 — RTCVDD
CSI-AVDD — CSI-AVDD
CSI-IOVDD — CSI-IOVDD
CSI-IOVDD =2.8V
CSI-AVDD =2.8V

VCC-3V — R35 NC/224 R0402 — D2 NC/POWER LED0805 — GND
IPSOUT — R36 NC/224 R0402 — D3 NC/CHARGING 2CHGLED LED0805
需指示充电状态以及电源状态时，增加上

备注：
对于电感尺寸有轻薄要求的，推荐使用乾坤的 PGEQ1B-2R2MS， 其体积为2.5x 平方毫米，饱和电流为1.8A 直流阻抗为85毫欧。

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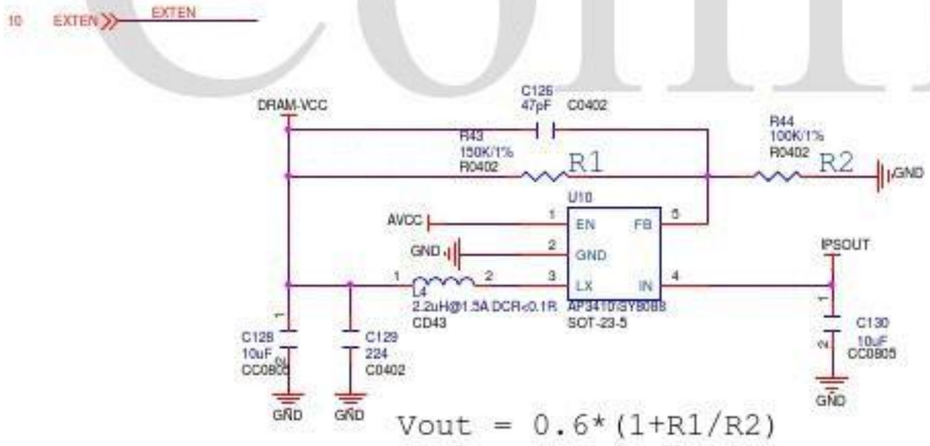
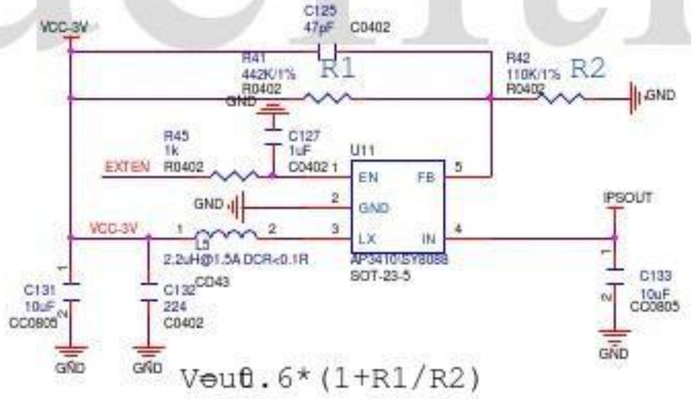
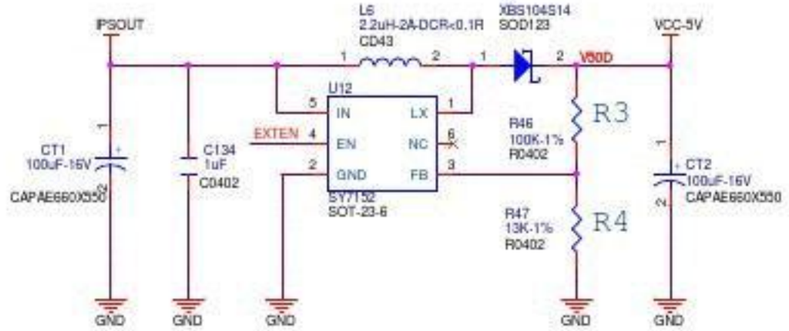
POWER-DC/DC







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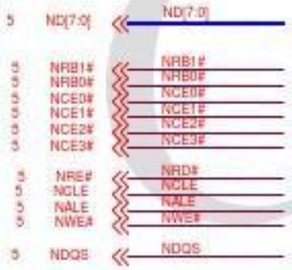
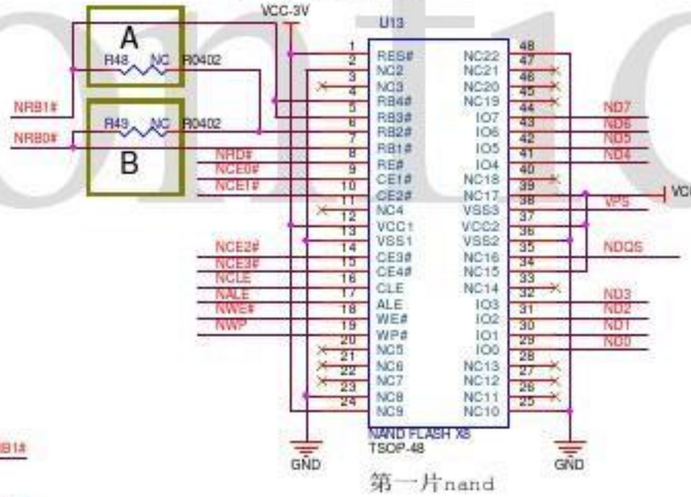
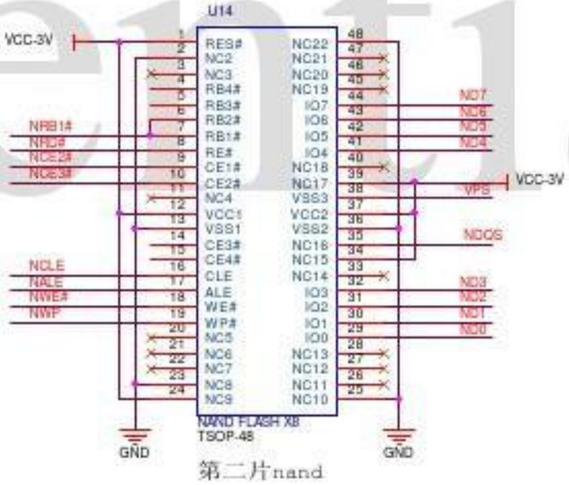
NAND Flash



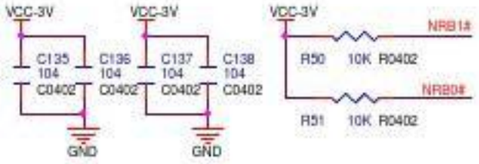
TSOP-48 Nand

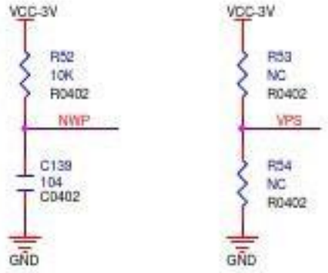


第一片nand

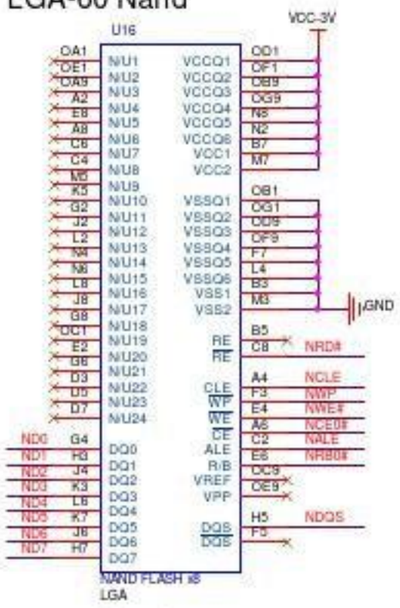


第二片nand

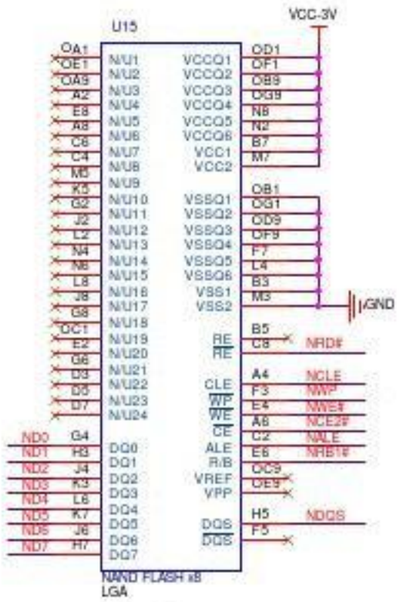




LGA-60 Nand



第一片nand



第二片nand

(1) 接1片单片选Nand 时，电阻A，B全断开
(2) 接1片双片选Nand 时，连接电阻A， 断开电阻B
(3) 接1片四片选Nand 时，连接电阻B， 断开电阻A
(4) 接2片单片选或接2片双片选Nand 时，连接电阻A， 断开电阻B

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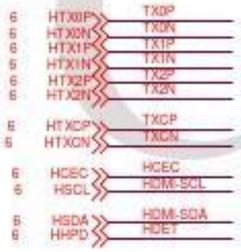
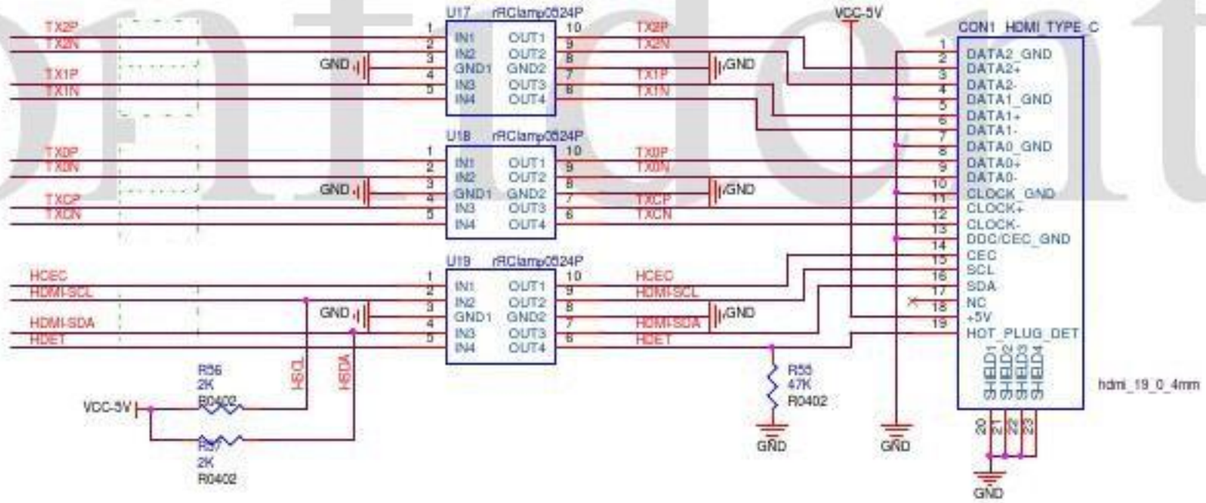
HDMI-CSI

HDMI

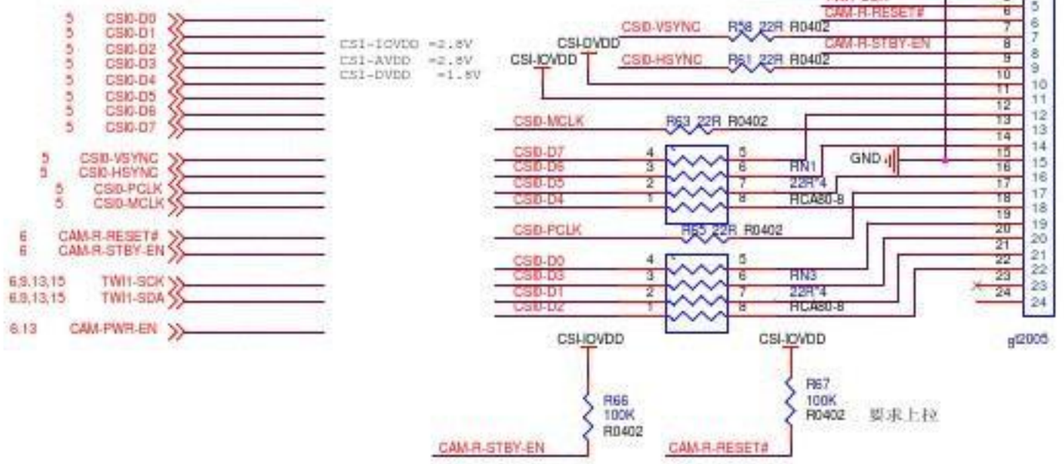




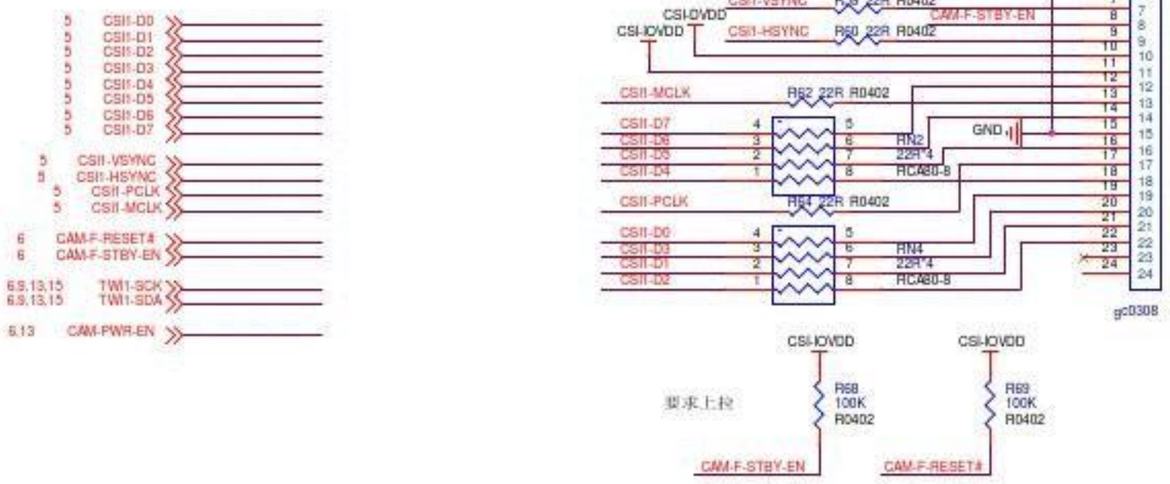
Differential pairs
Z0= 100 ohm

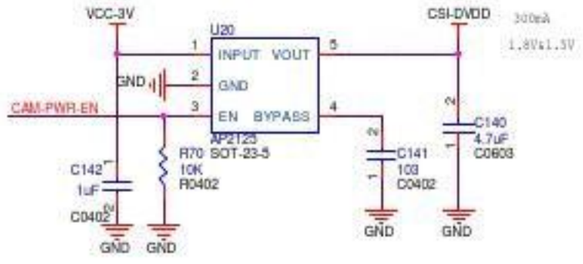
注意：差分走线过孔不能超过2个，有完整铺地。

CSI0-BACK　200W 后置高分辨率



CSI1-FRONT　30W-前置低分辨率





1、DOVDD 时，请保证摄像头成像方向与LCD显示一致；
2、DOVDD 时，请尽量保证两个摄像头的连接器不要分开太远，保证电源以及信号到达CSI的一致性；
3、若选用其他模组，请检查DOVDD，CSI-AVDD,CSI-DVDD的具体电压值以及负载能力能够满足。

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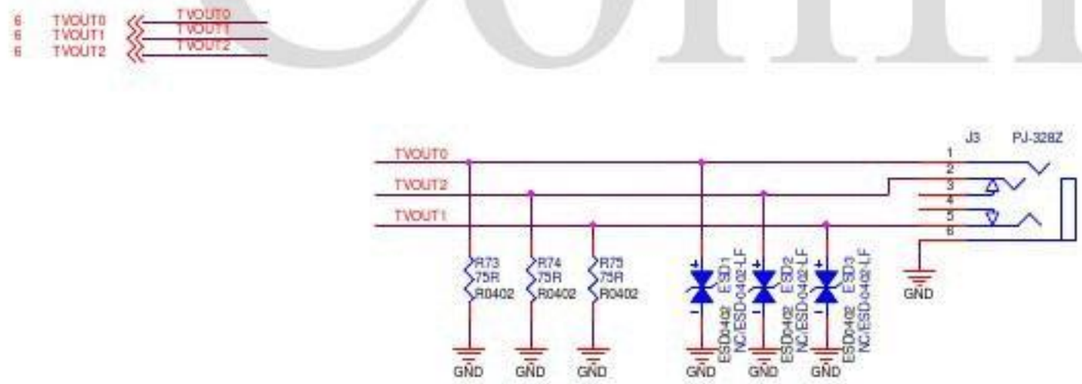
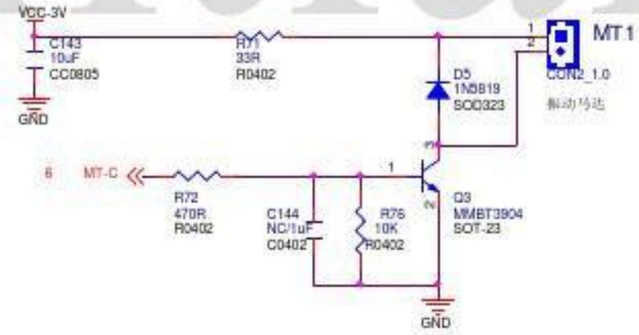
KEY-IR-TVOUT-MT

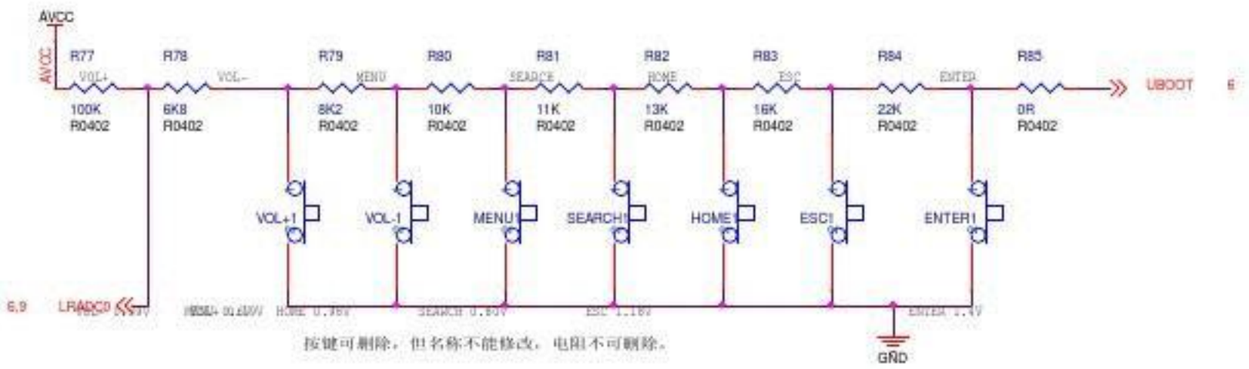
TVOUT



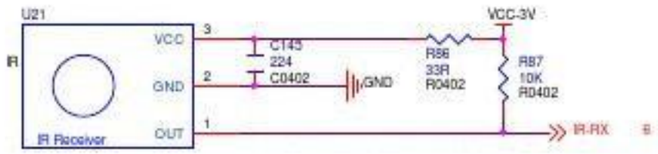
Motor



KEY



IR MODULE



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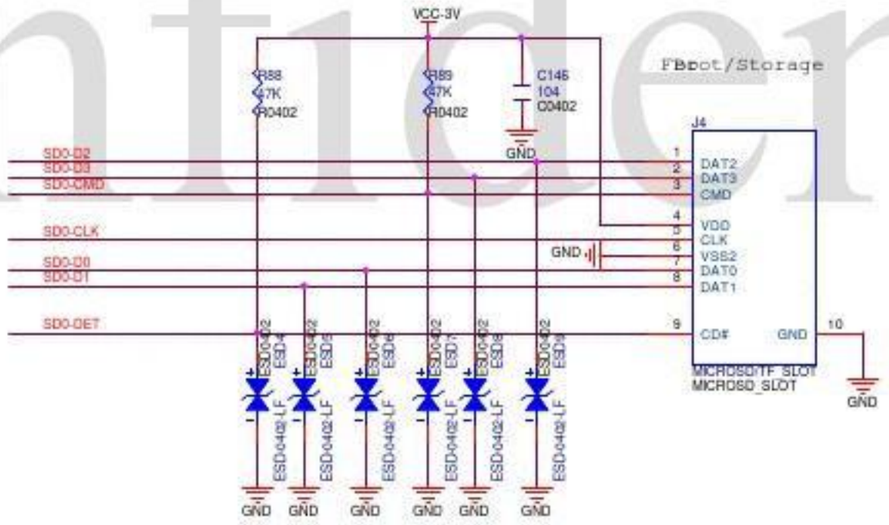
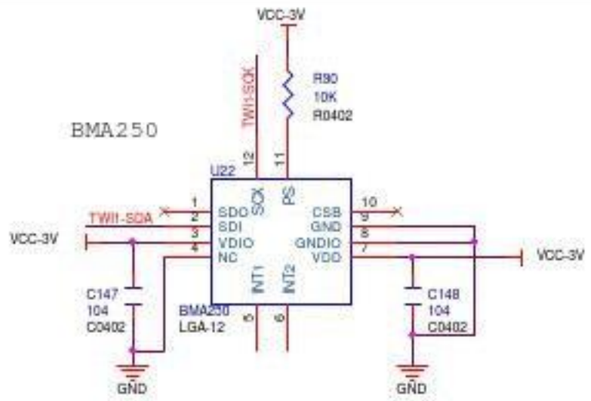
CARD-DEBUG-GS

CARD0



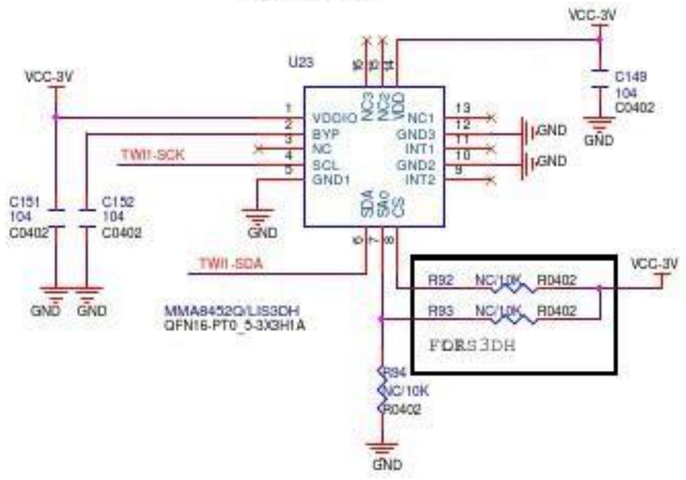
G-SENSOR

BMA250

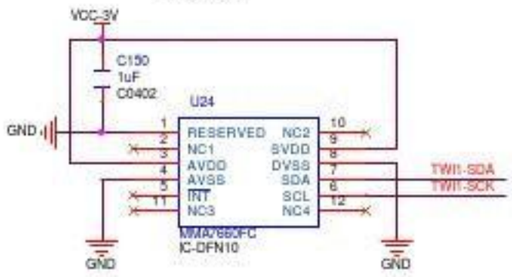


G-SENSOR IC与屏平行放置，放在屏的左上方，右上方放置PIN1脚。

MMA8453DH



MMA766



DEBU

预留JTAG、UART测试点，并要保证测试点方便焊接排列整齐，以备调试使用。

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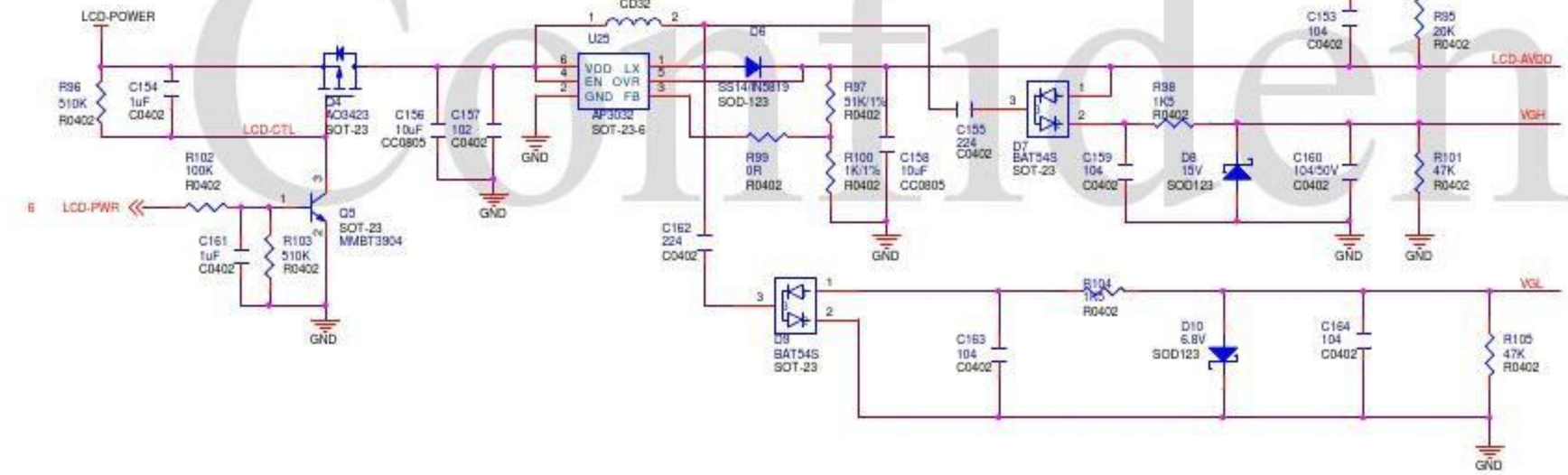
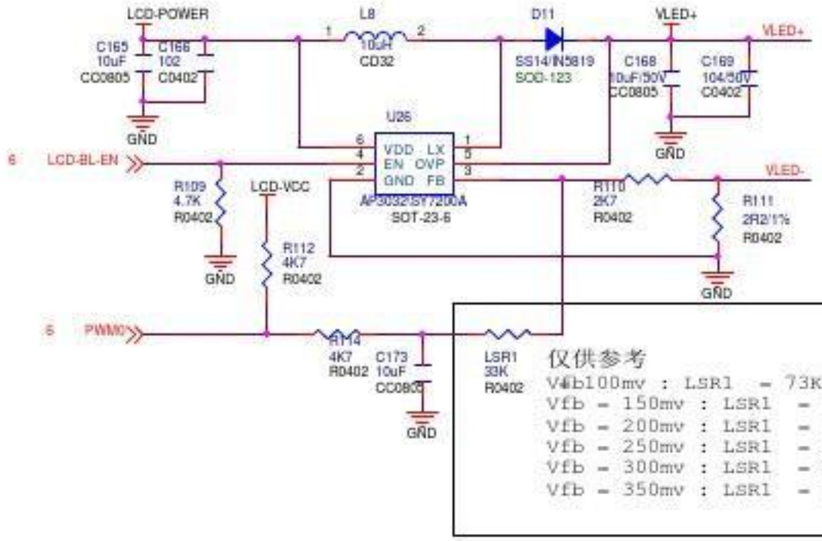
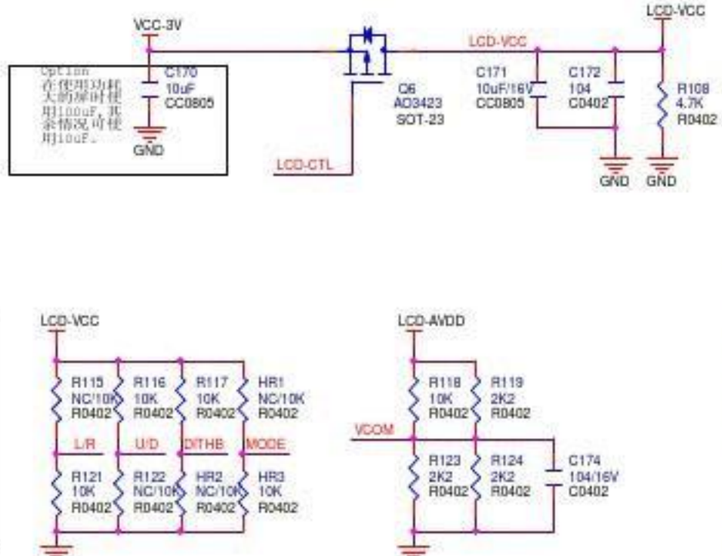
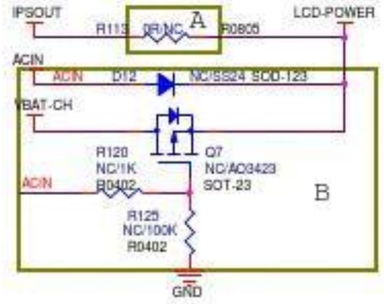
LCD

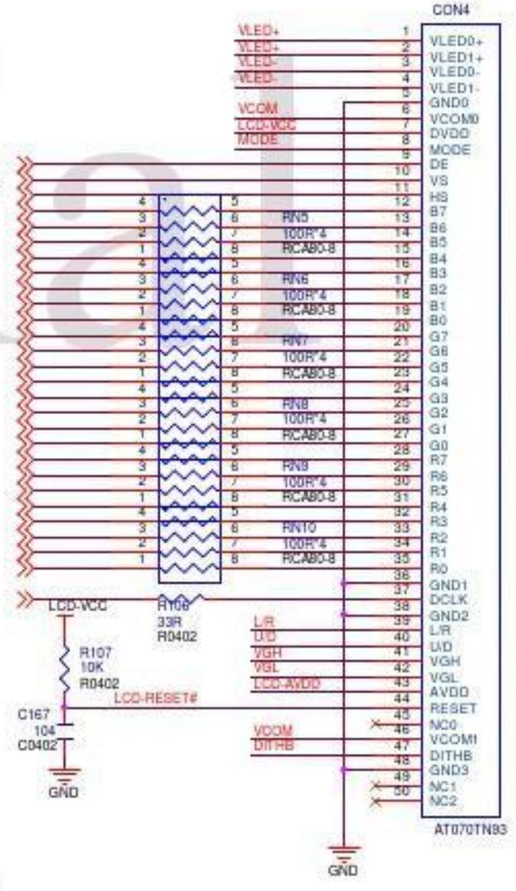


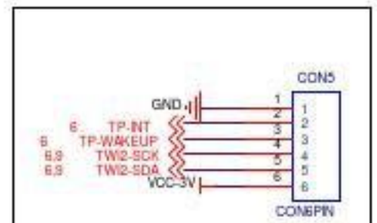




对于9.7"及以上屏的方案，需要在ACIN和BAT做外部通路，防止PMU承受过大电流而损坏。
1.使用9.7"以下屏将电阻A贴上，B部分器件不贴。
2.使用9.7"以上屏将电阻A不贴，B部分器件贴上。



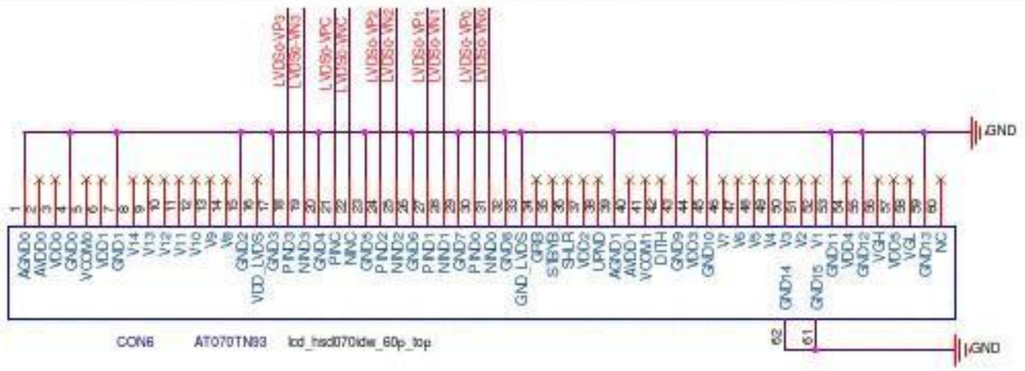




Option
电容屏信号连接示意图

Option
LVDS连接示意图

LCD0-D0	LVDS0-VP0
LCD0-D1	LVDS0-VN0
LCD0-D2	LVDS0-VP1
LCD0-D3	LVDS0-VN1
LCD0-D4	LVDS0-VP2
LCD0-D5	LVDS0-VN2
LCD0-D6	LVDS0-VPC
LCD0-D7	LVDS0-VNC
LCD0-D8	LVDS0-VP3
LCD0-D9	LVDS0-VN3



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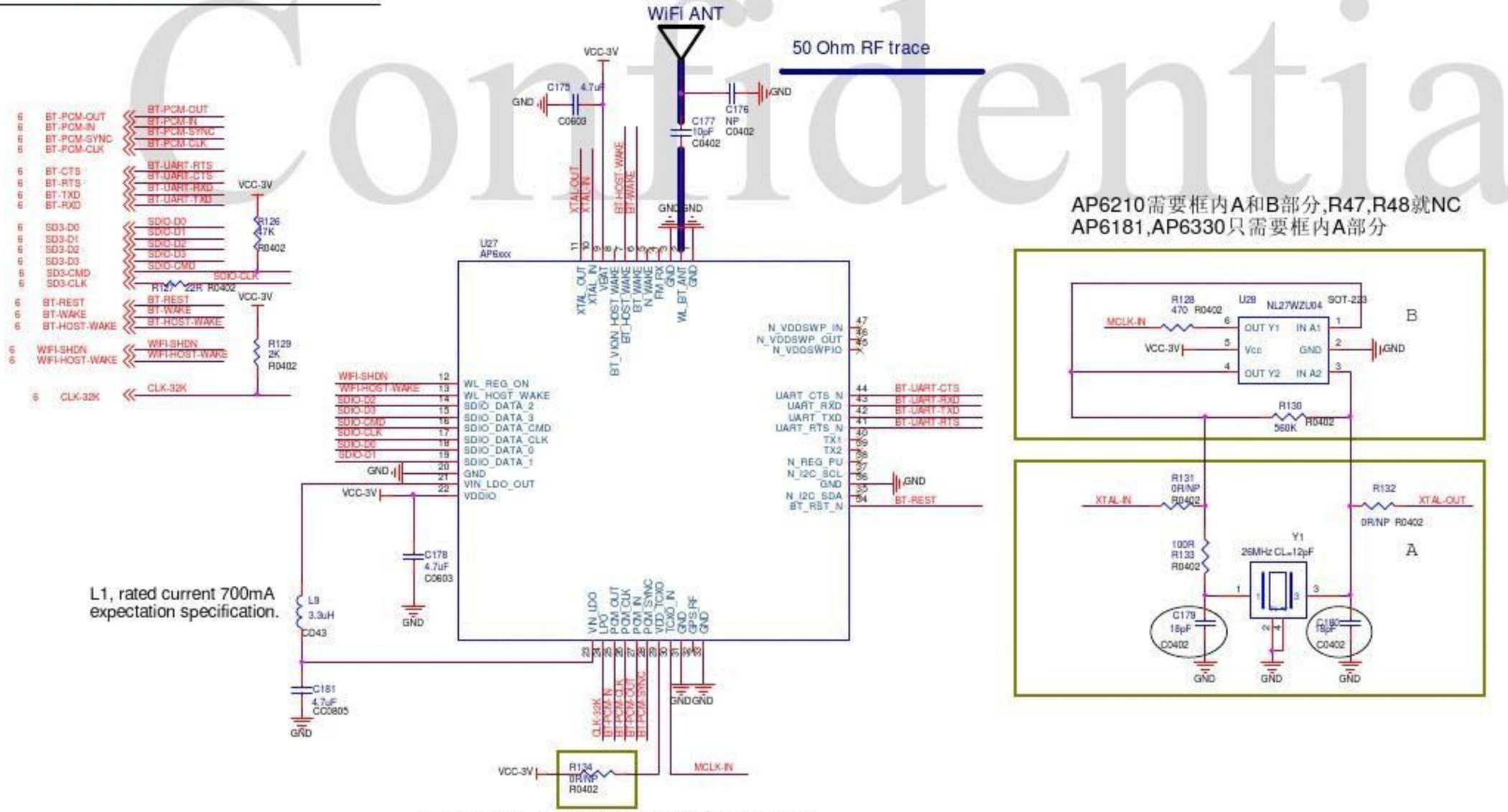
WIFI-BT

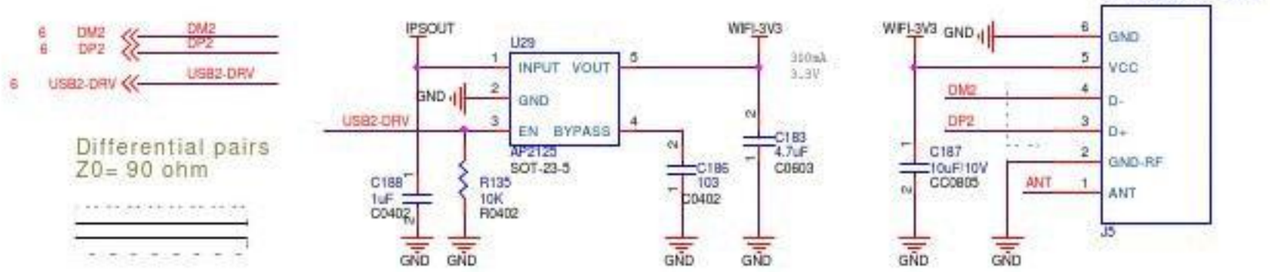


L1, rated current 700mA
expectation specification.

AP6210接上此电阻,AP6181和AP6330不接

AP6210需要框内A和B部分,R47,R48就NC
AP6181,AP6330只需要框内A部分

USB WIFI



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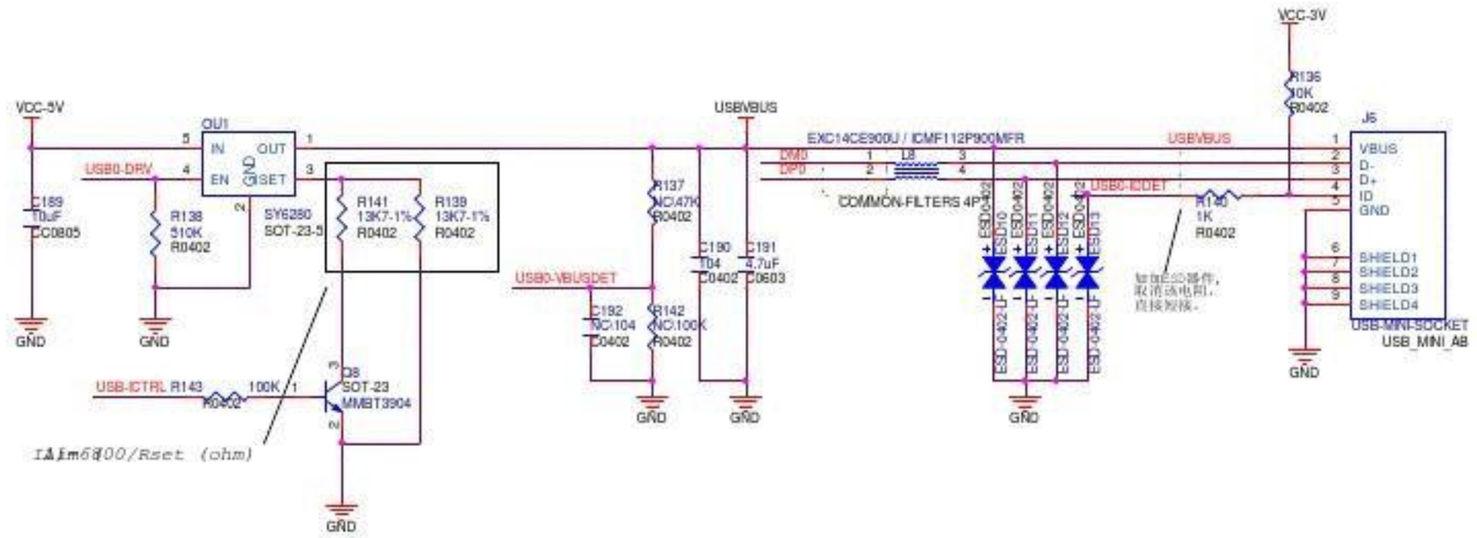
USB-USB OTG

6 DM0 — DM0
6 DP0 — DP0
6,10 USB0-IDDET — USB0-IDDET
6 USB0-VBUSDET — USB0-VBUSDET
6,10 USB0-DRV — USB0-DRV
19 USBVBUS — USBVBUS
6 USB-ICTRL — USB-ICTRL

Differential pairs
Z0= 90 ohm



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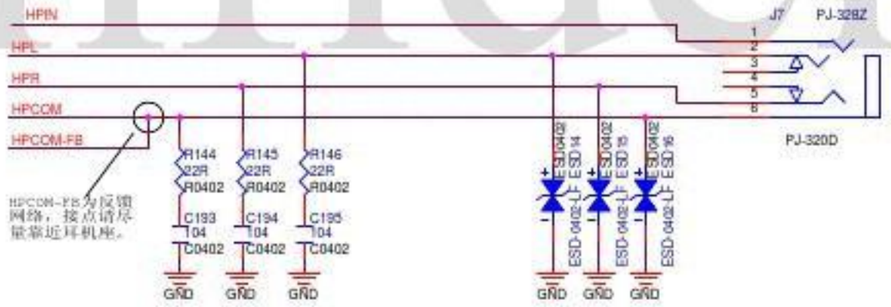
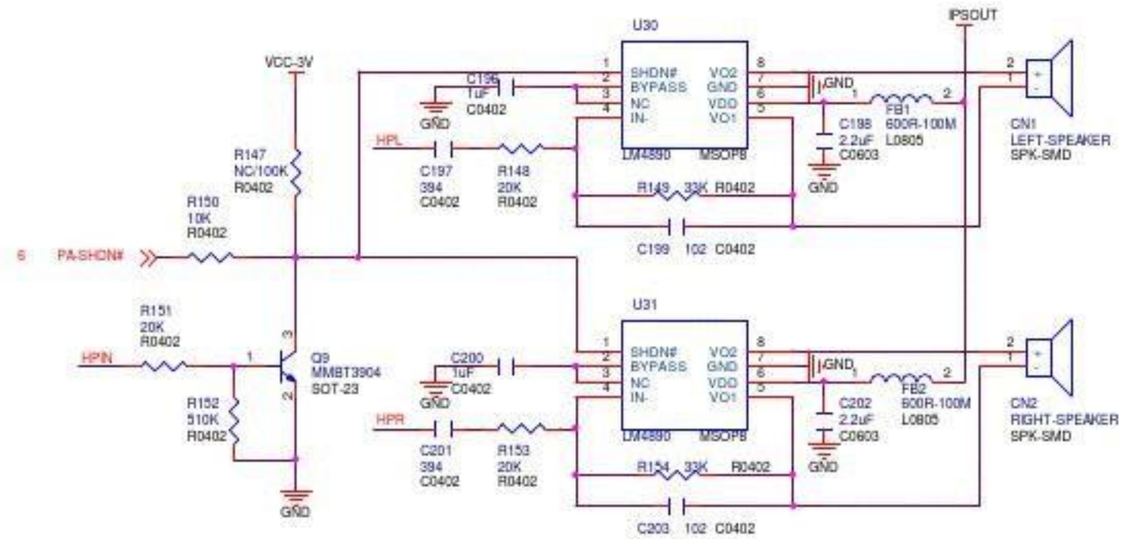
HP-MIC-SPK

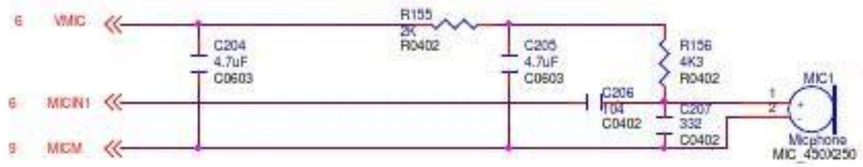
Head Phone



Speaker



Microphone



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