

Welch's BLOCK DIAGRAM

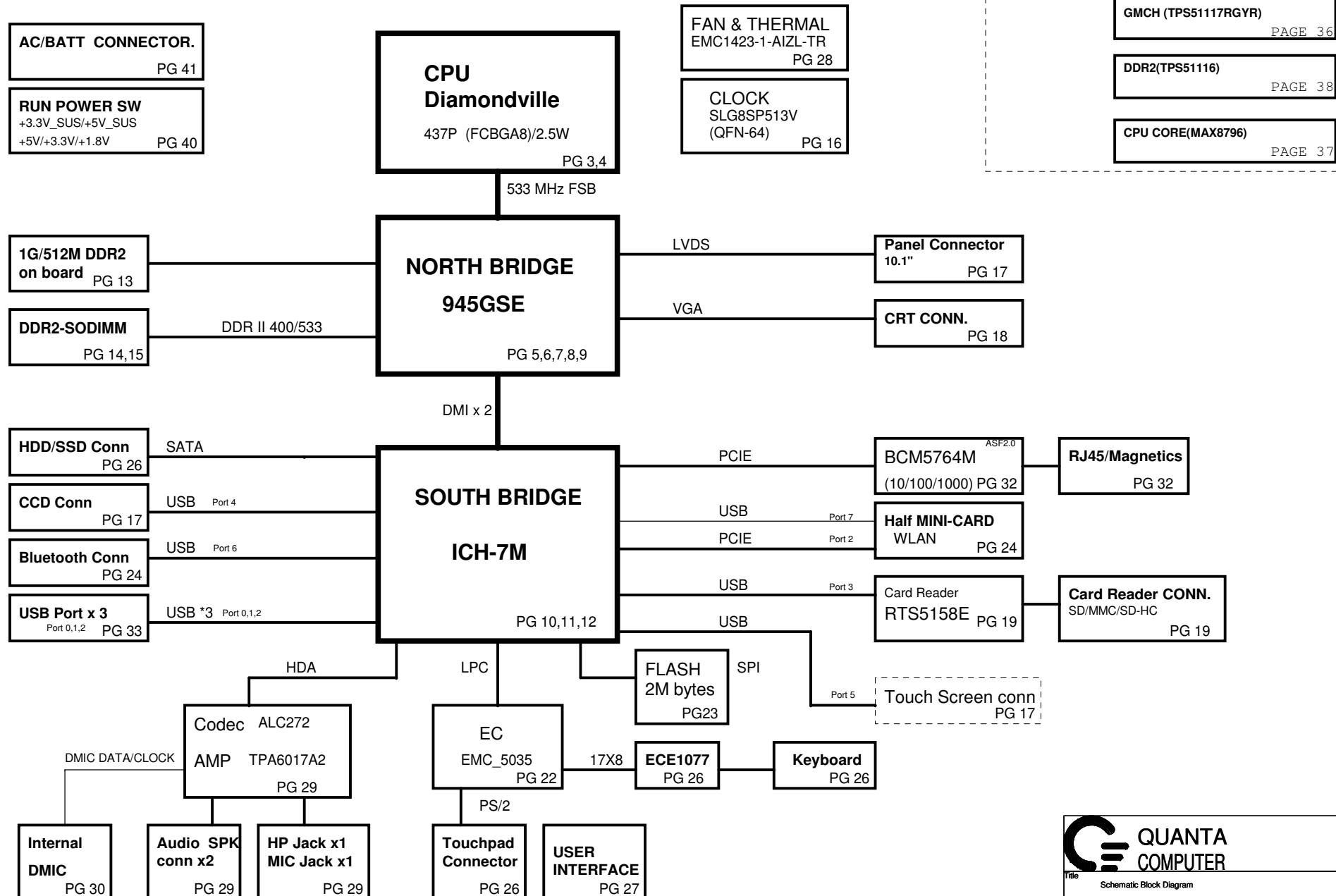


Table of Contents

PAGE	DESCRIPTION
1	Schematic Block Diagram
2	Front Page
3-4	Diamondville
5-9	Calistoga-945GSE
10-12	ICH7M
13	On Board Memory support
14-15	DDRII SO-DIMM(200P)
16	Clock Generator
17	LCD Conn.
18	CRT Conn
19	CARD READER/Conn
22	SIO (SMsC5035)
23	FLASH/RTC
24	Mini Card(WLAN)
25	SATA (HDD)
26	TP/KB/ECE1077
27	SWITCH /LED
28	FAN & Thermal
29	Audio CODEC(ALC272)
30	D-MIC
31-32	LAN(BCM5764M)
33	USB
34	System Reset Circuit
35	Battery Charger
36	GMCH_VCCP,1.5V
37	CPU(MAX8796)
38	DDR2_1.8VSUS, 0.9V
39	MAX17020 (+5.5V,+3.3V)
40	RUN Power Switch
41	DCIN,Batt
42	PAD& SCREW
43	EMI CAP
44	SMBUS BLOCK
45	Power Block Dianram
46	Port Mapping

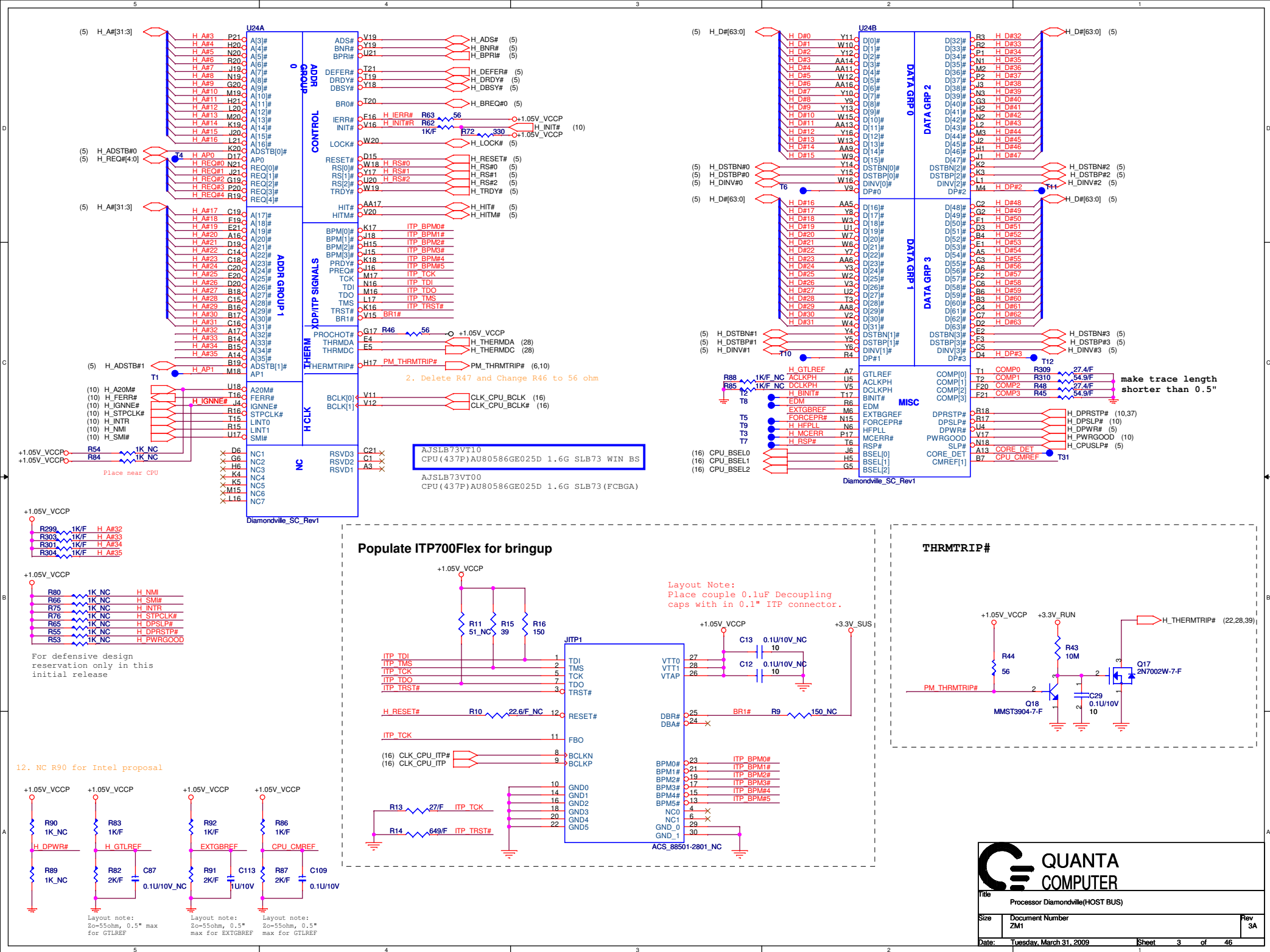
Power States

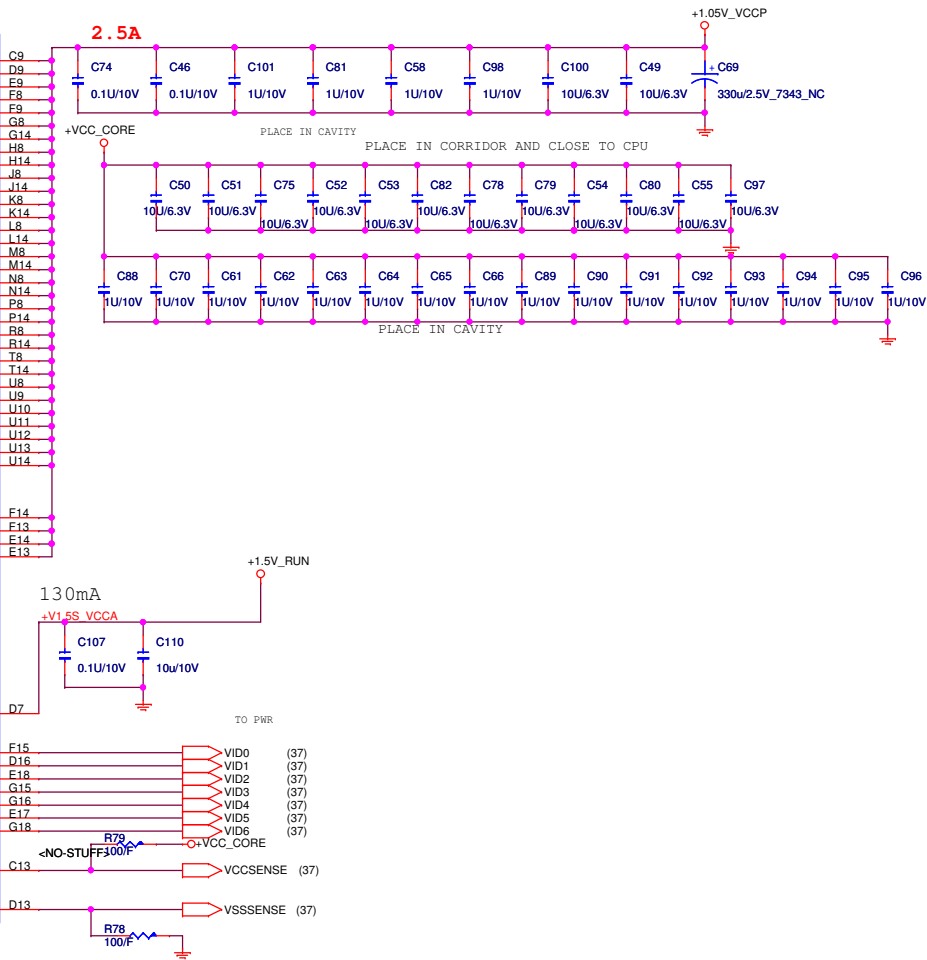
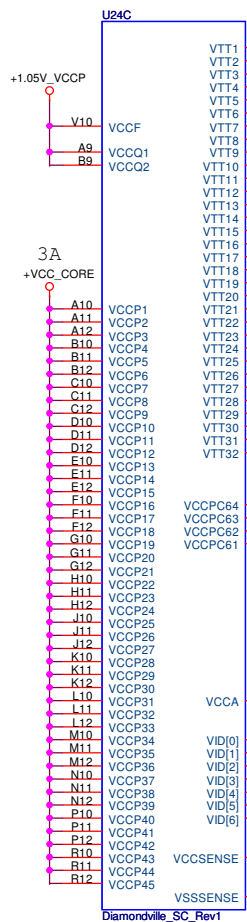
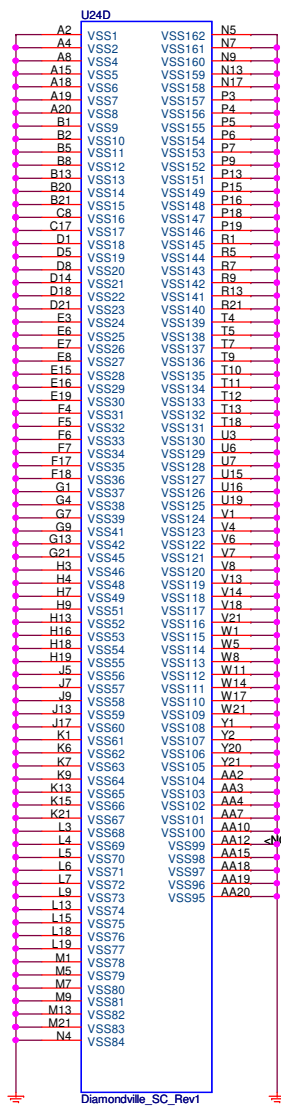
POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	17,23,35-38,42	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	10,13,22,23	RTC		S0~S5
+3.3V_ALW	+3.3V	22,23,28,29,34,35,38-40	8051 POWER	ALWON	S0~S5
+5V_ALW	+5V	8,26,38,39,42	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	39	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	33	LAN POWER	LAN_PWR_ON	
+5V_SUS	+5V	13,29,39	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	08,11-13,17,24,29,33,39	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	06,08,14,36,39	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	15,36,39	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	13,18,20,27-31,39	SLP_S3# CTRLD POWER	RUN_ON	
+2.5V_RUN	+2.5V	8	945GMS power	RUN_ON	
+3.3V_RUN	+3.3V	06-08,10-14,16-19,22,,24,25,27,29--31,33,39,42	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.5V_RUN	+1.5V	04,06,08,11,13,24,25	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.05V_VCCP	+1.05V	03-05,07,08,10,13	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	04,37,42	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	17	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_HDD	+5V	27	HDD Power	HDDC_EN	
+PBATT	+10V~+17V	35,40	MAIN BATTERY	CHG_PBATT	

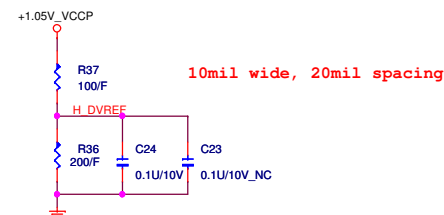
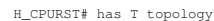
GND PLANE	PAGE	DESCRIPTION
 GNDA_CHG	35	
 GND_1.05V	36	
 AGND_DC/DC	38	
 GND POWER	33	
 AGND_DDR		
 AGND_ISL6260		
 GND	ALL	

QUANTA
COMPUTER

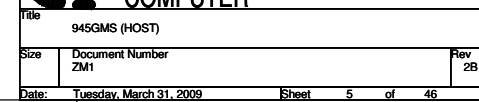
Title Index & Power Status		
Size	Document Number ZM1	Rev 3A
Date: Tuesday, March 31, 2009 Sheet 2 of 46		



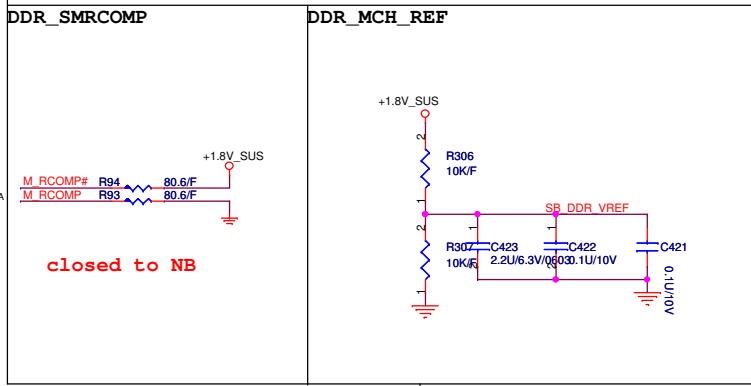
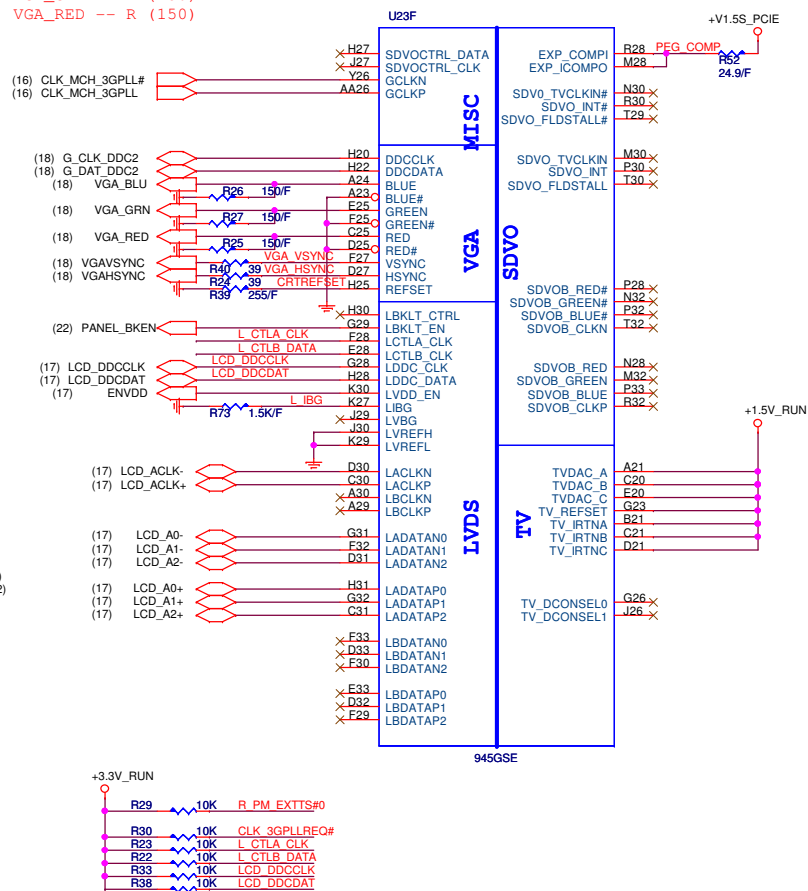
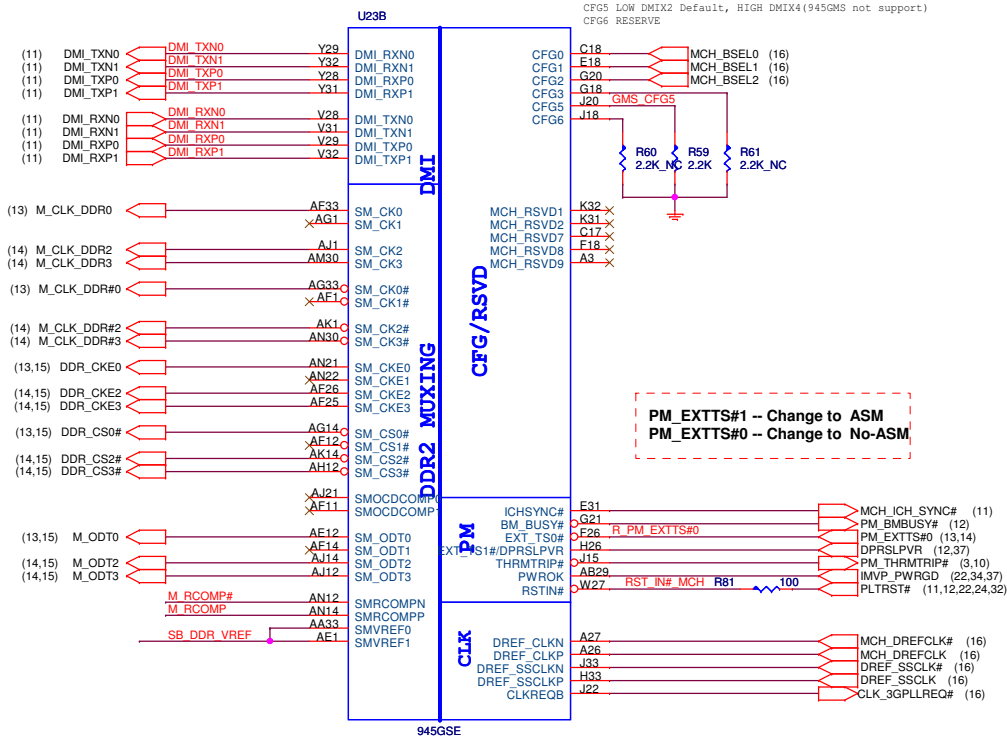


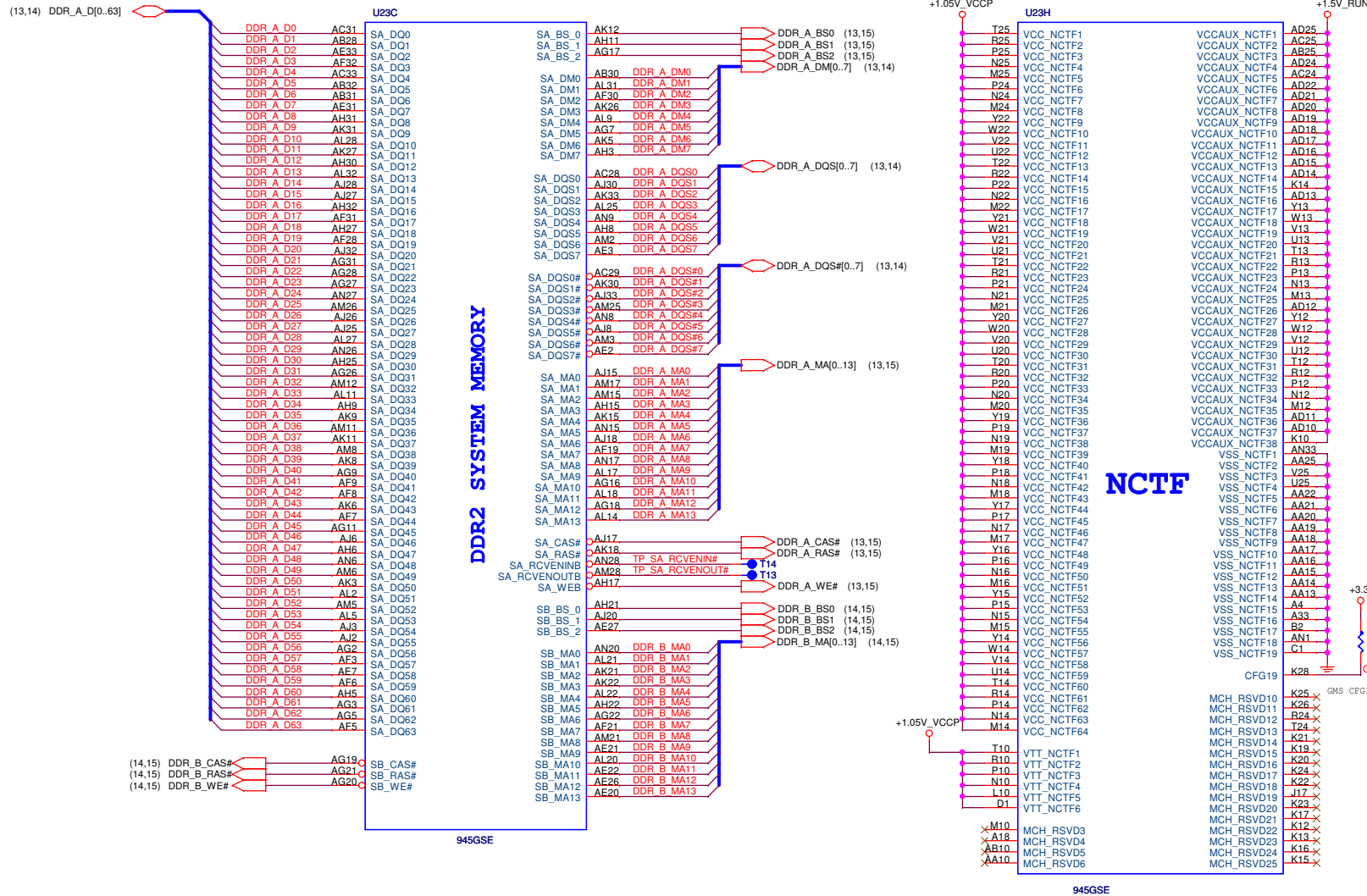


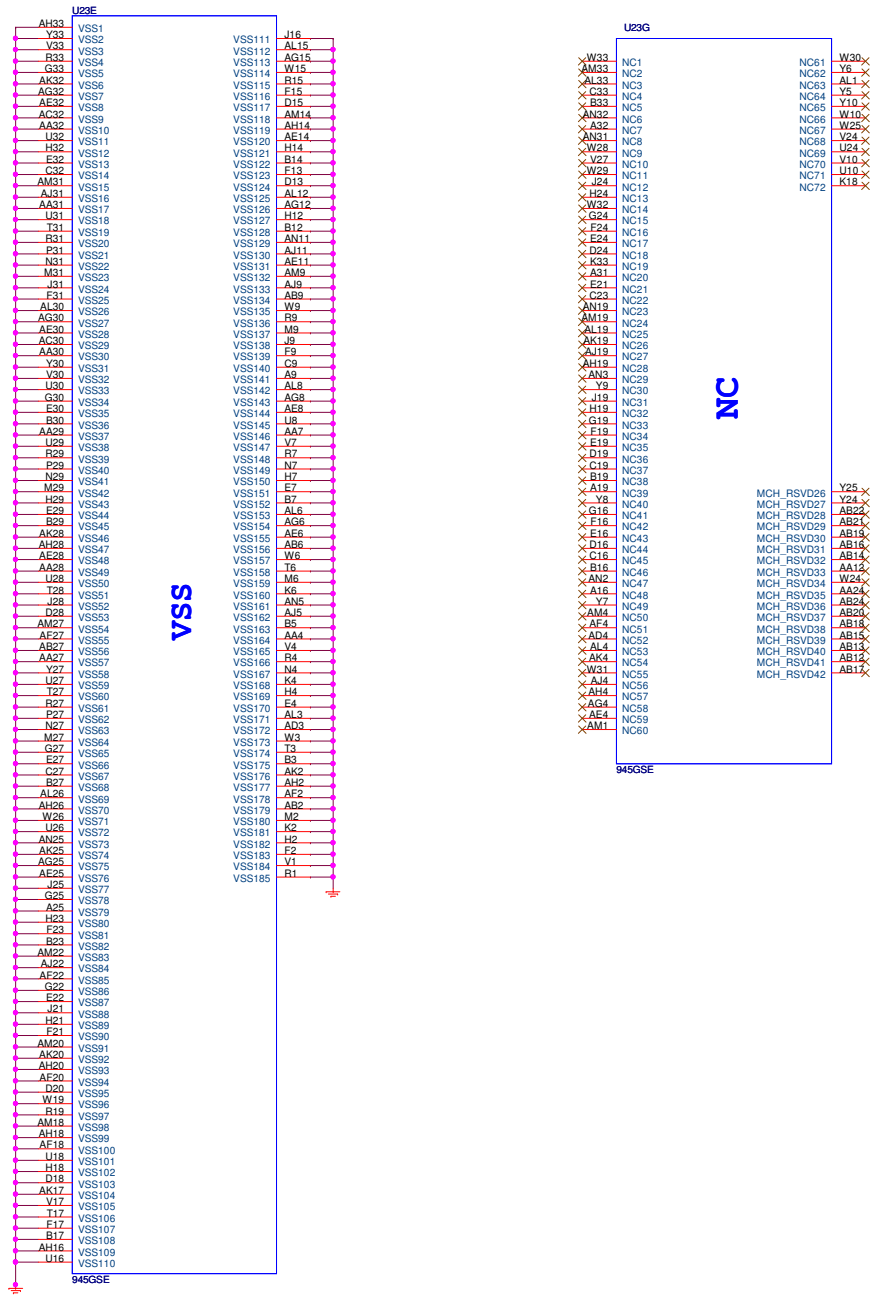
A3C5B2R0T11
IC CTRL(998P)QG82945GSE SLB2R WIN B/S



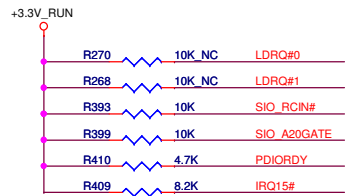
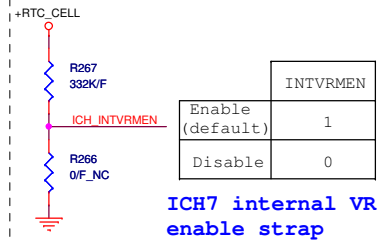
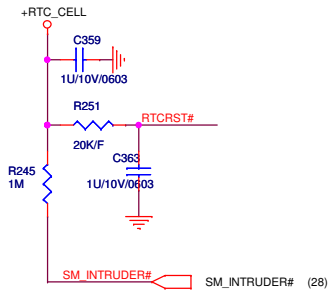
as close as possible to NB
VGA_BLU -- R (150)
VGA_GRN -- R (150)
VGA_RED -- R (150)



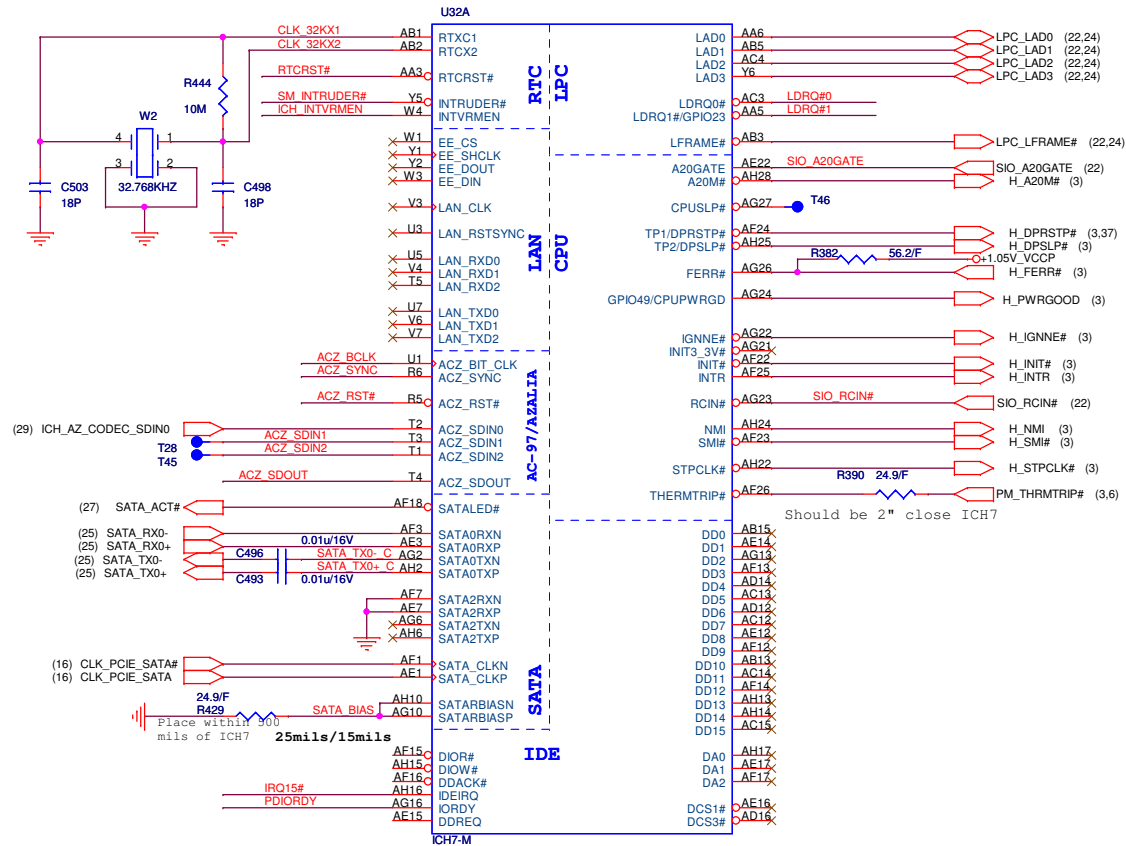




RTC



Please all series terms close to ICH7 except for SDIN input lines.



AJSL8YB0T47
IC (652P) NH82801GBM (ICH7M) BGA WIN B/S

AJSL8YB0T12
IC (652P) NH82801GBM (ICH7M) BGA



Title ICH7-M (CPU, SATA, IDE, LPC)

Size Document Number ZM1

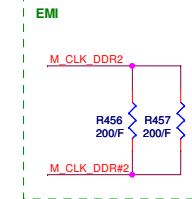
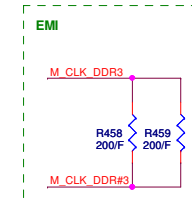
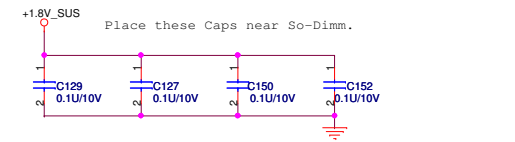
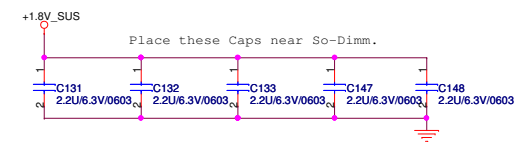
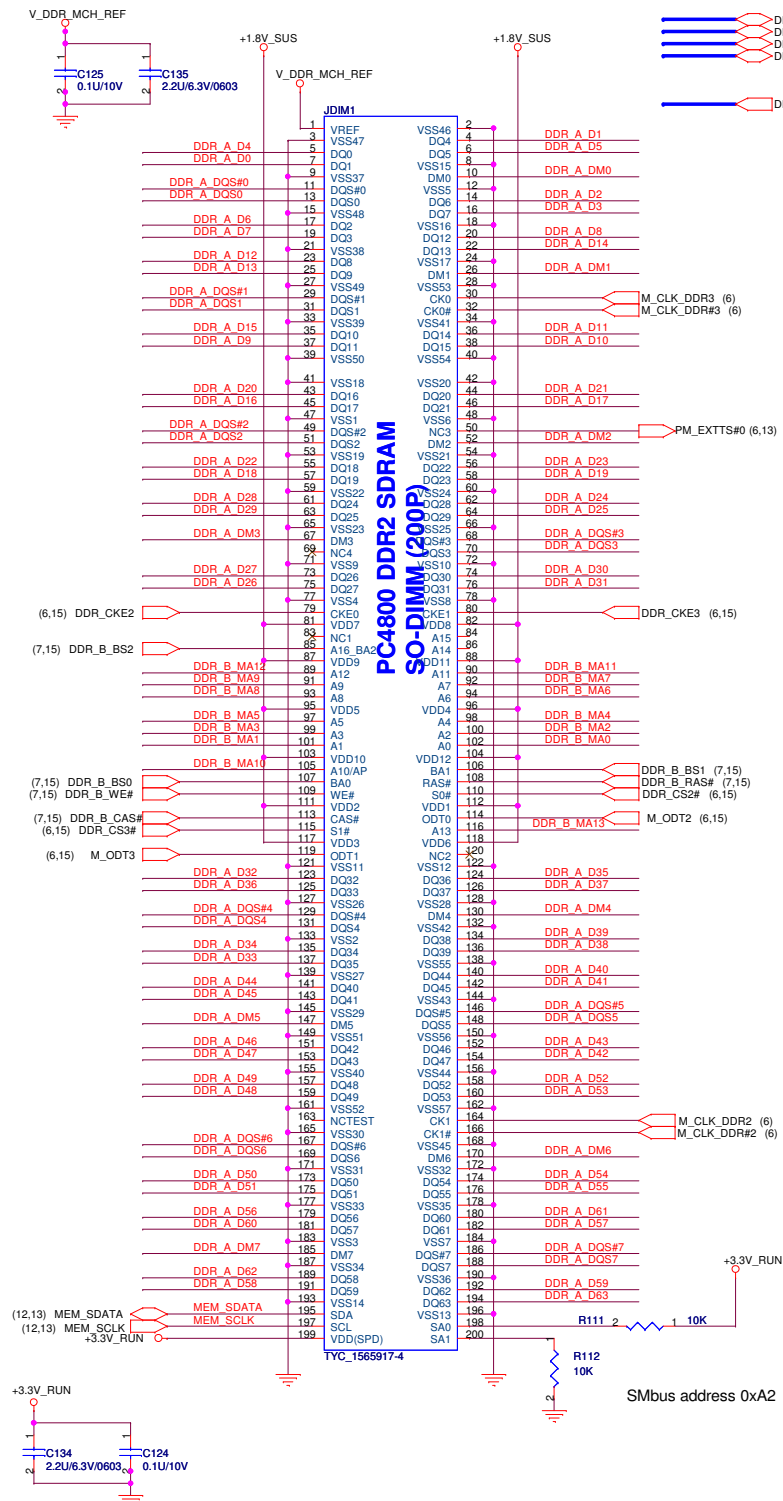
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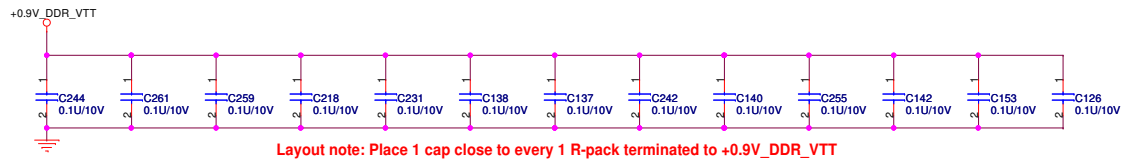
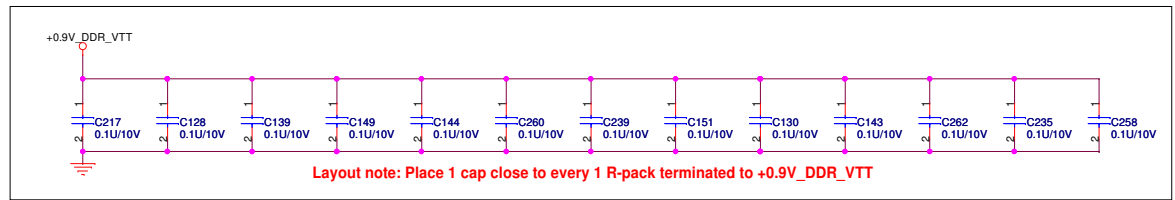
Sheet 10 of 46

Rev 3A



Title				ICH7-M (POWER & GND)			
Size		Document Number ZM1					Rev 3A
Date:		Tuesday, March 31, 2009		Sheet		12 of 46	

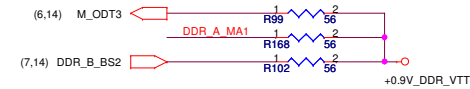
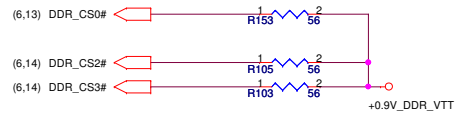
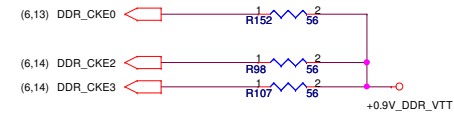
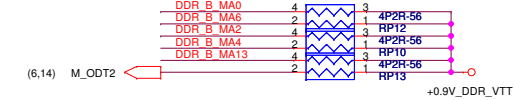
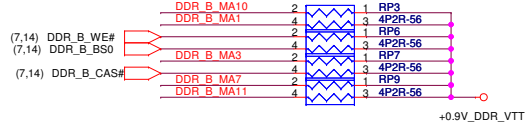
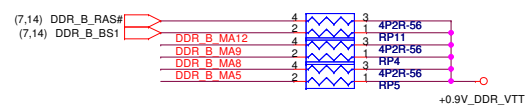
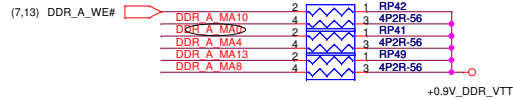
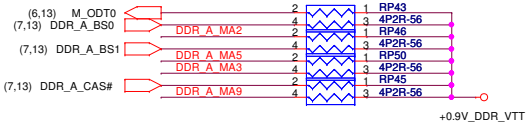
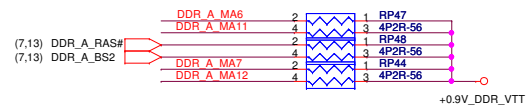


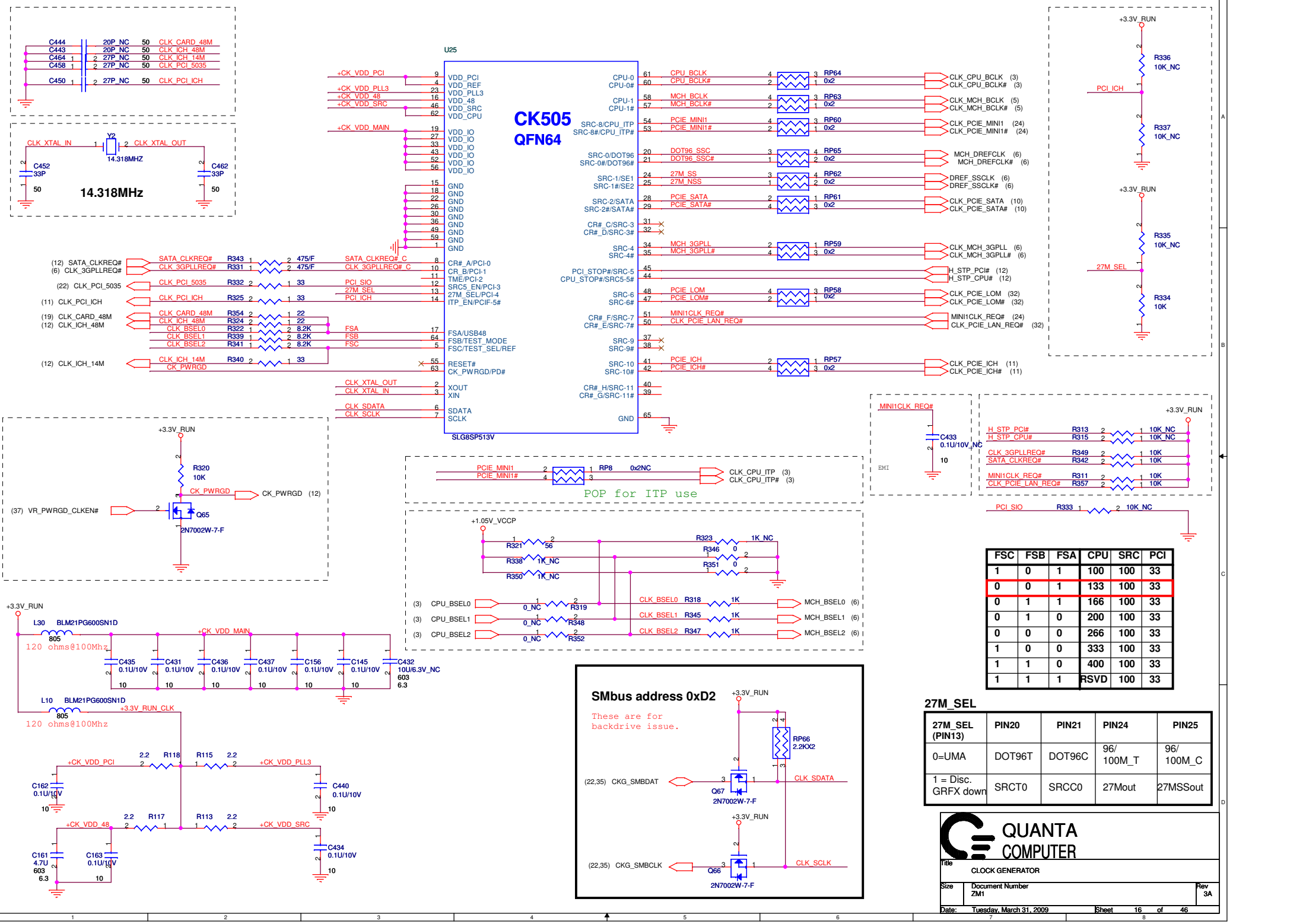


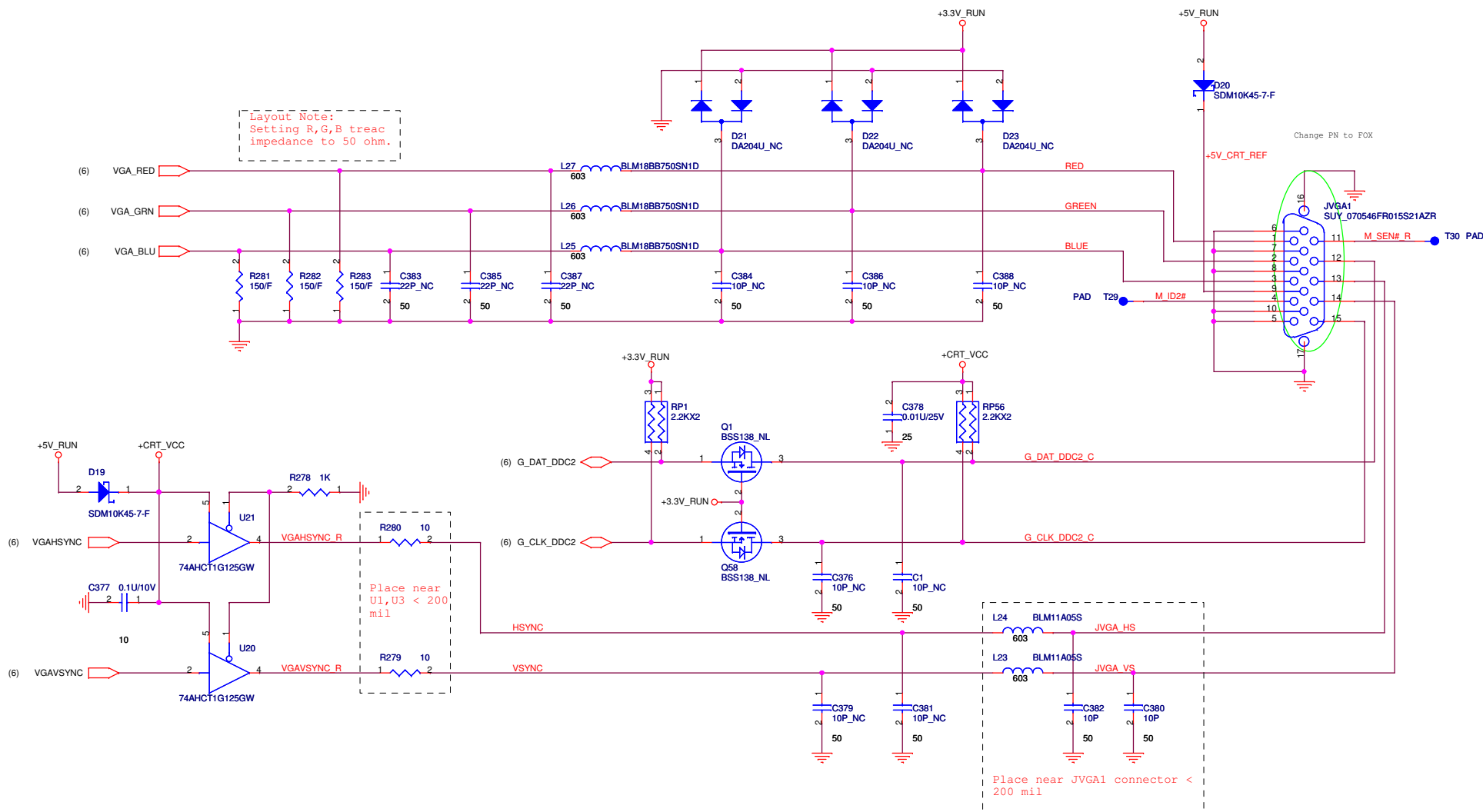
DDR_A_MA[0..13] (7,13)

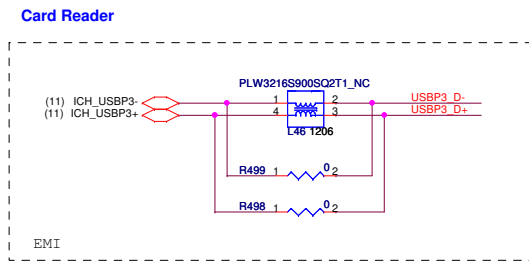
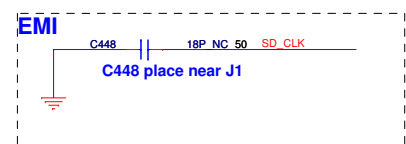
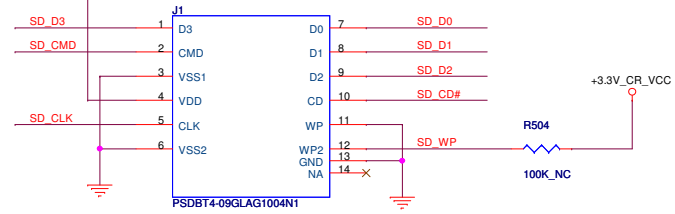
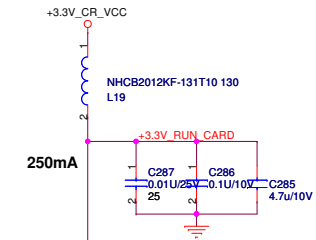
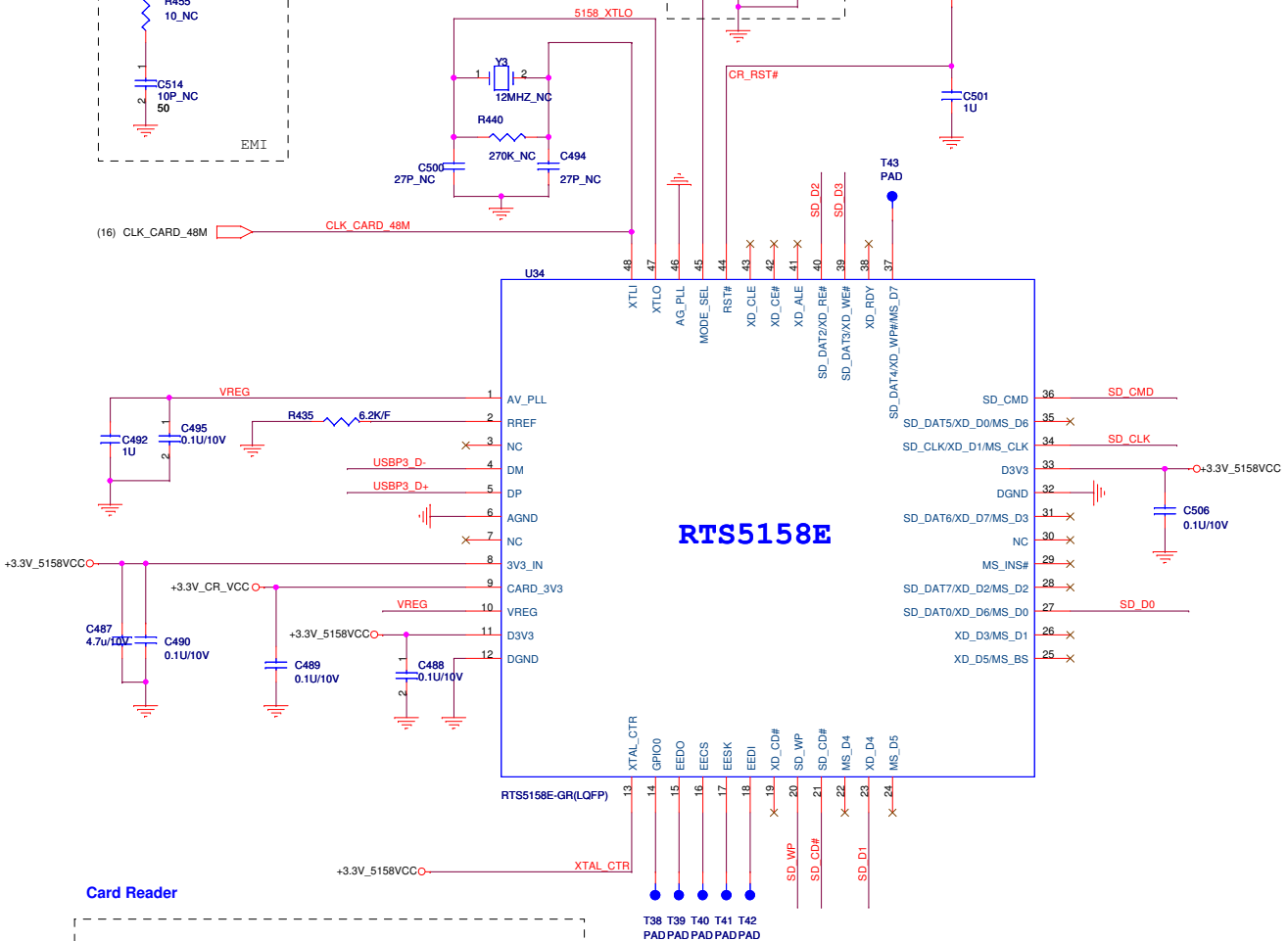
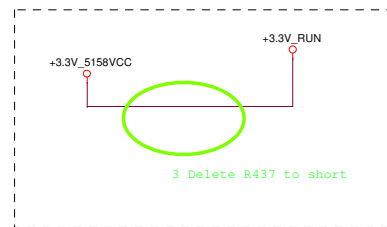
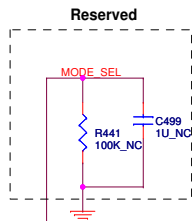
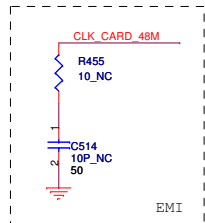
DDR_B_MA[0..13] (7,14)

Layout Note:
Place one cap close to every 2 pullup resistors terminated to +0.9V_DDR_VTT







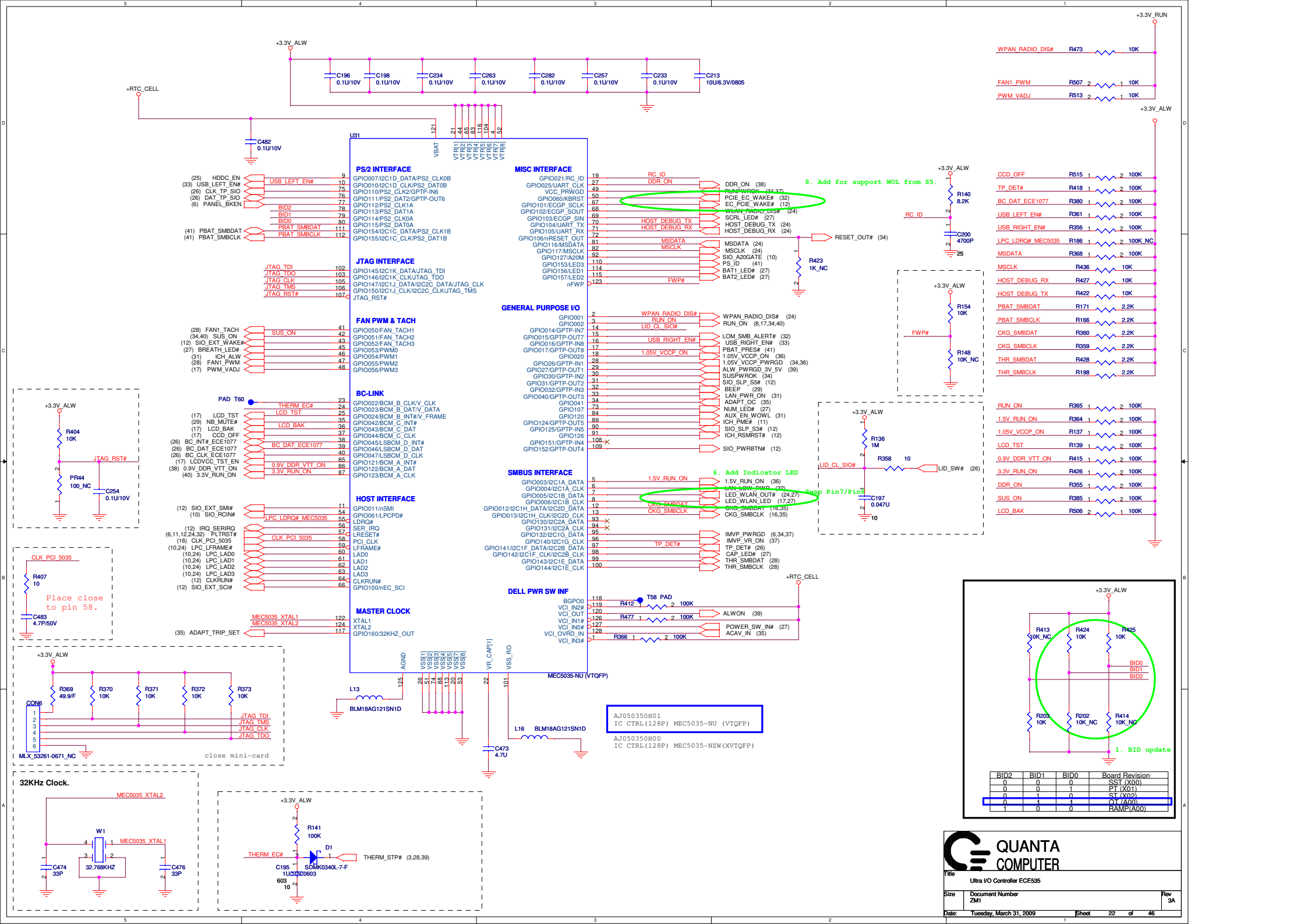


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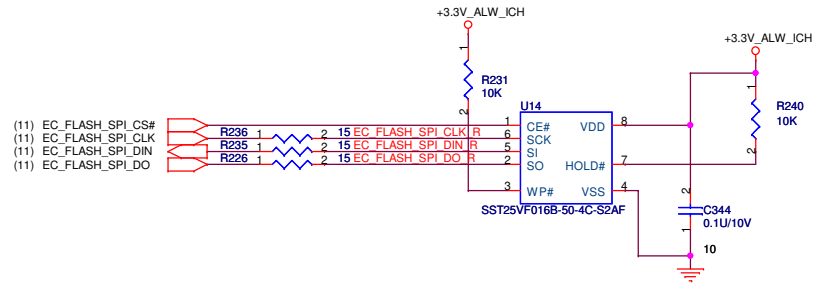


QUANTA
COMPUTER

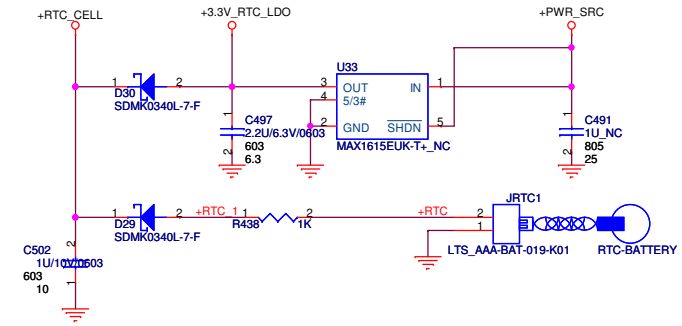
Title		
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Size	Document Number	Rev
ZM1		3A
Date: Tuesday, March 31, 2009		Sheet 21 of 46



16Mbit (2M Byte), SPI



RTC BATTERY



Flash / RTC

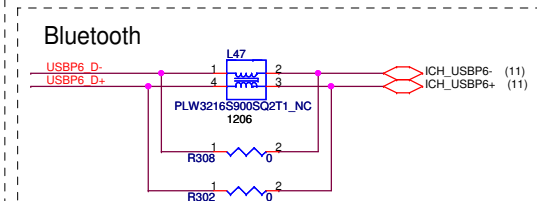
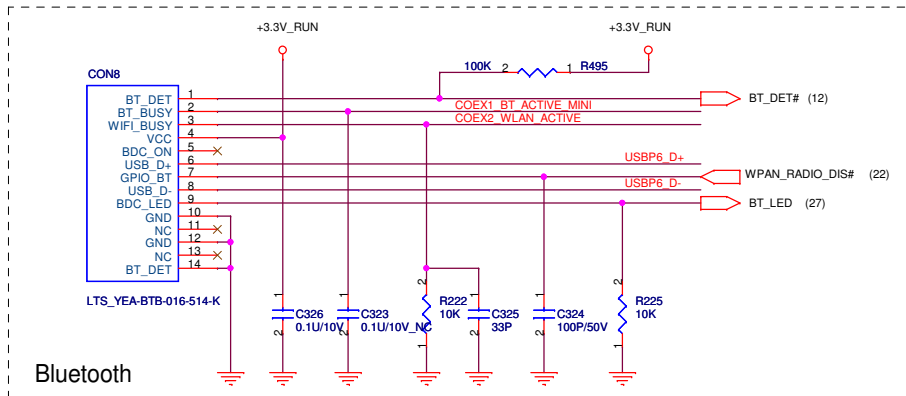
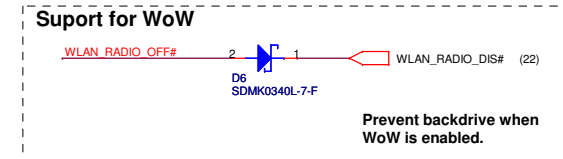
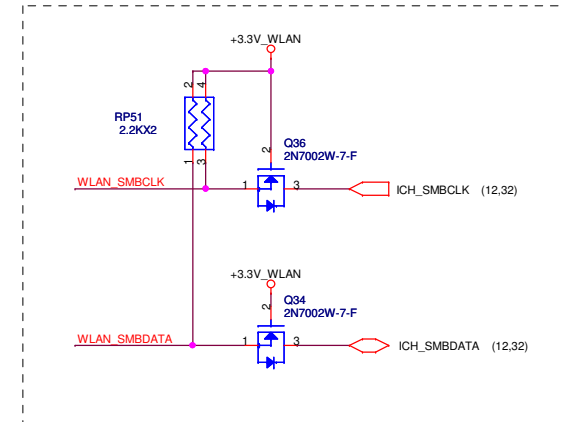
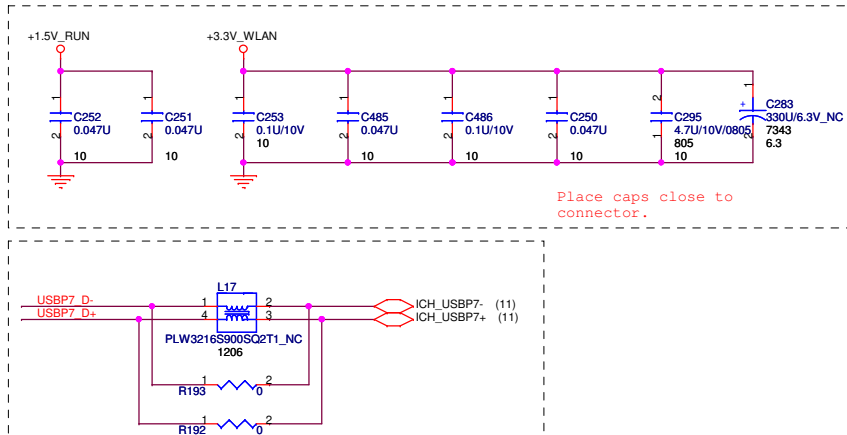
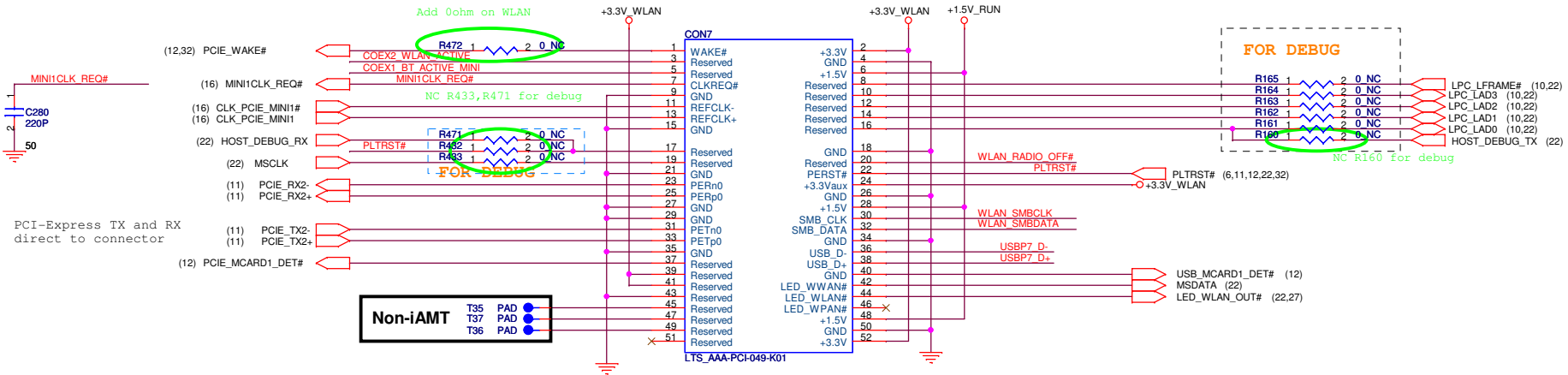
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Rev
3A

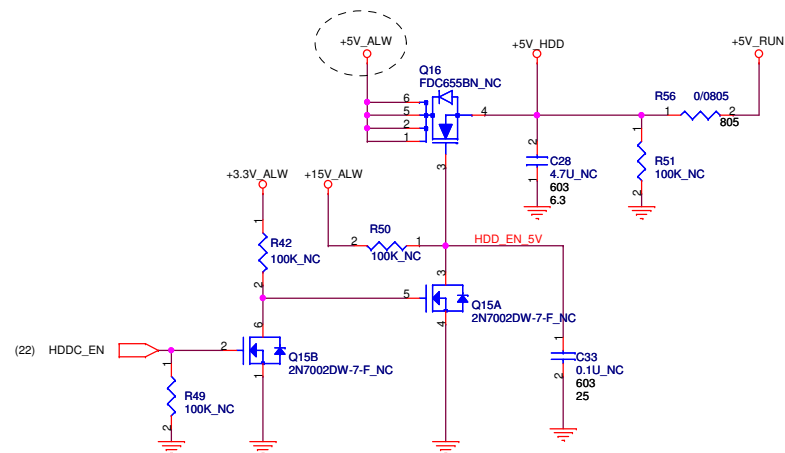
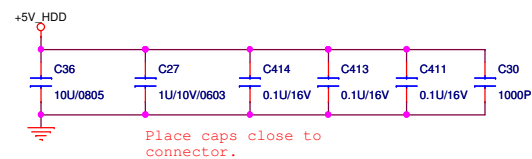
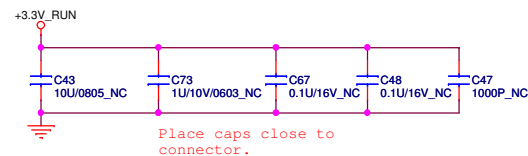
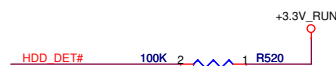
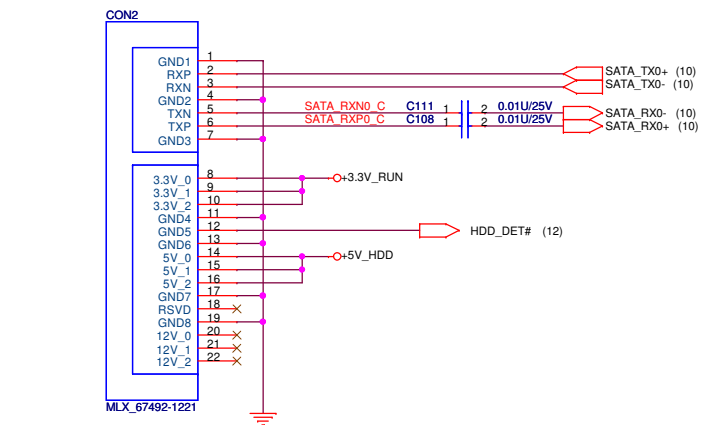
Date: Tuesday, March 31, 2009

Sheet 23 of 46

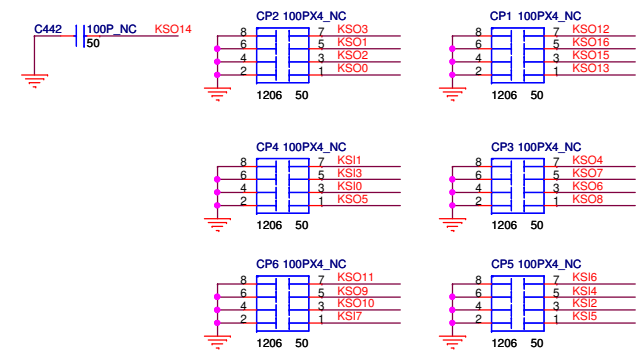
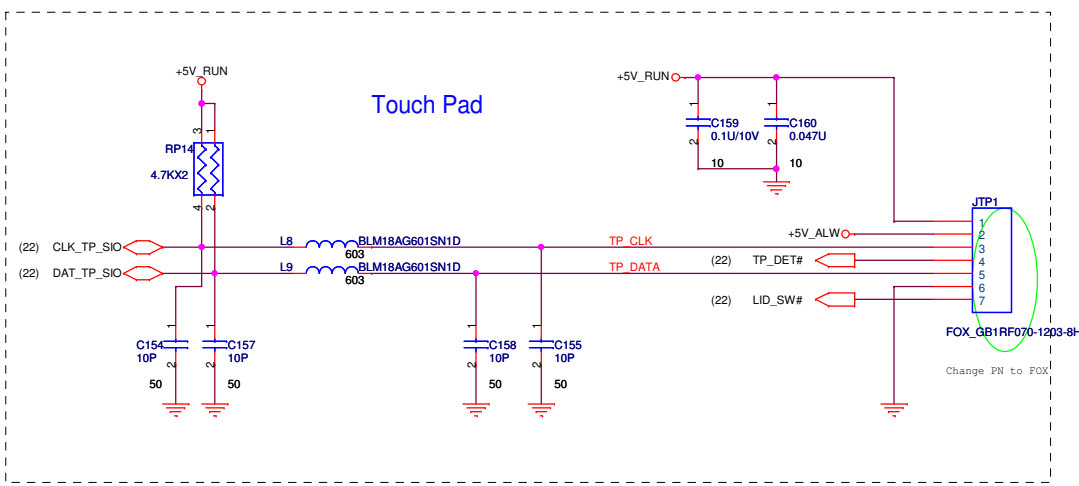
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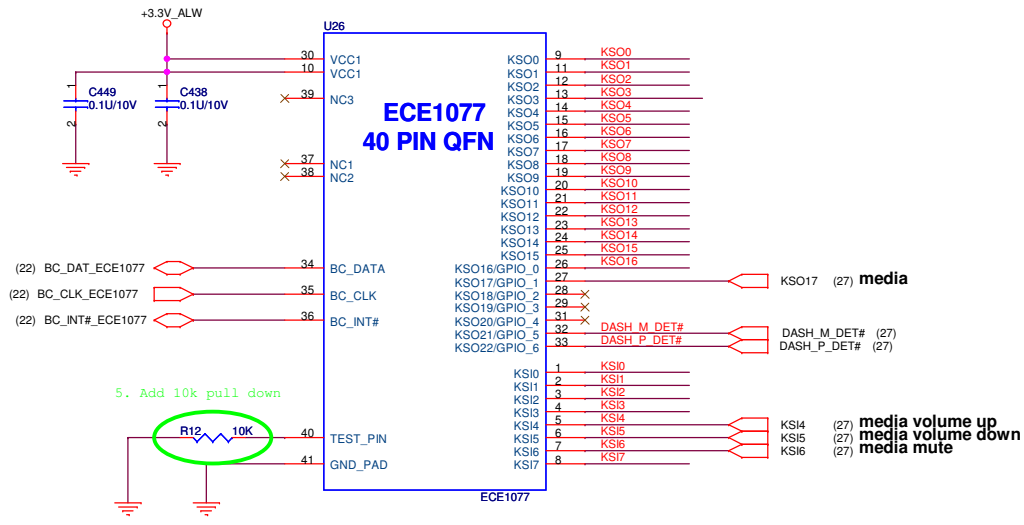
SATA HDD Connector.



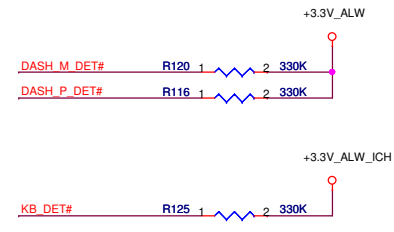
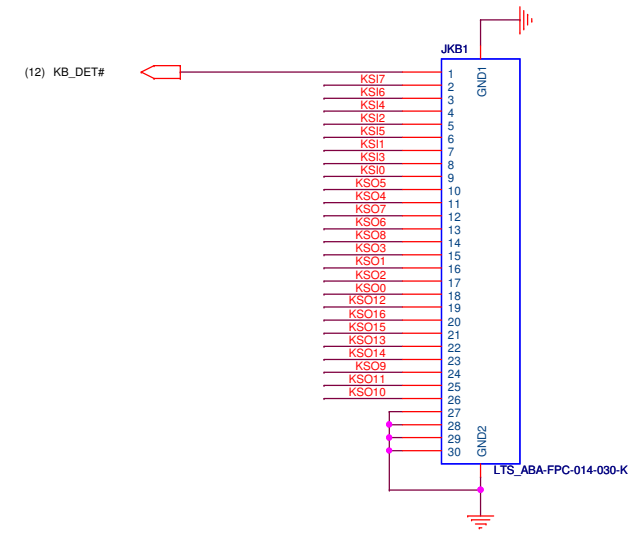
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Size	Document Number	Rev	
	ZM1	3A	
Date:	Tuesday, March 31, 2009	Sheet	25 of 46

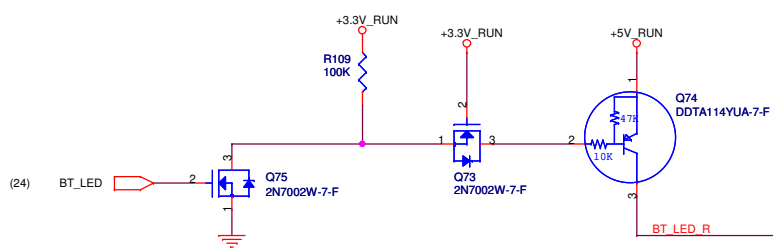
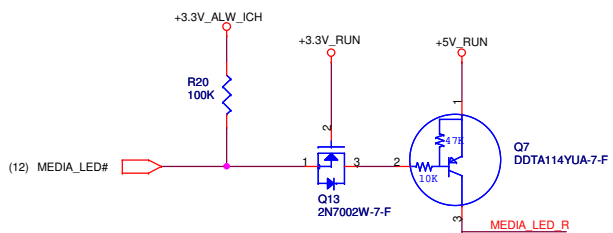
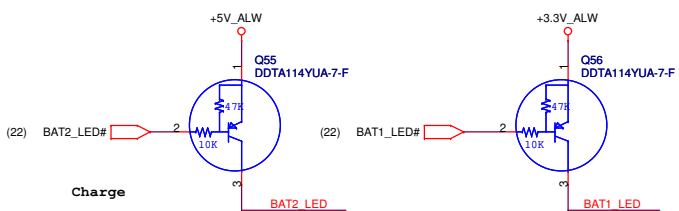
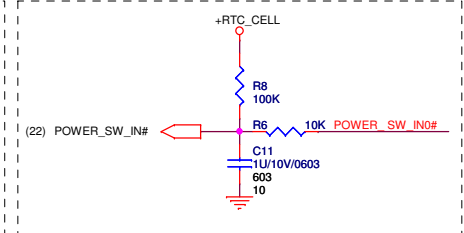
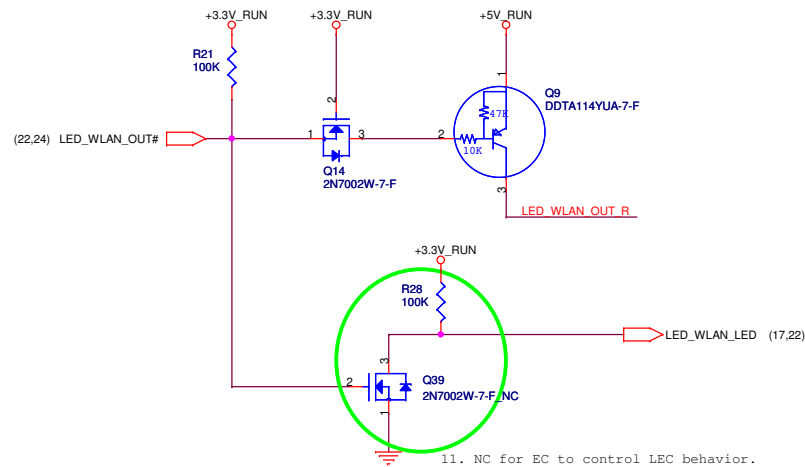
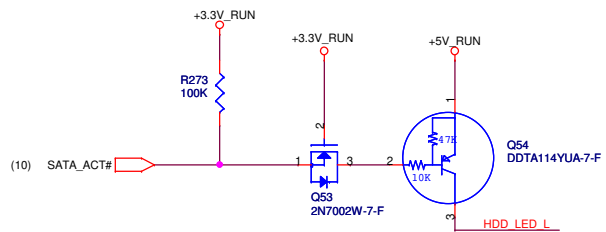
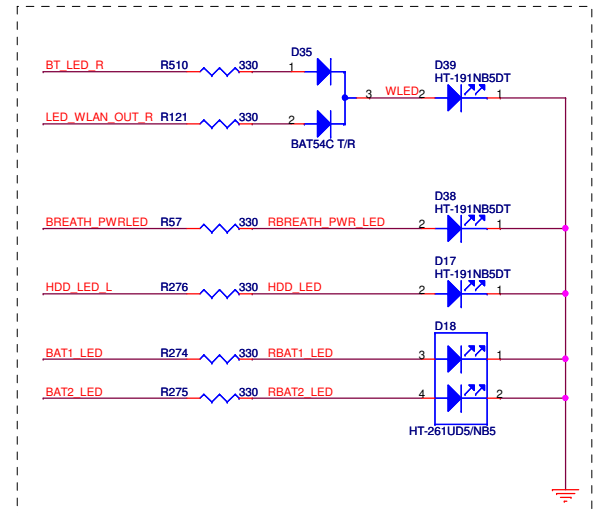
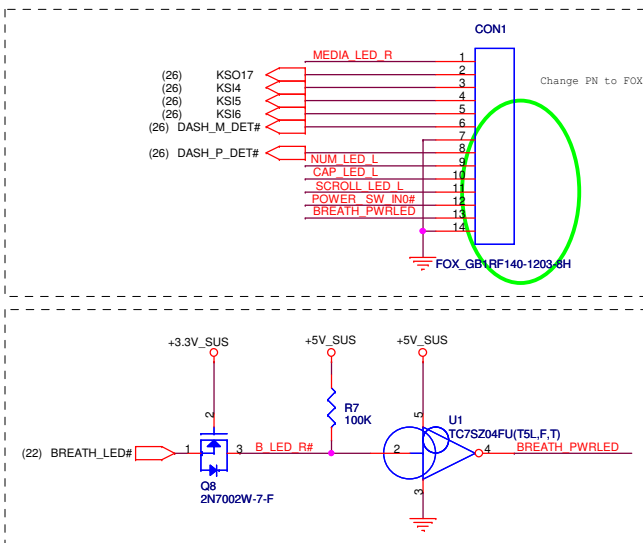
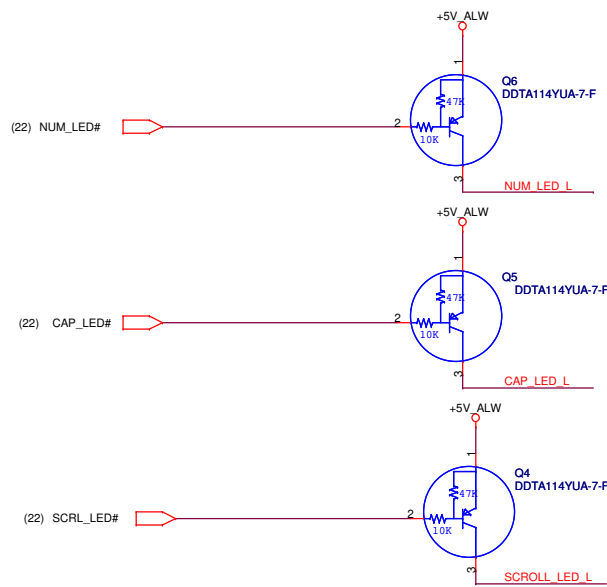


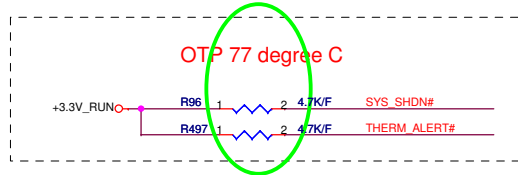
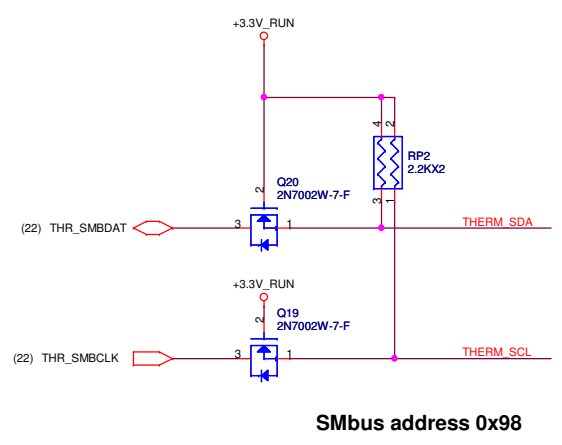
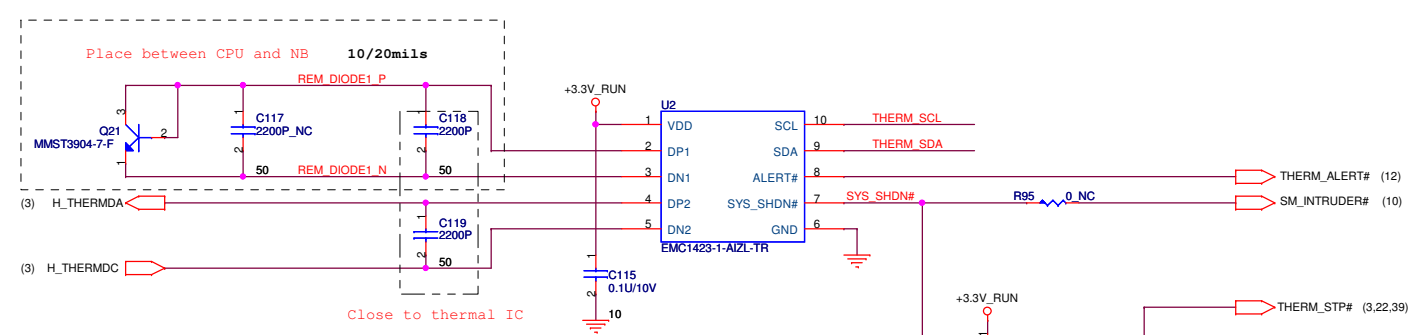
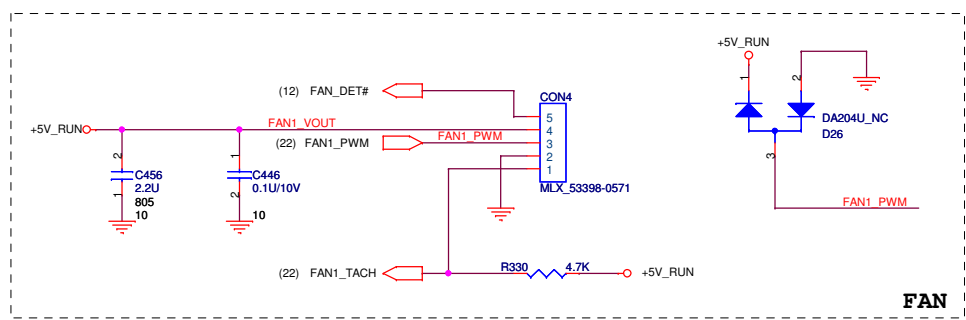
Keyboard Scan Extension



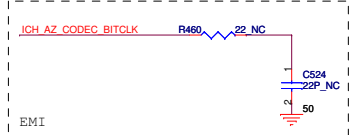
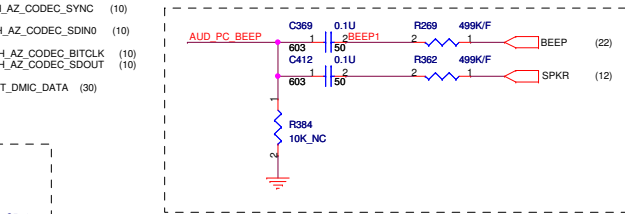
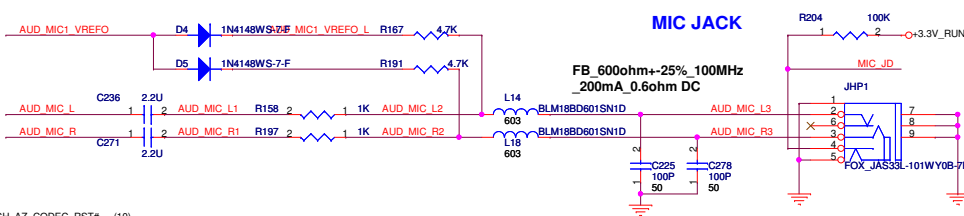
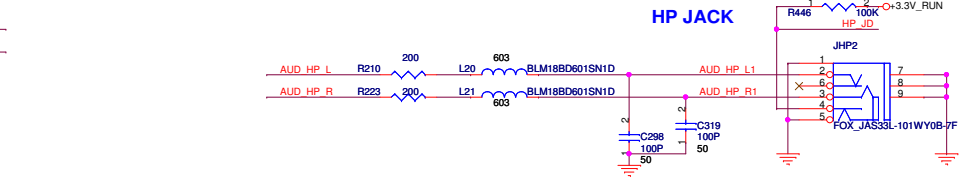
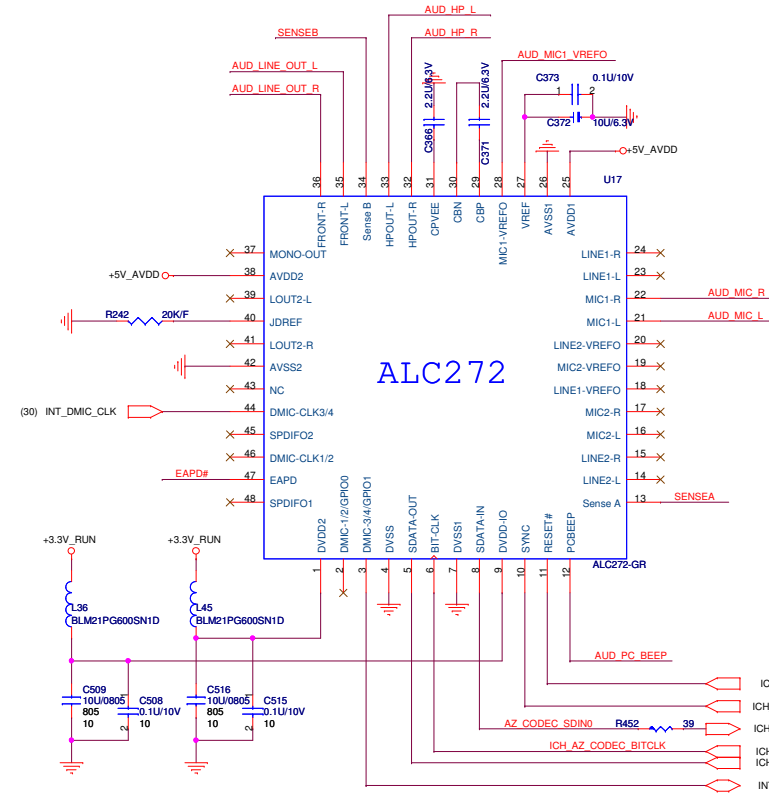
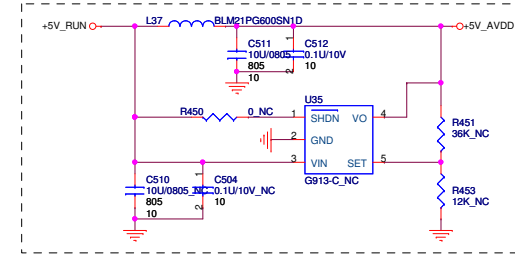
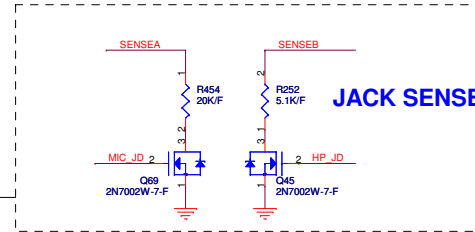
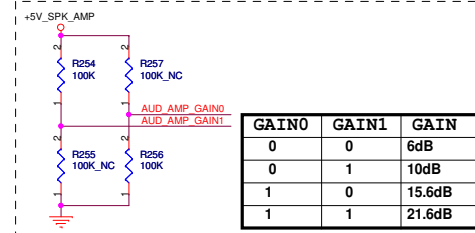
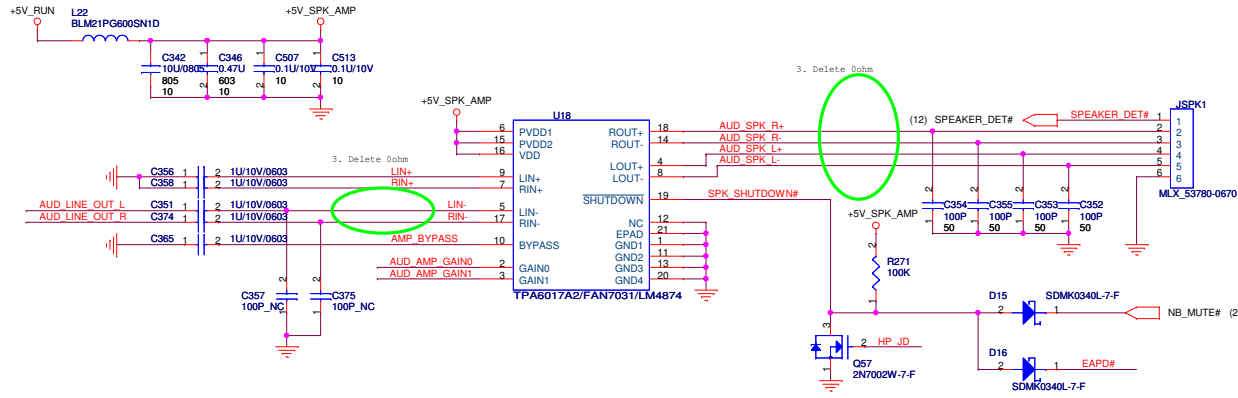
KEYBOARD CONNECTOR



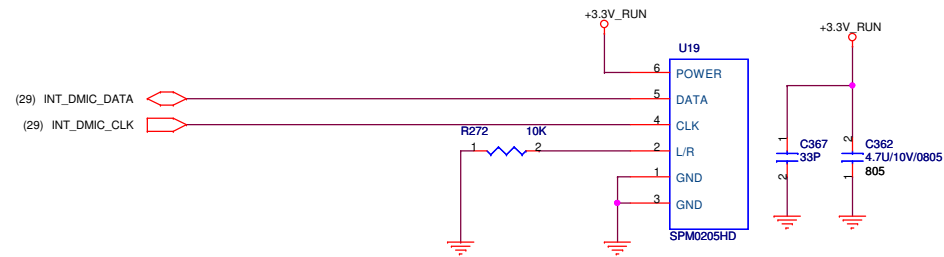




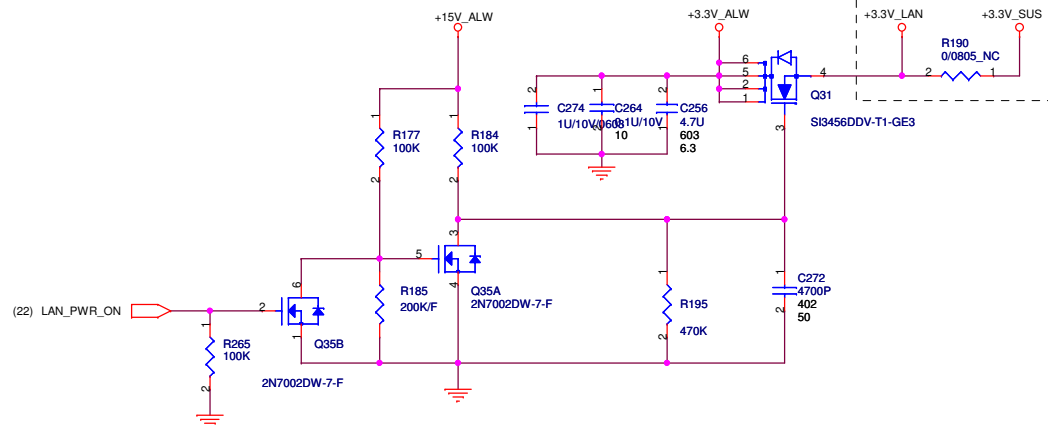
AUDIO AMPLIFIER TPA6017A2



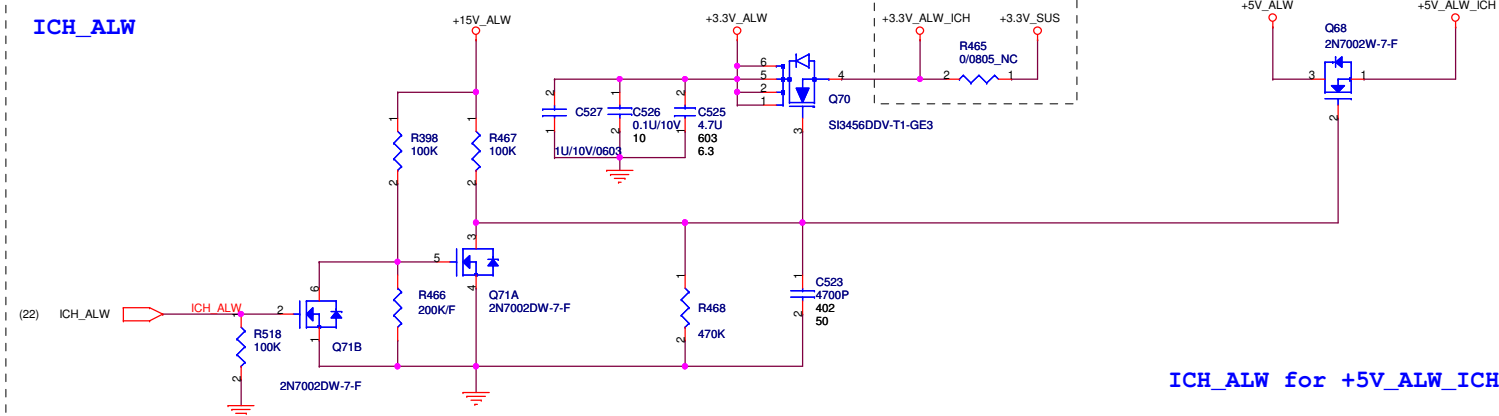
Internal Digital MIC



Support Wake on LAN on S5.

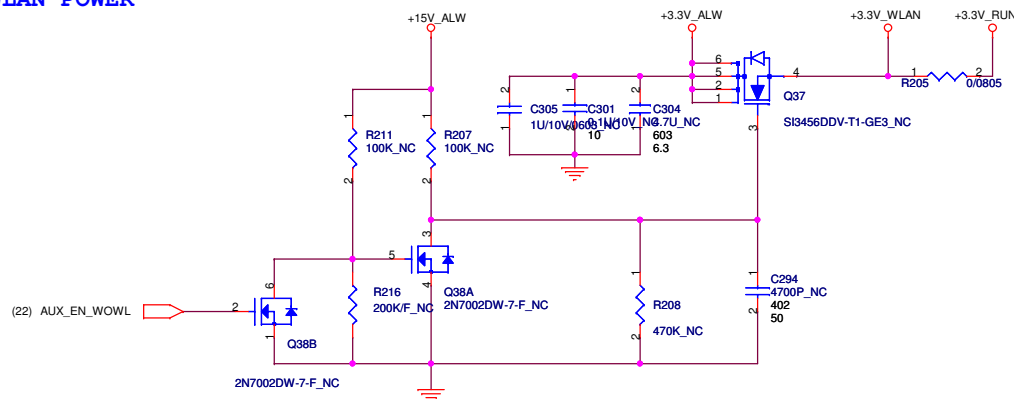


ICH_ALW

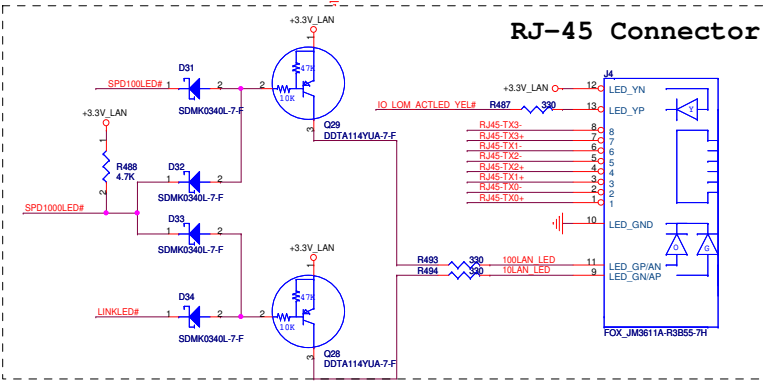
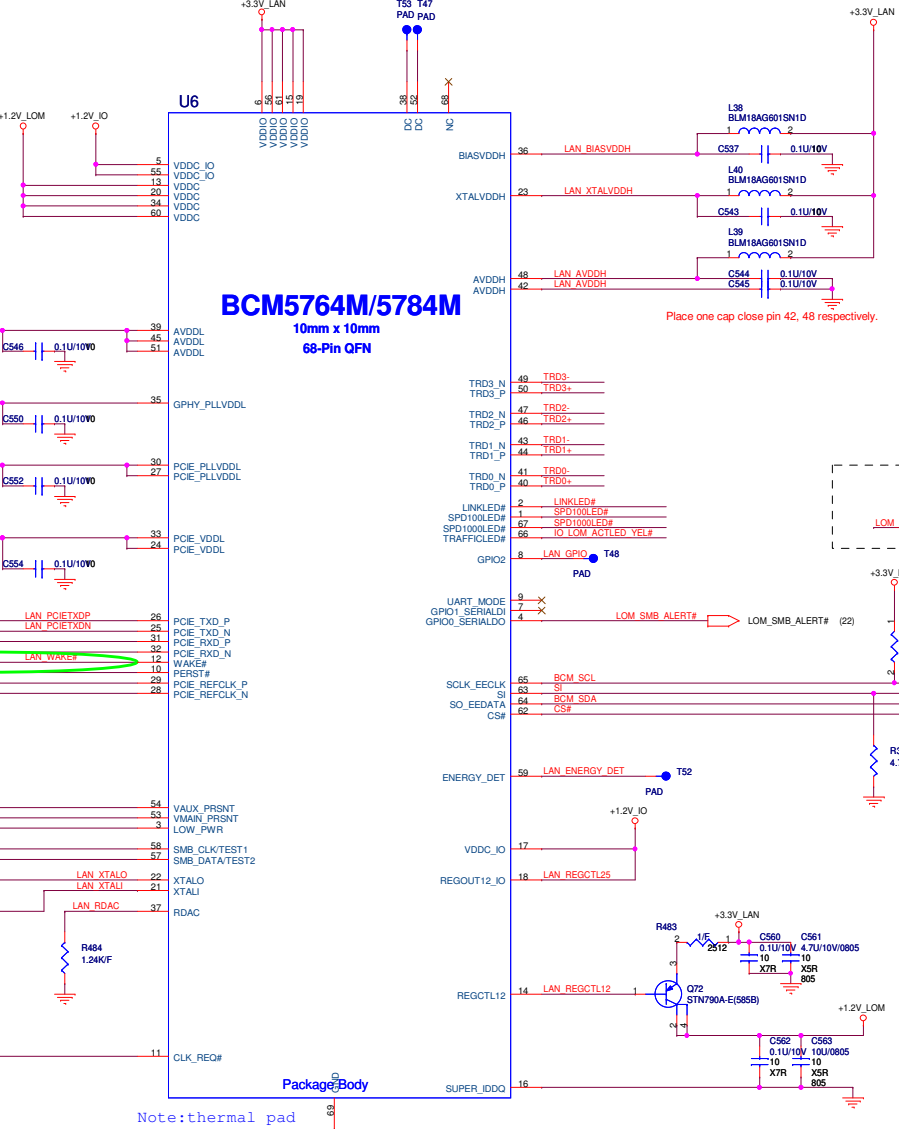
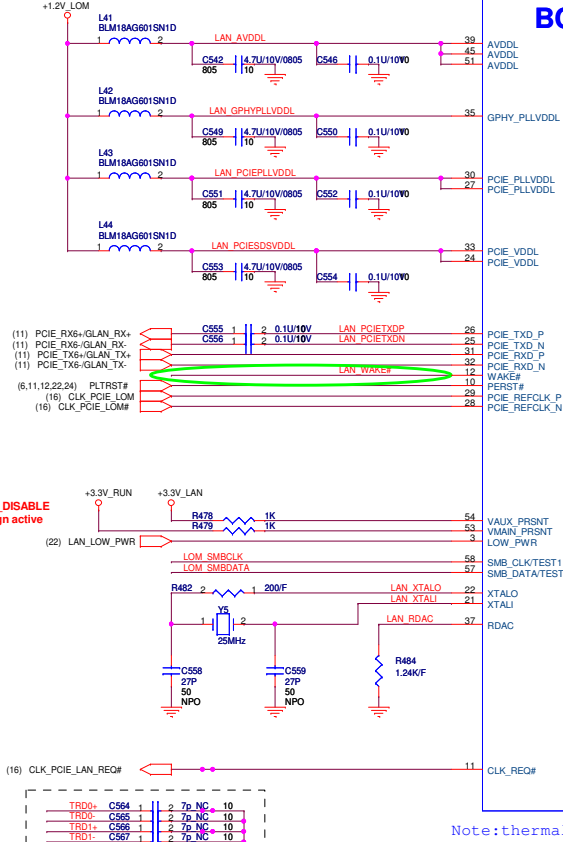
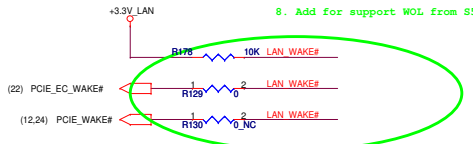
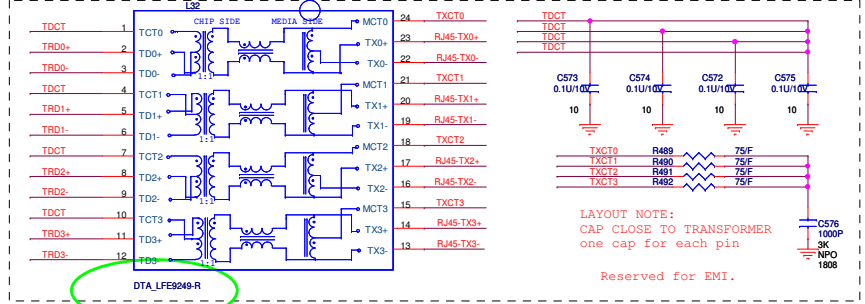
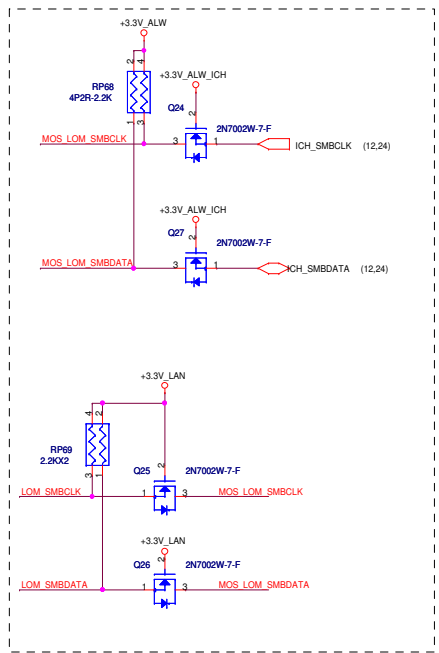
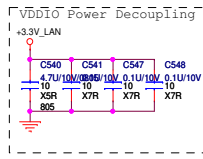
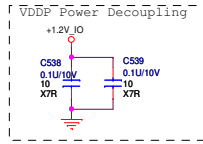
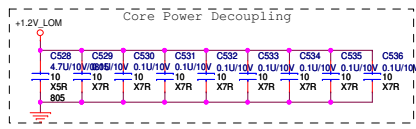


ICH_ALW for +5V_ALW_ICH

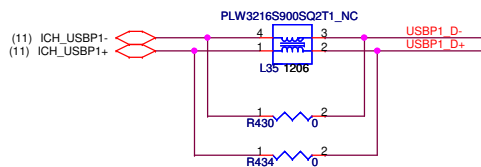
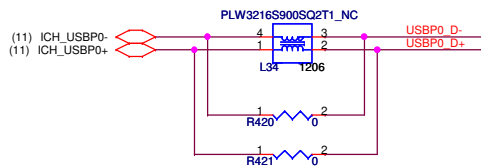
WLAN POWER



Title		
LAN POWER		
Size	Document Number	Rev
ZM1		3A
Date: Tuesday, March 31, 2009		
Sheet 31 of 46		



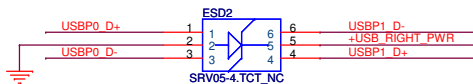
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



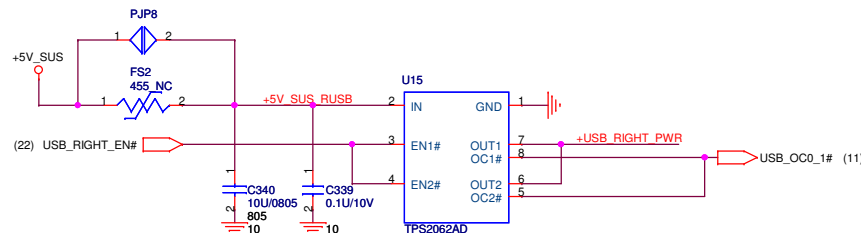
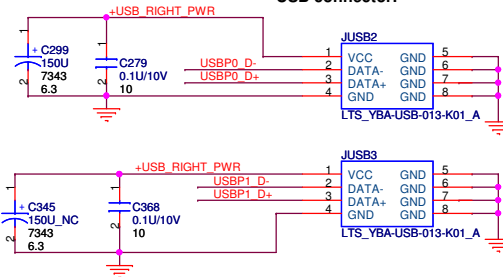
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

USB Right Side x2

Place ESD diodes as close as USB connector.

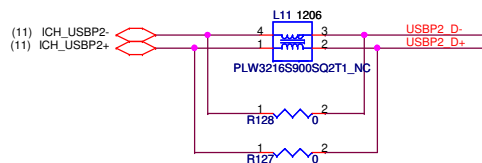


Place one 150uF cap by each USB connector.



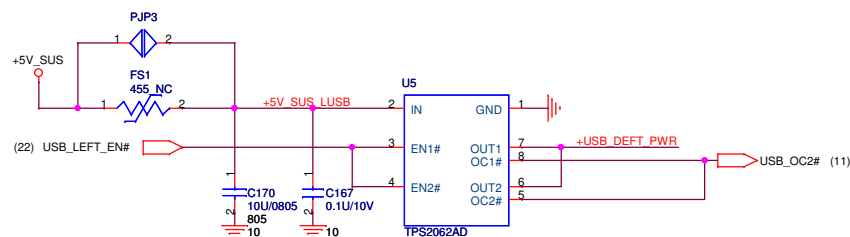
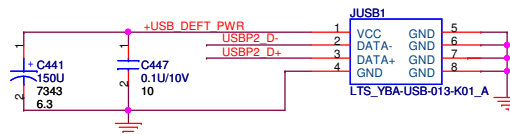
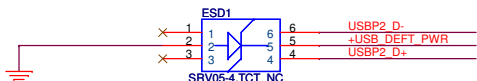
Each channel is 1A

USB Left Side



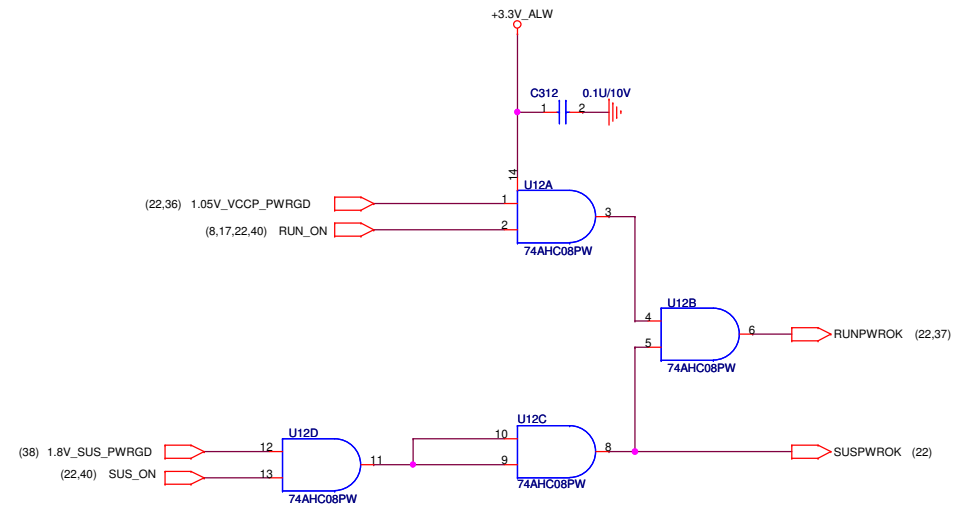
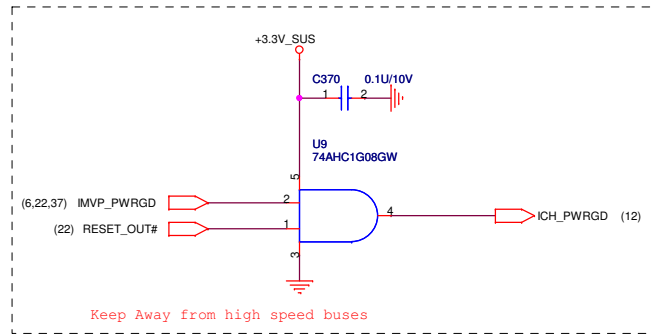
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

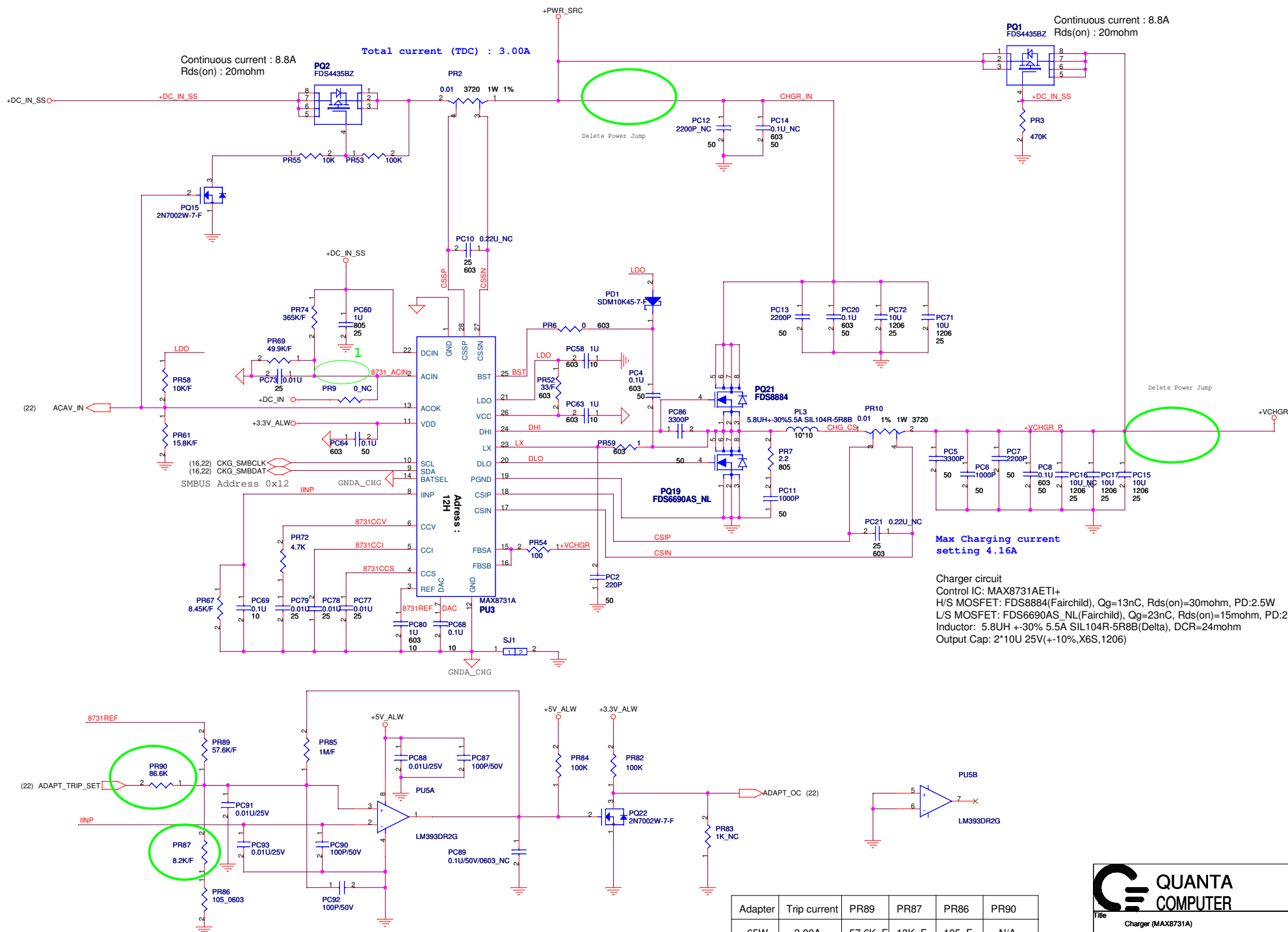
Place ESD diodes as close as USB connector.



Each channel is 1A





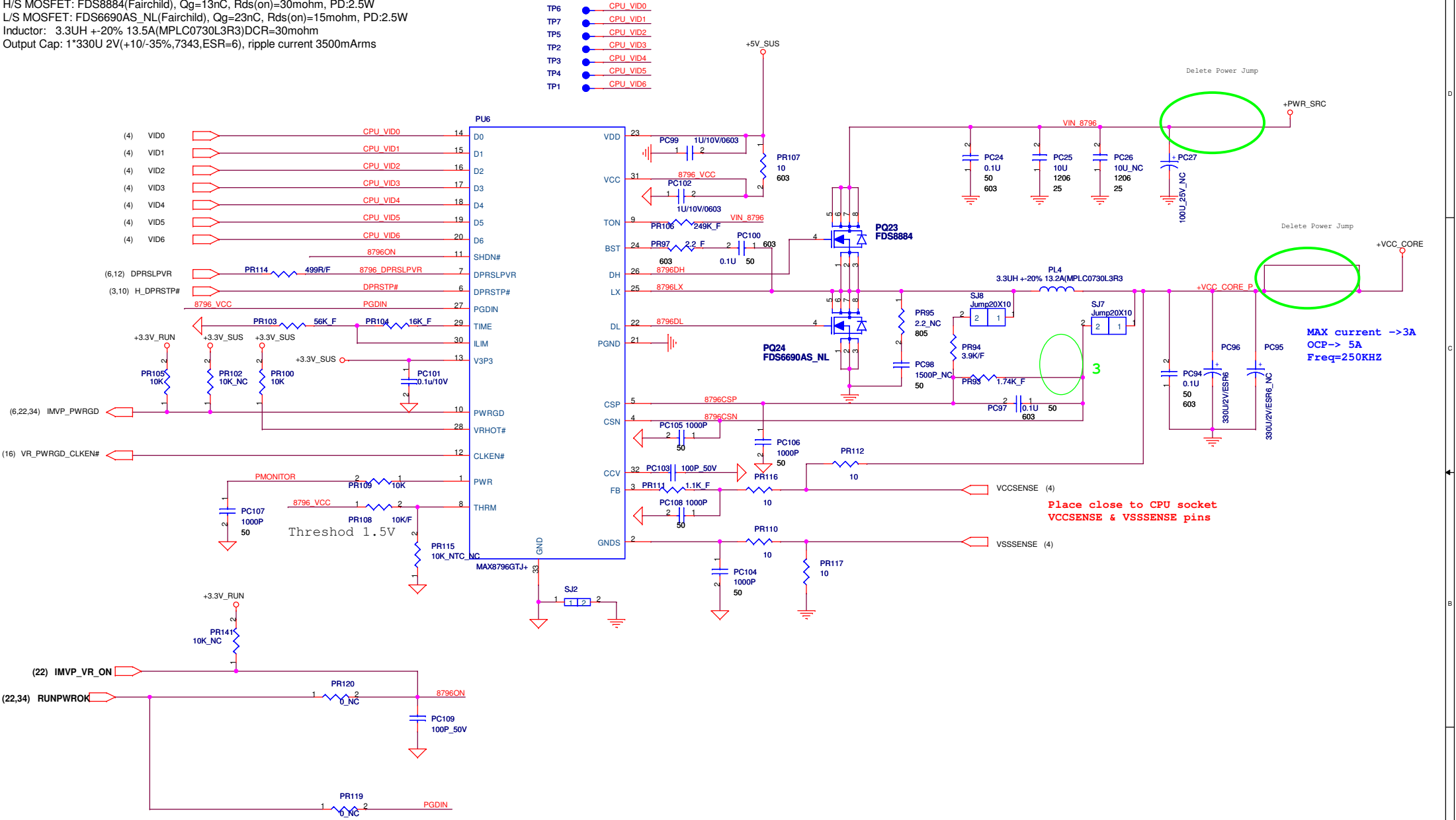


Charger (MAX8731A)

Size Document Number
ZM1

Date: Tuesday, March 31, 2009 Sheet 35 of 46

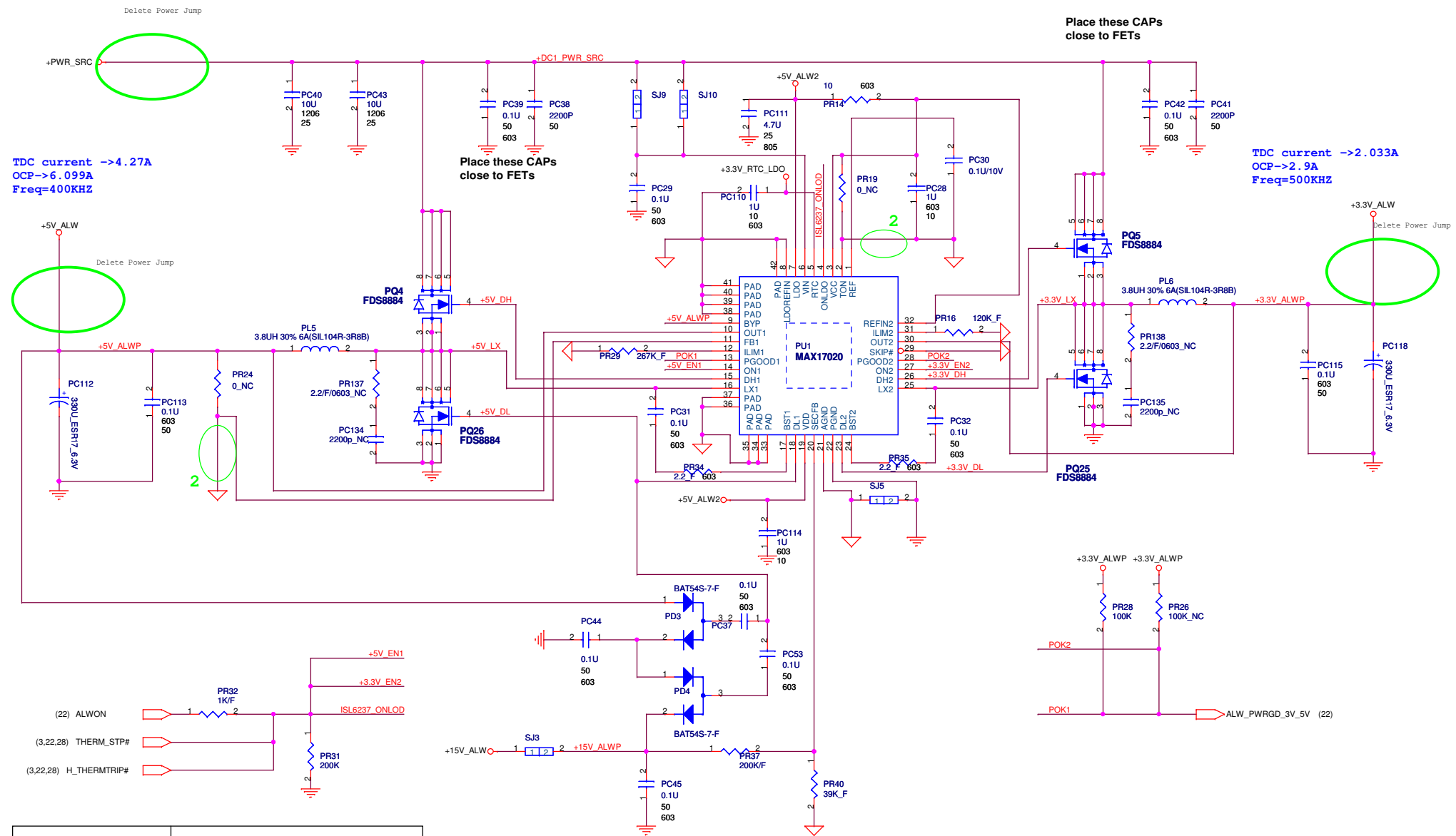
CPU Vcore power rail:
Control IC: MAX8796GTJ+
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS6690AS_NL(Fairchild), Qg=23nC, Rds(on)=15mohm, PD:2.5W
Inductor: 3.3UH +-20% 13.5A(MPLC0730L3R3)DCR=30mohm
Output Cap: 1*330U 2V(+10/-35%,7343,ESR=6), ripple current 3500mArms



5V_ALW power rail:
Control IC: MAX17020ETJ+
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
Inductor: 3.8UH 30% 6A(SIL104R-3R8B)(Delta), DCR=13mohm
Output Cap: 1* 330U,6.3V(20%ESR17,6.3*5.8), ripple current 3500mArms

DC/DC +3V_ALW/+5V_ALW /+15V_ALW

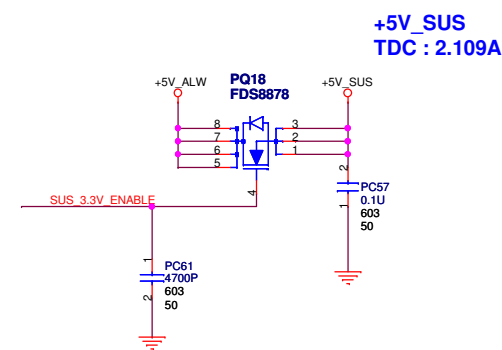
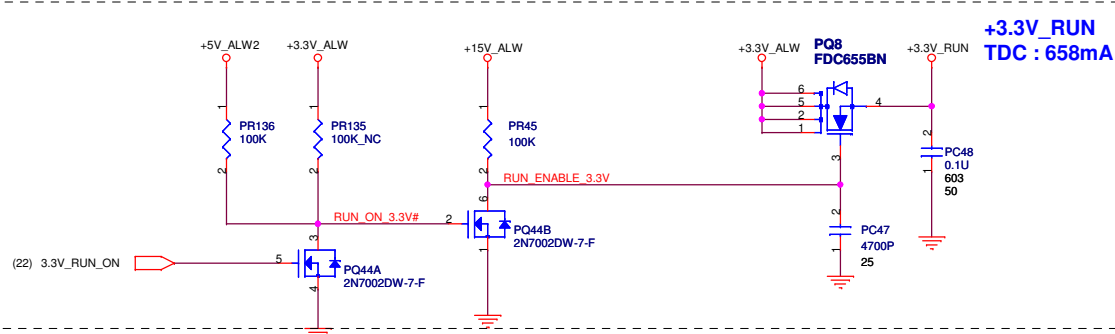
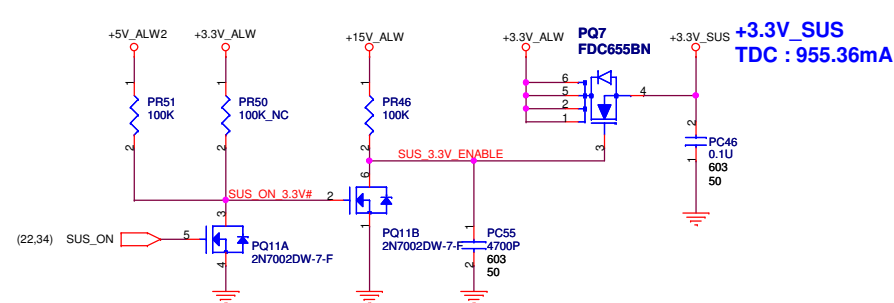
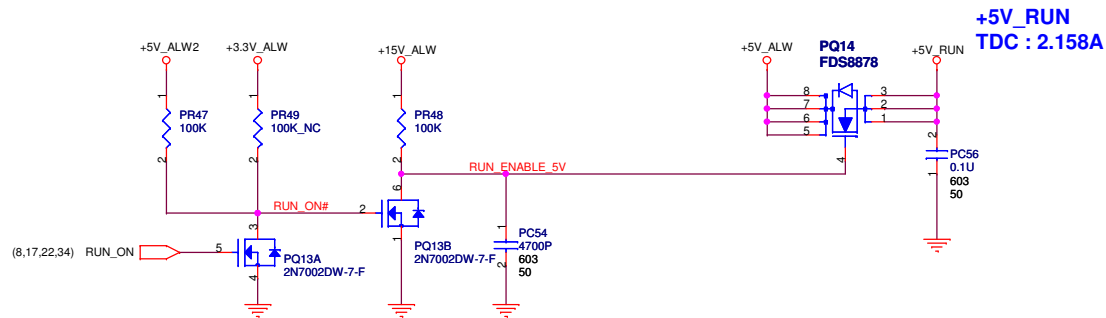
3.3V_ALW power rail:
Control IC: MAX17020ETJ+
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
Inductor: 3.8UH 30% 6A(SIL104R-3R8B)(Delta), DCR=13mohm
Output Cap: 1* 330U,6.3V(20%ESR17,6.3*5.8), ripple current 3500mArms



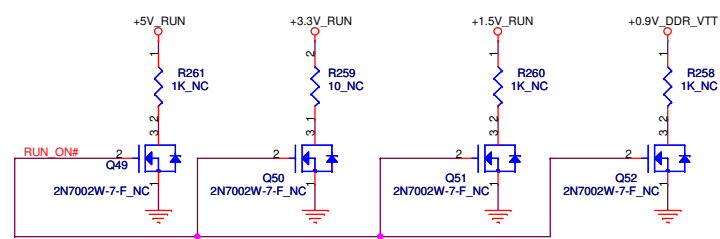
TDC current ->4.27A
OCP->6.099A
Freq=400KHZ

TDC current ->2.033A
OCP->2.9A
Freq=500KHZ

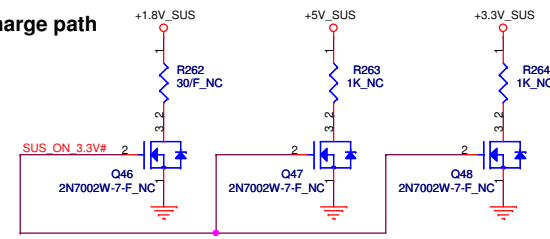
Switching regulator	TON setting
SMPS1	200KHZ (TON=VCC)
	400KHZ (TON=REF or GND)
SMPS2	300KHZ (TON=REF or VCC)
	500KHZ (TON=GND)



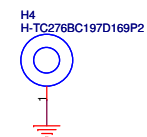
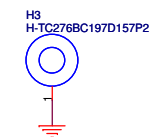
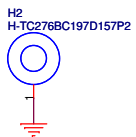
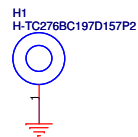
Reserve discharge path



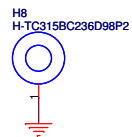
Reserve discharge path



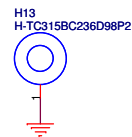
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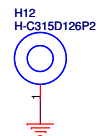
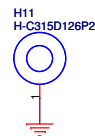
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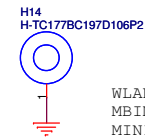
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H-C315D126P2

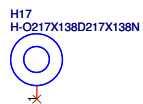


H-TC177BC197D106P2



WLAN USE
MBIM3001010
MINI CARD NUT H16 IM3 (MBIM3001, REV3A) CU

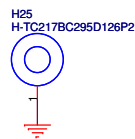
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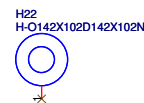
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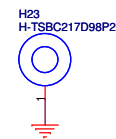
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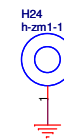
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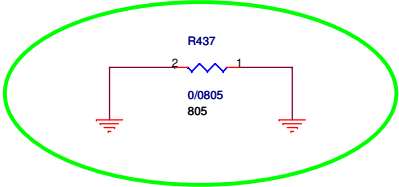
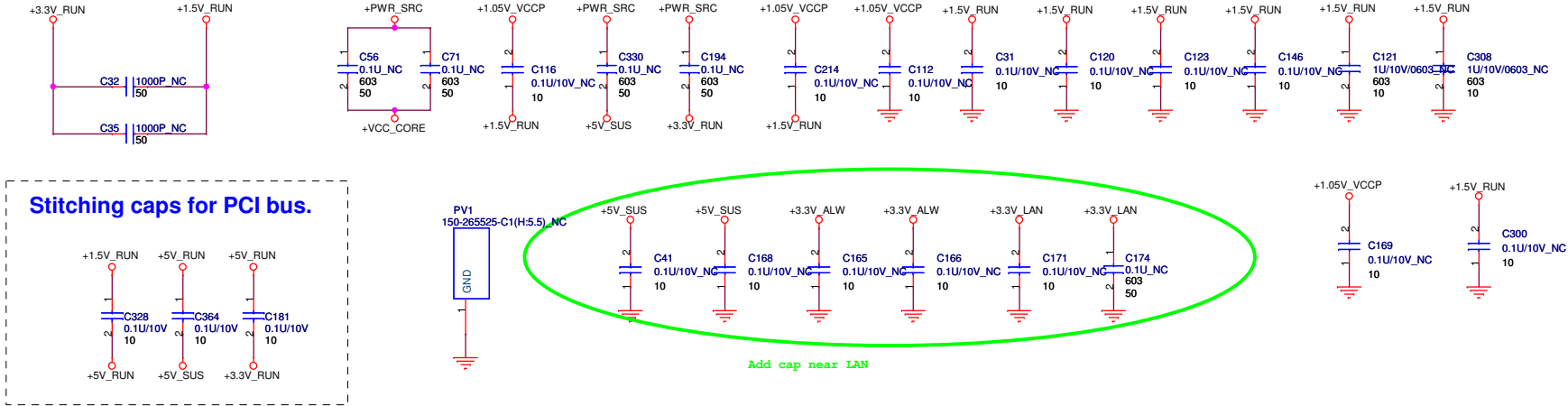


h-zm1-1



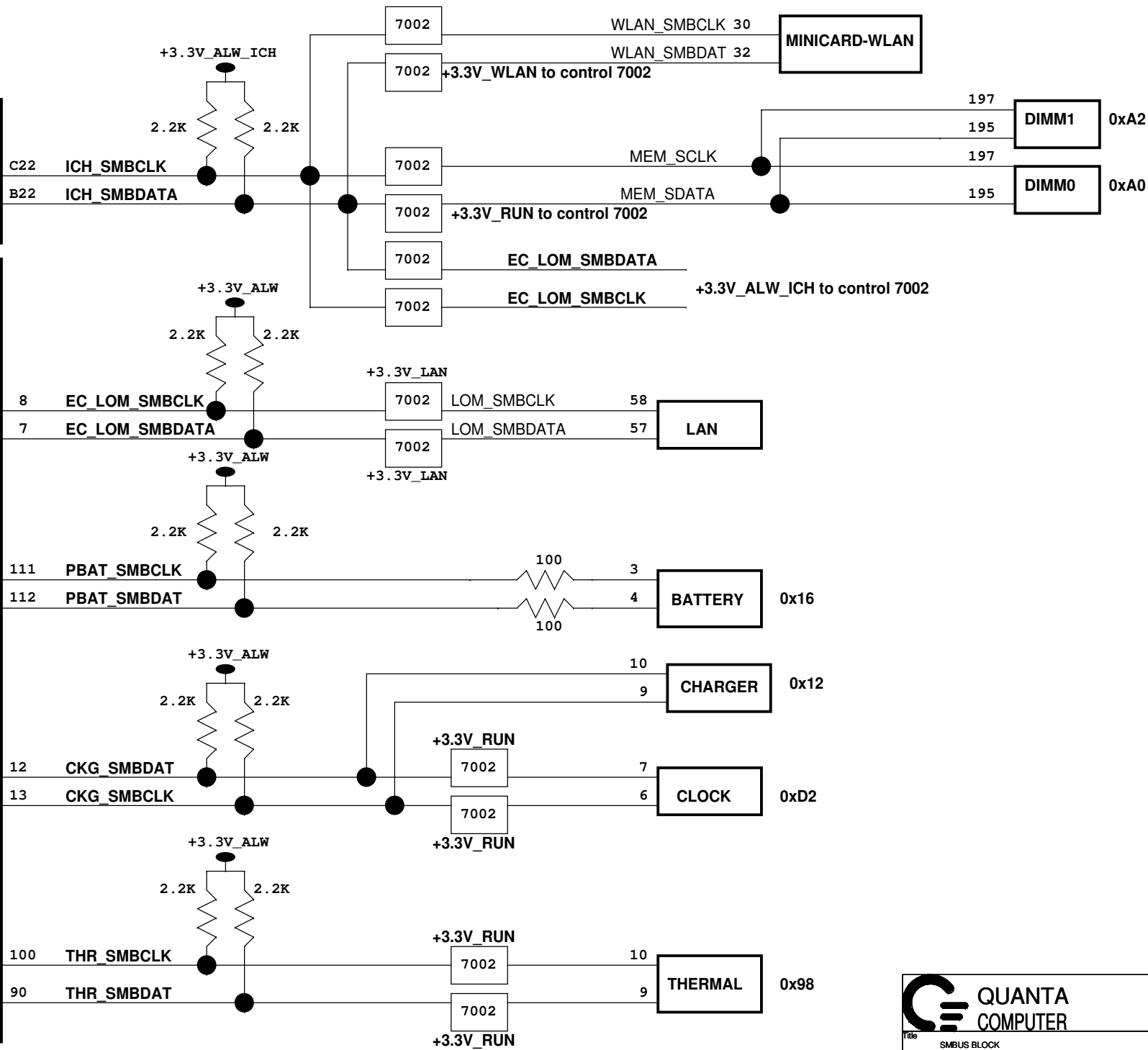
Reserved for EMI.

Stitching caps.

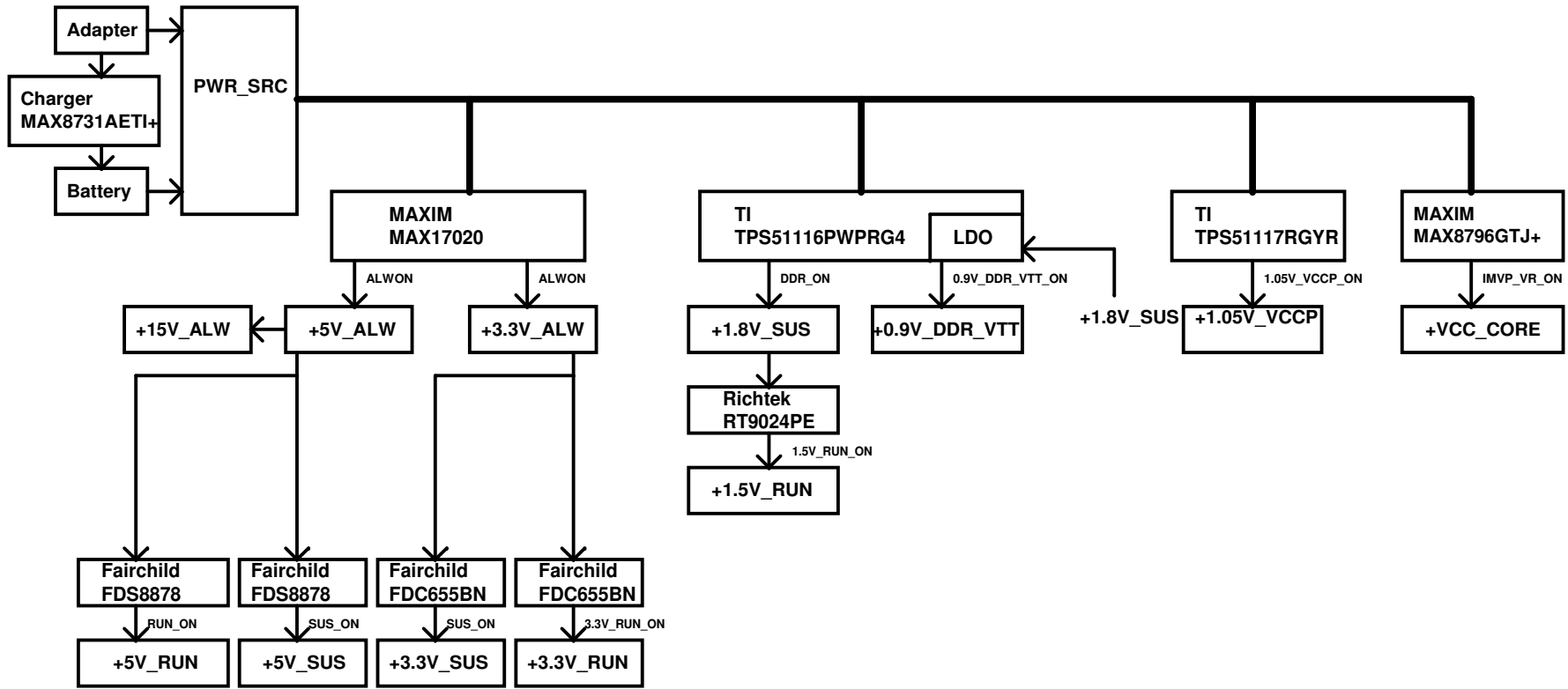


ICH7-M

SIO
ECE5035



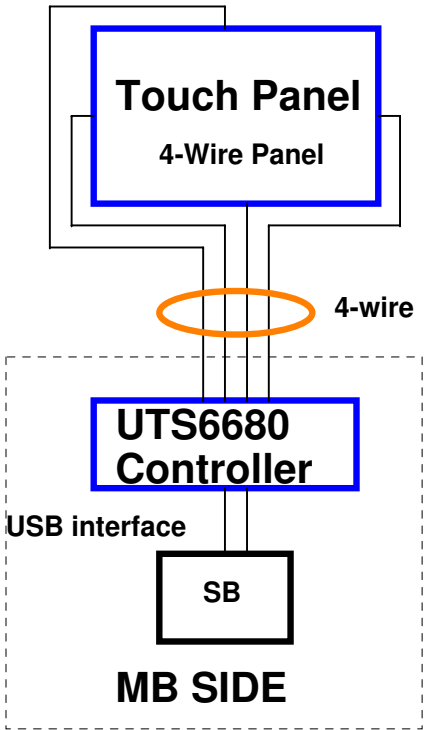
VER : 1A



ICH USB	Device
USBP0	Right side top
USBP1	Right side bottom
USBP2	Left side
USBP3	Card Reader
USBP4	Camera
USBP5	Touch Screen
USBP6	Bluetooth
USBP7	WLAN

PCI-E	Device
PCIE-1	NC
PCIE-2	Mini WLAN
PCIE-3	NC
PCIE-4	LAN
PCIE-5	NC
PCIE-6	NC

SATA	Device
SATA0	SATA/SSD HDD
SATA1	NC



AL006680B00IC OTHER(32P) UTS6680EF (LQFP)



QUANTA

COMPUTER

Title Port Mapping		
Size	Document Number ZM1	Rev 3A
Date:	Tuesday, March 31, 2009	Sheet 46 of 46