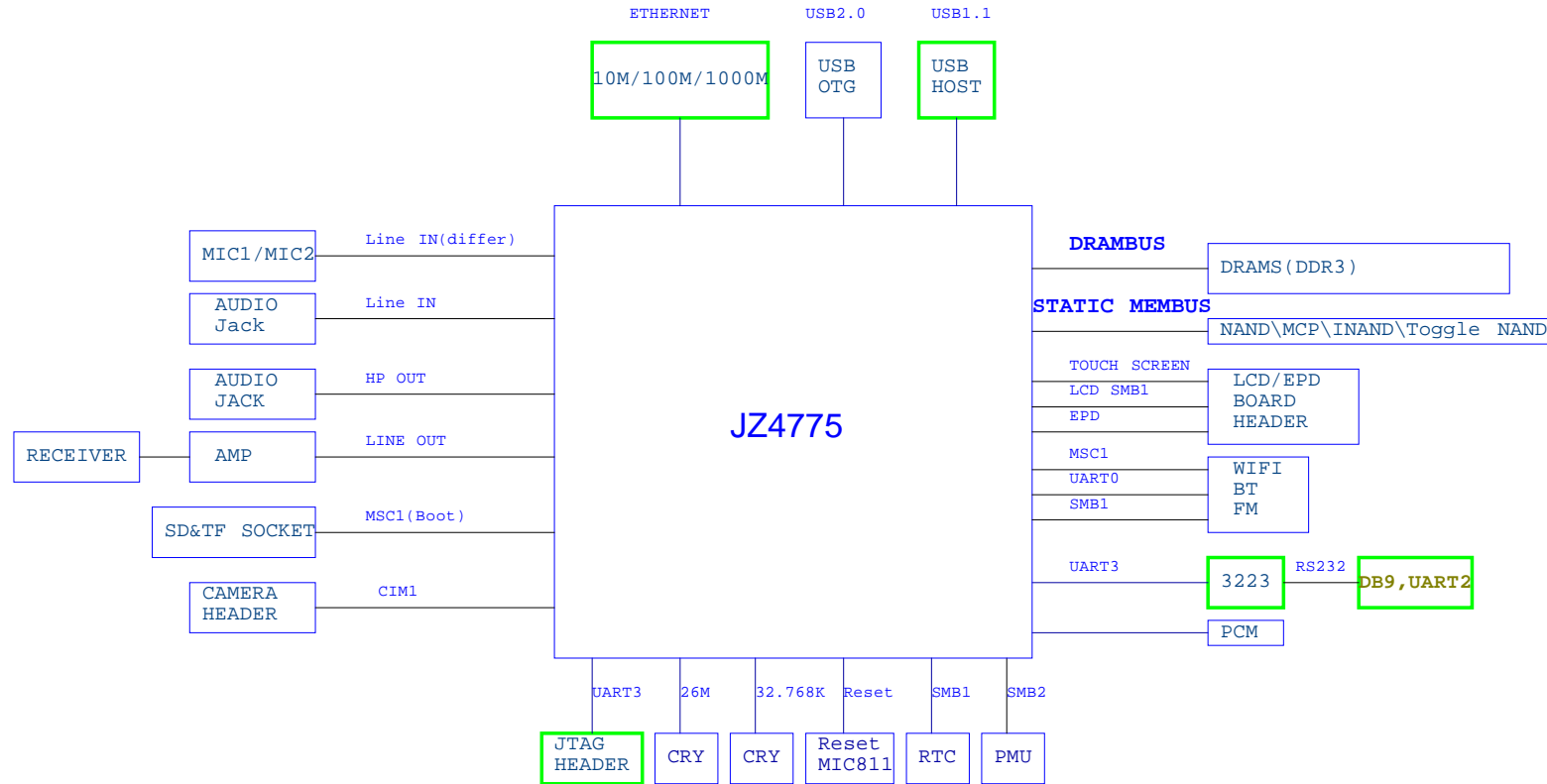




# RD\_JZ4775\_MENSA\_BOARD

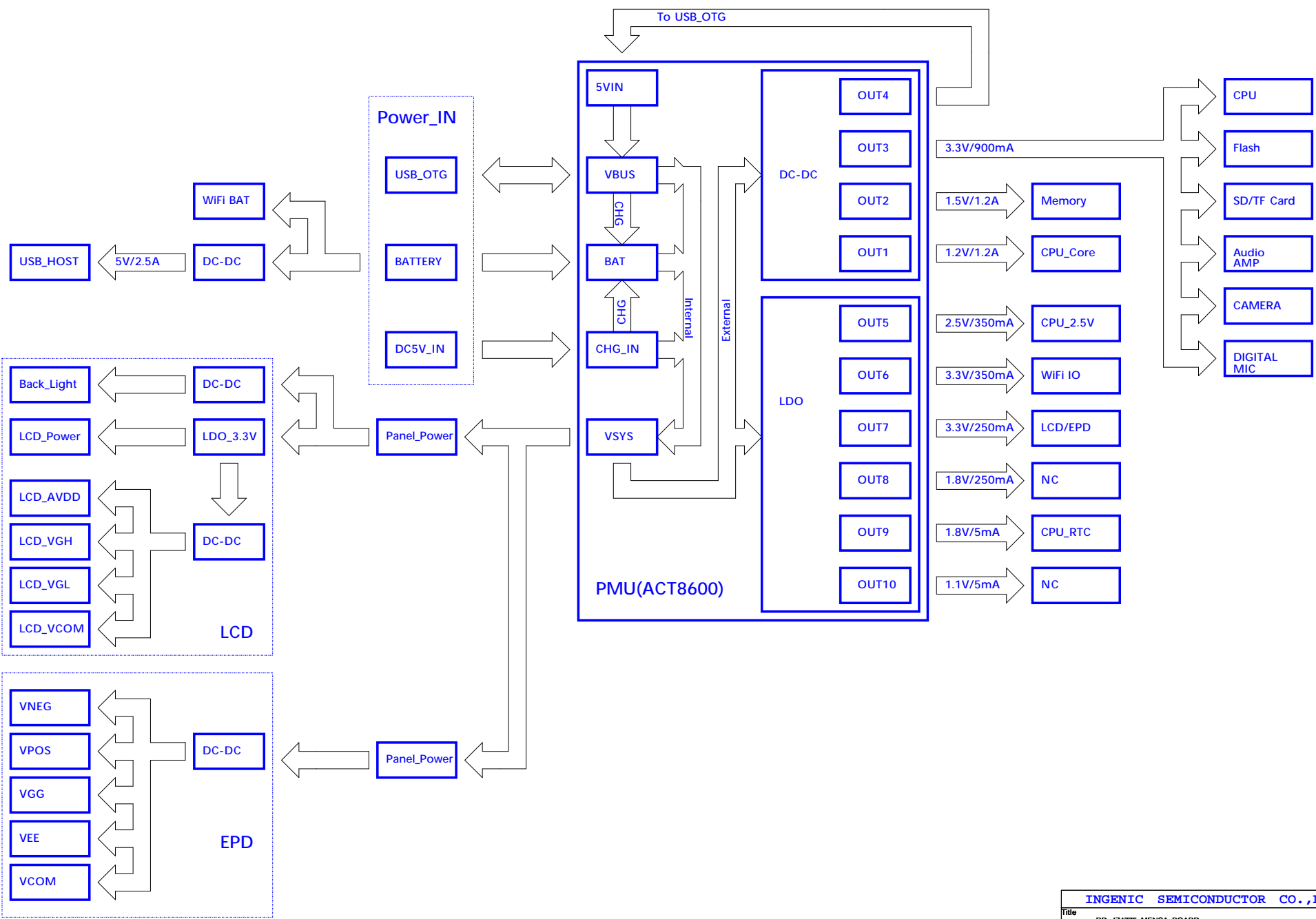
## Schematic Revision 1.2.1

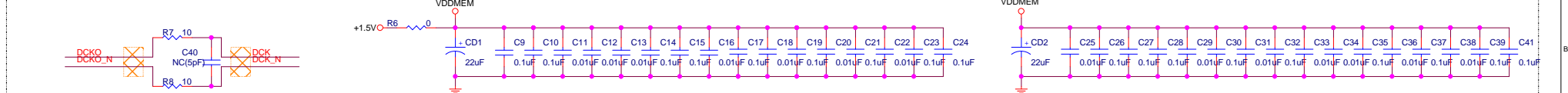
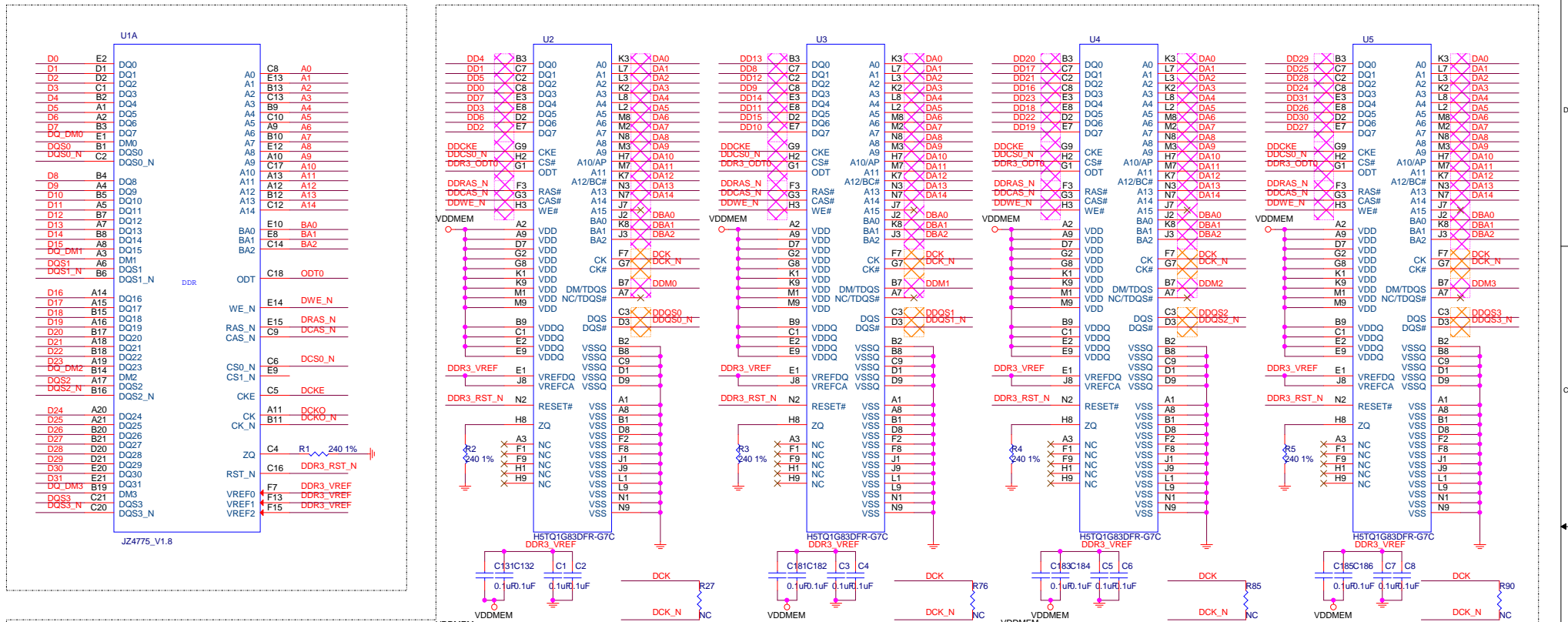
Title	Page
COVER SHEET	1
SYSTEM ARCHITECTURE	2
POWER ARCHITECTURE	3
DDR3	4
Nand/Camera	5
AUDIO/KEY	6
RTC	7
LCD/EPD	8
PMU	9
IW8101/IW8103	10
IW8103B/MT5931	11
USB OTG/SD CARD/PCM	12
DEBUG	13
HISTORY	14



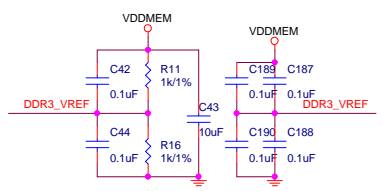
The green color is the debug board

INGENIC SEMICONDUCTOR CO.,LTD			
Title	RD_JZ4775_MENSA_BOARD		
Size	Document Number	Rev	
A3	SYSTEM ARCHITECTURE	V1.21	
Date:	Monday, January 25, 2016	Sheet	2 of 14

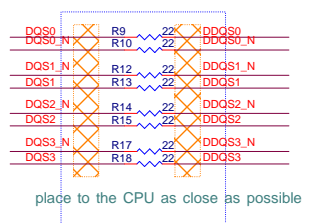




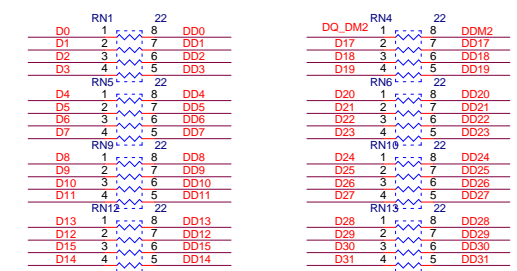
place to the CPU as close as possible



SUGGESTION:  
 1. R6 R7 is Differential Clock Termination.  
 place on each side of memory  
 2. The trance DDR\_VREF is 20 mils wide at least.  
 3. R12 and R16 can be adjust to 10K/1k when use mDDR



place to the CPU as close as possible

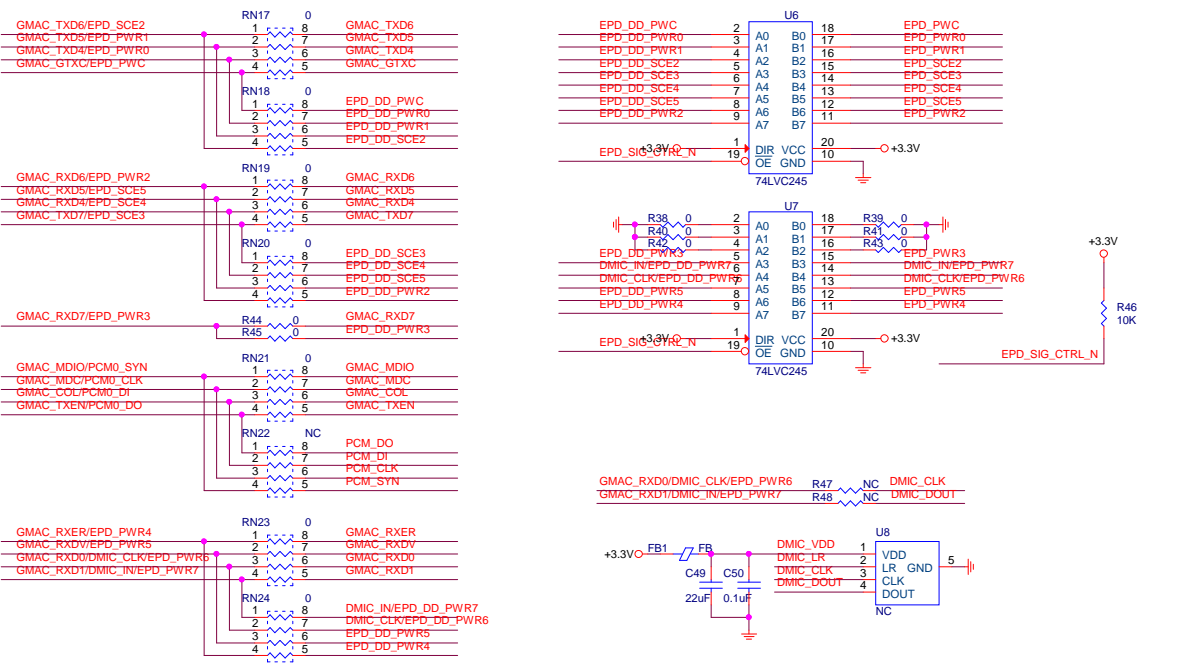
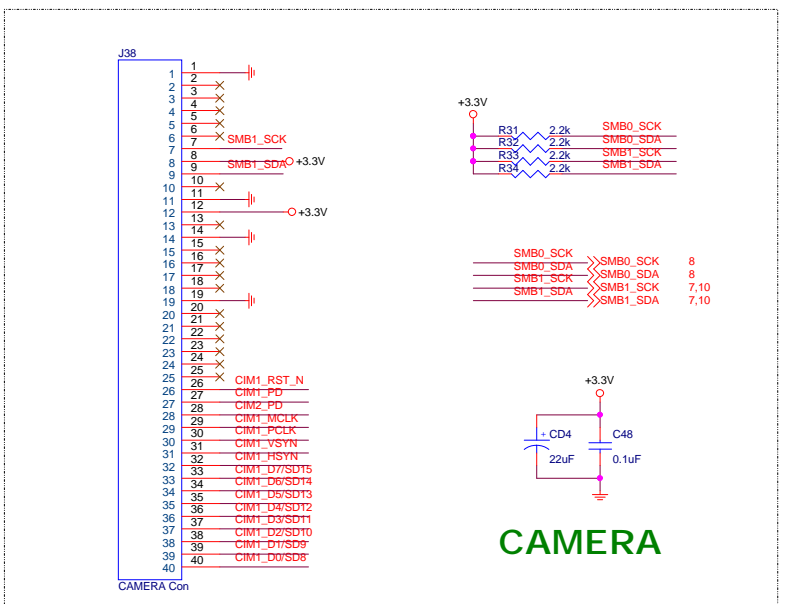
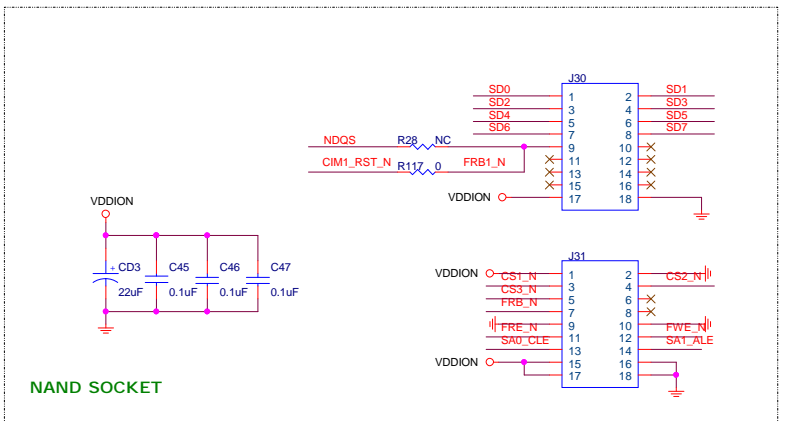


Differential pairs  
 Z0= 100 ohm

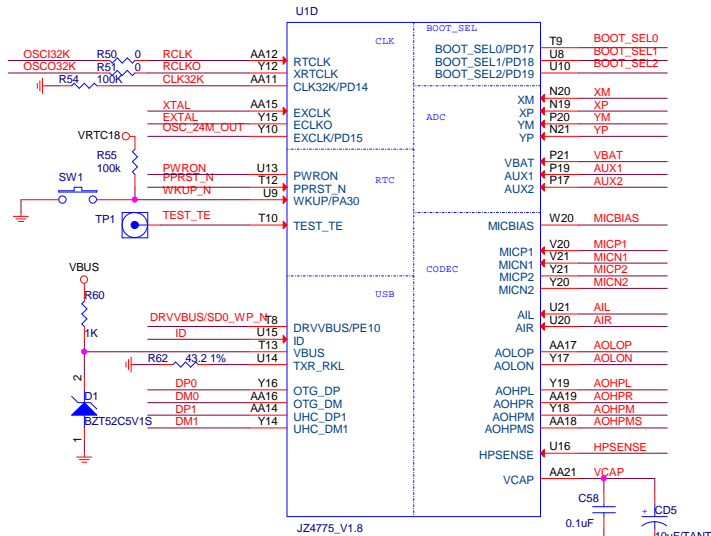
Equiling BUS  
 Z0= 50 ohm

# DDR3

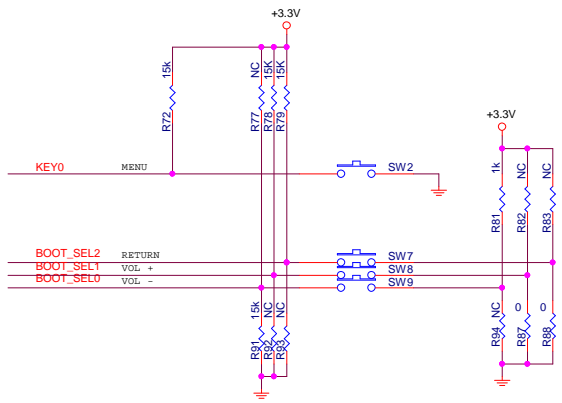
INGENIC SEMICONDUCTOR CO., LTD			
Title	RD_J24775_MENSA_BOARD		
Size	Document	Number	Rev
A3	DDR3		V1.21
Date:	Monday, January 25, 2016	Sheet	4 of 14



INGENIC SEMICONDUCTOR CO.,LTD			
Title	RD_J24775_MENSA_BOARD		
Size	Document Number	Rev	
A3	NAND/CAMERA	V1.21	
Date:	Monday, January 25, 2016	Sheet	5 of 14

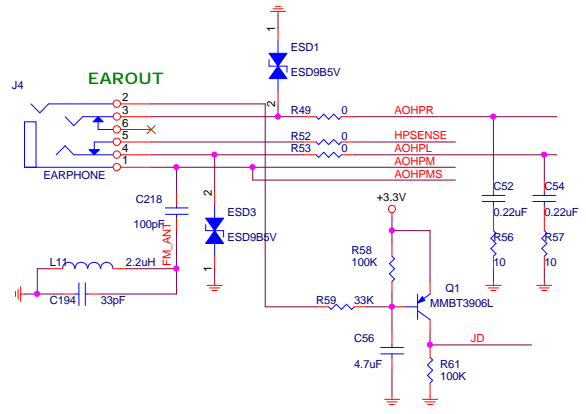
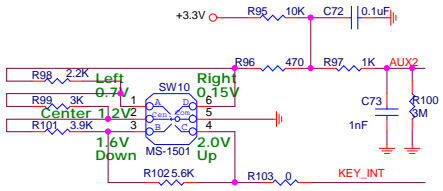


## FUNCTION KEY

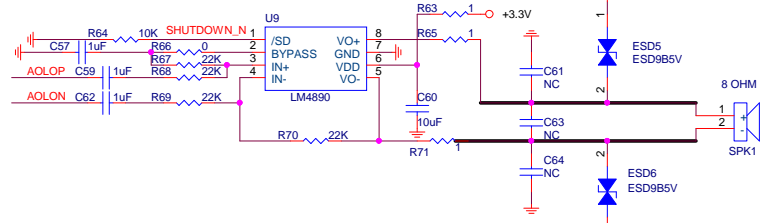
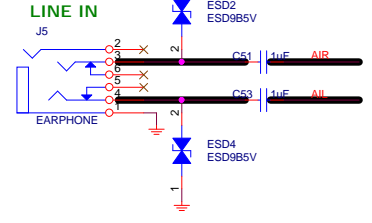


### Boot Mode Select

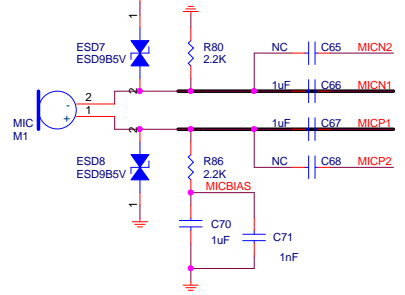
BOOT_SEL[2:1:0]	BOOT FROM
111	USB Boot
110	NAND Boot
101	MSC0 Boot
000	SPI Boot
100	MSC1 Boot
011	eMMC Boot
010	NOR Boot (CS2)



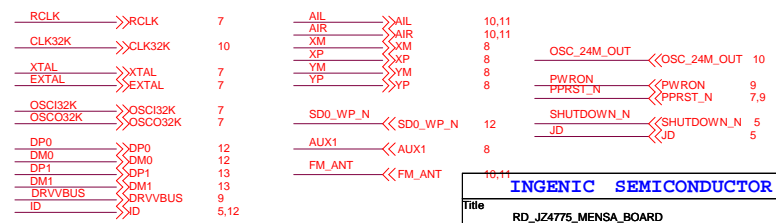
The AOHPS and AOHPM must be connected at terminate, near the headphone Jack



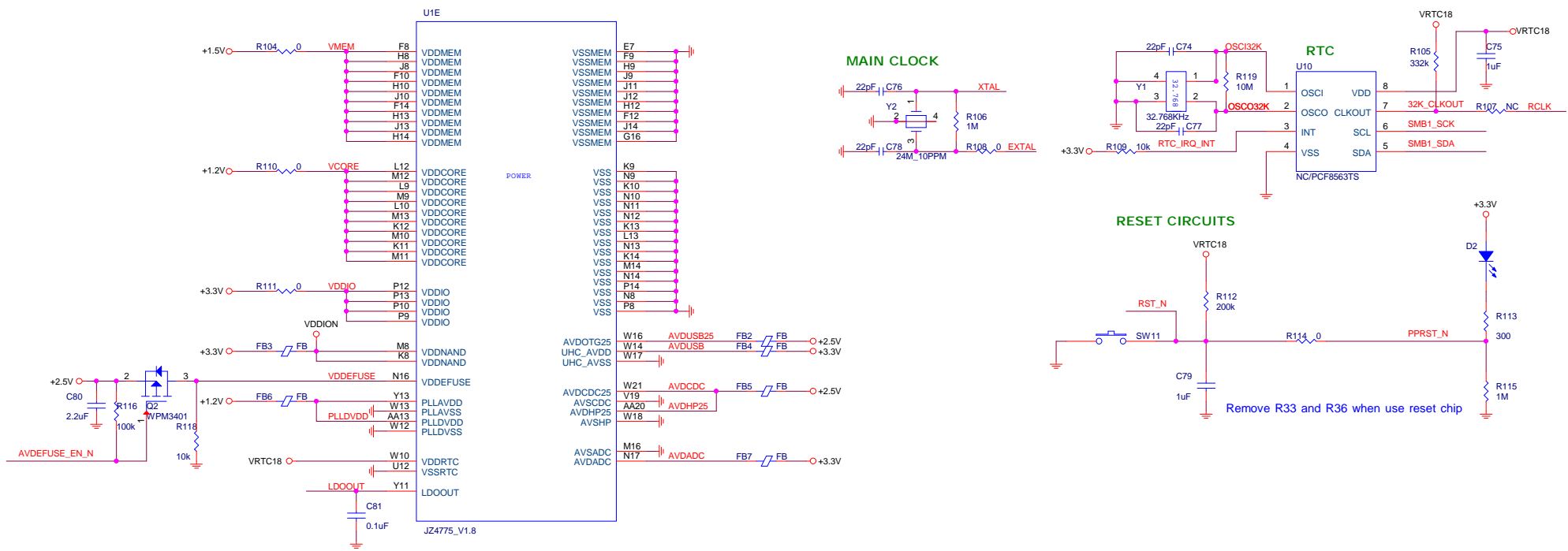
### MIC1 MIC2



## AUDIO



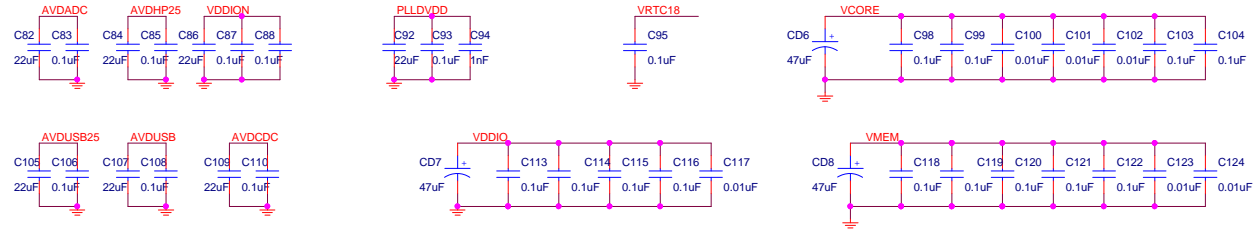
INGENIC SEMICONDUCTOR CO.,LTD		
Title	RD_JZ4775_MENSA_BOARD	
Size	Document Number	Rev
A3	AUDIO/KEY	V1.21
Date:	Monday, January 25, 2016	Sheet 6 of 14



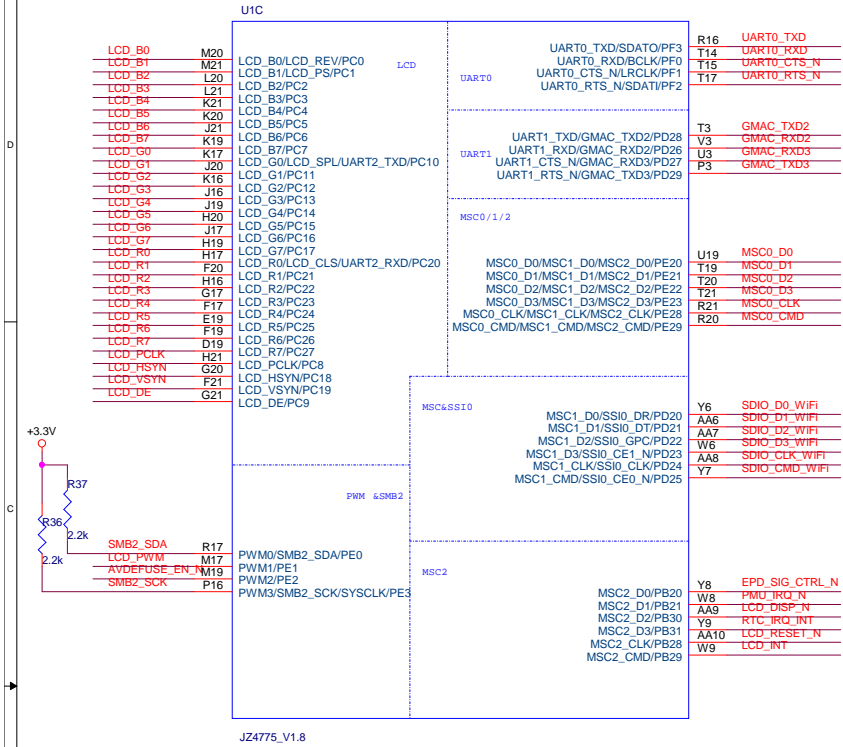
**MAIN CLOCK**

**RESET CIRCUITS**

**RTC**

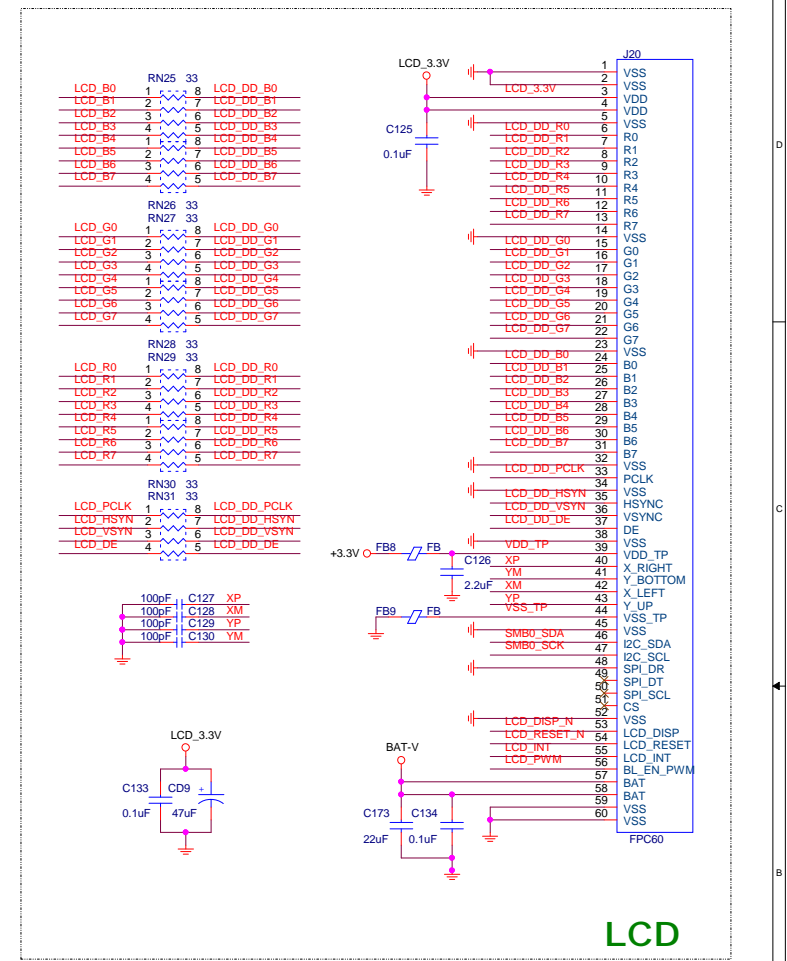
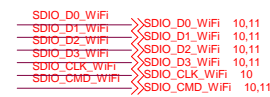
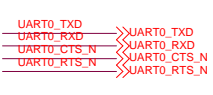
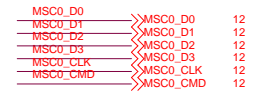
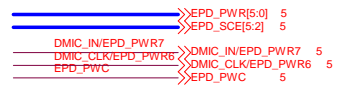
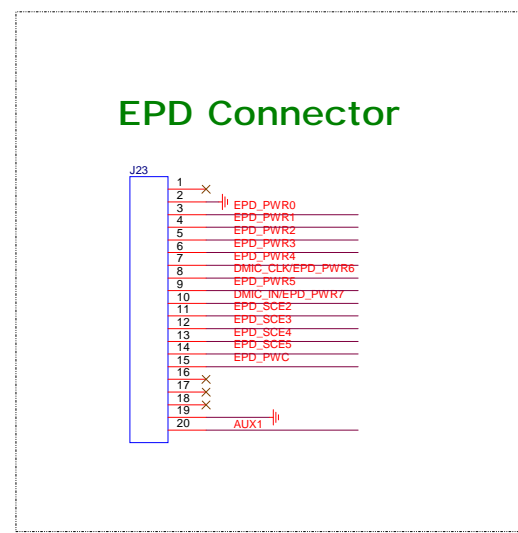


AVDEFUSE_EN_N	8
XTAL	6
EXTAL	6
OSCI32K	6
OSCO32K	6
SMB1_SCK	5,10
SMB1_SDA	5,10
RTC_IRQ_INT	8
RCLK	6
RST_N	13
PPRST_N	6,9



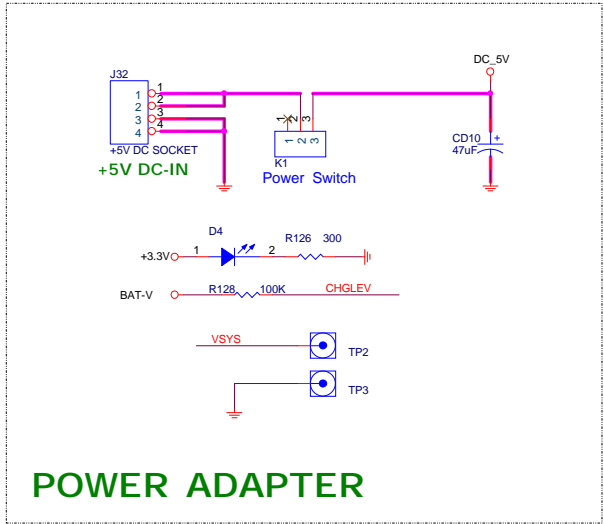
JZ4775\_V1.8

## EPD Connector



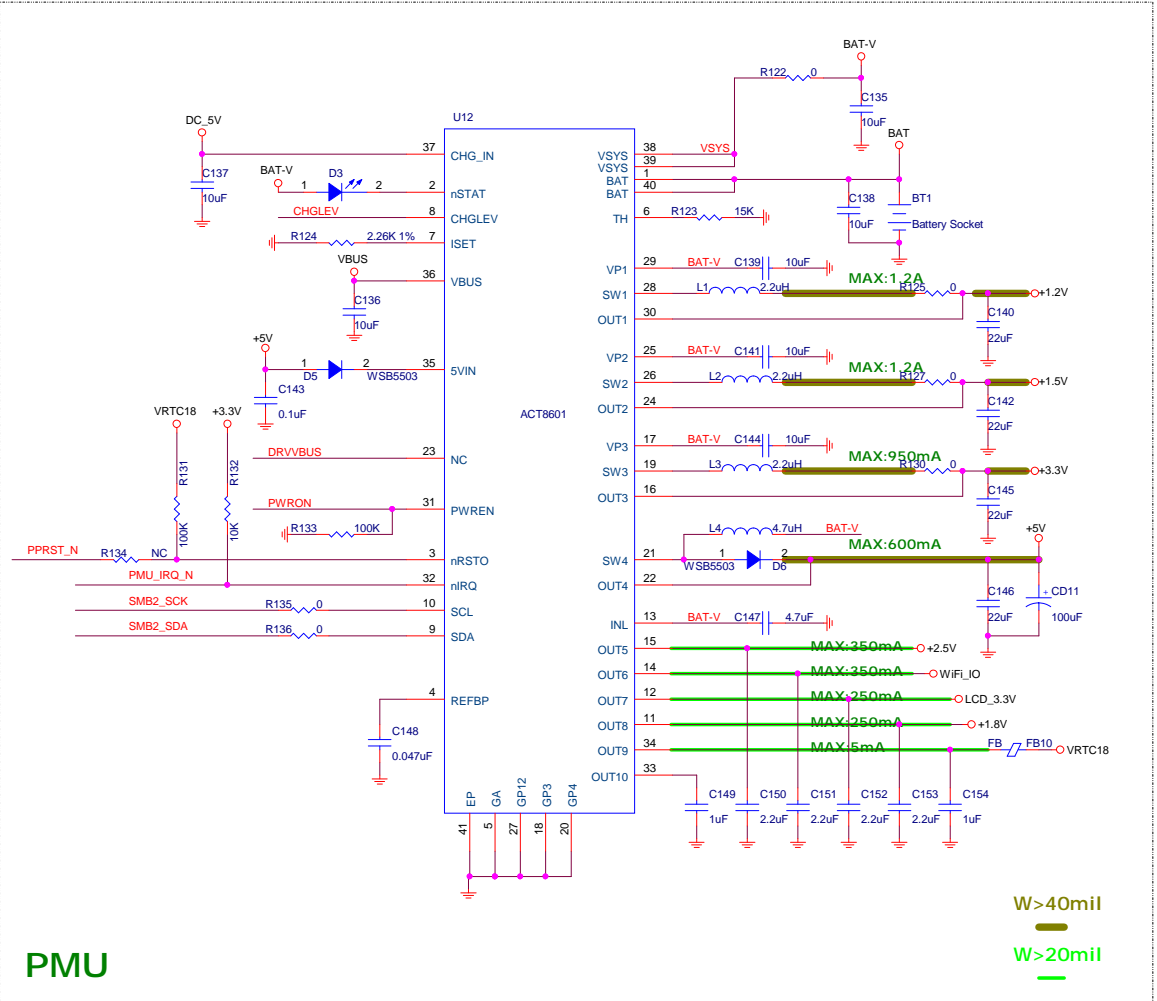
## LCD





**POWER ADAPTER**

- PPRST\_N << PPRST\_N 6,7
- PMU\_IRQ\_N << PMU\_IRQ\_N 8
- SMB2\_SCK << SMB2\_SCK 8
- SMB2\_SDA << SMB2\_SDA 8
- PWRON << PWRON 6
- DRVVBUS << DRVVBUS 6

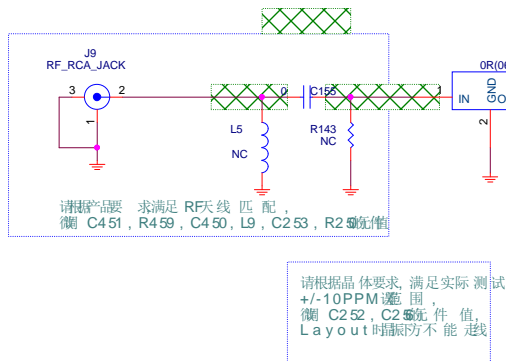


**PMU**

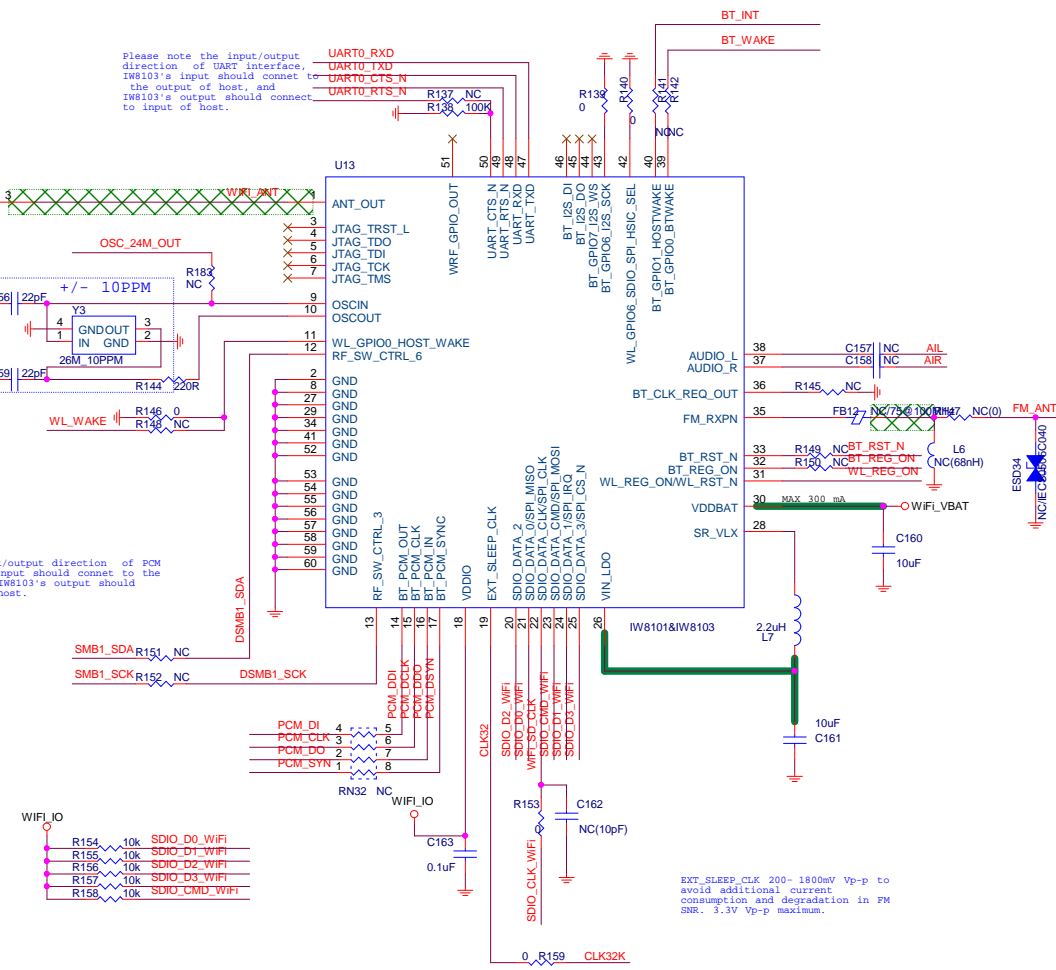
W>40mil  
 W>20mil

<b>INGENIC SEMICONDUCTOR CO.,LTD</b>			
Title RD_J24775_MENSA_BOARD			
Size A3	Document Number PMU	Rev V1.21	
Date: Monday, January 25, 2016	Sheet 9	of 14	

**RF Microstrip  
Z0= 50 ohm**



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.



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.

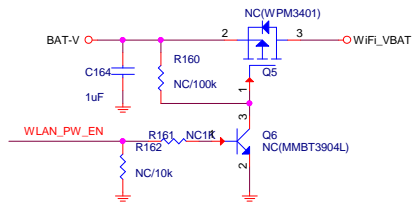
**Component select in IW8101 & IW8103**

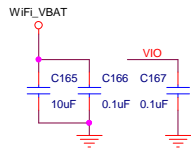
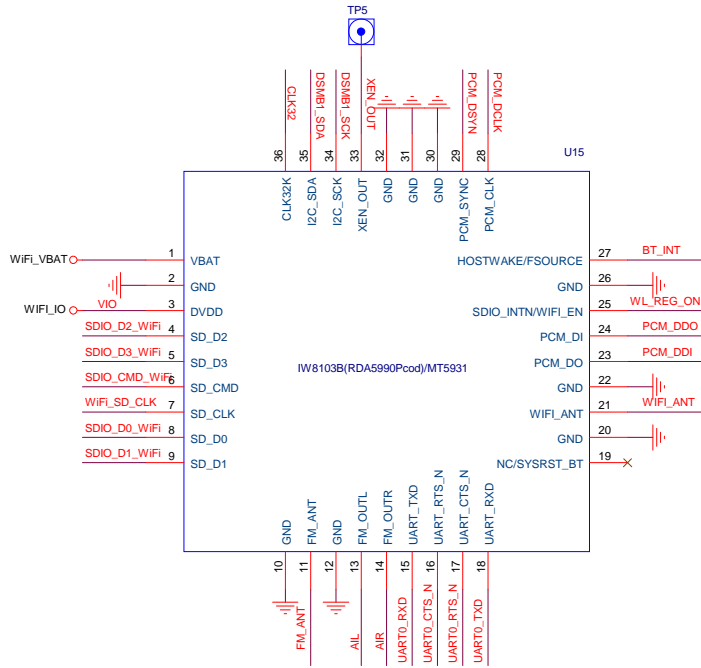
Part Number	IW8103	IW8101
	value	
C157,C158	1uF	NC
C164	1uF	NC
ESD34	TESBOR15V05B1X	NC
FB12	75@100MHz	NC
FB13	NC	75@100MHz
L7	2.2uH	1.5uH
Q5	WPM3401	NC
Q6	MMBT3904L	NC
RN32	0 OHM	NC
R138	NC	100K OHM
R139,R146	NC	0 OHM
R137,R141,R142,R147 R148,R149,R150	0 OHM	NC
R160	100K OHM	NC
R162	10K OHM	NC
R161	1K OHM	NC
U14	0 OHM	MURATA BPF LFB182G45CL3D264
Y3	37.4MHz, +/-10ppm	26MHz, +/-10ppm

备注

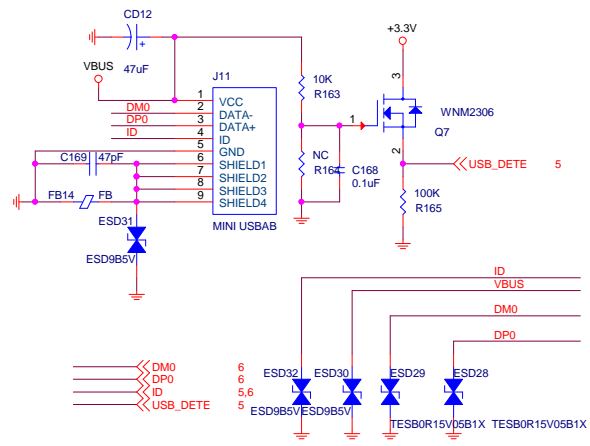
使用 IW810, WIFI 电压调整为 0V, 同系统的 V 也调整为 0V  
清单内无标识物料为共用料, 请按原理图标识值进行选择

- 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 SMB1\_SDA >>>
- 5,7 SMB1\_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 DSMB1\_SDA >>>
- 11 DSMB1\_SCK >>>

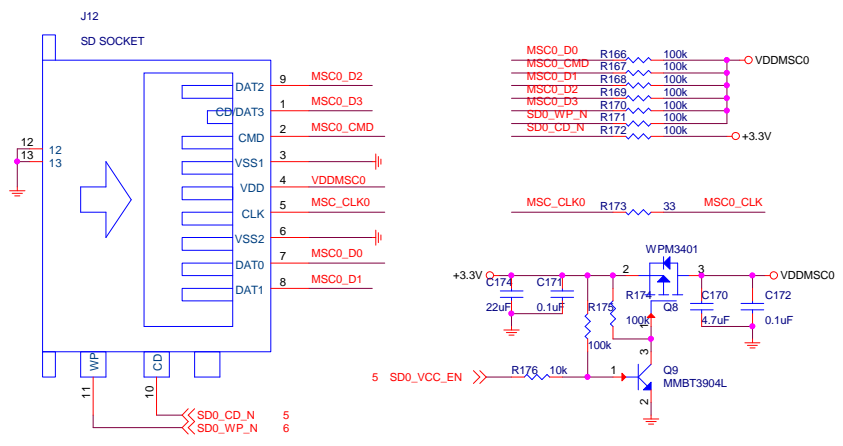
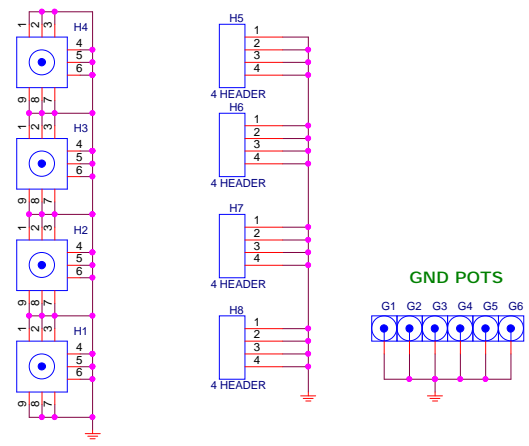




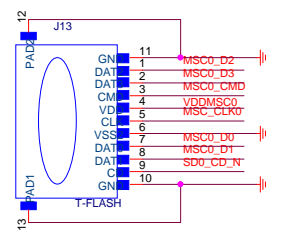
- 8,10 SDIO\_D0\_WIFI
- 8,10 SDIO\_D1\_WIFI
- 8,10 SDIO\_D2\_WIFI
- 8,10 SDIO\_D3\_WIFI
- 8,10 SDIO\_CMD\_WIFI
- 10 WIFI\_SD\_CLK
- 10 CLK32
- 5,10 WL\_REG\_ON
- 5,10 BT\_INT
- 8,10 UART0\_RXD
- 8,10 UART0\_TXD
- 8,10 UART0\_CTS\_N
- 8,10 UART0\_RTS\_N
- 6,10 AIL
- 6,10 AIR
- 10 WIFI\_ANT
- 6,10 FM\_ANT
- 10 PCM\_DDI
- 10 PCM\_DDI
- 10 PCM\_DSYN
- 10 PCM\_DCLK
- 10 DSMB1\_SDA
- 10 DSMB1\_SCK



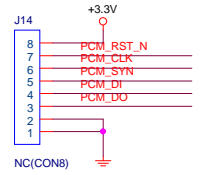
## USB2.0\_OTG



## MMC0

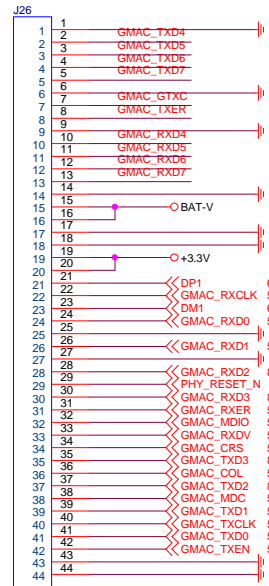


## PCM CODEC CONNECT

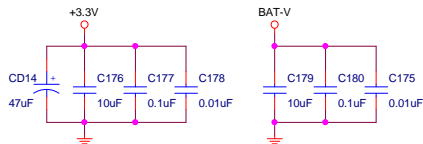


- PCM\_DI <> PCM\_DI 5,10
- PCM\_DO <> PCM\_DO 5,10
- PCM\_SYN <> PCM\_SYN 5,10
- PCM\_CLK <> PCM\_CLK 5,10
- PCM\_RST\_N <> PCM\_RST\_N 5
- MSC0\_D0 <> MSC0\_D0 8
- MSC0\_D1 <> MSC0\_D1 8
- MSC0\_D2 <> MSC0\_D2 8
- MSC0\_D3 <> MSC0\_D3 8
- MSC0\_CLK <> MSC0\_CLK 8
- MSC0\_CMD <> MSC0\_CMD 8
- SD0\_CD\_N <> SD0\_CD\_N 5
- SD0\_WP\_N <> SD0\_WP\_N 5
- SD0\_VCC\_EN <> SD0\_VCC\_EN 5

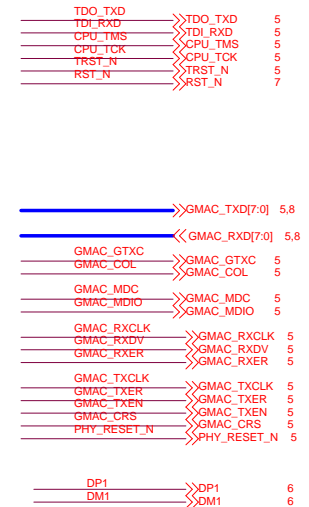
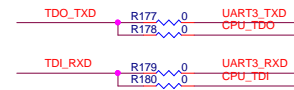
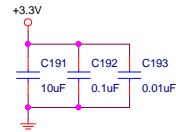
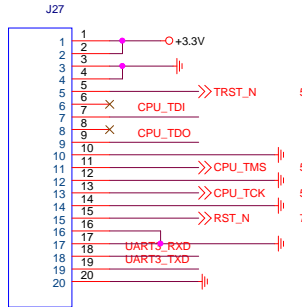
# Ethernet & USB Con



Ethernet & USB Con



# JDI & Uart Con



Data	Revision	Change
Jan 8 2013	Rev1.0	1. First Revision
Mar 28 2013	Rev1.0.1	<ol style="list-style-type: none"> <li>1. PAGE06: Change the Package of D1</li> <li>2. PAGE06: R82 change to NC&amp;R87 change to 0R</li> <li>3. PAGE07: The power of AVDADC connect to +3.3V</li> <li>4. PAGE07: Add R119 for 32.768k crystal</li> <li>5. PAGE07: NC the reset IC of U11</li> <li>6. PAGE10: Q6 change to NC</li> <li>7. Change the power of VRTC from VRTC33 TO VRTC18 for save power</li> <li>8. Change out1 of PMU to +1.2V</li> <li>9. Connect the J12.12&amp;J12.13 to GND</li> <li>10. Change the package of U1</li> <li>11. PAGE12: NC R175</li> <li>12. PAGE07: The power of the pull-up resistor R109 should +3.0 V power domain</li> <li>13. PAGE09: Change the R134 to NC</li> <li>14. PAGE05: Exchange the net of DMIC_CLK/EPD_PWR6 &amp; DMIC_IN/EPD_PWR7</li> <li>15. PAGE07: Connect the net of PLLAVDD and PLLDVDD</li> <li>15. PAGE04: Add the resistor of R27,R76,R85,R90</li> </ol>
Feb 14 2014	Rev1.2	<ol style="list-style-type: none"> <li>1. PAGE05: Add R117 for double cs of NAND</li> <li>2. PAGE12: Add R175 for boot from SD card</li> </ol>
Jan 25 2016	Rev1.2.1	1. PAGE09: Change U12 from ACT8600 to ACT8601.