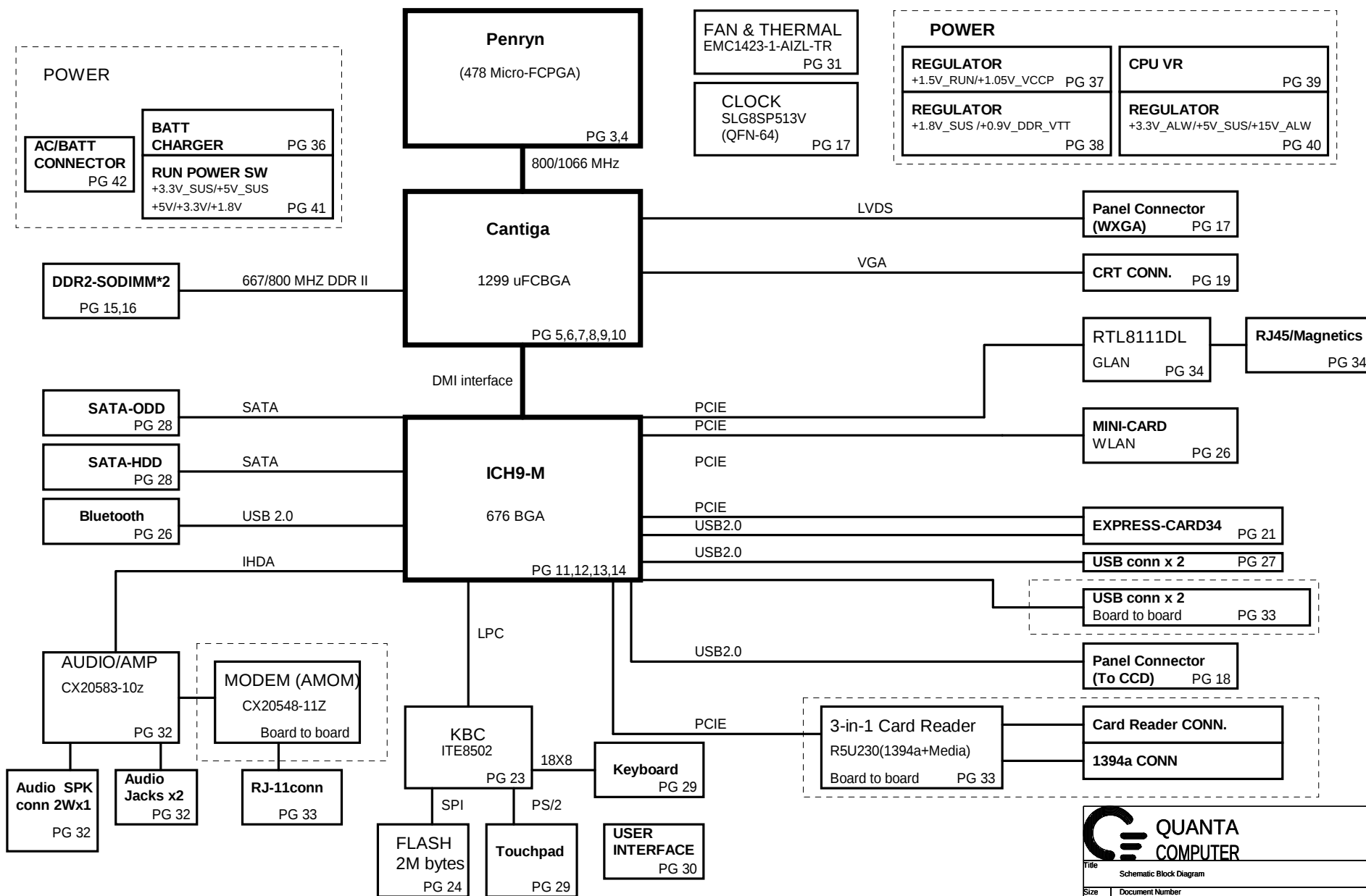


VM9M Block Diagram Intel UMA

VER : F3B



Title		
Schematic Block Diagram		
Size	Document Number	Rev
VM9M		1A
Date:	Monday, June 08, 2009	Sheet 1 of 46

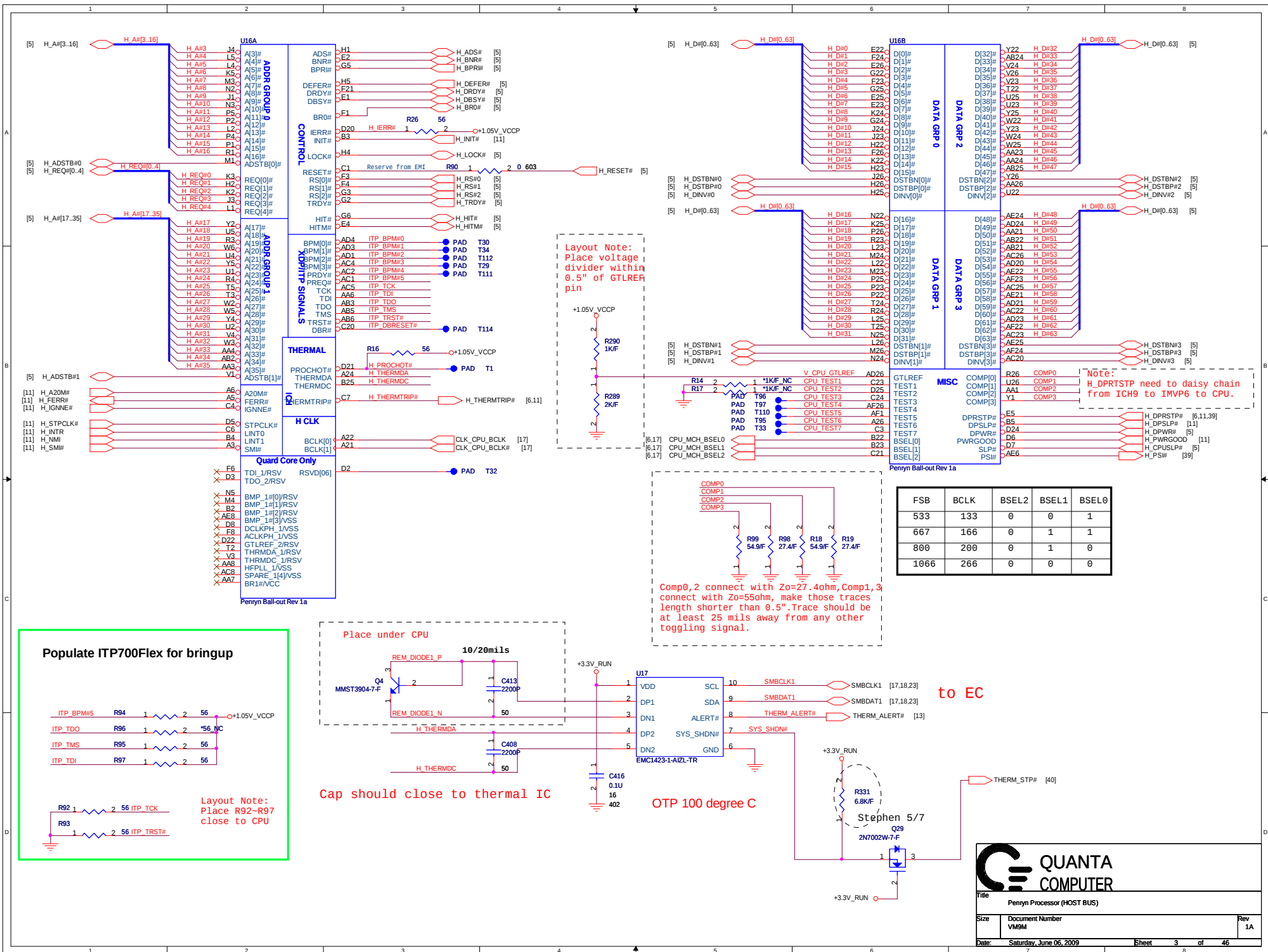
Table of Contents

PAGE	DESCRIPTION
1	Schematic Block Diagram
2	Front Page
3-4	Penryn
5-10	Cantiga
11-14	ICH9M
15-16	DDRII SO-DIMM(200P)
17	Clock Generator
18	LCD Conn.
19	CRT Conn
21	Express card
23	SIO (ITE8512)
24	FLASH/RTC
25	BLANK PAGE
26	Mini Card / BT
27	USB
28	SATA Conn
29	TP / KEYBOARD
30	SWITCH /LED
31	FAN & Thermal
32	Audio CODEC/Phone Jack
33	Board To Board
34	LAN / TRANSFORM
35	BLANK PAGE
36	Battery Selector & Charger
37	1.05VCCP / 1.5VRUJN
38	DDR2_1.8VSUS, 0.9V
39	CPU_MAX17410(2phase)
40	MAX17020 (+5.5V,+3.3V)
41	RUN Power Switch
42	DCIN,Batt
43	PAD& SCREW
44	EMI CAP
45	SMBUS BLOCK
46	Power Block Dianram

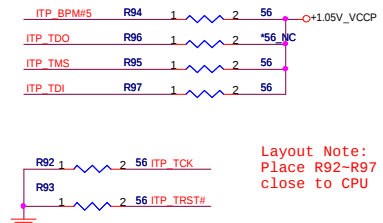
Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,18,24,36,37,3,8,39,40,44	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,23,24	RTC		S0~S5
+3.3V_ALW	+3.3V	3,23,24,30,35,36,38,40,41,42,45	8051 POWER	ALWON	S0~S5
+5V_ALW2	+5V	37,38,40,41,42	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	11,18,40,41	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	34	LAN POWER		
+5V_SUS	+5V	14,27,30,39,40,41,44	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,18,25,30,37,39,41,45	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,37,38,41	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,38,41	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,18,19,21,25,28,29,30,31,32,41,44	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,6,8,9,11,12,13,14,15,17,30,31,32,34,18,19,20,21,23,25,26,28,41,44,45	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,26,37,41,44	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.05V_VCCP	+1.05V	3,4,6,8,9,11,14,37,44	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,39	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	18	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	28	Module Power		
+5V_HDD	+5V	28	HDD Power		
+PBATT	+10V~+17V	42	MAIN BATTERY	CHG_PBATT	

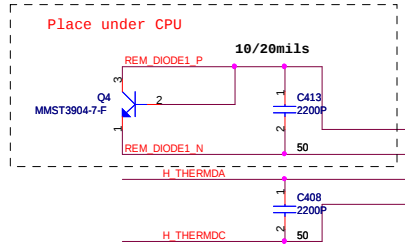
GND PLANE	PAGE	DESCRIPTION
 GND	ALL	



Populate ITP700Flex for bringup

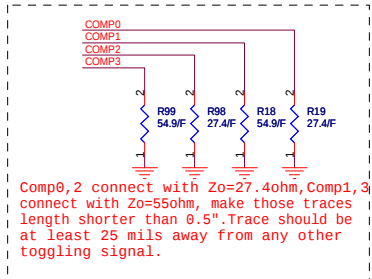


Layout Note:
Place R92-R97
close to CPU



Cap should close to thermal IC

OTP 100 degree C



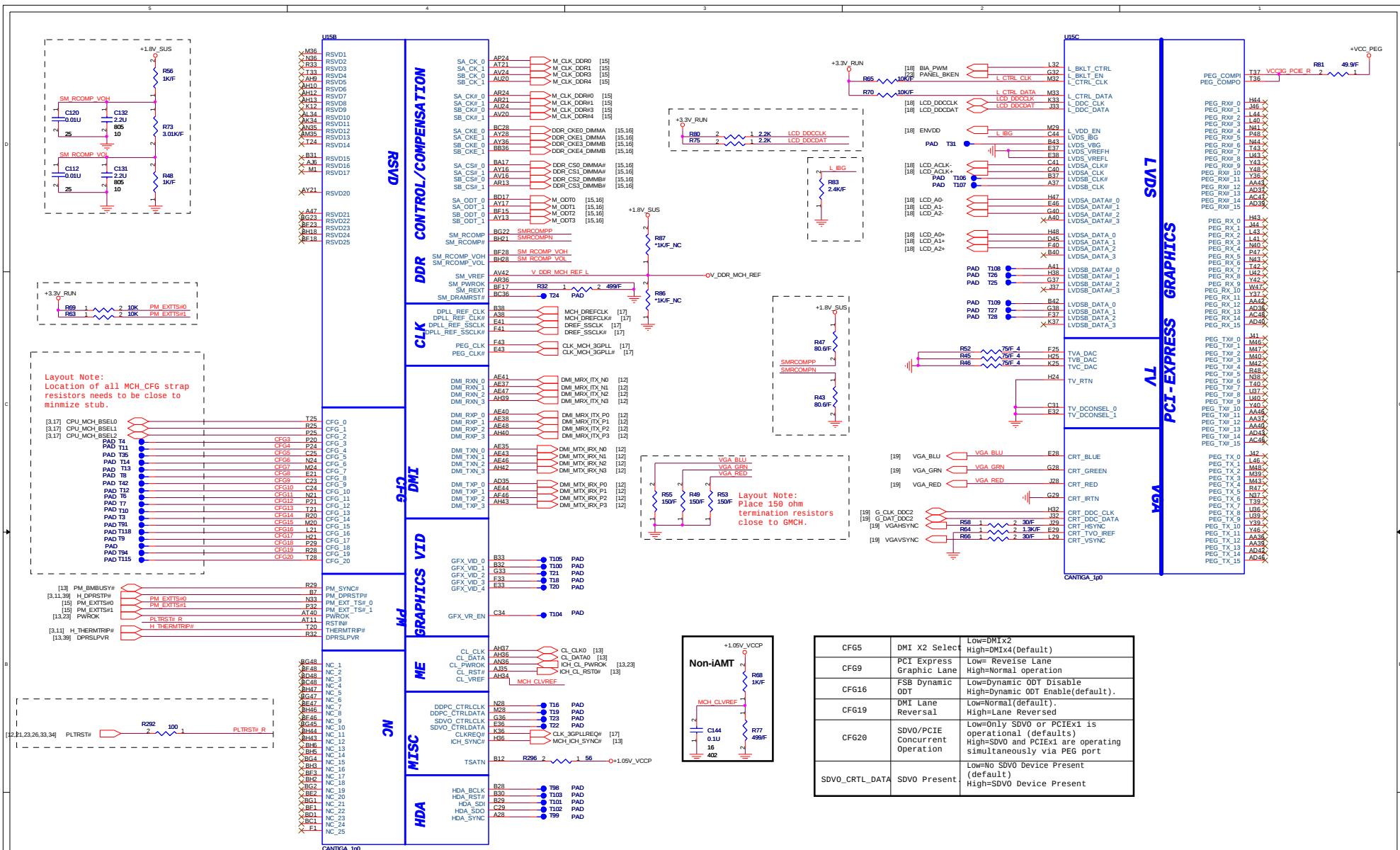
Layout Note:
Place voltage
divider within
0.5" of GTLREF
pin

FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

to EC

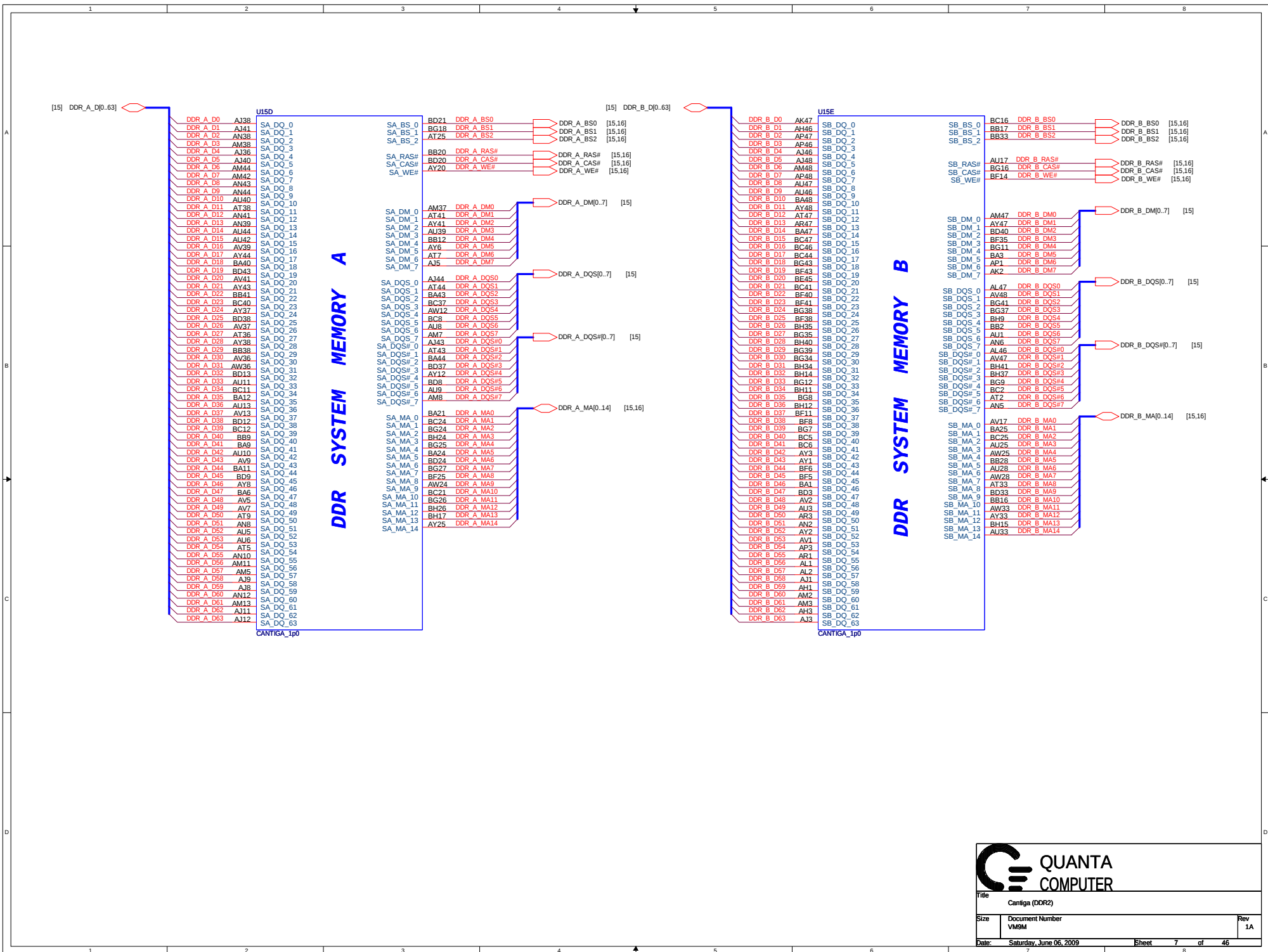


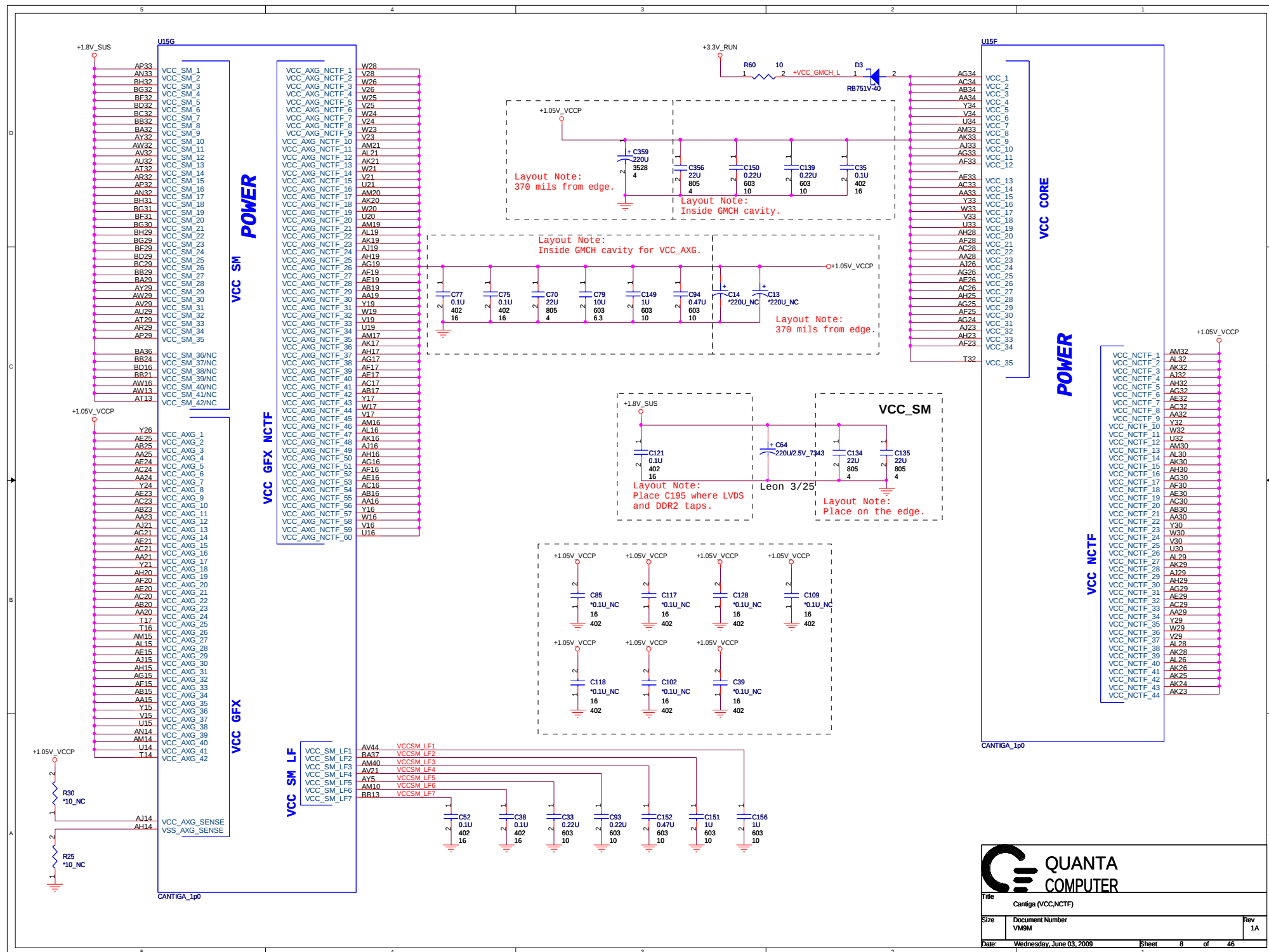
Sheet 4 of 46

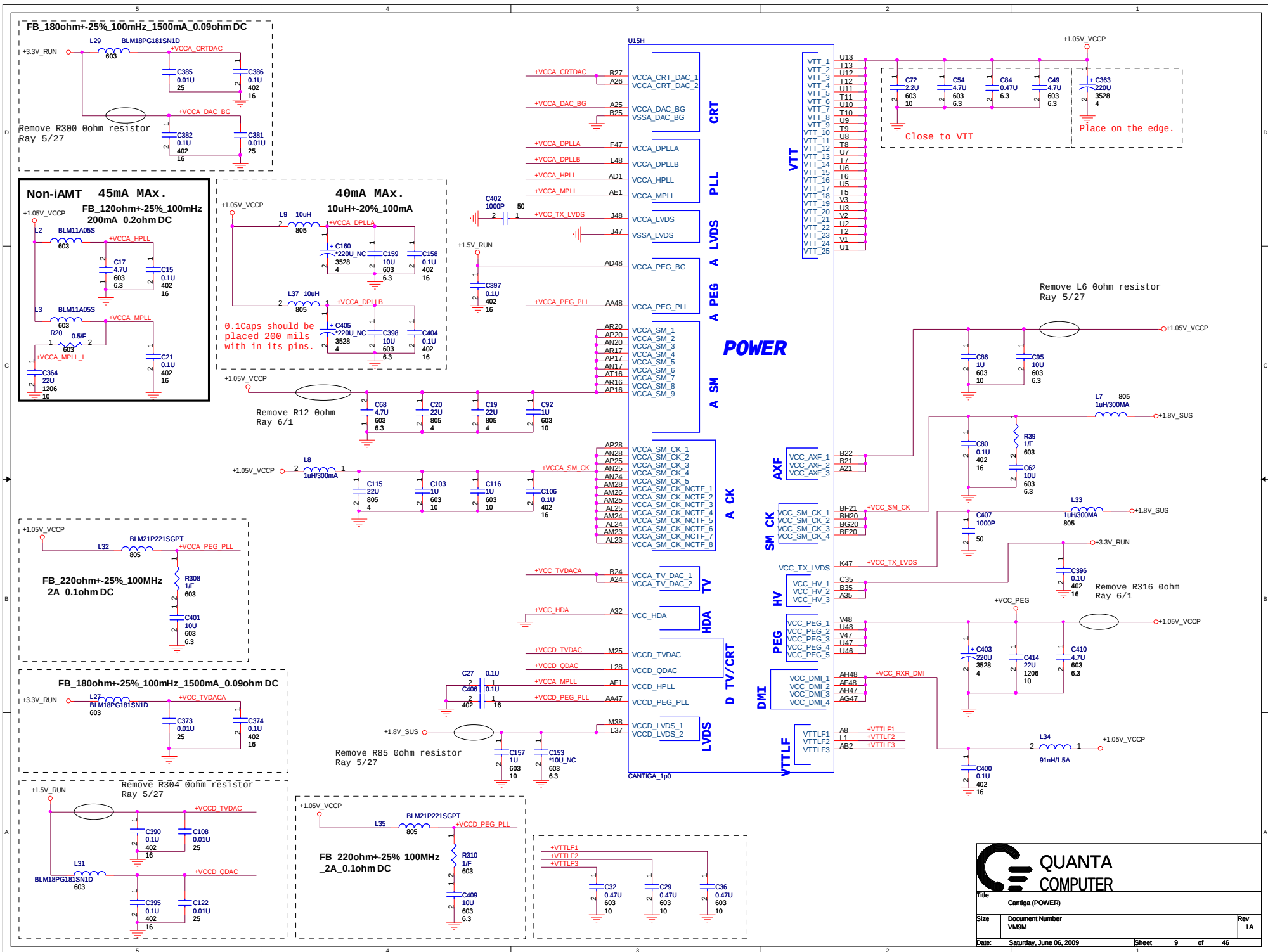


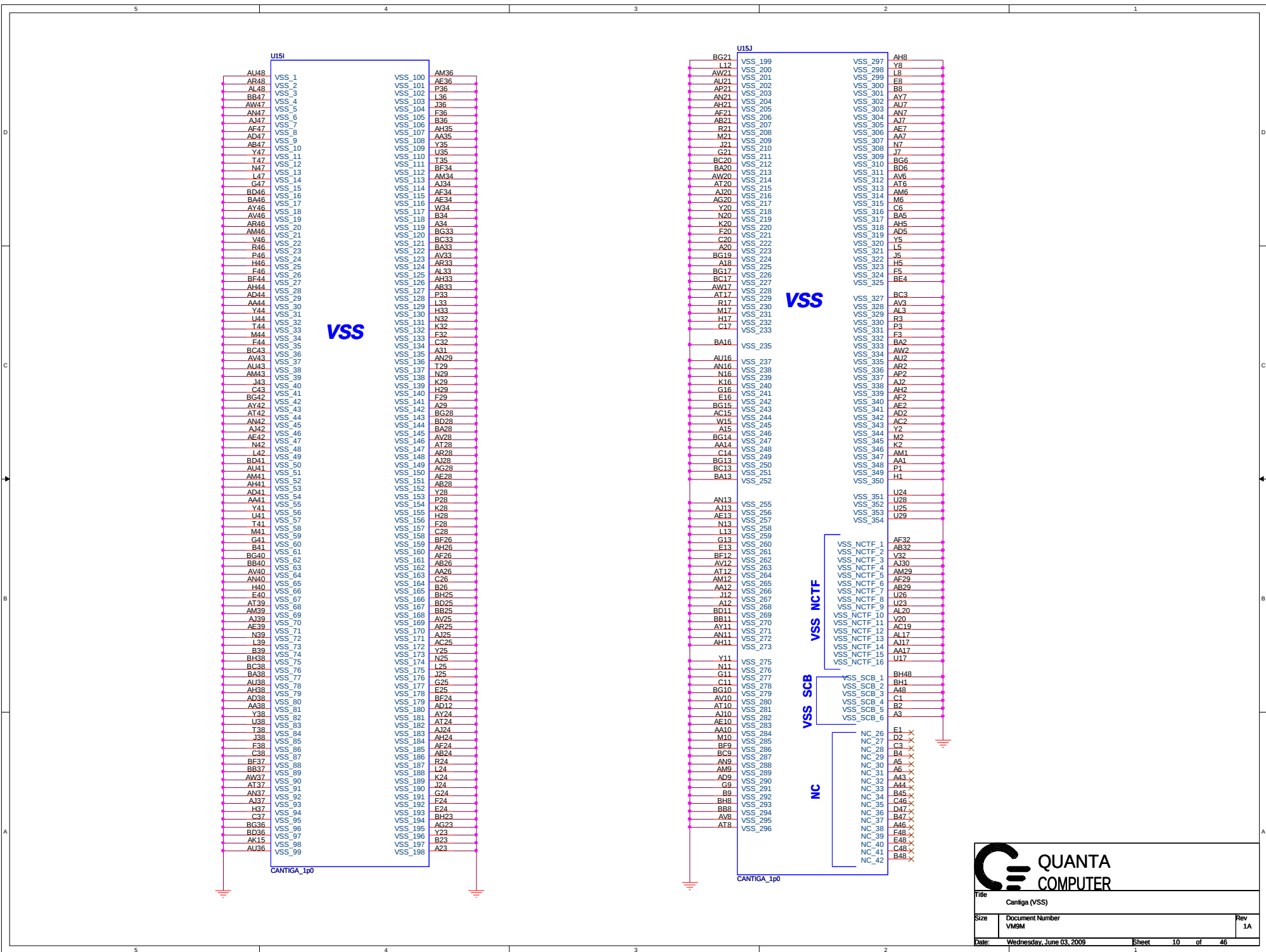
CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
CFG9	PCI Express Graphic Lane	Low= Reverse Lane High=Normal operation
CFG16	FSB Dynamic ODT	Low=Dynamic ODT Disable High=Dynamic ODT Enable(default).
CFG19	DMI Lane Reversal	Low=Normal(default). High=Lane Reversed
CFG20	SDVO/PCIe Concurrent Operation	Low=Only SDVO or PCIe is operational (defaults) High=SDVO and PCIe are operating simultaneously via PEG port
SDVO_CTRL_DATA	SDVO Present	Low=No SDVO Device Present (default) High=SDVO Device Present

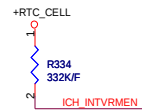
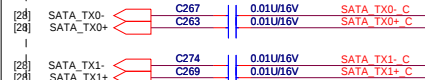
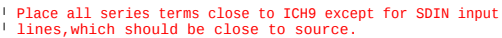
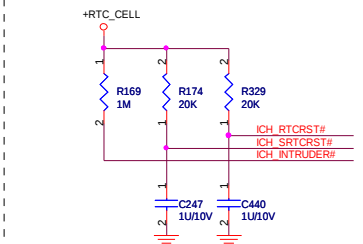






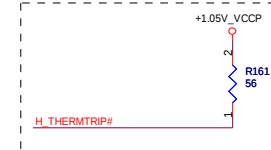
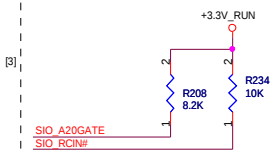
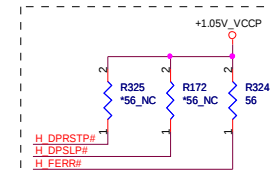
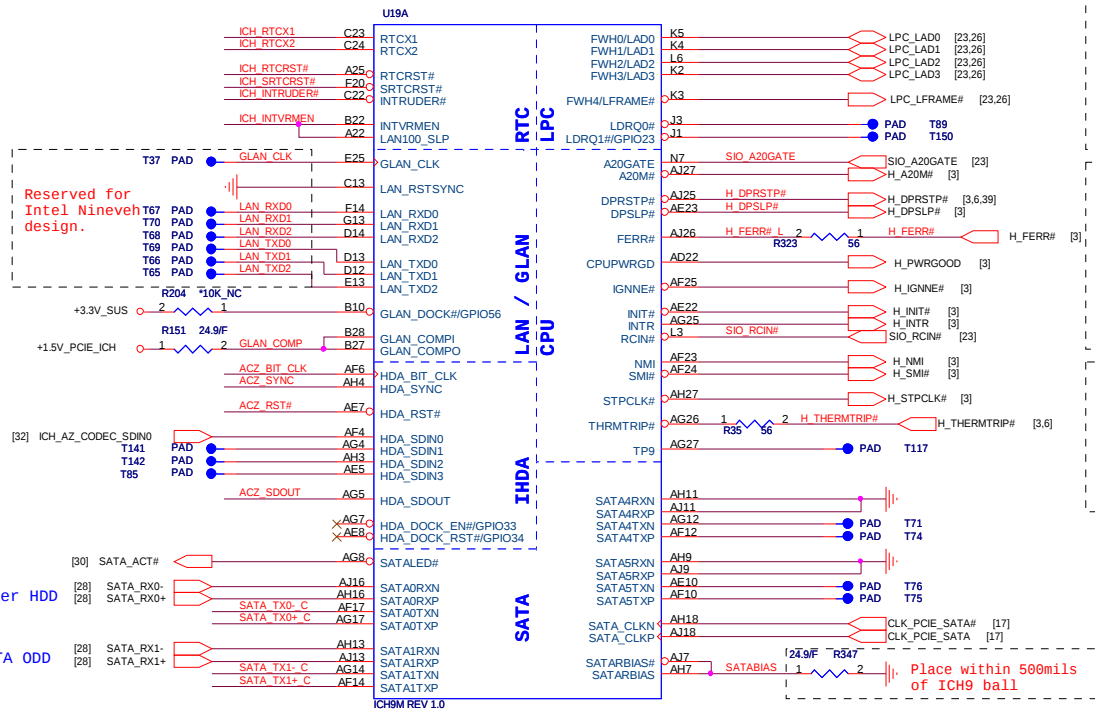






ICH9M Internal VR Enable Strap (Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)	
ICH_INTVRMEN	Low = Internal VR Disabled High = Internal VR Enabled(Default)

ICH9M LAN100 SLP Strap (Internal VR for VccLAN1.05 and VccCL1.05)	
ICH_LAN100_SLP	Low = Internal VR Disabled High = Internal VR Enabled(Default)



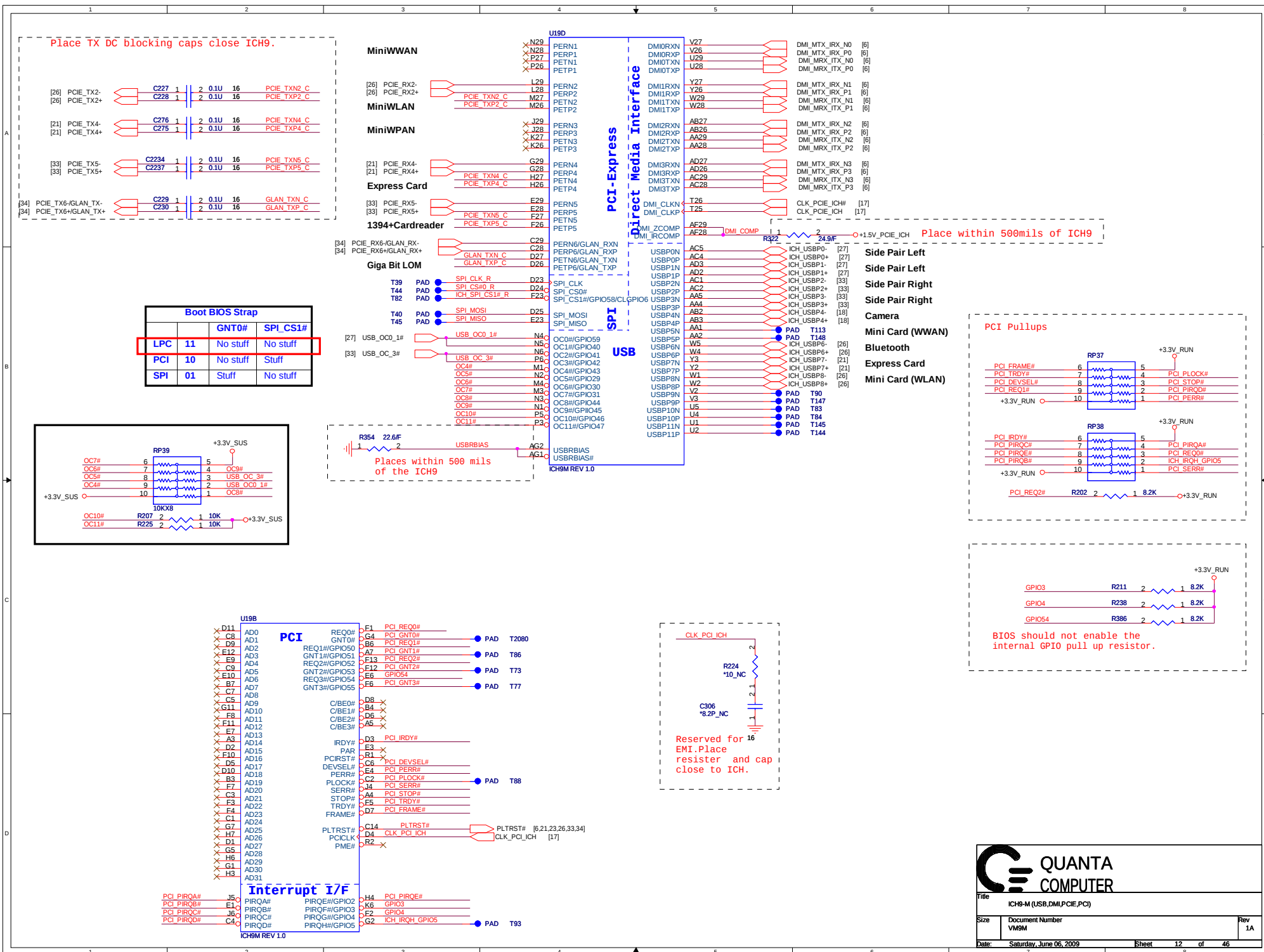
XOR Chain Entrance Strap		
ICH RSVD	HDA SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal Operation (Default)
1	1	Set PCIe port config bit 1

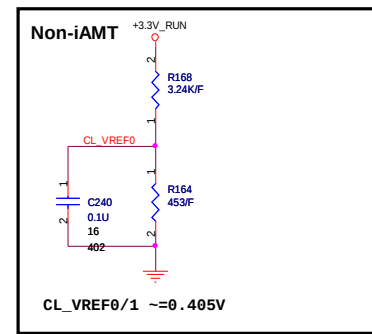
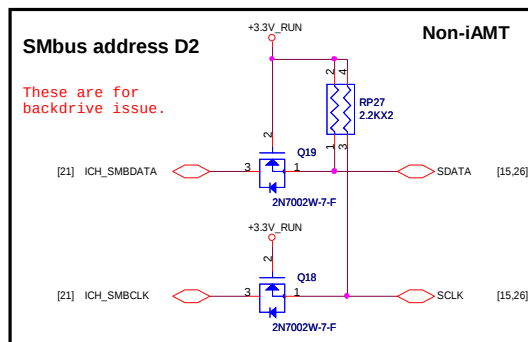
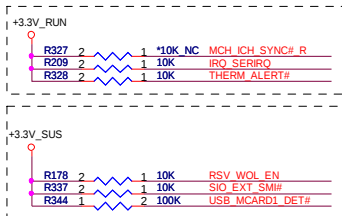
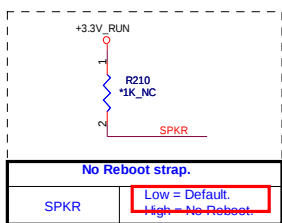
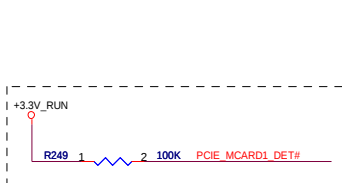
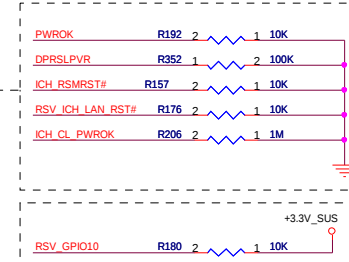
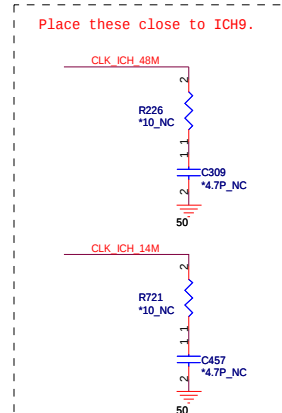
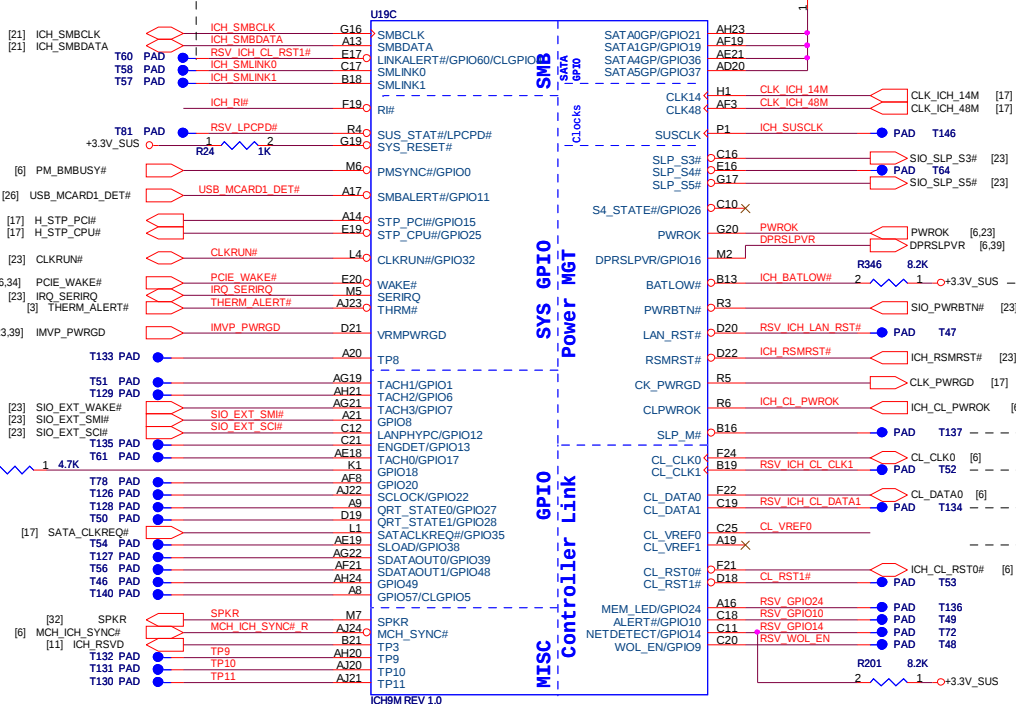
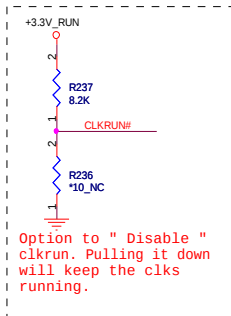
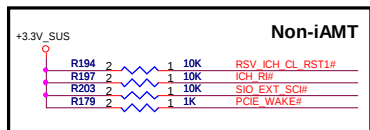
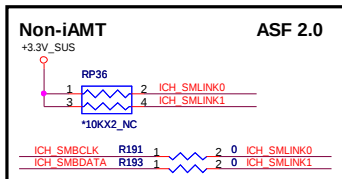
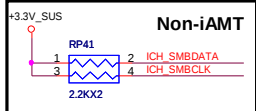


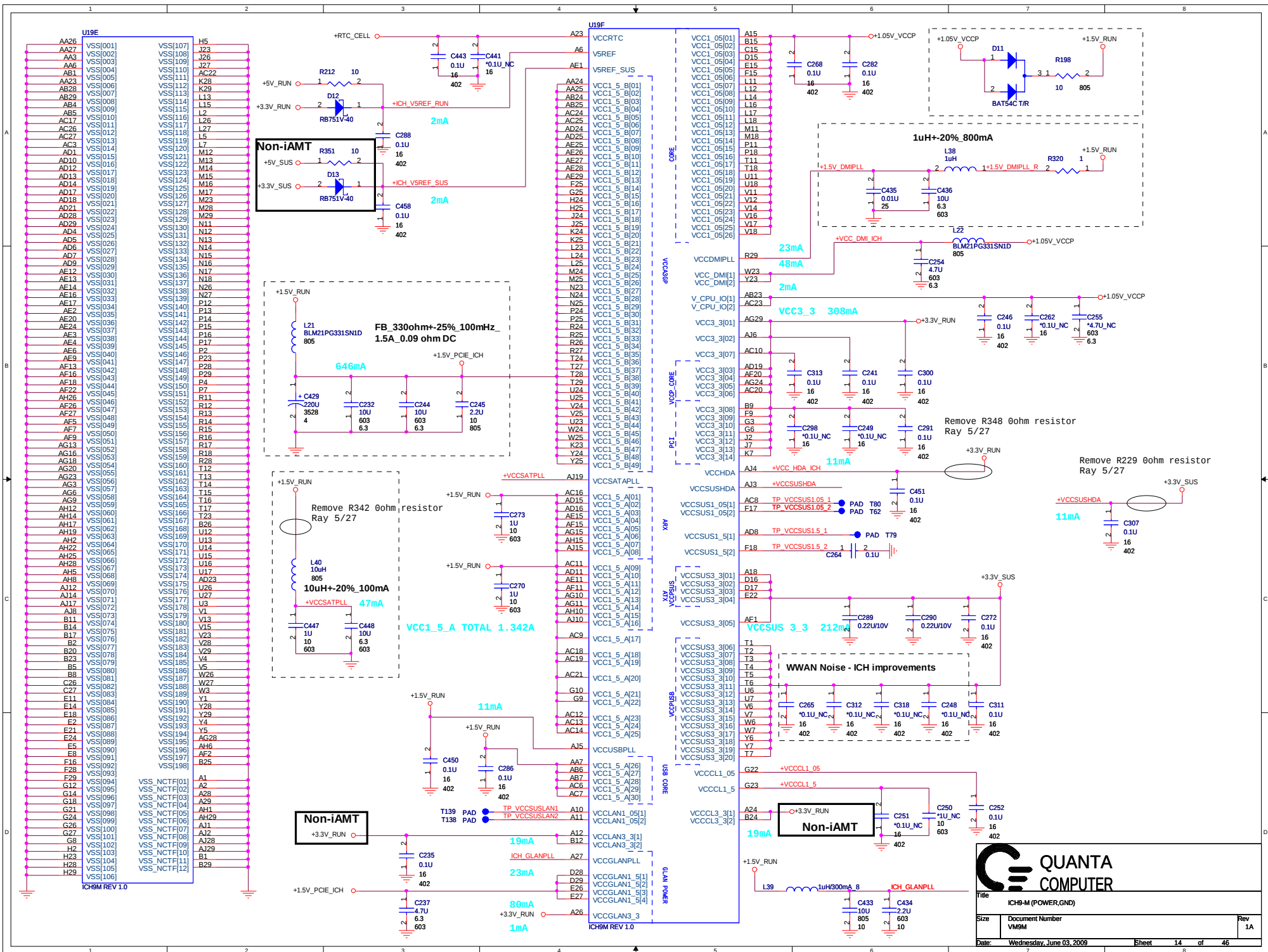
Title ICH9-M (CPU,SATA,LPC,LAN,CODEC)

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	VM9M	1A

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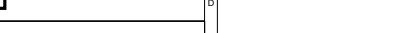
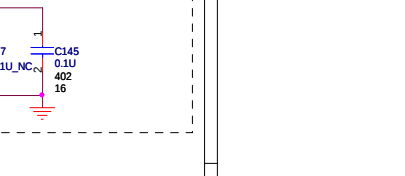
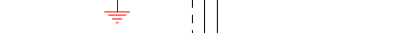
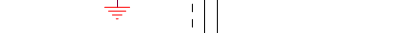
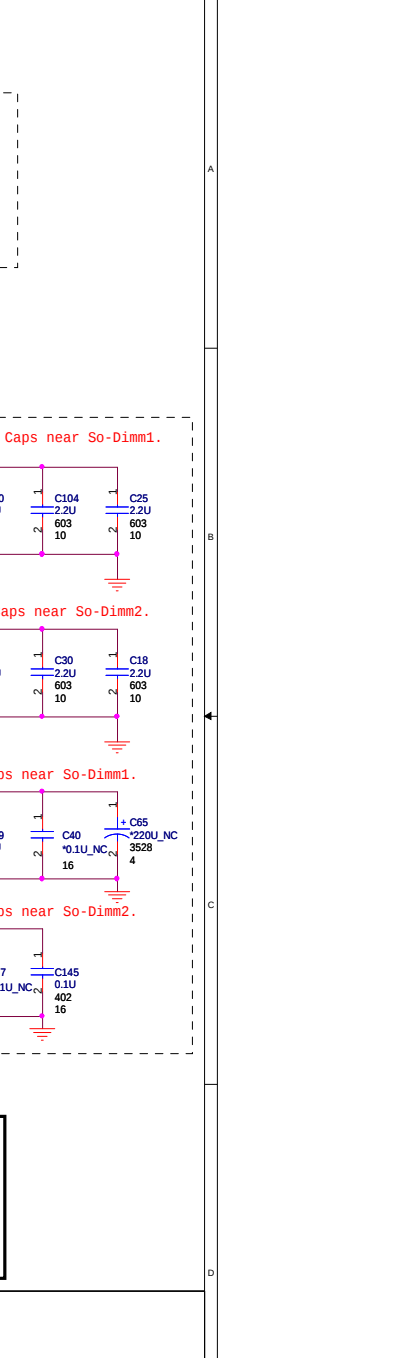
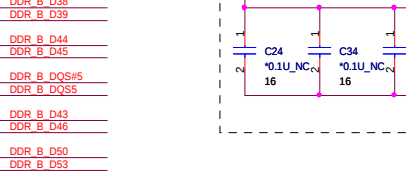
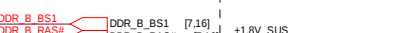
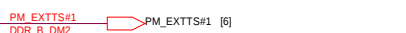
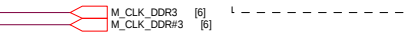
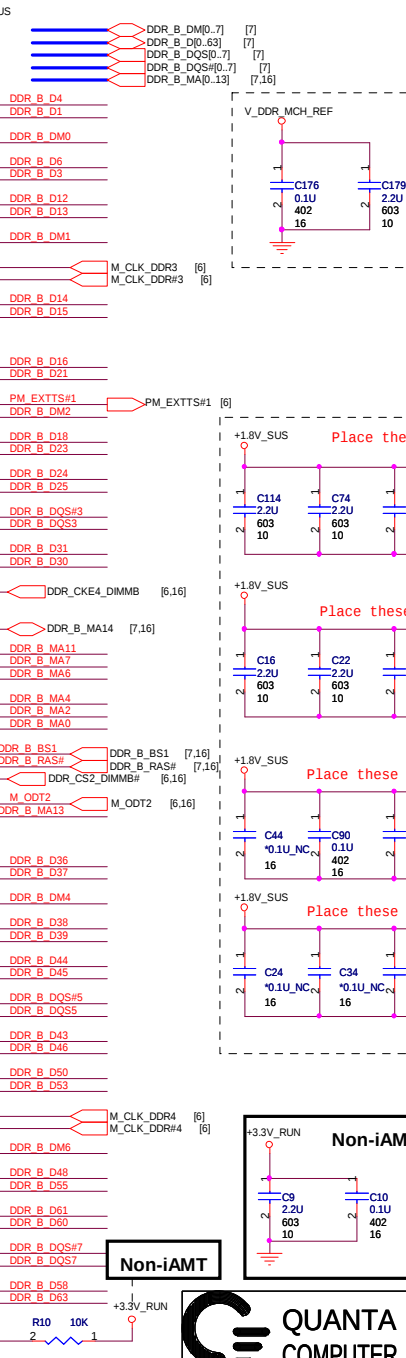
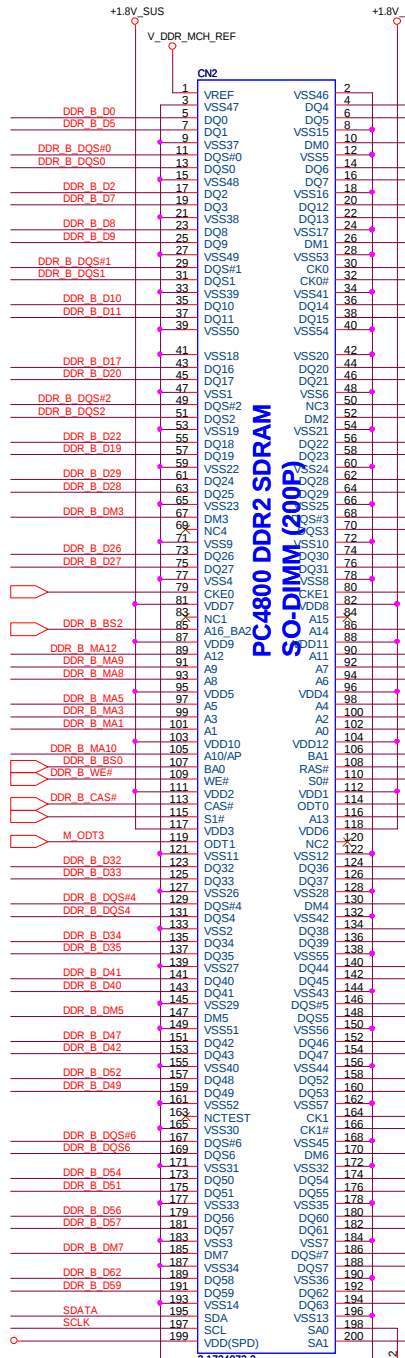
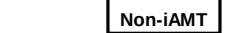
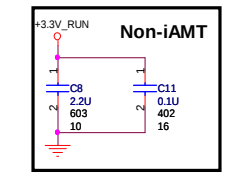
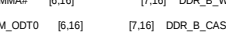
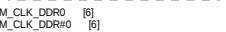
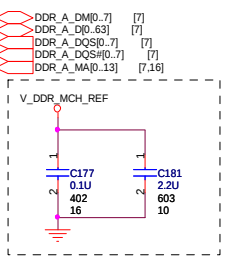
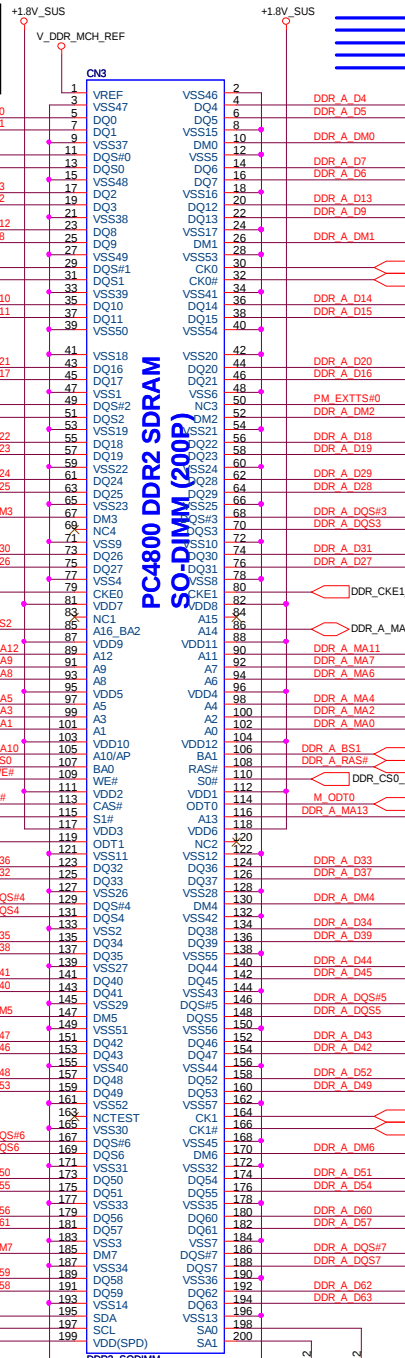




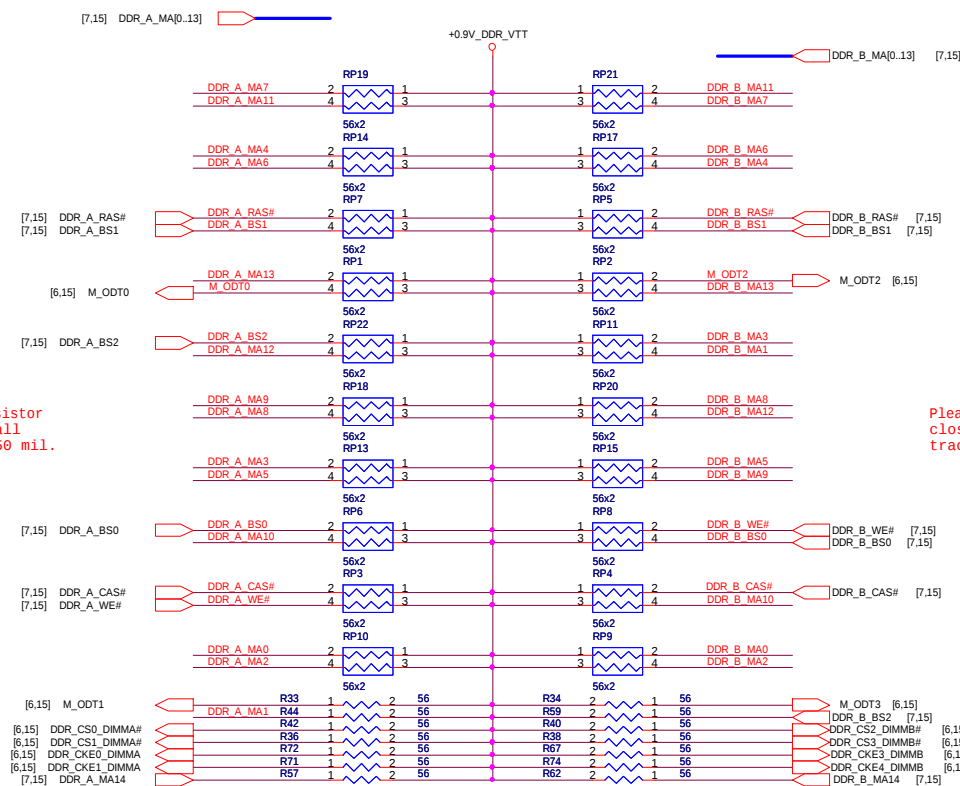
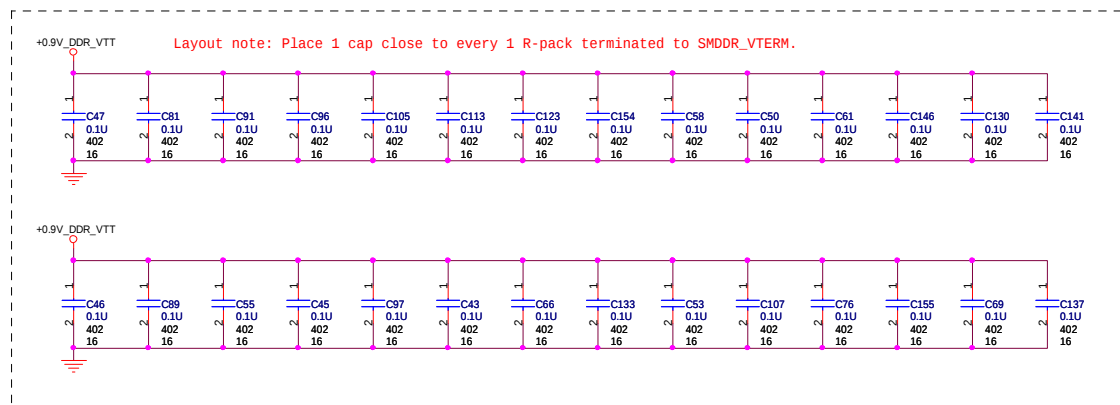


Title			
ICH9-M (POWER.GND)			
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	VM9M		
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A is required to route to Top SoDIMM for AMTto function. Ch.A SODIMM needs to be populated for Intel AMT support.



Title		
DDR2 SO-DIMM (200P) X 2		
Size	Document Number	
	VMSM	
Date:	Saturday, June 06, 2009	Sheet 15 of 46



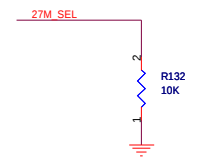
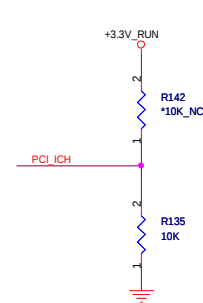
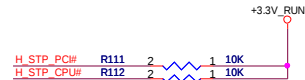
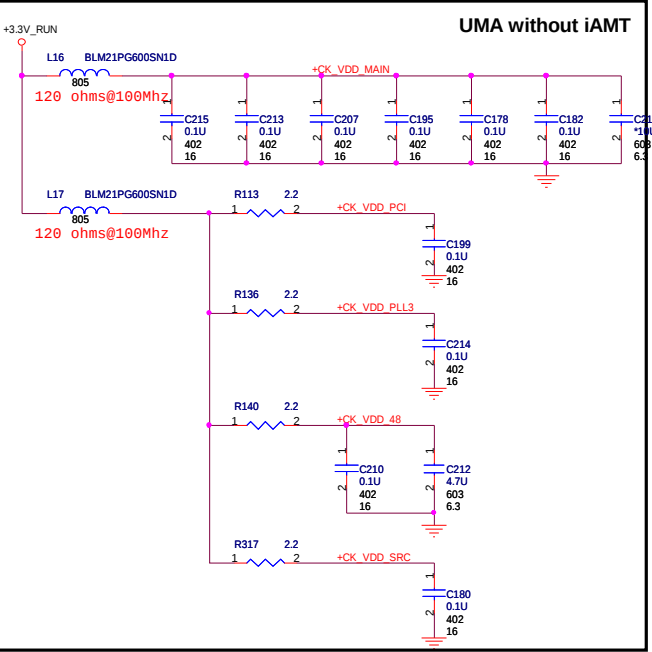
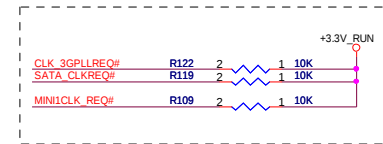
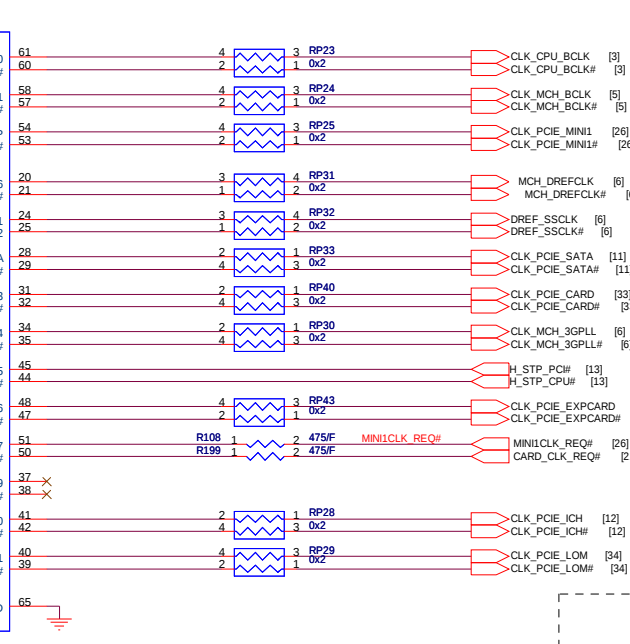
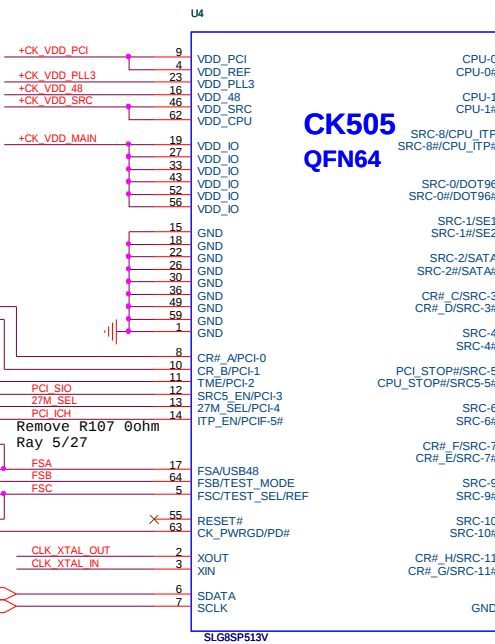
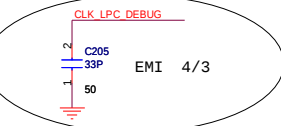
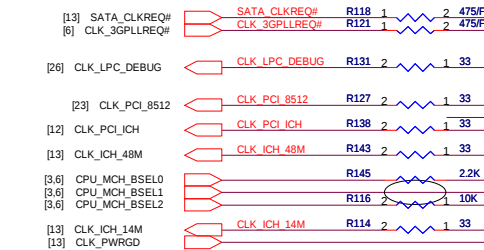
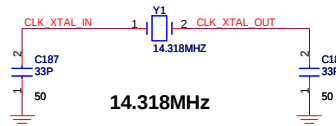
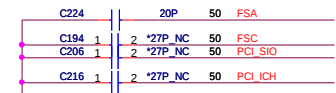
Please these resistor
closely DIMMB,all
trace length<750 mil.

Please these resistor
closely DIMMA,all
trace length<750 mil.



Title DDR2 RES ARRAY		
Size	Document Number VMSM	Rev 1A
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Add capacitor pads for improving WWAN.



FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

27M_SEL (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	96/100M_T	96/100M_C
1 = Disc. GRFX down	SRCT0	SRCC0	27Mout	27MSSout

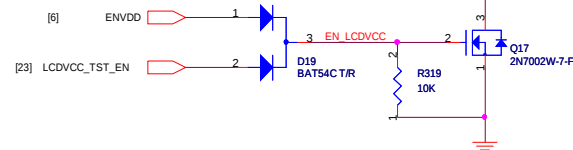
QUANTA COMPUTER

Title: CLOCK GENERATOR

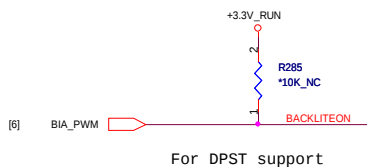
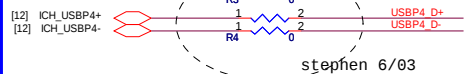
Size: Document Number: VMSM Rev 1A

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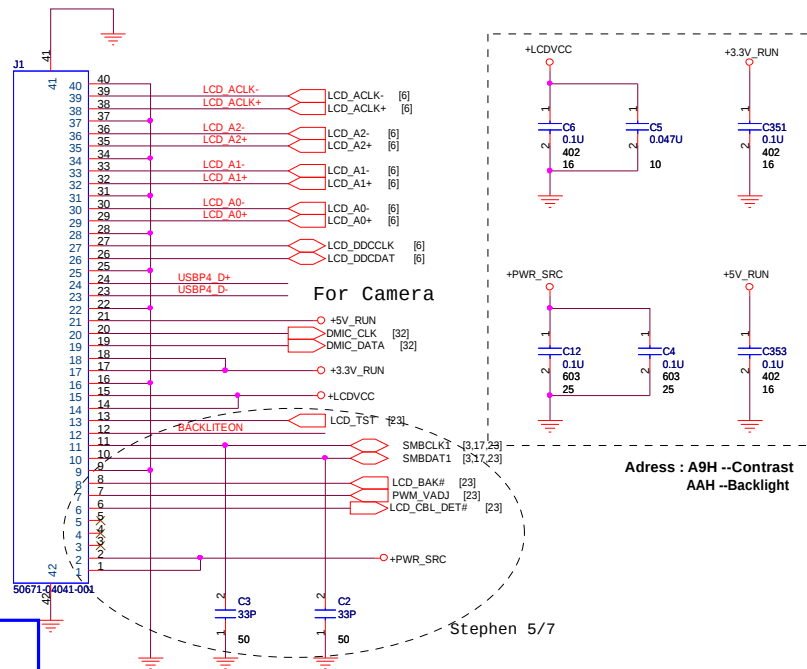
Support the new imbedded diagnostics.



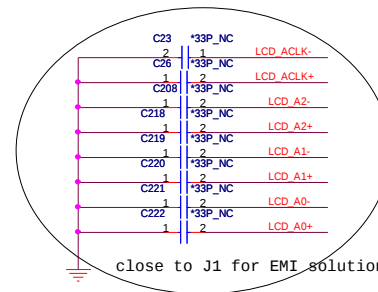
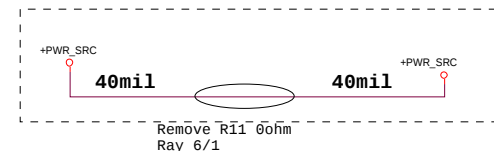
Camera

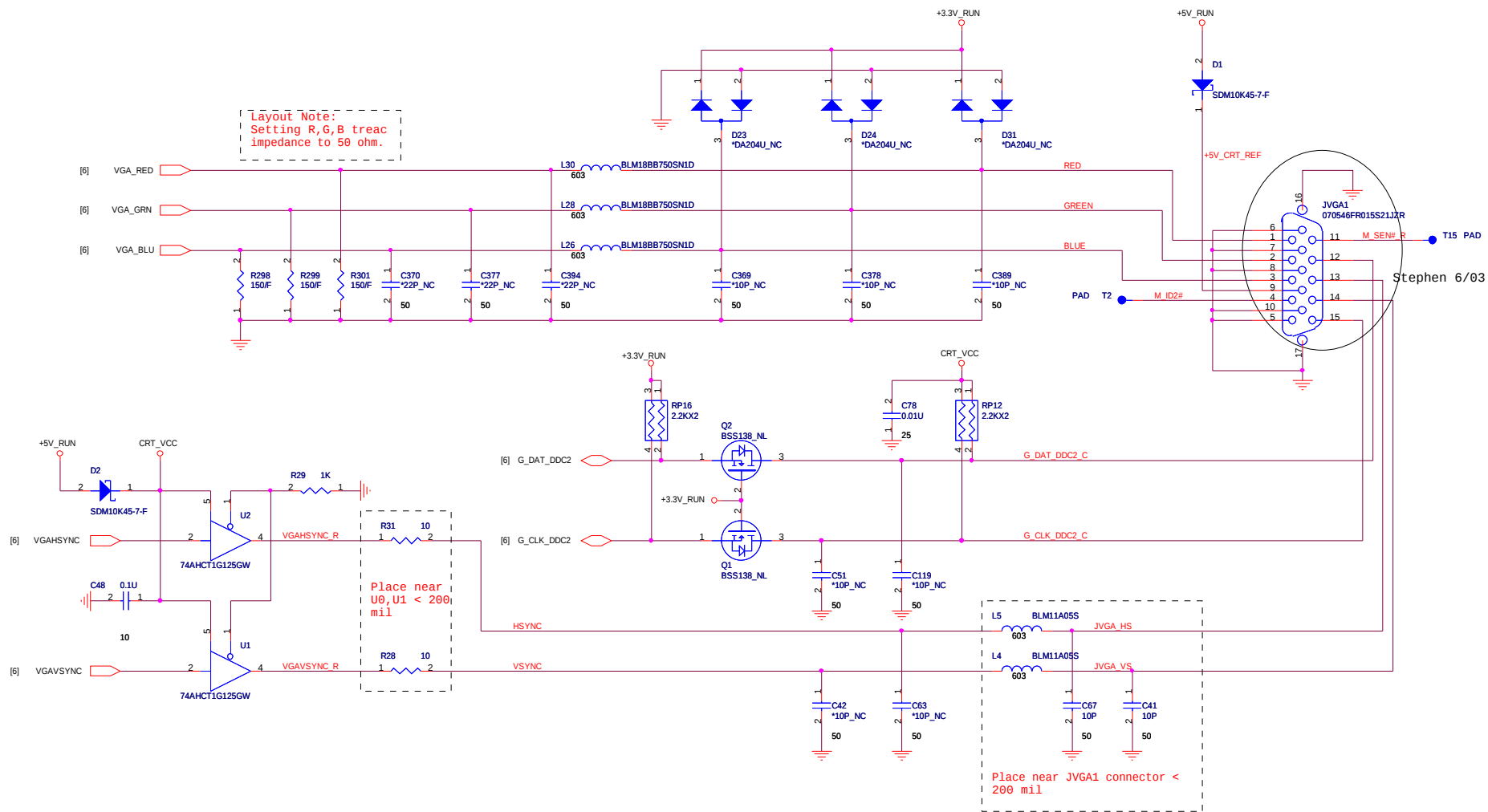


For DPST support



Stephen 5/7

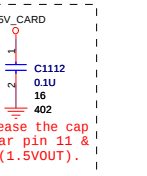
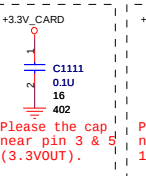
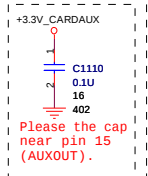
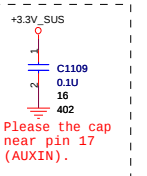
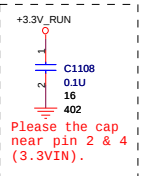
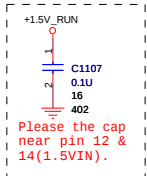
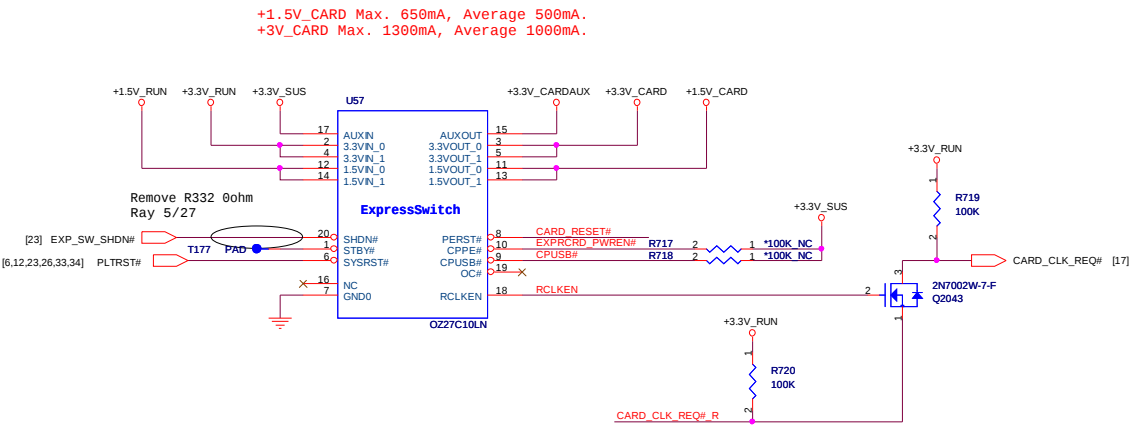
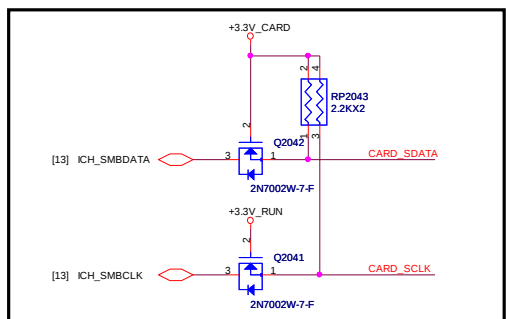
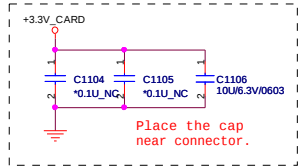
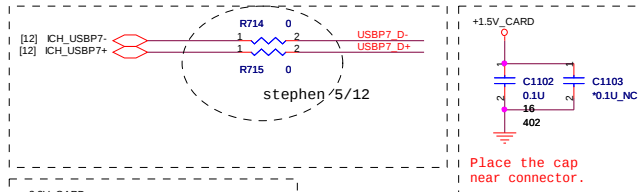




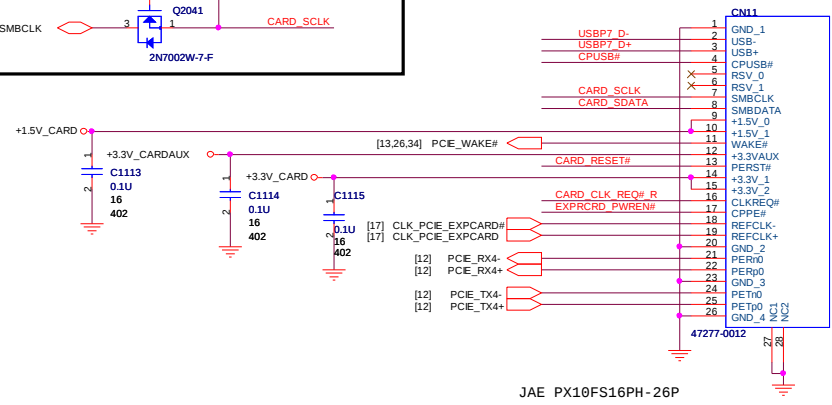
Stephen 6/03

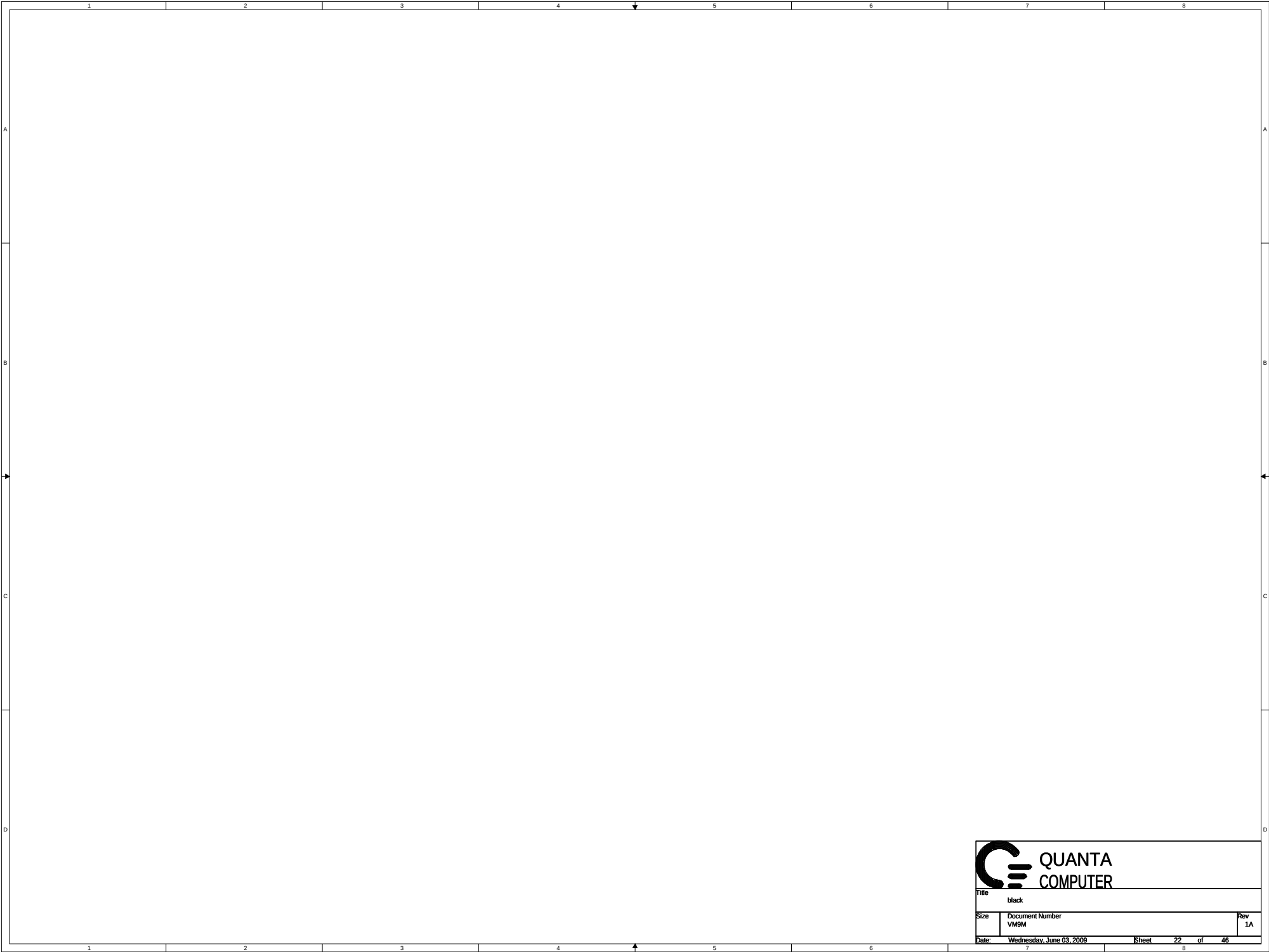
	A	B	C	D	E
1					
2					
3					
4					

		QUANTA COMPUTER	
Title		Card Reader-RTS5158E	
Size	Document Number	Rev	
	VM9M	1A	
Date: Wednesday, June 03, 2009		Sheet	20 of 46



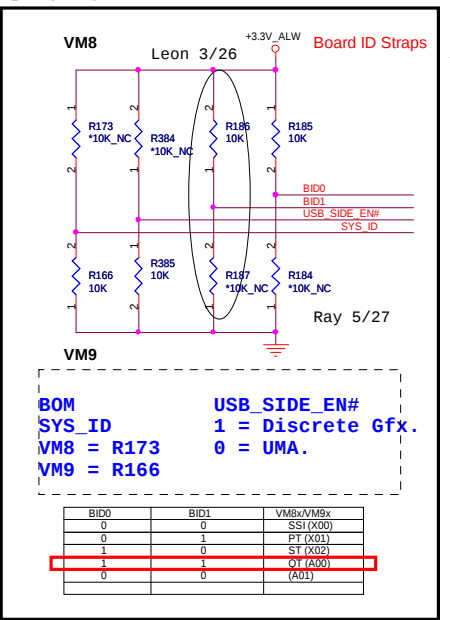
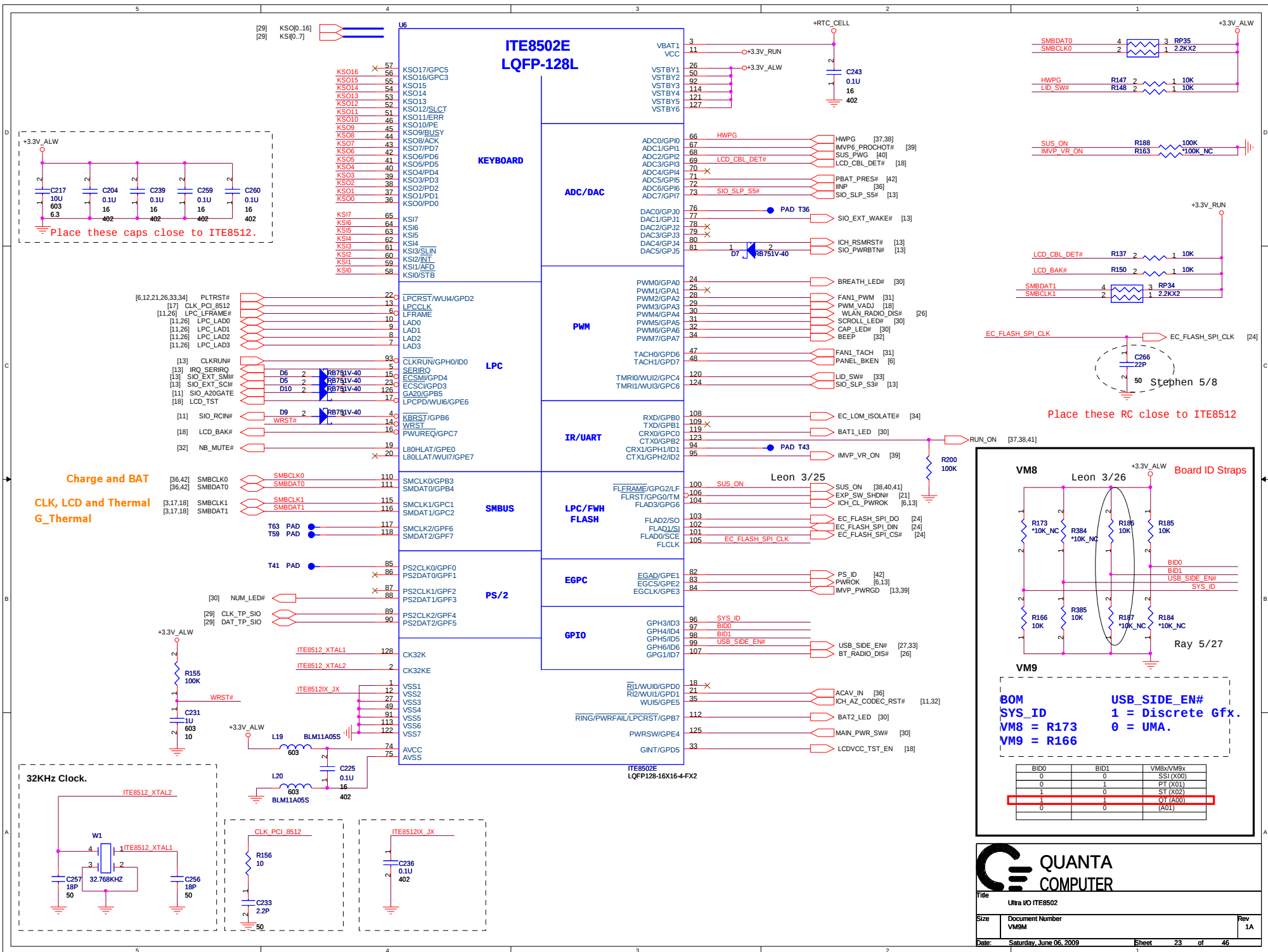
Express Card





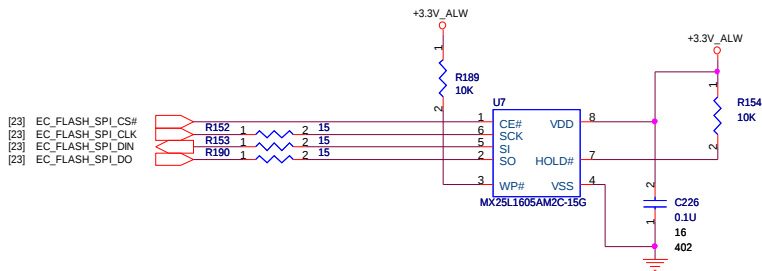
QUANTA
COMPUTER

Title		black	
Size	Document Number		Rev
	VM9M		1A
Date:	Wednesday, June 03, 2009		Sheet 22 of 46

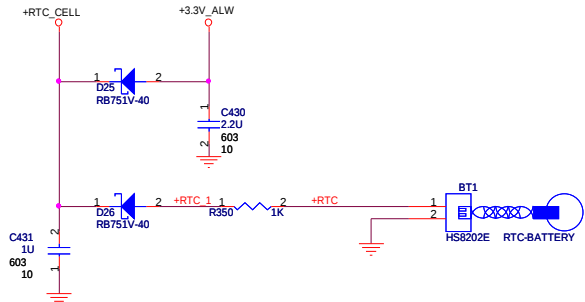


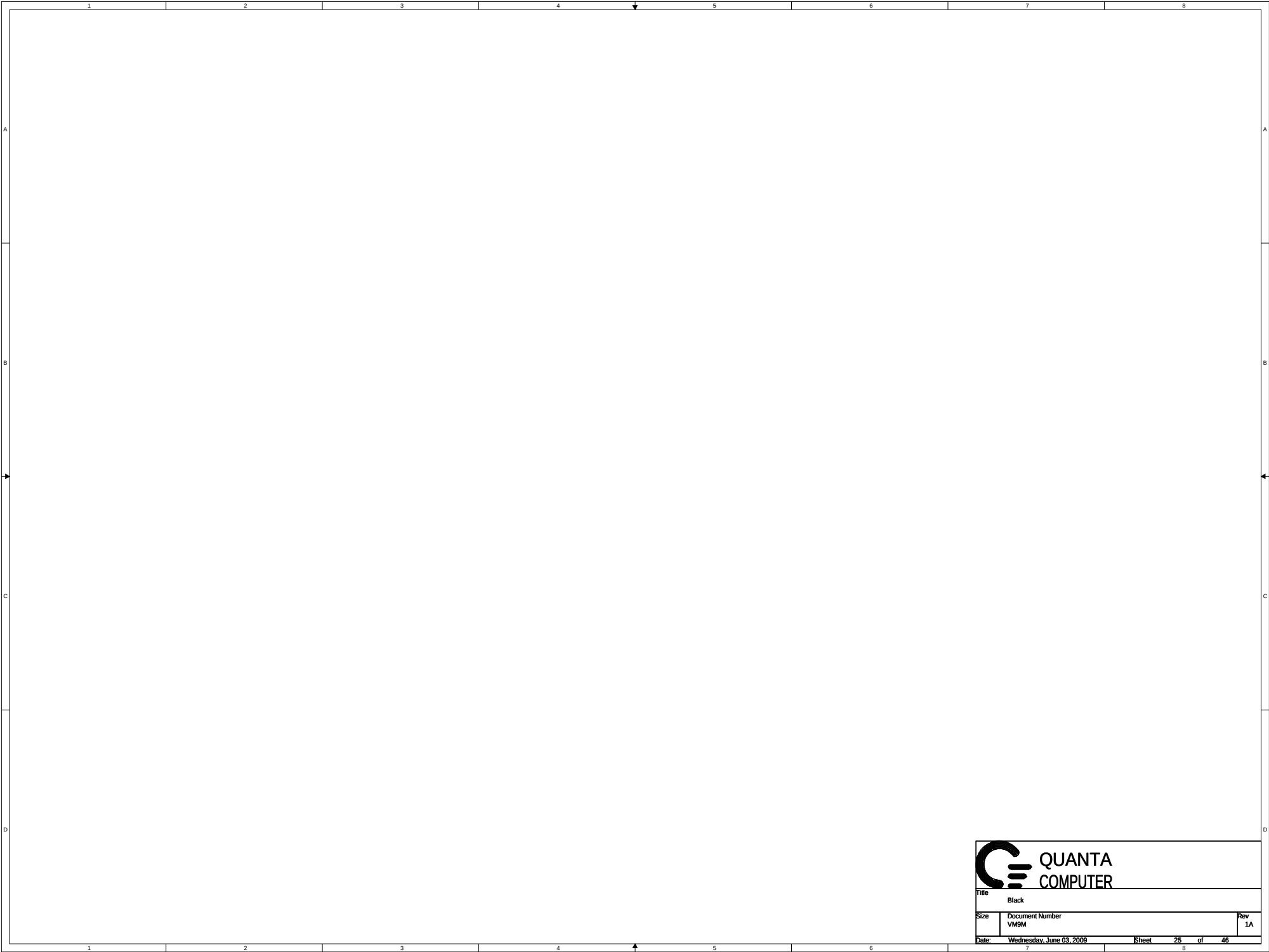
BOM				USB_SIDE_EN#			
SYS_ID				1 = Discrete Gfx.			
VM8 = R173				0 = UMA.			
VM9 = R166							
BID0	BID1	VM8x/VM9x		BID0	BID1	VM8x/VM9x	
0	0	SSI (X00)		0	0	PT (X01)	
1	0	ST (X02)		1	0	OT (A00)	
1	1	OT (A00)		1	1	OT (A00)	
0	0	(A01)		0	0	(A01)	

16Mbit (2M Byte), SPI



RTC BATTERY

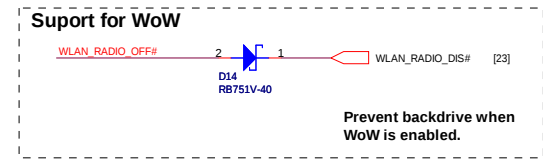
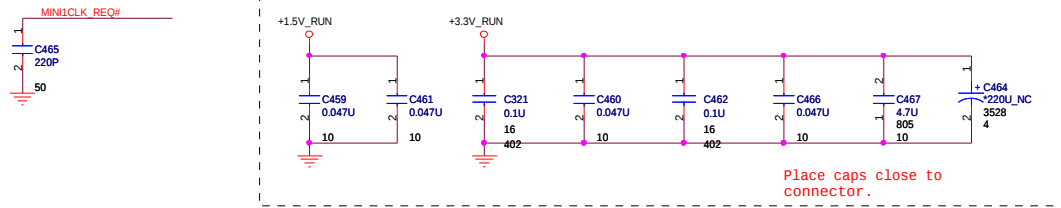
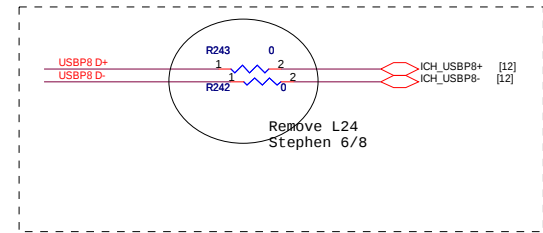
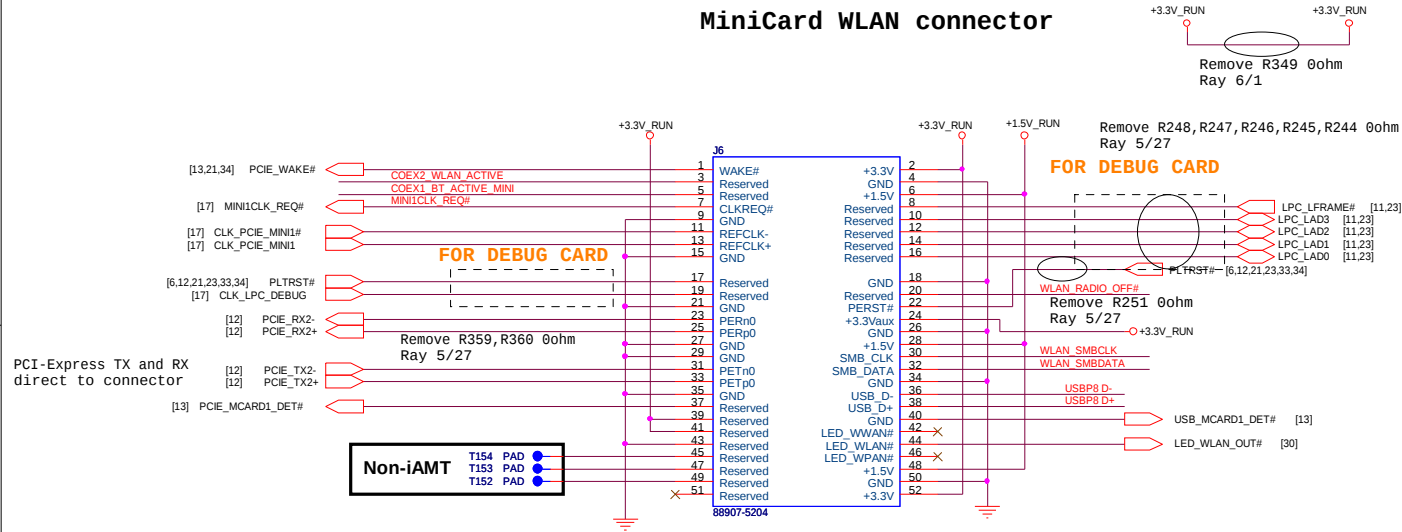




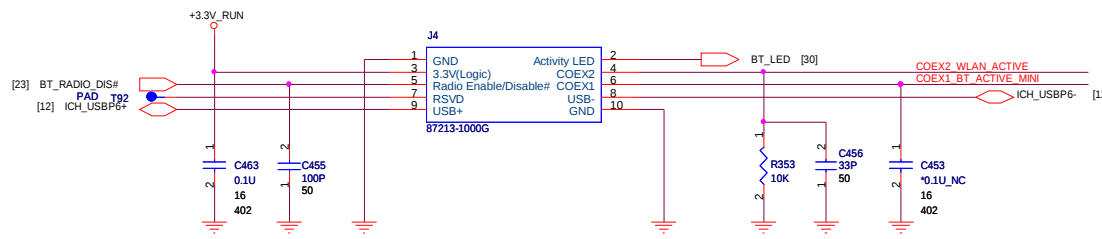
QUANTA
COMPUTER

Title		Black	
Size	Document Number		Rev
	VM9M		1A
Date:	Wednesday, June 03, 2009		Sheet 25 of 46

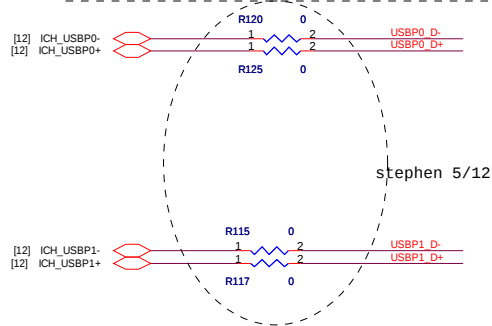
MiniCard WLAN connector



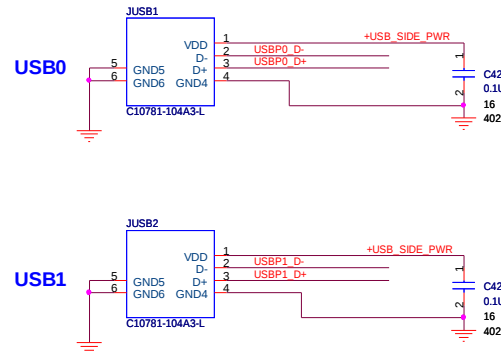
Bluetooth



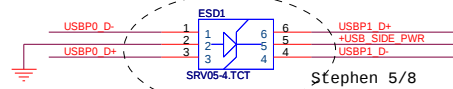
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



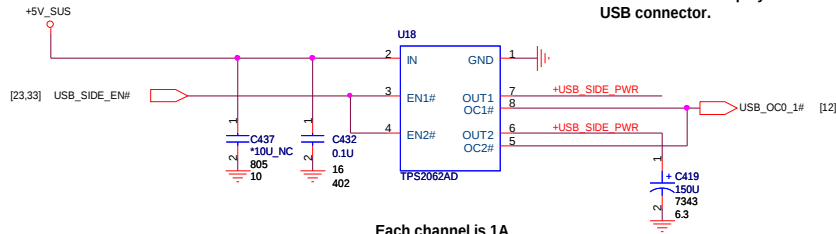
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.



Place ESD diodes as close as USB connector.

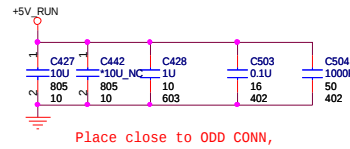
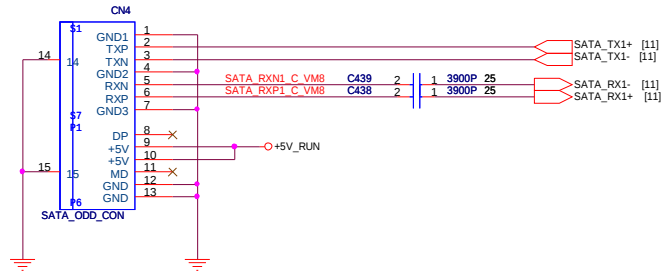
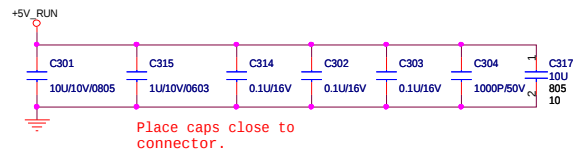
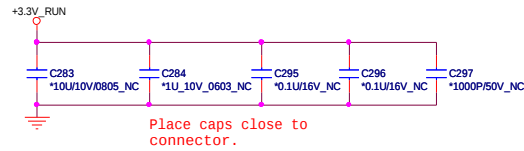
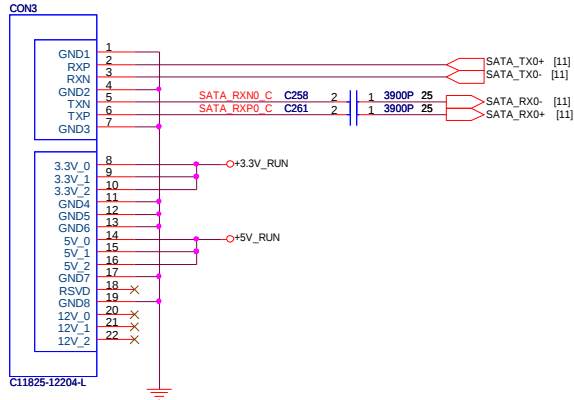


Place one 150uF cap by each USB connector.

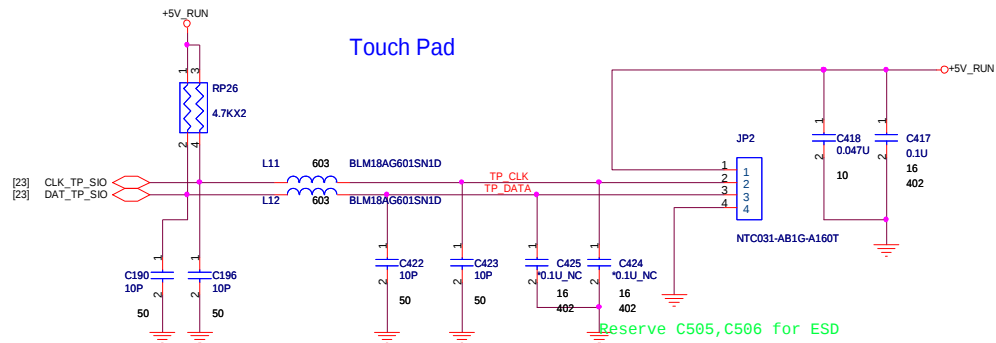


SATA HDD Connector.

SATA ODD Connector.

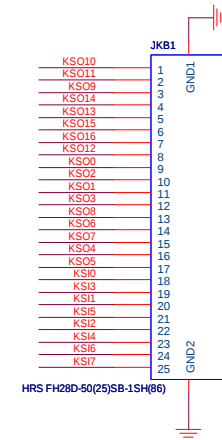


Title		
SATA (HDD&CD_ROM)		
Size	Document Number	Rev
VM9M		1A
Date:	Wednesday, June 03, 2009	Sheet 28 of 46

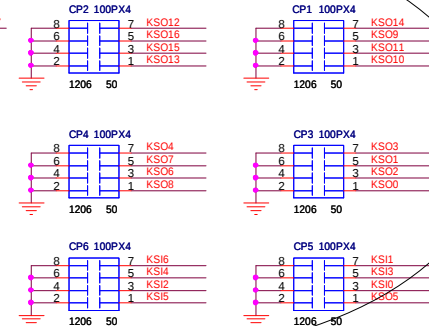


KEYBOARD CONNECTOR

[23] KSO[0..16]
[23] KSI[0..7]



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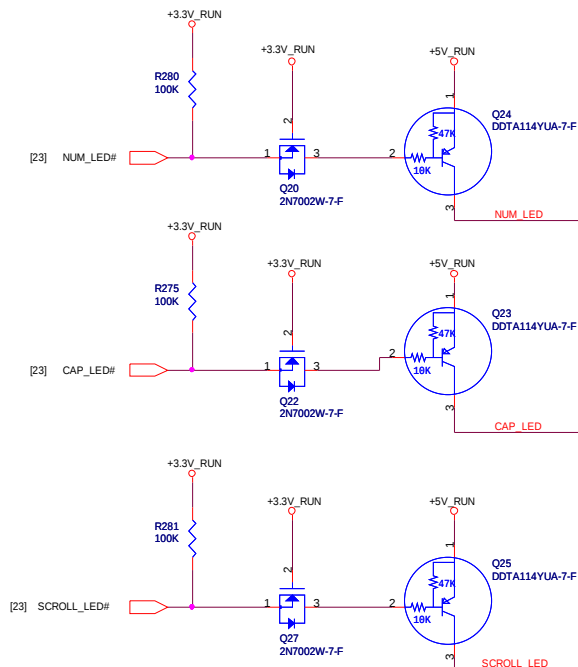


100P CAPS CLOSE TO JKB1

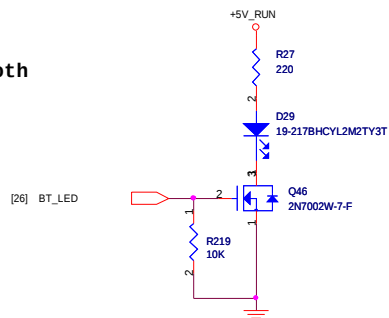


Title		
TOUCH PAD, BULE TOOTH & FIR		
Size	Document Number	Rev
	VMSM	1A
Date:	Wednesday, June 03, 2009	Sheet 29 of 46

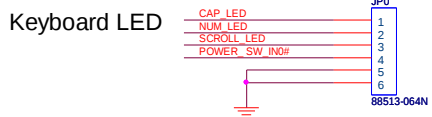
Keyboard LED



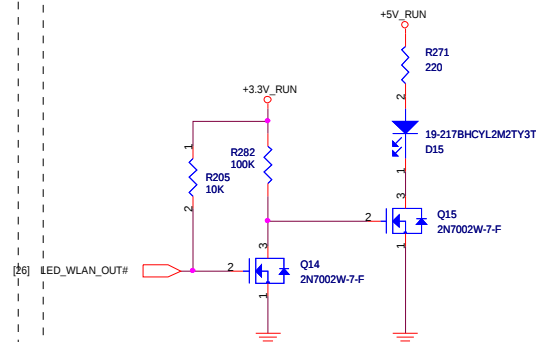
Bluetooth



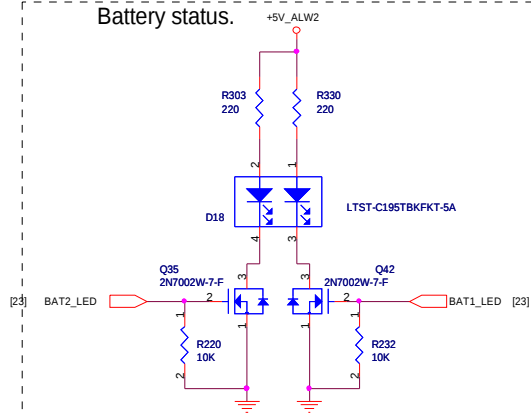
Dash board connector



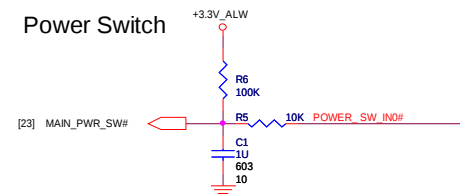
WLAN



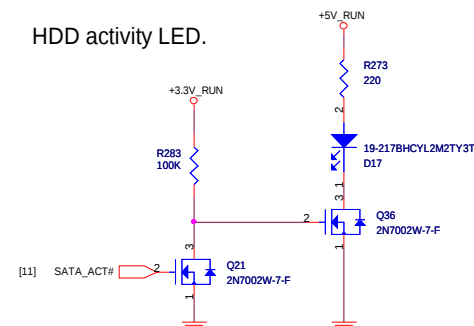
Battery status.



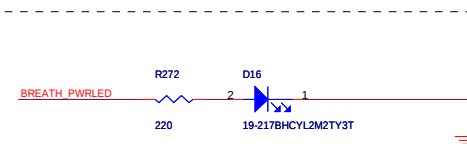
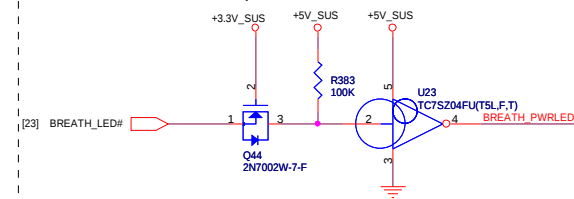
Power Switch



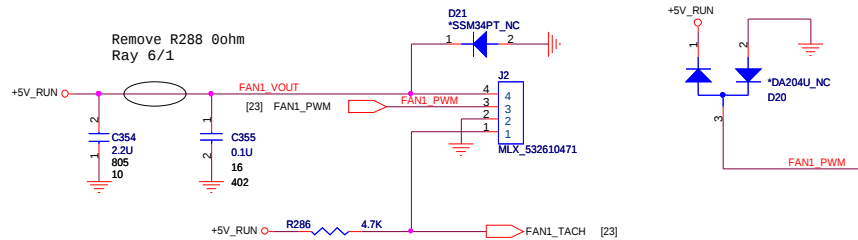
HDD activity LED.

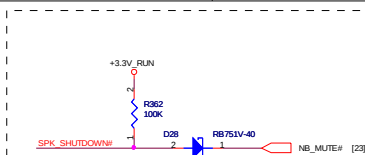


Power & Suspend.

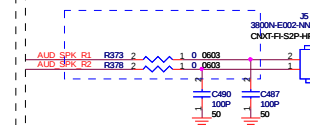


Title	SWITCH, KEYBOARD & LED		
Size	Document Number	Rev	
	VM9M	1A	
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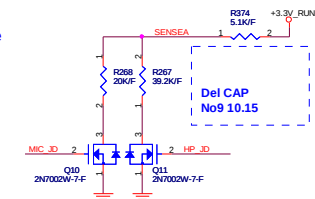




Speakers conn



Jack
Sense



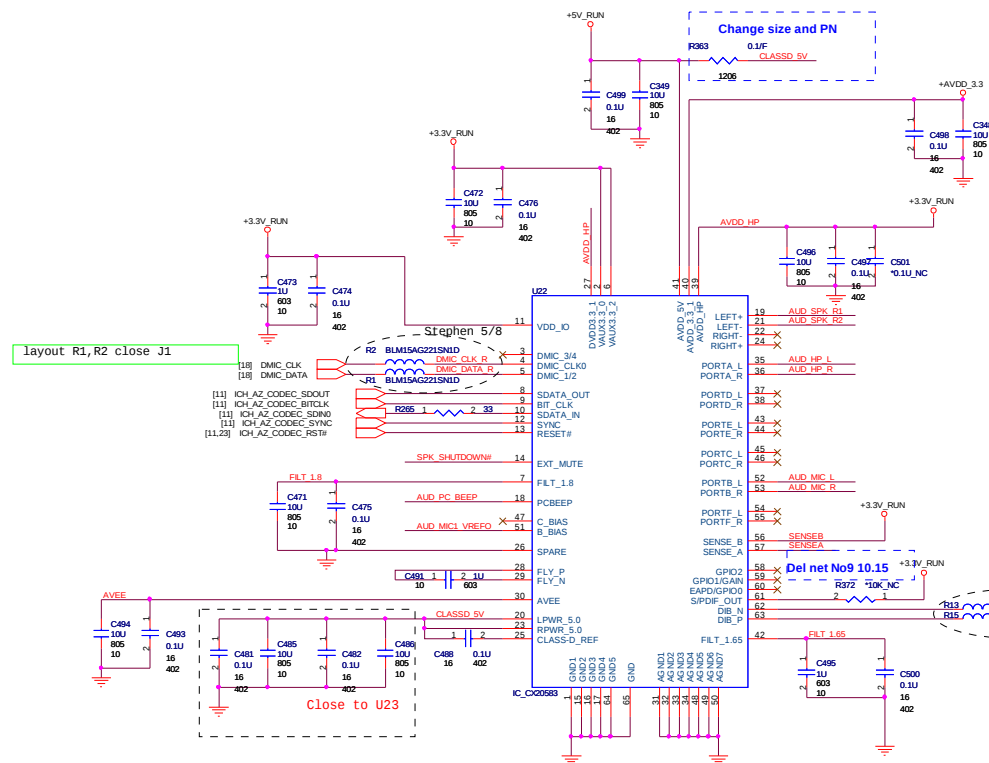
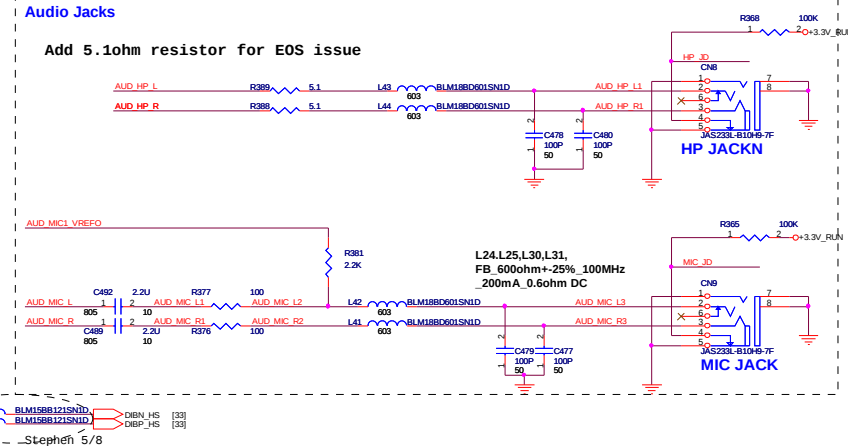
PC BEEP

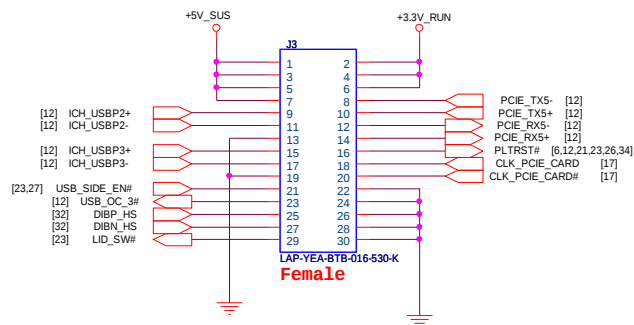
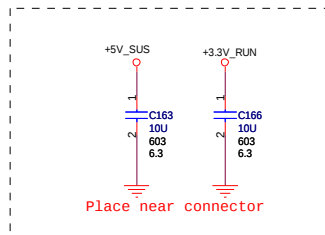
Close to U5



Audio Jacks

Add 5.1ohm resistor for EOS issue





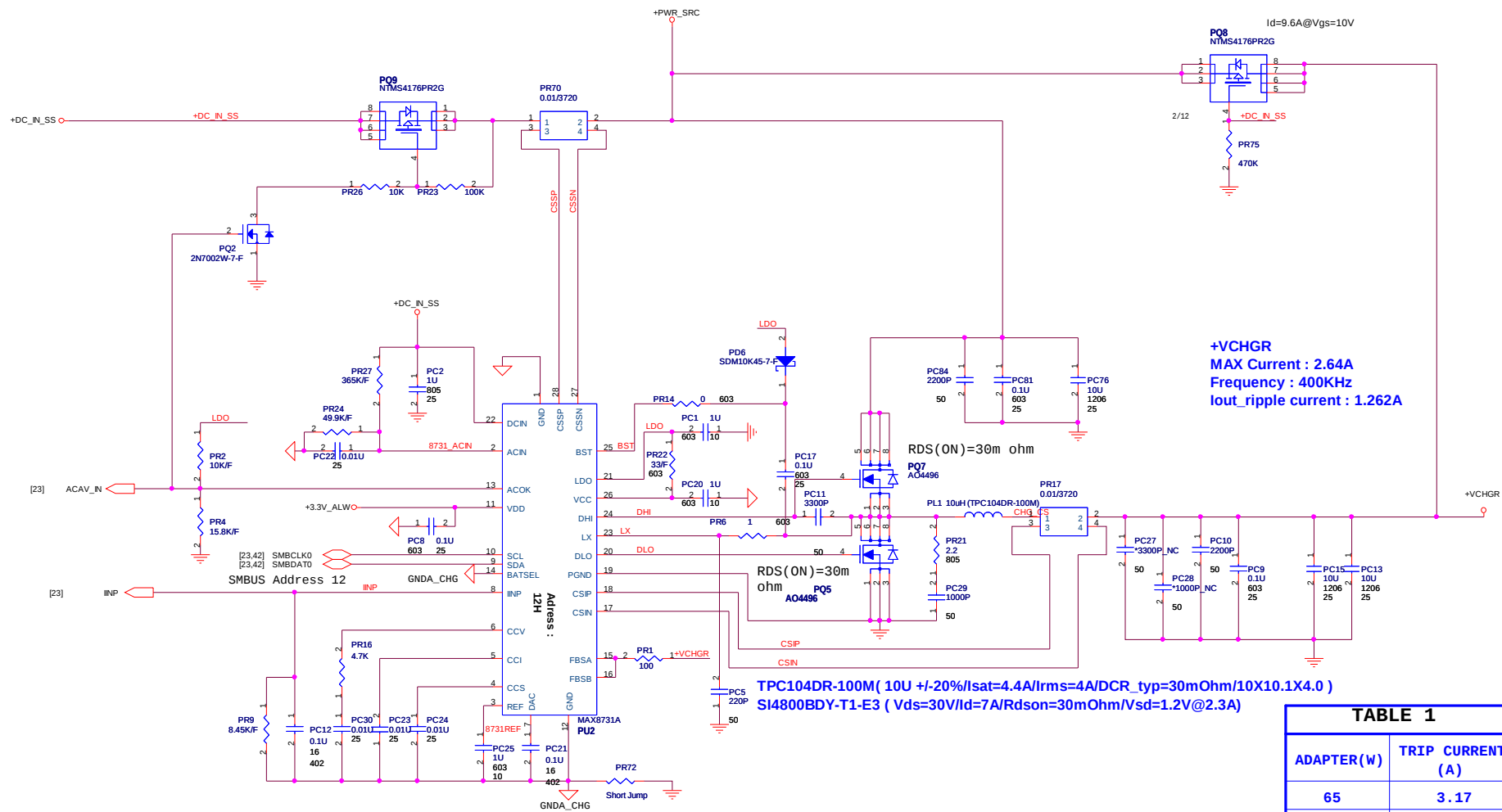
Board to board connector (Modem Card + Cardreader+1394a+ 2 USB Port)

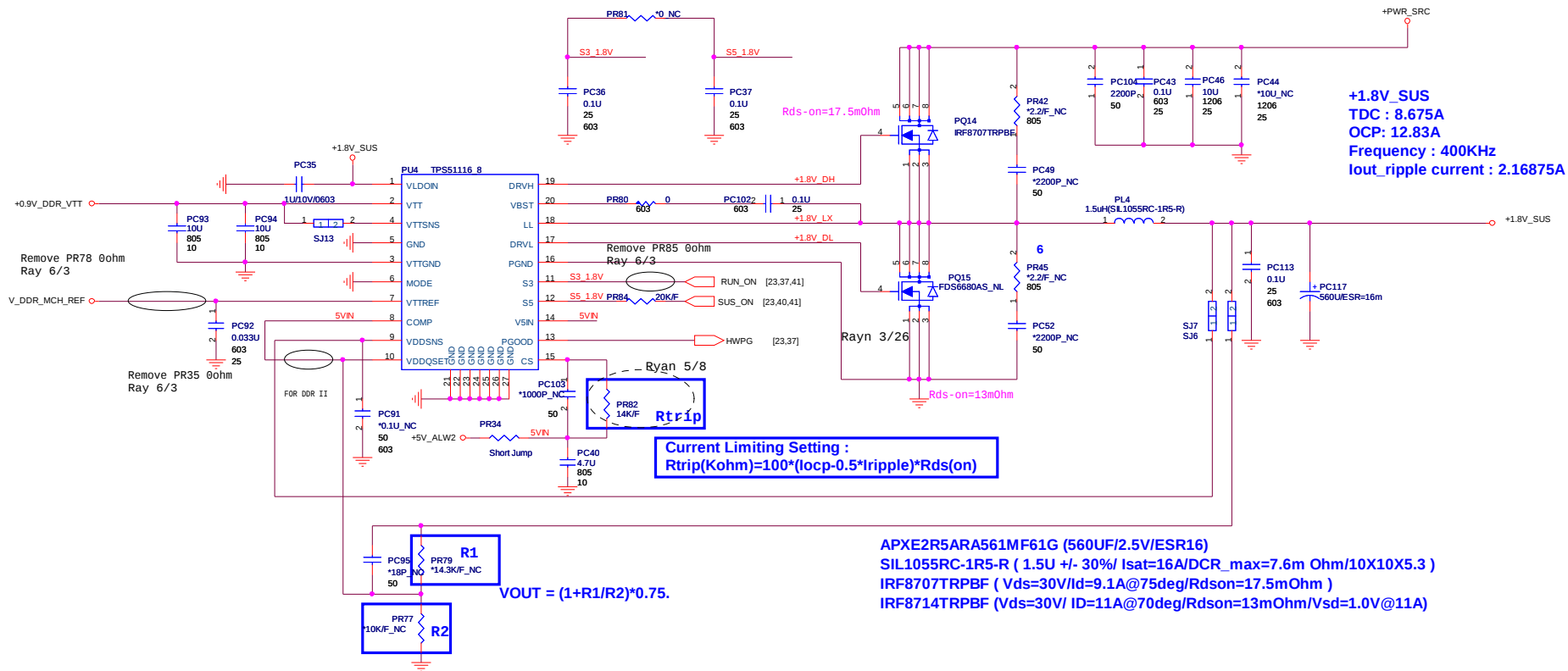
1	2	3	4	5	6	7	8
A							A
B							B
C							C
D							D
1	2	3	4	5	6	7	8

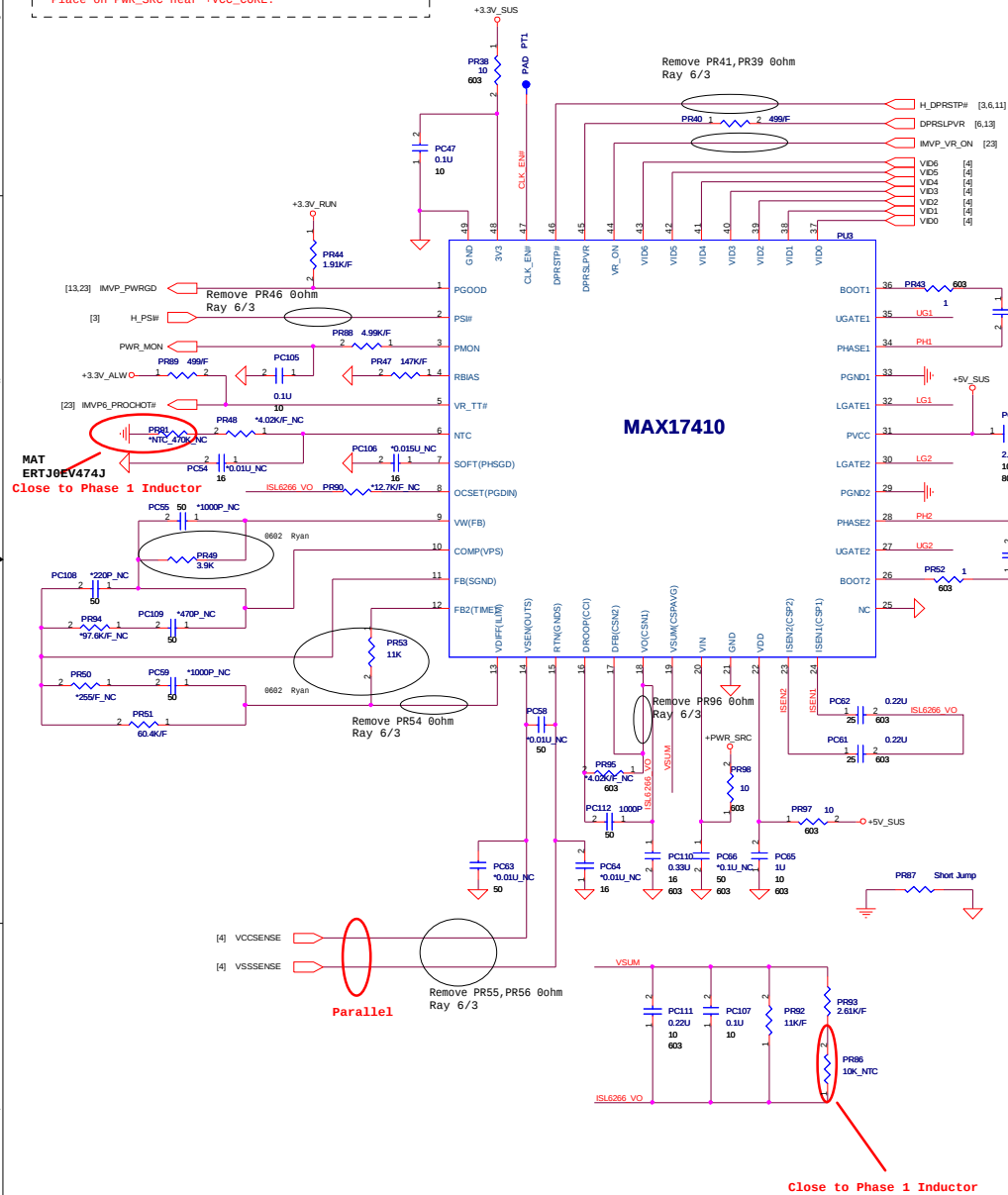
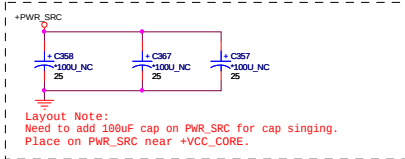


QUANTA
COMPUTER

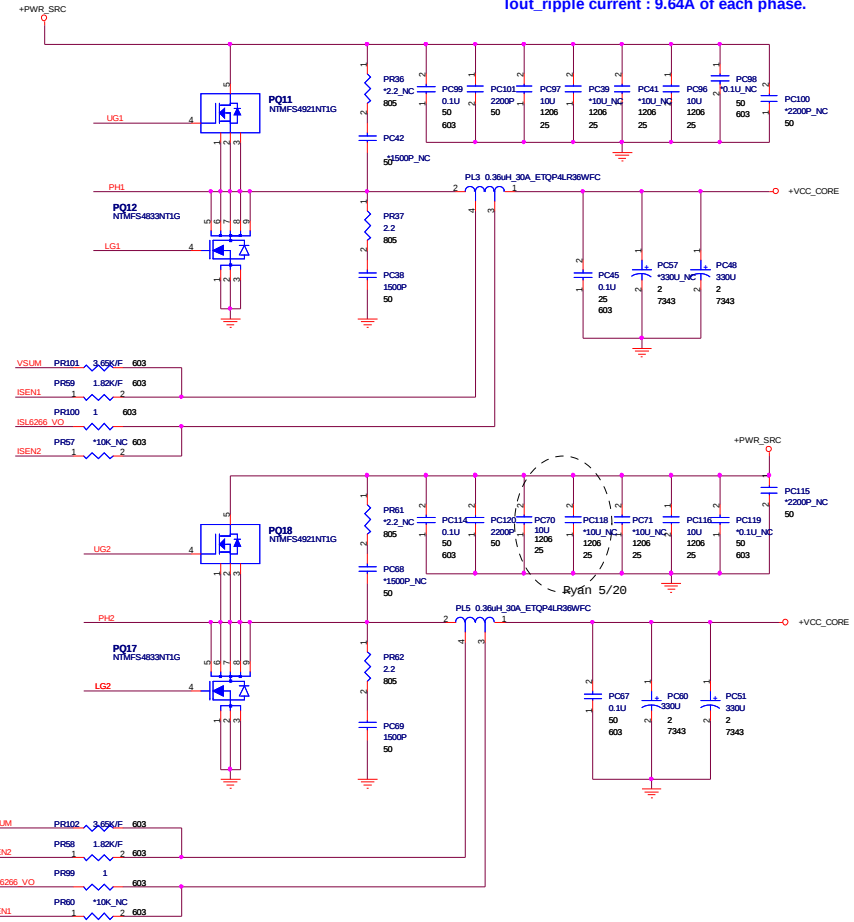
Title		System Reset Circuit	
Size	Document Number	Rev	
	VM9M	1A	
Date:	Wednesday, June 03, 2009	Sheet	35 of 46







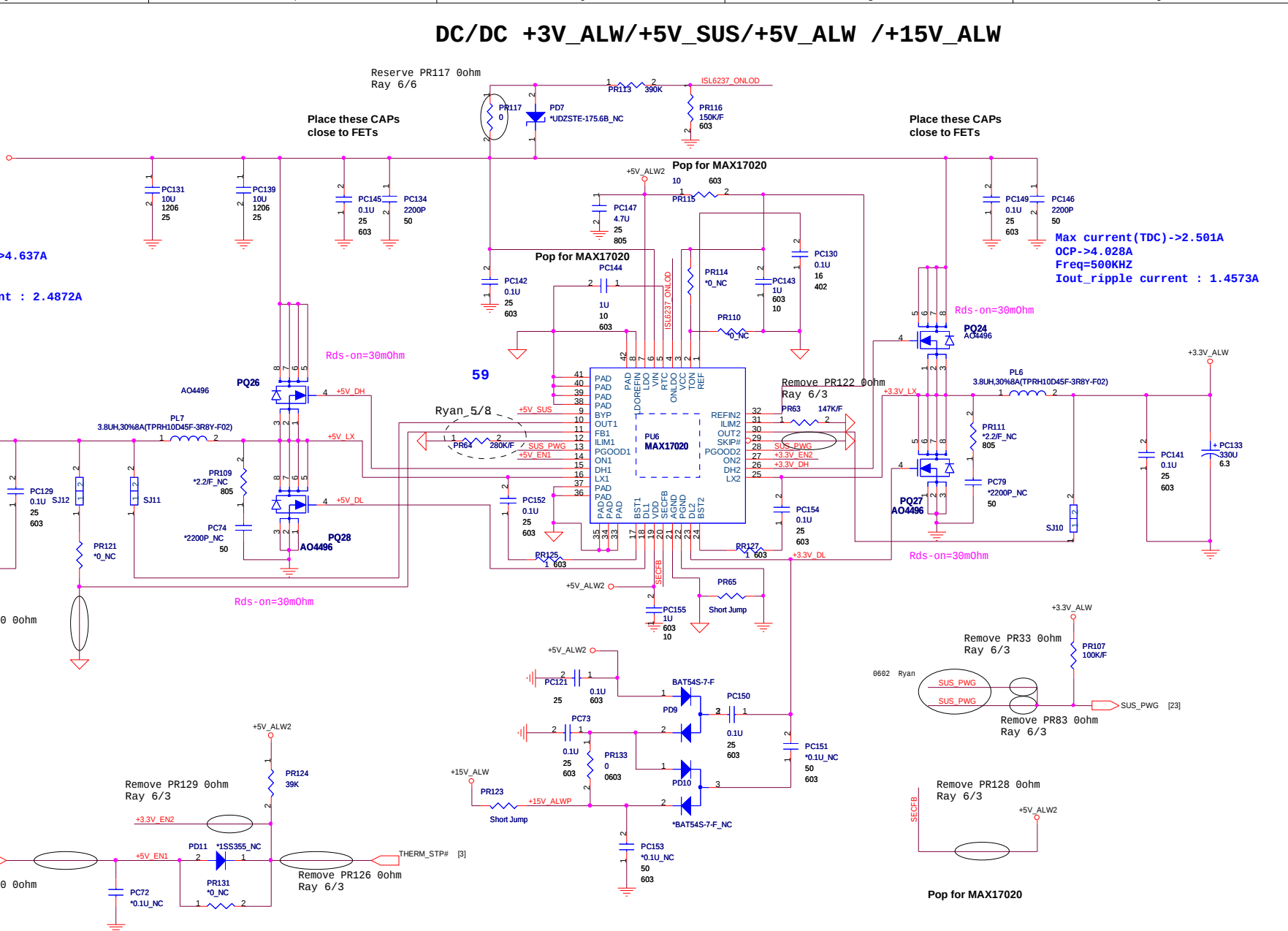
+VCC_CORE
TDC : 35A
MAX:47A
Frequency : 300KHz
Iout_ripple current : 9.64A of each phase.



D6	D5	D4	D3	D2	D1	D0	Output
0	0	0	0	0	0	0	1.500V
0	0	0	0	0	1	1	1.4875
0	0	0	0	1	0	1	1.4375
0	0	0	1	1	1	1	1.4125
0	0	1	0	0	0	1	1.4000
0	0	1	0	0	1	1	1.2875
0	0	1	1	0	0	0	1.2000
0	0	1	1	1	0	0	1.1500
0	1	0	1	0	0	0	1.0000
0	1	0	1	0	1	1	0.9625
0	1	1	1	0	0	0	0.7500
1	0	0	1	0	0	0	0.6500
1	0	1	0	0	0	0	0.5000
1	1	0	0	0	0	0	0.3000

ETQP4LR36WFC (0.36U +/- 20% Isat=24A/DCR_max=1.1m Ohm/11.5X10X4)
NTMFS4921NT1G (Vds=30V/Id=10.2A@85deg/Rdson=10.5mOhm)
NTMFS4946NT1G (Vds=30V/ ID=14.6A@85deg/Rdson=5.1mOhm/Vsd=1.0V@30A)
EEFSXD0331YR (330UF/2V/ESR9)

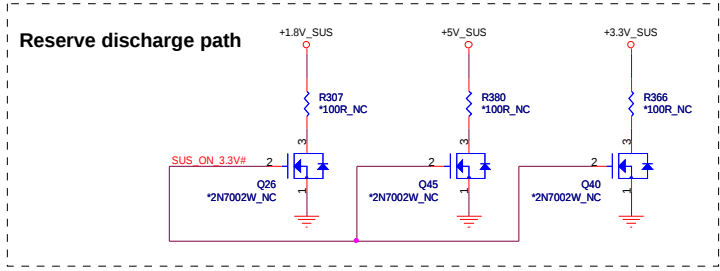
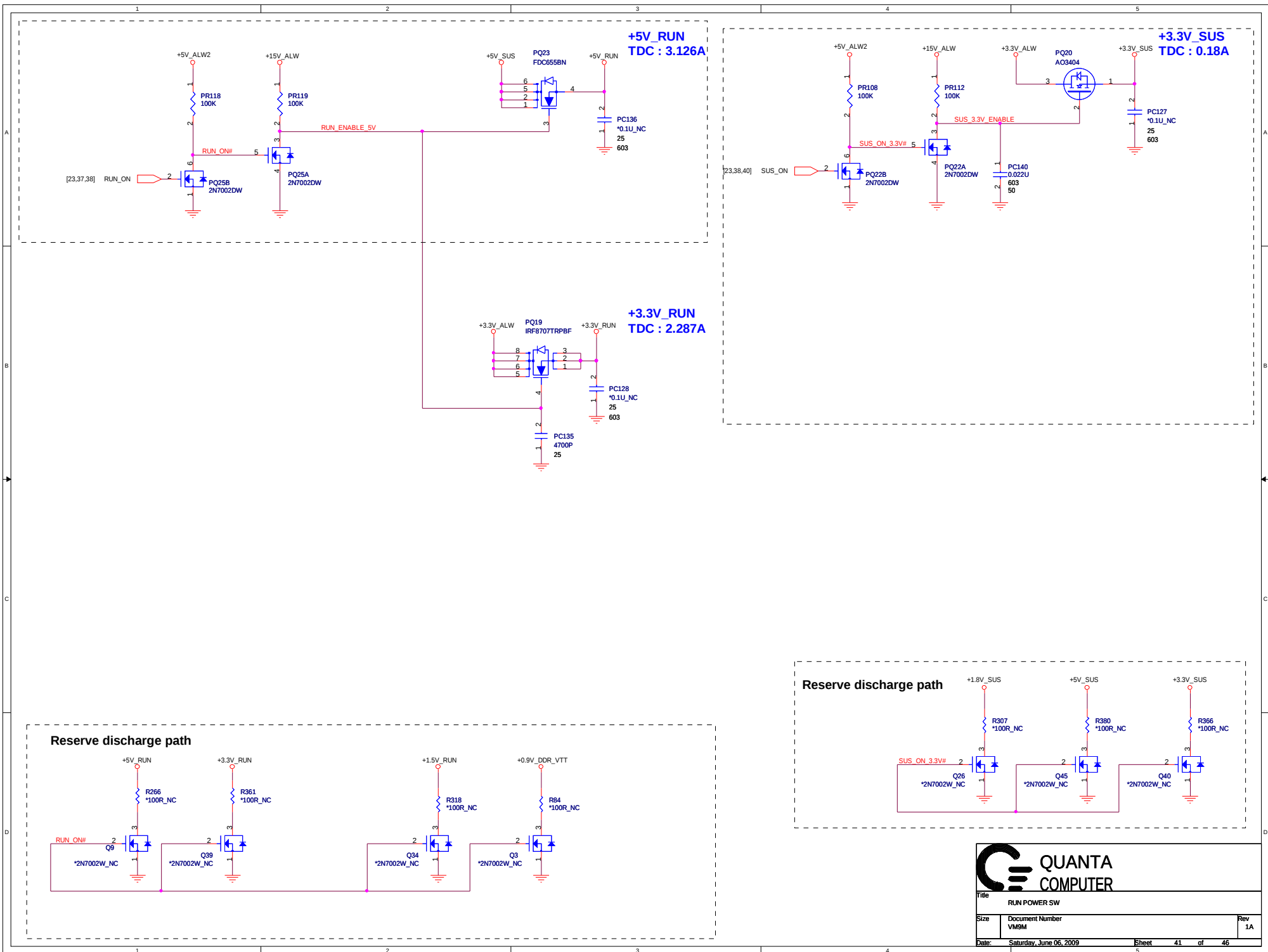




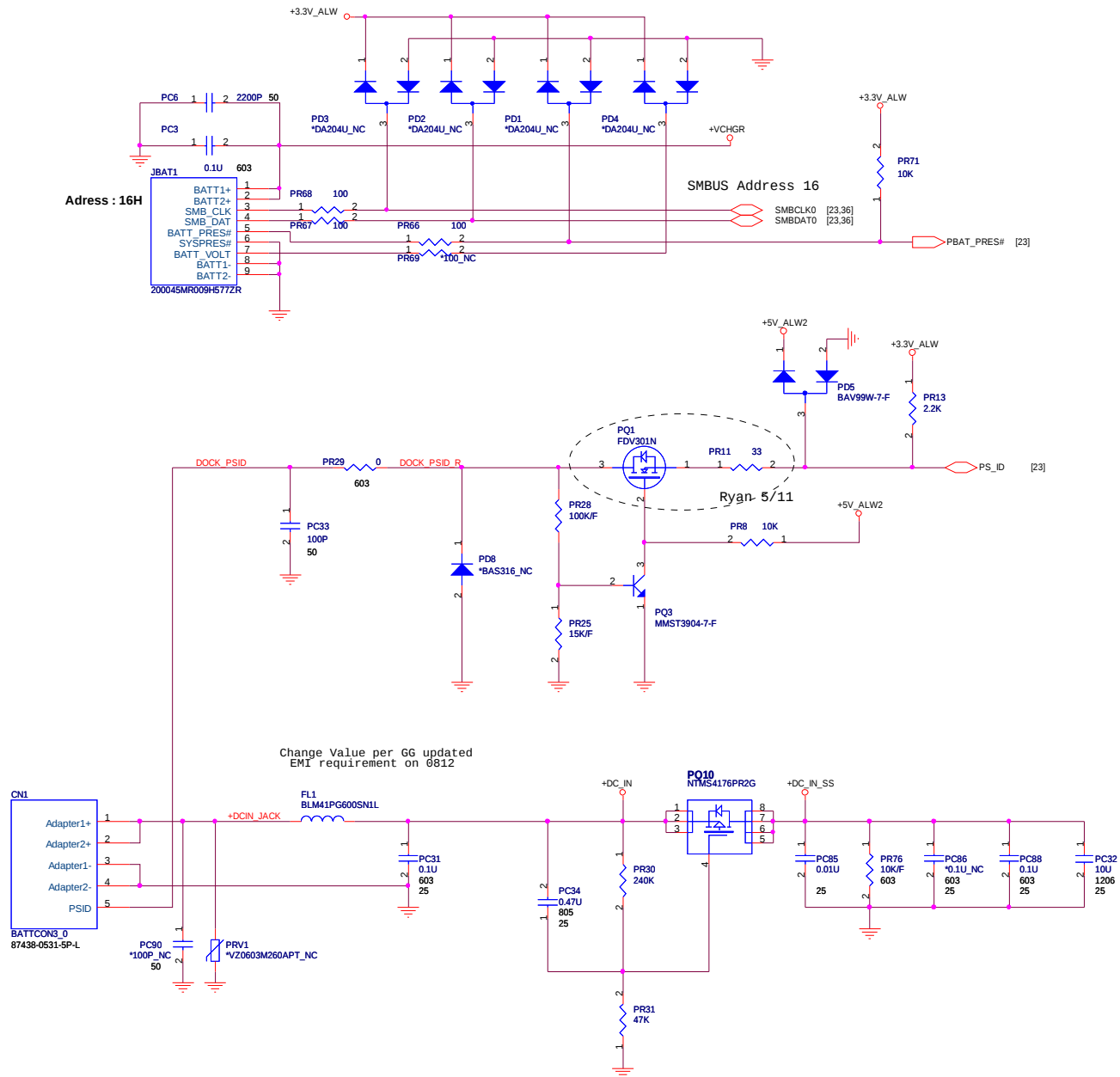
APXE6R3ARA331MF61G (330UF/6.3V/ESR17)	 QANTIA COMPUTER
TPC104DR-3R8Y(3.8U +/- 30%/ Isat=6A/DCR_max=12m Ohm/10X10X4)	
SI4800BDY-T1-E3 (Vds=30V/Id=7A/Rdson=30mOhm/Vsd=1.2V@2.3A)	

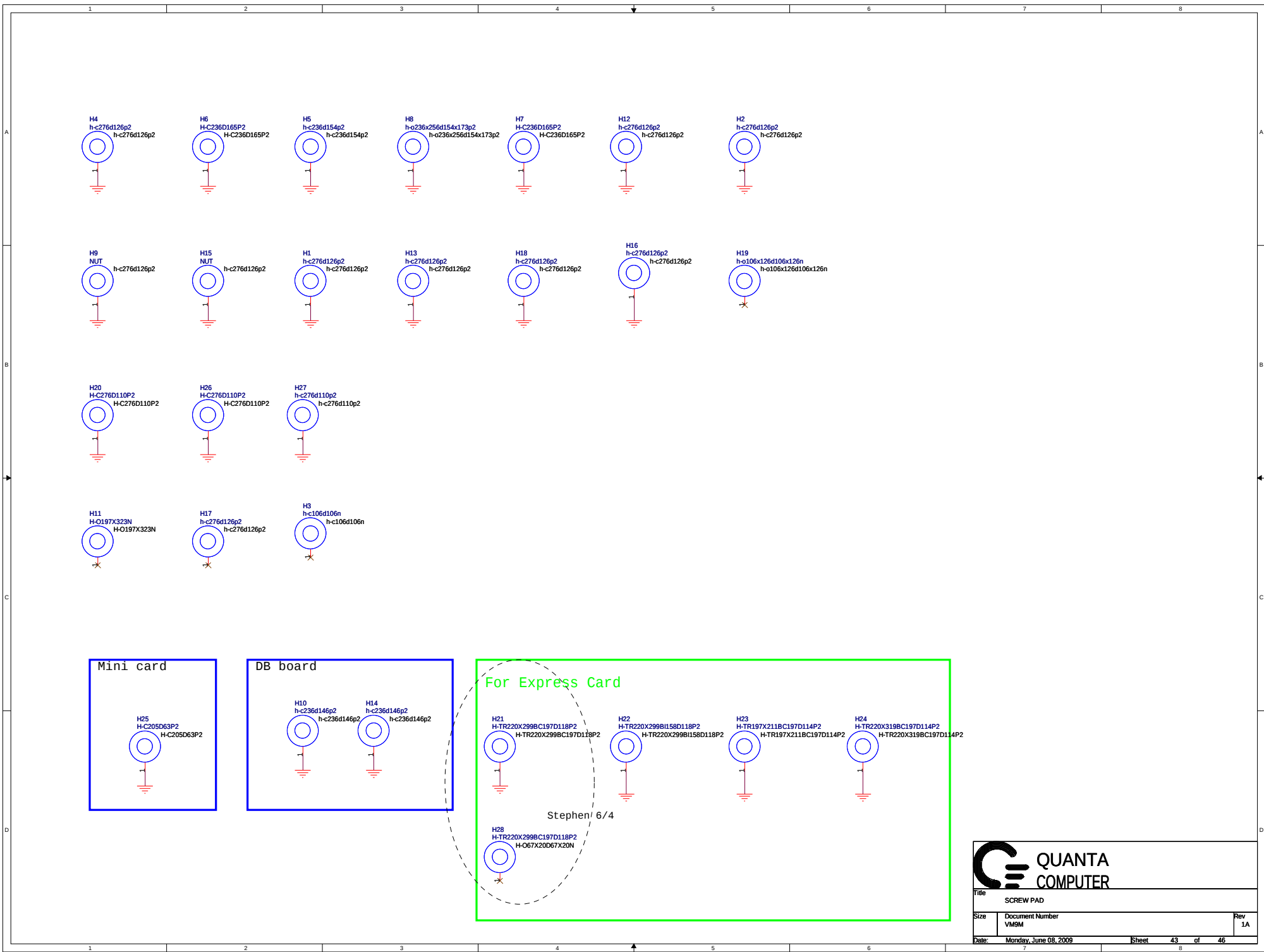


Price:	Current day (open to close)	Price:	40	50	40
		1			

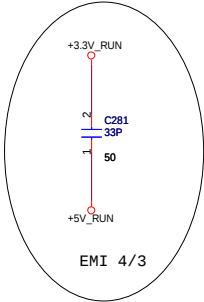


Adress : 16H





Reserved for EMI.



EMI 4/3

