

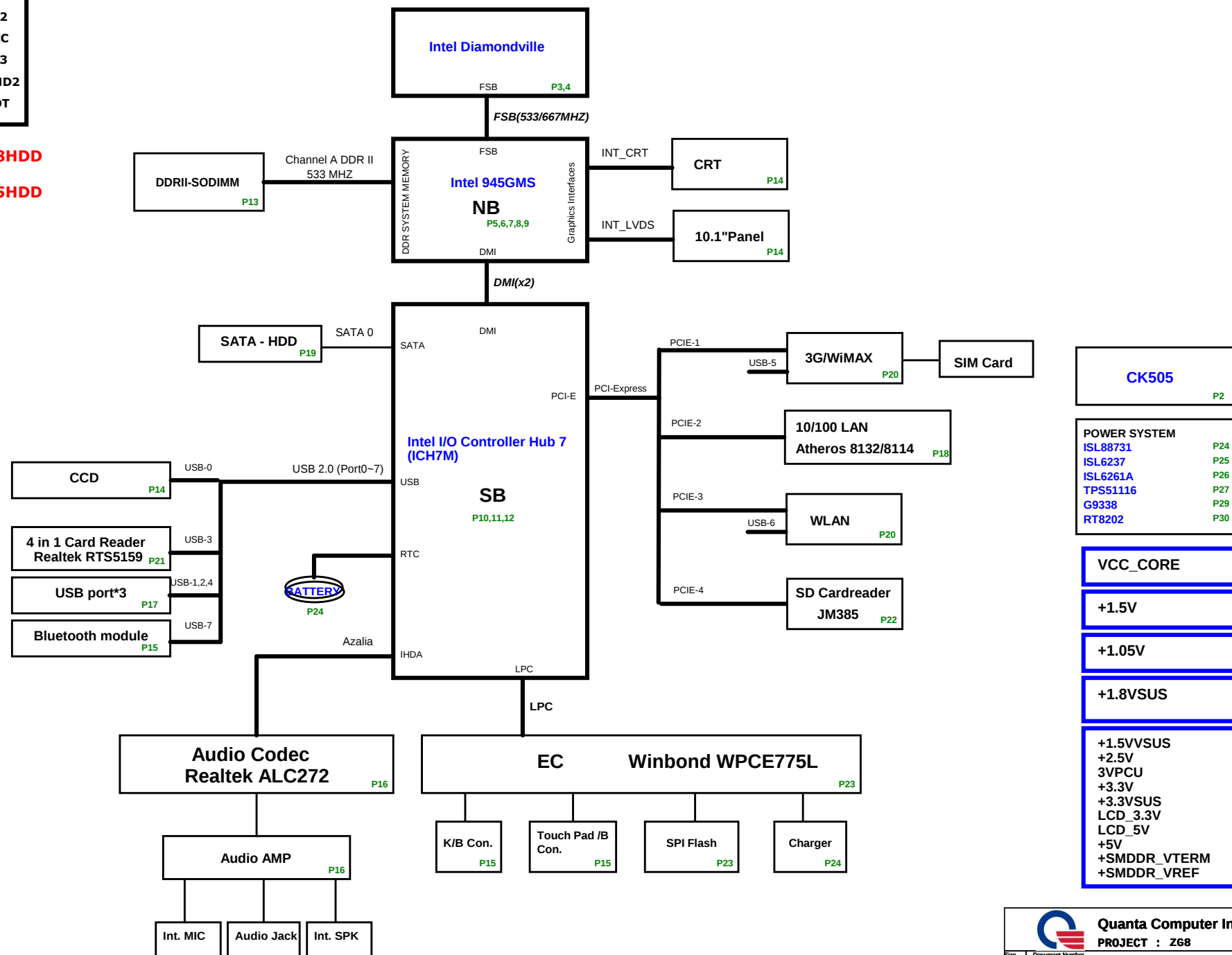
ZG8 Block Diagram

PCB STACK UP

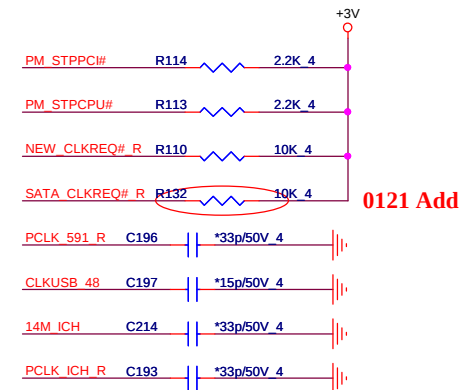
LAYER 1 : TOP
LAYER 2 : GND1
LAYER 3 : IN1
LAYER 4 : IN2
LAYER 5 : VCC
LAYER 6 : IN3
LAYER 7 : GND2
LAYER 8 : BOT

1.8@ for 1.8HDD

2.5@ for 2.5HDD



02



0121 Add

Default

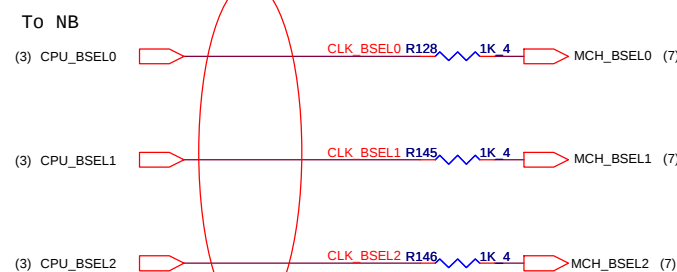
Default

SLG8SP513VTR ,ICS9LPRS365BKLFT

Three circuit diagrams are shown, each representing a pull-up resistor configuration for a PCLK signal. Each diagram consists of a +3V supply connected to a resistor, which is then connected to a signal line. The resistors are labeled with values like 10K 4 and *10K 4. A note indicates HIGH 27MHz and LOW SRC.

- Top Diagram:** +3V supply connected to resistor R167 (10K 4) and R168 (*10K 4). The signal line is PCLK_OZ129.
- Middle Diagram:** +3V supply connected to resistor R161 (*10K 4) and R155 (10K 4). The signal line is PCLK_591 R. A note indicates HIGH 27MHz and LOW SRC.
- Bottom Diagram:** +3V supply connected to resistor R151 (*10K 4) and R152 (10K 4). The signal line is PCLK_ICH R.

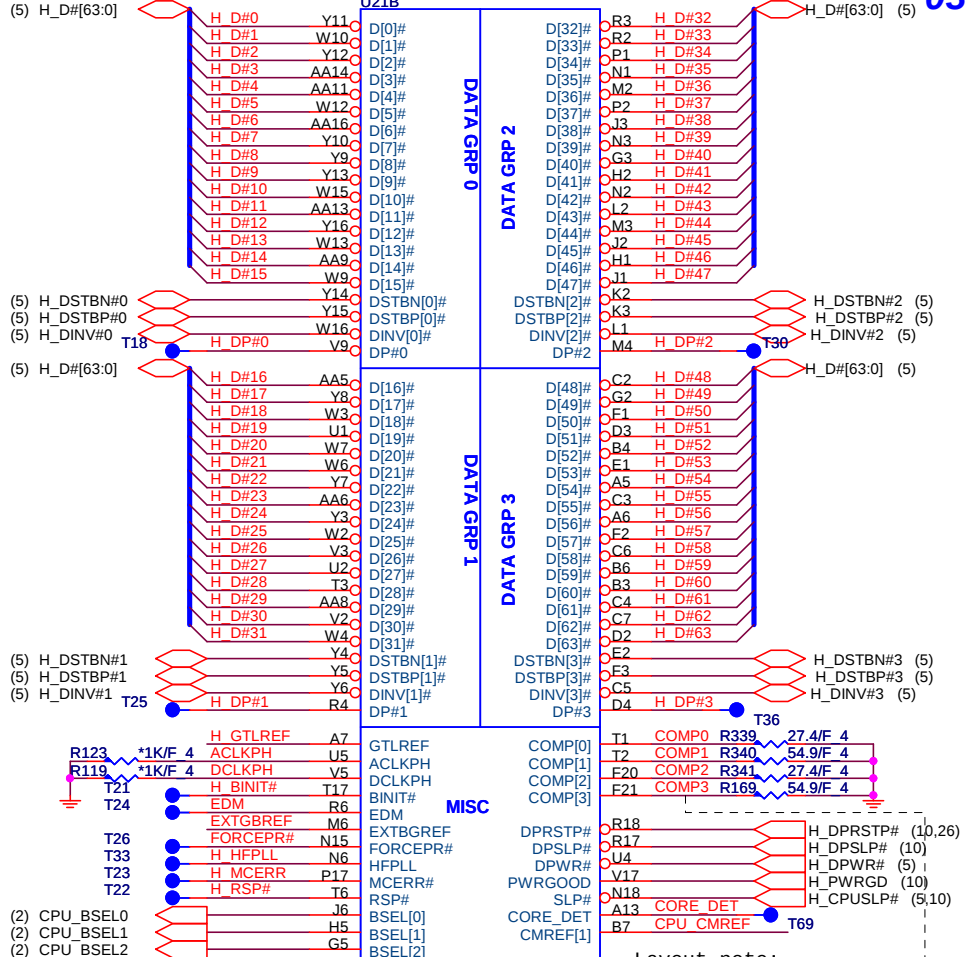
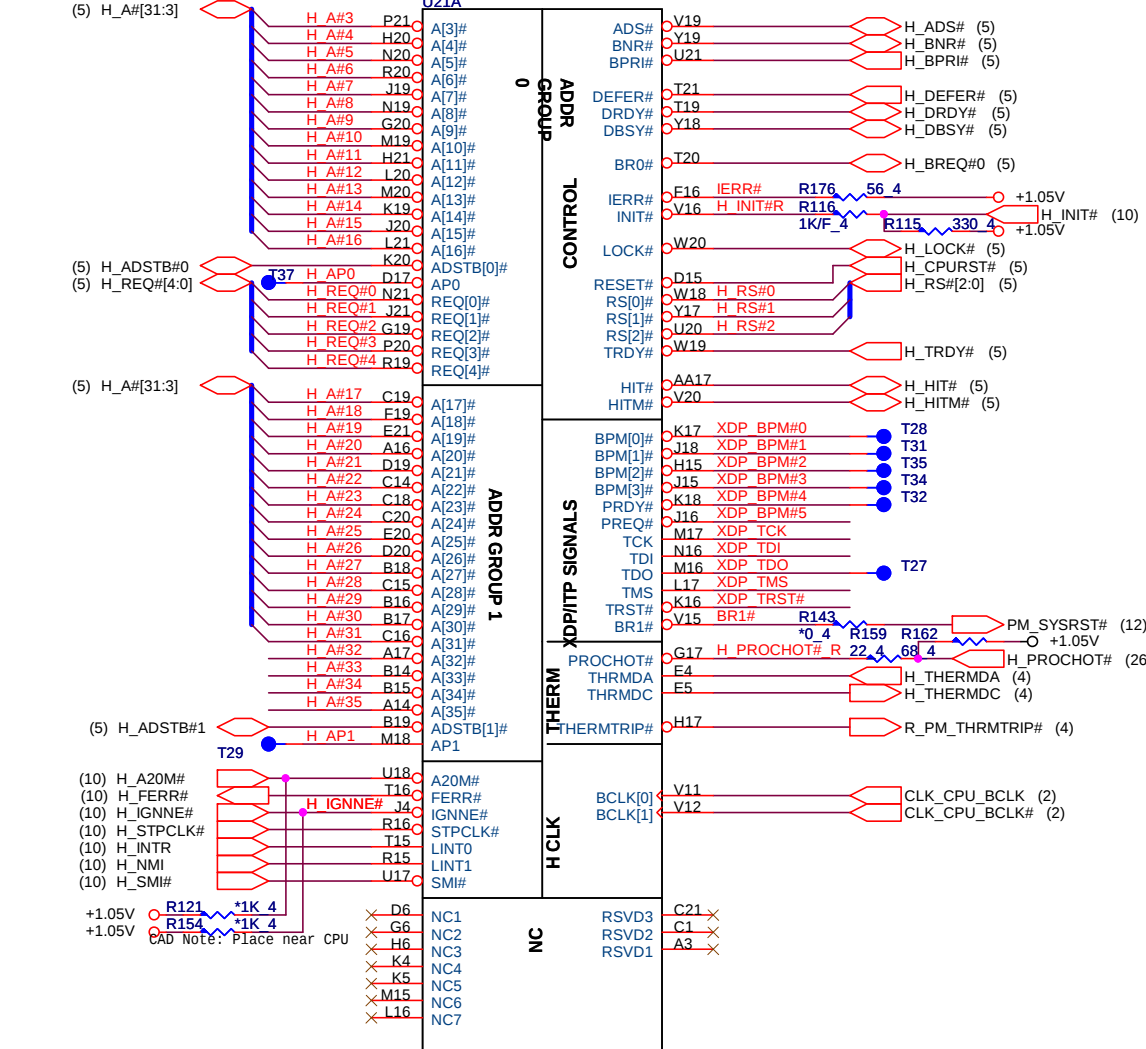
<MAIN>:ICS9LPRS365BGLFT QCI:ALPRS365K13
<SECOND>:SLG8SP512TTR: QCI:AL8SP512K05



Quanta Computer Inc.
PROJECT : ZG8

Size	Document Number	Rev
	CLOCK GENERATOR	1A
Date:	Tuesday, February 03, 2009	Sheet 2 of 33

CPU-1(CPU)



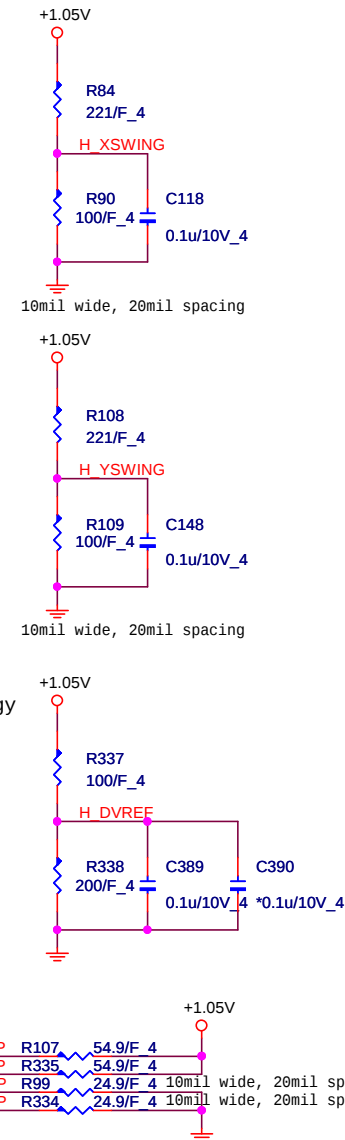
Layout note:
Comp0,2 connect with Zo=27.4ohm, make trace length shorter than 0.5"
Comp1,3 connect with Zo=55ohm, make trace length shorter than 0.5"



Quanta Computer Inc.
PROJECT : ZG8

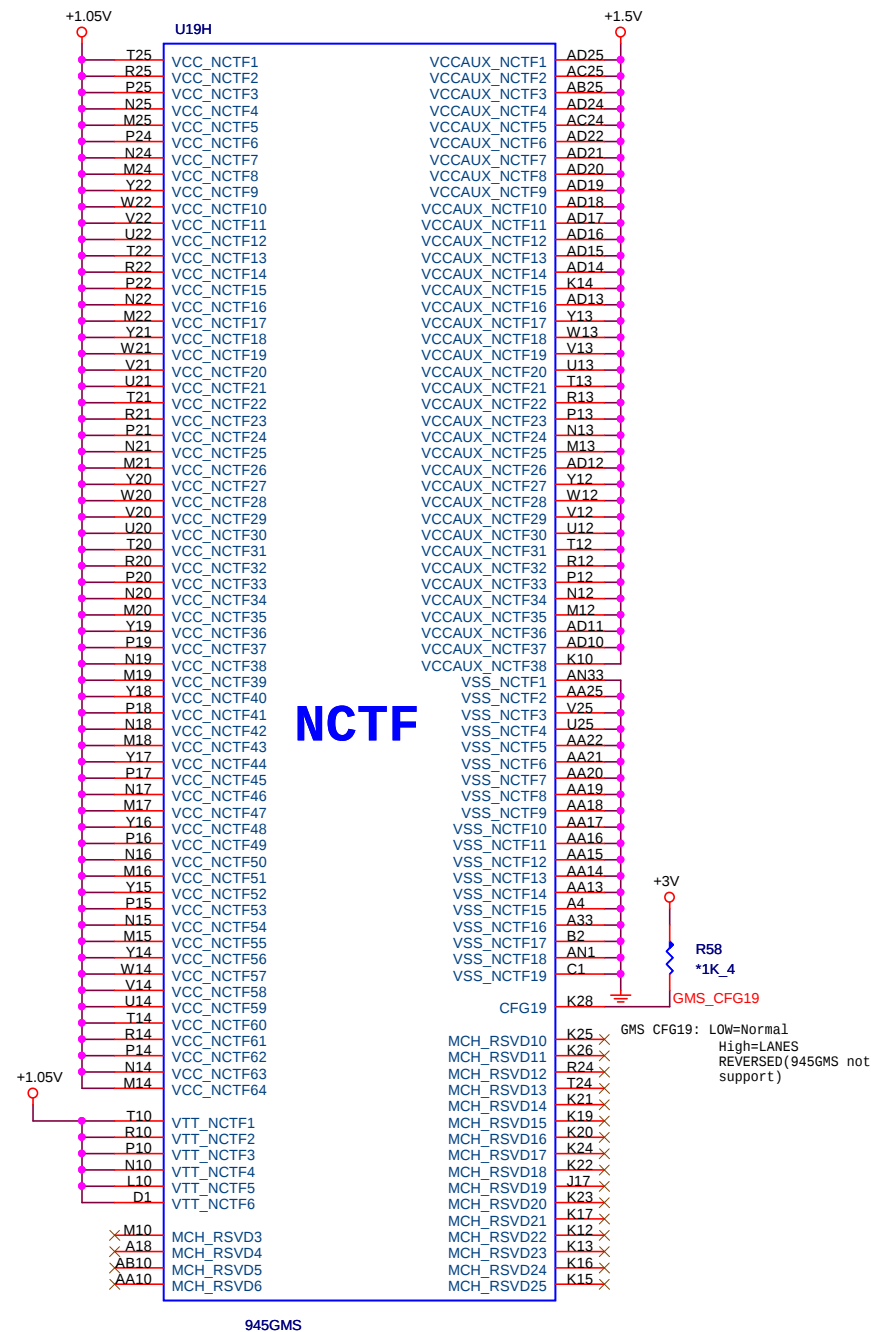
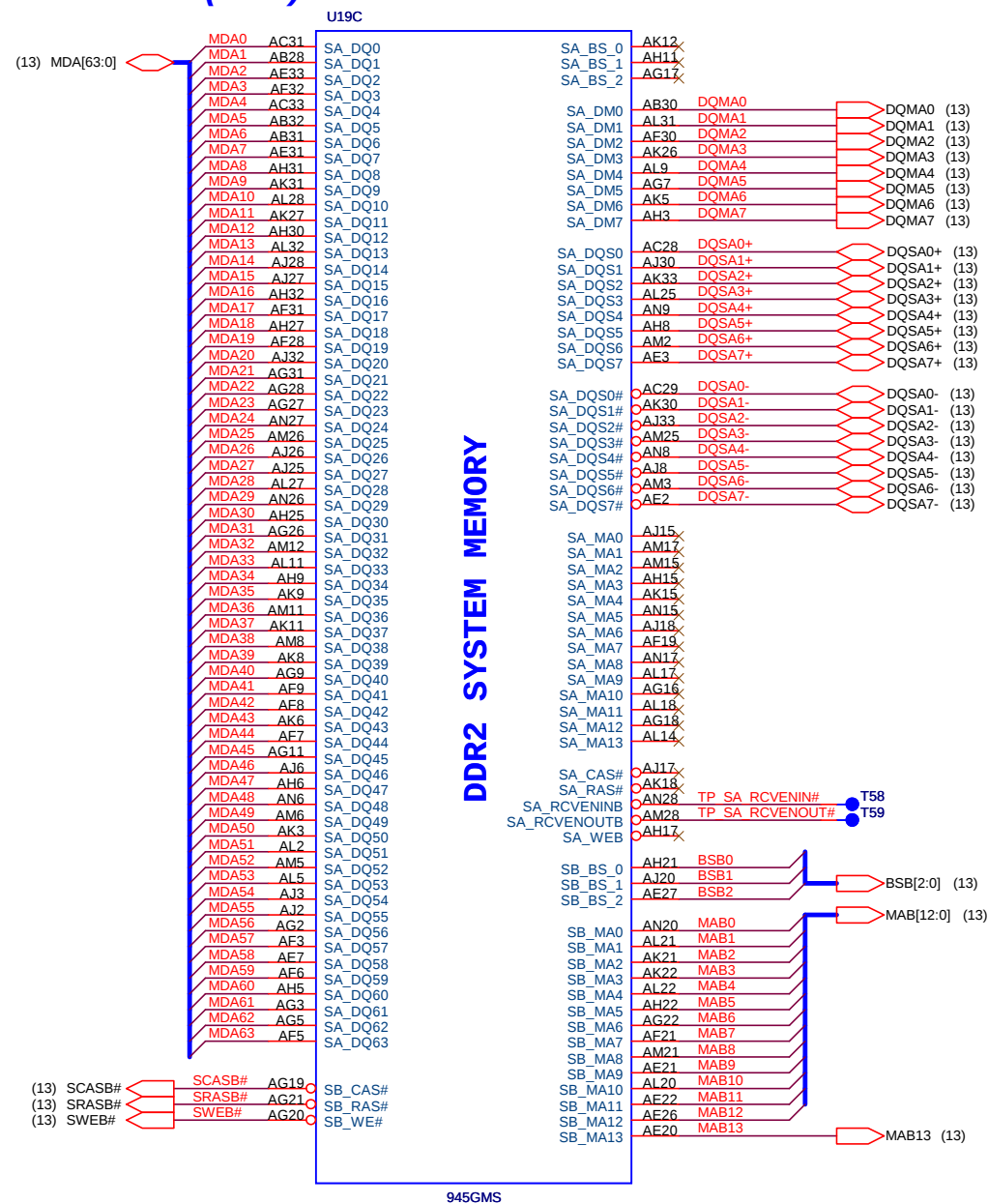
Size	Document Number	Rev 1A
Diamondville(1/2)		
Date:	Monday, January 19, 2009	Sheet 3 of 33





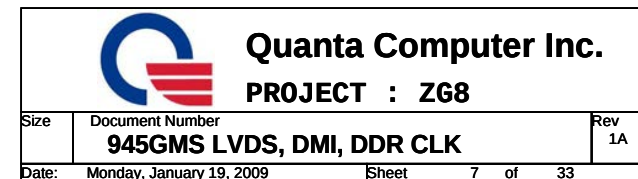
945GMS DDR(CLG)

06



Quanta Computer Inc.
PROJECT : ZG8

07





S2
*Short_6

POWER

A

945GMS GND(CLG)

09

AH33	VSS1	VSS111	J16	U19E
Y33	VSS2	VSS112	AL15	945GMS
R33	VSS3	VSS113	AG15	
G33	VSS4	VSS114	W15	
AK32	VSS5	VSS115	R15	
AG32	VSS6	VSS116	F15	
AE32	VSS7	VSS117	D15	
AC32	VSS8	VSS118	AM14	
AA32	VSS9	VSS119	AH14	
U32	VSS10	VSS120	AE14	
H32	VSS11	VSS121	H14	
E32	VSS12	VSS122	B14	
C32	VSS13	VSS123	F13	
AM31	VSS14	VSS124	D13	
AJ31	VSS15	VSS125	AG12	
AA31	VSS16	VSS126	H12	
U31	VSS17	VSS127	B12	
T31	VSS18	VSS128	AN11	
R31	VSS19	VSS129	AJ11	
P31	VSS20	VSS130	AE11	
N31	VSS21	VSS131	AM9	
M31	VSS22	VSS132	AJ9	
J31	VSS23	VSS133	AB9	
F31	VSS24	VSS134	W9	
AL30	VSS25	VSS135	R9	
AG30	VSS26	VSS136	M9	
AE30	VSS27	VSS137	J9	
AC30	VSS28	VSS138	F9	
AA30	VSS29	VSS139	C9	
Y30	VSS30	VSS140	A9	
V30	VSS31	VSS141	AL8	
U30	VSS32	VSS142	AG8	
G30	VSS33	VSS143	AE8	
E30	VSS34	VSS144	LB	
B30	VSS35	VSS145	AA7	
AA29	VSS36	VSS146	V7	
U29	VSS37	VSS147	R7	
R29	VSS38	VSS148	N7	
P29	VSS39	VSS149	H7	
N29	VSS40	VSS150	E7	
M29	VSS41	VSS151	B7	
H29	VSS42	VSS152	AL6	
E29	VSS43	VSS153	AG6	
B29	VSS44	VSS154	AE6	
AK28	VSS45	VSS155	AB6	
AH28	VSS46	VSS156	W6	
AE28	VSS47	VSS157	T6	
AA28	VSS48	VSS158	M6	
U28	VSS49	VSS159	K6	
T28	VSS50	VSS160	AN5	
J28	VSS51	VSS161	AJ5	
D28	VSS52	VSS162	B5	
AM27	VSS53	VSS163	AA4	
AE27	VSS54	VSS164	V4	
AB27	VSS55	VSS165	R4	
AA27	VSS56	VSS166	N4	
Y27	VSS57	VSS167	K4	
U27	VSS58	VSS168	H4	
T27	VSS59	VSS169	E4	
R27	VSS60	VSS170	AL3	
P27	VSS61	VSS171	AD3	
N27	VSS62	VSS172	W3	
M27	VSS63	VSS173	T3	
G27	VSS64	VSS174	B3	
E27	VSS65	VSS175	AK2	
C27	VSS66	VSS176	AH2	
U27	VSS67	VSS177	AE2	
AL26	VSS68	VSS178	AB2	
AH26	VSS69	VSS179	M2	
W26	VSS70	VSS180	K2	
U26	VSS71	VSS181	H2	
AN25	VSS72	VSS182	F2	
AK25	VSS73	VSS183	V1	
AG25	VSS74	VSS184	R1	
AE25	VSS75	VSS185		
J25	VSS76			
G25	VSS77			
A25	VSS78			
H23	VSS79			
F23	VSS80			
R23	VSS81			
AM22	VSS82			
AJ22	VSS83			
AF22	VSS84			
G22	VSS85			
E22	VSS86			
J21	VSS87			
H21	VSS88			
F21	VSS89			
AM20	VSS90			
AK20	VSS91			
AH20	VSS92			
AF20	VSS93			
D20	VSS94			
W19	VSS95			
R19	VSS96			
AM18	VSS97			
AH18	VSS98			
AF18	VSS99			
U18	VSS100			
H18	VSS101			
D18	VSS102			
AK17	VSS103			
V17	VSS104			
T17	VSS105			
F17	VSS106			
B17	VSS107			
AH16	VSS108			
U16	VSS109			
	VSS110			

W33	NC1	NC61	W30
AM33	NC2	NC62	Y6
AL33	NC3	NC63	AL1
C33	NC4	NC64	Y5
B33	NC5	NC65	Y10
AM32	NC6	NC66	W10
A32	NC7	NC67	W25
AN31	NC8	NC68	W24
W28	NC9	NC69	U24
V27	NC10	NC70	V10
W29	NC11	NC71	U10
J24	NC12	NC72	K18
H24	NC13		
W32	NC14		
G24	NC15		
F24	NC16		
E24	NC17		
D24	NC18		
K33	NC19		
A31	NC20		
E21	NC21		
C23	NC22		
AN19	NC23		
AM19	NC24		
AL19	NC25		
AK19	NC26		
AJ19	NC27		
AH19	NC28		
AN3	NC29		
Y9	NC30		
J19	NC31		
H19	NC32		
G19	NC33		
F19	NC34		
E19	NC35		
D19	NC36		
C19	NC37		
B19	NC38		
E7	NC39		
Y8	NC40		
G16	NC41		
F16	NC42		
E16	NC43		
D16	NC44		
C16	NC45		
B16	NC46		
AN2	NC47		
A16	NC48		
Y7	NC49		
AM4	NC50		
AF4	NC51		
AA4	NC52		
AL4	NC53		
AK4	NC54		
W31	NC55		
AJ4	NC56		
AH4	NC57		
AG4	NC58		
AE4	NC59		
AM1	NC60		

945GMS

NC

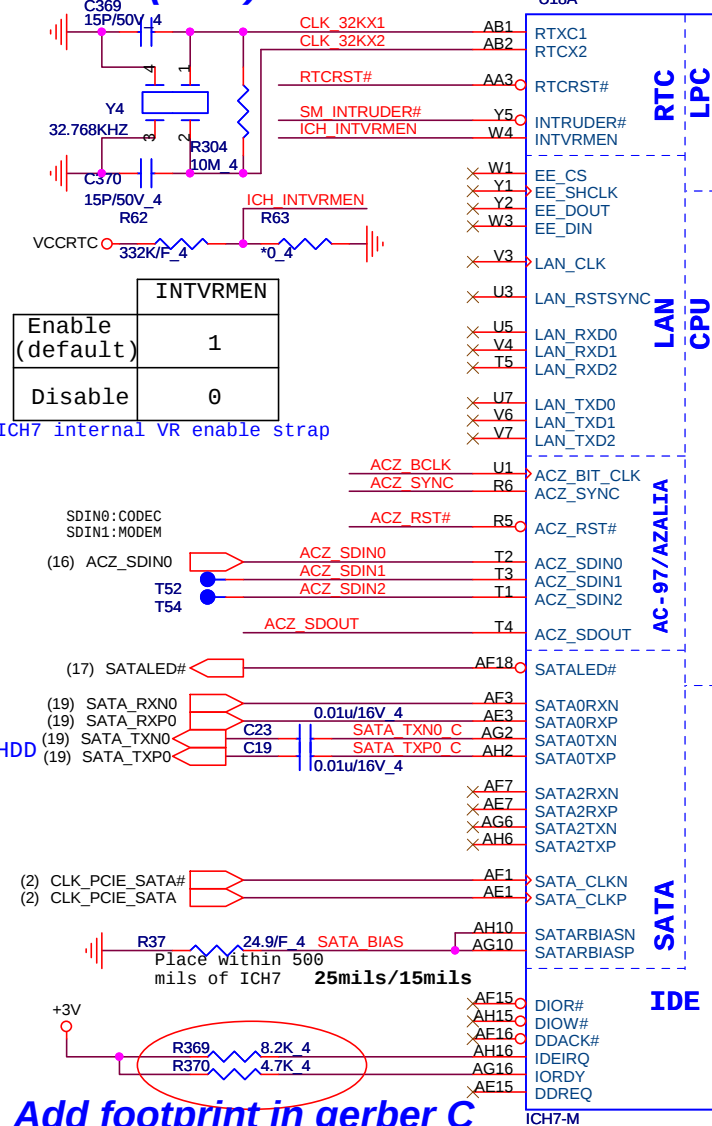


Quanta Computer Inc.

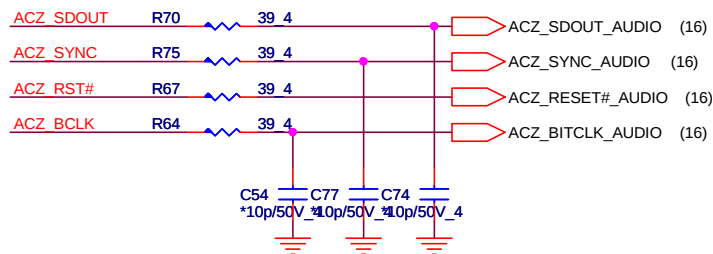
PROJECT : Z68

Size	Document Number	Rev
	945GMS GND	1A
Date:	Monday, January 19, 2009	Sheet 9 of 33

ICH7-M(CLG) 1/7 Change CAP to 15P for crystal precision

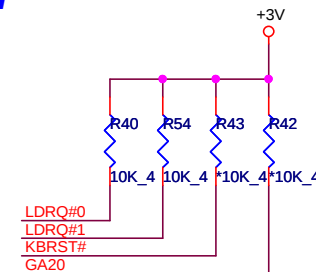


Add footprint in gerber C

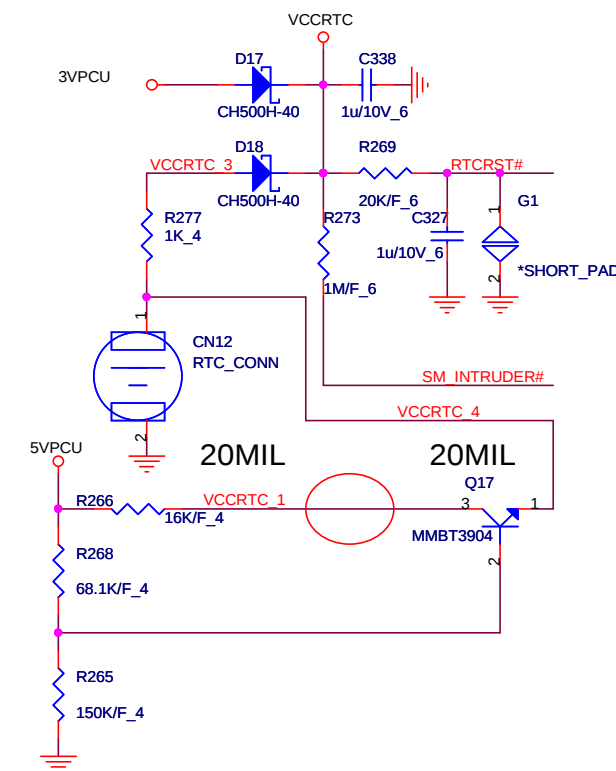


COMPONENTS	P/N
945GMS	AJSLB2R0T00
ICH7-M	AJSL8YB0T21

Pull-UP



RTC(RTC)

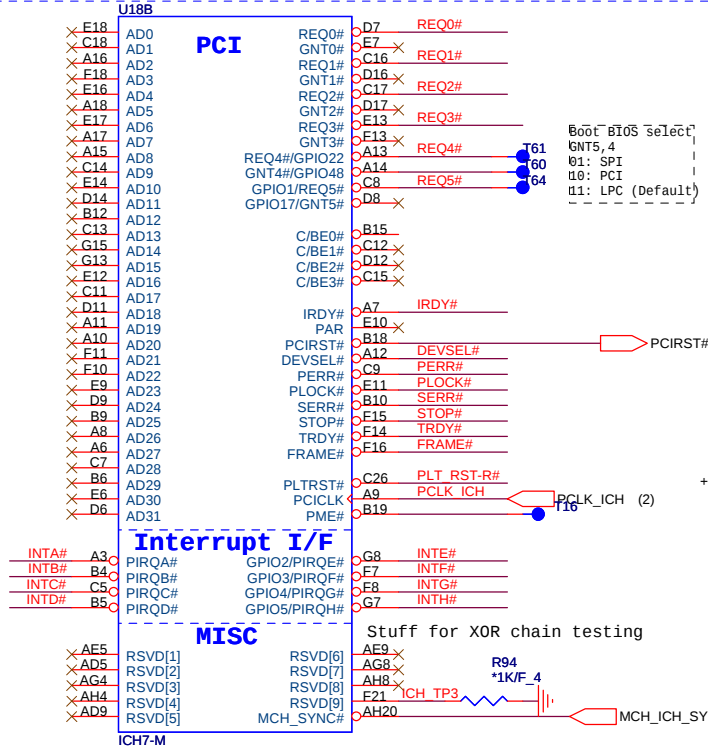
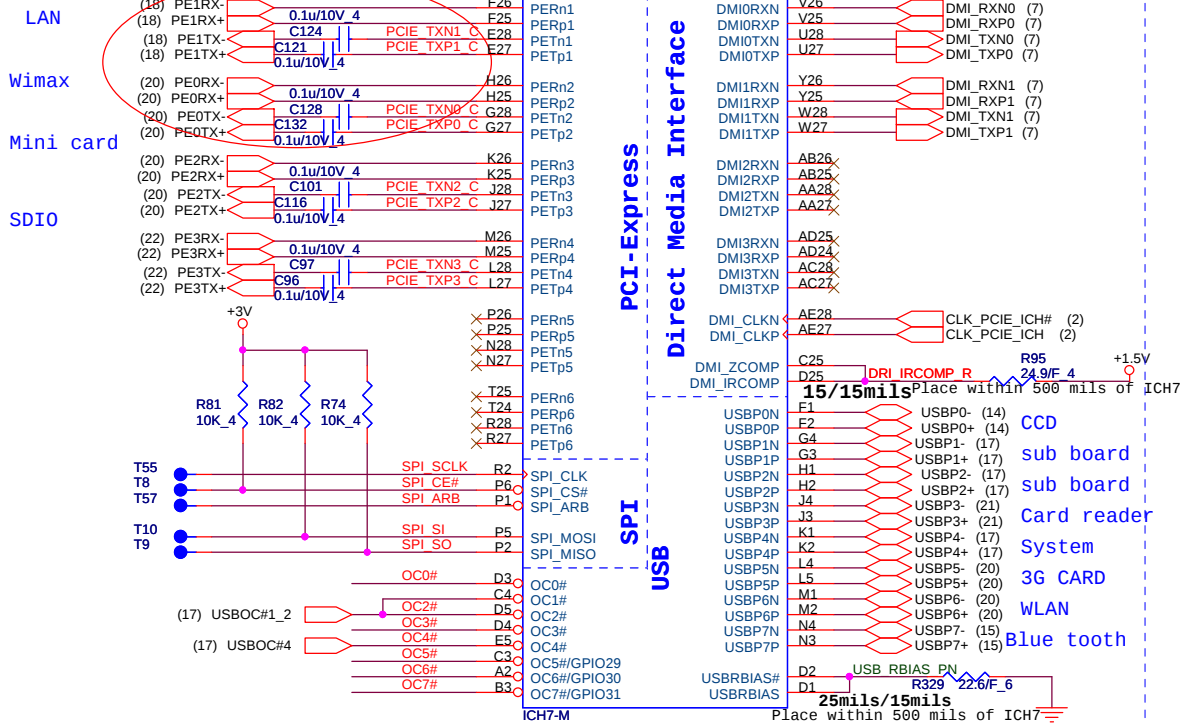


Quanta Computer Inc.
 PROJECT : ZG8

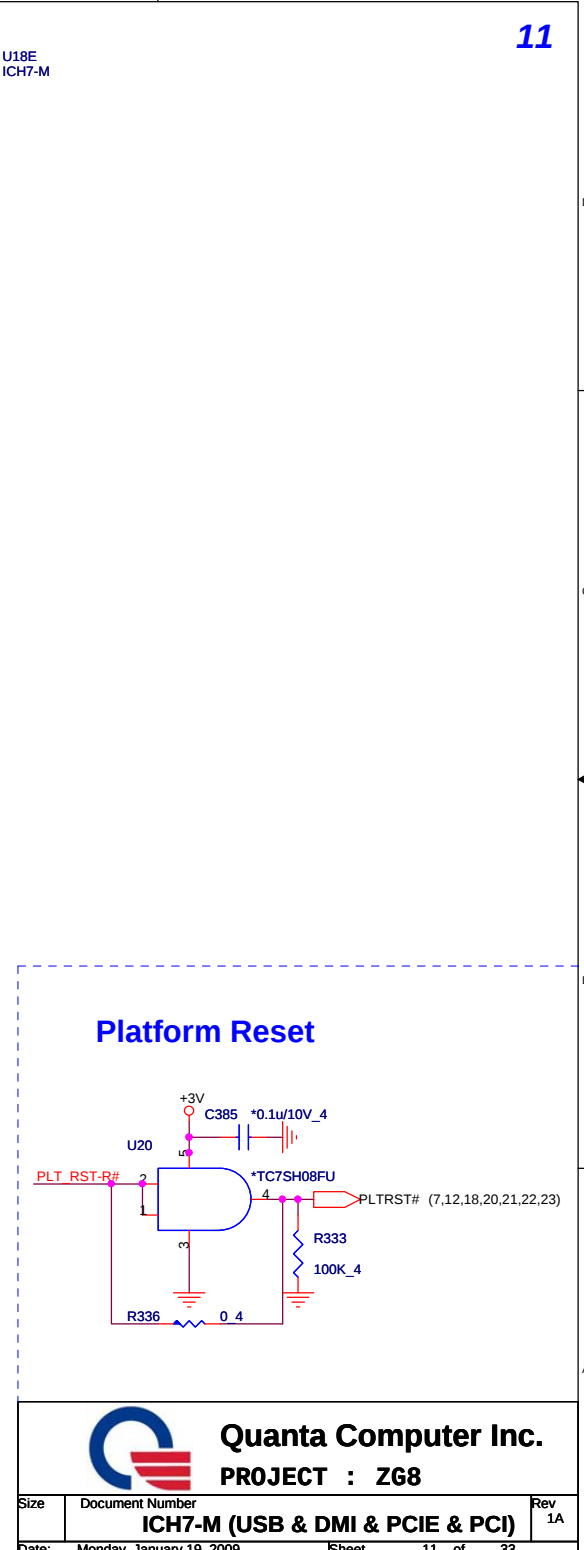
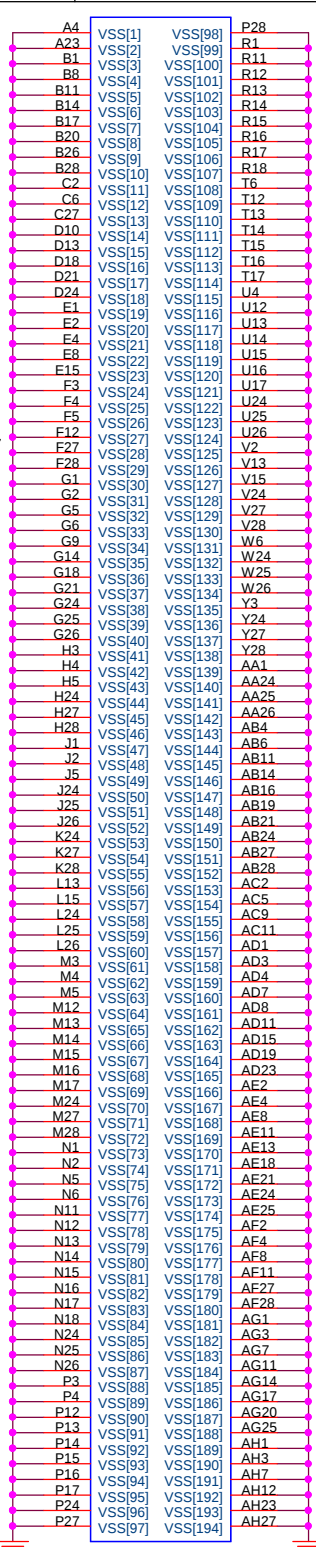
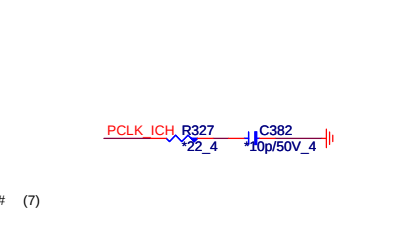
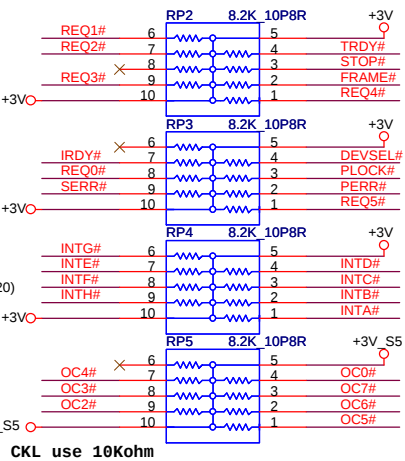
Size	Document Number	Rev
	ICH7-M (CPU, SATA, IDE, LPC)	1A
Date:	Tuesday, February 03, 2009	Sheet 10 of 33

ICH7-M(CLG)

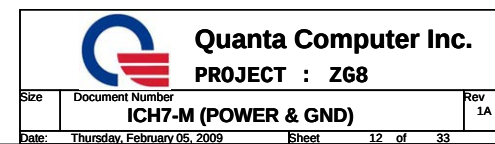
Exchange LAN & Wimax



Pull-UP resistor

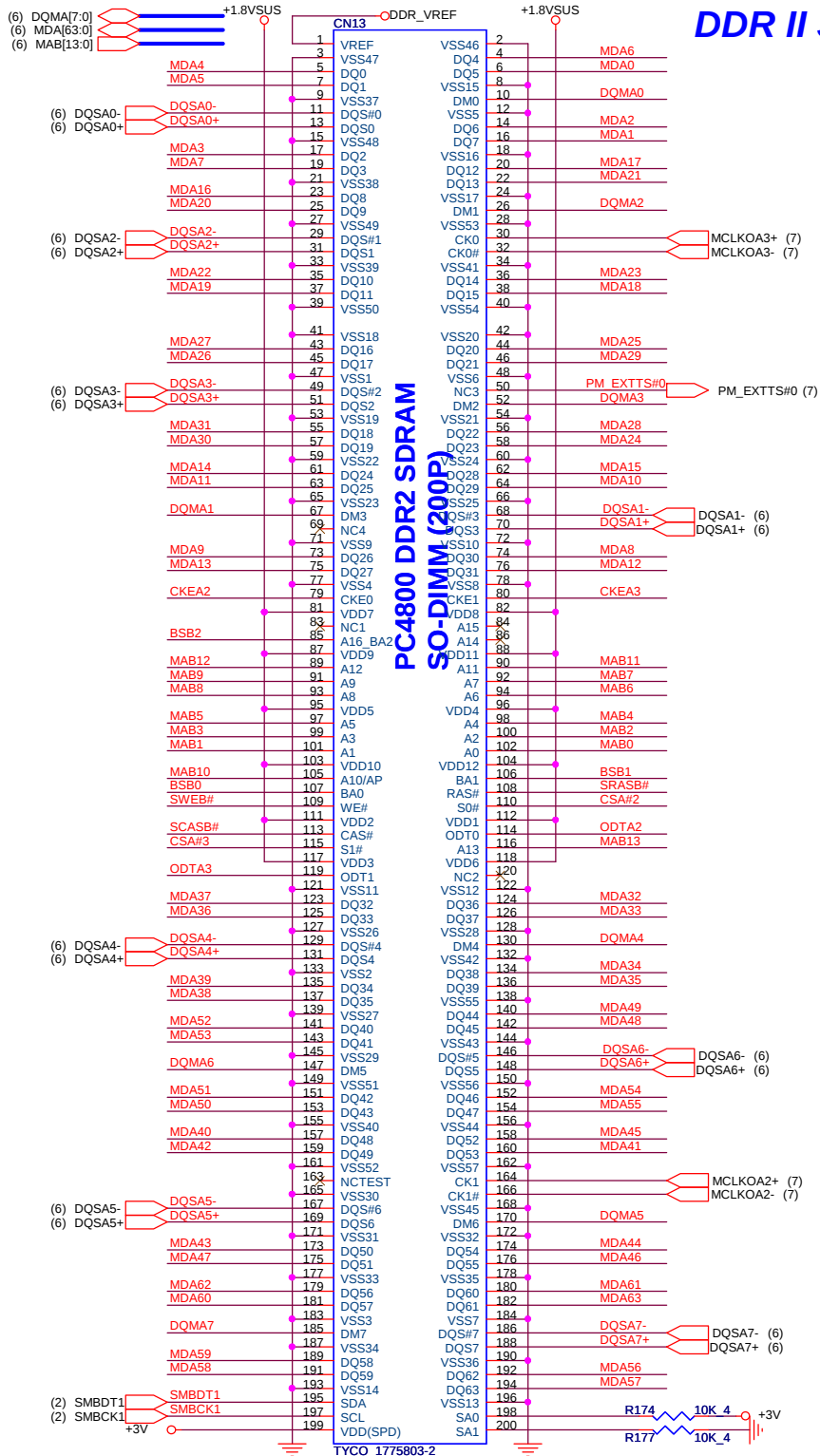


Quanta Computer Inc.
PROJECT : ZG8

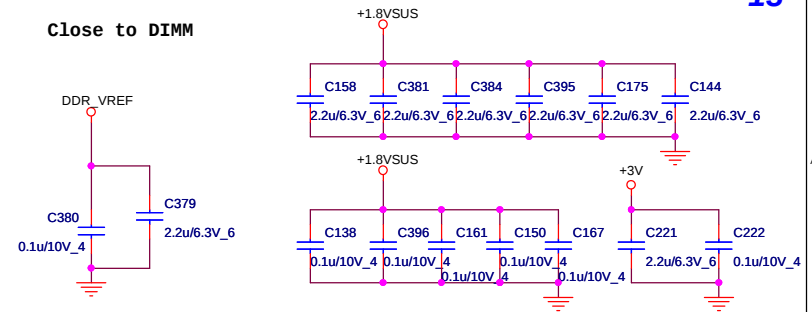


DDR II SOCKET(DDR)

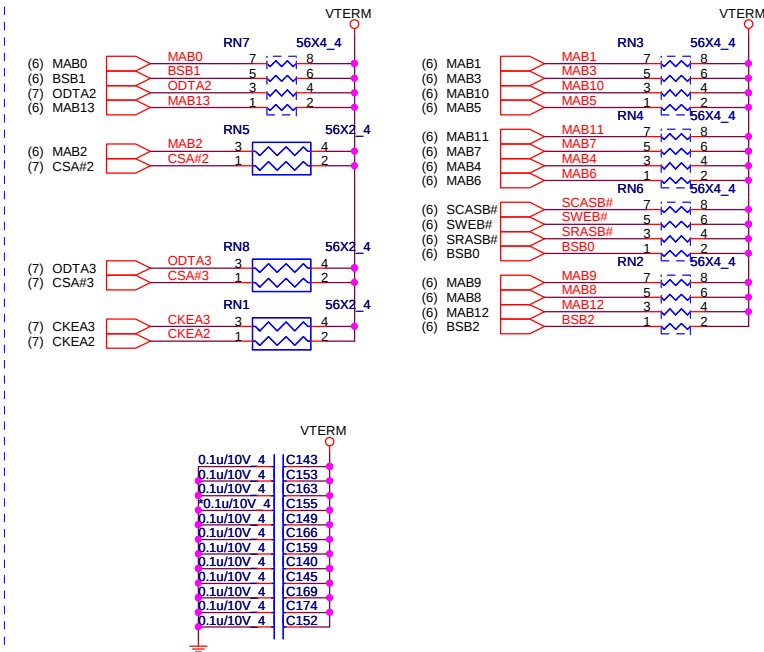
13



Close to DIMM



Termination resistor



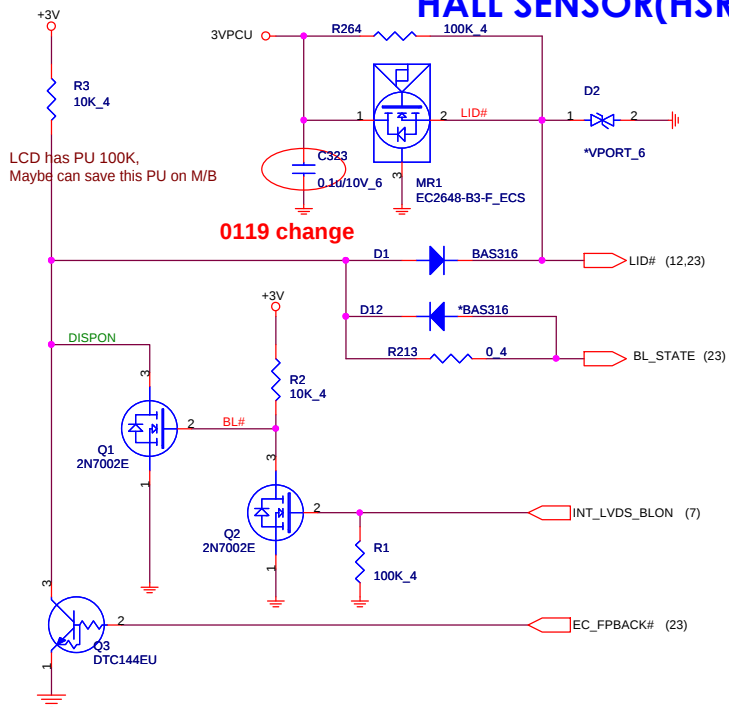
STD H: 4.0mm

SMbus address A1

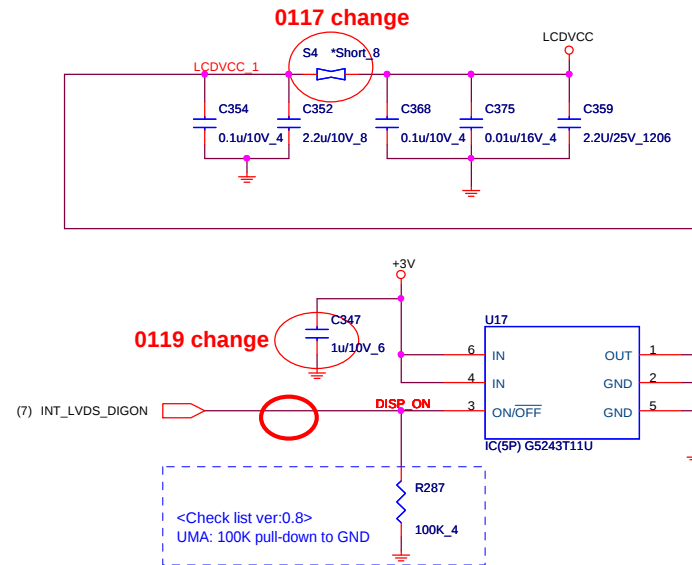
CLOCK 1,2
CKE 2,3

Quanta Computer Inc. PROJECT : Z68		
Size	Document Number	Rev 1A
DDR2 SO-DIMM(200P)		
Date: Monday, February 02, 2009	Sheet 13 of 33	

HALL SENSOR(HSR)

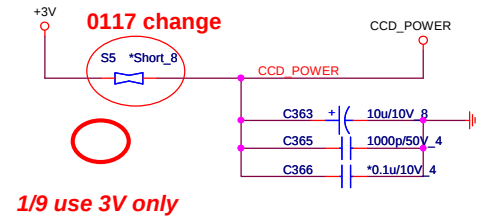


LCD POWER SWITCH(LDS)



CAMERA POWER(CCD)

14

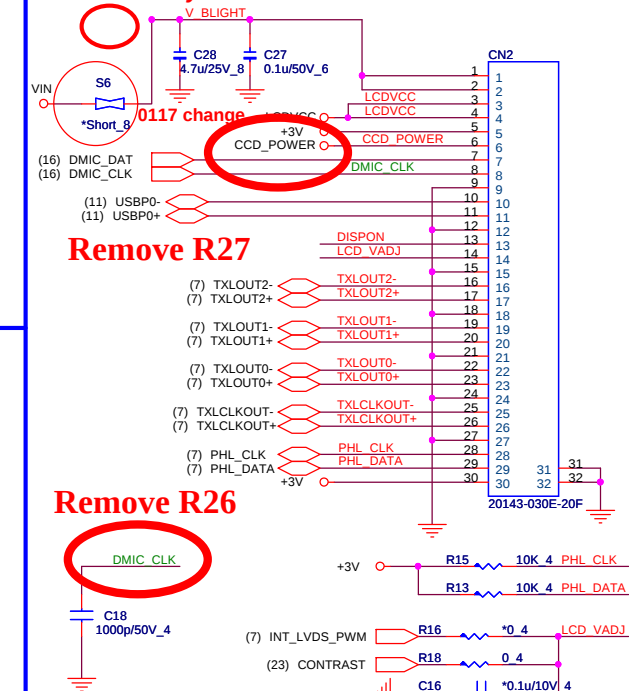


LCD MODULE(LDS)

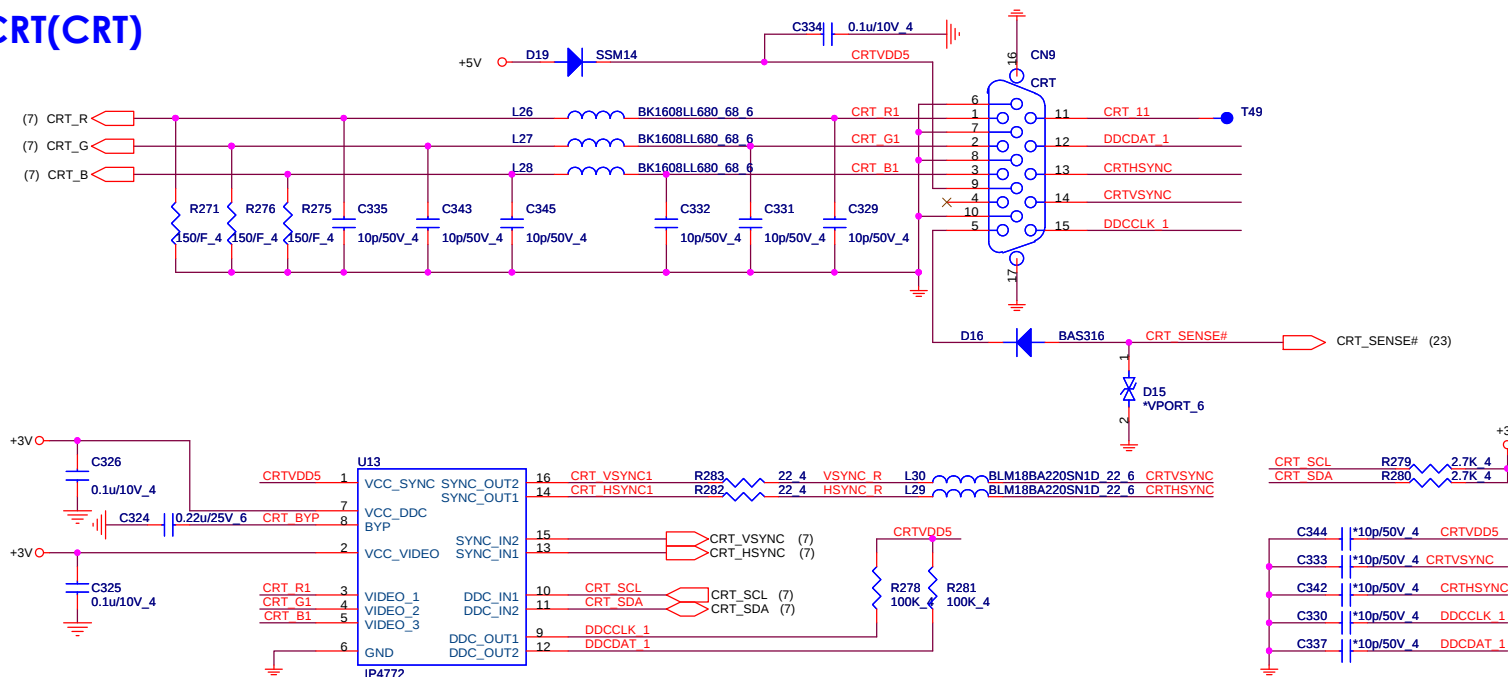
V_BLIGHT

8.9"(5.5V):supply 5V 10.1":supply 19V

1/9 use 19V only



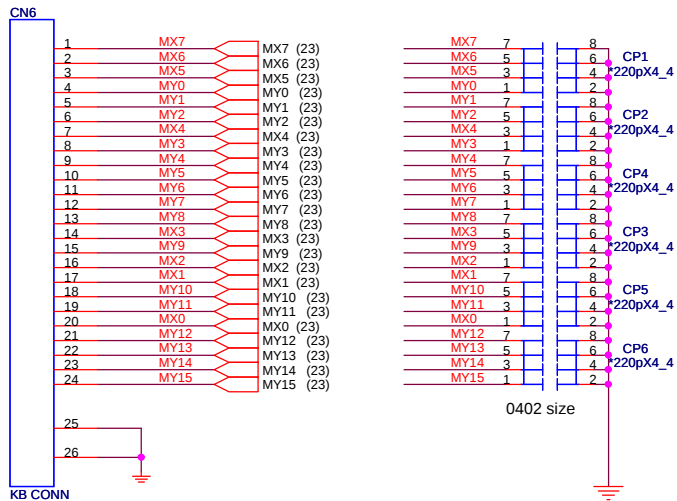
CRT(CRT)



Quanta Computer Inc.
PROJECT : ZG8

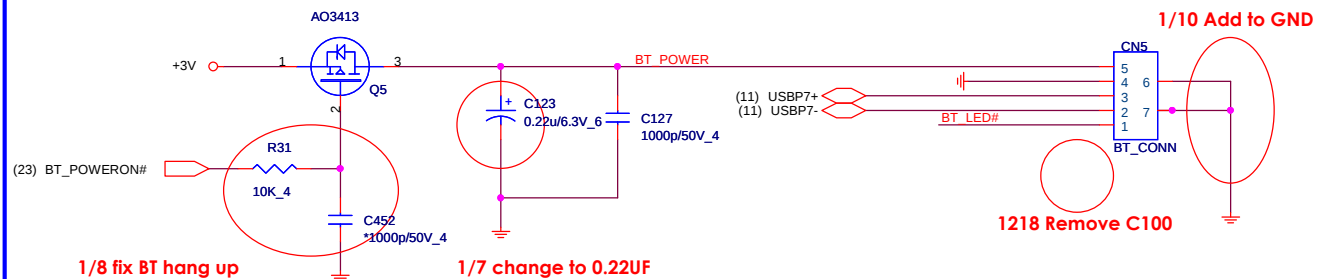
Size Document Number CRT/LVDS
Date: Monday, February 02, 2009 Sheet 14 of 33 Rev 1A

KEYBOARD(KBC)

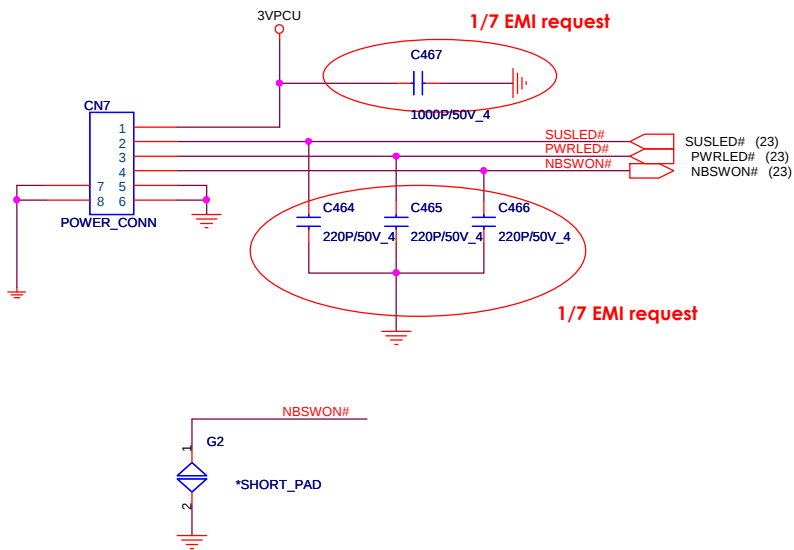


BLUETOOTH(BTM)

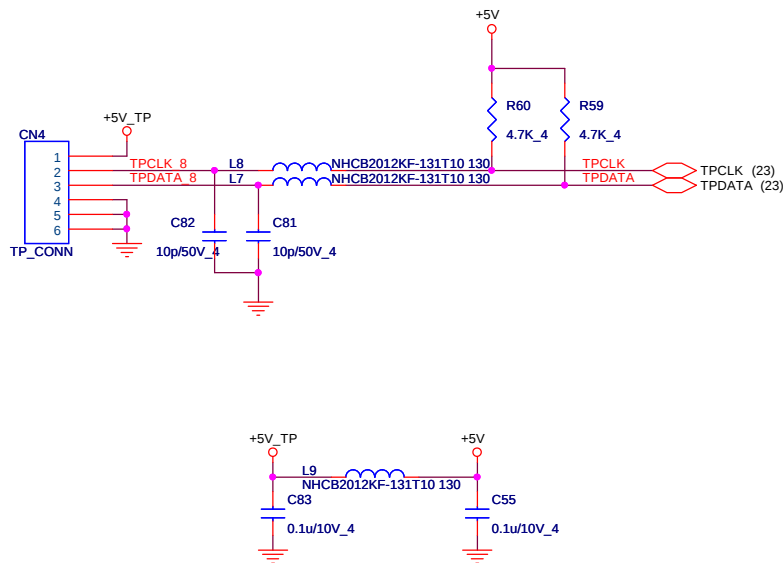
15



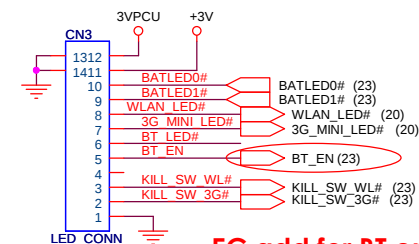
Power On Connector(UIF)



TOUCH PAD(TPD)



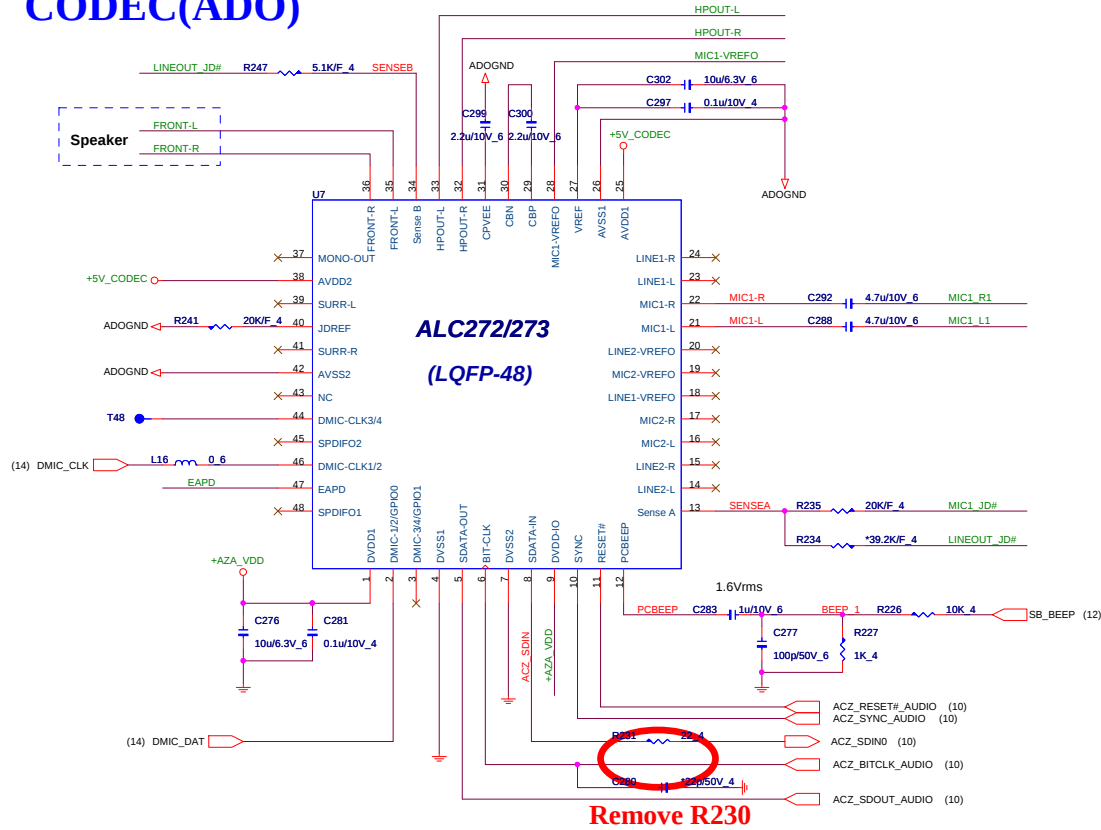
LED CONNECTOR(KBC)



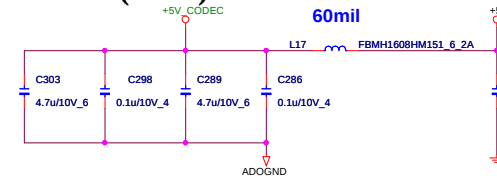
Quanta Computer Inc.
PROJECT : Z68

Size	Document Number	Rev
	KB/BT/TP/LED/Power Connector	1A
Date:	Thursday, February 05, 2009	Sheet 15 of 33

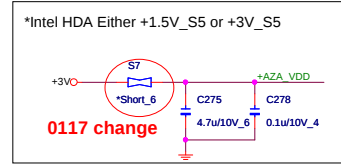
CODEC(ADO)



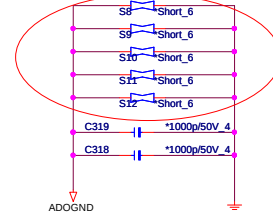
Codec Power(ADO)



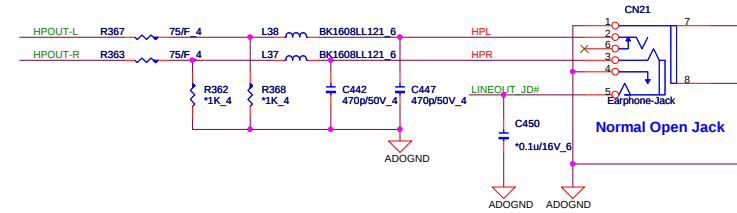
HDA Power(ADO)



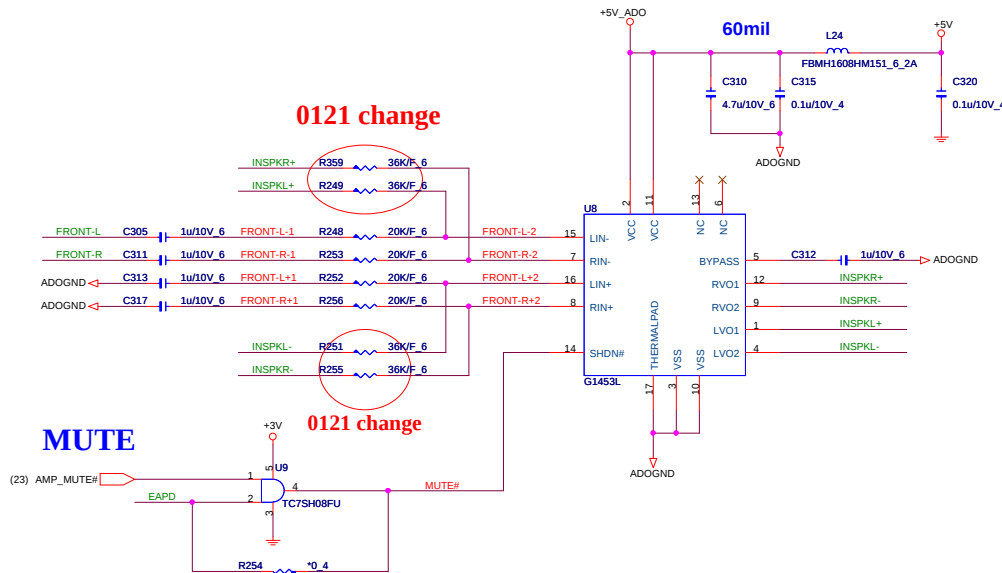
0117 Change short pad



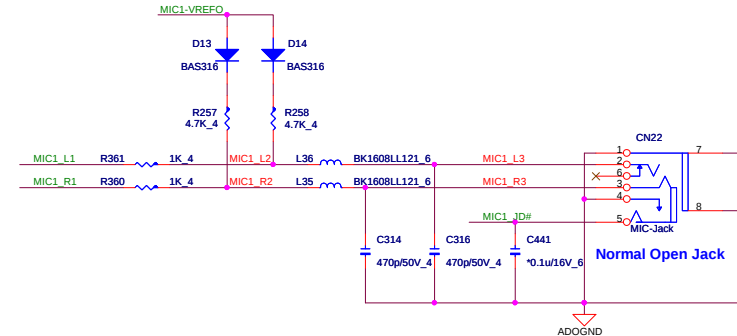
Earphone(AMP)



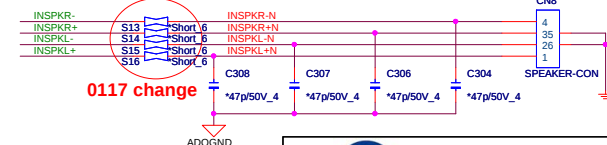
Speaker Amplifier(AMP)



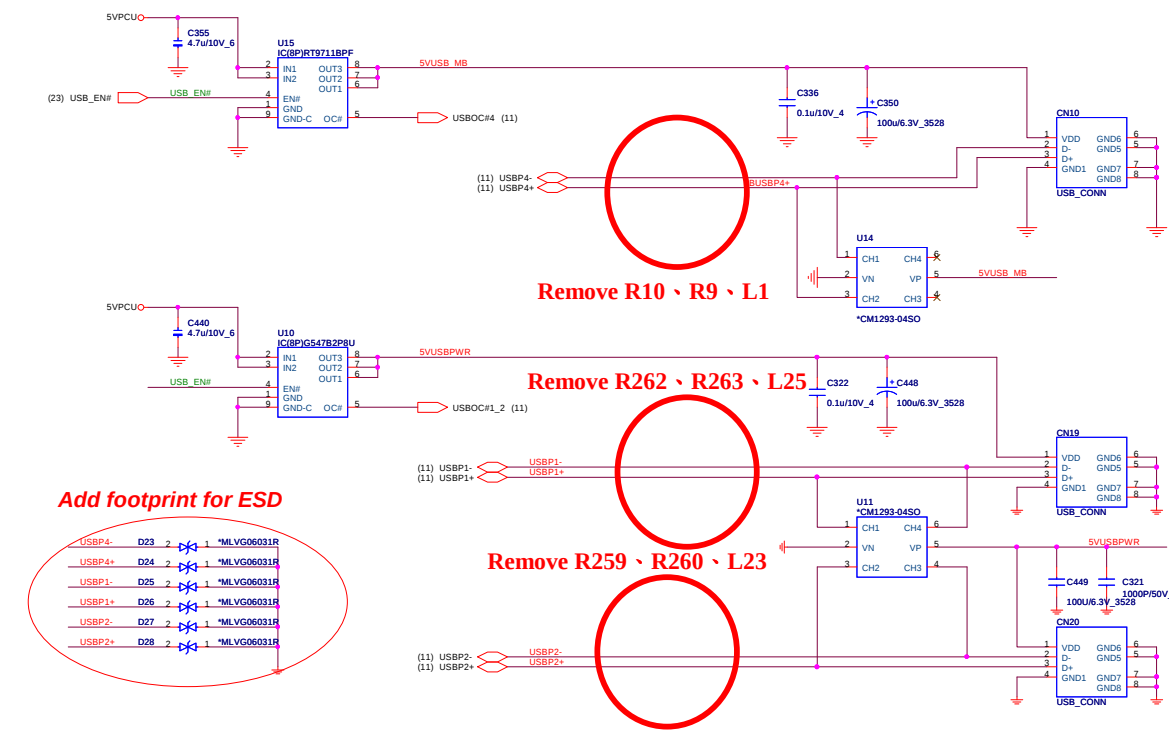
System MIC(AMP)



Speaker(AMP)

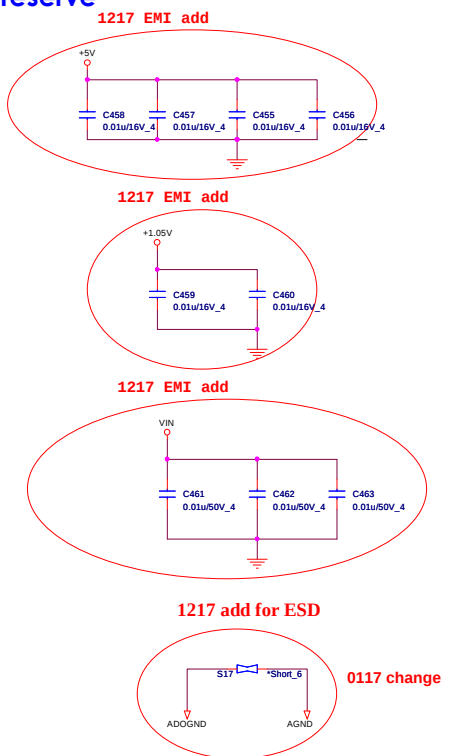


USB(USB)

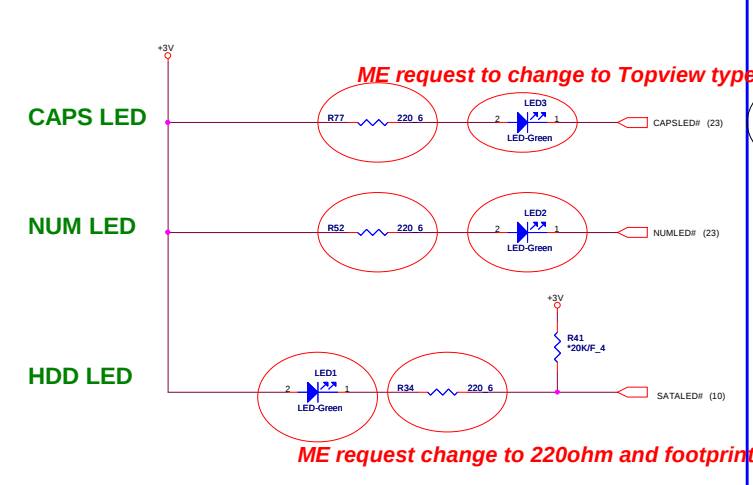


EMI reserve

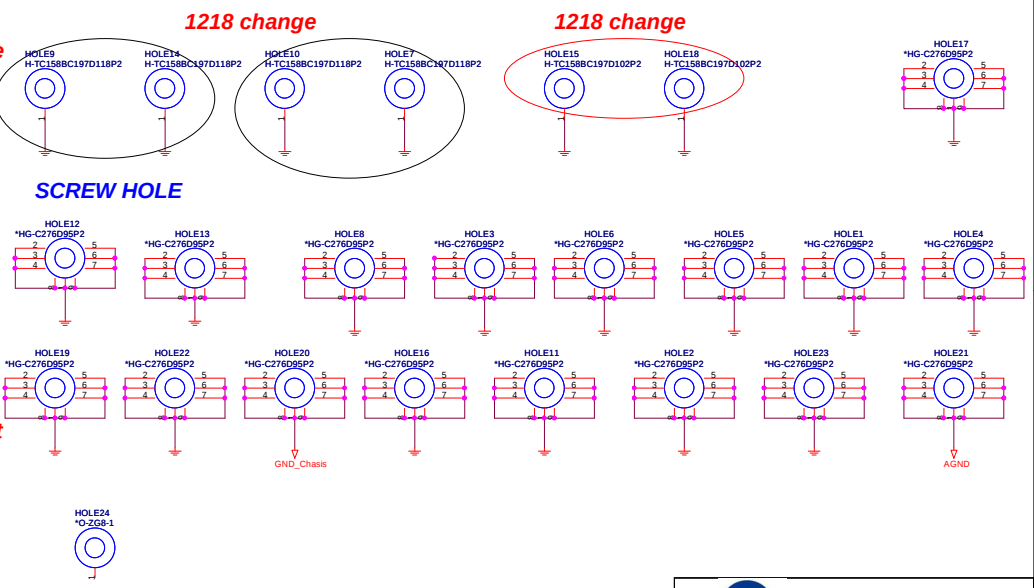
17



LED on M/B(UIF)



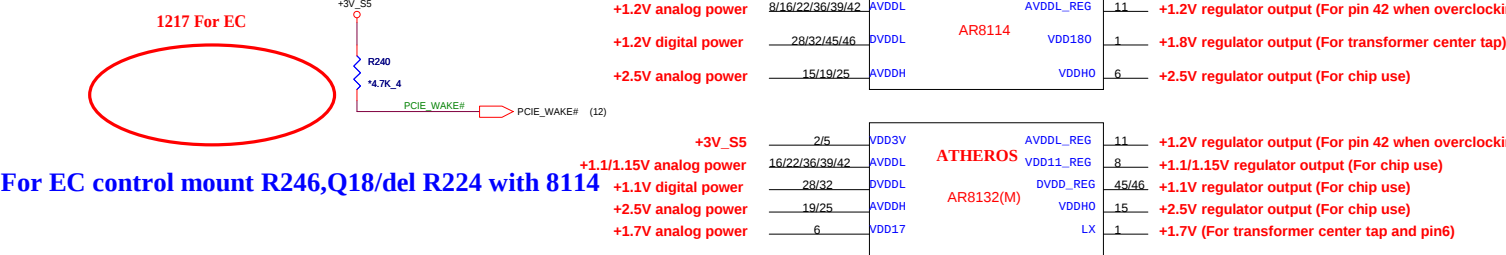
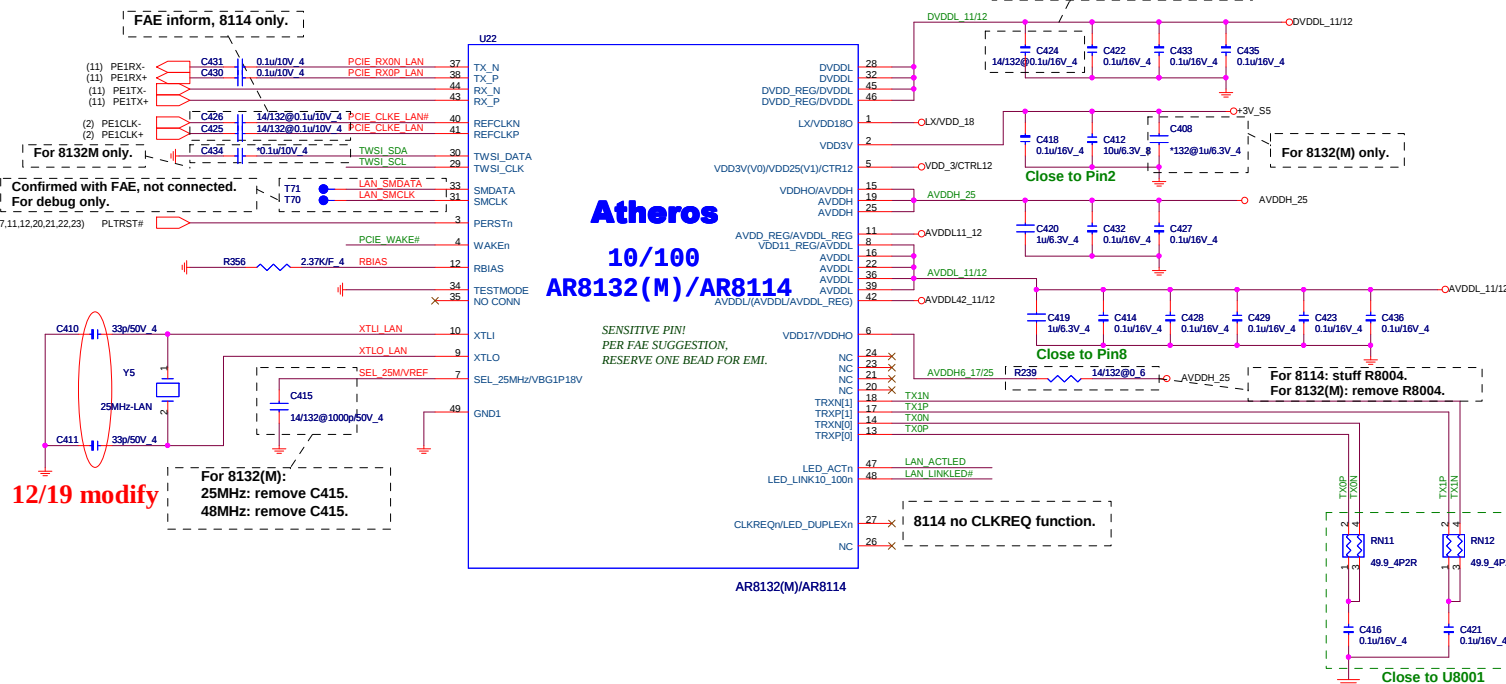
SCREW HOLE



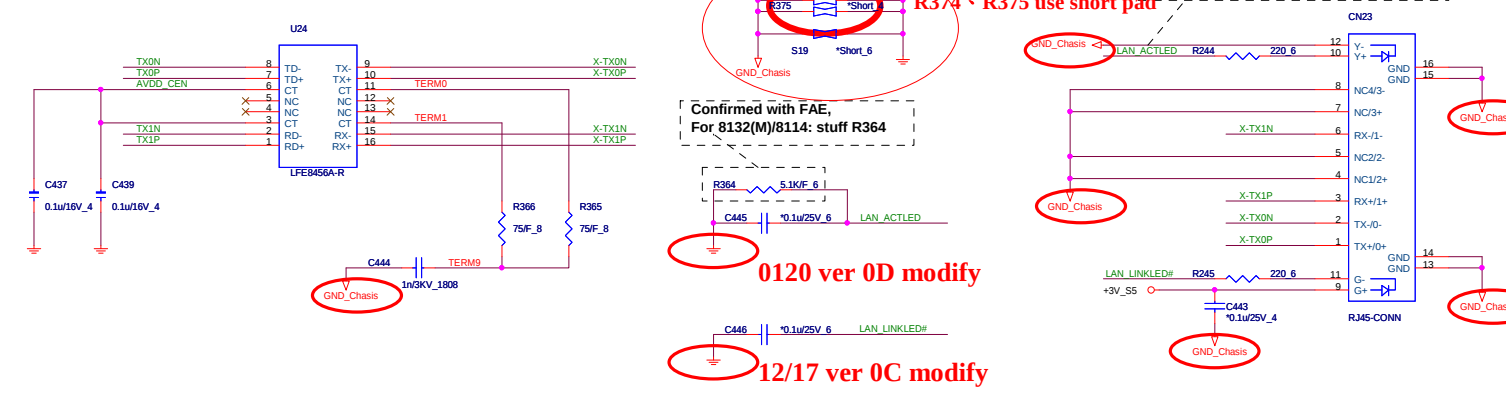
SCREW HOLE

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

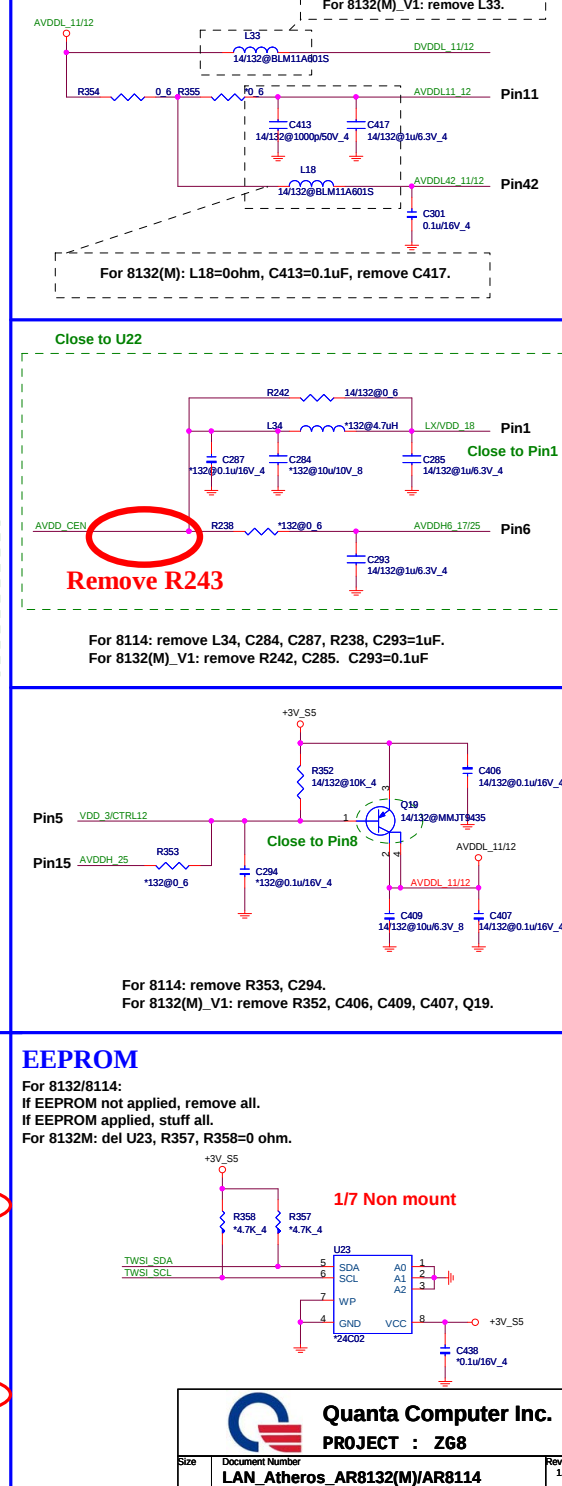
LAN



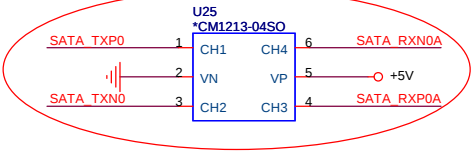
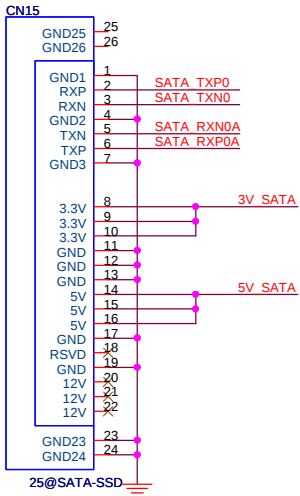
TRANSFORMER



EEPROM

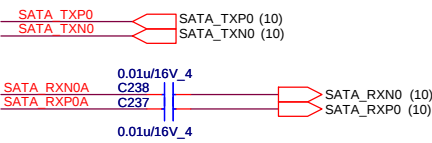


2.5" SATA HDD(HDD)

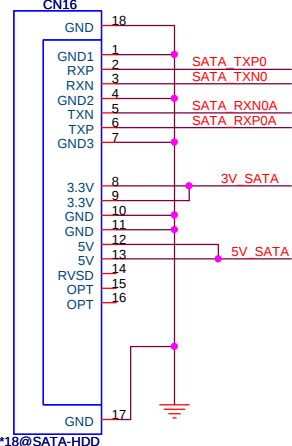
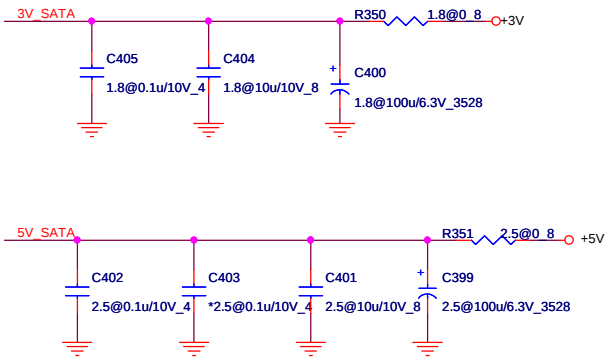


0119 add for ESD and place near SATA conn

0120 : CN15 PIN25 & 26 IS NP, NO contact to GND.



1.8" SATA HDD(TOSHIBA)



ZT4 card connector

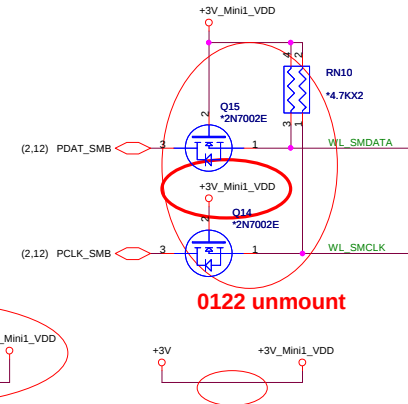
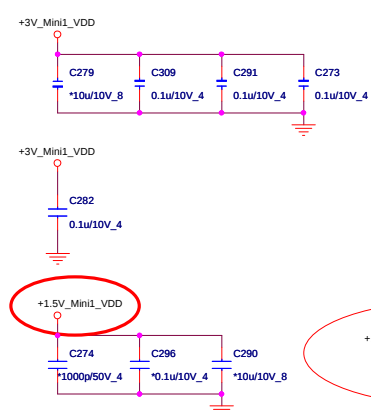
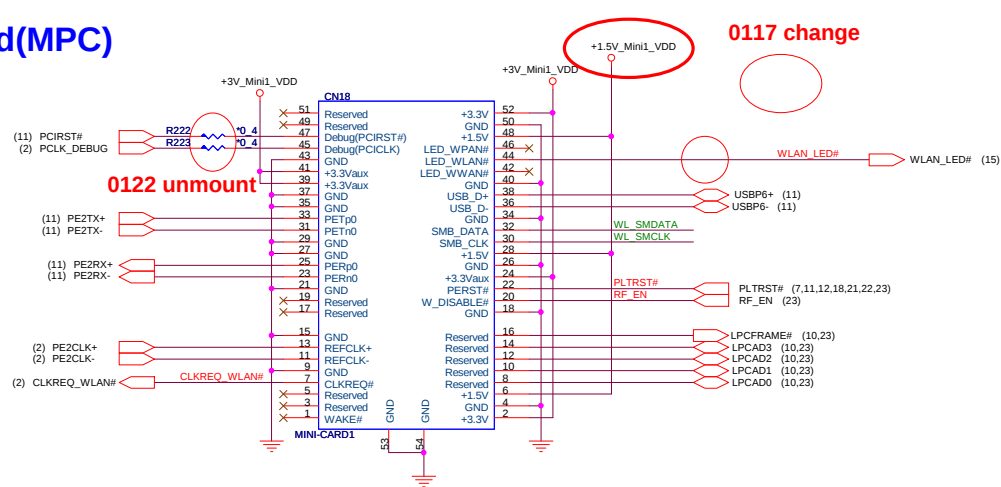


Quanta Computer Inc.
PROJECT : Z68

Size	Document Number	Rev
	SATA-HDD/SSD	1A

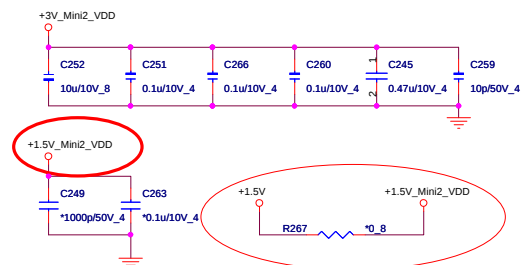
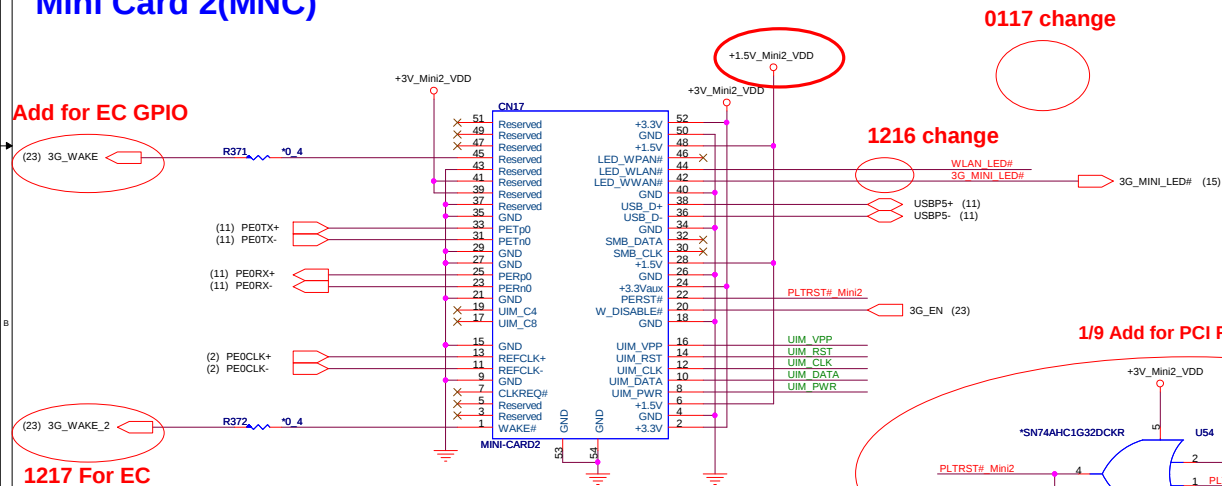
Date: Monday, February 02, 2009 Sheet 19 of 33

Mini Card(MPC)



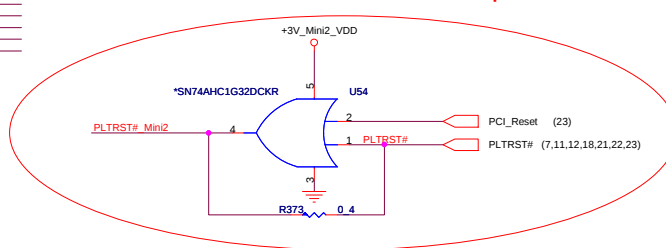
20

Mini Card 2(MNC)

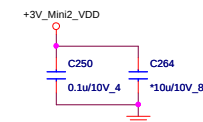


0117 Remove

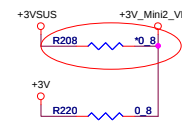
1/9 Add for PCI Reset On/Off pin



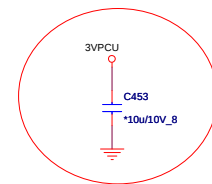
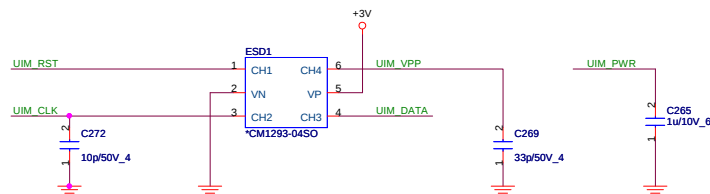
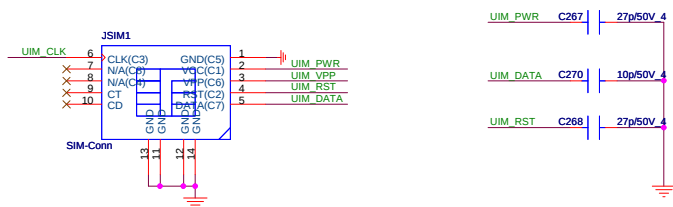
1211 Add



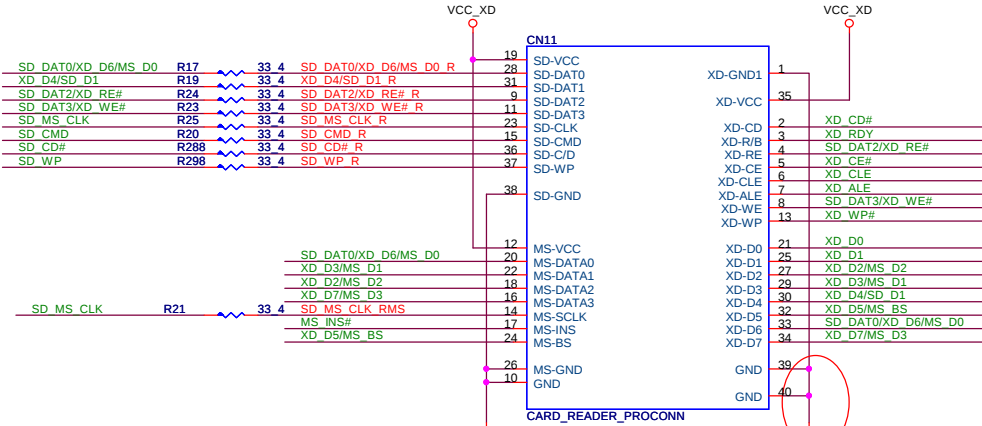
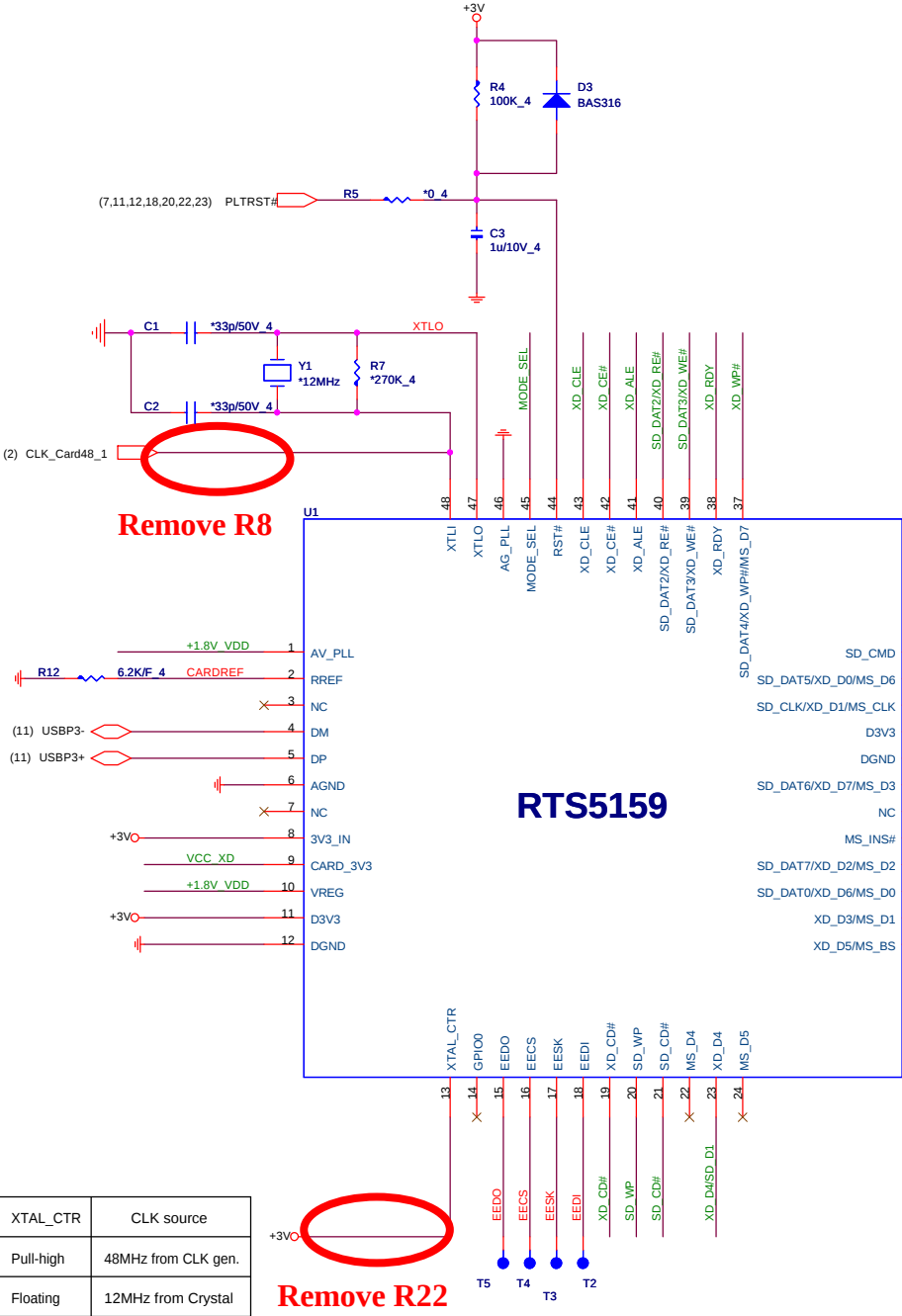
1/7 Change power source



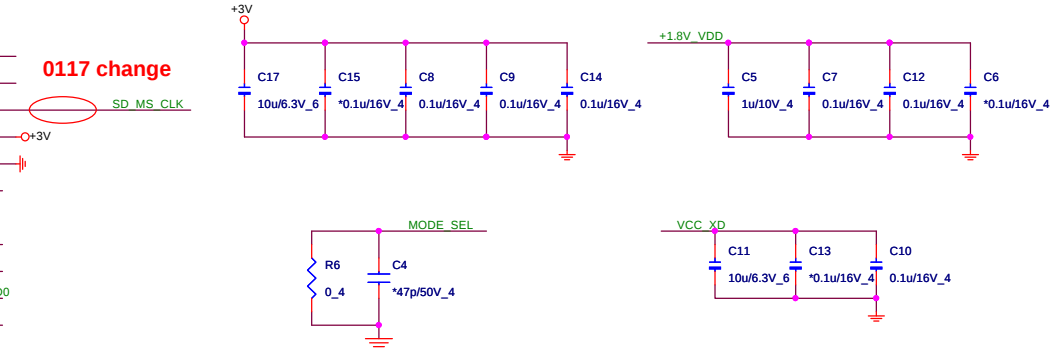
SIM



0117 Add



1/10 Add pin39,pin40 to GND



MODE_SEL Table (Please refer to Realtek Application Notes for more detail description)

	R9016	C9016	Power mode	SD_D1 Out From
RTS 5158E	NC	NC	Power Saving	Pin23
RTS 5159	0 ohm	NC	Power Saving	Pin23

Power Saving mode need install Realtek icon driver.
USB Hotfix KB941600 is also needed for Vista SP0 but SP1.

XTAL_CTR	CLK source
Pull-high	48MHz from CLK gen.
Floating	12MHz from Crystal

Remove R22

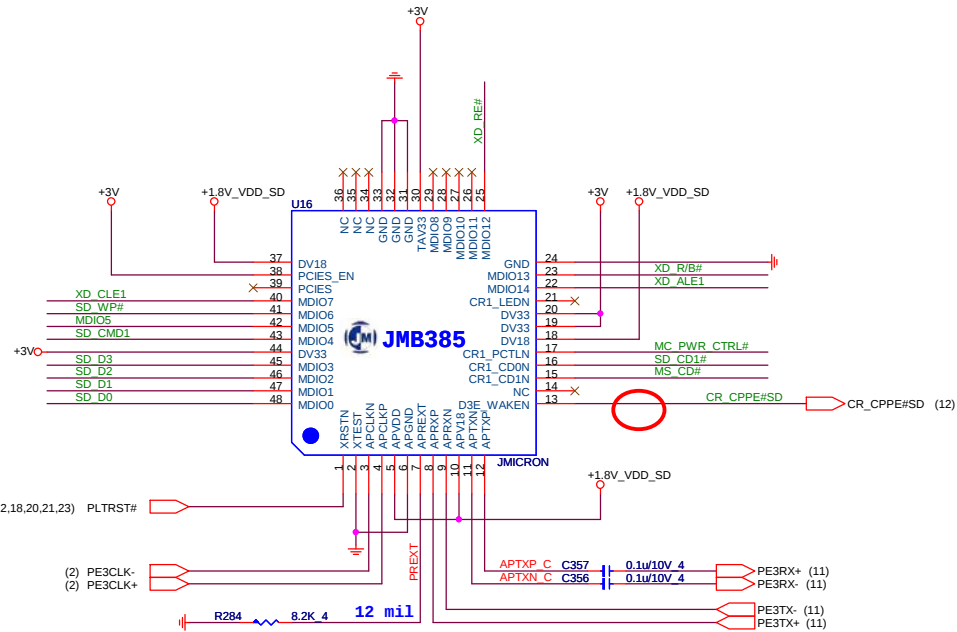


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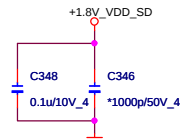
PROJECT : ZG8

Size	Document Number	Rev
	RTS5159 (Card Reader)	1A
Date:	Monday, February 02, 2009	Sheet 21 of 33

JMB385 SIDO(MMC)



For APVDD(pin5)

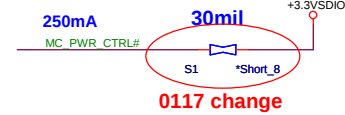


APVDD(pin5) must put C346/1000pF close to APVDD(pin5) (length must under 120mil) and trace width = 20mil, after C346, pls put one more 0.1uF for it.

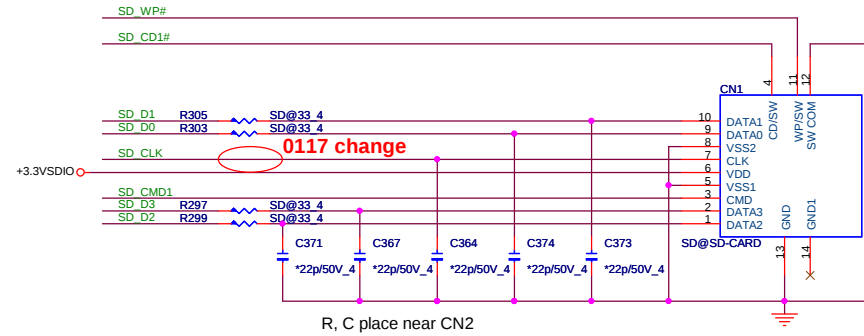
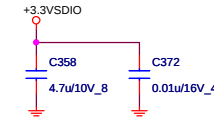
SD CONNDETOR

22

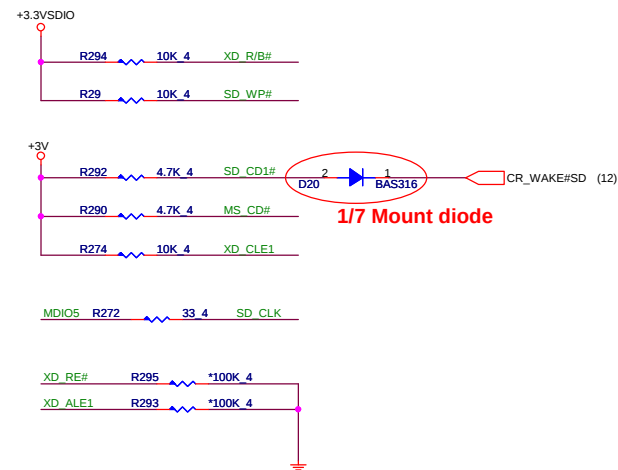
Use 0805 type and over 20 mils trace width on both side

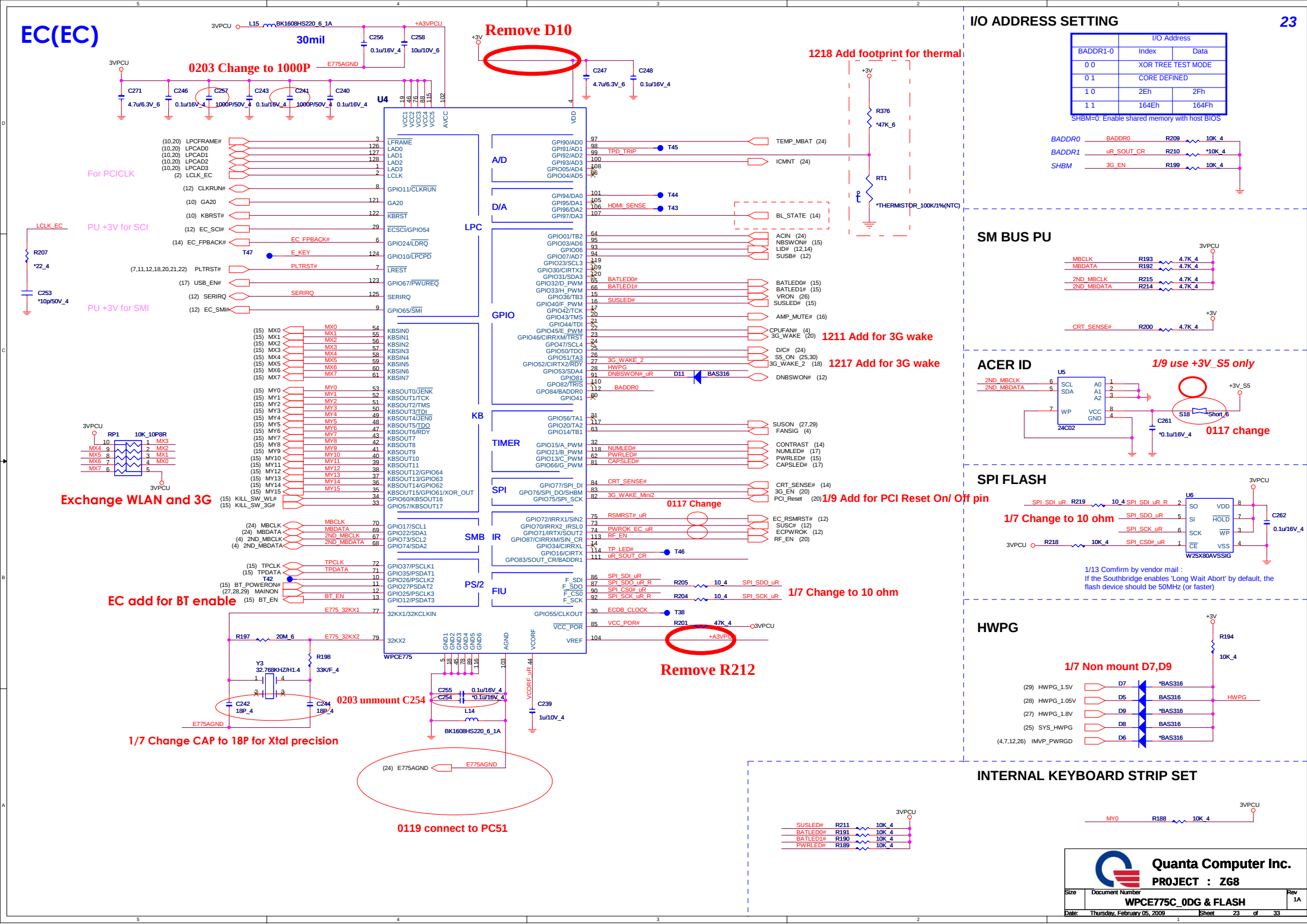


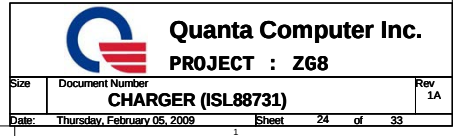
Memory Card Power Supply



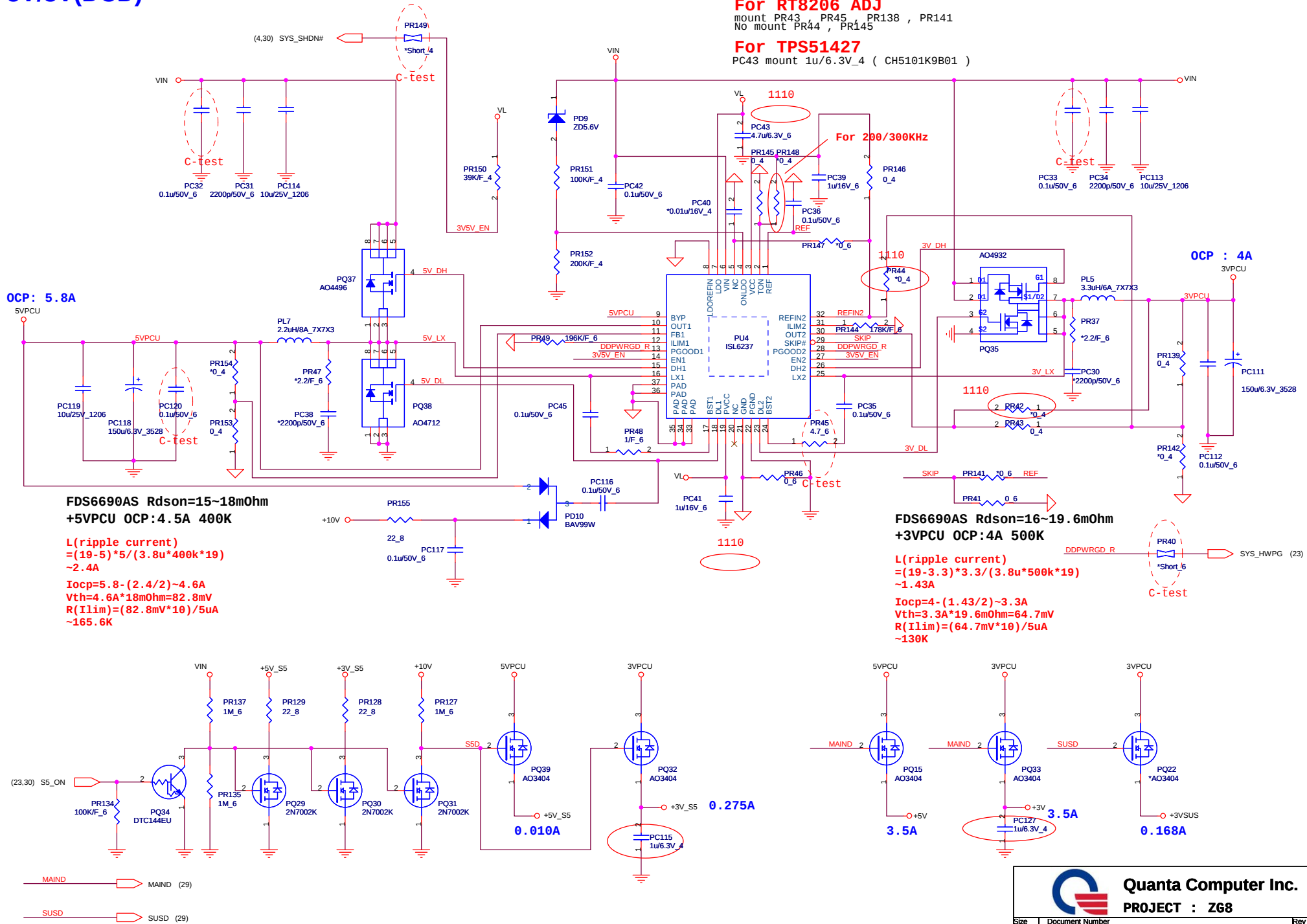
R, C place near CN2

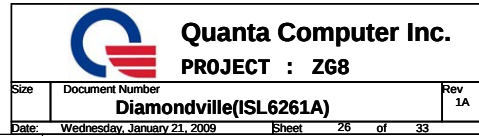




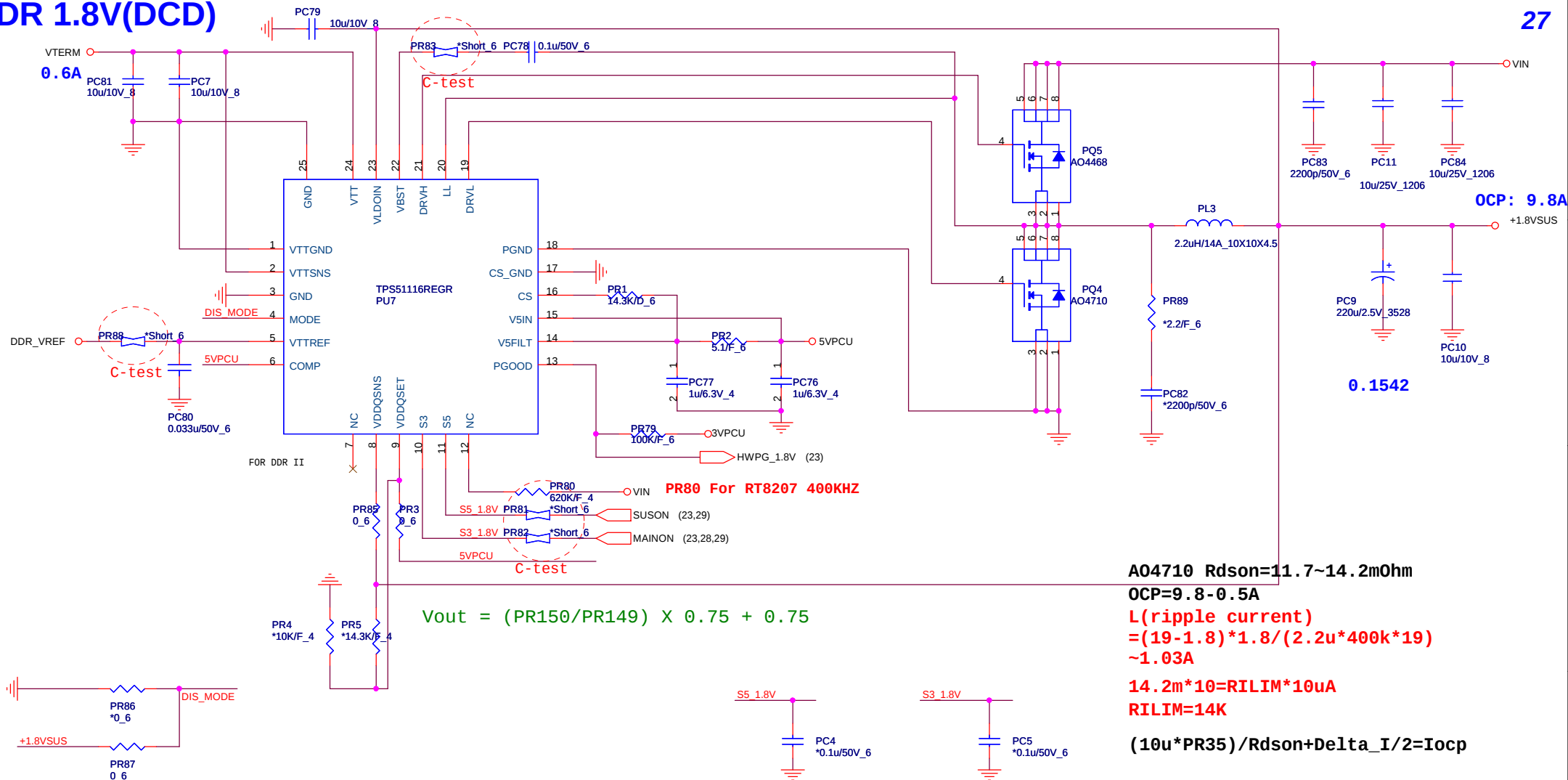


5V/3V(DCD)





DDR 1.8V(DCD)

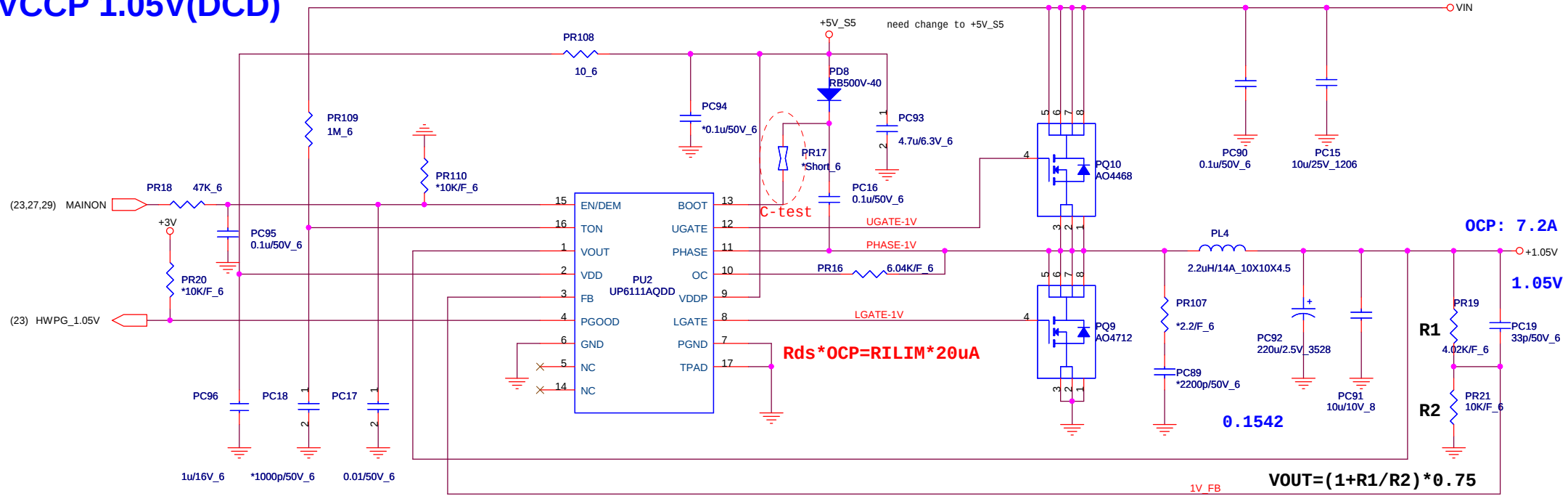


Quanta Computer Inc.
PROJECT : ZG8

Size	Document Number	Rev
	DDR 1.8V(TPS51116)	1A
Date:	Wednesday, January 21, 2009	Sheet 27 of 33

VCCP 1.05V(DCD)

28



$$TON = 3.85p * RTON * Vout / (Vin - 0.5)$$

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

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

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

A04712 $R_{ds(on)} = 15 \sim 18m\Omega$

OCP = 7.2 - 0.8A

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

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

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



Quanta Computer Inc.
PROJECT : ZG8

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

Date: Wednesday, January 21, 2009 Sheet 28 of 33

Discharger/1.5V(DCD)

29

