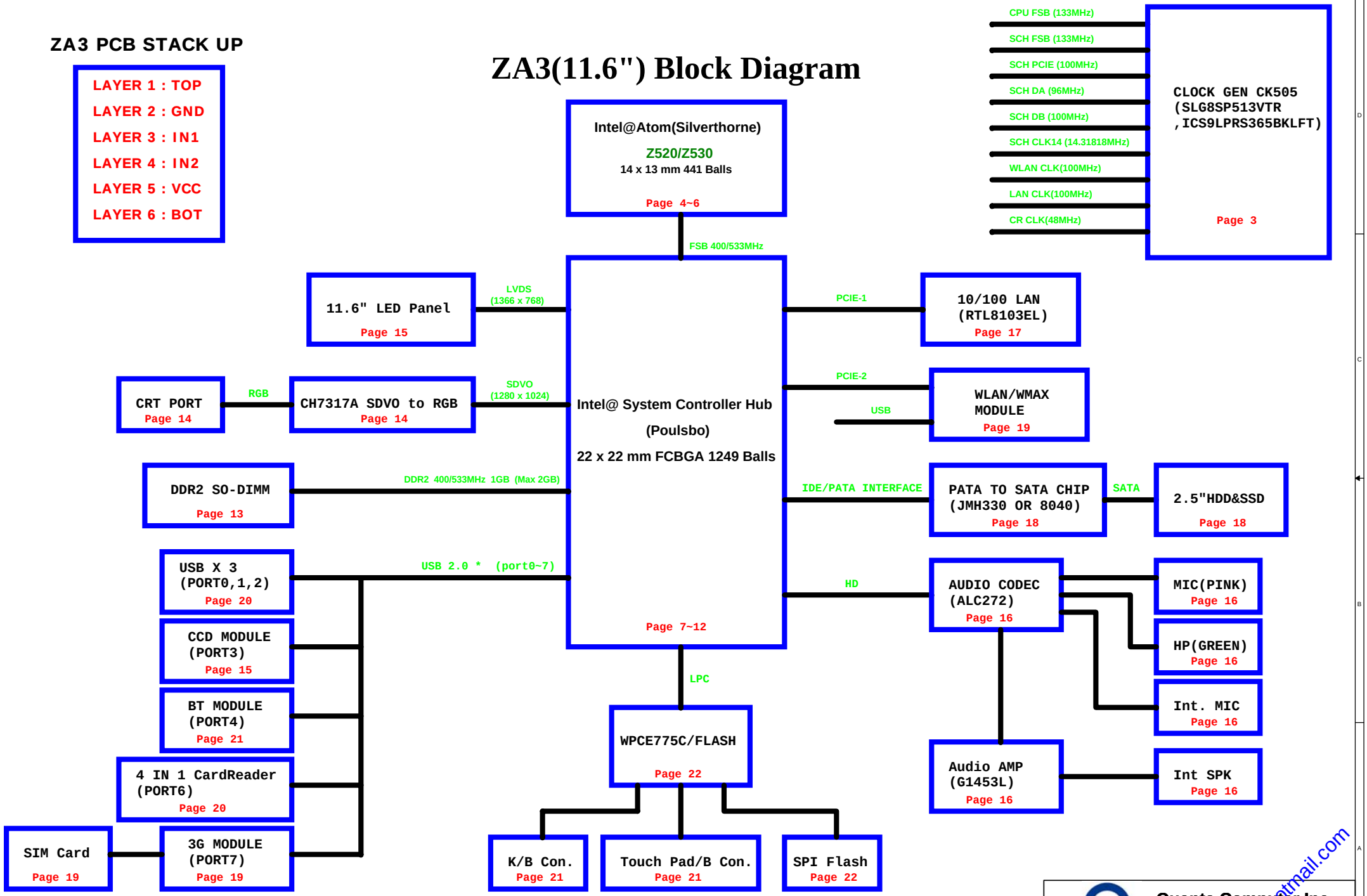
ZA3 PCB STACK UP

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

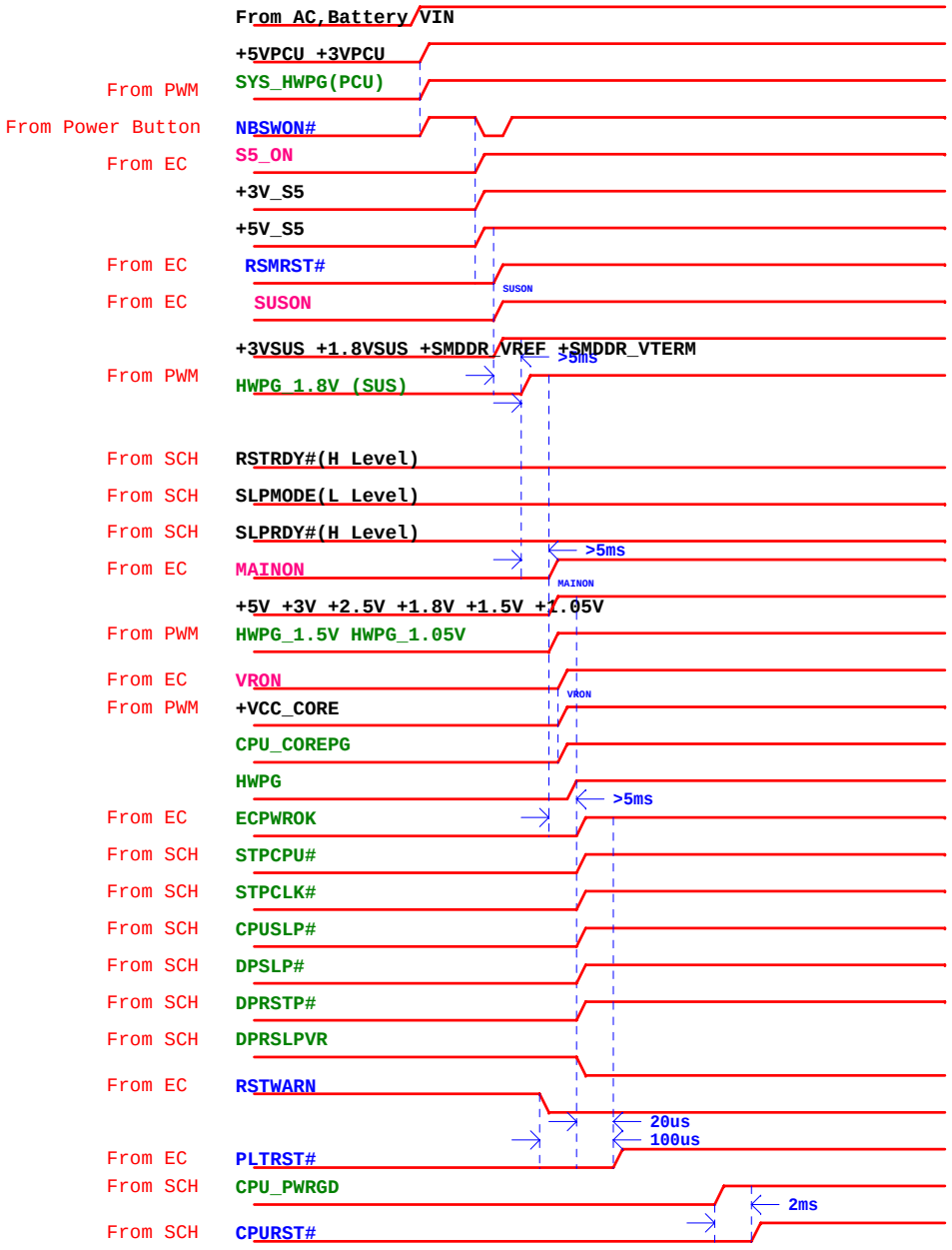
ZA3(11.6") Block Diagram



Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	BLOCK DIAGRAM	1A
Date: Sunday, March 08, 2009	Sheet 1 of 34	

ZA3 Power On Sequence



BOM naming rule

Items	Function	Name	Description
1	PATA TO SATA BRIDGE	8040@	Marvell 88SE8040
2	PATA TO SATA BRIDGE	330@	Jmicron JMH330
3	3G Module	3G@	
4	FAN Module	FAN_PWM@	PWM FAN
5			
6			

Poulsbo SCH SMBUS Table

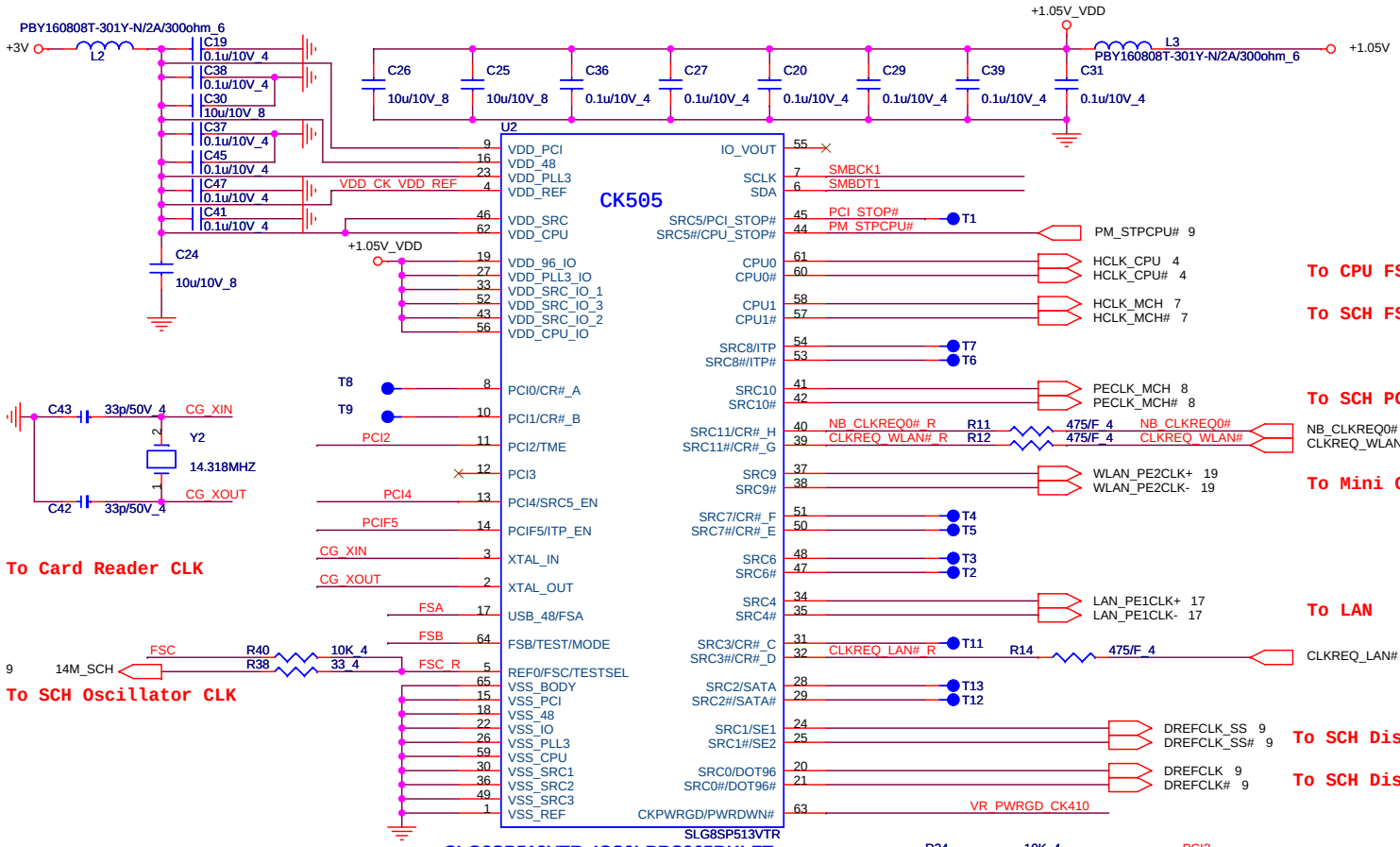
	CLK GEN	RAM	Mini Card (WLAN/WMAX)	Mini Card (3G)
(SMB_DATA) / (SMB_CLK) (+3V)	V	V	V	V
Power Plane	+3V	+3V	+3V	+3VSUS
MOS CKT	Reserve	Reserve	Reserve	Reserve

EC SMBUS Table

	Battery	CPU thermal Sensor	EC EEPROM
EC775 SDA1 / SCL1 (+3VPCU)	V		
EC775 SDA2 / SCL2 (+3VPCU)		V	V
Power Plane	+3VPCU	+3V	+3VPCU
MOS CKT	X	Stuff	X

Quanta Computer Inc.
PROJECT : ZA3
Size | Document Number: Power Sequence/ BOM Rule | Rev: 1A
Date: Sunday, March 08, 2009 | Sheet 2 of 34

Clock Generator(CLK)



SLG8SP513VTR ,ICS9LPRS365BKLFT

To Card Reader CLK

To SCH Oscillator CLK

To CPU FSB CLK

To SCH FSB CLK

To SCH PCIE CLKREQ

SCH_PCIE_CLKREQ

WLAN_PCIE_CLKREQ

To Mini Card 1 (WLAN/WMAX)

To LAN

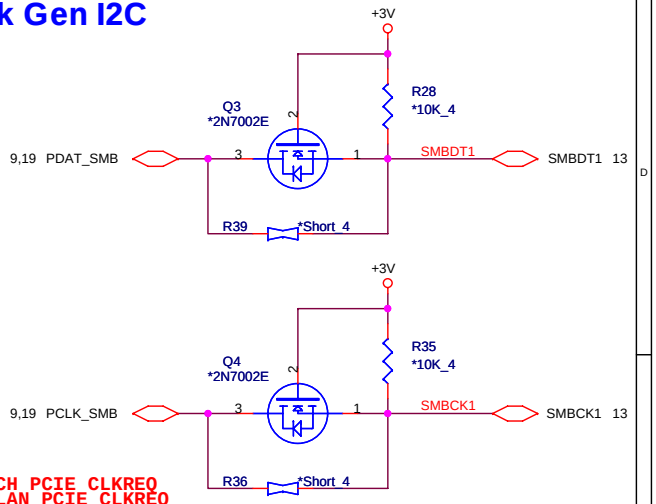
LAN CLKREQ

To SCH Display PLLB CLK

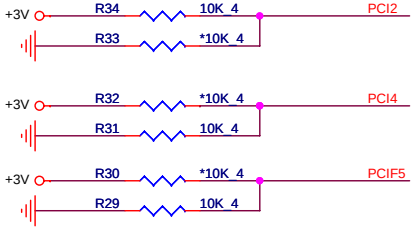
To SCH Display PLLA CLK

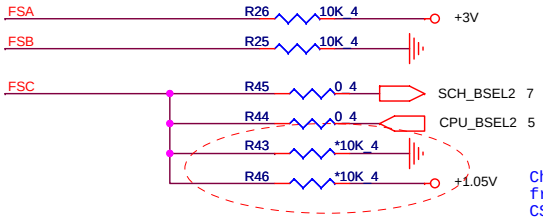
Modify R39 R36 footprint from RC0402 to SHORT0402 for 0 ohm cost down rev.c 20090301

Clock Gen I2C

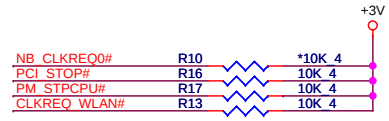


EMI

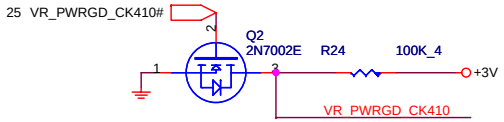




Change R43 P/N from CS00002JB38 to CS31002JB28 rev.c 20090301



CLK GEN & PWR



	SLG8SP513VTR (AL8SP513000)	ICS9LPRS365 (ALPRS365000)	PULL HIGH	PULL DOWN
Pin 11	PCI2/TME	PCI2/TME	NO OVERCLOCKING (default)	NORMAL RUN
Pin 13	PCI4/ 27_Select	PCI_4/ SEL_LCDCLK#	PIN 24/25 IS 27MHz	PIN 24/25 IS SRC/DOT (default)
Pin 14	PCIF-5/ITP_EN	PCIF-5/ITP_EN	PIN 53/54 IS CPUITP	PIN 53/54 IS SRC8 (default)

<MAIN> : SLG8SP513VTR(AL8SP513000)
<SECOND> : ICS9LPRS365BKLFT(ALPRS365000)

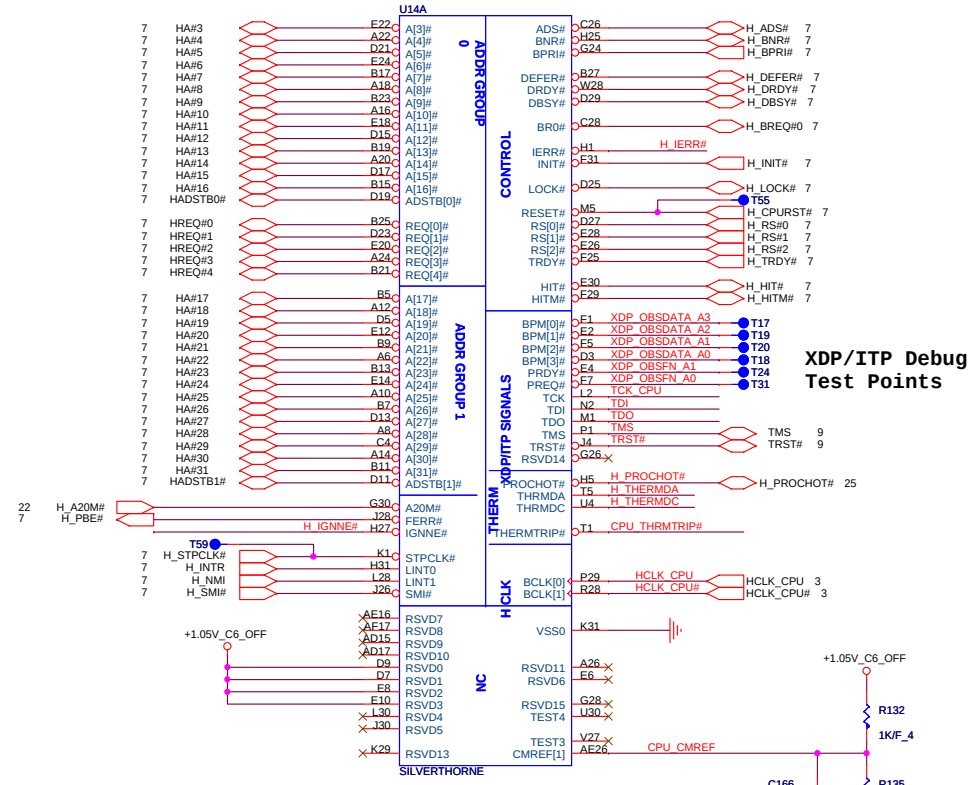
SEL2 SEL1 SEL0 Frequence select

FSC	FSB	FSA	CPU	SRC	PCI	States
1	0	1	100	100	33	
0	0	1	133	100	33	Default

Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	CLOCK GEN(CK505)	1A
Date: Sunday, March 08, 2009	Sheet 3 of 34	

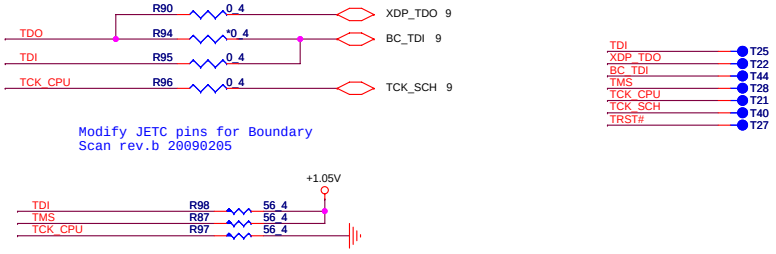
Silverthorne(CPU)



XDP/ITP Debug Test Points

Note : H_FERR# for layout length must be greater than 150mils 20081128

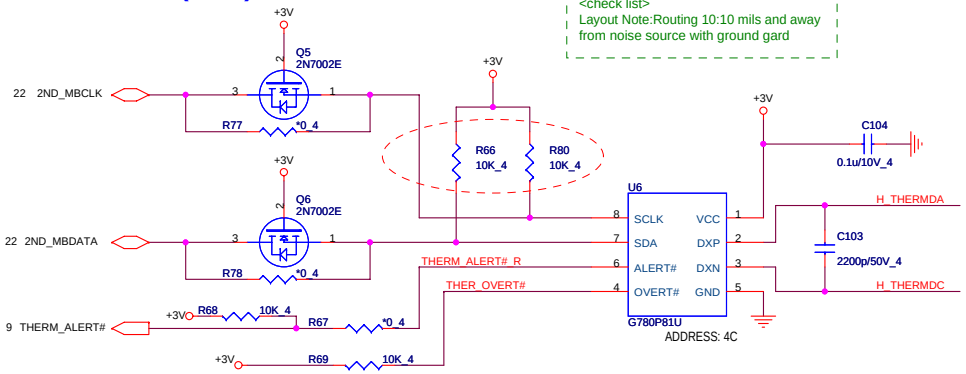
For intel suggest R115 connect to +1.05V_C6_OFF 20081218



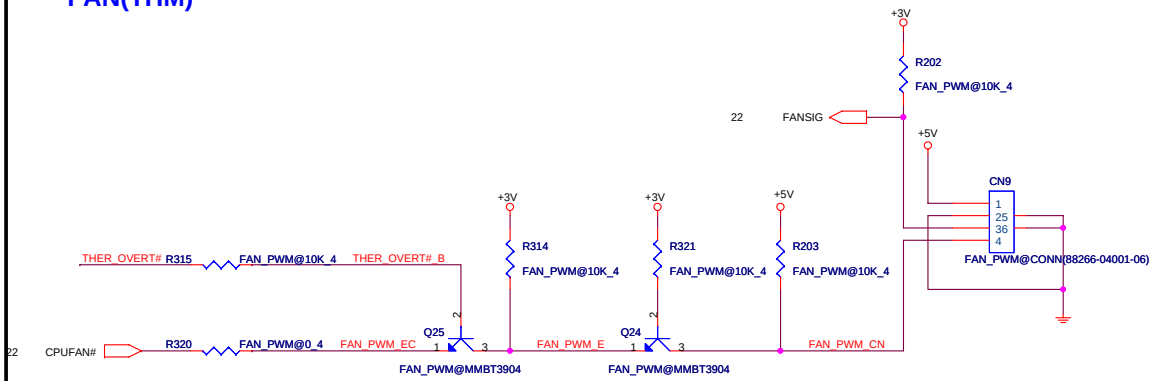
Modify JETC pins for Boundary Scan rev.b 20090205

CPU Thermal monitor(THM)

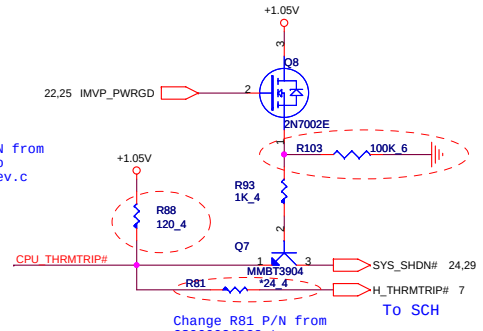
<check list>
Layout Note:Routing 10:10 mils and away from noise source with ground gard



FAN(THM)



Thermal Trip(CPU)



Change R88 P/N from CS05602JB17 to CS11202JB21 rev.c 20090301

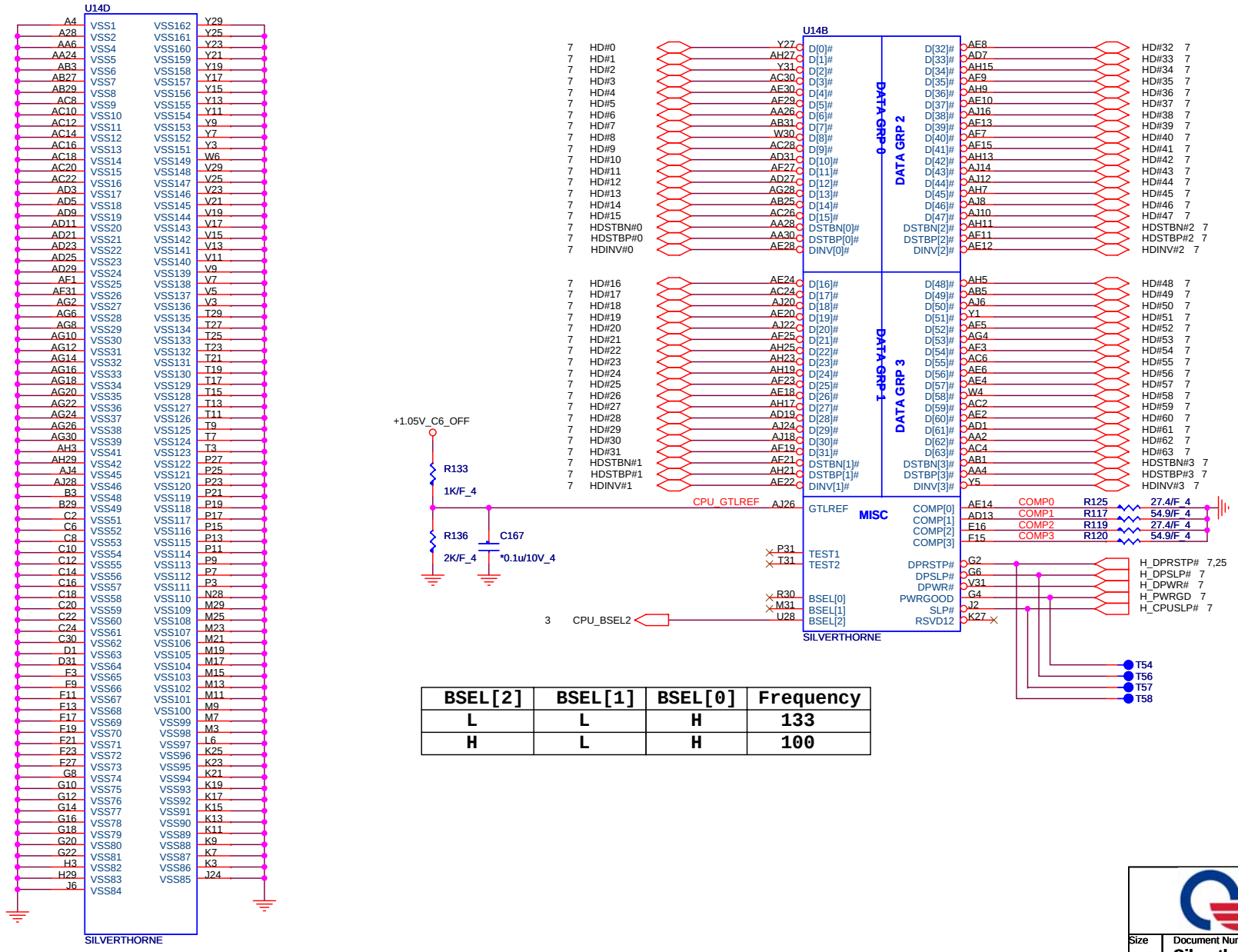
Change R81 P/N from CS00002JB38 to CS02402JB11 rev.c 20090301

Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	Silverthorne CPU(01_HOST)	1A

Date: Sunday, March 08, 2009 Sheet 4 of 34

Silverthorne(CPU)



BSEL[2]	BSEL[1]	BSEL[0]	Frequency
L	L	H	133
H	L	H	100

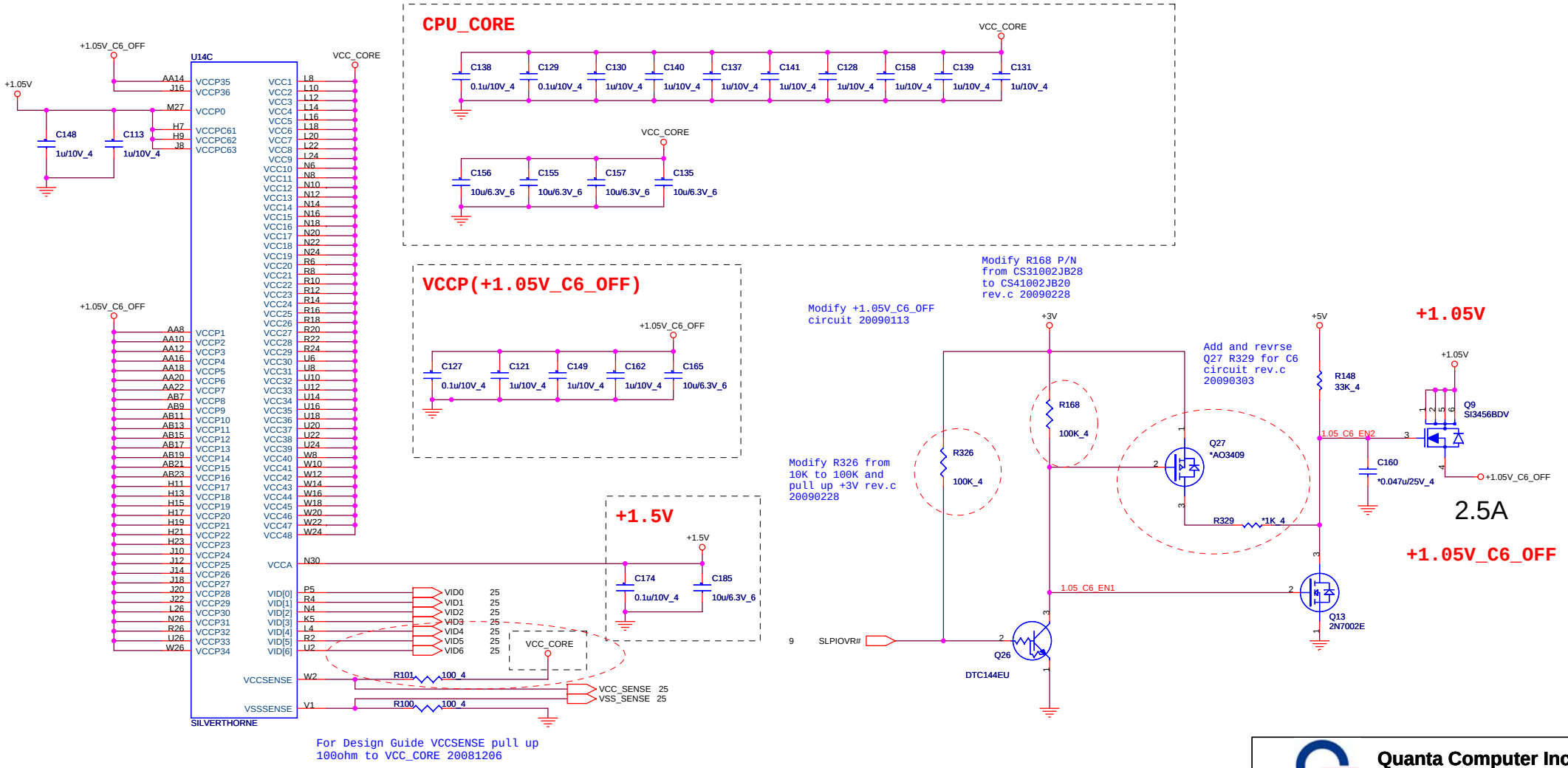
Quanta Computer Inc.

PROJECT : ZA3

Size	Document Number	Rev
	Silverthorne CPU(02_HOST)	1A

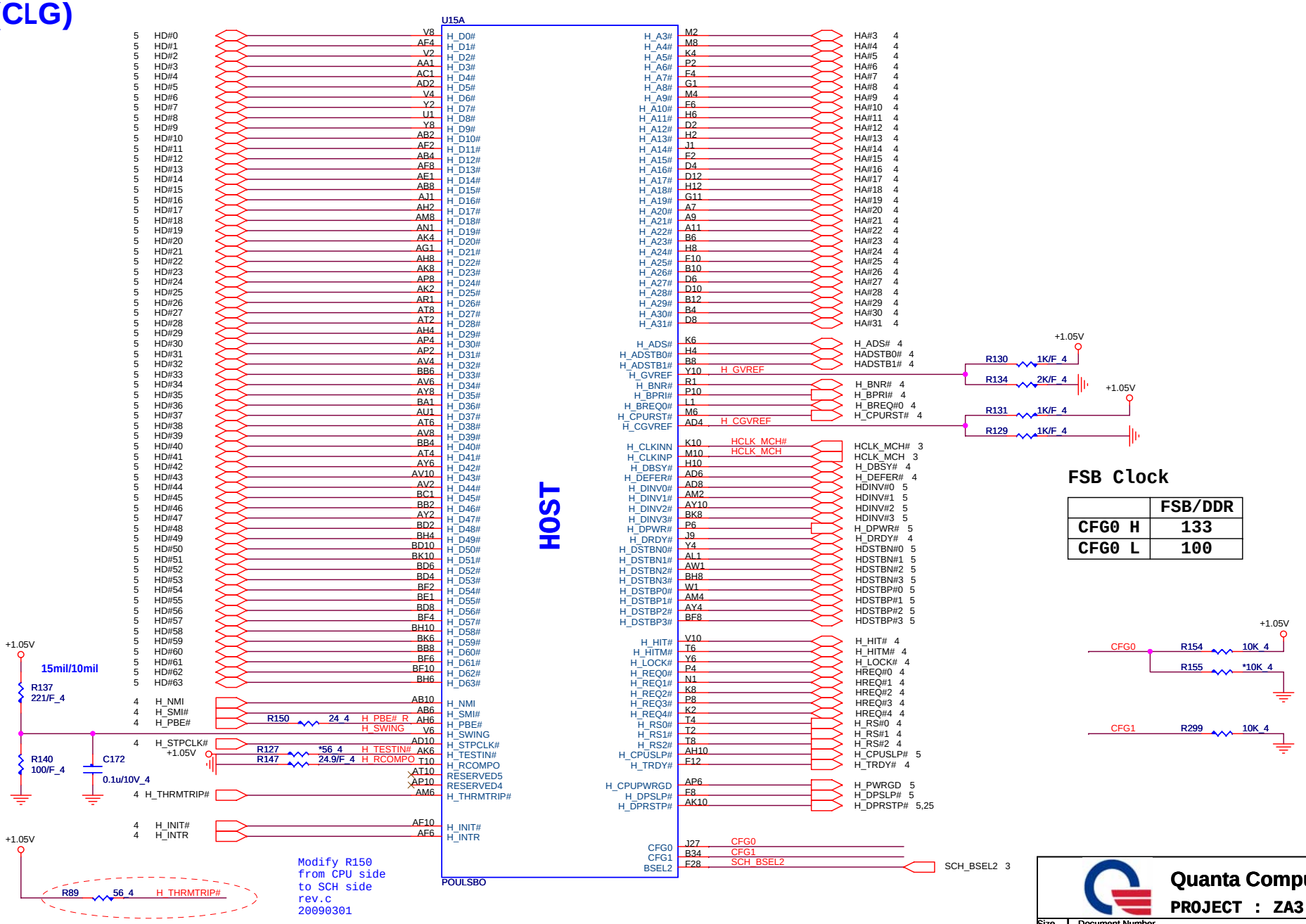
Date: Sunday, March 08, 2009 Sheet 5 of 34

Silverthorne(CPU)



Quanta Computer Inc.		
PROJECT : ZA3		
Size	Document Number: Silverthorne CPU(03_Power)	Rev: 1A
Date: Sunday, March 08, 2009	Sheet 6 of 34	

Poulsbo(CLG)



FSB Clock

	FSB/DDR
CFG0 H	133
CFG0 L	100

Quanta Computer Inc.			
PROJECT : ZA3			
Size	Document Number		Rev
	Poulsbo(01_HOST)		1A
Date: Sunday, March 08, 2009	Sheet 7	of 34	

Poulsbo(CLG)

Stuff R312 for Keyboard
and TP issues rev.c
20090228

Add R333 R334
R335 R336 for
LPC AD0~AD3
rev.c 20090301

EMI

Add T60 T61 T62 T63
test point for
Boundary Scan rev.b
20090205

SCH_RSV1 : (LPC_CLKOUT0 buffer strength)
0 = 1 Load driver strength
1 = 2 Load driver strength
*** intel has integrated 300K puii-up

Change C233 C231 C243
C240 C239 C238 C237
C235 from SDVO chip
side to SCH side rev.c
20090301

SDVO to CRT

PCIE TO LAN

PCIE TO WLAN/WMAX

RTC Battery

SANYO:	AHL03001502 ; ML1220-CM11
MATSUSHITA:	AHL03001405 ; ML1220/USTC/TSB1
MAXELL:	AHL03001404 ; ML1220-ZR1S

RTC(RTC)

Quanta Computer Inc.	PROJECT : ZA3
Size	Document Number: Poulsbo(02_LPC/LVDS/SDIO)
Rev	1A
Date: Sunday, March 08, 2009	Sheet 8 of 34

Poulsbo(CLG)

0--MB USB PORT1
1--MB USB PORT2
2--DB USB PORT3
3--CCD Module
4--BT Module
5--MINI WLAN/WMAX
6--CARD READER
7--MINI 3G Module

U15C

USB I/F
Termination Voltage
PATA/IDE
JTAG
SYSTEM GPIOs
HD AUDIO
CLOCK I/F
SMB
No-Connect

POULSBO

Change R186 R184 R309 R296
P/N from CS31002JB28 to
CS21002JB34 rev.c 20090301

ID1	ID0	Functions
0	0	
0	1	
1	0	
1	1	

* : Default

GPIO3	GPIO0	CMC Base Add.
0	0	FFFB000h
0	1	FFFC000h
1	0	FFFD000h(*)
1	1	FFFE000h

* : Default

XDP/ITP Debug Test Points

Modify JETC pins for Boundary
Scan rev.b 20090205

Change R297 from
+3V_S5 to +3V
for SMI# rev.c
20090304

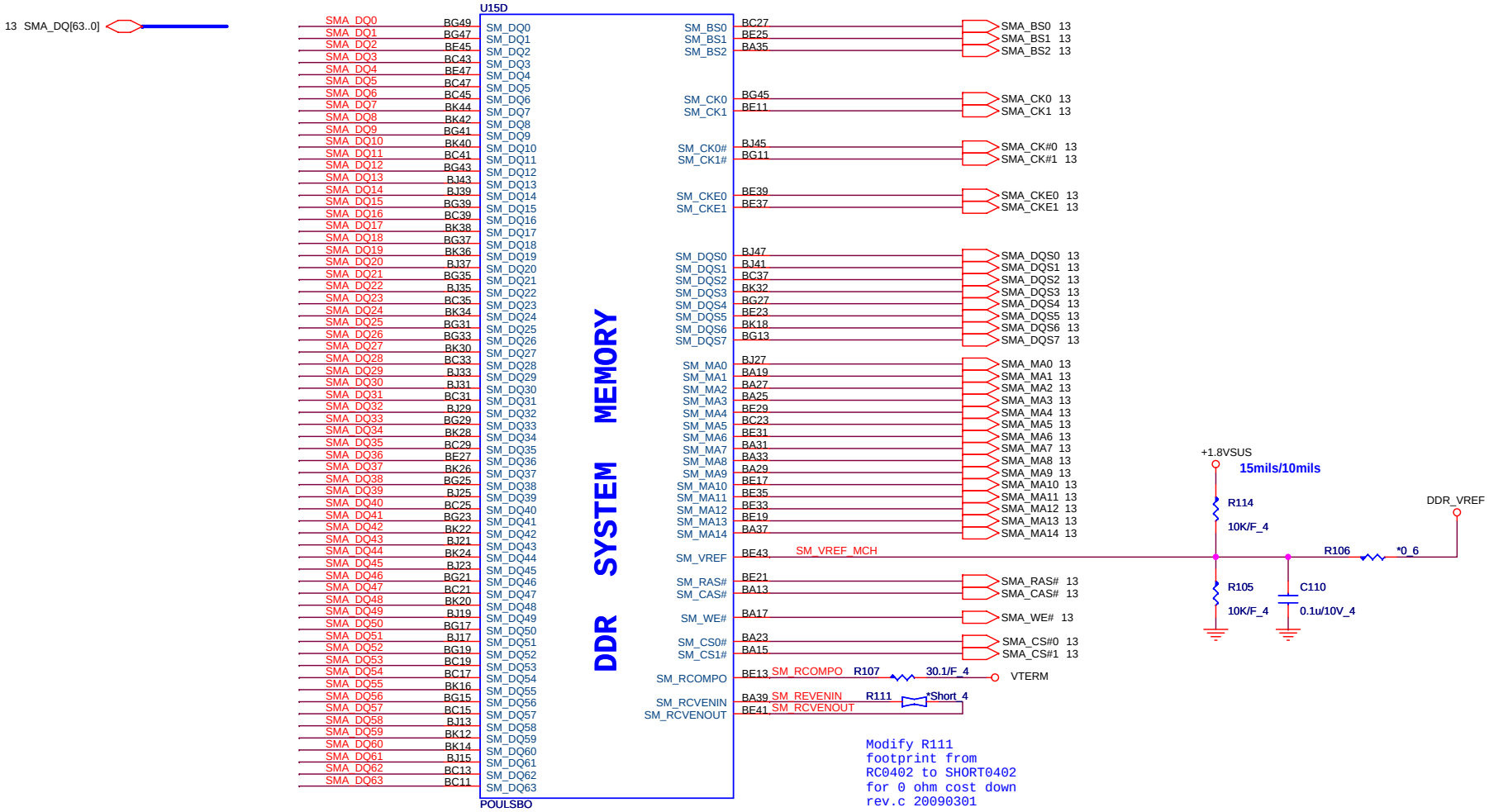
For intel suggest add R295 pull
down 20081218

SCH GFX Clock
SCH GFX SS Clock

Del RN8 and Add R337 R338 to SCH
SMBUS rev.c 20090301

Quanta Computer Inc.		
PROJECT : ZA3		
Size	Document Number: Poulsbo(03_USB/PATA/HD)	Rev: 1A
Date: Sunday, March 08, 2009	Sheet 9 of 34	

Poulsbo(CLG)



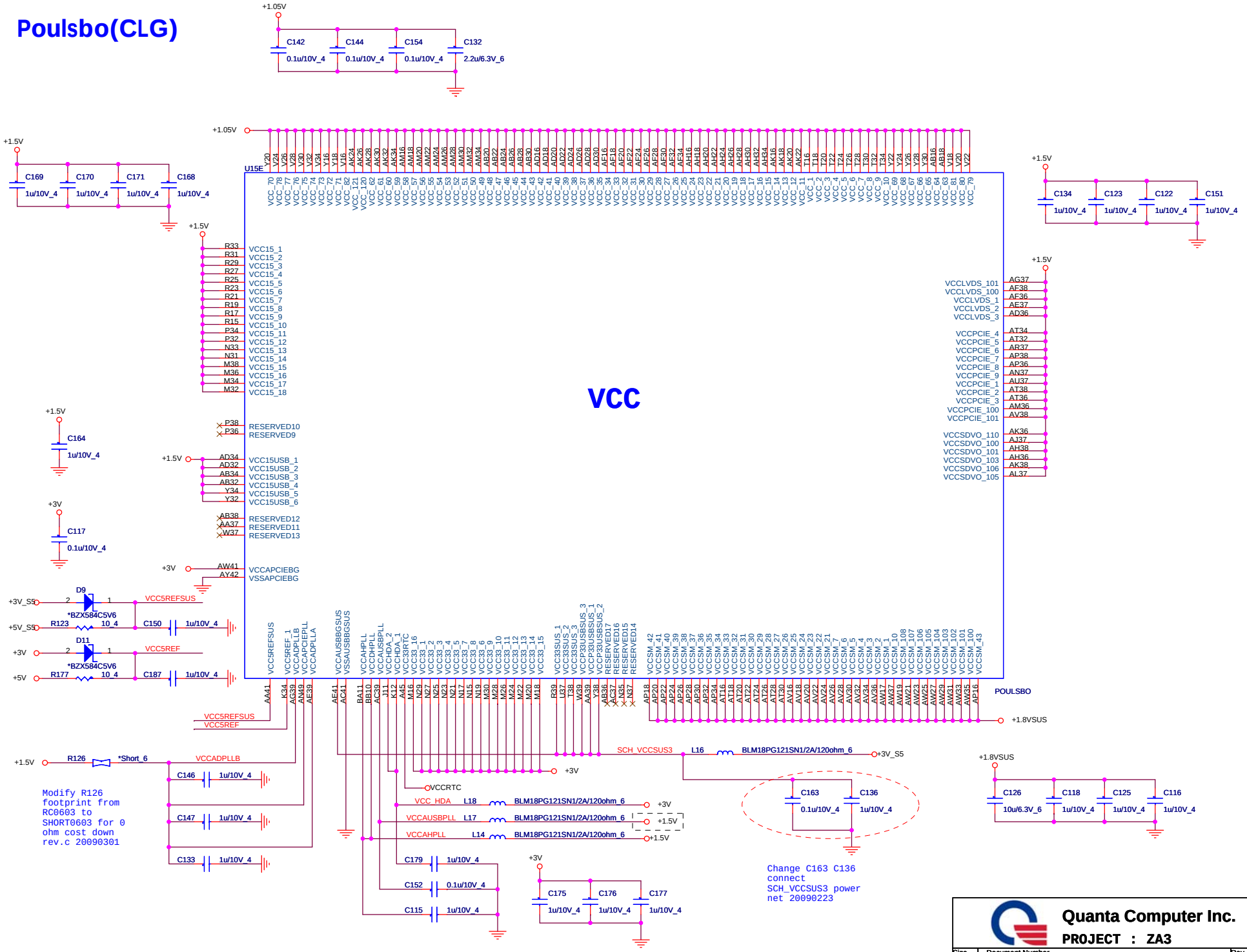
Quanta Computer Inc.

PROJECT : ZA3

Size	Document Number	Rev
	Poulsbo(04_MEM)	1A

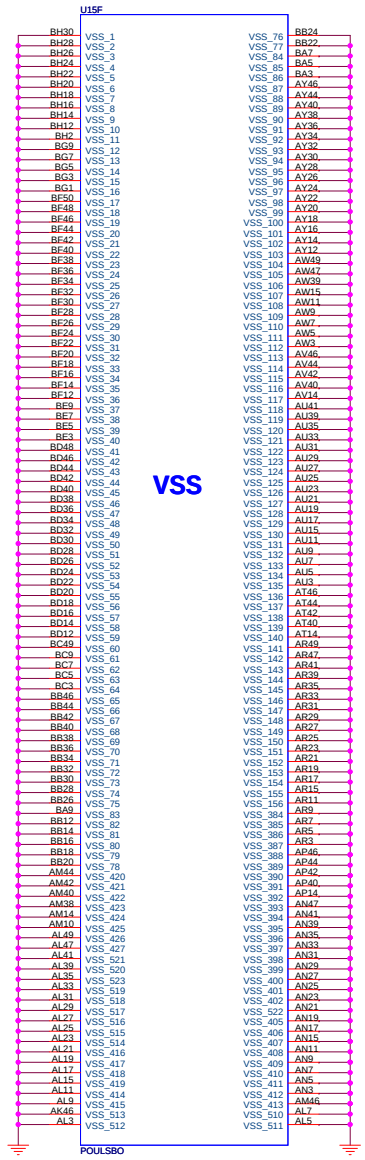
Date: Sunday, March 08, 2009 Sheet 10 of 34

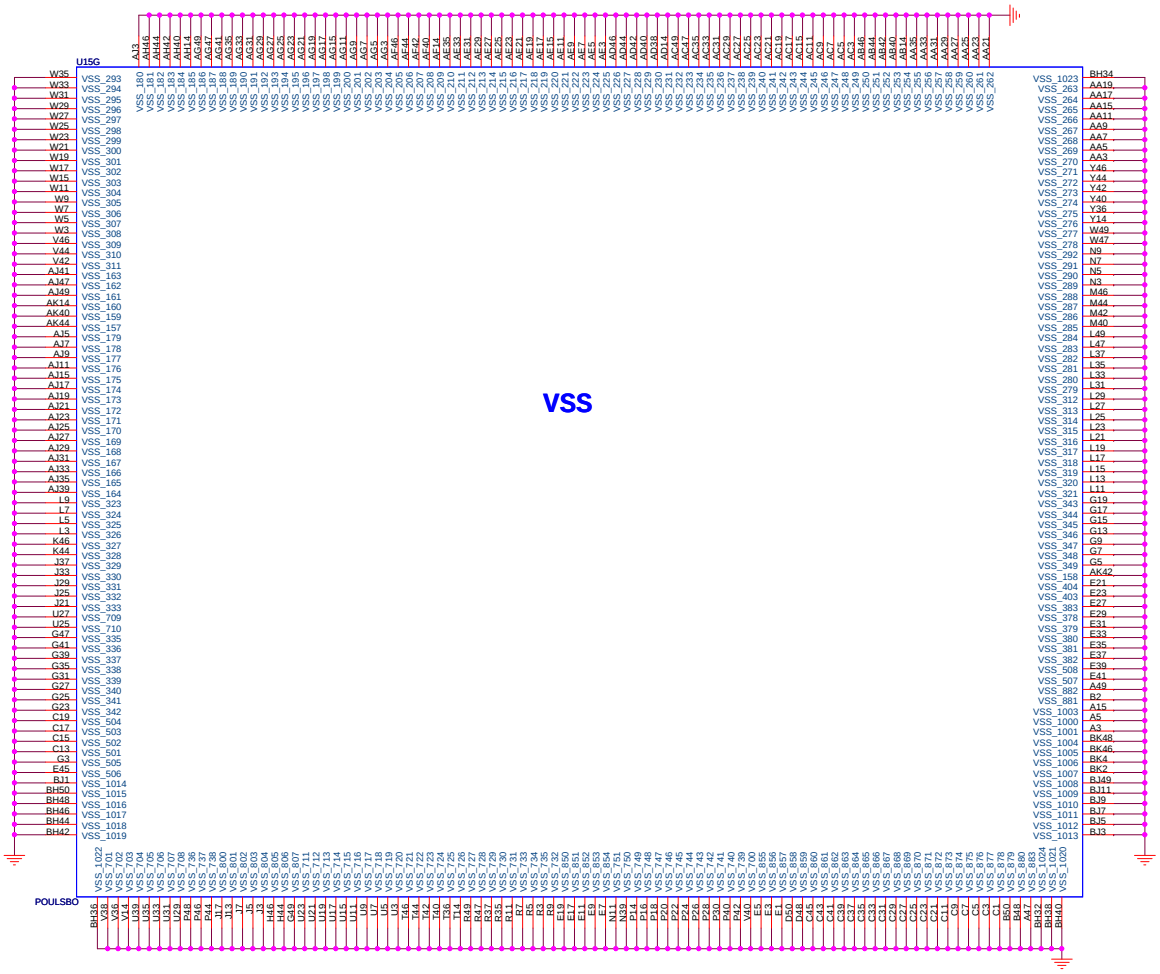
Poulsbo(CLG)



Quanta Computer Inc.			
PROJECT : ZA3			
Size	Document Number		Rev
	Poulsbo(05_Power)		1A
Date:	Sunday, March 08, 2009	Sheet 11 of 34	

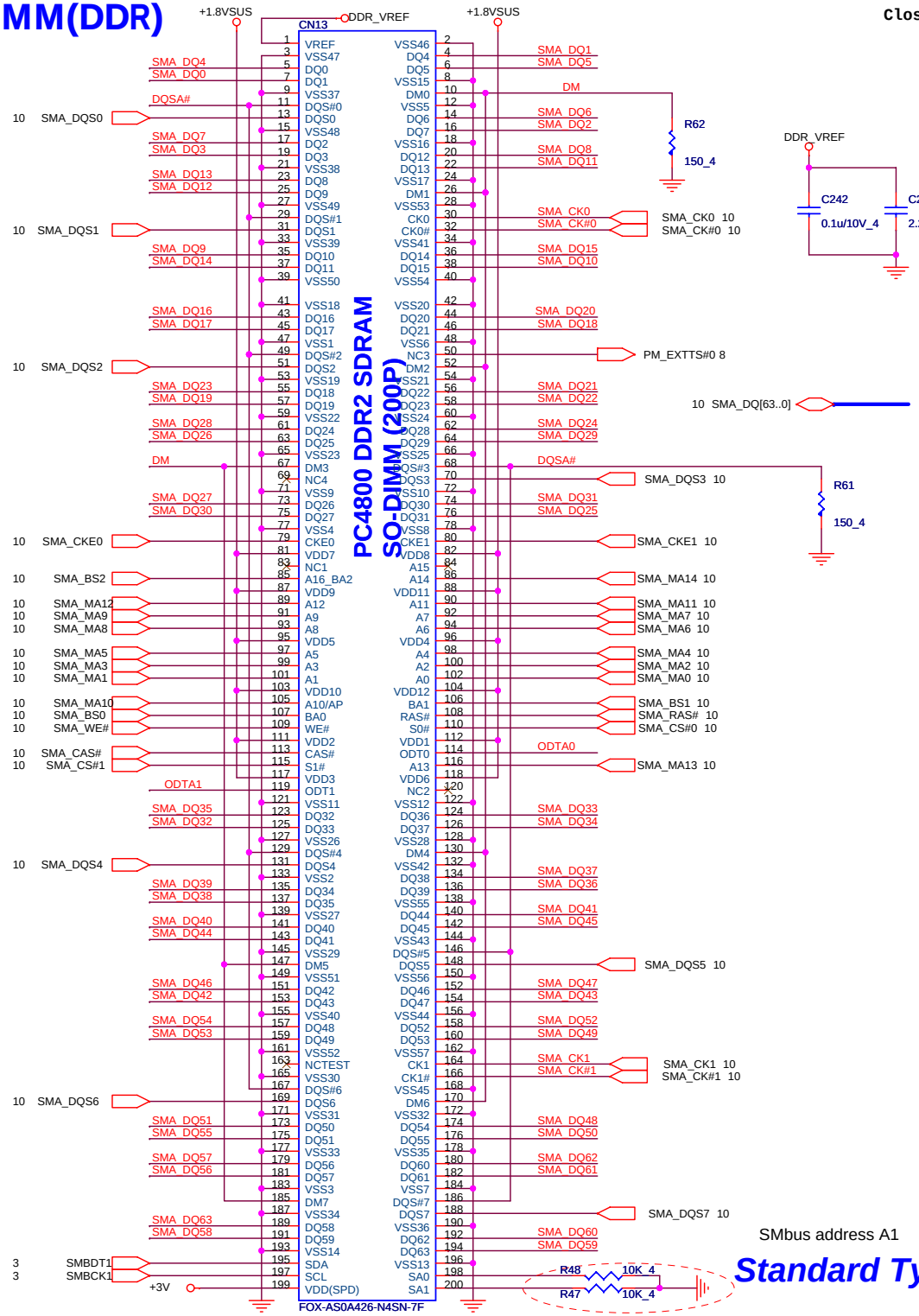
Poulsbo(CLG)





Quanta Computer Inc.
PROJECT : ZA3
Size
Document Number
Poulsbo(06_GND)
Rev
1A
Date: Sunday, March 08, 2009
Sheet 12 of 34

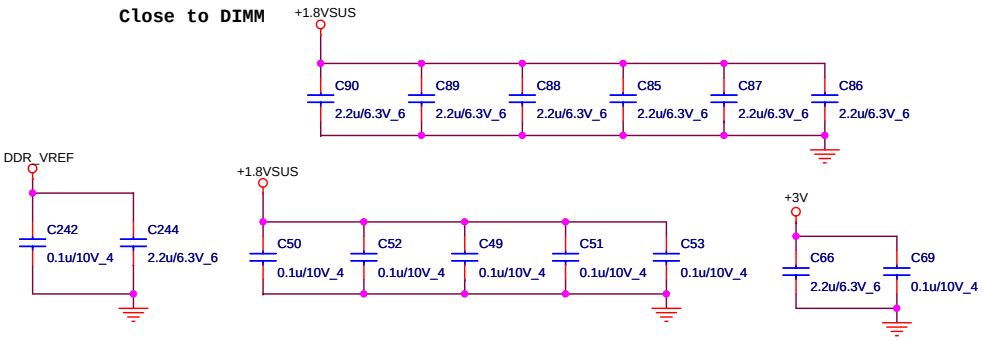
SO-DIMM(DDR)



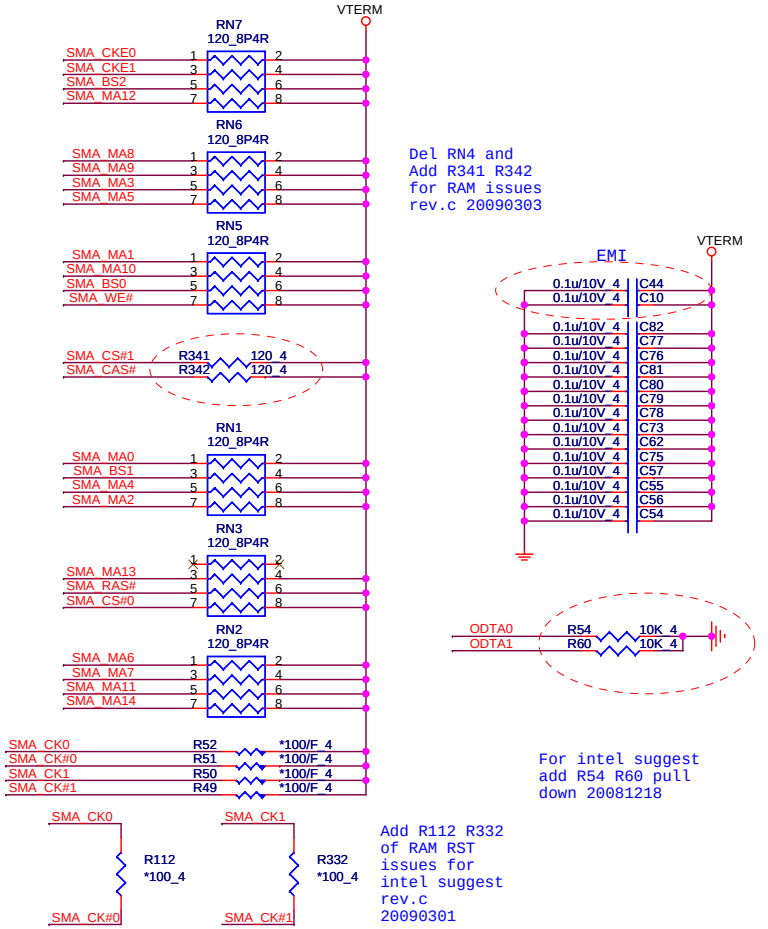
SMbus address A1

Standard Type H: 4.0mm

Close to DIMM



Termination resistor



Del RN4 and
Add R341 R342
for RAM issues
rev.c 20090303

For intel suggest
add R54 R60 pull
down 20081218

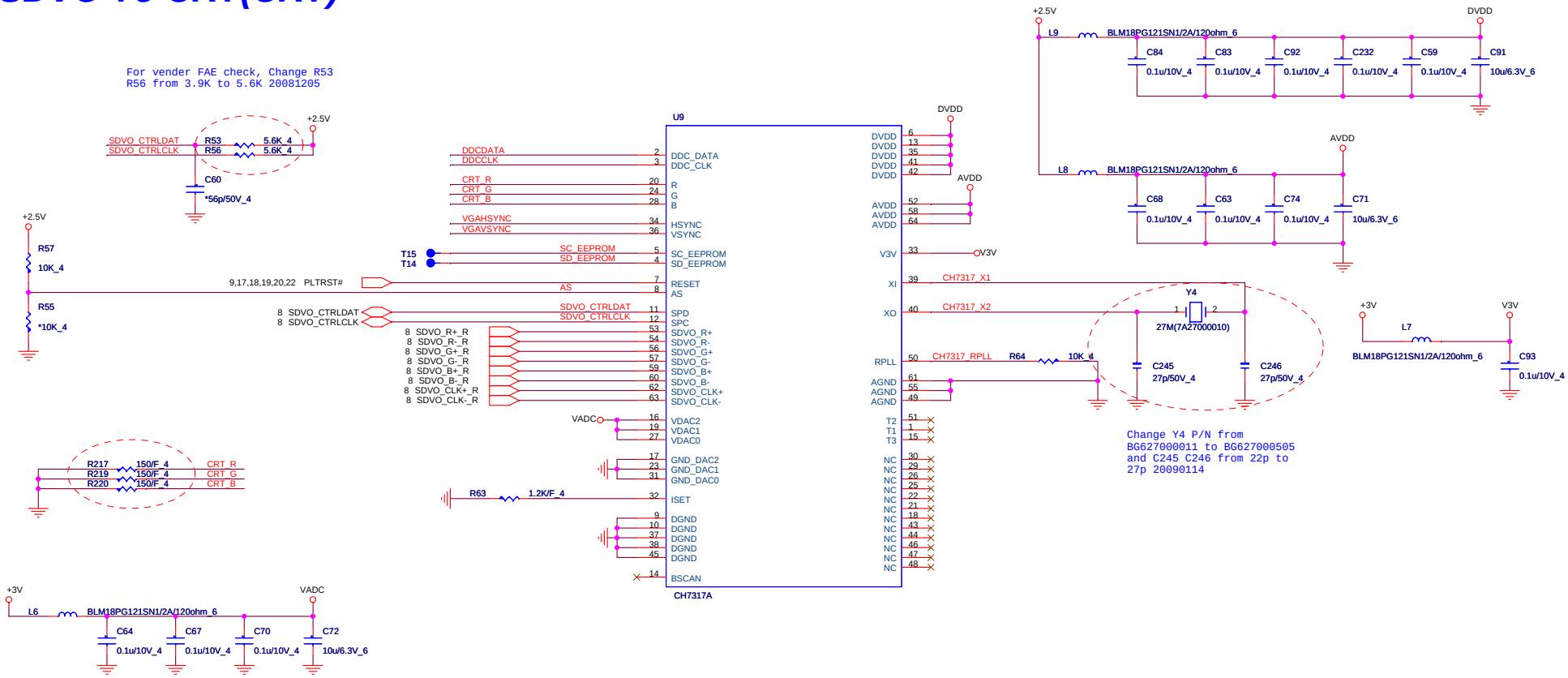
Add R112 R332
of RAM RST
issues for
intel suggest
rev.c
20090301

Quanta Computer Inc.

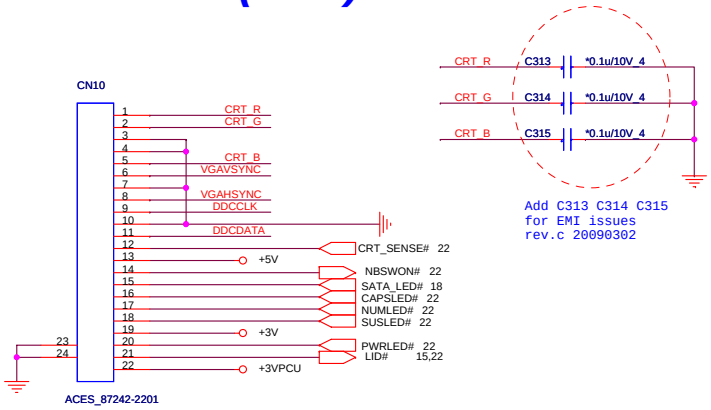
PROJECT : ZA3

Size	Document Number	Rev
	DDR2 SO-DIMM(200P)	1A
Date: Sunday, March 08, 2009	Sheet 13 of 34	

SDVO To CRT(CRT)



CRT DB CONNECTER(CRT)



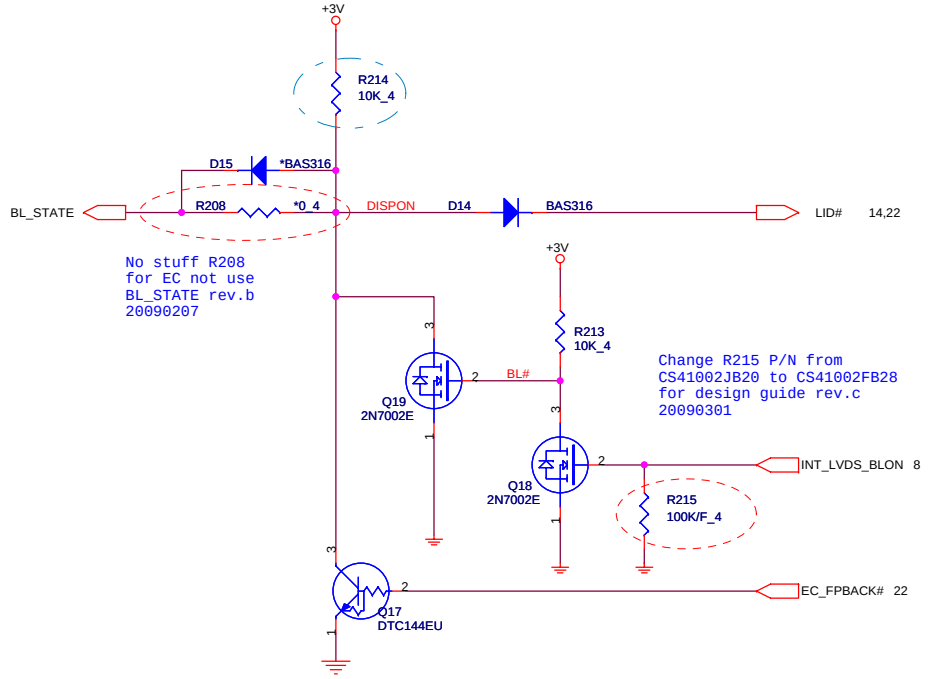
Quanta Computer Inc.

PROJECT : ZA3

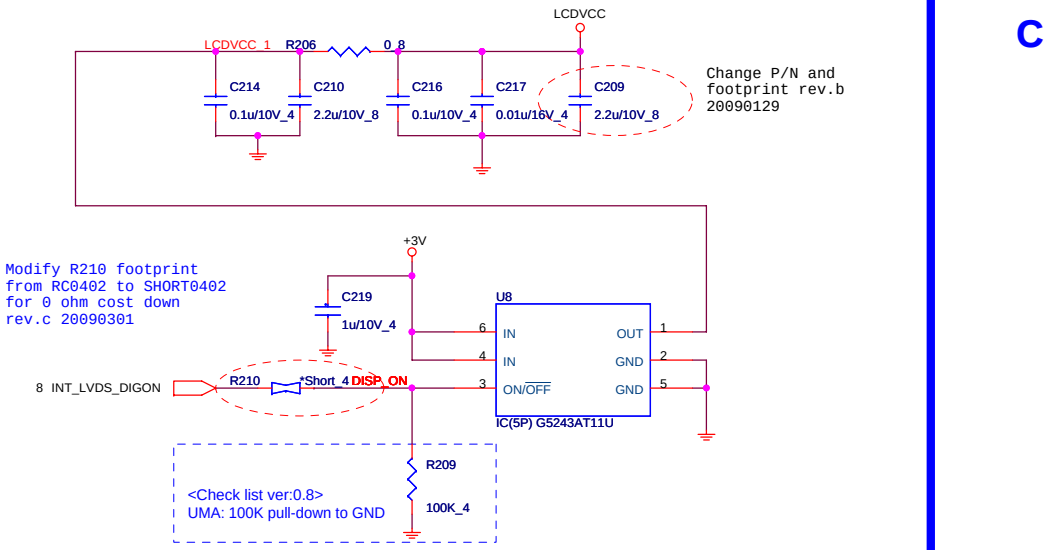
Size	Document Number	Rev
	SDVO TO CRT(CH7317A)	1A

Date: Sunday, March 08, 2009 Sheet 14 of 34

Backlight Control(LDS)

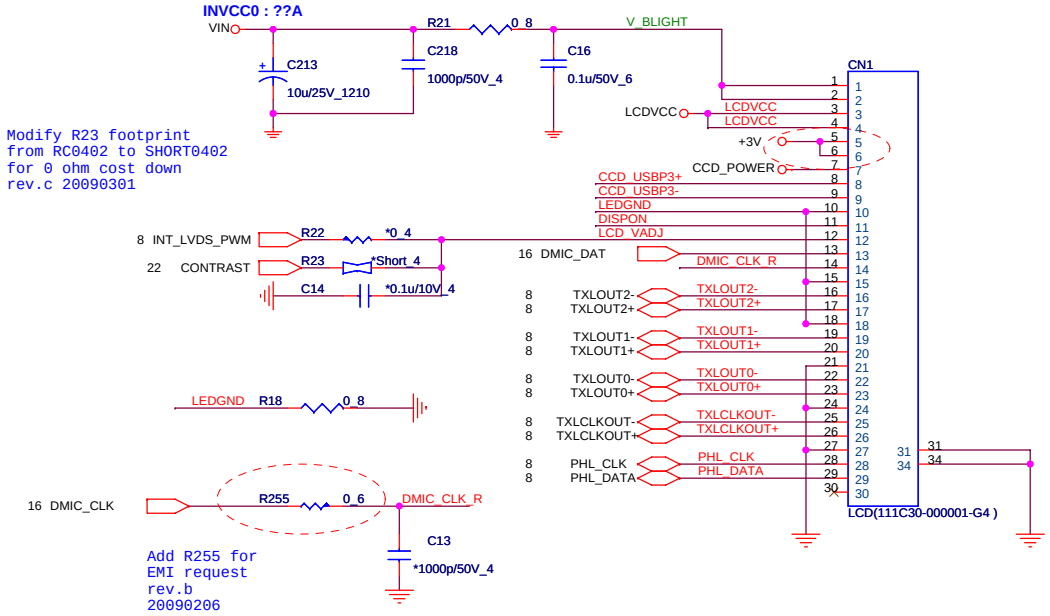


LED Panel POWER SWITCH(LDS)

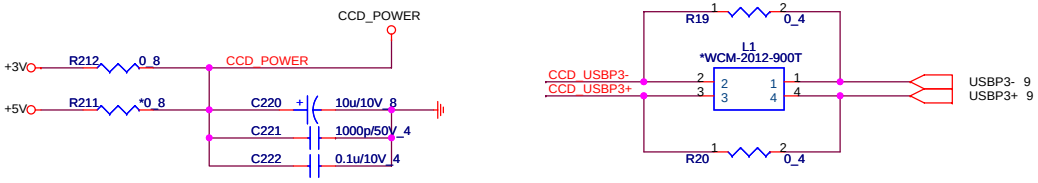


LED Panel(LDS)

V_BLIGHT : ?V ?A

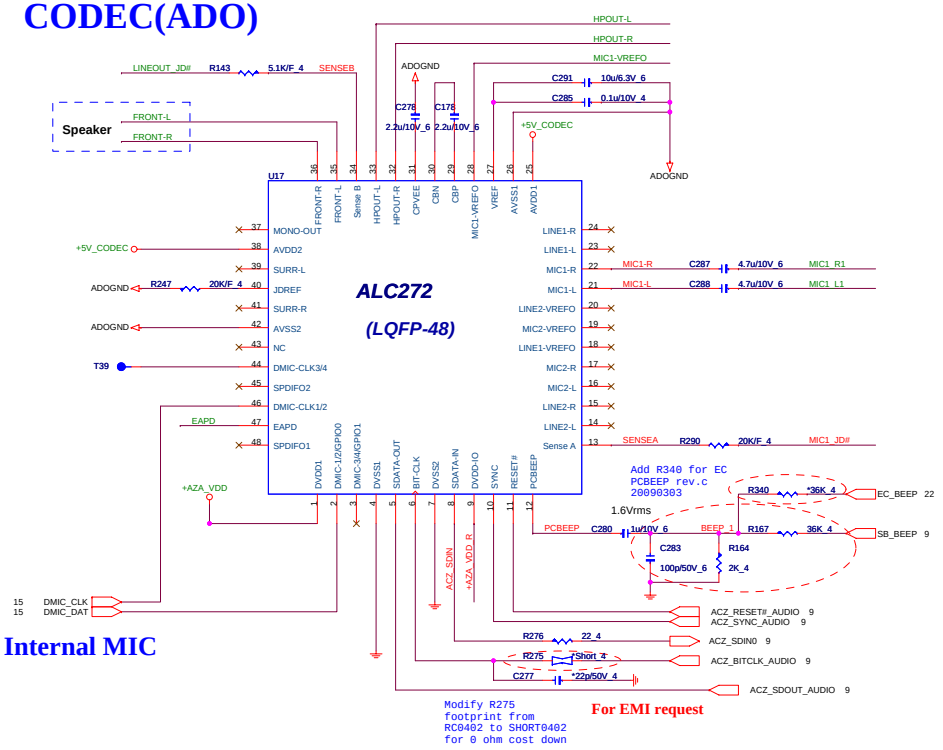


Camera(CCD)



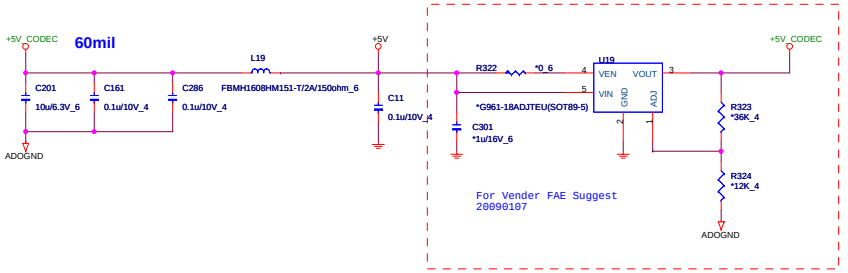
Quanta Computer Inc.		
PROJECT : ZA3		
Size	Document Number	Rev
	LED PANEL/CCD MODULE	1A
Date: Sunday, March 08, 2009	Sheet 15 of 34	

CODEC(ADO)

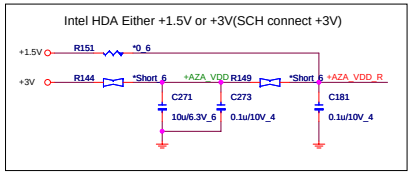


Internal MIC

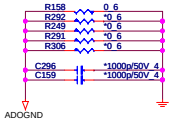
Codec Power(ADO)



HDA Power(ADO)

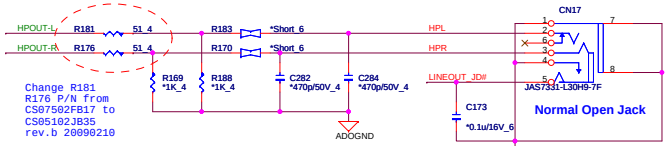


Modify R144 R149 footprint
from RC0603 to SHORT0603
for 0 ohm cost down rev.c
20090301



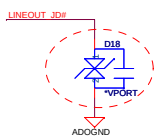
HP_Green(AMP)

Modify R170 R183 footprint
from RC0603 to SHORT0603
for 0 ohm cost down rev.c
20090301



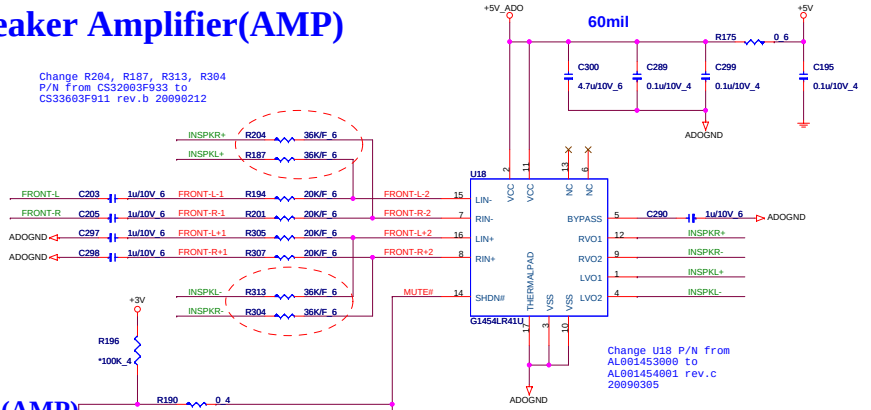
Change R181
R176 P/N from
CS07502FB17 to
CS05102JB35
rev.b 20090210

HP_Green ESD(EMC)

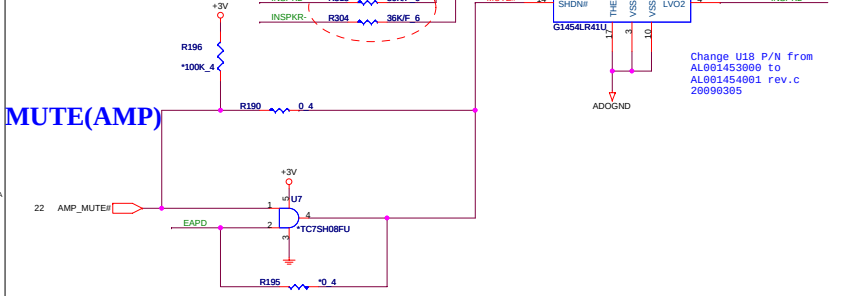


Speaker Amplifier(AMP)

Change R204, R187, R313, R304
P/N from CS32003F933 to
CS33603F911 rev.b 20090212

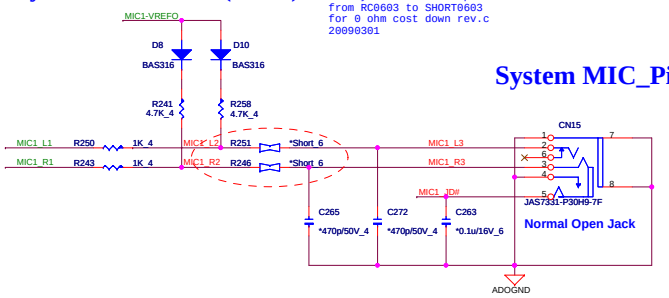


MUTE(AMP)

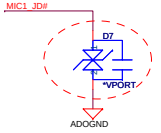


System MIC_Pink(AMP)

Modify R246 R251 footprint
from RC0603 to SHORT0603
for 0 ohm cost down rev.c
20090301

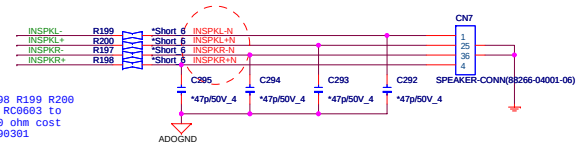


System MIC_Pink ESD(EMC)



Speaker(AMP)

Modify SPK circuit 20090115

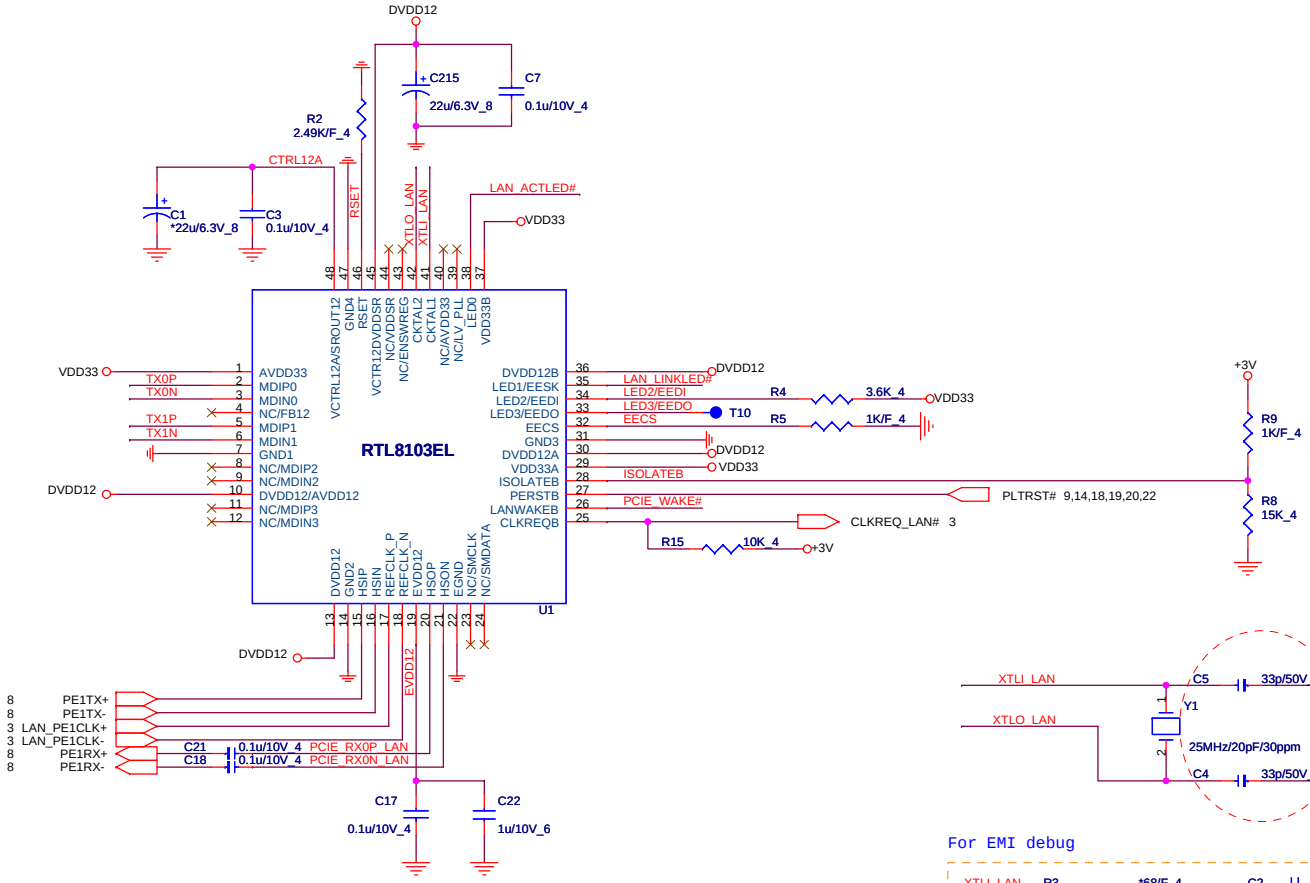


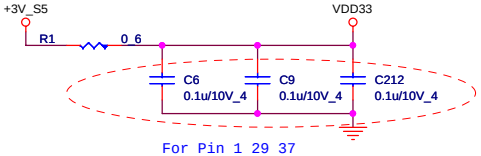
Modify R197 R198 R199 R200
footprint from RC0603 to
SHORT0603 for 0 ohm cost
down rev.c 20090301

Quanta Computer Inc.
PROJECT : ZA3

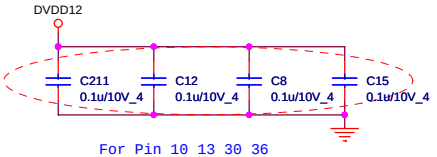
Size	Document Number	Rev
	AL272/AMP/MIC/LINE-OUT	1A
Date: Sunday, March 08, 2009	Sheet 16 of 34	

LAN RTL8103EL (LAN)

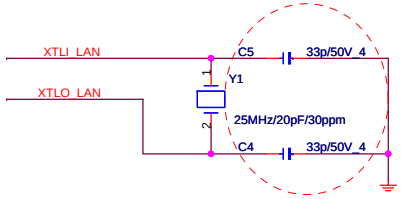




For Pin 1 29 37
Bypass 20081222



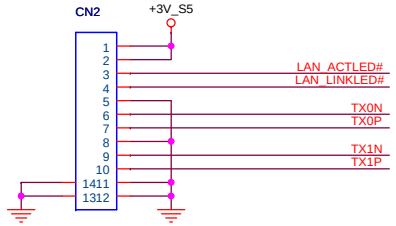
For Pin 10 13 30 36
Bypass 20081222



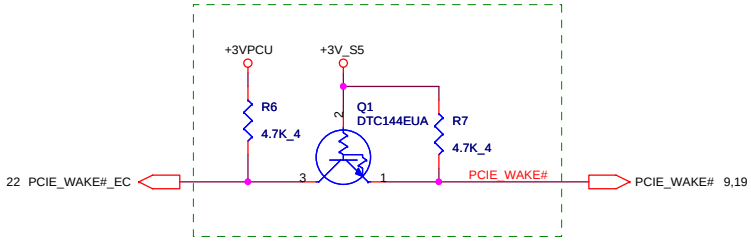
Change C4 C5 P/N from CH02706JB06 to CH03306JBD7 for vender suggest rev.b 20090212

For EMI debug

LAN D/B CONNECTER(LAN)



LAN CONN(88501-120N)

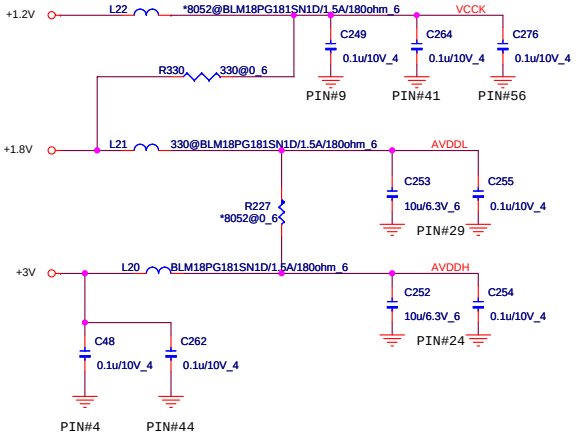


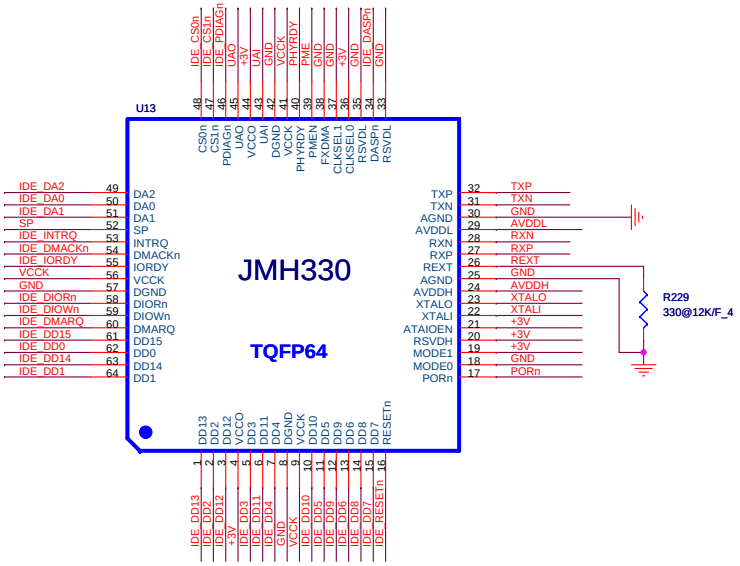
Quanta Computer Inc.
PROJECT: ZA3

Size	Document Number	Rev
	LAN RTL8103EL	C
Date: Sunday, March 08, 2009	Sheet 17 of 34	

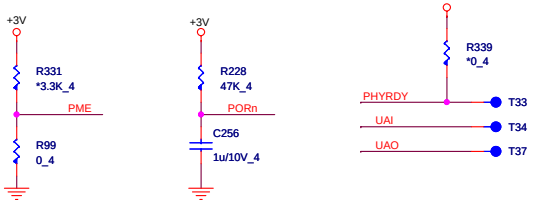
PATA TO SATA BRIDGE(HDD)

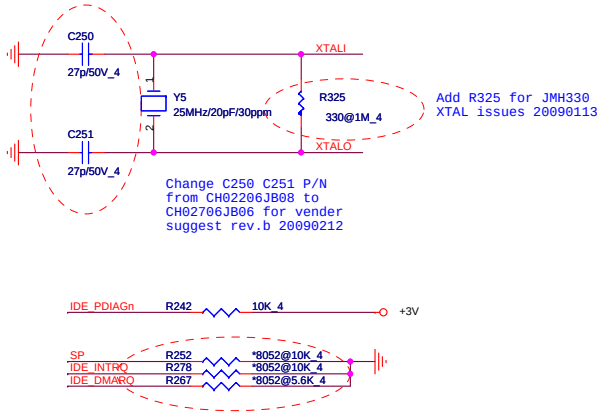
Bypass CAP must place close to power pins

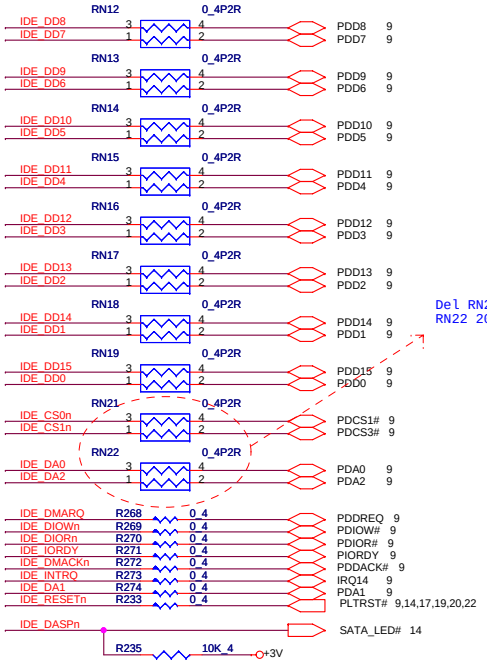




PME







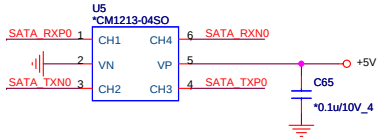
Del RN20 and add RN21
RN22 20090113

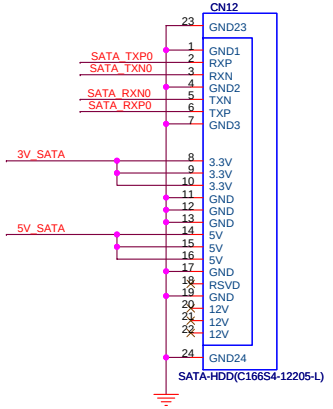
	JMH330 (AJ003300H00)	88SA8052 (AJ080520H00)
Stuff	L21 R330 R325	L22 R227
No Stuff	L22 R227	L21 R330 R325
Change	R229 = 12K	R229 = 6.04K

For JMicron FAE Check : Can chenge RN20 R269 R270 R272 R274 from 82ohm to 0ohm, R268 R271 R273 from 22ohm to 0ohm, RN12 RN13 RN14 RN15 RN16 RN17 RN18 RN19 R233 from 33ohm to 0ohm 20081223

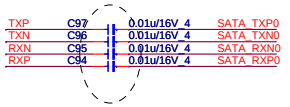
2.5" SATA HDD OR SSD(TOSHIBA)

SATA ESD(EMC)

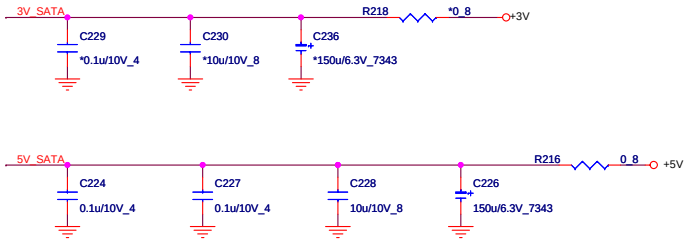




Close to SATA Connecter



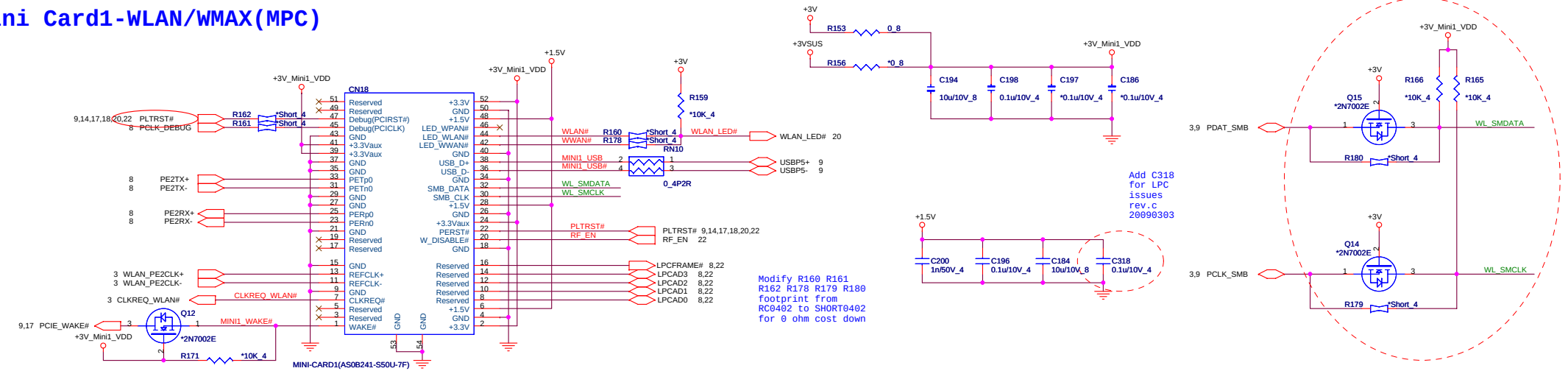
SATA POWER(HDD)



Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	PATA TO SATA BRIDGE(88SA8052)	1A
Date: Sunday, March 08, 2009	Sheet 18 of 34	

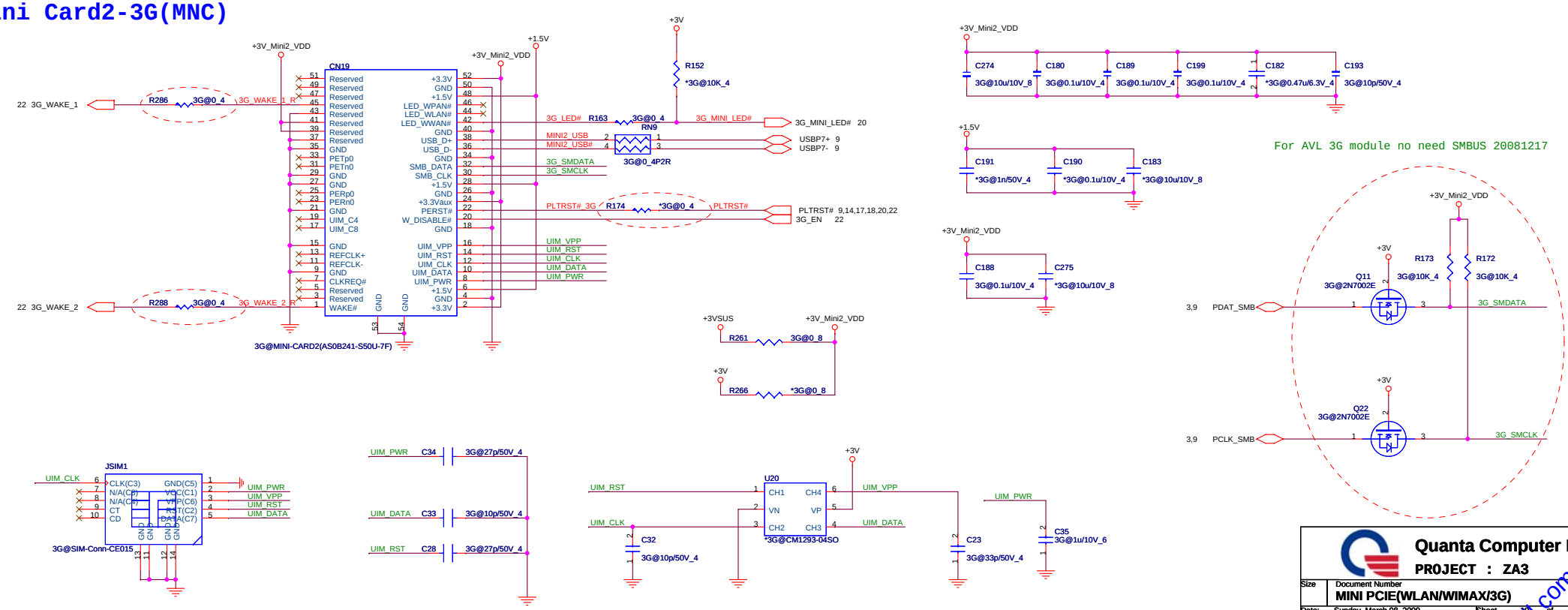
Mini Card1-WLAN/WMAX(MPC)



Add C318 for LPC issues rev.c 20090303

Modify R160 R161 R162 R178 R179 R180 footprint from RC0402 to SHORT0402 for 0 ohm cost down

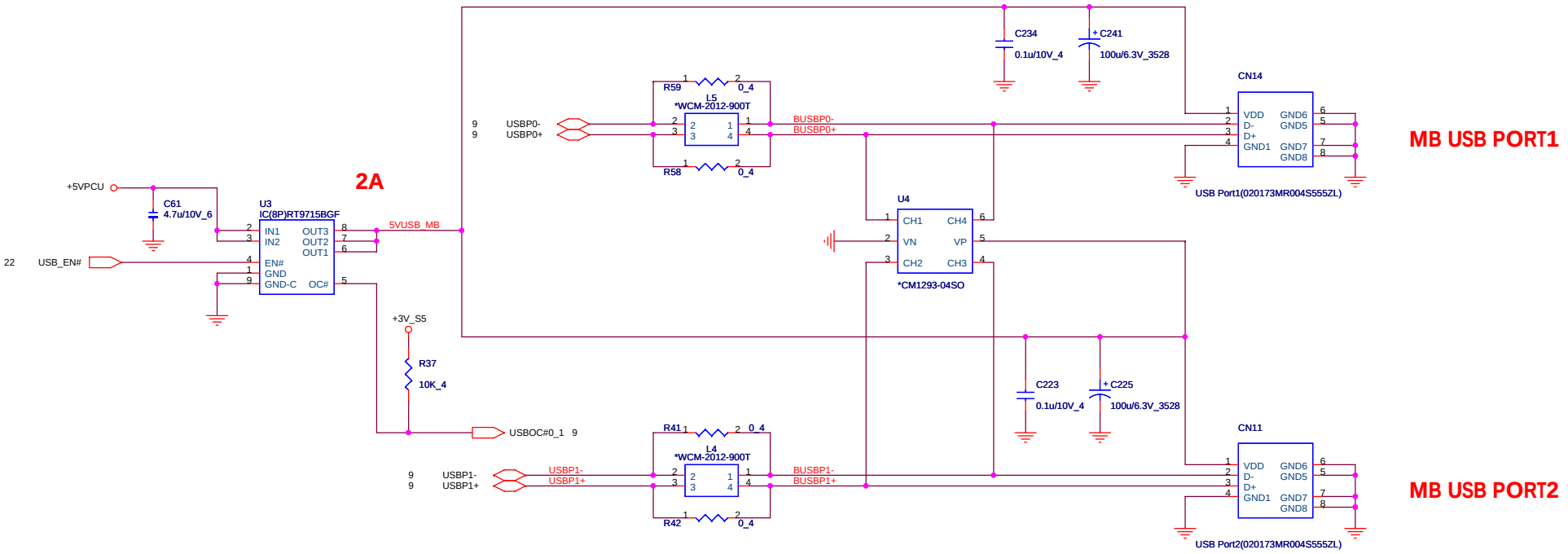
Mini Card2-3G(MNC)



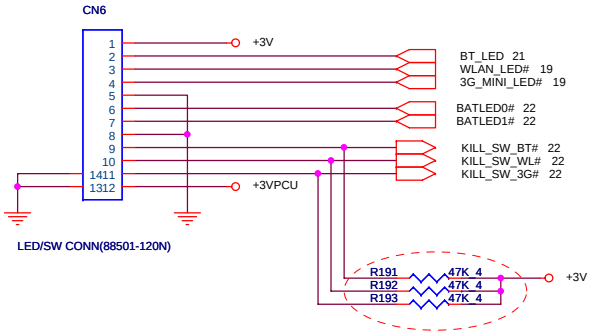
For AVL 3G module no need SMBUS 20081217

Quanta Computer Inc.		
PROJECT : ZA3		
Size	Document Number: MINI PCIE(WLAN/WIMAX/3G)	Rev: 1A
Date: Sunday, March 08, 2009	Sheet 19 of 34	

MB USB PORTS(USB)

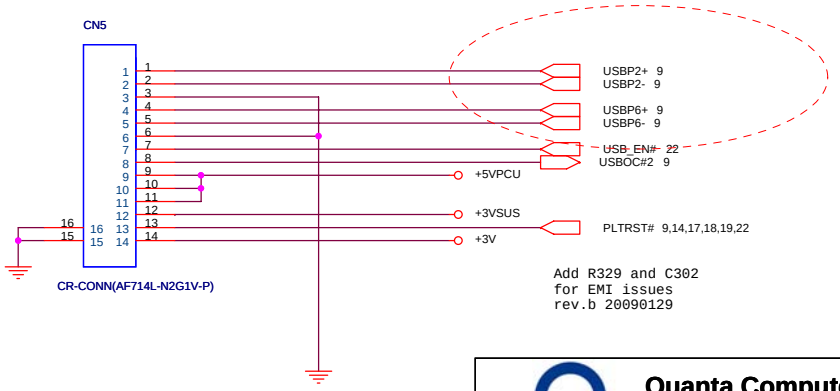


LED DB CONNECTER(UIF)



EC GPIO	Button
KILL_SW_WL#(GPIO57 PIN33)	WLAN Switch
KILL_SW_3G#(GPIO60 PIN34)	3G Switch
KILL_SW_BT#(GPIO12 PIN13)	BT Switch

Card Reader/USB DB CONNECTER(MMC)

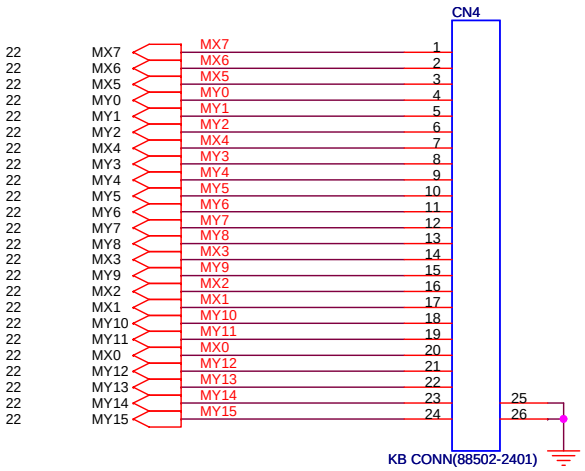


Add R329 and C302
for EMI issues
rev.b 20090129

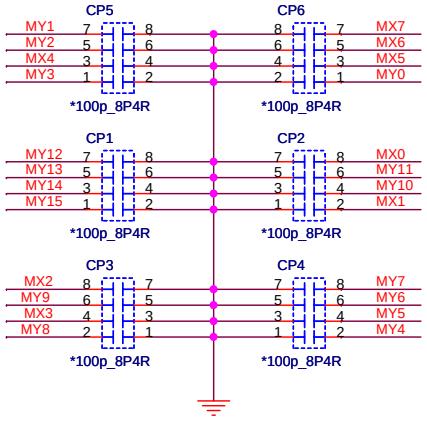
Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	USB/SD_LED AND CR_USB DB	1A
Date: Sunday, March 08, 2009	Sheet 20 of 34	

Keyboard(KBC)

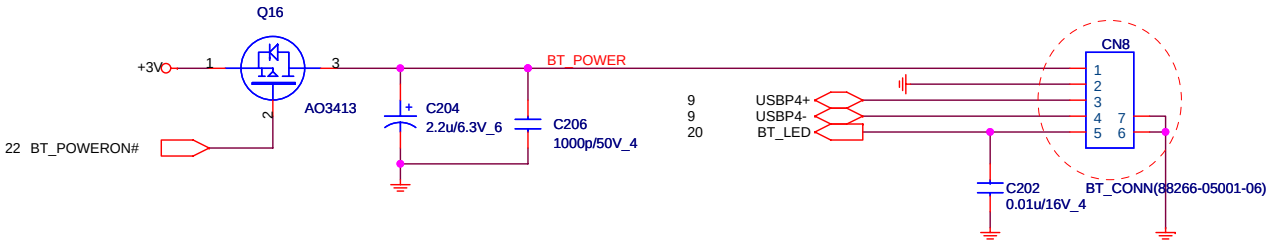


For EMI Reserve Caps for debug

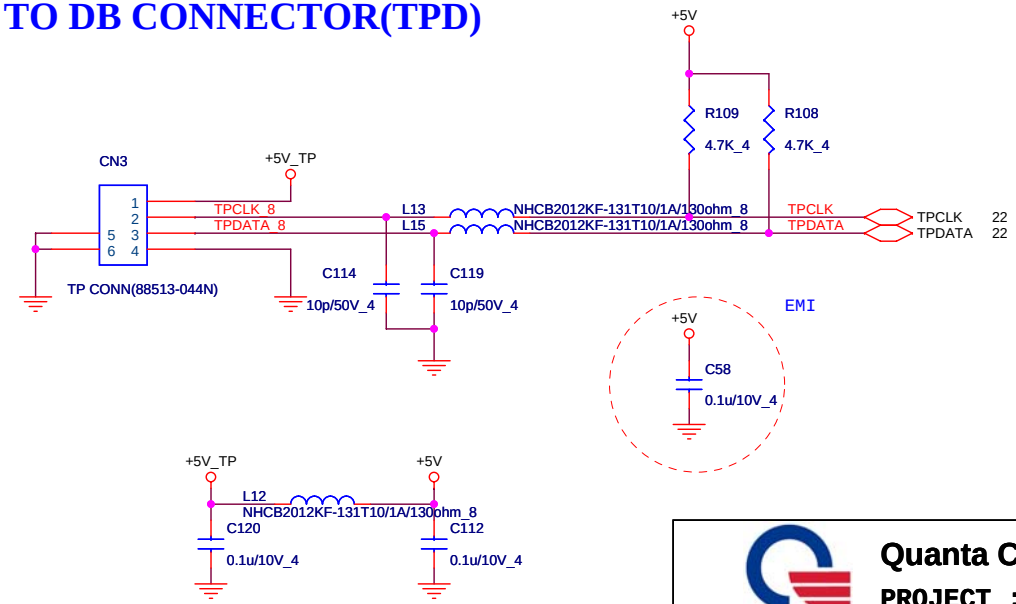


BT CONNECTER(BTM)

Modify CN8
footprint and
pin define rev.c
20090301



TO DB CONNECTOR(TPD)



Quanta Computer Inc.

PROJECT : ZA3

Size	Document Number	Rev
	KB/BT/TP	1A
Date: Sunday, March 08, 2009	Sheet 21 of 34	

EC(KBC)

Modify R110 footprint from RC0603 to SHORT0603 for 0 ohm cost down rev.c 20090301

Del D6 for SWI# issues rev.c 20090303

Stuff D17, Reserve R262, Change C267 C270 connect from +3V to 3V_VDD_EC rev.c 20090228

Modify R138 R139 R207 R327 R328 R65 R82 R83 R92 footprint from RC0402 to SHORT0402 for 0 ohm cost down

Change U16 Pin5 from +3VPCU to +3V_S5 rev.c 20090228

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 — BADDR0 — R232 10K_4
BADDR1 — uR_SOUT_CR — R230 *10K_4
SHBM — 3G_EN — R84 10K_4

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

MBCLK — R225 10K_4 — +3VPCU
MBDATA — R224 10K_4 — +3VPCU
2ND_MBCLK — R74 10K_4 — +3V_S5
2ND_MBDATA — R75 10K_4 — +3V_S5
CRT_SENSE# — R85 4.7K_4 — +3V

ACER ID

U10 AT24C02BN-SH-T
2ND_MBCLK → SCL
2ND_MBDATA → SDA
A0 A1 A2 WP → GND
VCC → +3VPCU +3V_S5
R70 *0_4 Short_4
R65 *0_4 Short_4
C98 0.1u/10V_4

SPI FLASH

U11 W25X80AVSSIG
SPI_SDI_uR R79 22_4 SPI_SDI_uR_R
SPI_SDO_uR
SPI_SCK_uR
SPI_CS0#_uR
R76 10K_4 +3VPCU
C99 0.1u/10V_4

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

HWPG

28 +1.5V_PG — D5 BAS316 HWPG_R
27 HWPG_1.05V — D1 BAS316
26 HWPG_1.8V — D2 BAS316
24 HWPG_SYS — D3 BAS316
4,25 IMVP_PWRGD — D4 BAS316
R104 10K_4 +3V
R207 Short_4 HWPG

POWER SWITCH

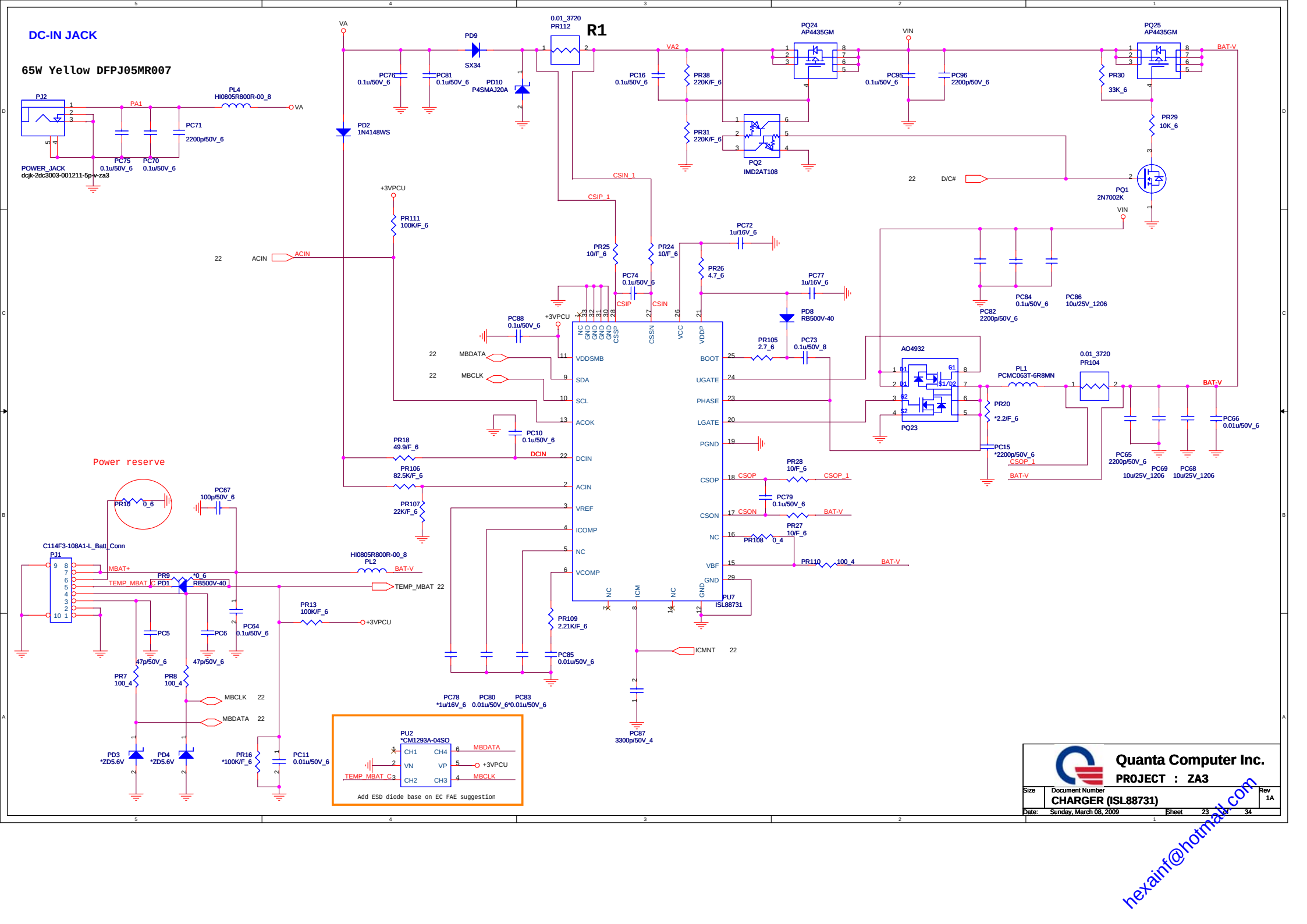
NBSWON# — G1 *SHORT_PAD — G3 *SHORT_PAD

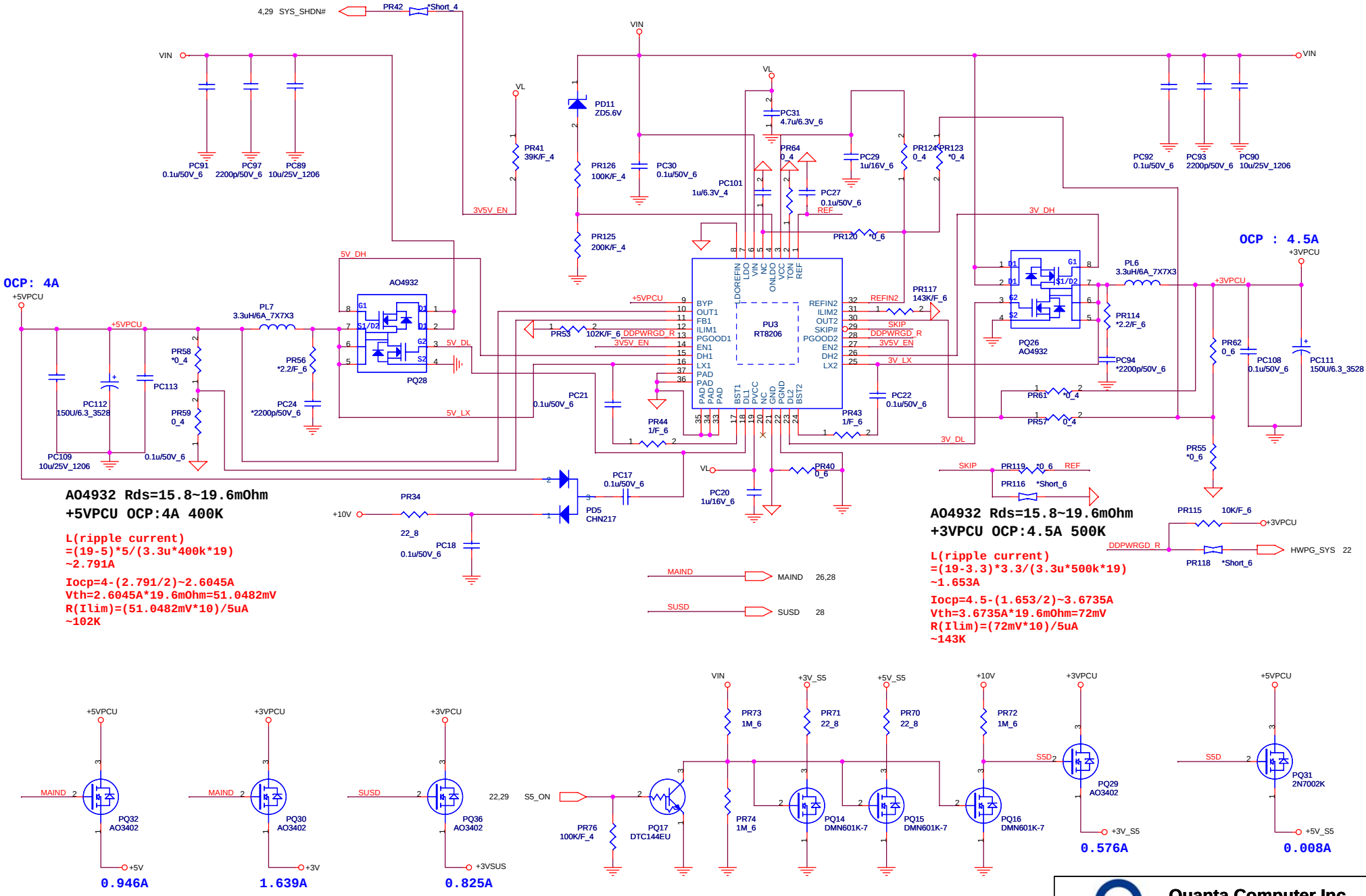
SUSLED# R231 10K_4
BATLED0# R222 10K_4
BATLED1# R223 10K_4
PWRLED# R86 10K_4
+3VPCU

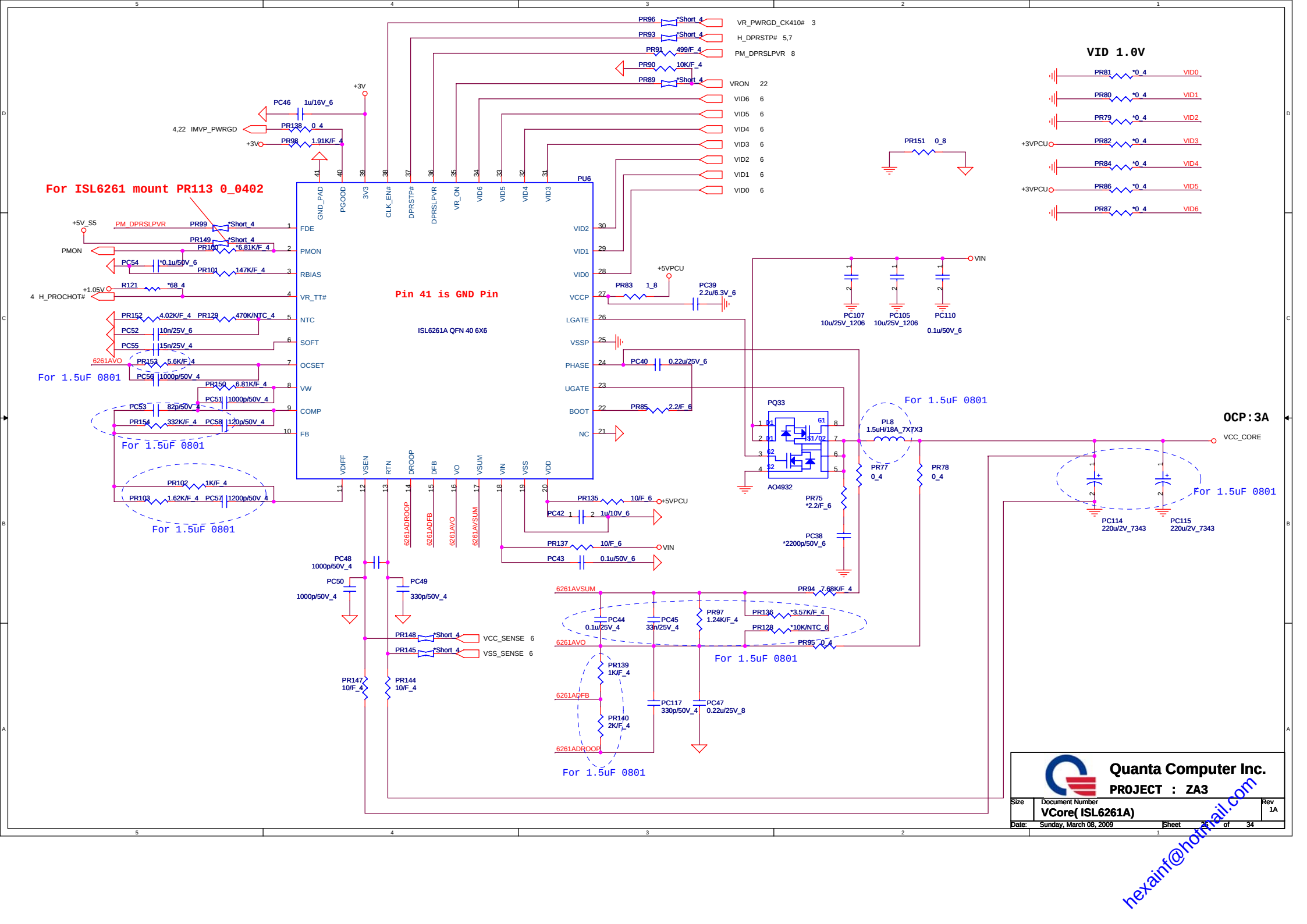
INTERNAL KEYBOARD STRIP SET

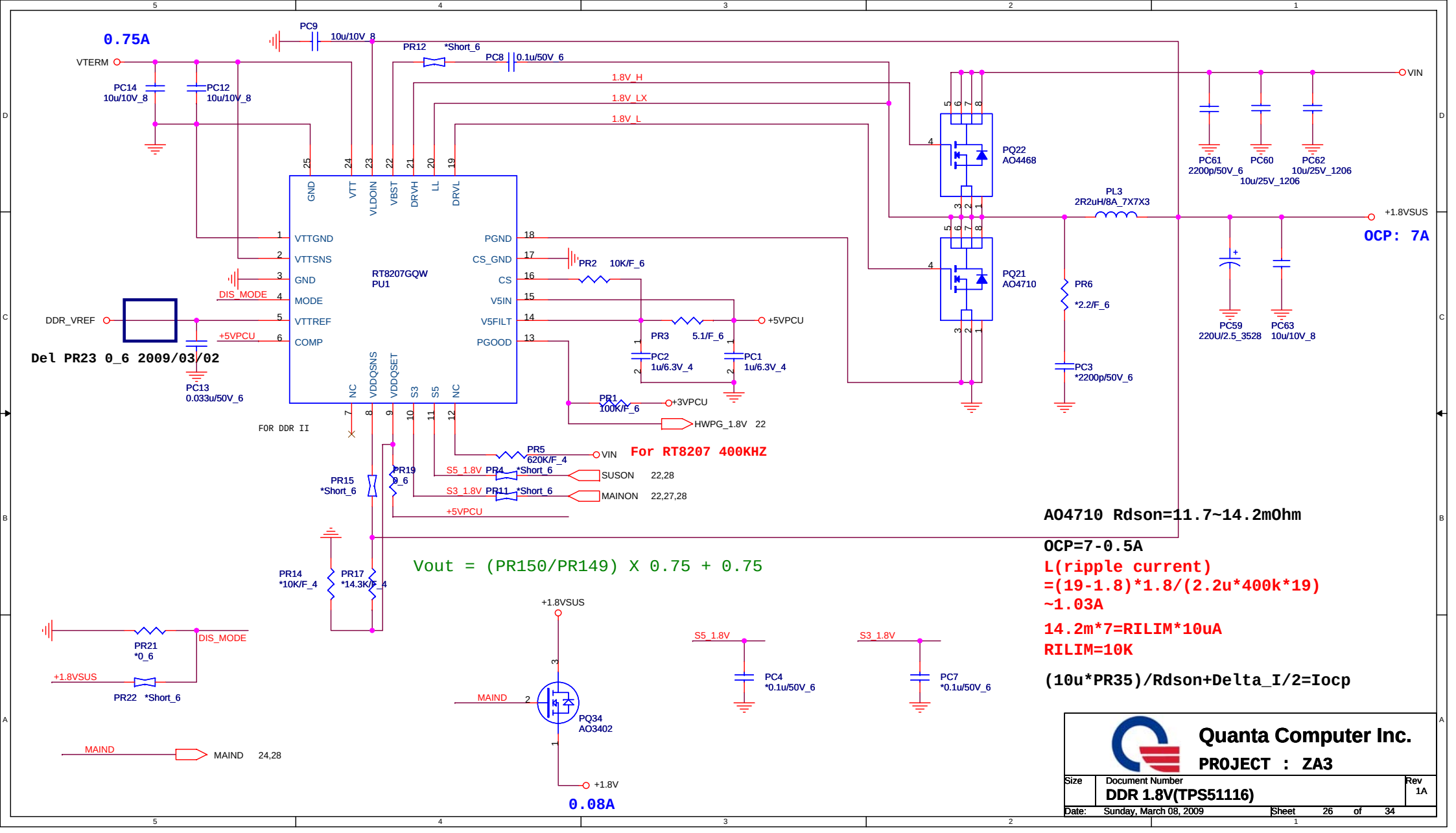
MY0 — R91 10K_4 — +3VPCU

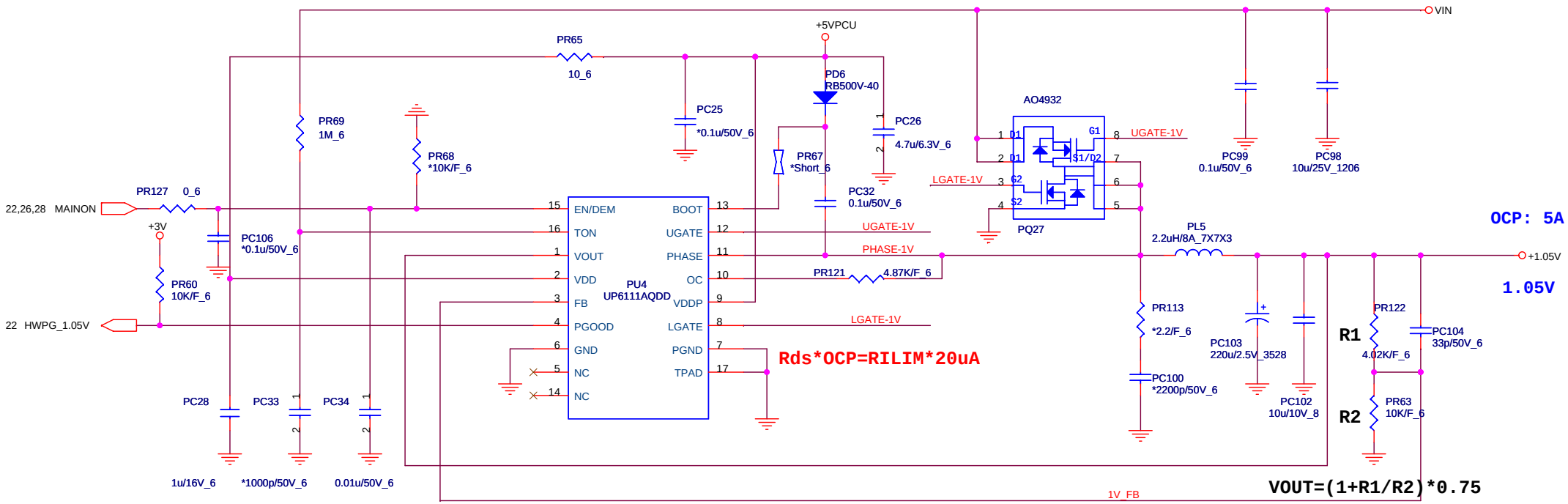
Quanta Computer Inc.	
PROJECT : ZA3	
Size	Document Number: WPCE775C/FLASH — Rev: 1A
Date: Sunday, March 08, 2009	Sheet 22 of 34


DC-IN JACK
65W Yellow DFPJ05MR007
R1
Power reserve
Quanta Computer Inc.
PROJECT : ZA3
CHARGER (ISL88731)
Sunday, March 08, 2009
hexainf@hotmail.com


4,29 SYS_SHDN#
PR42 *Short_4
VIN
VL
PD11 ZD5.6V
PR41 39K/F_4
3V5V_EN
PR126 100K/F_4
PC30 0.1u/50V_6
PC101 1u/6.3V_4
PR125 200K/F_4
PC31 4.7u/6.3V_6
PR64 0_4
PC27 0.1u/50V_6
REF
PR120 *0_6
PC29 1u/16V_6
PR124 0_4
PR123 *0_4
PC91 0.1u/50V_6
PC97 2200p/50V_6
PC89 10u/25V_1206
PC92 0.1u/50V_6
PC93 2200p/50V_6
PC90 10u/25V_1206
OCP: 4A
OCP : 4.5A
5V_DH
3V_DH
AO4932
PQ28
PQ26 AO4932
PU3 RT8206
PL7 3.3uH/6A_7X7X3
PL6 3.3uH/6A_7X7X3
+5VPCU
+3VPCU
PR58 *0_4
PR59 0_4
PR56 *2.2/F_6
PR114 *2.2/F_6
PC112 150U/6.3_3528
PC113
PC109 10u/25V_1206
0.1u/50V_6
PC24 *2200p/50V_6
PC94 *2200p/50V_6
PC108 0.1u/50V_6
PC111 150U/6.3_3528
PR62 0_6
PR53 102K/F_6
DDPWRGD_R
PR117 143K/F_6
REFIN2
SKIP
PR61 *0_4
PR57 0_4
PR55 *0_6
PC21 0.1u/50V_6
PC22 0.1u/50V_6
PR44 1/F_6
PR43 1/F_6
5V_DL
5V_LX
3V_DL
3V_LX
PR40 0_6
PC17 0.1u/50V_6
PC20 1u/16V_6
PD5 CHN217
PR34 22_8
PC18 0.1u/50V_6
+10V
PR119 *0_6
PR116 *Short_6
PR115 10K/F_6
PR118 *Short_6
HWPG_SYS 22
MAIND 26,28
SUSD 28
AO4932 Rds=15.8~19.6mOhm
+5VPCU OCP:4A 400K
L(ripple current)
=(19-5)*5/(3.3u*400k*19)
~2.791A
Iocp=4-(2.791/2)~2.6045A
Vth=2.6045A*19.6mOhm=51.0482mV
R(Ilim)=(51.0482mV*10)/5uA
~102K
AO4932 Rds=15.8~19.6mOhm
+3VPCU OCP:4.5A 500K
L(ripple current)
=(19-3.3)*3.3/(3.3u*500k*19)
~1.653A
Iocp=4.5-(1.653/2)~3.6735A
Vth=3.6735A*19.6mOhm=72mV
R(Ilim)=(72mV*10)/5uA
~143K
PQ32 AO3402
PQ30 AO3402
PQ36 AO3402
PQ17 DTC144EU
PR76 100K/F_4
PR73 1M_6
PR74 1M_6
PR71 22_8
PR70 22_8
PR72 1M_6
PQ14 DMN601K-7
PQ15 DMN601K-7
PQ16 DMN601K-7
PQ29 AO3402
PQ31 2N7002K
S5_ON
S5D
22,29
0.946A
1.639A
0.825A
0.576A
0.008A
Quanta Computer Inc.
PROJECT : ZA3
Size
Document Number
SYSTEM 5V/3V (ISL6237)
Rev 1A
Date: Sunday, March 08, 2009
Sheet 24 of 34


For ISL6261 mount PR113 0_0402
Pin 41 is GND Pin
ISL6261A QFN 40 6X6
PU6
FDE
PMON
RBIAS
VR_TT#
NTC
SOFT
OCSET
VW
COMP
FB
VDIFF
VSEN
RTN
DROOP
DFB
VO
VSUM
VIN
VSS
VDD
GND_PAD
PGOOD
3V3
CLK_EN#
DPRSTP#
DPRSLPVR
VR_ON
VID6
VID5
VID4
VID3
VID2
VID1
VID0
VCCP
LGATE
VSSP
PHASE
UGATE
BOOT
NC
VID 1.0V
PR81 *0_4 VID0
PR80 *0_4 VID1
PR79 *0_4 VID2
PR82 *0_4 VID3
PR84 *0_4 VID4
PR86 *0_4 VID5
PR87 *0_4 VID6
PR151 0_8
PR96 *Short_4 VR_PWRGD_CK410# 3
PR93 *Short_4 H_DPRSTP# 5,7
PR91 499/F_4 PM_DPRSLPVR 8
PR90 10K/F_4
PR89 *Short_4 VRON 22
VID6 6
VID5 6
VID4 6
VID3 6
VID2 6
VID1 6
VID0 6
PC46 1u/16V_6
PR138 0_4
PR98 1.91K/F_4
4,22 IMVP_PWRGD
+3V
+5V_S5
PM_DPRSLPVR
PR99 *Short_4
PR149 *Short_4
PR100 *6.81K/F_4
PMON
PC54 *0.1u/50V_6
PR101 147K/F_4
R121 *68_4
+1.05V
4 H_PROCHOT#
PR152 4.02K/F_4
PR129 470K/NTC_4
PC52 10n/25V_6
PC55 15n/25V_4
6261AVO
PR153 5.6K/F_4
PC56 1000p/50V_4
PR150 6.81K/F_4
PC51 1000p/50V_4
PC53 82p/50V_4
PR154 332K/F_4
PC58 120p/50V_4
For 1.5uF 0801
PR102 1K/F_4
PR103 1.62K/F_4
PC57 1200p/50V_4
For 1.5uF 0801
PR83 1_8
+5VPCU
PC39 2.2u/6.3V_6
PC40 0.22u/25V_6
PR85 2.2/F_6
PR135 10/F_6
PC42 1u/10V_6
PR137 10/F_6
PC43 0.1u/50V_6
VIN
PC48 1000p/50V_4
PC50 1000p/50V_4
PC49 330p/50V_4
PR148 *Short_4 VCC_SENSE 6
PR145 *Short_4 VSS_SENSE 6
PR147 10/F_4
PR144 10/F_4
6261AVSUM
PC44 0.1u/25V_4
PC45 33n/25V_4
PR97 1.24K/F_4
PR136 *3.57K/F_4
PR128 *10K/NTC_6
PR95 0_4
PR94 7.68K/F_4
For 1.5uF 0801
6261ADFB
PR139 1K/F_4
PR140 2K/F_4
PC117 330p/50V_4
PC47 0.22u/25V_8
6261ADROOP
For 1.5uF 0801
PQ33
AO4932
PR75 *2.2/F_6
PC38 *2200p/50V_6
PR77 0_4
PR78 0_4
PL8 1.5uH/18A_7X7X3
For 1.5uF 0801
PC107 10u/25V_1206
PC105 10u/25V_1206
PC110 0.1u/50V_6
VIN
OCP:3A
VCC_CORE
PC114 220u/2V_7343
PC115 220u/2V_7343
For 1.5uF 0801
Quanta Computer Inc.
PROJECT : ZA3
Size
Document Number
VCore(ISL6261A)
Rev 1A
Date: Sunday, March 08, 2009
Sheet 30 of 34
hexainf@hotmail.com


0.75A
PC9
10u/10V_8
PR12
*Short_6
PC8
0.1u/50V_6
VTERM
PC14
10u/10V_8
PC12
10u/10V_8
1.8V_H
1.8V_LX
1.8V_L
VIN
PQ22
AO4468
PQ21
AO4710
PL3
2R2uH/8A_7X7X3
+1.8VSUS
OCP: 7A
PC61
2200p/50V_6
PC60
10u/25V_1206
PC62
10u/25V_1206
PC59
220U/2.5_3528
PC63
10u/10V_8
PR6
*2.2/F_6
PC3
*2200p/50V_6
GND
VTT
VLDOIN
VBST
DRVH
LL
DRVL
VTTGND
VTTSNS
GND
MODE
VTTREF
COMP
PGND
CS_GND
CS
V5IN
V5FILT
PGOOD
RT8207GQW
PU1
DIS_MODE
DDR_VREF
+5VPCU
PR2
10K/F_6
PR3
5.1/F_6
PC2
1u/6.3V_4
PC1
1u/6.3V_4
Del PR23 0_6 2009/03/02
PC13
0.033u/50V_6
NC
VDDQSNS
VDDQSET
S3
S5
NC
PR1
100K/F_6
+3VPCU
HWPG_1.8V 22
FOR DDR II
PR5
620K/F_4
VIN
For RT8207 400KHZ
PR15
*Short_6
PR19
0_6
S5_1.8V
PR4
*Short_6
SUSON 22,28
S3_1.8V
PR11
*Short_6
MAINON 22,27,28
+5VPCU
PR14
*10K/F_4
PR17
*14.3K/F_4
Vout = (PR150/PR149) X 0.75 + 0.75
AO4710 Rdson=11.7~14.2mOhm
OCP=7-0.5A
L(ripple current)
=(19-1.8)*1.8/(2.2u*400k*19)
~1.03A
14.2m*7=RILIM*10uA
RILIM=10K
(10u*PR35)/Rdson+Delta_I/2=Iocp
PR21
*0_6
DIS_MODE
+1.8VSUS
PR22
*Short_6
MAIND
MAIND 24,28
+1.8VSUS
MAIND
PQ34
AO3402
+1.8V
0.08A
S5_1.8V
PC4
*0.1u/50V_6
S3_1.8V
PC7
*0.1u/50V_6
Quanta Computer Inc.
PROJECT : ZA3
Size
Document Number
DDR 1.8V(TPS51116)
Rev
1A
Date: Sunday, March 08, 2009
Sheet 26 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

AO4932 Rdson=15.8~19.6mOhm

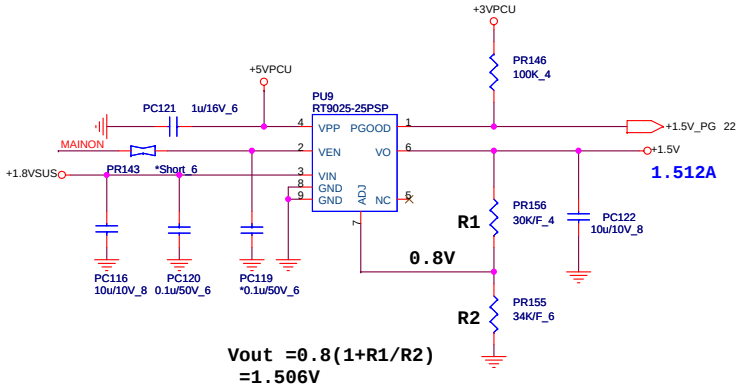
OCP=7.2-0.8A

L(ripple current)
=(19-1.05)*1.05/(3.3u*272k*19)
~1.105A

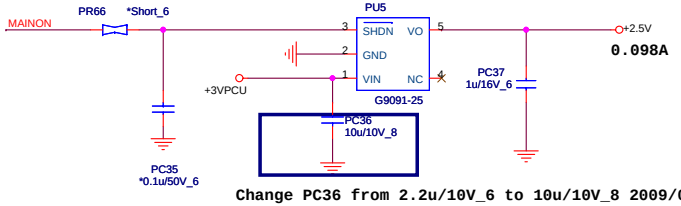
19.6m*5=RILIM*20uA

RILIM=4.9K(4.87K)

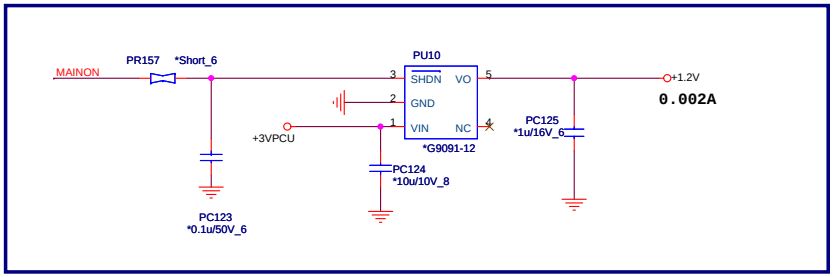
Quanta Computer Inc.		
PROJECT : ZA3		
Size	Document Number: VCCP 1.05V(UP6111AQDD)	Rev: 1A
Date: Sunday, March 08, 2009	Sheet 27 of 34	



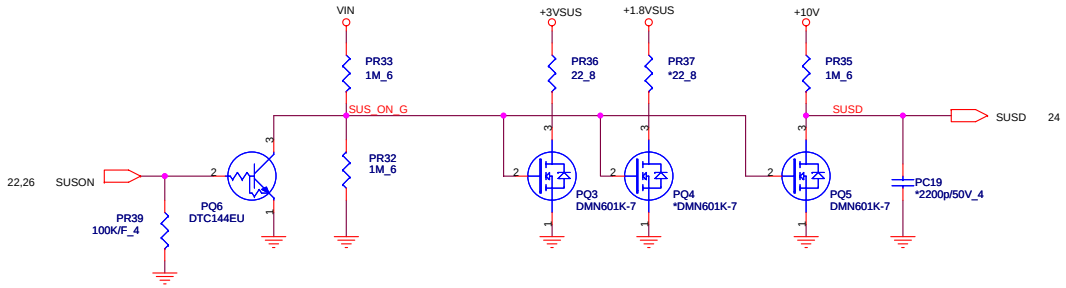
Vout =0.8(1+R1/R2)
=1.506V

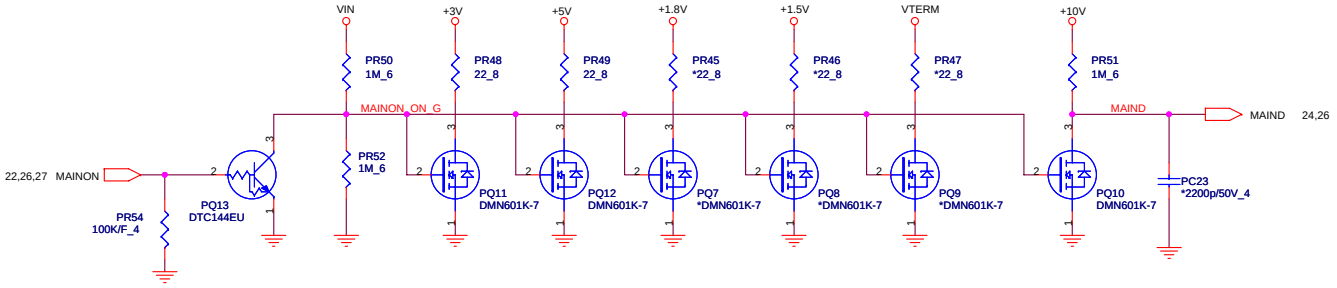


Change PC36 from 2.2u/10V_6 to 10u/10V_8 2009/03/02



Addition +1.2v LDO 2009/03/02

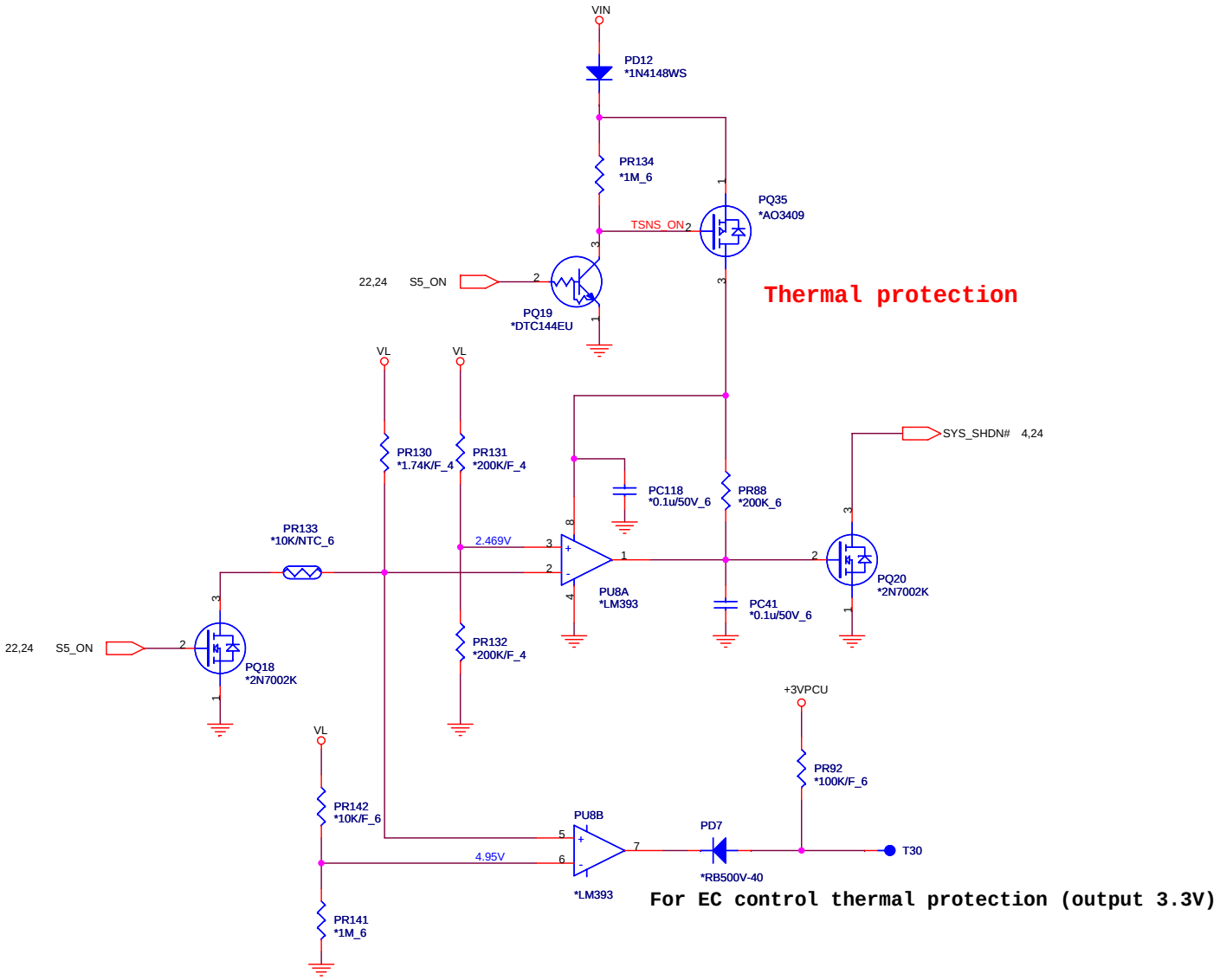




Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	Discharge/1.5/2.5V	1A

Date: Sunday, March 08, 2009 Sheet 28 of 34

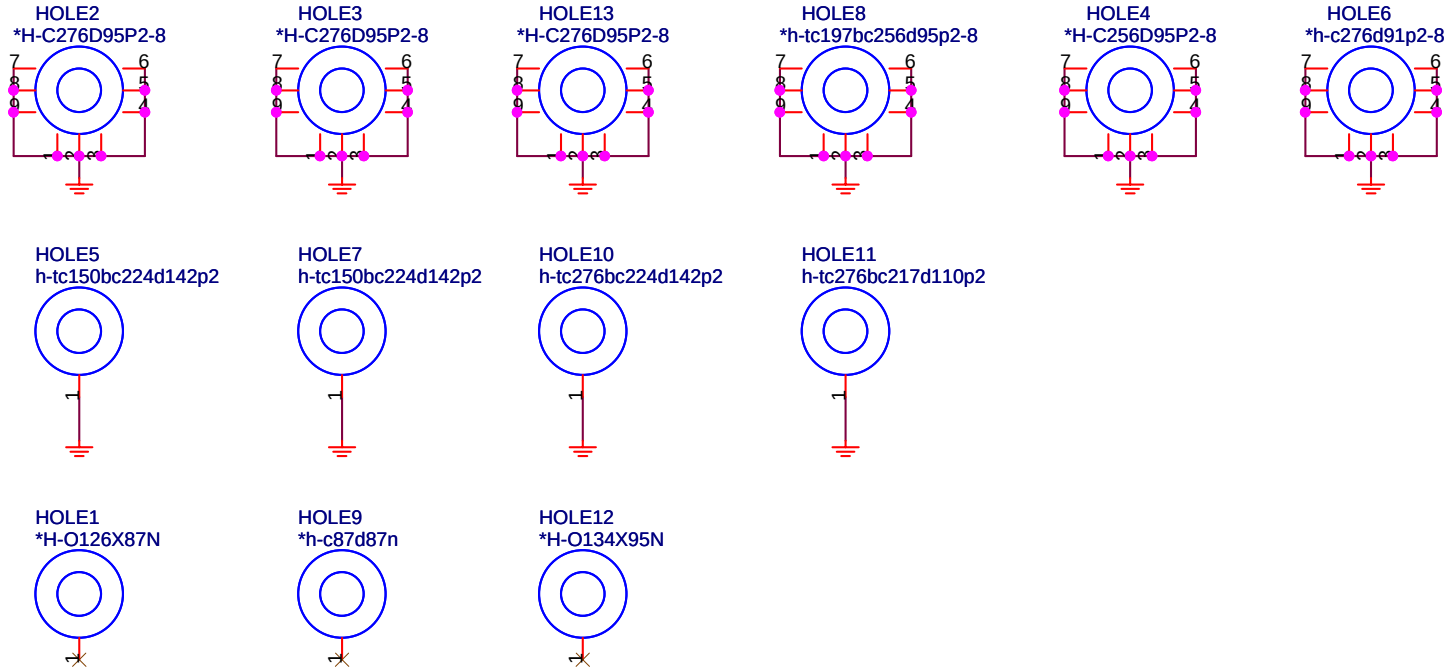


Quanta Computer Inc.

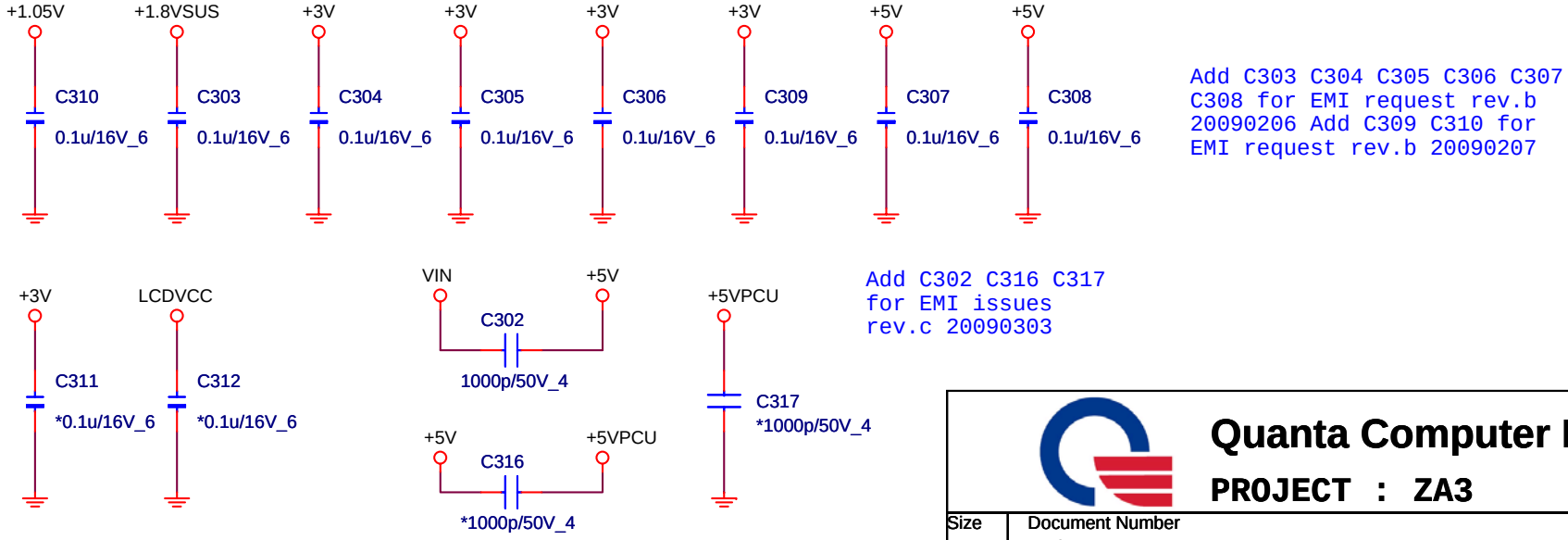
PROJECT : ZA3

Size	Document Number	Rev
	Thermal protect	1A
Date: Sunday, March 08, 2009	Sheet 29 of 34	

HOLES



EMI



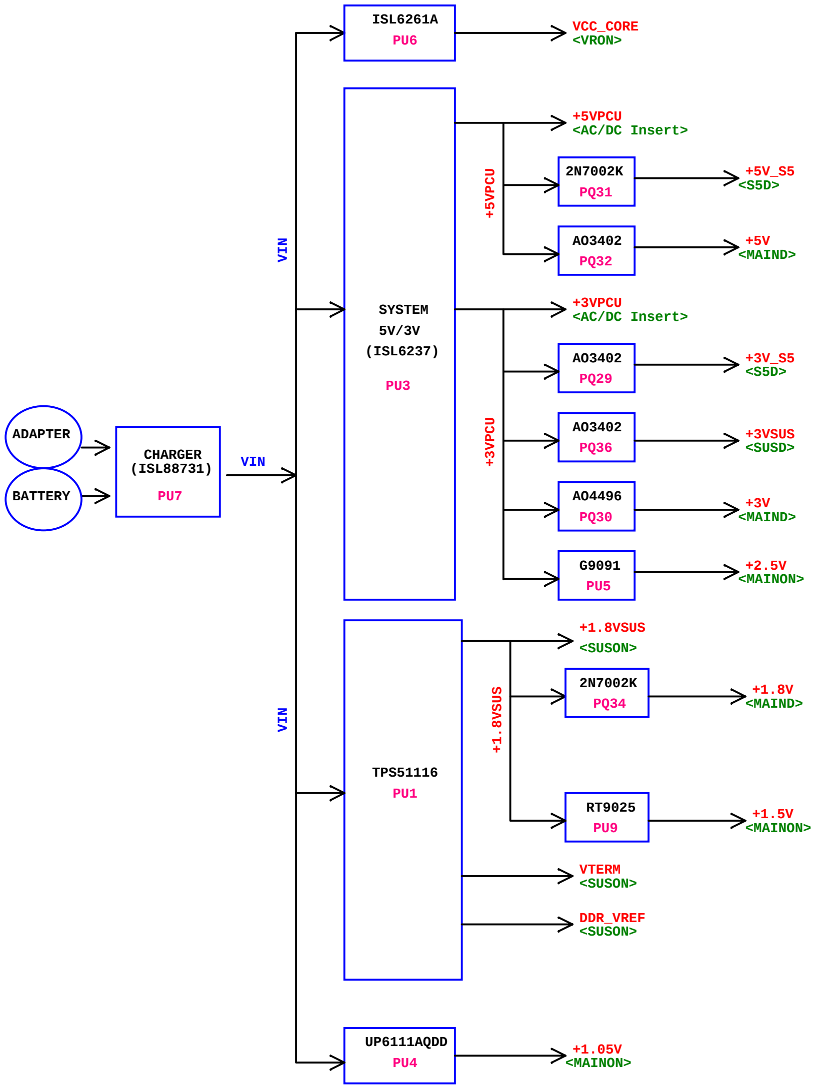
Add C303 C304 C305 C306 C307 C308 for EMI request rev.b 20090206 Add C309 C310 for EMI request rev.b 20090207

Add C302 C316 C317 for EMI issues rev.c 20090303

Quanta Computer Inc.

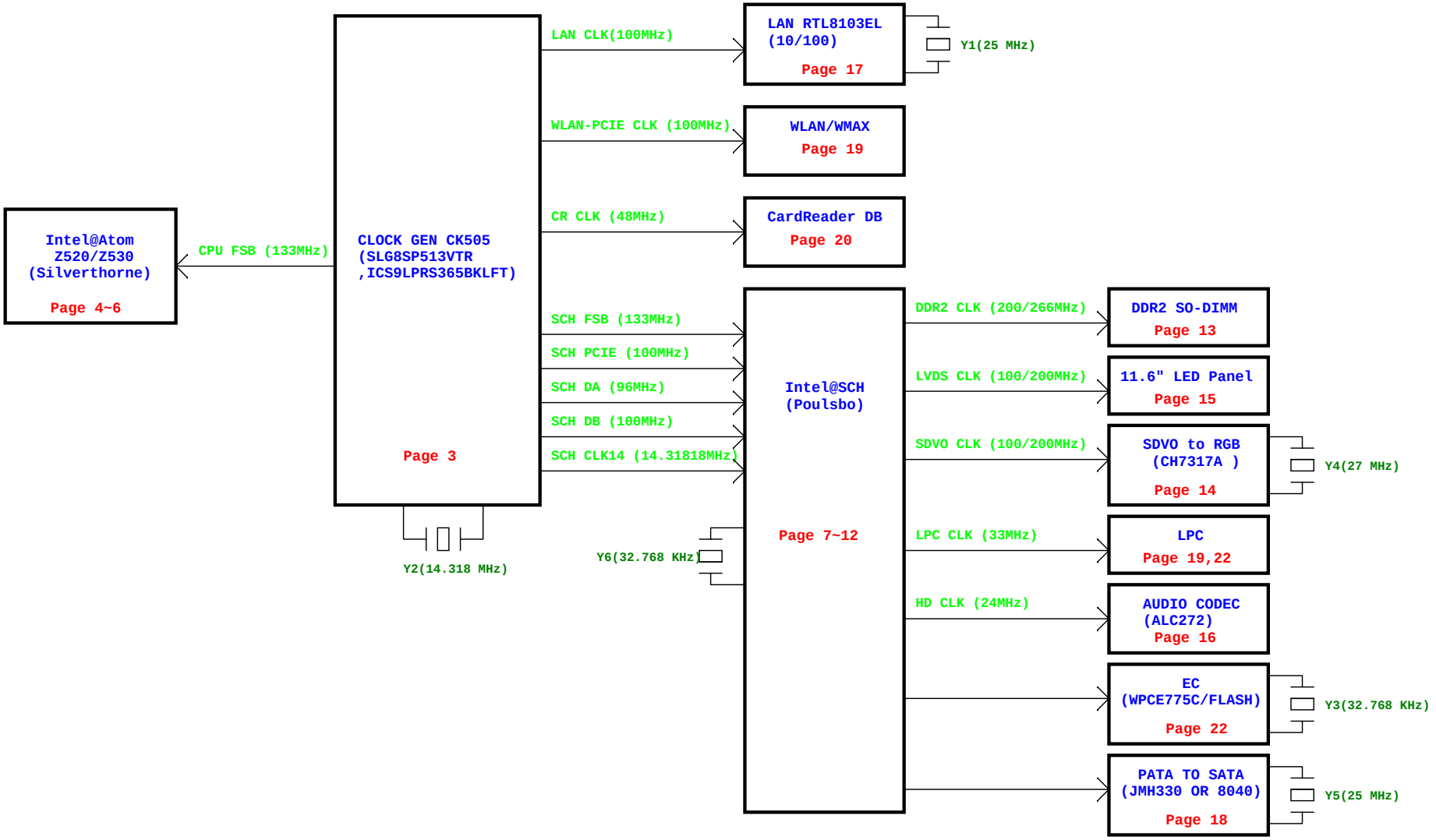
PROJECT : ZA3

Size	Document Number	Rev
	HOLE	1A
Date: Sunday, March 08, 2009	Sheet 30 of 34	



POWER	Distribution
VCC_CORE	CPU
+5VPCU	RTC, USB Connecter
+5V_S5	SCH Power
+5V	CPU C6-Power Circuit, SCH Power, CRT, LCD, CAMERA ,Audio Code, INT SPK AMP, SATA HDD,Touch Pad
+3VPCU	RTC, LED Power, HALL SENSOR, EC, ID , SPI Flash ,
+3V_S5	SCH USB Power, LAN, ID
+3VSUS	WLAN/WMAX, 3G
+3V	CLK_GEN Power, Thermal Sensor Power, CPU Pull Up Power, SCH Pull Up Power, SCH Power, DDRII Power, SDVO to CRT Power, LCD Power, INT SPK AMP, PATA To SATA Bridge, SATA, WLAN/WMAX, 3G, Card Reader, BT, EC,
+2.5V	SDVO to CRT
+1.8VSUS	SCH Power, DDRII SO-DIMM
+1.8V	PATA To SATA Bridge
+1.5V	CPU, SCH, WLAN/WMAX, 3G
VTERM	DDRII SO-DIMM
DDR_VREF	DDRII SO-DIMM
+1.05V	CLK_GEN, CPU, SCH,

Quanta Computer Inc.
PROJECT : ZA3
Size | Document Number: Power Tree | Rev 1A
Date: Sunday, March 08, 2009 | Sheet 31 of 34



Quanta Computer Inc.

PROJECT : ZA3

Size	Document Number	Rev
	Clock Distribution Diagram	1A
Date: Sunday, March 08, 2009	Sheet 32 of 34	

Model	REV	DATE	CHANGE LIST	NOTE
ZA3	A1A	20090107	PAGE16 : Reverse C301 R322 U19 R323 R324 for SPK AMP Power	ECN Release
		20090112	PAGE23 : Change PJ1 P/N and Footprint	
		20090113	PAGE18 : Del RN20 and add RN21 RN22 for HDD issues	
			PAGE18 : Add R325 for JMH330 XTAL issues	
			PAGE21 : Change CN4 P/N from DFFC24FR023 to DFFC24FR017	
			PAGE21 : Change CN4 footprint	
			PAGE20 : Change CN5 P/N from DFFC14FR080 to DFFC14FR047	
			PAGE20 : Change CN6 P/N from DFFC12FR293 to DFFC12FR019	
			PAGE17 : Change CN2 P/N from DFFC12FR293 to DFFC12FR019	
			PAGE20 : Change CN5 footprint from BL121-14R-TAND-14P-L-BU1 to af714l-n2g1x-14p-l	
			PAGE19 : Change ESD1 value to U20	
			PAGE16 : Change CN7 P/N from DFHS04FS969 to DFHD04MRA75	
			PAGE16 : Change CN7 footprint from 88460-0401-4p-l to 88266-040xx-xxx-4p-l	
			PAGE4 : Change CN7 P/N from DFHS04FS969 to DFHD04MRA75	
			PAGE4 : Change CN7 footprint from 88460-0401-4p-l to 88266-040xx-xxx-4p-r	
			PAGE21 : Change CN8 P/N from DFHS05FS000 to DFHD05MRD98	
			PAGE21 : Change CN8 footprint from 88460-0501-5P-L to 88266-0500x-5p-l	
			PAGE6 : Del Q10 R138R139 for modify +1.05V_C6_OFF circuit	
			PAGE6 : Change R168 P/N from CS41002FB28 to CS31002JB28 for modify +1.05V_C6_OFF circuit	
			PAGE6 : Add R326 for modify +1.05V_C6_OFF circuit	
			PAGE6 : Change R148 P/N from CS41002FB28 to CS33302JB16 for modify +1.05V_C6_OFF circuit	
			PAGE6 : Add Q26 for modify +1.05V_C6_OFF circuit	
		20090114	PAGE22 : Add R138 R139 R327 R328 for power sequence debug	
			PAGE5 : Add T54 T56 T57 T58 for power sequence debug	
			PAGE4 : Add T55 T59 for power sequence debug	
			PAGE14 : Change Y4 footprint from XTAL-3_2X2_5-2_3X1_9 to xtl-5x3_2-3_7 for cost down issues	
			PAGE14 : Change Y4 P/N from BG627000011 to BG627000505 for cost down issues	
			PAGE17 : Change U1 P/N from AL08103EB00 to AL008103B00	
		20090115	PAGE15 : Change CN1 footprint from MSC-RB30-5-FG-30P-L to msc-rb30-5-fg-30p-l-za3 for ZA3 A-test SMT issues	
			PAGE19 : Change JSIM1 footprint from SIM-CE01X-3-14P to sim-ce01x-3-14p-za3 for ZA3 A-test SMT issues	
			PAGE19 : Change CN18 footprint from mipcie-88956-5204-52p-ruv-v to mipcie-88956-5204-52p-ruv-v-za3 for ZA3 A-test SMT issues	
			PAGE19 : Change CN19 footprint from mipcie-88956-5204-52p-ruv-v to mipcie-88956-5204-52p-ruv-v-za3 for ZA3 A-test SMT issues	
			PAGE20 : Change CN11 footprint from usb-020173mr004s555zl-4p-r-v to usb-020173mr004s555-4p-r-v-za3 for ZA3 A-test SMT issues	
			PAGE20 : Change CN14 footprint from usb-020173mr004s555zl-4p-r-v to usb-020173mr004s555-4p-r-v-za3 for ZA3 A-test SMT issues	
			PAGE23 : Change PJ2 footprint from dcjk-2dc3003-001211-5p to dcjk-2dc3003-001211-5p-v-za3 for ZA3 A-test SMT issues	
			PAGE23 : Change PR104 footprint from RC3720 to rc3720-0_8h for ZA3 A-test SMT issues	
			PAGE23 : Change PR112 footprint from RC3720 to rc3720-0_8h for ZA3 A-test SMT issues	
			PAGE14 : Change U9 footprint from QFN64-8X8-4-65P-0_85H to qfn64-8X8-4-65p-0_85h-za3 for ZA3 A-test SMT issues	
			PAGE23 : Change PU7 footprint from QFN28-5X5-5-33P to qfn28-5x5-5-33p-za3 for ZA3 A-test SMT issues	
			PAGE22 : Change U12 footprint from LQFP128-16X16-4 to lqfp128-16x16-4-za3 for ZA3 A-test SMT issues	
			PAGE23 : Change PJ1 footprint from bat-c144f8-108a1-l-8p-l-v-zg8 to bat-c144f8-108a1-l-8p-l-v-za3 for ZA3 A-test SMT issues	
			PAGE30 : Change HOLE8 HOLE9 HOLE10 footprint	
			PAGE16 : Modify SPK circuit	
		20090116	PAGE21 : Add CN8 PIN6 PIN7 to GND	
			PAGE30 : Modify HOLE8 HOLE9 HOLE10 symbol	
			PAGE21 : Change CN3 footprint from BL123-04R-4P-R-BL5 to 88513-0401-4p-r	
			PAGE21 : Change CN3 P/N	
		20090117	PAGE16 : Change CN7 P/N from DFHS04FS969 to DFHD04MRA75	
			PAGE4 : Change CN9 P/N from DFHS04FS969 to DFHD04MRA75	
		20090119	PAGE23 : stuff PR10 for Battery issues	
		20090121	PAGE22 : Modify SUSLED# from GPIO30 to GPIO40	
			PAGE27 : Change PL5 P/N from DC-33D5M000 to DC-2280M002	
		20090129	PAGE15 : Change C209 P/N from CH62202Z233 to CH52202MA91	
			PAGE15 : Change C209 footprint from CC1206 to CC0805	
			PAGE19 : Change CN18 P/N from DG052000031 to DFHS52FR025 for cost issues	
			PAGE19 : Change CN19 P/N from DG052000031 to DFHS52FR025 for cost issues	
			PAGE20 : Add R329 and C302 for EMI 48MHz issues	
			PAGE19 : Change C182 P/N from CH44702K912 to CH4472K9B00	
		20090205	PAGE8 : Add T60 T61 T62 T63 test point for Boundary Scan	
			PAGE4 : Modify JETC pins for Boundary Scan	
			PAGE9 : Modify JETC pins for Boundary Scan	
			PAGE16 : Modify CN7 pin5 pin6 for ESD issues	
			PAGE14 : Change CN10 P/N form DFWF20MS000 to DFWF20MS002	
			PAGE14 : Change CN10 footprint form 88442-2001-20p-luv to 87242-2001-20p-luv	
			PAGE8 : No stuff C160 for C6 issues	
		20090206	PAGE15: Add R255 for EMI request	

Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	Change List01	1A

Date: Sunday, March 08, 2009 Sheet 33 of 34

Model	REV	DATE	CHANGE LIST	NOTE
ZA3	B1A	20090206	PAGE16 : Reverse C301 R322 U19 R323 R324 for SPK AMP Power	ECN Release
			PAGE30 : Add C303 C304 C305 C306 C307 C308 for EMI Request	
		20090207	PAGE15 : No stuff R208 for EC not use BL_STATE rev.b 20090207	
			PAGE30 : C309 C310 for EMI Request	
			PAGE4 : Change R98 R87 R97 P/N from CS05102FB09 to CS05602JB17 rev.b 20090207	
			PAGE9 : Change R260 R259 R256 P/N from CS05102FB09 to CS05602JB17	
			PAGE9 : Change R257 P/N from CS02702JB21 to CS05602JB17 rev.b 20090207	
		20090209	PAGE8 : Change T60 T61 T62 T63 footprint from TP3075 to TP3050	
			PAGE8 : Modify HOLE10 HOLE5 HOLE7 footprint	
			PAGE15 : Change U8 P/N from AL005243000 to AL005243001	
		20090210	PAGE16 : Change R181 R176 P/N from CS07502FB17 to CS05102JB35	
			PAGE7 ~ PAGE12 : Change U15 P/N from AJSLGFQ0T02 to AJ0QV230T01	
		20090211	PAGE30 : C311 C312 for EMI Request	
			PAGE30 : Modify CN10 P/N and footprint for EMI request	
		20090212	PAGE16 : Change R204, R187, R313, R304 P/N from CS32003F933 to CS33603F911	
			PAGE17 : Change C4 C5 P/N from CH02706JB06 to CH03306JBD7 for vender suggest	
			PAGE3 : Change C42 C43 P/N from CH02706JB06 to CH03306JBD7 for vender suggest	
			PAGE18 : Change C250 C251 P/N from CH02206JB08 to CH02706JB06 for vender suggest	
		20090213	PAGE16 : Change R164 P/N from CS21002JB34 to CS22002JB02 for Ben check	
			PAGE16 : Change R167 P/N from CS00002JB38 to CS33602JB17 for Ben check	
	C1A	20090213	PAGE11 : Change C163 C136 connect SCH_VCCSUS3 power net	
		20090228	PAGE22 : Change U16 Pin5 from +3VPCU to +3V_S5	
			PAGE22 : Stuff D17, Reserve R262, Change C267 C270 connect from 3V_VDD_EC to +3V	
			PAGE6 : Modify R326 from 10K to 100K and pull up +3V and Change R168 from 10K to 100K	
		20090301	PAGE21 : Modify CN8 footprint and pin define	
			PAGE18 : Modify 8040 circuit to 88SA8052 add L22 R330 R331 R99 R339	
			PAGE4 : Modify R150 from CPU side to SCH side	
			PAGE4 : Change R88 P/N from CS05602JB17 to CS11202JB21	
			PAGE4 : Change R81 P/N from CS00002JB38 to CS02402JB11	
			PAGE6 : Change R100 R101 P/N from CS11002FB22 to CS11002JB32	
			PAGE13 : Add R112 R332 of RAM RST issues for intel suggest	
			PAGE15 : Change R215 P/N from CS41002JB20 to CS41002FB28	
			PAGE8 : Add R333 R334 R335 R336 for LPC AD0~AD3	
			PAGE8 : Change C233 C231 C243 C240 C239 C238 C237 C235 from SDVO chip side to SCH side	
			PAGE3 : Change R43 P/N from CS00002JB38 to CS31002JB28	
			PAGE9 : Change R186 R184 R309 R296 P/N from CS31002JB28 to CS21002JB34	
			PAGE9 : Del RN8 and Add R337 R338 to SCH SMBUS	
			PAGE15 : Modify R210 R23 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE16 : Modify R275 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE22 : Modify R138 R139 R207 R327 R328 R65 R82 R83 R92 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE10 : Modify R111 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE19 : Modify R160 R161 R162 R178 R179 R180 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE3 : Modify R39 R36 footprint from RC0402 to SHORT0402 for 0 ohm cost down	
			PAGE22 : Modify R110 footprint from RC0603 to SHORT0603 for 0 ohm cost down	
			PAGE11 : Modify R126 footprint from RC0603 to SHORT0603 for 0 ohm cost down	
			PAGE16 : Modify R144 R149 R170 R183 R246 R251 R197 R198 R199 R200 footprint from RC0603 to SHORT0603 for 0 ohm cost down	
		20090302	PAGE16 : Modify R168 P/N from CS31002JB28 to CS41002JB20	
			PAGE23 : Modify PJ1 footprint from bat-c144f8-108a1-l-8p-l-v-za3 to bat-c144f8-108a1-l-8p-l-v for SMT issues	
			PAGE14 : Add C313 C314 C315 for EMI issues	
		20090303	PAGE16 : Add R340 for EC PCBEEP	
			PAGE3 : Del R27 for CR DB +3VSUS issues	
			PAGE20 : Del R329 C302 for CR DB +3VSUS issues and modify CN5 pin12 to +3VSUS	
			PAGE6 : Add and revrse Q27 R329 for C6 circuit	
			PAGE19 : Add C318 for LPC issues	
			PAGE30 : Add C302 C316 C317 for EMI issues	
			PAGE13 : Del RN4 and Add R341 R342 for RAM issues	
			PAGE9 : Stuff R297 for SMI#	
			PAGE9 : No stuff R239 for SWI#	
			PAGE22 : Del D6 for SWI# issues	
		20090304	PAGE9 : Change R297 from +3V_S5 to +3V for SMI#	
			PAGE22 : Del SWI# net and Add test point T36	
			PAGE19 : No stuff C182 and change P/N from CH4472K9B00 to CH4471Z3B07	
		20090305	PAGE16 : Change U18 P/N from AL001453000 to AL001454001	
			PAGE19 : Change CN18 CN19 P/N from DFHS52FR025 to DG052000031	
			PAGE15 : Change CN1 P/N from DFHS30FR299 to DFHS30FR014 for SMT issues	

Quanta Computer Inc.
PROJECT : ZA3

Size	Document Number	Rev
	Change List02	1A

Date: Sunday, March 08, 2009 Sheet 34 of 34