ZG5 NB Block Diagram

2008.04.01

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

Diamondville
VCORE:+1.196 ~ +0.748
VCCP:+1.05V
VCCA:+1.8V or +1.5V
P 4,5

VID[0:6] → CPU VCORE P 29

+/- CPU_CLK
+/- HCLK
→ Clock Gengerator TBD. P 3

FSB

945GMS
HOST P 6
DDR P 7
LVDS, DMI, DDR CLK P 8
POWER P 9
GND P 10

CRT P 17

8.9" panel P 17 — LVDS

CHA → DDRII 256M/512M/1GB P 14,15,16

SATA → HDD, ODD P 22

IDE/USB → SSD module P 22

DMI

ICH7M
RTC, AC97, SATA, IDE, LPC, CPU P 11
PCI-E, USB, DMI, PCI P 12
SMB, GPIO, CLK P 13

RJ-45 P 21 — 10/100 Ethernet RTL8102EL P 21 — PCI-E

5in1 P 19 — Card Reader JBM385 P 24 — PCI-E

USB → Camera Conn. P 17 → Camera Module

USB → 3G module P 23 → SIM card

PCI-E/USB → WLAN + WMAX P 23 → WLAN +WMAX Module

USB → USB PORT X 3 P 20,24

Int. SPK — HDA CODEC ALC268 P 19 — HD Audio

Audio Jack

MDC Modem P 19

Int. Mic

RJ-11

Card Reader JBM385 P 26 — PCI-E

SD Card P 26

LPC BUS

EC WPCE775L P 25 → SPI Flash

Int. KB P 18

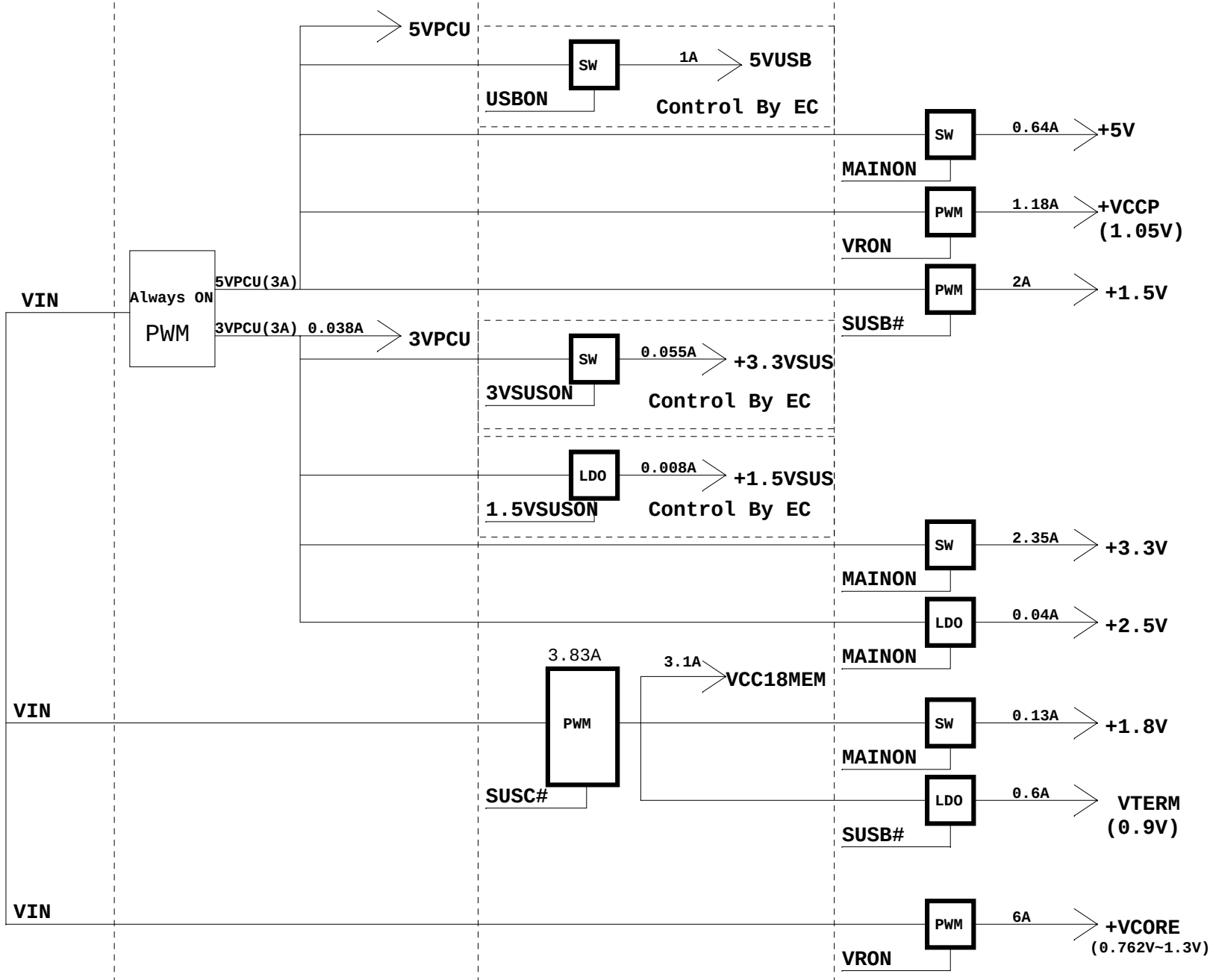
T/P P 18

Charger P 27 → Battery P 27

Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	Block Diagram	1A

Date: Thursday, June 05, 2008 Sheet 1 of 34

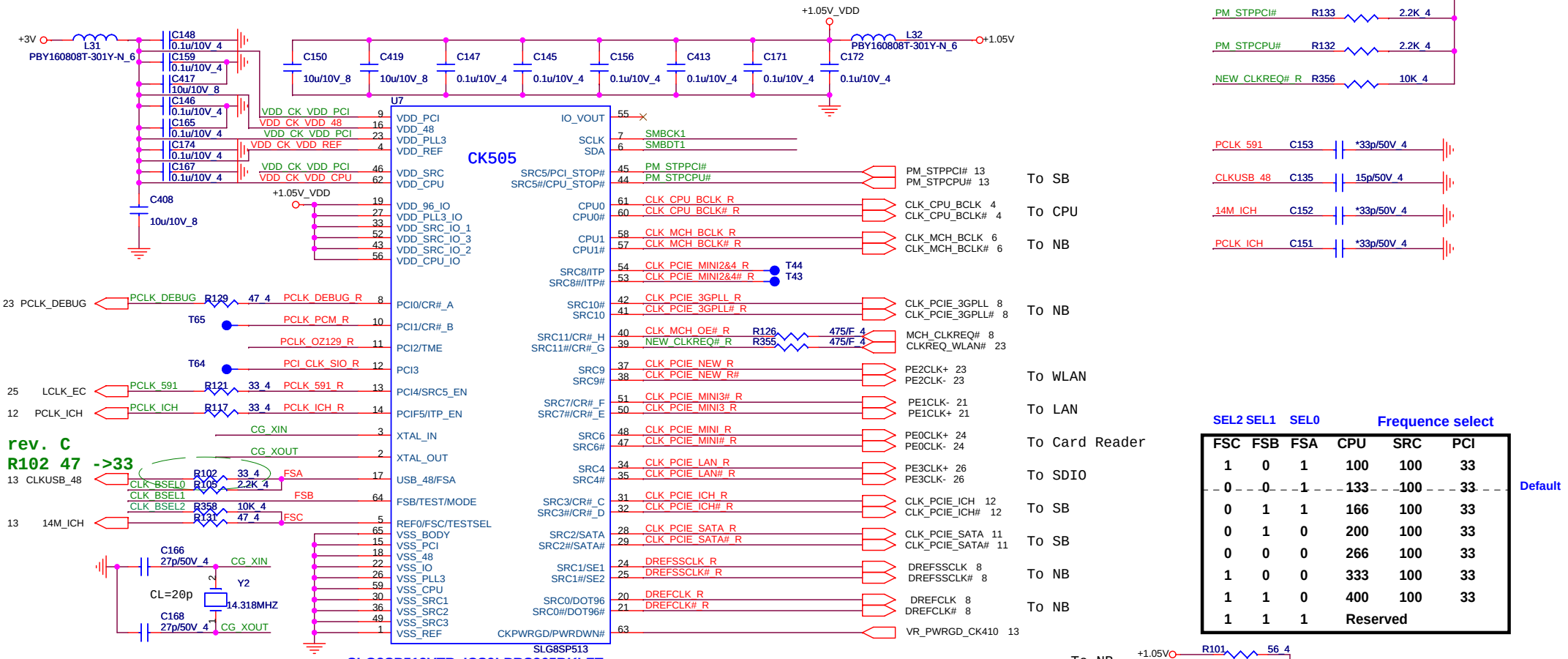


Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	Block Diagram	1A

Date: Thursday, June 05, 2008 Sheet 2 of 34

Clock Generator



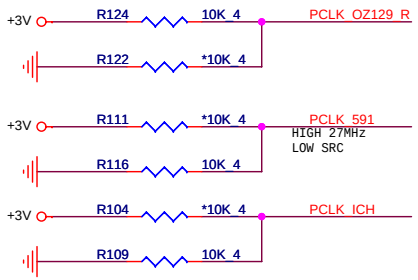
rev. C
R102 47 ->33

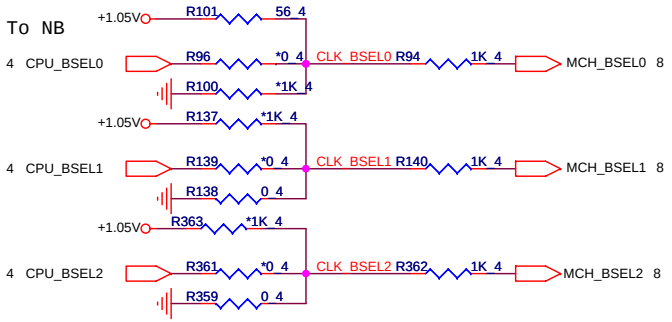
SLG8SP513VTR ,ICS9LPRS365BKLFT

SEL2	SEL1	SEL0	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	Reserved		

Frequence select — Default

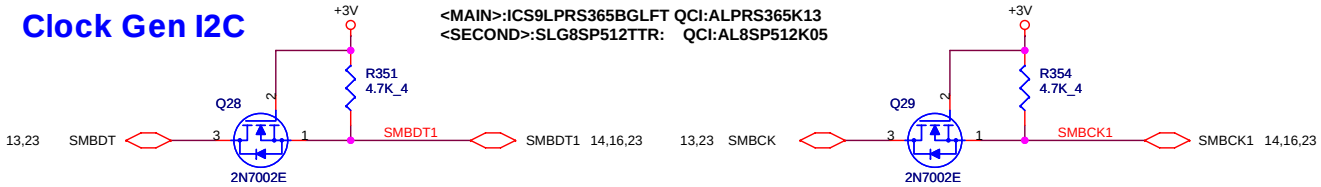
	ICS9LPRS365 (ALPRS365K13)	RTM875T-606 (AL000875K06)	PULL HIGH	PULL DOWN
Pin 11	PCI2/TME	PCI2/TME internal PD	NO OVERCLOCKING (default)	NORMAL RUN
Pin 12	PCI-3	PCI-3/SRC5_EN internal PD	PIN37/38 IS SRC5	PIN37/38 IS PCI_STOP/CPU_STOP (default)
Pin 13	PCI-4/27M_SEL	PCI-4/27M_SEL internal PD	PIN 17/18 IS 27MHz	PIN 17/18 IS SRC/DOT (default)
Pin 14	PCIF-5/ITP_EN	PCIF-5/ITP_EN internal PD	PIN 46/47 IS CPUITP	PIN 46/47 IS SRC8 (default)





Clock Gen I2C

<MAIN>:ICS9LPRS365BGLFT QCI:ALPRS365K13
<SECOND>:SLG8SP512TTR: QCI:AL8SP512K05



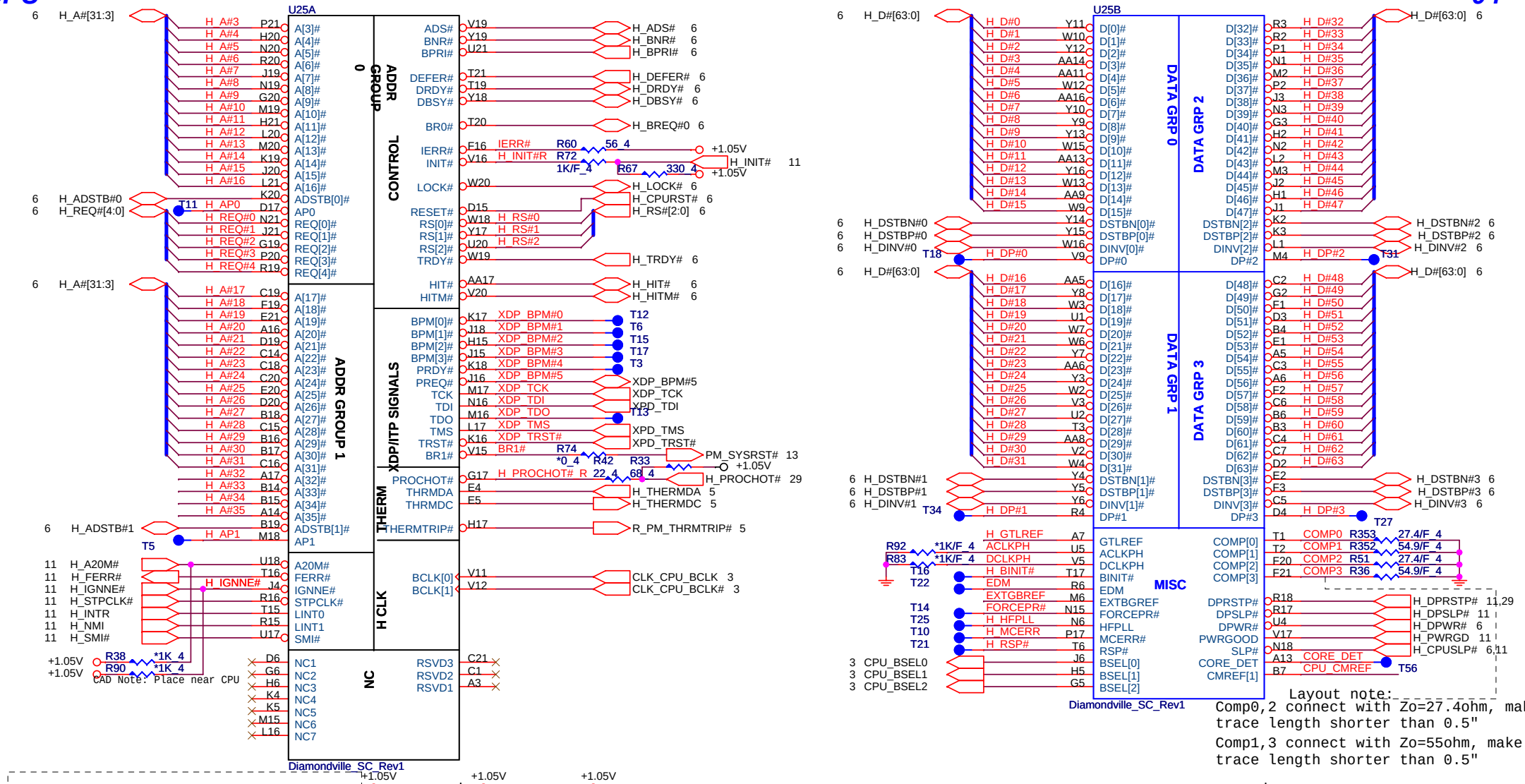
Quanta Computer Inc.
PROJECT : ZG5

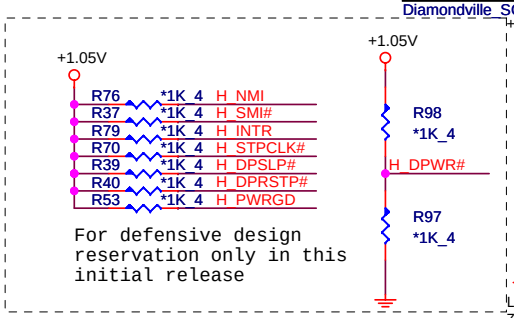
Size	Document Number	Rev
	CLOCK GENERATOR	1A

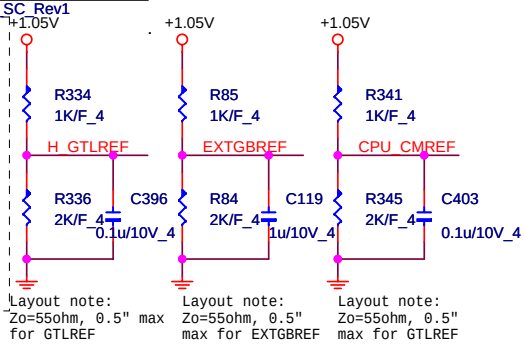
Date: Thursday, June 05, 2008 Sheet 3 of 34

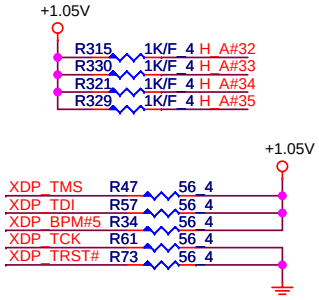
CPU

04









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

Quanta Computer Inc.		
PROJECT : ZG5		
Size	Document Number: Diamondville(1/2)	Rev: 1A
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CPU-2

05

U25D

Diamondville_SC_Rev1

U25C

Diamondville_SC_Rev1

2.5A

C74 0.1u/10V_4 C106 0.1u/10V_4 C69 1u/10V_4 C104 1u/10V_4 C78 1u/10V_4 C68 1u/10V_4 C120 10u/6.3V_6 C116 10u/6.3V_6 C59 330u/2.5V_7343

PLACE IN CAVITY

PLACE IN CORRIDOR AND CLOSE TO CPU

C110 C62 C107 C63 C108 C64 C109 C65 C66 C111 C114 C67 10u/6.3V_6

C89 C87 C86 C90 C91 C92 C95 C94 C96 C99 C88 C85 C93 C97 C98 C100 1u/10V_4

PLACE IN CAVITY

3A

130mA

<NO_STUFF>

FAN

R360 10K_6

C157 2.2u/6.3V_6

U6 G995

30 MIL

CN12 FAN

C409 2.2u/6.3V_6 C411 1000p/50V_4 C415 0.01u/16V_4

125 Degree Protection

Q6 2N7002E

Q5 MMBT3904

R23 56_4 R28 1K_4 R27 33_4 R25 *0_4

945GMS & ICH7M

CPU Thermal monitor

U5 G780P81U

R93 1_6 C137 0.1u/10V_4 C131 2200p/50V_4

R120 10K_4 R119 *0_4 R110 10K_4

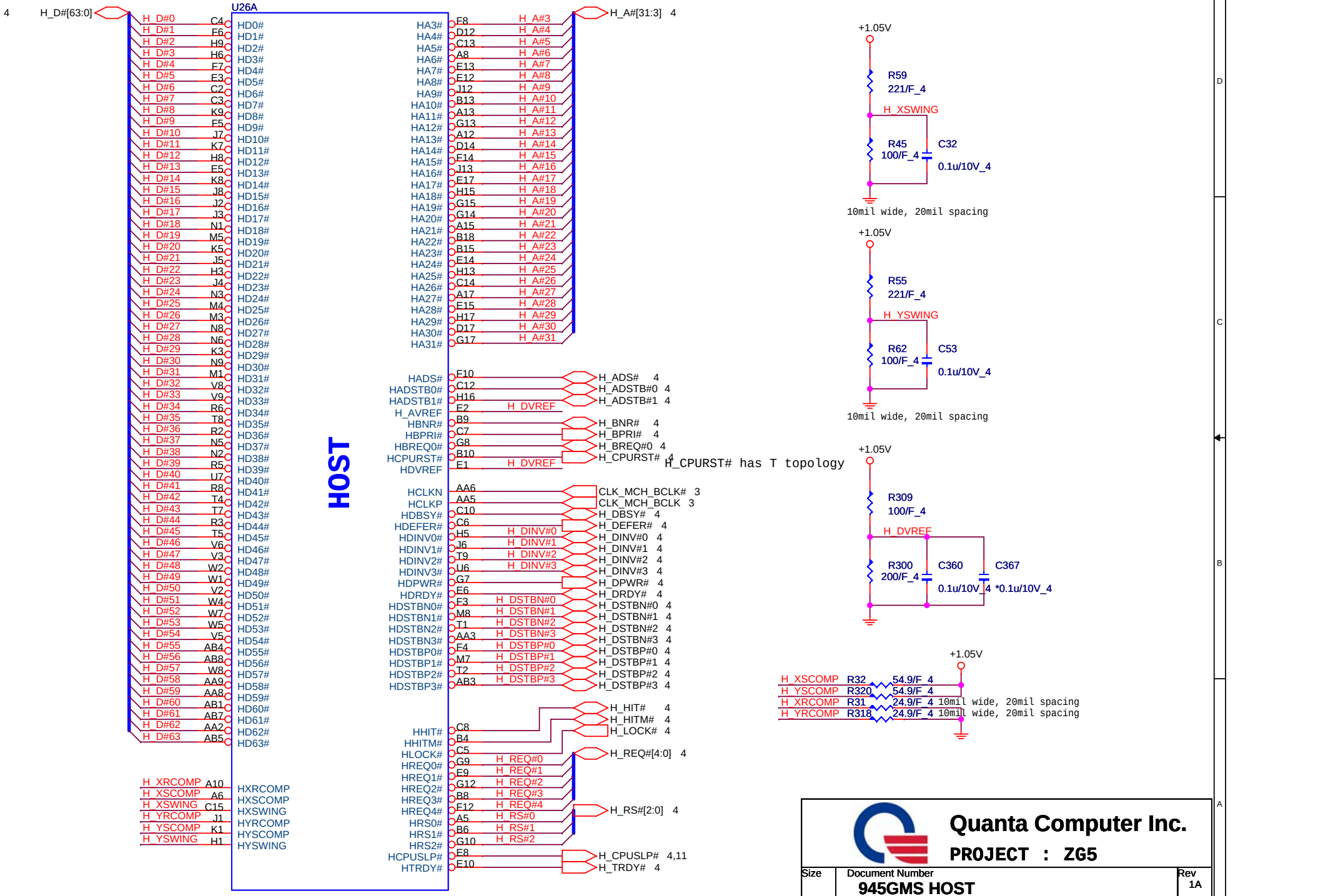
ADDRESS: 4C

<check list>
Layout Note:Routing 10:10 mils and away from noise source with ground gard

Quanta Computer Inc.

PROJECT : ZG5

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



Quanta Computer Inc.		
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945GMS DDR

07

U26C

DDR2 SYSTEM MEMORY

14,15,16 MDA[63:0]

MDA0	AC31	SA_DQ0	
MDA1	AB28	SA_DQ1	
MDA2	AE33	SA_DQ2	
MDA3	AF32	SA_DQ3	
MDA4	AC33	SA_DQ4	
MDA5	AB32	SA_DQ5	
MDA6	AB31	SA_DQ6	
MDA7	AE31	SA_DQ7	
MDA8	AH31	SA_DQ8	
MDA9	AK31	SA_DQ9	
MDA10	AL28	SA_DQ10	
MDA11	AK27	SA_DQ11	
MDA12	AH30	SA_DQ12	
MDA13	AL32	SA_DQ13	
MDA14	AJ28	SA_DQ14	
MDA15	AJ27	SA_DQ15	
MDA16	AH32	SA_DQ16	
MDA17	AF31	SA_DQ17	
MDA18	AH27	SA_DQ18	
MDA19	AF28	SA_DQ19	
MDA20	AJ32	SA_DQ20	
MDA21	AG31	SA_DQ21	
MDA22	AG28	SA_DQ22	
MDA23	AG27	SA_DQ23	
MDA24	AN27	SA_DQ24	
MDA25	AM26	SA_DQ25	
MDA26	AJ26	SA_DQ26	
MDA27	AJ25	SA_DQ27	
MDA28	AL27	SA_DQ28	
MDA29	AN26	SA_DQ29	
MDA30	AH25	SA_DQ30	
MDA31	AG26	SA_DQ31	
MDA32	AM12	SA_DQ32	
MDA33	AL11	SA_DQ33	
MDA34	AH9	SA_DQ34	
MDA35	AK9	SA_DQ35	
MDA36	AM11	SA_DQ36	
MDA37	AK11	SA_DQ37	
MDA38	AM8	SA_DQ38	
MDA39	AK8	SA_DQ39	
MDA40	AG9	SA_DQ40	
MDA41	AF9	SA_DQ41	
MDA42	AF8	SA_DQ42	
MDA43	AK6	SA_DQ43	
MDA44	AF7	SA_DQ44	
MDA45	AG11	SA_DQ45	
MDA46	AJ6	SA_DQ46	
MDA47	AH6	SA_DQ47	
MDA48	AN6	SA_DQ48	
MDA49	AM6	SA_DQ49	
MDA50	AK3	SA_DQ50	
MDA51	AL2	SA_DQ51	
MDA52	AM5	SA_DQ52	
MDA53	AL5	SA_DQ53	
MDA54	AJ3	SA_DQ54	
MDA55	AJ2	SA_DQ55	
MDA56	AG2	SA_DQ56	
MDA57	AF3	SA_DQ57	
MDA58	AE7	SA_DQ58	
MDA59	AF6	SA_DQ59	
MDA60	AH5	SA_DQ60	
MDA61	AG3	SA_DQ61	
MDA62	AG5	SA_DQ62	
MDA63	AF5	SA_DQ63	

14 SCASB#	SCASB#	AG19	SB_CAS#
14 SRASB#	SRASB#	AG21	SB_RAS#
14 SWEB#	SWEB#	AG20	SB_WE#

SA_BS_0	AK12	BAA0	BAA[2:0] 14,15,16
SA_BS_1	AH11	BAA1	
SA_BS_2	AG17	BAA2	
SA_DM0	AB30	DQMA0	DQMA0 14,15
SA_DM1	AL31	DQMA1	DQMA1 14,15
SA_DM2	AF30	DQMA2	DQMA2 14,15
SA_DM3	AK26	DQMA3	DQMA3 14,15
SA_DM4	AL9	DQMA4	DQMA4 14,16
SA_DM5	AG7	DQMA5	DQMA5 14,16
SA_DM6	AK5	DQMA6	DQMA6 14,16
SA_DM7	AH3	DQMA7	DQMA7 14,16
SA_DQS0	AC28	DQSA0+	DQSA0+ 14,15
SA_DQS1	AJ30	DQSA1+	DQSA1+ 14,15
SA_DQS2	AK33	DQSA2+	DQSA2+ 14,15
SA_DQS3	AL25	DQSA3+	DQSA3+ 14,15
SA_DQS4	AN9	DQSA4+	DQSA4+ 14,16
SA_DQS5	AH8	DQSA5+	DQSA5+ 14,16
SA_DQS6	AM2	DQSA6+	DQSA6+ 14,16
SA_DQS7	AE3	DQSA7+	DQSA7+ 14,16
SA_DQS0#	AC29	DQSA0-	DQSA0- 14,15
SA_DQS1#	AK30	DQSA1-	DQSA1- 14,15
SA_DQS2#	AJ33	DQSA2-	DQSA2- 14,15
SA_DQS3#	AM25	DQSA3-	DQSA3- 14,15
SA_DQS4#	AN8	DQSA4-	DQSA4- 14,16
SA_DQS5#	AJ8	DQSA5-	DQSA5- 14,16
SA_DQS6#	AM3	DQSA6-	DQSA6- 14,16
SA_DQS7#	AE2	DQSA7-	DQSA7- 14,16
SA_MA0	AJ15	MAA0	MAA[12:0] 14,15,16
SA_MA1	AM17	MAA1	
SA_MA2	AM15	MAA2	
SA_MA3	AH15	MAA3	
SA_MA4	AK15	MAA4	
SA_MA5	AN15	MAA5	
SA_MA6	AJ18	MAA6	
SA_MA7	AF19	MAA7	
SA_MA8	AN17	MAA8	
SA_MA9	AL17	MAA9	
SA_MA10	AG16	MAA10	
SA_MA11	AL18	MAA11	
SA_MA12	AG18	MAA12	
SA_MA13	AL14	MAA13	MAA13 14
SA_CAS#	AJ17	SCASA#	SCASA# 14,15,16
SA_RAS#	AK18	SRASA#	SRASA# 14,15,16
SA_RCVENINB	AN28	TP_SA_RCVENIN#	T61
SA_RCVENOUTB	AM28	TP_SA_RCVENOUT#	T63
SA_WEB	AH17	SWEA#	SWEA# 14,15,16
SB_BS_0	AH21	BSB0	BSB[2:0] 14
SB_BS_1	AJ20	BSB1	
SB_BS_2	AE27	BSB2	
SB_MA0	AN20	MAB0	MAB[12:0] 14
SB_MA1	AL21	MAB1	
SB_MA2	AK21	MAB2	
SB_MA3	AK22	MAB3	
SB_MA4	AL22	MAB4	
SB_MA5	AH22	MAB5	
SB_MA6	AG22	MAB6	
SB_MA7	AF21	MAB7	
SB_MA8	AM21	MAB8	
SB_MA9	AE21	MAB9	
SB_MA10	AL20	MAB10	
SB_MA11	AE22	MAB11	
SB_MA12	AE26	MAB12	
SB_MA13	AE20	MAB13	MAB13 14

T62

945GMS

U26H

NCTF

+1.05V

+1.5V

T25	VCC_NCTF1	VCCAUX_NCTF1	AD25
R25	VCC_NCTF2	VCCAUX_NCTF2	AC25
P25	VCC_NCTF3	VCCAUX_NCTF3	AB25
N25	VCC_NCTF4	VCCAUX_NCTF4	AD24
M25	VCC_NCTF5	VCCAUX_NCTF5	AC24
P24	VCC_NCTF6	VCCAUX_NCTF6	AD22
N24	VCC_NCTF7	VCCAUX_NCTF7	AD21
M24	VCC_NCTF8	VCCAUX_NCTF8	AD20
Y22	VCC_NCTF9	VCCAUX_NCTF9	AD19
W22	VCC_NCTF10	VCCAUX_NCTF10	AD18
V22	VCC_NCTF11	VCCAUX_NCTF11	AD17
U22	VCC_NCTF12	VCCAUX_NCTF12	AD16
T22	VCC_NCTF13	VCCAUX_NCTF13	AD15
R22	VCC_NCTF14	VCCAUX_NCTF14	AD14
P22	VCC_NCTF15	VCCAUX_NCTF15	K14
N22	VCC_NCTF16	VCCAUX_NCTF16	AD13
M22	VCC_NCTF17	VCCAUX_NCTF17	Y13
Y21	VCC_NCTF18	VCCAUX_NCTF18	W13
W21	VCC_NCTF19	VCCAUX_NCTF19	V13
V21	VCC_NCTF20	VCCAUX_NCTF20	U13
U21	VCC_NCTF21	VCCAUX_NCTF21	T13
T21	VCC_NCTF22	VCCAUX_NCTF22	R13
R21	VCC_NCTF23	VCCAUX_NCTF23	P13
P21	VCC_NCTF24	VCCAUX_NCTF24	N13
N21	VCC_NCTF25	VCCAUX_NCTF25	M13
M21	VCC_NCTF26	VCCAUX_NCTF26	AD12
Y20	VCC_NCTF27	VCCAUX_NCTF27	Y12
W20	VCC_NCTF28	VCCAUX_NCTF28	W12
V20	VCC_NCTF29	VCCAUX_NCTF29	V12
U20	VCC_NCTF30	VCCAUX_NCTF30	U12
T20	VCC_NCTF31	VCCAUX_NCTF31	T12
R20	VCC_NCTF32	VCCAUX_NCTF32	R12
P20	VCC_NCTF33	VCCAUX_NCTF33	P12
N20	VCC_NCTF34	VCCAUX_NCTF34	N12
M20	VCC_NCTF35	VCCAUX_NCTF35	M12
Y19	VCC_NCTF36	VCCAUX_NCTF36	AD11
P19	VCC_NCTF37	VCCAUX_NCTF37	AD10
N19	VCC_NCTF38	VCCAUX_NCTF38	K10
M19	VCC_NCTF39	VSS_NCTF1	AN33
Y18	VCC_NCTF40	VSS_NCTF2	AA25
P18	VCC_NCTF41	VSS_NCTF3	V25
N18	VCC_NCTF42	VSS_NCTF4	U25
M18	VCC_NCTF43	VSS_NCTF5	AA22
Y17	VCC_NCTF44	VSS_NCTF6	AA21
P17	VCC_NCTF45	VSS_NCTF7	AA20
N17	VCC_NCTF46	VSS_NCTF8	AA19
M17	VCC_NCTF47	VSS_NCTF9	AA18
Y16	VCC_NCTF48	VSS_NCTF10	AA17
P16	VCC_NCTF49	VSS_NCTF11	AA16
N16	VCC_NCTF50	VSS_NCTF12	AA15
M16	VCC_NCTF51	VSS_NCTF13	AA14
Y15	VCC_NCTF52	VSS_NCTF14	AA13
P15	VCC_NCTF53	VSS_NCTF15	A4
N15	VCC_NCTF54	VSS_NCTF16	A33
M15	VCC_NCTF55	VSS_NCTF17	B2
Y14	VCC_NCTF56	VSS_NCTF18	AN1
W14	VCC_NCTF57	VSS_NCTF19	C1
V14	VCC_NCTF58		
U14	VCC_NCTF59	CFG19	K28
T14	VCC_NCTF60		
R14	VCC_NCTF61	MCH_RSVD10	K25
P14	VCC_NCTF62	MCH_RSVD11	K26
N14	VCC_NCTF63	MCH_RSVD12	R24
M14	VCC_NCTF64	MCH_RSVD13	T24
		MCH_RSVD14	K21
T10	VTT_NCTF1	MCH_RSVD15	K19
R10	VTT_NCTF2	MCH_RSVD16	K20
P10	VTT_NCTF3	MCH_RSVD17	K24
N10	VTT_NCTF4	MCH_RSVD18	K22
L10	VTT_NCTF5	MCH_RSVD19	J17
D1	VTT_NCTF6	MCH_RSVD20	K23
		MCH_RSVD21	K17
M10	MCH_RSVD3	MCH_RSVD22	K12
A18	MCH_RSVD4	MCH_RSVD23	K13
AB10	MCH_RSVD5	MCH_RSVD24	K16
AA10	MCH_RSVD6	MCH_RSVD25	K15

+3V

R68 *1K_4

GMS_CFG19

GMS CFG19: LOW=Normal
High=LANES
REVERSED(945GMS not
support)

945GMS

Quanta Computer Inc.

PROJECT : ZG5

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	945GMS DDR	1A
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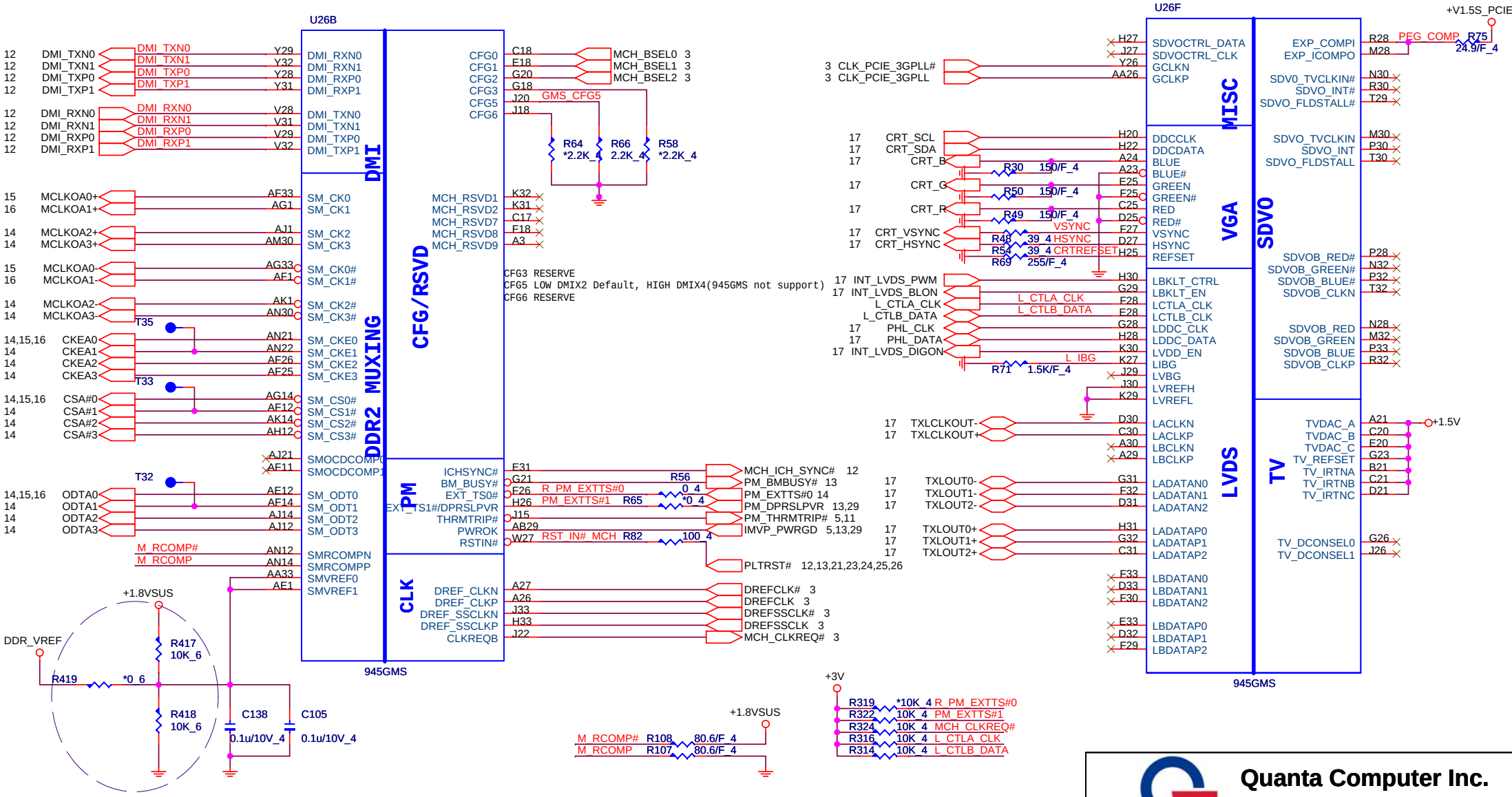
DMI, LVDS, DDR CLK

08



rev. D
Add in R417 , R418 , R419

Quanta Computer Inc.		
PROJECT : ZG5		
Size	Document Number: 945GMS LVDS, DMI, DDR CLK	Rev: 1A
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945GMS POWER

09

U26D

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

place under BGA

PLACE CLOSE TO GMCH

PLACE IN CAVITY

DISABLE TV

POWER

945GMS

Quanta Computer Inc.	
PROJECT : ZG5	
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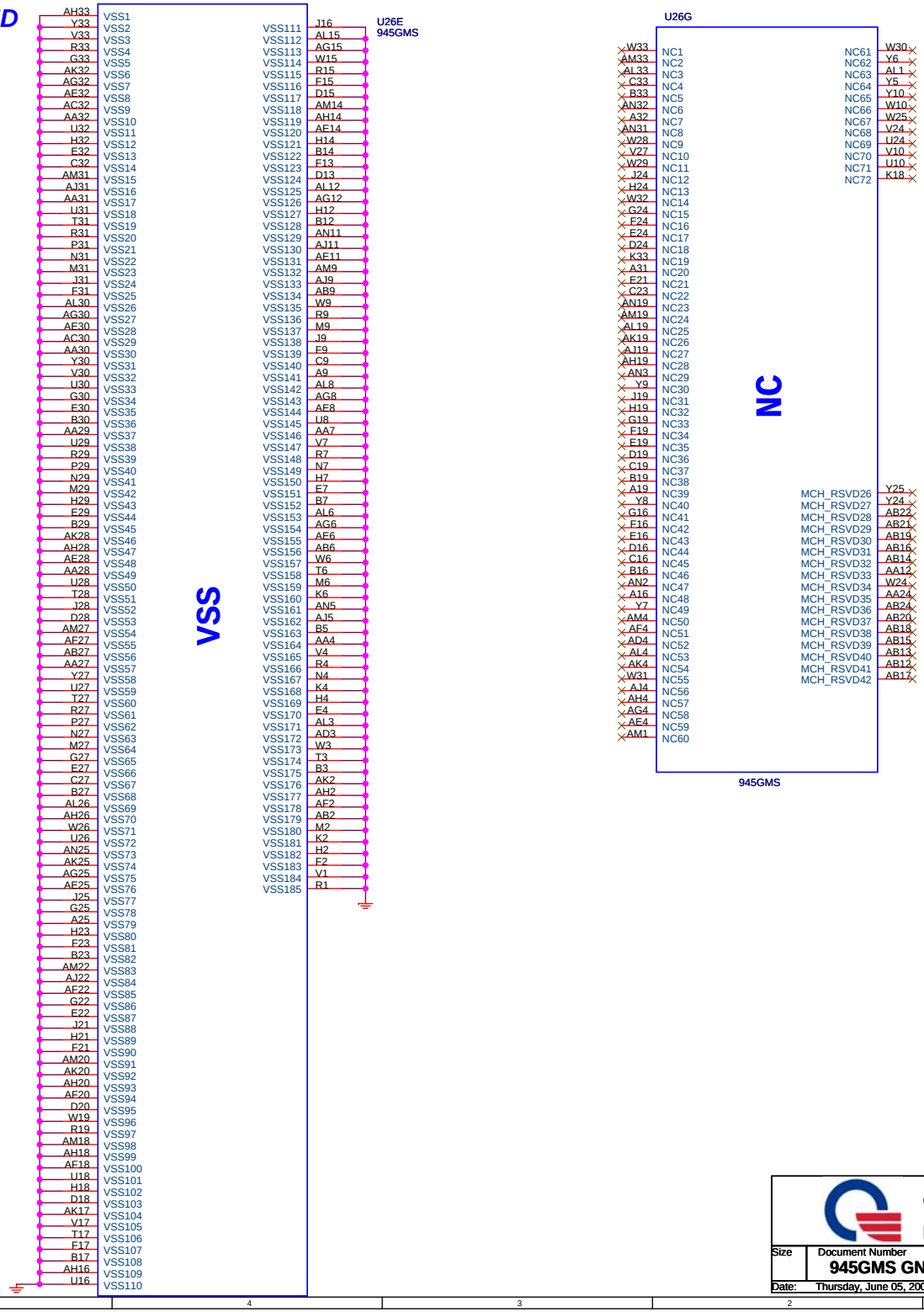
945GMS GND



U26E
945GMS

U26G

10

Quanta Computer Inc.		
PROJECT : ZG5		
Size	Document Number: 945GMS GND	Rev: 1A
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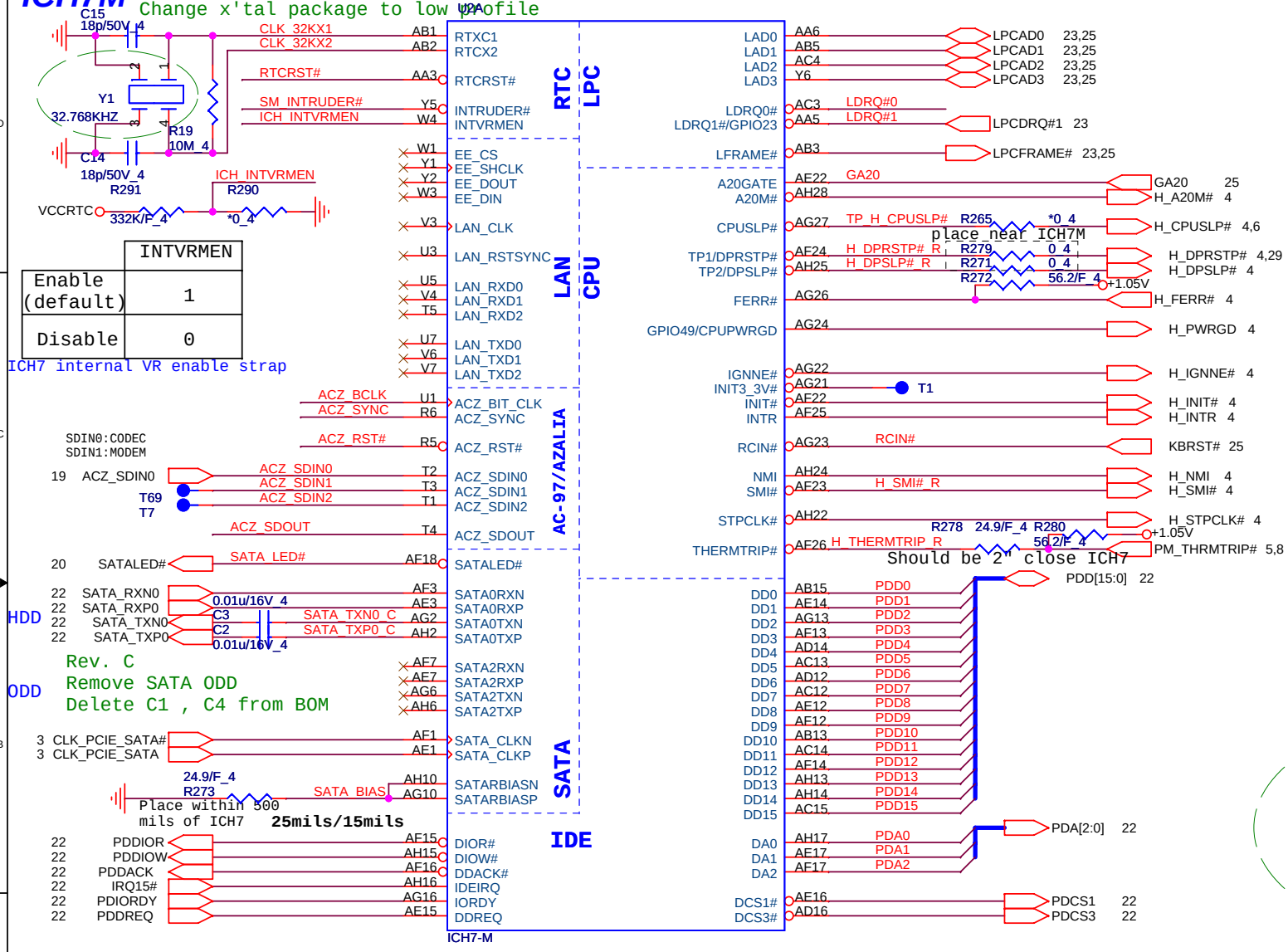
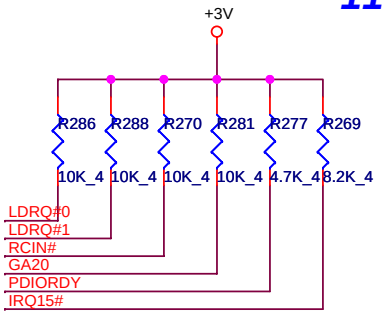
ICH7M

Rev. C
Change x'tal package to low profile

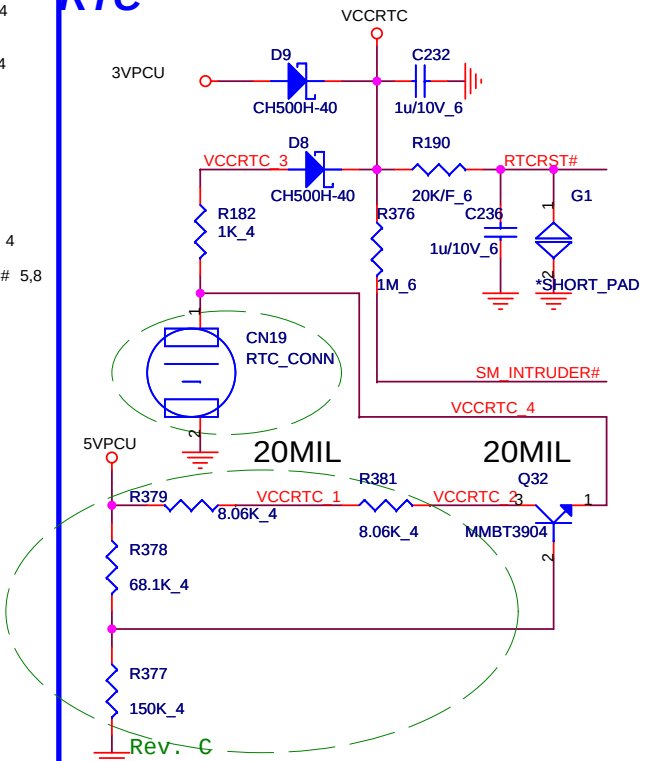


Pull-UP

11



RTC



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

ACZ_SDOUT R307 39_4 ACZ_SDOUT_AUDIO 19
ACZ_SYNC R311 39_4 ACZ_SYNC_AUDIO 19
ACZ_RST# R29 39_4 ACZ_RESET#_AUDIO 19
ACZ_BCLK R24 39_4 ACZ_BITCLK_AUDIO 19

C27 *10p/50V_4 C372 *10p/50V_4 C373 *10p/50V_4

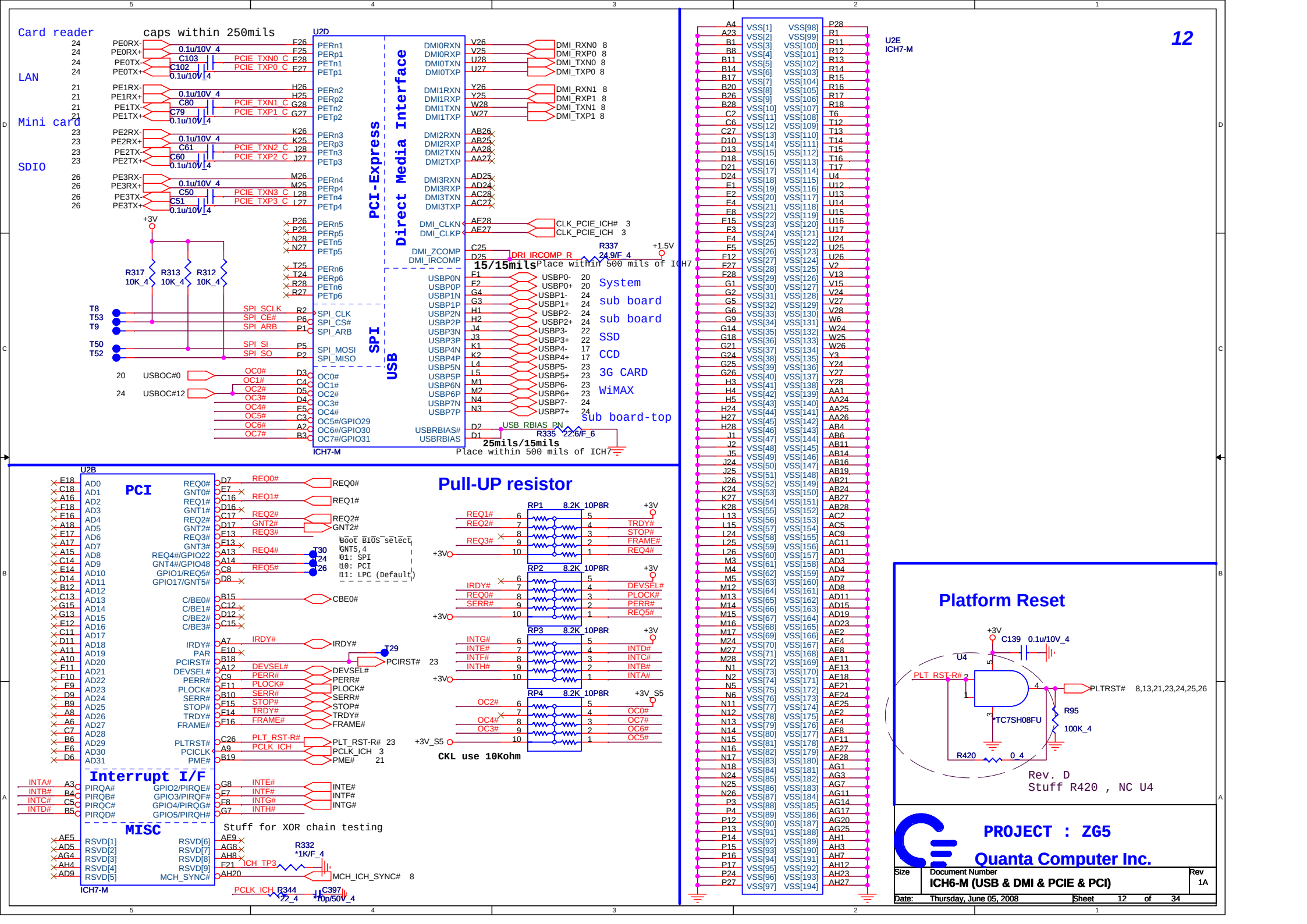
Rev. B
Remove MDC components-
R303 , R306 , R41 , R21

COMPONENTS	P/N
945GM	AJSL8Z20T25
ICH7-M	AJSL8YB0T21

PROJECT : ZG5

Quanta Computer Inc.

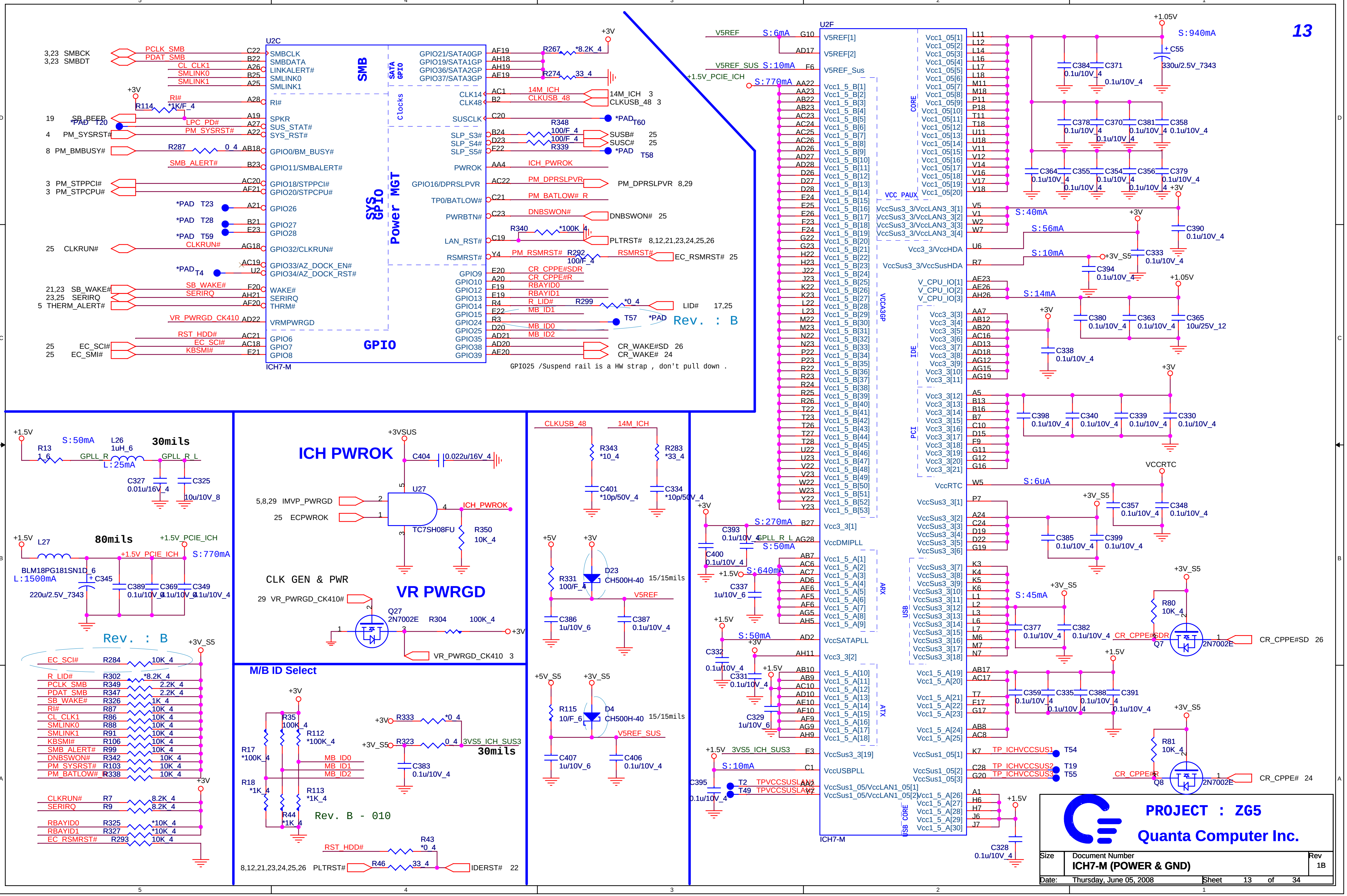
Size	Document Number	Rev
	ICH7-M (CPU, SATA, IDE,LPC)	1A
Date: Thursday, June 05, 2008	Sheet 11 of 34	

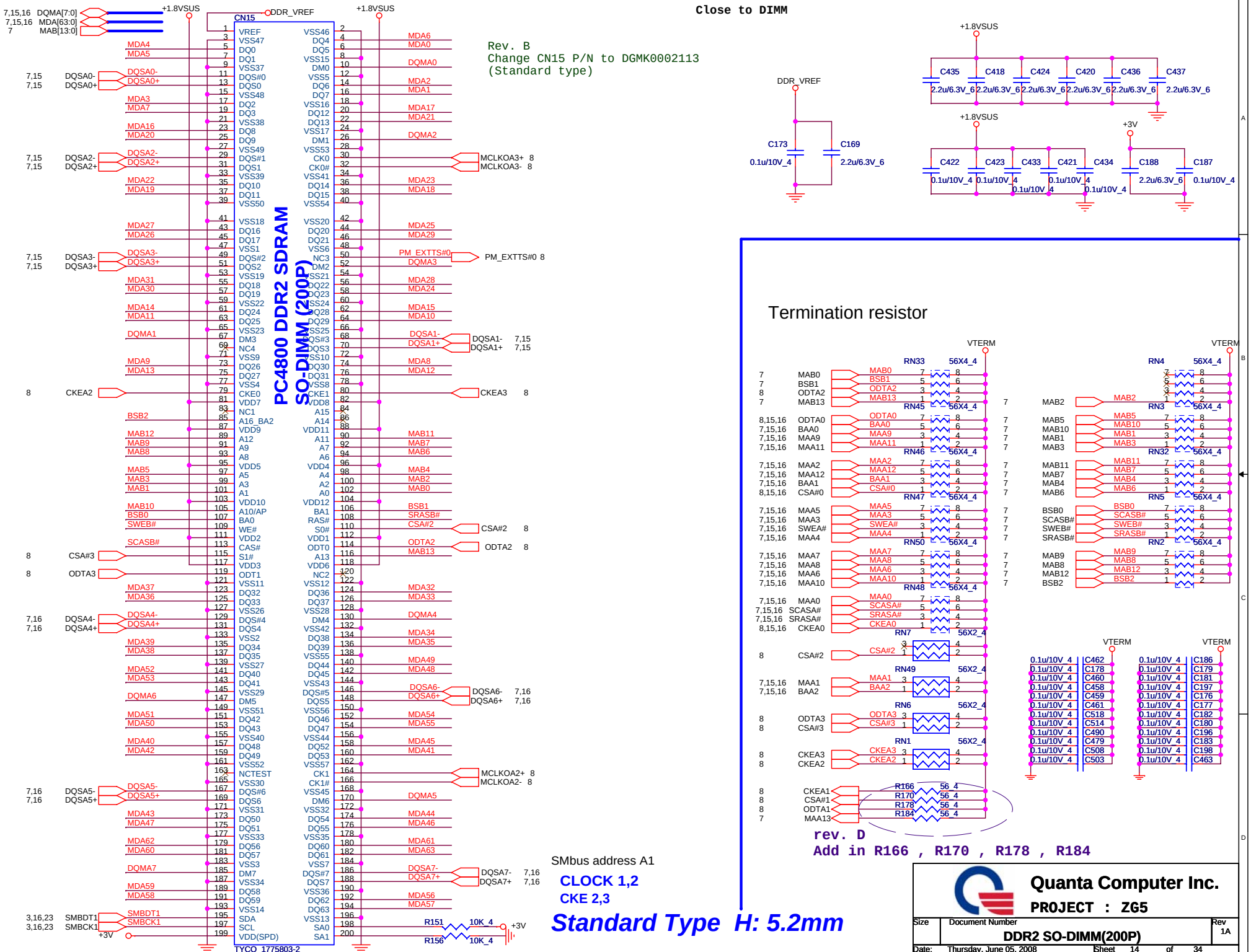


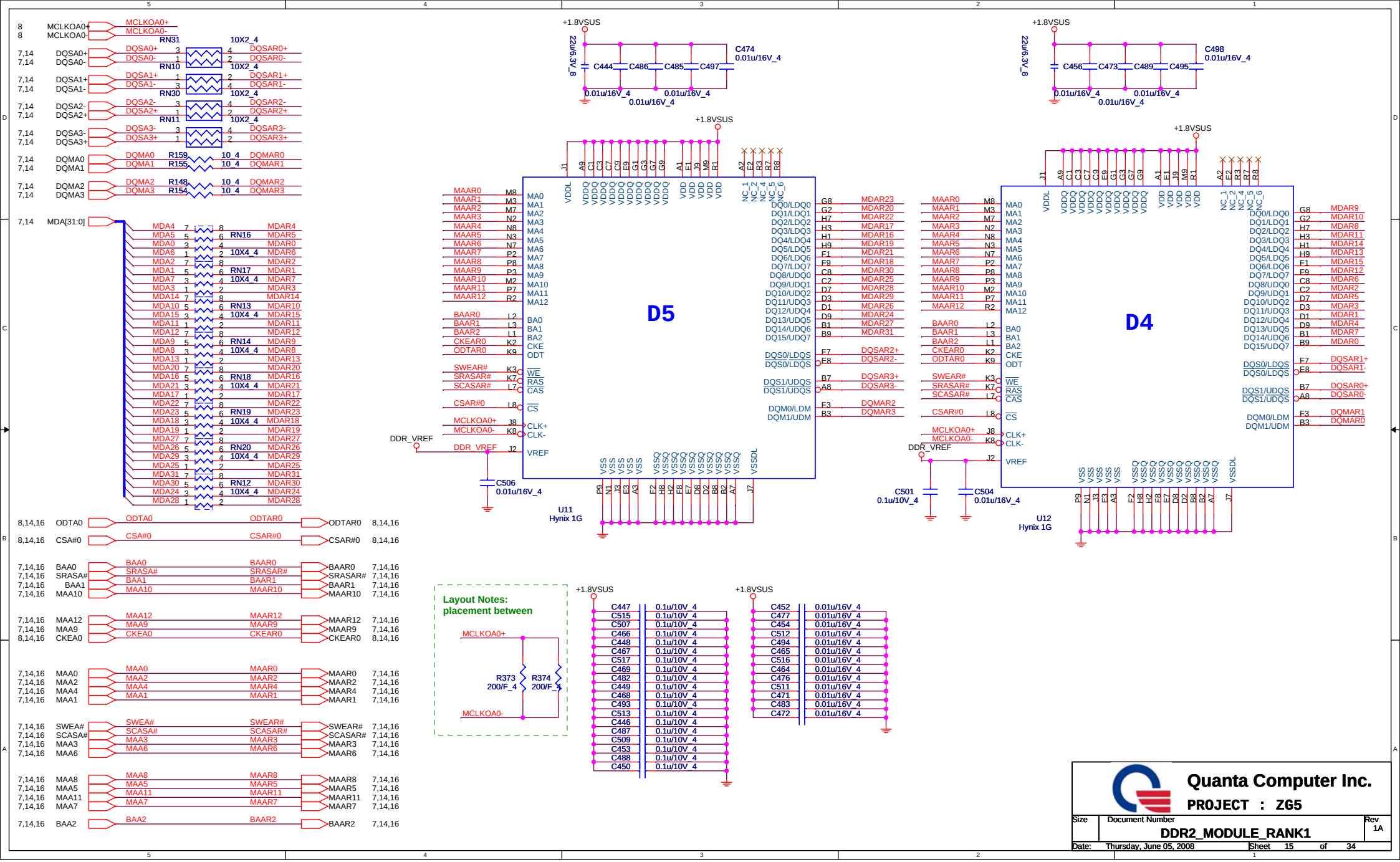
PROJECT : ZG5

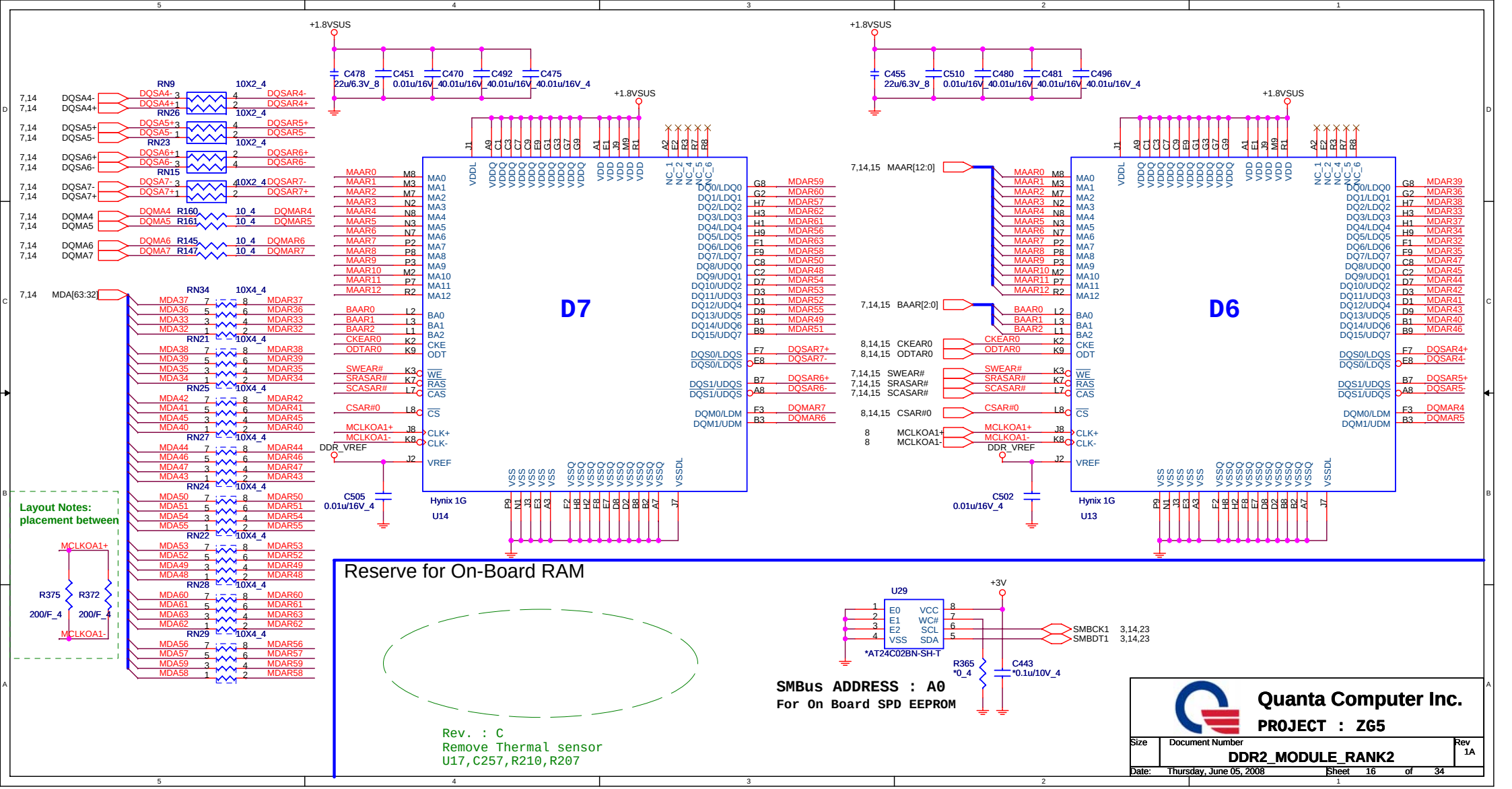
Quanta Computer Inc.

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

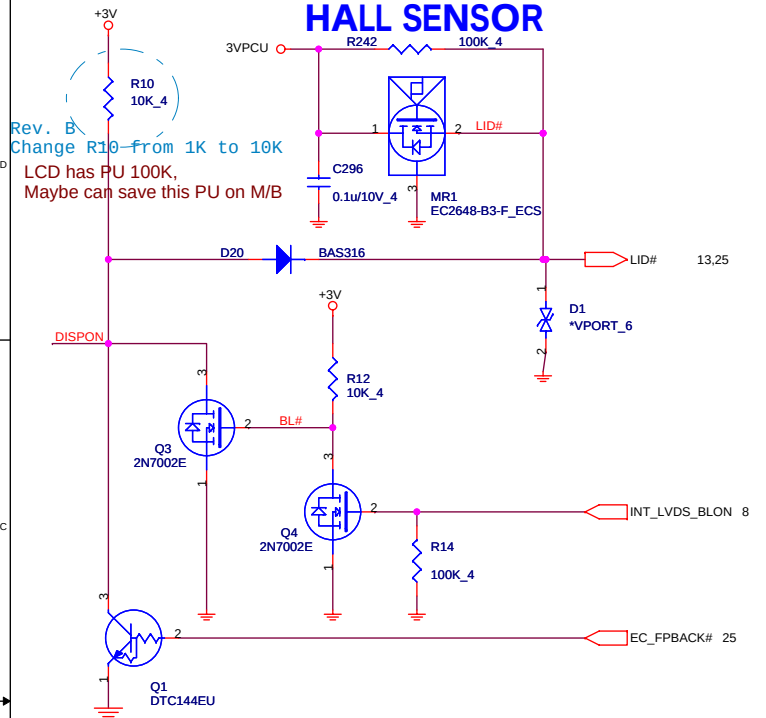

13
U2C
SMB
GPIO
SYS GPIO
Power MGT
Clocks
ICH7-M
GPIO25 /Suspend rail is a HW strap , don't pull down .
Rev. : B
U2F
ICH7-M
S:940mA
ICH PWROK
TC7SH08FU
CLK GEN & PWR
VR PWRGD
M/B ID Select
Rev. : B
Rev. B - 010
30mils
80mils
PROJECT : ZG5
Quanta Computer Inc.
Size
Document Number
ICH7-M (POWER & GND)
Rev
1B
Date: Thursday, June 05, 2008
Sheet 13 of 34


Close to DIMM
Rev. B
Change CN15 P/N to DGMK0002113
(Standard type)
CN15
PC4800 DDR2 SDRAM
SO-DIMM (200P)
TYCO_1775803-2
DDR_VREF
+1.8VSUS
+3V
C435 C418 C424 C420 C436 C437
2.2u/6.3V_6
C422 C423 C433 C421 C434 C188 C187
0.1u/10V_4
C173 C169
Termination resistor
VTERM
RN33 RN4 RN45 RN3 RN46 RN32 RN47 RN5 RN50 RN2 RN48 RN7 RN49 RN6 RN1
56X4_4 56X2_4
R166 R170 R178 R184 56_4
rev. D
Add in R166 , R170 , R178 , R184
SMbus address A1
CLOCK 1,2
CKE 2,3
Standard Type H: 5.2mm
R151 R156 10K_4
Quanta Computer Inc.
PROJECT : ZG5
Size
Document Number
DDR2 SO-DIMM(200P)
Rev 1A
Date: Thursday, June 05, 2008
Sheet 14 of 34

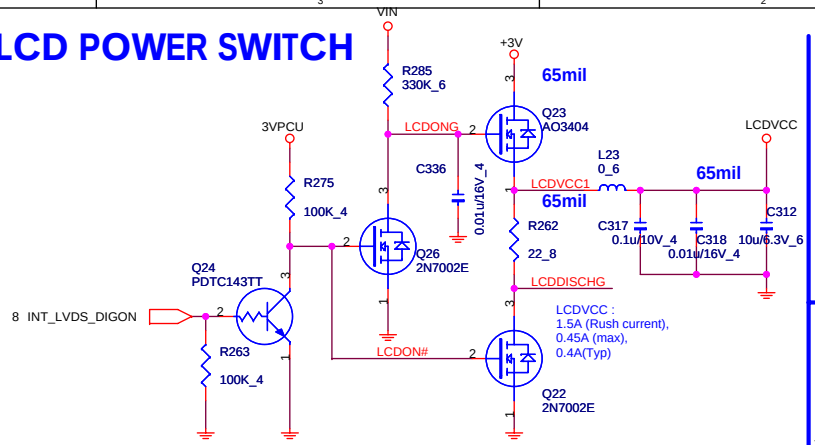

D5
D4
U11
Hynix 1G
U12
Hynix 1G
+1.8VSUS
DDR_VREF
Layout Notes:
placement between
R373
200/F_4
R374
200/F_4
Quanta Computer Inc.
PROJECT : ZG5
Size
Document Number
DDR2_MODULE_RANK1
Rev
1A
Date: Thursday, June 05, 2008
Sheet 15 of 34


+1.8VSUS
C478 22u/6.3V_8
C451 0.01u/16V
C470 0.01u/16V
C492 0.01u/16V
C475 0.01u/16V_4
C455 22u/6.3V_8
C510 0.01u/16V
C480 0.01u/16V
C481 0.01u/16V
C496 0.01u/16V_4
RN9 10X2_4
RN26 10X2_4
RN23 10X2_4
RN15 10X2_4
DQSA4- DQSA4+ DQSAR4- DQSAR4+
DQSA5+ DQSA5- DQSAR5+ DQSAR5-
DQSA6+ DQSA6- DQSAR6+ DQSAR6-
DQSA7- DQSA7+ DQSAR7- DQSAR7+
DQMA4 R160 10_4 DQMAR4
DQMA5 R161 10_4 DQMAR5
DQMA6 R145 10_4 DQMAR6
DQMA7 R147 10_4 DQMAR7
MDA[63:32]
RN34 RN21 RN25 RN27 RN24 RN22 RN28 RN29 10X4_4
MDAR32 MDAR33 MDAR34 MDAR35 MDAR36 MDAR37 MDAR38 MDAR39
MDAR40 MDAR41 MDAR42 MDAR43 MDAR44 MDAR45 MDAR46 MDAR47
MDAR48 MDAR49 MDAR50 MDAR51 MDAR52 MDAR53 MDAR54 MDAR55
MDAR56 MDAR57 MDAR58 MDAR59 MDAR60 MDAR61 MDAR62 MDAR63
Layout Notes:
placement between
MCLKOA1+
MCLKOA1-
R375 200/F_4
R372 200/F_4
D7
D6
Hynix 1G
U14
U13
MAA[12:0]
BAA[2:0]
CKEAR0
ODTAR0
SWEAR#
SRASAR#
SCASAR#
CSAR#0
DDR_VREF
C505 0.01u/16V_4
C502 0.01u/16V_4
Reserve for On-Board RAM
U29
*AT24C02BN-SH-T
+3V
SMBCK1 3,14,23
SMBDT1 3,14,23
R365 *0_4
C443 *0.1u/10V_4
SMBus ADDRESS : A0
For On Board SPD EEPROM
Rev. : C
Remove Thermal sensor
U17,C257,R210,R207
Quanta Computer Inc.
PROJECT : ZG5
Size
Document Number
DDR2_MODULE_RANK2
Rev 1A
Date: Thursday, June 05, 2008
Sheet 16 of 34

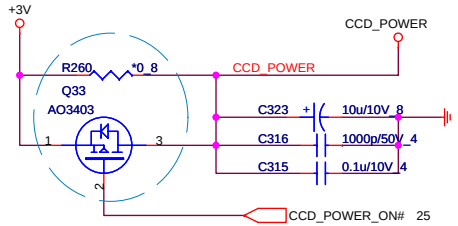
HALL SENSOR



LCD POWER SWITCH



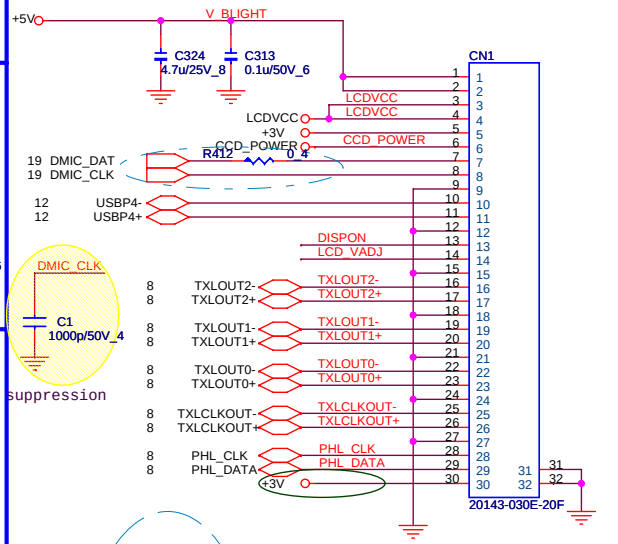
CAMERA POWER



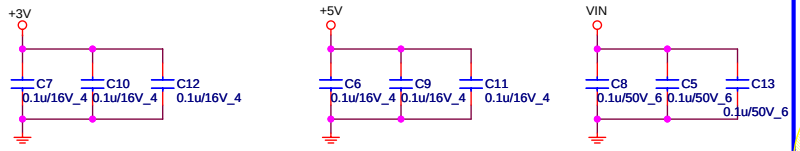
LCD MODULE

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

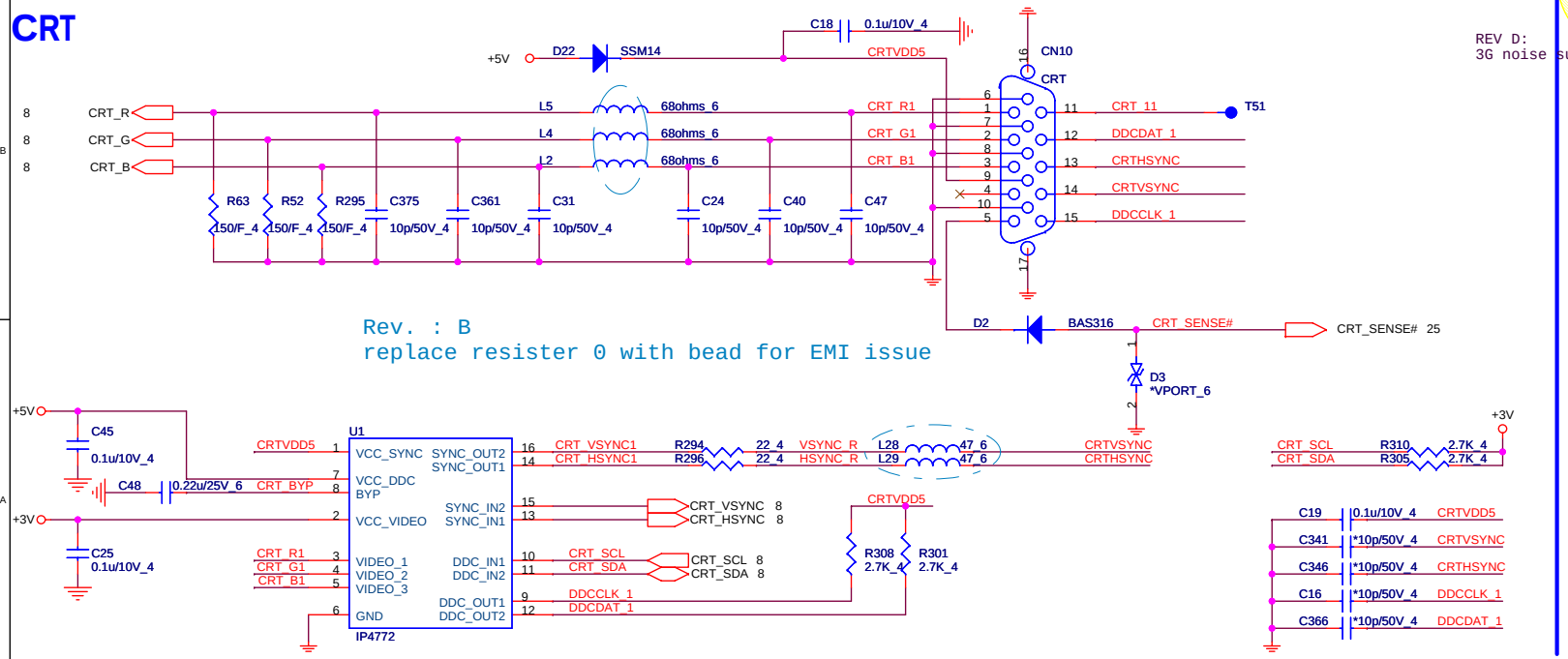
Rev. : B
Remove L25 , C321 , R261

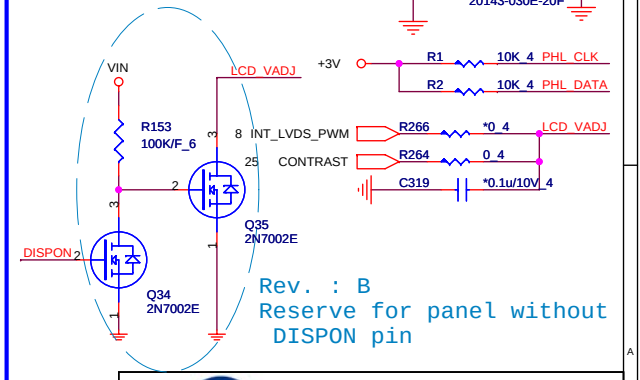


EMI reserve



CRT



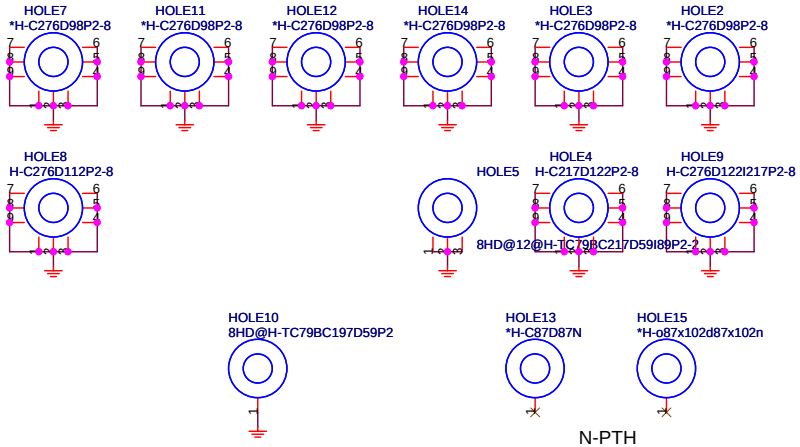


DMIC_CLK
C1 1000p/50V_4

REV D:
3G noise suppression

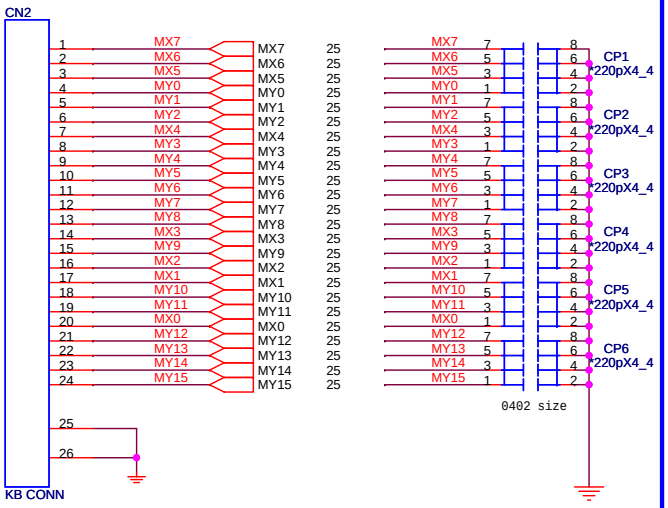
Quanta Computer Inc.		
PROJECT : ZG5		
Size	Document Number	Rev
	CRT/LVDS	1A
Date: Thursday, June 05, 2008	Sheet 17 of 34	

SCREW HOLE



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

KEYBOARD

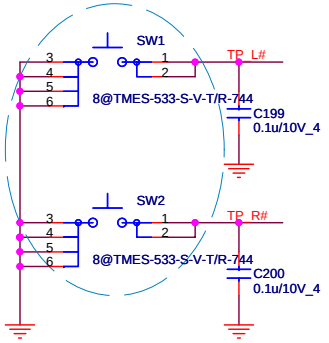


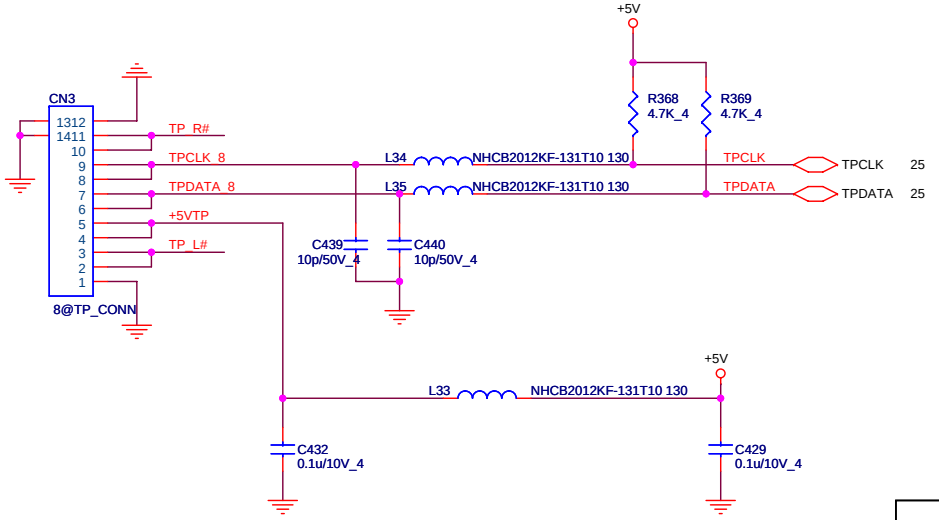
12" TOUCH PAD BOARD

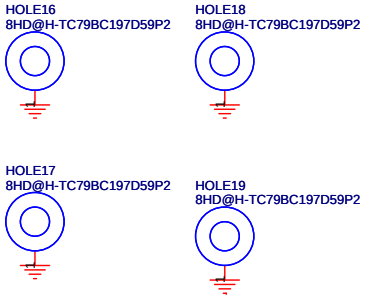
Rev. : B
Remove T/P conn.-CN4 , C210 , C206 , C207

MM20050ICI2 CF@ x 2, HD@ x 2, ODD@ x 2
SSD x 2
HDD x 2
12" x 4

8.9" TOUCH PAD CONNECTOR





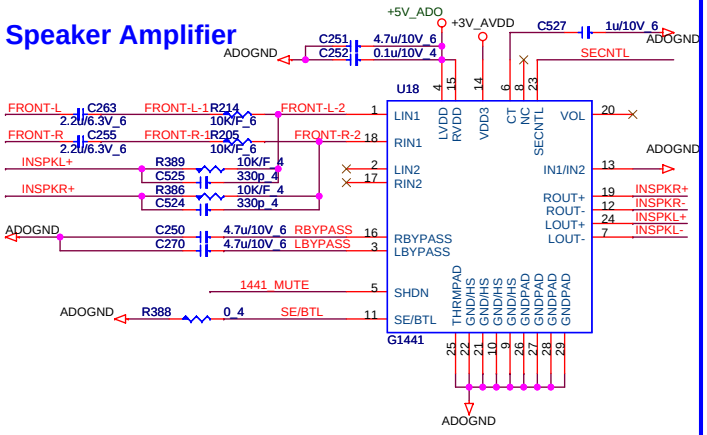


Rev. : B
Swap pin2 & 3 for touch pad function fail .

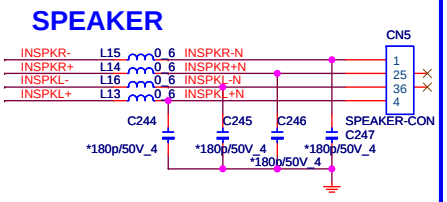
Rev. : C
SMT line suggest to change switch P/N

Quanta Computer Inc.		
PROJECT : ZG5		
Size	Document Number: KB/TP/HOLE	Rev 1A
Date: Thursday, June 05, 2008	Sheet 18 of 34	

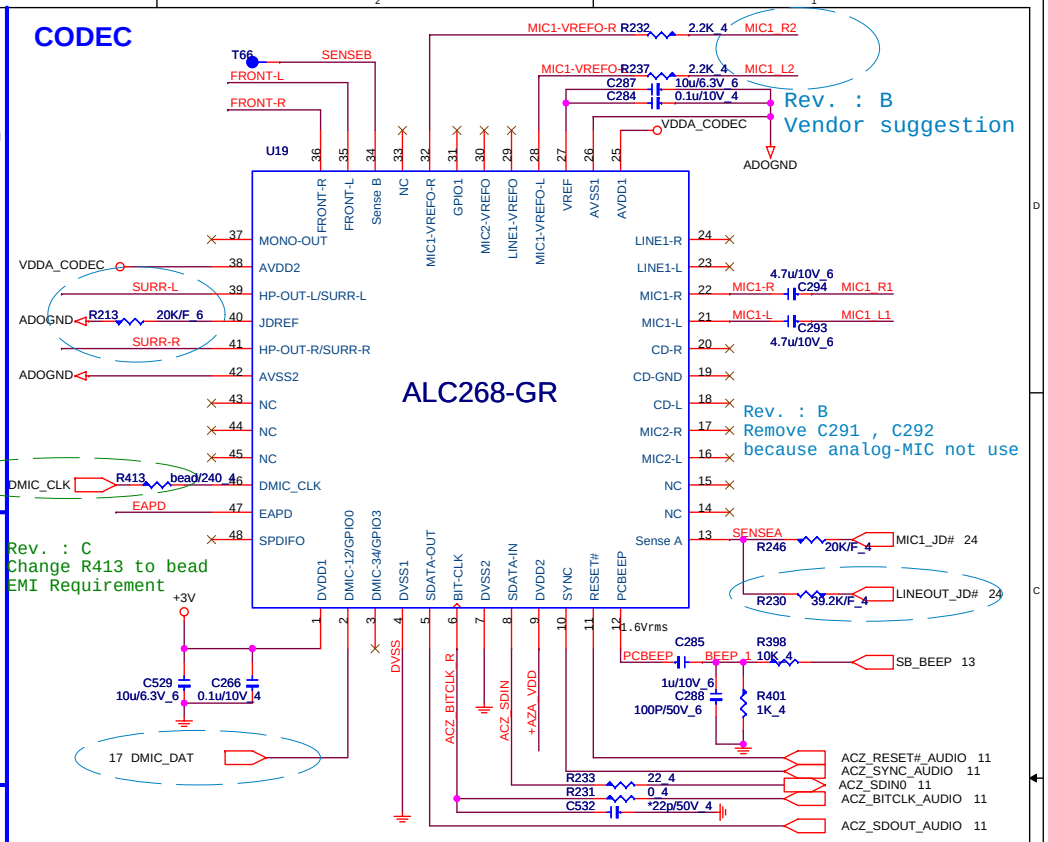
Speaker Amplifier



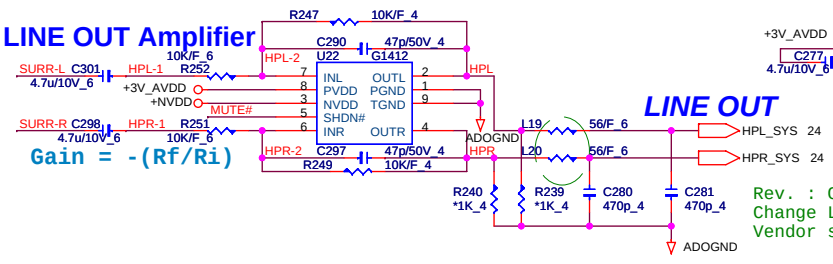
SPEAKER



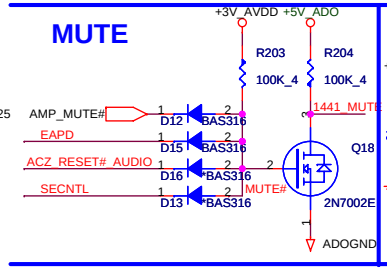
CODEC



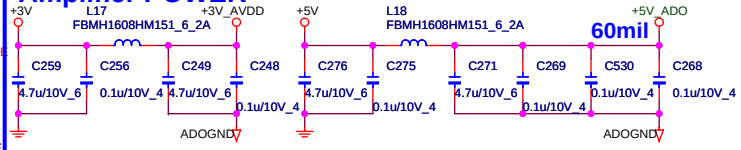
LINE OUT Amplifier



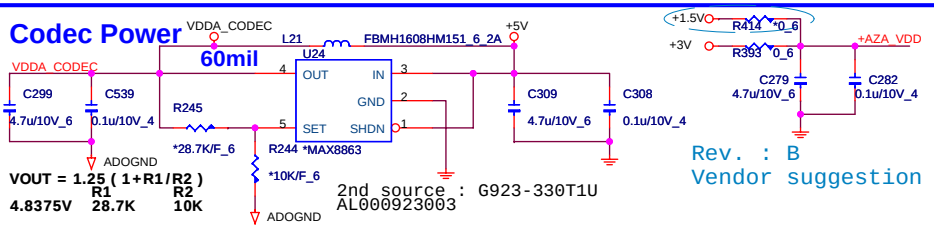
MUTE



Amplifier POWER



Codec Power

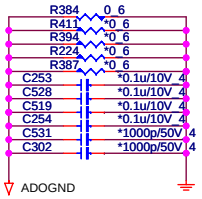


MDC

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

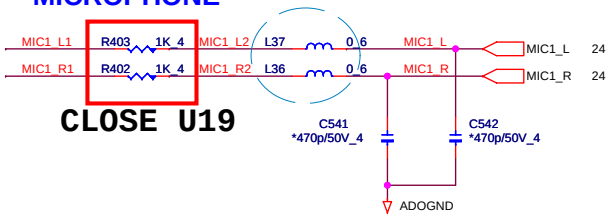
12.1" Audio Conn.

Rev. : B
Remove CN22 , CN20 , CN24 , R208 , R211 ,
R218 , R221 , R223 , R229 , C258 , C260 ,
C264 , C265 , C267 , C274 , R235 , R236 ,
R189 , C228 , C289



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

MICROPHONE



CLOSE U19

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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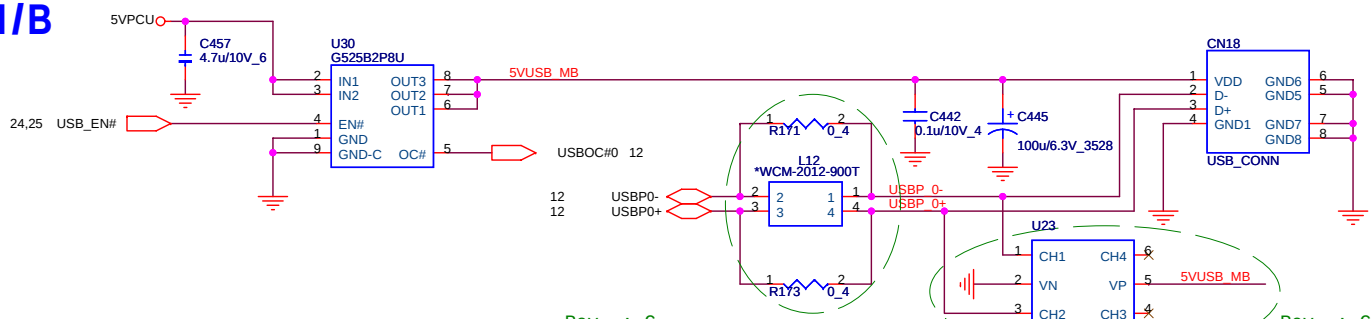
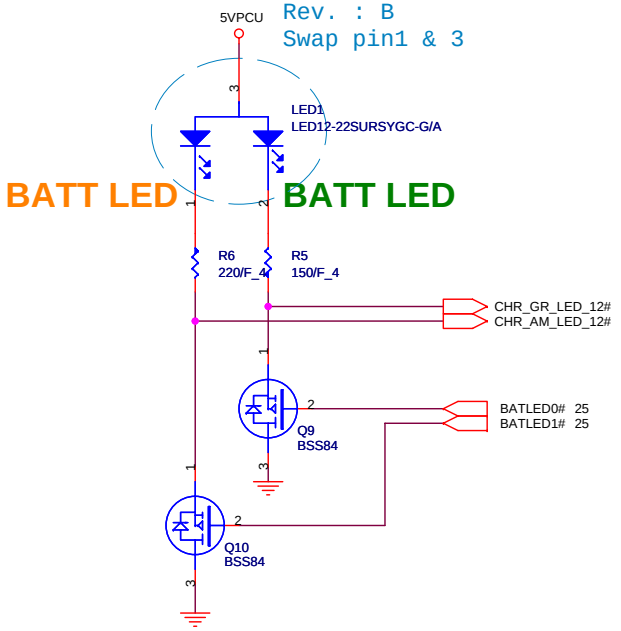
USB on M/B



Rev. : C
Change choke , resister size

Rev. : C
Add in ESD protector

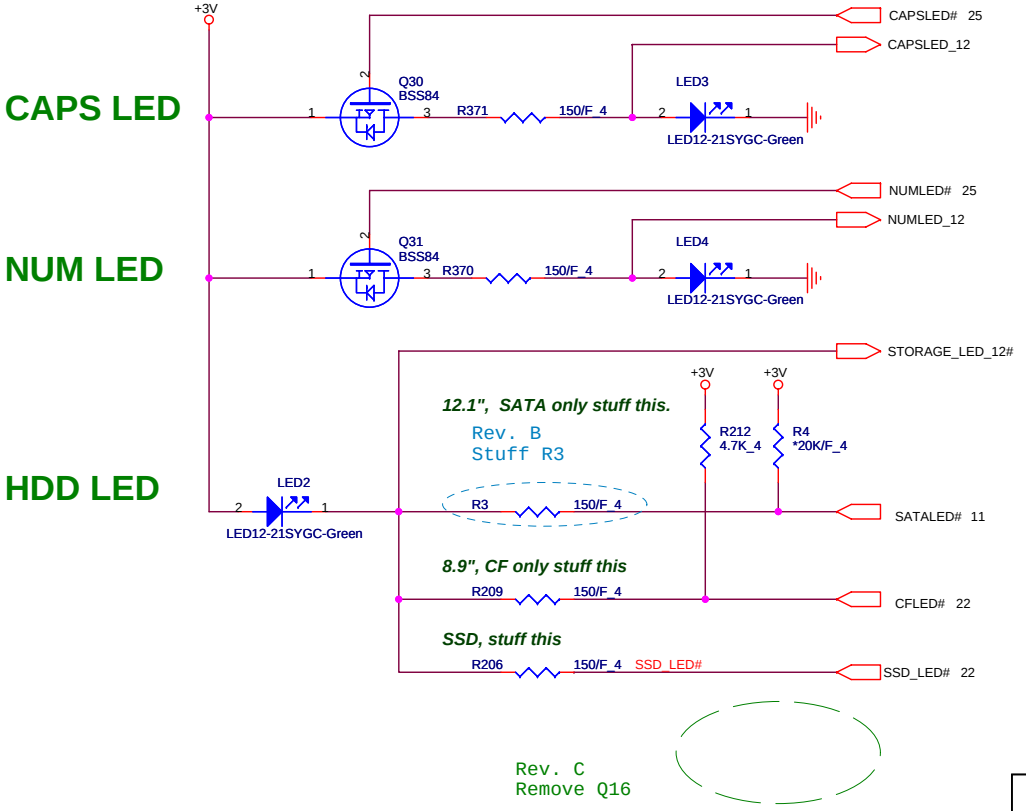
LED on M/B



Rev. : B
Swap pin1 & 3

BATT LED

BATT LED



Rev. C
Remove Q16

LED on Main Side:

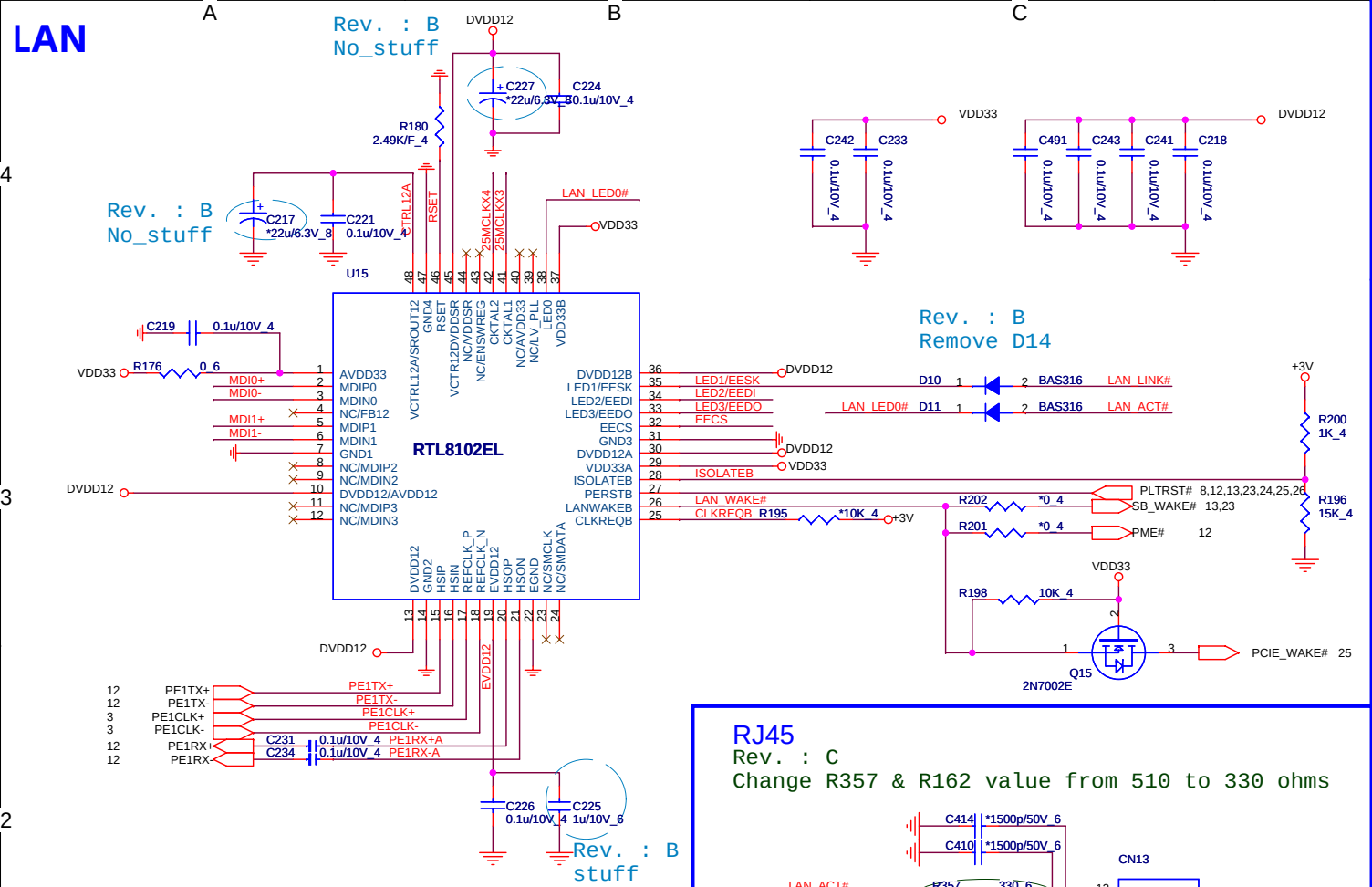
- ***Charger (Green/ Abler)***
- ***Storage HDD/ SSD/ Media (Gereen)***
- ***Caps (Green)***
- ***Num (Green)***

Quanta Computer Inc.

PROJECT : ZG3

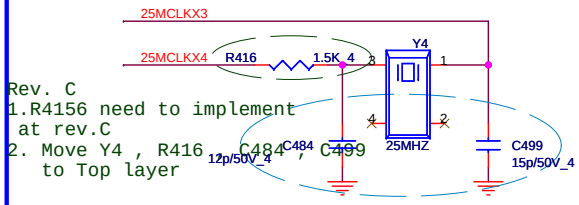
Size	Document Number	Rev
	USB on Board/LED	1A
Date: Thursday, June 05, 2008	Sheet 20 of 34	

LAN



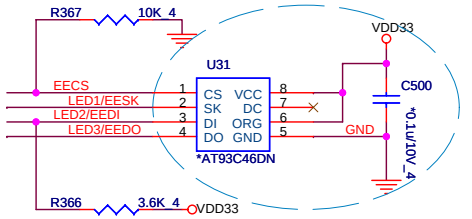
X'tal 25MHz

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



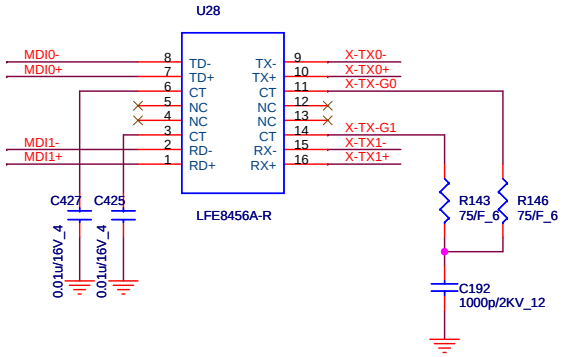
Rev. C
1.R4156 need to implement at rev.C
2. Move Y4 , R416 , C484 , C499 to Top layer

EEPROM



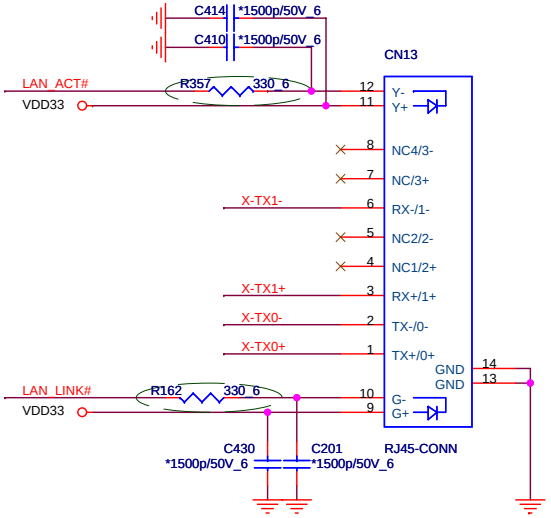
Rev. : B
No stuff U31 & C500
replaced by E-fuse in RTL8102E

10/100 Transformer

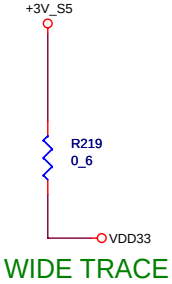


RJ45

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



LAN Power

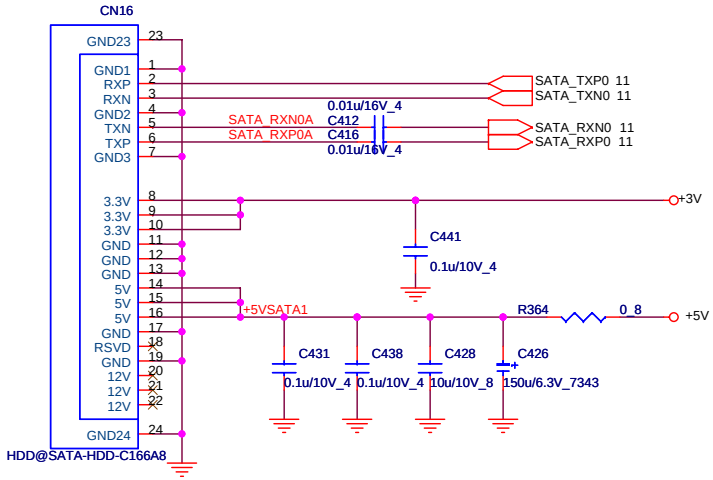


WIDE TRACE

Quanta Computer Inc.
PROJECT : ZG3

Size	Document Number	Rev
	LAN_RTL8102EL/RJ45	1A
Date: Thursday, June 05, 2008	Sheet 21 of 34	

SATA HDD

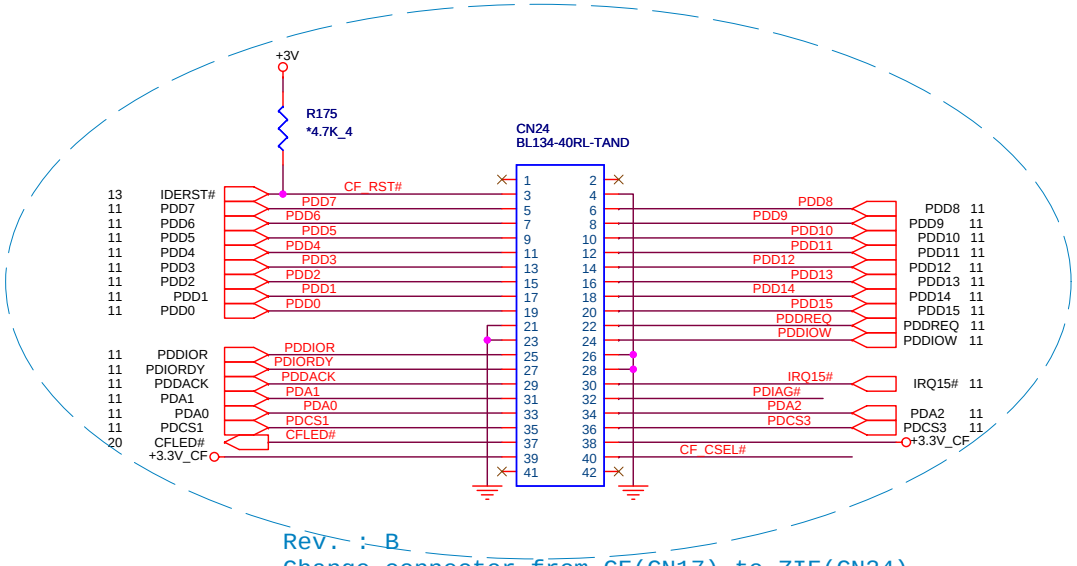


SATA ODD

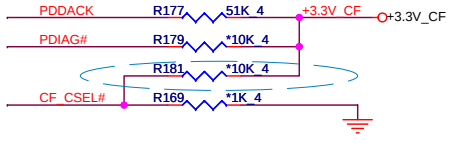
Rev. B
Remove R191 , C240 , C229 , C237 , C235 , C230

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

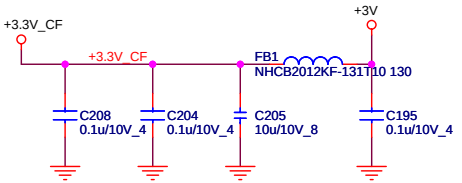
ZT4 card connector



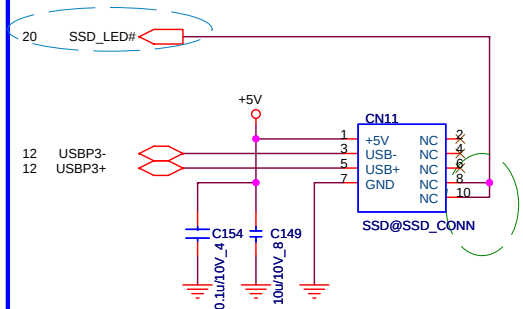
Rev. : B
Change connector from CF(CN17) to ZIF(CN24)
Change R172 from 33 to 0 ohms



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



SSD connector



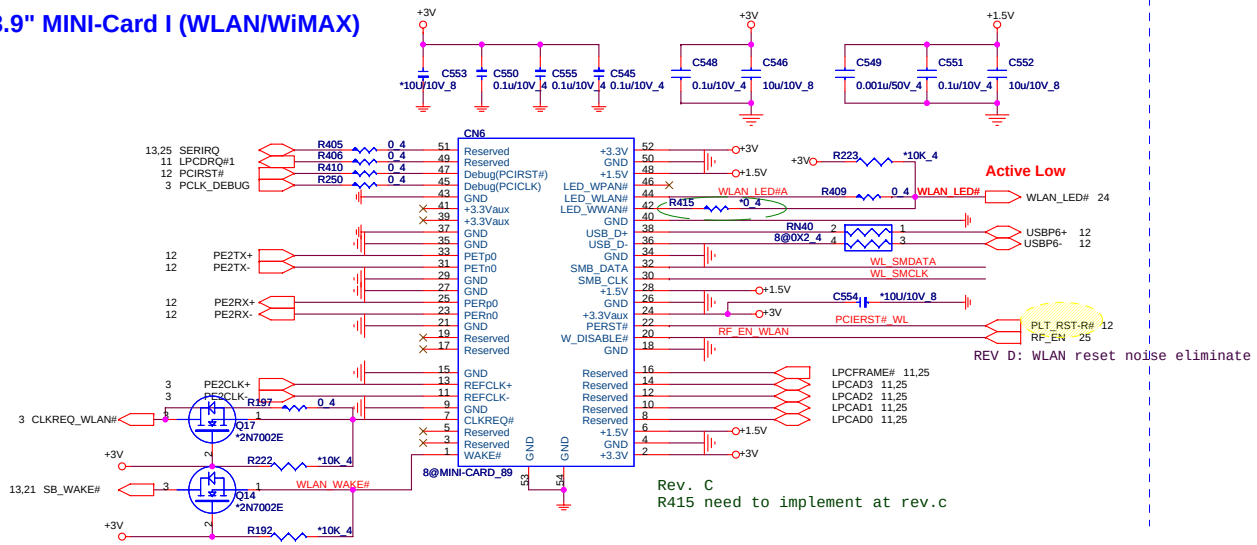
Rev. : C
Change pin 8 to low active

Rev. : B
pin8 for sandisk
pin10 for intel

Quanta Computer Inc.
PROJECT : ZG3

Size	Document Number	Rev
	SATA-HDD/ODD/CF/SSD	1A
Date: Thursday, June 05, 2008	Sheet 22 of 34	

8.9" MINI-Card I (WLAN/WiMAX)



Rev. C
R415 need to implement at rev.c

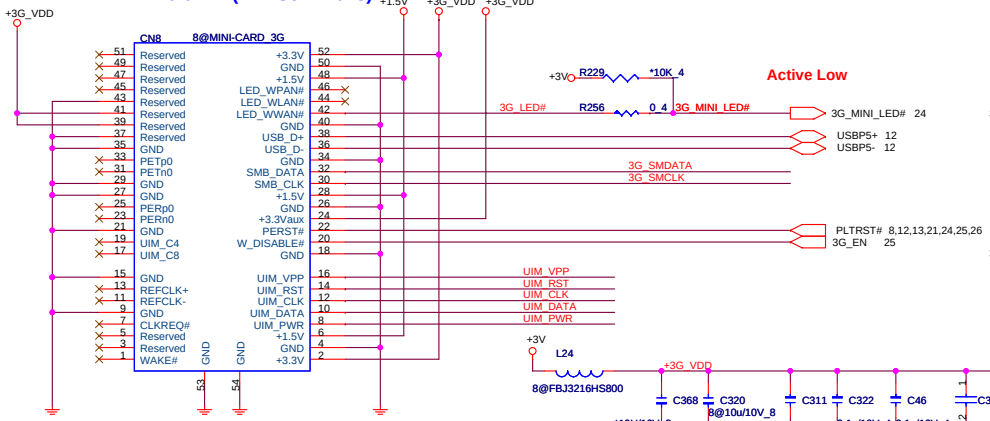
12.1" MINI-Card I (WLAN/ WiMAX)

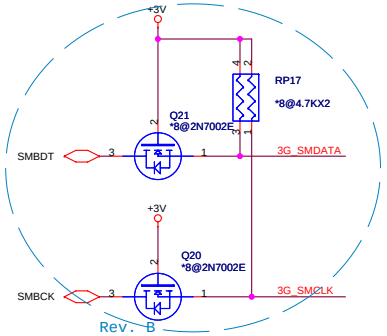
Rev. : B
Remove CN14 , RN38 , RN39 , RN36

REV D: WLAN reset noise eliminate

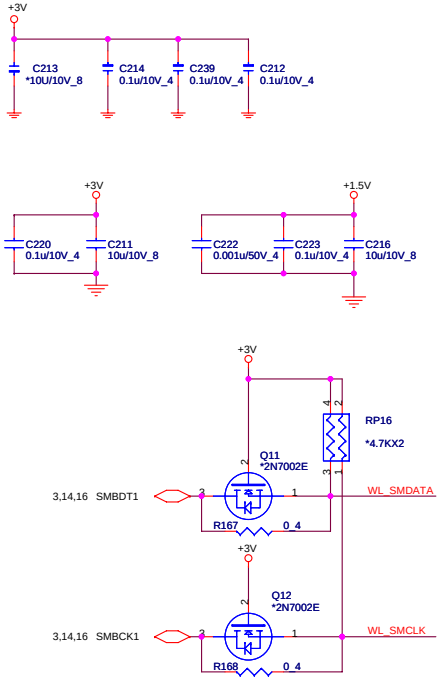
3G MINI CARD

8.9": 8mm (DFHD52MS065)
12.1": 9.9mm (DFHS52FR018)



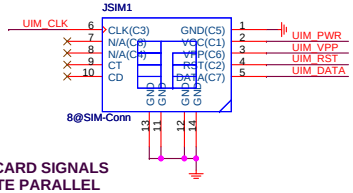


Rev. B
No stuff - RP17 , Q21 , Q20
Not used by 3G module

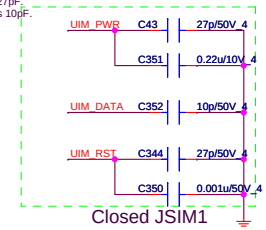


SIM CARD

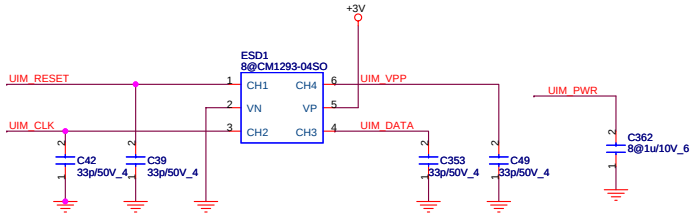
The value of the capacitor is suggest by Siemens HQ expert.
For against 900MHz RF interference. The value of capacitor is 27pF.
For against 1800MHz RF interference. The value of capacitor is 10pF.
1nF/10nF value capacitor use for against ESD purpose.



SIM CARD SIGNALS ROUTE PARALLEL



Closed JSIM1

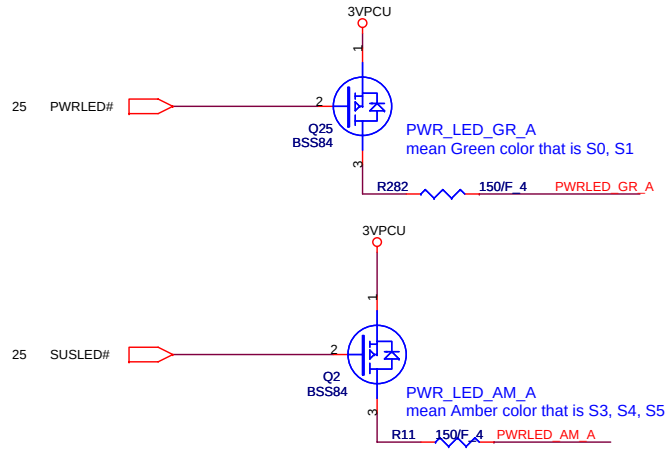


Quanta Computer Inc.
PROJECT : ZG5

Size	Document Number	Rev
	Mini-Card/WL/3G/SIM	1A
Date: Thursday, June 05, 2008	Sheet 23 of 34	

Rev. : B
Remove RN43 , RN44

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



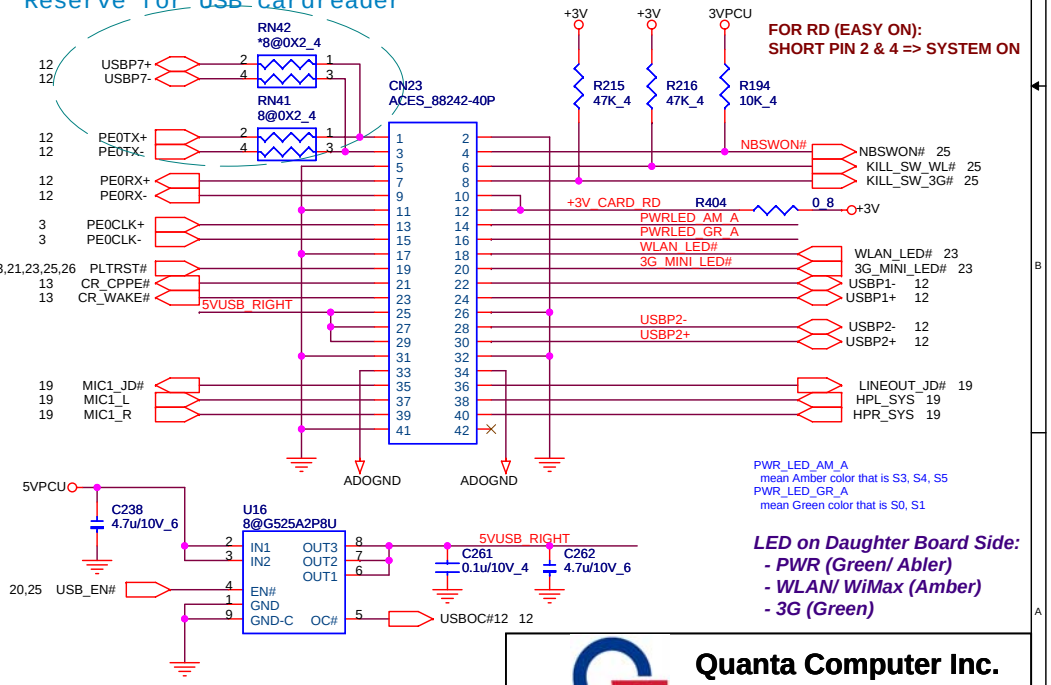
Rev. : B
Remove WLAN & 3G LED driving transister
(Q19 , Q13 , R241 , R178)

12"
USB/PWR BTN Board
USB/LED Board

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

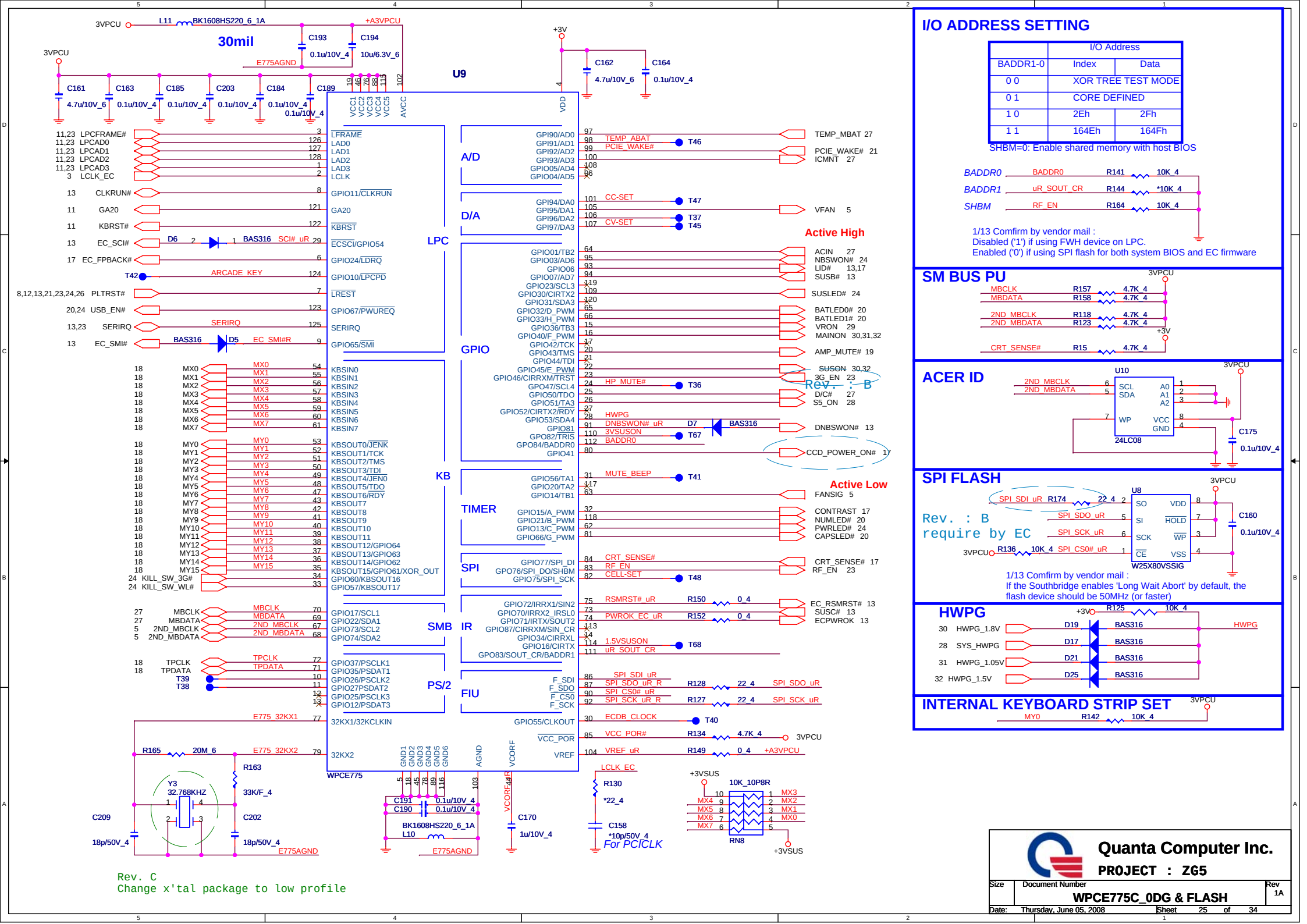
8.9"
Card-Reader / USB / Kill SW / POWER SW

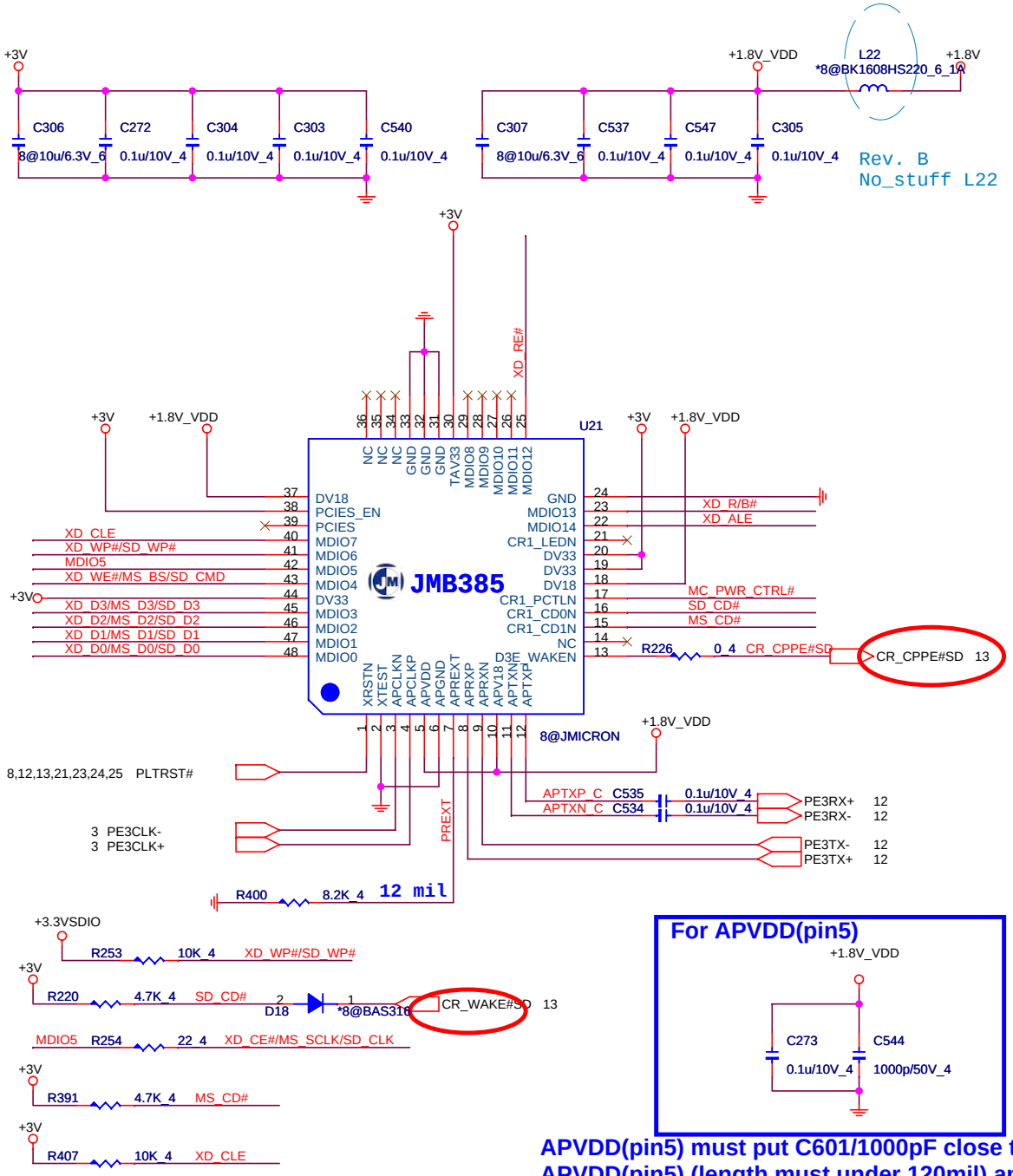
Rev. : B
Reserve for USB cardreader



Quanta Computer Inc.
PROJECT : ZG3

Size	Document Number	Rev
	PCIe-Cardreader/External-USB	1A
Date: Thursday, June 05, 2008	Sheet 24 of 34	

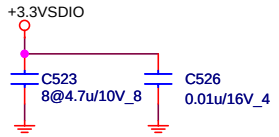

U9
WPCE775
LPC
A/D
D/A
GPIO
KB
TIMER
SPI
SMB
IR
PS/2
FIU
Active High
Active Low
Rev. : B
Rev. C
Change x'tal package to low profile
I/O ADDRESS SETTING
I/O Address
BADDR1-0
Index
Data
0 0
XOR TREE TEST MODE
0 1
CORE DEFINED
1 0
2Eh
2Fh
1 1
164Eh
164Fh
SHBM=0: Enable shared memory with host BIOS
BADDR0
BADDR1
SHBM
1/13 Comfirm 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
24LC08
SPI FLASH
W25X80VSSIG
Rev. : B
require by EC
1/13 Comfirm 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
Quanta Computer Inc.
PROJECT : ZG5
WPCE775C_0DG & FLASH
Rev 1A
Date: Thursday, June 05, 2008
Sheet 25 of 34



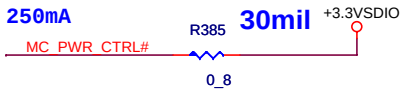
For APVDD(pin5)

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.

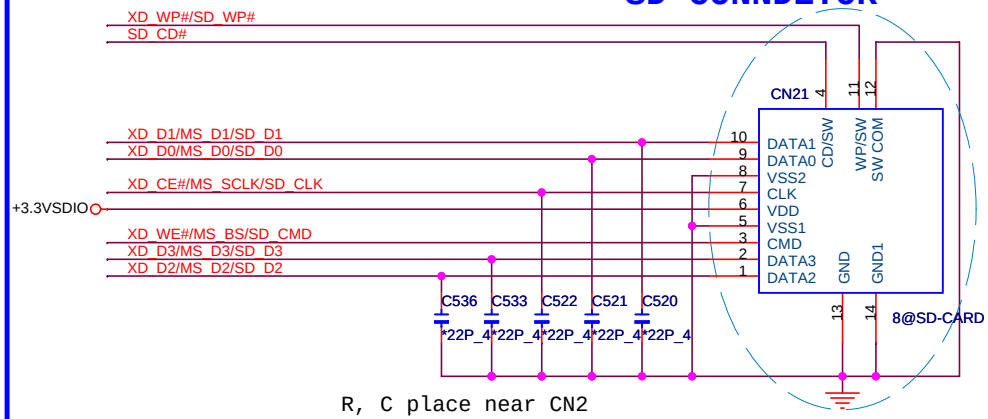
Memory Card Power Supply



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

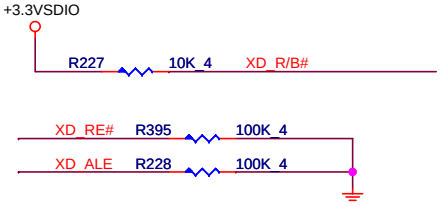


SD CONNDETOR



R, C place near CN2

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



Quanta Computer Inc.

PROJECT : ZG5

Size	Document Number	Rev
	JMB385 SIDO	1A
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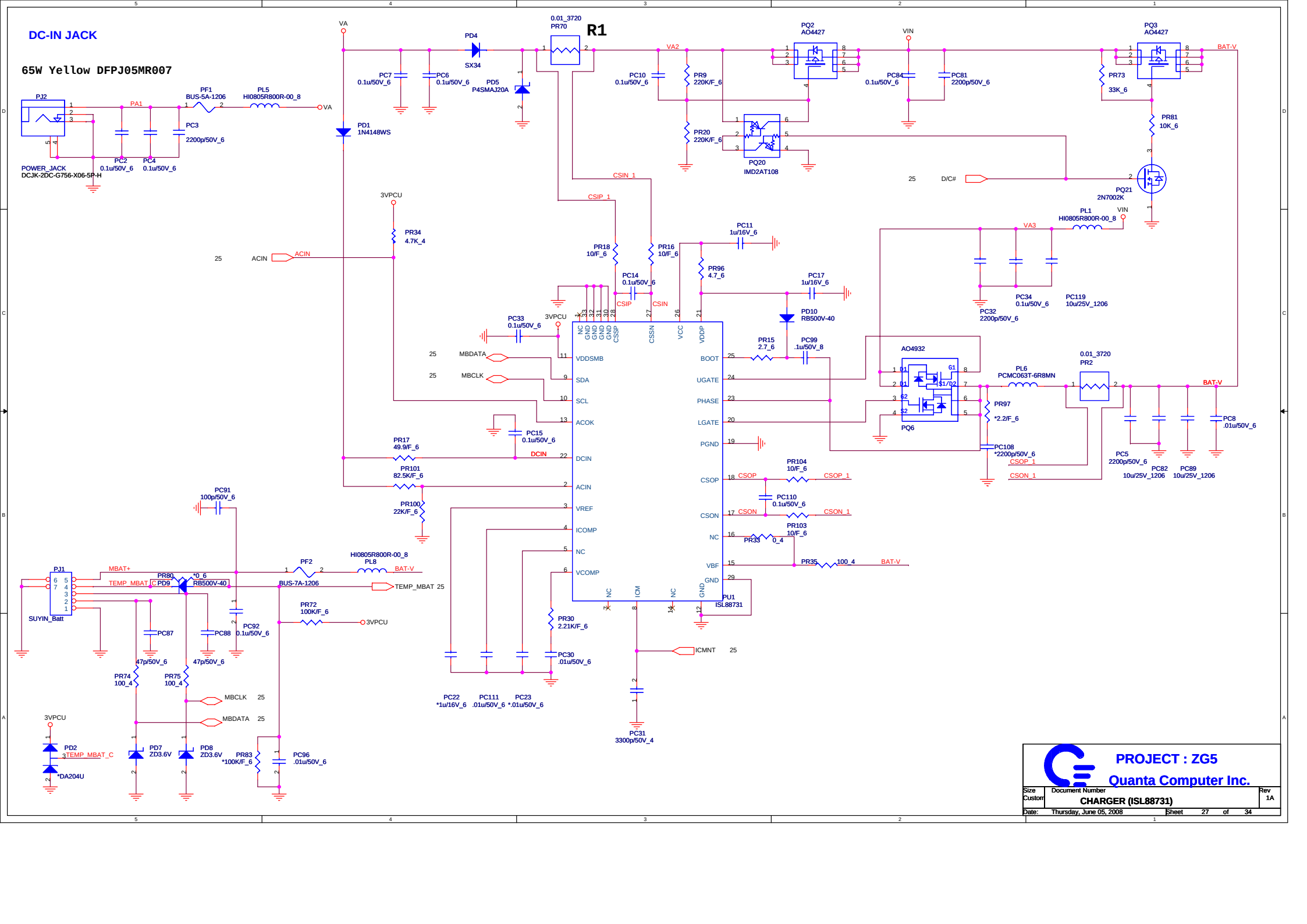
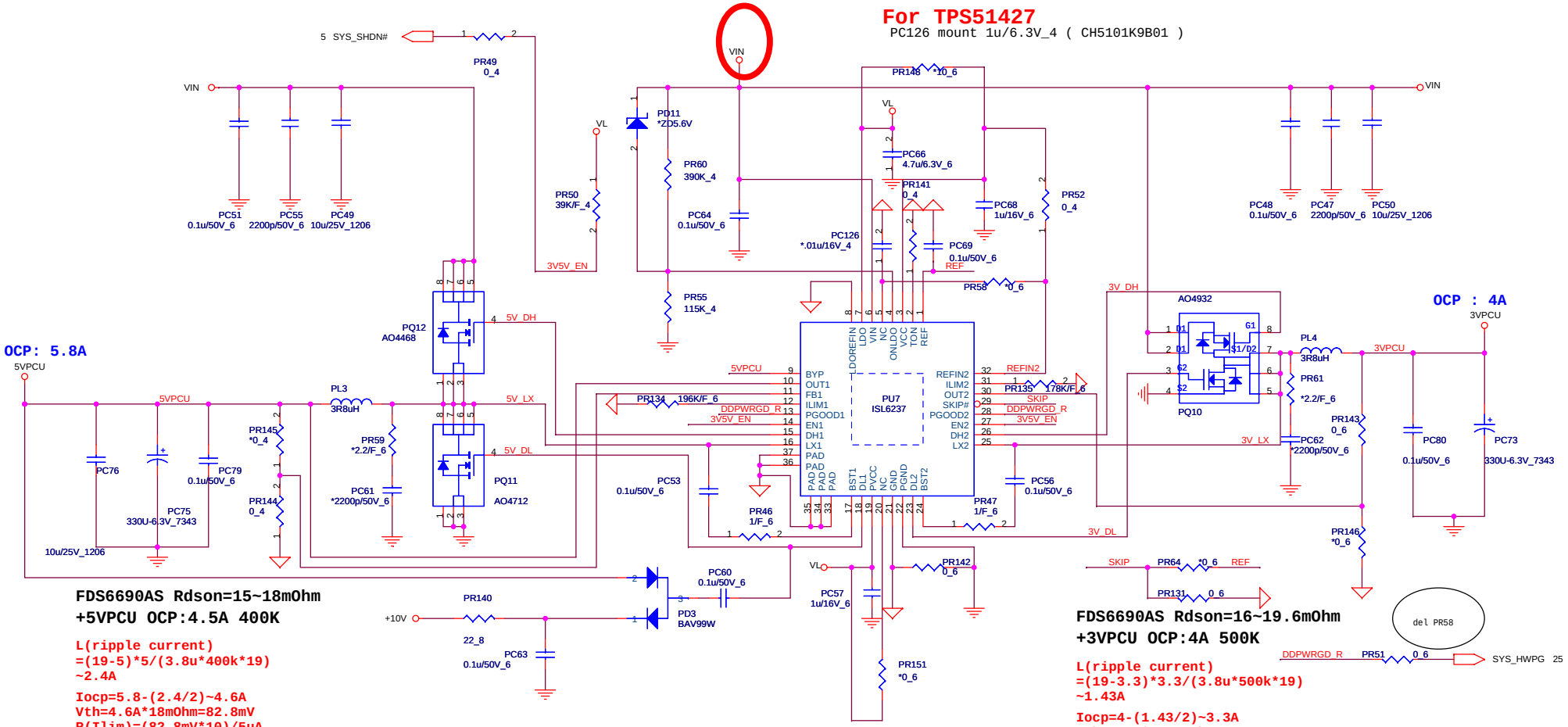

DC-IN JACK
65W Yellow DFPJ05MR007
R1
PROJECT : ZG5
Quanta Computer Inc.
CHARGER (ISL88731)
Size Custom
Document Number
Rev 1A
Date: Thursday, June 05, 2008
Sheet 27 of 34

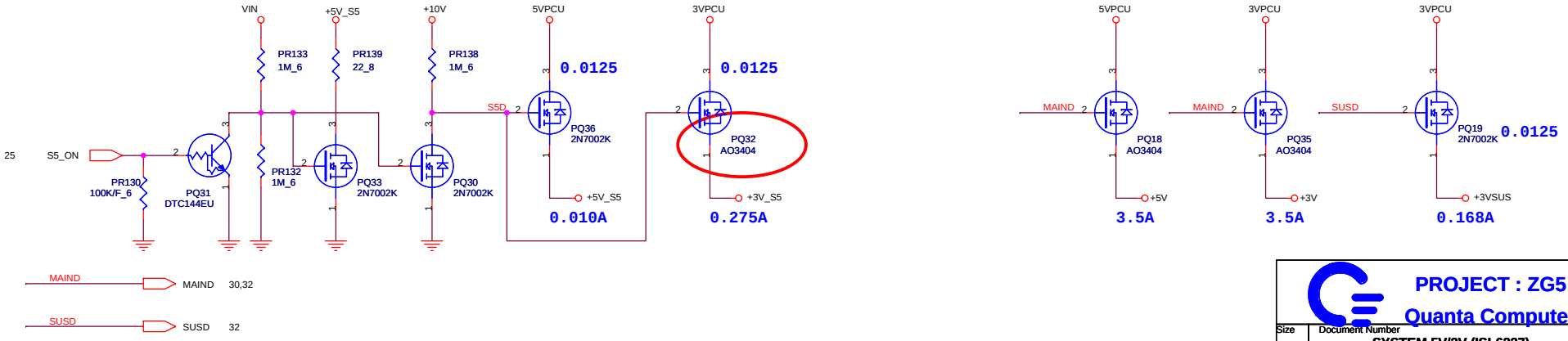
For MAX17101

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

For TPS51427

PC126 mount 1u/6.3V_4 (CH5101K9B01)





Project	PROJECT : ZG5
Company	Quanta Computer Inc.
Size	Document Number: SYSTEM 5V/3V (ISL6237)
Rev	1A
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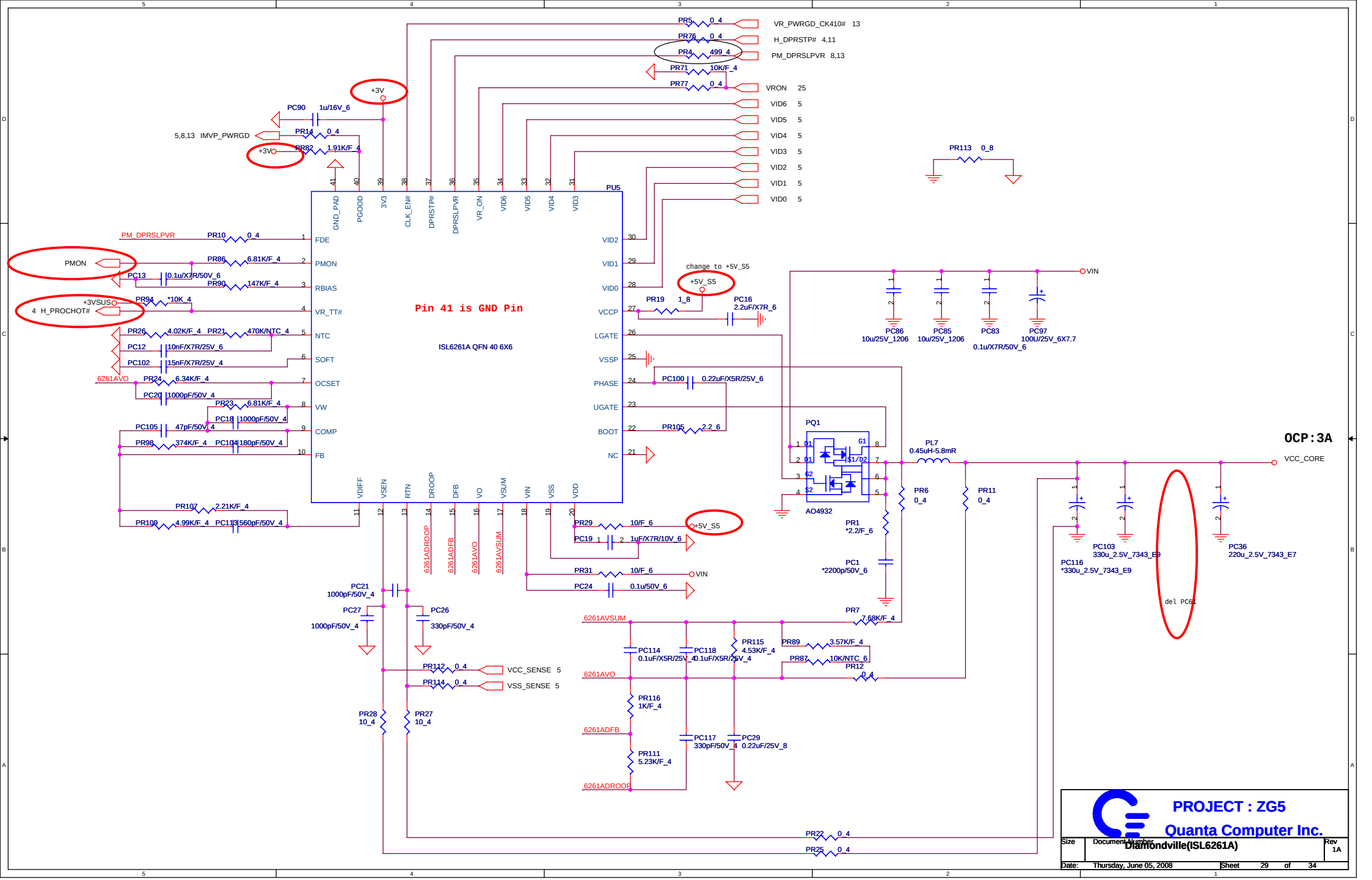
PR5 0_4
VR_PWRGD_CK410# 13
PR76 0_4
H_DPRSTP# 4,11
PR4 499_4
PM_DPRSLPVR 8,13
PR71 10K/F_4
PR77 0_4
VRON 25
VID6 5
VID5 5
VID4 5
VID3 5
VID2 5
VID1 5
VID0 5
+3V
PC90 1u/16V_6
5,8,13 IMVP_PWRGD
PR14 0_4
PR82 1.91K/F_4
PR113 0_8
PU5
GND_PAD
PGOOD
3V3
CLK_EN#
DPRSTP#
DPRSLPVR
VR_ON
VID6
VID5
VID4
VID3
PM_DPRSLPVR
PR10 0_4
FDE
PMON
PR86 6.81K/F_4
PC13 0.1u/X7R/50V_6
PR90 147K/F_4
RBIAS
+3VSUS
4 H_PROCHOT#
PR94 *10K_4
VR_TT#
PR26 4.02K/F_4
PR21 470K/NTC_4
NTC
PC12 10nF/X7R/25V_6
PC102 15nF/X7R/25V_4
SOFT
6261AVO
PR24 6.34K/F_4
PC20 1000pF/50V_4
OCSET
PR23 6.81K/F_4
PC18 1000pF/50V_4
VW
PC105 47pF/50V_4
PR98 374K/F_4
PC104 180pF/50V_4
COMP
FB
Pin 41 is GND Pin
ISL6261A QFN 40 6X6
VID2
VID1
VID0
change to +5V_S5
+5V_S5
PR19 1_8
PC16 2.2uF/X7R_6
VCCP
LGATE
VSSP
PHASE
PC100 0.22uF/X5R/25V_6
UGATE
BOOT
PR105 2.2_6
NC
VDIFF
VSEN
RTN
DROOP
DFB
VO
VSUM
VIN
VSS
VDD
PR107 2.21K/F_4
PR109 4.99K/F_4
PC113 560pF/50V_4
PR29 10/F_6
PC19 1uF/X7R/10V_6
+5V_S5
PR31 10/F_6
PC24 0.1u/50V_6
VIN
6261ADROOP
6261ADFB
6261AVO
6261AVSUM
PC21 1000pF/50V_4
PC27 1000pF/50V_4
PC26 330pF/50V_4
PR112 0_4
VCC_SENSE 5
PR114 0_4
VSS_SENSE 5
PR28 10_4
PR27 10_4
PQ1
AO4932
PL7 0.45uH-5.8mR
PR6 0_4
PR11 0_4
PR1 *2.2/F_6
PC1 *2200p/50V_6
PR7 7.68K/F_4
PR89 3.57K/F_4
PR87 10K/NTC_6
PR12 0_4
PC114 0.1uF/X5R/25V_4
PC118 0.1uF/X5R/25V_4
PR115 4.53K/F_4
PR116 1K/F_4
PC117 330pF/50V_4
PC29 0.22uF/25V_8
PR111 5.23K/F_4
PR22 0_4
PR25 0_4
VIN
PC86 10u/25V_1206
PC85 10u/25V_1206
PC83 0.1u/X7R/50V_6
PC97 100U/25V_6X7.7
OCP:3A
VCC_CORE
PC116 *330u_2.5V_7343_E9
PC103 330u_2.5V_7343_E9
PC36 220u_2.5V_7343_E7
del PC61
PROJECT : ZG5
Quanta Computer Inc.
Diamondville(ISL6261A)
Size
Document Number
Rev 1A
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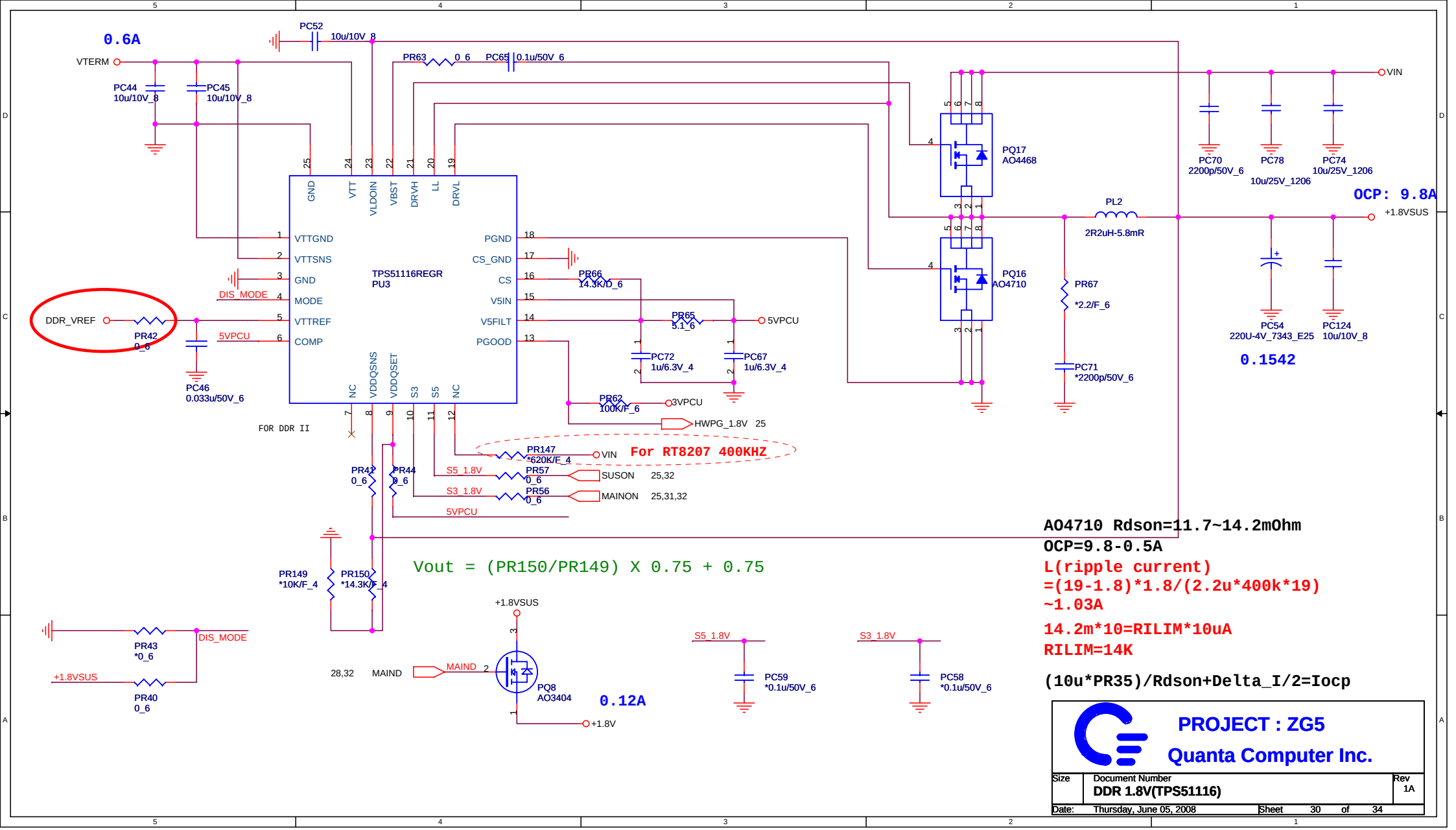
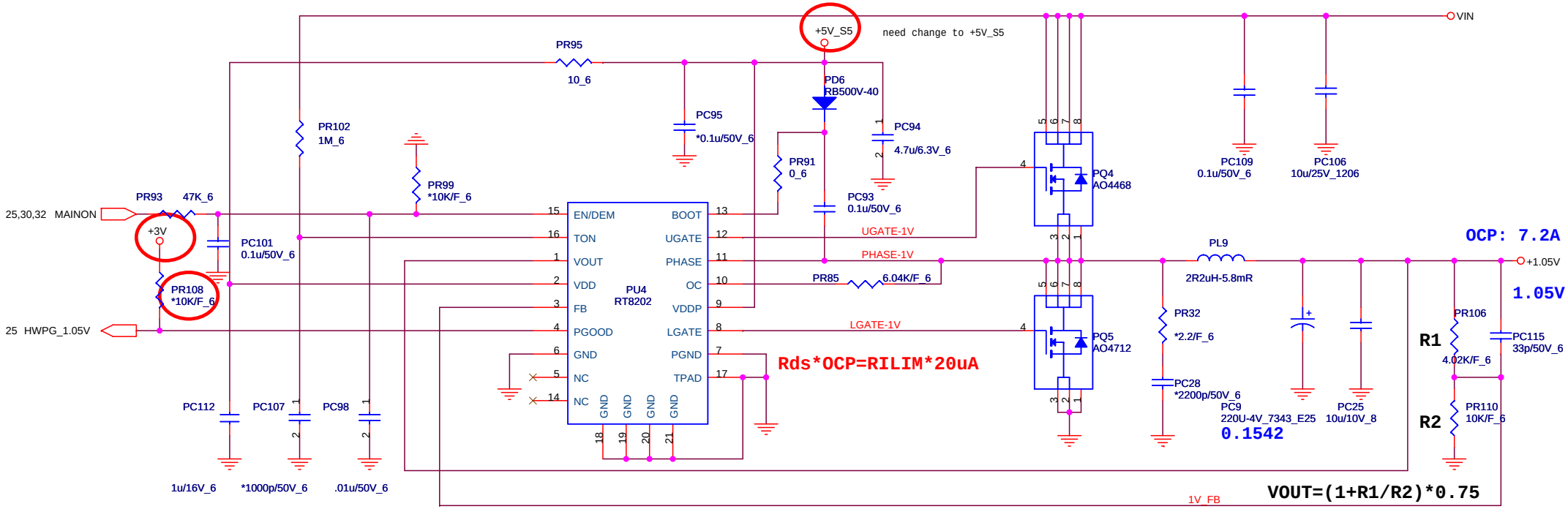

0.6A
PC52
10u/10V_8
VTERM
PC44
10u/10V_8
PC45
10u/10V_8
PR63
0_6
PC65
0.1u/50V_6
VIN
PC70
2200p/50V_6
PC78
10u/25V_1206
PC74
10u/25V_1206
OCP: 9.8A
+1.8VSUS
PQ17
AO4468
PQ16
AO4710
PL2
2R2uH-5.8mR
PR67
*2.2/F_6
PC71
*2200p/50V_6
PC54
220U-4V_7343_E25
PC124
10u/10V_8
0.1542
TPS51116REGR
PU3
GND
VTT
VLDOIN
VBST
DRVH
LL
DRVL
VTTGND
VTTSNS
GND
MODE
VTTREF
COMP
PGND
CS_GND
CS
V5IN
V5FILT
PGOOD
NC
VDDQSNS
VDDQSET
S3
S5
NC
DDR_VREF
PR42
0_6
PC46
0.033u/50V_6
DIS_MODE
5VPCU
PR66
14.3K/D_6
PR65
5.1_6
PC72
1u/6.3V_4
PC67
1u/6.3V_4
PR62
100K/F_6
3VPCU
HWPG_1.8V 25
FOR DDR II
PR147
*620K/F_4
VIN
For RT8207 400KHZ
PR42
0_6
PR44
0_6
S5_1.8V
PR57
0_6
SUSON 25,32
S3_1.8V
PR56
0_6
MAINON 25,31,32
5VPCU
Vout = (PR150/PR149) X 0.75 + 0.75
PR149
*10K/F_4
PR150
*14.3K/F_4
+1.8VSUS
PR43
*0_6
DIS_MODE
PR40
0_6
28,32 MAIND
MAIND
PQ8
AO3404
0.12A
+1.8V
S5_1.8V
PC59
*0.1u/50V_6
S3_1.8V
PC58
*0.1u/50V_6
AO4710 Rdson=11.7~14.2mOhm
OCP=9.8-0.5A
L(ripple current)
=(19-1.8)*1.8/(2.2u*400k*19)
~1.03A
14.2m*10=RILIM*10uA
RILIM=14K
(10u*PR35)/Rdson+Delta_I/2=Iocp
PROJECT : ZG5
Quanta Computer Inc.
Size
Document Number
DDR 1.8V(TPS51116)
Rev
1A
Date: Thursday, June 05, 2008
Sheet 30 of 34



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 Rdson=15~18mOhm

OCP=7.2-0.8A

L(ripple current)
=(19-1.05)*1.05/(2.2u*272k*19)
~1.63A

18m*7=RILIM*20uA

RILIM=6K(2.5~8K)

PROJECT : ZG5

Quanta Computer Inc.

Size	Document Number	Rev
	VCCP 1.05V(RT8202)	1A
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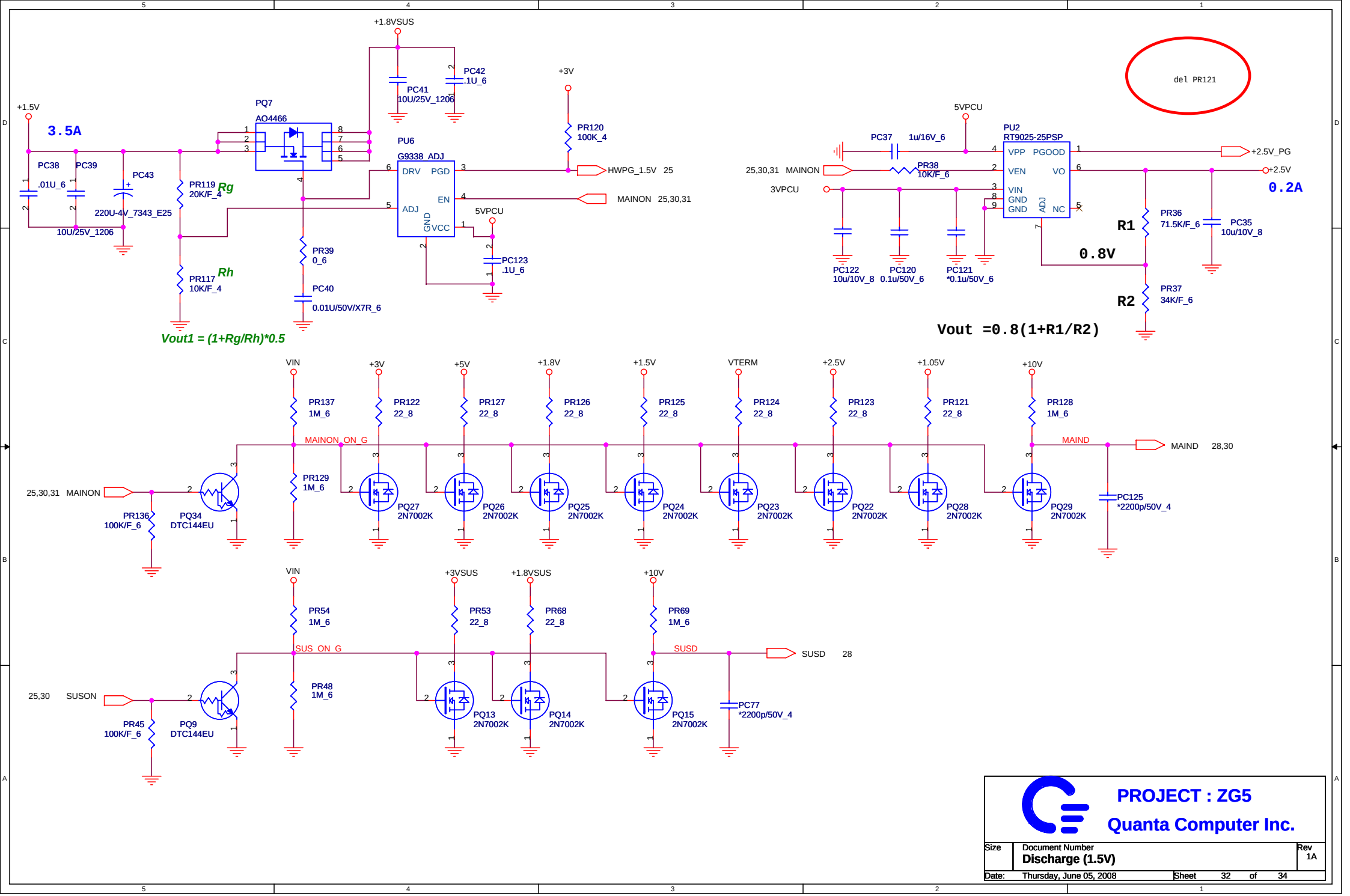

PROJECT : ZG5

Quanta Computer Inc.

Size	Document Number	Rev
	Discharge (1.5V)	1A
Date: Thursday, June 05, 2008	Sheet 32 of 34	

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

PROJECT : ZG5
Quanta Computer Inc.

Size	Document Number	Rev
	Power Change List	1A
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