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		

AllWinner Technology Co.,Ltd

Design Name: PAD_APP4_STD

Size: A3 | Page Name: REVISION HISTORY | Rev:

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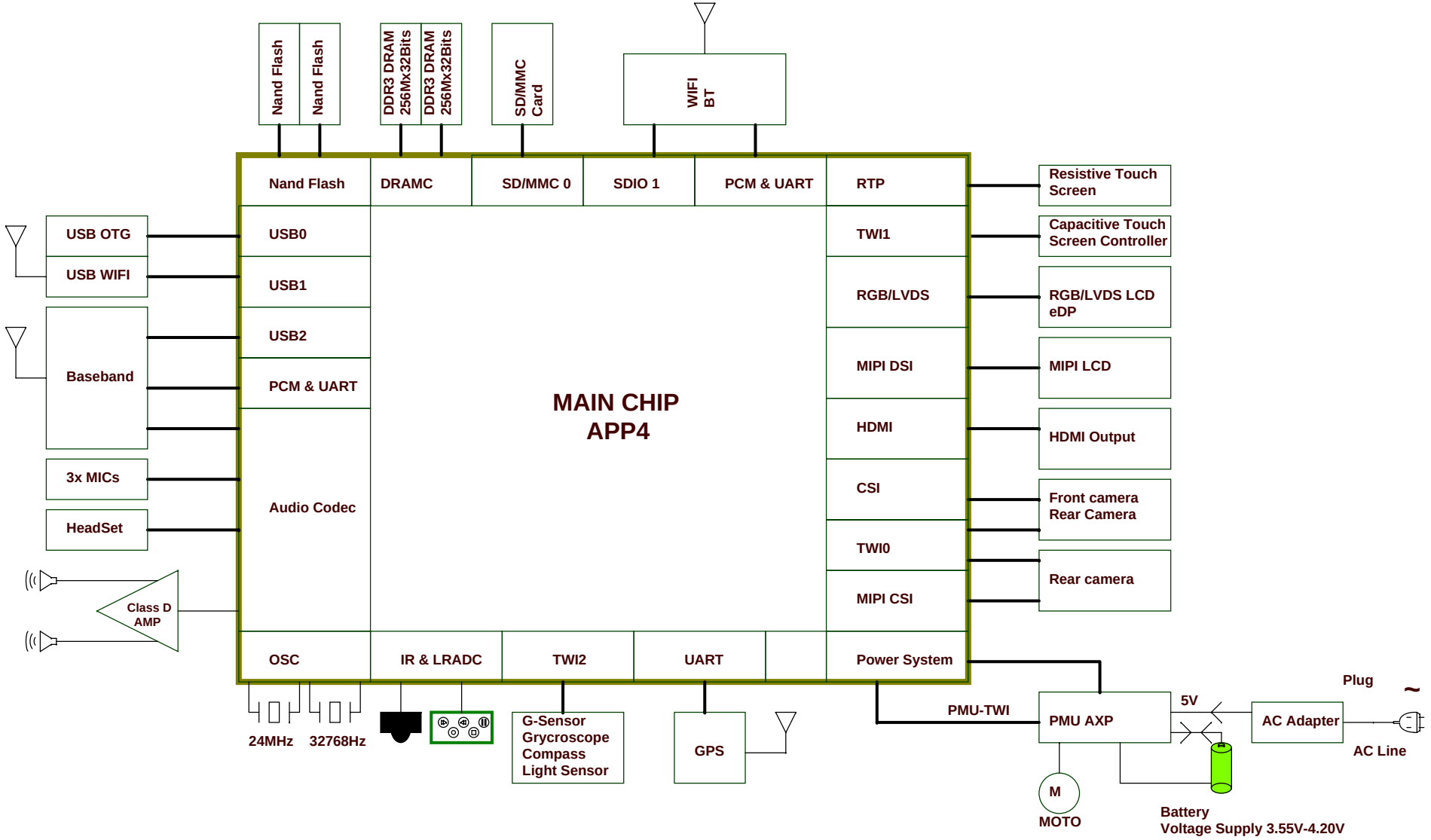
BLOCK



AllWinner Technology Co.,Ltd		
Design Name: PAD_APP4_STD		
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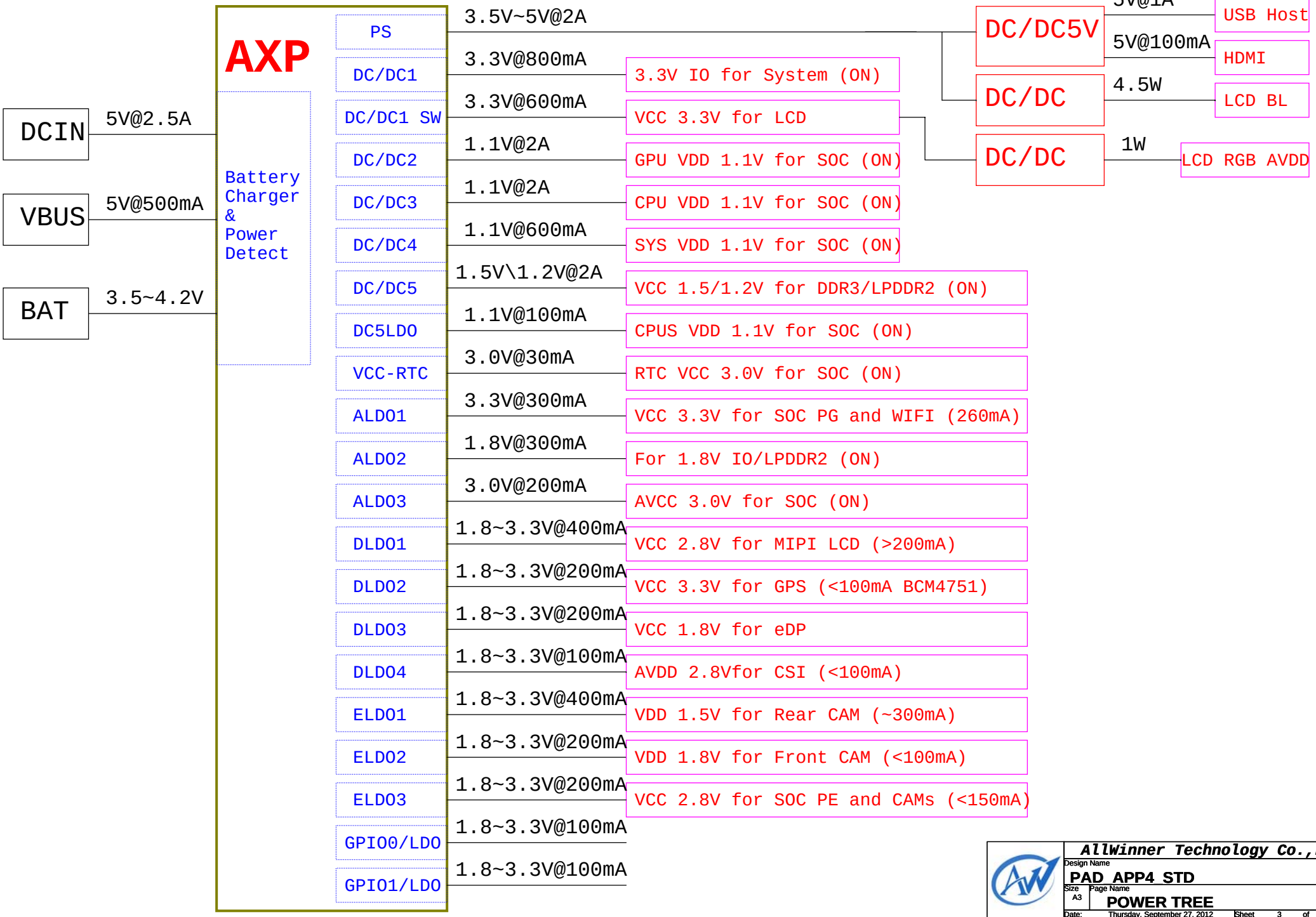
POWER TREE



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Design Name	PAD_APP4_STD
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Rev	
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GPIO ASSIGNMENT

No.	Define	Function
PA0	GPS-RST	GPS
PA1	GPS-PWR	
PA2	CTP-WAKE	CTP
PA3	CTP-INT	
PA4	GPS-UART-RX	GPS
PA5	GPS-UART-TX	
PA6	GPS-UART-CTS	
PA7	GPS-UART-RTS	
PA8	SD0-DET	SD Card
PA9	GS-INT	Sensors
PA10	GY-INT	
PA11	CP-INT	
PA12	LS-INT	
PA13	USB0-DRV	USB
PA14	USB0-VBUSDET	
PA15	USB0-IDDET	
PA16	DMIC-CLK	DMIC
PA17	DMIC-DIN	
PA18	SPK-SHDN	AUDIO
PA19	LCD-SDA	LCD-eDP
PA20	LCD-SCL	
PA21		
PA22		
PA23		
PA24		
PA25	LCD-BL-EN	LCD
PA26	USB1-DRV	USB
PA27	USB-ICTRL	

No.	Define	Function
PB0	BB-UART-RTS	BB
PB1	BB-PCM-CLK	
PB2	BB-PCM-SYNC	
PB3	BB-PCM-IN	
PB4	BB-UART-CTS	
PB5	BB-UART-RX	
PB6	BB-UART-TX	
PB7	BB-PCM-OUT	

No.	Define	Function
PG0	WL-SDIO-CLK	WIFI
PG1	WL-SDIO-CMD	
PG2	WL-SDIO-D0	
PG3	WL-SDIO-D1	
PG4	WL-SDIO-D2	
PG5	WL-SDIO-D3	
PG6	BT-UART-RX	BT
PG7	BT-UART-TX	
PG8	BT-UART-CTS	
PG9	BT-UART-RTS	
PG10	WL-ENABLE	WIFI
PG11	WL-WAKE	
PG12	WL-HOST-WAKE	
PG13	BT-PCM-CLK	BT
PG14	BT-PCM-SYNC	
PG15	BT-PCM-OUT	
PG16	BT-PCM-IN	
PG17	BT-ENABLE	
PG18	BT-WAKE	

No.	Define	Function
PH0	NAND1-WE	NAND
PH1	NAND1-ALE	
PH2	NAND1-CLE	
PH3	NAND1-CE1	
PH4	NAND1-CE0	
PH5	NAND1-RE	
PH6	NAND1-RB0	
PH7	NAND1-RB1	
PH8	NAND1-DQS	
PH9	TMS	DEBUG
PH10	TCK	
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	
PH20	UART-TX	DEBUG
PH21	UART-RX	
PH22		
PH23		
PH24		
PH25		
PH26		
PH27		
PH28		
PH29	NAND1-CE2	NAND
PH30	NAND1-CE3	

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

NOTE:
PA21-24 and PH22-28 can be used for GPIO and others are reserved for function using.

AllWinner Technology Co.,Ltd

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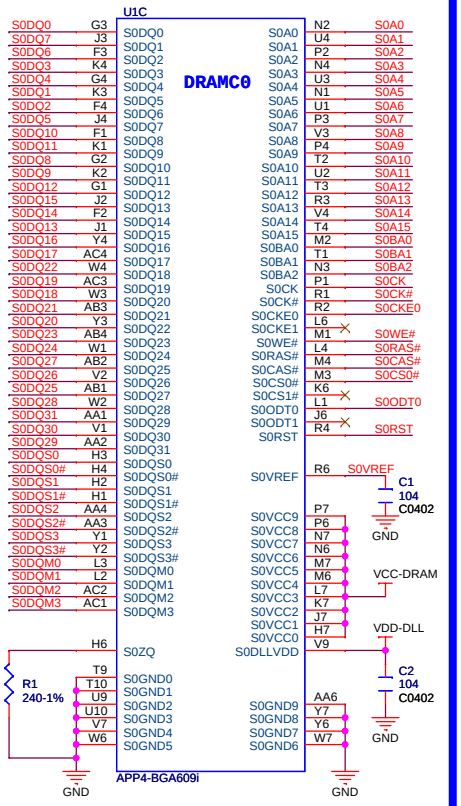
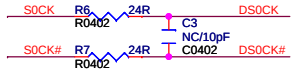
DDR3

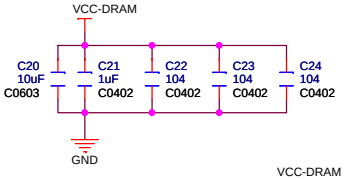
1.5/1.35/1.2V
DDR3/LVDDR3/LPDDR2

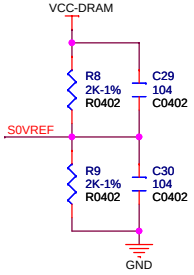
Please copy DRAM PCB template and follow PCB layout guide. The circuit is only for single-side PCB layout.

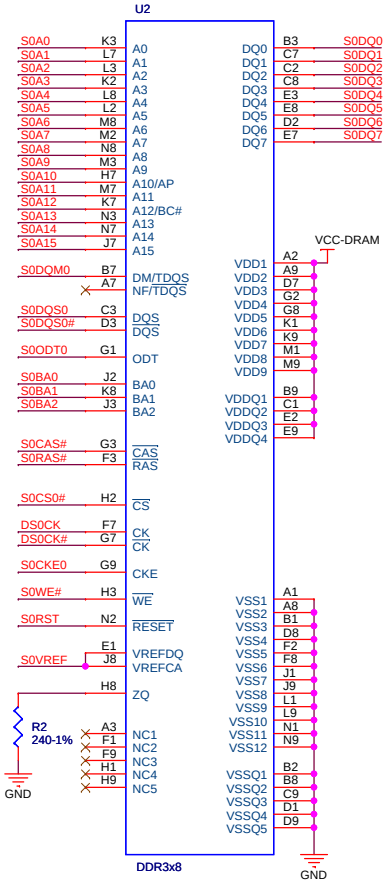


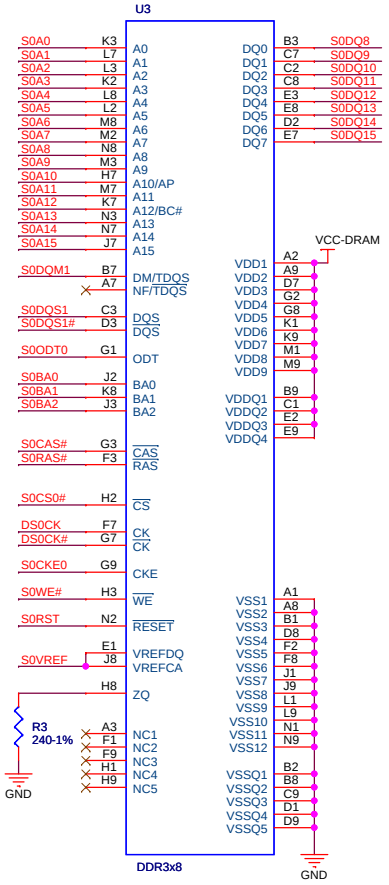
VCC-DRAM=1.5V
VDD-DLL =1.1V

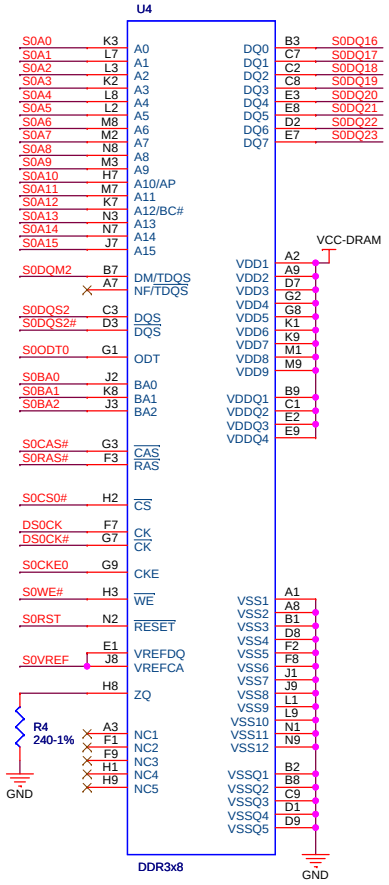


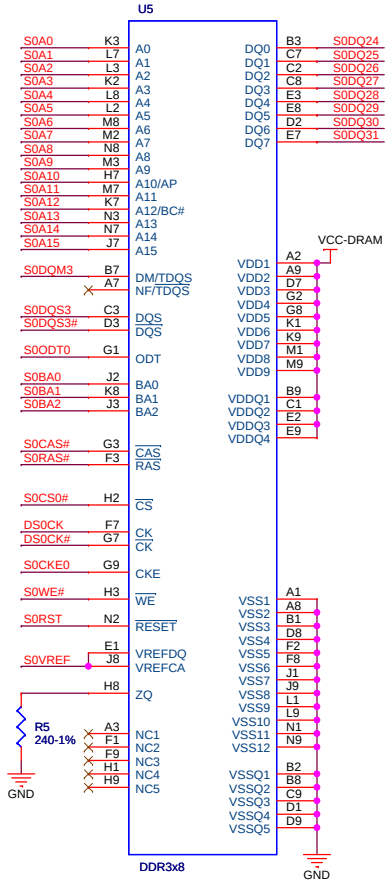


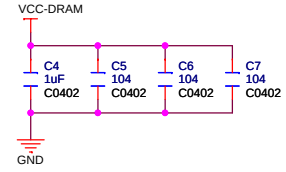


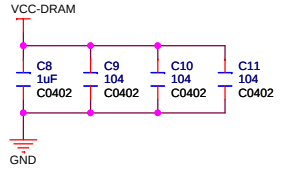


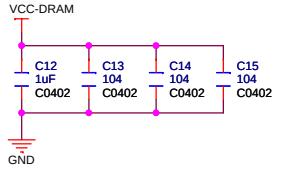


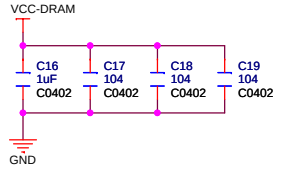












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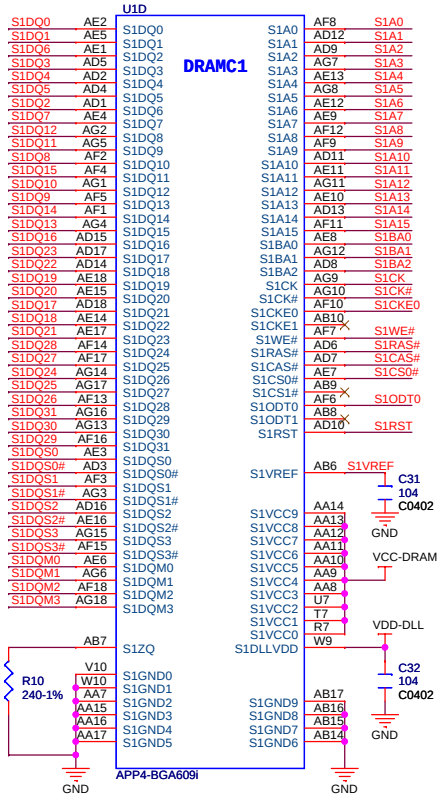
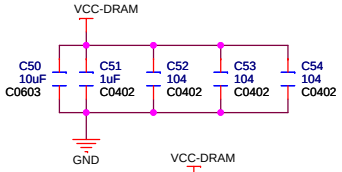
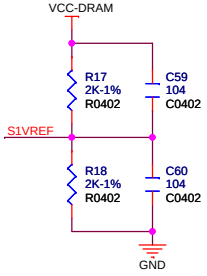
DDR3

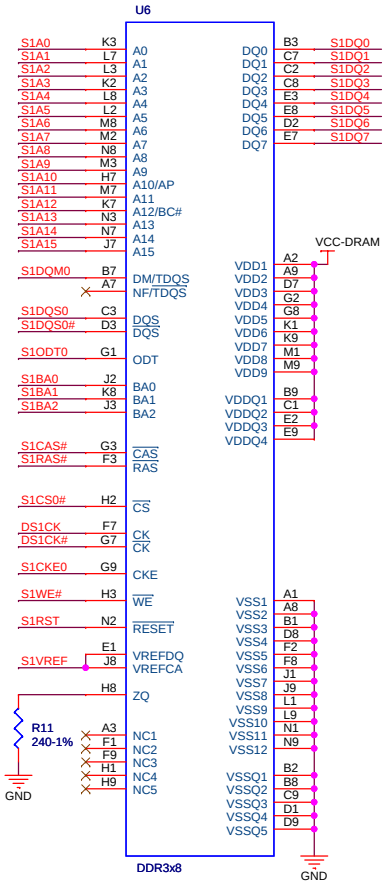
1.5/1.35/1.2V
DDR3/LVDDR3/LPDDR2

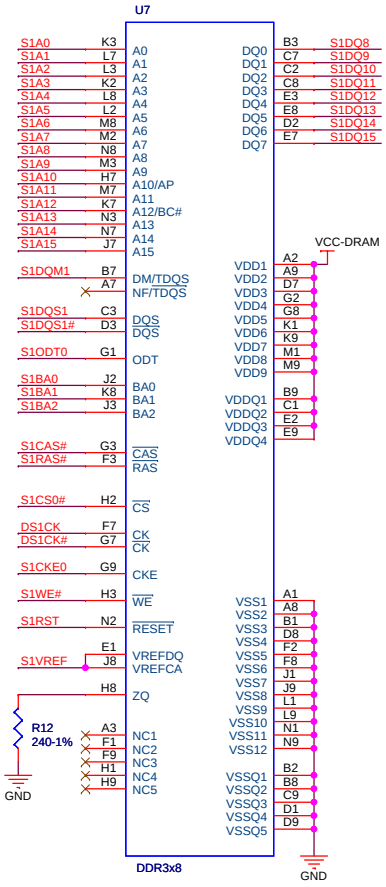


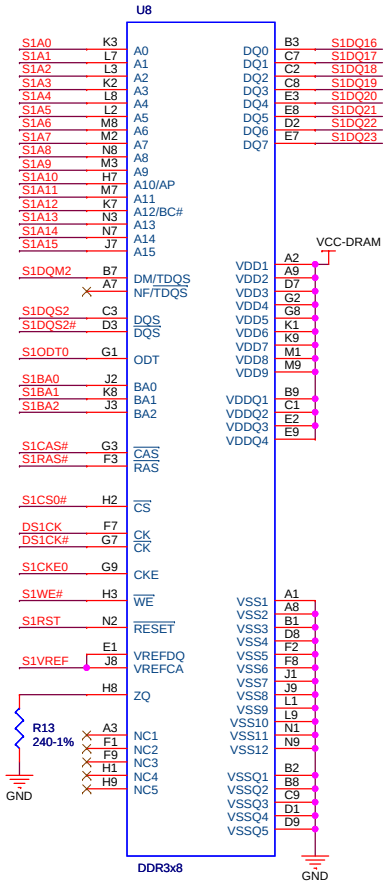
VCC-DRAM=1.5V
VDD-DLL =1.1V

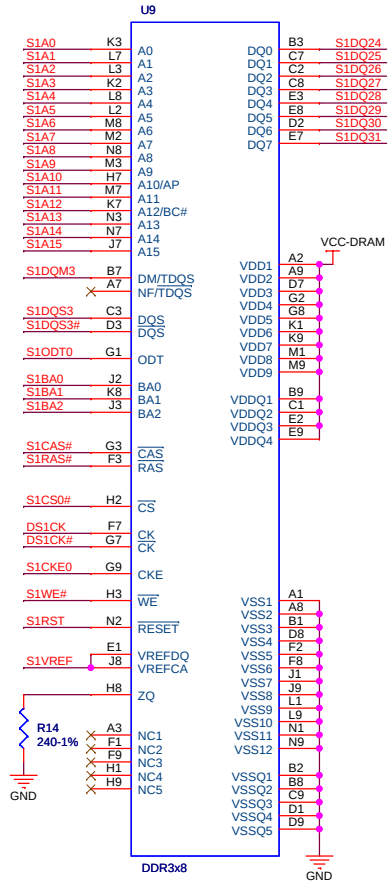


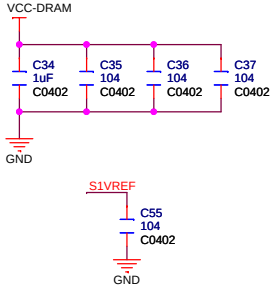


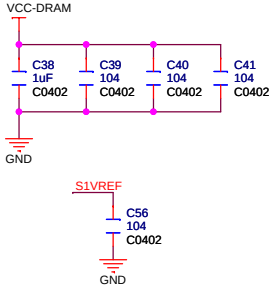


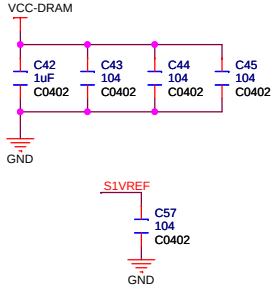


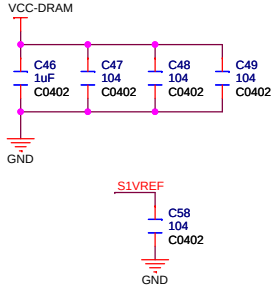












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Design Name: PAD_APP4_STD			
Size: A3	Page Name: DDR3x8-2		Rev
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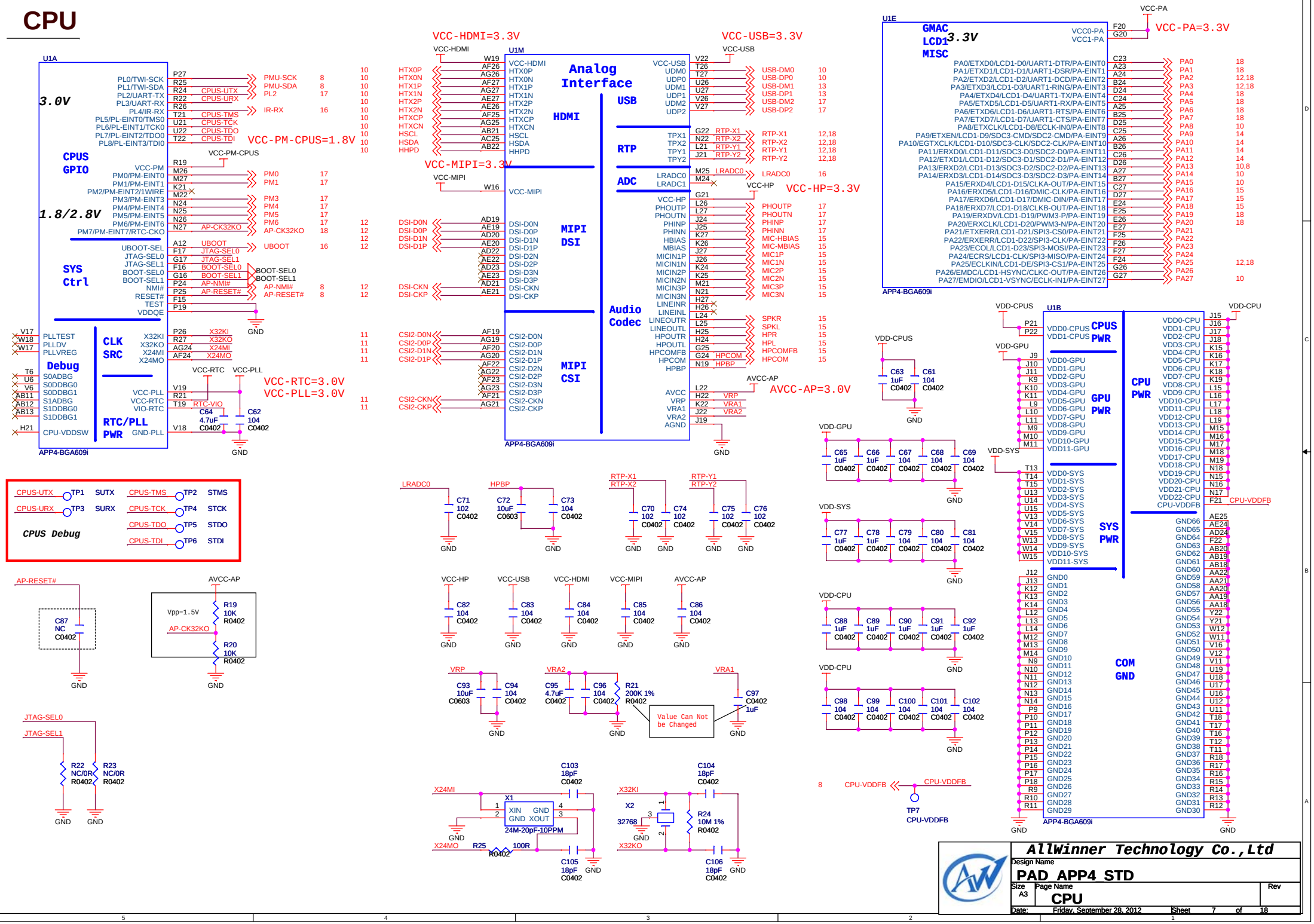
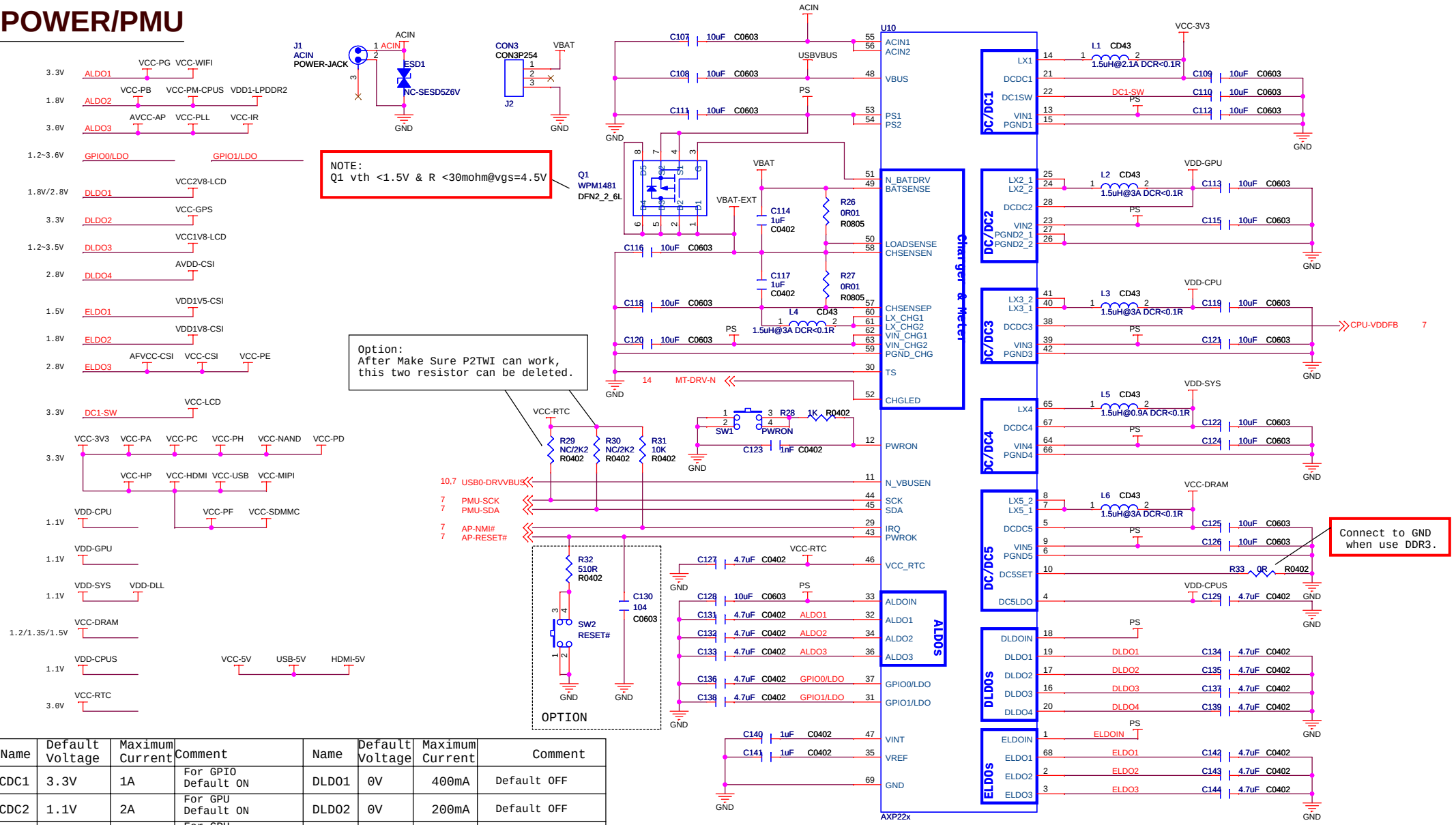
CPU


U1A
3.0V
1.8/2.8V
CPUS GPIO
SYS Ctrl
CLK SRC
Debug
RTC/PLL PWR
APP4-BGA609i
VCC-PM-CPUS=1.8V
VCC-RTC=3.0V
VCC-PLL=3.0V
U1M
Analog Interface
HDMI
USB
RTP
ADC
MIPI DSI
Audio Codec
MIPI CSI
VCC-HDMI=3.3V
VCC-USB=3.3V
VCC-MIPI=3.3V
VCC-HP=3.3V
AVCC-AP=3.0V
U1E
GMAC
LCD1
MISC
3.3V
VCC-PA=3.3V
U1B
CPUS PWR
GPU PWR
CPU PWR
SYS PWR
COM GND
CPU Debug
Value Can Not be Changed
AllWinner Technology Co.,Ltd
PAD_APP4_STD
CPU

POWER/PMU



Name	Default Voltage	Maximum Current	Comment	Name	Default Voltage	Maximum Current	Comment
DCDC1	3.3V	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	1.2/1.35/1.5V	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	3.3V	0.1ohm	For LCD, From DC/DC1 Default OFF
GPIO1	0V	100mA	Default OFF	RTC-VCC	3V	30mA	For RTC Always On

AllWinner Technology Co.,Ltd

Design Name: PAD_APP4_STD

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NAND

VCC-PC=3.3V

3.3V
Nand Flash, eMMC-NAND, etc

Toggle and TSOP NAND

eMMC NAND

U1G
Boot:
Nand/SDC/SPI
VCC-PC
VCC0-PC G7
VCC1-PC G8

PC0/NAND0-WE/SPI0-MOSI	D2	N0WE
PC1/NAND0-ALE/SPI0-MISO	D4	N0ALE
PC2/NAND0-CLE/SPI0-CLK	C3	N0CLE
PC3/NAND0-CE1	D5	N0CE1
PC4/NAND0-CE0	C5	N0CE0
PC5/NAND0-RE	C4	N0RE
PC6/NAND0-RB0/SDC2-CMD/SDC3-CMD	B1	N0RB0 eMMC-CMD
PC7/NAND0-RB1/SDC2-CLK/SDC3-CLK	B2	N0RB1 eMMC-CLK
PC8/NAND0-DQ0/SDC2-D0/SDC3-D0	B3	N0DQ0 eMMC-D0
PC9/NAND0-DQ1/SDC2-D1/SDC3-D1	B4	N0DQ1 eMMC-D1
PC10/NAND0-DQ2/SDC2-D2/SDC3-D2	A1	N0DQ2 eMMC-D2
PC11/NAND0-DQ3/SDC2-D3/SDC3-D3	A2	N0DQ3 eMMC-D3
PC12/NAND0-DQ4/SDC2-D4/SDC3-D4	A3	N0DQ4 eMMC-D4
PC13/NAND0-DQ5/SDC2-D5/SDC3-D5	A4	N0DQ5 eMMC-D5
PC14/NAND0-DQ6/SDC2-D6/SDC3-D6	E4	N0DQ6 eMMC-D6
PC15/NAND0-DQ7/SDC2-D7/SDC3-D7	D3	N0DQ7 eMMC-D7
PC16/NAND0-DQ8/NAND1-DQ0/TRACE-DOUT0	B5	N1DQ0
PC17/NAND0-DQ9/NAND1-DQ1/TRACE-DOUT1	A5	N1DQ1
PC18/NAND0-DQ10/NAND1-DQ2/TRACE-DOUT2	D6	N1DQ2
PC19/NAND0-DQ11/NAND1-DQ3/TRACE-DOUT3	C6	N1DQ3
PC20/NAND0-DQ12/NAND1-DQ4/TRACE-DOUT4	B6	N1DQ4
PC21/NAND0-DQ13/NAND1-DQ5/TRACE-DOUT5	A6	N1DQ5
PC22/NAND0-DQ14/NAND1-DQ6/TRACE-DOUT6	D7	N1DQ6
PC23/NAND0-DQ15/NAND1-DQ7/TRACE-DOUT7	C7	N1DQ7
PC24/NAND0-DQS/SDC2-RST/SDC3-RST	F7	N0DQS eMMC-RST
PC25/NAND0-CE2	B7	N0CE2
PC26/NAND0-CE3	A7	N0CE3
PC27/SPI0-CS0	F6	

APP4-BGA609i

VCC-PH=3.3V

U1L
NAND1
MISC
VCC-PH
VCC0-PH J14
VCC1-PH G15

PH0/NAND1-WE/TRACE-DOUT8	D8	N1WE
PH1/NAND1-ALE/TRACE-DOUT9	C8	N1ALE
PH2/NAND1-CLE/TRACE-DOUT10	B8	N1CLE
PH3/NAND1-CE1/TRACE-DOUT11	A8	N1CE1
PH4/NAND1-CE0/TRACE-DOUT12	D9	N1CE0
PH5/NAND1-RE/TRACE-DOUT13	C9	N1RE
PH6/NAND1-RB0/TRACE-DOUT14	B9	N1RB0
PH7/NAND1-RB1/TRACE-DOUT15	A9	N1RB1
PH8/NAND1-DQS/TRACE-CLK	D10	N1DQS
PH9/SPI2-CS0/TMS1/PWM1-P	F9	CPU-TMS
PH10/SPI2-CLK/TCK1/PWM1-N	F8	CPU-TCK
PH11/SPI2-MOSI/TDO1/PWM2-P	G9	CPU-TDO
PH12/SPI2-MISO/TDI1/PWM2-N	G10	CPU-TDI
PH13/PWM0	C11	LCD-PWM
PH14/TWI0-SCK	B10	TWI0-SCK
PH15/TWI0-SDA	A10	TWI0-SDA
PH16/TWI1-SCK	D11	TWI1-SCK
PH17/TWI1-SDA	C10	TWI1-SDA
PH18/TWI2-SCK	B11	TWI2-SCK
PH19/TWI2-SDA	A11	TWI2-SDA
PH20/UART0-TX	D12	UART0-TX
PH21/UART0-RX	G12	UART0-RX
PH22	F13	
PH23	G11	
PH24	F10	
PH25	G13	
PH26	F11	
PH27/SPDIF-IN	G14	
PH28/SPDIF-OUT/TRACE-CTL	F12	
PH29/NAND1-CE2	F14	N1CE2
PH30/NAND1-CE3	B12	N1CE3

APP4-BGA609i

12,18	LCD-PWM	LCD-PWM
11	TWI0-SCK	TWI0-SCK
11	TWI0-SDA	TWI0-SDA
12,18	TWI1-SCK	TWI1-SCK
12,18	TWI1-SDA	TWI1-SDA
14	TWI2-SCK	TWI2-SCK
14	TWI2-SDA	TWI2-SDA

TWI0 pull-up by VCC-PE in Camera Page

VCC-PH
R47 2K2 R0402 TWI1-SCK
R48 2K2 R0402 TWI1-SDA
R49 2K2 R0402 TWI2-SCK
R50 2K2 R0402 TWI2-SDA

Pull-Up Resistor for TWIs

CPU-TMS	TP8	TMS
CPU-TCK	TP9	TCK
CPU-TDO	TP10	TDO
CPU-TDI	TP11	TDI
UART0-TX	TP12	UTX
UART0-RX	TP13	URX

Debug Pins for CPU

OPTION:
eMMC NAND

U12
VCC-NAND
eMMC-D0 H3
eMMC-D1 H4
eMMC-D2 H5
eMMC-D3 J2
eMMC-D4 J3
eMMC-D5 J4
eMMC-D6 J5
eMMC-D7 J6
eMMC-CMD W5
eMMC-CLK W6
eMMC-RST U5
K2 VDDI
C149 1uF C0402
C150 104 C0402
U8 R10 P5 M7
GND

DAT0 DAT1 DAT2 DAT3 DAT4 DAT5 DAT6 DAT7 CMD CLKM RSTN
VDDM1 M6
VDDM2 N5
VDDM3 T10
VDDM4 U9
VDDQM1 K6
VDDQM2 W4
VDDQM3 Y4
VDDQM4 AA3
VDDQM5 AA5
VSSQM1 K4
VSSQM2 Y2
VSSQM3 Y5
VSSQM4 AA4
VSSQM5 AA6
VSSM4 VSSM3 VSSM2 VSSM1

eMMC NAND

VCC-NAND
C155 1uF C0402
C156 104 C0402
C157 104 C0402
C158 104 C0402
GND

K7 J7 K8 J8 K9 J9 K10 J10 J12 K12 K13 L13 L12 M12 M13 M14 U14 U13 U12 V13 V12 W13 W12 Y12 W10 Y10 W9 Y9 W8 Y8 W7 Y7 J11 N12 T12 Y11 K11 N13 T13 W11 N1 AA11 W2 P14 H11 W1 U2 R14 K1 H10
DQ31 DQ30 DQ29 DQ28 DQ27 DQ26 DQ25 DQ24 DQ23 DQ22 DQ21 DQ20 DQ19 DQ18 DQ17 DQ16 DQ15 DQ14 DQ13 DQ12 DQ11 DQ10 DQ9 DQ8 DQ7 DQ6 DQ5 DQ4 DQ3 DQ2 DQ1 DQ0 DQS3 DQS2 DQS1 DQS0 DQM3 DQM2 DQM1 DQM0 VDD1 VDD2 VDD3 VDD4 VDD5 VSS1 VSS2 VSS3 VSS4 VSS5
TQ L4
A0 V2
A1 V3
A2 W3
A3 Y3
A4 K3
A5 L1
A6 L2
A7 L3
A8 M3
A9 N3
A10 U3
A11 M2
A12 M1
A13 N2
BA0 V1
BA1 U1
CE0# P2
CE1# T3
CAS# T2
RAS# R2
WE# R3
CKE0 P1
CKE1 T1
CLK P12
CLK# R12
VDDQ1 H8
VDDQ2 J13
VDDQ3 K14
VDDQ4 P13
VDDQ5 R1
VDDQ6 R13
VDDQ7 W14
VDDQ8 Y13
VDDQ9 AA8
VSSQ1 H9
VSSQ2 H12
VSSQ3 L14
VSSQ4 T14
VSSQ5 V14
VSSQ6 Y6
VSSQ7 AA9
VSSQ8 AA12
VSSQ9 N14

DRAM

MCP-BGA169

A4 A6 A9 A11 B2 B13 D1 D14 H1 H14 AA1 AA14 AE1 AE14 AG2 AG13 AH4 AH6 AH9 AH11
DNU-A4 DNU-A6 DNU-A9 DNU-A11 DNU-B2 DNU-B13 DNU-D1 DNU-D14 DNU-H1 DNU-H14 DNU-AA1 DNU-AA14 DNU-AE1 DNU-AE14 DNU-AG2 DNU-AG13 DNU-AH4 DNU-AH6 DNU-AH9 DNU-AH11
NC-AA13 AA13
NC-AA10 AA10
NC-AA7 AA7
NC-AA2 AA2
NC-Y14 Y14
NC-Y1 Y1
NC-U10 U10
NC-U7 U7
NC-U6 U6
NC-T5 T5
NC-R5 R5
NC-P10 P10
NC-P3 P3
NC-N10 N10
NC-M10 M10
NC-M9 M9
NC-M8 M8
NC-M5 M5
NC-K5 K5
NC-J14 J14
NC-J1 J1
NC-H13 H13
NC-H7 H7
NC-H6 H6
NC-H2 H2

NC Pins

Toggle NAND and TSOP NAND

Both Toggle NAND and TSOP NAND layout together

VCC-NAND
R36 10K R0402 N0RB1
R37 0R-NC R0402
A
B
R38 NC-0R R0402
R39 10K R0402 N0RB0
N0RBX
C151 104 C0402
C152 104 C0402
C153 104 C0402
C154 104 C0402
GND

R40 10K R0402 N1RB1
R41 0R-NC R0402
R42 NC-0R R0402
R43 10K R0402 N1RB0
N1RBX
C159 104 C0402
C161 104 C0402
C162 104 C0402
C160 104 C0402

R44 10K R0402 NWP
C163 104 C0402
R45 NC/0R R0402 VPS
R46 NC/0R R0402

U13
NAND FLASH X8
TSOP-48

RES#	1	48	NC
NC	2	47	NC
NC	3	46	NC
RB#4	4	45	NC
RB3#	5	44	IO7 N0DQ7
RB2#	6	43	IO6 N0DQ6
RB1#	7	42	IO5 N0DQ5
RE#	8	41	IO4 N0DQ4
CE1#	9	40	NC
CE2#	10	39	NC
NC	11	38	VSS3 VPS
VCC1	12	37	VCC2
VSS1	13	36	VSS2 N0DQS
CE3#	14	35	NC
CE4#	15	34	NC
CLE	16	33	NC
ALE	17	32	IO3 N0DQ3
WE#	18	31	IO2 N0DQ2
WP#	19	30	IO1 N0DQ1
NC	20	29	IO0 N0DQ0
NC	21	28	NC
NC	22	27	NC
NC	23	26	NC
NC	24	25	NC

U14
TOGGLE NAND LGA-60

OA1	A1	B1	OD1
OE1	A2	B2	OF1
OA9	A3	B3	OB9
A2	A4	B4	OG9
E8	A5	B5	N8
A8	A6	B6	N2
C6	A7	B7	M7
C4	A8	B8	
M5	A9	C1	
K5	B1	C2	OB1
G2	B2	C3	OG1
J2	B3	C4	OD9
L2	B4	C5	OF9
N4	B5	C6	F7
N6	B6	C7	L4
L8	B7	C8	B3
J8	B8	D1	M3
G8	C1	D2	
OC1	C2	D3	B5
E2	C3	D4	N0RE
G6	C4	D5	
D3	C5	D6	A4 N0CLE
D5	C6	D7	F3 NWP
D7	C7	E1	E4 N0WE
	C8	E2	A6 N0CE0
N0DQ0 G4	D1	E3	C2 N0ALE
N0DQ1 H3	D2	E4	E6 N0RB0
N0DQ2 J4	D3	E5	
N0DQ3 K3	D4	E6	OC9
N0DQ4 L6	D5	E7	OE9
N0DQ5 K7	D6	F1	H5 N0DQS
N0DQ6 J6	D7	F2	F5
N0DQ7 H7	D8	F3	
	E1	F4	
	E2	F5	
	E3	F6	
	E4	F7	
	E5	F8	
	E6	G1	
	E7	G2	
	E8	G3	

U15
NAND FLASH X8
TSOP-48

RES#	1	48	NC
NC	2	47	NC
NC	3	46	NC
RB#4	4	45	NC
RB3#	5	44	IO7 N1DQ7
RB2#	6	43	IO6 N1DQ6
RB1#	7	42	IO5 N1DQ5
RE#	8	41	IO4 N1DQ4
CE1#	9	40	NC
CE2#	10	39	NC
NC	11	38	VSS3 VPS
VCC1	12	37	VCC2
VSS1	13	36	VSS2 N1DQS
CE3#	14	35	NC
CE4#	15	34	NC
CLE	16	33	NC
ALE	17	32	IO3 N1DQ3
WE#	18	31	IO2 N1DQ2
WP#	19	30	IO1 N1DQ1
NC	20	29	IO0 N1DQ0
NC	21	28	NC
NC	22	27	NC
NC	23	26	NC
NC	24	25	NC

U16
TOGGLE NAND LGA-60

OA1	A1	B1	OD1
OE1	A2	B2	OF1
OA9	A3	B3	OB9
A2	A4	B4	OG9
E8	A5	B5	N8
A8	A6	B6	N2
C6	A7	B7	M7
C4	A8	B8	
M5	A9	C1	
K5	B1	C2	OB1
G2	B2	C3	OG1
J2	B3	C4	OD9
L2	B4	C5	OF9
N4	B5	C6	F7
N6	B6	C7	L4
L8	B7	C8	B3
J8	B8	D1	M3
G8	C1	D2	
OC1	C2	D3	B5
E2	C3	D4	N1RE
G6	C4	D5	
D3	C5	D6	A4 N1CLE
D5	C6	D7	F3 NWP
D7	C7	E1	E4 N1WE
	C8	E2	A6 N1CE0
N1DQ0 G4	D1	E3	C2 N1ALE
N1DQ1 H3	D2	E4	E6 N1RB0
N1DQ2 J4	D3	E5	
N1DQ3 K3	D4	E6	OC9
N1DQ4 L6	D5	E7	OE9
N1DQ5 K7	D6	F1	H5 N1DQS
N1DQ6 J6	D7	F2	F5
N1DQ7 H7	D8	F3	
	E1	F4	
	E2	F5	
	E3	F6	
	E4	F7	
	E5	F8	
	E6	G1	
	E7	G2	
	E8	G3	

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

(1) TSOP CE Count: Chip Select Count of one TSSOP Nand Flash, can be 1/2/4.
(2) Refer to the Datasheet of Nand Flash to determine VPS should be Pull-up or -down.
(3) Both Toggle NAND and TSOP NAND can be layout together.

BOOT-SEL0
A
R51 NC/0R R0402
GND
BOOT-SEL1
B
R52 NC/0R R0402
GND

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

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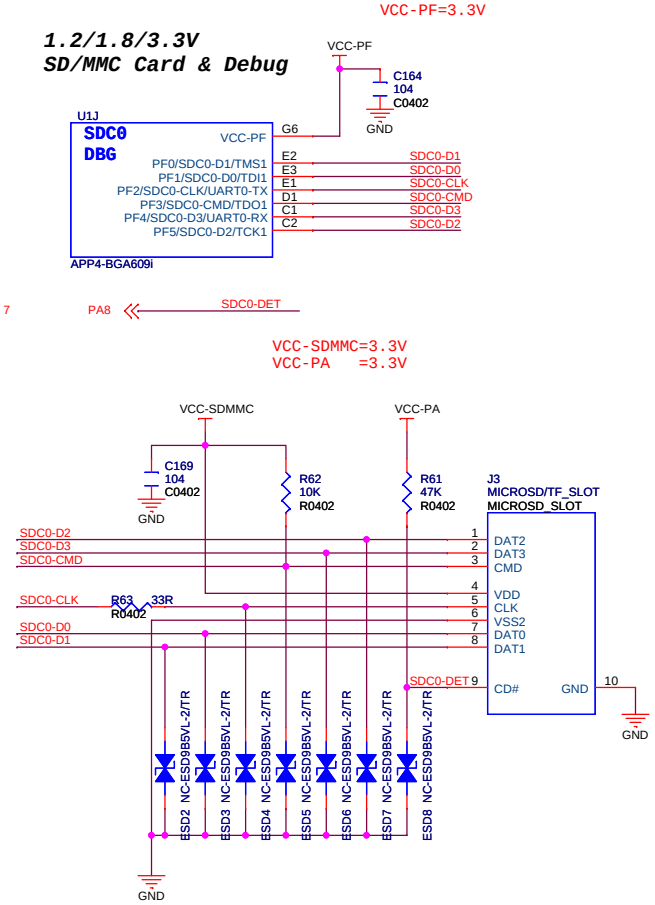
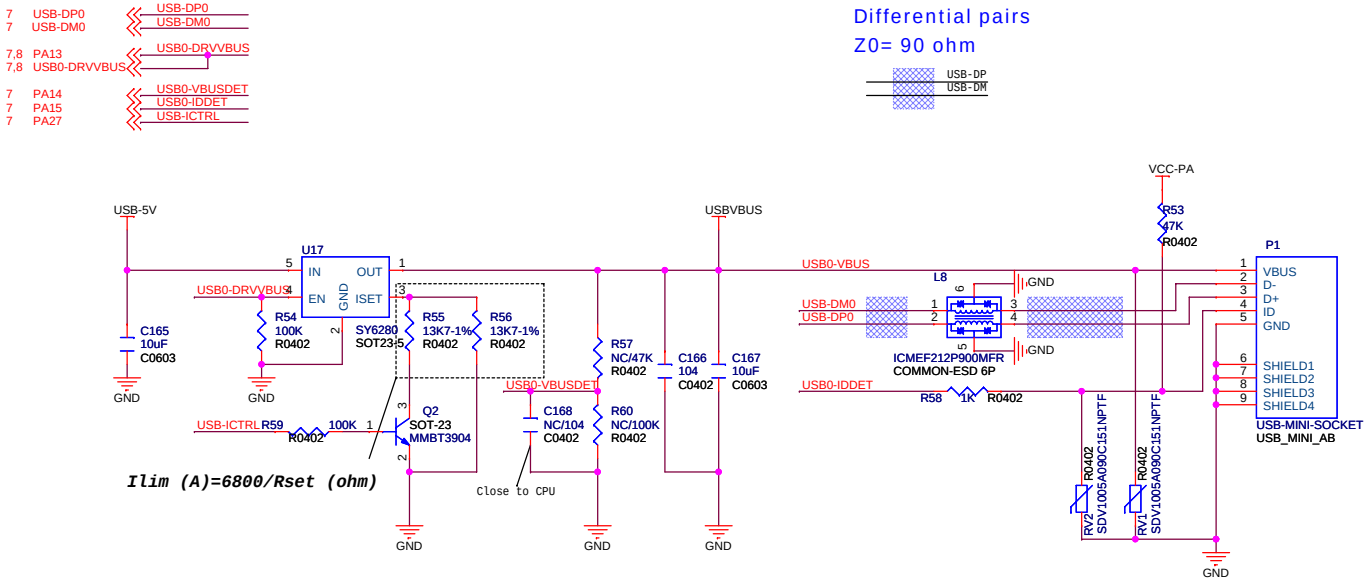
CARD-USB-HDMI

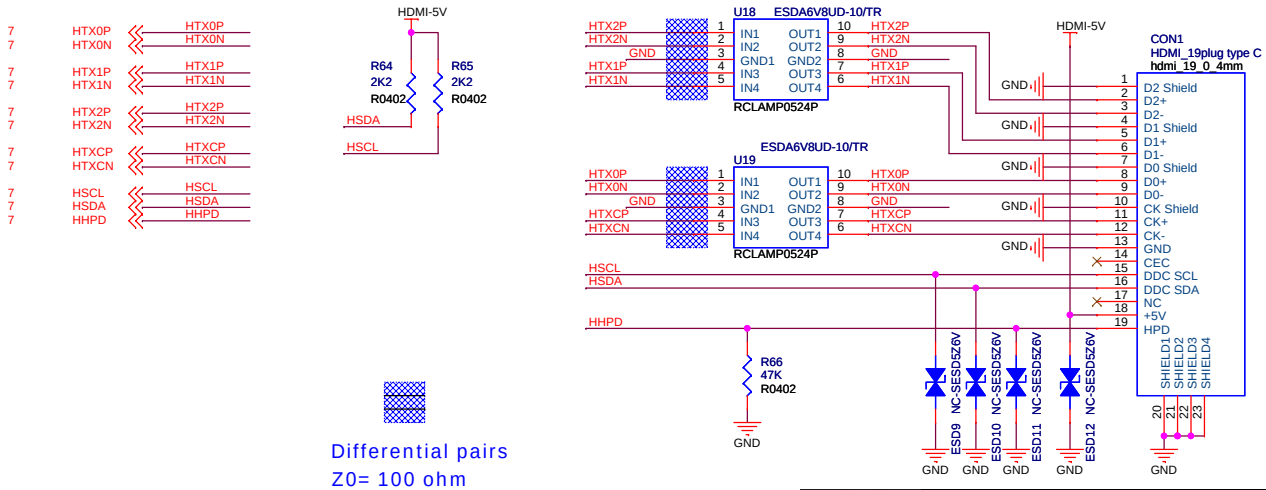
CARD



USB



HDMI



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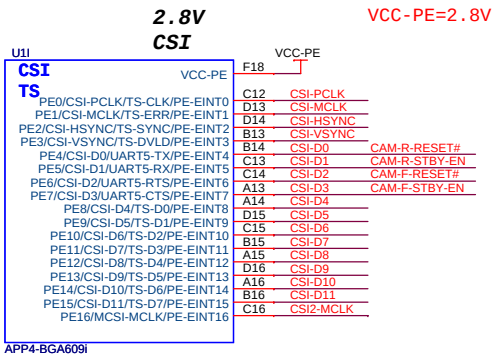
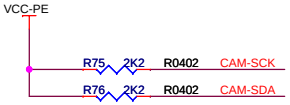
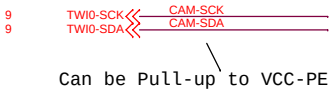
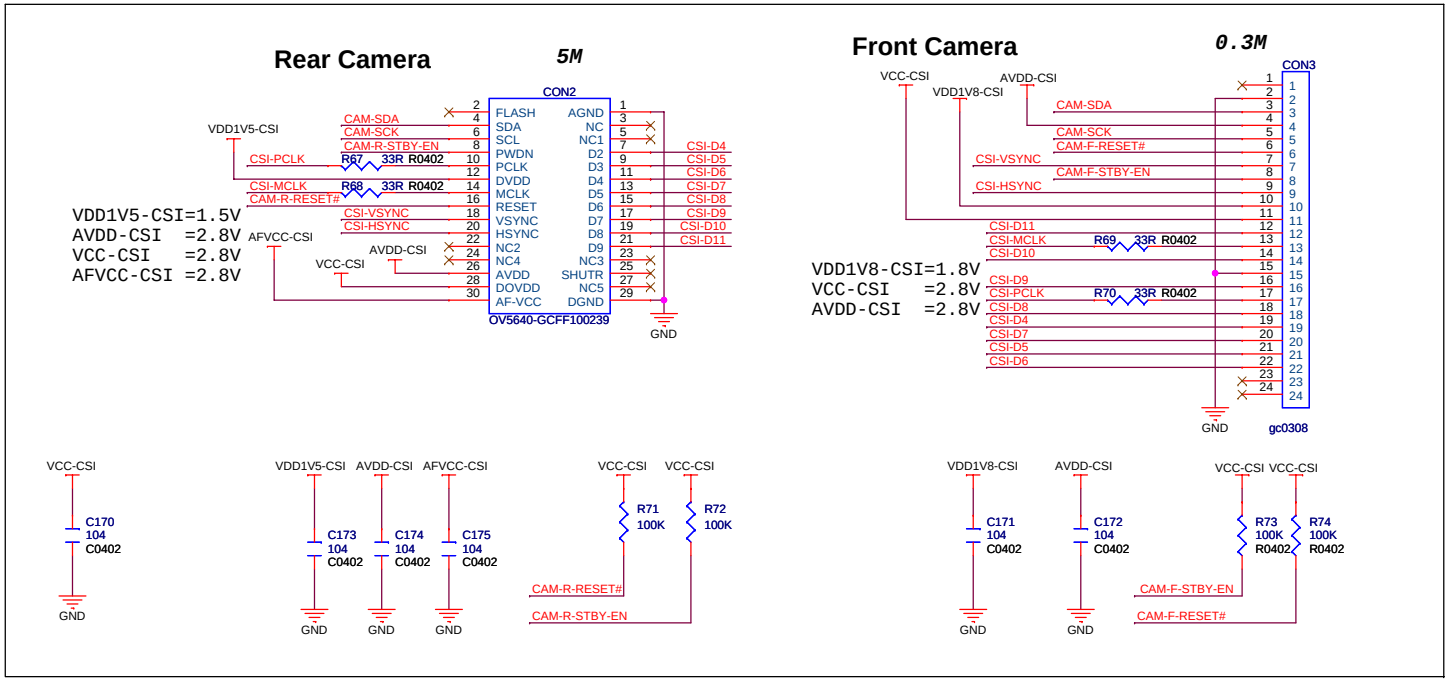
CAMERA

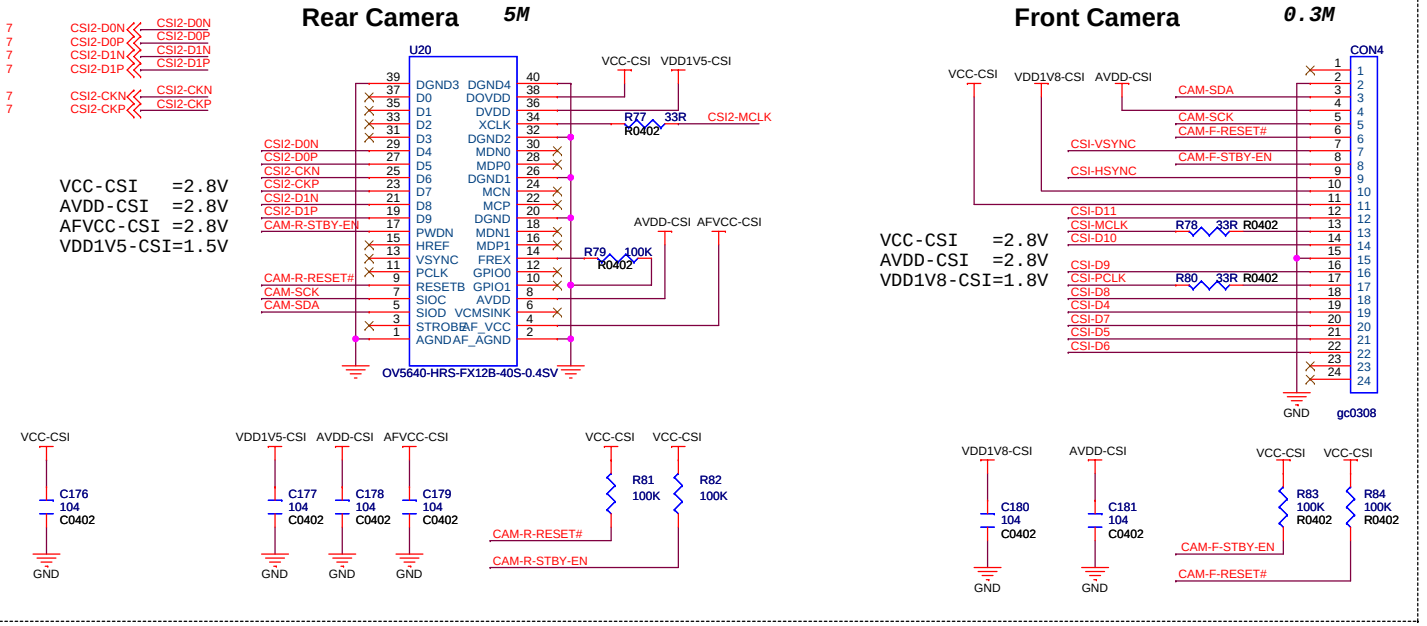








OPTION:
CAMERA-MIPI



AllWinner Technology Co.,Ltd		
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LCD-TP

VCC-PD=3.3V

PS LCD-POWER

3.3V LCD

U1H

LCD0 LVDS

APP4-BGA609i

RGB

LVDS

MIPI

Single link:LVDS0

Dual link:LVDS0+LVDS1

Backlight

U21 SY7201

SS14/IN5819 SOD-123

R85 2K2 R0402

R87 2R2/1% R0402

R=200mV/I(led)

Reference:

Vfb = 100mv : LSR1 = 73K

Vfb = 150mv : LSR1 = 47K

Vfb = 200mv : LSR1 = 33K

Vfb = 250mv : LSR1 = 25K

Vfb = 300mv : LSR1 = 20K

Vfb = 350mv : LSR1 = 16K

LVDS

J4 CON40

OPTOPN 1: MIPI

VCC2V8-LCD > 200mA

J5 CON30

OPTOPN 2: RGB

U22 AP3019

CON5

CTP

CON6

Option:
Connect to Capacitive Touch Panel

RTP

CON7 SOT23-6

Option:
Connect to Resistive Touch Panel

AllWinner Technology Co.,Ltd

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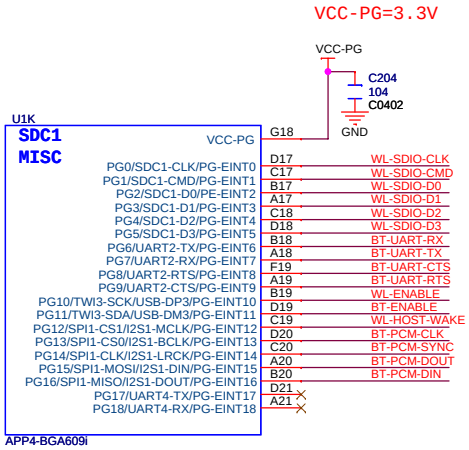
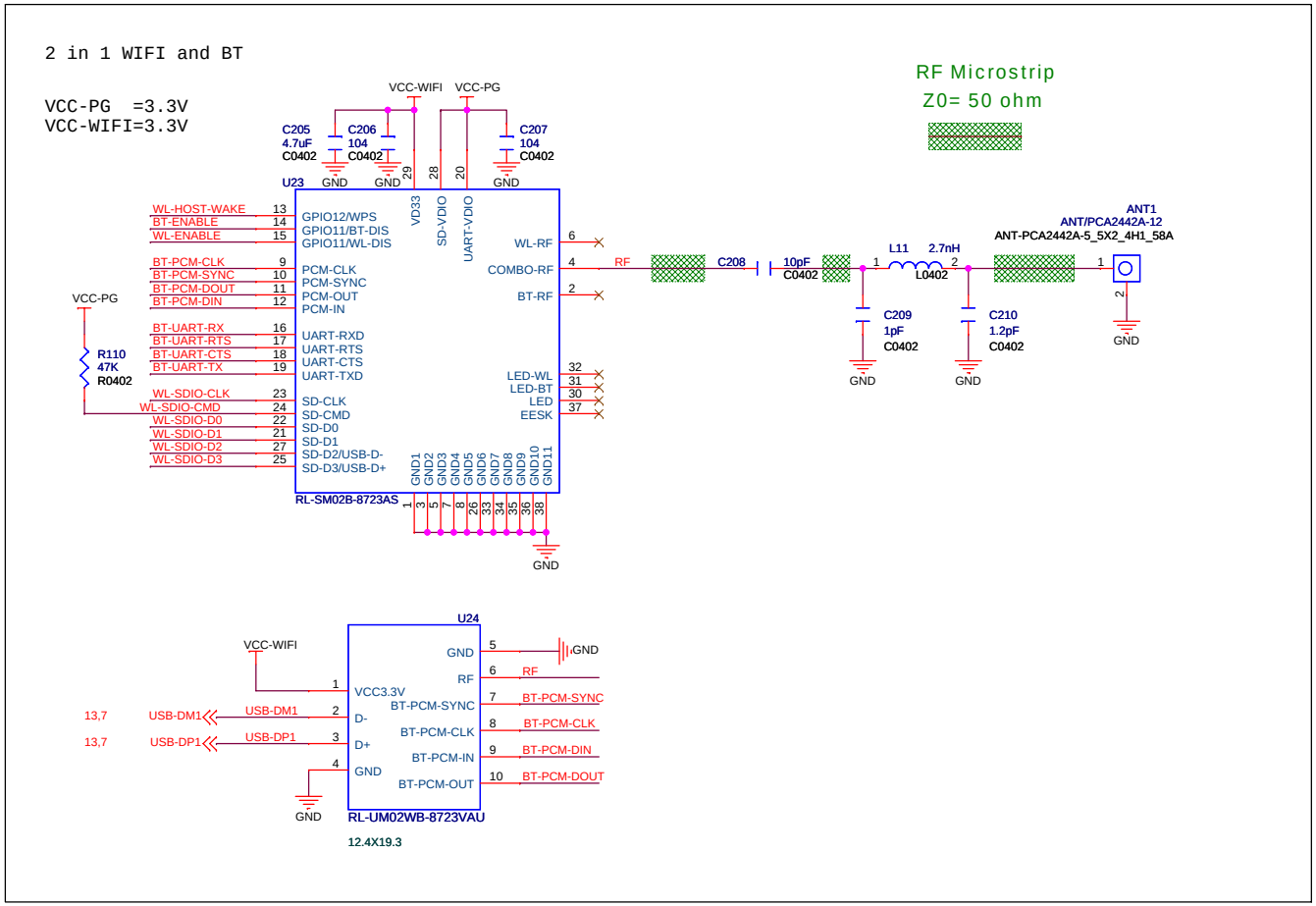
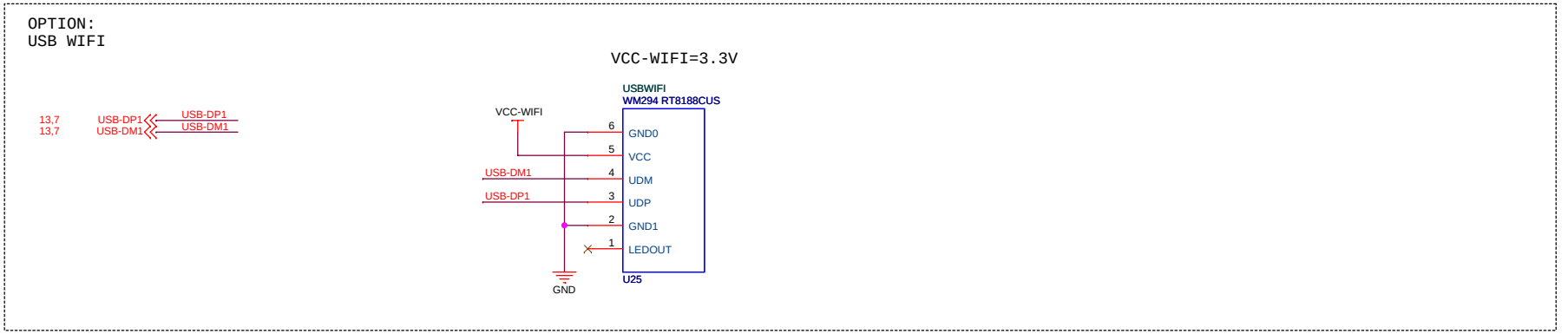
Date: Friday, September 28, 2012 | Sheet 12 of 18

WIFI







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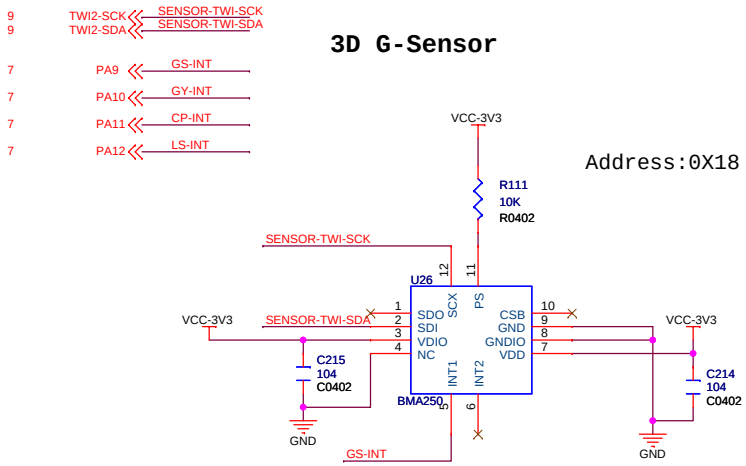
SENSORs

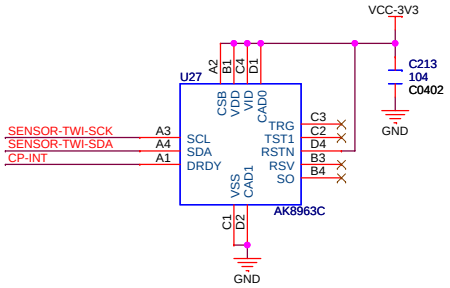
3D G-Sensor



Address:0X18

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

Magnetic Sensor

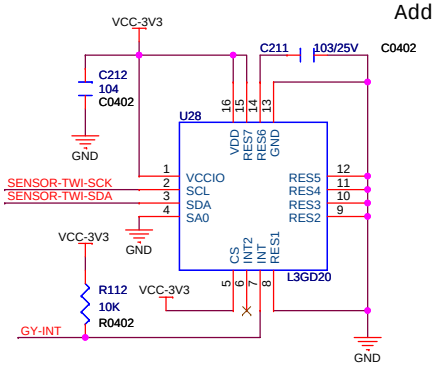


Address:0X0D

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

3-Axis Gyroscope

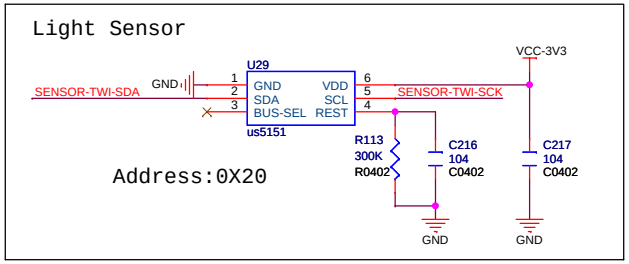
Gyroscope



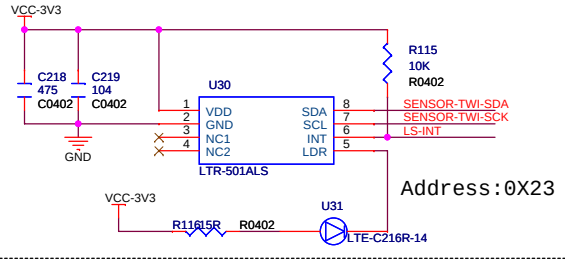
Address:0X6A

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

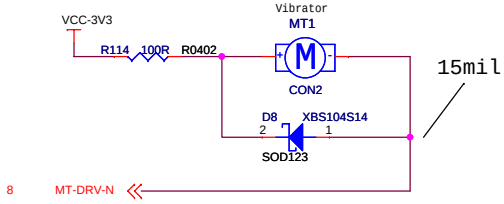
Light Sensor



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



Motor



AllWinner Technology Co.,Ltd	
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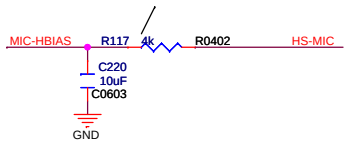
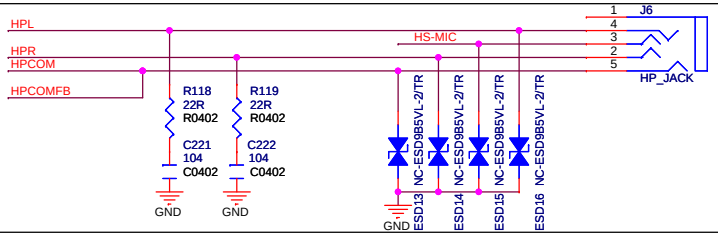
AUDIO IN/OUT

Head Phone

MIC-HBIAS with current detection function.



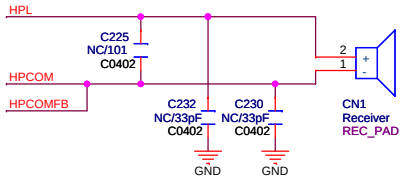
NOTE:
Not support headphone MIC recording and communication function.

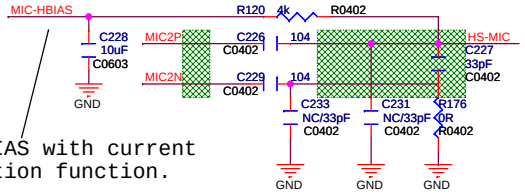


OPTION:

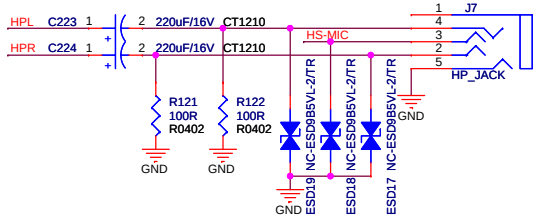
NOTE:
Support headphone MIC recording and communication function.

Differential pairs

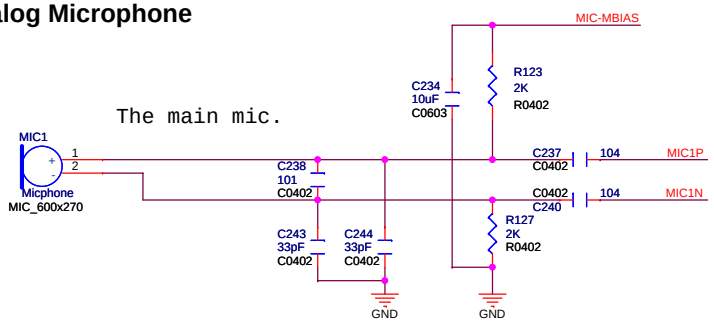




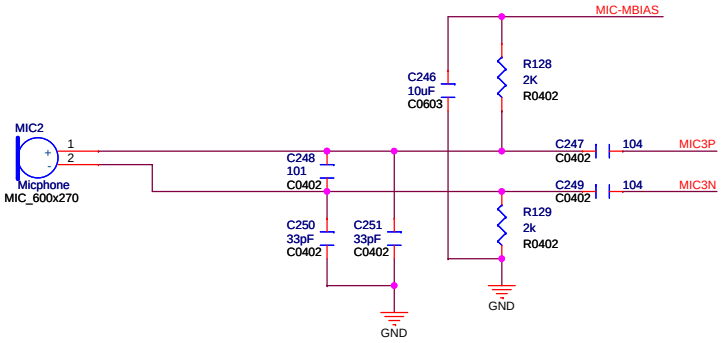
MIC-HBIAS with current detection function.



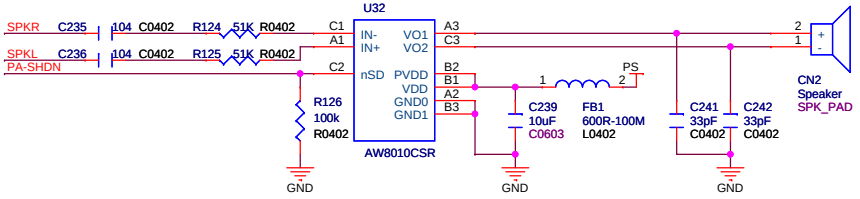
Analog Microphone



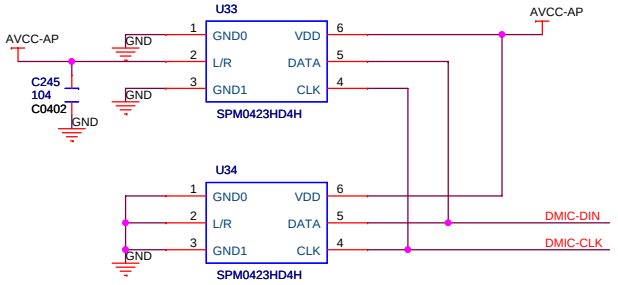
Option: MIC for Surrouding Noise Cancellation



Speaker



Digital Microphone(Option)



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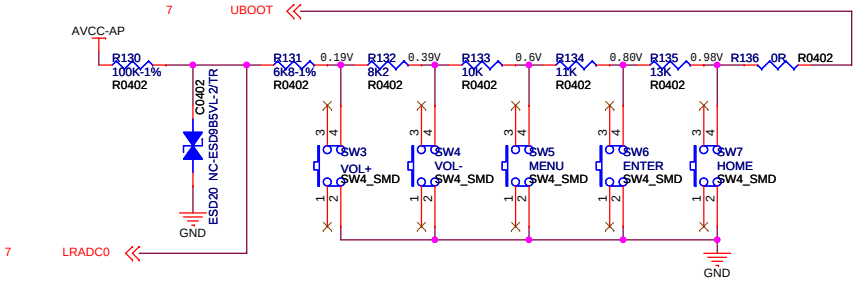
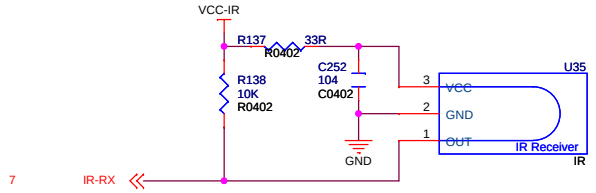
KEY-IR-MISC





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BASEBAND

VCC-PB=1.8V

RF Microstrip
Z0= 50 ohm

U1F
APP4-BGA609i

PCM UART	VCC-PB	G19
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....

PM0 BB-HOST-WAKE
PM1 BB-ON
PM3 BB-PWRON
PM4 BB-WAKE
PM5 BB-RF-DIS
PM6 BB-RST-N
PL2 BB-VBAT-EN

C260 33pF C0402
C259 33pF C0402

USB-DM2 BB-USB-DM
USB-DP2 BB-USB-DP

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

BB-ON
R140 R0402 NC-10K
R141 R0805 NC-0R
VBAT-EXT
3G-VBAT
C262 10uF C0603
C263 NC-104 C0402
R142 510K R0402
Q3 SI2305 SOT-23
BB-VBAT-EN
Q4 SOT-23 MMBT3904
R144 100K R0402
C265 NC-1uF C0402
R145 510K R0402
FB3 30R-100M L0603
+C272 220uF/10V C1210
+C266 220uF/10V C1210
+C267 220uF/10V C1210
C268 104 C0402
C271 104 C0402
3G-VBT-PA

FBMJ1608HS280NT by TAIYO YUDEN or
MPZ1608S300ATAH0 by TDK is recommanded.

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BB-ON	13	ON1	
	48	ON2-N	
BB-PWRON	31	PWRDWN-N	
BB-RST-N	53	RESIN-N	
BB-RF-DIS	39	W-DISABLE-N	
BB-WAKE	42	WAKEUP-IN	
BB-HOST-WAKE	43	WAKEUP-OUT	
	9	RESOUT-N	
	14	HSIC-HOST-ACTVIE	
	15	HSIC-SLAVE-WAKEUP	
	21	HSIC-USB-STRB	
	22	HSIC-USB-DATA	
	41	HSIC-HOST-WAKEUP	
	44	HSIC-SUSPEND-REQ	
3G-VBAT	32	USB-VBUS	
BB-USB-DP	23	USB-DP	
BB-USB-DM	24	USB-DM	
	26	MIPI-HSI-RX-DATA	
	28	MIPI-HSI-RX-FLG	
	30	MIPI-HSI-RX-RDY	
	37	MIPI-HSI-RX-WAKE	
	36	MIPI-HSI-TX-DATA	
	35	MIPI-HSI-TX-FLG	
	33	MIPI-HSI-TX-RDY	
	34	MIPI-HSI-TX-WAKE	
	54	I2S-CLK1	
BB-PCM-CLK	55	I2S-CLK0	
BB-PCM-DIN	56	I2S-RX	
BB-PCM-DOUT	57	I2S-TX	
BB-PCM-SYNC	58	I2S-WA0	
	59	I2S-WA1	
	16	GPIO2	
	6	GPIO1	
	17	SLEEP-STATUS	
	45	LED-STATUS	
	46	LED-MODE	
	8	JTAG-TRST	
	12	JTAG-TCK	
	10	JTAG-TMS	
	2	JTAG-TDO	
	11	JTAG-TDI	
	18	RES18	
	19	RES19	
	47	RES47	
	50	RES50	
	1	NC1	
	3	NC3	
	4	NC4	
	5	NC5	
	7	NC6	
	60	NC60	
	61	NC61	
	69	NC69	
	75	NC75	
	76	NC76	
	77	NC77	
	78	NC78	

	52	VBAT-PA2	3G-VBT-PA
	51	VBAT-PA1	
	49	VBAT-PMU	3G-VBT-PMU
	40	VCC-IN	3G-VCC-1V8
	38	VCC-EXT1	3G-EXT-1V8
	65	MAIN-ANT	MAIN-ANT
	72	AUX-ANT	AUX-ANT
	20	SIM-VCC	SIM-VCC
	27	SIM-CLK	SIM-CLK
	25	SIM-RST	SIM-RST
	29	SIM-DATA	SIM-DATA
	62	GND62	
	63	GND63	
	64	GND64	
	66	GND66	
	67	GND67	
	68	GND68	
	70	GND70	
	71	GND71	
	73	GND73	
	74	GND74	
	79	GND79	
	80	GND80	
	81	GND81	
	82	GND82	
	83	GND83	
	84	GND84	
	85	GND85	
	86	GND86	
	87	GND87	
	88	GND88	
	89	GND89	
	90	GND90	
	91	GND91	
	92	GND92	
	93	GND93	
	94	GND94	
	95	GND95	
	96	GND96	
	97	GND97	
	98	GND98	
	99	GND99	
	100	GND100	
	101	GND101	
	102	GND102	
	103	GND103	
	104	GND104	
	105	GND105	
	106	GND106	
	107	GND107	
	108	GND108	
	109	GND109	
	110	GND110	
	111	GND111	
	112	GND112	
	113	GND113	
	114	GND114	

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FBMJ1608HS280NT by TAIYO YUDEN or
MPZ1608S300ATAH0 by TDK
is recommanded.

3G-VBAT
3G-VBT-PMU
FB2 30R-100M L0603
C253 104 C0402
C254 1uF C0402
C255 10uF C0603
GND

3G-EXT-1V8 R139 R0402 0
3G-VCC-1V8
C256 1uF C0402
C257 104 C0402
GND

ANT2
ANT/PCA2442A-12
ANT-PCA2442A-5_5X2_4H1_58A
MAIN-ANT
C258 100pF C0402
L12 27nH L0402
L13 27nH L0402
GND

ANT3
ANT/PCA2442A-12
ANT-PCA2442A-5_5X2_4H1_58A
AUX-ANT
C261 100pF C0402
L14 27nH L0402
L15 27nH L0402
GND

These component values should be adjusted according to
the actual PCB Layout and Routings

J8 SIM Socket
SIM-VCC
SIM-RST
SIM-CLK
SIM-DATA
R143 4K7 R0402
C264 C269 C273 C270
ESD23 ESD22 ESD24
ESD-0402-LF
GND

OPTION:
BASEBAND PW6086

VCC-5V R146 NC/0R R0402 3G-VBUS-5V
3G-1V8
R150 100K R0402
BB-RST-N
C282 104 C0402
GND

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

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PW6086 PW6086_H2_65A

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

ANT4 ANT-PCA2442A-5_5X2_4H1_58A

R149 NC R0402
17,7 PHINP C274 105 C0402
17,7 PHINN C275 105 C0402
17,7 PHOUTP C276 105 C0402
17,7 PHOUTN C277 105 C0402
BB-RST-N
3G-VBUS-5V
3G-VBT-PA
3G-1V8

SIM-VCC
SIM-RST
SIM-CLK
SIM-DATA
R147 4K7 R0402
3G-1V8
R148 100K R0402
SIM-DET
J9 SIM SOCKET SIM_SCGC1B03H1_55A
C278 C279 C280 C281
ESD25 ESD26 ESD27 ESD28
GND

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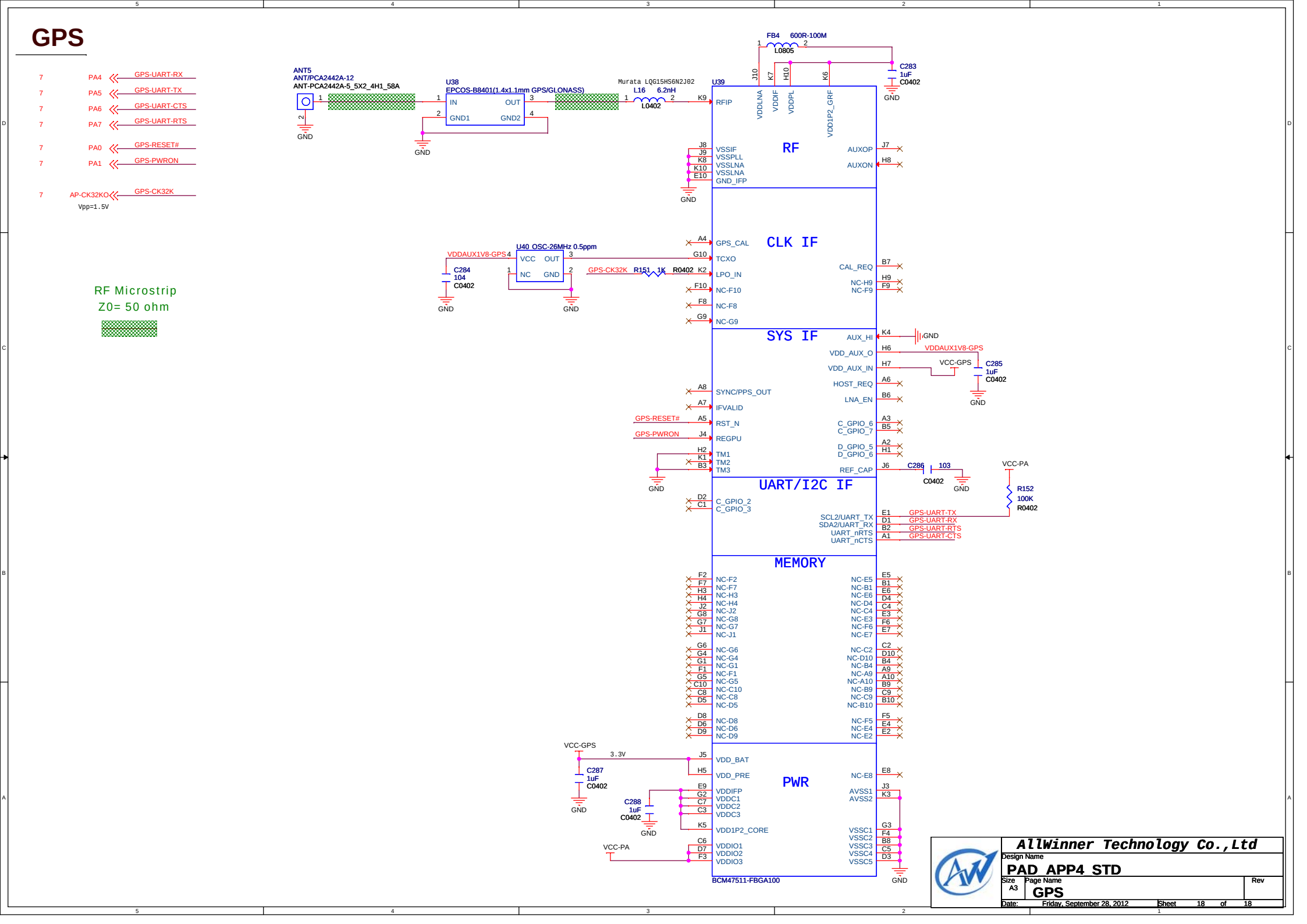
GPS



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