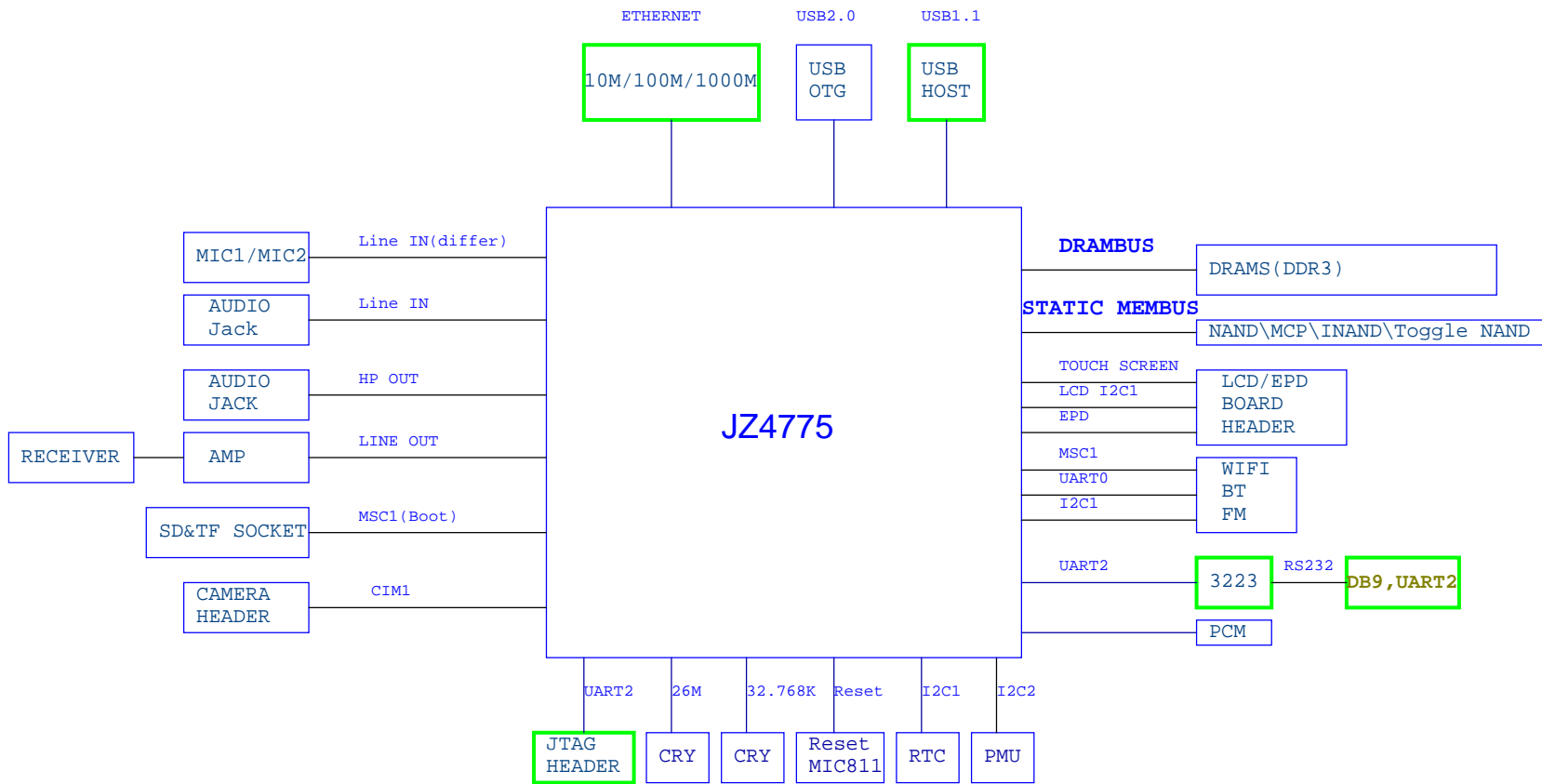




# RD\_JZ4775\_MENSA\_BOARD

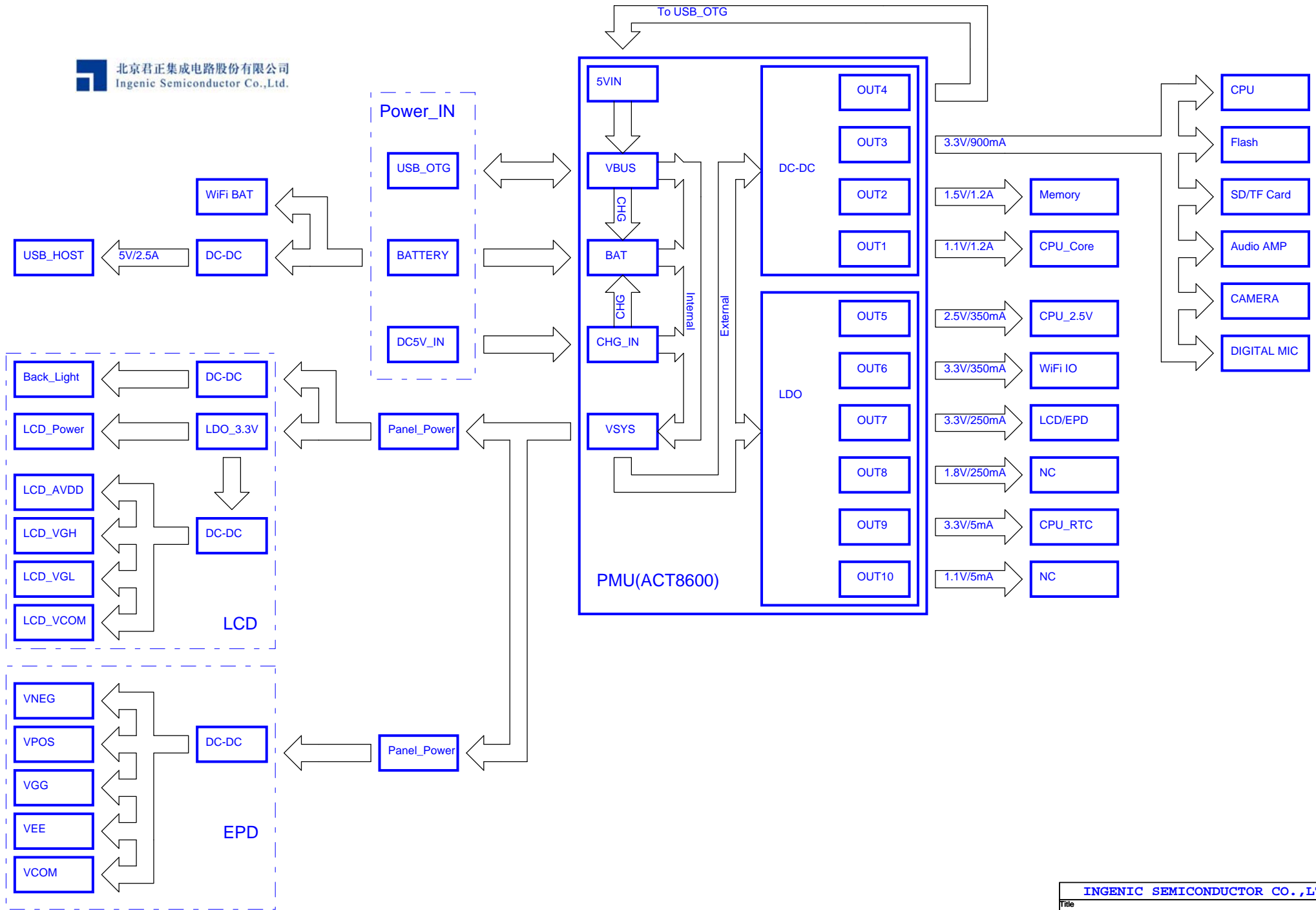
## Schematic Revision 1.0

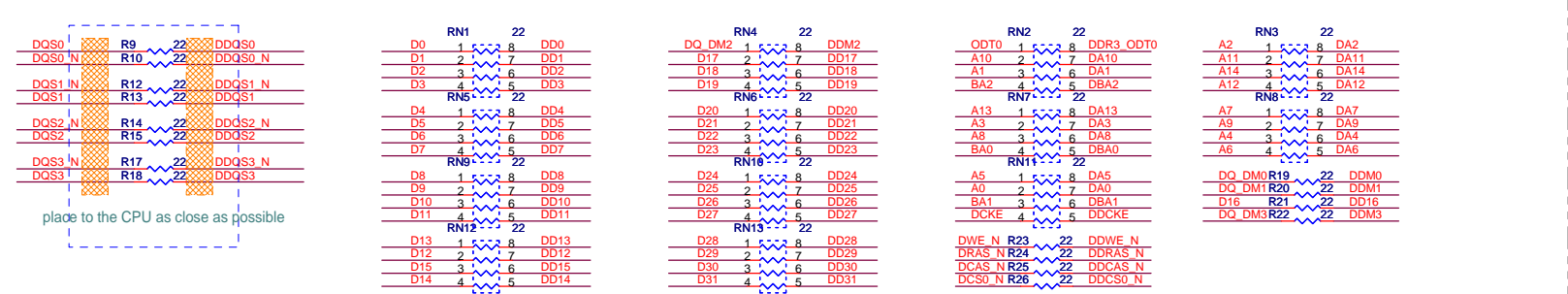
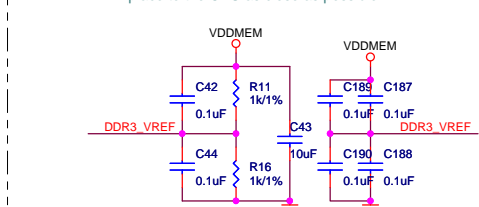
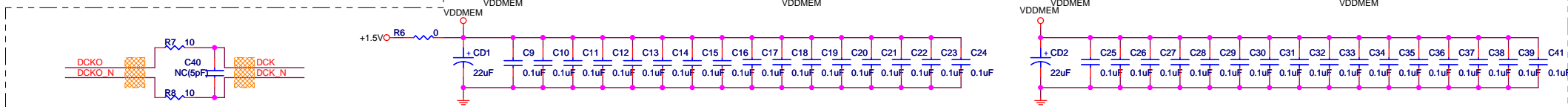
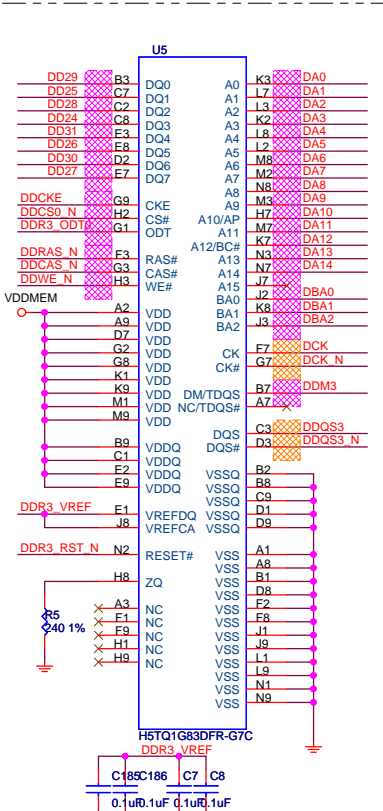
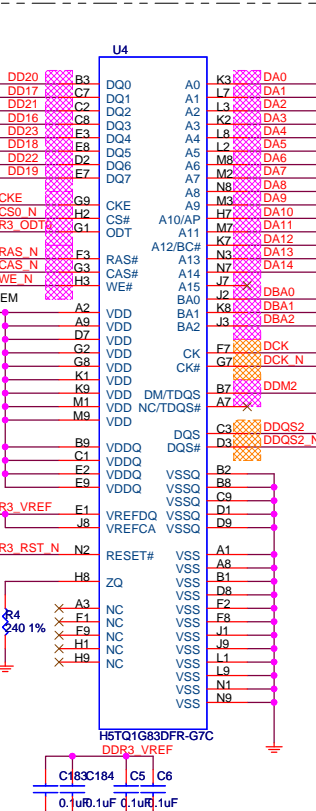
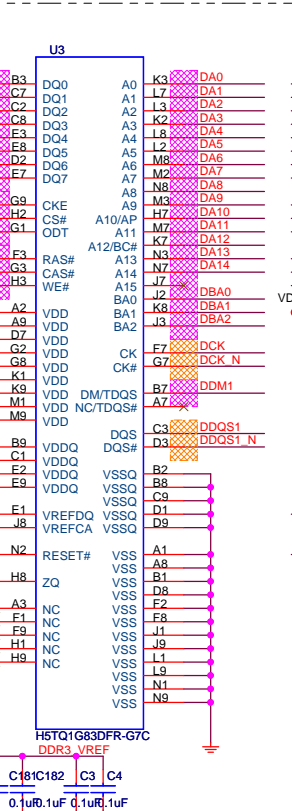
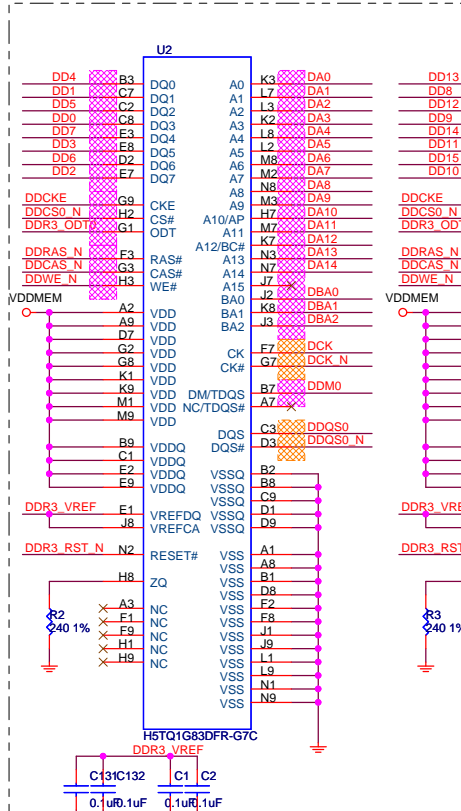
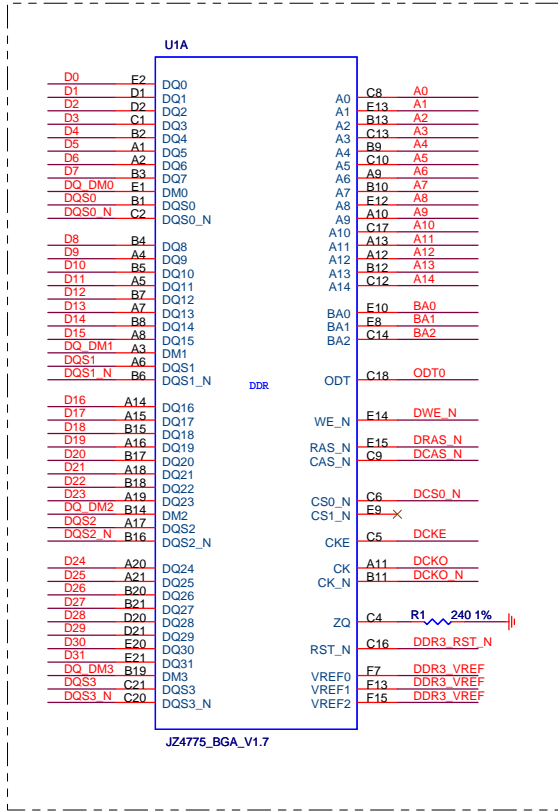
Title	Page
COVER SHEET	1
SYSTEM ARCHITECTURE	2
POWER ARCHITECTURE	3
DDR3	4
Nand/Camera	5
AUDIO/KEY	6
RTC	7
LCD/EPD	8
PMU	9
IW8101/IW8103	10
IW8103B/MT5913	11
USB OTG/SD CARD/PCM	12
DEBUG	13
HISTORY	14



The green color is the debug board

INGENIC SEMICONDUCTOR CO.,LTD		
Title	RD_IJZ4775_MENSA_BOARD	
Size	Document Number	Rev
A3	SYSTEM ARCHITECTURE	V1.0
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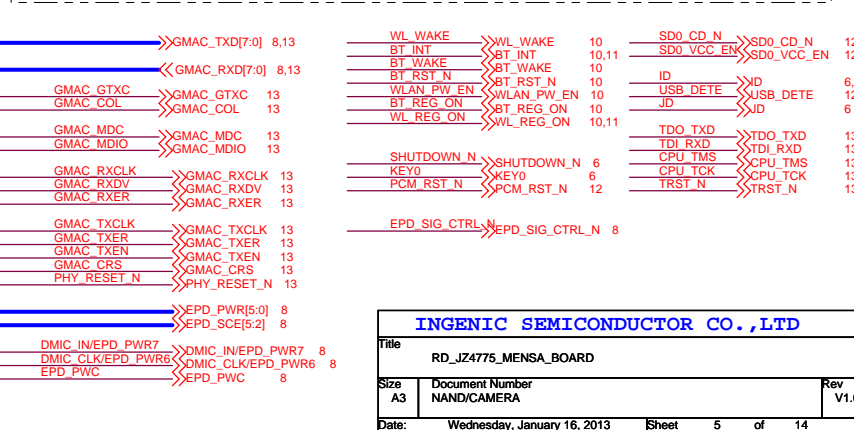
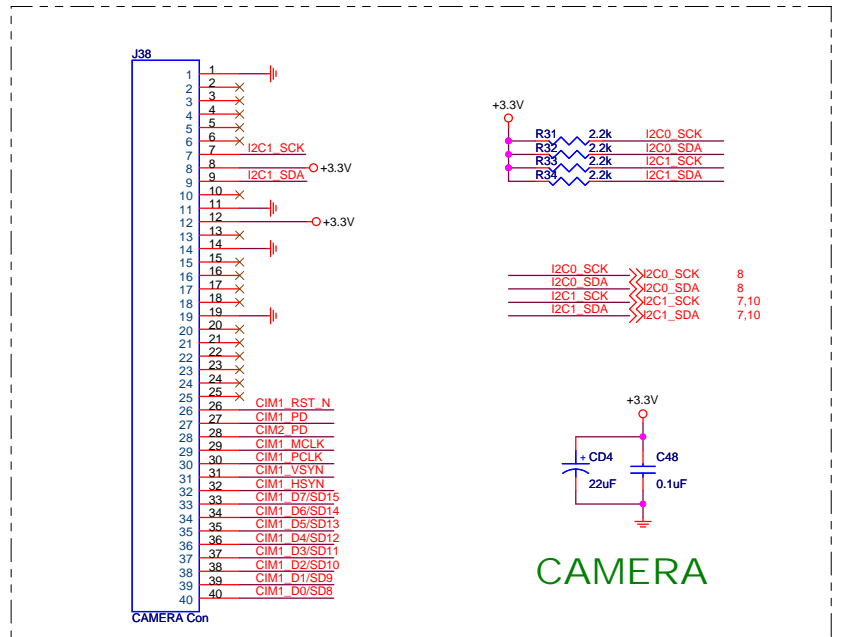
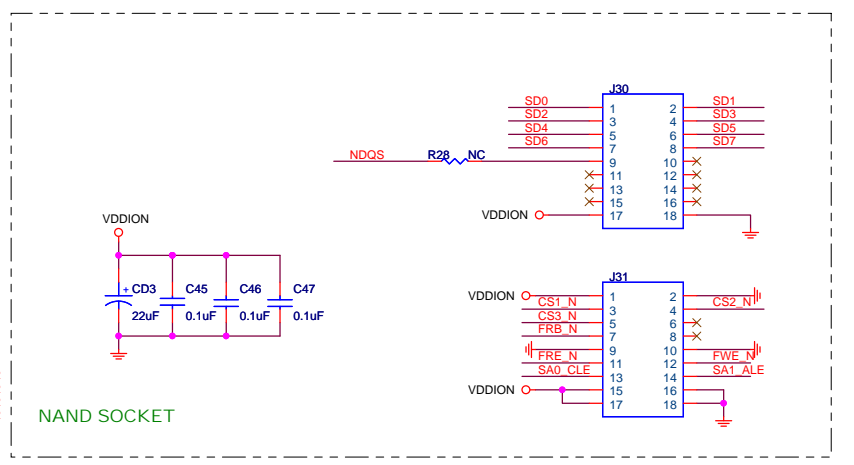
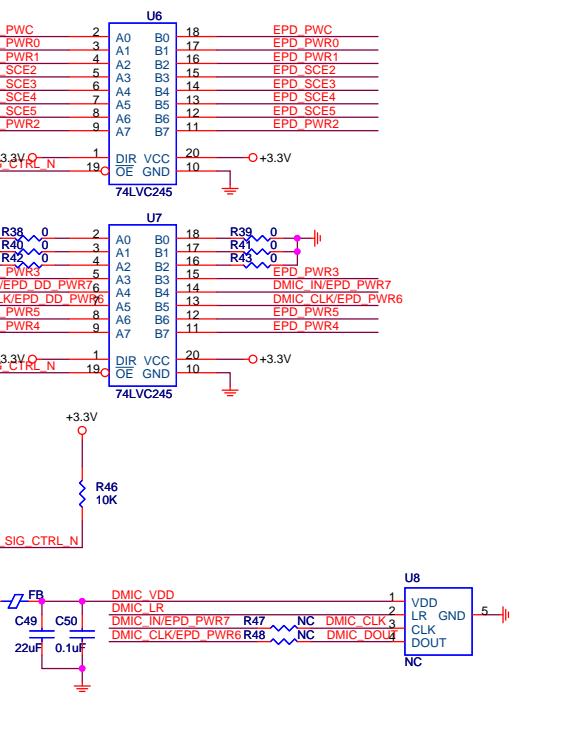
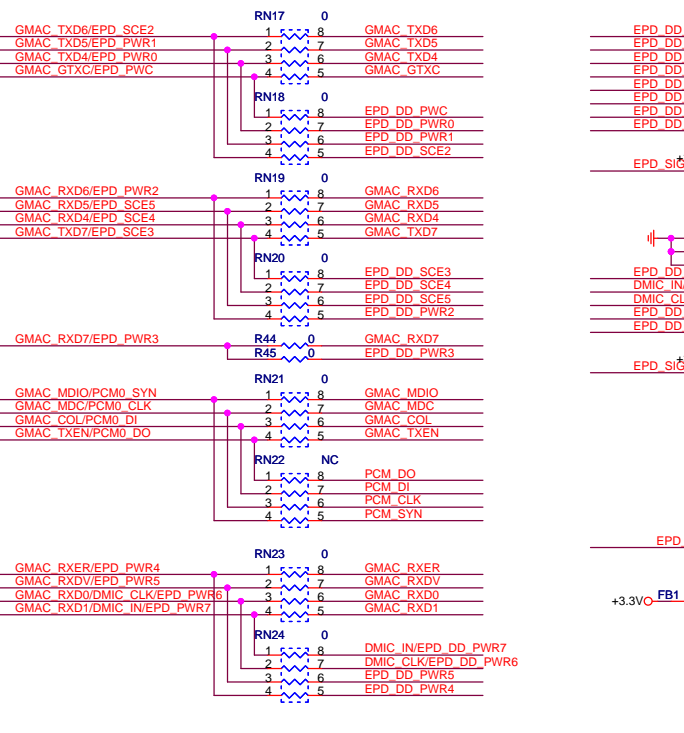
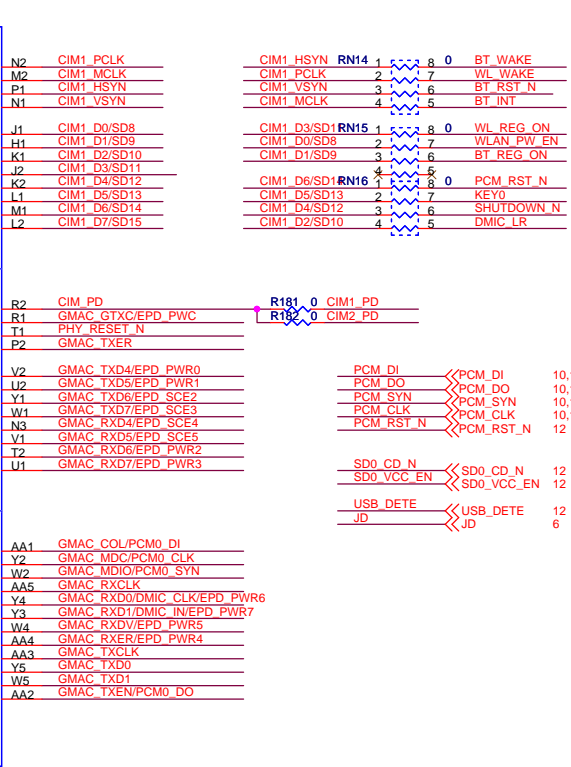
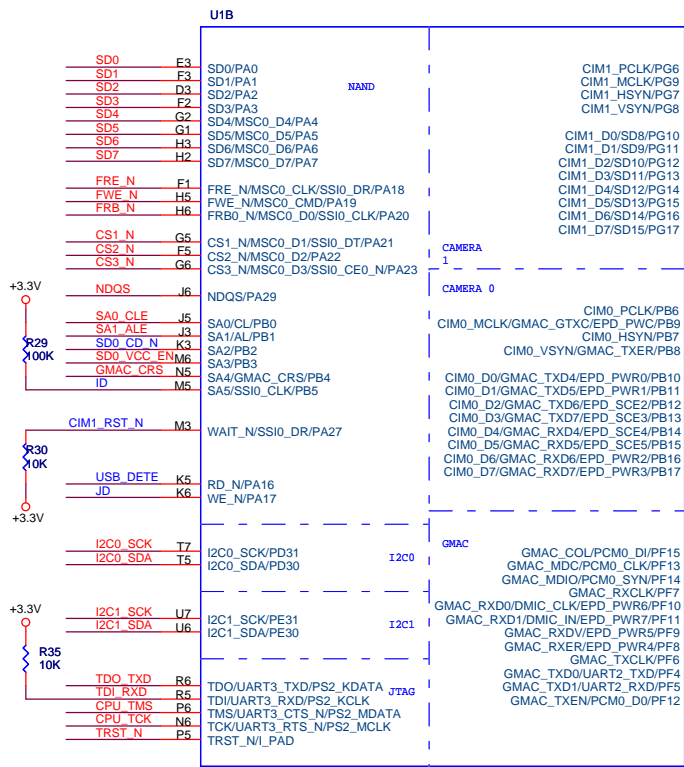
SUGGESTION:  
 1. R6 R7 is Differential Clock Termination. place on each side of memory  
 2. The trance DDR\_VREF is 20 mills wide at least.  
 3. R12 and R16 can be adjust to 10K/1% when use mDDR

Differential pairs Z0= 100 ohm  
 Equiling BUS Z0= 50 ohm

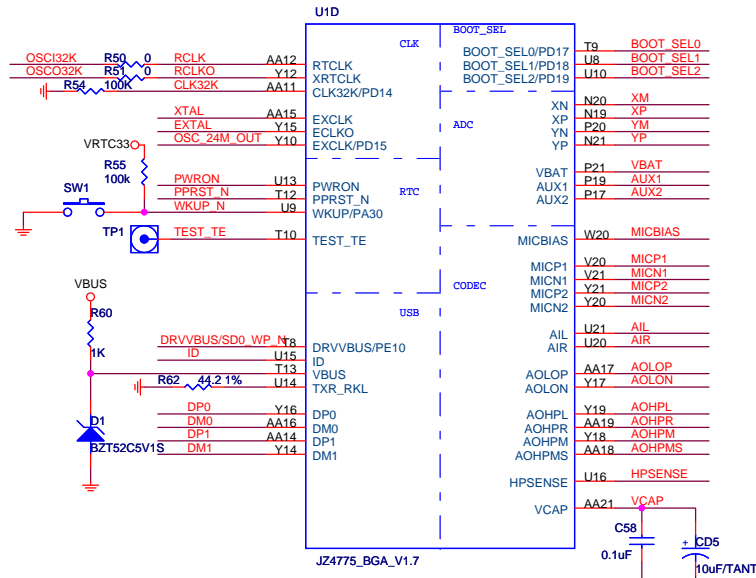
# DDR3

**INGENIC SEMICONDUCTOR CO., LTD**

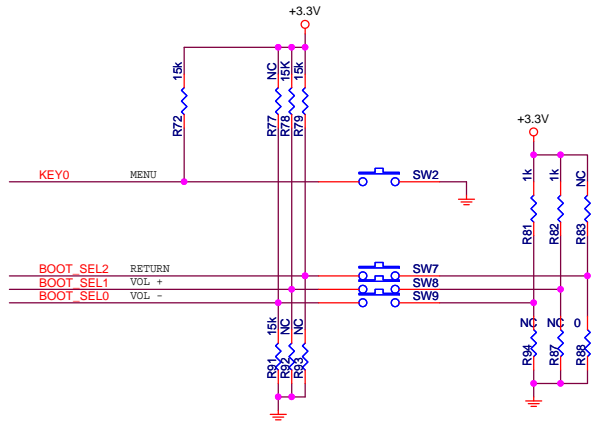
Title: RD\_IJZ4775\_MENSA\_BOARD  
 Size A3 Document Number: DDR3  
 Date: Wednesday, January 16, 2013 Sheet 4 of 14  
 Rev V1.0



INGENIC SEMICONDUCTOR CO., LTD		
Title	RD_IJ24775_MENSA_BOARD	
Size	Document Number	Rev
A3	NAND/CAMERA	V1.0
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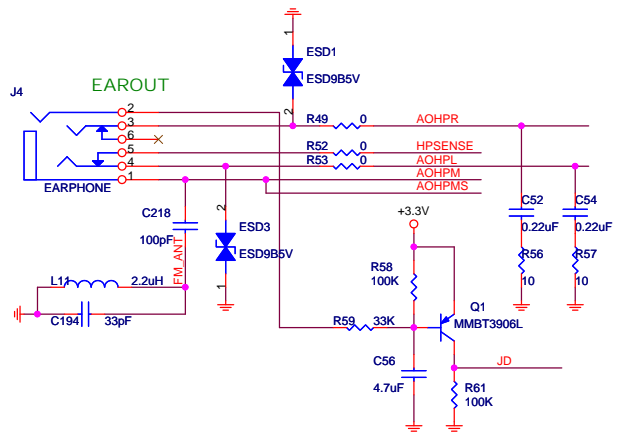
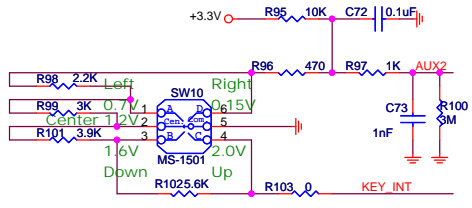


## FUNCTION KEY

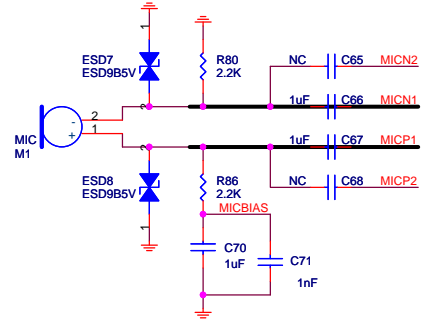
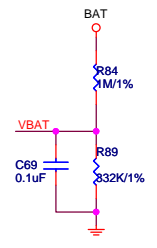
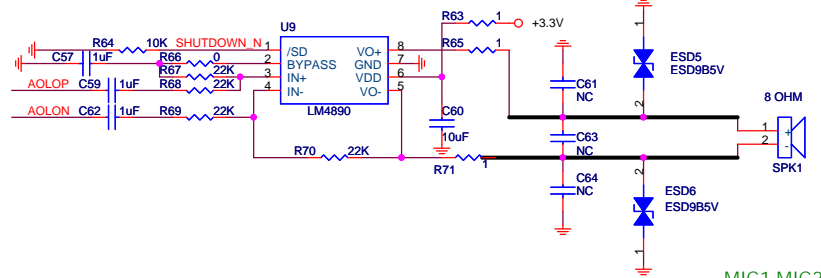
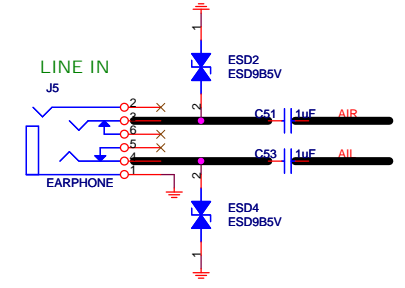


### Boot Mode Select

BOOT_SEL[2:1:0]	BOOT FROM
111	USB Boot
110	NRND Boot
101	MSC0 Boot
000	SPI Boot
100	MSC1 Boot
011	eMMC Boot
010	NOR Boot (CS2)

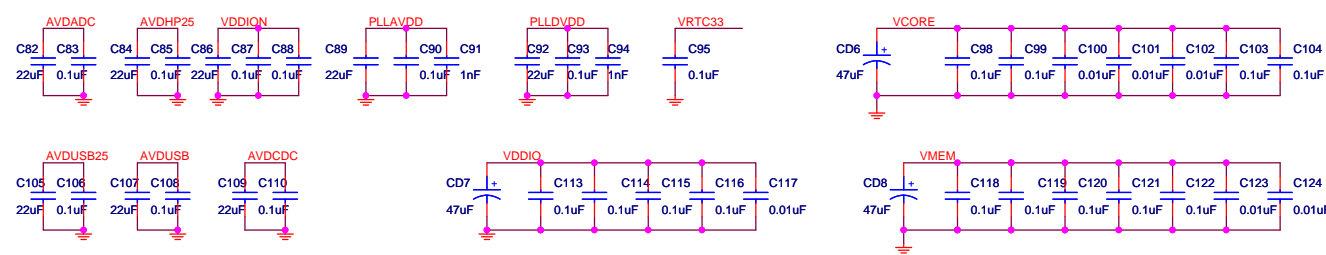
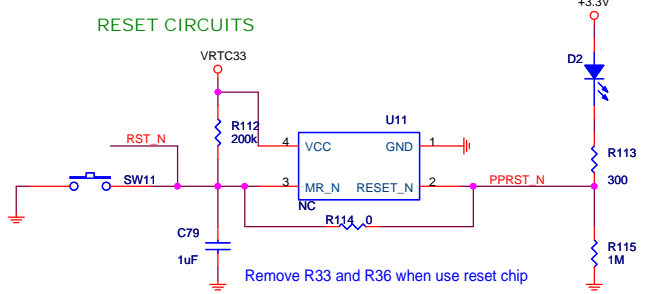
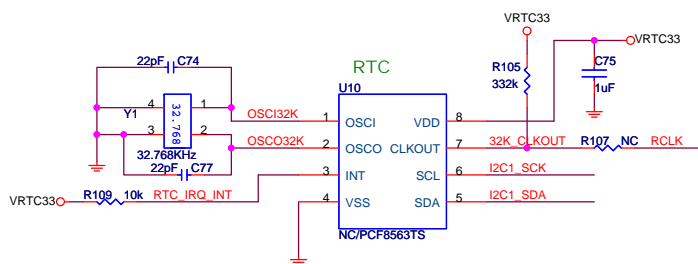
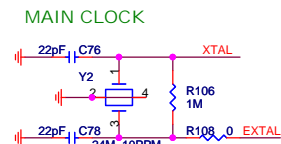
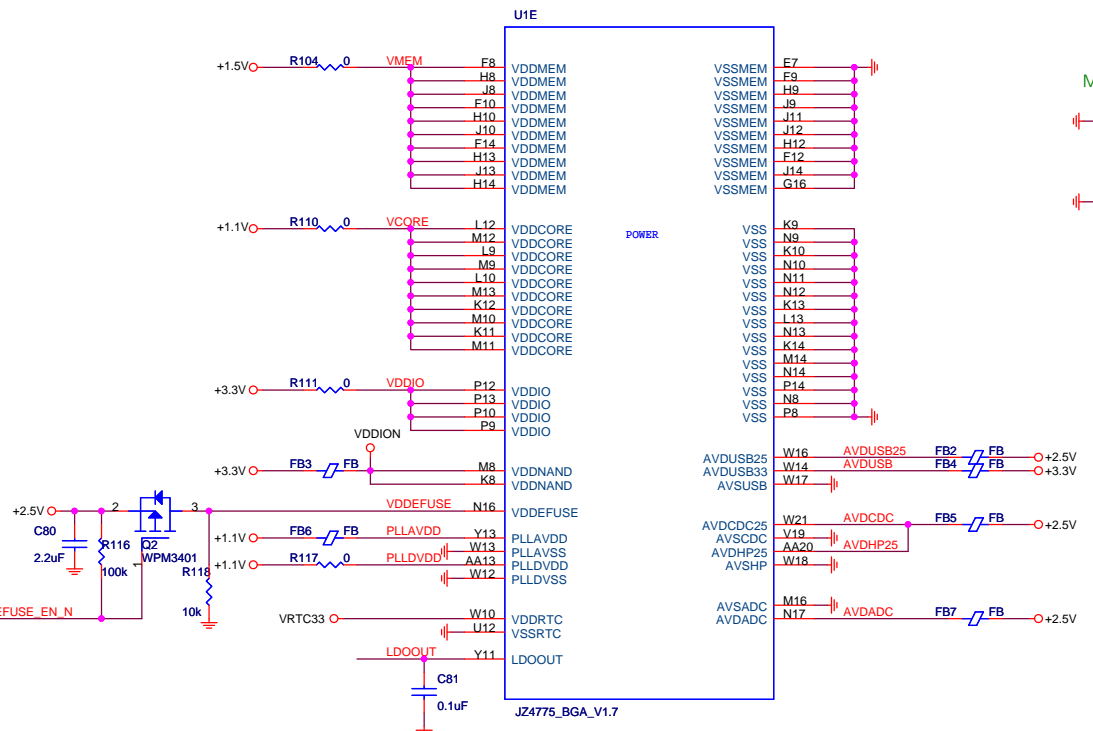


The AOHPMS and AOHPM must be connected at terminate, near the headphone Jack



## AUDIO

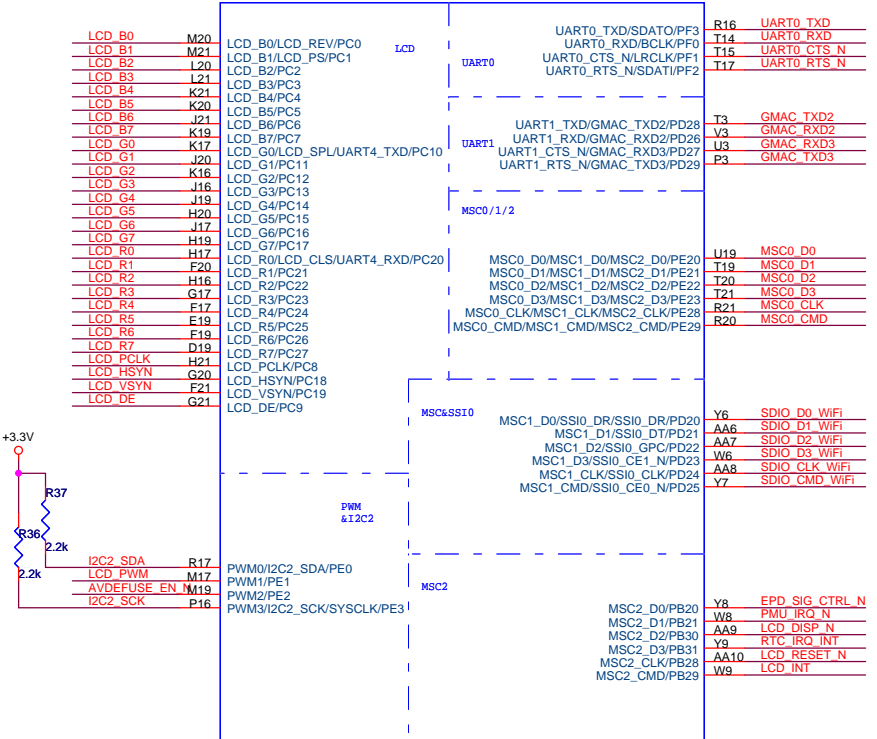
RCLK	>>RCLK	7	AIL	>>AIL	10,11
CLK32K	>>CLK32K	10	AIR	>>AIR	10,11
XTAL	>>XTAL	7	XM	>>XM	8
EXTAL	>>EXTAL	7	XP	>>XP	8
OSC132K	>>OSC132K	7	YM	>>YM	8
OSC032K	>>OSC032K	7	YP	>>YP	8
DP0	>>DP0	12	SD0_WP_N	<<<SD0_WP_N	12
DM0	>>DM0	12	AUX1	<<<AUX1	8
DP1	>>DP1	13	FM_ANT	<<<FM_ANT	10,11
DM1	>>DM1	13			
DRVVBUS	>>DRVVBUS	9			
ID	>>ID	5,12			
KEY0	>>KEY0	5			



- << AVDEFUSE\_EN\_N 8
- << XTAL 6
- << EXTERNAL 6
- << OSC I32K 6
- << OSC O32K 6
- << I2C1\_SCK 5,10
- << I2C1\_SDA 5,10
- << RTC\_IRQ\_INT 8
- << RCLK 6
- << RST\_N 13
- << PPRST\_N 6,9

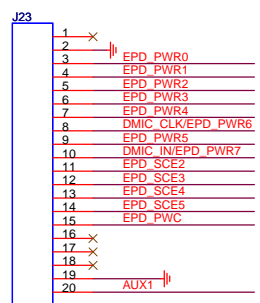
<b>INGENIC SEMICONDUCTOR CO.,LTD</b>		
Title	RD_IJ4775_MENSA_BOARD	
Size	Document Number	Rev
A3	RTC	V1.0
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UIC



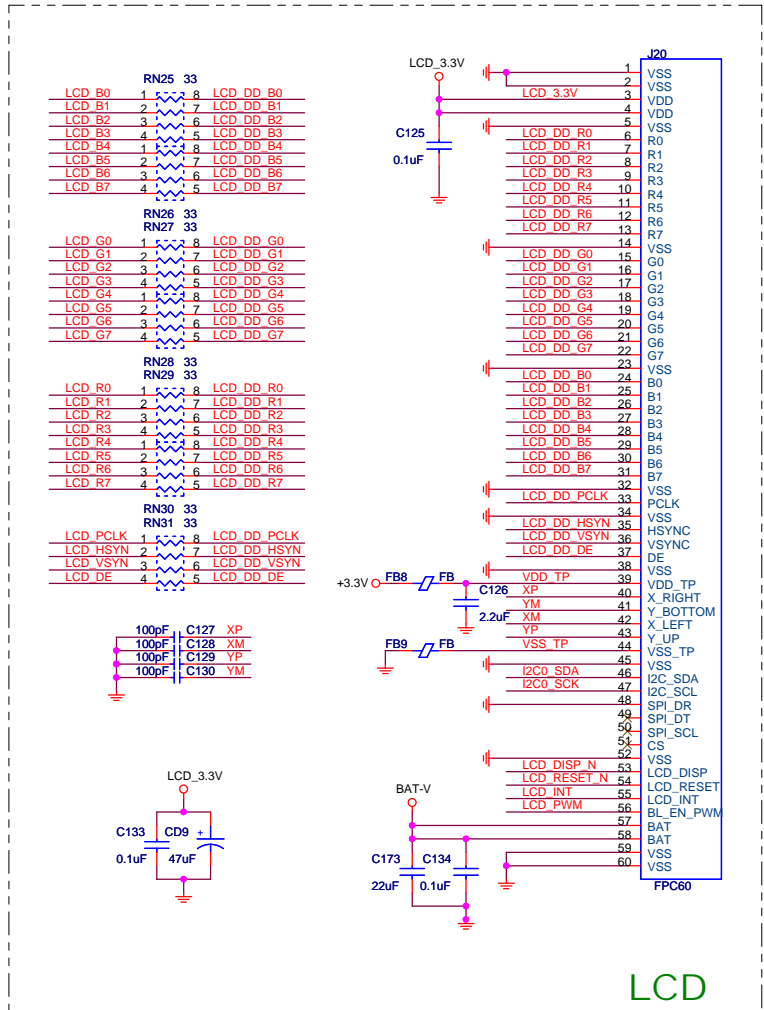
J24775\_BGA\_V1.7

EPD Connector



EPD_PWR[5:0]	5
EPD_SCE[5:2]	5
DMIC_IN/EPD_PWR7	5
DMIC_CLK/EPD_PWR6	5
EPD_PWC	5

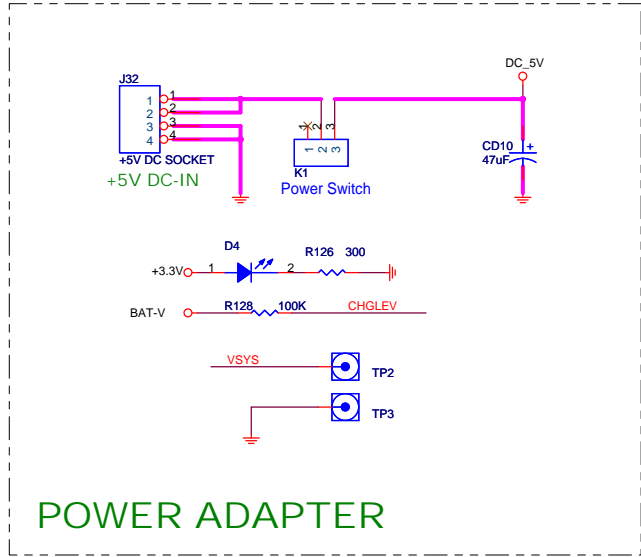
MSC0_D0	MSC0_D0	12	UART0_TXD	UART0_TXD	10,11	XM	XM	6
MSC0_D1	MSC0_D1	12	UART0_RXD	UART0_RXD	10,11	XP	XP	6
MSC0_D2	MSC0_D2	12	UART0_CTS_N	UART0_CTS_N	10,11	YM	YM	6
MSC0_D3	MSC0_D3	12	UART0_RTS_N	UART0_RTS_N	10,11	YP	YP	6
MSC0_CLK	MSC0_CLK	12						
MSC0_CMD	MSC0_CMD	12						
SDIO_D0_WIFI	SDIO_D0_WIFI	10,11	GMAC_TXD2	GMAC_TXD2	13	I2C0_SDA	I2C0_SDA	5
SDIO_D1_WIFI	SDIO_D1_WIFI	10,11	GMAC_RXD2	GMAC_RXD2	13	I2C0_SCK	I2C0_SCK	5
SDIO_D2_WIFI	SDIO_D2_WIFI	10,11	GMAC_RXD3	GMAC_RXD3	13			
SDIO_D3_WIFI	SDIO_D3_WIFI	10,11	GMAC_TXD3	GMAC_TXD3	13			
SDIO_CLK_WIFI	SDIO_CLK_WIFI	10						
SDIO_CMD_WIFI	SDIO_CMD_WIFI	10,11						
			I2C2_SDA	I2C2_SDA	9			
			I2C2_SCK	I2C2_SCK	9			
			AVDEFUSE_EN_N	AVDEFUSE_EN_N	7			
EPD_SIG_CTRL_N	EPD_SIG_CTRL_N	5						
PMU_IRQ_N	PMU_IRQ_N	9						



LCD

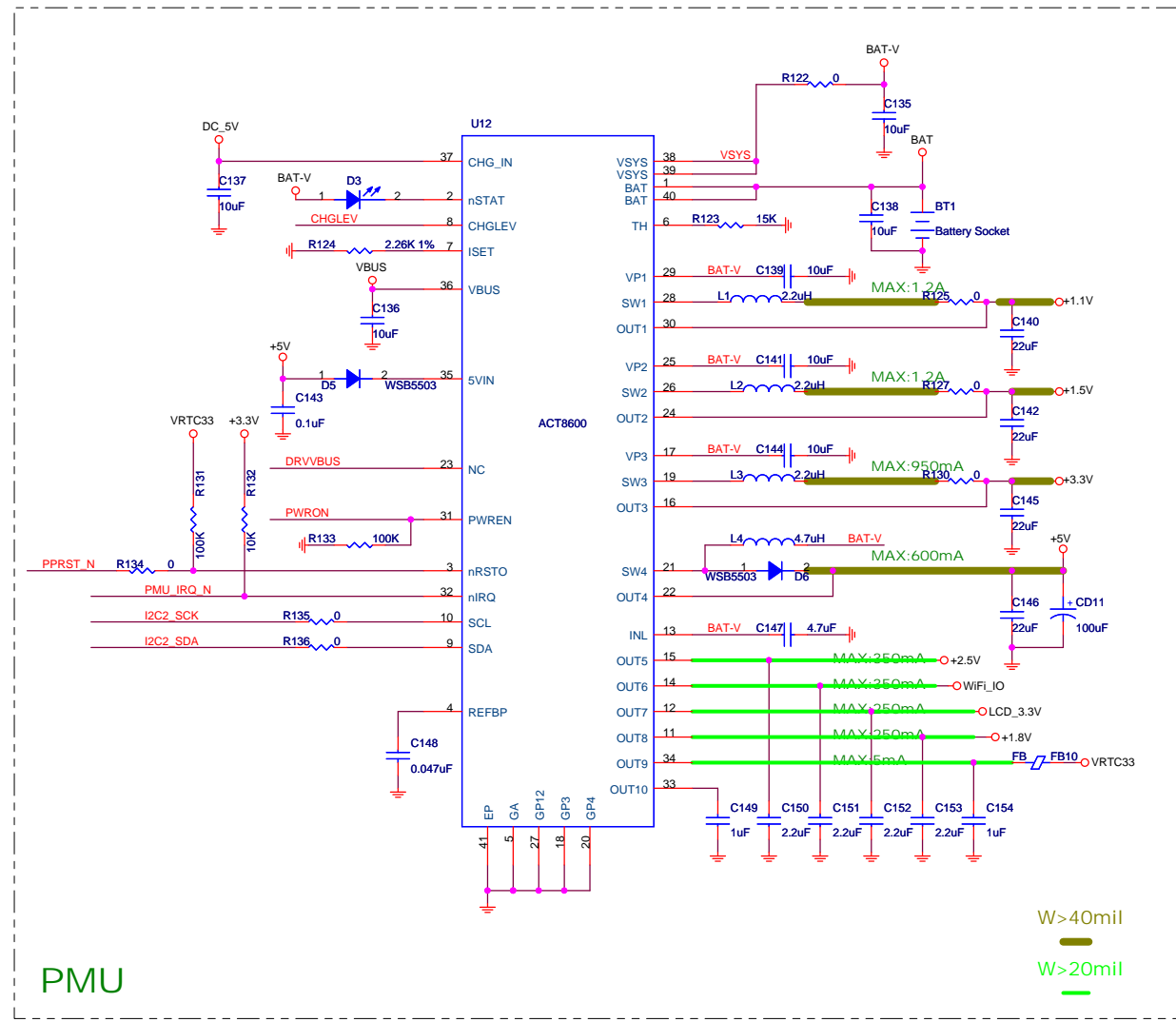
INGENIC SEMICONDUCTOR CO.,LTD			
Title	RD_IJ24775_MENSA_BOARD		
Size	Document Number		Rev
A3	LCD/EPD		V1.0
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**POWER ADAPTER**

- PPRST\_N << PPRST\_N 6,7
- PMU\_IRQ\_N << PMU\_IRQ\_N 8
- I2C2\_SCK << I2C2\_SCK 8
- I2C2\_SDA << I2C2\_SDA 8
- PWRON << PWRON 6
- DRVVBUS << DRVVBUS 6

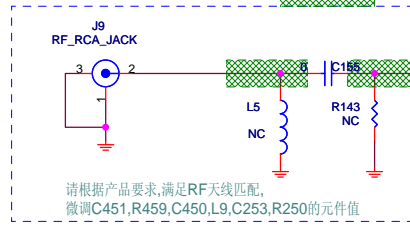


**PMU**

W>40mil  
W>20mil

<b>INGENIC SEMICONDUCTOR CO.,LTD</b>		
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RF Microstrip  
Z0= 50 ohm

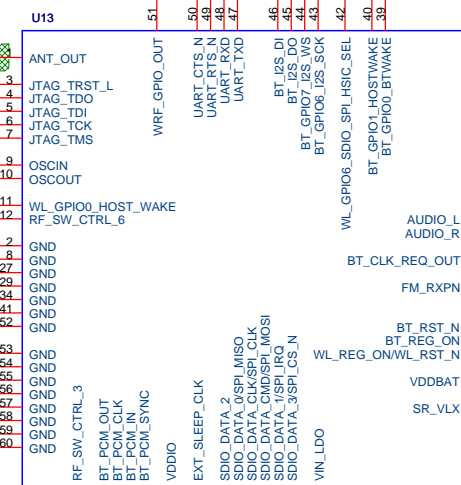


请根据产品要求,满足RF天线匹配,  
微调C451,R459,C450,L9,C253,R250的元件值

请根据晶体要求,满足实际测试  
+/-10PPM误差范围,  
微调C252,C256的元件值,  
Layout时晶振下方不能走线

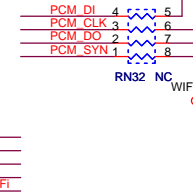
Please note the input/output direction of UART interface,  
IW8103's input should connect to the output of host, and  
IW8103's output should connect to input of host.

UART0\_RXD  
UART0\_TXD  
UART0\_CTS\_N  
UART0\_RTS\_N



Please note the input/output direction of PCM interface,  
IW8103's input should connect to the output of host, and IW8103's output should connect to input of host.

I2C1\_SDA R151 NC  
I2C1\_SCK R152 NC

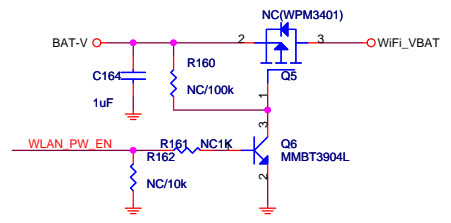


EXT\_SLEEP\_CLK 200-1800mV Vp-p to avoid additional current consumption and degradation in PWM SMR. 3.3V Vp-p maximum.

Component select in IW8101 & IW8103		
Part Number	IW8103	IW8101
	value	
C157,C158	1uF	NC
C164	1uF	NC
ESD34	TESB0R15V05B1X	NC
FB12	75@100MHz	NC
FB13	NC	75@100MHz
L7	2.2uH	1.5uH
Q5	WPM3401	NC
Q6	MMBT3904L	NC
RN32	0 OHM	NC
R138	NC	100K OHM
R139,R146	NC	0 OHM
R137,R141,R142,R147	0 OHM	NC
R148,R149,R150	100K OHM	NC
R160	100K OHM	NC
R162	10K OHM	NC
R161	1K OHM	NC
U14	0 OHM	MURATA BPF LFB182G45CL3D264
Y3	37.4MHz, +/-10ppm	26MHz, +/-10ppm
备注		
使用IW8103, WIFI_IO电压调整为2.8V,同时系统的3.3V也调整为2.8V		
清单内无标识的物料为共用料, 请按原理图标识值进行选择		

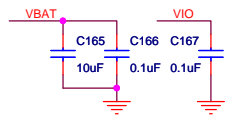
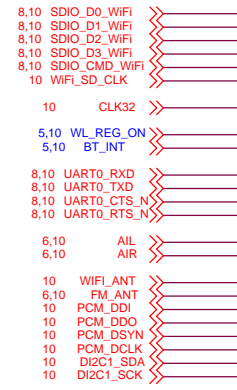
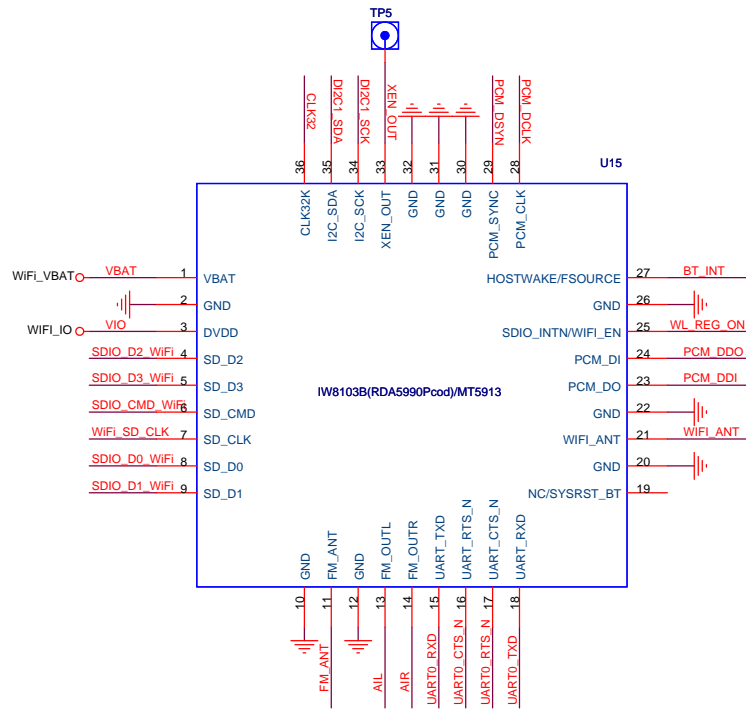
器件编号	IW8103	IW8103B
Y3	37.4MHz +/- 10ppm	26MHz +/- 10ppm
C157,C158	1uF	0.1uF
R151,R152	NC	0R
L7	2.2uH	4.7uH
FB12	75@100MHz Bead	100pF CAP
R140,R142	0R	NC

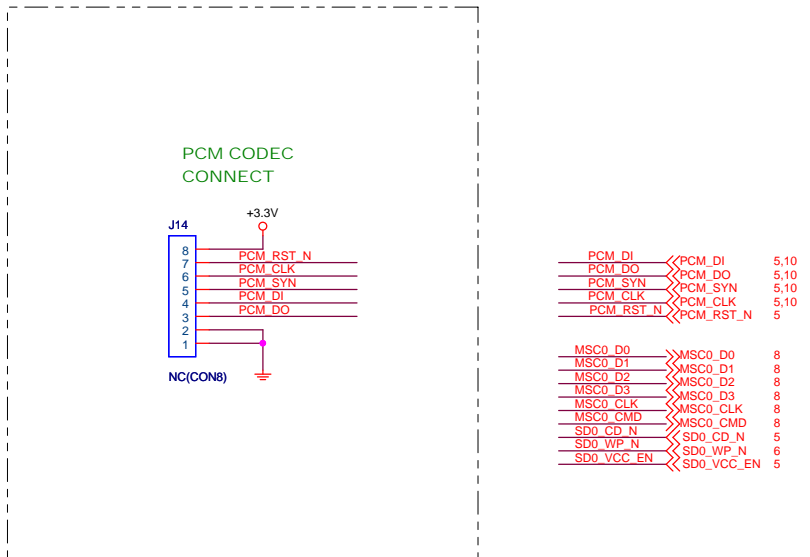
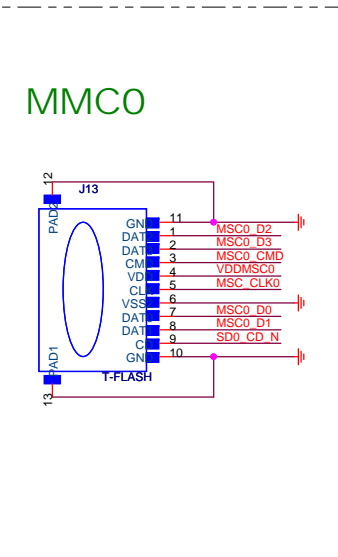
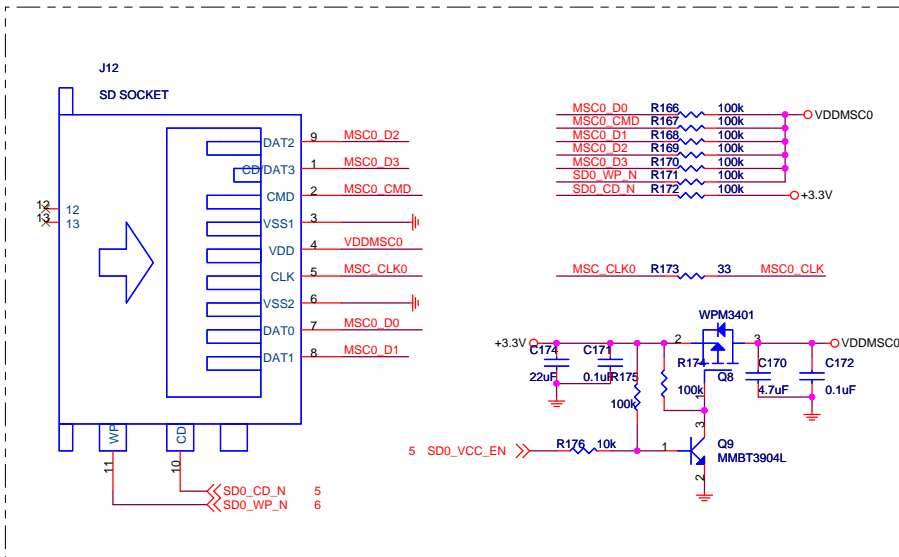
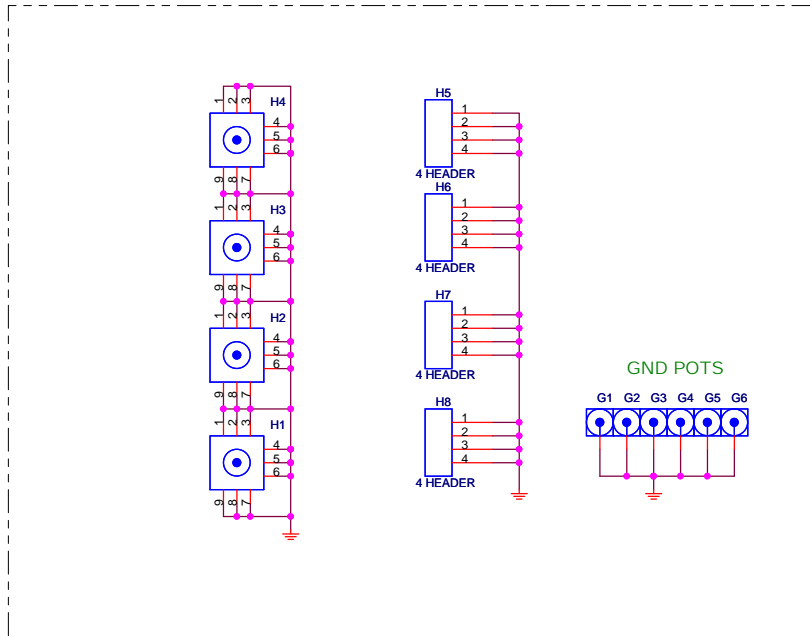
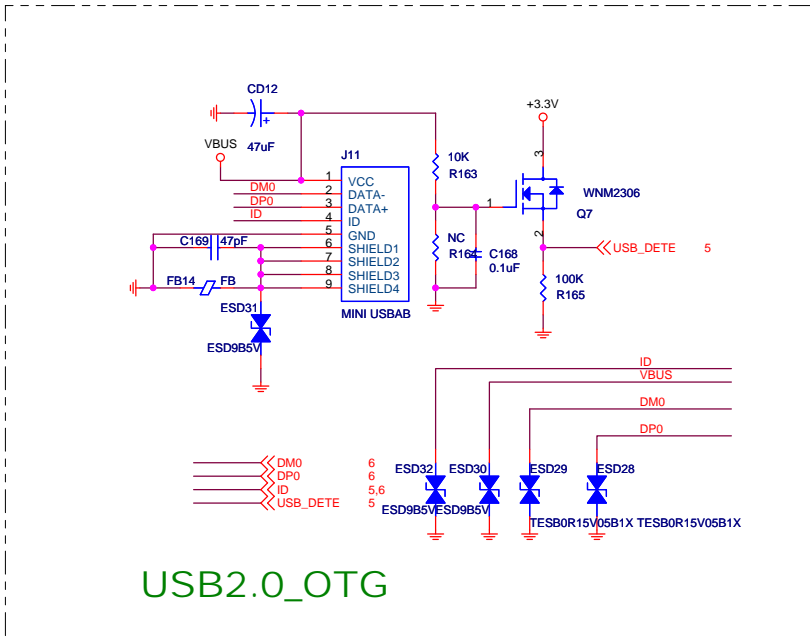
- 6 OSC\_24M\_OUT >>
- 8,11 SDIO\_D0\_WIFI >>
- 8,11 SDIO\_D1\_WIFI >>
- 8,11 SDIO\_D2\_WIFI >>
- 8,11 SDIO\_D3\_WIFI >>
- 8,11 SDIO\_CMD\_WIFI >>
- 8 SDIO\_CLK\_WIFI >>
- 6 CLK32K >>
- 5,12 PCM\_DI >>
- 5,12 PCM\_DO >>
- 5,12 PCM\_SYN >>
- 5,12 PCM\_CLK >>
- 5 WL\_WAKE >>
- 5,11 WL\_REG\_ON >>
- 5 BT\_REG\_ON >>
- 5 BT\_WAKE >>
- 5,11 BT\_INT >>
- 5 BT\_RST\_N >>
- 8,11 UART0\_RXD >>
- 8,11 UART0\_TXD >>
- 8,11 UART0\_CTS\_N >>
- 8,11 UART0\_RTS\_N >>
- 5 WLAN\_PW\_EN >>
- 6,11 AIL >>
- 6,11 AIR >>
- 5,7 I2C1\_SDA >>
- 5,7 I2C1\_SCK >>
- 11 WIFI\_ANT >>
- 6,11 FM\_ANT >>
- 11 CLK32 >>
- 11 WiFi\_SD\_CLK >>
- 11 PCM\_DDI >>
- 11 PCM\_DDO >>
- 11 PCM\_DSYN >>
- 11 PCM\_DCLK >>
- 11 DI2C1\_SDA >>
- 11 DI2C1\_SCK >>



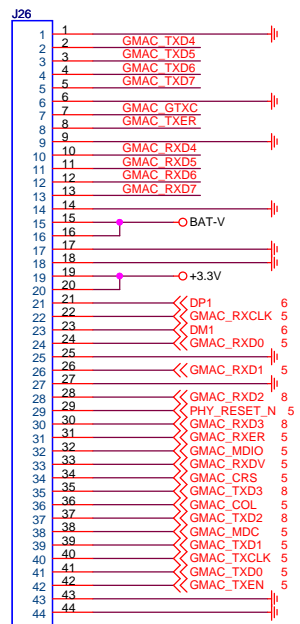
WIFI Power

INGENIC SEMICONDUCTOR CO.,LTD		
Title	RD_IJ24775_MENSA_BOARD	
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A3	WIFI_IW8101/IW8103	V1.0
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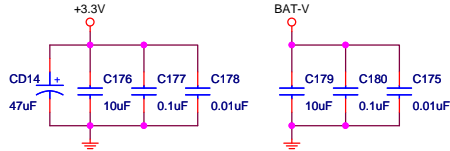




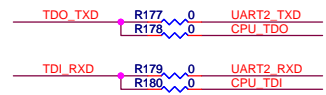
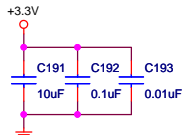
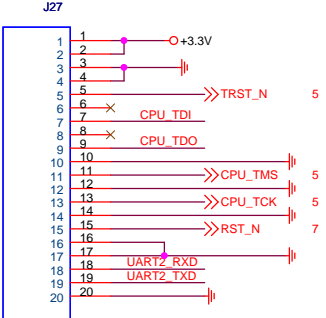
# Ethernet & USB Con



Ethernet & USB Con



# JDI & Uart Con



TDO_TXD	>>TDO_TXD	5
TDI_RXD	>>TDI_RXD	5
CPU_TMS	>>CPU_TMS	5
CPU_TCK	>>CPU_TCK	5
TRST_N	>>TRST_N	5
RST_N	>>RST_N	7

>>>GMAC_TXD[7:0]	5,8	
<<<GMAC_RXD[7:0]	5,8	
GMAC GTXC	>>GMAC GTXC	5
GMAC COL	>>GMAC_COL	5
GMAC MDC	>>GMAC_MDC	5
GMAC MDIO	>>GMAC_MDIO	5
GMAC_RXCLK	>>GMAC_RXCLK	5
GMAC_RXDV	>>GMAC_RXDV	5
GMAC_RXER	>>GMAC_RXER	5
GMAC_TXCLK	>>GMAC_TXCLK	5
GMAC_TXER	>>GMAC_TXER	5
GMAC_TXEN	>>GMAC_TXEN	5
GMAC CRS	>>GMAC_CRIS	5
PHY_RESET_N	>>PHY_RESET_N	5
DP1	>>DP1	6
DM1	>>DM1	6

Data Revision Change

Data	Revision	Change
Jan 8 2013	Rev1.0	1. First Revision