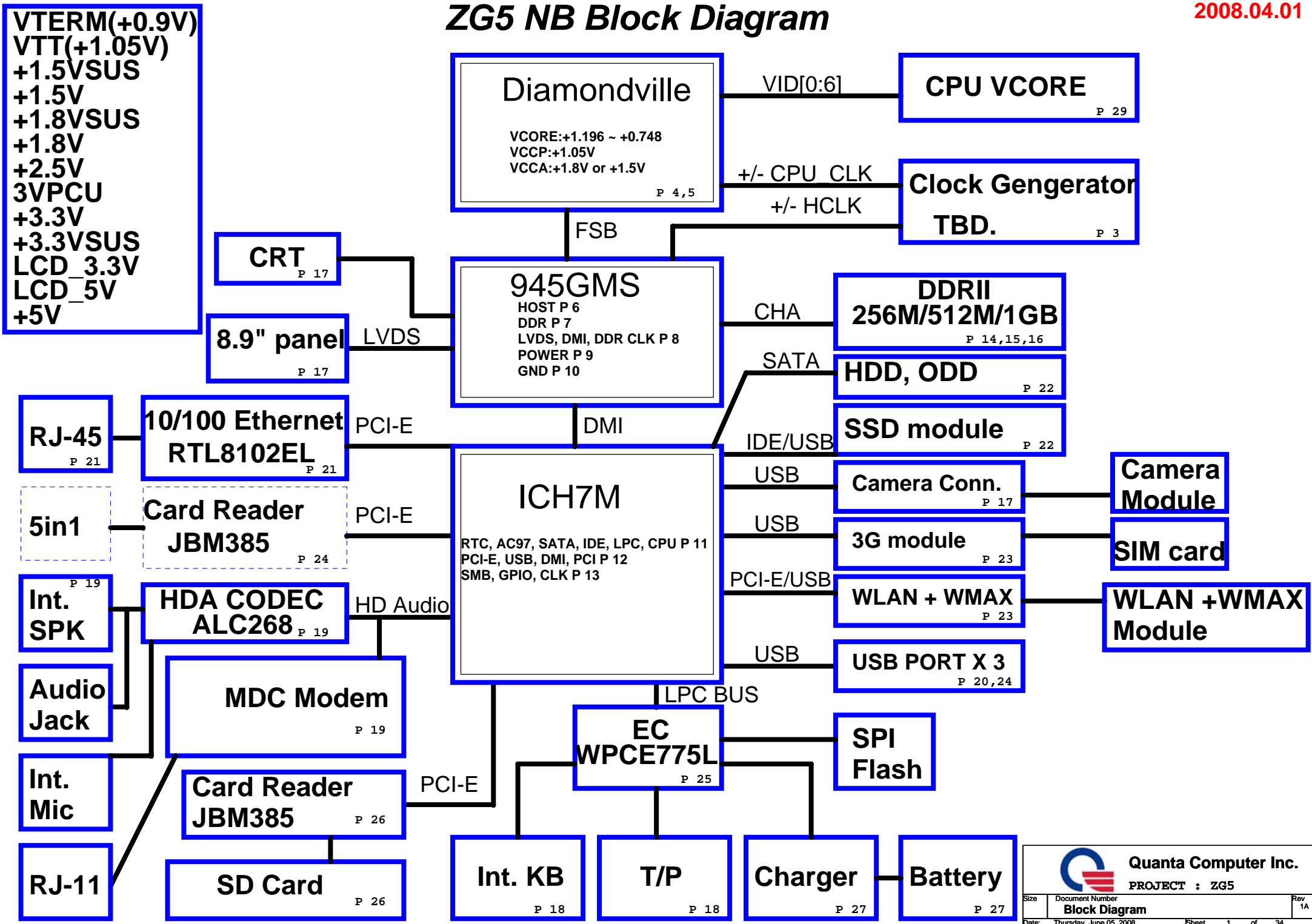


ZG5 NB Block Diagram



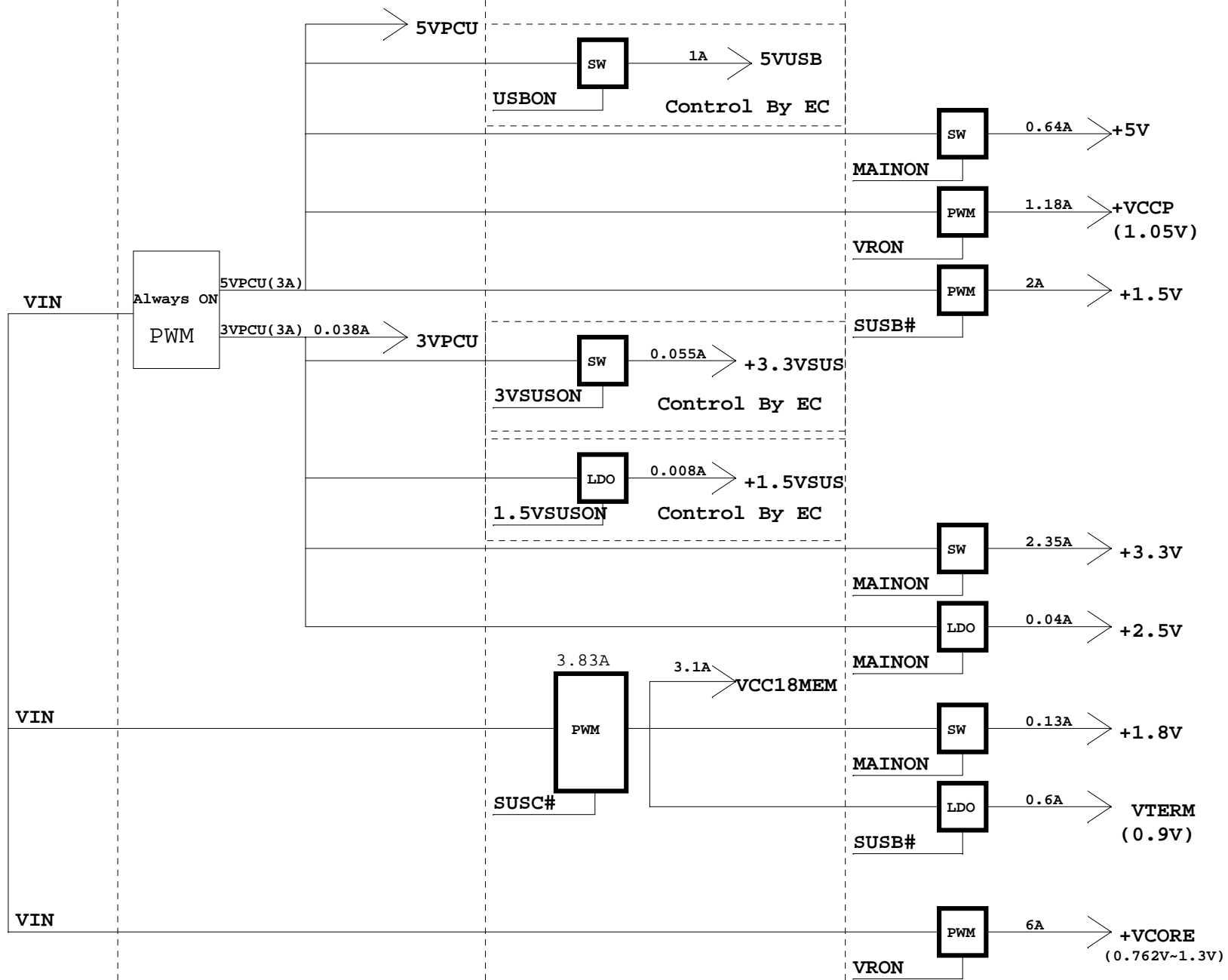
Quanta Computer Inc.
PROJECT : ZG5

DCIN

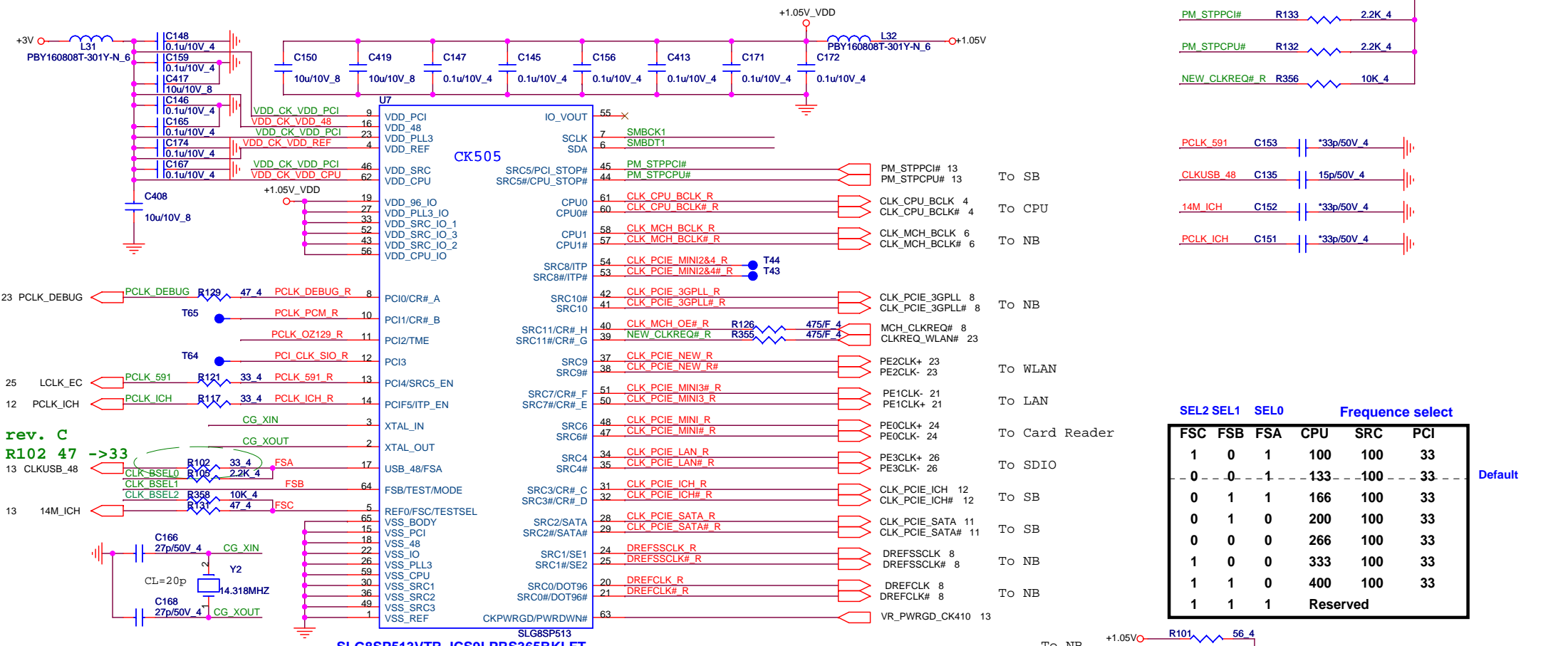
ALWAYS ON

S4 OFF

S3 OFF

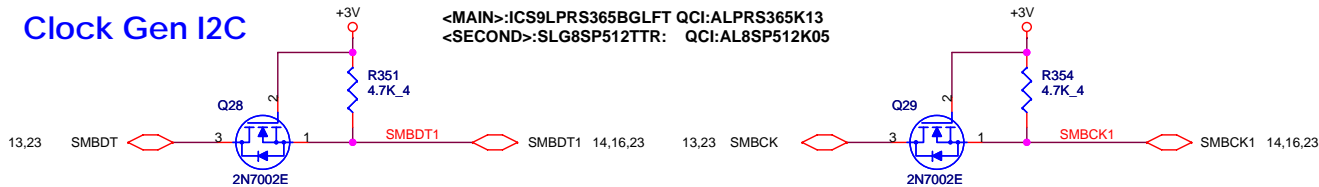



Clock Generator



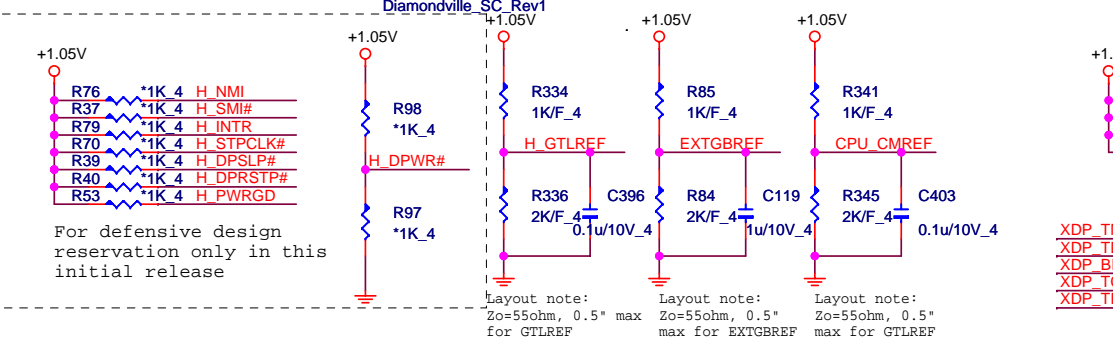
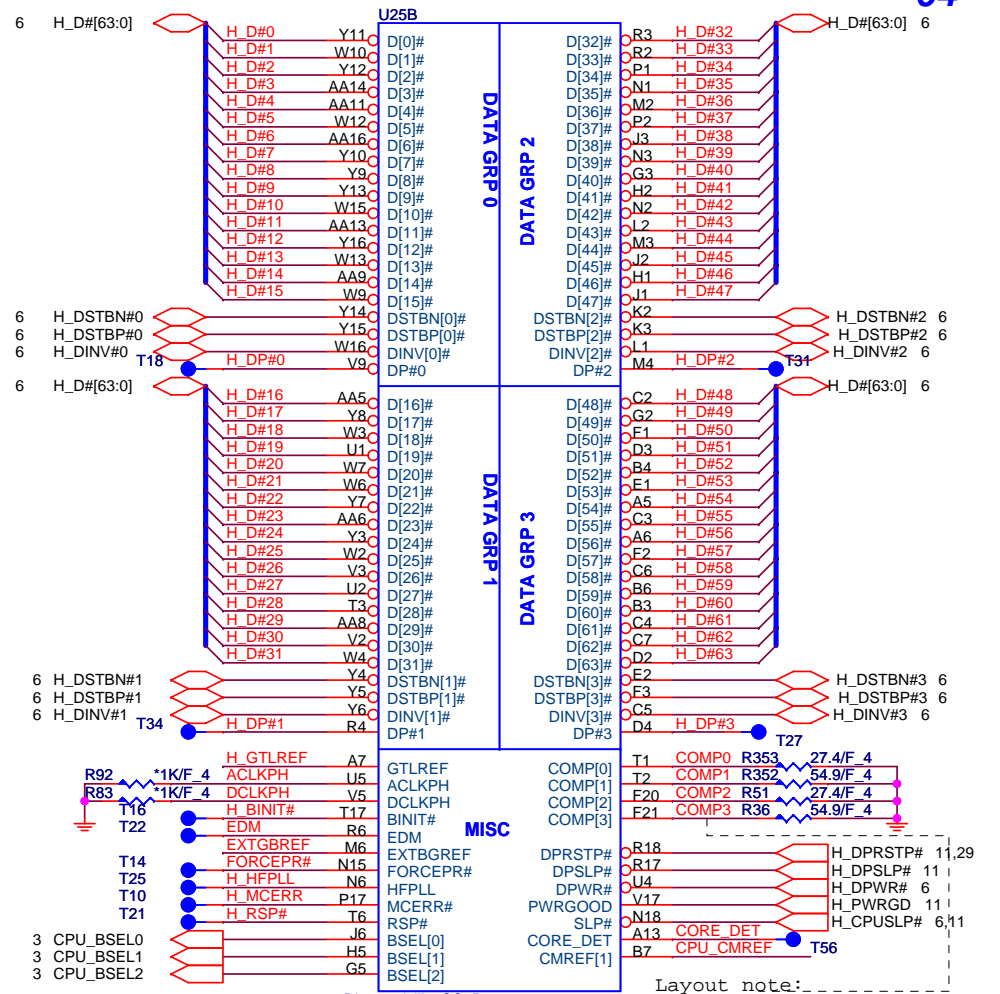
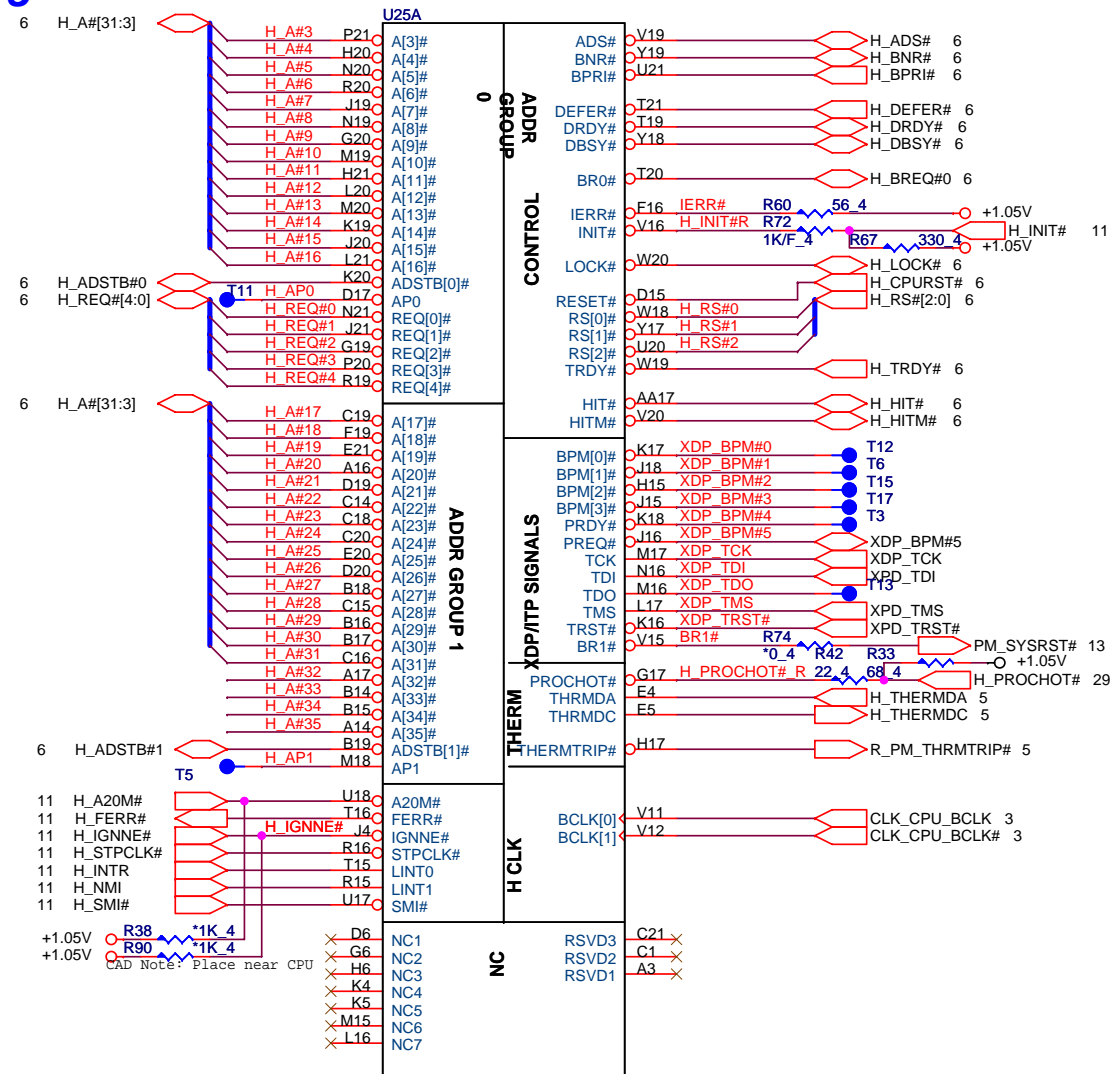
	ICS9LPRS365 (ALPRS365K13)	RTM8751-606 (AL000875K06)	PULL HIGH	PULL DOWN
Pin 11	PCI2/TME	internal PD	NO OVERCLOCKING (default)	NORMAL RUN
Pin 12	PCI-3	PCI-3/SRC5_EN internal PD	PIN37/38 IS SRC5	PIN37/38 IS PCI_STOP/CPU_STOP (default)
Pin 13	PCI-4/27M_SEL	internal PD	PIN 17/18 IS 27MHz	PIN 17/18 IS SRC/DOT (default)
Pin 14	PCIF-5/ITP_EN	internal PD	PIN 46/47 IS CPUITP	PIN 46/47 IS SRC8 (default)

Clock Gen I2C



**Quanta Computer Inc.**
PROJECT : ZG5

Size	Document Number	Rev
	CLOCK GENERATOR	1A
Date:	Thursday, June 05, 2008	Sheet 3 of 34




Layout note: ---ohm, make trace length shorter than 0.5"

Comp0,2 connect with Zo=27.4ohm, make trace length shorter than 0.5"

Comp1,3 connect with Zo=55ohm, make trace length shorter than 0.5"

Rev : B

No stuff - R37 ,R38 ,R39 ,R40 ,R70 ,R90 ,R98 from Intel info.



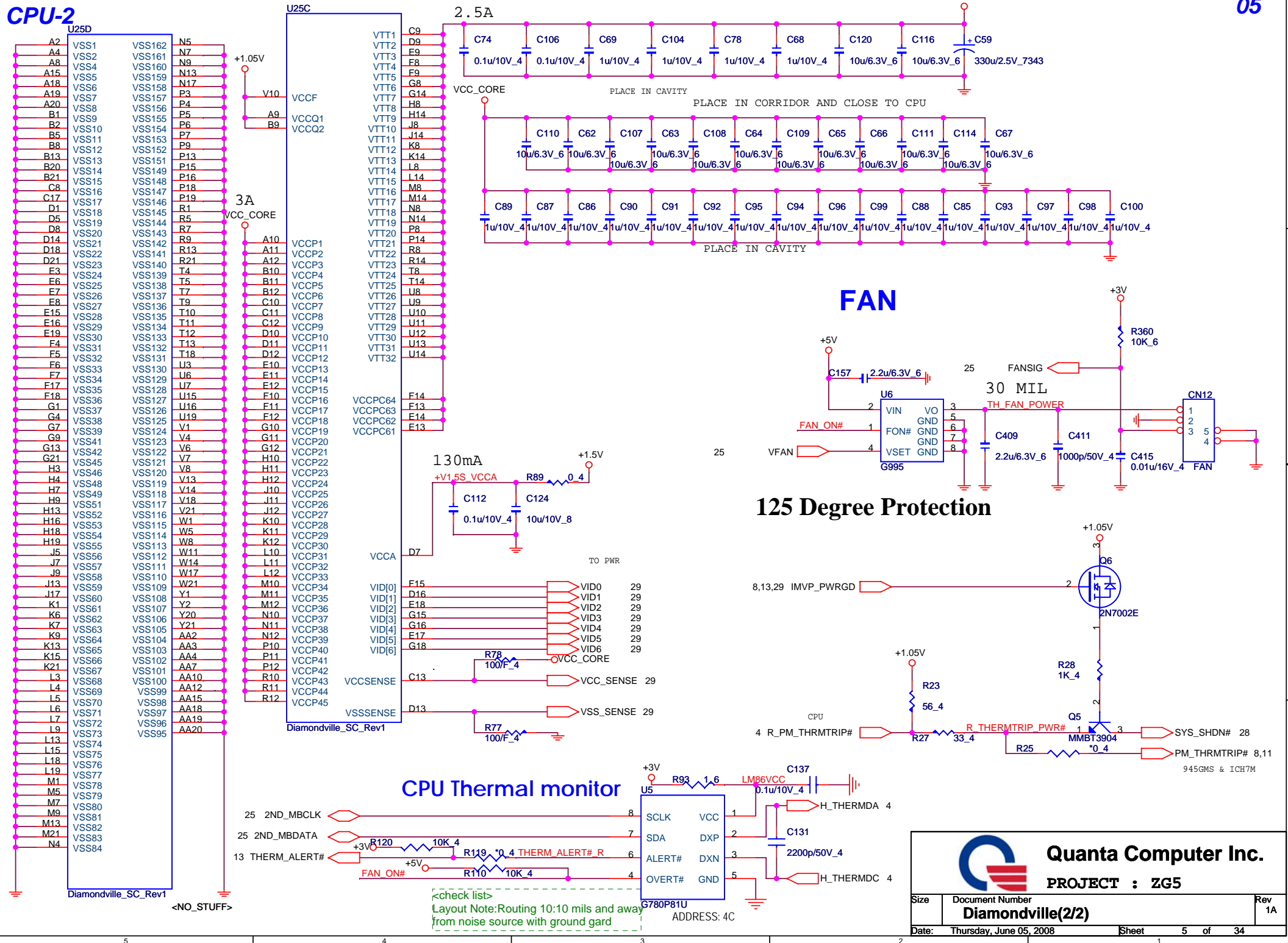
Quanta Computer Inc.

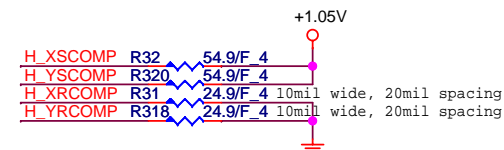
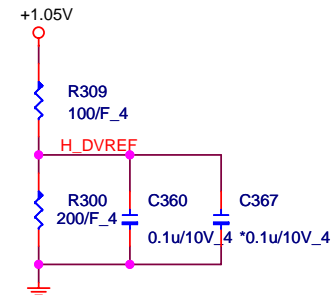
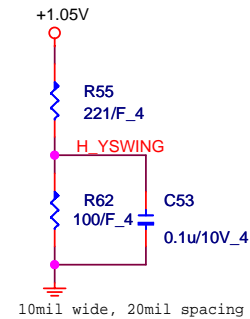
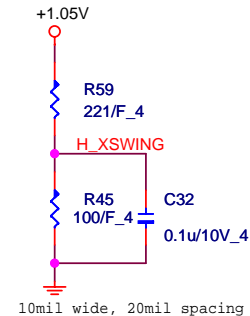
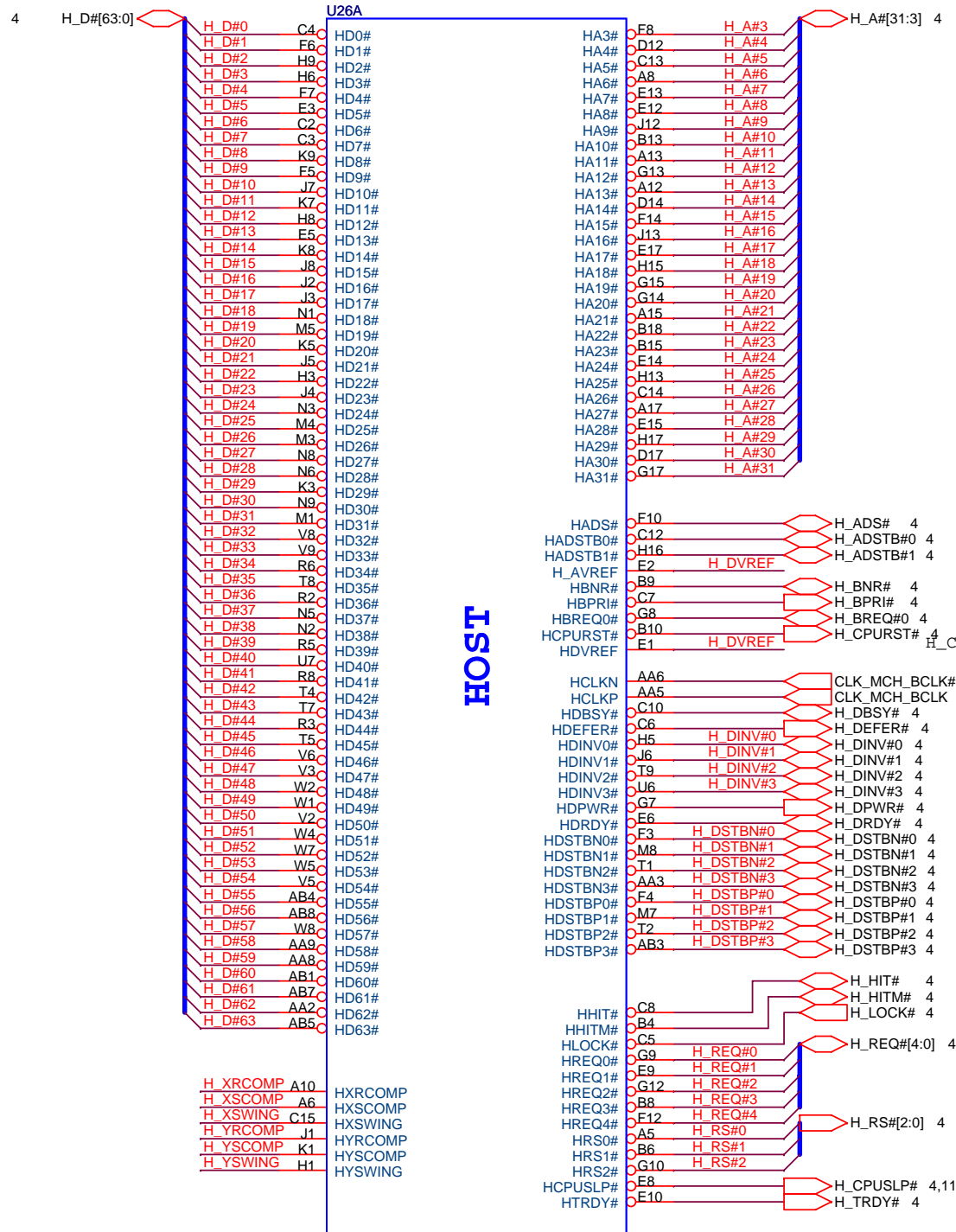
PROJECT : ZG5

Size	Document Number	Rev
	Diamondville(1/2)	1A
Date:	Thursday, June 05, 2008	Sheet 4 of 34

CPU-2

05

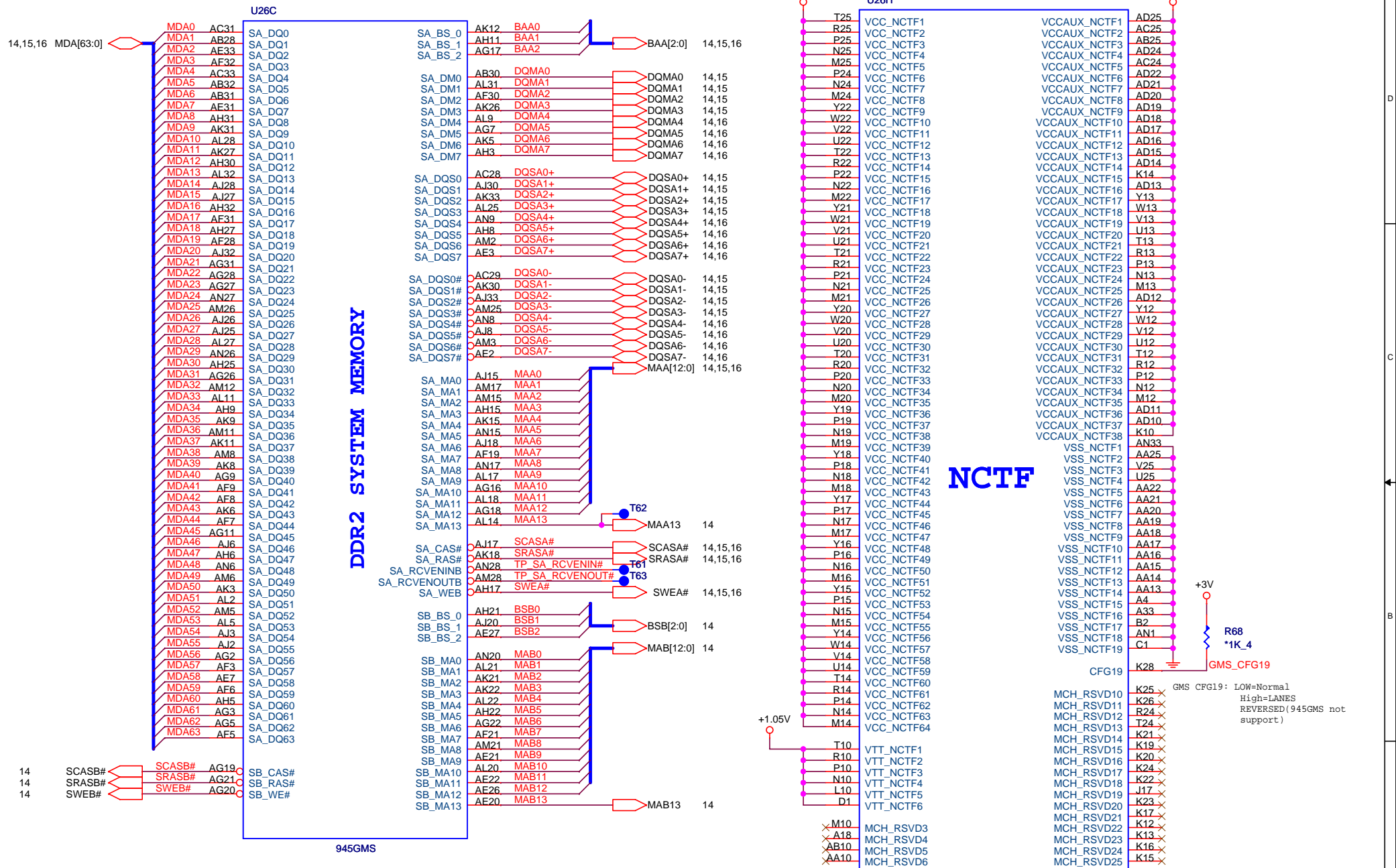




Quanta Computer Inc.

PROJECT : ZG5

Size	Document Number	Rev
	945GMS HOST	1A
Date: Thursday, June 05, 2008	Sheet 6 of 34	



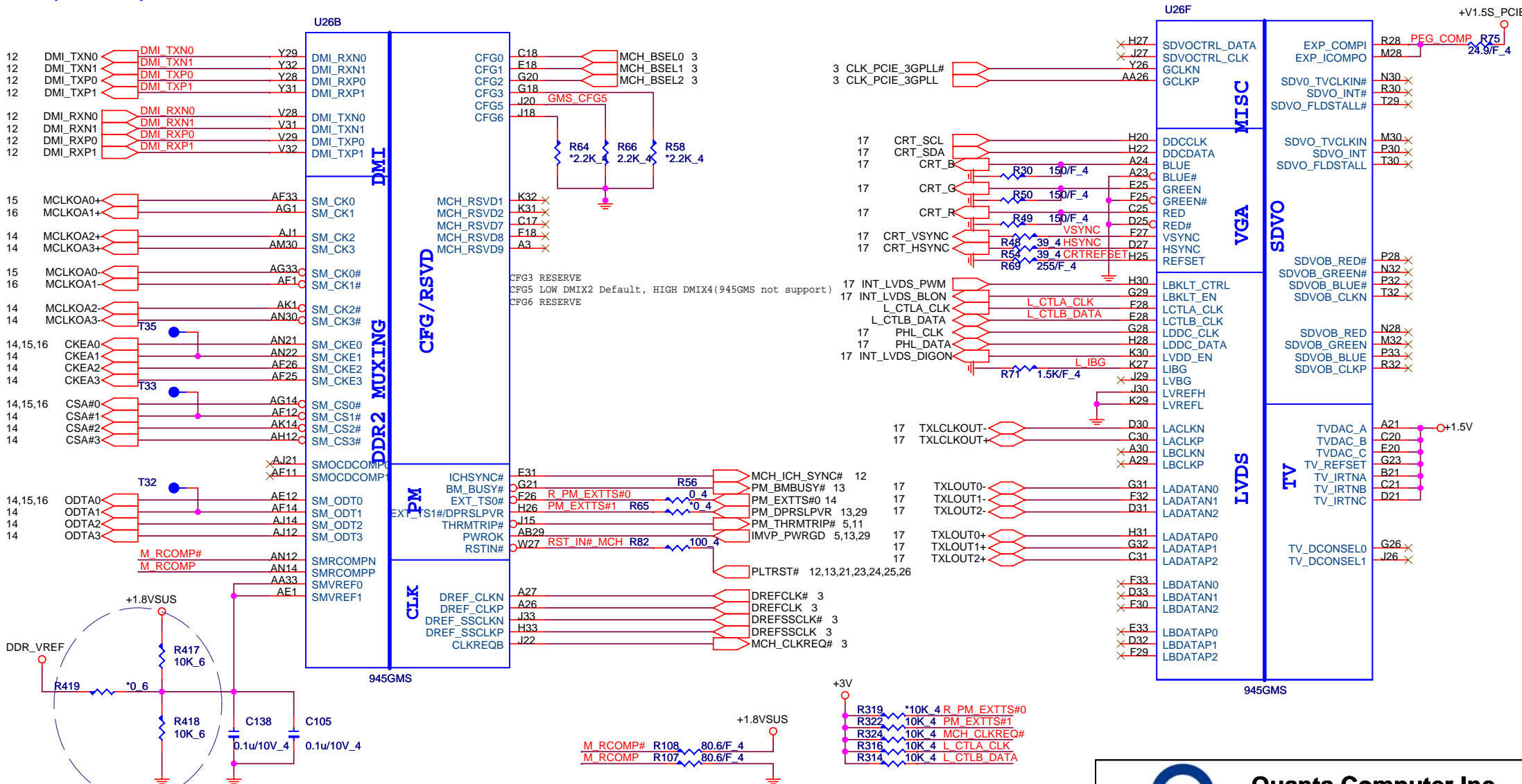
Quanta Computer Inc.

PROJECT : ZG5

Size	Document Number	Rev
	945GMS DDR	1A
Date:	Thursday, June 05, 2008	Sheet 7 of 34

DMI, LVDS, DDR CLK

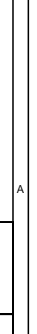
08



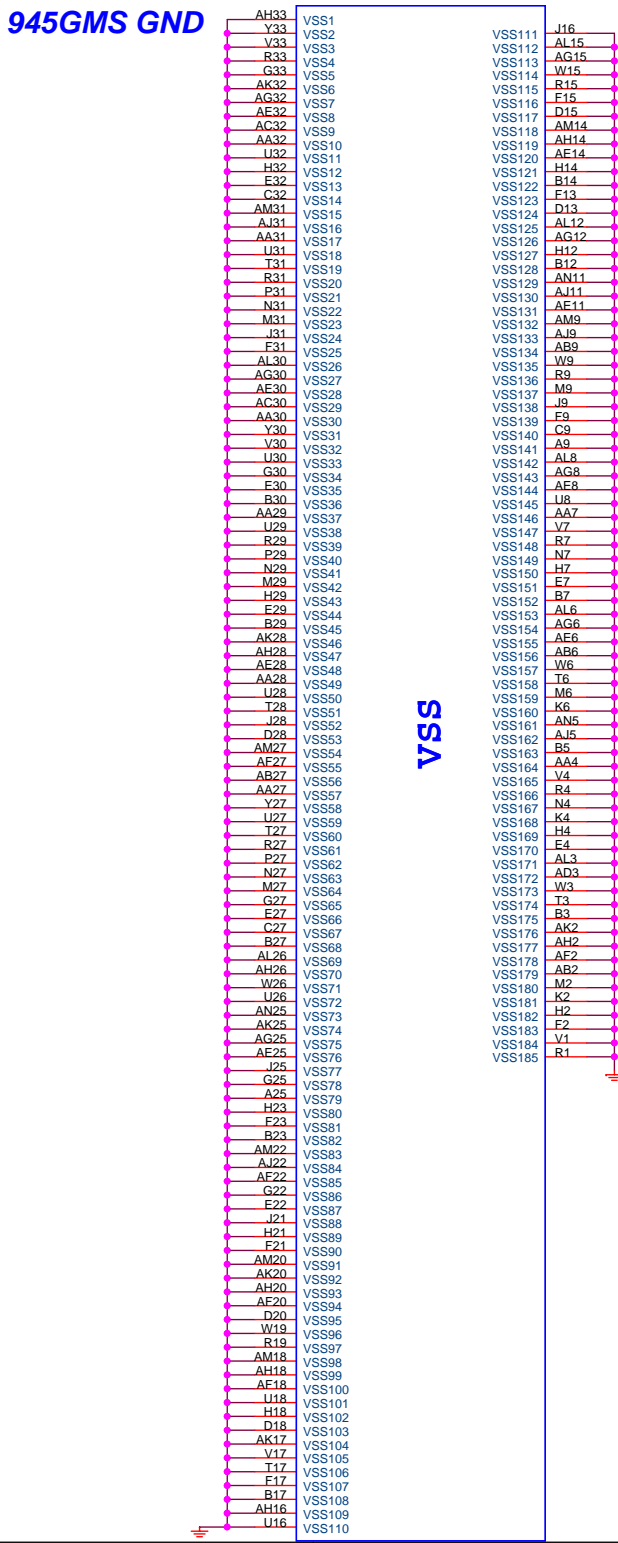
rev. D
Add in R417 , R418 , R419

Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	945GMS LVDS, DMI, DDR CLK	1A
Date:	Thursday, June 05, 2008	Sheet 8 of 34



945GMS GND



U26E
945GMS



NC

945GMS

10



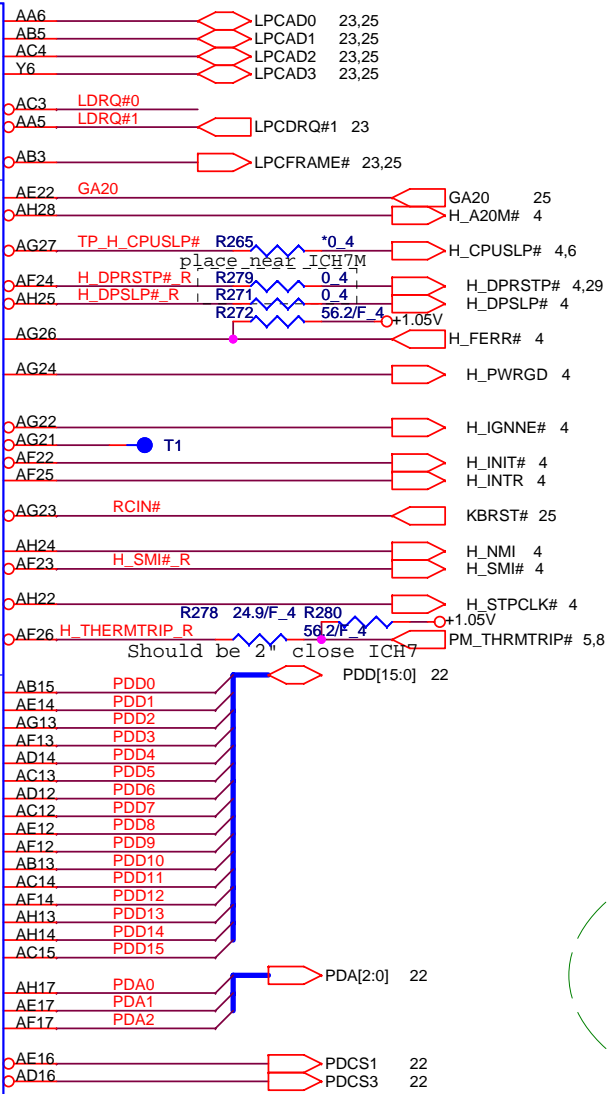
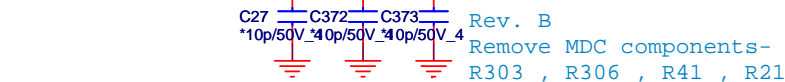
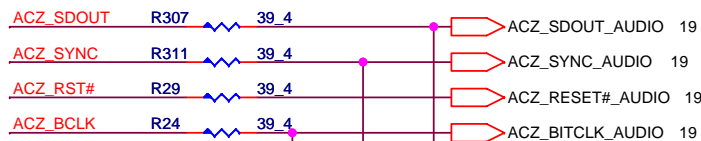
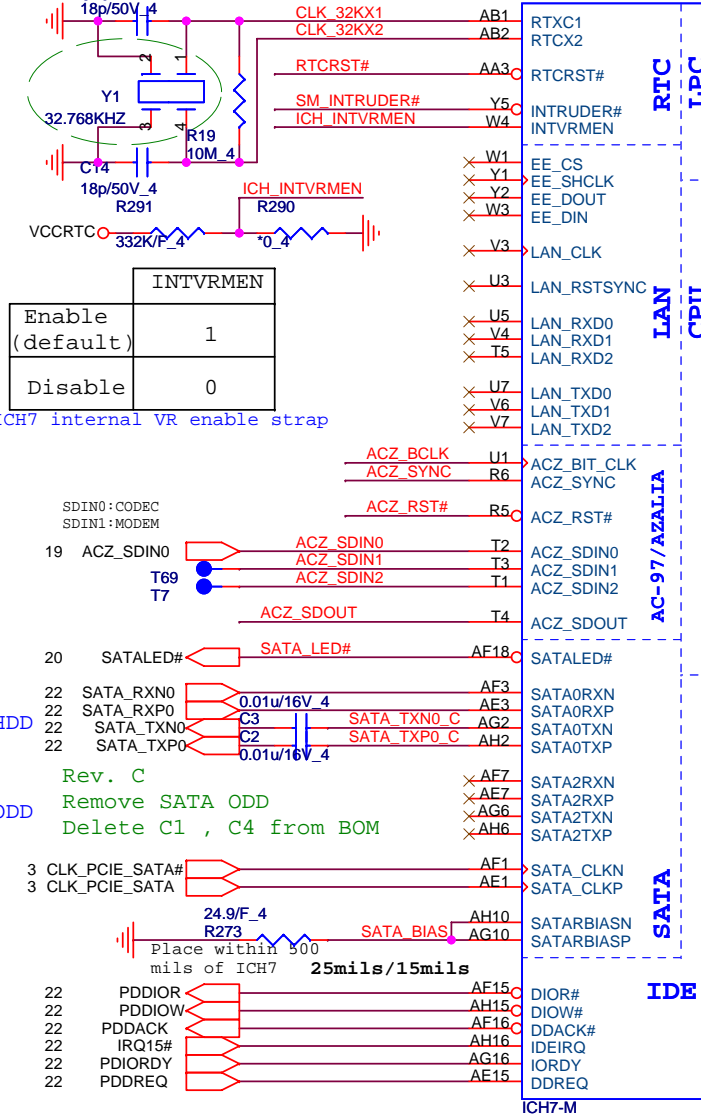
Quanta Computer Inc.

PROJECT : ZG5

Size	Document Number	Rev
	945GMS GND	1A
Date:	Thursday, June 05, 2008	Sheet 10 of 34

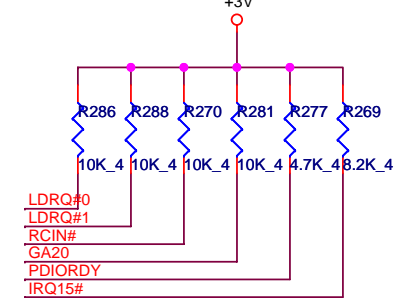
ICH7M

Rev. C
Change x'tal package to low profile

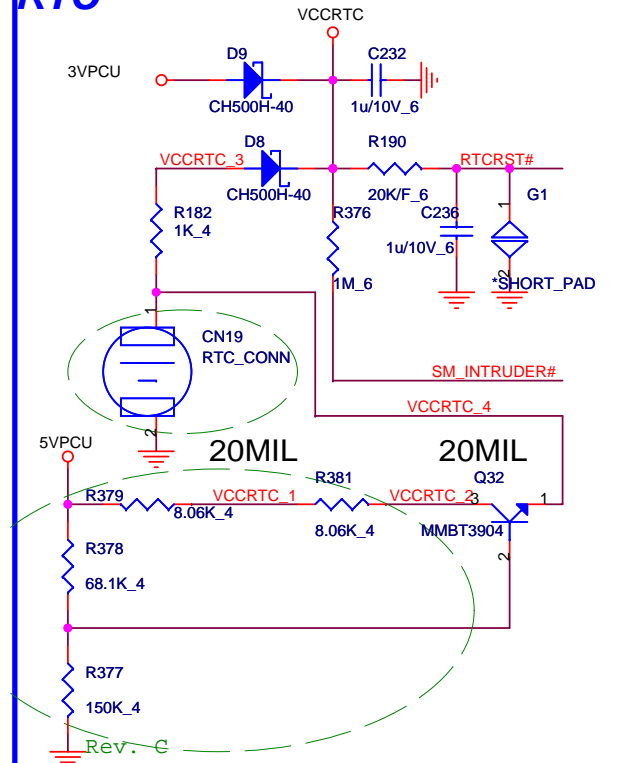


Pull-UP

11



RTC

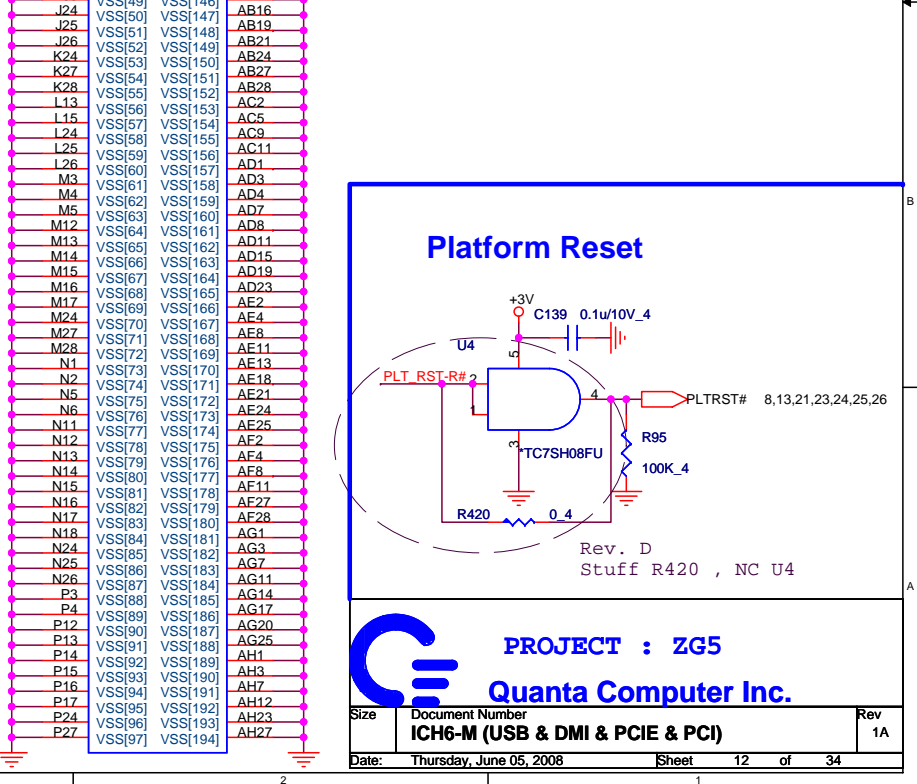
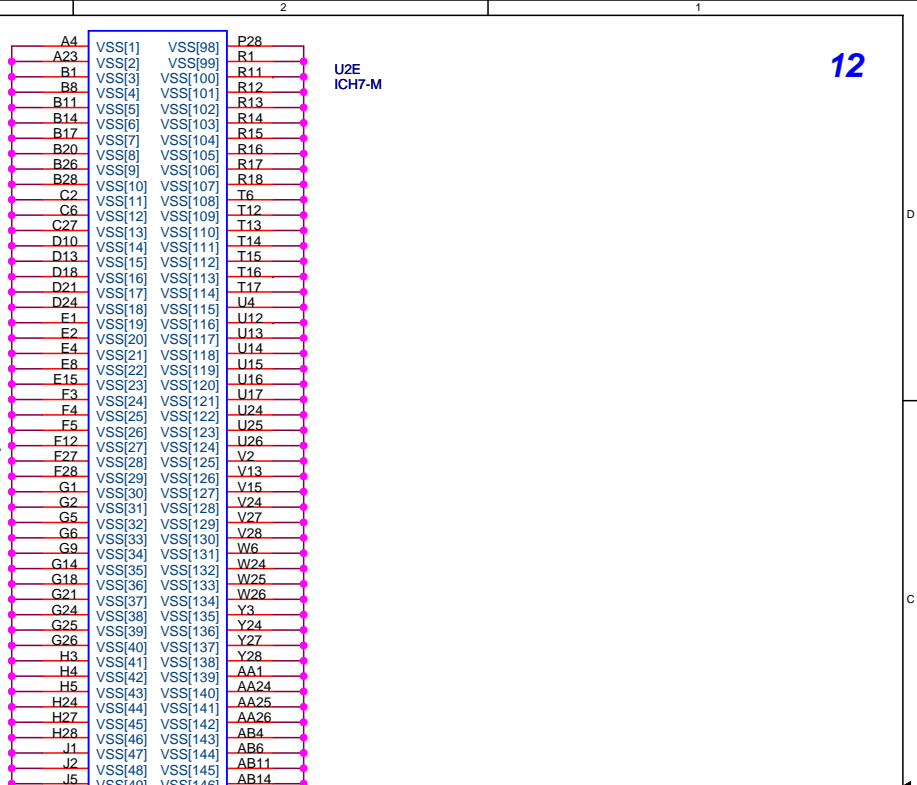


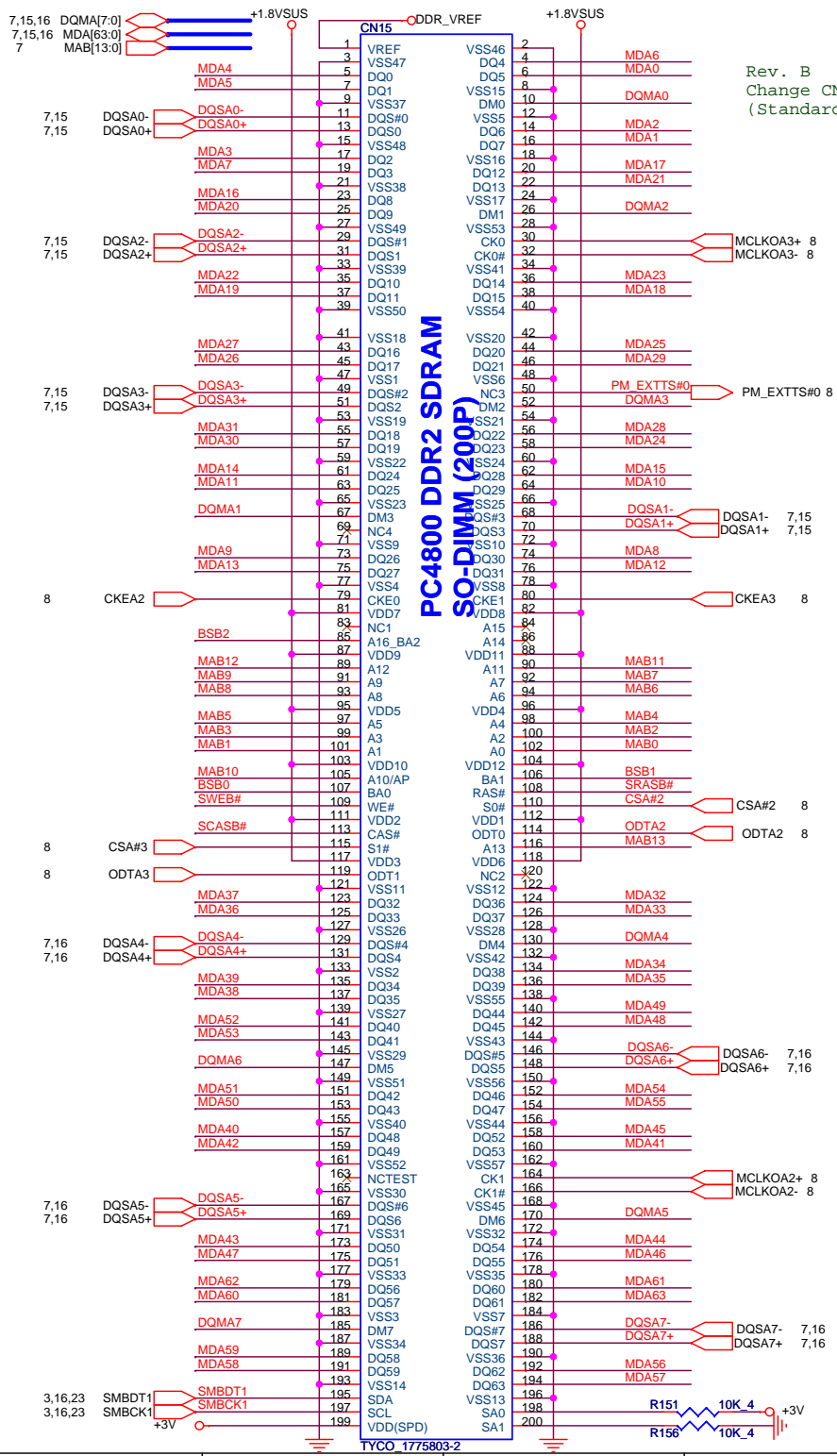
Rev. C
Change RTC battery holder
Change R379, R381, R378
, R377 value for RTC charge function

COMPONENTS	P/N
945GM	AJSL8Z20T25
ICH7-M	AJSL8YB0T21

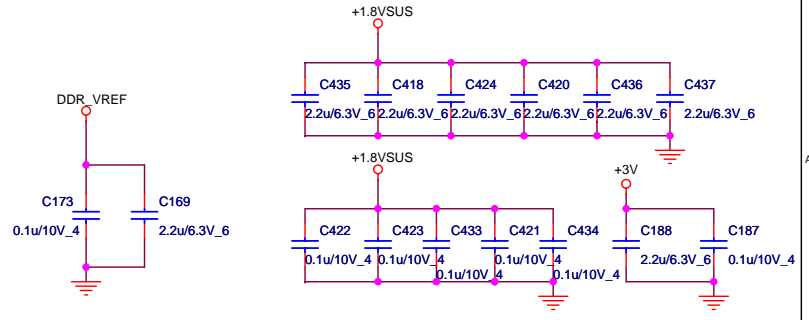
PROJECT : ZG5
Quanta Computer Inc.

Size	Document Number	Rev
	ICH7-M (CPU, SATA, IDE, LPC)	1A
Date:	Thursday, June 05, 2008	Sheet 11 of 34

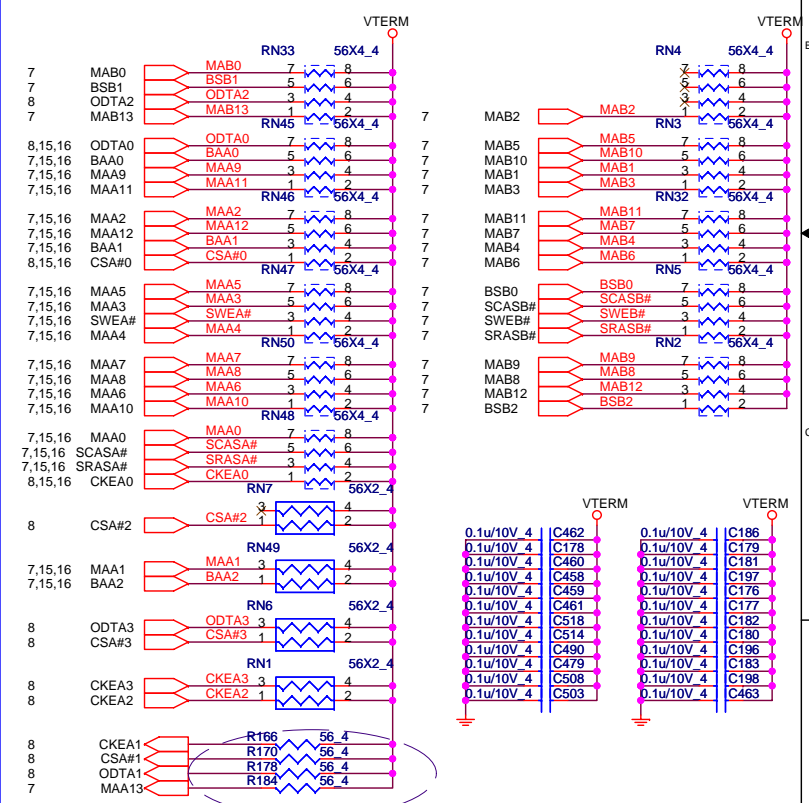





Close to DIMM



Termination resistor

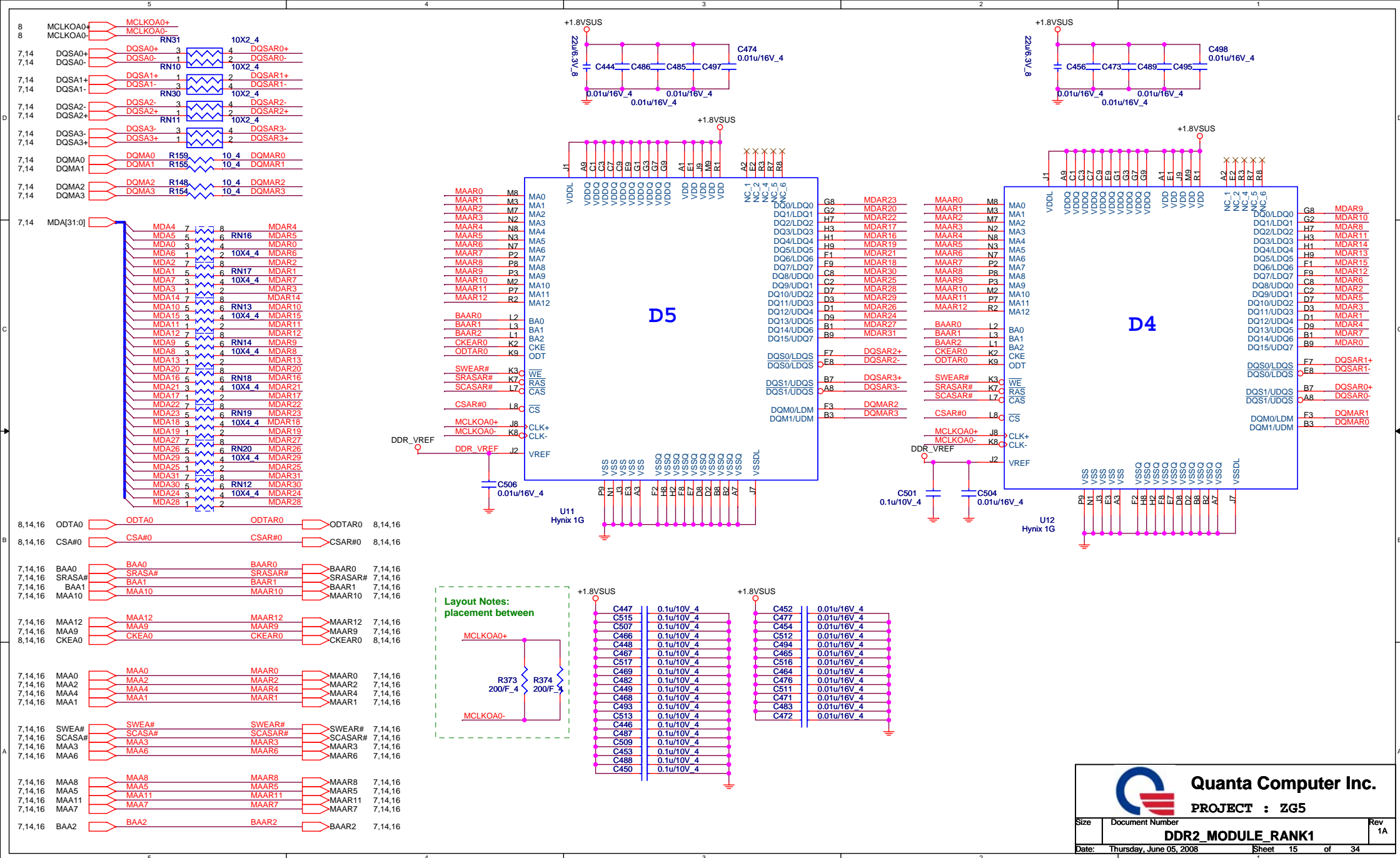


SMbus address A1
CLOCK 1,2
CKE 2,3
Standard Type H: 5.2mm



Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	DDR2 SO-DIMM(200P)	1A
Date:	Thursday, June 05, 2008	Sheet 14 of 34



Quanta Computer Inc.

PROJECT : ZG5

DDR2_MODULE_RANK1

Size

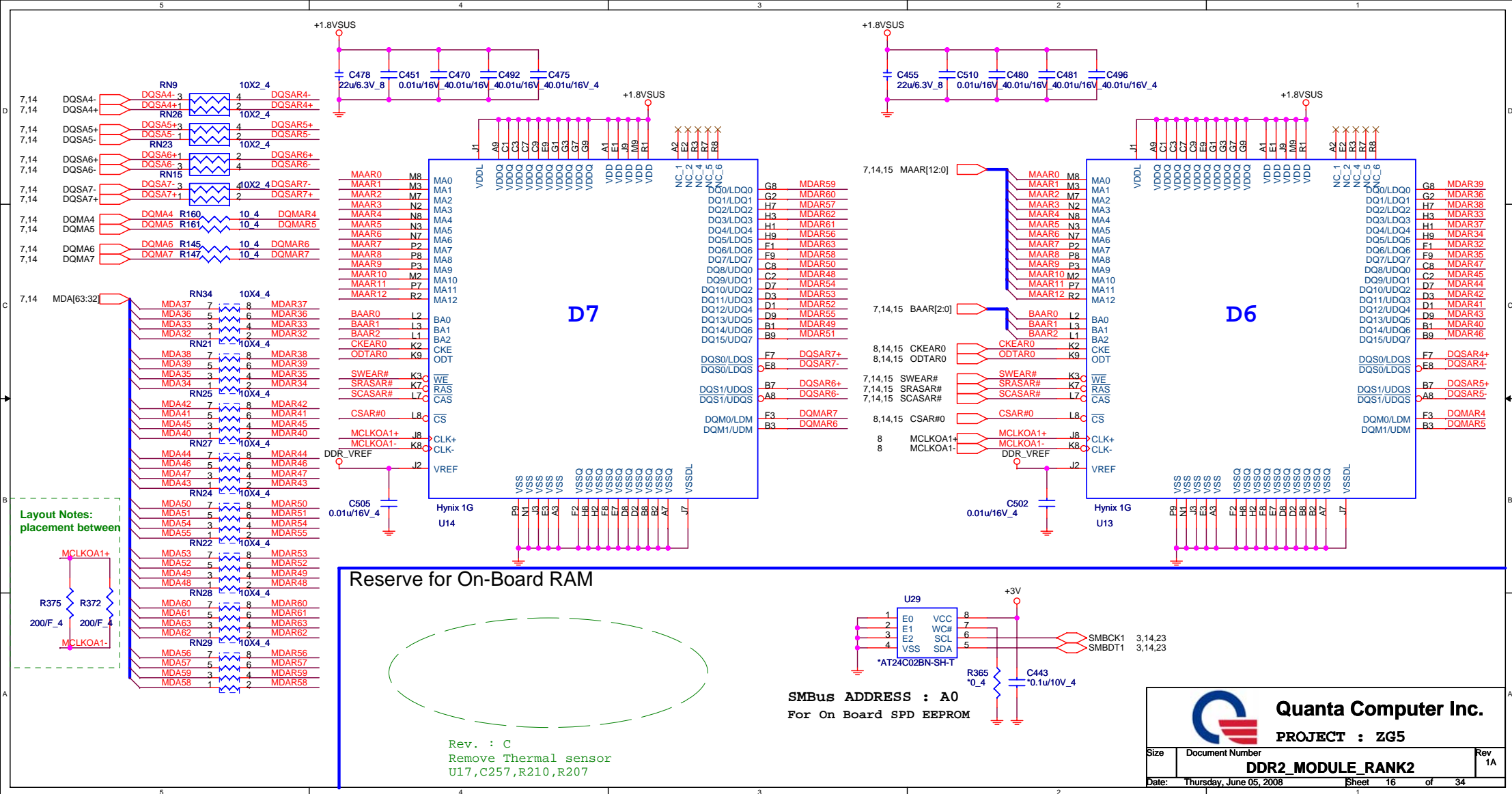
Document Number

Date _____

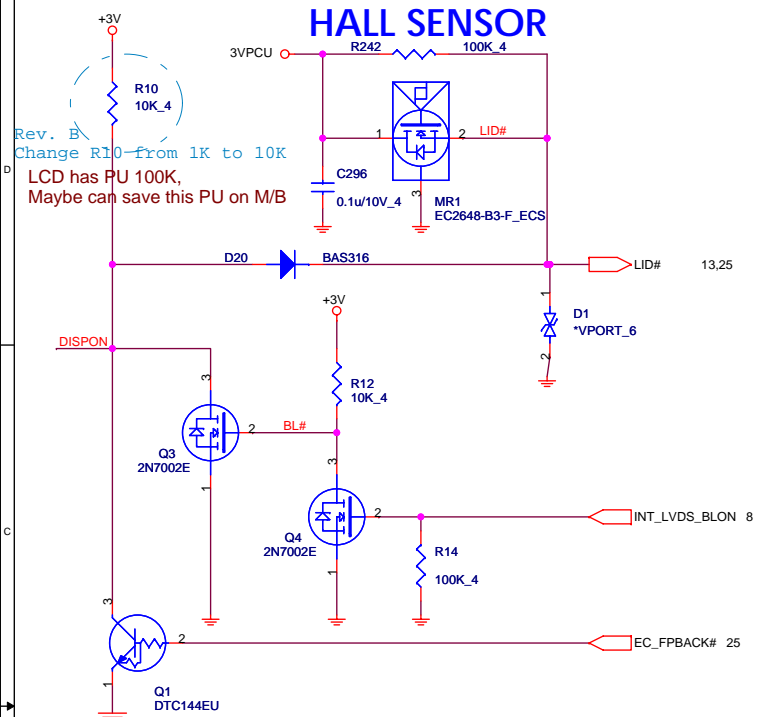
Thursday, June 05, 2008

Sheet 15 of 34

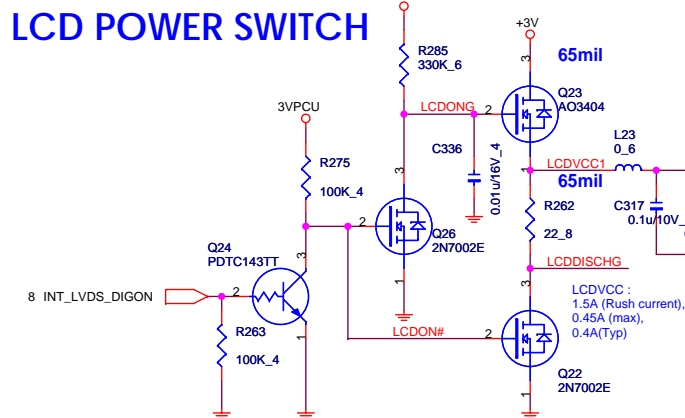
Rev



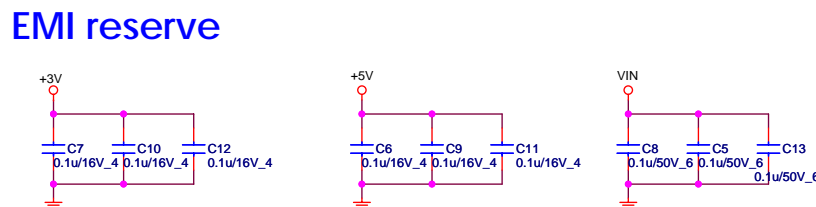
HALL SENSOR



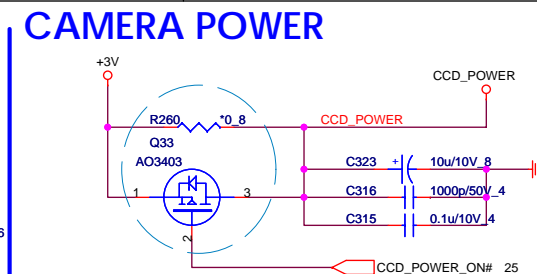
LCD POWER SWITCH



EMI reserve

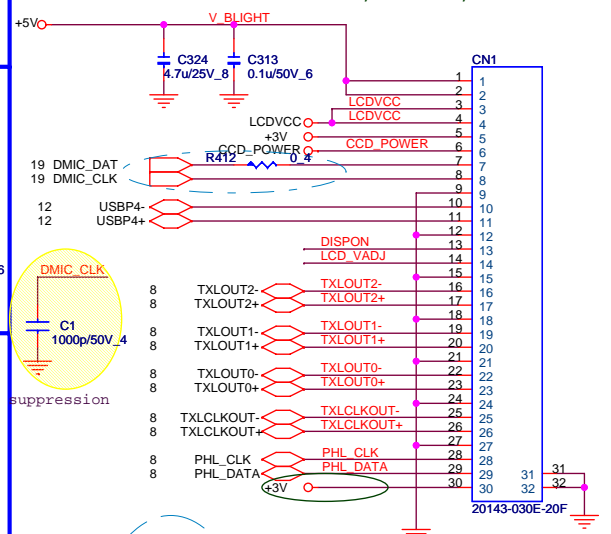


CAMERA POWER

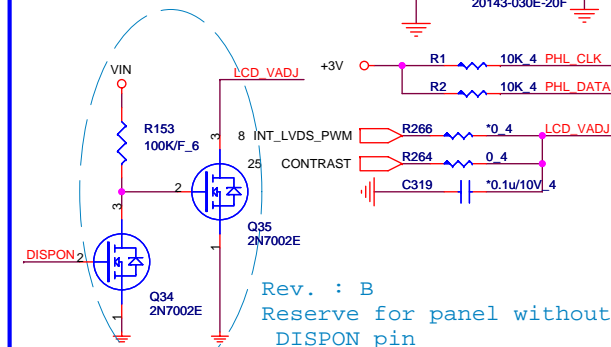
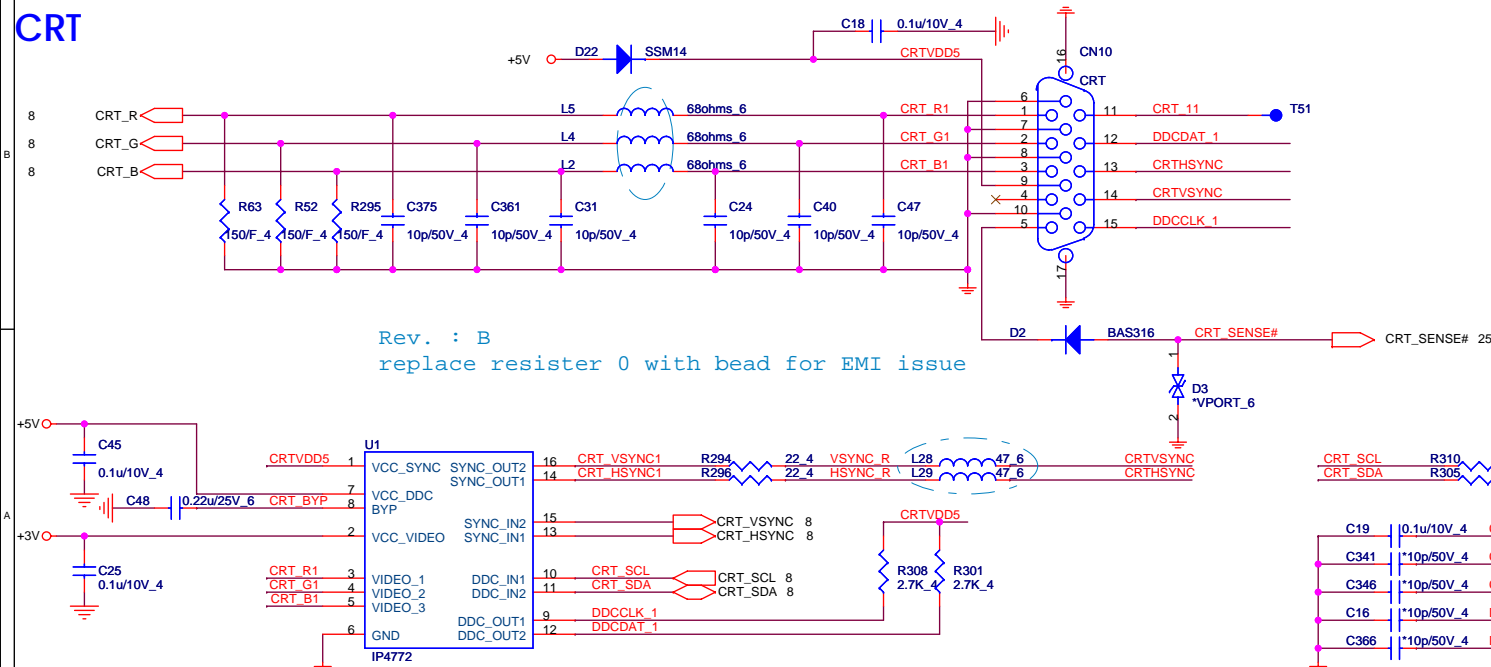


LCD MODULE *V_BLIGHT*
8.9"(5.5V): ZG5 supply 5V

Rev. : B
Remove L25 , C321 , R261



CRT

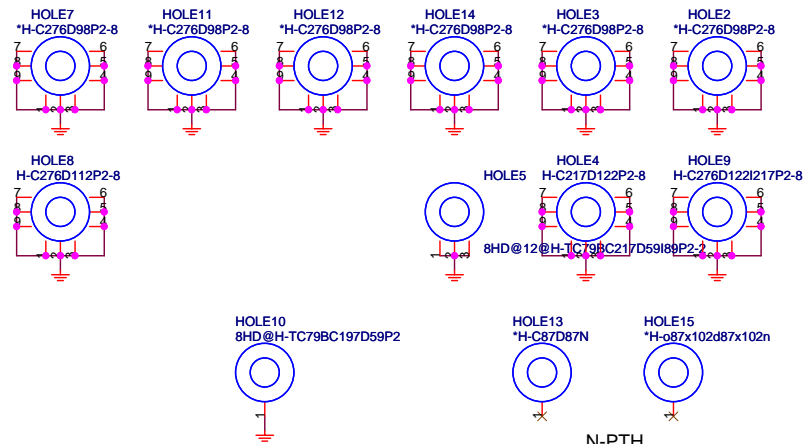
**Quanta Computer Inc.**

PROJECT : ZG5

Size	Document Number	Rev
	CRT/LVDS	1A

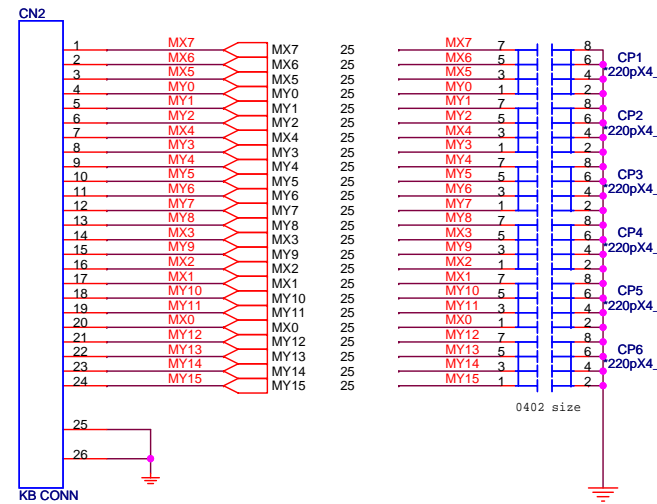
Date: Thursday, June 05, 2008 Sheet 17 of 34

SCREW HOLE



Rev. : B
Remove HOLE 1 , HOLE 6
Add HOLE 15

KEYBOARD



12" TOUCH PAD BOARD

Rev. : B
Remove T/P conn.-CN4 , C210 , C206 , C207

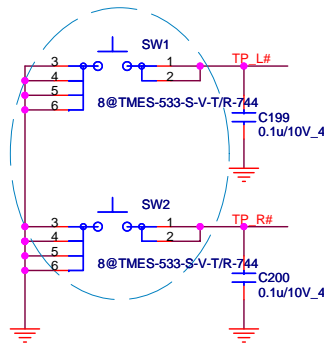
MM20050ICI2 CF@ x 2, HD@ x 2, ODD@ x 2

SSD x 2

HDD x 2

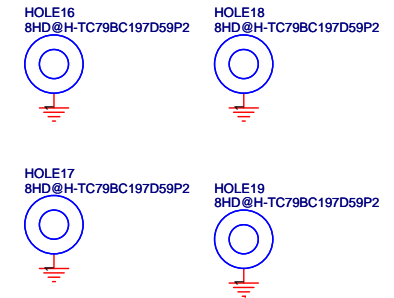
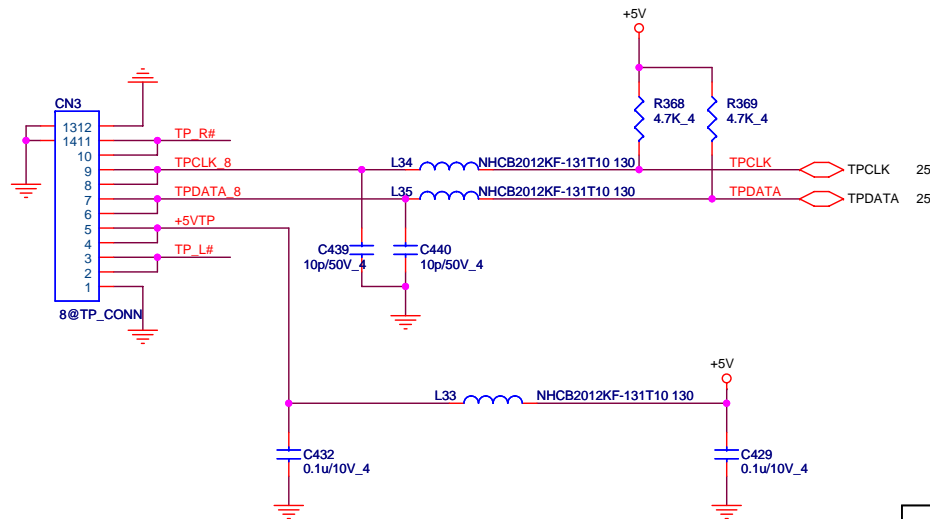
12" x 4

8.9" TOUCH PAD CONNECTOR



Rev. : B
Swap pin2 & 3 for touch pad
function fail .

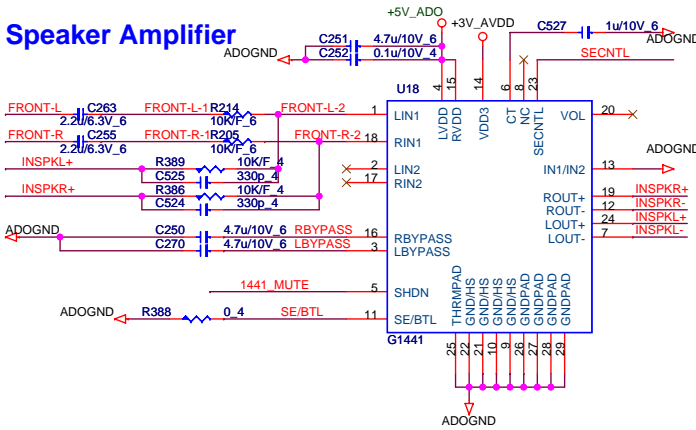
Rev. : C
SMT line suggest to change switch P/N



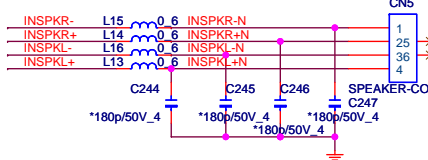
Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev 1A
KB/TP/HOLE		
Date: Thursday, June 05, 2008	Sheet 18 of 34	

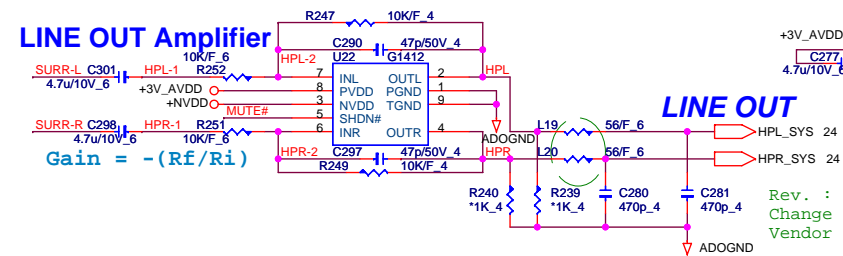
Speaker Amplifier



SPEAKER



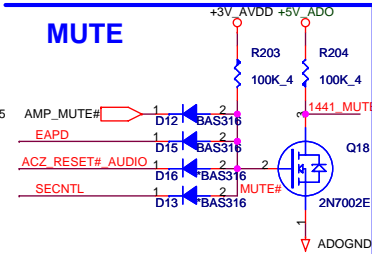
LINE OUT Amplifier



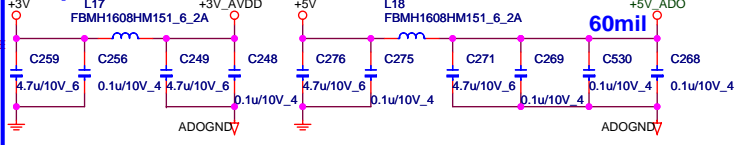
LINE OUT

Rev. : C
Change L19 , L20 to res 56ohms
Vendor suggestion

MUTE



Amplifier POWER

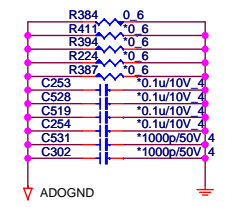


MDC

Rev. : B
Remove CN9 , R26 , R22 , R297 ,
R289 , C342 , C343 , C347

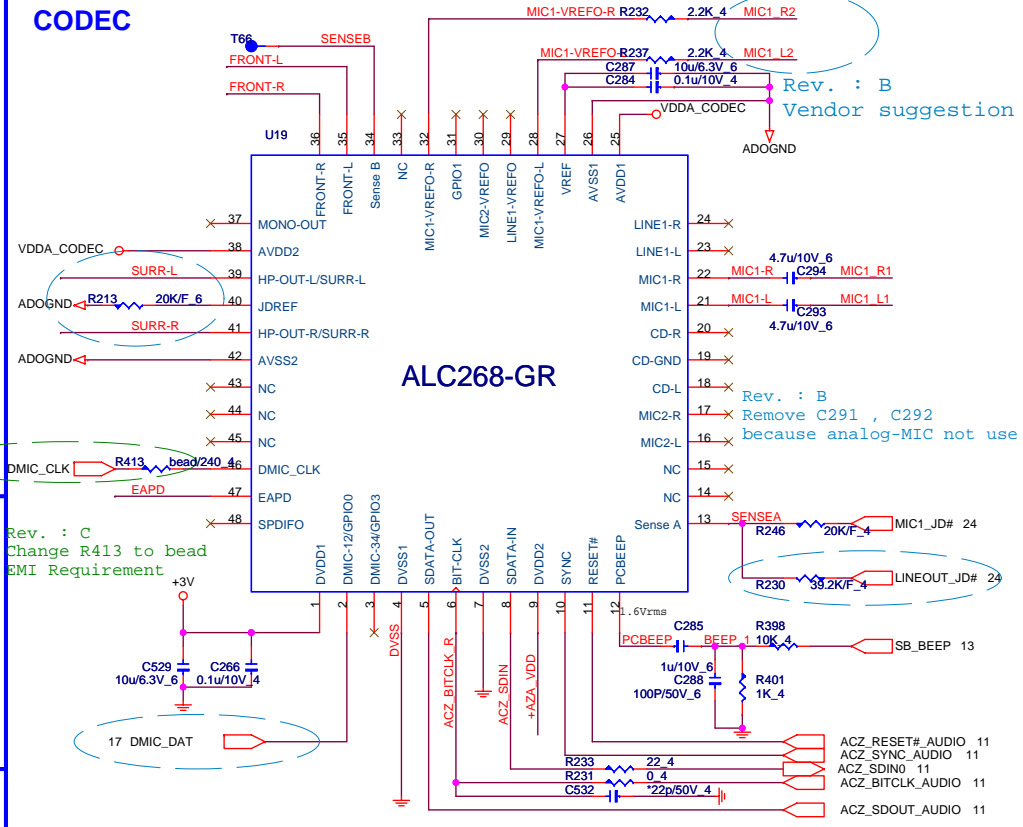
12.1" Audio Conn.

Rev. : B
Remove CN22 , CN20 , CN24 , R208 , R211 ,
R218 , R221 , R223 , R229 , C258 , C260 ,
C264 , C265 , C267 , C274 , R235 , R236 ,
R189 , C228 , R289

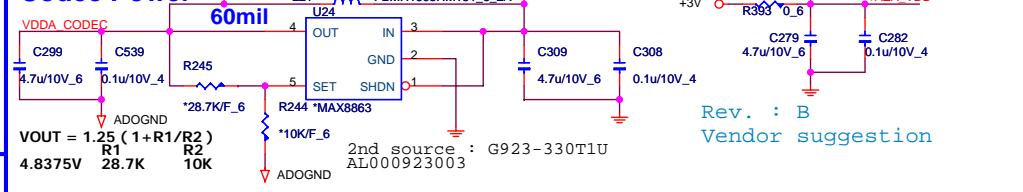


Tied at one point only
under the codec or
near the codec

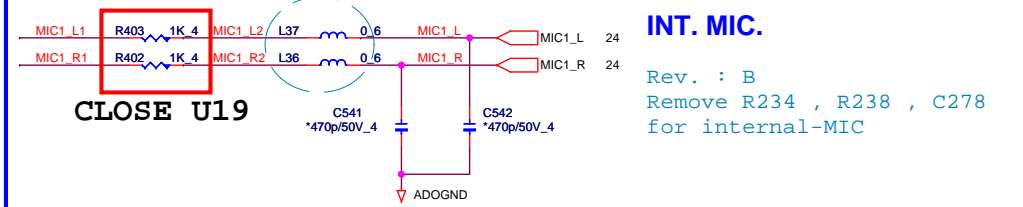
CODEC



Codec Power



MICROPHONE



LED on M/B



- **Charger (Green/ Abler)**
- **Storage HDD/ SSD/ Media (Gereen)**
- **Caps (Green)**
- **Num (Green)**

Rev. C
Remove Q16

**Quanta Computer Inc.**

PROJECT : ZG3

Size	Document Number
------	-----------------

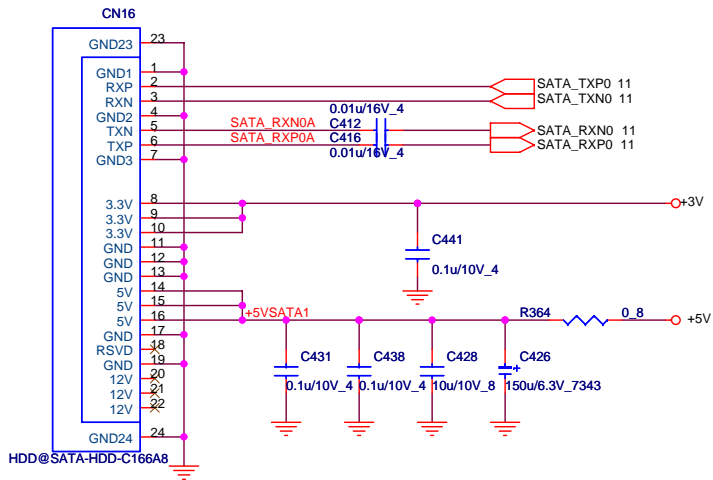
	USB on Board/LED
--	-------------------------

Date: Thursday, June 05, 2008

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Rev
1A

SATA HDD

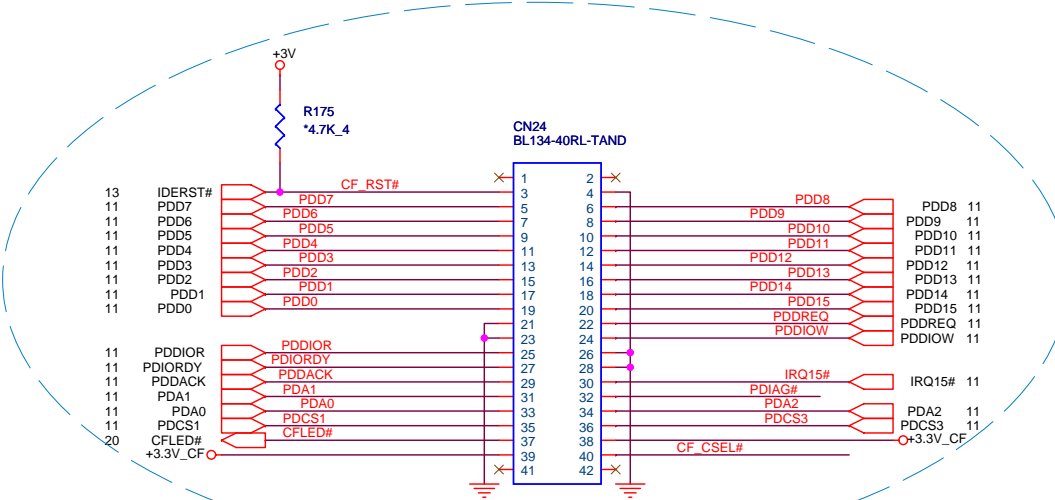


SATA ODD

Rev. B
Remove R191 , C240 , C229 , C237 , C235 , C230

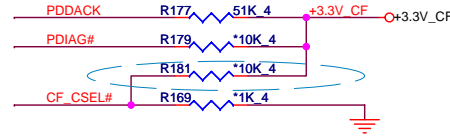
Rev. C
Remove SATA ODD
Delete C538 , C543 , R193 from BOM

ZT4 card connector

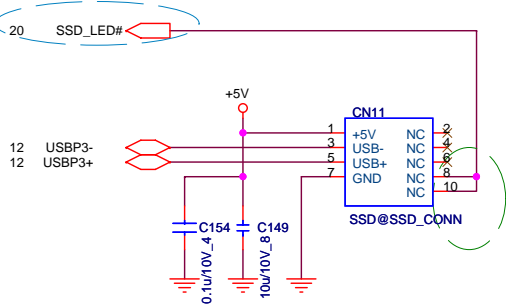
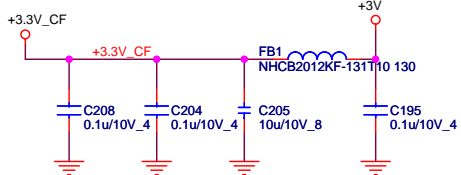


Rev. : B
Change connector from CF(CN17) to ZIF(CN24)
Change R172 from 33 to 0 ohms

SSD connector



Rev. : B
Change R169 to NA
Remove R166 , R153 , R184 , R135 , R181, R170

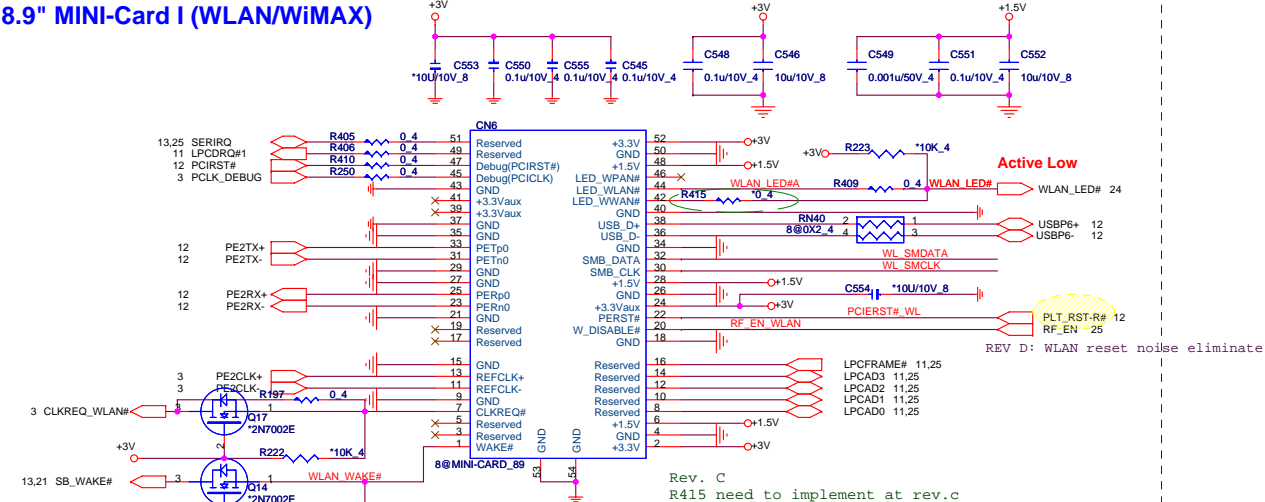


Rev. : C
Change pin 8 to low active
pin8 for sandisk
pin10 for intel



Quanta Computer Inc.
PROJECT : ZG3

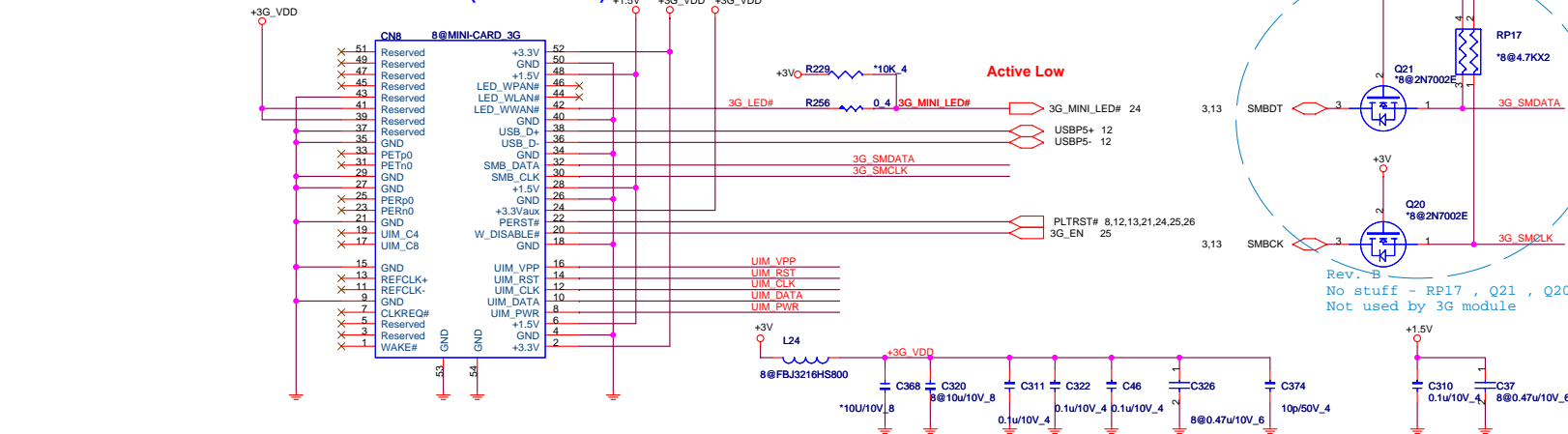
8.9" MINI-Card I (WLAN/WiMAX)



3G MINI CARD

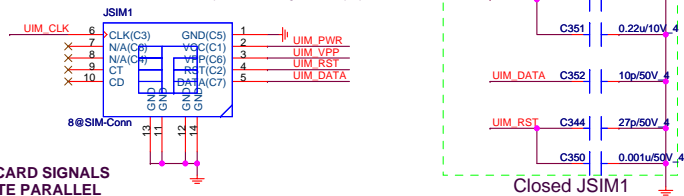
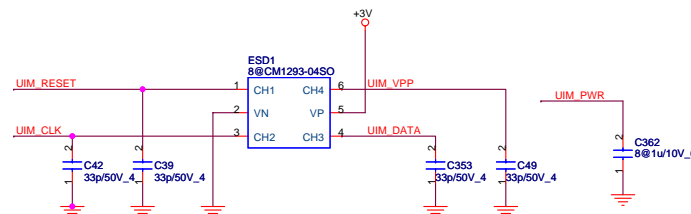
8.9": 8mm (DFHD52MS065)

12.1": 9.9mm (DFHS52FR018)



SIM CARD

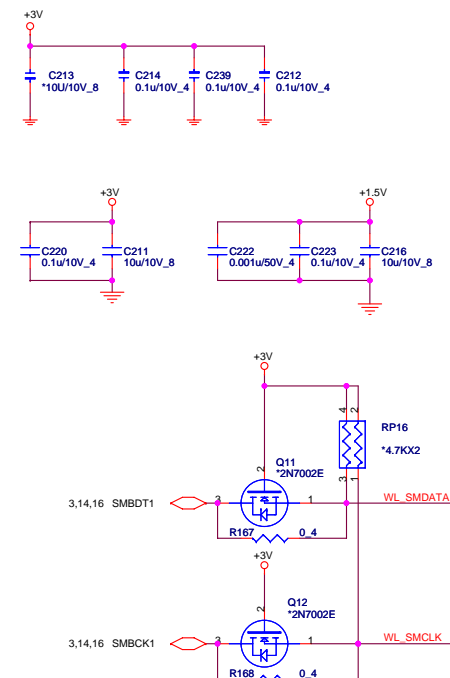
The value of the capacitor is suggest by Siemens HQ expert.
For against 900MHz RF interference. The value of capacitor is 27pF.
For against 1800MHz RF interference. The value of capacitor is 10pF.
1nF/10nF value capacitor use for against ESD purpose.

SIM CARD SIGNALS
ROUTE PARALLEL

12.1" MINI-Card I (WLAN/ WiMAX)

Rev. : F

Remove CN14 , RN38 , RN39 , RN36

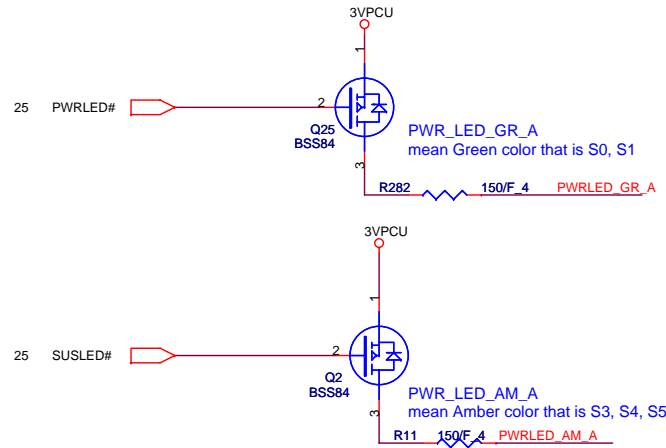


Rev. : B
Remove RN43 , RN44

USB#1=> 8.9" (Left side) or 12.1" (Right-Front side)

12" USB/PWR BTN Board USB/LED Board

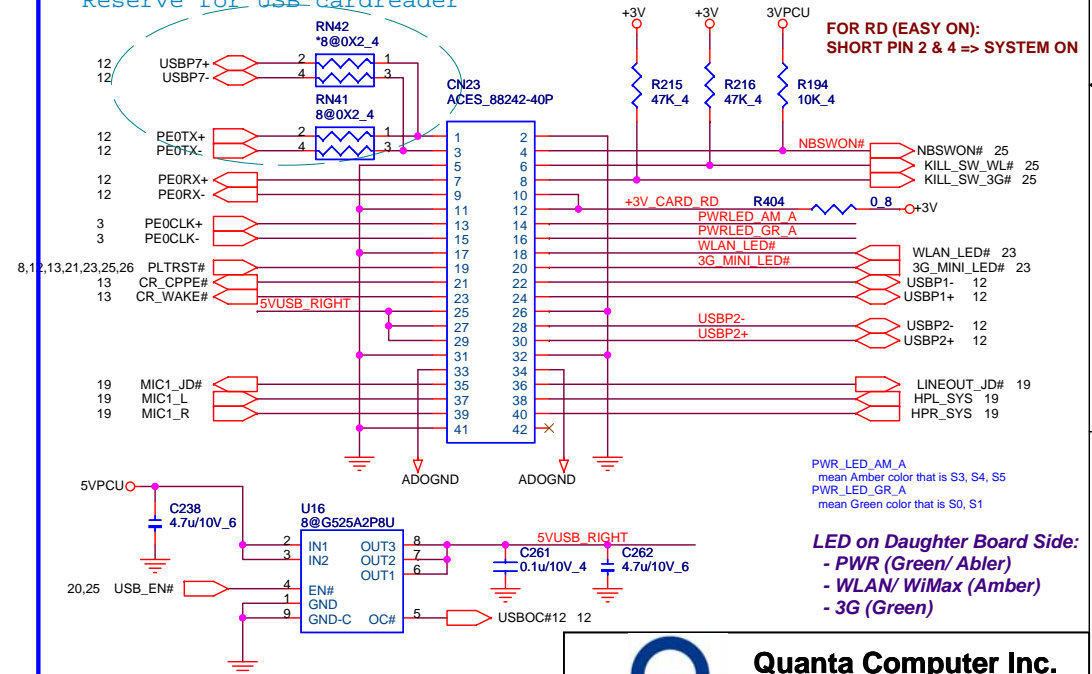
Rev. : B
Remove CN7 , CN26 , U23 , U3 ,
C286 , C300 , C75 ,C295



Rev. : B
Remove WLAN & 3G LED driving transistor
(Q19 , Q13 , R241 , R178)

8.9" Card-Reader / USB / Kill SW / POWER SW

Rev. : B
Reserve for USB cardreader

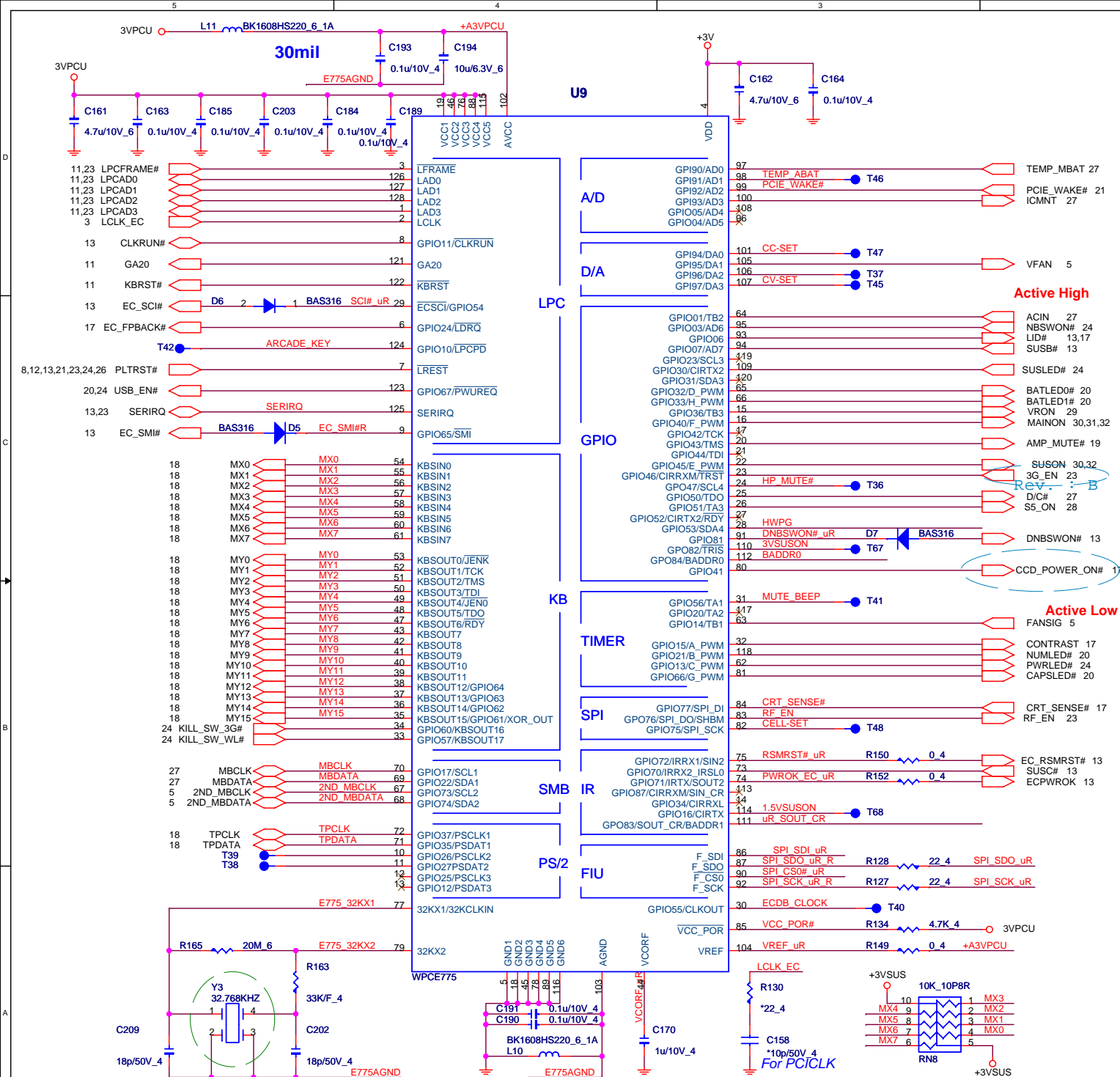


Quanta Computer Inc.

PROJECT : ZG3

Size	Document Number	Rev
	PCle-Cardreader/External-USB	1A

Date: Thursday, June 05, 2008 Sheet 24 of 34

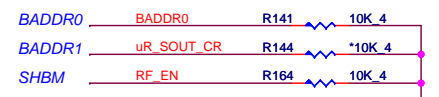


Rev. C
Change x'tal package to low profile

I/O ADDRESS SETTING

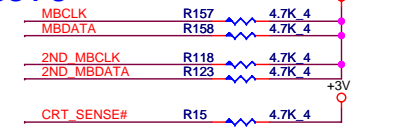
I/O Address		
BADDR1-0	Index	Data
0 0	XOR TREE TEST MODE	
0 1	CORE DEFINED	
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS

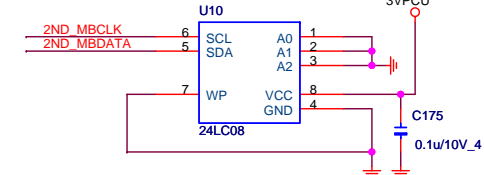


1/13 Confirm by vendor mail :
Disabled (*1) if using FWH device on LPC.
Enabled (0') if using SPI flash for both system BIOS and EC firmware

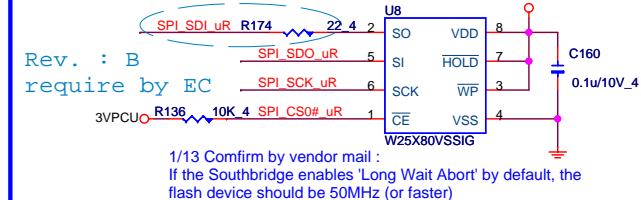
SM BUS PU



ACER ID

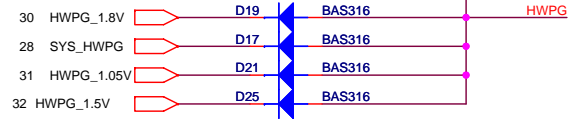


SPI FLASH



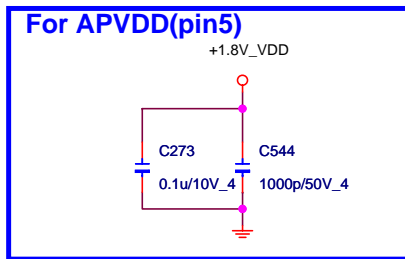
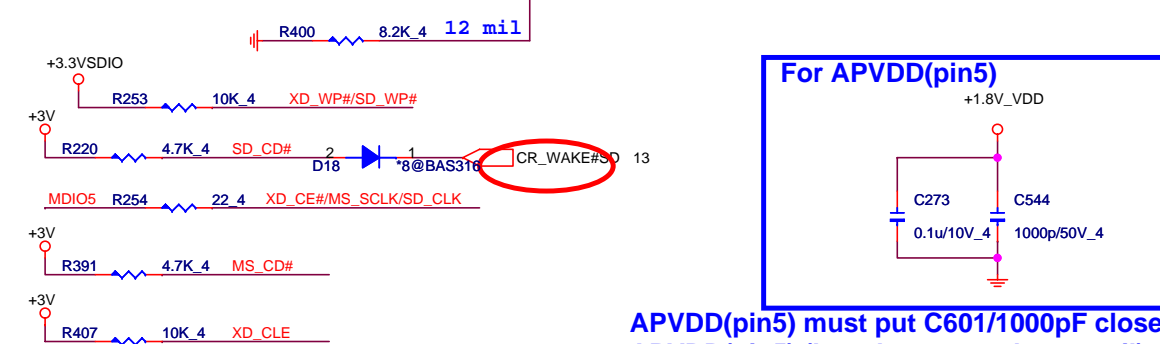
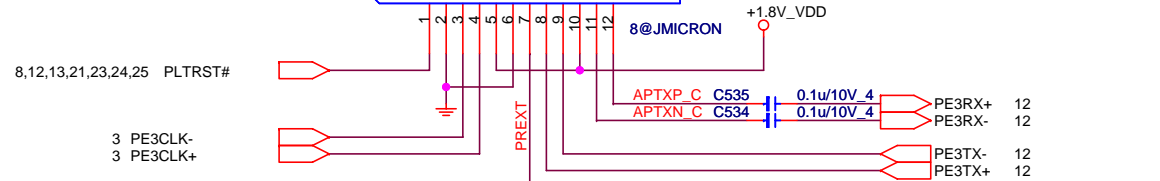
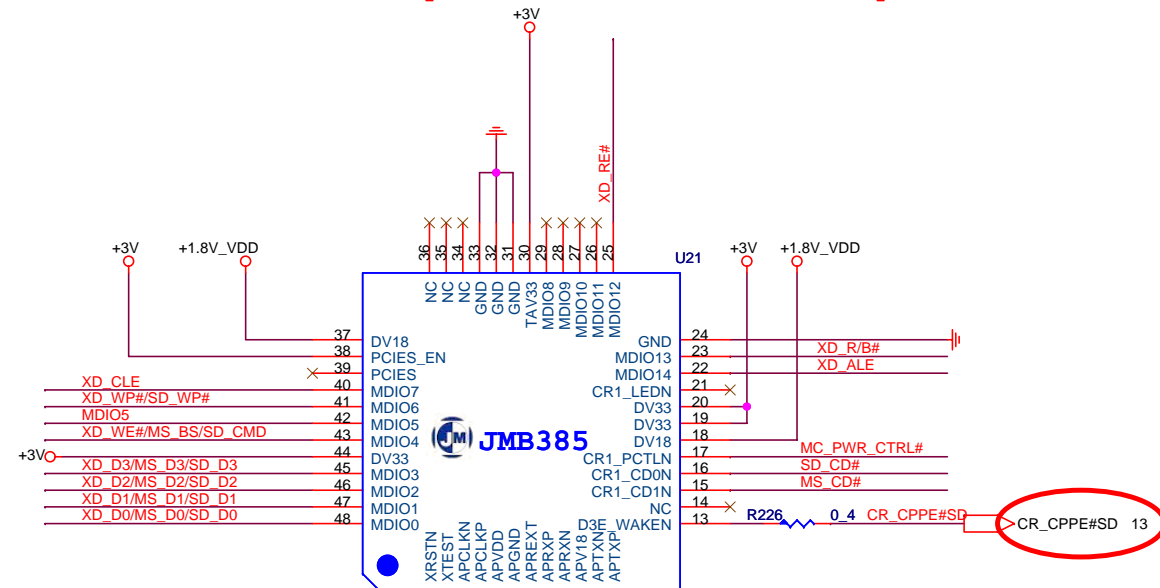
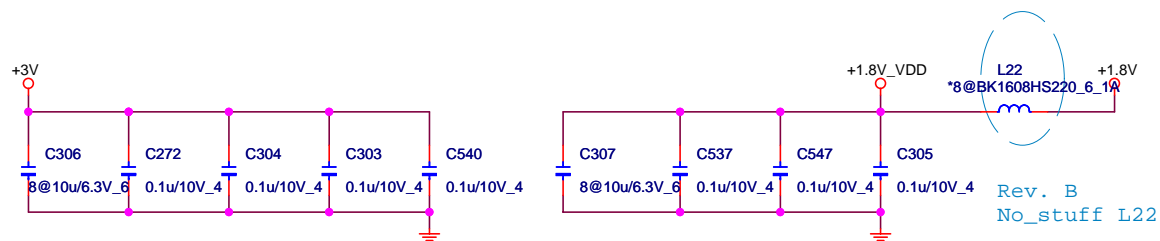
1/13 Confirm by vendor mail :
If the Southbridge enables 'Long Wait Abort' by default, the flash device should be 50MHz (or faster)

HWPG



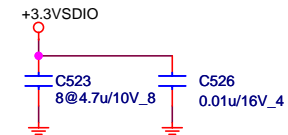
INTERNAL KEYBOARD STRIP SET



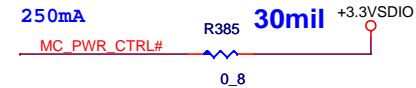


APVDD(pin5) must put C601/1000pF close to APVDD(pin5) (length must under 120mil) and trace width = 20mil, after C601, pls put one more 0.1uF for it.

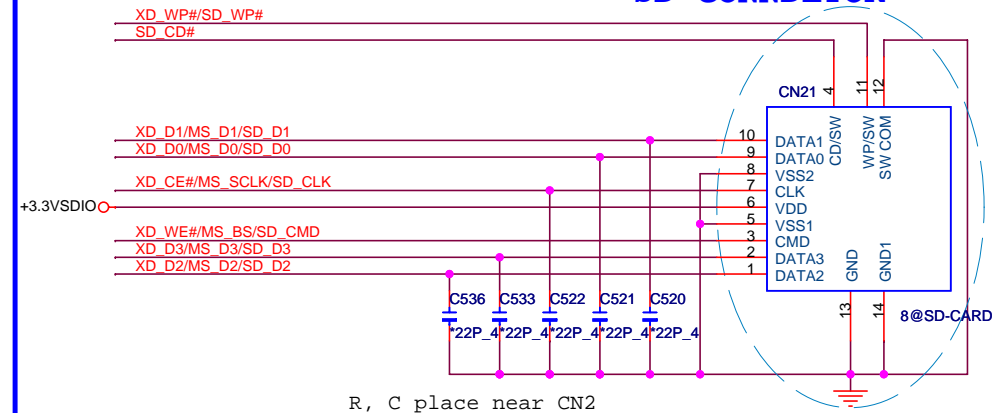
Memory Card Power Supply



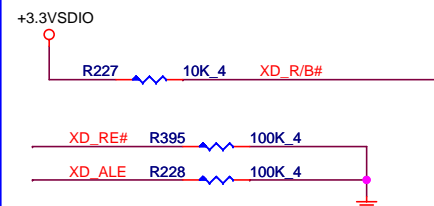
Use 0805 type and over 20 mils trace width on both side



SD CONNDETOR



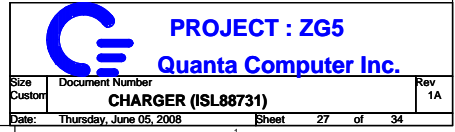
Rev. : B
Swap pin & change conn. P/N



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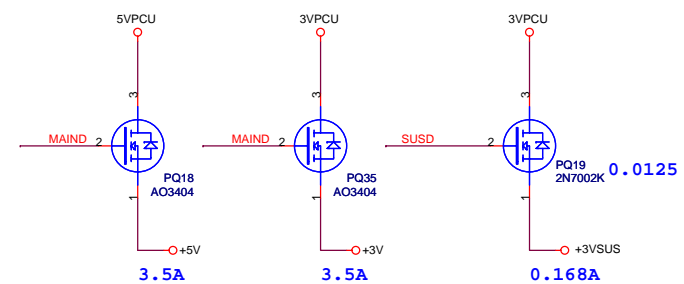
PROJECT : ZG5

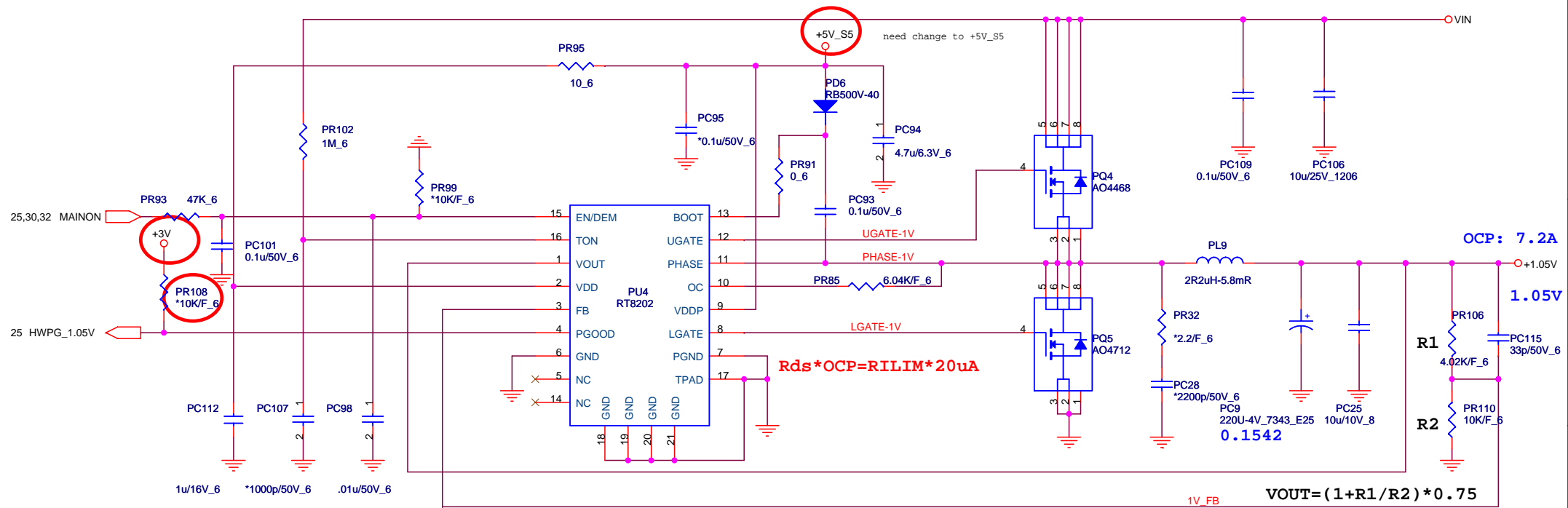
65W Yellow DFPJ05MR007



```
PR148 mount 10_6 ( CS01003J953 )
PC126 mount 0.1uF ( CH4104K9B03 )
PR151 mount 0_6 ( CS00003J951 )
```

PC126 mount 1u/6.3V_4 (CH5101K9B01)





$$TON = 3.85p * R_{TON} * V_{out} / (V_{in} - 0.5)$$

$$Frequency = V_{out} / (V_{in} * TON)$$

$$TON = 3.85p * 1M * 1 / (V_{in} - 0.5)$$

$$Frequency = 1 / (0.0036767) = 272K$$

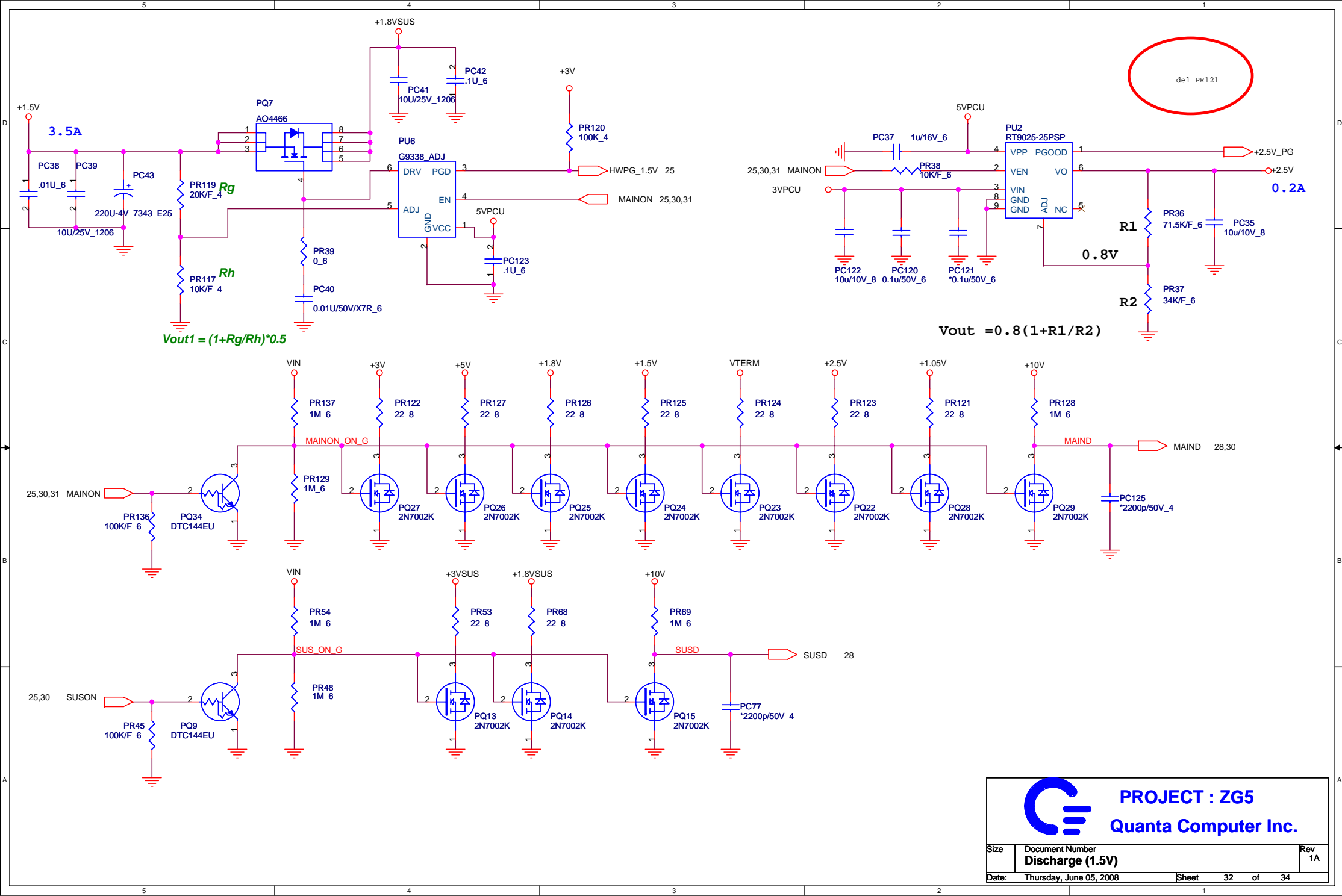
AO4712 $R_{dson} = 15 \sim 18m\Omega$

OCP = 7.2 - 0.8A

$$L(\text{ripple current}) = (19 - 1.05) * 1.05 / (2.2u * 272k * 19) \sim 1.63A$$

$$18m * 7 = R_{ILIM} * 20\mu A$$

$$R_{ILIM} = 6K(2.5 \sim 8K)$$



B test change list

Page 27 : Change PQ6 to BAM49320000
Page 28 : Change PR134 to CS41963F916
Page 28 : Change PD3 to BCBAV99W022
Page 28 : Change PC73 , PC75 to CH73301M8B9
Page 28 : Change PQ10 to BAM49320000
Page 28 : Change PQ11 to BAM47120000
Page 28 : Change PQ12 to BAM44680003
Page 29 : Change PQ1 to BAM49320000
Page 29 : Change PC103 , PC116 to CH7330LM8812
Page 30 : Change PR65 to CS-5103F916
Page 30 : Change PR66 to CS31433B917
Page 30 : Change PC67 , PC72 to CH5101K9B01
Page 30 : Change PQ16 to BAM47100000
Page 30 : Change PQ17 to BAM44680003
Page 30 : Change PU3 to AL051116008
Page 31 : Change PQ4 to BAM44680003
Page 31 : Change PQ5 to BAM47120000
Page 32 : Change PQ7 to BAM44660000

C test change list

Page 28 : Change PL3 , PL4 footprint to CDRH104R-zg5
Page 28 : Add layout location PR151
Page 29 : Change PU5 footprint to qfn40-6X6-5-41p-0_9h-zg5
Page 30 : Add layout location PR149 , PR150

D test change list


Page 28 : Change PR55 to CS41152FB08
Page 28 : Add PD11 Component

M/B sku 2 : Change PU7 to RT8206 (AL008206000)

Change PU3 to RT8207 (AL008207000)

Add PR147 620K/F_6 (CS46202FB00)

Page 27 : Del PR84 0_6
Page 29 : Del PR3 , PR78 , PR8 , PR79 , PR88 , PR13 , PR92 0_4
Page 32 : Del PR118 0_4

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		Quanta Computer Inc.	
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	Power Change List		1A
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