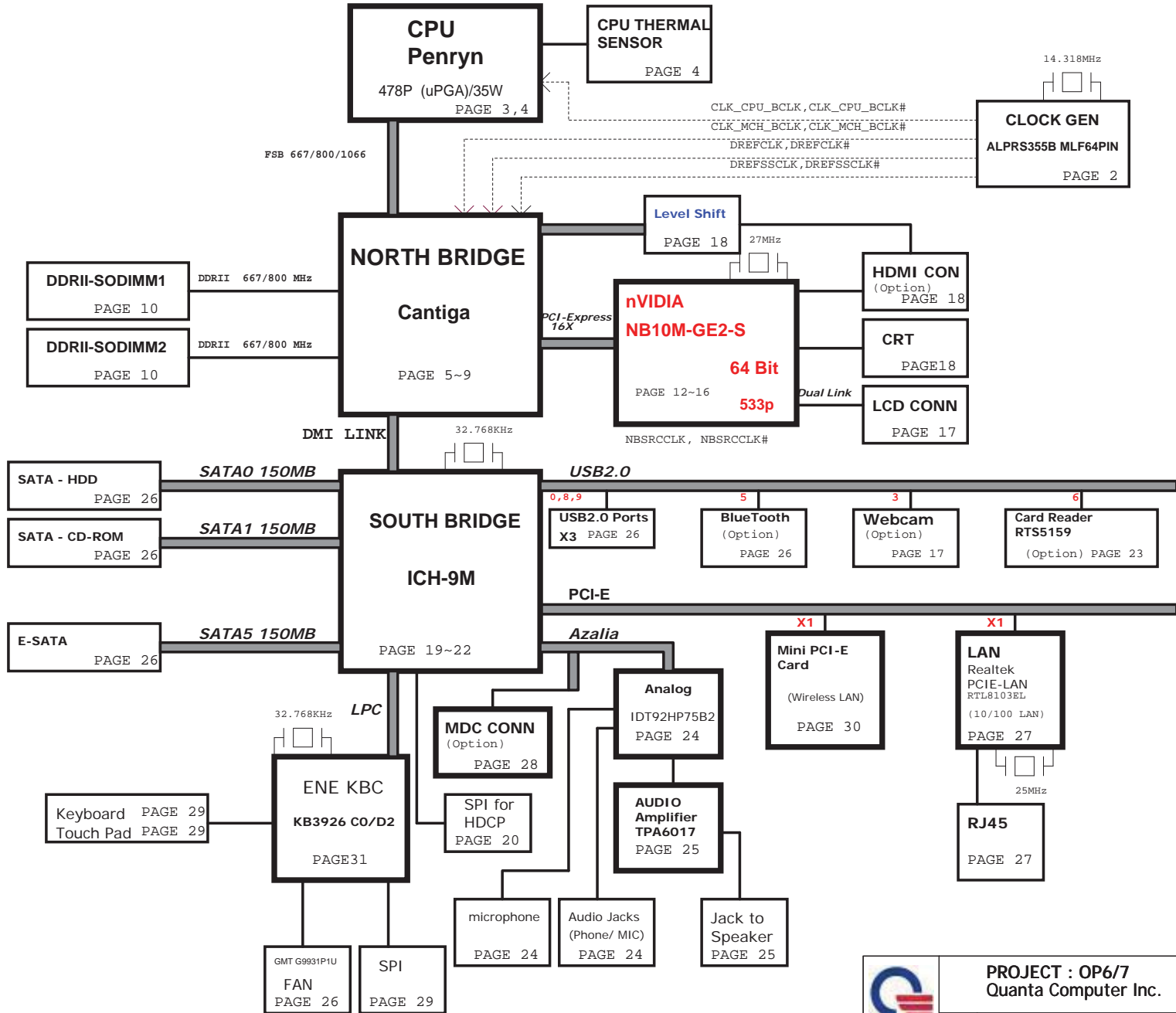


# Tango/Ballet BLOCK DIAGRAM

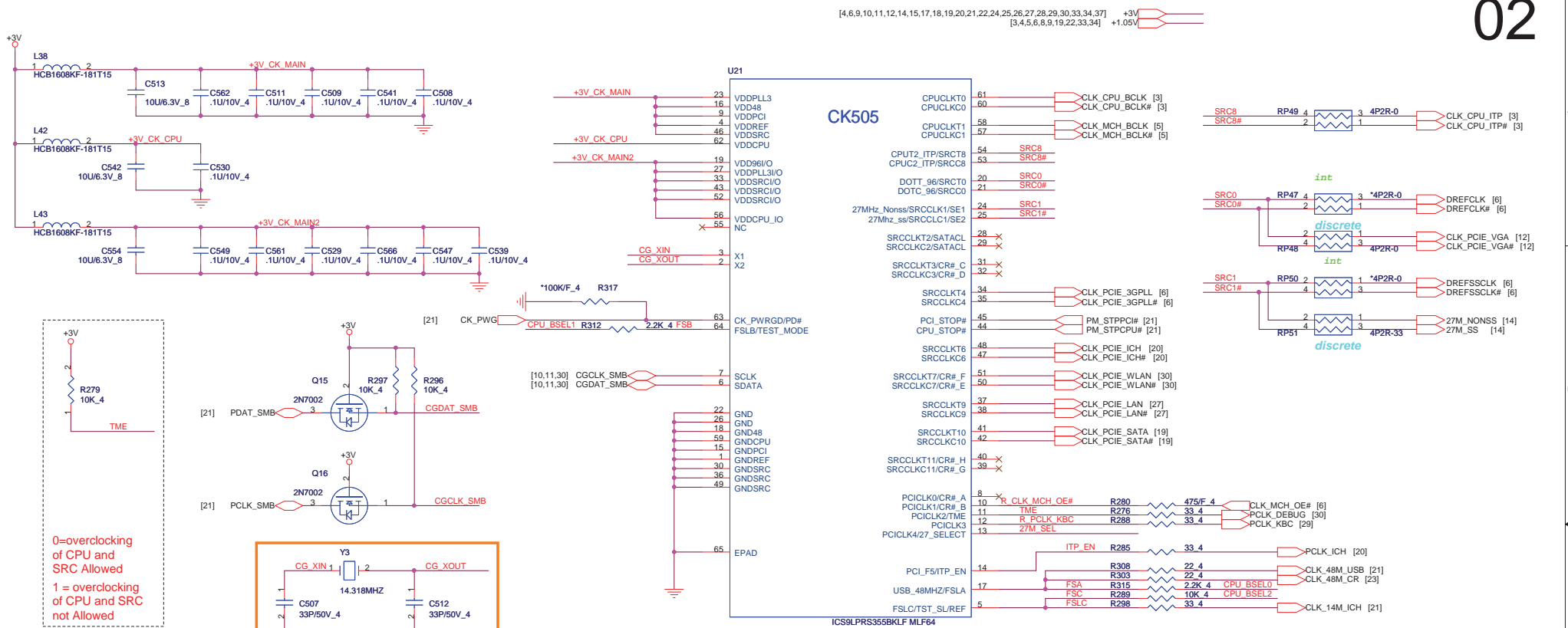
- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : BOT

- SYSTEM CHARGER(ISL6251AHAZ-T)  
PAGE 31
- SYSTEM POWER ISL6237IRZ-T  
PAGE 32
- DDR II SMDDR\_VTERM  
1.8V/1.8VSUS(TPS51116REGR)  
PAGE 36
- VCCP +1.5V AND GMCH  
1.05V(RT8204)  
PAGE 33
- CPU CORE ISL6266A  
PAGE 34

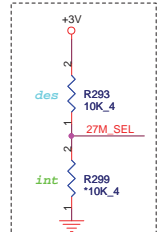


<http://laptop-motherboard-schematic.blogspot.com>

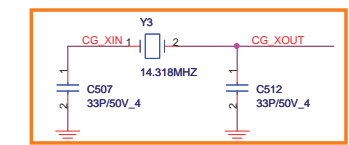
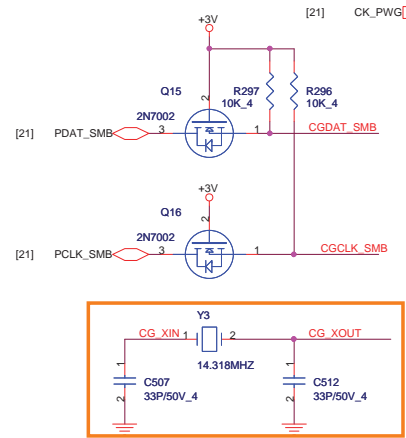
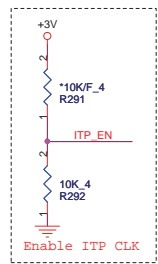
	<b>PROJECT : OP6/7</b>		Rev A
	Quanta Computer Inc.		
Size Custom NF5	Document Number <b>Block Diagram</b>	Date: Tuesday, January 20, 2009	Sheet 1 of 37



0=overclocking of CPU and SRC Allowed  
 SRC Allowed  
 1 = overclocking of CPU and SRC not Allowed



0=UMA  
 1 = External VGA

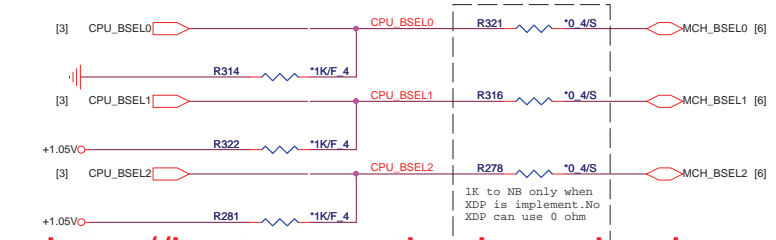


DB:Change from 27P to 33P(TXC suggestion)

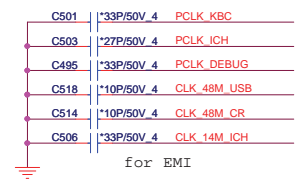
27M_SEL PIN13	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	SRCT1/LCDT_100	SRCT1/LCDT_100
1 = External VGA	SRCT0	SRCC0	27Mout-NSS	27Mout-SS

**CK505 QFN64**  
 Siligo SLG8SP513VTR AL8SP513000  
 Realtek RTM875N-606-VD-GR AL000875000

**CPU Clock select**

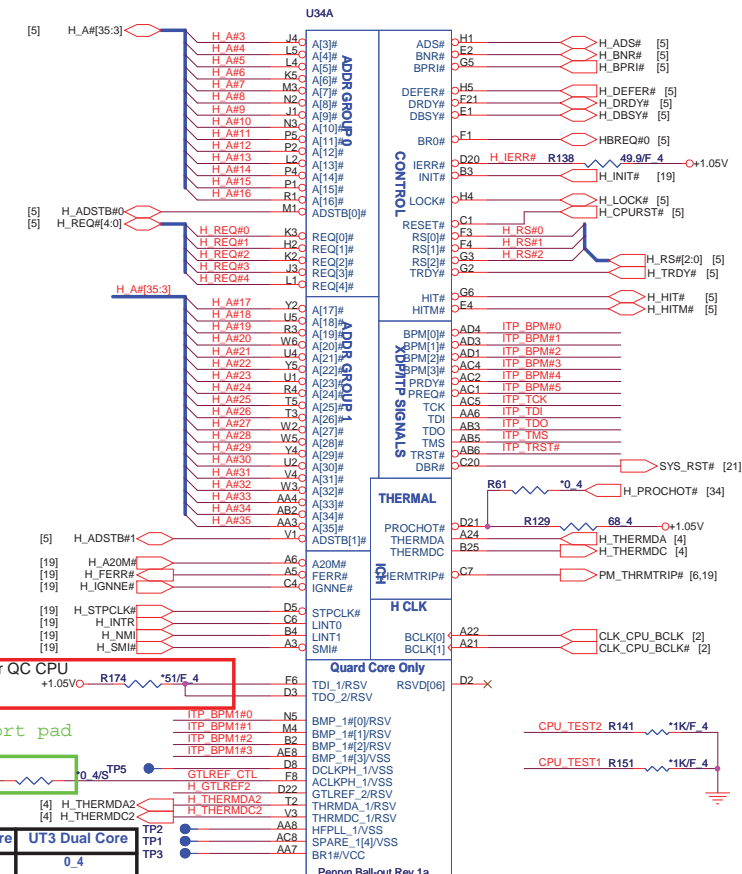


FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33



**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom	Document Number	Rev SI
	<b>CK505 Generator</b>	
Date: Tuesday, January 20, 2009	Sheet 2 of 37	



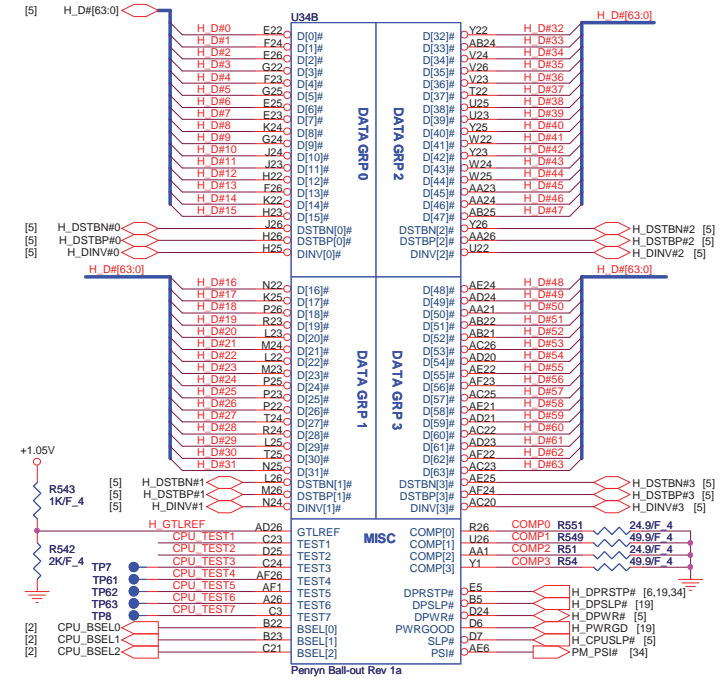
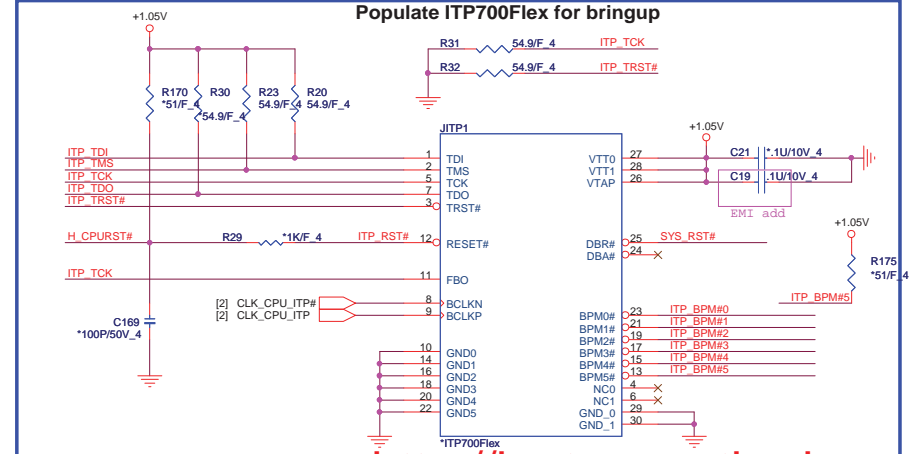
For QC CPU  
+1.05V R174 \*51/F\_4

PV Stage: Change to short pad

R28 \*0.4/S\*TP5

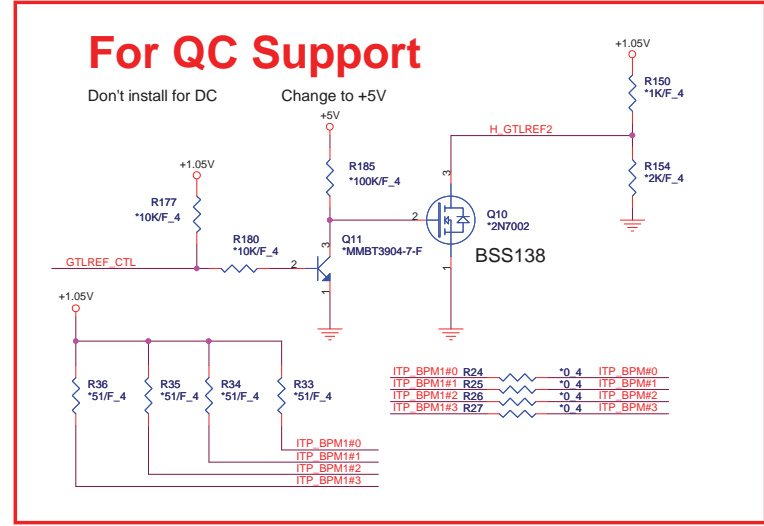
MODEL	UT5 Quad Core	UT3 Dual Core
R28	*0.4	0.4

Populate ITP700Flex for bringup

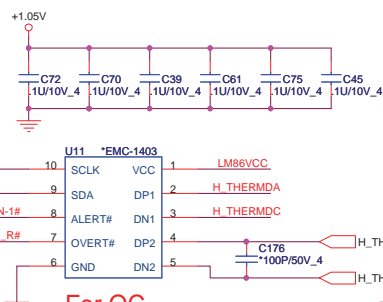
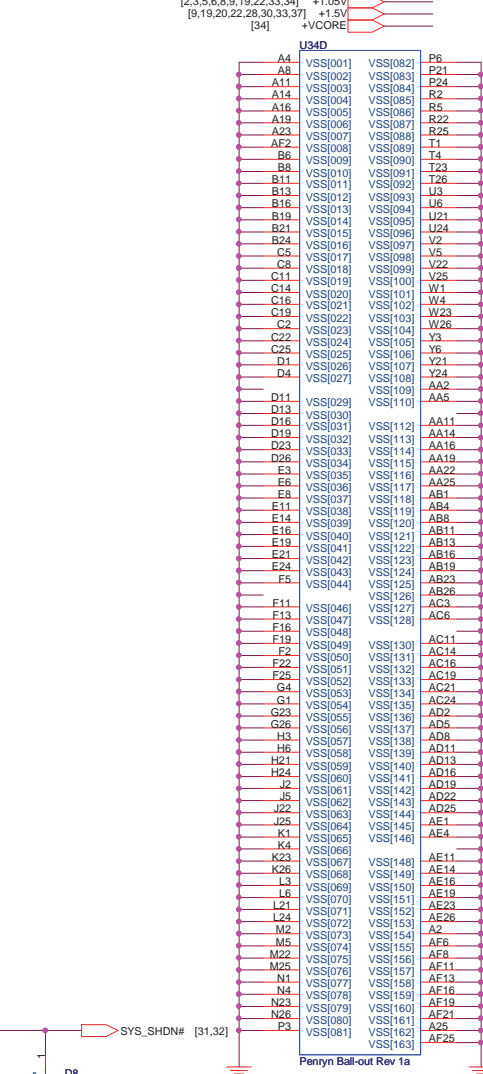
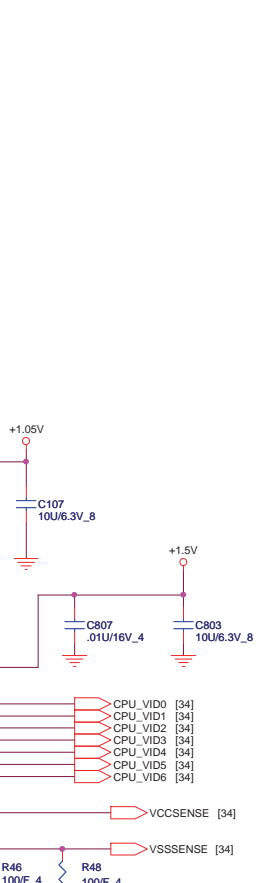
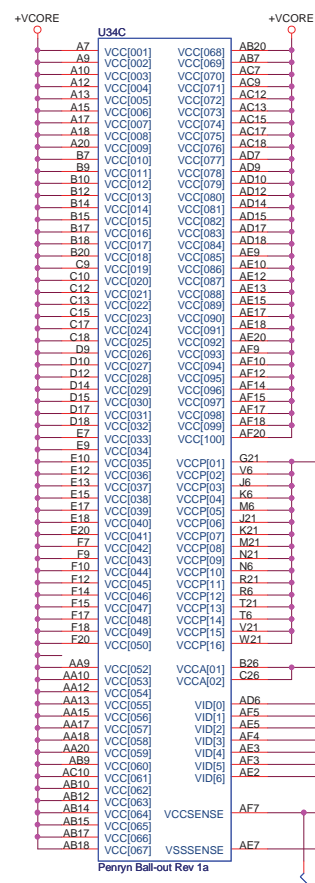
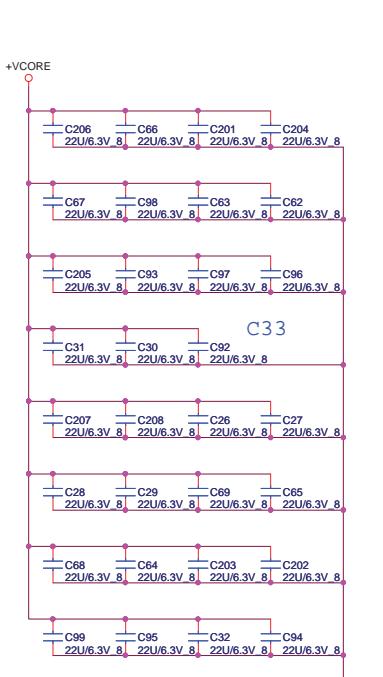
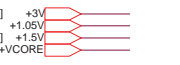


For QC Support

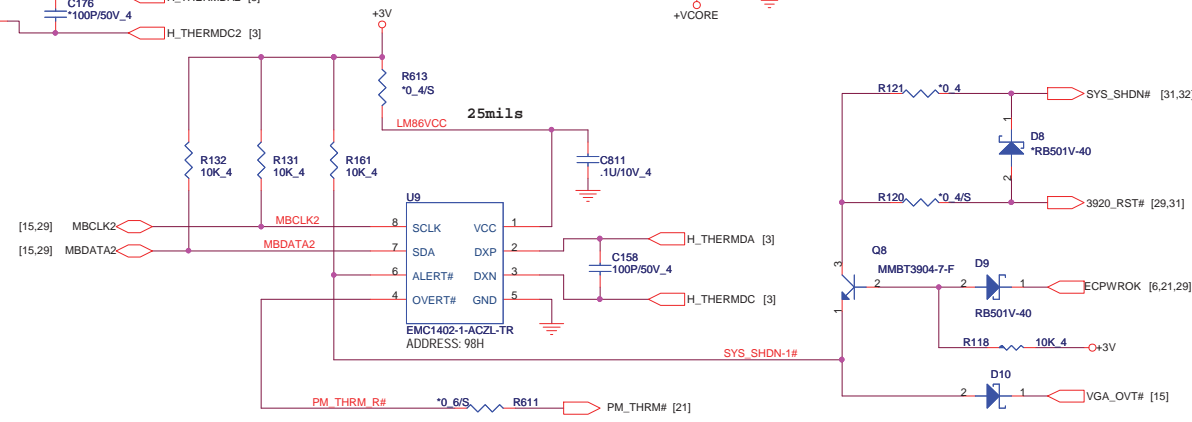
Don't install for DC Change to +5V

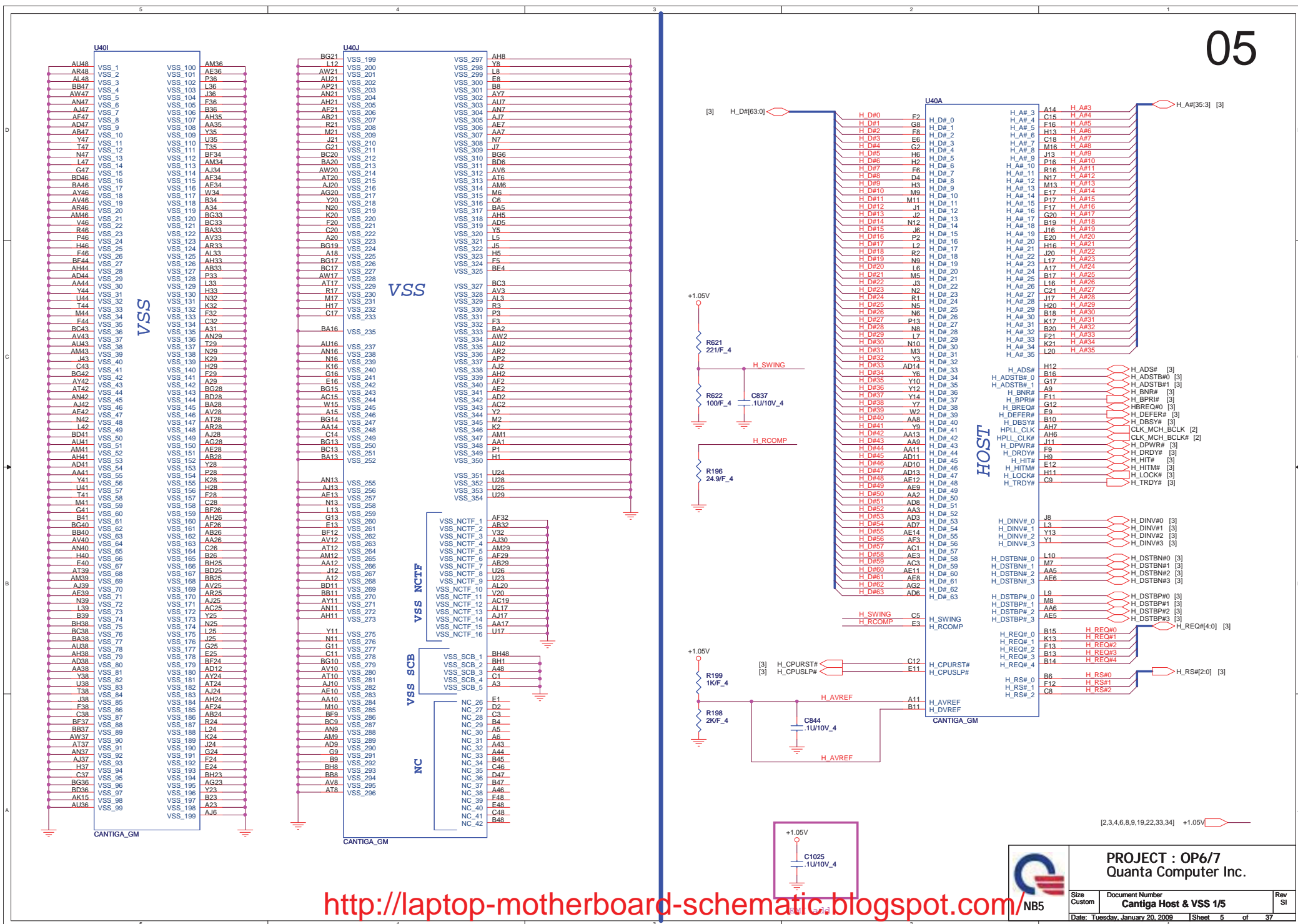


[2,6,9,10,11,12,14,15,17,18,19,20,21,22,24,25,26,27,28,29,30,33,34,37]  
[2,3,5,6,8,9,19,22,33,34]  
[9,19,20,22,28,30,33,37]  
[34]



For QC





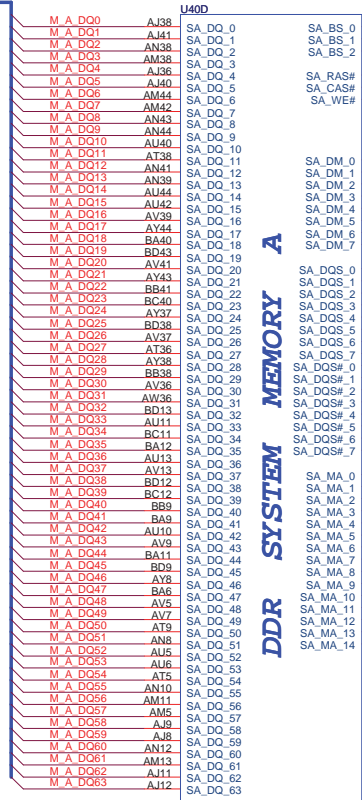
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom Document Number **Cantiga Host & VSS 1/5** Rev S1

Date: Tuesday, January 20, 2009 Sheet 5 of 37



[10] M\_A\_DQ[63:0]

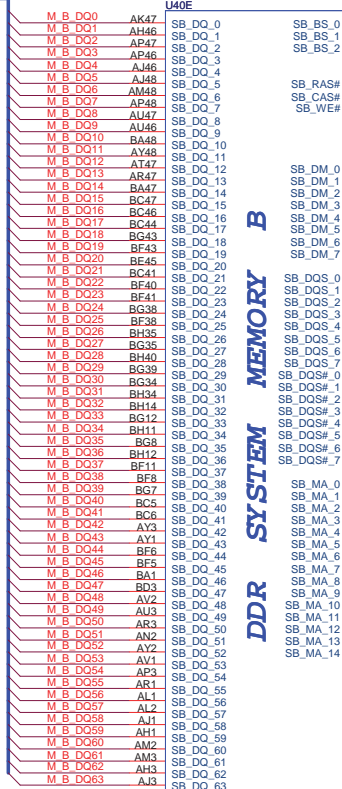


U40D

DDR SYSTEM MEMORY A

CANTIGA\_GM

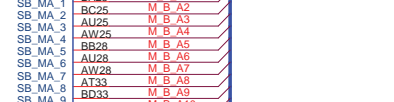
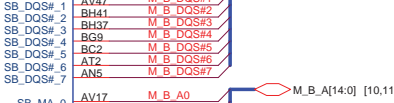
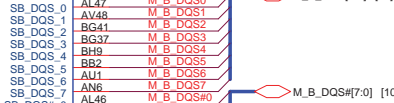
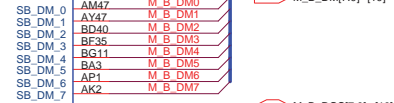
[10] M\_B\_DQ[63:0]



U40E

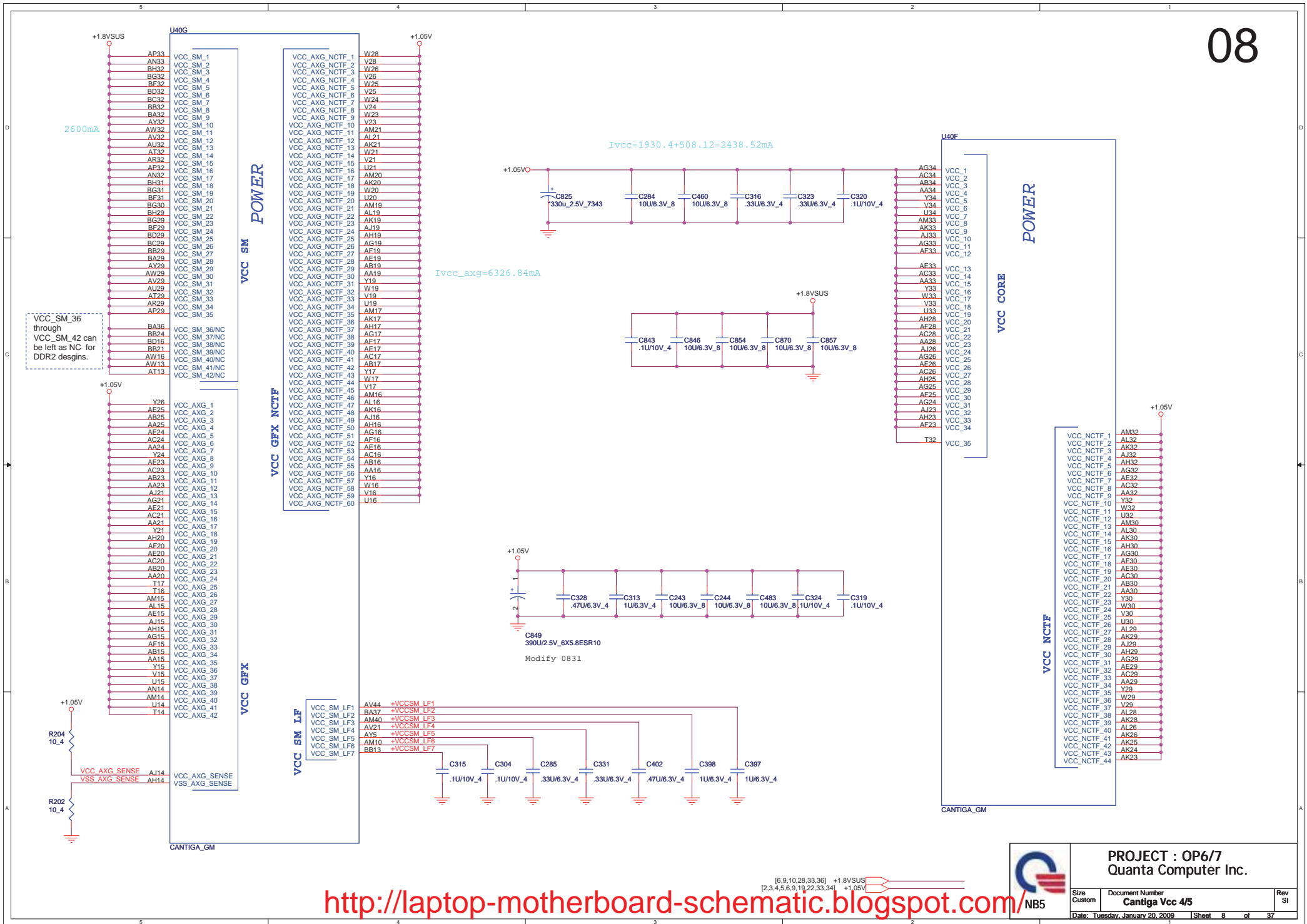
DDR SYSTEM MEMORY B

CANTIGA\_GM



**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom Document Number NB5 Cantiga DDR2 3/5 Rev S1  
 Date: Tuesday, January 20, 2009 Sheet 7 of 37



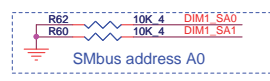
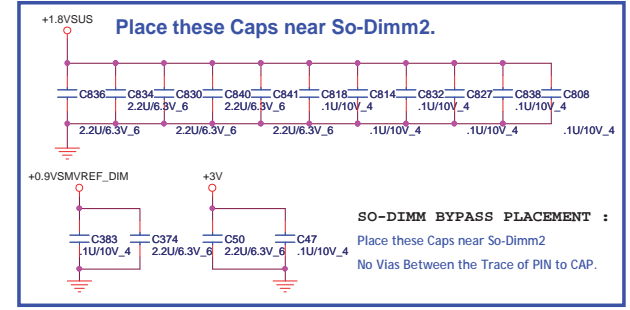
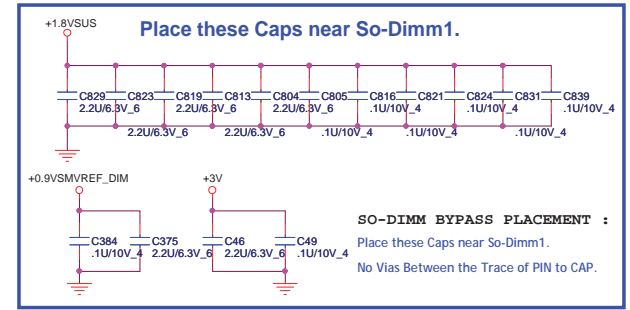
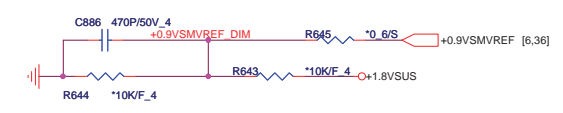
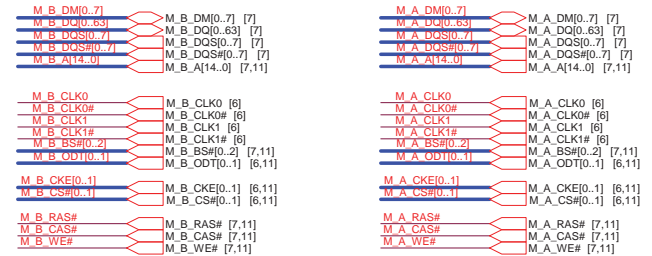
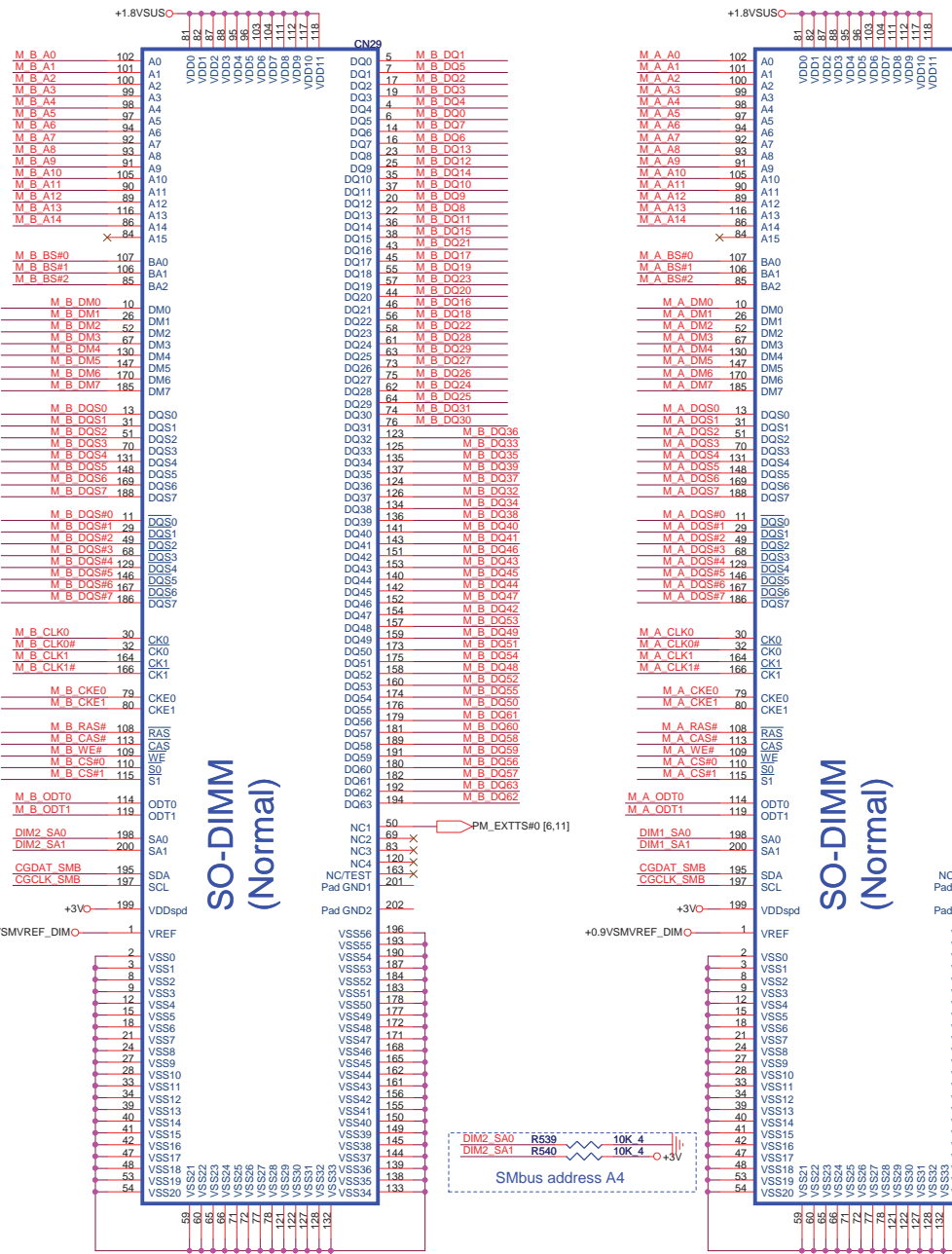
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom Document Number CANTIGA Vcc 4/5 Rev S1

Date: Tuesday, January 20, 2009 Sheet 8 of 37







H 9.2

H 5.2

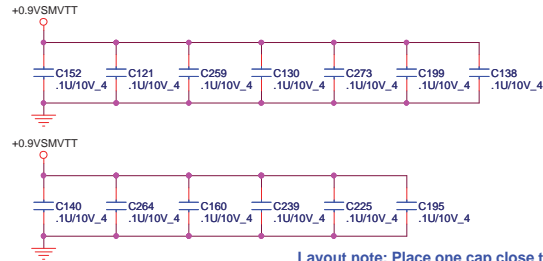
PROJECT : OP6/7  
Quanta Computer Inc.

Size Custom Document Number DDR2 DIMM Rev SI

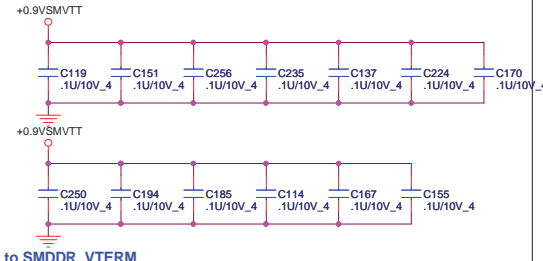
Date: Tuesday, January 20, 2009 Sheet 10 of 37

# DDRII DUAL CHANNEL A,B.

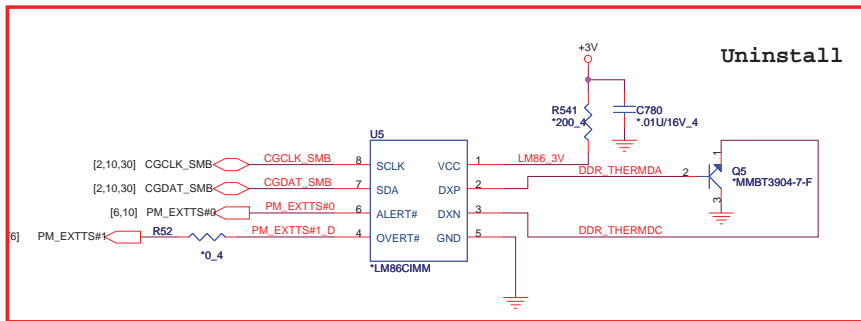
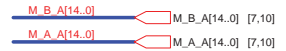
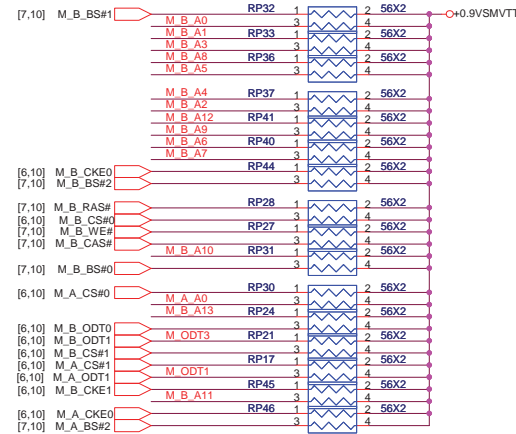
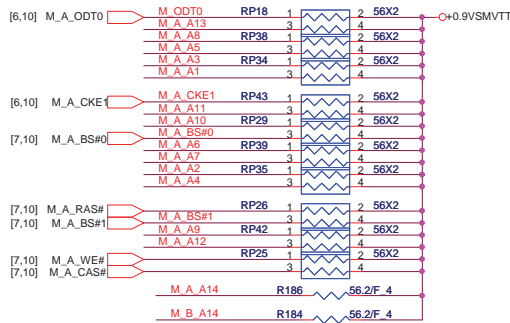
## DDRII A CHANNEL



## DDRII B CHANNEL

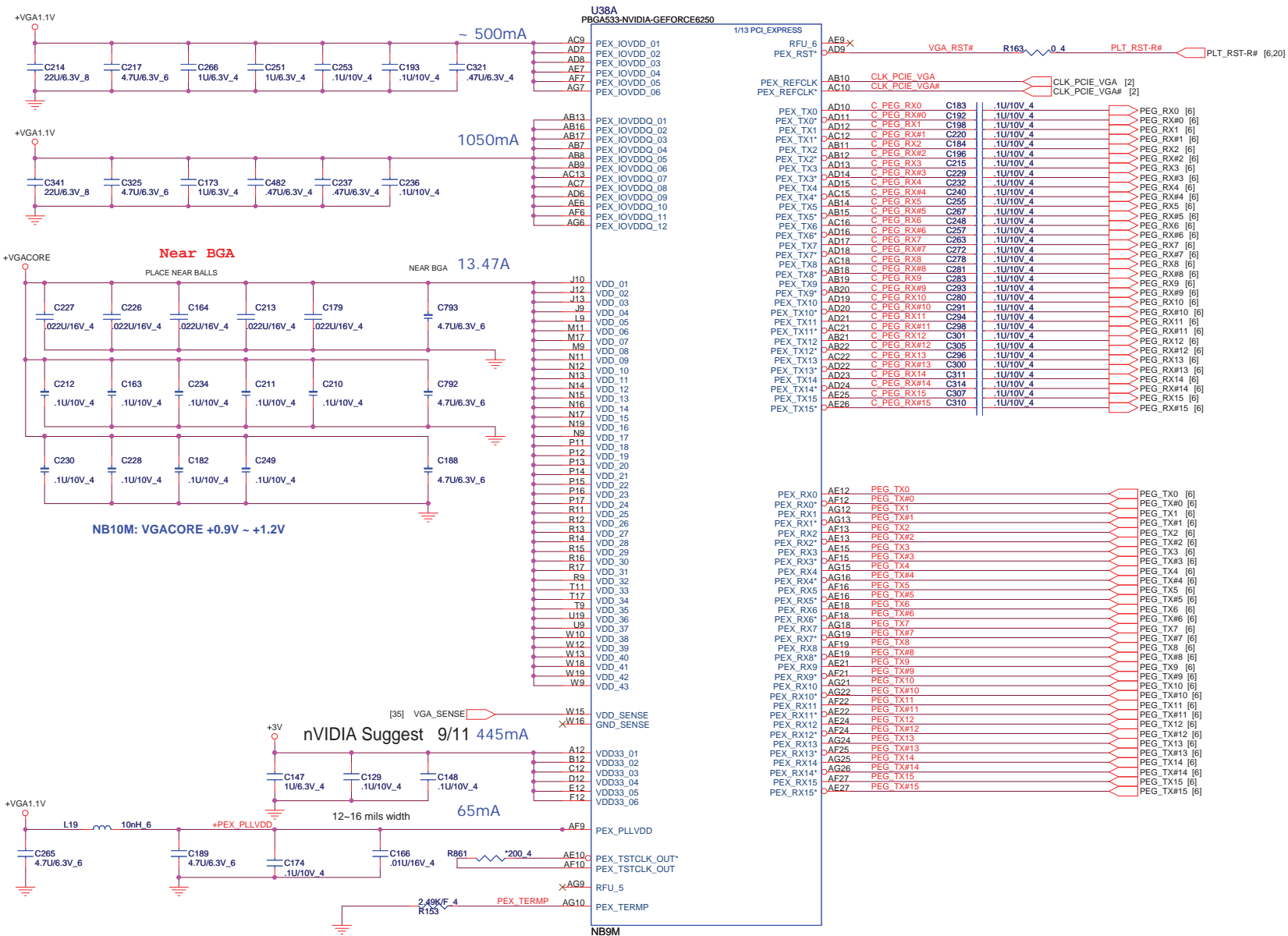


Layout note: Place one cap close to every 2 pullup resistors terminated to SMDR\_VTERM



Legend for bus signals:  
 ———— +0.9VSMVTT [36]  
 ———— +3V [2,4,6,9,10,12,14,15,17,18,19,20,21,22,24,25,26,27,28,29,30,33,34,37]

	<b>PROJECT : OP6/7</b> Quanta Computer Inc.	
	Size Custom Document Number <b>DDR2 termination</b>	Date: Tuesday, January 20, 2009 Sheet 11 of 37

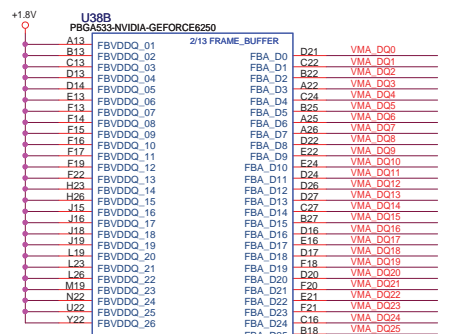


<http://laptop-motherboard-schematic.blogspot.com/>

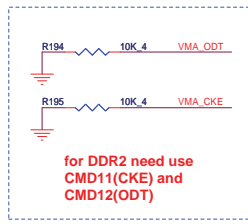
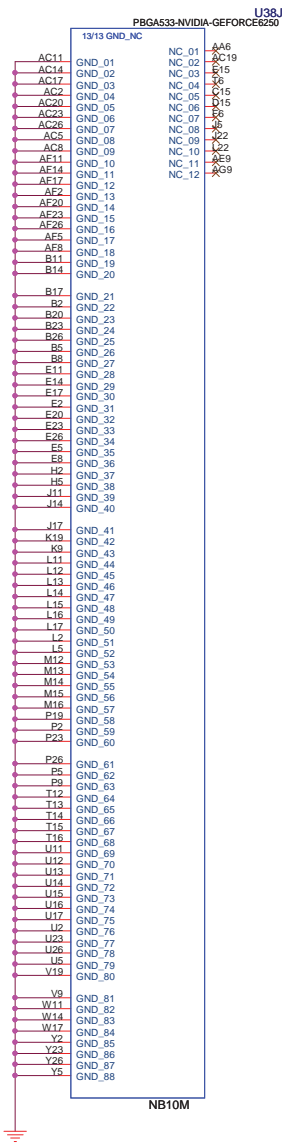
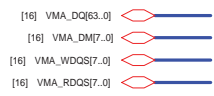
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

**NB5**

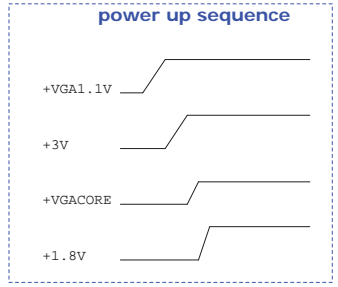
Size Custom	Document Number	Rev DB
	<b>NV10M (PCIE I/F) 1/5</b>	
Date: Tuesday, January 20, 2009		Sheet 12 of 37



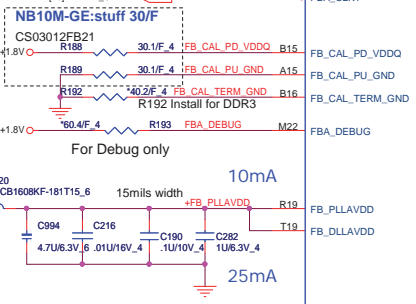
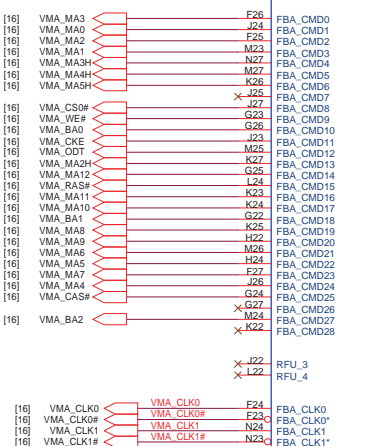
1.75A



for DDR2 need use  
CMD11(CKE) and  
CMD12(ODT)

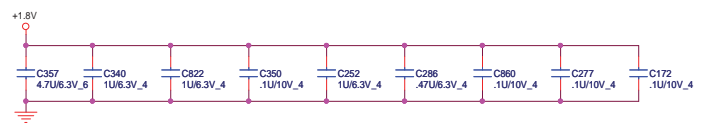


power up sequence



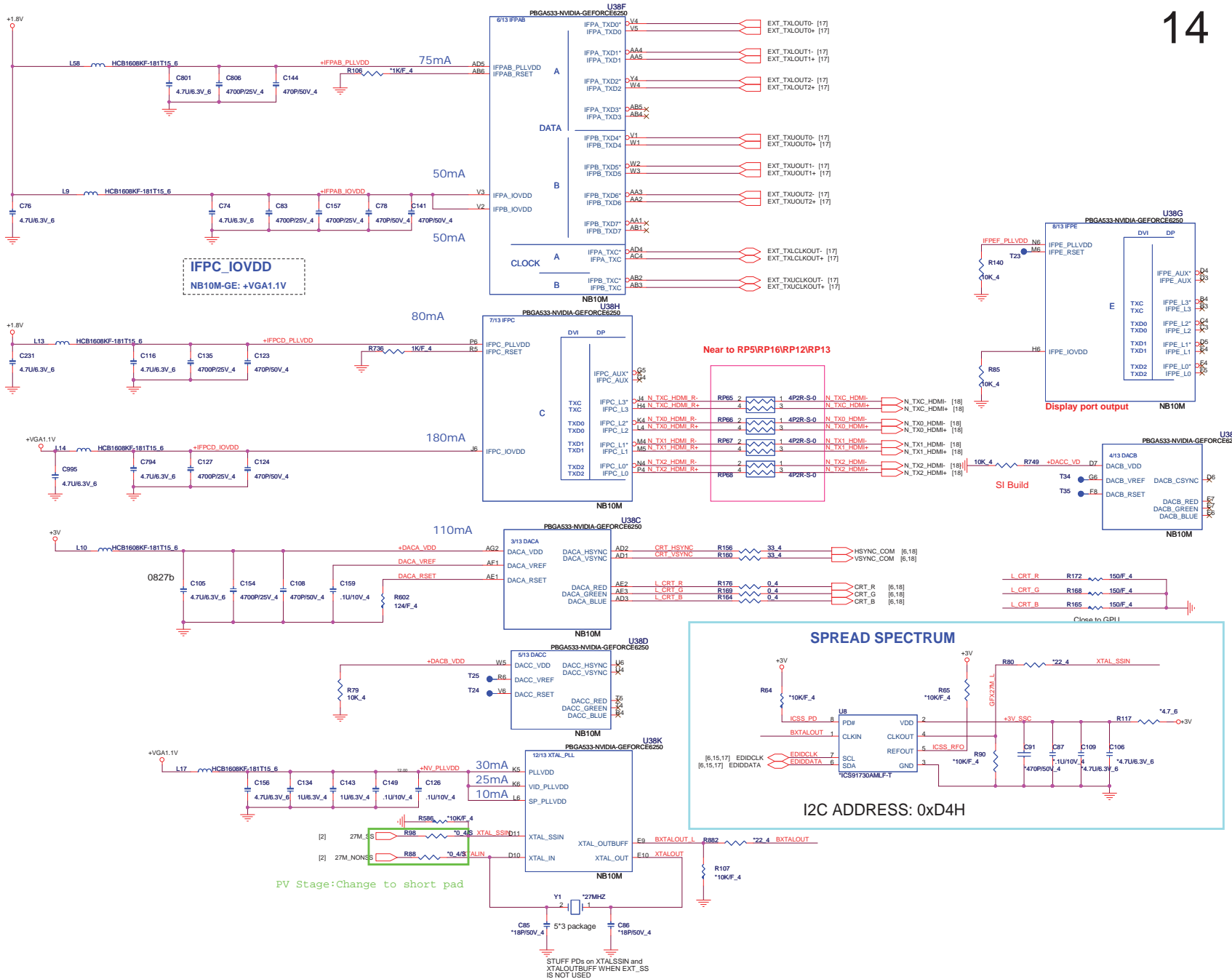
NB10M

NB10M



PROJECT : OP6/7  
Quanta Computer Inc.

Size	Document Number	Rev
11	NV10M (MEMORY I/F) 2/5	DB
Date: Tuesday, January 20, 2009	Sheet 13 of 37	



<http://laptop-motherboard-schematic.blogspot.com/>

Install it when not connected to Spread spectrum device

**PROJECT : OP6/7**  
**Quanta Computer Inc.**

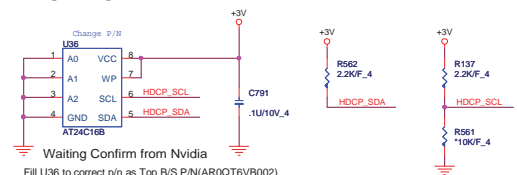
Doc No: QM65  
**NB10M (DISPLAY) 3/5**

Date: Tuesday, January 20, 2009 Sheet 14 of 37



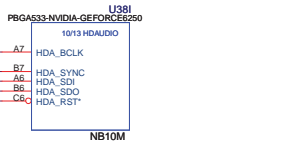
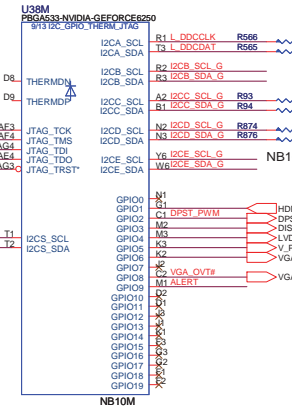
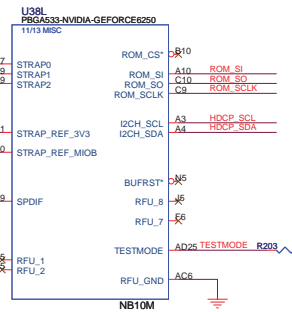
DB:Remove GPU thermal sensor footprint

HDCP ROM



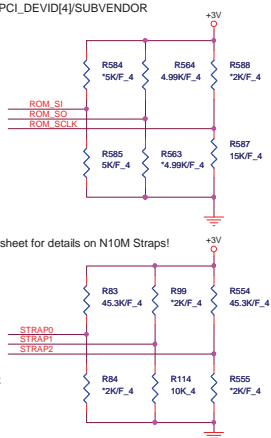
Waiting Confirm from Nvidia  
Fill U36 to correct pin as Top B/S P/N(AR0QT6VB002)

DHCP ROM	
HDCP_SCL	Low: Crypto ROM
	Hi: I2C ROM



NB10M Straps  
GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	PRIMARY DVI HOTPLUG
1	IN	N/A	SECONDARY DVI HOTPLUG
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	N/A	NV_VDD VID0
6	OUT	N/A	NV_VDD VID1
7	OUT	N/A	FBVDD VID0
8	IN	LOW	THERMAL ALERT
9	OUT	LOW	FAN PWM
10	OUT	N/A	FBVREF SELECT
11	OUT	N/A	SLI SYNC0
12	IN	N/A	AC DETECT
13	OUT	LOW	PS CONTROL OR HDMI_CEC
14	OUT	HIGH	PS CONTROL



RAM ID: ROM\_SI R585  
64M\*16 HYN 0000 PD 5K  
SAM 0001 PD 10K  
QIM 0010 PD 15K

PCI\_DEVID: STRAP2 R554  
NB10M-GE2 0x6EF 8 1111 PU 45K

Logical Strap Bit Mapping		
	PU-VDD	PD
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

NB10M VRAM Configuration Table

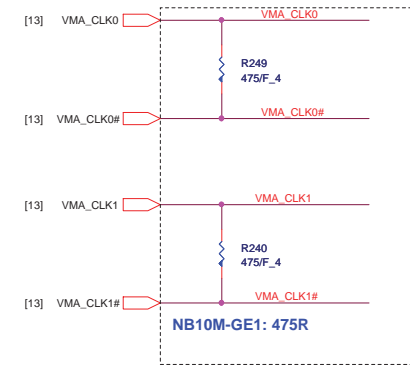
RAM_CFG[3:0]	DESCRIPTION	Vendor
0000	DDR2 64Mx16x4, 64bit, 512MB	Hynix H5PS1G63EFR-20L
0001	DDR2 64Mx16x4, 64bit, 512MB	Samsung K4NT1G164QQ-HC20
0010	DDR2 64Mx16x4, 64bit, 512MB	Qimonda HY618T1G161C2P-20

	Logical	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SO	XCLK_277	TVMODE[2]	TVMODE[1]	TVMODE[0]
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM100
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]

1000  
0010  
XXXX  
XXXX  
0001  
1111

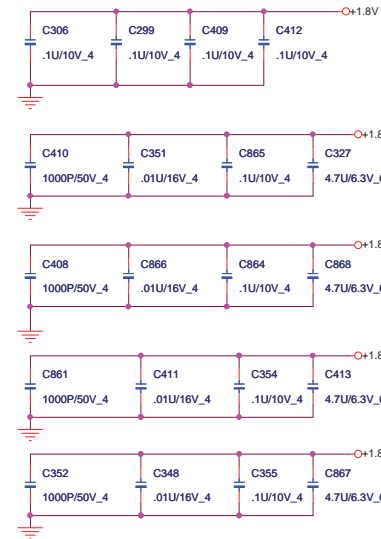
PROJECT : OP6/7  
Quanta Computer Inc.

Size	Document Number	Rev
NB5	NV10M (GPIO & STRAPS) 4/5	08
Date: Tuesday, January 20, 2009	Sheet 15 of 37	



CS14752FB11 RES CHIP 475 1/16W +-1%(0402)

(By pass capacitor)



- [13] VMA\_DQ[63..0]
  - [13] VMA\_DM[7..0]
  - [13] VMA\_RDQS[7..0]
- 256Mb : AKD5JGAT\*05  
512Mb : AKD59G-T\*01

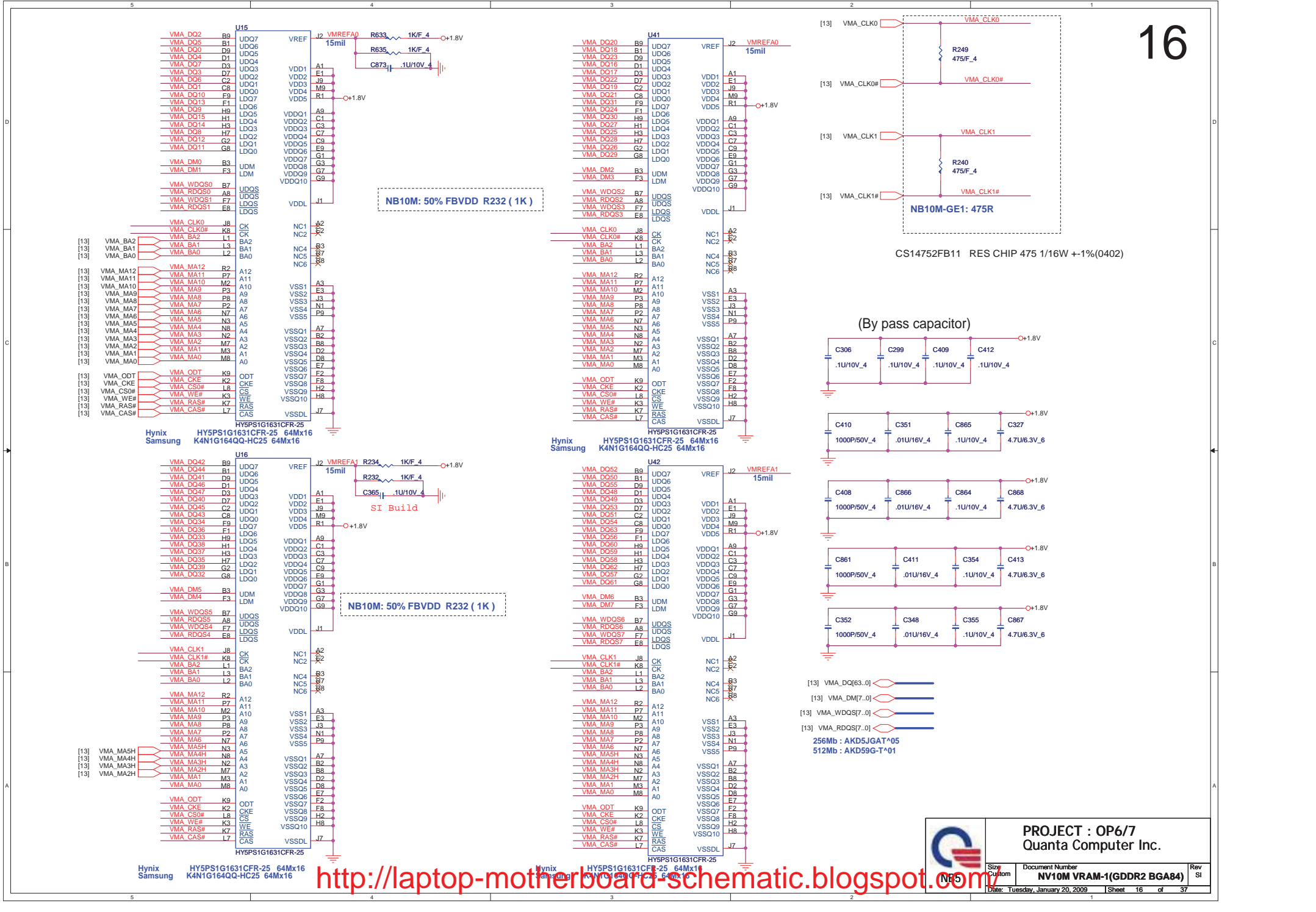


PROJECT : OP6/7  
Quanta Computer Inc.

Size	Document Number	Rev
Custom	NV10M VRAM-1(GDDR2 BGA84)	SI
Date: Tuesday, January 20, 2009	Sheet 16	of 37

NB10M: 50% FBVDD R232 ( 1K )

NB10M: 50% FBVDD R232 ( 1K )



Hynix HY5PS1G1631CFR-25 64Mx16  
Samsung K4N1G164QQ-HC25 64Mx16

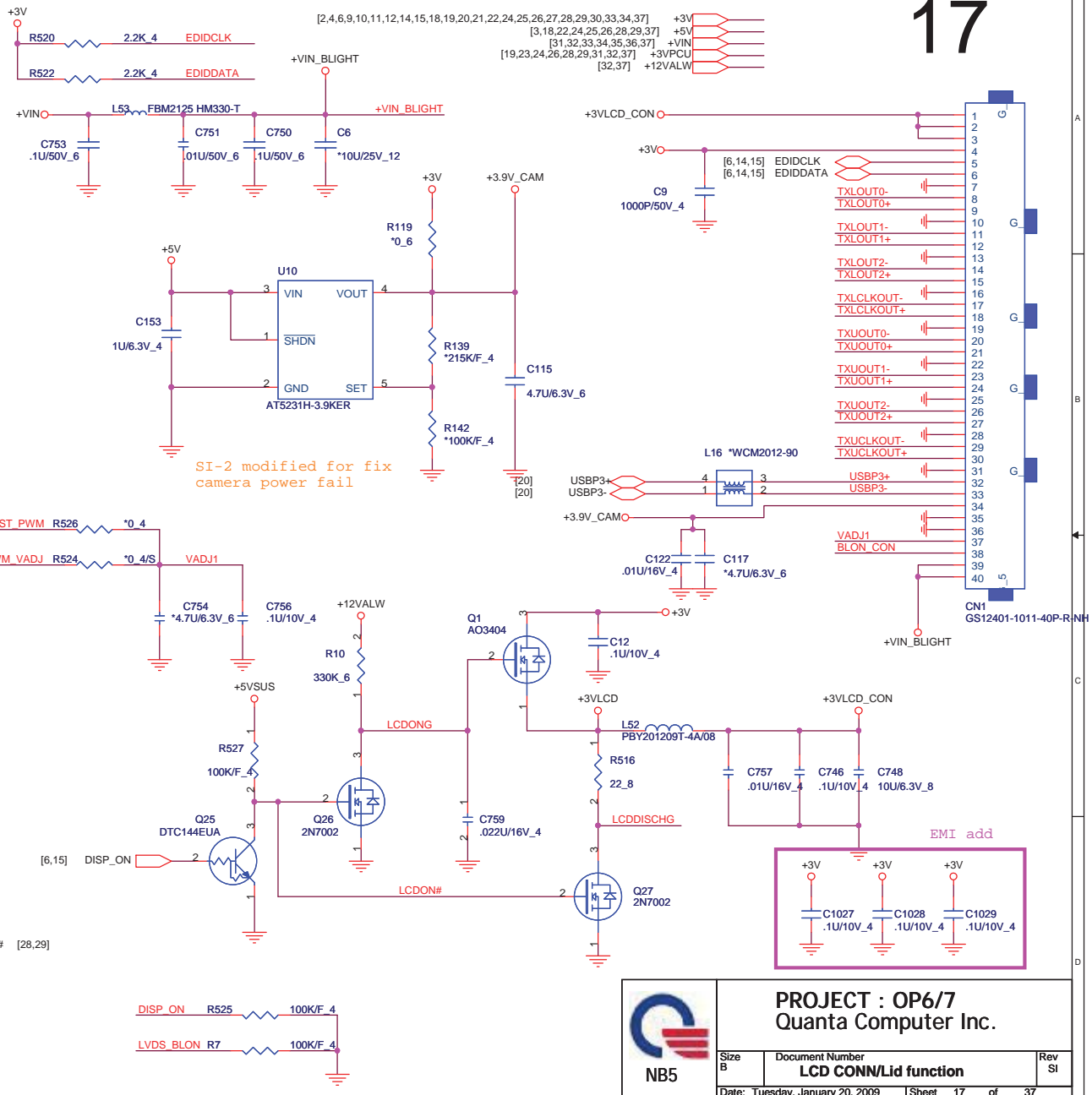
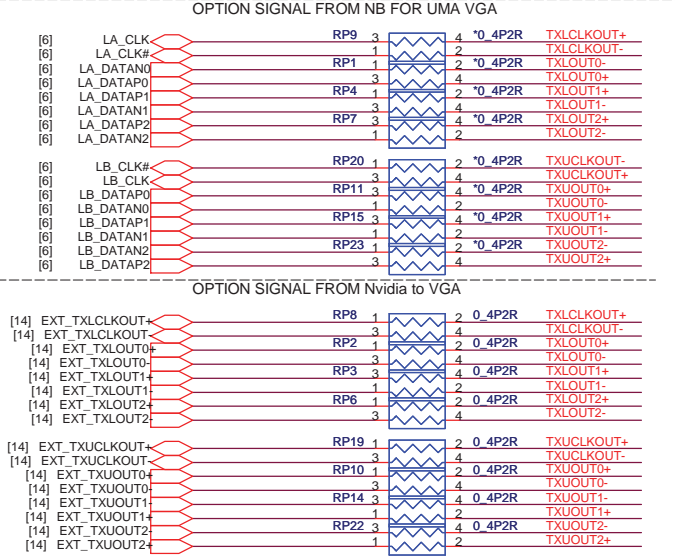
Hynix Samsung HY5PS1G1631CFR-25 64Mx16  
K4N1G164QQ-HC25 64Mx16

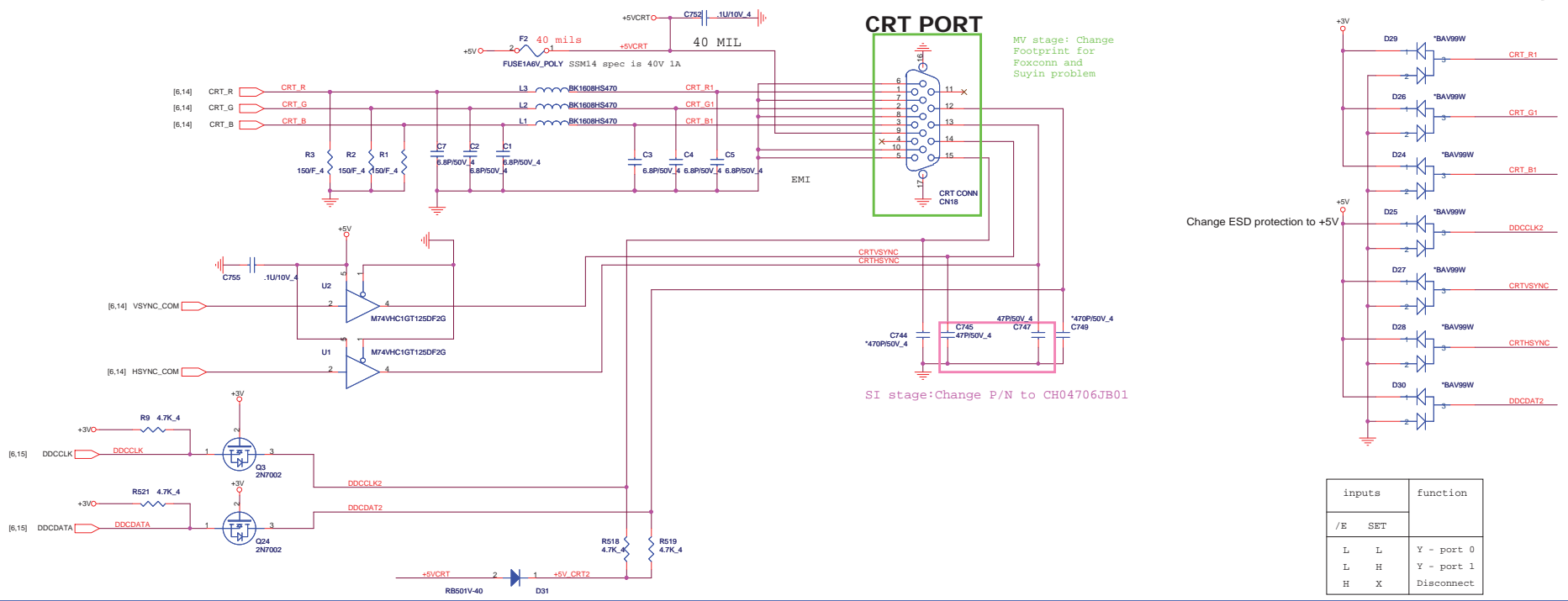
Hynix Samsung HY5PS1G1631CFR-25 64Mx16  
K4N1G164QQ-HC25 64Mx16

Hynix Samsung HY5PS1G1631CFR-25 64Mx16  
K4N1G164QQ-HC25 64Mx16

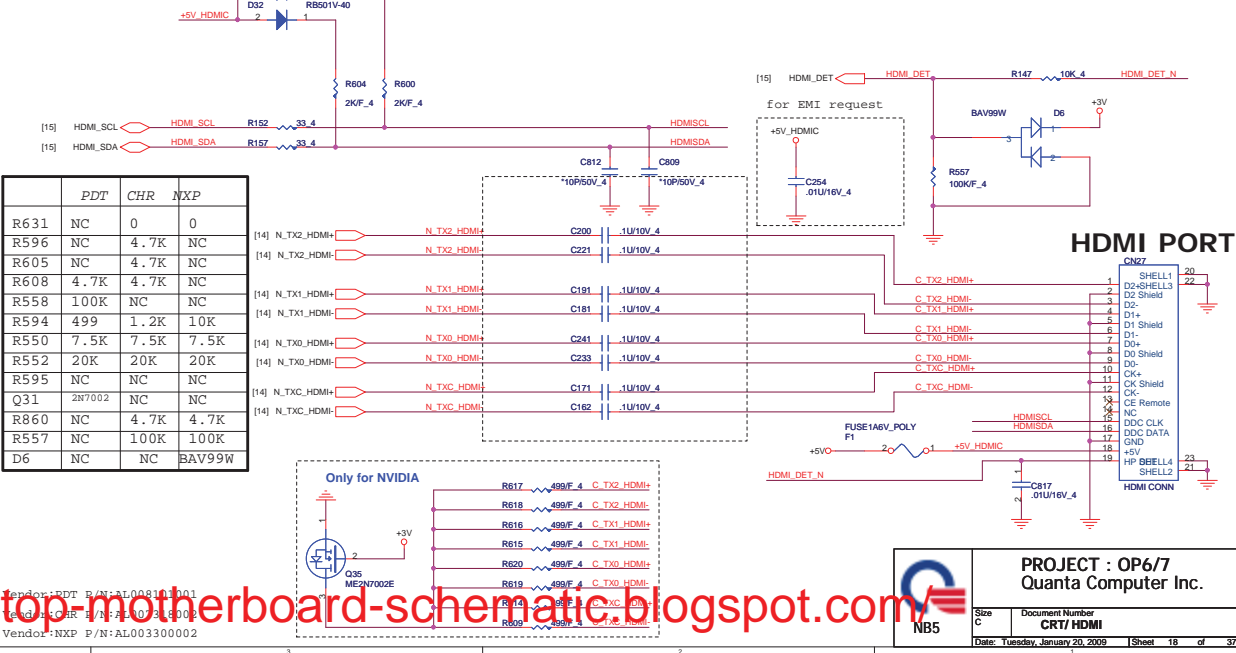
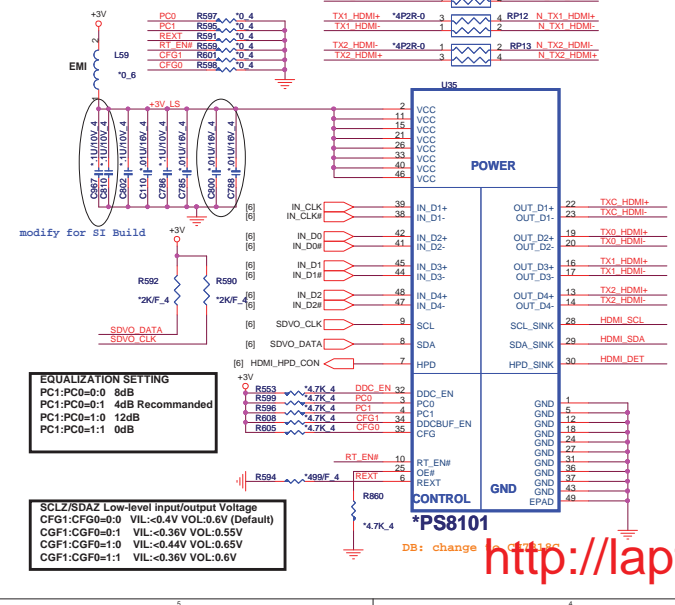


1. If LCD connector near GPU, then place these series Resistors near GPU  
 2. If LCD connector near N/B, then place these series Resistors near N/B





For UMA HDMI function



<http://laptop-motherboard-schematic.blogspot.com/>

PROJECT : OP/67  
 Quanta Computer Inc.

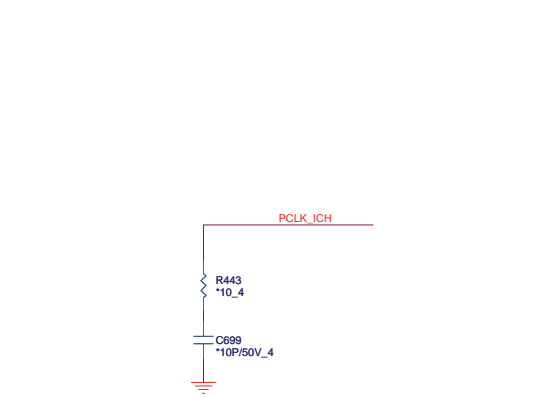
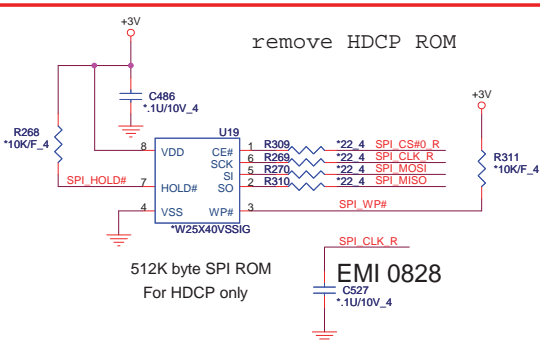
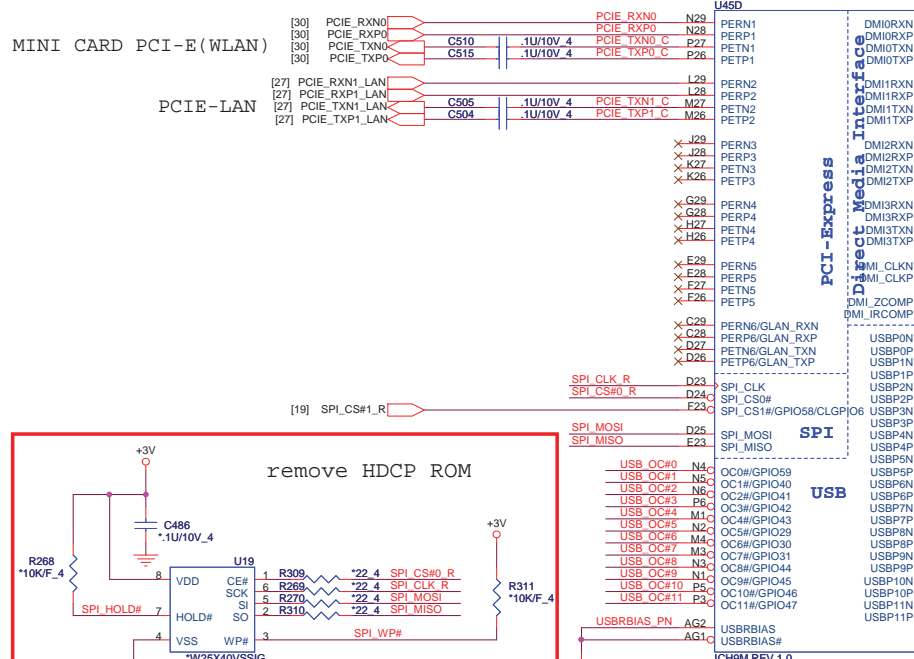
Size: NB5  
 Document Number: CR7/HDMI  
 Date: Tuesday, January 20, 2009 | Sheet 18 of 37



[4,9,19,22,28,30,33,37] +1.5V  
[2,4,6,9,10,11,12,14,15,17,18,19,21,22,24,25,26,27,28,29,30,33,34,37] +3V  
[21,23,26,30,33,34,35,37] +3VSUS

MINI CARD PCI-E(WLAN)

PCI-E-LAN



E-SATA and USB Connector

USB Connector

FINGERPRINT

Carama USB

Docking

BLUETOOTH

Cardread

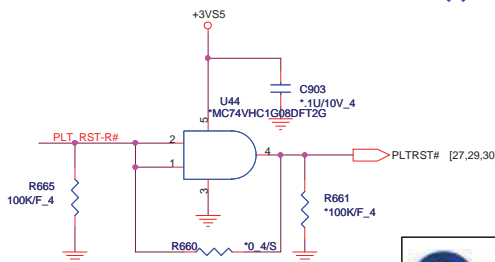
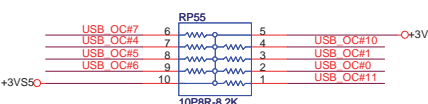
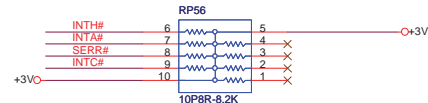
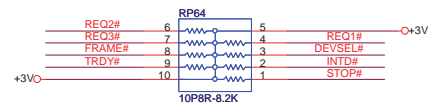
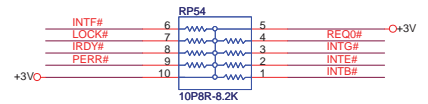
NEW CARD

USB Connector

USB Connector

Robson Min-Card

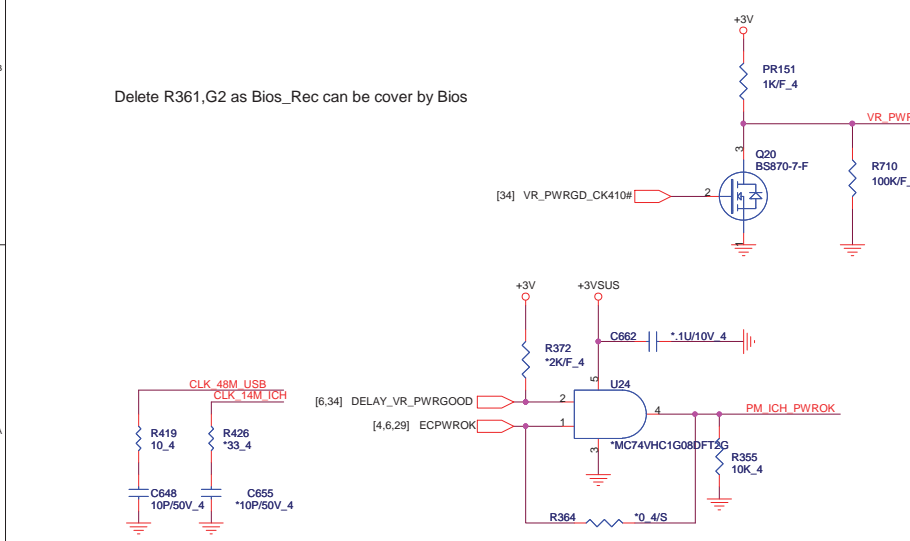
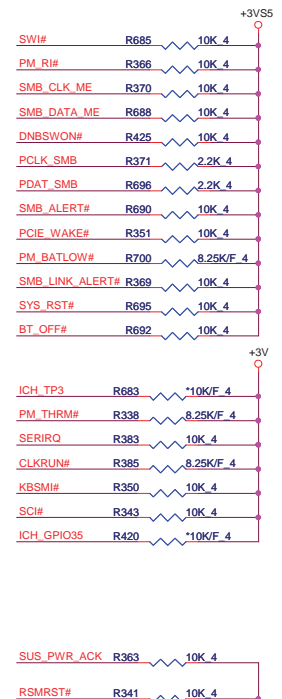
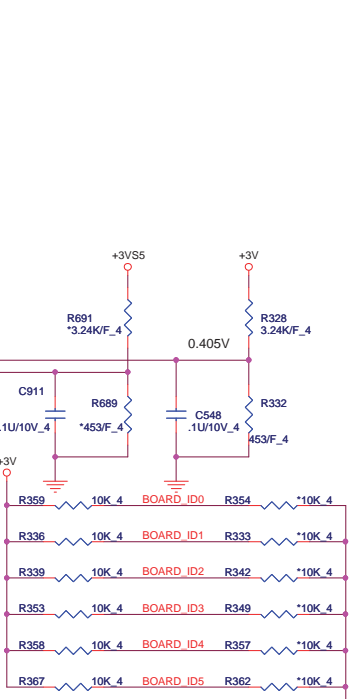
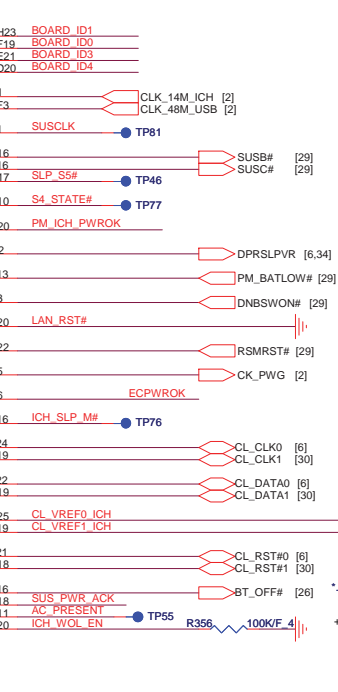
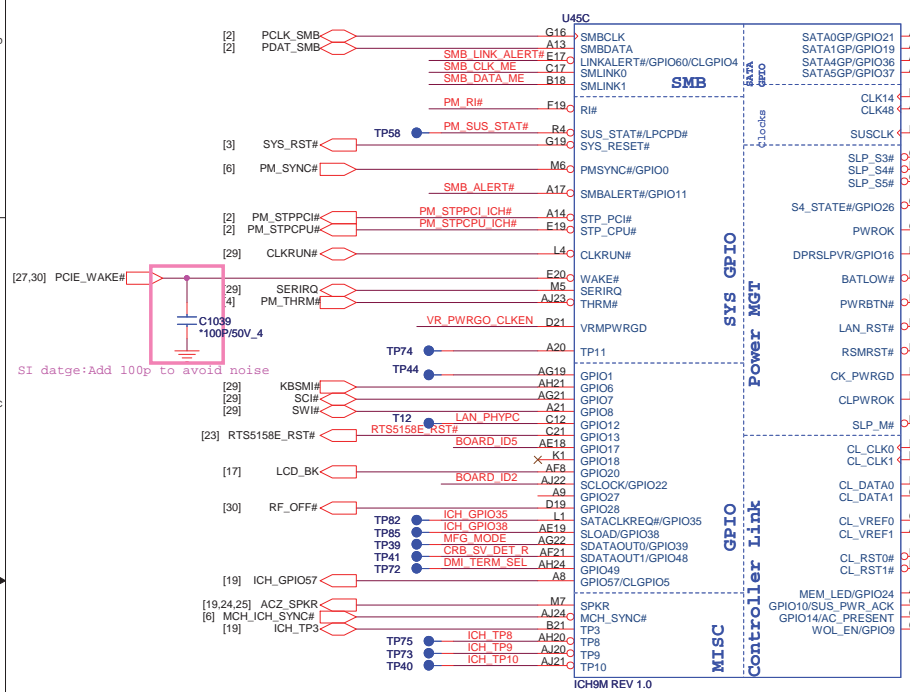
TV Min-Card



PROJECT : OP6/7  
Quanta Computer Inc.

Size Custom	Document Number ICH9-M PCI-E 2/4	Rev S1
Date: Tuesday, January 20, 2009   Sheet 20 of 37		

[4,9,19,20,22,28,30,33,37] +1.5V  
 [2,4,6,9,10,11,12,14,15,17,18,19,20,22,24,25,26,27,28,29,30,33,34,37] +3V  
 [19,20,22,37] +3VSUS  
 [23,26,30,33,34,35,37] +3VSUS

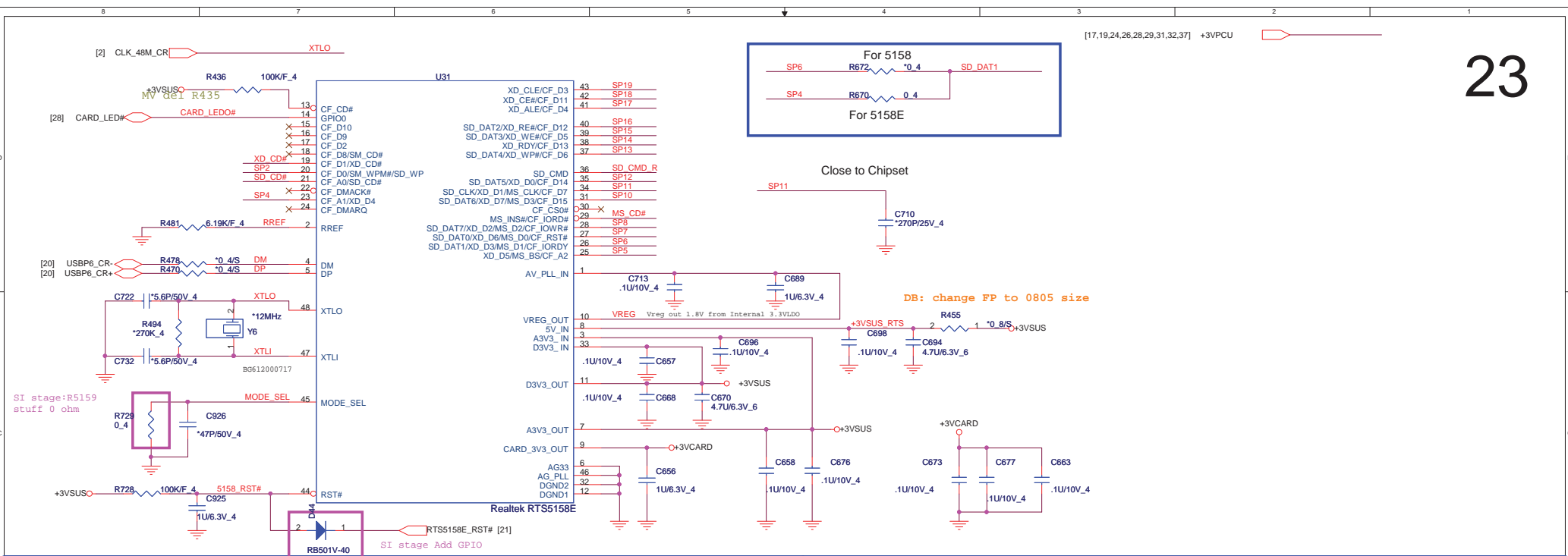


Board ID	ID0 GPIO19	ID1 GPIO21	ID2 GPIO22	ID3 GPIO36	ID4 GPIO37	ID5 GPIO17
UMA/DIS	0=UMA 1=Dis.					
CardReader		0=No Sup 1=Support				
HDMI			0=No Sup 1=Support			
Bluetooth						
Camera						
Modem						

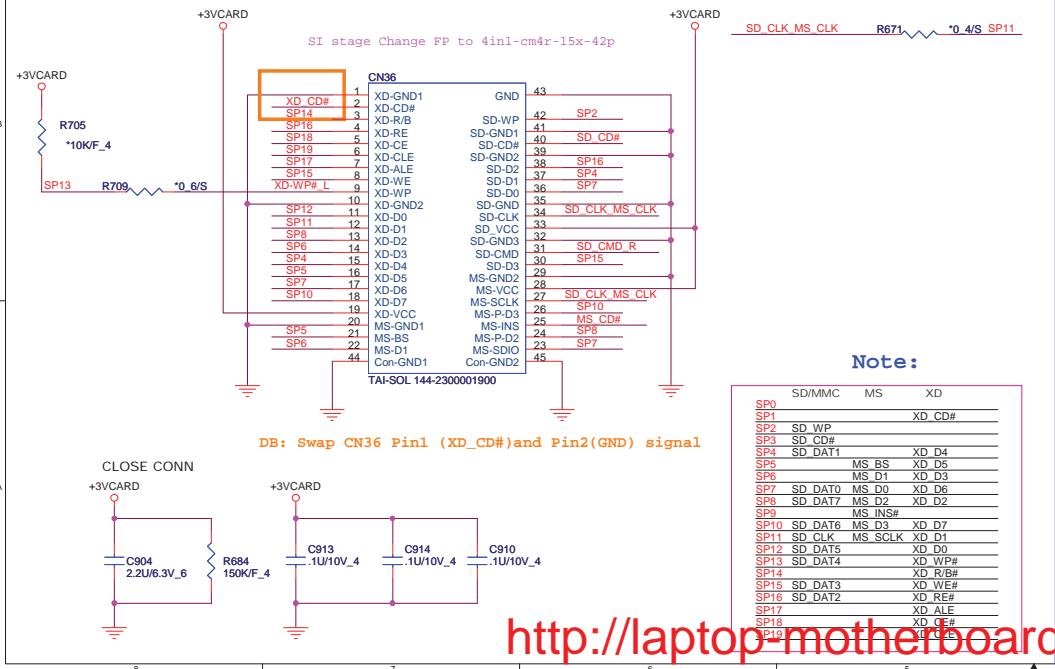
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>ICH9-M GPIO 3/4</b>	Rev SI
Date: Tuesday, January 20, 2009		Sheet 21 of 37



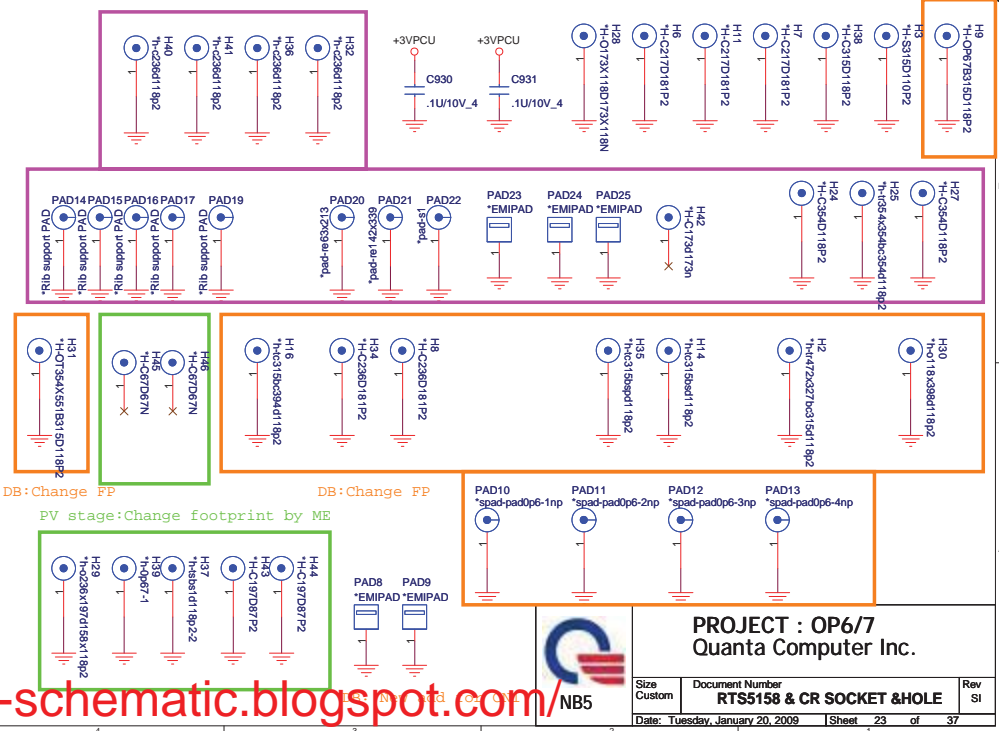


4 IN1 CARD READER XD, /SD, MS/MSP



Note:

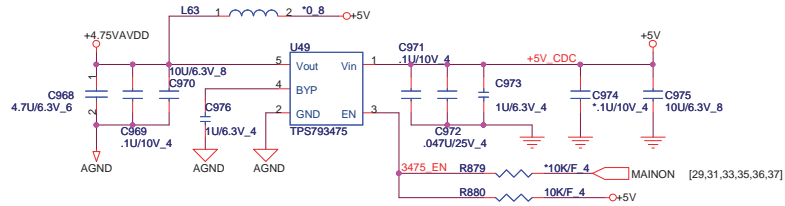
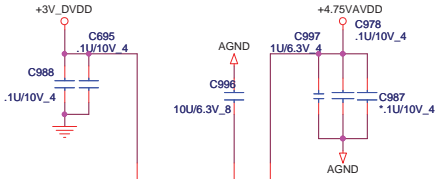
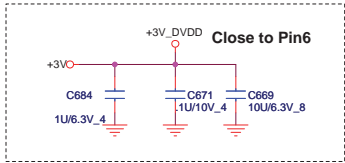
SP0	SD/MMC	MS	XD
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4	SD_DAT1		XD D4
SP5		MS BS	XD D5
SP6		MS D1	XD D3
SP7	SD DAT0	MS D0	XD D6
SP8	SD DAT7	MS D2	XD D2
SP9		MS_INS#	
SP10	SD DAT6	MS D3	XD D7
SP11	SD_CLK	MS_SCLK	XD D1
SP12	SD DAT5		XD D0
SP13	SD DAT4		XD_WP#
SP14		XD_R/B#	
SP15	SD DAT3		XD WE#
SP16	SD DAT2		XD_RE#
SP17		XD_ALE	
SP18		XD_CE#	
SP19		XD_CE#	



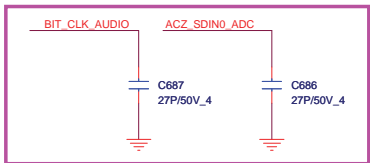
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom Document Number **RTS5158 & CR SOCKET & HOLE** Rev SI

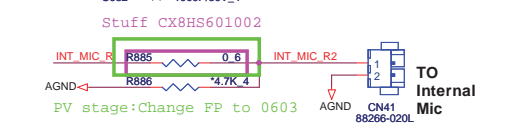
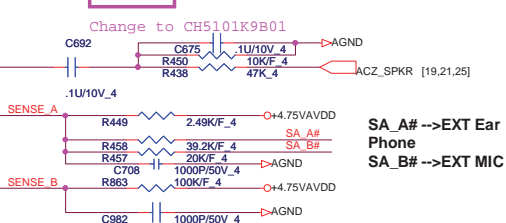
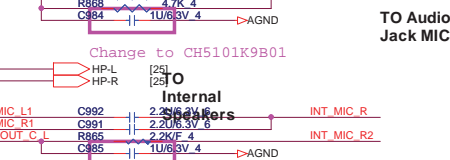
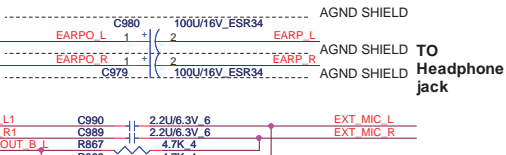
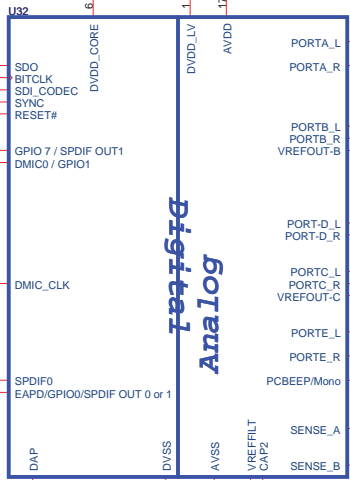
Date: Tuesday, January 20, 2009 Sheet 23 of 37



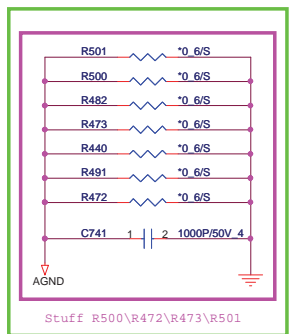
- [19] ACZ\_SDOUT\_AUDIO
- [19] BIT\_CLK\_AUDIO
- [19] ACZ\_SDINO
- [19] ACZ\_SYNC\_AUDIO
- [19] ACZ\_RST#\_AUDIO



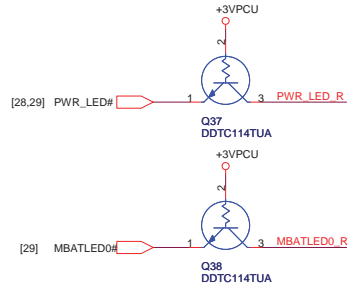
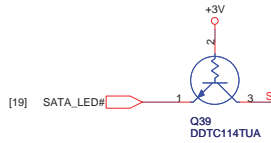
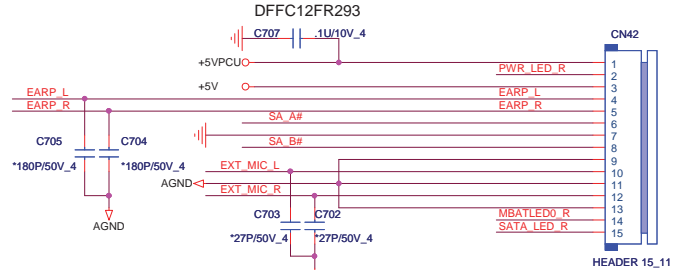
Stuff for EMI



PV Stage:Change to short pad



AUDIO/B CON.



PROJECT : OP6/7  
Quanta Computer Inc.

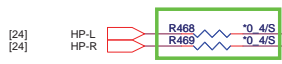
Size: Custom  
Document Number: Azalia IDT92HD75B3  
Date: Tuesday, January 20, 2009  
Sheet: 24 of 37



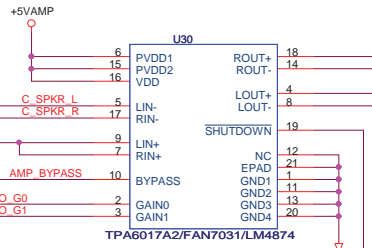
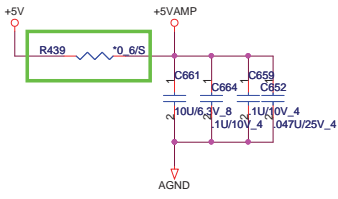
# AUDIO AMPLIFIER

Swap Audio input source as Speaker Bo noise issue

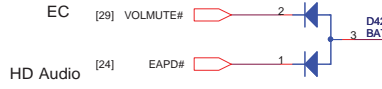
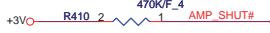
Change R468,R469 from 20K to 0 ohm as HP request



PV Stage: Change to short pad

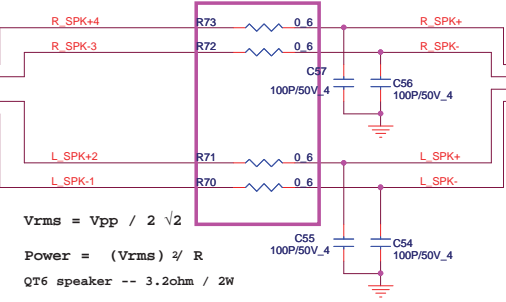


Change R410 from 100K to 470K(CS44702FB13)



AL001431K04  
AL6017A2K12  
APA2031 ,AL002031K00

Change P/N to CX8HS601002 for EMI



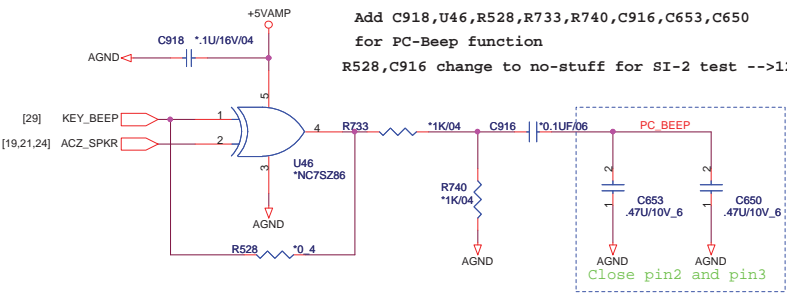
$V_{rms} = V_{pp} / 2 \sqrt{2}$   
Power =  $(V_{rms})^2 / R$   
QT6 speaker -- 3.2ohm / 2W

INT. SPEAKER

6017A2 Gain Table

GAIN0	GAIN1	AV	RIN
0	0	6dB	90K
0	1	10dB	70K
1	0	15.6dB	45K
1	1	21.6dB	25K

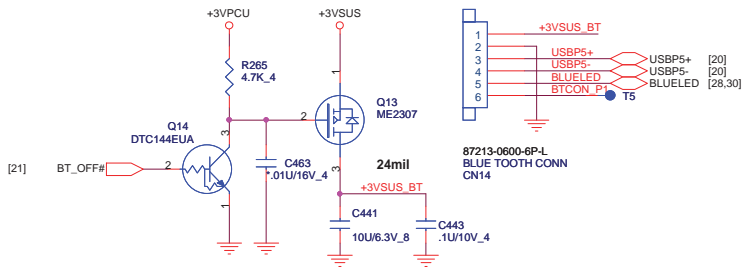
Add C918,U46,R528,R733,R740,C916,C653,C650 for PC-BEEP function  
R528,C916 change to no-stuff for SI-2 test -->12/6



PROJECT : OP6/7  
Quanta Computer Inc.

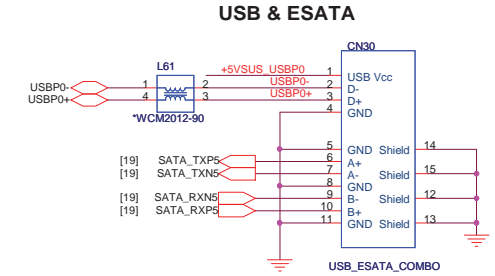
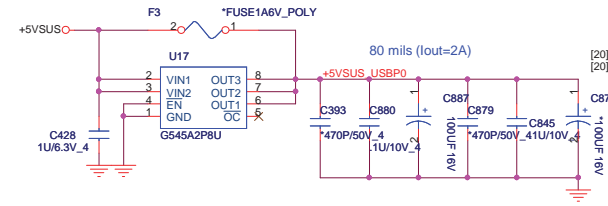
Document Number: AMP\_TPA6047A4/Accelerometer  
Date: Tuesday, January 20, 2009 Sheet 25 of 37

# BLUETOOTH

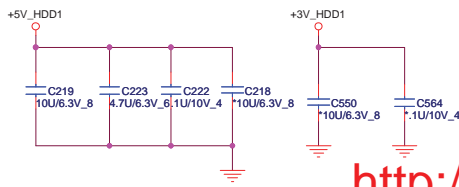
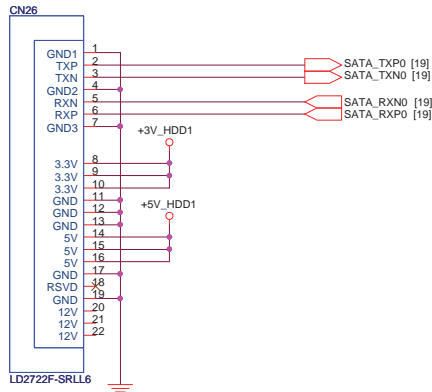


# LEFT SIDE USBX1 and E-SATA/USB COMBO

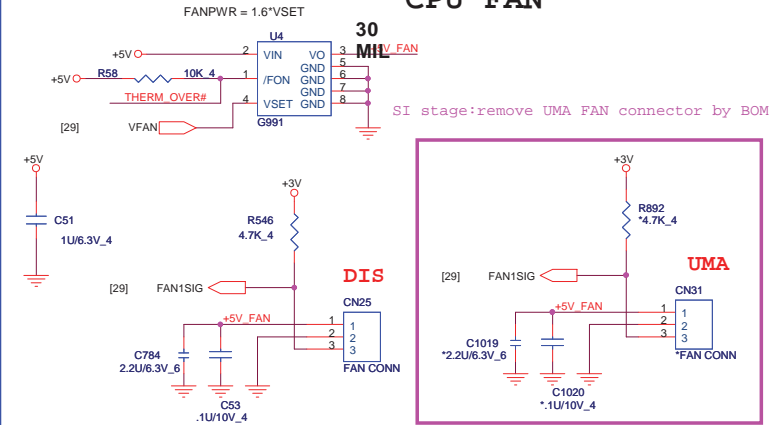
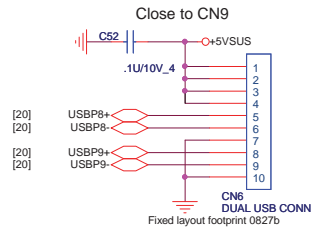
26



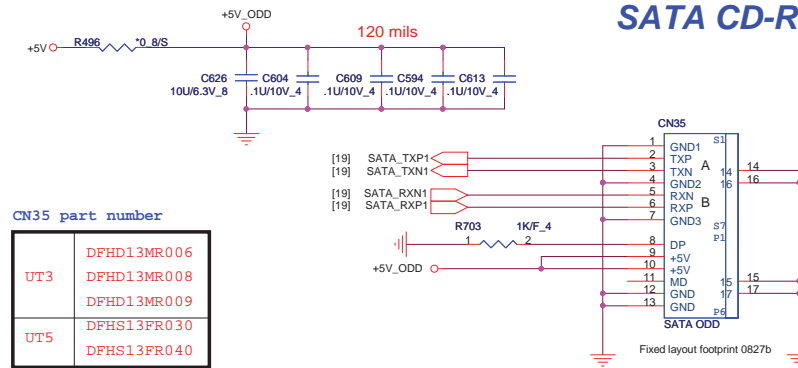
# SATA\_1 CONNECTOR



# RIGHT SIDE USBX2



# SATA CD-ROM

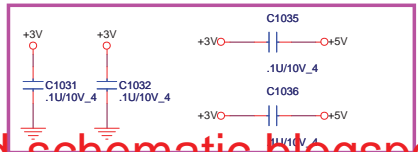
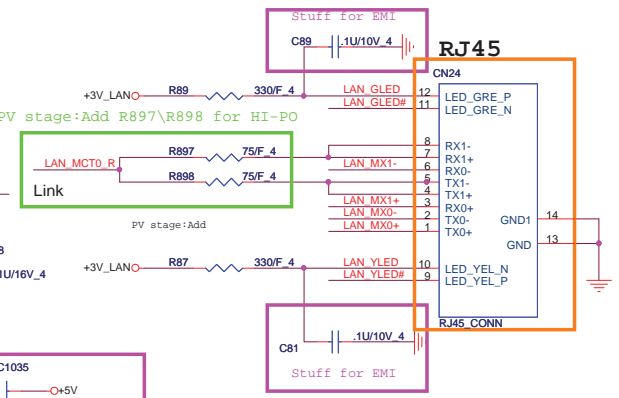
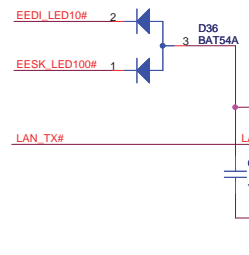
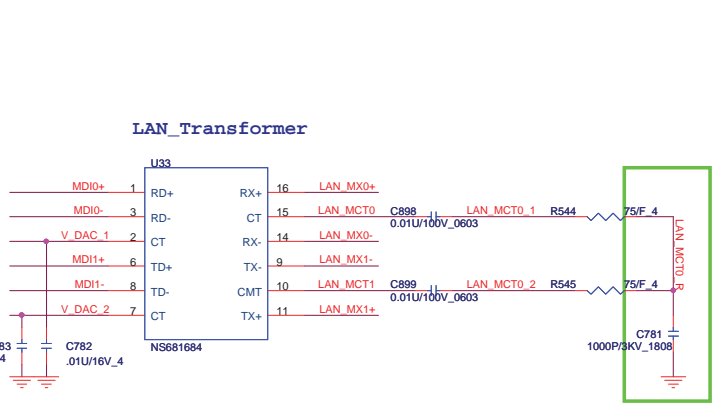
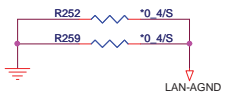
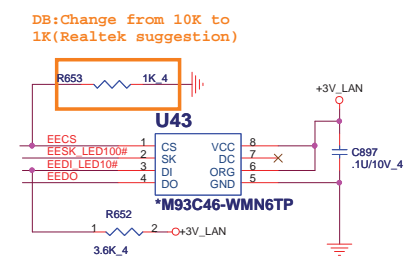
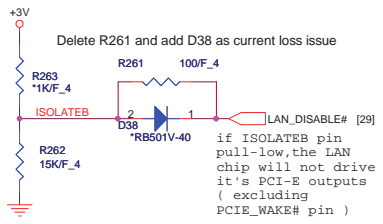
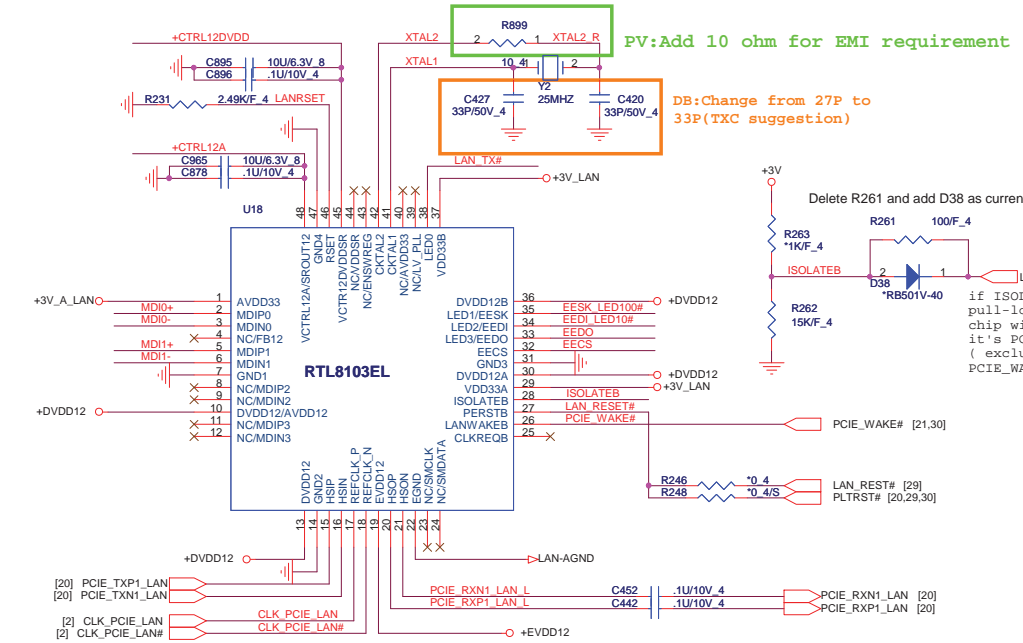
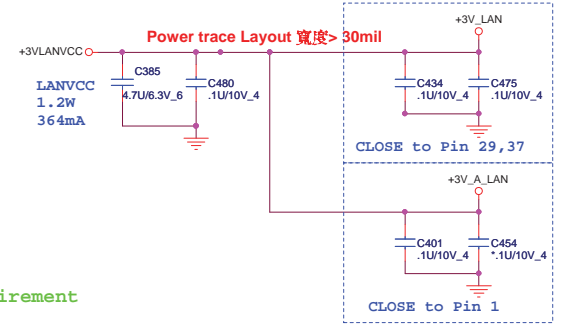
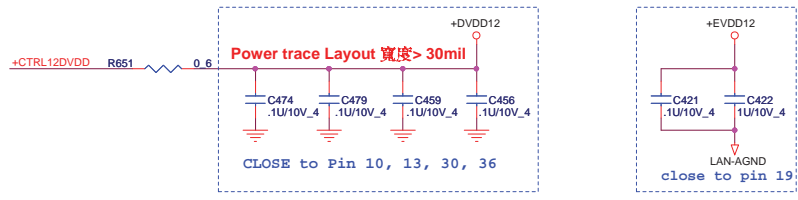


CN35 part number

UT3	DFHD13MR006
	DFHD13MR008
	DFHD13MR009
UT5	DFHS13FR030
	DFHS13FR040

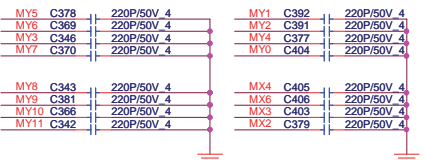
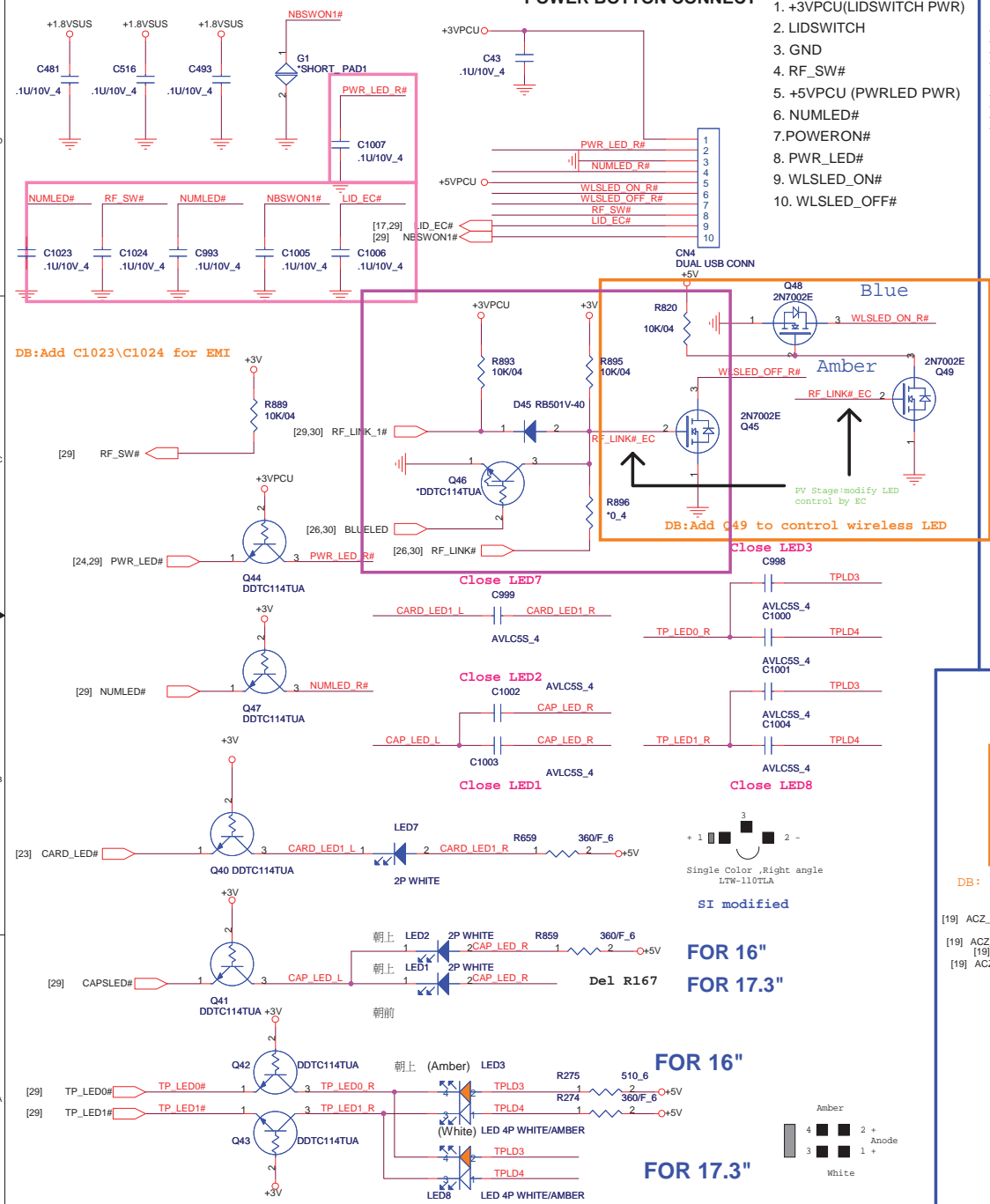
PROJECT : OP6/7  
Quanta Computer Inc.

Size Custom	Document Number BT/ESATA/USB/ODD/HDD	Rev SI
Date: Tuesday, January 20, 2009	Sheet 26 of 37	

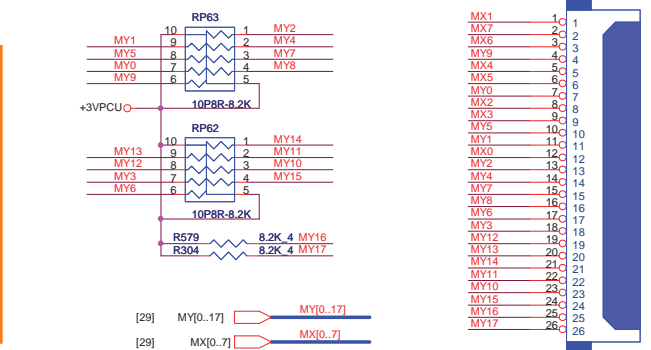


**POWER BOTTON CONNECT**

1. +3VPCU(LIDSWITCH PWR)
2. LIDSWITCH
3. GND
4. RF\_SW#
5. +5VPCU (PWRLD PWR)
6. NUMLED#
7. POWERON#
8. PWR\_LED#
9. WLSLED\_ON#
10. WLSLED\_OFF#

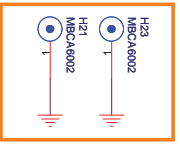


**KEYBOARD PULL-UP**



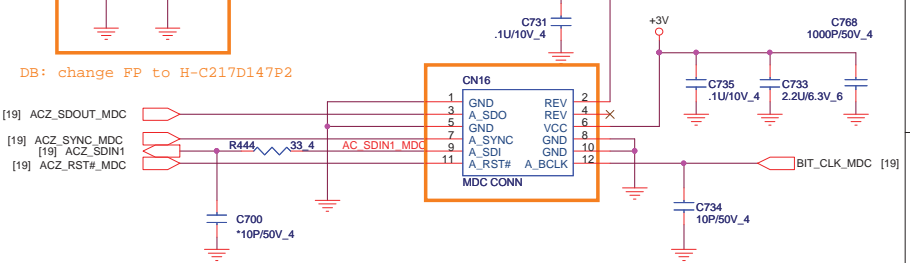
GB1RF260-1253-8F  
Footprint: "gblrf260-1253-7f-26p-1"

R430 Change to 100k ohm ,pull low



DB: change FP to H-C217D147P2

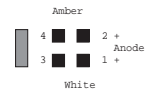
**MDC**



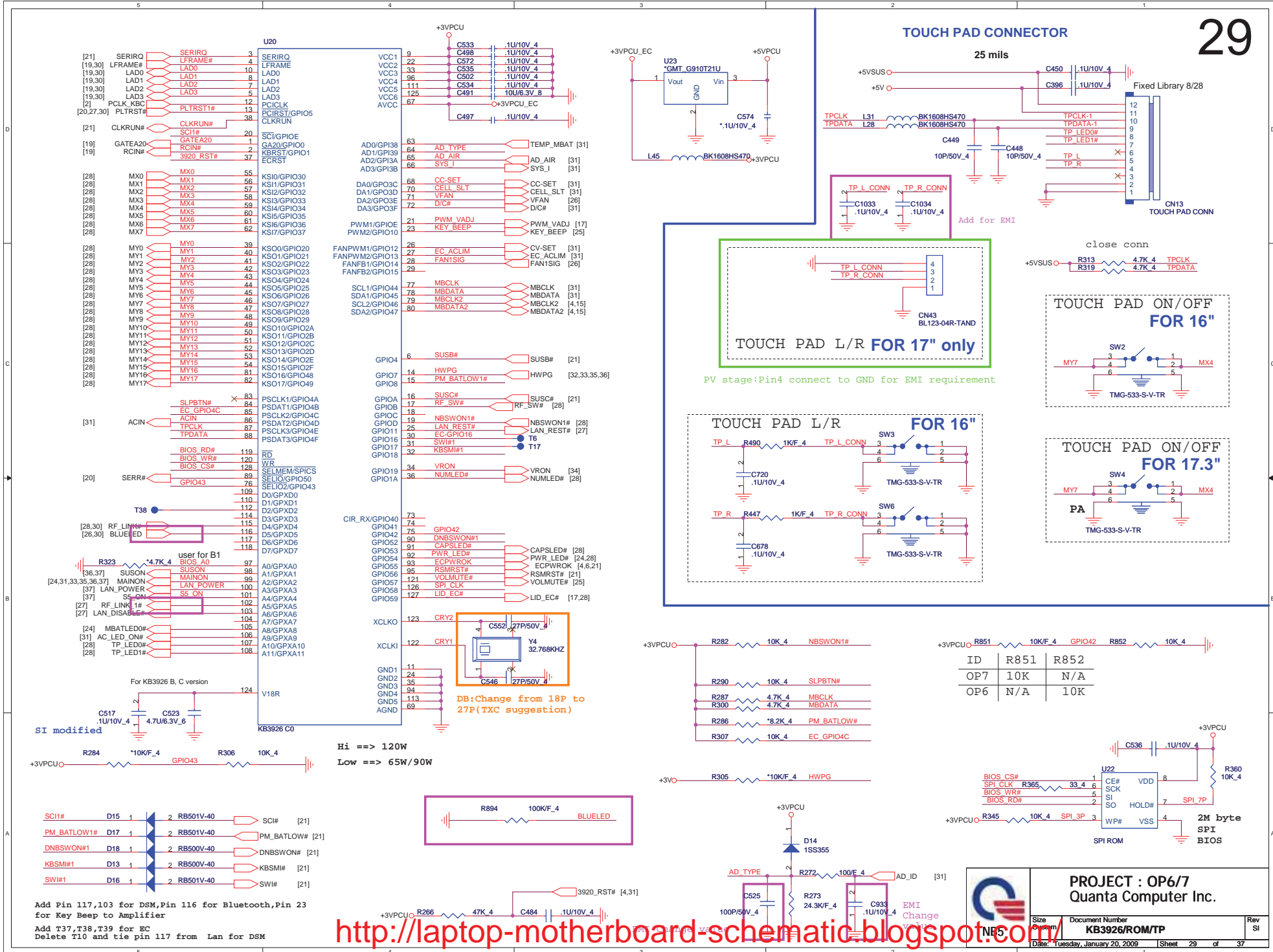
DB: change FP to MDC-1-179373-2-12P-RUV

FOR 16"  
FOR 17.3"

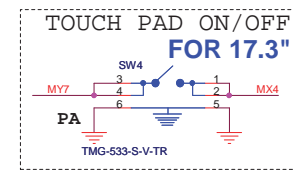
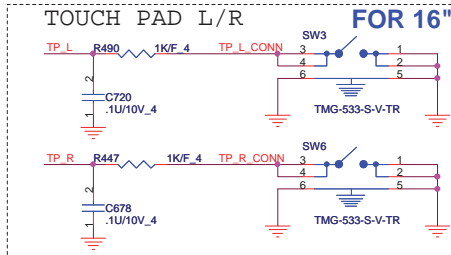
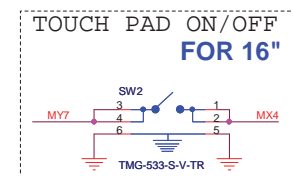
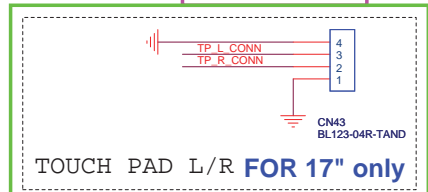
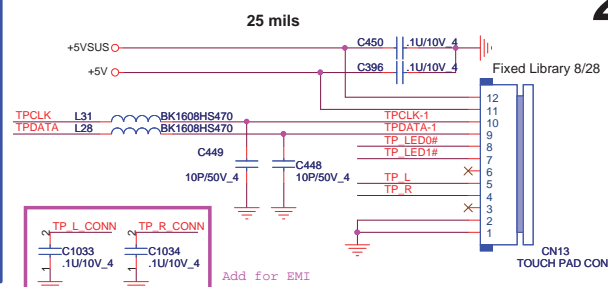
FOR 16"  
FOR 17.3"



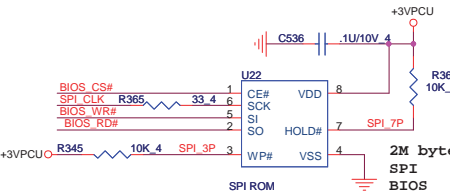
	<p><b>PROJECT : OP6/7</b> Quanta Computer Inc.</p>	
	<p>Size: Custom</p>	<p>Document Number: <b>KB/LED/POWER CONN/MDC</b></p>
<p>Date: Tuesday, January 20, 2009</p>		<p>Sheet 28 of 37</p>



TOUCH PAD CONNECTOR



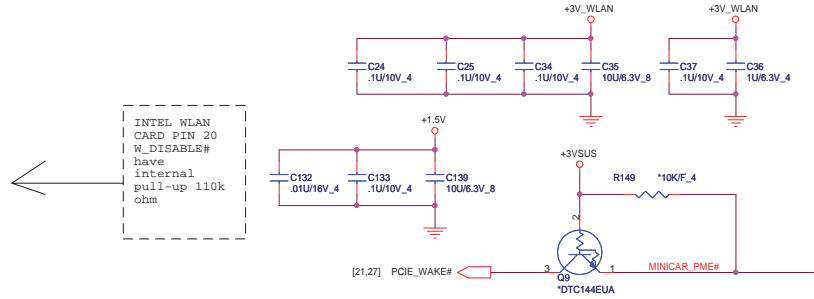
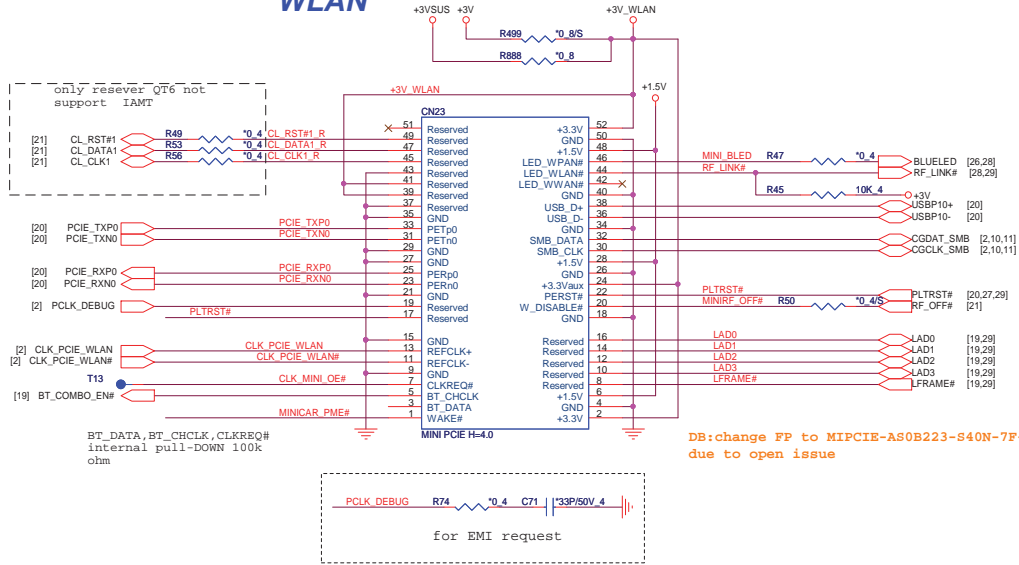
ID	R851	R852
OP7	10K	N/A
OP6	N/A	10K



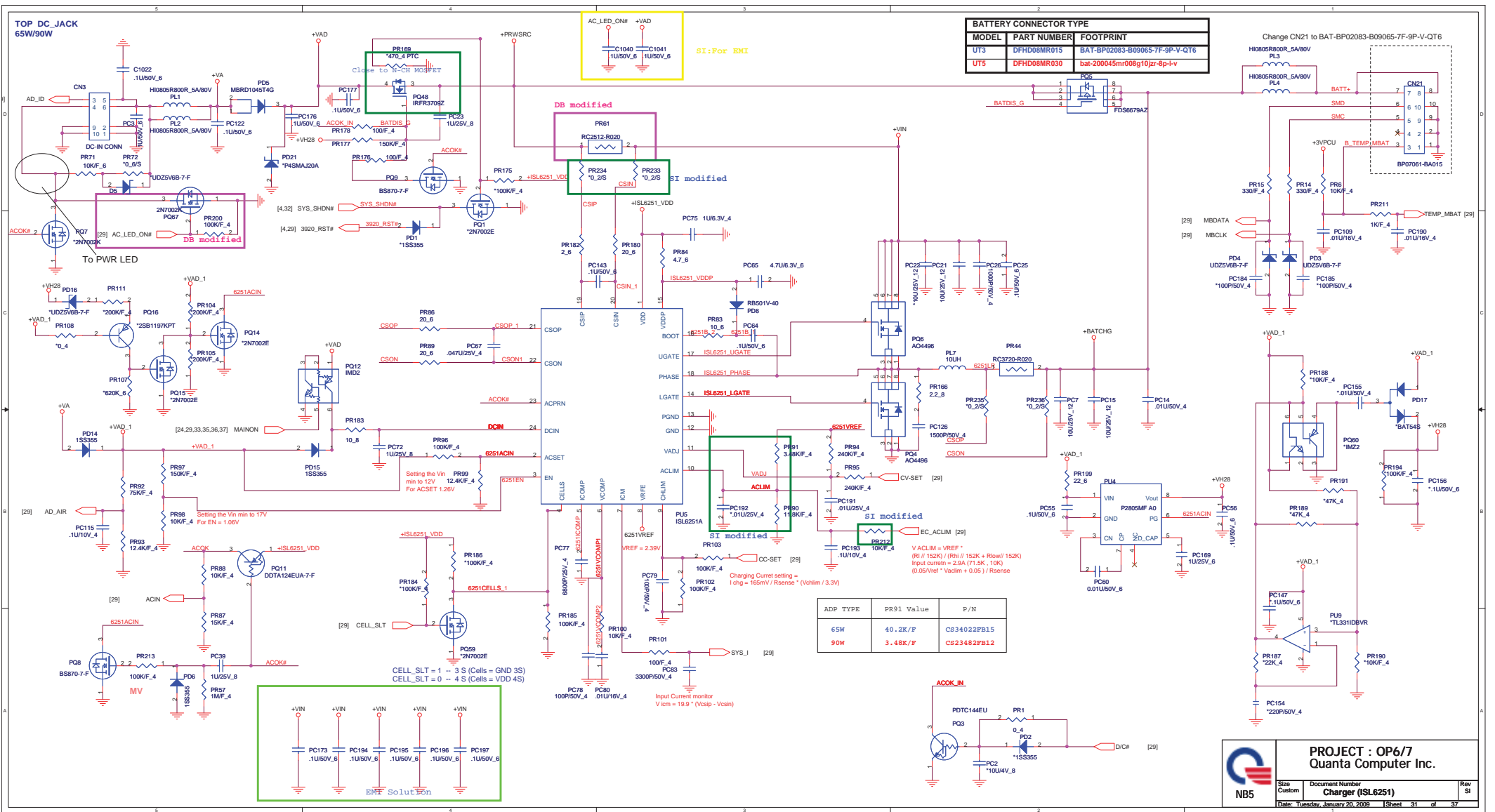
PROJECT : OP6/7  
Quanta Computer Inc.

<http://laptop-motherboard-schematic.blogspot.com/>

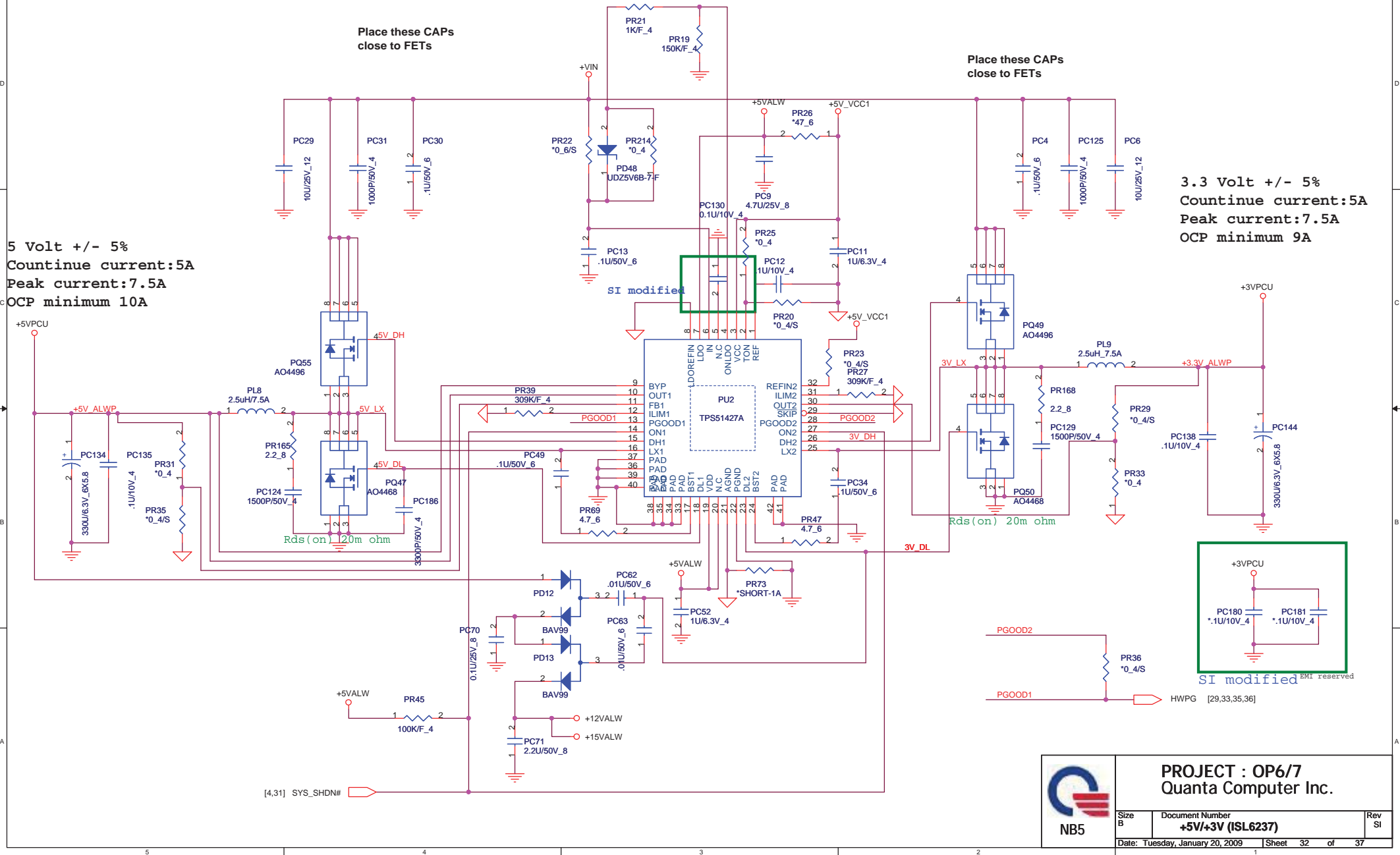
# Mini PCI-E Card 1 WLAN



	PROJECT : OP6/7		Rev SI
	Quanta Computer Inc.		
Size Custom	Document Number MINI PCI_E CONN X3	Date: Tuesday, January 20, 2009   Sheet 30 of 37	



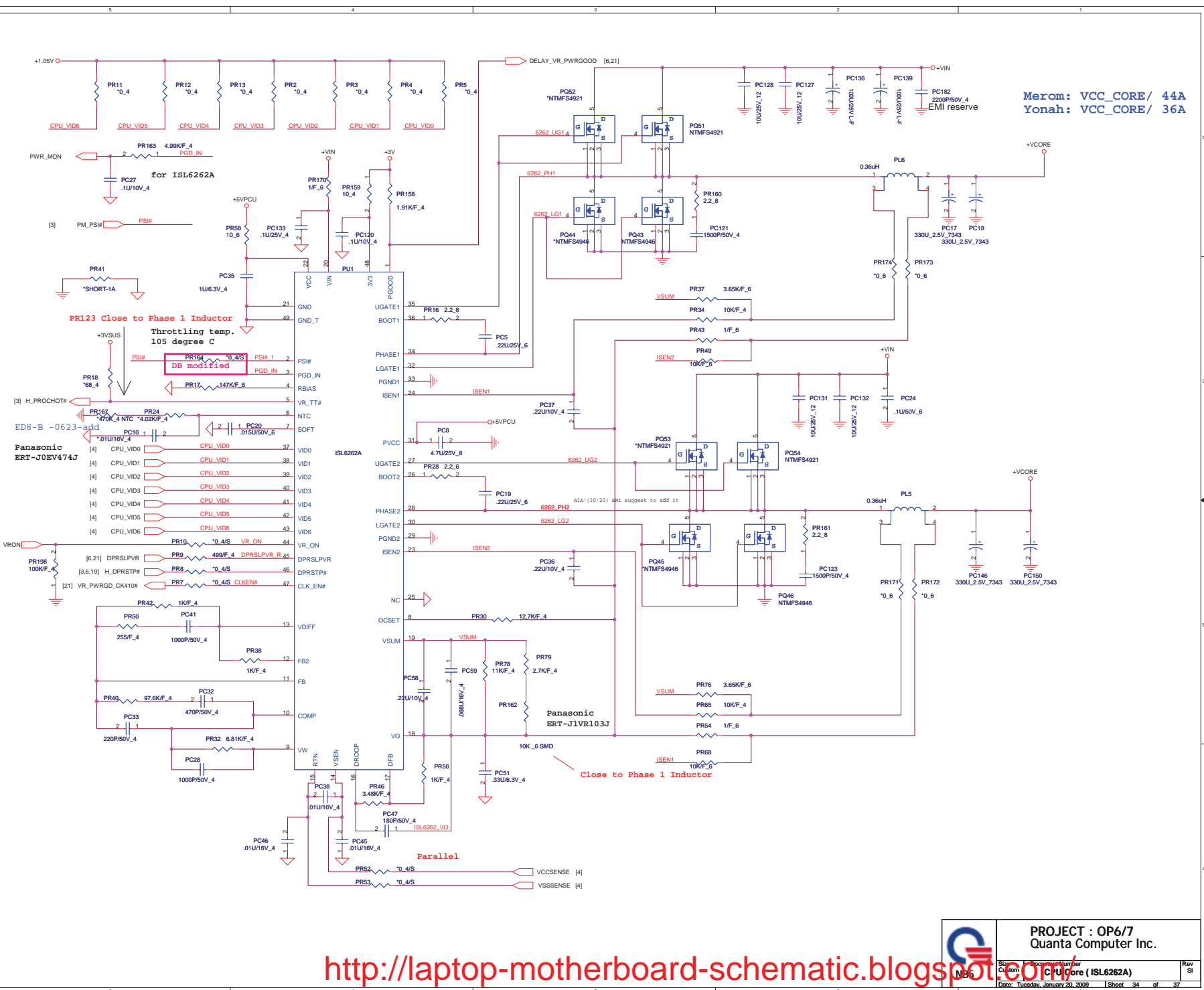
# DC/DC +3V\_ALW/+5V\_ALW/+5V\_ALW2 /+12V\_ALW



<b>PROJECT : OP/7</b> Quanta Computer Inc.		
Size B	Document Number <b>+5V/+3V (ISL6237)</b>	Rev SI
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Merom: VCC\_CORE/ 44A  
Yonah: VCC\_CORE/ 36A

for ISL6262A

PR123 Close to Phase 1 Inductor  
Throttling temp. 105 degree C

Panasonic ERT-J0EV474J

Panasonic ERT-J1VR103J

Parallel

Close to Phase 1 Inductor

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