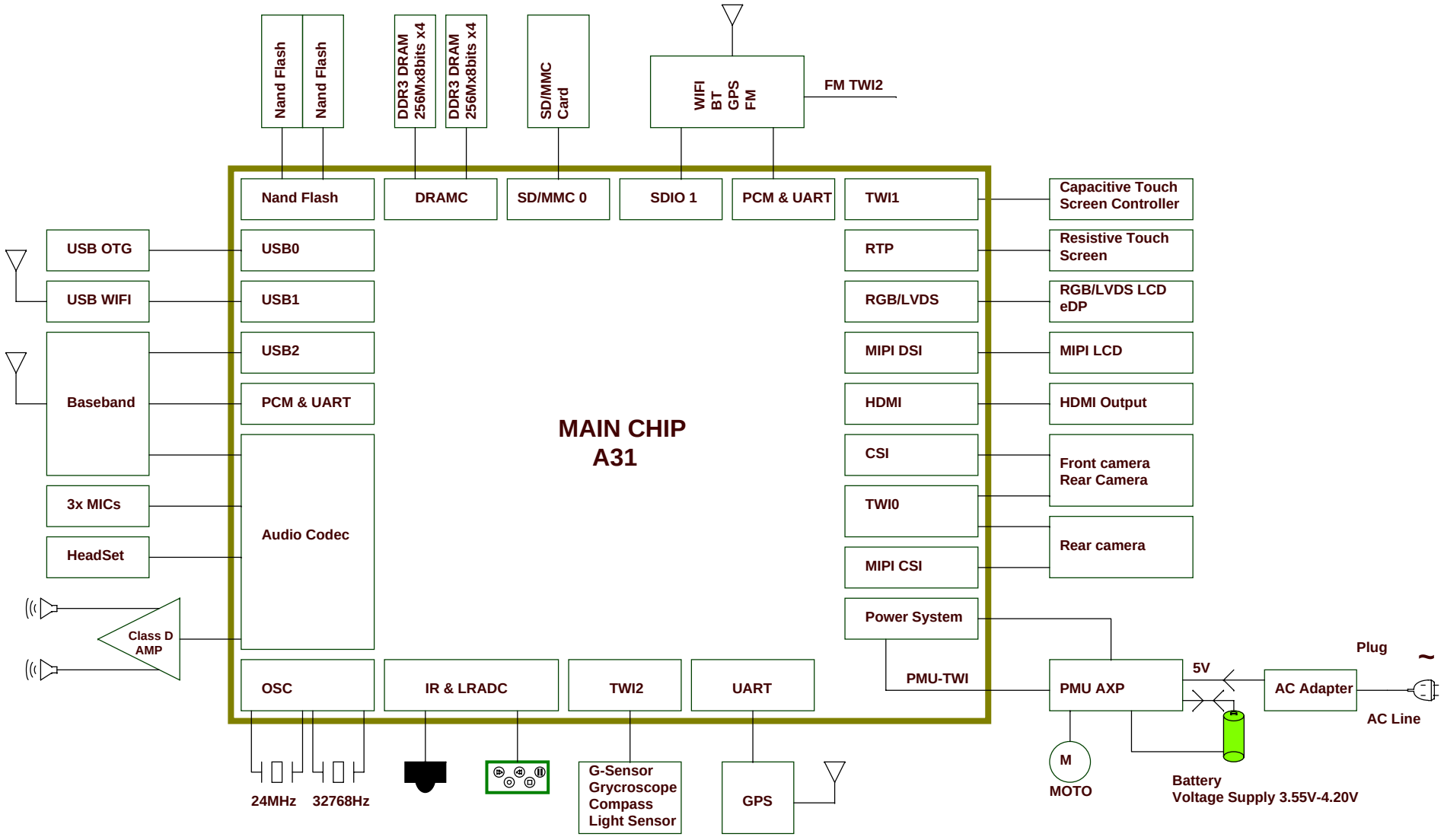
REVISION HISTORY

Schematics Index:

Revision	Description	Date	Drawn	Checked	Approved
PAD_APP4_STD_V1_10		2012-08-28	YT		
PAD_APP4_STD_V1_20		2012-09-02	YT		
PAD_APP4_STD_V1_30		2012-09-13	YT		
PAD_APP4_STD_V1_40		2012-09-27	YT		
PAD_APP4_STD_V1_50		2012-12-12	YT		
PAD_A31_STD_V1_60		2012-12-26	YT		
A31_PAD_STD_V1_70	增加4合1模组调整BT、WIFI的唤醒功能等GPIO.	2013-01-06	YT		
A31_PAD_STD_V1_80	USB的VCC-USB供电改为分离LDO供电。	2013-01-10	YT		
A31_PAD_STD_V1_90	eDP转换电路由ANX9804更换ANX6345。	2013-02-25	YT		

BLOCK



AllWinner Technology Co.,Ltd		
Design Name: A31_PAD_STD		
Size: A3	Page Name: BLOCK	Rev
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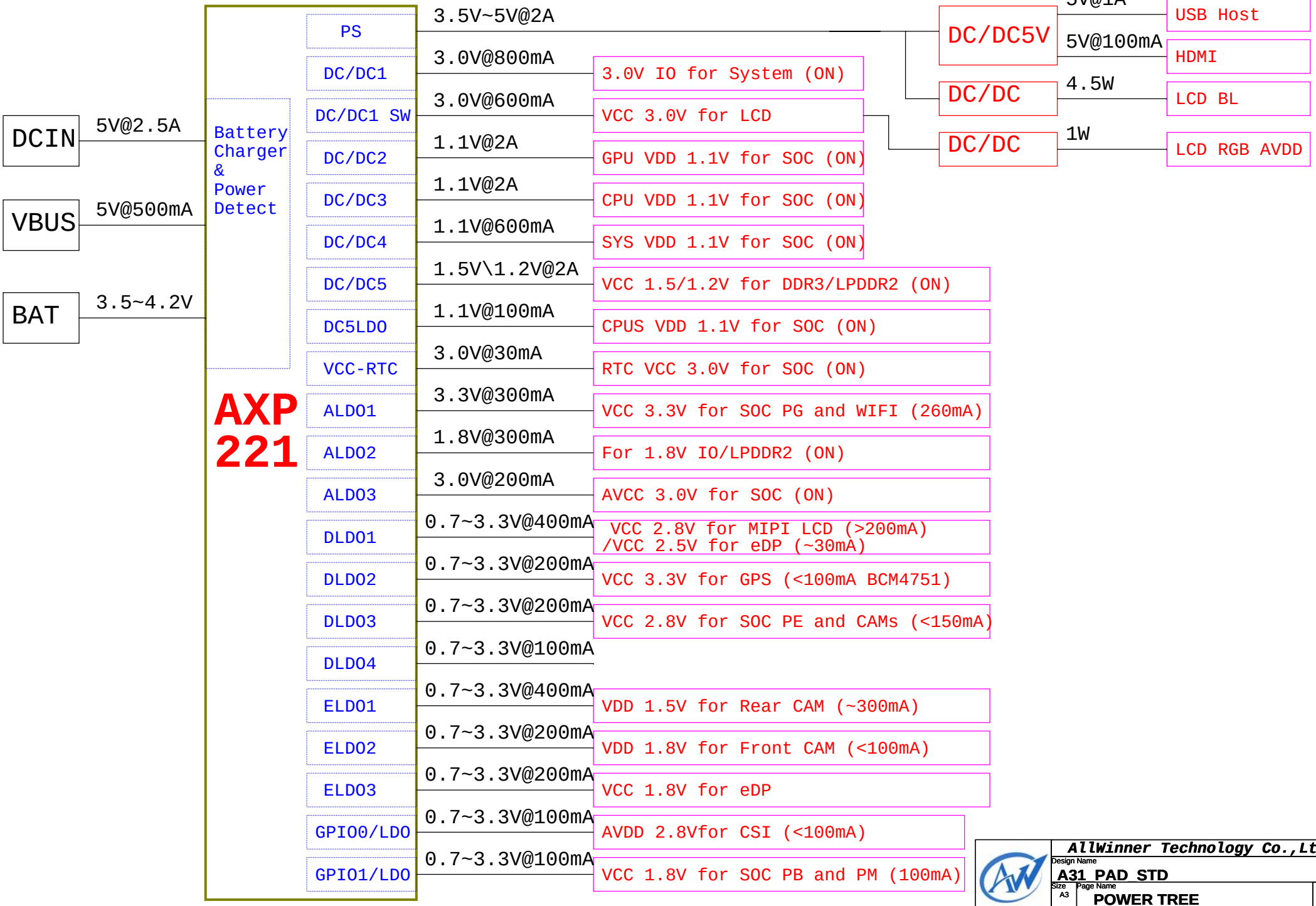
POWER TREE



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Design Name	A31_PAD_STD
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GPIO ASSIGNMENT

No.	Define	Function
PA0	GPS-RST	
PA1	GPS-PWR	GPS
PA2	CTP-WAKE	CTP
PA3	CTP-INT	
PA4	GPS-UART-RX	
PA5	GPS-UART-TX	GPS
PA6	GPS-UART-CTS	
PA7	GPS-UART-RTS	
PA8	SD0-DET	SD Card
PA9	GS-INT	
PA10	GY-INT	Sensors
PA11	CP-INT	
PA12	LS-INT	
PA13	USB0-DRV	
PA14	USB0-VBUSDET	USB
PA15	USB0-IDDET	
PA16	DMIC-CLK	
PA17	DMIC-DIN	DMIC
PA18	SPK-SHDN	AUDIO
PA19	LCD-SDA	LCD-eDP
PA20	LCD-SCL	
PA21	FLASH-MODE	FLASH LED
PA22	FLASH-EN	
PA23		
PA24		
PA25	LCD-BL-EN	LCD
PA26		
PA27	USB-ICTRL	USB
PE0	CSI-PCLK	
PE1	CSI-MCLK	
PE2	CSI-HSYNC	
PE3	CSI-VSYNC	CSI
PE4	CAM-F-RESET#	
PE5	CAM-F-STBY-EN	
PE6	CSI-D2	
PE7	CSI-D3	
PE8	CSI-D4	
PE9	CSI-D5	
PE10	CSI-D6	
PE11	CSI-D7	
PE12	CSI-D8	CSI
PE13	CSI-D9	
PE14	CSI-D10	
PE15	CSI-D11	
PE16	CSI2-MCLK	

No.	Define	Function
PB0	BB-UART-RTS	
PB1	BB-PCM-CLK	
PB2	BB-PCM-SYNC	
PB3	BB-PCM-IN	BB
PB4	BB-UART-CTS	
PB5	BB-UART-RX	
PB6	BB-UART-TX	
PB7	BB-PCM-OUT	
PC0	N0WE	
PC1	N0ALE	
PC2	N0CLE	
PC3	N0CE1	
PC4	N0CE0	
PC5	N0RE	
PC6	N0RB0/eMMC-CMD	
PC7	N0RB1/eMMC-CLK	
PC8	N0DQ0/eMMC-D0	
PC9	N0DQ1/eMMC-D1	
PC10	N0DQ2/eMMC-D2	NAND
PC11	N0DQ3/eMMC-D3	/eMMC
PC12	N0DQ4/eMMC-D4	
PC13	N0DQ5/eMMC-D5	
PC14	N0DQ6/eMMC-D6	
PC15	N0DQ7/eMMC-D7	
PC16	N1DQ0	
PC17	N1DQ1	
PC18	N1DQ2	
PC19	N1DQ3	
PC20	N1DQ4	
PC21	N1DQ5	
PC22	N1DQ6	
PC23	N1DQ7	
PC24	N0DQS/eMMC-RST	
PC25	N0CE2	
PC26	N0CE3	
PC27		
PF0	SDC0-D1	
PF1	SDC0-D0	
PF2	SDC0-CLK	SDC0
PF3	SDC0-CMD	
PF4	SDC0-D3	
PF5	SDC0-D2	
DM0	USB0	OTG
DP0		
DM1	USB1	WIFI
DP1		
DM2	USB2	BB
DP2		

No.	Define	Function
PD0	LCD0-D0/D0P	
PD1	LCD0-D1/D0N	
PD2	LCD0-D2/D1P	
PD3	LCD0-D3/D1N	
PD4	LCD0-D4/D2P	
PD5	LCD0-D5/D2N	
PD6	LCD0-D6/CLKP	
PD7	LCD0-D7/CLKN	
PD8	LCD0-D8/D3P	LCD
PD9	LCD0-D9/D3N	/LVDS0
PD10	LCD0-D10	
PD11	LCD0-D11	
PD12	LCD0-D12	
PD13	LCD0-D13	
PD14	LCD0-D14	
PD15	LCD0-D15	
PD16	LCD0-D16	
PD17	LCD0-D17	
PD18	LCD0-D18	
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/DSI-TE	LCD/MIPI
PG0	WL-SDIO-CLK	
PG1	WL-SDIO-CMD	
PG2	WL-SDIO-D0	
PG3	WL-SDIO-D1	
PG4	WL-SDIO-D2	WIFI
PG5	WL-SDIO-D3	
PG6	BT-UART-RX	
PG7	BT-UART-TX	BT
PG8	BT-UART-CTS	
PG9	BT-UART-RTS	
PG10		
PG11		
PG12		
PG13	BT-PCM-CLK	
PG14	BT-PCM-SYNC	BT
PG15	BT-PCM-OUT	
PG16	BT-PCM-IN	
PG17		
PG18	GPS-SYNC	GPS 4IN1

No.	Define	Function
PH0	NAND1-WE	
PH1	NAND1-ALE	
PH2	NAND1-CLE	
PH3	NAND1-CE1	NAND
PH4	NAND1-CE0	
PH5	NAND1-RE	
PH6	NAND1-RB0	
PH7	NAND1-RB1	
PH8	NAND1-DQS	
PH9	TMS	
PH10	TCK	DEBUG
PH11	TDO	
PH12	TDI	
PH13	LCD-PWM	LCD
PH14	TWI0-SCK	CAMERA
PH15	TWI0-SDA	
PH16	TWI1-SCK	CTP
PH17	TWI1-SDA	
PH18	TWI2-SCK	Sensors
PH19	TWI2-SDA	/FM
PH20	UART-TX	DEBUG
PH21	UART-RX	
PH22	CAM-R-RESET#	CSI
PH23	CAM-R-STBY-EN	
PH24		
PH25		
PH26		
PH27		
PH28		Recovery
PH29	NAND1-CE2	NAND
PH30	NAND1-CE3	

No.	Define	Function
PL0	PMU-SCK	PMU
PL1	PMU-SDA	
PL2	BB-VBAT-EN	BB
PL3	SUART-RX /WL-ENABLE	DEBUG /WIFI
PL4	IR-RX /WL-VBAT-EN	IR /WIFI
PL5	STMS /WL-WAKE-HOST	DEBUG /WIFI
PL6	STCK /BT-WAKE-HOST	DEBUG /BT
PL7	STDO /BT-ENABLE /WL-SYSRST-N	DEBUG /BT /WIFI
PL8	STDI /WL-PMU-EN	DEBUG /WIFI
PM0	BB-WAKE-HOST	BB
PM1		
PM2		
PM3	BB-PWRON	
PM4	BB-WAKE-BB	BB
PM5	BB-RF-DIS	
PM6	BB-RST-N	
PM7	CK32KO	CLOCK

NOTE:
PA23-24、PA26 and PH24-27 can be used for GPIO and others are reserved for function using.

AllWinner Technology Co.,Ltd

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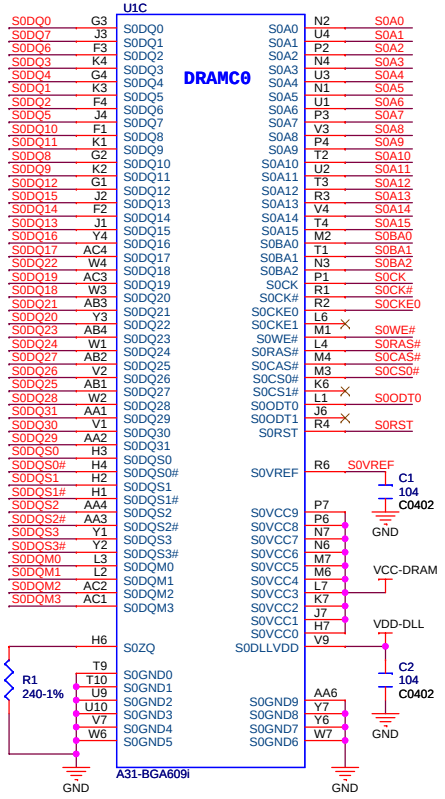
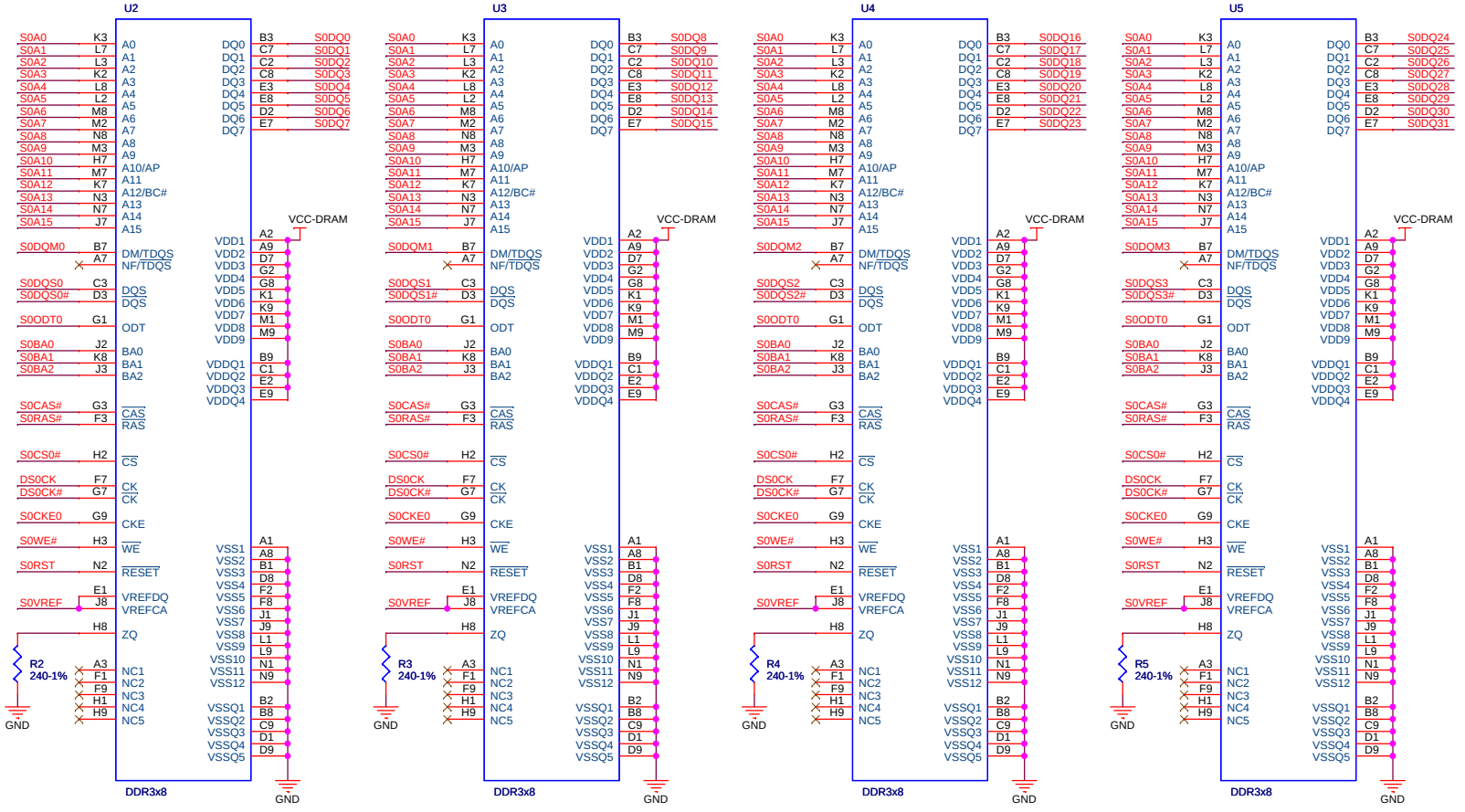
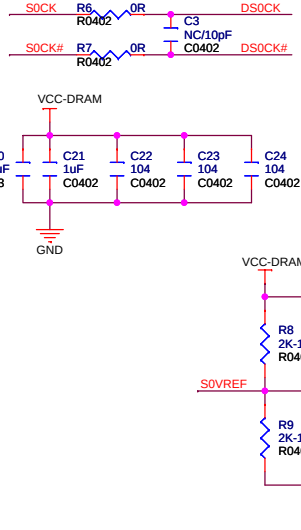
DDR3

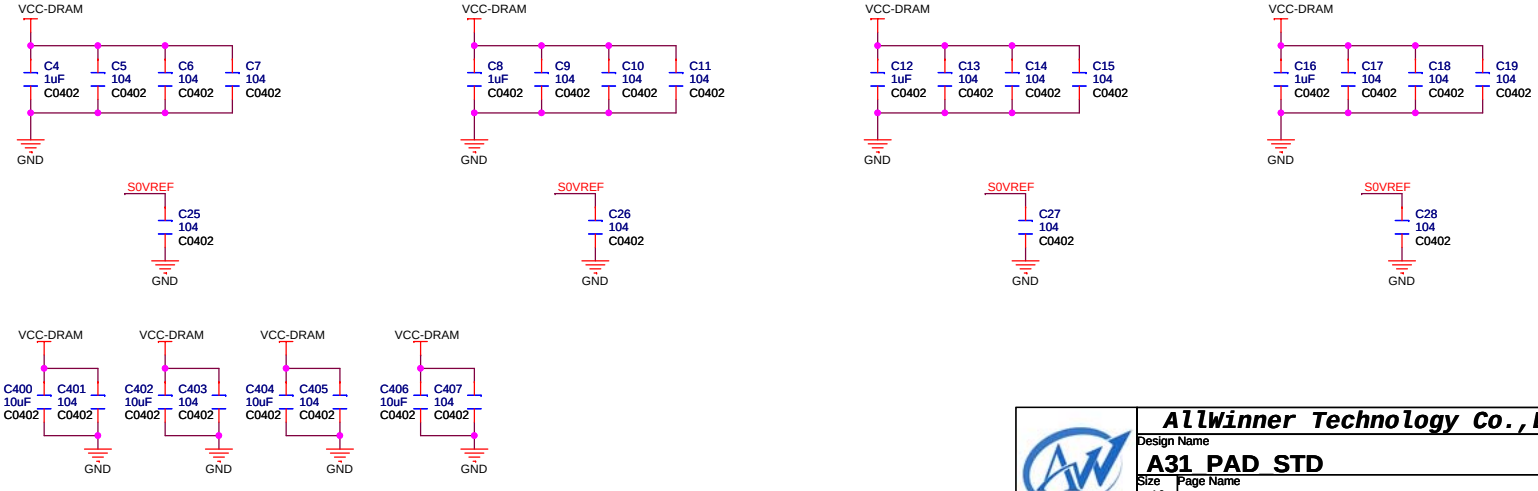
1.5/1.35/1.2V
DDR3/LVDDR3/LPDDR2

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









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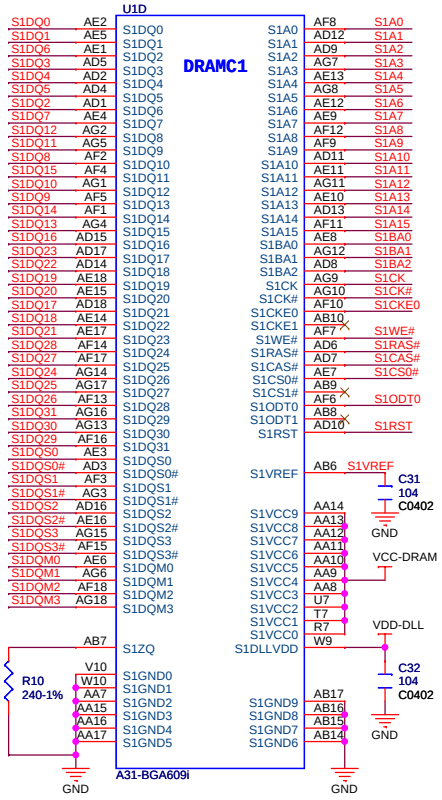
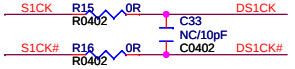
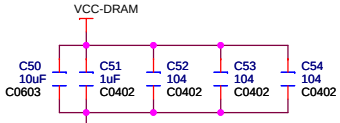
DDR3

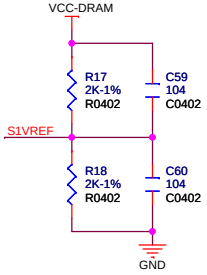
1.5/1.35/1.2V
DDR3/LVDDR3/LPDDR2

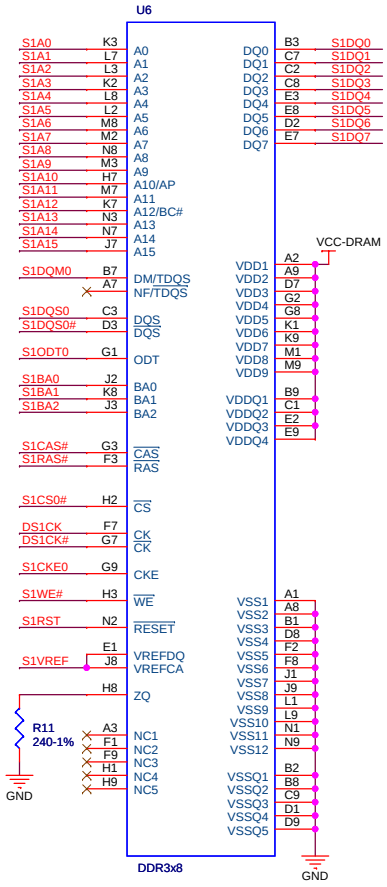


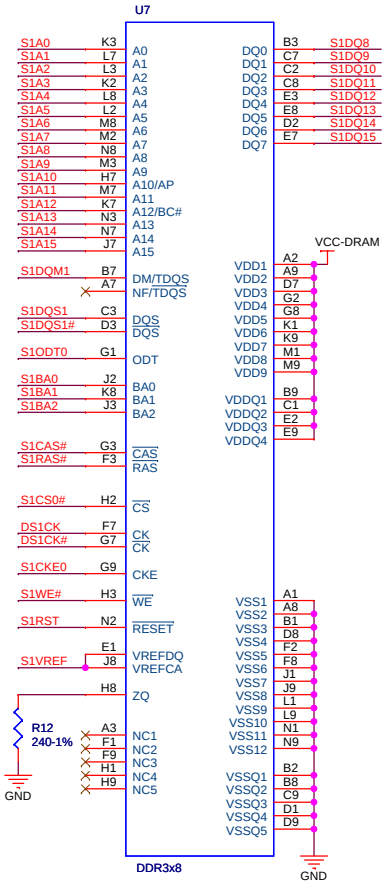
VCC-DRAM=1.5V
VDD-DLL =1.1V

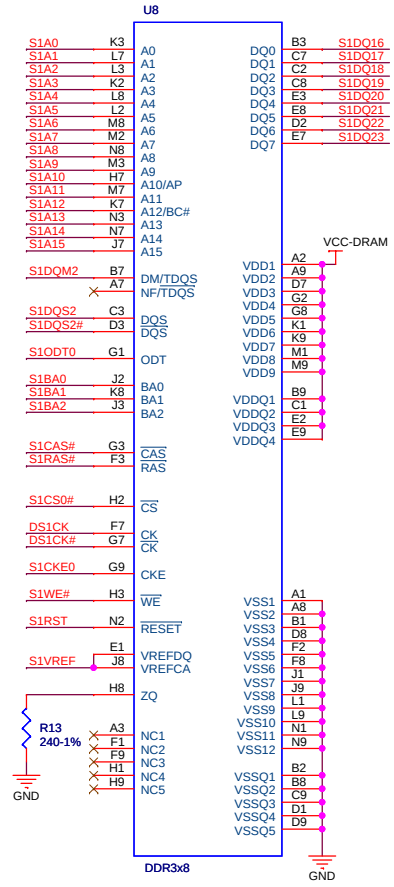


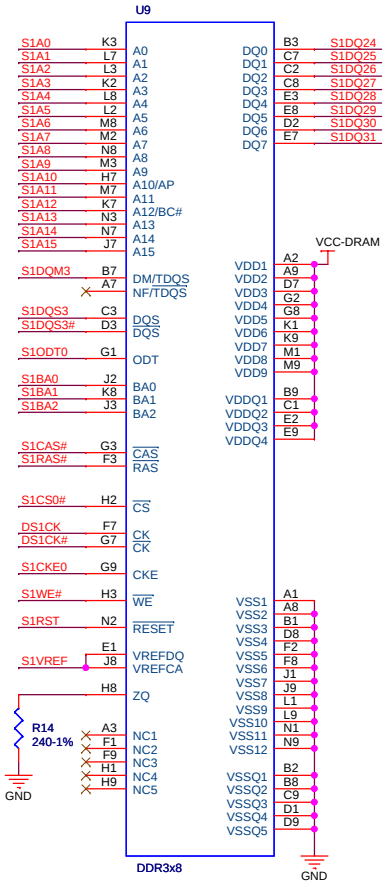


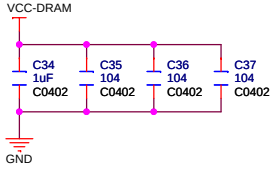


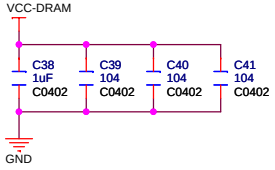


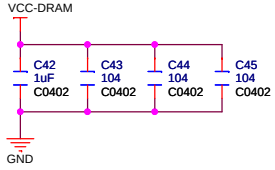


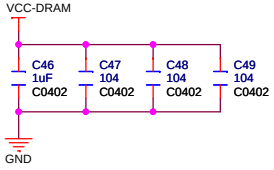


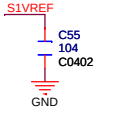


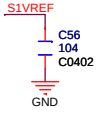


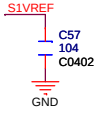


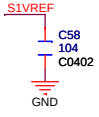


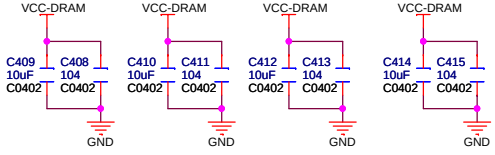












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CPU

PL2->BB-VBAT-EN
PL3->WL-ENABLE
PL4->WL-VBAT-EN
PL5->WL-WAKE-HOST
PL6->BT-WAKE-HOST
PL7->BT-ENABLE/WL-SYSRST-N
PL8->WL-PMU-EN

VCC-HDMI=3.0V
VCC-USB=3.0V
VCC-MIPI=3.0V
VCC-HP=3.0V
AVCC-AP=3.0V
VCC-RTC=3.0V
VCC-PLL=3.0V
VCC-PM-CPUS=1.8V
VCC-PA=3.0V

U1A — A31-BGA609i

3.0V
CPUS GPIO
PL0/TWI-SCK
PL1/TWI-SDA
PL2/UART-TX
PL3/UART-RX
PL4/IR-RX
PL5/PL-EINT0/TMS0
PL6/PL-EINT1/TCK0
PL7/PL-EINT2/TDO0
PL8/PL-EINT3/TDI0
CPUS-UTX
CPUS-URX
CPUS-TMS
CPUS-TCK
CPUS-TDO
CPUS-TDI
PMU-SCK
PMU-SDA
PL2
PL3
PL4
IR-RX
PL5
PL6
PL7
PL8

1.8/2.8V
VCC-PM
PM0/PM-EINT0
PM1/PM-EINT1
PM2/PM-EINT2/1WIRE
PM3/PM-EINT3
PM4/PM-EINT4
PM5/PM-EINT5
PM6/PM-EINT6
PM7/PM-EINT7/RTC-CKO
PM0
PM3
PM4
PM5
PM6
AP-CK32KO

SYS Ctrl
UBOOT-SEL
JTAG-SEL0
JTAG-SEL1
BOOT-SEL0
BOOT-SEL1
NMI#
RESET#
TEST
VDDQE
JTAG-SEL0
JTAG-SEL1
BOOT-SEL0
BOOT-SEL1
AP-NMI#
AP-RESET#
UBOOT

CLK SRC
PLLTEST
PLLDV
PLLVREG
X32KI
X32KO
X24MI
X24MO

Debug
S0ADBG
S0DDBG0
S0DDBG1
S1ADBG
S1DDBG0
S1DDBG1
CPU-VDDSW

RTC/PLL PWR
VCC-PLL
VCC-RTC
VIO-RTC
GND-PLL
RTC-VIO

PM0->BB-WAKE-HOST
PM1->
PM2->
PM3->BB-PWRON
PM4->BB-WAKE-BB
PM5->BB-RF-DIS
PM6->BB-RST-N

U1M — A31-BGA609i

Analog Interface
HDMI
VCC-HDMI
HTX0P
HTX0N
HTX1P
HTX1N
HTX2P
HTX2N
HTXCP
HTXCN
HSCL
HSDA
HHPD

USB
VCC-USB
UDM0
UDP0
UDM1
UDP1
UDM2
UDP2
USB-DM0
USB-DP0
USB-DM1
USB-DP1
USB-DM2
USB-DP2

RTP
TPX1
TPX2
TPY1
TPY2

ADC
LRADC0
LRADC1

MIPI DSI
VCC-MIPI
DSI-D0N
DSI-D0P
DSI-D1N
DSI-D1P
DSI-D2N
DSI-D2P
DSI-D3N
DSI-D3P
DSI-CKN
DSI-CKP

MIPI CSI
CSI2-D0N
CSI2-D0P
CSI2-D1N
CSI2-D1P
CSI2-D2N
CSI2-D2P
CSI2-D3N
CSI2-D3P
CSI2-CKN
CSI2-CKP

Audio Codec
VCC-HP
PHOUTP
PHOUTN
PHINP
PHINN
HBIAS
MBIAS
MICIN1P
MICIN1N
MICIN2P
MICIN2N
MICIN3P
MICIN3N
LINEINR
LINEINL
LINEOUTR
LINEOUTL
HPOUTR
HPOUTL
HPCOMFB
HPCOM
HPBP
MIC-HBIAS
MIC-MBIAS
MIC1P
MIC1N
MIC2P
MIC2N
MIC3P
MIC3N
FM-AUD-R
FM-AUD-L
SPKR
SPKL
HPR
HPL
HPCOMFB
HPCOM
AVCC
VRP
VRA1
VRA2
AGND

U1E — A31-BGA609i

GMAC LCD1 MISC 3.3V
VCC0-PA
VCC1-PA
PA0/ETXD0/LCD1-D0/UART1-DTR/PA-EINT0
PA1/ETXD1/LCD1-D1/UART1-DSR/PA-EINT1
PA2/ETXD2/LCD1-D2/UART1-DCD/PA-EINT2
PA3/ETXD3/LCD1-D3/UART1-RING/PA-EINT3
PA4/ETXD4/LCD1-D4/UART1-TX/PA-EINT4
PA5/ETXD5/LCD1-D5/UART1-RX/PA-EINT5
PA6/ETXD6/LCD1-D6/UART1-RTS/PA-EINT6
PA7/ETXD7/LCD1-D7/UART1-CTS/PA-EINT7
PA8/ETXCLK/LCD1-D8/ECLK-IN0/PA-EINT8
PA9/ETXEN/LCD1-D9/SDC3-CMD/SDC2-CMD/PA-EINT9
PA10/EGTXCLK/LCD1-D10/SDC3-CLK/SDC2-CLK/PA-EINT10
PA11/ERXD0/LCD1-D11/SDC3-D0/SDC2-D0/PA-EINT11
PA12/ETXD1/LCD1-D12/SDC3-D1/SDC2-D1/PA-EINT12
PA13/ERXD2/LCD1-D13/SDC3-D2/SDC2-D2/PA-EINT13
PA14/ERXD3/LCD1-D14/SDC3-D3/SDC2-D3/PA-EINT14
PA15/ERXD4/LCD1-D15/CLKA-OUT/PA-EINT15
PA16/ERXD5/LCD1-D16/DMIC-CLK/PA-EINT16
PA17/ERXD6/LCD1-D17/DMIC-DIN/PA-EINT17
PA18/ERXD7/LCD1-D18/CLKB-OUT/PA-EINT18
PA19/ERXDV/LCD1-D19/PWM3-P/PA-EINT19
PA20/ERXCLK/LCD1-D20/PWM3-N/PA-EINT20
PA21/ETXERR/LCD1-D21/SPI3-CS0/PA-EINT21
PA22/ERXERR/LCD1-D22/SPI3-CLK/PA-EINT22
PA23/ECOL/LCD1-D23/SPI3-MOSI/PA-EINT23
PA24/ECRS/LCD1-CLK/SPI3-MISO/PA-EINT24
PA25/ECLKIN/LCD1-DE/SPI3-CS1/PA-EINT25
PA26/EMDC/LCD1-HSYNC/CLKC-OUT/PA-EINT26
PA27/EMDIO/LCD1-VSYNC/ECLK-IN1/PA-EINT27

PA0->GPS-RESET#
PA1->GPS-PWRON
PA2->CTP-WAKE
PA3->CTP-INT
PA4->GPS-UART-RX
PA5->GPS-UART-TX
PA6->GPS-UART-CTS
PA7->GPS-UART-RTS
PA8->SDC0-DET
PA9->GS-INT
PA10->GY-INT
PA11->CP-INT
PA12->LS-INT
PA13->USB0-DRVVBUS
PA14->USB0-VBUSDET
PA15->USB0-IDDET
PA16->DMIC-CLK
PA17->DMIC-DIN
PA18->PA-SHDN
PA19->LCD-SDA
PA20->LCD-SCL
PA21->FLASH-MODE
PA22->FLASH-EN
PA23->
PA24->
PA25->LCD-BL-EN
PA26->
PA27->USB-ICTRL

U1B — A31-BGA609i

CPUS PWR
VDD0-CPUS
VDD1-CPUS
GPU PWR
VDD0-GPU
VDD1-GPU
VDD2-GPU
VDD3-GPU
VDD4-GPU
VDD5-GPU
VDD6-GPU
VDD7-GPU
VDD8-GPU
VDD9-GPU
VDD10-GPU
VDD11-GPU
SYS PWR
VDD0-SYS
VDD1-SYS
VDD2-SYS
VDD3-SYS
VDD4-SYS
VDD5-SYS
VDD6-SYS
VDD7-SYS
VDD8-SYS
VDD9-SYS
VDD10-SYS
VDD11-SYS
CPU PWR
VDD0-CPU
VDD1-CPU
VDD2-CPU
VDD3-CPU
VDD4-CPU
VDD5-CPU
VDD6-CPU
VDD7-CPU
VDD8-CPU
VDD9-CPU
VDD10-CPU
VDD11-CPU
VDD12-CPU
VDD13-CPU
VDD14-CPU
VDD15-CPU
VDD16-CPU
VDD17-CPU
VDD18-CPU
VDD19-CPU
VDD20-CPU
VDD21-CPU
VDD22-CPU
CPU-VDDFB
COM GND
GND0
GND1
GND2
GND3
GND4
GND5
GND7
GND8
GND9
GND10
GND11
GND12
GND13
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GND58
GND59
GND60
GND61
GND62
GND63
GND64
GND65
GND66

CPUS Debug
CPUS-UTX TP1 SUTX
CPUS-URX TP3 SURX
CPUS-TMS TP2 STMS
CPUS-TCK TP4 STCK
CPUS-TDO TP5 STDO
CPUS-TDI TP6 STDI

AVCC-AP C72 104 C0402
VRP C73 10uF C0603 C74 104 C0402
VRA2 C75 2.2uF C0402 R19 200K 1% R0402
VRA1 C76 C0402 1uF
Value Can Not be Changed.
A, B Close to AP.
A R20 0R-1% R0402
B R21 0R-1% R0402
EARGND
>=30 mil
LRADC0 C83 102 C0402
HPBP C84 10uF C0603 C85 104 C0402

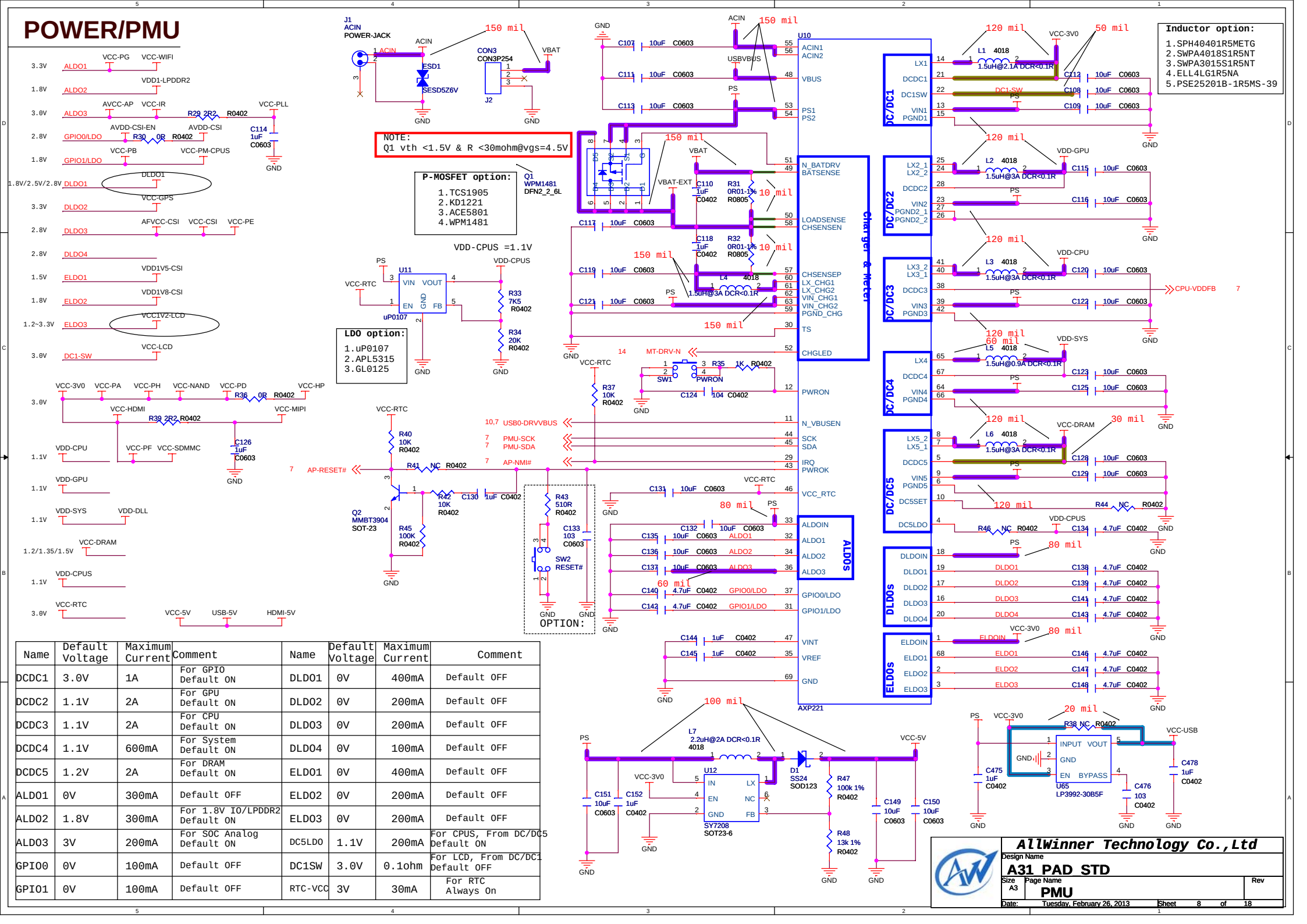
VDD-CPUS C64 1uF C0402 C62 104 C0402
VDD-GPU C66 10uF C0603 C67 1uF C0402 C68 1uF C0402 C69 104 C0402 C70 104 C0402 C71 104 C0402
VDD-SYS C77 10uF C0603 C78 1uF C0402 C79 1uF C0402 C80 104 C0402 C81 104 C0402 C82 104 C0402
VDD-CPU C87 10uF C0603 C88 1uF C0402 C89 1uF C0402 C90 1uF C0402 C91 1uF C0402 C92 1uF C0402
VDD-CPU C98 104 C0402 C99 104 C0402 C100 104 C0402 C101 104 C0402 C102 104 C0402

C61 104 C0402
C63 4.7uF C0402 C65 104 C0402
C86 104 C0402
AP-RESET#
Vpp=1.5V
AP-CK32KO
R22 10K R0402
R23 10K R0402
JTAG-SEL0
JTAG-SEL1
R24 NC/0R R0402
R25 NC/0R R0402
VCC-PM-CPUS C97 104 C0402
VCC-HP C93 104 C0402
VCC-USB C94 104 C0402
VCC-HDMI C95 104 C0402
VCC-MIPI C96 104 C0402

X24MI
X1
XIN GND XOUT GND
24M-20pF-10PPM
X24MO R27 0R R0402
C103 12pF C0402
C105 12pF C0402
X32KI
X2 32768
X32KO
R26 10M 1% R0402
C104 18pF C0402
C106 18pF C0402

CPU-VDDFB
TP7 CPU-VDDFB

POWER/PMU



Name	Default Voltage	Maximum Current	Comment	Name	Default Voltage	Maximum Current	Comment
DCDC1	3.0V	1A	For GPIO Default ON	DLDO1	0V	400mA	Default OFF
DCDC2	1.1V	2A	For GPU Default ON	DLDO2	0V	200mA	Default OFF
DCDC3	1.1V	2A	For CPU Default ON	DLDO3	0V	200mA	Default OFF
DCDC4	1.1V	600mA	For System Default ON	DLDO4	0V	100mA	Default OFF
DCDC5	1.2V	2A	For DRAM Default ON	ELDO1	0V	400mA	Default OFF
ALDO1	0V	300mA	Default OFF	ELDO2	0V	200mA	Default OFF
ALDO2	1.8V	300mA	For 1.8V IO/LPDDR2 Default ON	ELDO3	0V	200mA	Default OFF
ALDO3	3V	200mA	For SOC Analog Default ON	DC5LDO	1.1V	200mA	For CPUS, From DC/DC5 Default ON
GPIO0	0V	100mA	Default OFF	DC1SW	3.0V	0.1ohm	For LCD, From DC/DC1 Default OFF
GPIO1	0V	100mA	Default OFF	RTC-VCC	3V	30mA	For RTC Always On

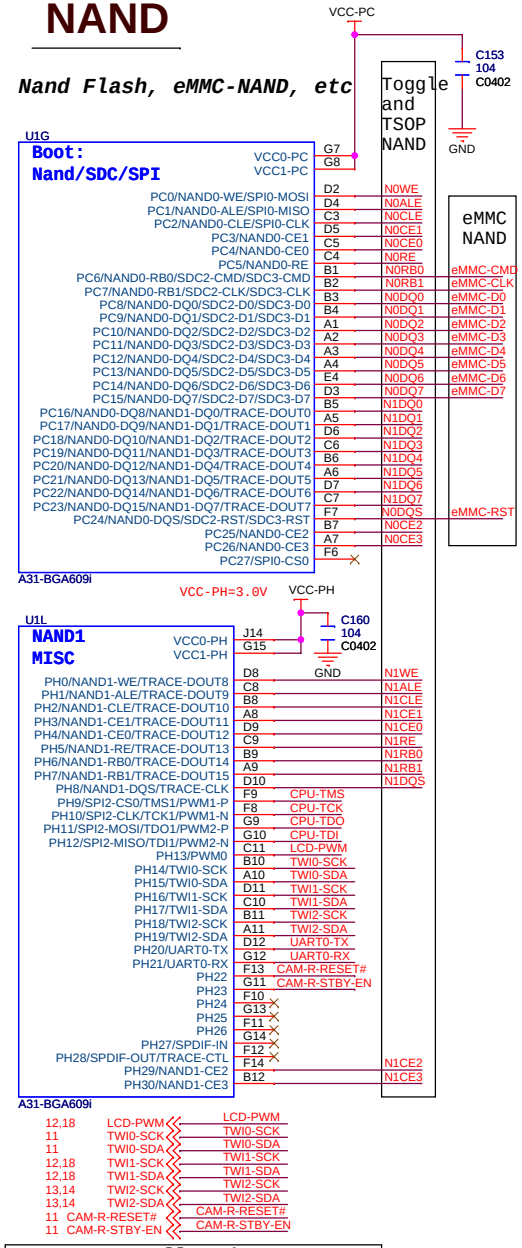
NAND

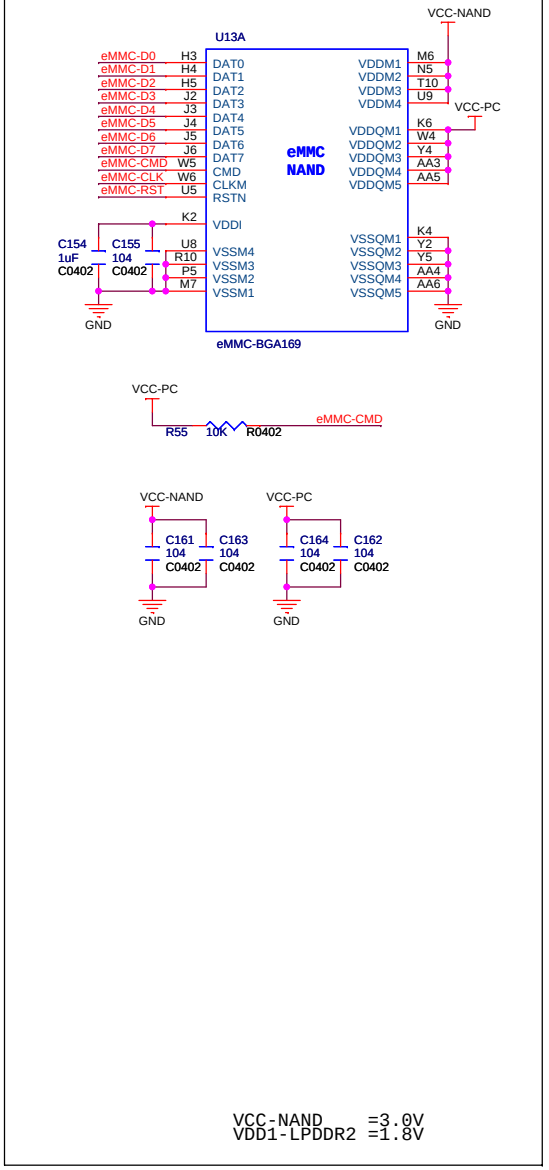
Nand Flash, eMMC-NAND, etc

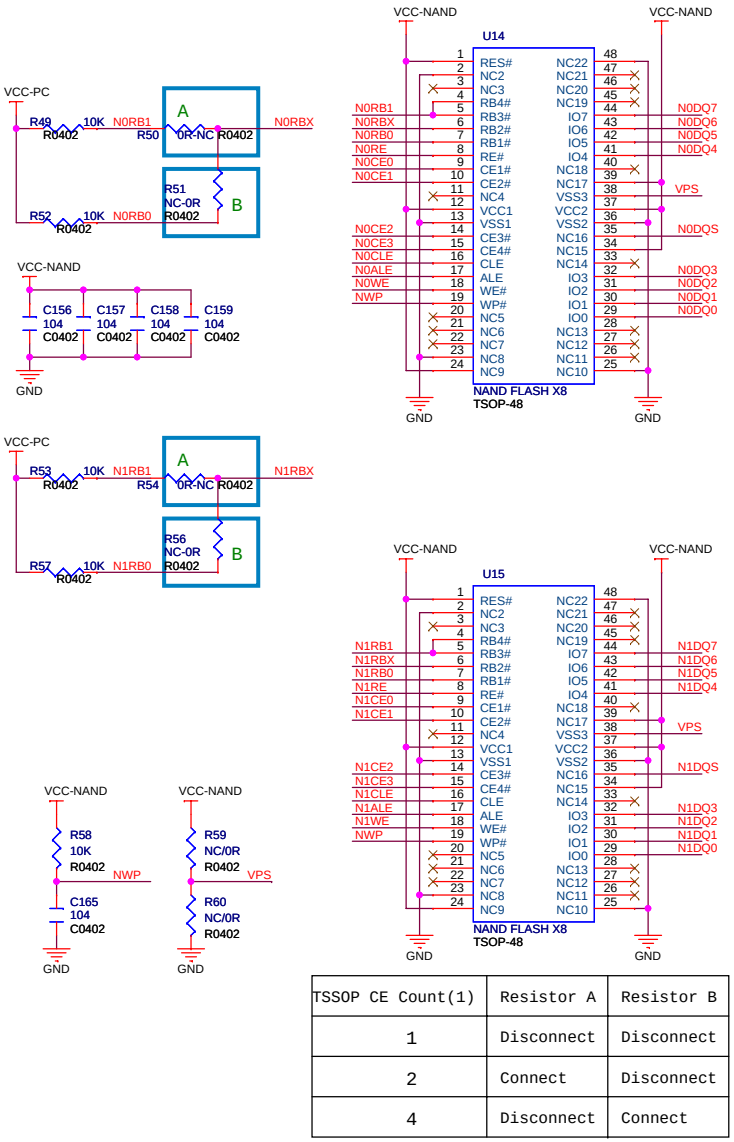
Both eMMC NAND and TSOP NAND layout together

Toggle and TSOP NAND

eMMC NAND

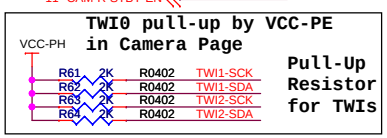




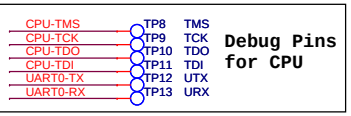


TSSOP CE Count(1)	Resistor A	Resistor B
1	Disconnect	Disconnect
2	Connect	Disconnect
4	Disconnect	Connect

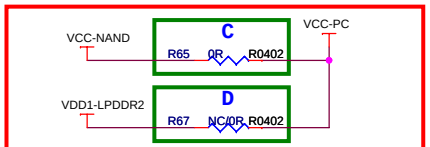
TWI0 pull-up by VCC-PE in Camera Page



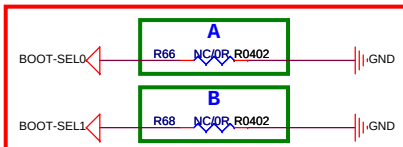
Pull-Up Resistor for TWIs



Debug Pins for CPU



C=0R、D=NC:Use nand flash.
C=NC、D=0R:Use eMMC nand flash.



A=NC、B=NC:Boot from raw nand flash
A=NC、B=0R:Boot from eMMC nand flash

AllWinner Technology Co.,Ltd

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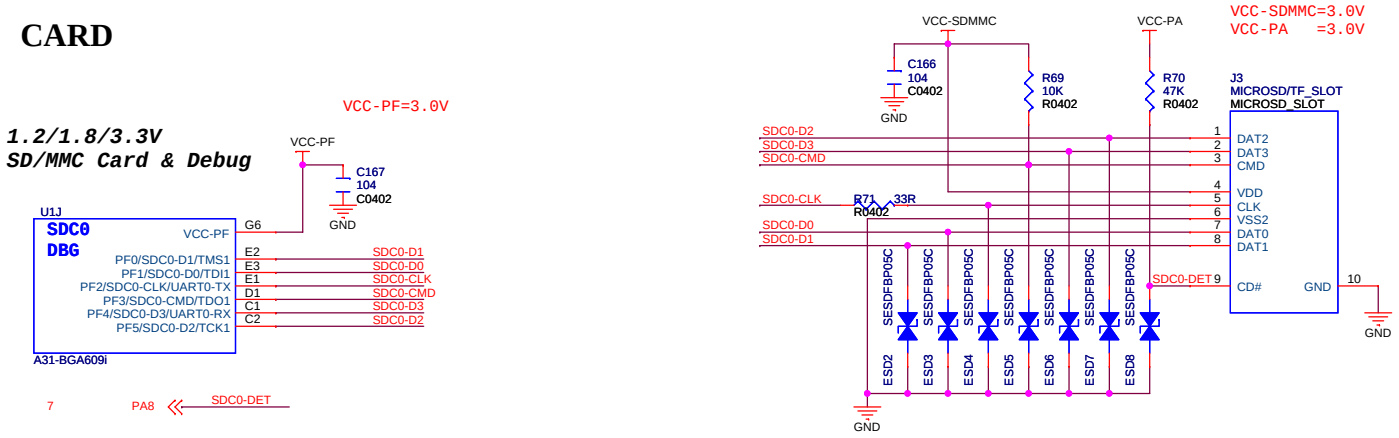
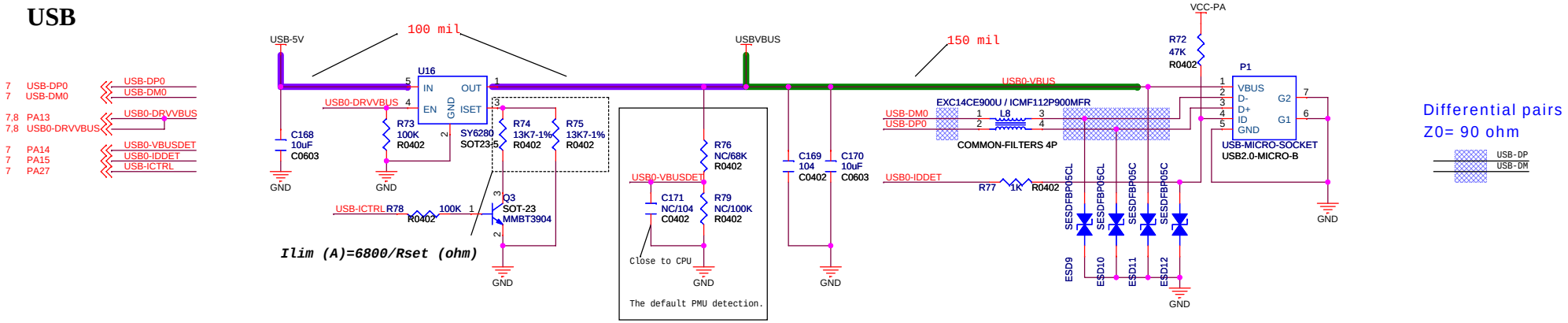
CARD-USB-HDMI

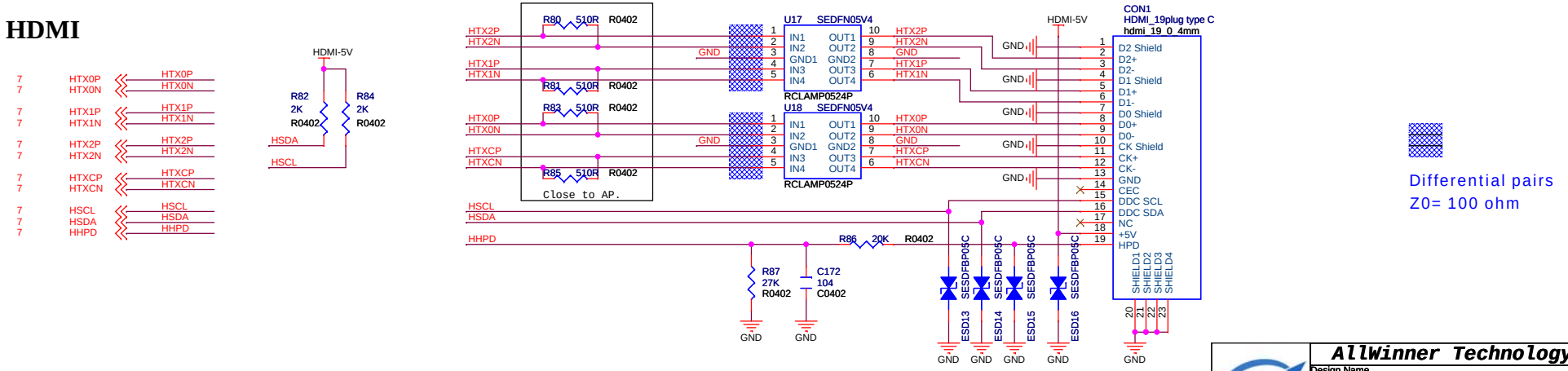
CARD



USB



HDMI



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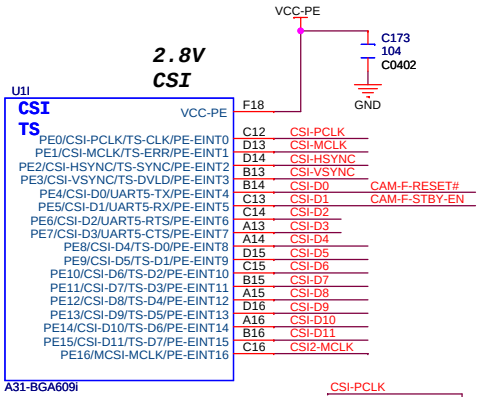
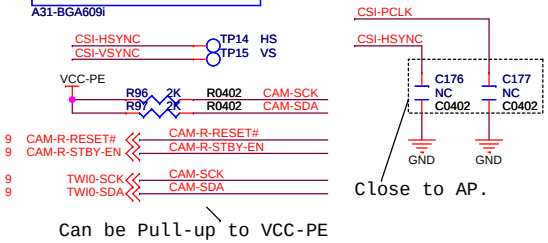
CAMERA

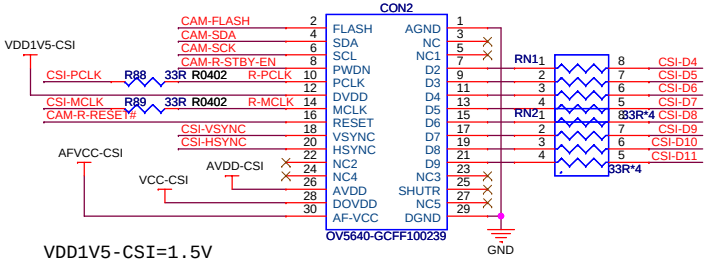
VCC-PE=2.8V

2.8V CSI

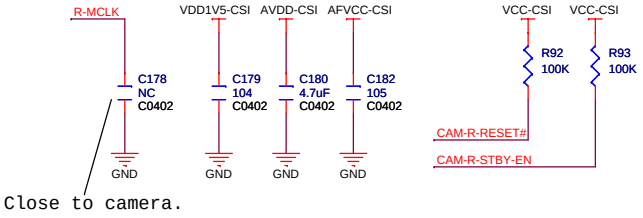




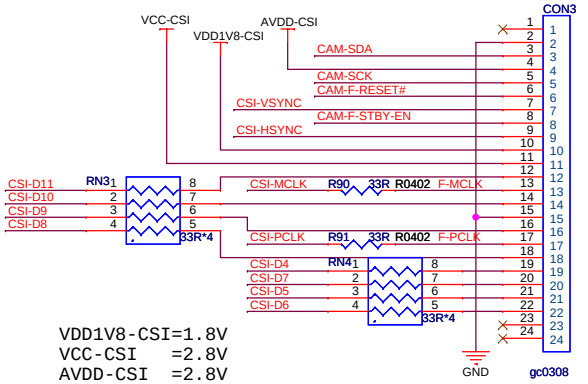
Rear Camera 5M



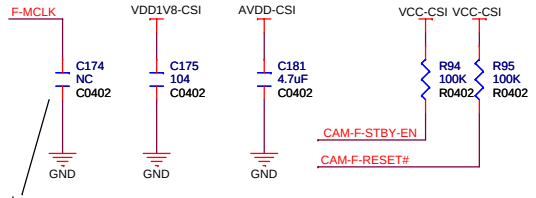
VDD1V5-CSI=1.5V
AVDD-CSI =2.8V
VCC-CSI =2.8V
AFVCC-CSI =2.8V



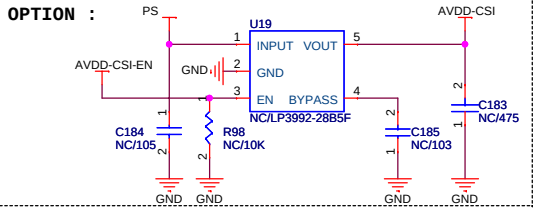
Front Camera 0.3M



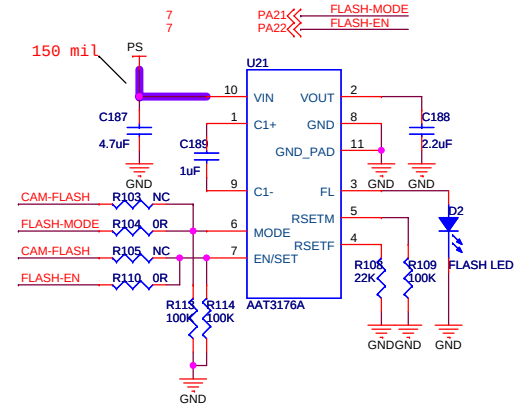
VDD1V8-CSI=1.8V
VCC-CSI =2.8V
AVDD-CSI =2.8V



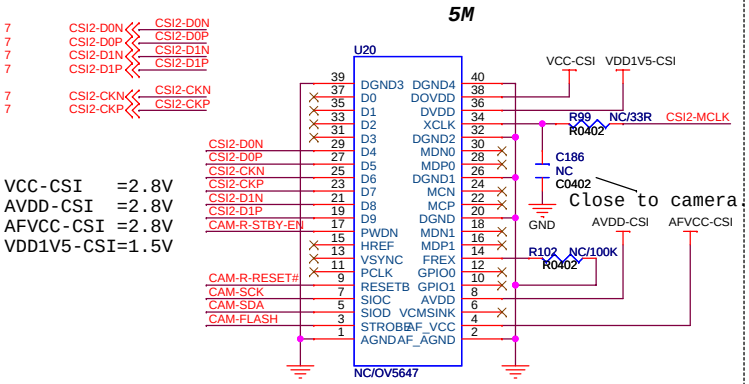
OPTION :



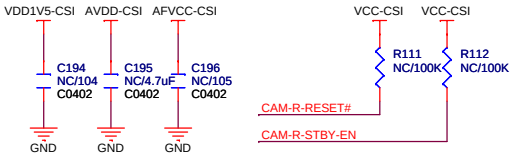
FLASH LED DRIVER



OPTION 1: CAMERA-MIPI Rear Camera 5M

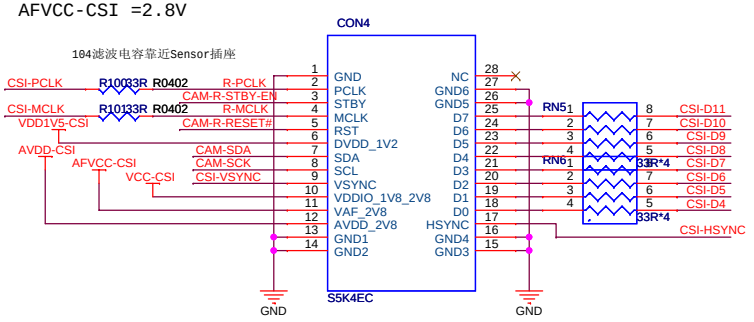


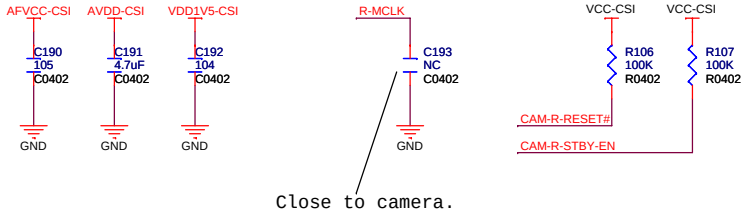
VCC-CSI =2.8V
AVDD-CSI =2.8V
AFVCC-CSI =2.8V
VDD1V5-CSI=1.5V



OPTION 2: CAMERA-CSI Rear Camera

VDD1V5-CSI=1.2V
AVDD-CSI =3.3V
VCC-CSI =2.8V
AFVCC-CSI =2.8V





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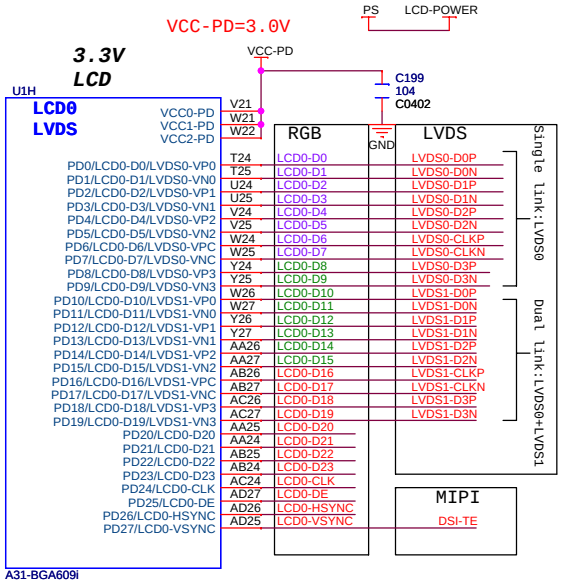
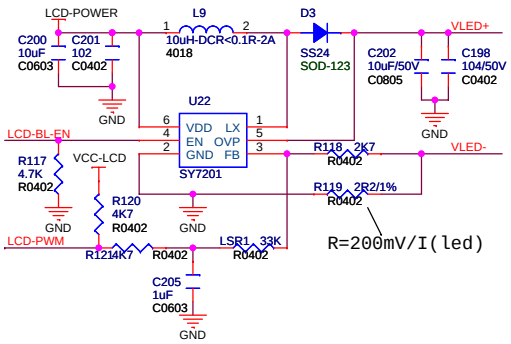
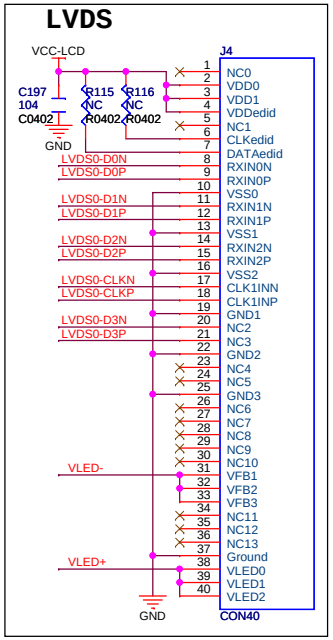
LCD-TP



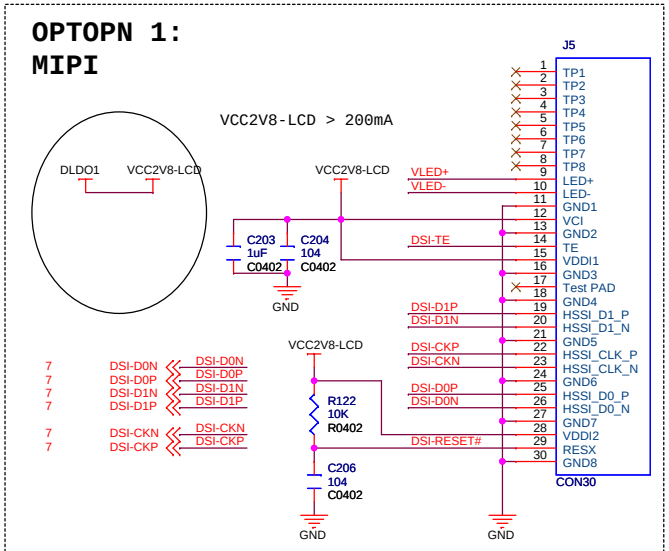
Backlight



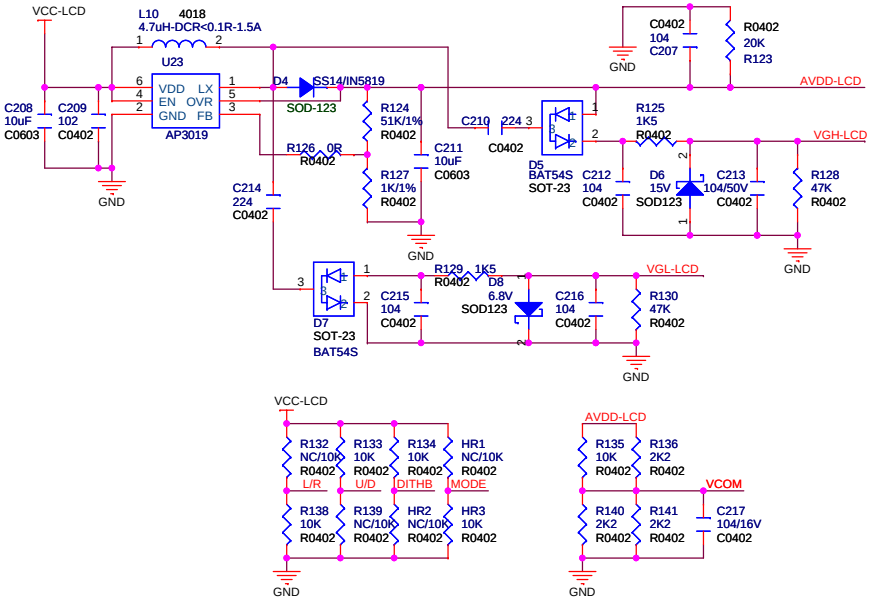
LVDS



OPTOPN 1: MIPI



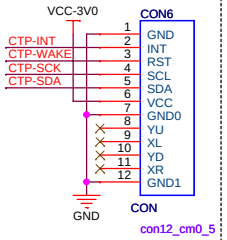
OPTOPN 2: RGB



18,7 PA2 CTP-WAKE
18,7 PA3 CTP-INT
18,9 TWI1-SCK CTP-SCK
18,9 TWI1-SDA CTP-SDA

18,9 LCD-PWM LCD-PWM
18,7 PA25 LCD-BL-EN

CTP



Option:
Connect to Capacitive Touch Panel

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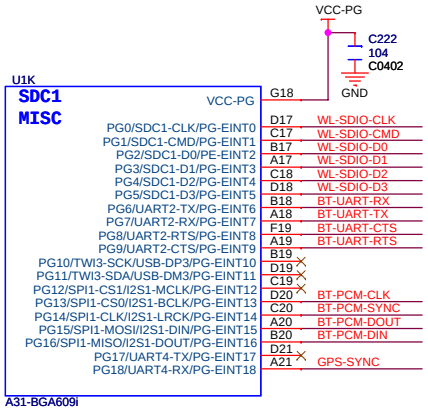
WIFI

RF Microstrip
Z0= 50 ohm

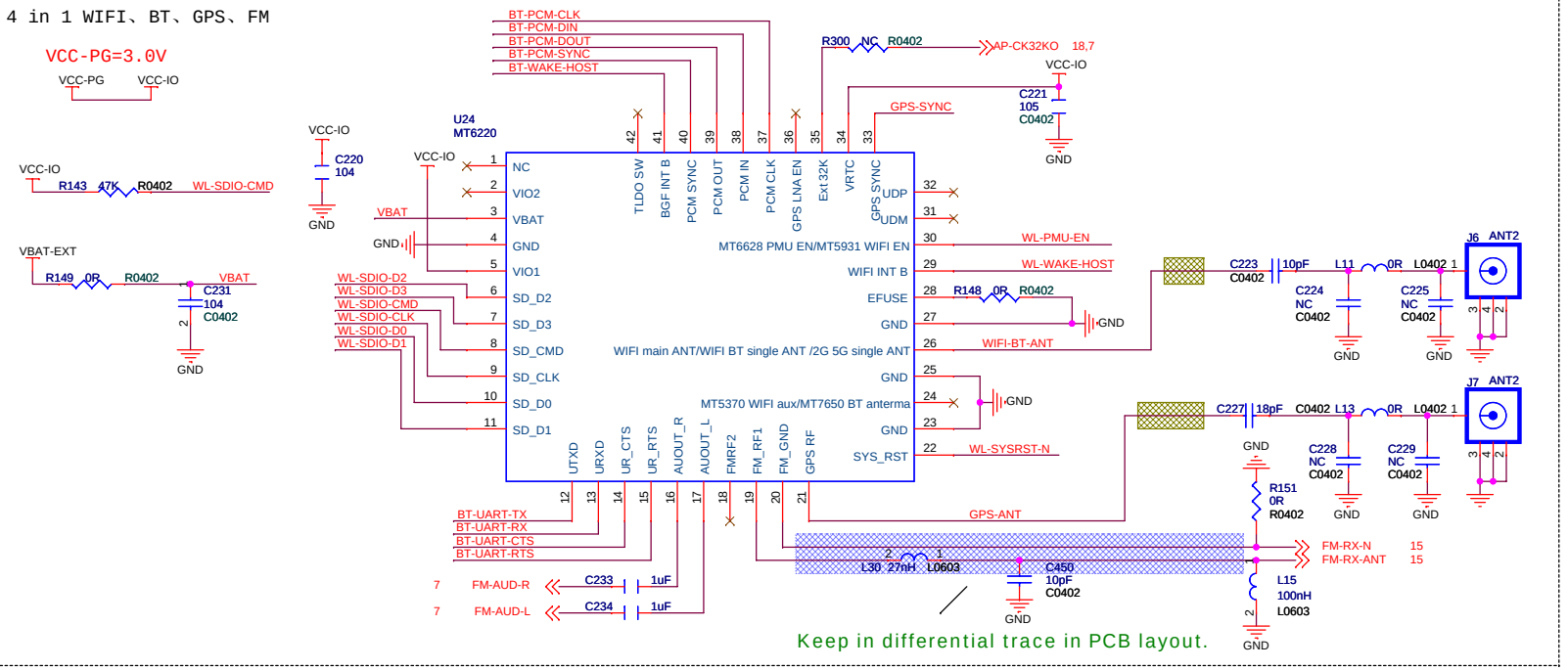


14,9 TWI2-SCK — FM-TWI-SCK
14,9 TWI2-SDA — FM-TWI-SDA

14,9 PL3 — R153 0R — WL-ENABLE
14,9 PL4 — R154 0R — WL-VBAT-EN
7 PL5 — R155 0R — WL-WAKE-HOST
7 PL6 — R156 0R — BT-WAKE-HOST
14,9 PL7 — R157 0R — BT-ENABLE
WL-SYSRST-N
14,9 PL8 — R158 0R — WL-PMU-EN

OPTION 1:
4 in 1 WIFI、BT、GPS、FM

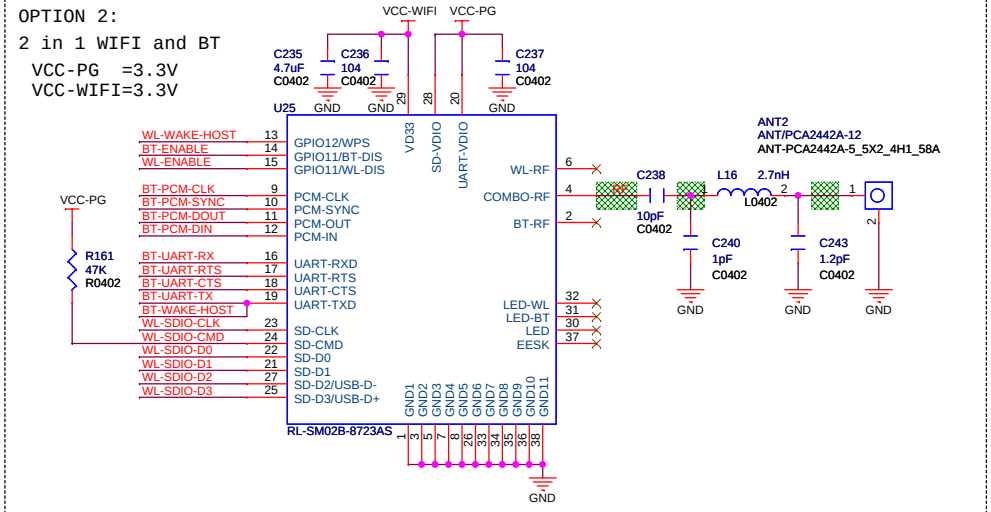
VCC-PG=3.0V



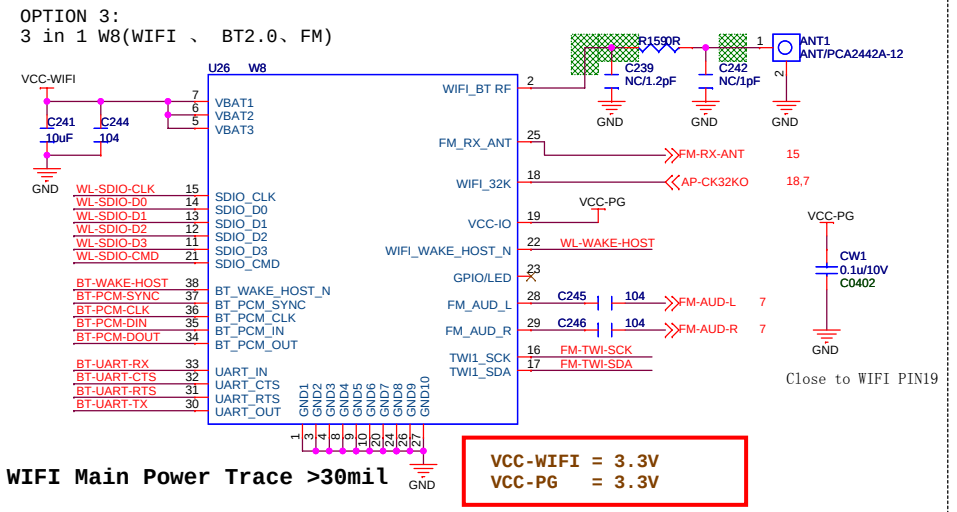
Keep in differential trace in PCB layout.

OPTION 2:
2 in 1 WIFI and BT

VCC-PG =3.3V
VCC-WIFI=3.3V



OPTION 3:
3 in 1 W8(WIFI 、 BT2.0、FM)

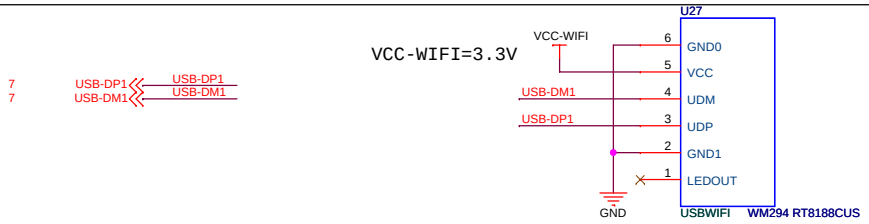


WIFI Main Power Trace >30mil

VCC-WIFI = 3.3V
VCC-PG = 3.3V

USB WIFI

VCC-WIFI=3.3V



AllWinner Technology Co.,Ltd	
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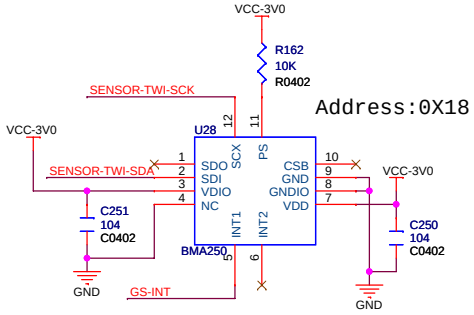
SENSORs

13,9 TWI2-SCK <<< SENSOR-TWI-SCK
13,9 TWI2-SDA <<< SENSOR-TWI-SDA

7 PA9 <<< GS-INT
7 PA10 <<< GY-INT
7 PA11 <<< CP-INT
7 PA12 <<< LS-INT

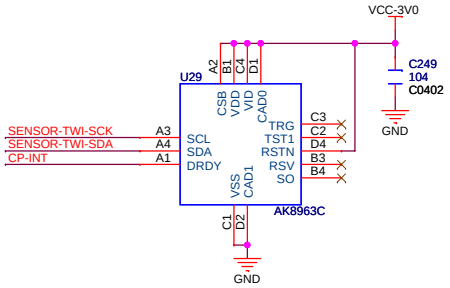
3D G-Sensor



1、The first pin paced on the left lower corner of product on top view.

Magnetic Sensor

Address:0X0D

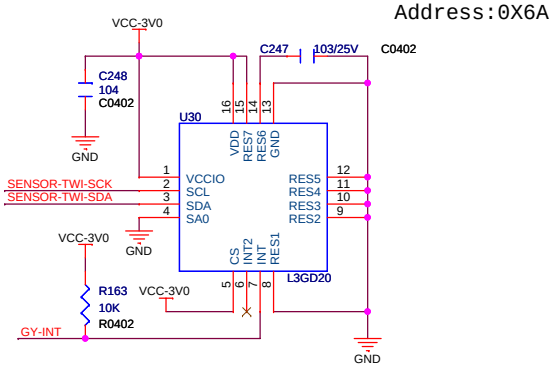


1、The first pin paced on the left lower corner of product on top view.
2、Not close to the metal.

3-Axis Gyroscope

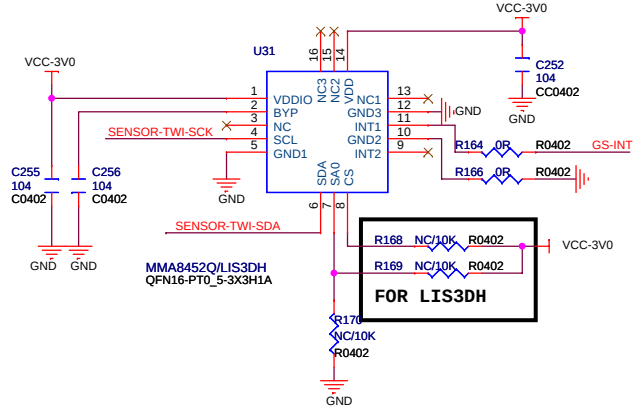
Gyroscope

Address:0X6A



1、The first pin paced on the left lower corner of product on top view.

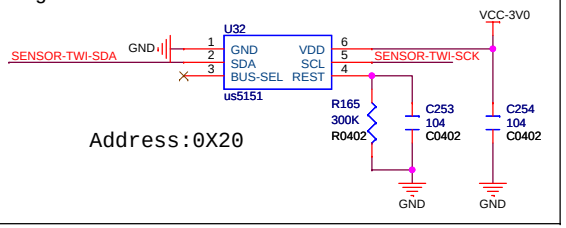
MMA8452Q/LIS3DH



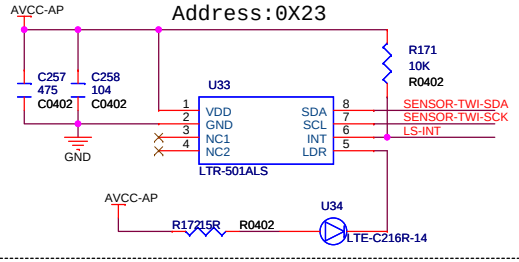
1、MMA8452Q:3x3x1mm
pin 7:NC pull down resistor and pull up resistor;
pin 8:NC pull up resistor.
2、LIS3DH:
pin 2:NC pull down capacitance ;
pin 7:NC pull down resistor , pull up resistor=10K;
pin 8: pull up resistor=10K.

Light Sensor

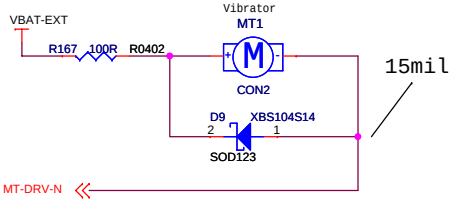
Light Sensor



OPTION:
2-in-1 Light Sensor and Proximity Sensor



Motor



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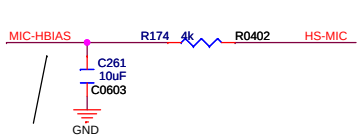
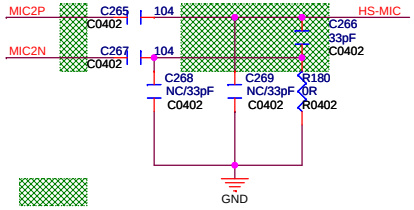
AUDIO IN/OUT

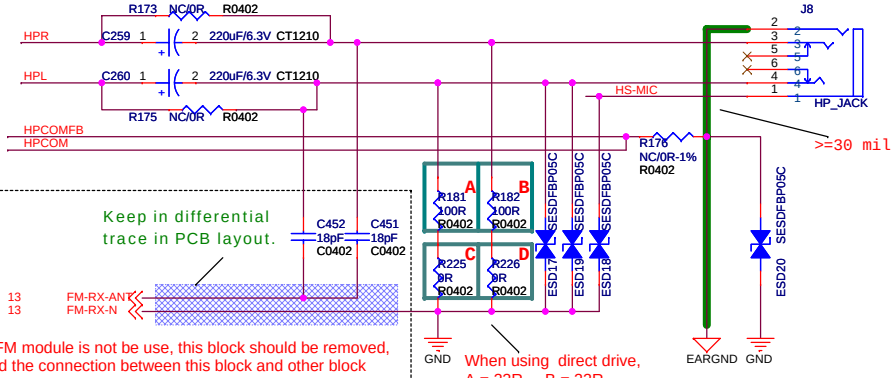
Head Phone



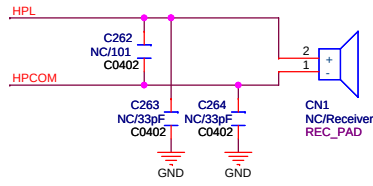
MIC-HBIAS with current detection function.

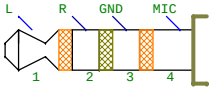


Differential pairs



Option:

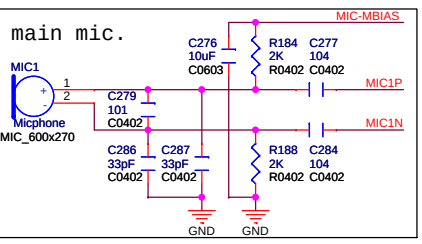


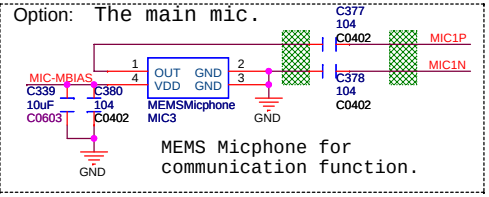


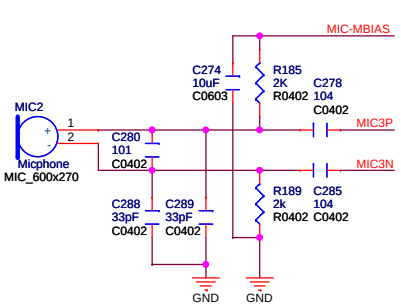
iPhone,SAMSUNG: L+R+G+M

NOTE:
1、Coupling drive support headphone MIC recording and communication function.
2、Direct drive does not support headphone MIC recording and communication function.

Analog Microphone





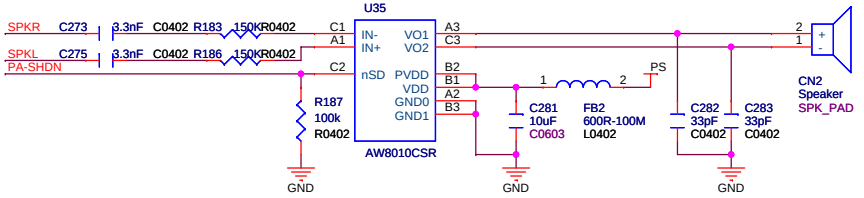


Option: MIC for Surrouding Noise Cancellation.

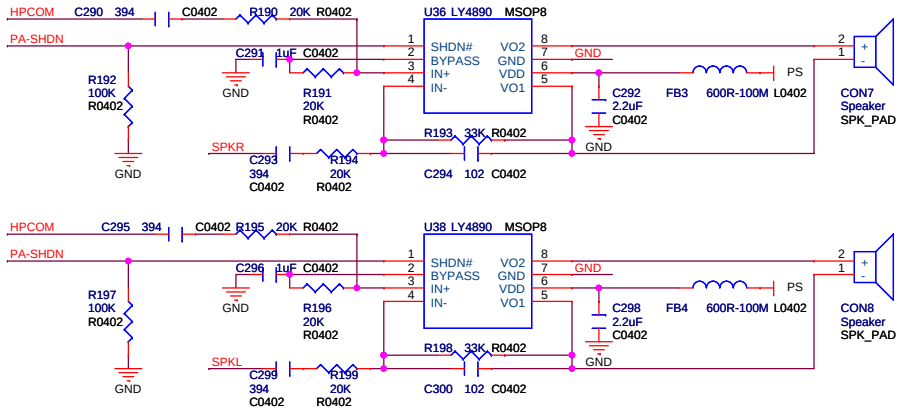
Digital Microphone(Option)

DMIC-DIN
DMIC-CLK

Speaker



Option:



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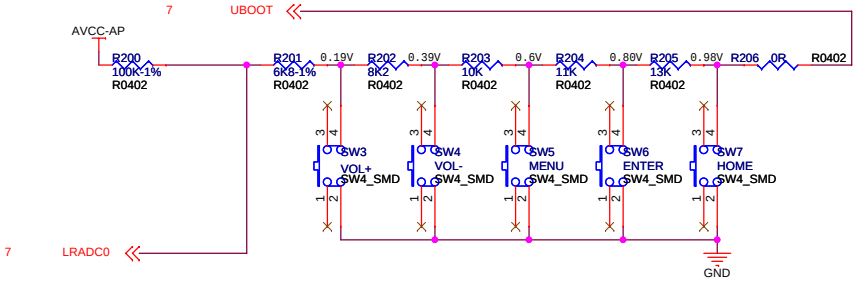
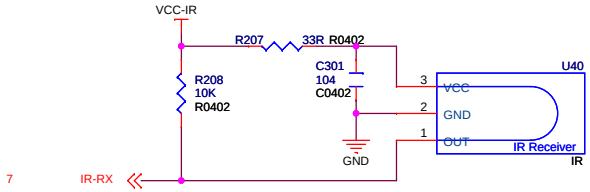
KEY-IR-MISC

KEY



IR



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BASEBAND

RF Microstrip
Z0= 50 ohm

U1F
PCM
UART
A31-BGA609I

VCC-PB
VCC-PB=1.8V

PB0/I2S0-MCLK/UART3-CTS/MCS-MCLK1/PB-EINT0	B21	BB-UART-RTS
PB1/I2S0-BCLK/PB-EINT1	C21	BB-PCM-CLK
PB2/I2S0-LRCK/PB-EINT2	A22	BB-PCM-SYNC
PB3/I2S0-DO0/PB-EINT3	B22	BB-PCM-DIN
PB4/I2S0-DO1/UART3-RTS/PB-EINT4	C22	BB-UART-CTS
PB5/I2S0-DO2/UART3-TX/TWI3-SCK/PB-EINT5	D22	BB-UART-RX
PB6/I2S0-DO3/UART3-RX/TWI3-SDA/PB-EINT6	B23	BB-UART-TX
PB7/I2S0-DI/PB-EINT7	D23	BB-PCM-DOUT

After AP Power-Down, VBAT-EXT still on,
IOs of BB should be still kept on the right level!!
Take Care of polarity of the Control Signals....

7	PM0	BB-WAKE-HOST
7	PM3	BB-PWRON
7	PM4	BB-WAKE-BB
7	PM5	BB-RF-DIS
7	PM6	BB-RST-N
7	PL2	BB-VBAT-EN
7	USB-DM2	BB-USB-DM
7	USB-DP2	BB-USB-DP

C302 33pF C0402
C304 33pF C0402

Note:
If the POWER Swtich Circuit below
do not be used, this TWO
Resistor can not be NC!!

VBAT-EXT
R213 NC-0R R0805
3G-VBAT
C308 10uF C0603
C307 NC-104 C0402
R214 510K R0402
Q8 SI2305 SOT-23
FB5 30R-100M L0603
BB-VBAT-EN
Q9 SOT-23 MMBT3904
R215 100K R0402
C317 NC-1uF C0402
R216 510K R0402
3G-VBT-PA

FBMJ1608HS280NT by TAIYO YUDEN or
MPZ1608S300ATAH0 by TDK is recommanded.

3G-VBT-PA
C321 +220uF/10V C1210
C322 +220uF/10V C1210
C323 +220uF/10V C1210
C319 104 C0402
C320 104 C0402

OPTION 1:
BASEBAND G3

U41
G3

3G-VBT-PA	1	VCC	
	2	VCC	
	3	GND	
	4	UART0_CTS_N	
	5	UART0_RTS_N	
	6	UART0_RX_DATA	
	7	UART0_TX_DATA	
	8	SPI_CLK	
	9	SPI_CSN0	
	10	GND	
SIM-DATA	11	UIM_DATA	
SIM-RST	12	UIM_RESET	
SIM-CLK	13	UIM_CLK	
SIM-VCC	14	VSIM	
	15	VDD_IO	
	16	GPIO41/HEADMIC_IN	
	17	AUXMICN	
	18	AUXMICP	
	19	HPH_LP	
	20	HPH_RN	
	21	HSED_BIAS	
BB-MICN	22	MICN	
BB-MICP	23	MICP	
BB-REC-P	24	EARP	
BB-REC-N	25	EARN	
	26	GND	
	27	SPI_MISO_DATA	
	28	I2C_SCL	
	29	I2C_SDA	
	30	GND	
	60	VCC	3G-VBT-PA
	59	VCC	
	58	GND	
	57	VCC/NC	3G-VCC
	56	AUX_PCM_DOUT	BB-PCM-DOUT
	55	AUX_PCM_DIN	BB-PCM-DIN
	54	AUX_PCM_CLK	BB-PCM-CLK
	53	AUX_PCM_SYNC	BB-PCM-SYNC
	52	SPI_MOSI_DATA	
	51	WAKE	BB-WAKE-HOST
	50	GND	
	49	USB_DM	R210 0R BB-USB-DM
	48	USB_DP	R211 0R BB-USB-DP
	47	GND	
	46	VDD_SDIO	
	45	SD0_DATA3	
	44	SD0_DATA2	
	43	SD0_DATA1	
	42	SD0_DATA0	
	41	SD0_CMD	
	40	SD0_CLK	
	39	GPIO_105	
	38	GPIO_20	
	37	GND	
	36	EXT_RSTN	BB-RST
	35	GPIO_21	
	34	GPIO_19	
	33	KPLED	
	32	KPDPWR_N	
	31	GND	

R209 NC/0R
MSM-IO
SIM-VCC
C303 1uF C0402
Q6 DTC143ZE
BB-RST-N
C305 33pF C0402
nPWR
Q7 DTC143ZE
R212 0R BB-PWRON
C306 33pF C0402

SIM-VCC = 1.8V/3V
MSM-IO = VCC-PB = 2.8V

17,7	PHOUTN	C309	105	BB-MICN	BB-MICN	C310 33pF
17,7	PHOUTP	C311	105	BB-MICP	BB-MICP	C312 33pF
17,7	PHINP	C313	105	BB-REC-P	BB-REC-P	C314 33pF
17,7	PHINN	C315	105	BB-REC-N	BB-REC-N	C316 NC/33pF

J9
SIM SOCKET
SIM_SCGC1B03H1_55A

R217 4K7 R0402
C318 104 C0402
ESD21 NC-SESDFBP05C
ESD22 NC-SESDFBP05C
ESD23 NC-SESDFBP05C
ESD24 NC-SESDFBP05C

VCC-5V
R220 NC/0R R0402
3G-VBUS-5V
3G-1V8
R222 100K R0402
BB-RST-N
C332 104 C0402

17,7	PHOUTP	
17,7	PHOUTN	
17,7	PHINP	
17,7	PHINN	

R218 NC R0402
C324 105 C0402
C325 105 C0402
C326 105 C0402
C327 105 C0402

U42
PW6086 PW6086_H2_65A

SIM-VCC	1	VREG_USIM	GND4	36	
SIM-RST	2	USIM_RST	GND3	35	
SIM-CLK	3	USIM_CLK	SIG_LED	34	
SIM-DATA	4	USIM_DATA	PCM_DIN	33	BB-PCM-DIN
	5	GND	PCM_CLK	32	BB-PCM-CLK
	6	EAR2_P	USB_DM	31	BB-USB-DM
	7	EAR1_P	USB_DP	30	BB-USB-DP
	8	EAR1_N	ON/OFF	29	BB-PWRON
	9	MIC2_P	PCM_SYNC(/DSR)	28	BB-PCM-SYNC
	10	MIC1_P	PCM_DOUT(DCD)	27	BB-PCM-DOUT
	11	MIC1_N	/DTR	26	BB-SIM-DET
	12	GND1	/RTS	25	BB-UART-RTS
BB-RST-N	13	/PON_RST	RI	24	BB-WAKE-HOST
	14	VBUS	TXD	23	BB-UART-TX
3G-VBUS-5V	15	VCHG	RXD	22	BB-UART-RX
3G-VBT-PA	16	V_MAIN	/CTS	21	BB-UART-CTS
	17	V_MSME_1V8	GND2	20	
3G-1V8	18	V_MAIN1	RF_ANT	19	ANT/PCA2442A-121

ANT3
ANT-PCA2442A-5_5X2_4H1_58A

SIM-VCC
R221 4K7 R0402
SIM-RST
SIM-CLK
SIM-DATA
3G-1V8
R219 100K R0402
BB-SIM-DET
J10
SIM SOCKET
SIM_SCGC1B03H1_55A
C328 104
C329 33pF
C330 33pF
C331
ESD25 NC-SESDFBP05C
ESD26 NC-SESDFBP05C
ESD27 NC-SESDFBP05C
ESD28 NC-SESDFBP05C

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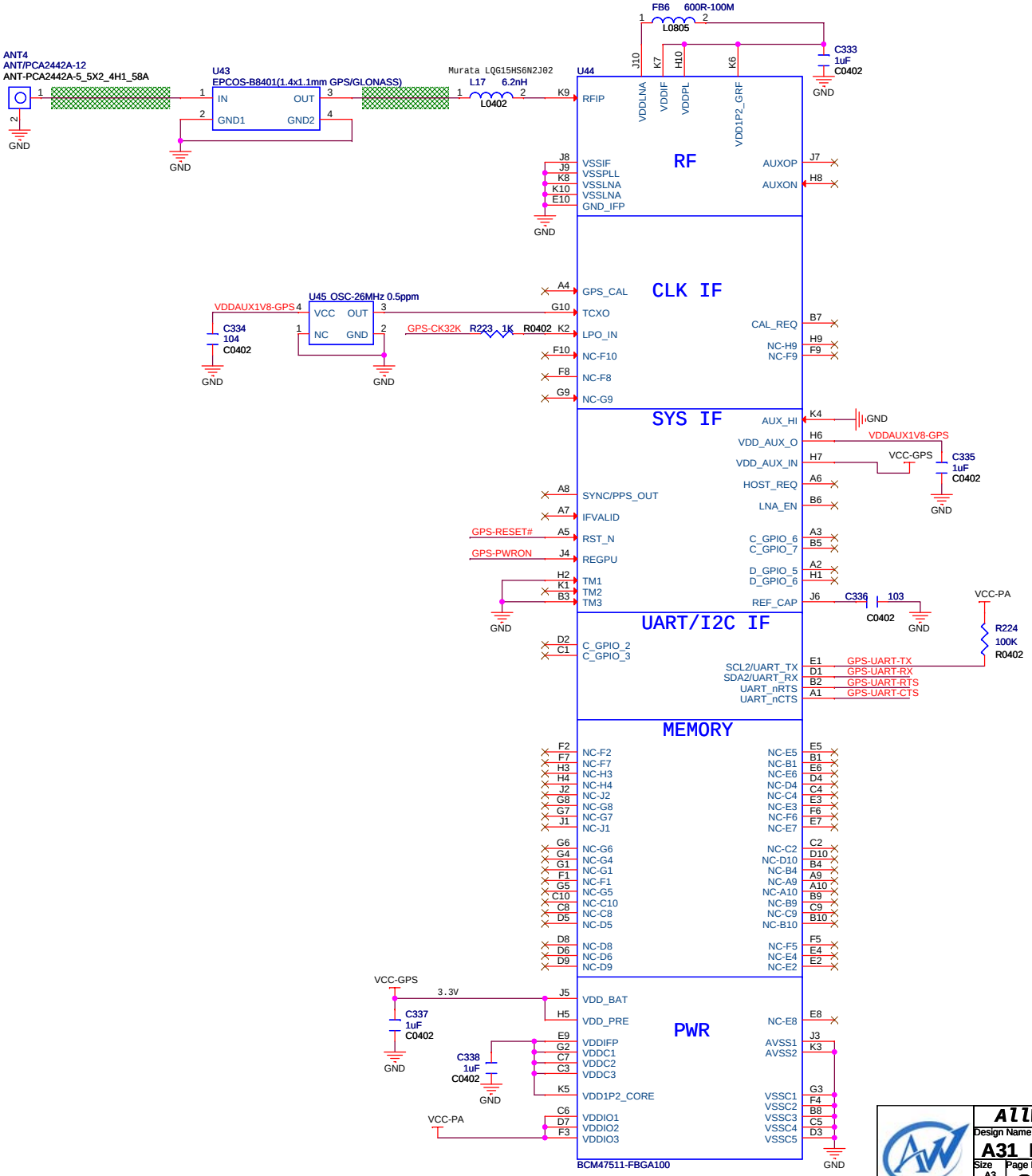
GPS

7 PA4 GPS-UART-RX
7 PA5 GPS-UART-TX
7 PA6 GPS-UART-CTS
7 PA7 GPS-UART-RTS
7 PA0 GPS-RESET#
7 PA1 GPS-PWRON
13,7 AP-CK32KO GPS-CK32K
Vpp=1.5V

RF Microstrip
Z0= 50 ohm



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Size	A3
Page Name	GPS
Rev	
Date:	Sunday, January 06, 2013
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