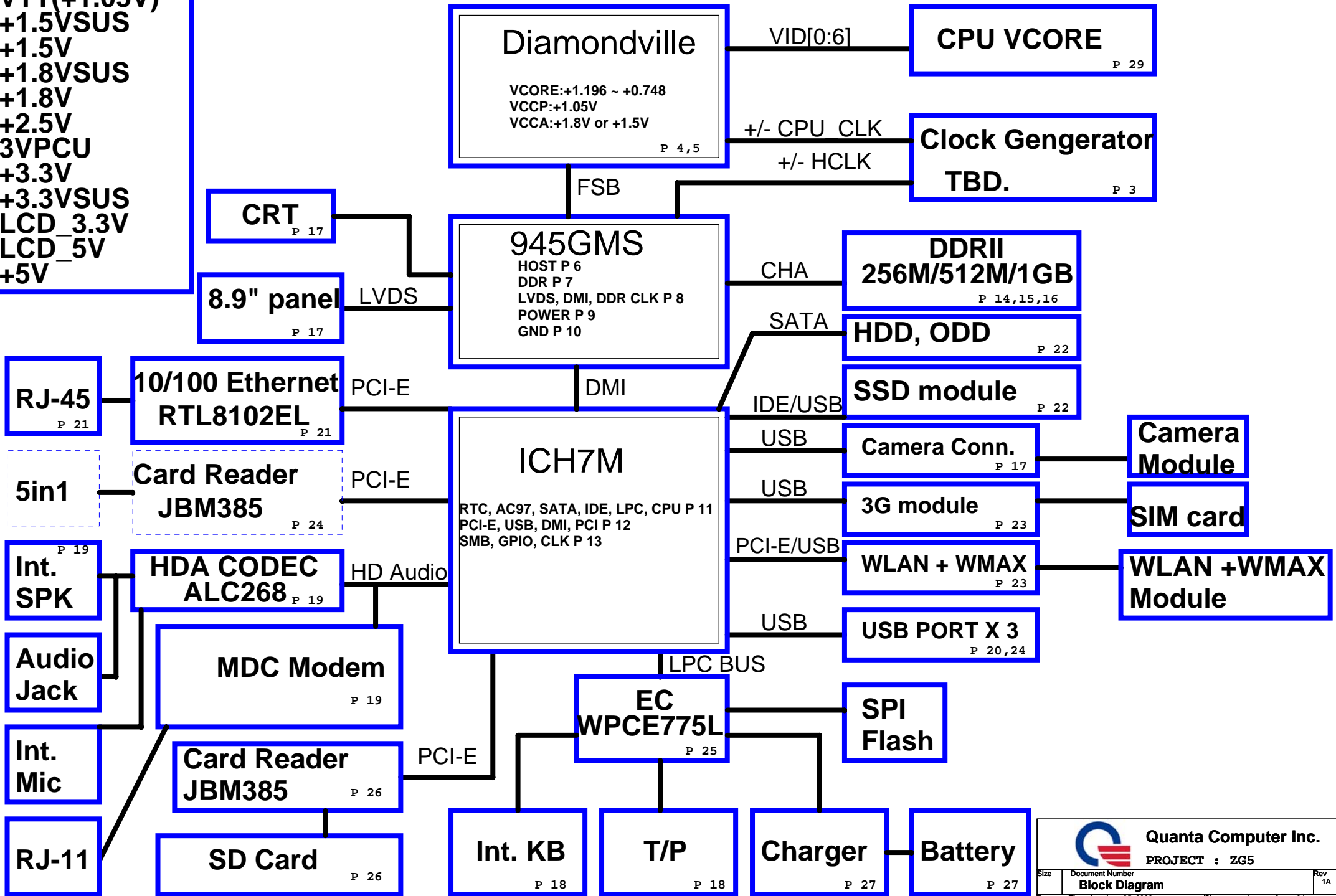


ZG5 NB Block Diagram

VTERM(+0.9V)
 VTT(+1.05V)
 +1.5VSUS
 +1.5V
 +1.8VSUS
 +1.8V
 +2.5V
 3VPCU
 +3.3V
 +3.3VSUS
 LCD_3.3V
 LCD_5V
 +5V

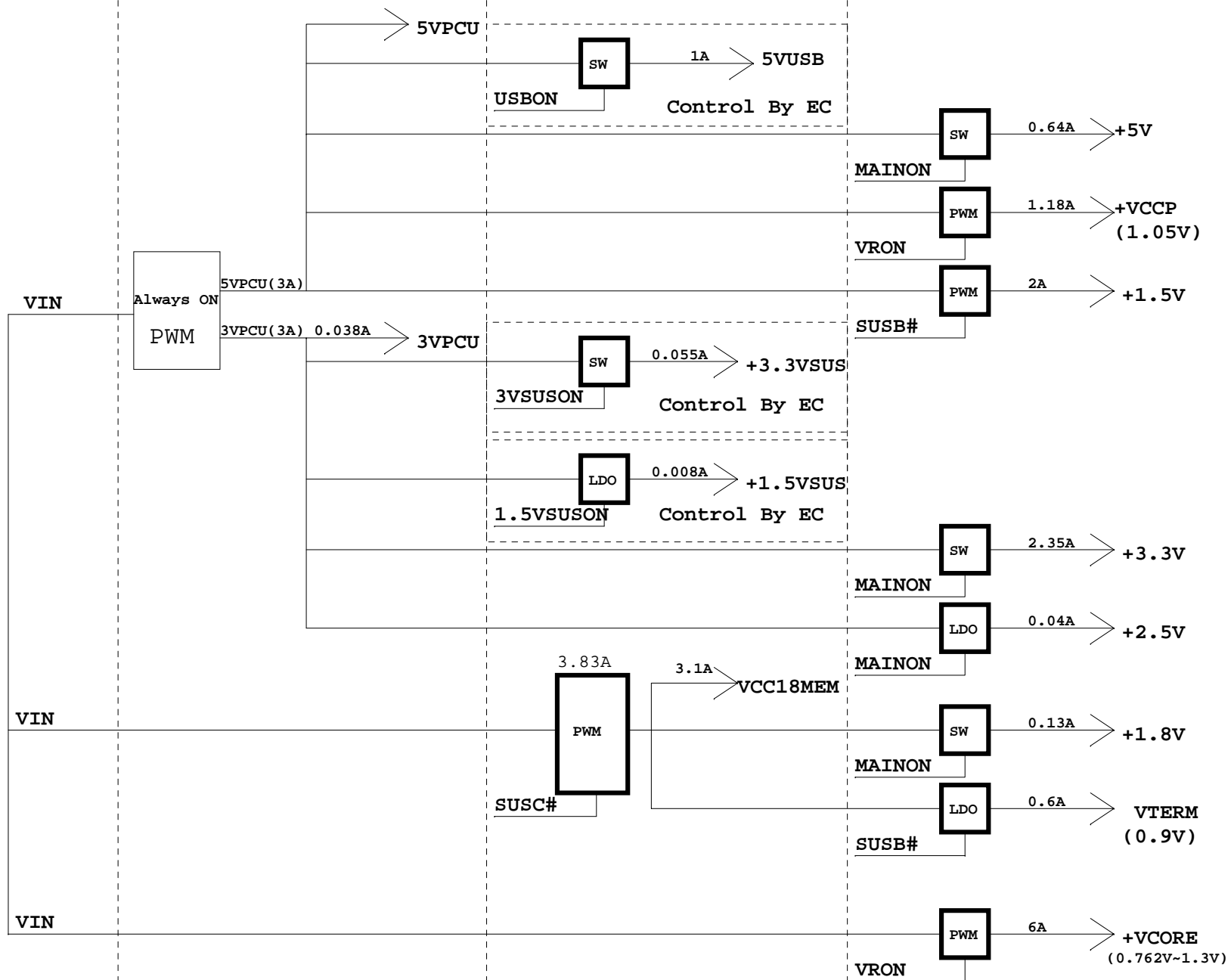


DCIN

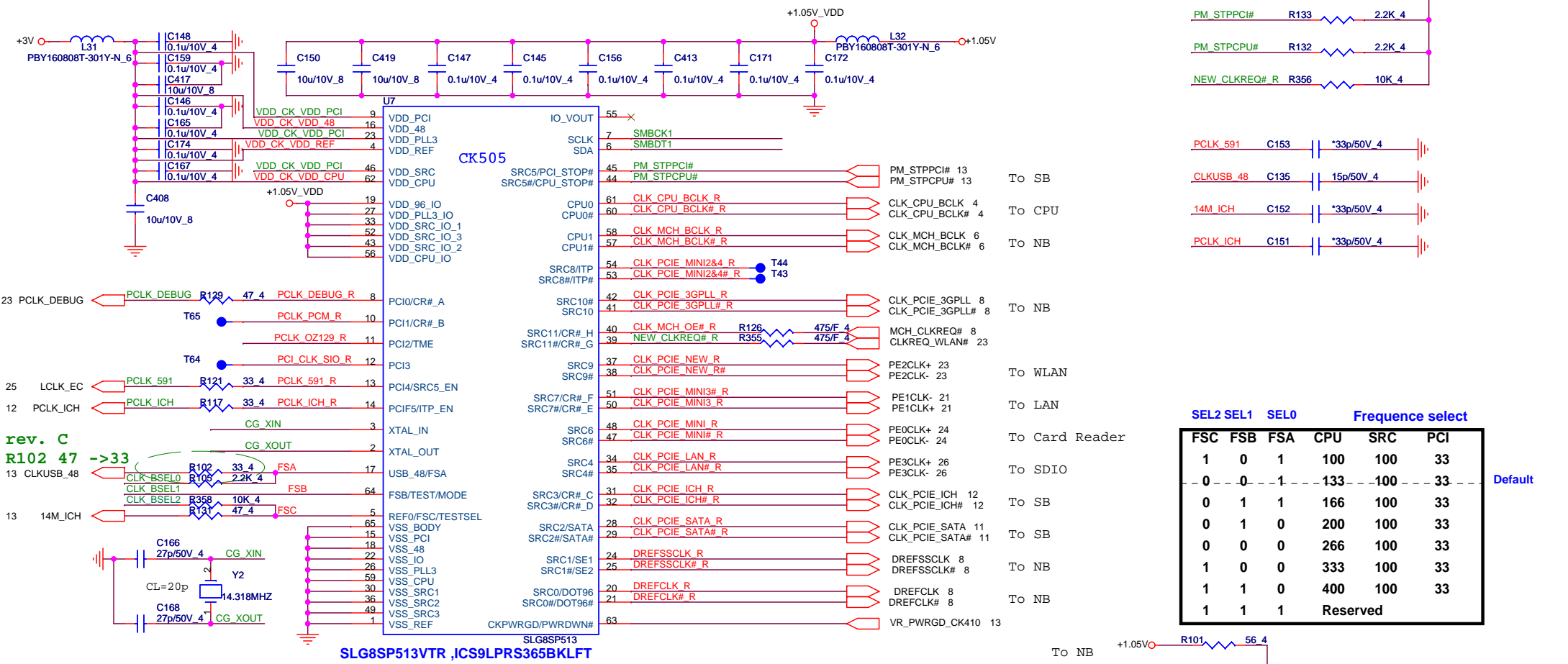
ALWAYS ON

S4 OFF

S3 OFF



Clock Generator

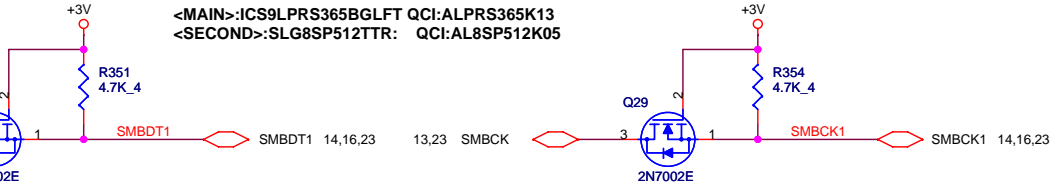


rev. C
R102 47 -> 33

SEL2 SEL1 SEL0			Frequency select			
FSC	FSB	FSA	CPU	SRC	PCI	
1	0	1	100	100	33	
0	0	1	133	100	33	Default
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	Reserved			

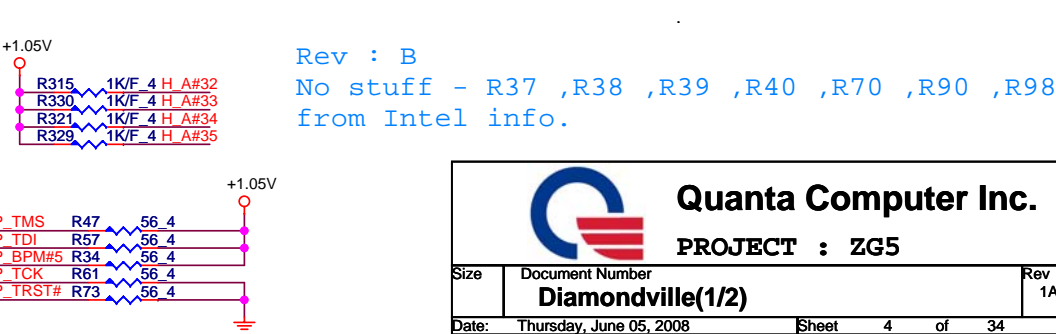
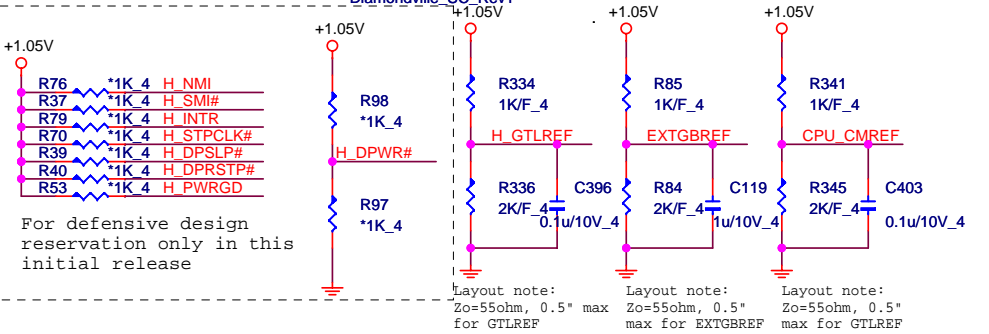
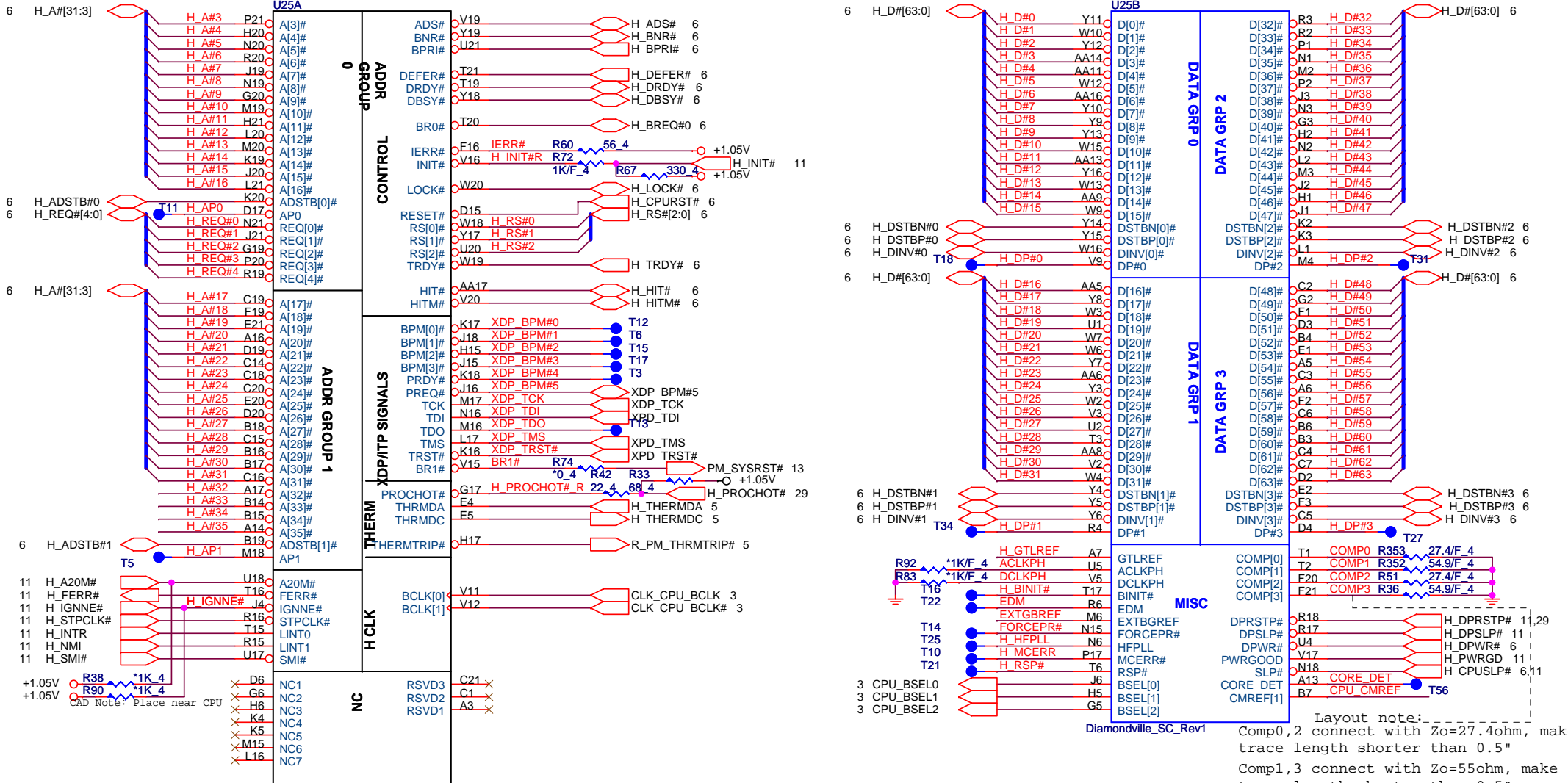
Pin	IC59LPRS365 (ALPRS365K13)	RTM8751-606 (AL000875K06)	PULL HIGH	PULL DOWN
Pin 11	PCI2/TME	internal PD	NO OVERCLOCKING (default)	NORMAL RUN
Pin 12	PCI-3	PCI-3/SRC5_EN internal PD	PIN37/38 IS SRC5	PIN37/38 IS PCI_STOP/CPU_STOP (default)
Pin 13	PCI-4/27M_SEL	internal PD	PIN 17/18 IS 27MHz	PIN 17/18 IS 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



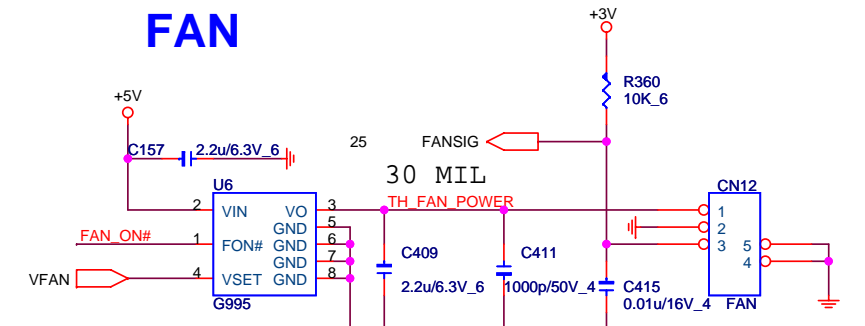
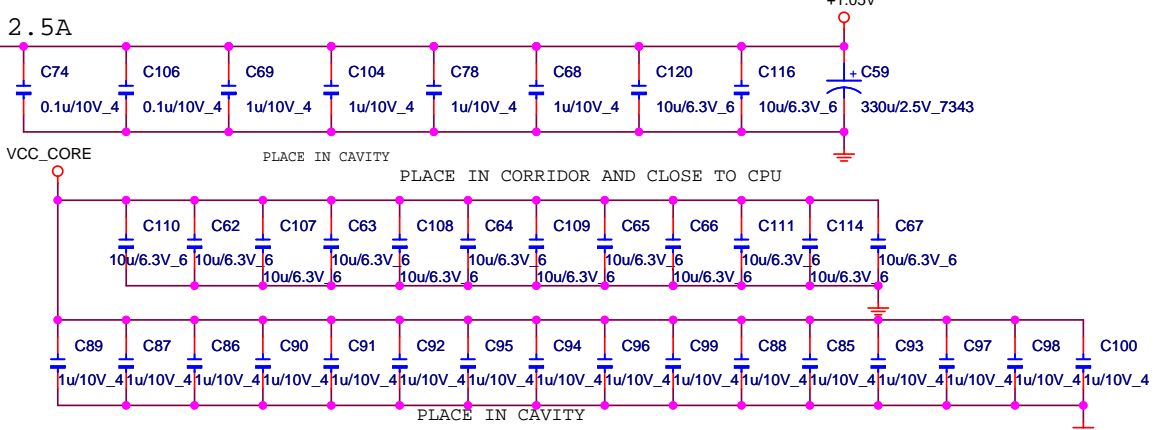
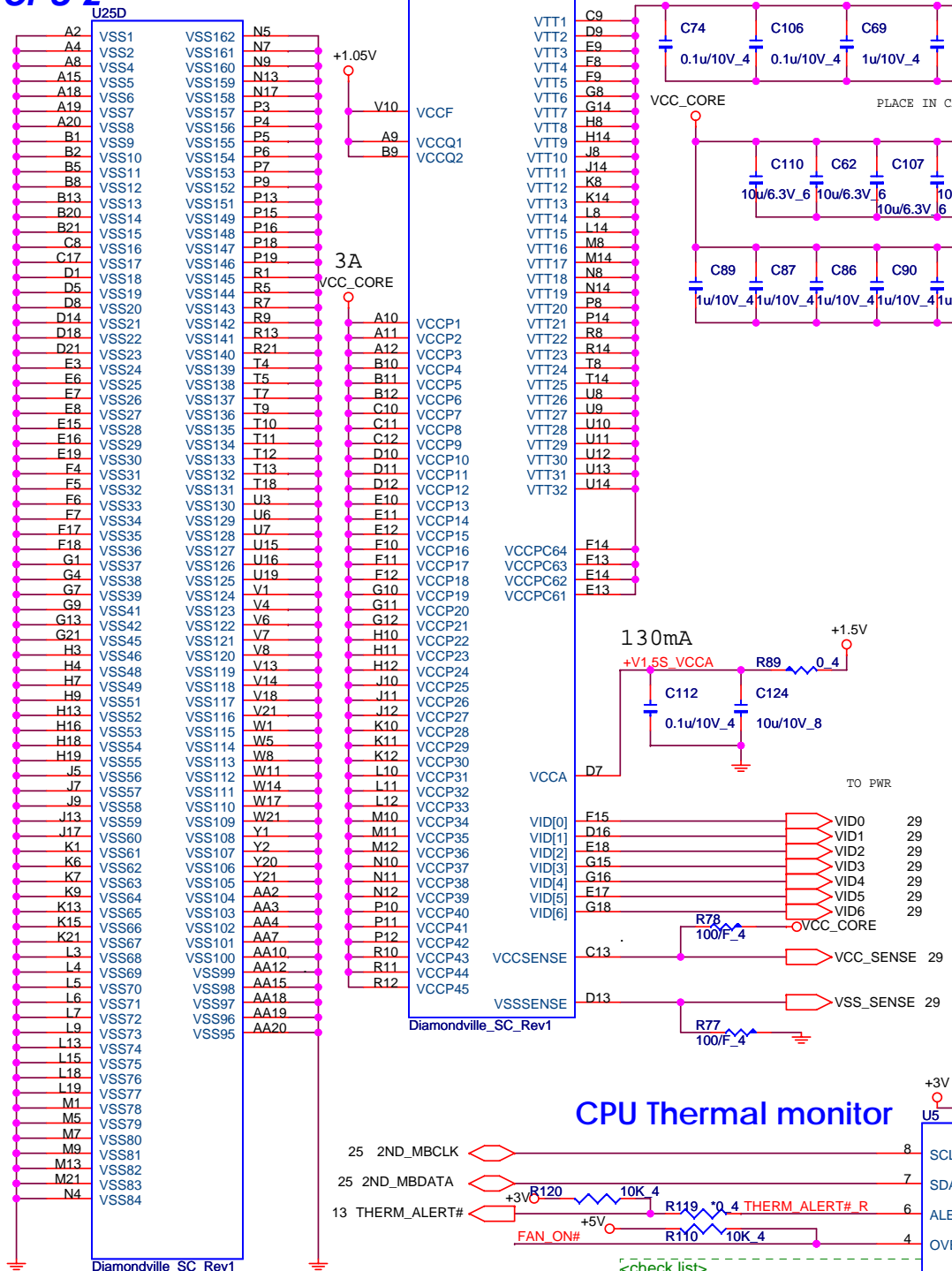
Rev : B
 No stuff - R37 ,R38 ,R39 ,R40 ,R70 ,R90 ,R98 from Intel info.

Quanta Computer Inc.

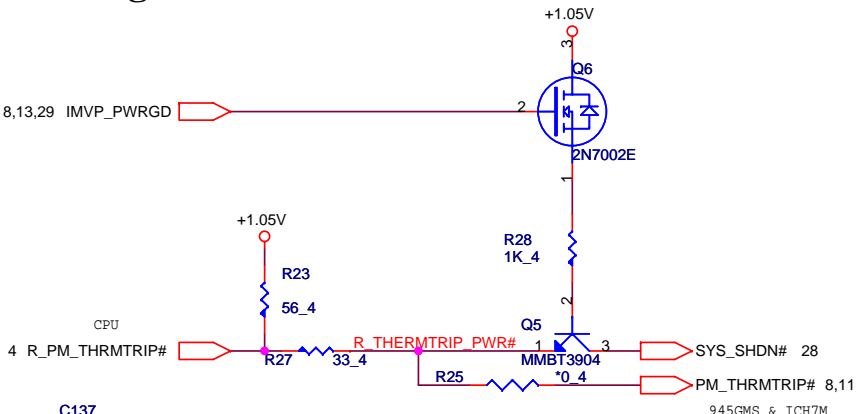
PROJECT : ZG5

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

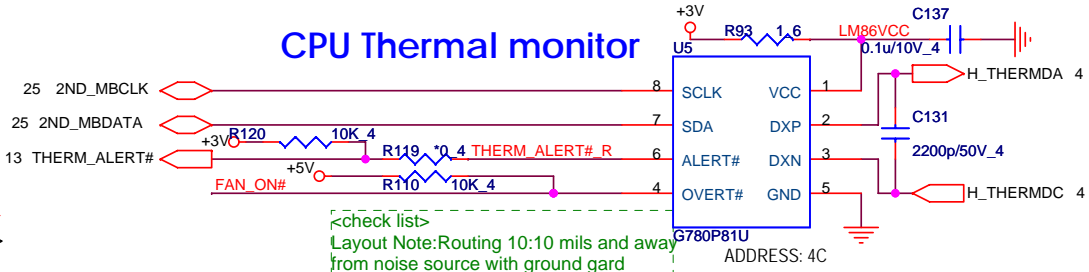
For defensive design reservation only in this initial release



125 Degree Protection

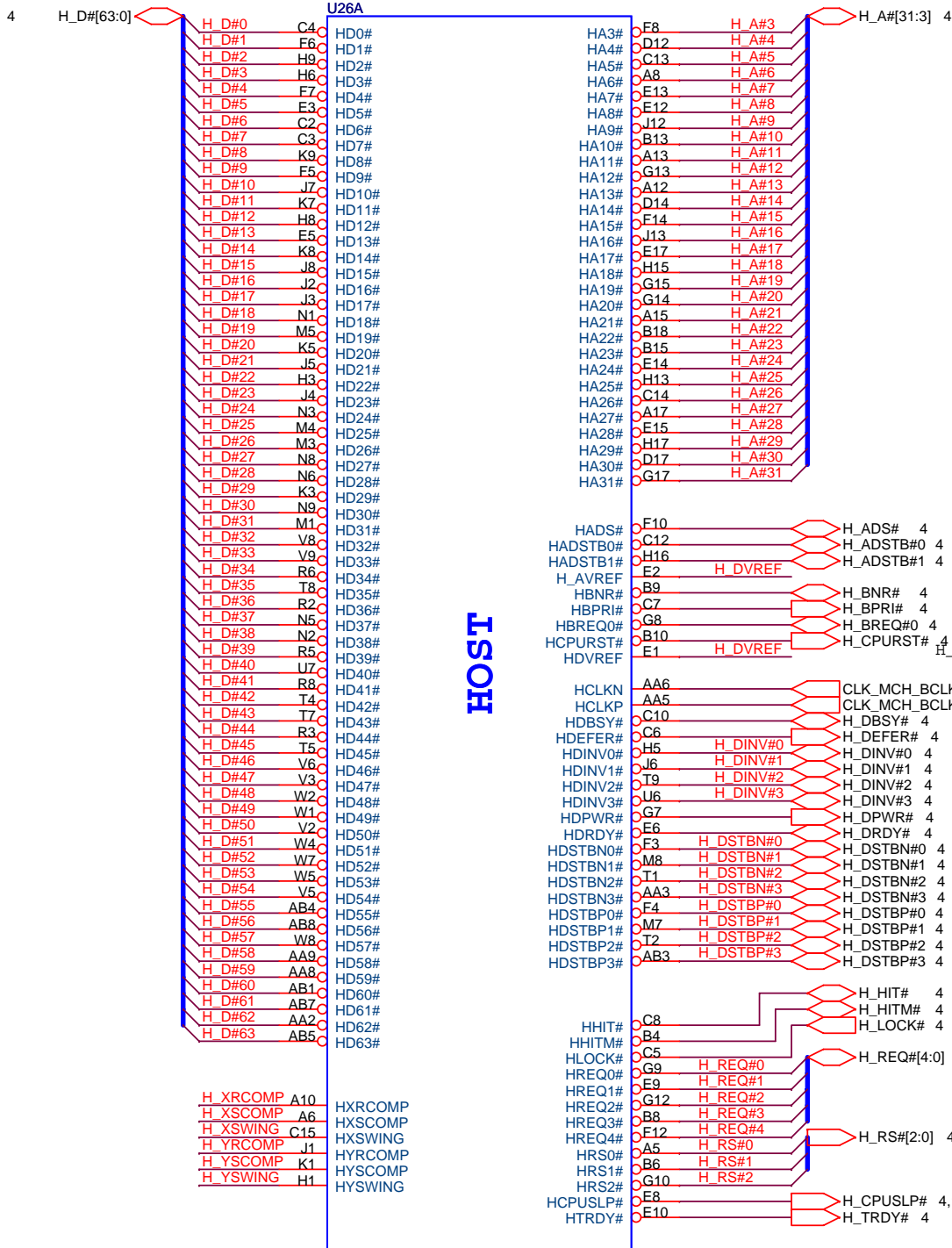


CPU Thermal monitor

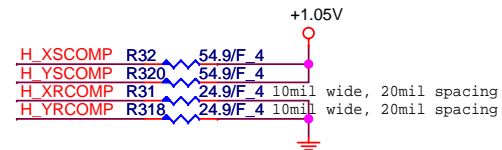
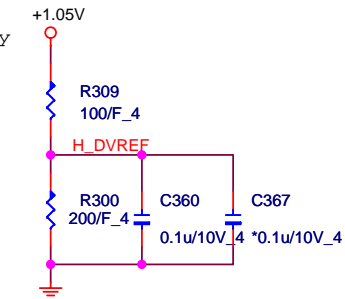
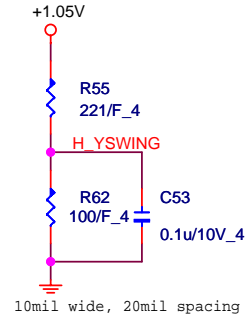
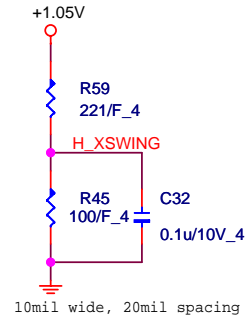


Quanta Computer Inc.
PROJECT : ZG5

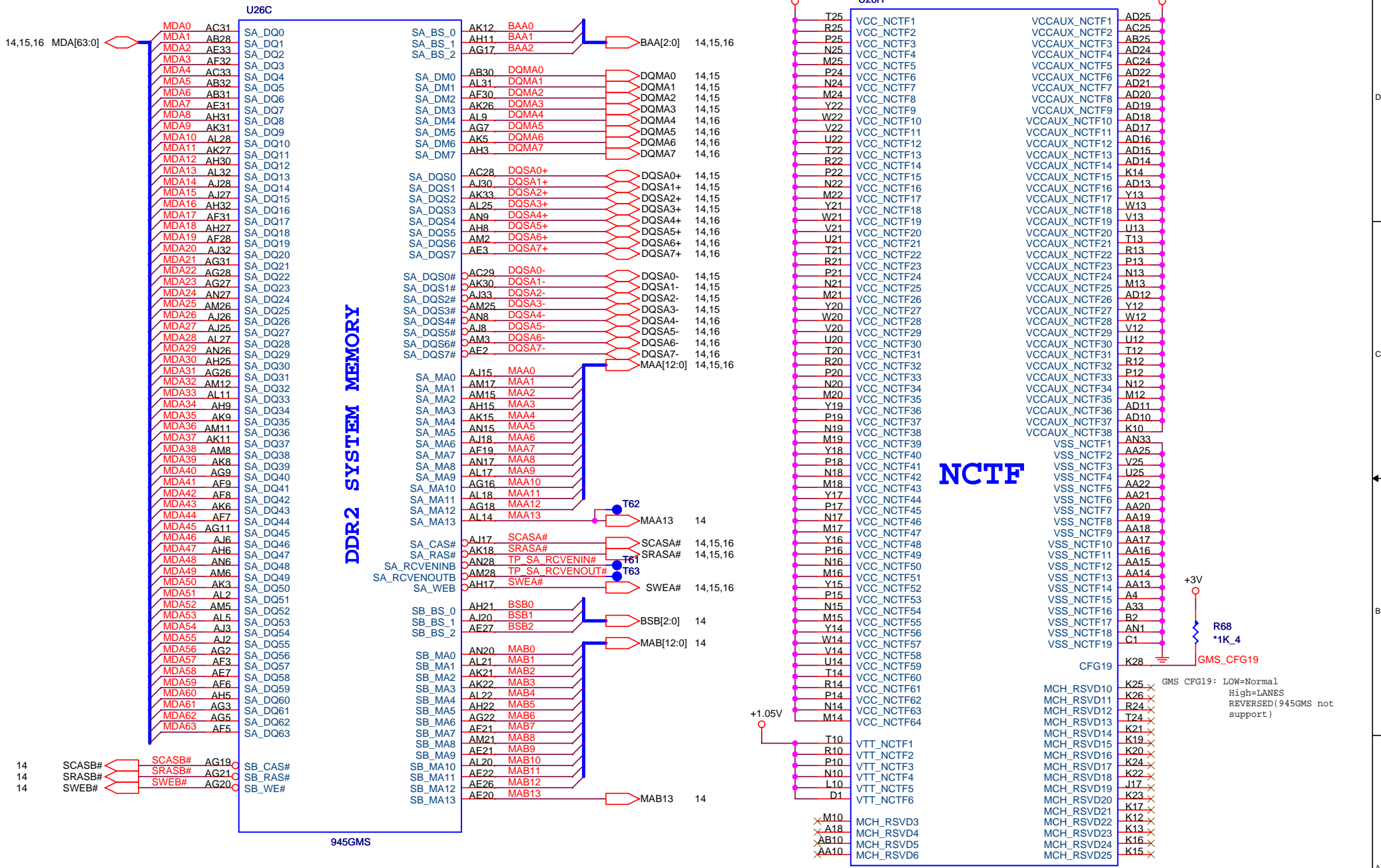
Size	Document Number	Rev
	Diamondville(2/2)	1A
Date:	Thursday, June 05, 2008	Sheet 5 of 34



HOST



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



DDR2 SYSTEM MEMORY

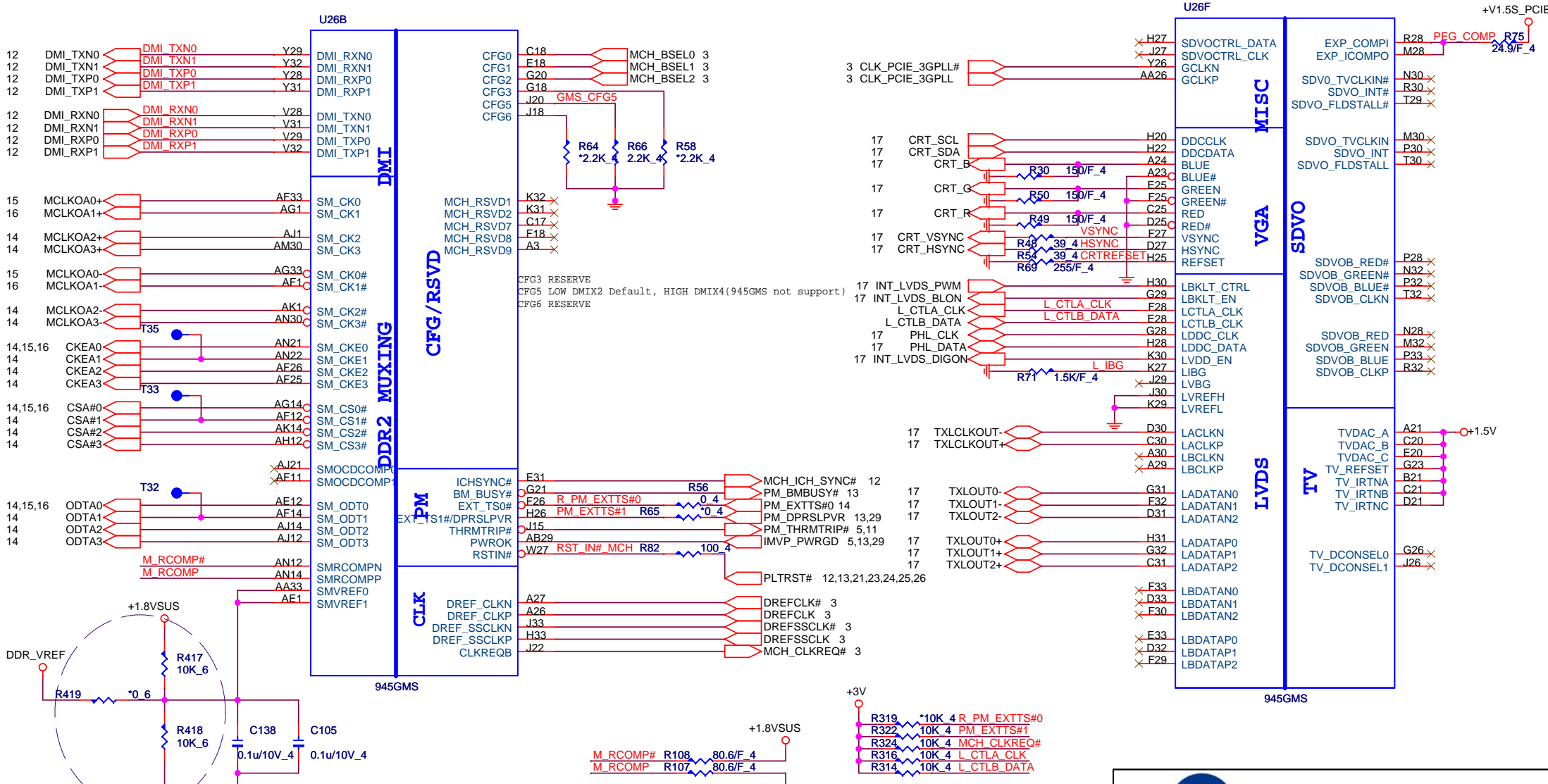
NCTF

945GMS

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

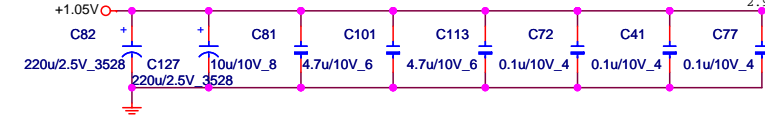


rev. D
Add in R417 , R418 , R419

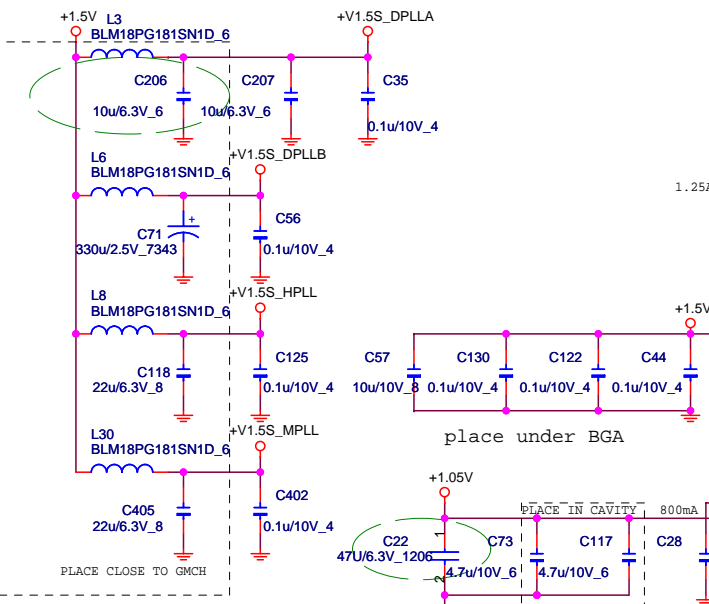
Quanta Computer Inc.
PROJECT : ZG5

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

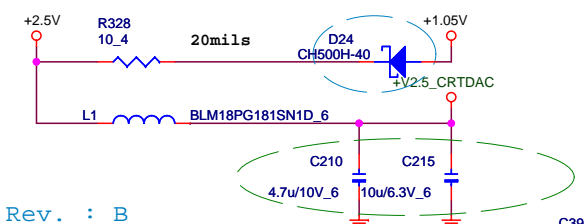
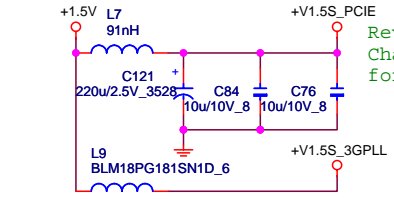
945GMS POWER



Rev. : C
 Del C17 & Add in C206,C207
 for M/E interference

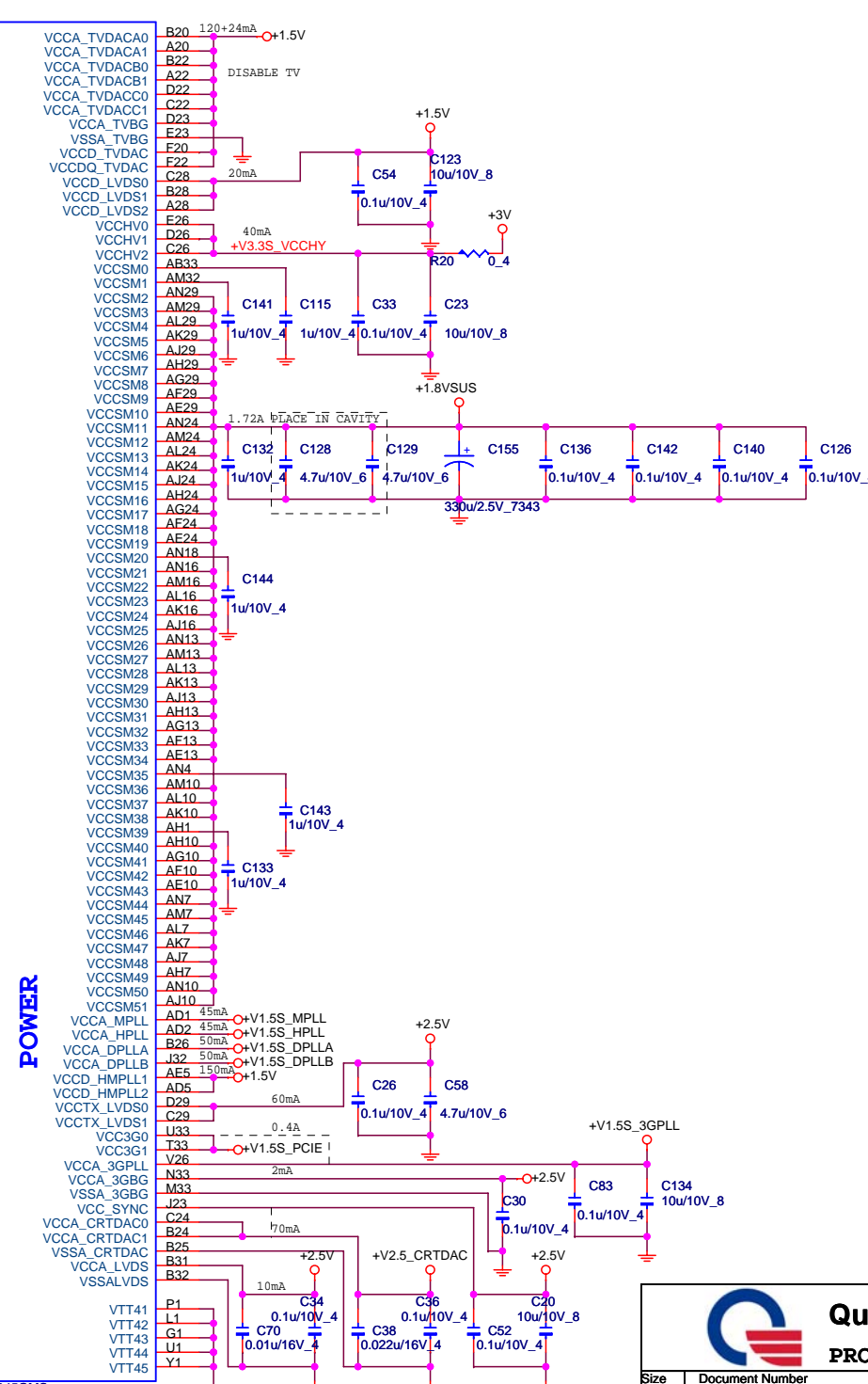


Rev. : C
 Change C22 size to 1206
 for M/E interference



Rev. : B
 Change D24 schottky diode
 Rev. : C
 Del C21 & Add in C210,C215
 for M/E interference

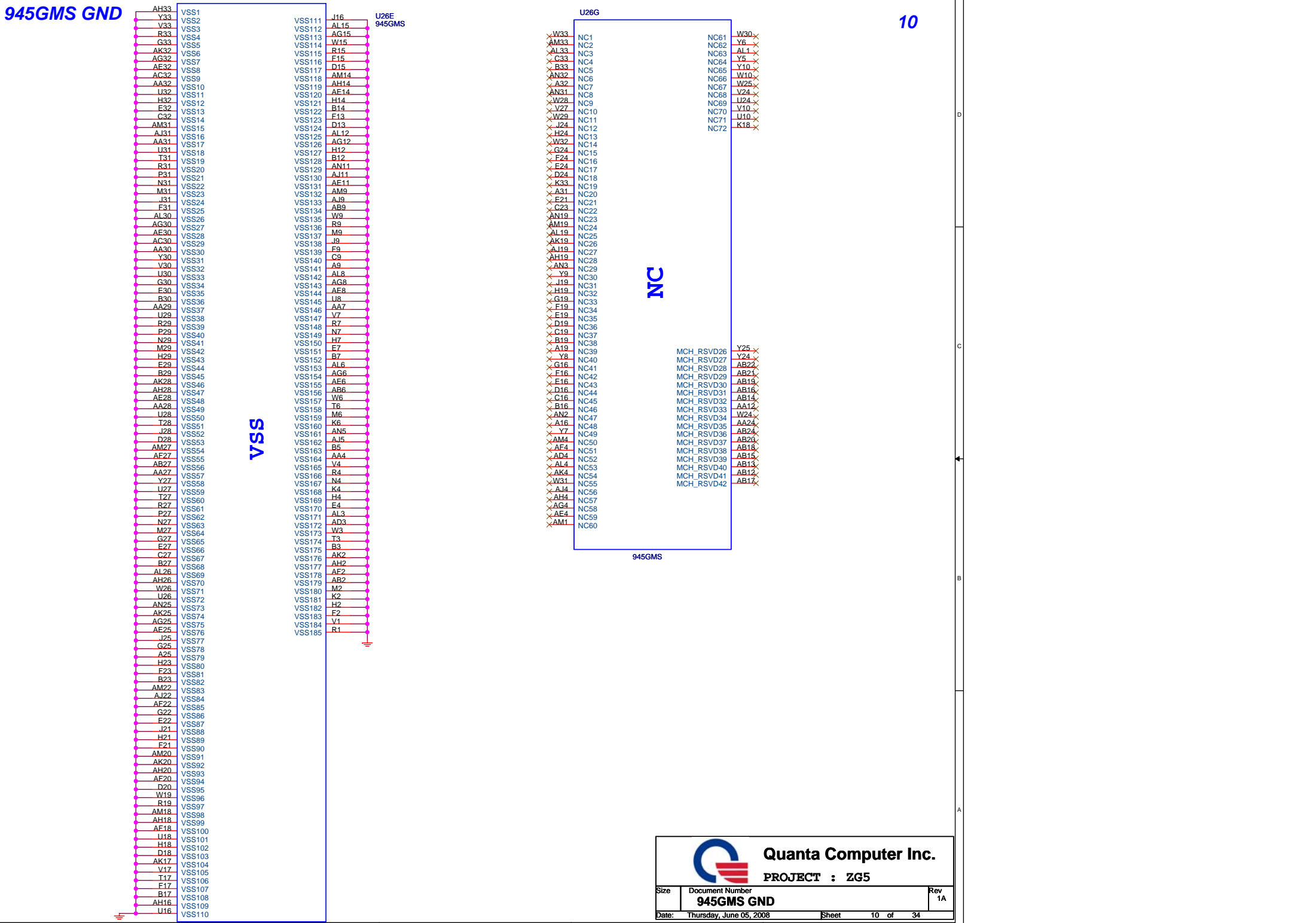
- U26D
- T26 VCC0
 - R26 VCC1
 - P26 VCC2
 - N26 VCC3
 - M26 VCC4
 - V19 VCC5
 - U19 VCC6
 - T19 VCC7
 - W18 VCC8
 - V18 VCC9
 - T18 VCC10
 - R18 VCC11
 - W17 VCC12
 - U17 VCC13
 - R17 VCC14
 - V16 VCC15
 - T16 VCC16
 - R16 VCC17
 - U15 VCC18
 - U15 VCC19
 - T15 VCC20
 - VCC21
- 1.25A
- AD33 VCC_AUX1
 - AD32 VCC_AUX2
 - AD31 VCC_AUX3
 - AD30 VCC_AUX4
 - AD29 VCC_AUX5
 - AD28 VCC_AUX6
 - AD27 VCC_AUX7
 - AC27 VCC_AUX8
 - AD26 VCC_AUX9
 - AC26 VCC_AUX10
 - AB26 VCC_AUX11
 - AE19 VCC_AUX12
 - AE18 VCC_AUX13
 - AE17 VCC_AUX14
 - AE16 VCC_AUX15
 - AE15 VCC_AUX16
 - AE15 VCC_AUX17
 - AE15 VCC_AUX18
 - AE15 VCC_AUX19
 - J14 VCC_AUX20
 - H10 VCC_AUX21
 - H10 VCC_AUX22
 - AE9 VCC_AUX23
 - AD9 VCC_AUX24
 - AD8 VCC_AUX25
 - AD7 VCC_AUX26
 - AD6 VCC_AUX27
 - AD6 VCC_AUX28
- 800mA
- A14 VTT0
 - D10 VTT1
 - P9 VTT2
 - L9 VTT3
 - D9 VTT3
 - P8 VTT4
 - L8 VTT5
 - D8 VTT6
 - VTT7
 - P7 VTT8
 - L7 VTT9
 - D7 VTT10
 - A7 VTT11
 - P6 VTT12
 - L6 VTT13
 - G6 VTT14
 - D6 VTT15
 - VTT16
 - P5 VTT17
 - L5 VTT18
 - G5 VTT19
 - D5 VTT20
 - Y4 VTT21
 - U4 VTT22
 - P4 VTT23
 - L4 VTT24
 - G4 VTT25
 - D4 VTT26
 - VTT27
 - Y3 VTT28
 - U3 VTT29
 - P3 VTT30
 - L3 VTT31
 - G3 VTT32
 - D3 VTT33
 - Y2 VTT34
 - U2 VTT35
 - P2 VTT36
 - L2 VTT37
 - G2 VTT38
 - D2 VTT39
 - AA1 VTT40
 - F1 VTT40




POWER

Quanta Computer Inc.
 PROJECT : ZG5

Size	Document Number	Rev
	945GMS POWER	1A
Date:	Thursday, June 05, 2008	Sheet 9 of 34

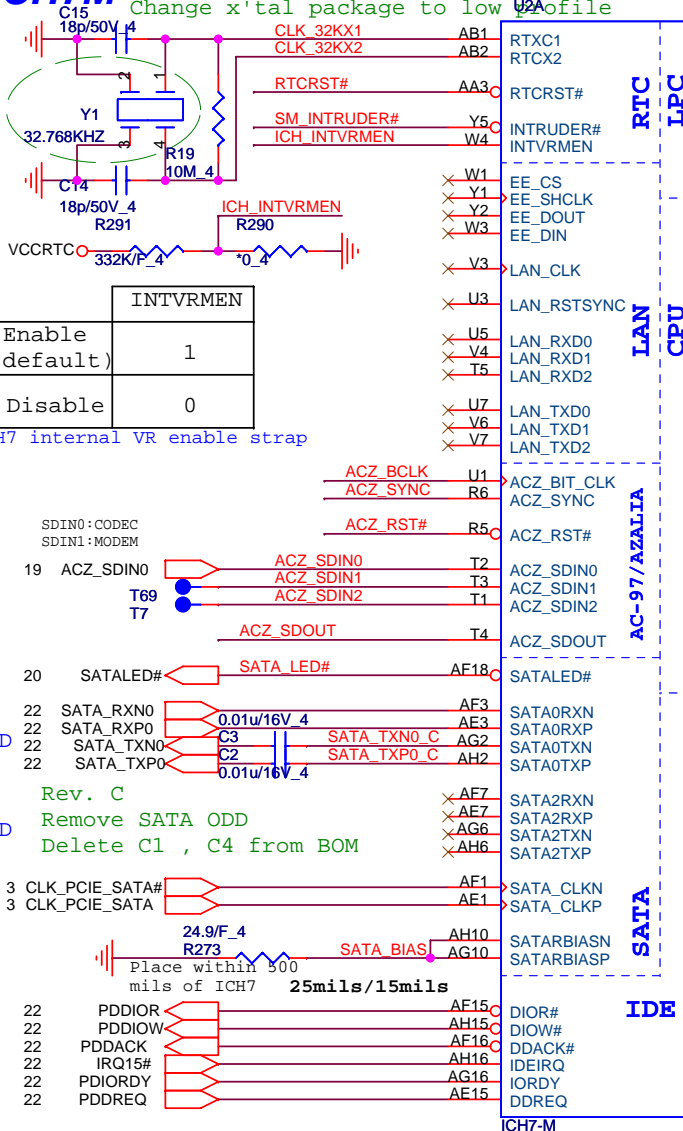


 **Quanta Computer Inc.**
PROJECT : ZG5

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

ICH7M Rev. C

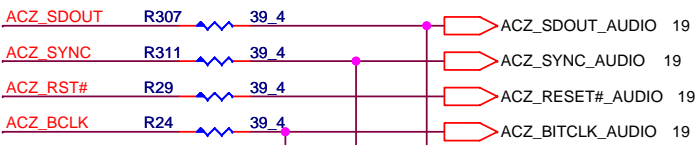
Change x'tal package to low profile



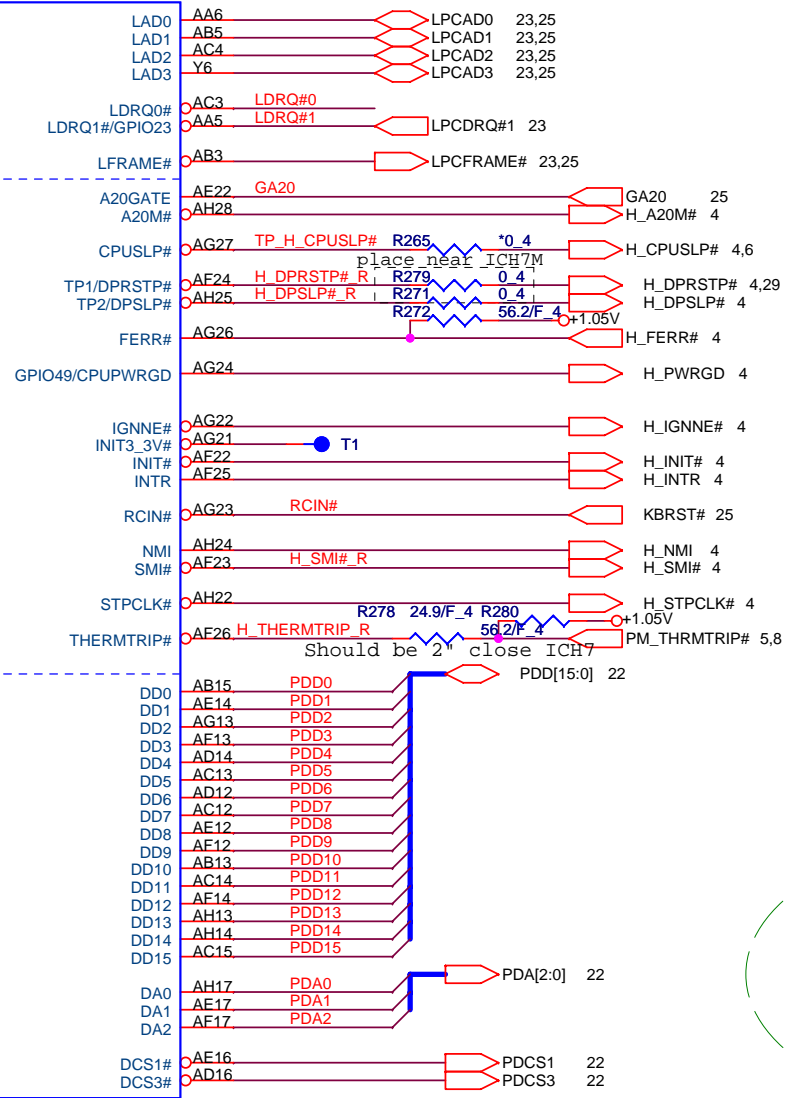
	INTVRMEN
Enable (default)	1
Disable	0

ICH7 internal VR enable strap

Rev. C
Remove SATA ODD
Delete C1, C4 from BOM

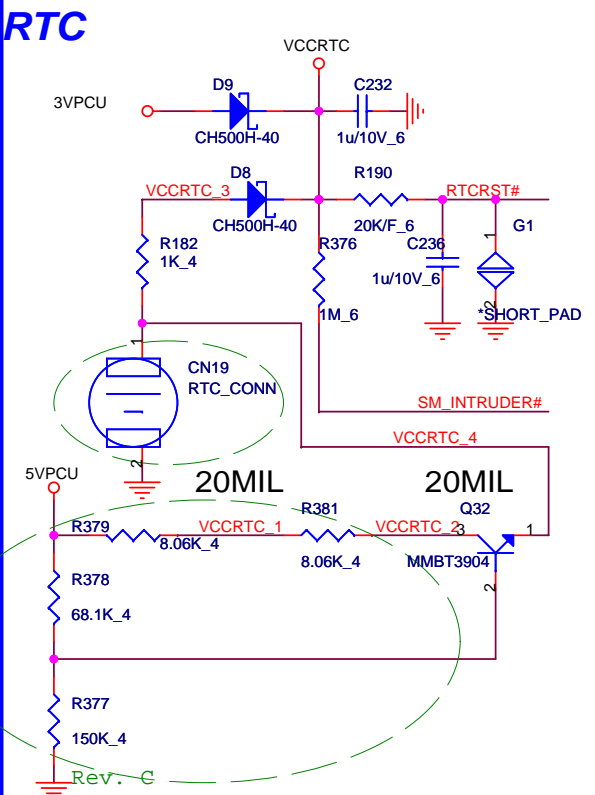
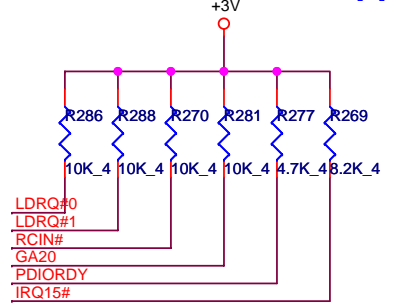


Rev. B
Remove MDC components-
R303, R306, R41, R21



COMPONENTS	P/N
945GM	AJSL8Z20T25
ICH7-M	AJSL8YB0T21

Pull-UP 11

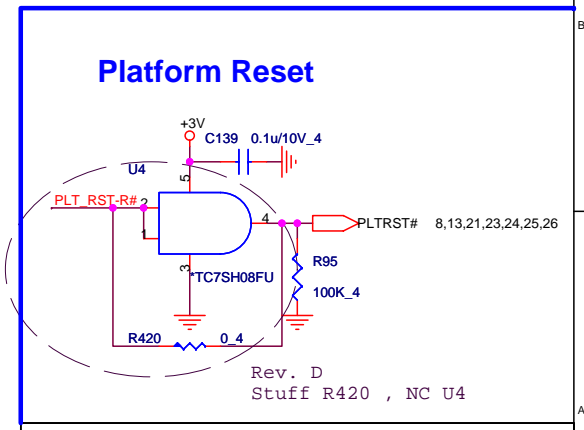
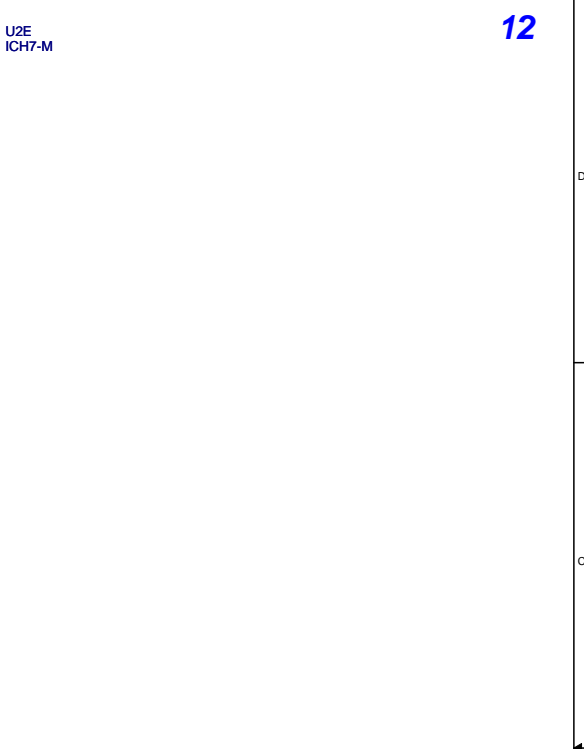
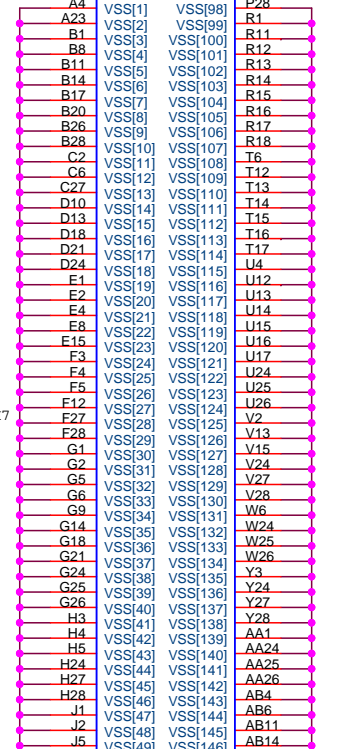
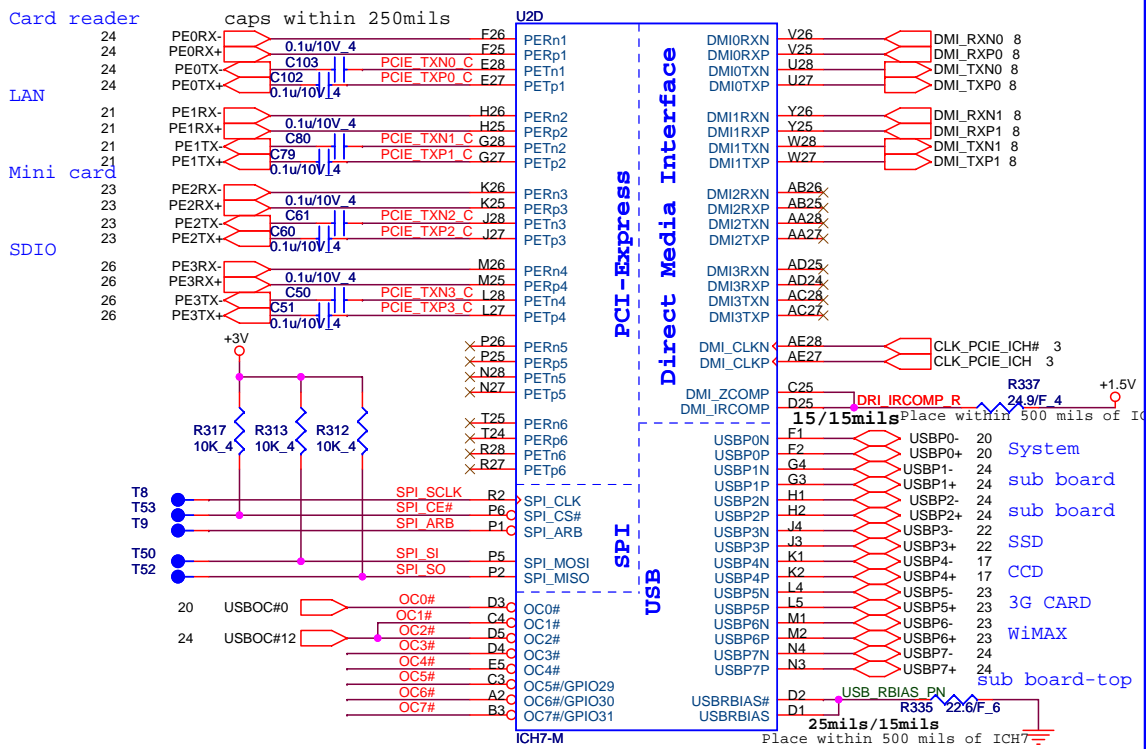


Rev. C
Change RTC battery holder
Change R379, R381, R378, R377 value for RTC charge function

PROJECT : ZG5

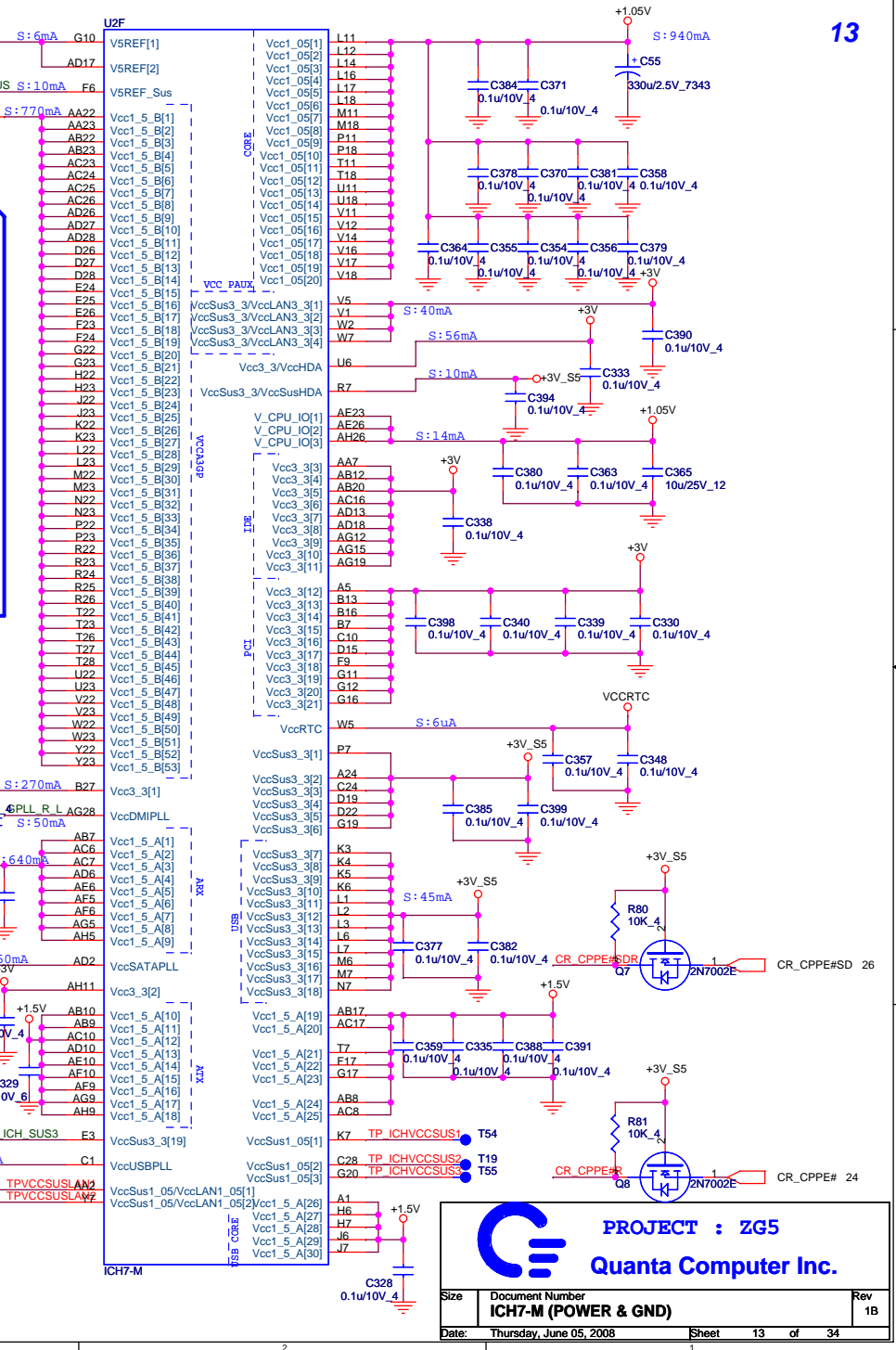
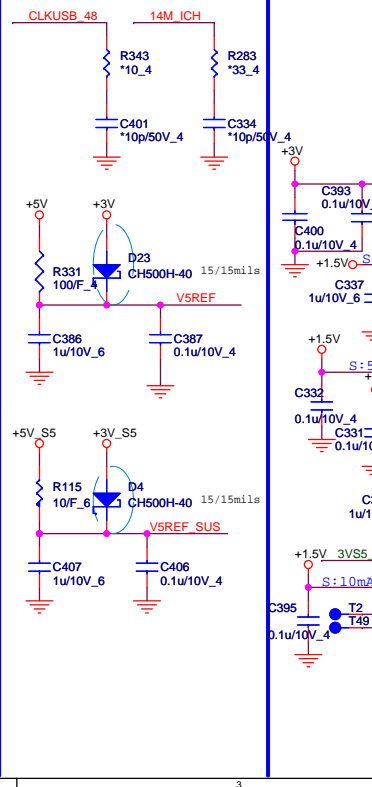
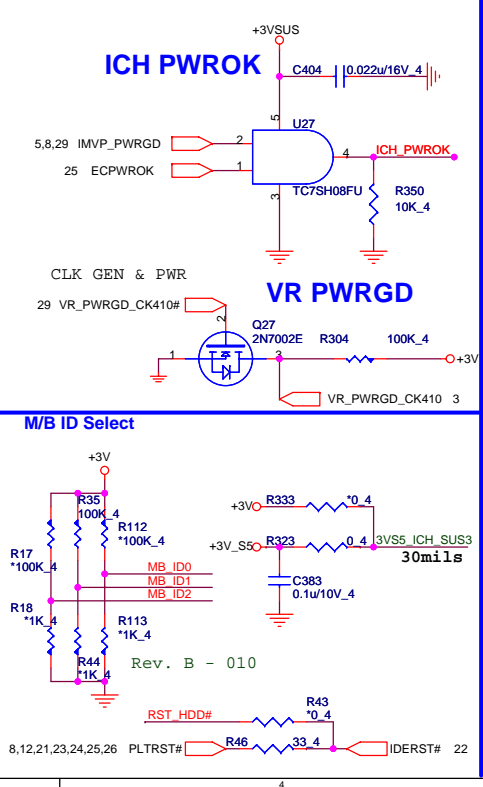
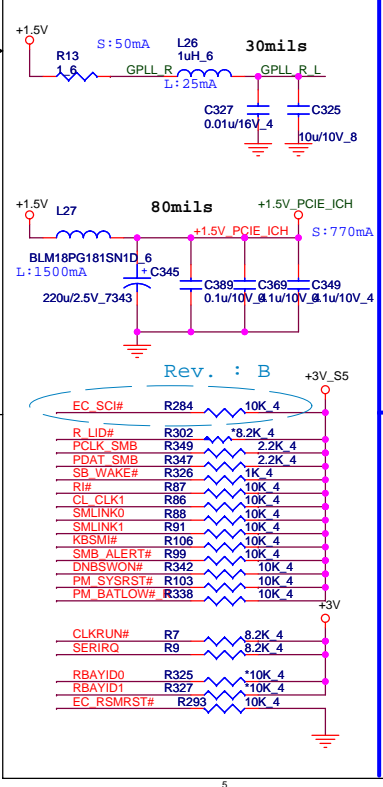
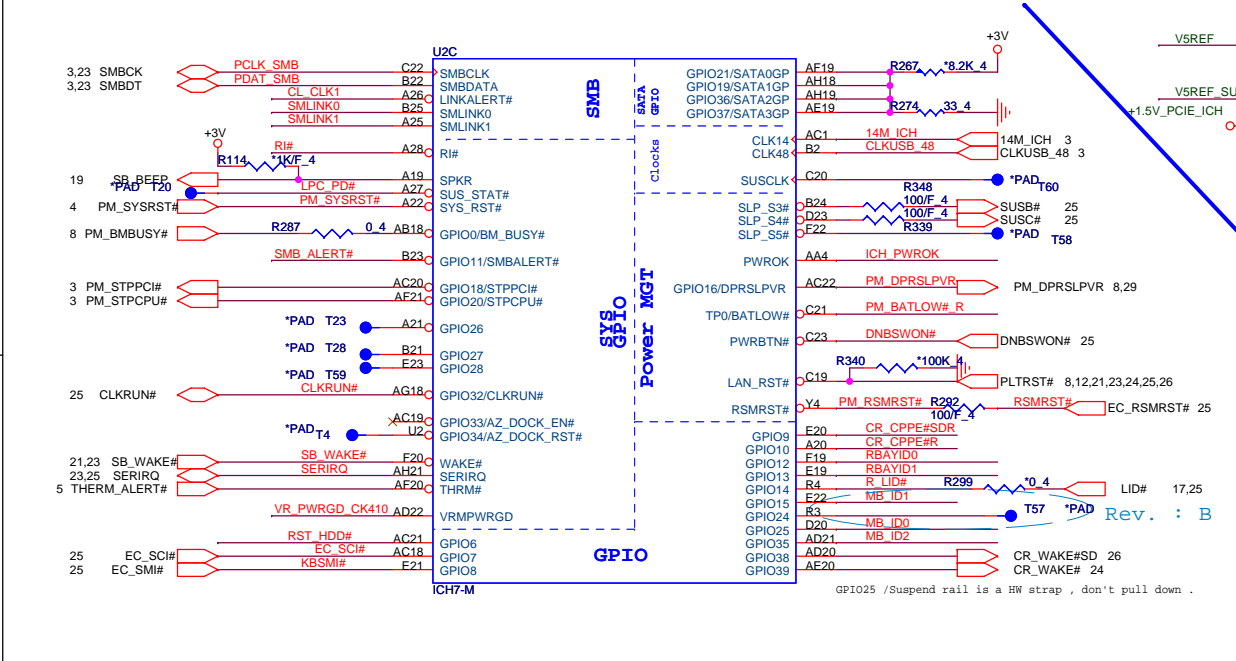
Quanta Computer Inc.

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



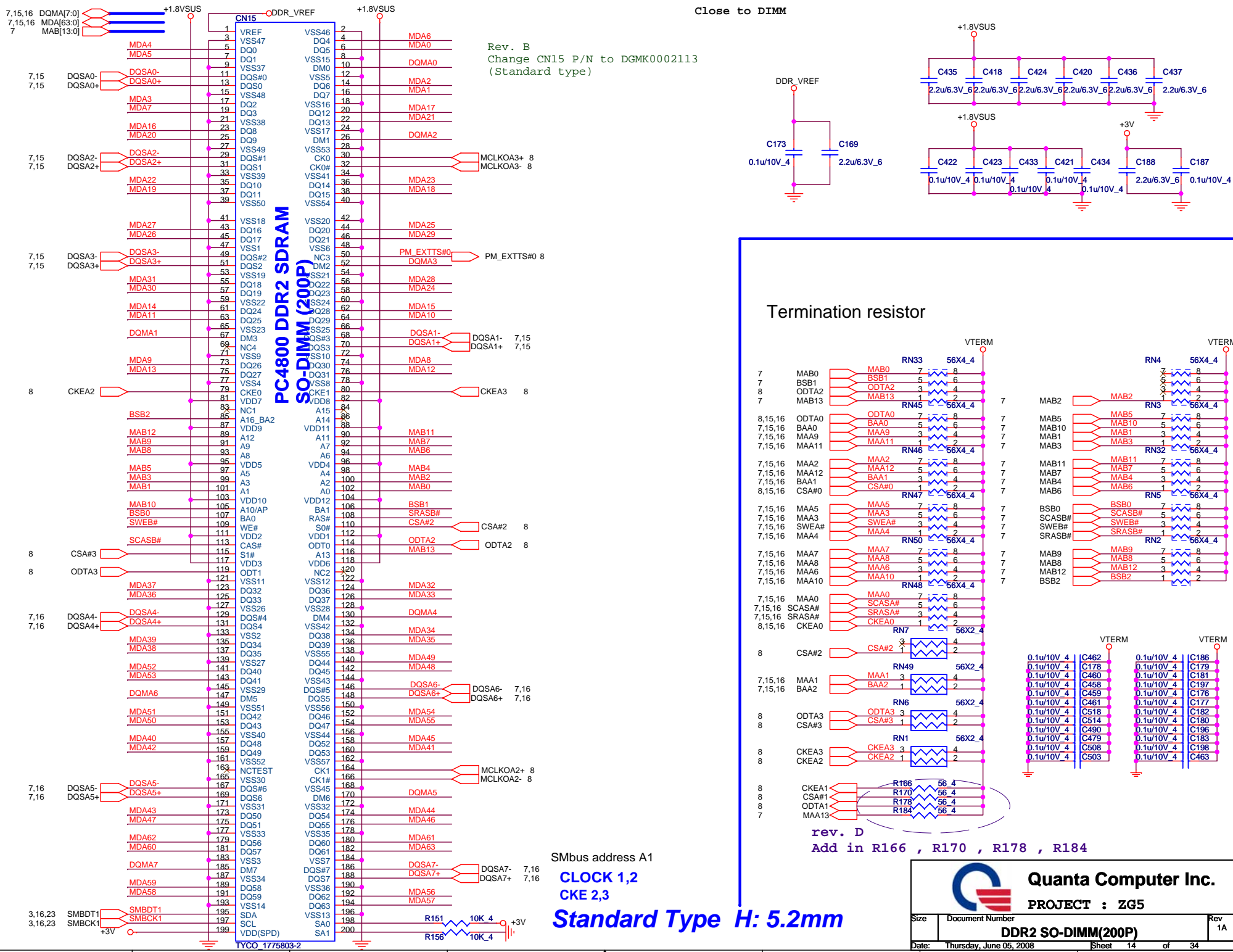
PROJECT : ZG5
Quanta Computer Inc.

Size: Document Number
ICH6-M (USB & DMI & PCIE & PCI)
 Date: Thursday, June 05, 2008 Sheet 12 of 34 Rev 1A

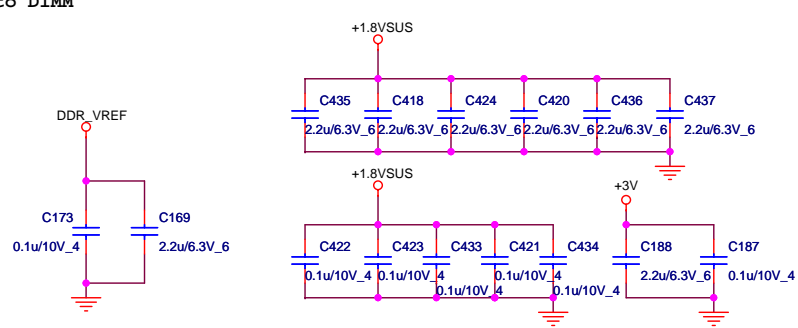


PROJECT : ZG5
Quanta Computer Inc.

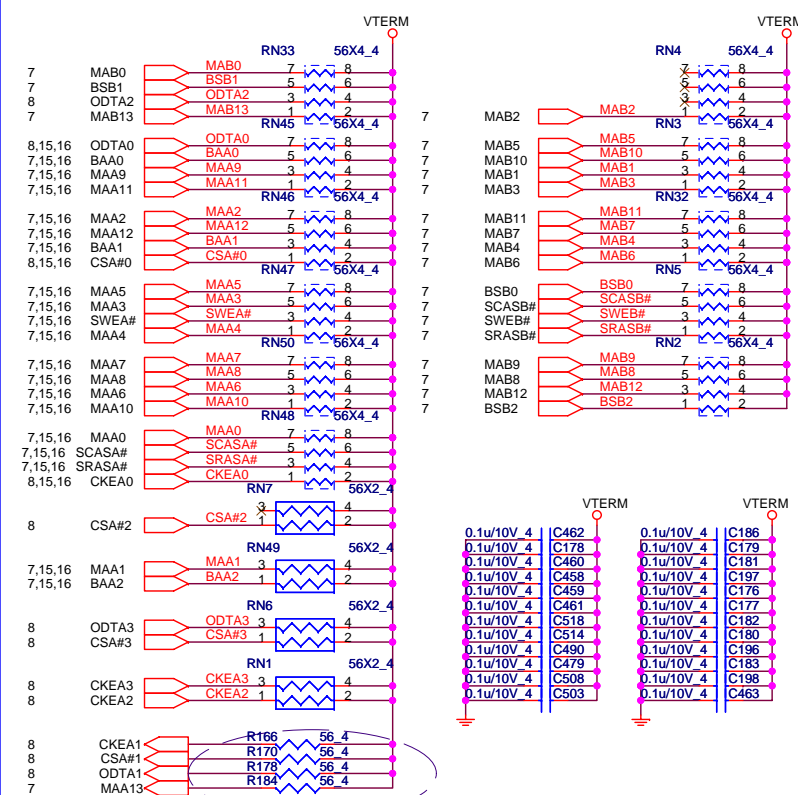
Size	Document Number	Rev
	ICH7-M (POWER & GND)	1B
Date:	Thursday, June 05, 2008	Sheet 13 of 34



Rev. B
Change CN15 P/N to DGMK0002113
(Standard type)




Termination resistor



rev. D
Add in R166 , R170 , R178 , R184

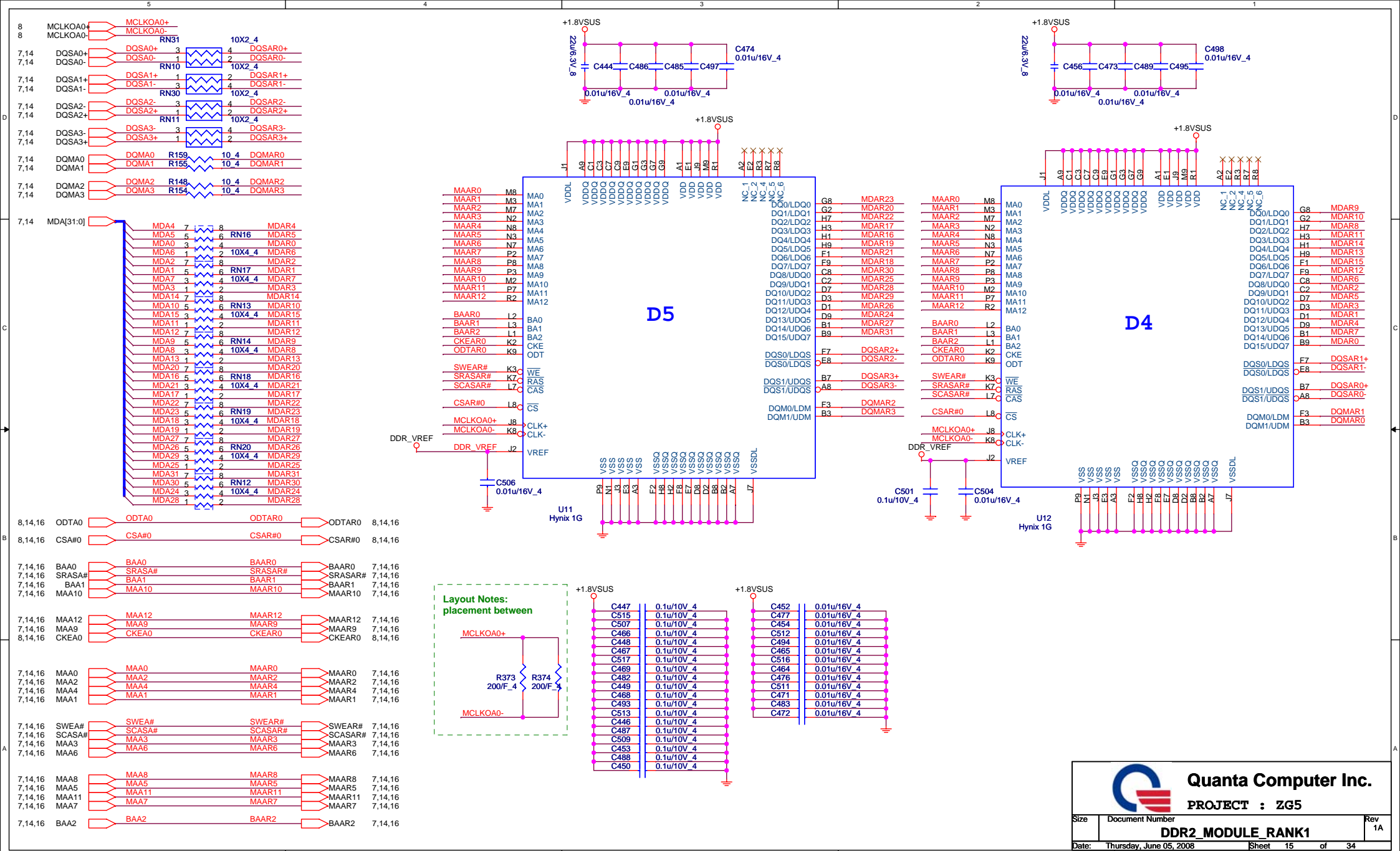
SMbus address A1

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



Quanta Computer Inc.
PROJECT : ZG5

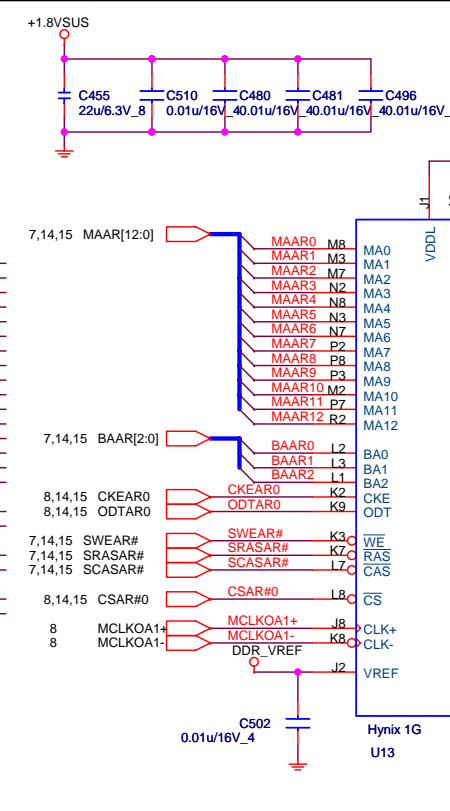
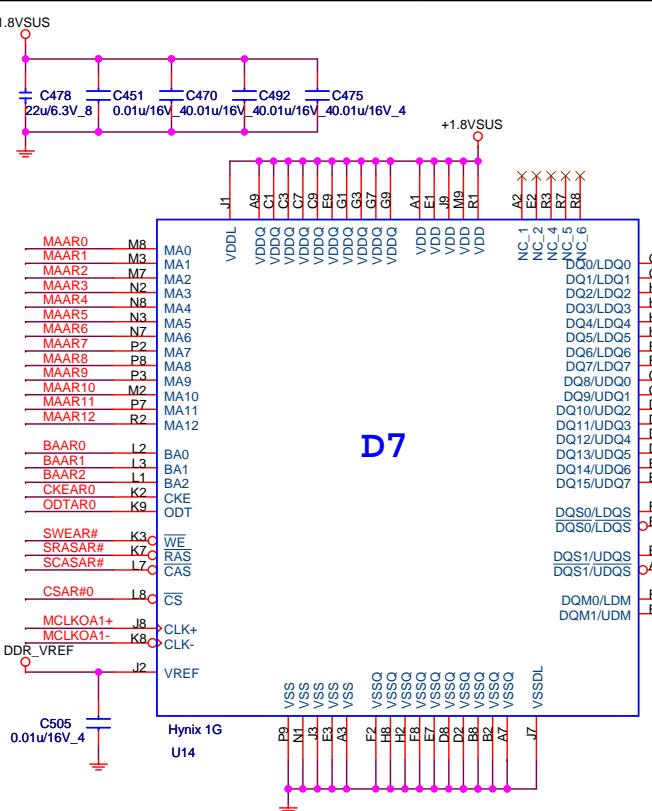
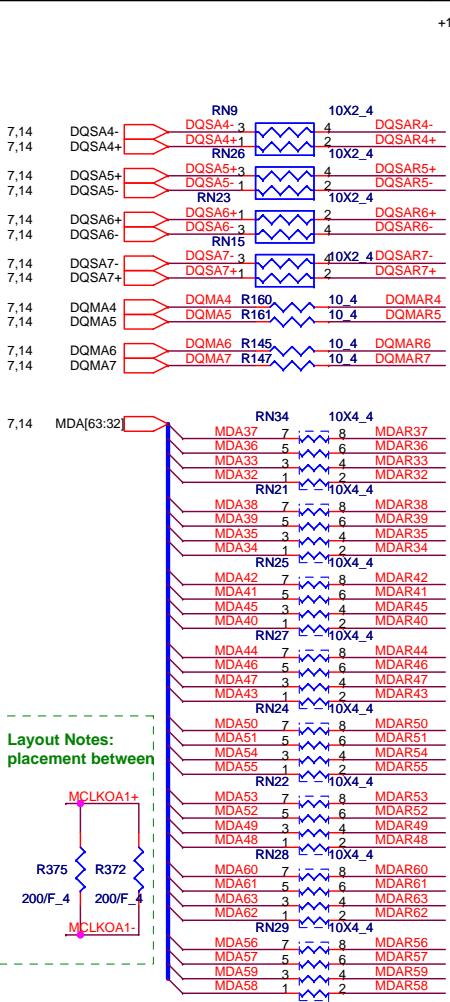
Size	Document Number	Rev
	DDR2 SO-DIMM(200P)	1A
Date:	Thursday, June 05, 2008	Sheet 14 of 34



Quanta Computer Inc.
PROJECT : ZG5

Size Document Number
DDR2_MODULE_RANK1 Rev 1A

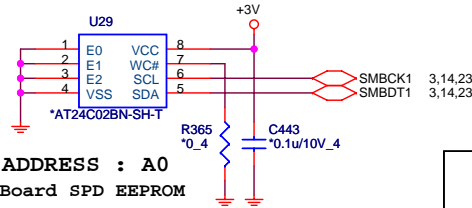
Date: Thursday, June 05, 2008 Sheet 15 of 34



Layout Notes:
placement between

Reserve for On-Board RAM

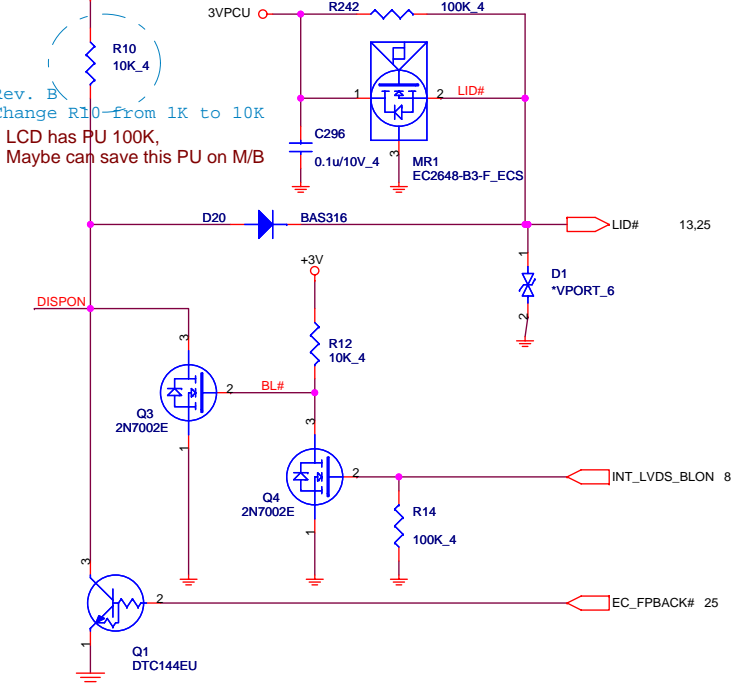
Rev. : C
Remove Thermal sensor
U17, C257, R210, R207



Quanta Computer Inc.
PROJECT : ZG5

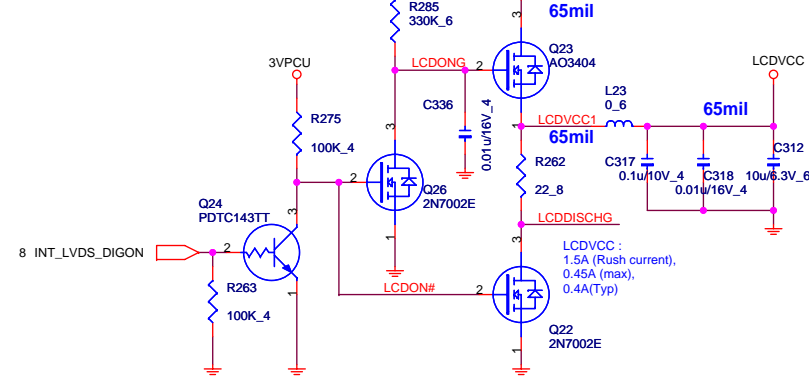
Size	Document Number	Rev
	DDR2_MODULE_RANK2	1A
Date:	Thursday, June 05, 2008	Sheet 16 of 34

HALL SENSOR

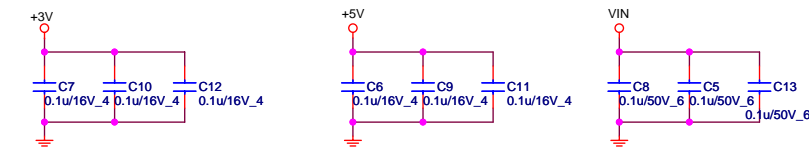


Rev. B
Change R10 from 1K to 10K
LCD has PU 100K,
Maybe can save this PU on M/B

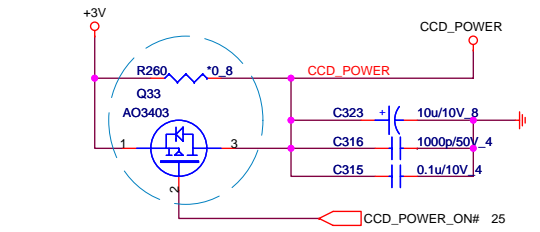
LCD POWER SWITCH



EMI reserve

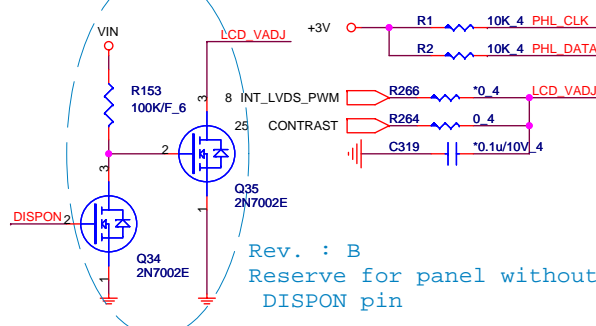
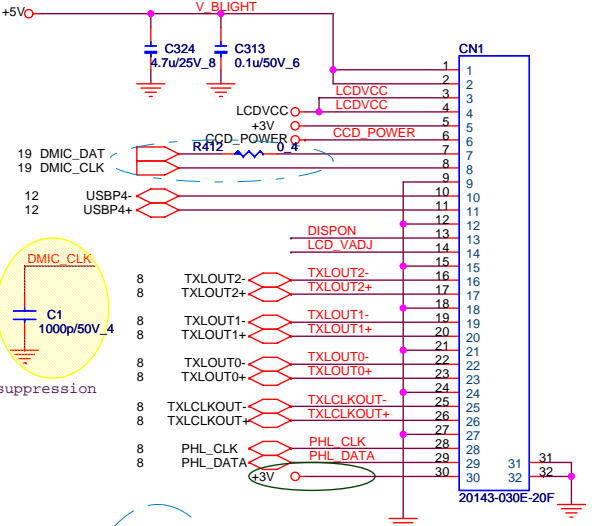


CAMERA POWER



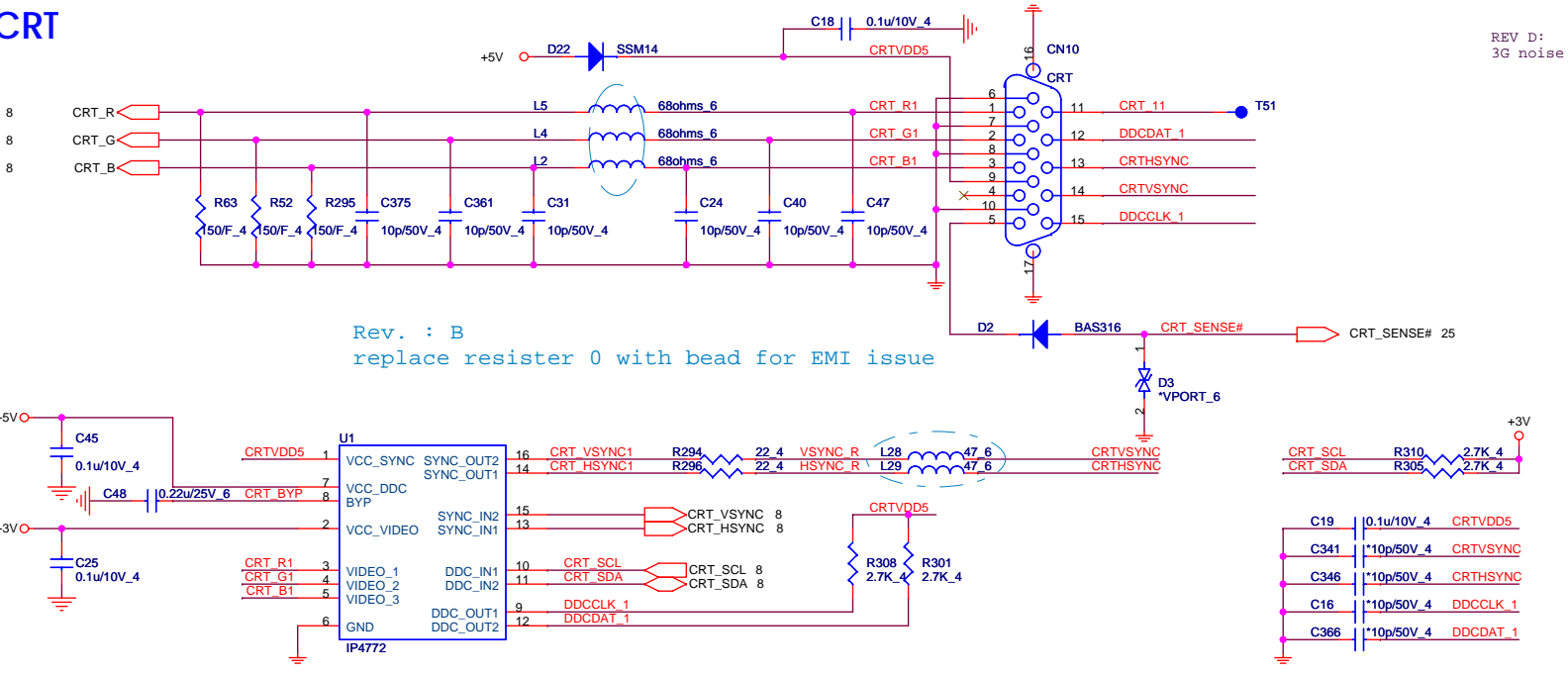
LCD MODULE V_BLIGHT 8.9"(5.5V): ZG5 supply 5V

Rev. : B
Remove L25 , C321 , R261

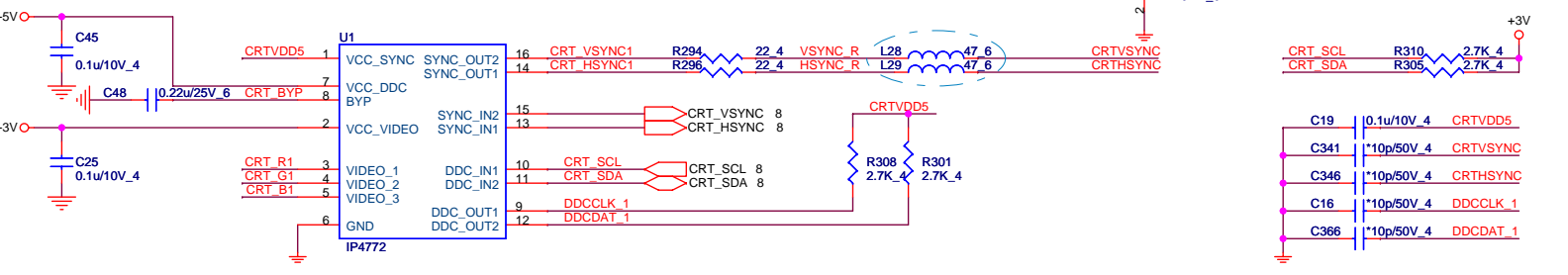


Rev. : B
Reserve for panel without
DISPON pin

CRT



Rev. : B
replace resistor 0 with bead for EMI issue

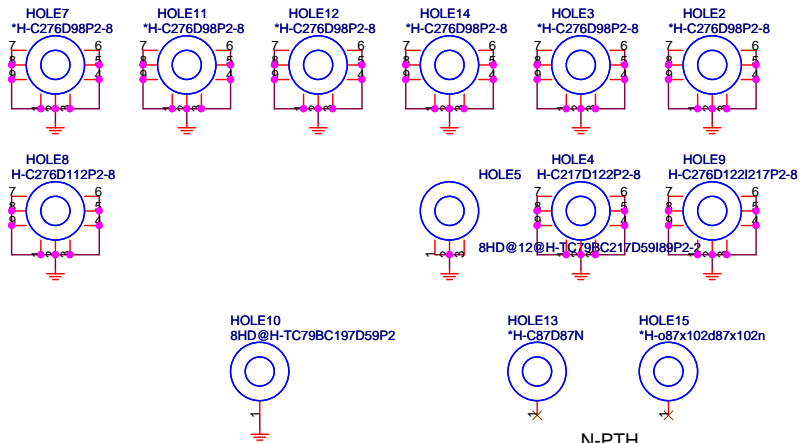


Quanta Computer Inc.

PROJECT : ZG5

Size	Document Number	Rev
	CRT/LVDS	1A
Date:	Thursday, June 05, 2008	Sheet 17 of 34

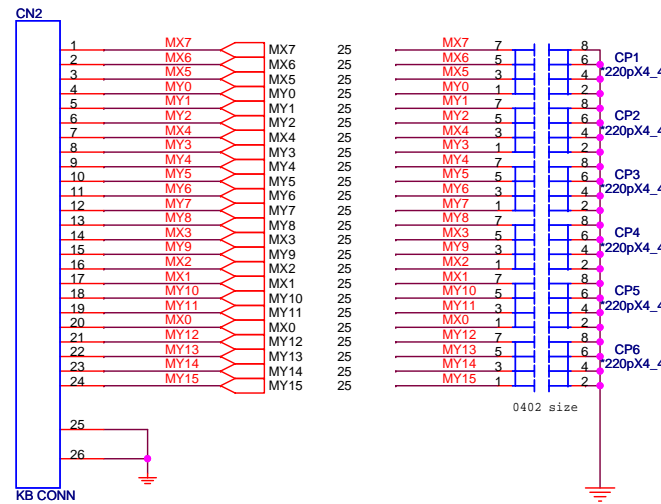
SCREW HOLE



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

N-PTH

KEYBOARD



12" TOUCH PAD BOARD

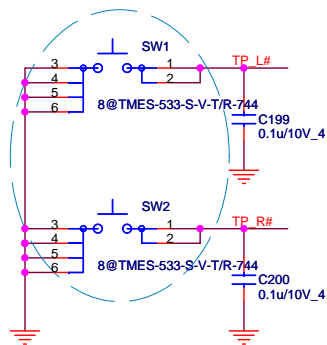
Rev. : B
Remove T/P conn.-CN4 , C210 , C206 , C207

MM20050IC12 CF@ x 2, HD@ x 2, ODD@ x 2

SSD x 2

HDD x 2

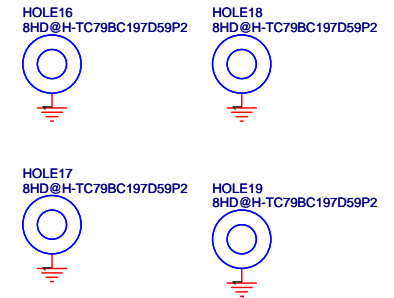
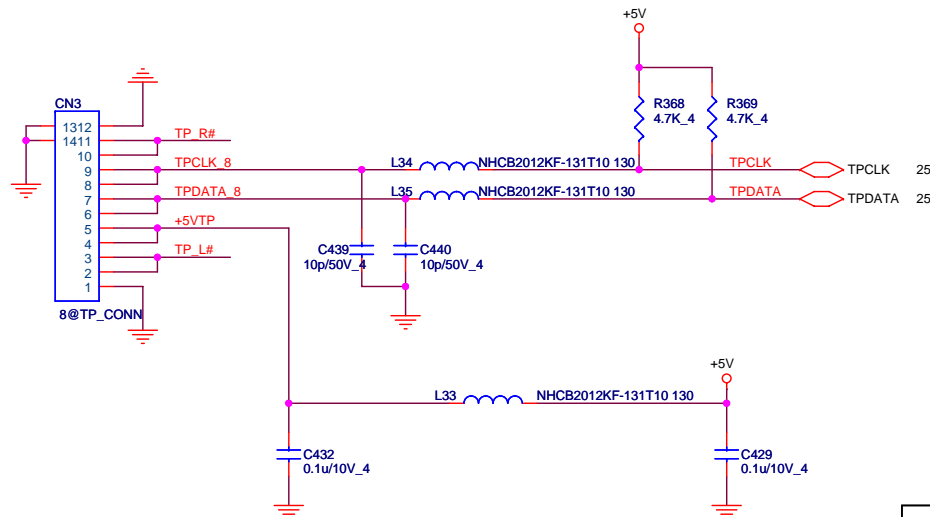
12" x 4



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

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

8.9" TOUCH PAD CONNECTOR



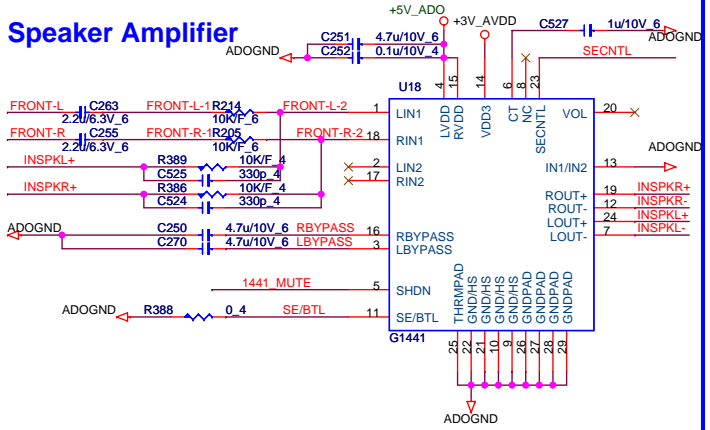
Quanta Computer Inc.

PROJECT : ZG5

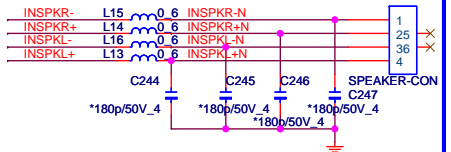
Size	Document Number	Rev
	KB/TP/HOLE	1A

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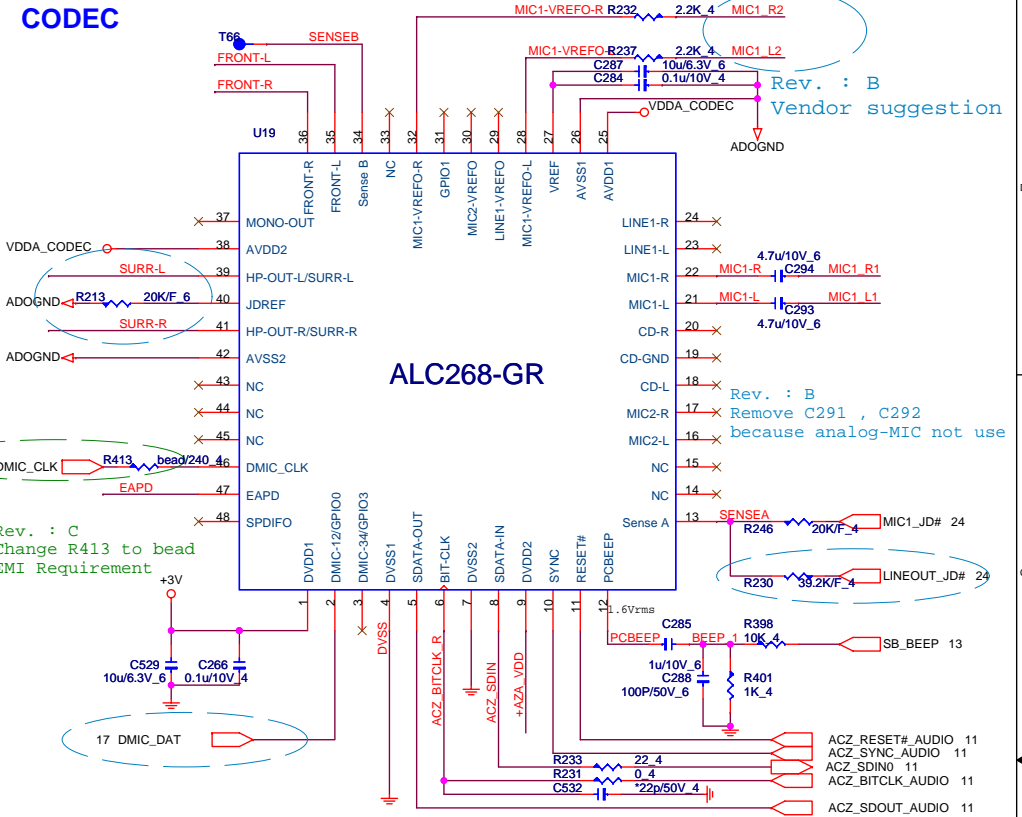
Speaker Amplifier



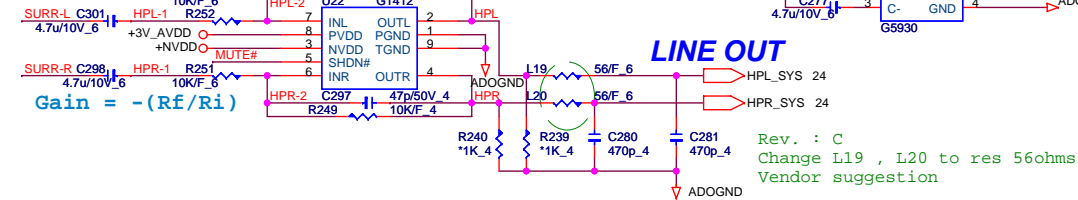
SPEAKER



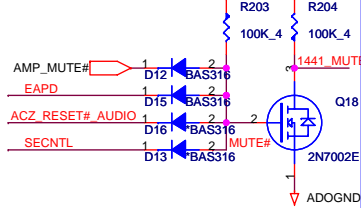
CODEC



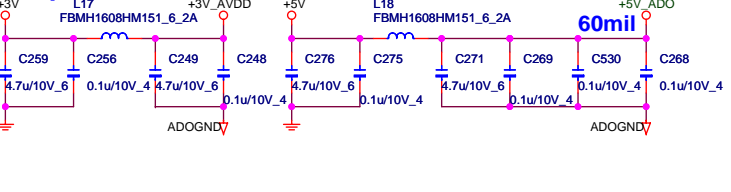
LINE OUT Amplifier



MUTE



Amplifier POWER

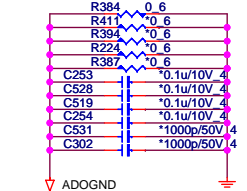


MDC

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

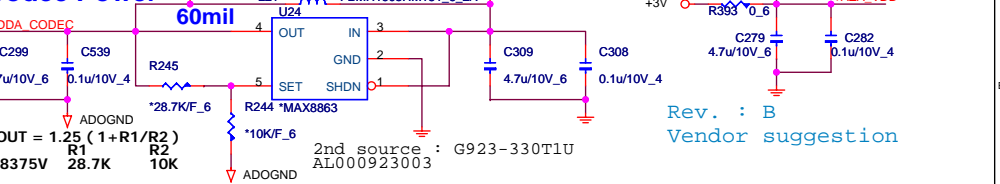
12.1" Audio Conn.

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

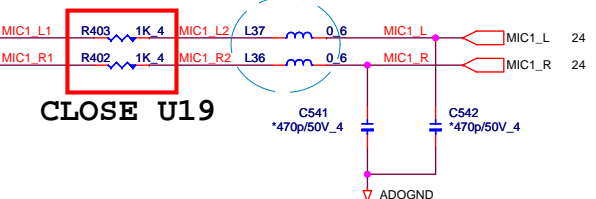


Tied at one point only under the codec or near the codec

Codec Power



MICROPHONE



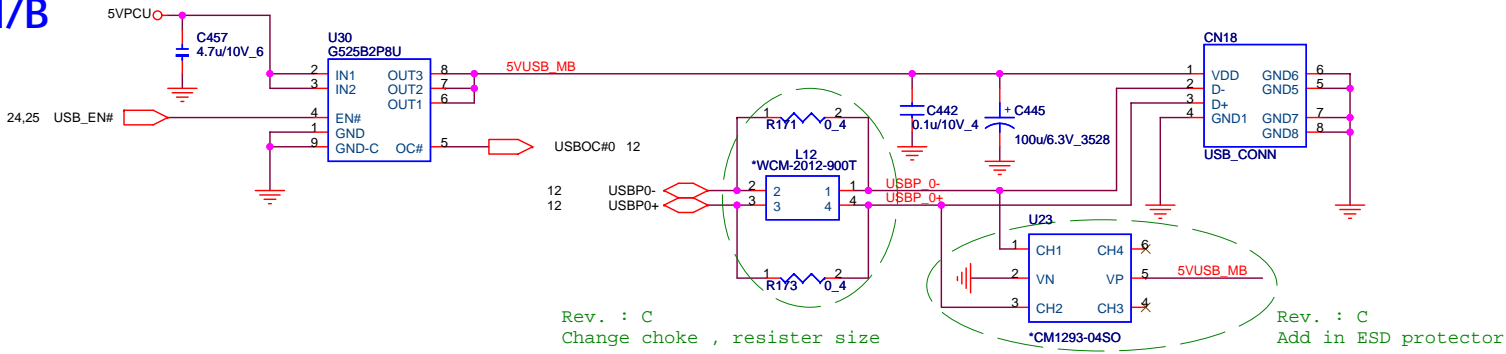
INT. MIC.

Rev. : B
Remove R234 , R238 , C278 for internal-MIC

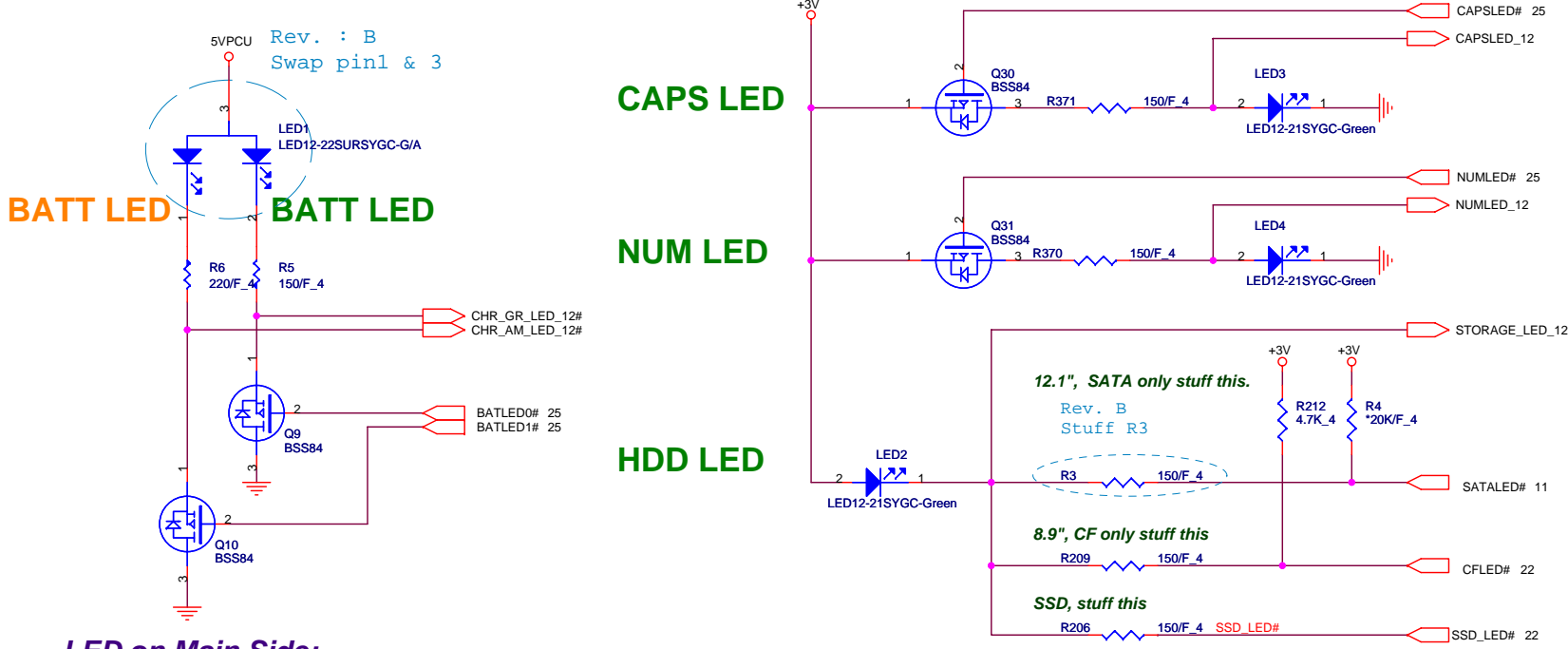
Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	CODEC/AMP/MDC	1A
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USB on M/B



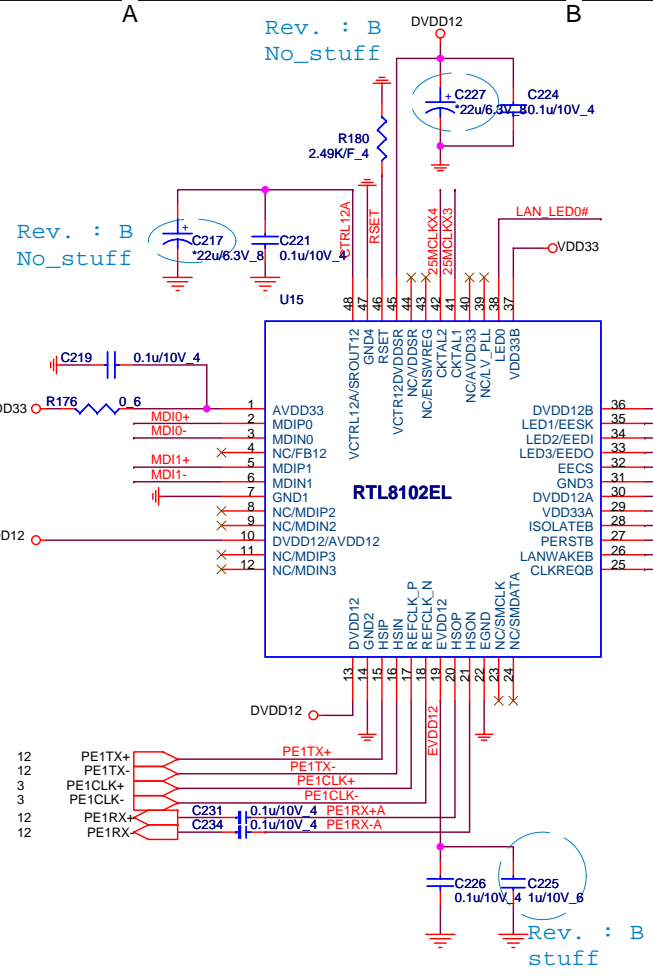
LED on M/B



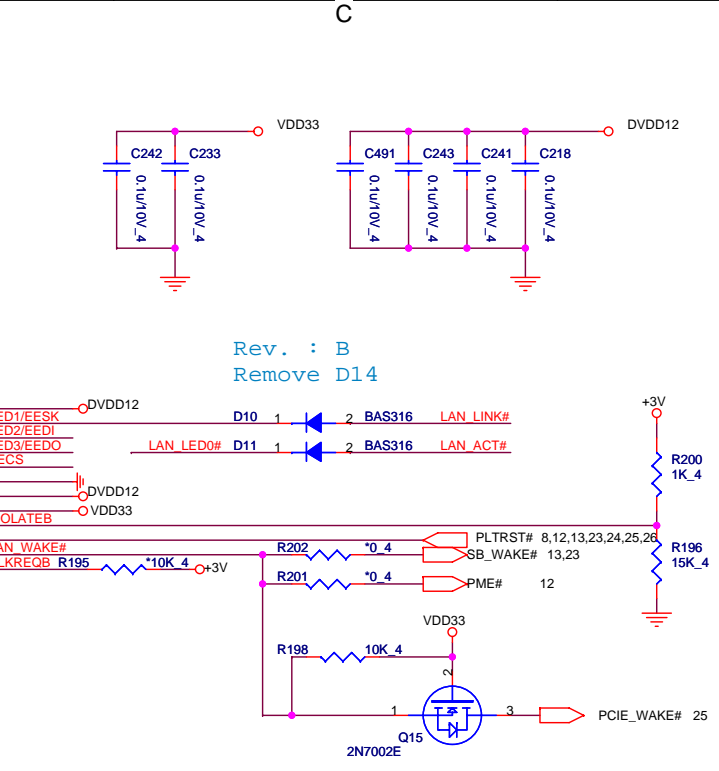
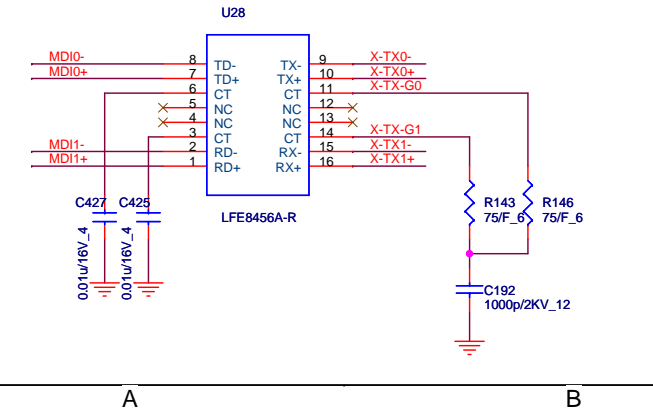
- LED on Main Side:**
- Charger (Green/ Abler)
 - Storage HDD/ SSD/ Media (Green)
 - Caps (Green)
 - Num (Green)

 Quanta Computer Inc. PROJECT : ZG3		Rev
		1A
Size	Document Number	
USB on Board/LED		
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LAN

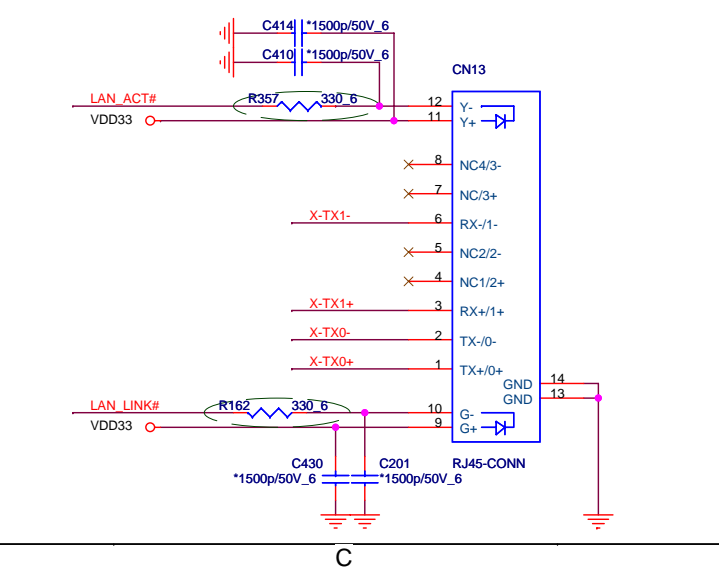


10/100 Transformer



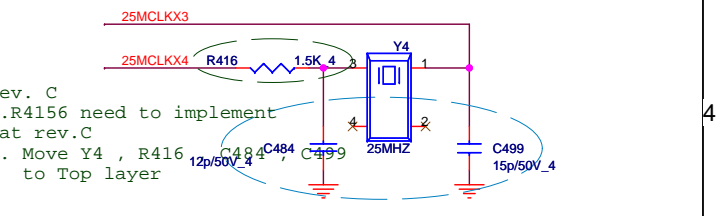
RJ45

Rev. : C
Change R357 & R162 value from 510 to 330 ohms

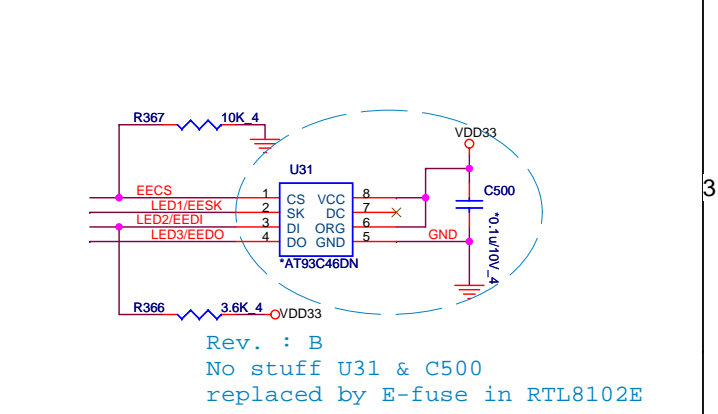


X'tal 25MHz

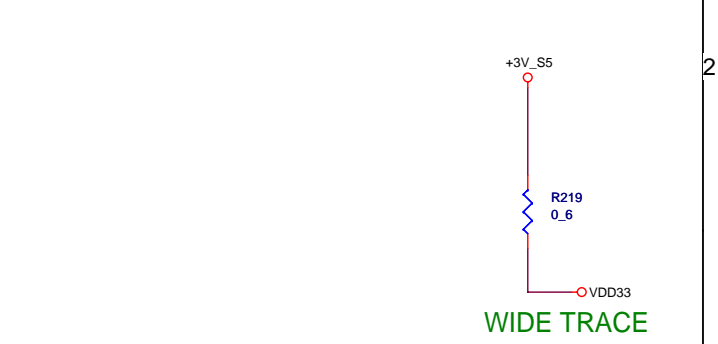
Rev. : B
Change C value to 12pF
X'tal second source : BG625000037



EEPROM



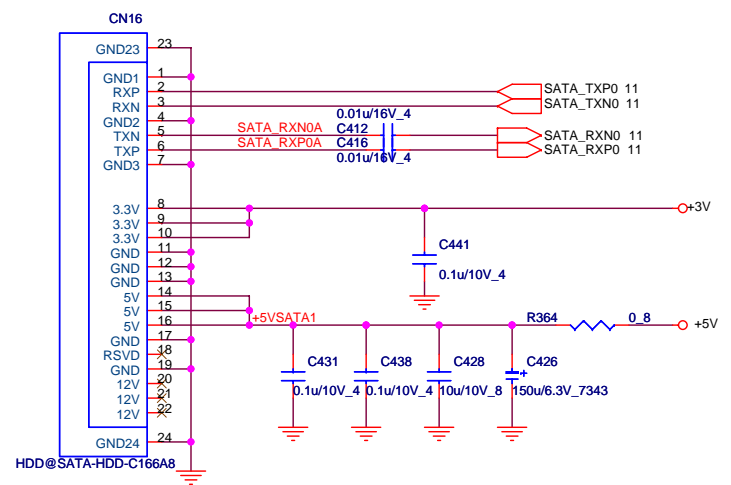
LAN Power



Quanta Computer Inc.
PROJECT : ZG3

Size	Document Number	Rev
	LAN_RTL8102EL/RJ45	1A
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SATA HDD

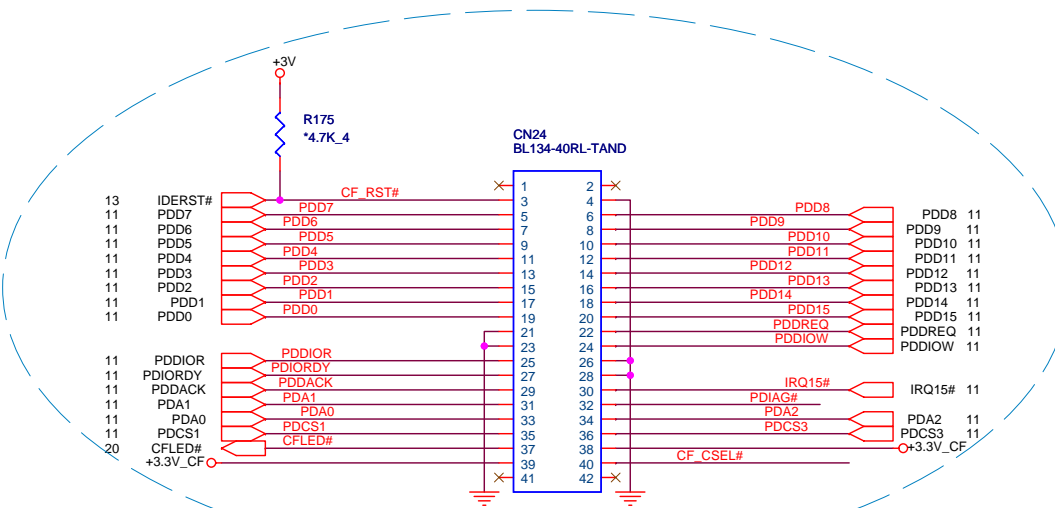


SATA ODD

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

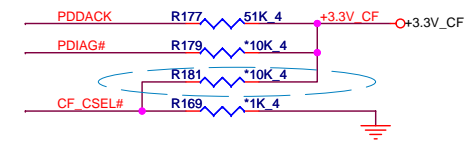
Rev. C
Remove SATA ODD
Delete C538 , C543 , R193 from BOM

ZT4 card connector

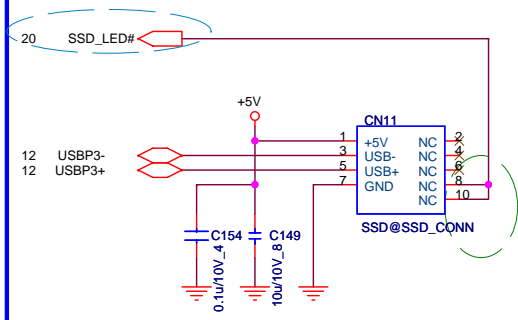


Rev. : B
Change connector from CF(CN17) to ZIF(CN24)
Change R172 from 33 to 0 ohms

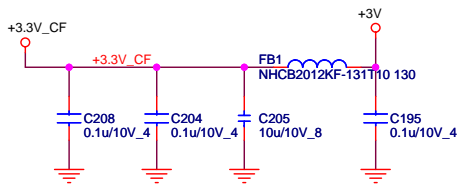
SSD connector



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



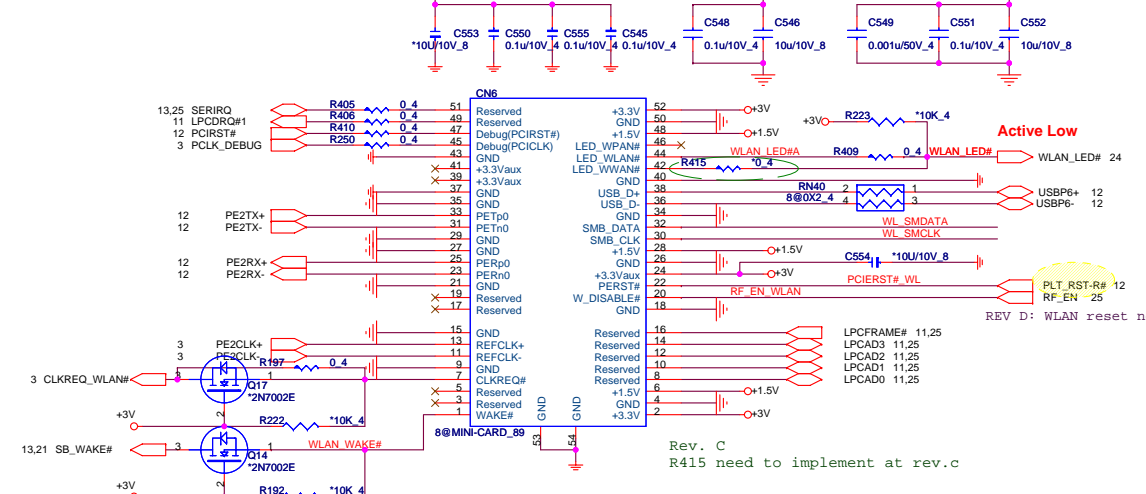
Rev. : C
Change pin 8 to low active
Rev. : B
pin8 for sandisk
pin10 for intel



Quanta Computer Inc.
PROJECT : ZG3

Size	Document Number	Rev
	SATA-HDD/ODD/CF/SSD	1A
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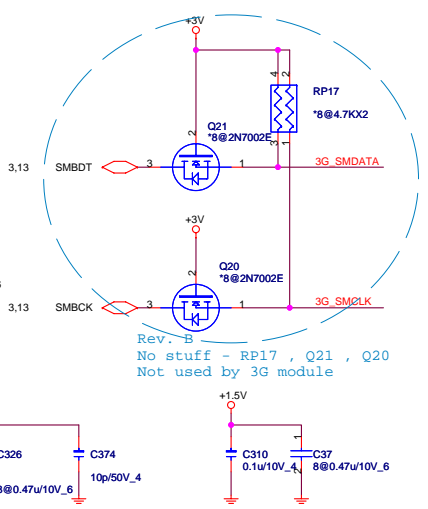
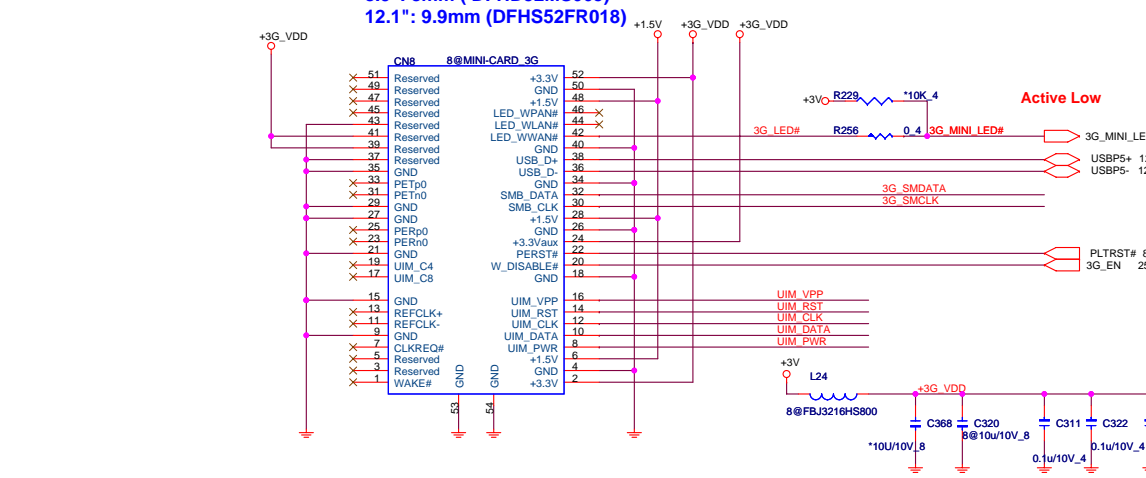
8.9" MINI-Card I (WLAN/WiMAX)



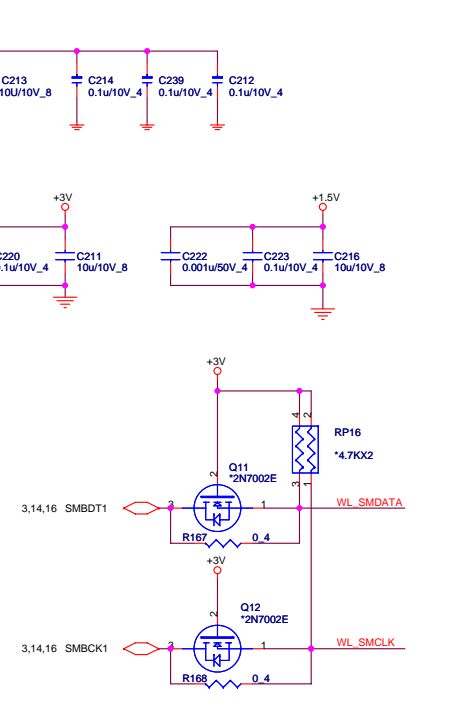
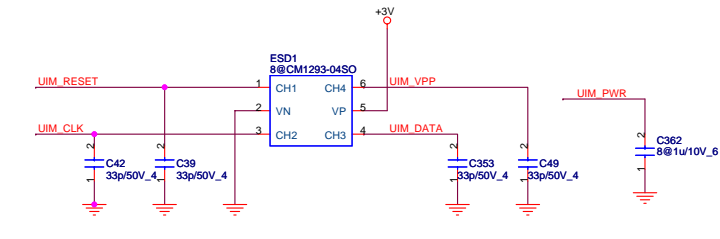
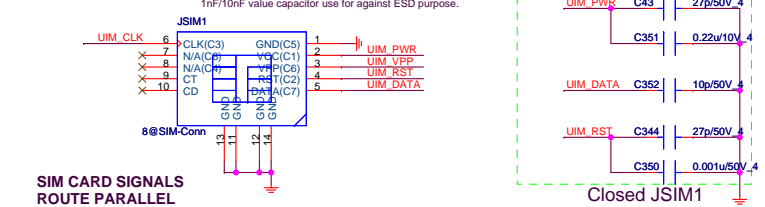
12.1" MINI-Card I (WLAN/ WiMAX)

Rev. : B
Remove CN14 , RN38 , RN39 , RN36

3G MINI CARD



SIM CARD



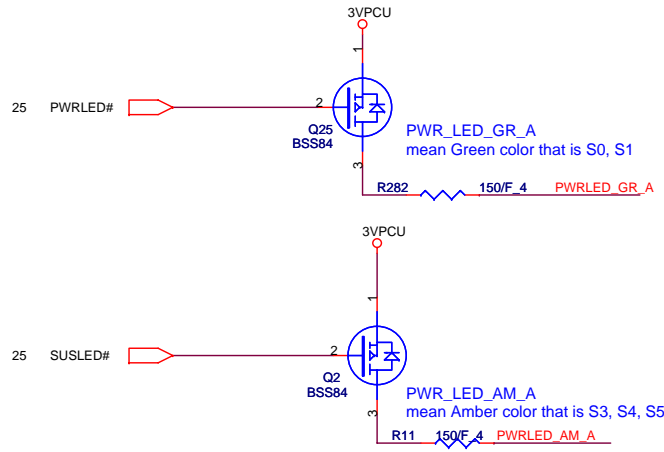
SIM CARD SIGNALS
ROUTE PARALLEL

Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
		1A
Mini-Card/WL/3G/SIM		
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Rev. : B
Remove RN43 , RN44

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



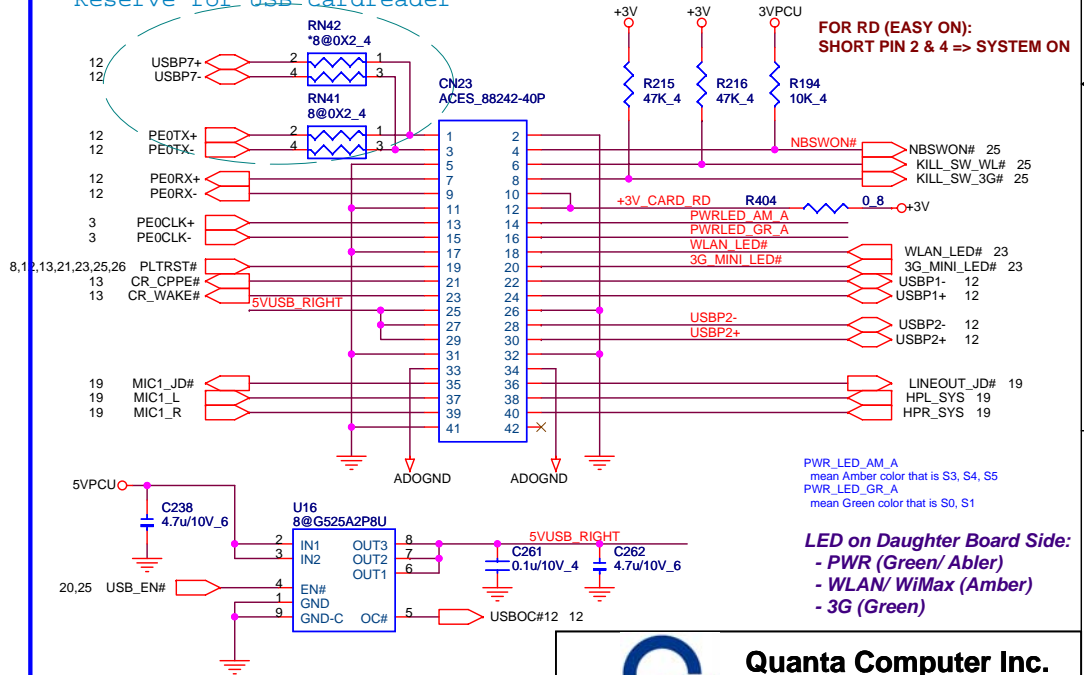
Rev. : B
Remove WLAN & 3G LED driving transistor
(Q19 , Q13 , R241 , R178)

12"
USB/PWR BTN Board
USB/LED Board

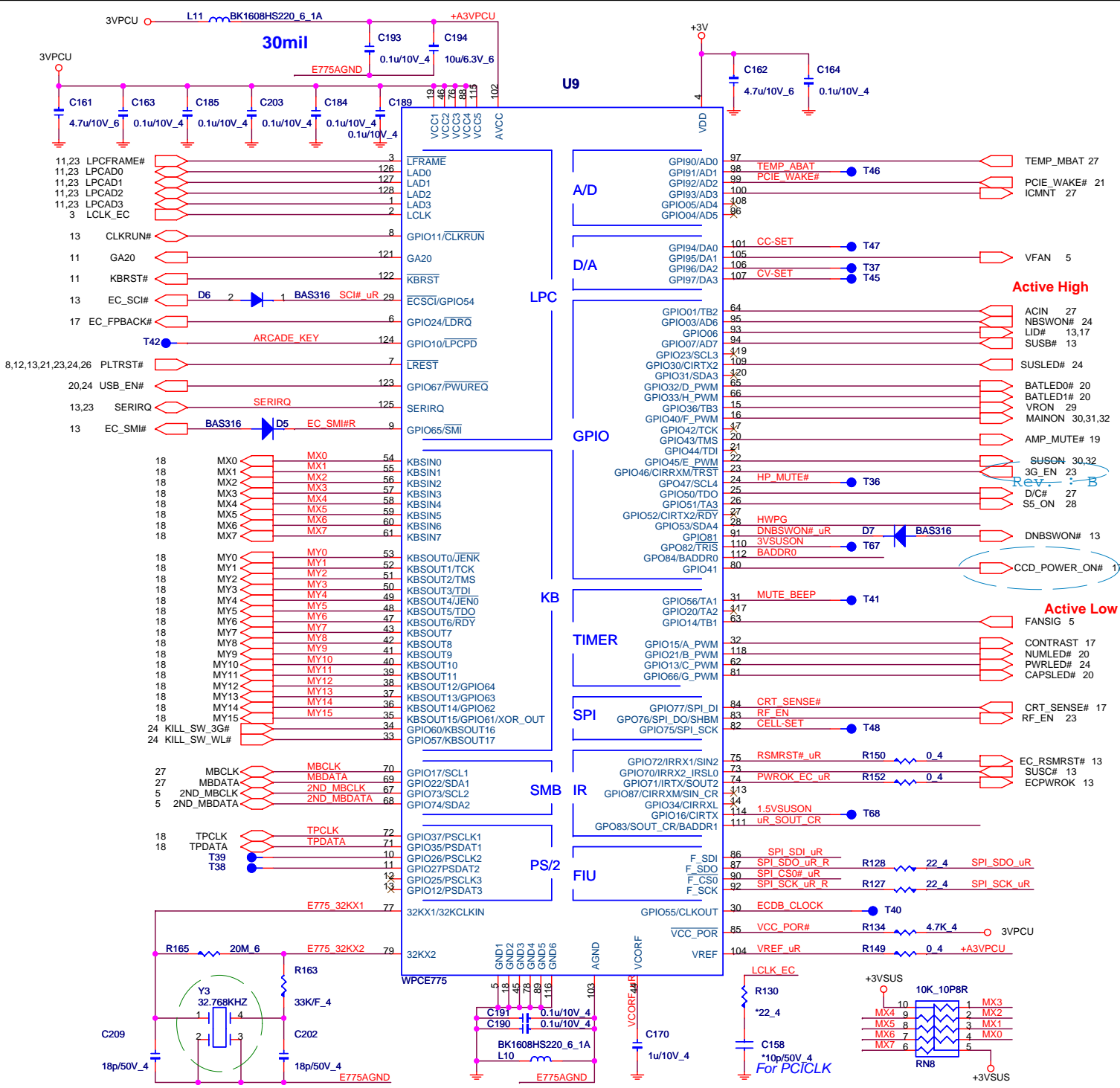
Rev. : B
Remove CN7 , CN26 , U23 , U3 ,
C286 , C300 , C75 , C295

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

Rev. : B
Reserve for USB cardreader



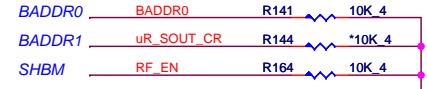
Size	Document Number	Rev
	PCle-Cardreader/External-USB	1A
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I/O ADDRESS SETTING

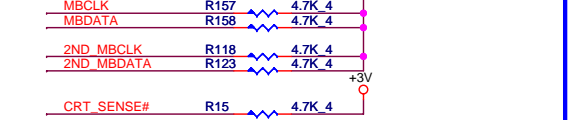
I/O Address		
BADDR1-0	Index	Data
0 0		XOR TREE TEST MODE
0 1		CORE DEFINED
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS

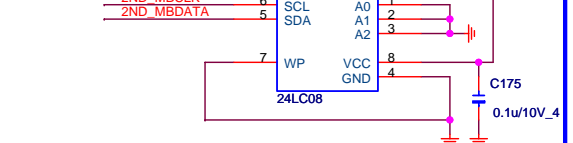


1/13 Confirm by vendor mail :
 Disabled (*) if using FW device on LPC.
 Enabled (0) if using SPI flash for both system BIOS and EC firmware

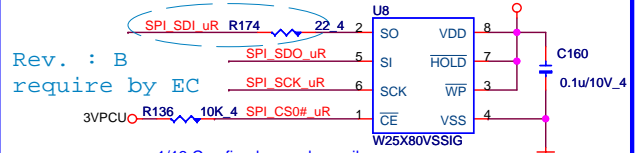
SM BUS PU



ACER ID

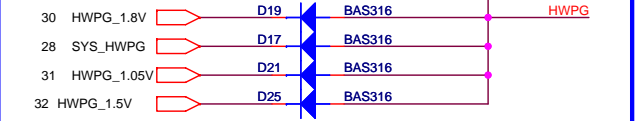


SPI FLASH



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

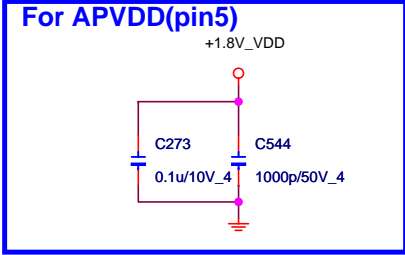
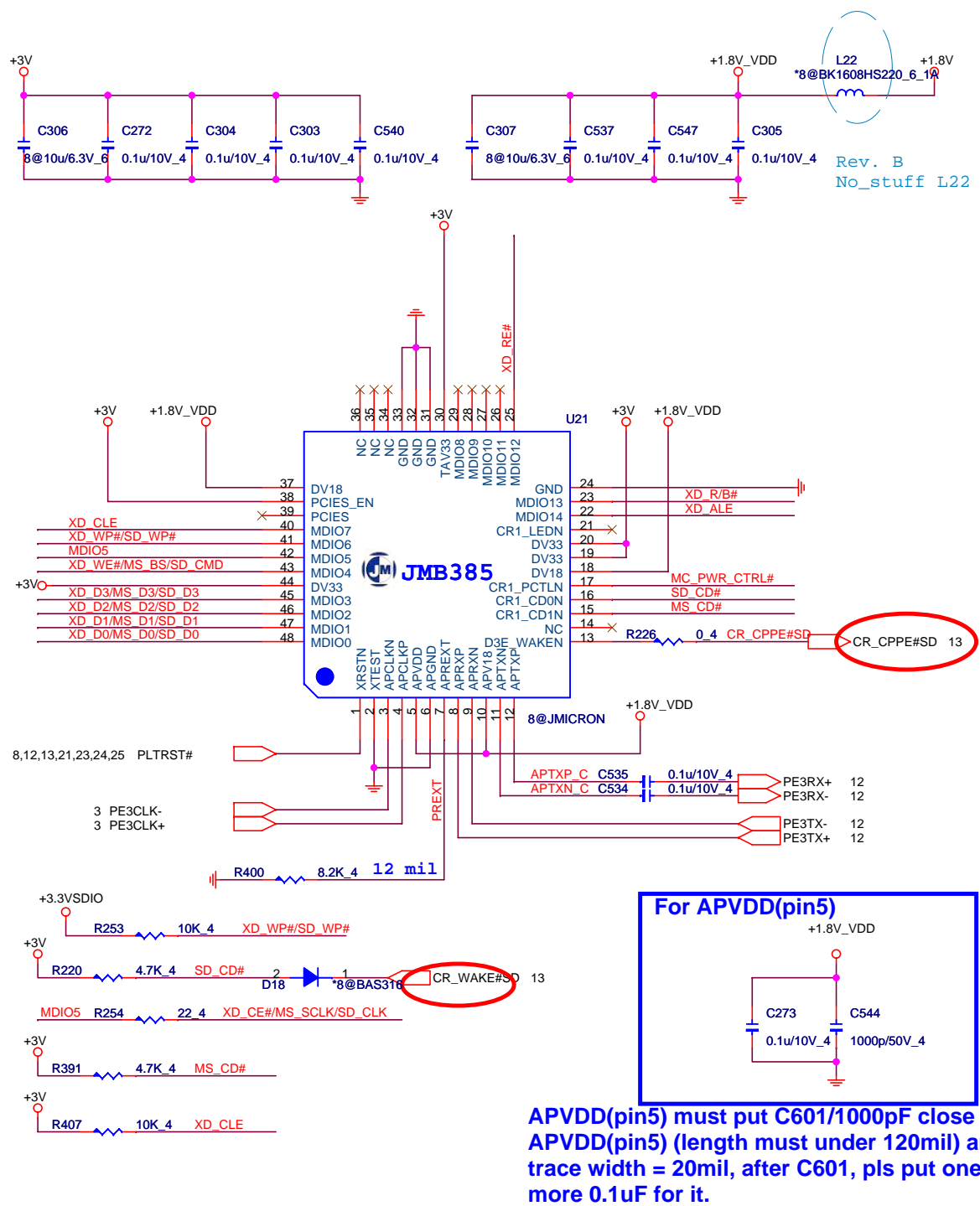
HWPG



INTERNAL KEYBOARD STRIP SET

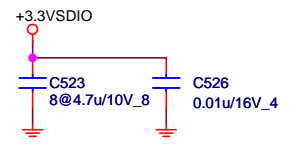


Rev. C
 Change x'tal package to low profile

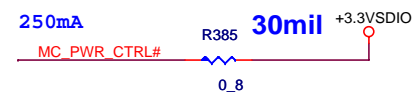


APVDD(pin5) must put C601/1000pF close to APVDD(pin5) (length must under 120mil) and trace width = 20mil, after C601, pls put one more 0.1uF for it.

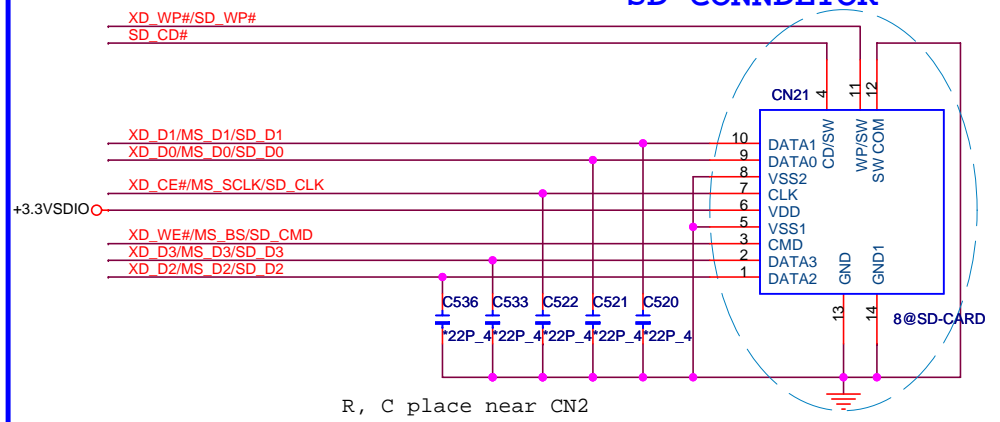
Memory Card Power Supply



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



SD CONNDETOR



R, C place near CN2

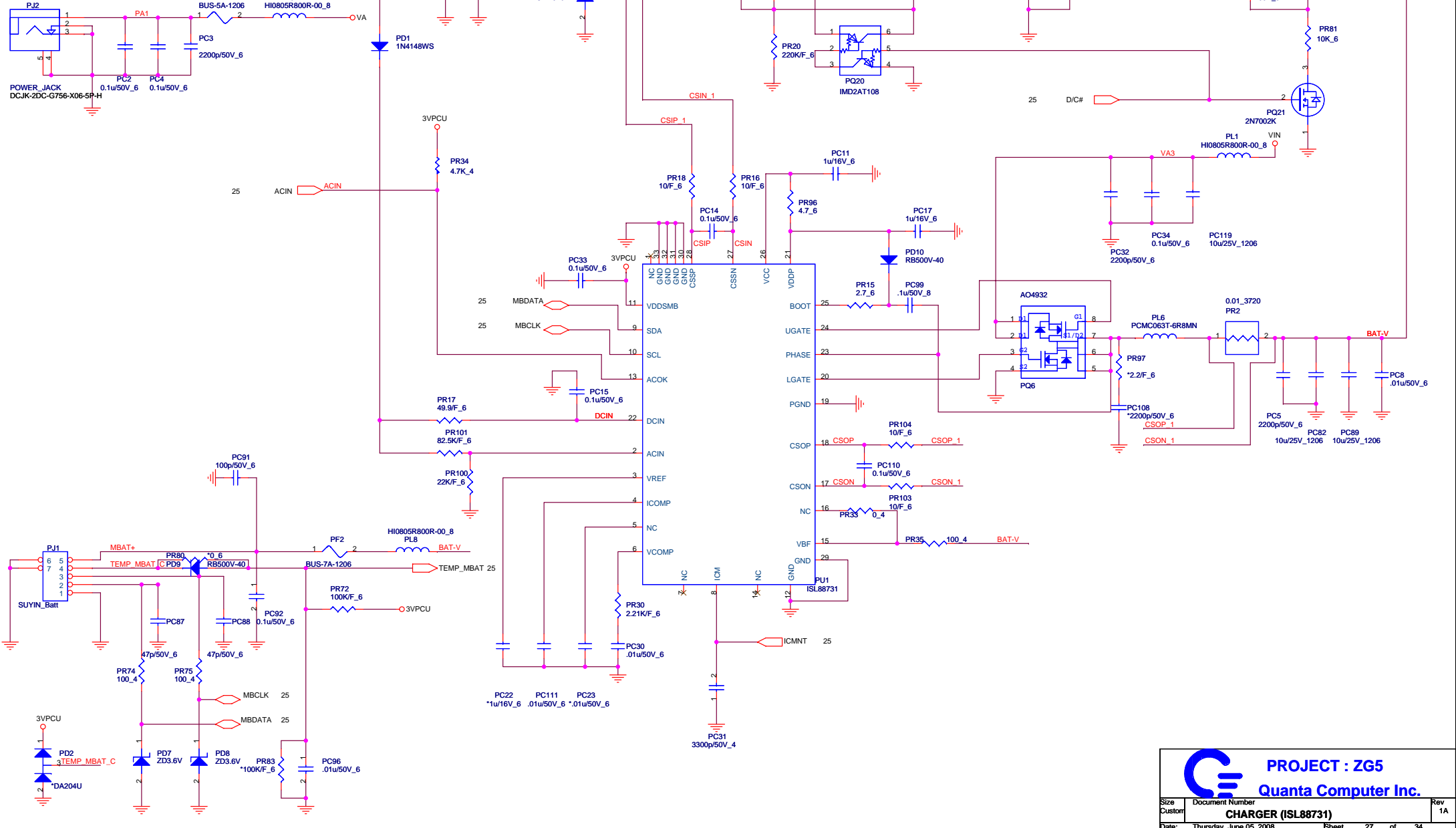
Rev. : B
Swap pin & change conn. P/N


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	JMB385 SIDO	1A
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DC-IN JACK

65W Yellow DFPJ05MR007



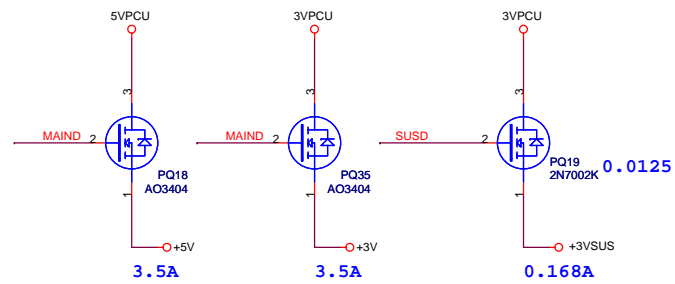
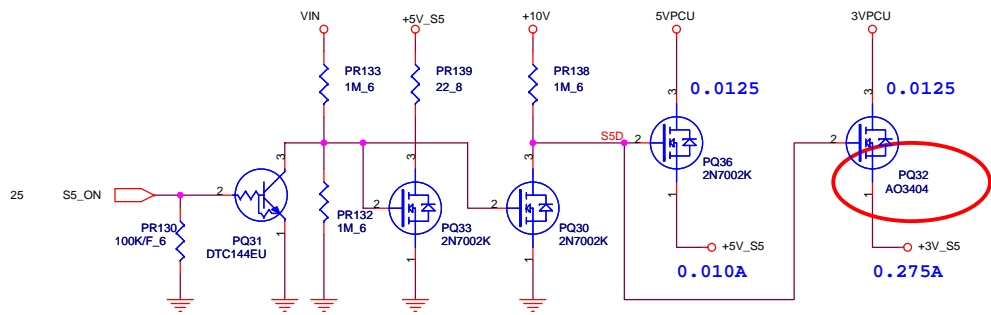
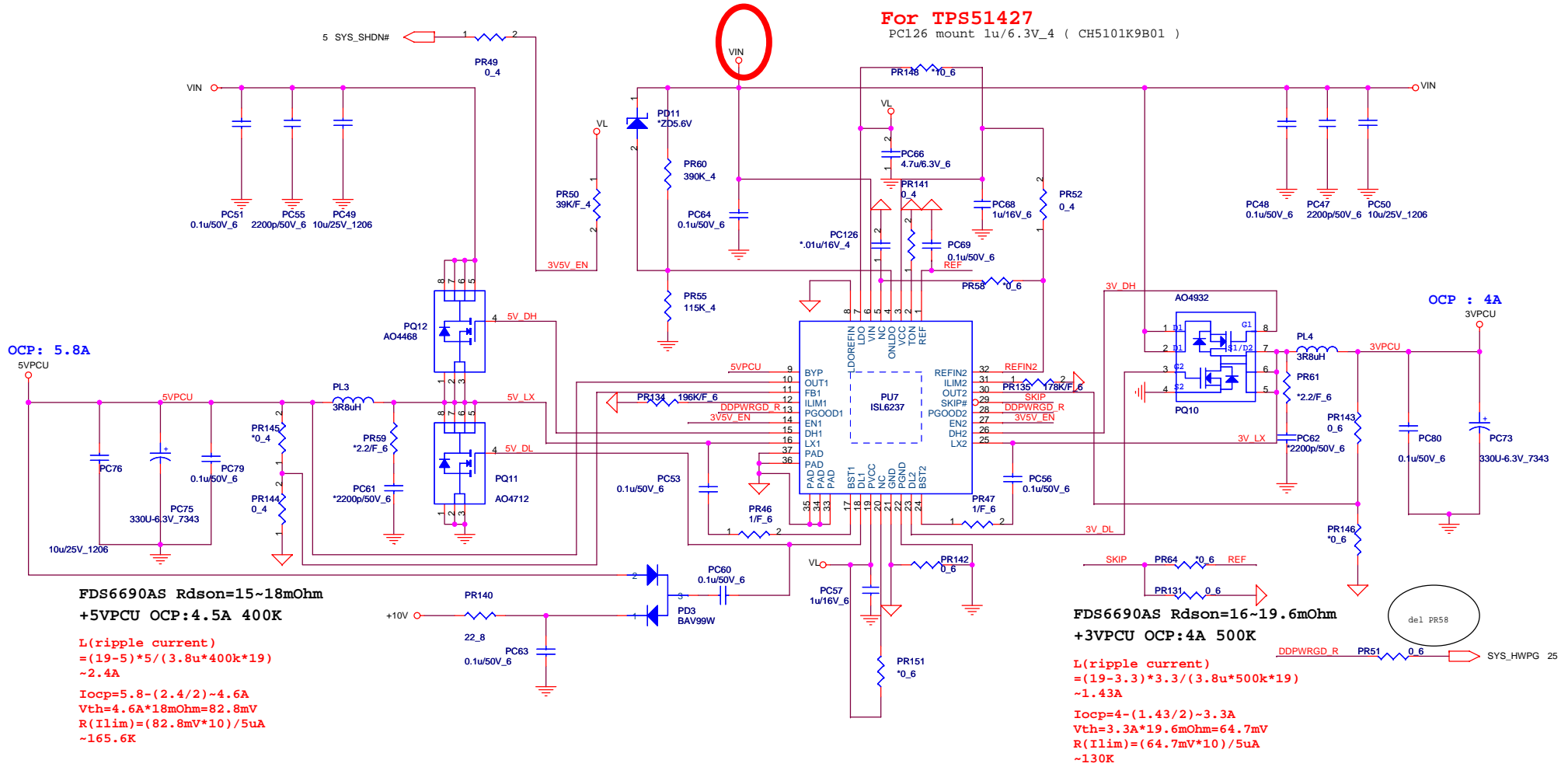
		PROJECT : ZG5	
		Quanta Computer Inc.	
Size	Document Number		Rev
Custom	CHARGER (ISL88731)		1A
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For MAX17101

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

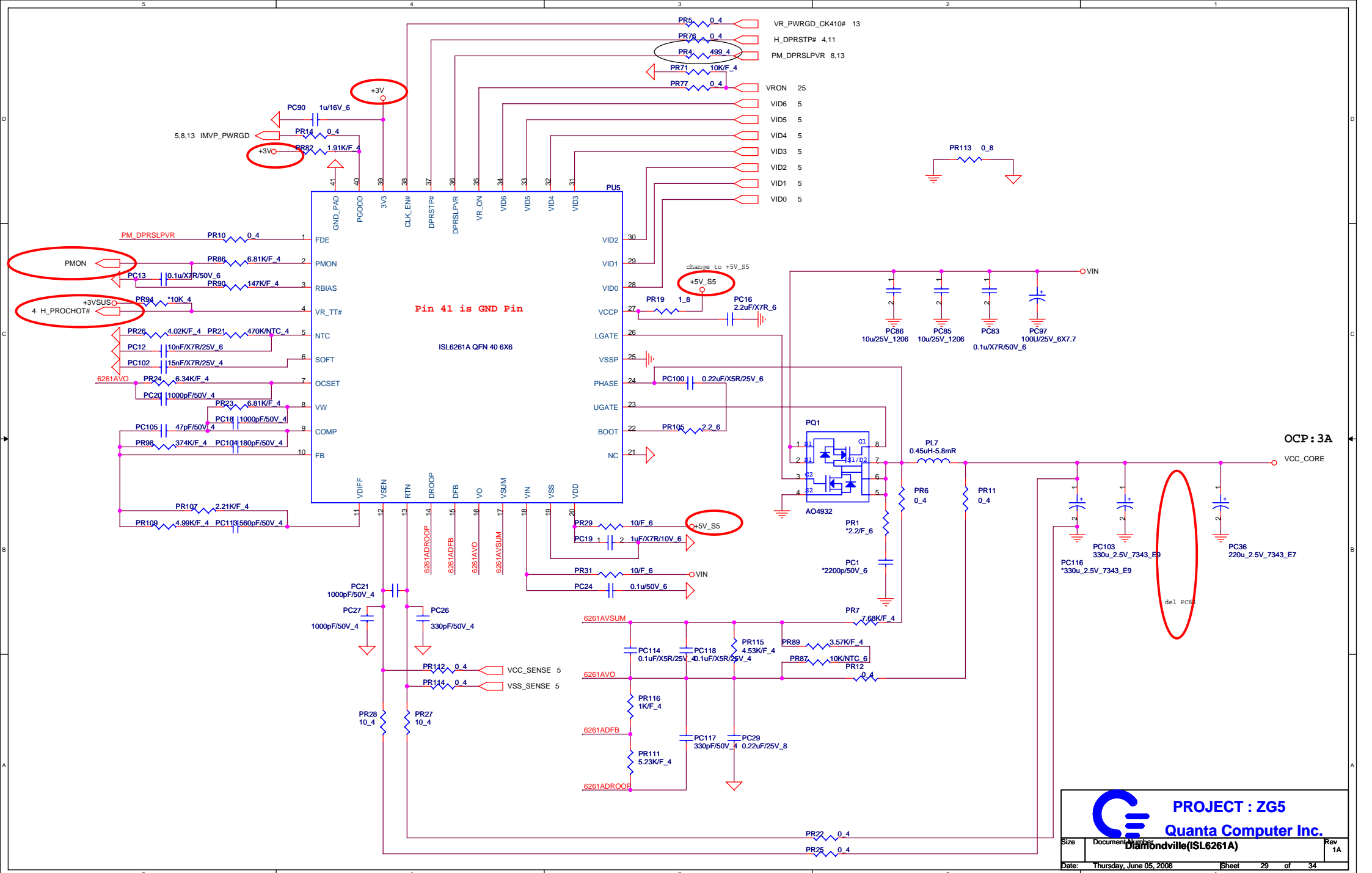
For TPS51427

PC126 mount 1u/6.3V_4 (CH5101K9B01)



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Quanta Computer Inc.


Size	Document Number	Rev
	SYSTEM 5V/3V (ISL6237)	1A
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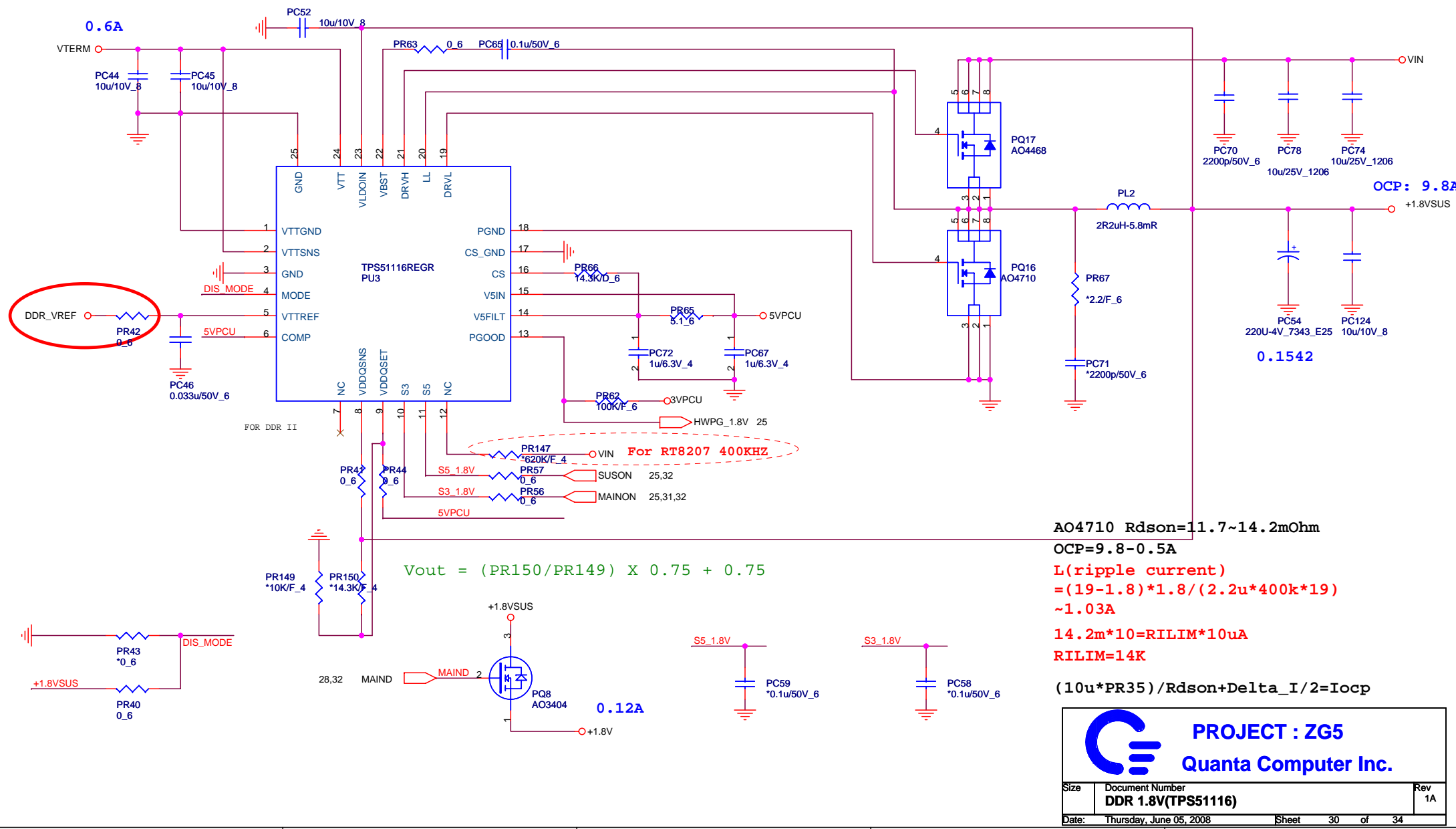


Pin 41 is GND Pin

ISL6261A QFN 40x66

OCP : 3A

		PROJECT : ZG5 Quanta Computer Inc.	
		Diamondville (ISL6261A)	
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			Rev 1A



$$V_{out} = (PR150/PR149) \times 0.75 + 0.75$$

AO4710 $R_{dson} = 11.7 \sim 14.2 \text{m}\Omega$

OCP = 9.8 - 0.5A

$L(\text{ripple current}) = (19 - 1.8) \times 1.8 / (2.2 \mu \times 400 \text{k} \times 19) \sim 1.03 \text{A}$

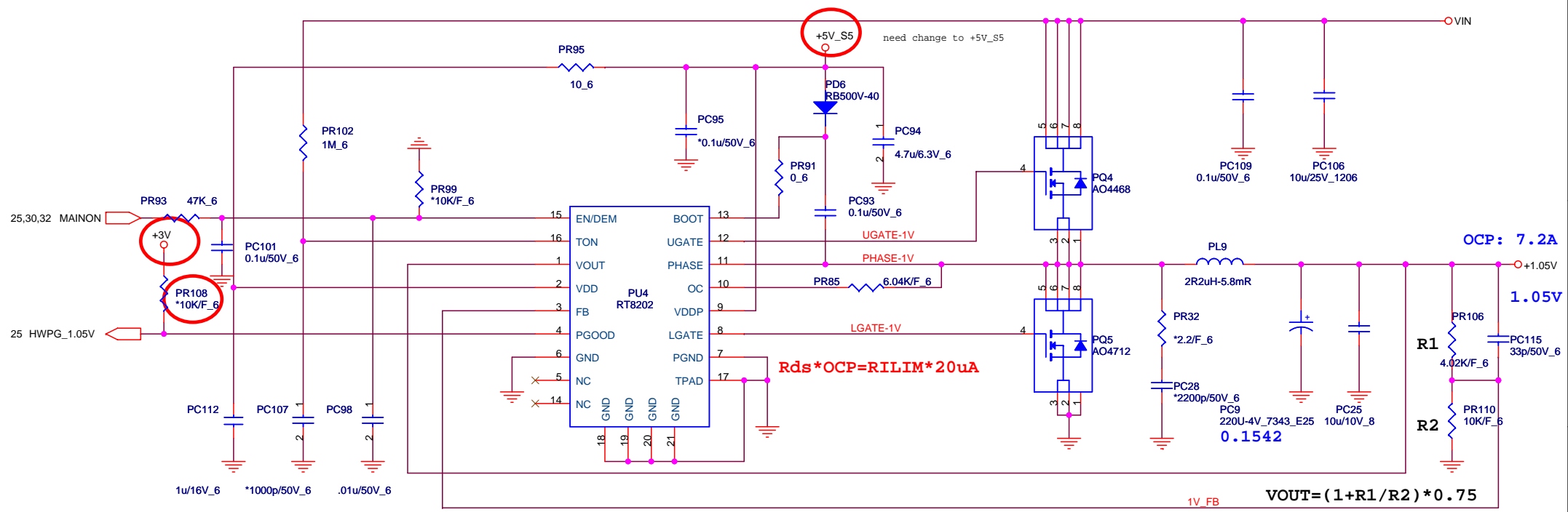
$14.2 \text{m} \times 10 = R_{ILIM} \times 10 \mu \text{A}$
 $R_{ILIM} = 14 \text{K}$

$$(10 \mu \times PR35) / R_{dson} + \Delta I / 2 = I_{ocp}$$



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Quanta Computer Inc.

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	DDR 1.8V(TPS51116)	1A
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$$TON = 3.85p * RTON * Vout / (Vin - 0.5)$$

$$Frequency = Vout / (Vin * TON)$$

$$TON = 3.85p * 1M * 1 / (Vin - 0.5)$$

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


AO4712 $R_{ds(on)} = 15 \sim 18m\Omega$

OCP = 7.2 - 0.8A

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

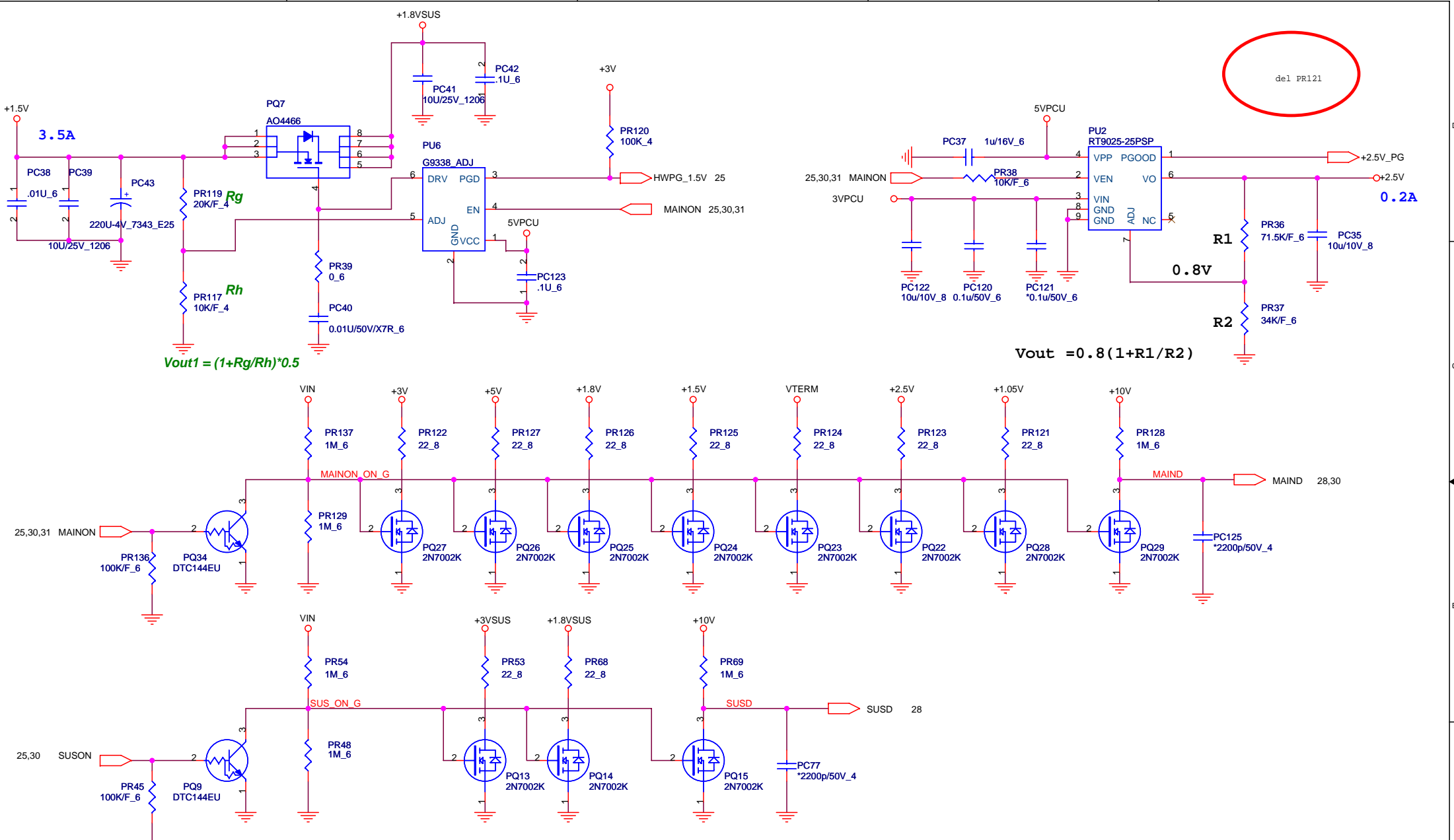
$$18m * 7 = RILIM * 20uA$$


$$RILIM = 6K (2.5 \sim 8K)$$



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Quanta Computer Inc.

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Quanta Computer Inc.

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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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	Power Change List	1A
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