

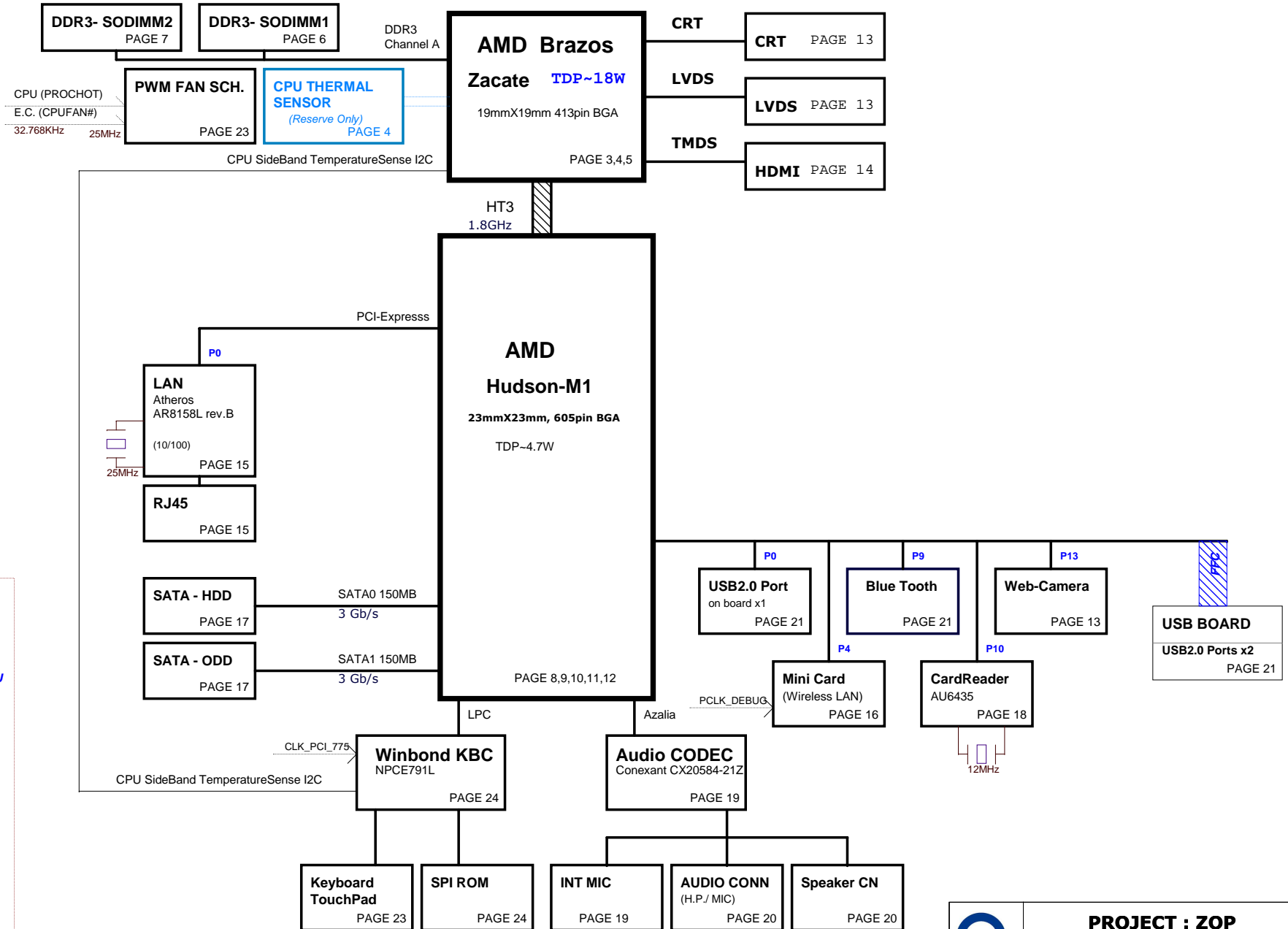
ZQP SYSTEM DIAGRAM

PCB STACK UP

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

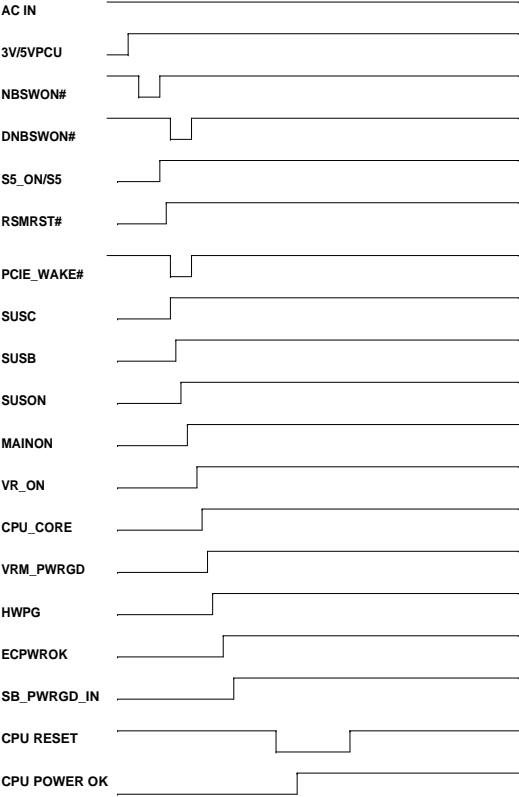
HDMI@ -----> HDMI option
SP@ -----> Board ID/Strap pin
H@ -----> 家電下鄉

UMA REV:B



PAGE#	DESCRIPTION	NOTE
1	BLOCK DIAGRAM	
2	SYSTEM INFORMATION	
3	ONTARIO MEM & PCIE I/F(1/3)	
4	ONTATIO DISPLAY/CLK/MI(2/3)	
5	ONTARIO POWER & DECOUP(3/3)	
6	DDR3 SO-DIMM (STD=8)	
7	DDR3 SO-DIMM (STD=4)	
8	HUDSON PCIE/LPC/CPU IF(1/5)	
9	HUDSON ACPI/GPIO/USB(2/5)	
10	HUDSON SATA/BIDs(3/5)	
11	HUDSON PWR/GND(4/5)	
12	HUDSON STRAPS/PWRGD(5/5)	
13	CRT/LVDS/CCD	
14	HDMI	
15	LAN AR8152	
16	MINI PCI-E	
17	HDD /ODD	
18	CARD READER	
19	AUDIO - CONEXANT 20584	
20	AUDIO JACK CONN	
21	USB / BT /TP	
22	LED / NUT	
23	KB/FAN/TP	
24	WPCE791 /FLASH	
25	CHARGER (ISL88731A)	
26	SYSTEM 5V/3V (RT8223M)	
27	CPU CORE (OZ8380)	
28	VCCP 1.1V (G5602)	
29	+1V(G5602)	
30	DDR 1.5V (RT8207A)	
31	+1.8V/Discharge/Thermal Protection	
32	Change list	

Power Sequence

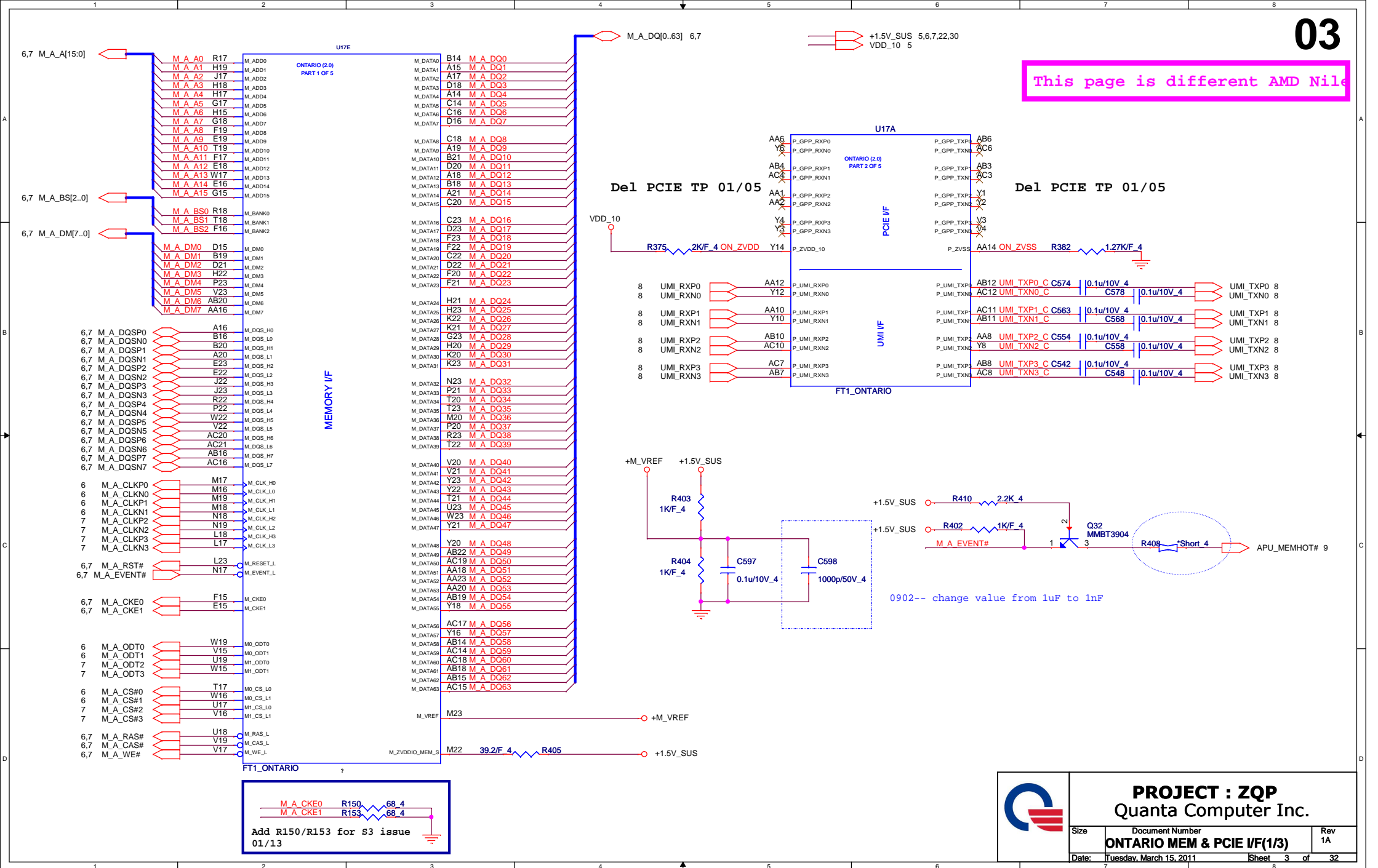


Hudson M1 SM BUS

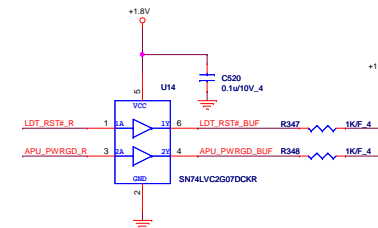
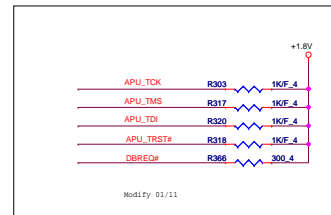
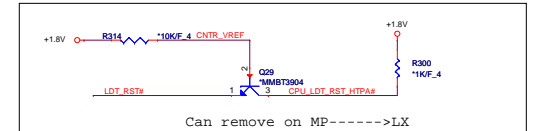
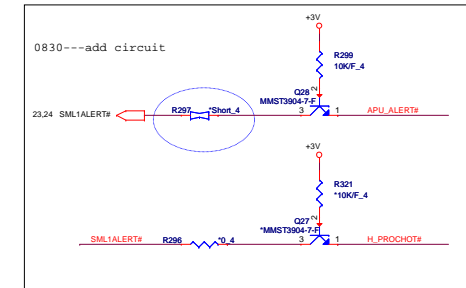
SB820 SMBUS	Pin NO.	SMBUS Function Define
PCLK_SMB PDAT_SMB (+3V)	AD22 AE22	DDR / RFID
SB_SMBCLK1 SB_SMBDATA1 (+3V_S5)	F5 F4	not used
SB_SCLK2 SB_SDATA2 (+3V_S5)	D25 F23	not used
SB_SCLK3 SB_SDATA3 (+3V_S5)	B26 E26	not used
SB_SCLK3 SB_SDATA3 (+3V_S5)	B26 E26	not used

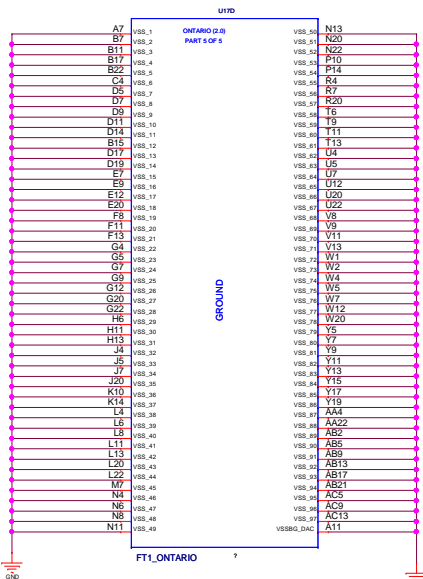
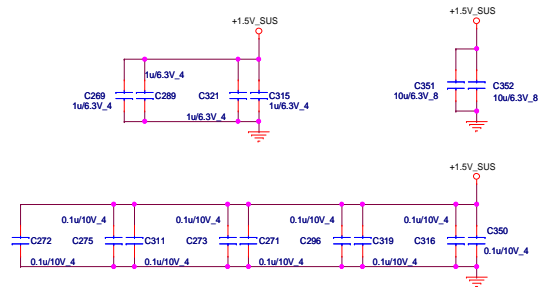
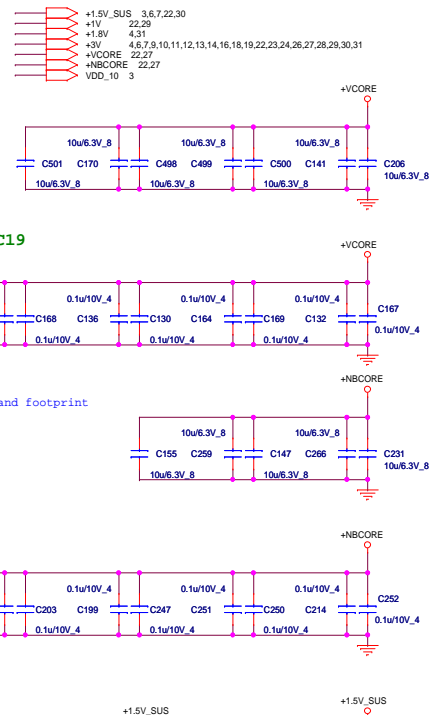
KBC(EC) SM BUS

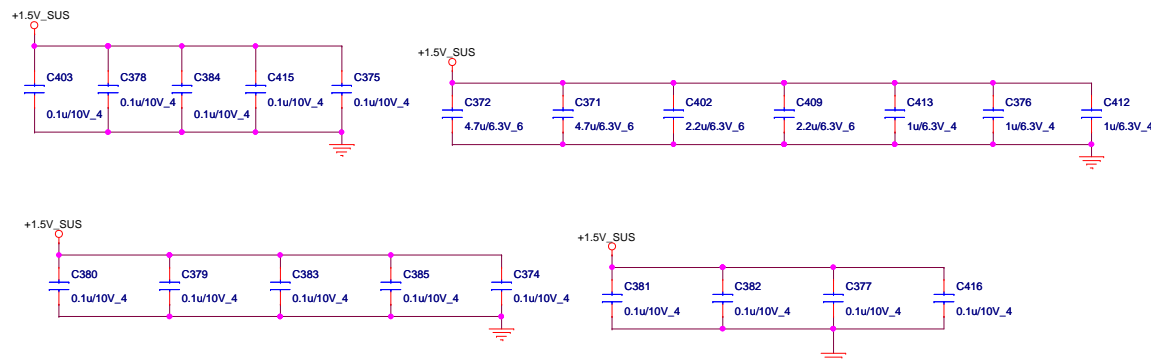
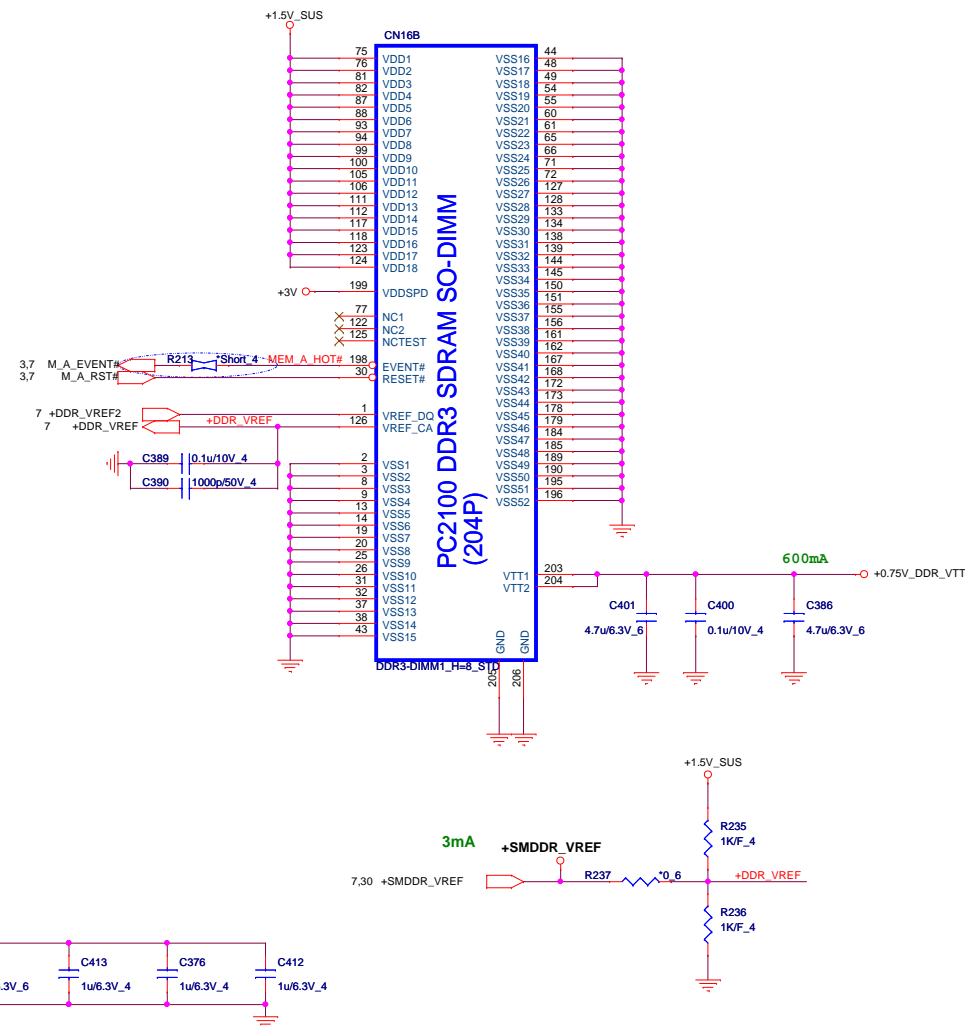
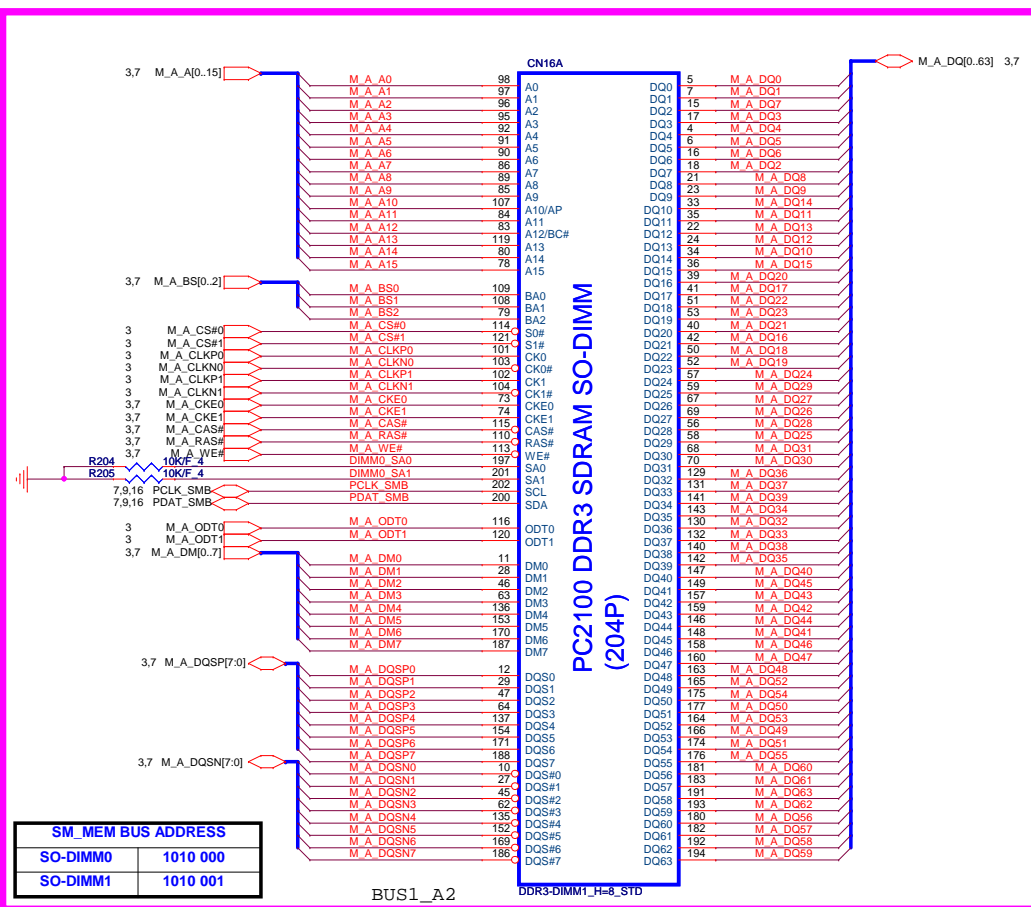
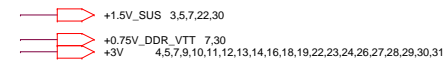
KBC SMBUS	Pin NO.	SMBUS Function Define
MBCLK MBDATA (+3VPCU)	110 111	Battery
MBCLK_THRM MBDATA_THRM (+3VPCU)	115 116	Thermal



The diagram illustrates the power supply circuit for the CPU/APU section of the HP Z440. It features two main voltage rails: +1.8V and +3V. The +1.8V rail is connected to the APU_SVC and APU_SIO pins via resistors R70 and R99. The +3V rail is connected to the LDT_RST# and APU_PWROD pins via resistors R301 and R326. Additionally, the +3V rail branches to supply the APU_THERMTRIP# and APU_ALERT# pins through resistors R345 and R334, and the H_PROCHOT# pin through resistor R323. A 2K 1/6W F 4 resistor is connected between the +3V rail and the INT_CRT_RED, INT_CRT_GRE, and INT_CRT_BLU pins of the APU. The diagram also shows the connection to the 2K 1/6W F 4 capacitors connected to the INT_EDDCLK and INT_EDDDATA pins.

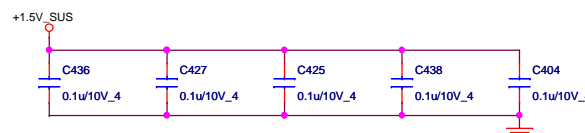
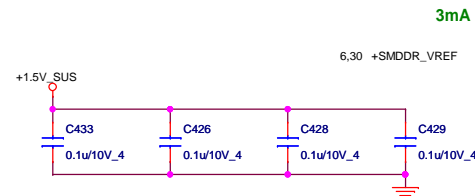
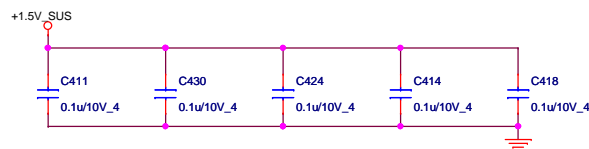
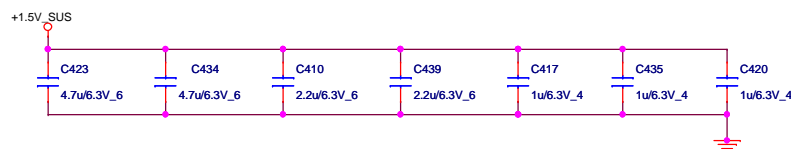
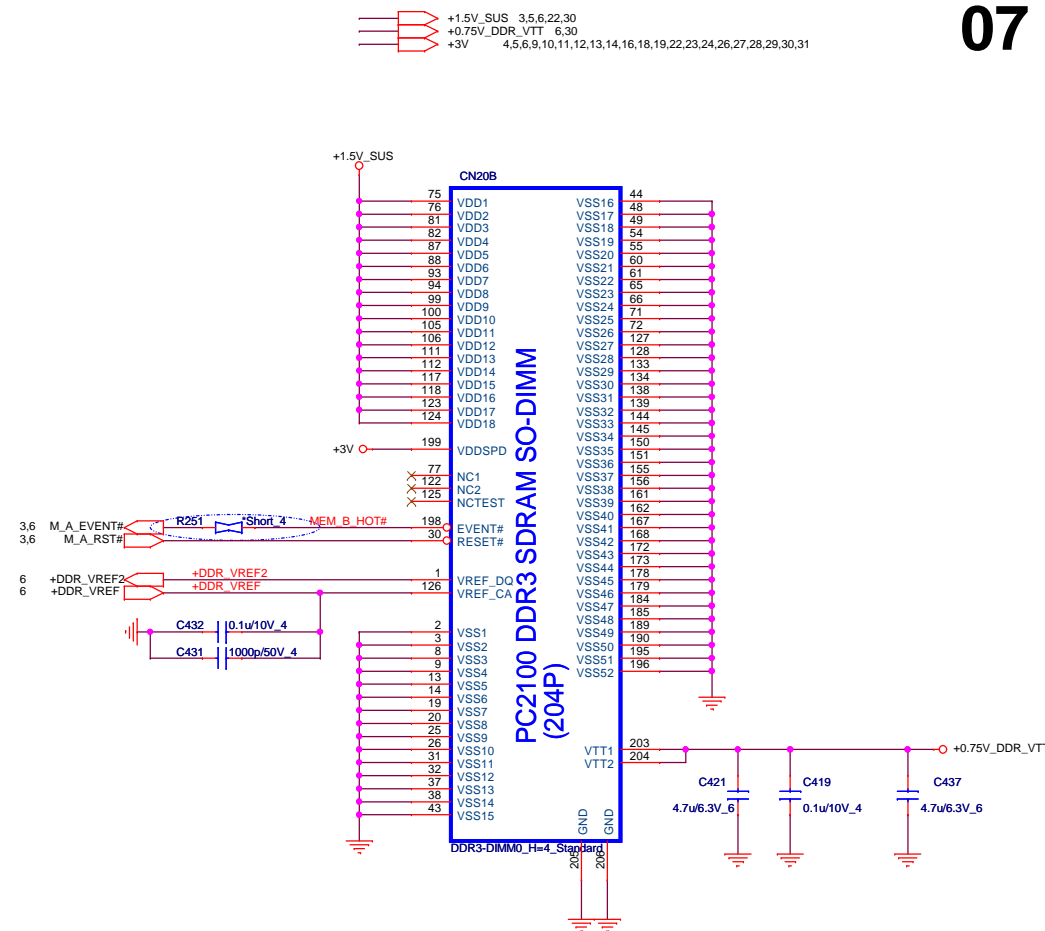
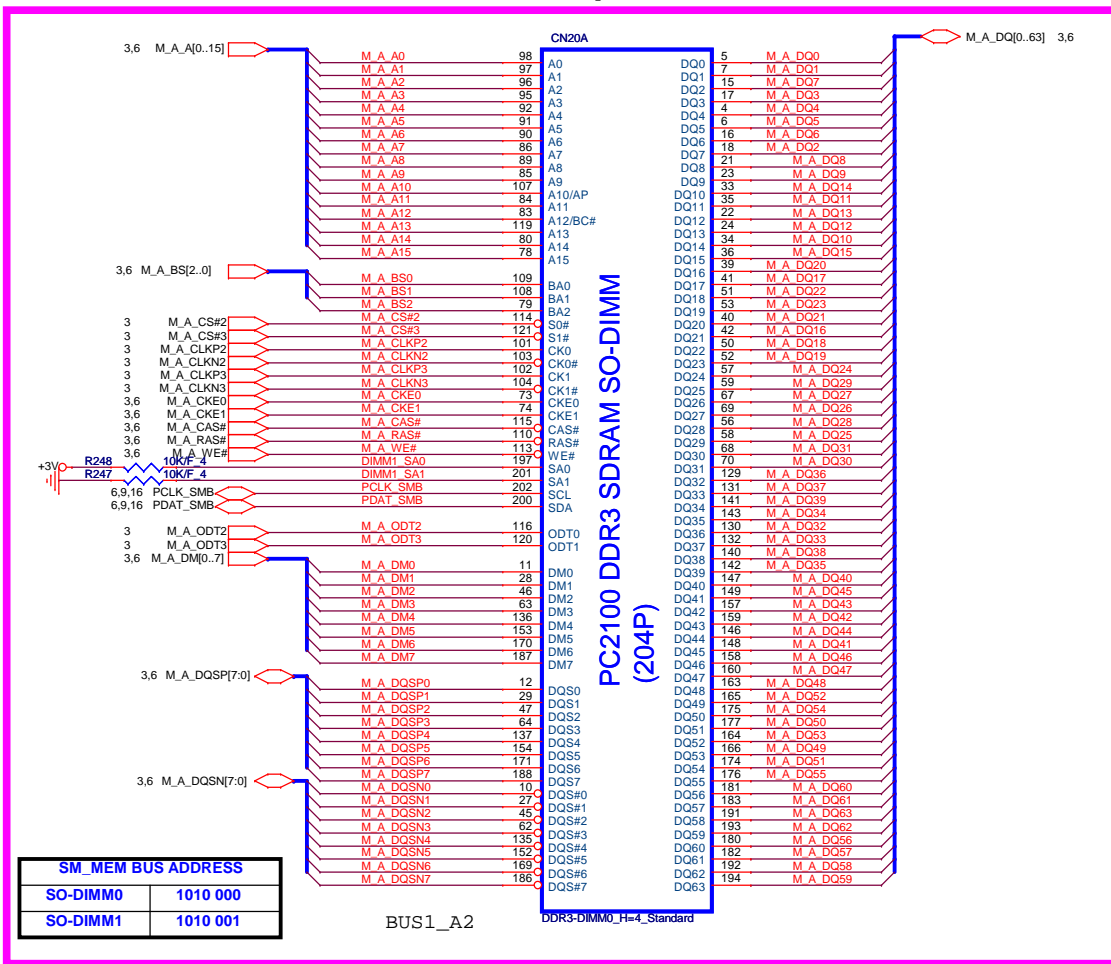






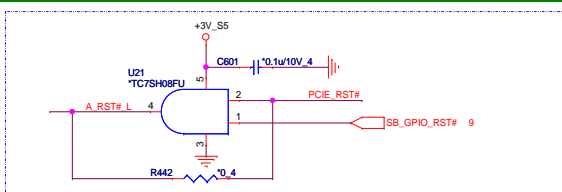
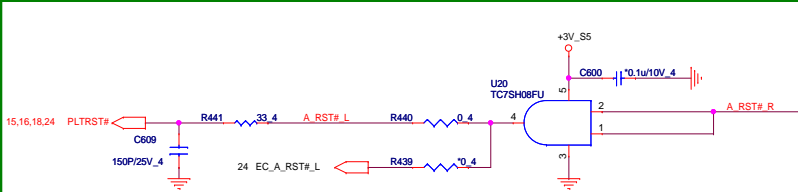
PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number DDR3 SO-DIMM (STD)	Rev 1A
Date:	Tuesday, March 15, 2011	Sheet 6 of 32



PROJECT : ZQP
Quanta Computer Inc.

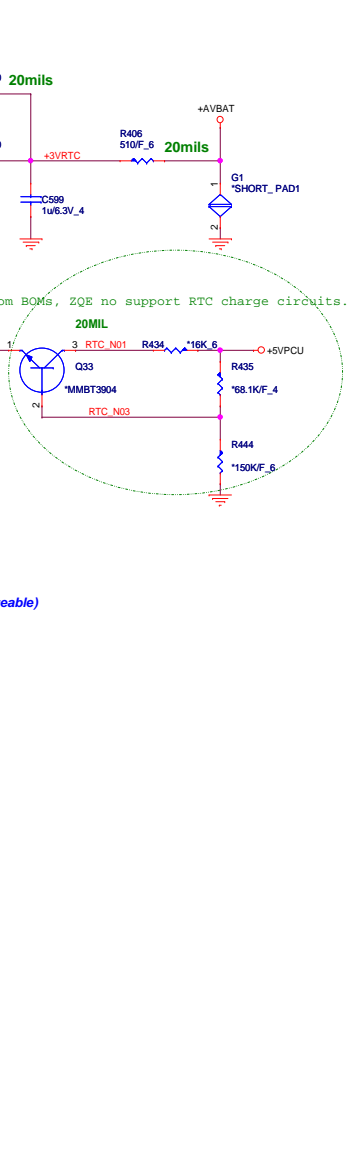
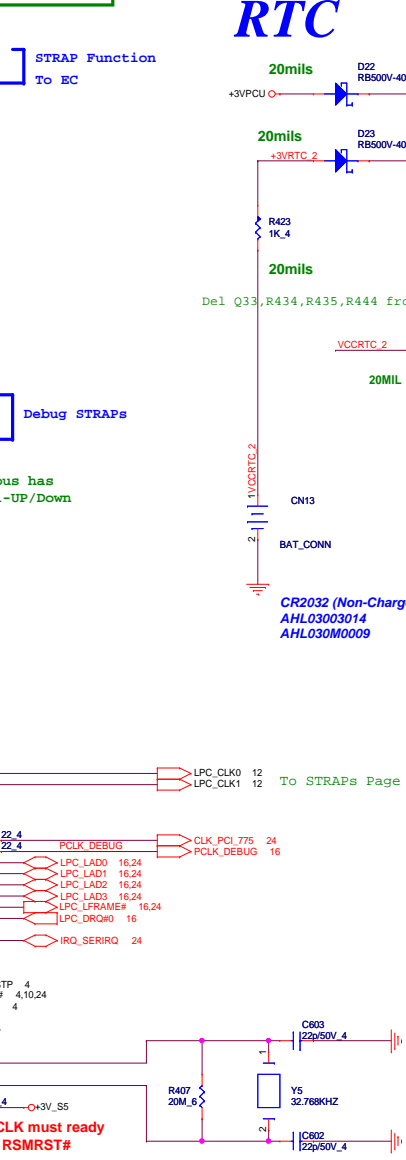
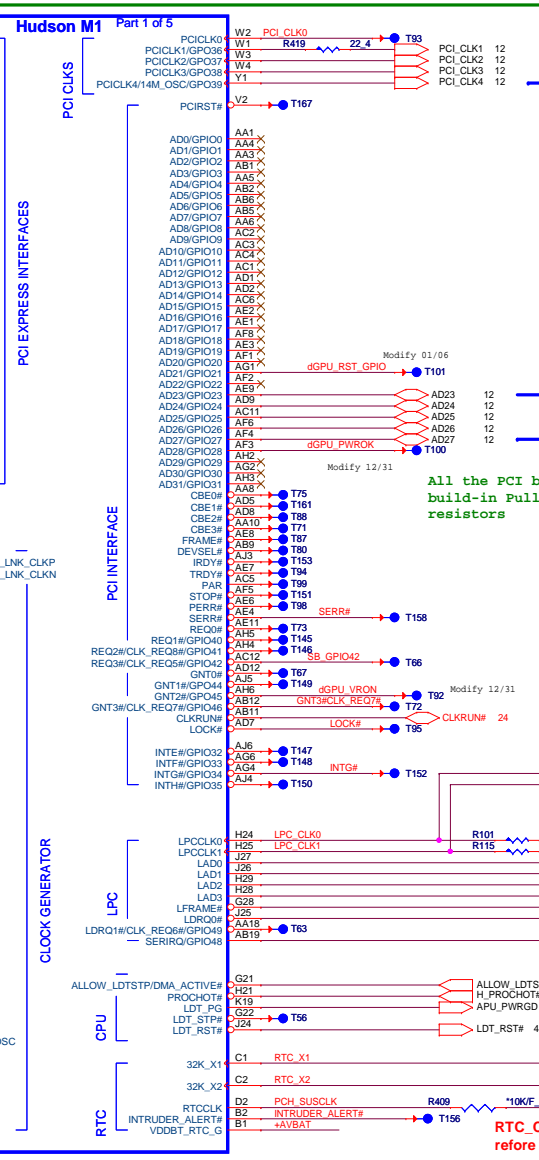
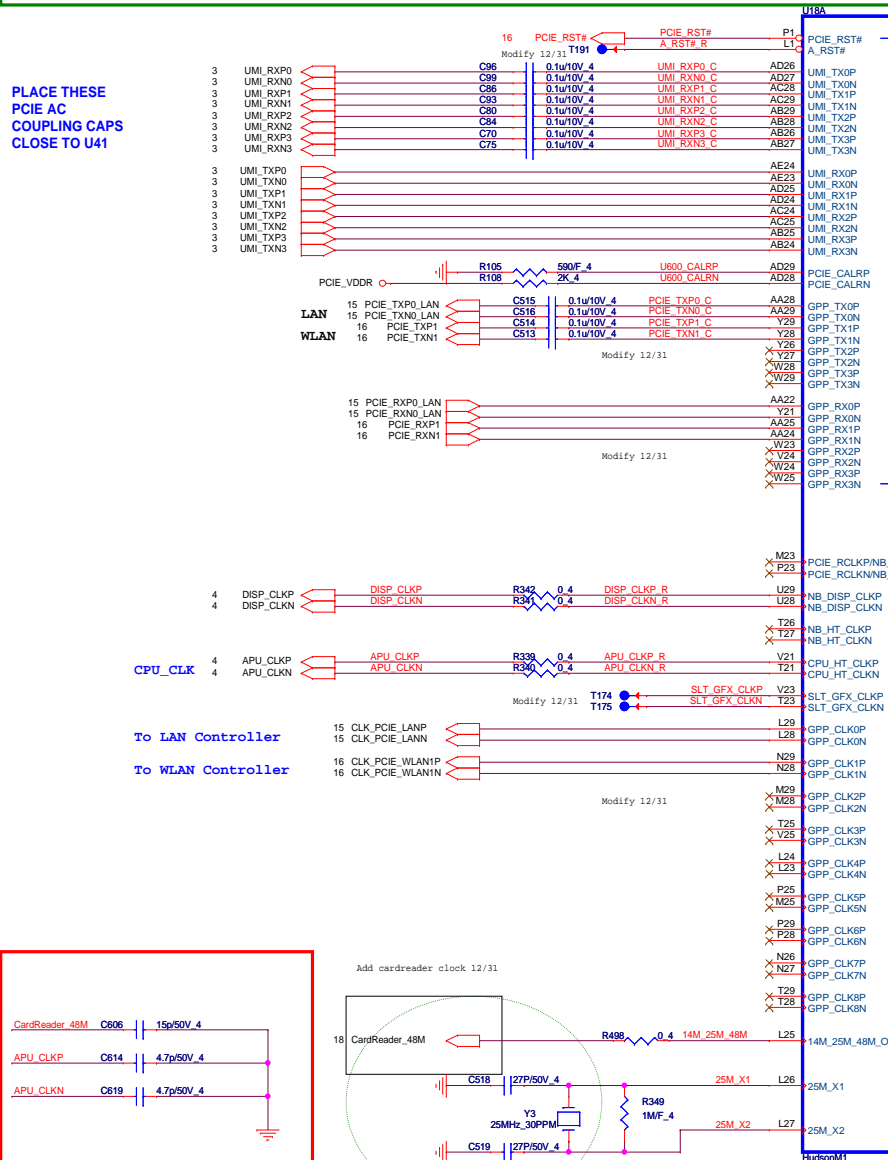
Size	Document Number	Rev
7	DDR3 SO-DIMM (STD)	1A
Date: Tuesday, March 15, 2011	Sheet 7 of 32	



PCIE_VDDR 11
+3V_S5 9,10,11,12,15,21,22,26
+3VPCU 13,22,23,24,25,26,31
+5VPCU 26,27,28,31

This page is different AMD Nil expect RTC circuit

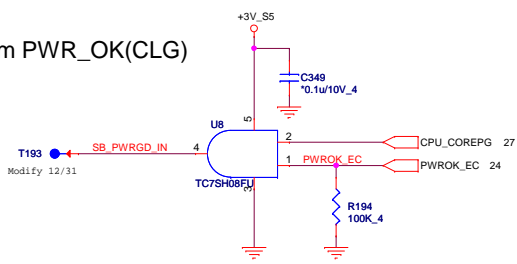
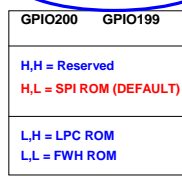
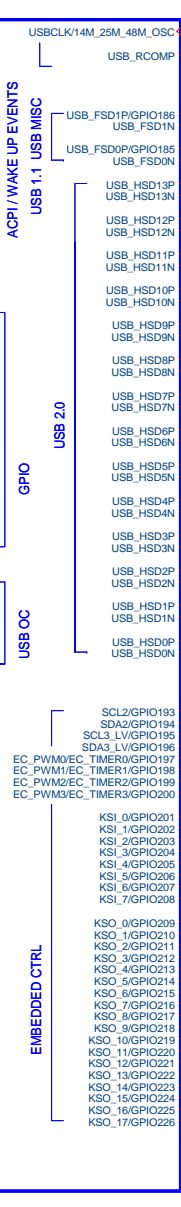
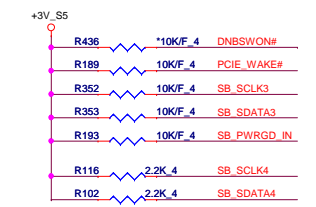
PLACE THESE
PCIE AC
COUPLING CAPS
CLOSE TO U41



Add C606,C614,C619 for strong clock
02/15 REV:B

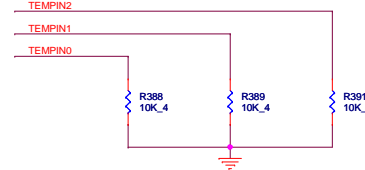
BG625000486

INTRUDER_ALERT# Left not connected (Southbridge has 50-kohm internal pull-up to VBAT).



This page is different AMD Nile

AMD recommend : TEMPIN0 / TEMPIN1 / TEMPIN2
can not maintain on floating stages when without usage.
Do not care pull high or pull down.

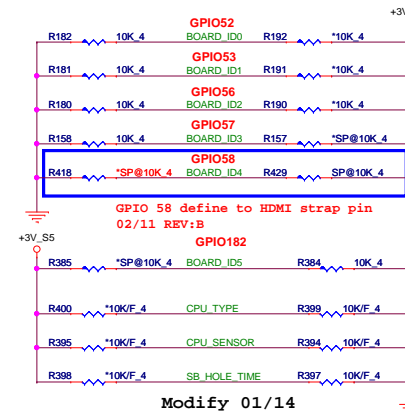


0831--modify location

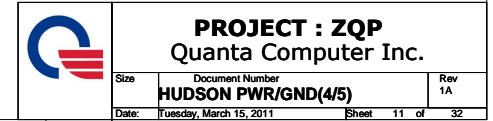
MB ID

CPU THERMAL	GPIO52
External	1
SB-TSI	0
SB8XX Hold Time	GPIO53
1.2V	1
1.1V	0
DU1/MK2	GPIO56
MK2.0 AMD	1
DU1.0 AMD	0

	GPIO57
(Dis) SW	1
UMA	0
	GPIO58
With HDMI	1
Without HDMI	0
	GPIO182
PX4.0	1
PX3.0	0



PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.

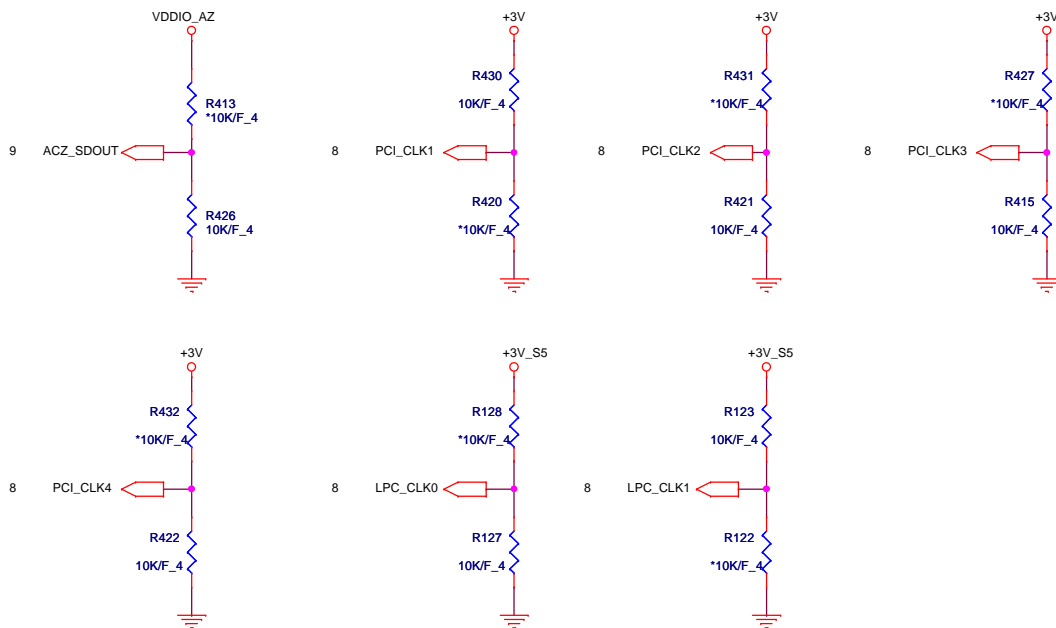




OVERLAP COMMON PADS WHERE
POSSIBLE FOR DUAL-OP RESISTORS.

REQUIRED STRAPS

internal have pull
Hi 10K , confirm AMD
ward this pull Hi
not need



PCI_CLK4 CPU/NB HT Clock Selection
0 V - Reserved.
3.3 V - Required setting for integrated clock mode.
This strap is not used if the strap CLKGEN is
configured for external clock generator mode.

REQUIRED STRAPS

	AZ_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	GPIO200	GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE Gen2 DEFAULT	Watchdog Timer Enabled	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	H,H = Reserved H,L = SPI ROM (Default)	
PULL LOW	PERFORMANCE MODE DEFAULT	FORCE PCIE Gen1	Watchdog Timer Disabled DEFAULT	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	L,H = LPC ROM L,L = FWH ROM	

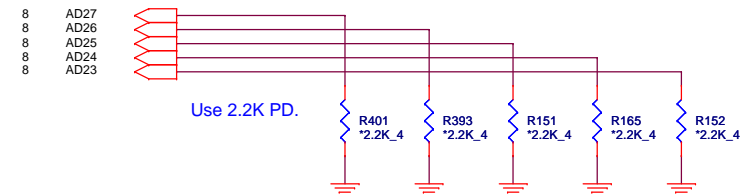


VDDIO_AZ 11
+3V 4,5,6,7,9,10,11,13,14,16,18,19,22,23,24,26,27,28,29,30,31
+3V_S5 8,9,10,11,15,21,22,26

12

DEBUG STRAPS

HUDSON-M1 HAS 15K INTERNAL PU FOR PCI_AD[27:23]



	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT



PROJECT : ZQP
Quanta Computer Inc.

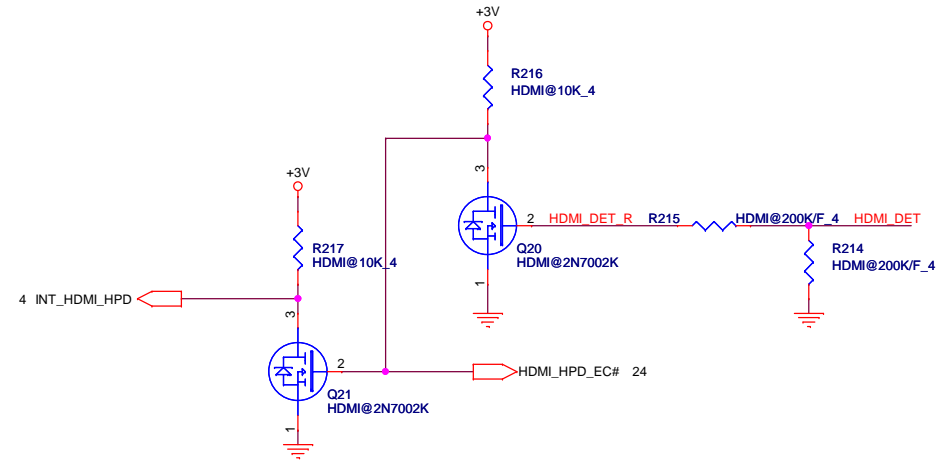
Size	Document Number	Rev
	HUDSON STRAPS/PWRGD(5/5)	1A
Date:	Tuesday, March 15, 2011	Sheet 12 of 32

HDMI HPD SENSE (HDM)

HDMI SDVO I2C Control

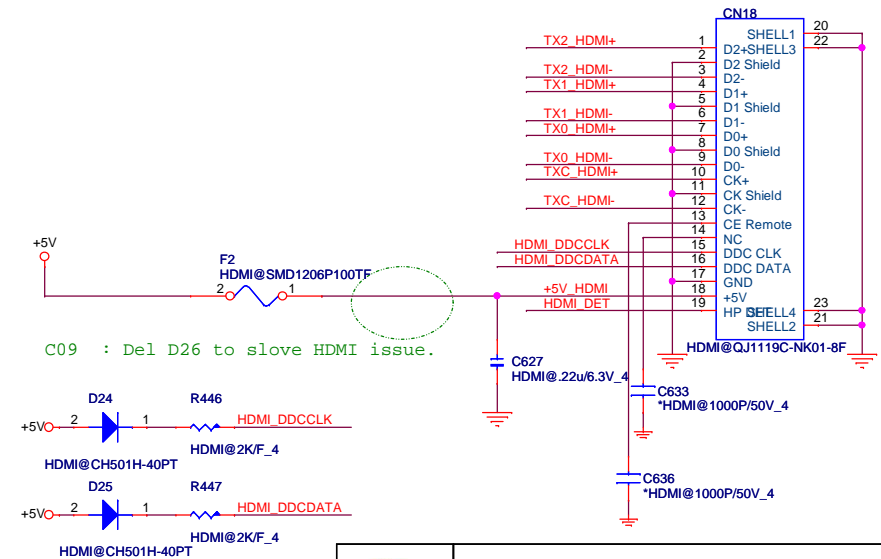


```
UMA use +3V for the detect pin
Dis use +3V_DELAY for the detect pin
```



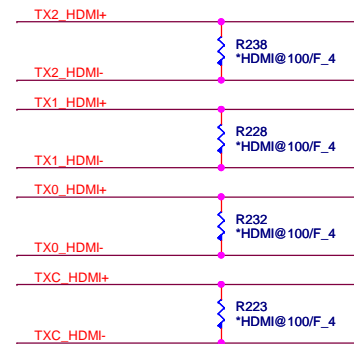
Added HDMI function
01/19 REV:B

HDMI PORT (HDM)

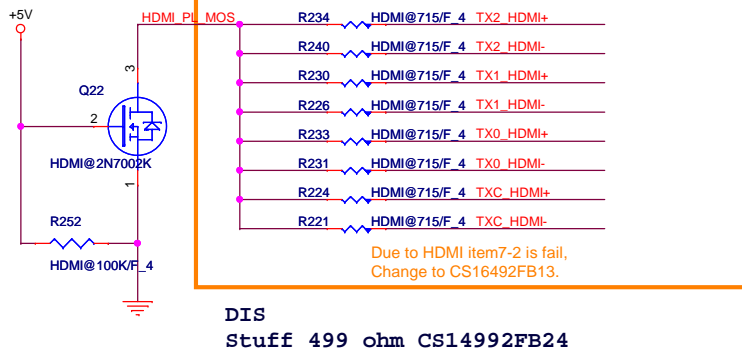


EMI reserve for HDMI(EMC)

Close connector



Close to HDMI Connector



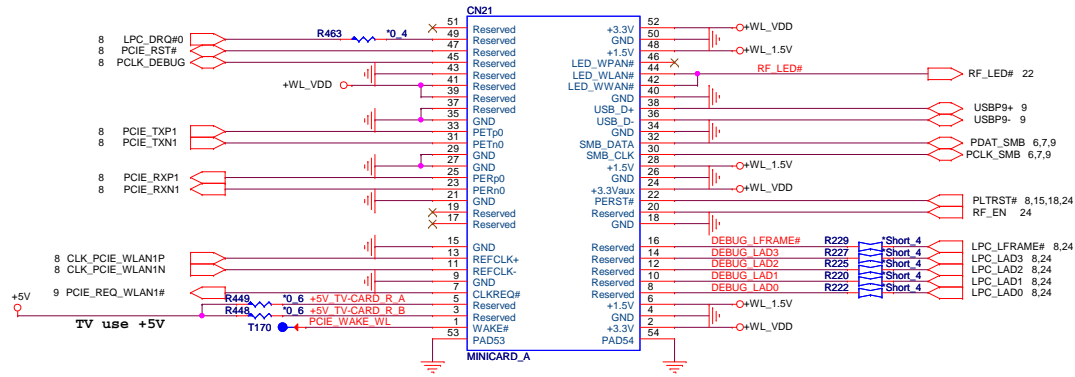
PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number	Rev 1A
Date:	Tuesday, March 15, 2011	Sheet 14 of 32

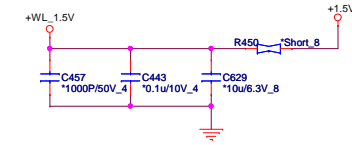
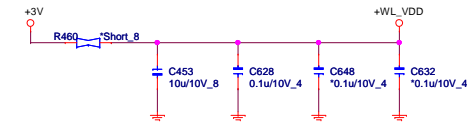
MINI-CARD WLAN(MPC)

+3.3V: 1000mA
+3.3Vaux:330mA
+1.5V:500mA

Check LED signal. (active high or low)



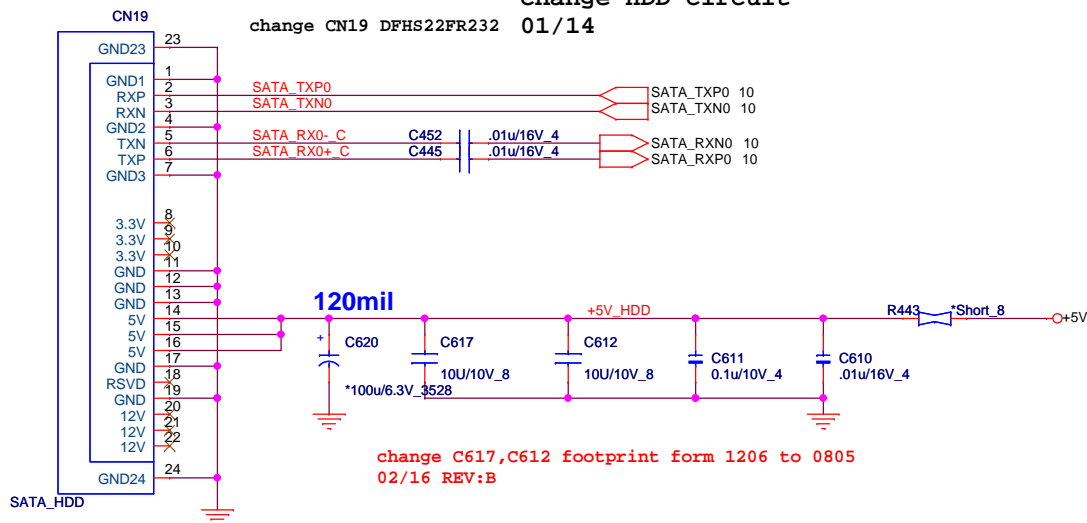
Debug



SATA HDD

change HDD circuit

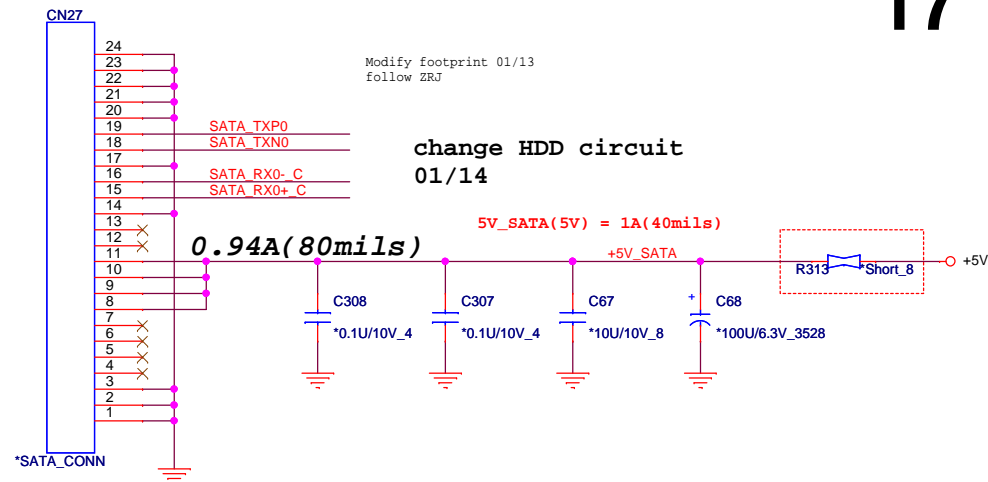
change CN19 DFHS22FR232 01/14



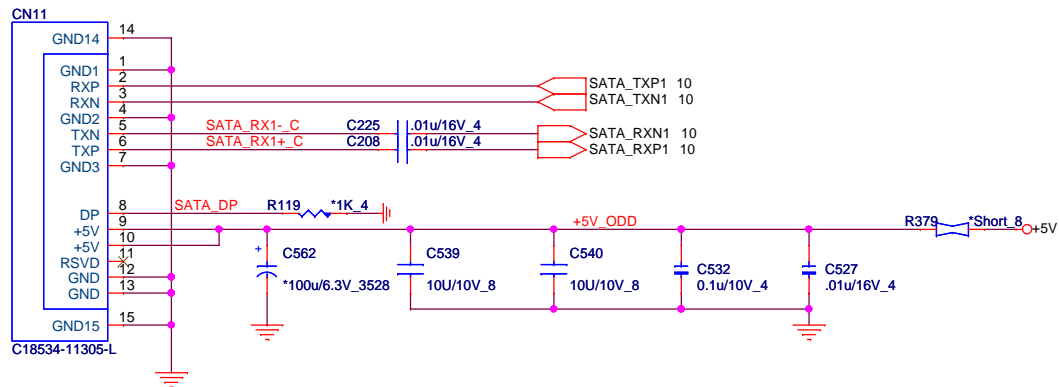
SATA HDD(HDD)

Modify footprint 01/13
follow ZRJ

change HDD circuit
01/14



SATA ODD



PROJECT : ZQP
Quanta Computer Inc.

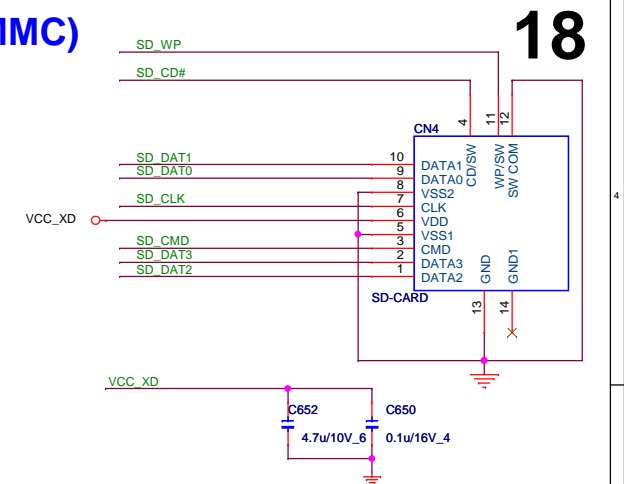
Size	Document Number	Rev
	SATA-HDD/ODD/HOLE	1A

Date: Tuesday, March 15, 2011 Sheet 17 of 32

CARD READER Controller AU6435-GDL

2 IN 1 CARD READER (SD/MMC)

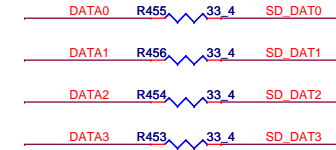
Main	DFHS11FR011
Second	DFHS11FR033



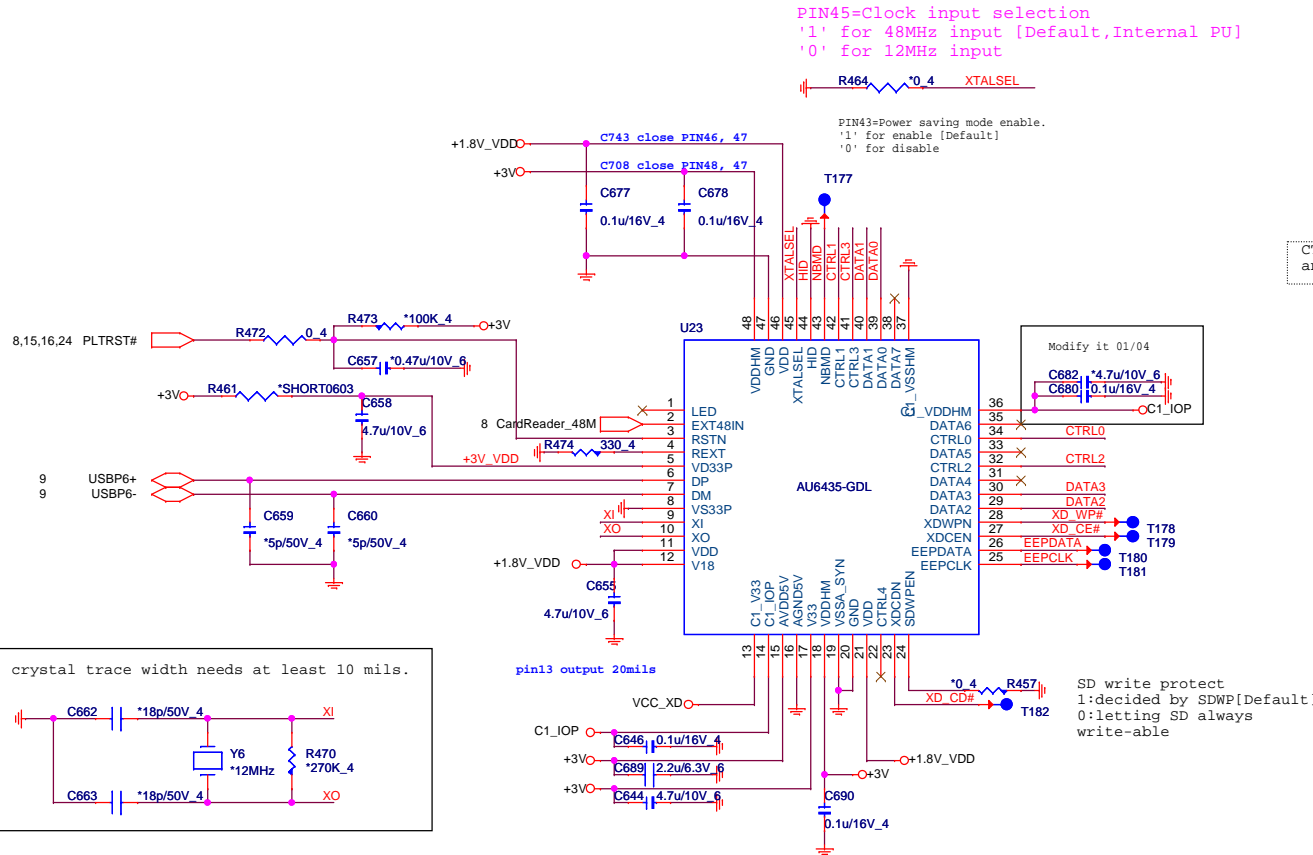
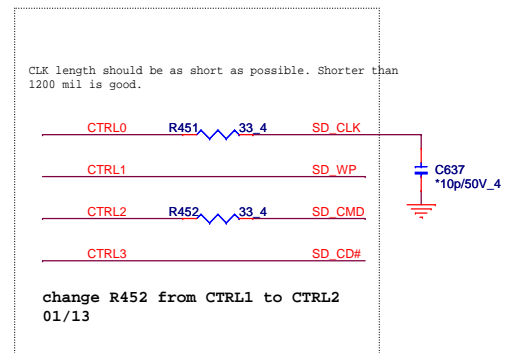
Close to CN14 pin 14 & pin23
4.7u CAP close to pin23

CTRL0, CTRL1 trace length shorter ,
and surround with GND.

The trace length difference for each card interfaces should be
smaller than 500 mil

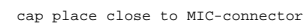



Close to connector



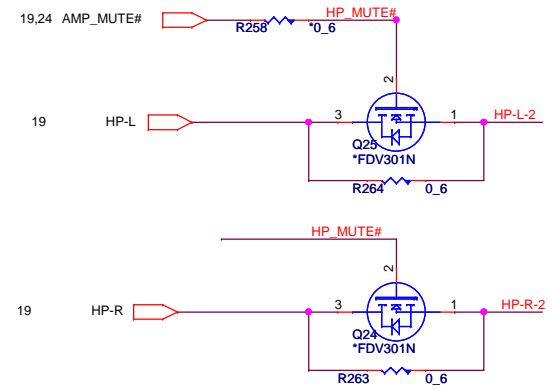
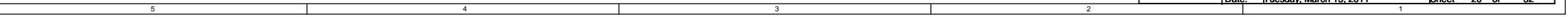
PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number	Rev
	AU6435 CardReader	1A
Date:	Tuesday, March 15, 2011	Sheet 18 of 32

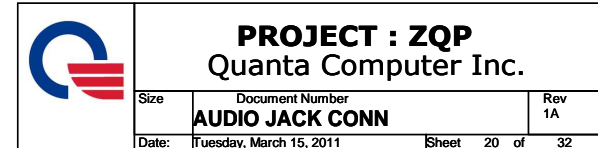


	PROJECT : QZP Quanta Computer Inc.		
	Size	Document Number	Rev
		CONEXANT 20584	1A
Date:	Tuesday, March 15, 2011	Sheet	19 of 32

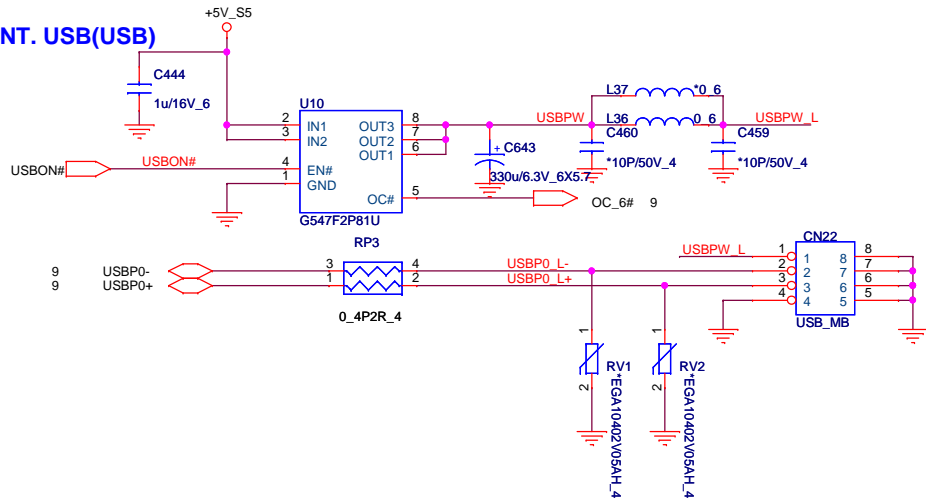
A



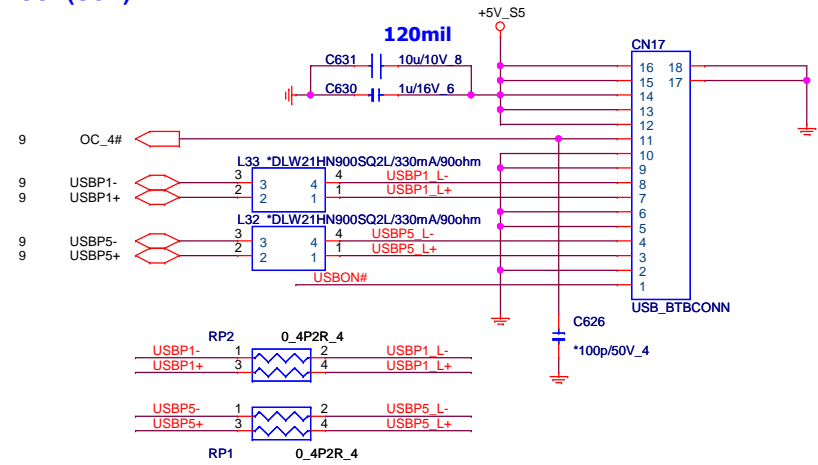
1



INT. USB(USB)

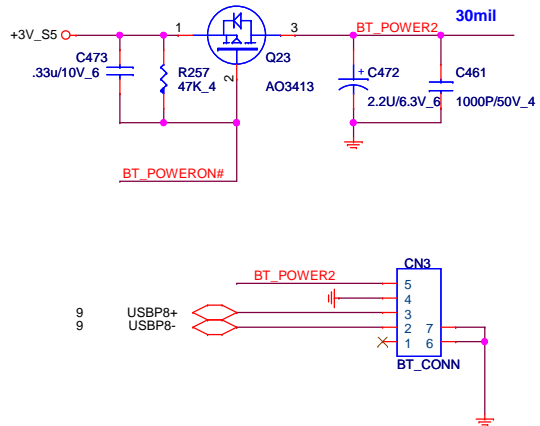


EXT. USB(USB)

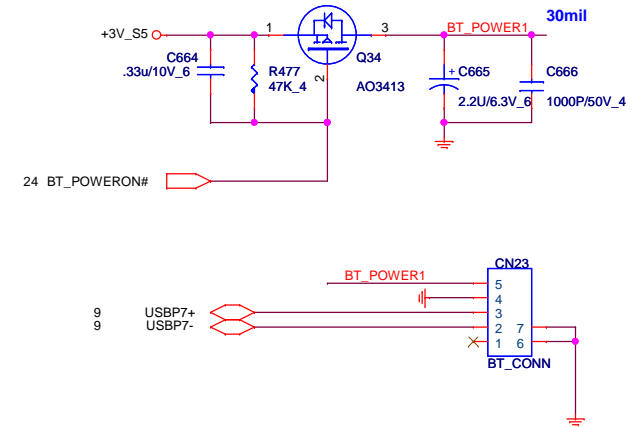


21

BLUETOOTH V2.1 CONN(BTM)



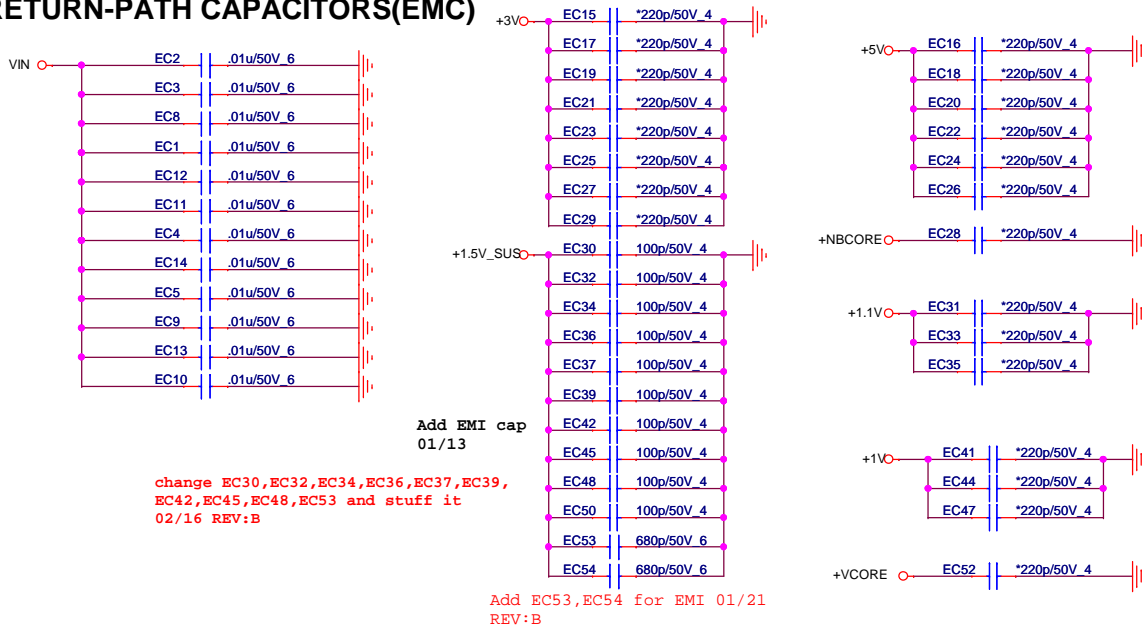
BLUETOOTH V3.0 CONN(BTM)



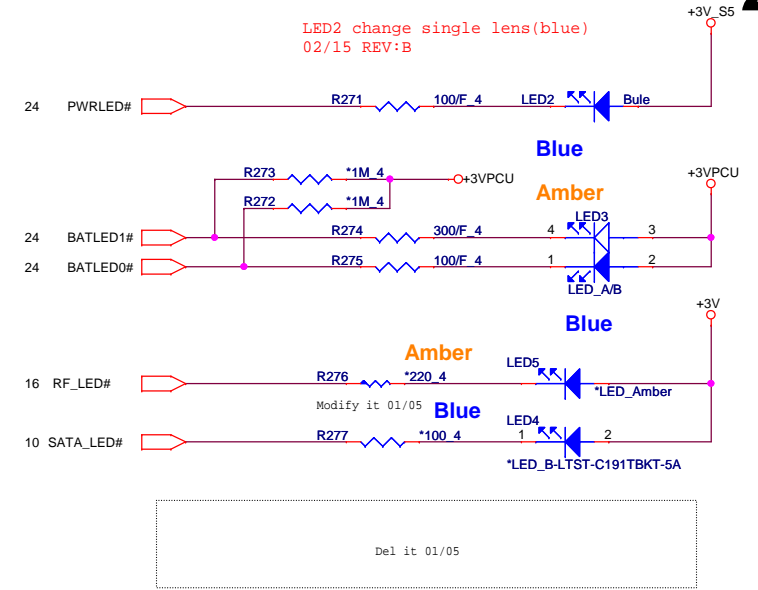
PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number	Rev
	USB/BT	1A
Date:	Tuesday, March 15, 2011	Sheet 21 of 32

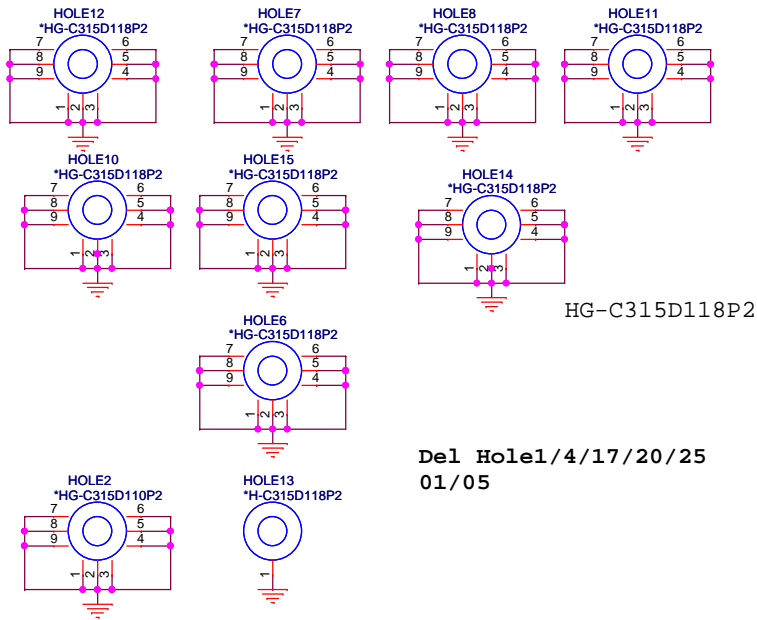
EE RETURN-PATH CAPACITORS(EMC)



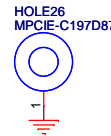
LED(UIF)



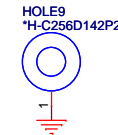
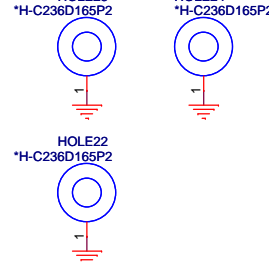
HOLE(OTH)



mini PCI




cpu

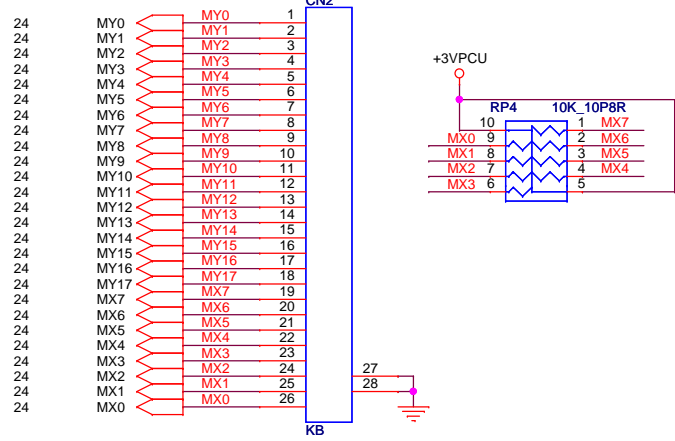


No stuff HOLE9
REV:B 02/17

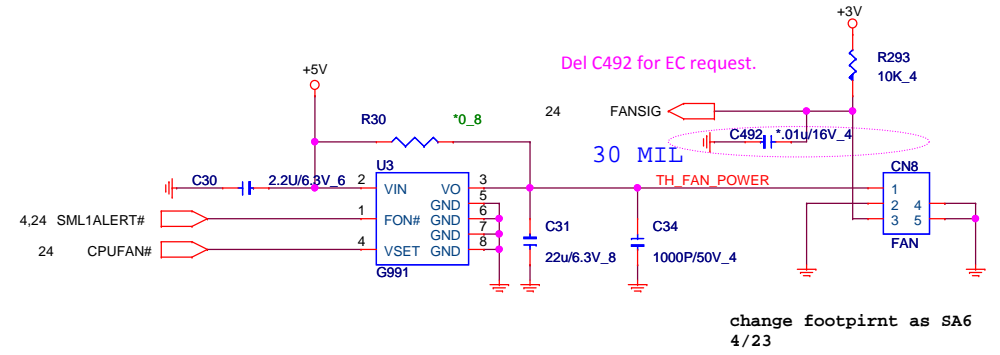
CPU nut PN : FBBU1001010 x 3 @ SHOLE1~3

			PROJECT : ZQP Quanta Computer Inc.	
Size	Document Number		Rev	
	LED/ EMI/ Screw Hole& Nut		1A	
Date:	Tuesday, March 15, 2011	Sheet	22	of 32

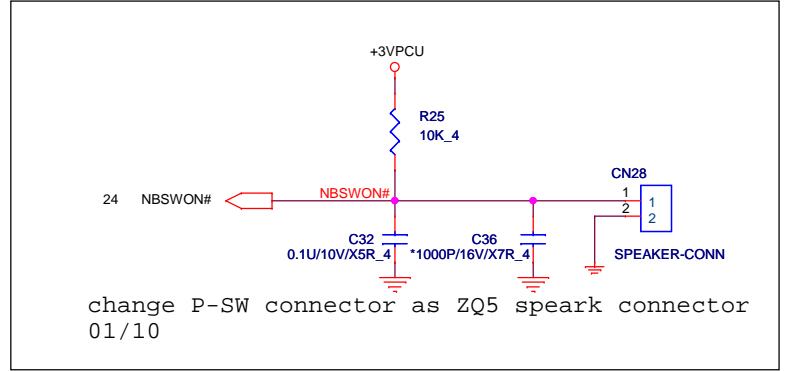
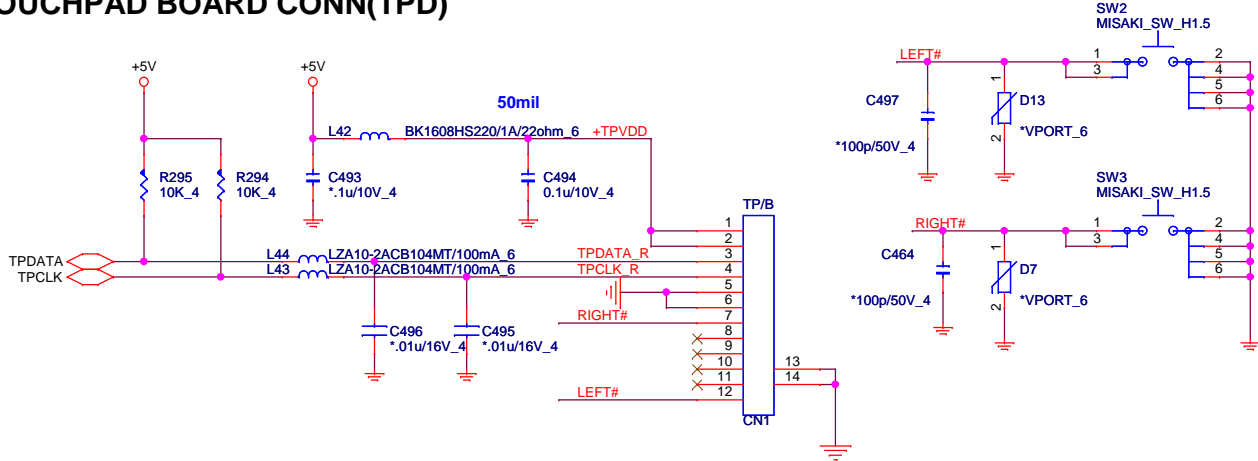
K/B(KBC)



CPU FAN(THM)



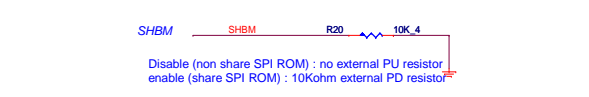
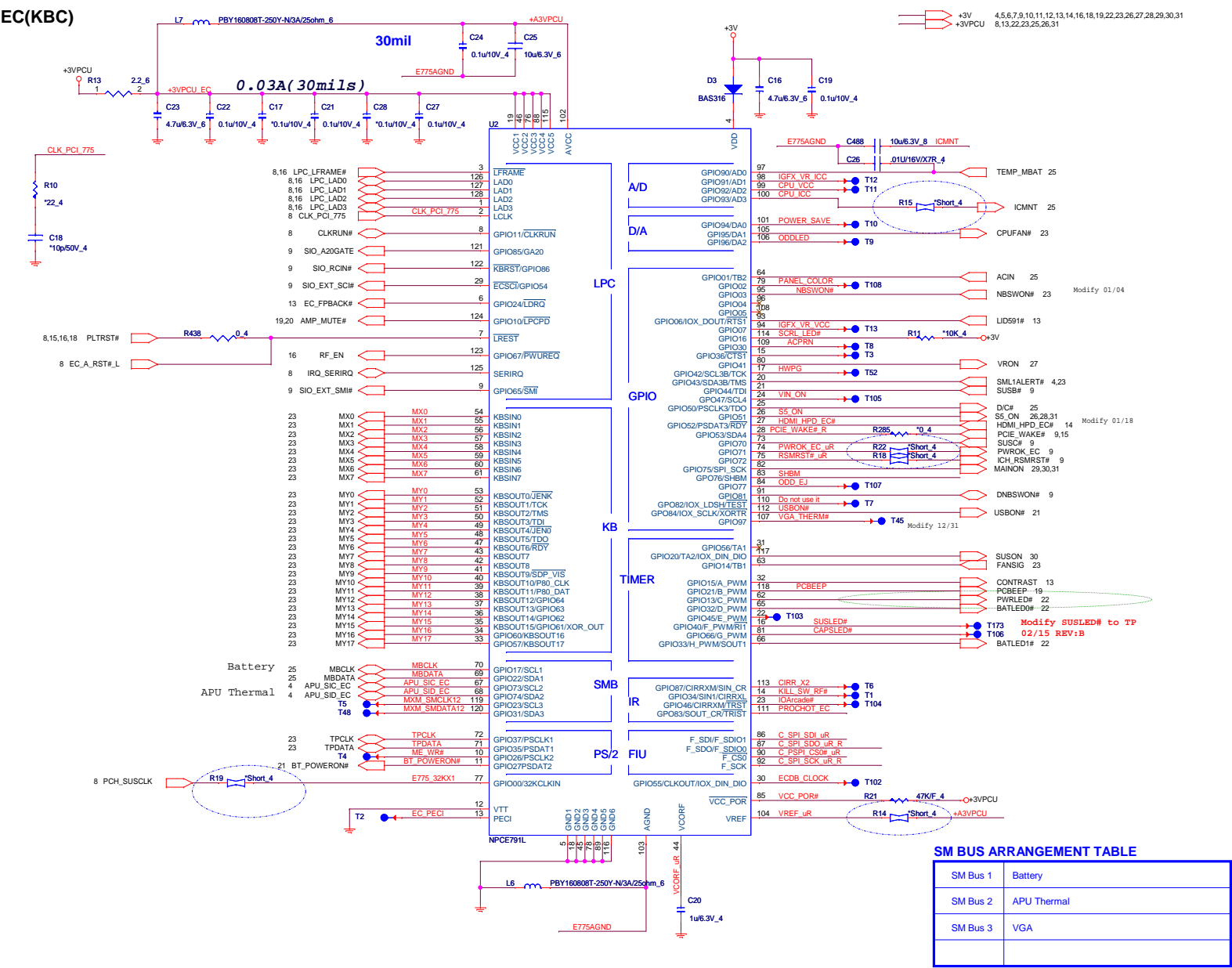
TOUCHPAD BOARD CONN(TPD)



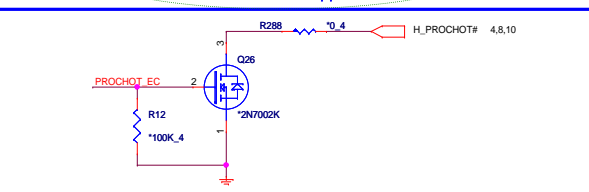
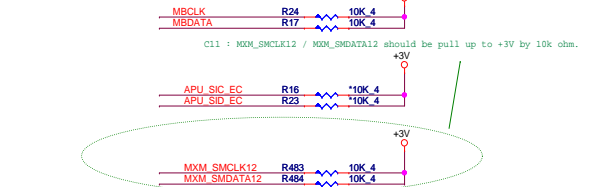
DFFC12FR234 will be EOL by PDC , so change PN to DFFC12FR026

PROJECT : ZQP
Quanta Computer Inc.

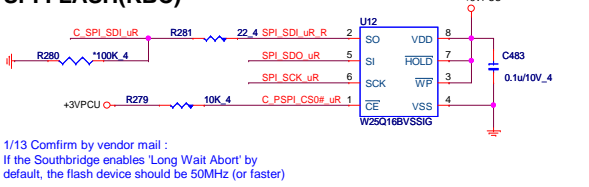
Size	Document Number	Rev
	KB/TP/FAN	1A
Date:	Tuesday, March 15, 2011	Sheet 23 of 32



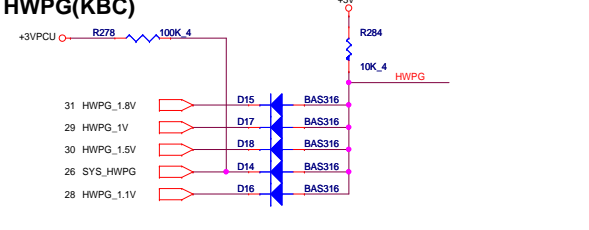
SM BUS PU(KBC)



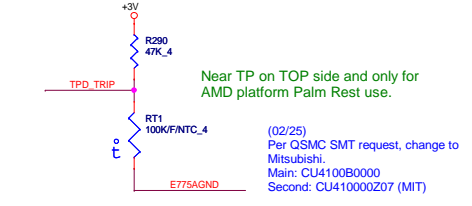
SPI FLASH(KBC)



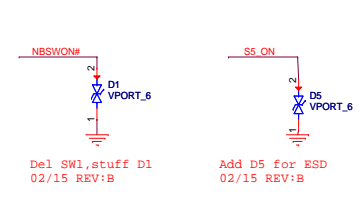
HWPG(KBC)



PALM REST THERMAL SENSOR (THM)

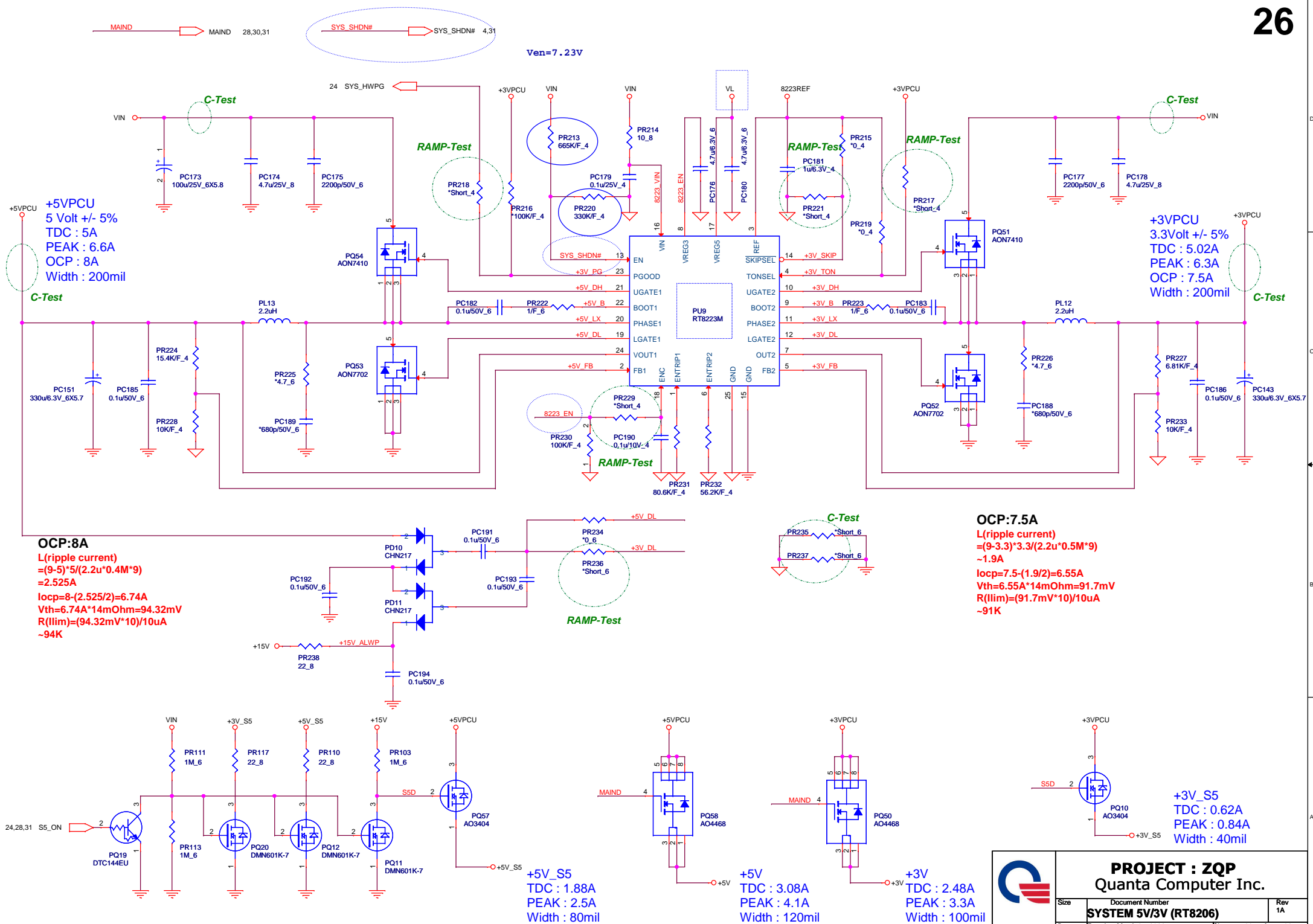


POWER-ON SWITCH (KBC)



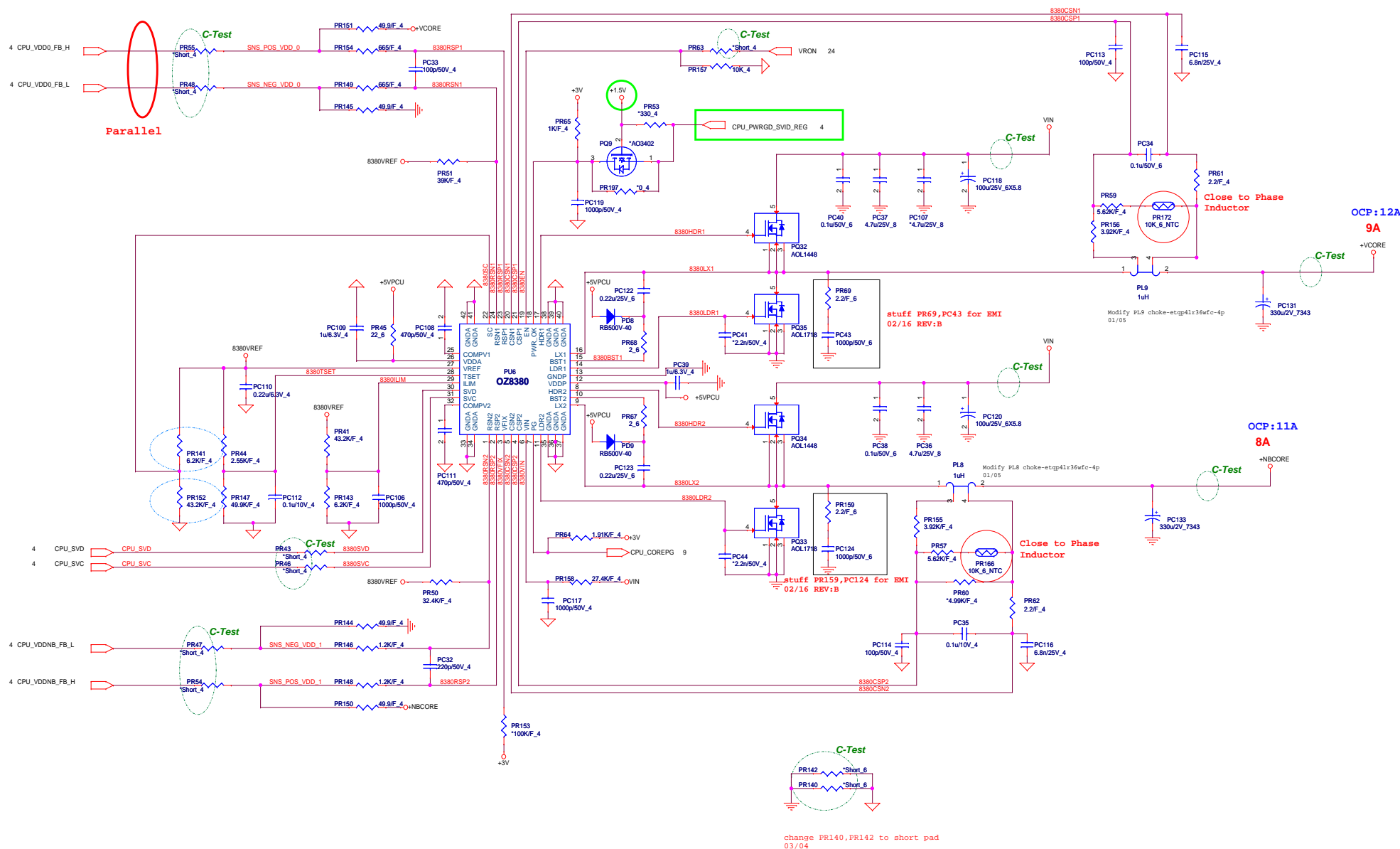
PROJECT : QZP
Quanta Computer Inc.

Size	Document Number	Rev
	WPCE791 & FLASH	1A
Date:	Tuesday, March 15, 2011	Sheet 24 of 32

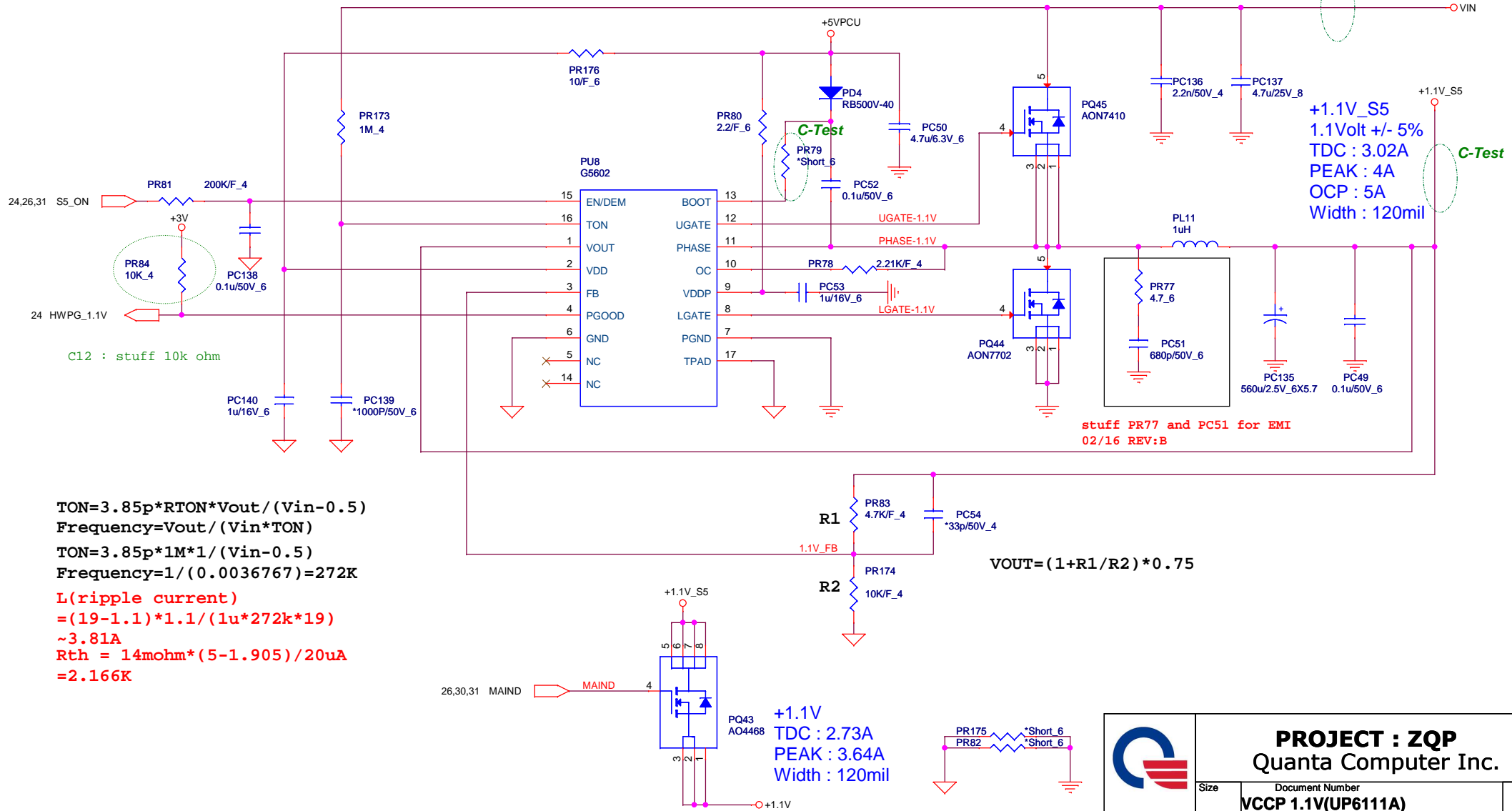


PROJECT : ZQP
 Quanta Computer Inc.

Size	Document Number	Rev
	SYSTEM 5V/3V (RT8206)	1A
Date:	Tuesday, March 15, 2011	Sheet 26 of 32



change PR79 to 0 ohm for EMI
02/16 REV:B



PROJECT : ZQP
 Quanta Computer Inc.

Size	Document Number	Rev
	VCCP 1.1V(UP6111A)	1A
Date:	Tuesday, March 15, 2011	Sheet 28 of 32



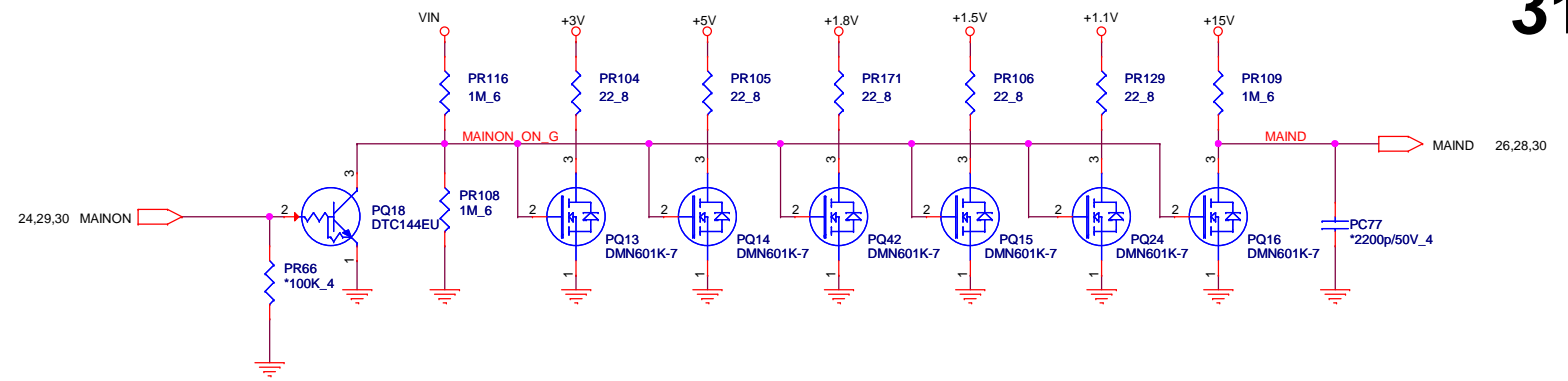
change PR169 PN from 0ohm to 430kohm for timing issue

C14 : stuff 10k ohm

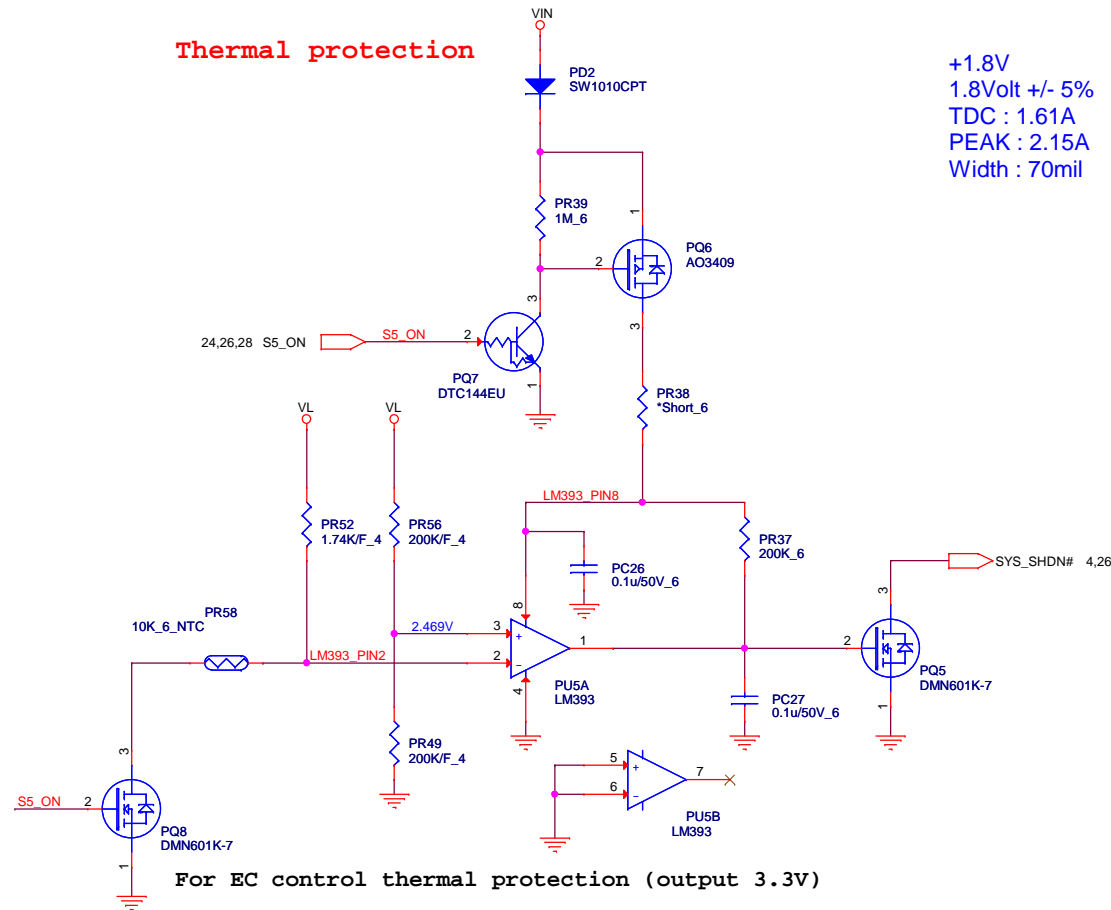
```
L(ripple current)
=(19-1)*1/(1u*272k*19)
~3.483A
Rth=14mohm*(10-1.741)/20uA
=3.68Kohm
```



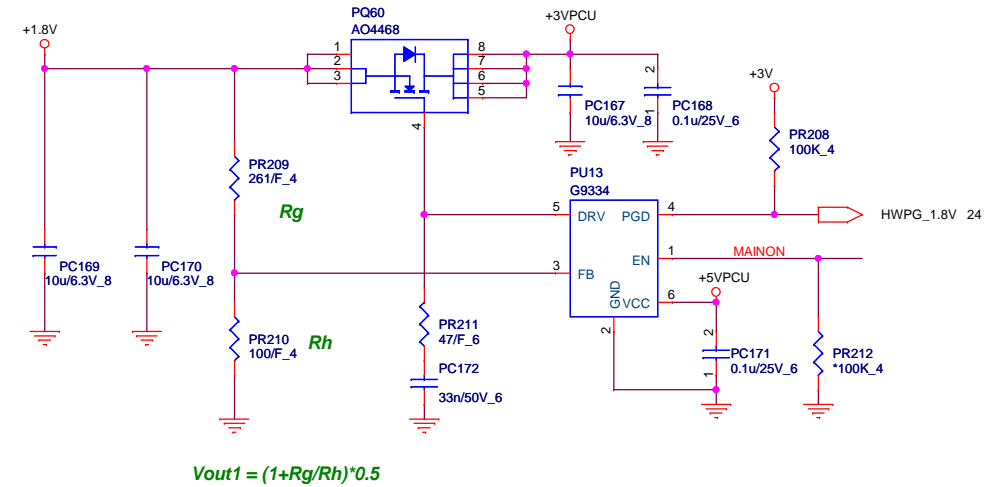
Date:	Tuesday, March 15, 2011	Sheet	29	of	32
-------	-------------------------	-------	----	----	----



Thermal protection




+1.8V
1.8VOLT +/- 5%
TDC : 1.61A
PEAK : 2.15A
Width : 70mil



PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number	Rev
	Discharge /Thermal protection	1A
Date:	Tuesday, March 15, 2011	Sheet 31 of 32

MODEL	REV	CHANGE LIST	Model ZQE/G M/B BOARD				
			Page	From	To		
ZQP/Q M/B	A	First Release	1	1A	3A		
			2	1A	3A		
			3	1A	3A		
	B	01.P14: Add HDMI function 02.P22: Add EC53,EC54 for EMI 03.P20: Stuff C673/C675/C671/C672 for EMI 04.P15: Stuff ESD protector at R31/R32 for EMI 05.P10: GPIO 58 define to HDMI strap pin 06.P08: Add C606,C614,C619 for strong clock 07.P20:change C673,C675,C671,C672 for EMI 08.P19:change L48,L47,L35,L34 to CX08T601000 for EMI 09.P24:No stuff SW1,stuff D1 10.P24:Add D5 on S5_ON for ESD 11.P22:LED2 change single lens(blue) 12.P08:Del C623 13.P24:Del SW1 14.P13:Del R26,R27 and add RP5 for EMI 15.P15:Add EC38,EC40,EC43,EC46 for EMI 16.P28:change PR79 to 0 ohm and stuff PR77 and PC51 for EMI 17.P29:change PR76 to 0 ohm and stuff PR164,PC126 for EMI 18.P27:stuff PR69,PC43 for EMI 19.P17:change C617,C612,C539,C540 footprint form 1206 to 0805 20.P13:Swap USB nets between L50 and PR5 21.P13:Add R33,R34 for ESD 22.P15:change C354 to CH122GK1I10 for EMI 23.P22:change EC30,EC32,EC34,EC36,EC37,EC39,EC42,EC45,EC48,EC53 and stuff it for EMI 24.P26:Remove JP20,JP21,JP22,JP23 and change to short pad PR235,PR237 25.P27:Remove JP10,JP9,JP6,JP8 and change to short pad PR55,PR48,PR43,PR46,PR47,PR54,PR63,PR142,PR140 26.P28:Remove JP24,JP25 27.P29:Remove JP16,JP17 and change to short pad PR70,PR72 28.P30:Remove JP18,JP19 and change to short pad PR196,PR107 29.P22:No stuff HOLE9	4	1A	3A		
			5	1A	3A		
			6	1A	3A		
			7	1A	3A		
			8	1A	3A		
			9	1A	3A		
			10	1A	3A		
			11	1A	3A		
			12	1A	3A		
			13	1A	3A		
			14	1A	3A		
			15	1A	3A		
			16	1A	3A		
			17	1A	3A		
			18	1A	3A		
			19	1A	3A		
			20	1A	3A		
			21	1A	3A		
			22	1A	3A		
			23	1A	3A		
			24	1A	3A		
			25	1A	3A		
			26	1A	3A		
			27	1A	3A		
			28	1A	3A		
			29	1A	3A		
			30	1A	3A		
			31	1A	3A		
			32	1A	3A		
33	1A	3A					
	C	01.P15:change RJ45 connector without LED 02.P27:change PR140,PR142 to short pad 03.P30:change PR119,PR123,PR102 to short pad 04.P26:change PR217,PR218,PR221,PR229,PR236 to short pad 05.P29:change PR76 to short pad 06.P28:change PR79 to short pad	34	1A	3A		
			35	1A	3A		
			36	1A	3A		
			37	1A	3A		
			38	1A	3A		
			39	1A	3A		
			40	1A	3A		
			41	1A	3A		
<div><div></div><div><div>PROJECT : ZQP</div><div>Quanta Computer Inc.</div></div></div>		Size		Document Number	Rev		
		CHANGE LIST - 3A		1A			
Date: Tuesday, March 15, 2011		Sheet 32 of 32					
PROJECT: ZQP/Q		PCBA NO.		REV: 3A		DOC. NO :	
APPROVED BY : Andy Lin		CHECK BY : JC Huang		DRAWING BY : Andy Chen		DATE :10/18/2010 SHEET 1	



PROJECT : ZQP
Quanta Computer Inc.

Size	Document Number	Rev
	CHANGE LIST - 3A	1A
Date: Tuesday, March 15, 2011	Sheet 32 of 32	