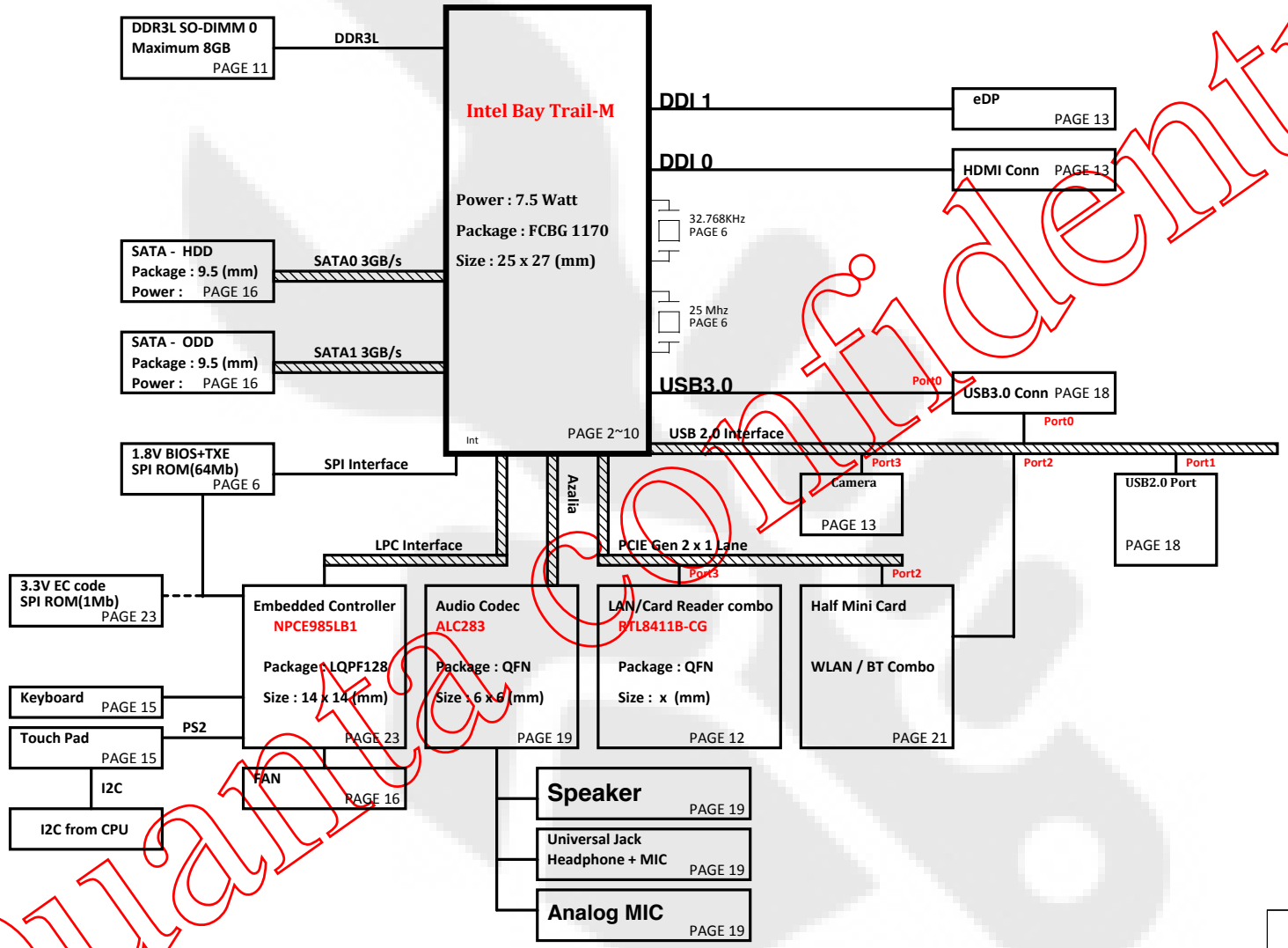
Z8A UMA(14")

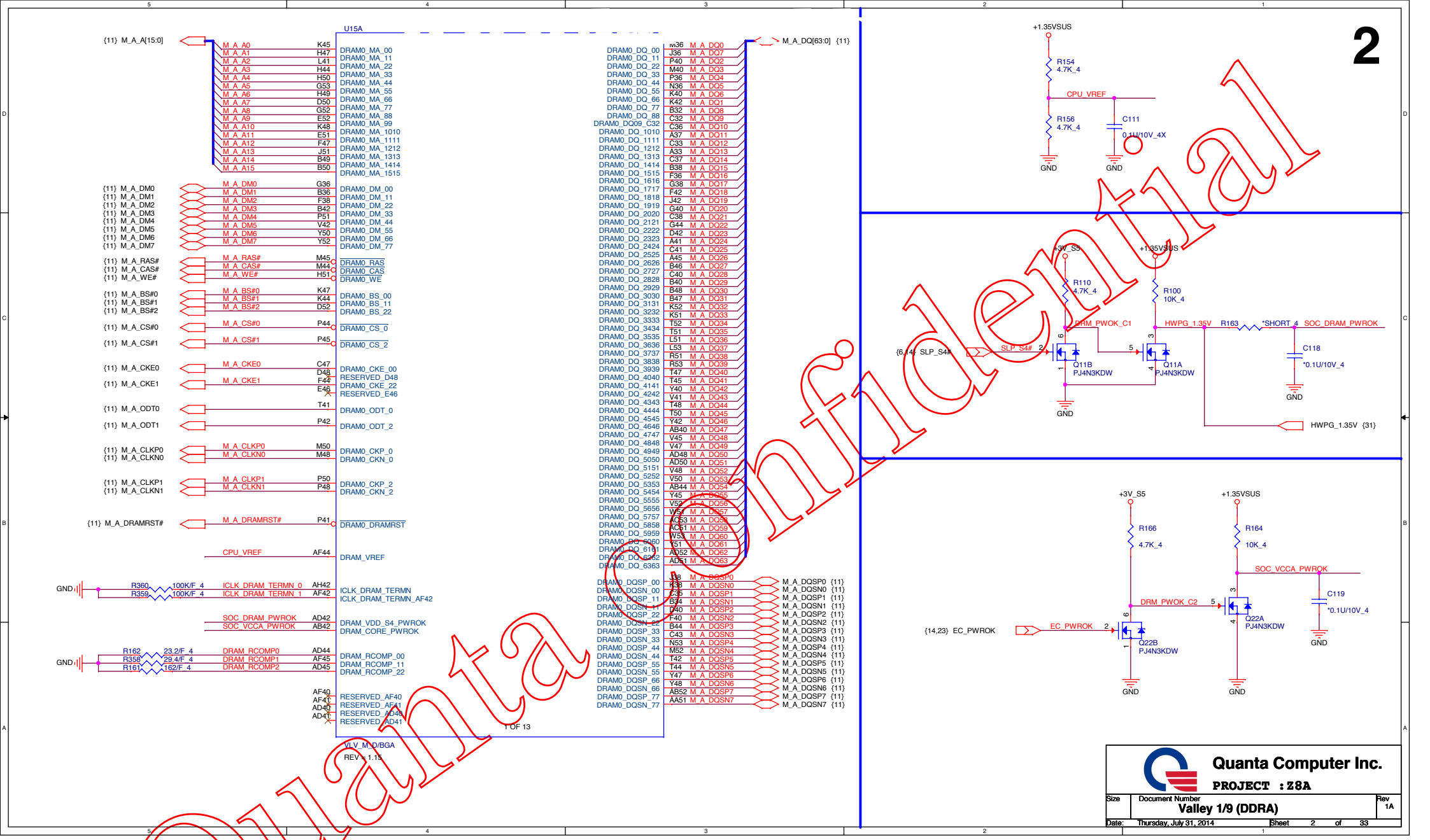
Intel Bay Trail-M Platform Block Diagram

PCB 4L STACK UP

LAYER 1 : TOP
LAYER 2 : SVCC
LAYER 3 : SGND
LAYER 4 : BOT



Quanta Computer Inc.
PROJECT : Z8A
Size | Document Number: Intel Block Diagram | Rev 1A
Date: Thursday, July 31, 2014 | Sheet 1 of 33



Quanta Computer Inc.

PROJECT : Z8A

Size	Document Number	Rev
	Valley 2/9 (DDRB)	1A

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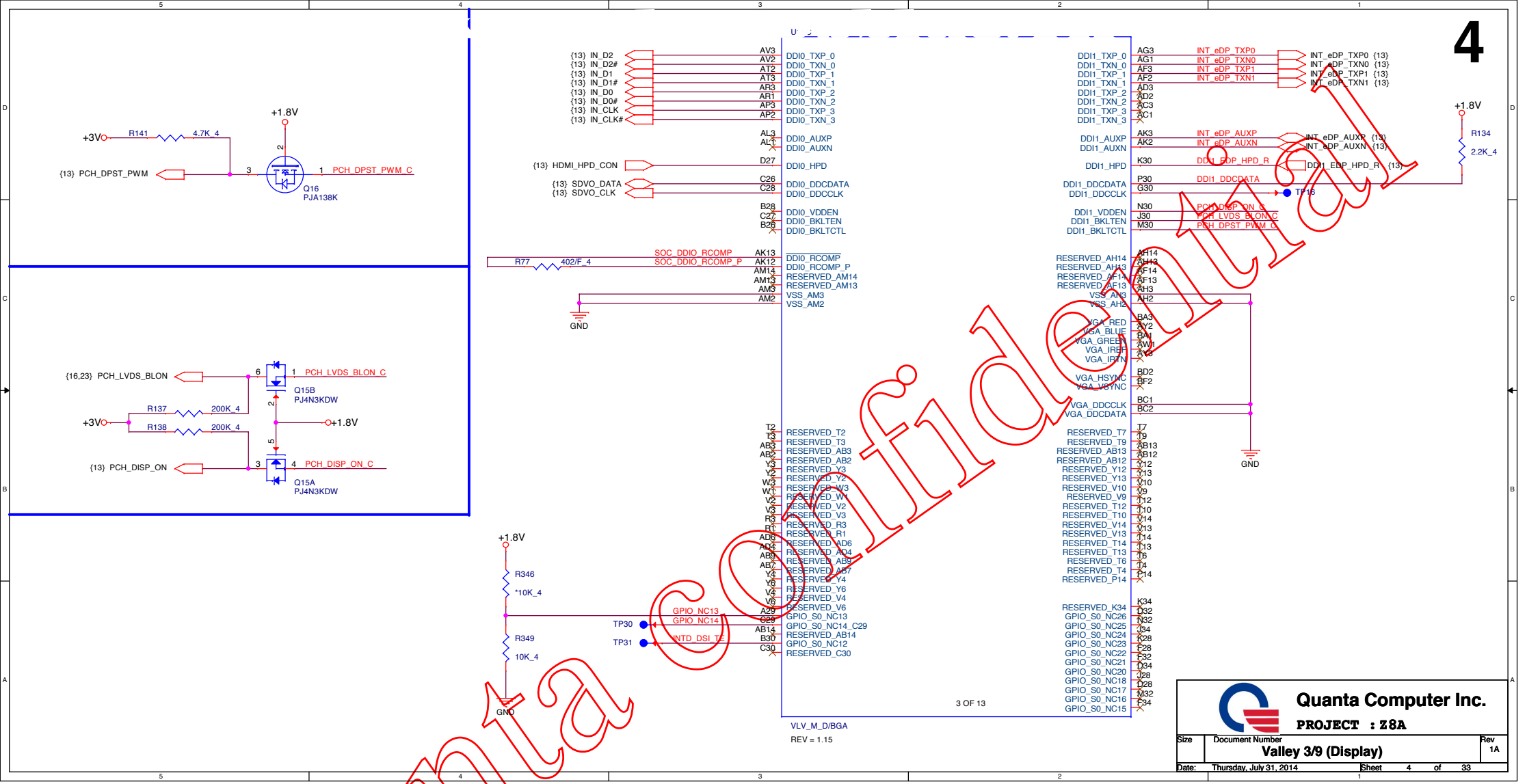
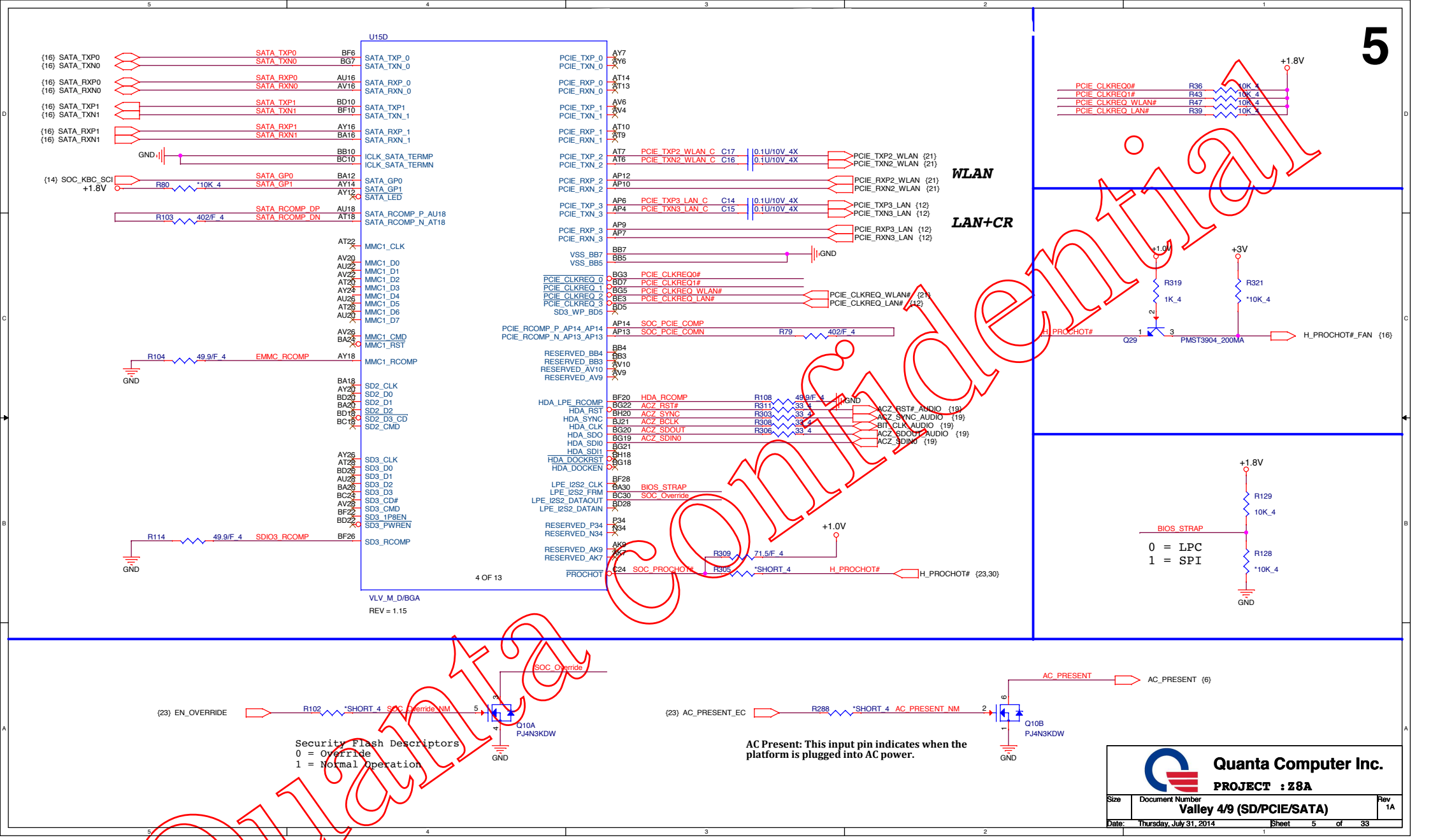
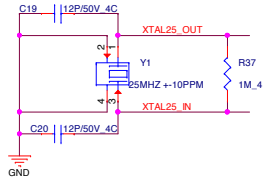
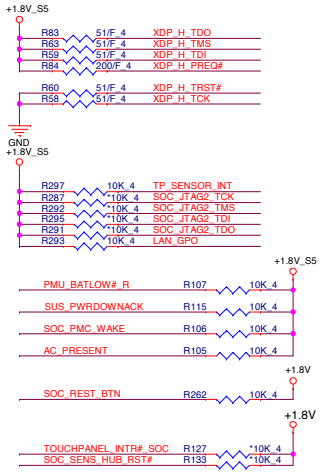
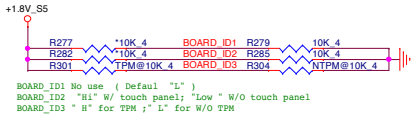


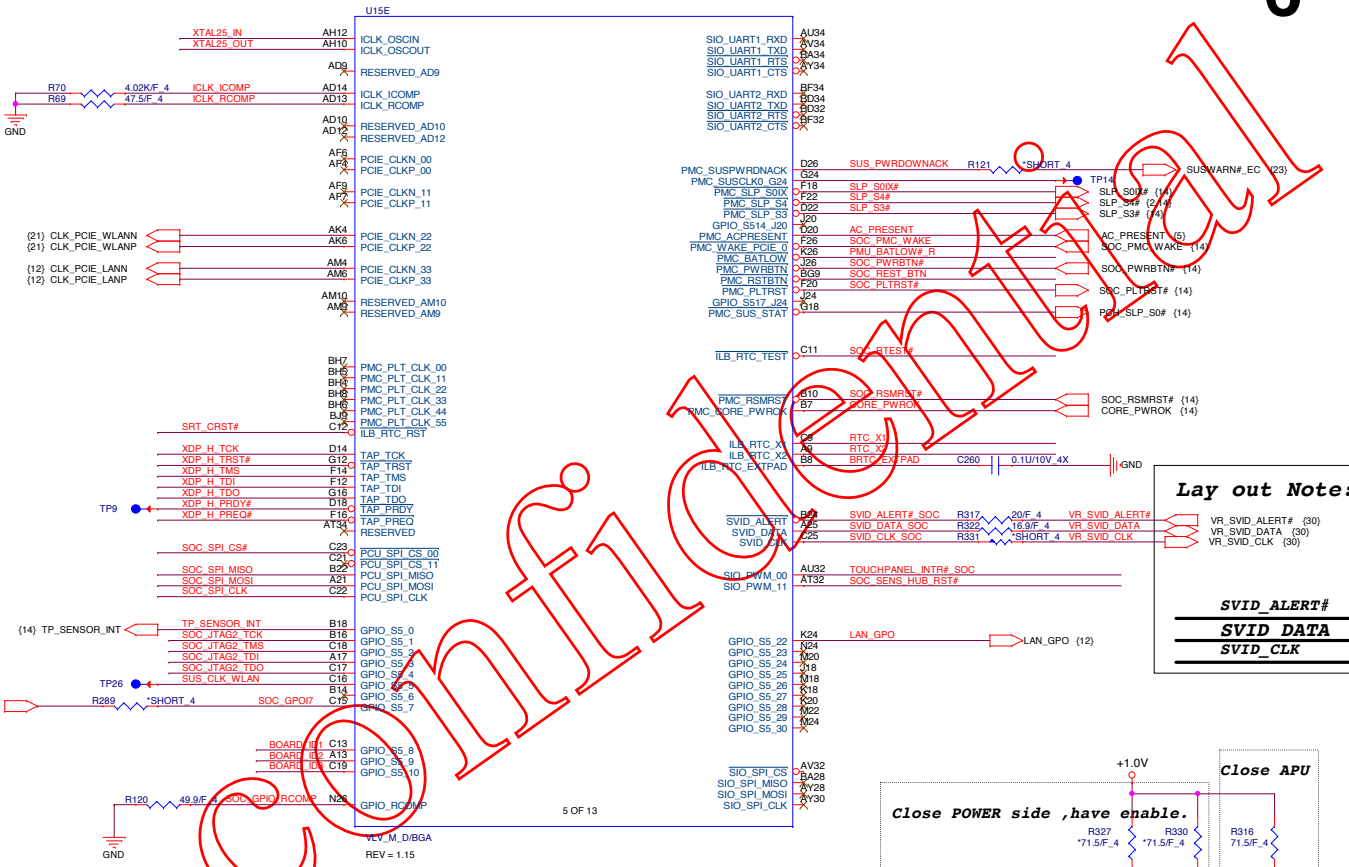




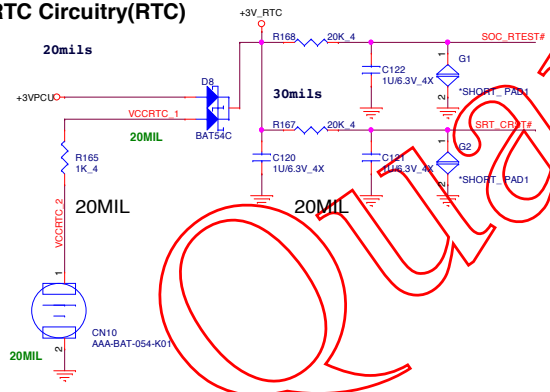


BOARD ID

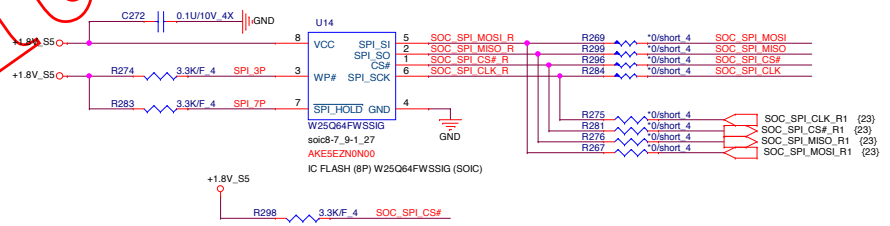




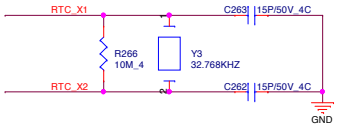
RTC Circuitry(RTC)



SPI NOR FLASH



RTC Clock 32.768KHz



Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	Valley 5/9 (SPI/GPIO/CLK)	1A
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Quanta Computer Inc.
PROJECT : Z8A
Size | Document Number: Valley 6/9 (USB/LPC/I2C) | Rev 1A
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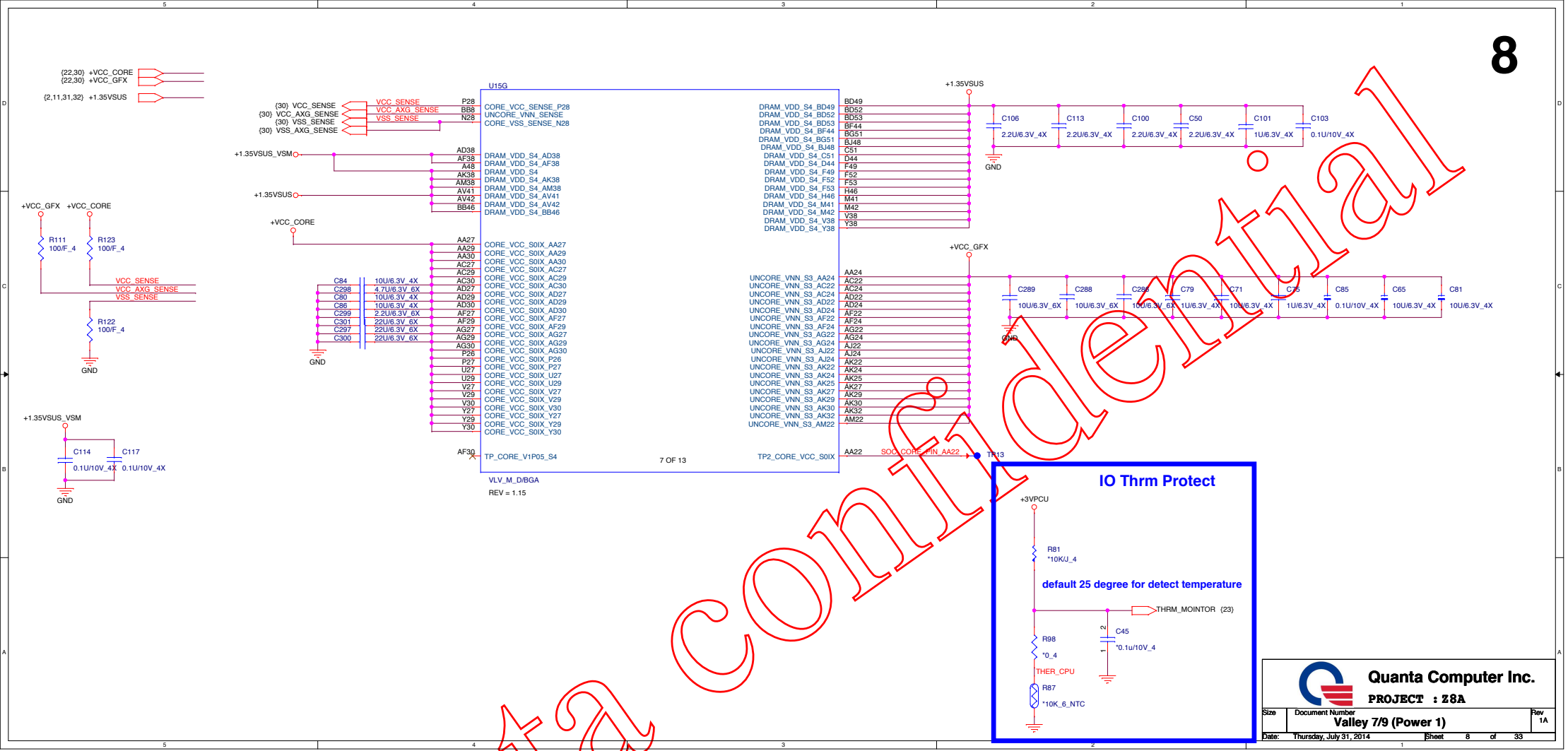

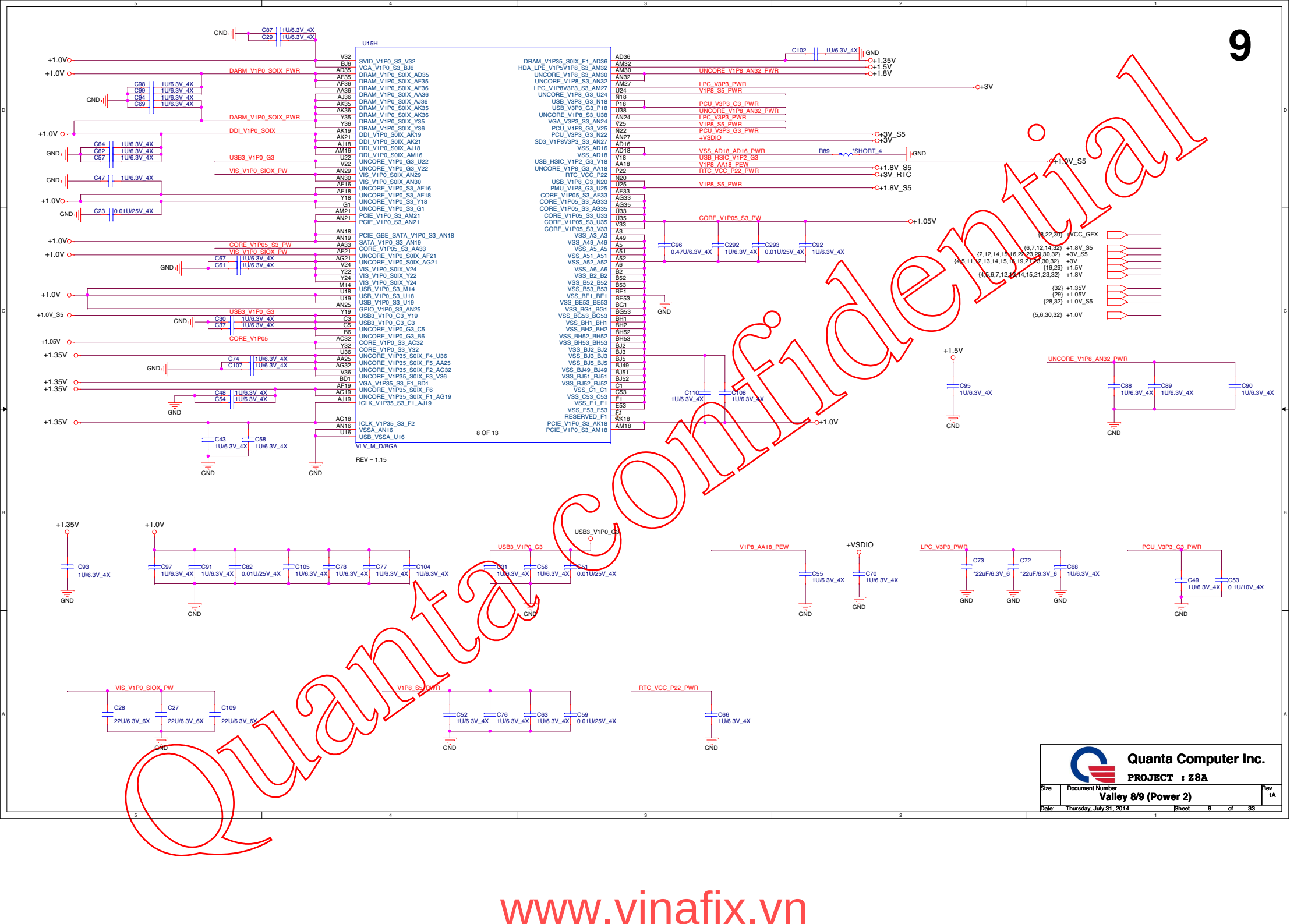
9
U15H
8 OF 13
VLV_M_D/BGA
REV = 1.15
Quanta Computer Inc.
PROJECT : Z8A
Valley 8/9 (Power 2)
Size
Document Number
Rev
1A
Date: Thursday, July 31, 2014
Sheet 9 of 33
Quanta Confidential
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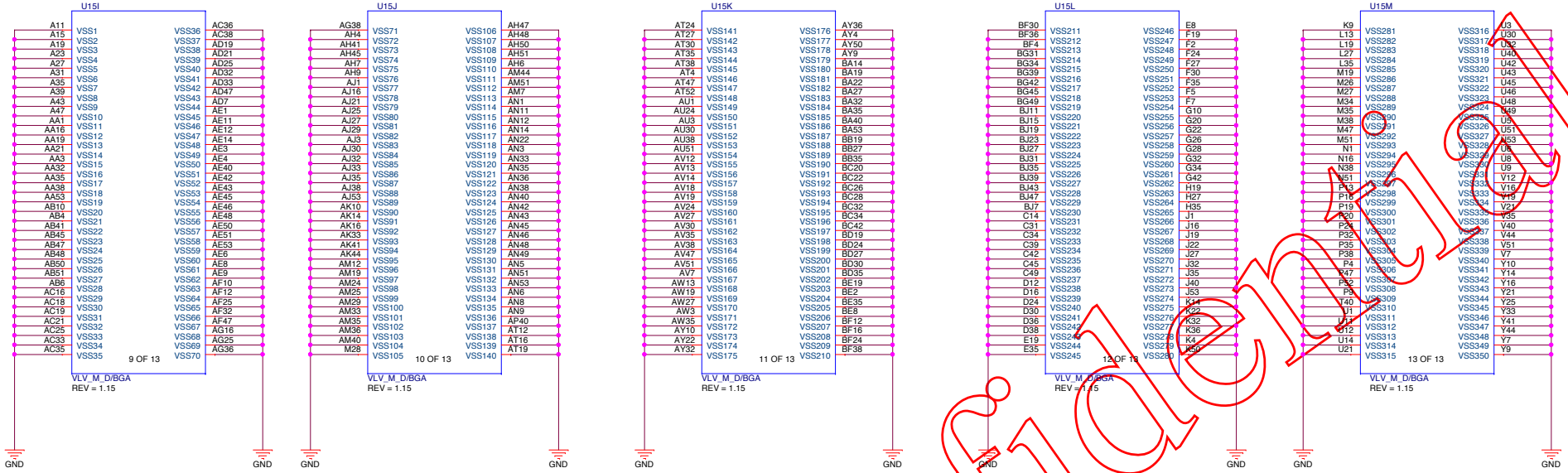

Quanta Computer Inc.

PROJECT : Z8A

Size	Document Number	Rev
	Valley 9/9 (GND)	1A
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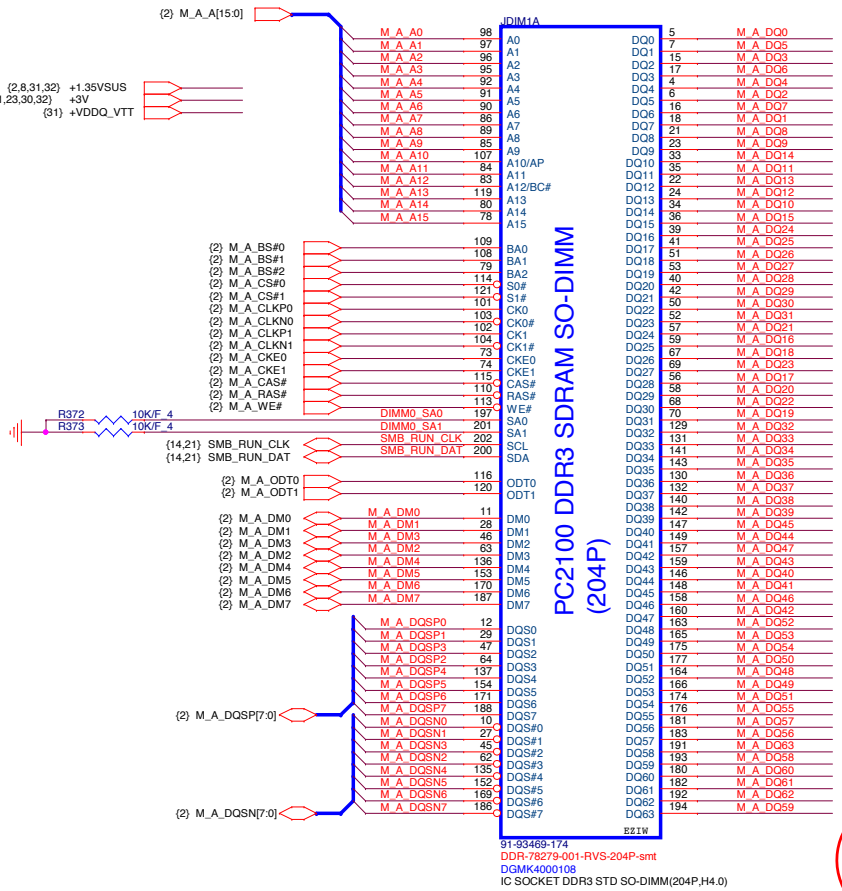

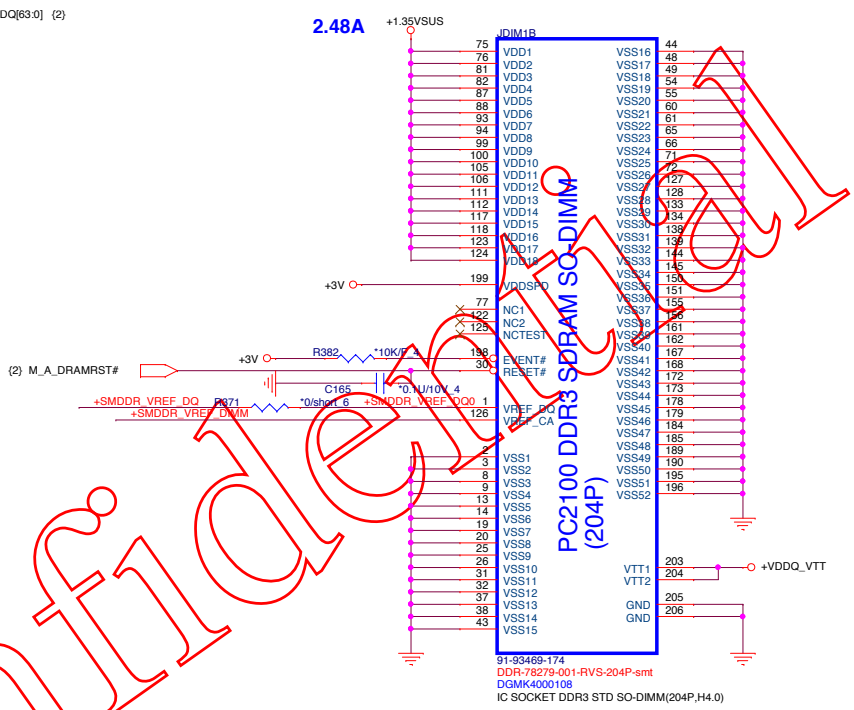

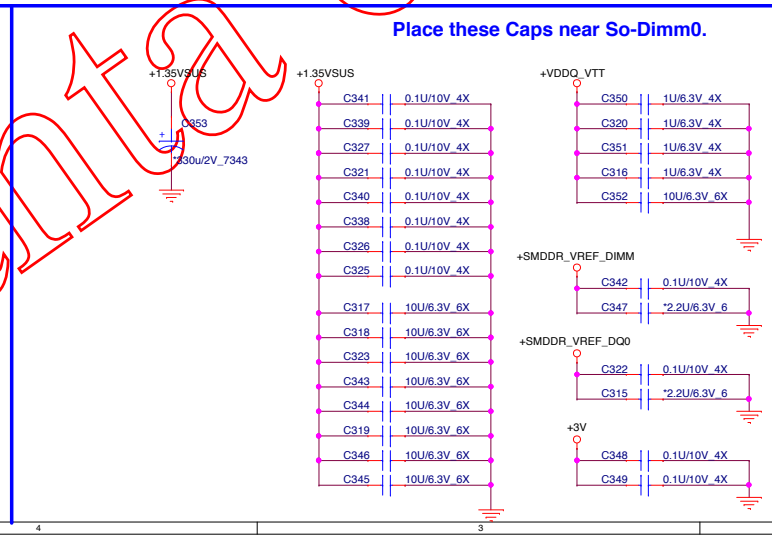

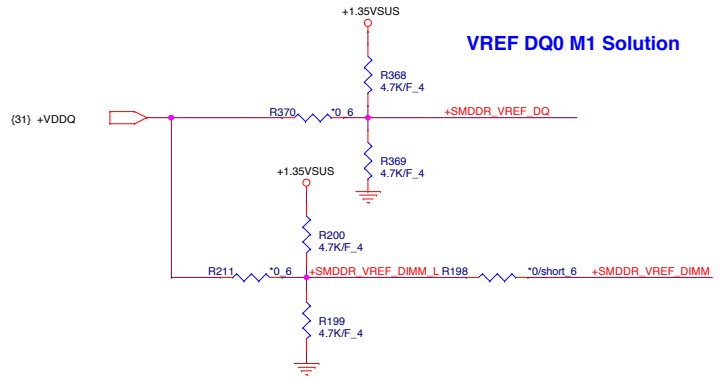

Quanta Computer Inc.

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Size	Document Number	Rev
	DDR3 DIMM0-STD(4.0H)	1A

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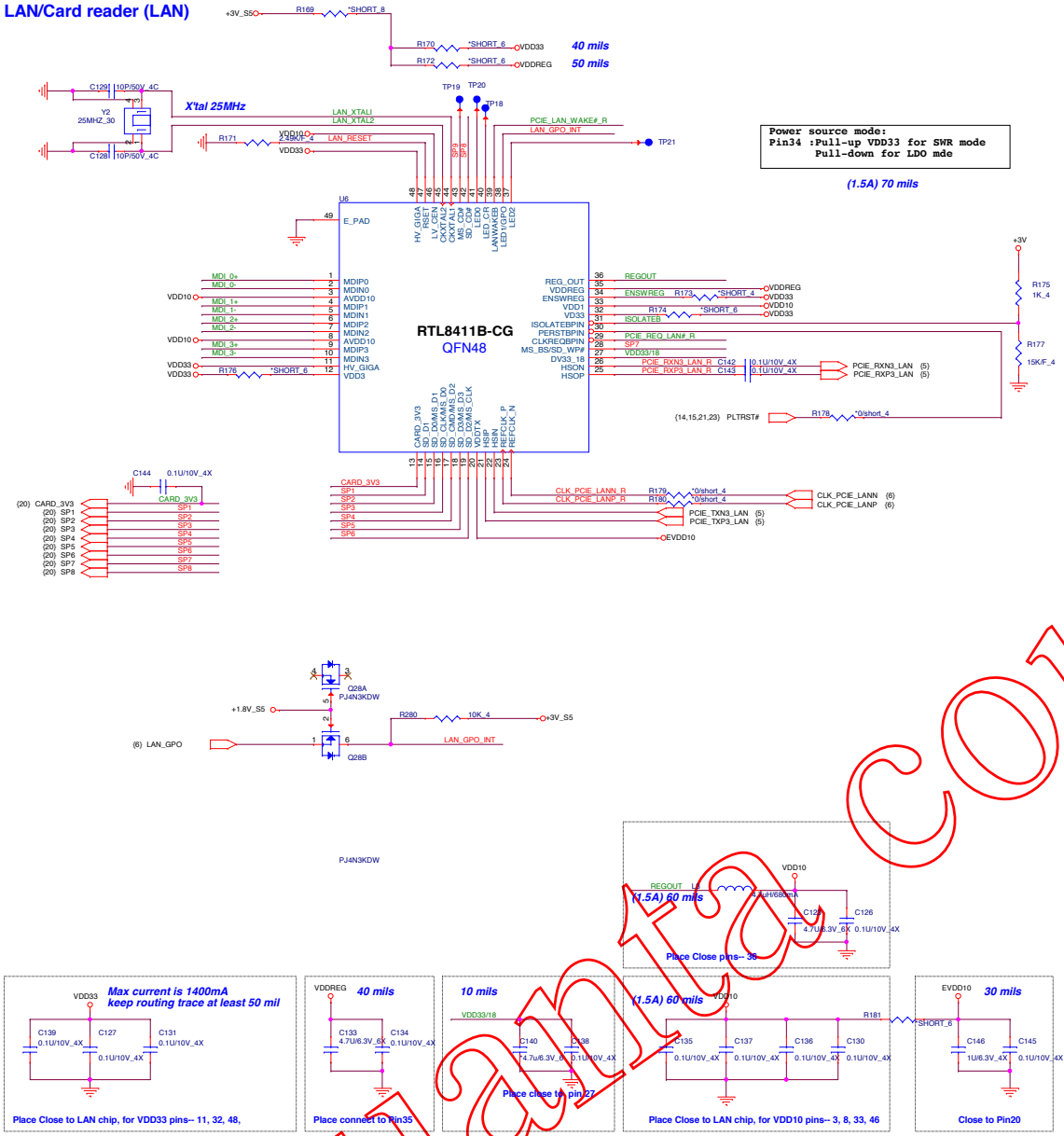
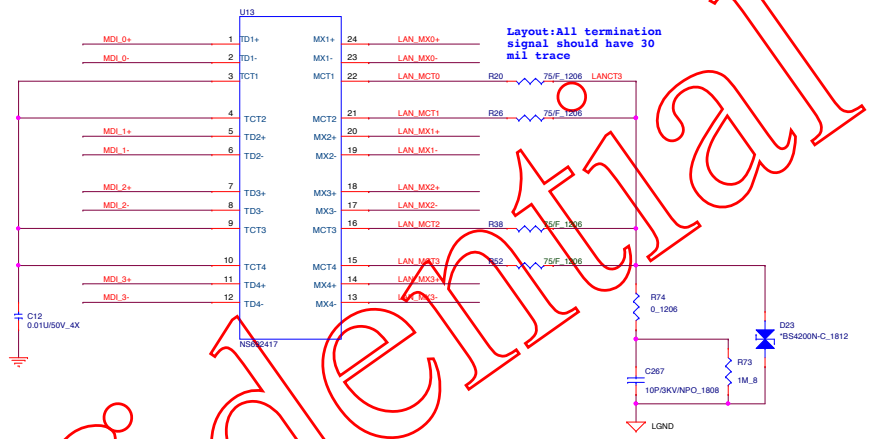
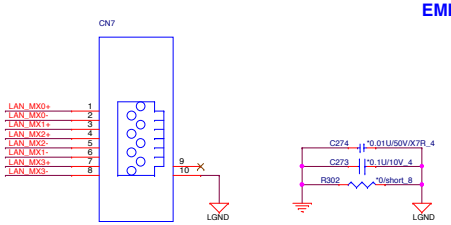
LAN/Card reader (LAN)



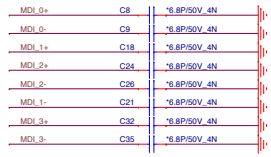
Trans[illegible] LAN

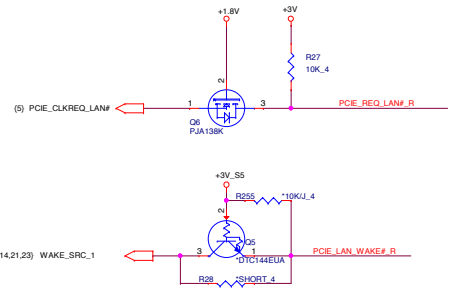


RJ45 Connector



EMI





Quanta Computer Inc.
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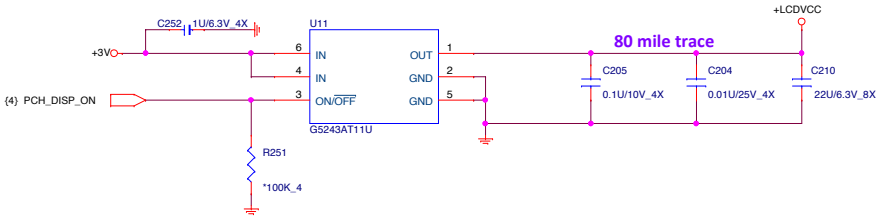
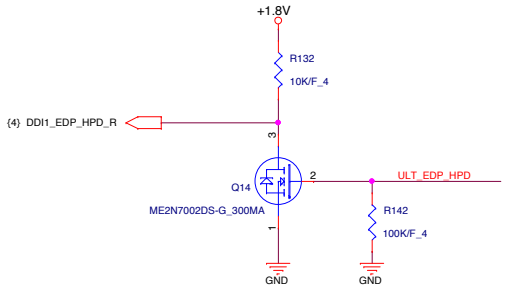
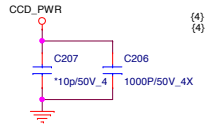
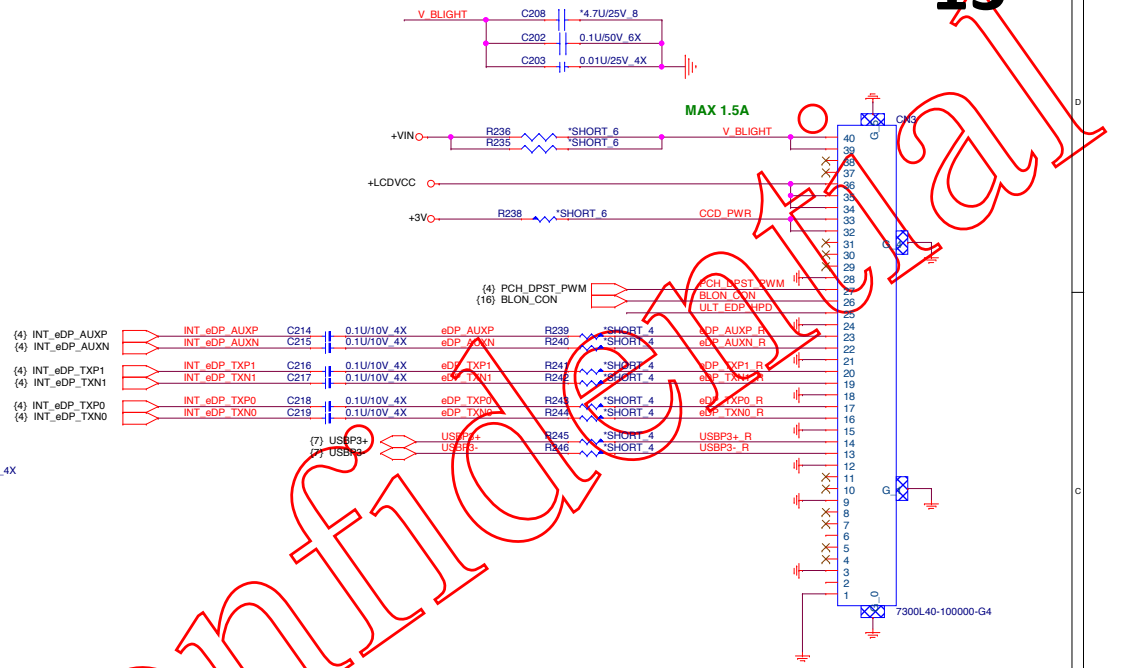
LCD POWER SWITCH



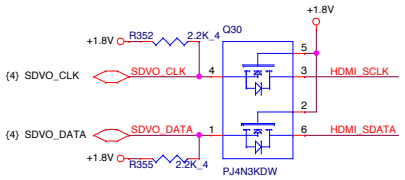




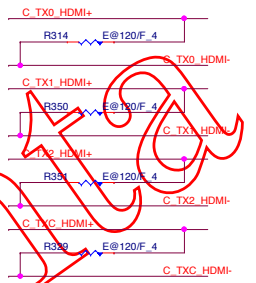


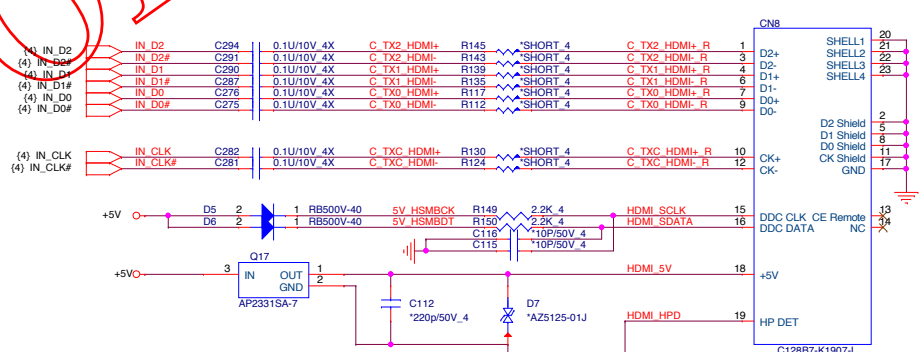
HDMI Conn.

HDMI SMBus Isolation

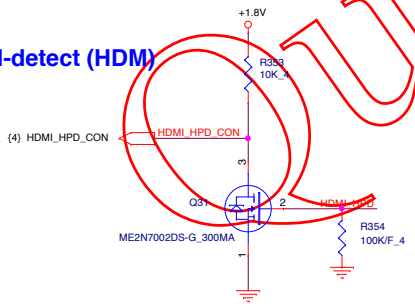


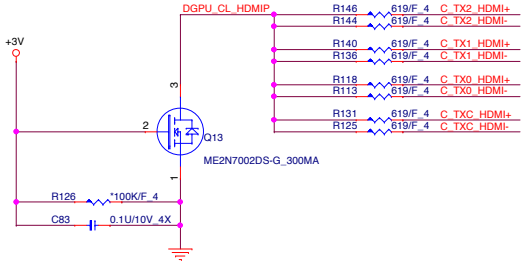
EMI (EMC)





HDMI-detect (HDM)





Quanta Computer Inc.
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Size | Document Number: LCD/HDMI/Camera | Rev: 1A
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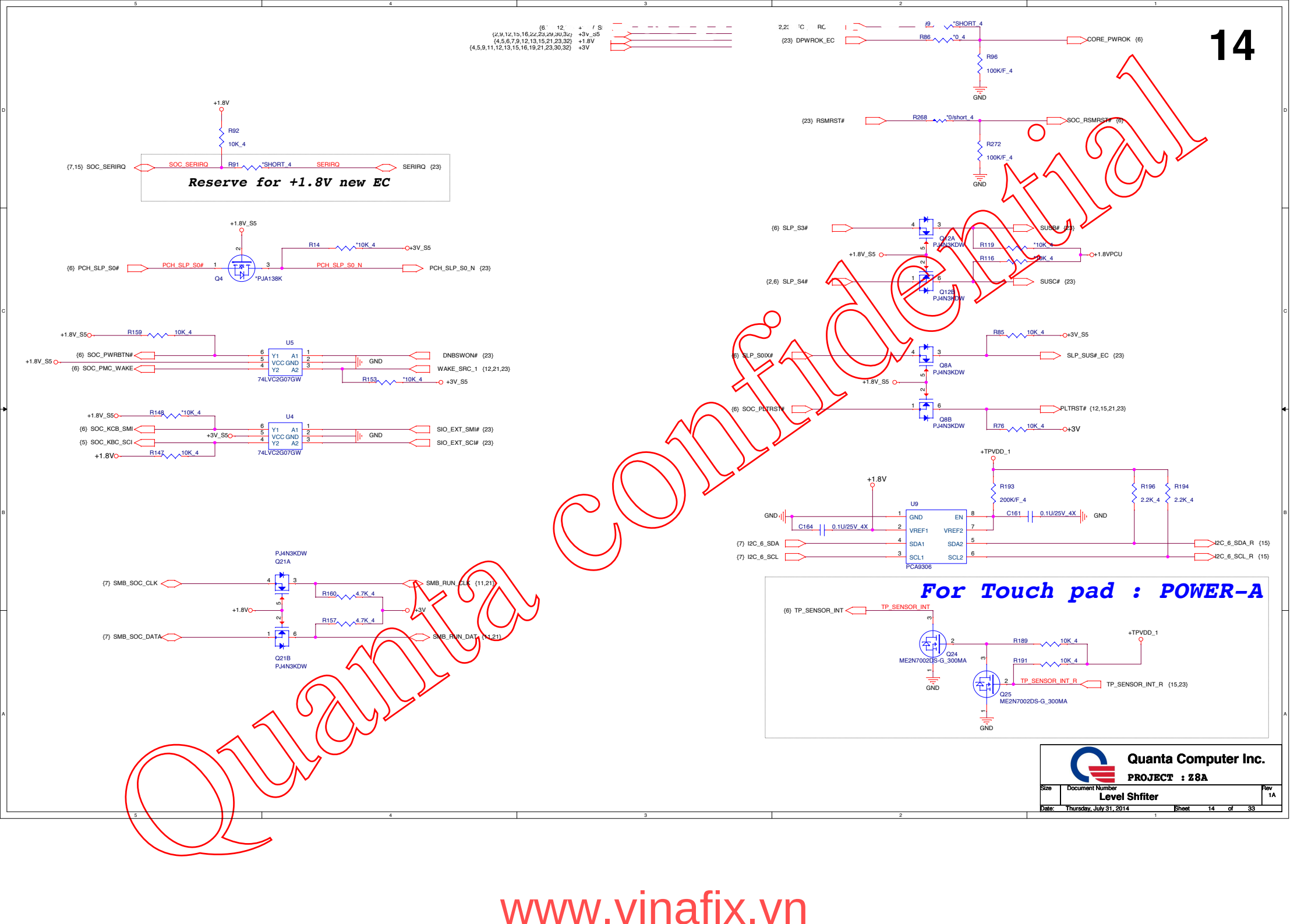

Quanta Computer Inc.

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	Level Shfiter	1A

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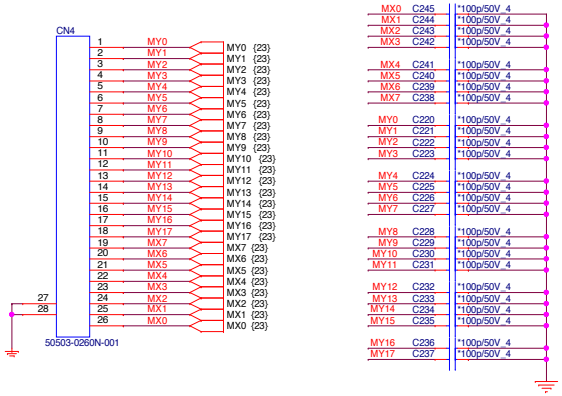
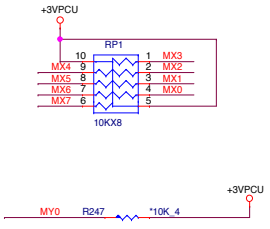
KEYBOARD (KBC)

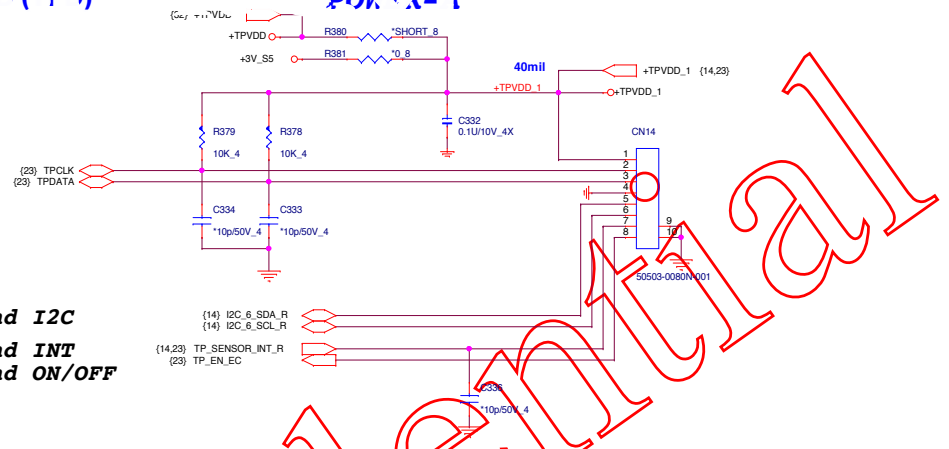


INTERNAL KEYBOARD STRIP SET (KBC)



: TOUCH PAD (TP)

POWER

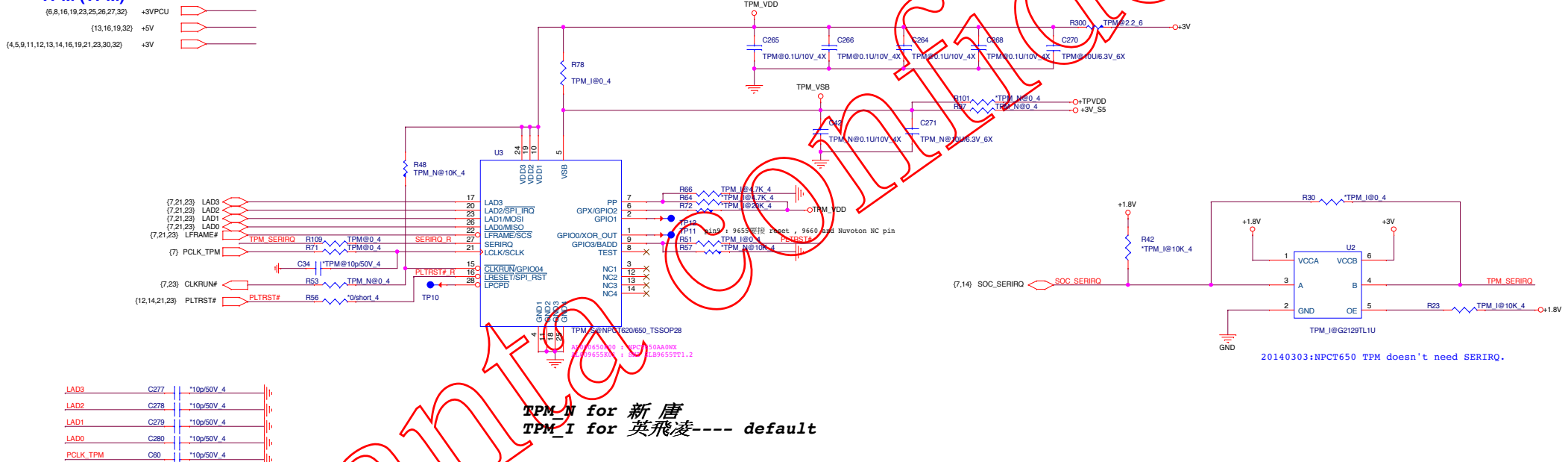


Touch pad I2C

Touch pad INT

Touch pad ON/OFF

TPM (TPM)



20140303:NPCT650 TPM doesn't need SERIRQ.

TPM_N for 新唐

TPM_I for 英飛凌---- default

Quanta Computer Inc.		
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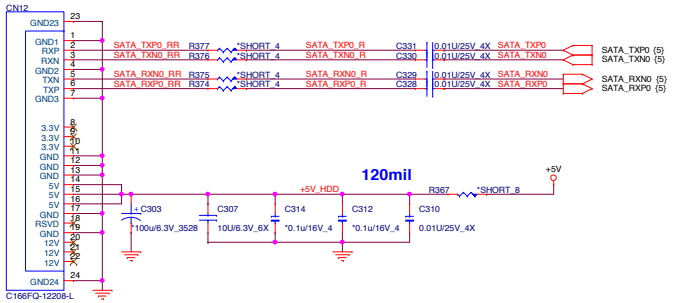
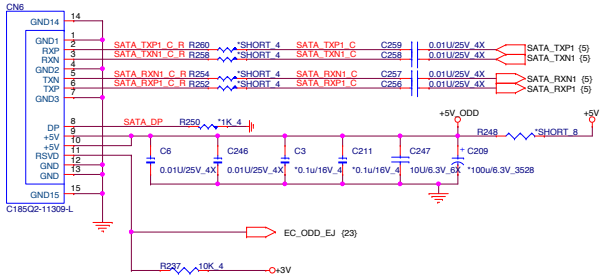
2.5" SATA HDD (HDD)

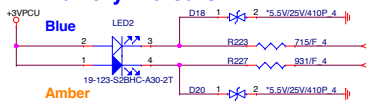


SATA ODD Connecto

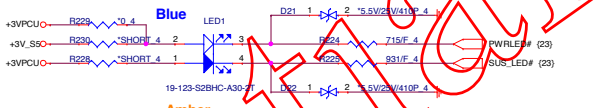


LED (UIF)

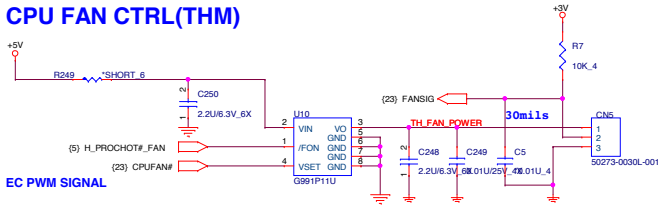
Battery indicator



PWR indicator



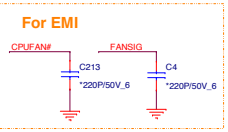
CPU FAN CTRL(THM)



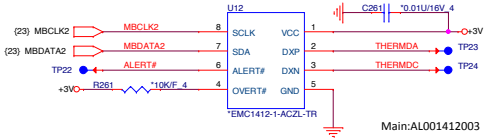
EC PWM SIGNAL

FANPWR = 1.6*VSET

For EMI



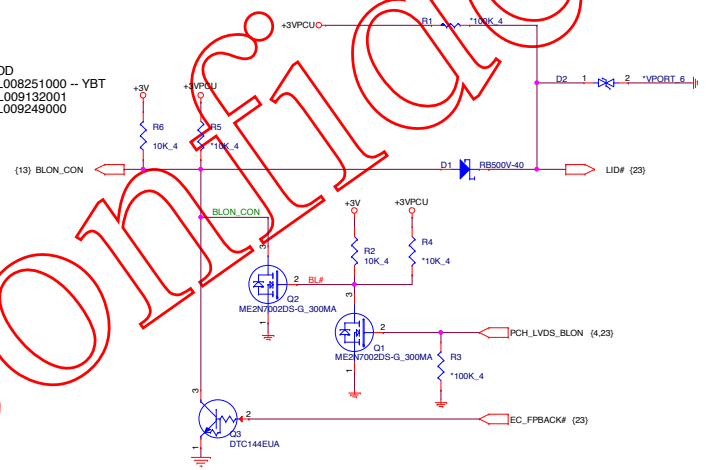
CPU Thermal sensor(THS) / MB Local TEMP



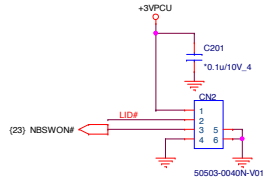
Main:AL001412003 EMC1412-1-ACZL-TR(98h)
2nd:AL000431014 TMP431ADGKR(98h)

HALL IC (HSR)

1st source : EOD
2nd source : AL008251000 -- YBT
3rd source : AL009132001
4th source : AL009249000



PWR button DB CON



Quanta Computer Inc.
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Size	Document Number	Rev
	HDD/Hall/eMMC/LED	1A

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Quanta Computer Inc.

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Size	Document Number	Rev
	USB HUB -1	1A

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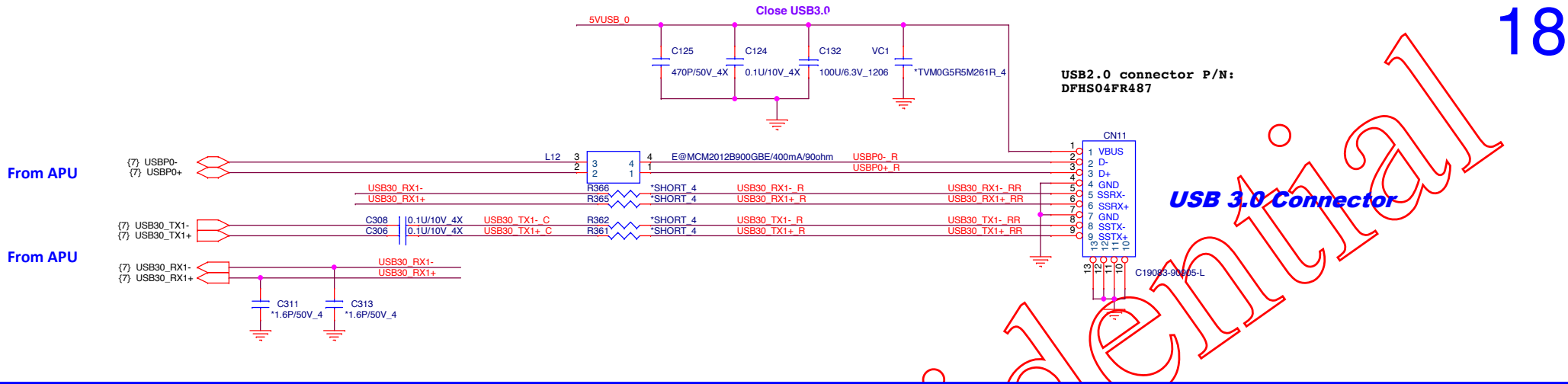

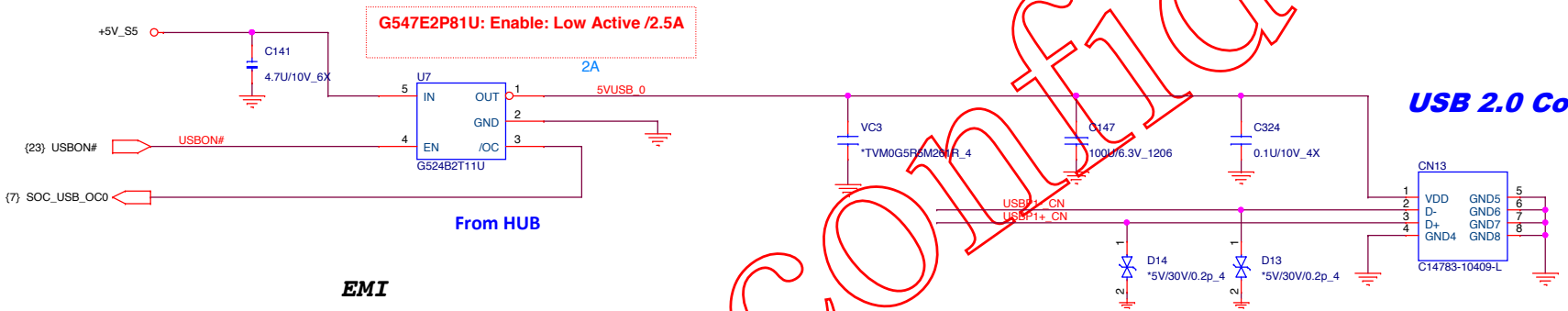

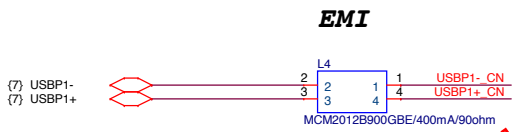

Quanta Computer Inc.
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Size	Document Number	Rev
	USB / eMMC CONN	1A
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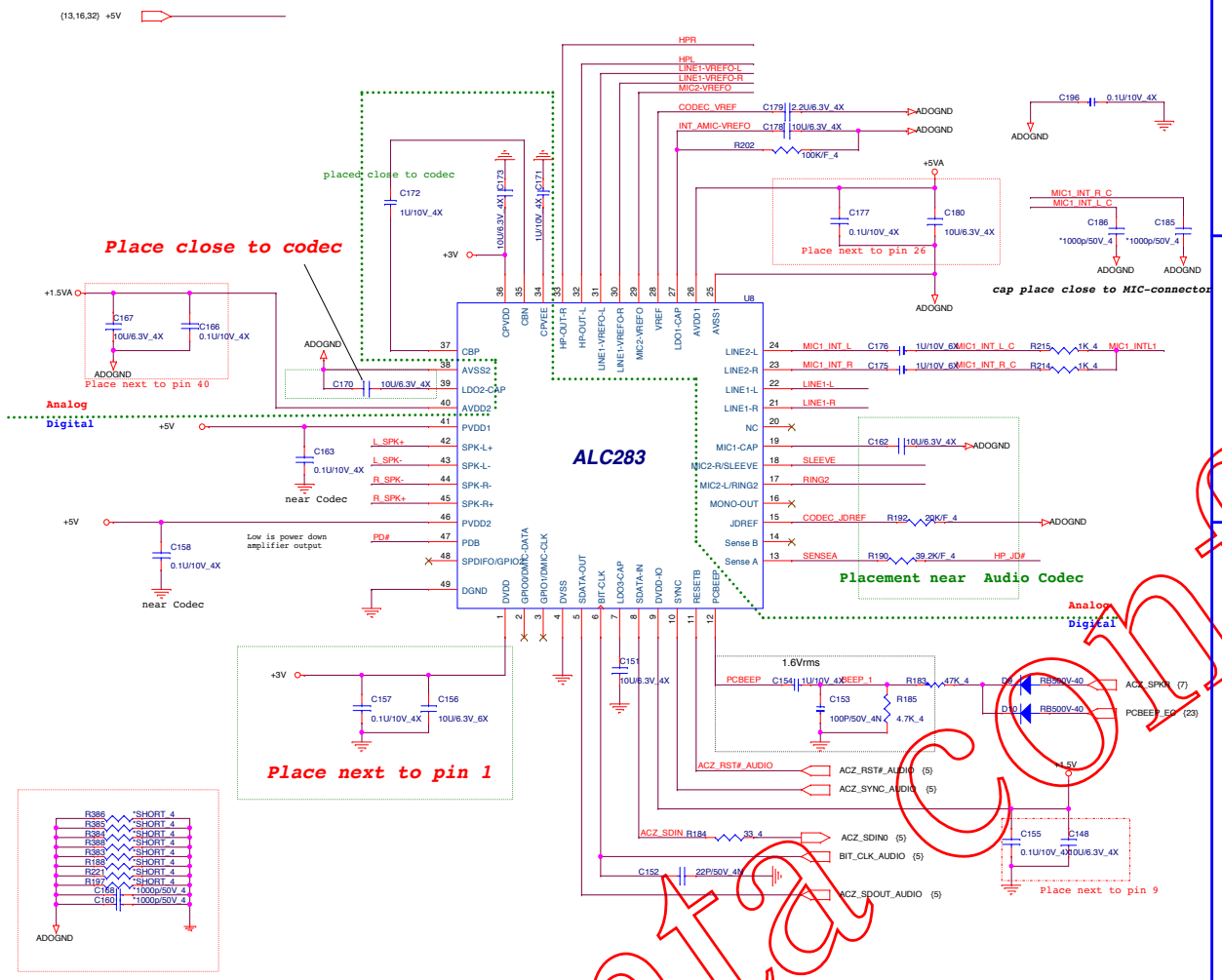
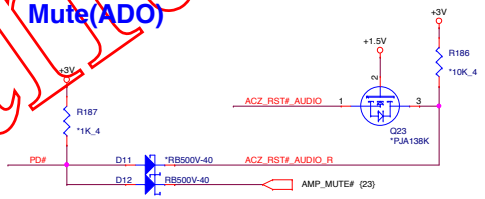
Codec(ADO)



Codec PWR 5V(ADO)

Codec PWR 1.5V(ADO)

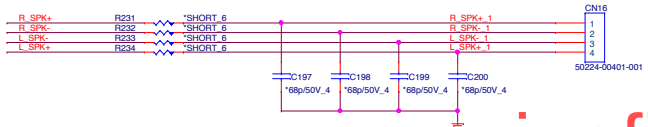
Mute(ADO)



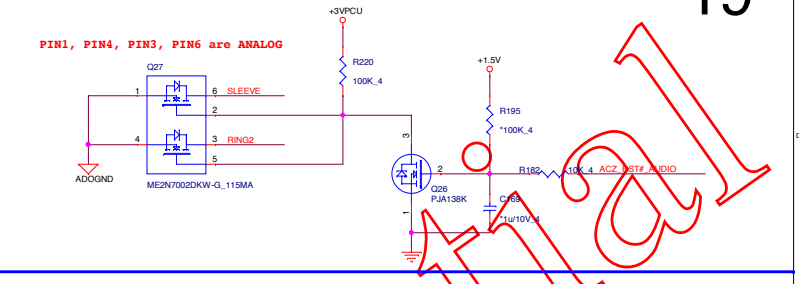
Internal Speaker

footprint 88266-040xx-xxx-4p-1

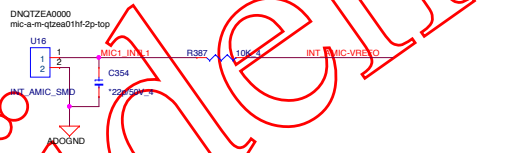
40mil for each signal



Jack Detection(ADO)

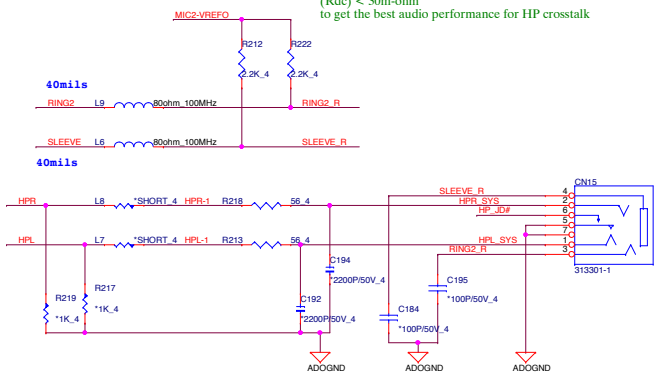


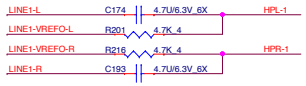
INT MIC array



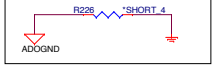
HEADPHONE/MIC/LINE combo

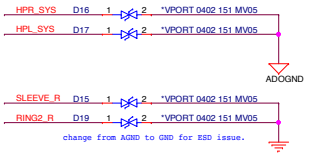
FB1/FB2(SLEEVE/RING2) should choose DC resistance (Rdc) < 30m-ohm to get the best audio performance for HP crosstalk





Close to Audio Jack





Quanta Computer Inc.
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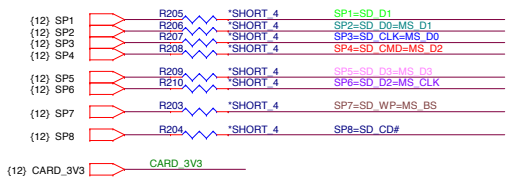
Size	Document Number	Rev
	ALC283/HP/SPK	1A
Date: Thursday, July 31, 2014	Sheet 19 of 33	

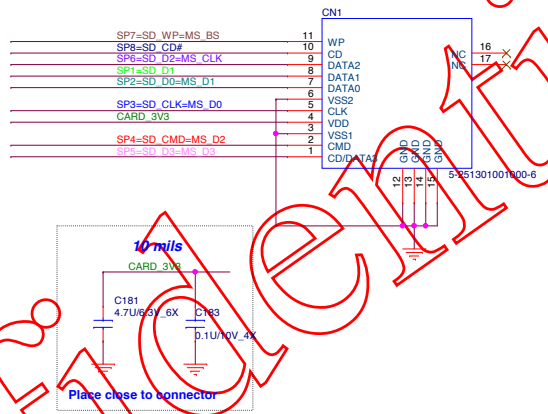
CARD READER CONNECTOR (MMC)

Share Pin

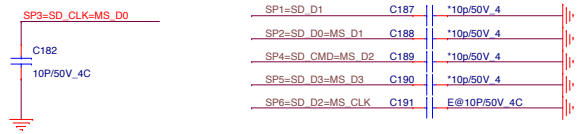
SP1	SD_D1	
SP2	SD_D0	MS_D1
SP3	SD_CLK	MS_D0
SP4	SD_CMD	MS_D2
SP5	SD_D3	MS_D3
SP6	SD_D2	MS_CLK
SP7	SD_WP	MS_BS
SP8	SD_CD#	
SP9		MS_INS#



SD/MMC CARD READER (MMC)



EMI



Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	Cardreader GL834L	1A

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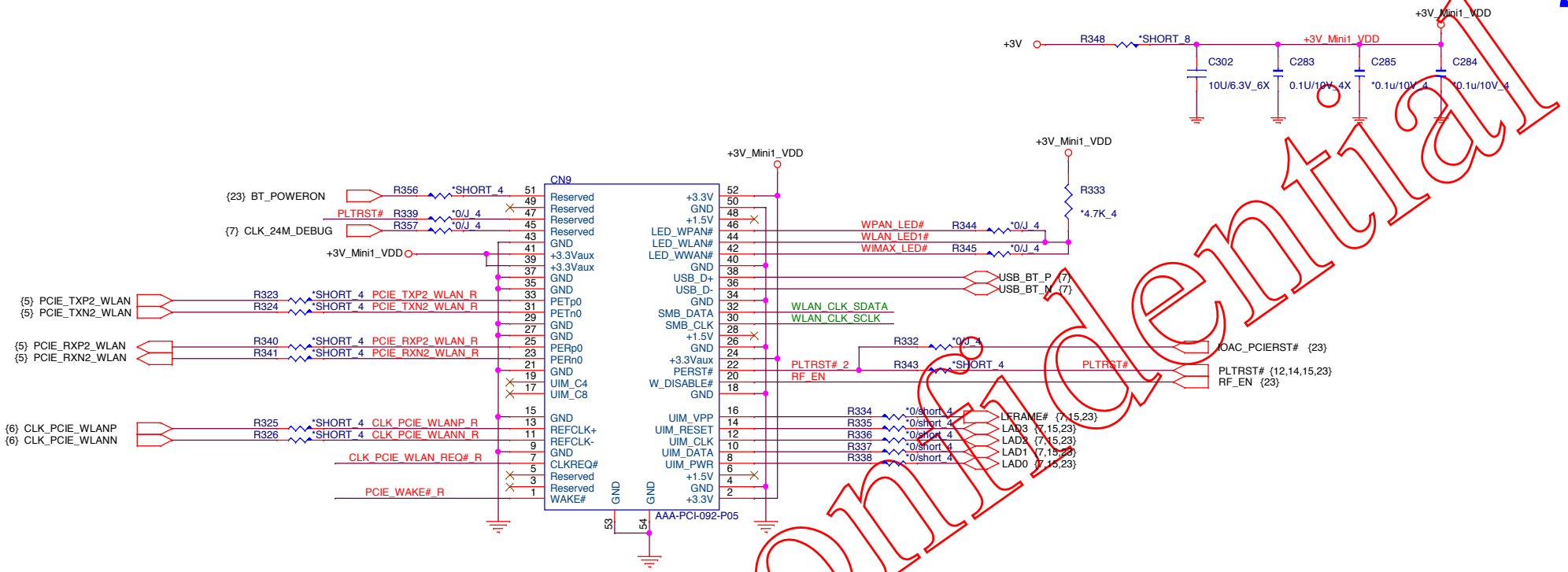
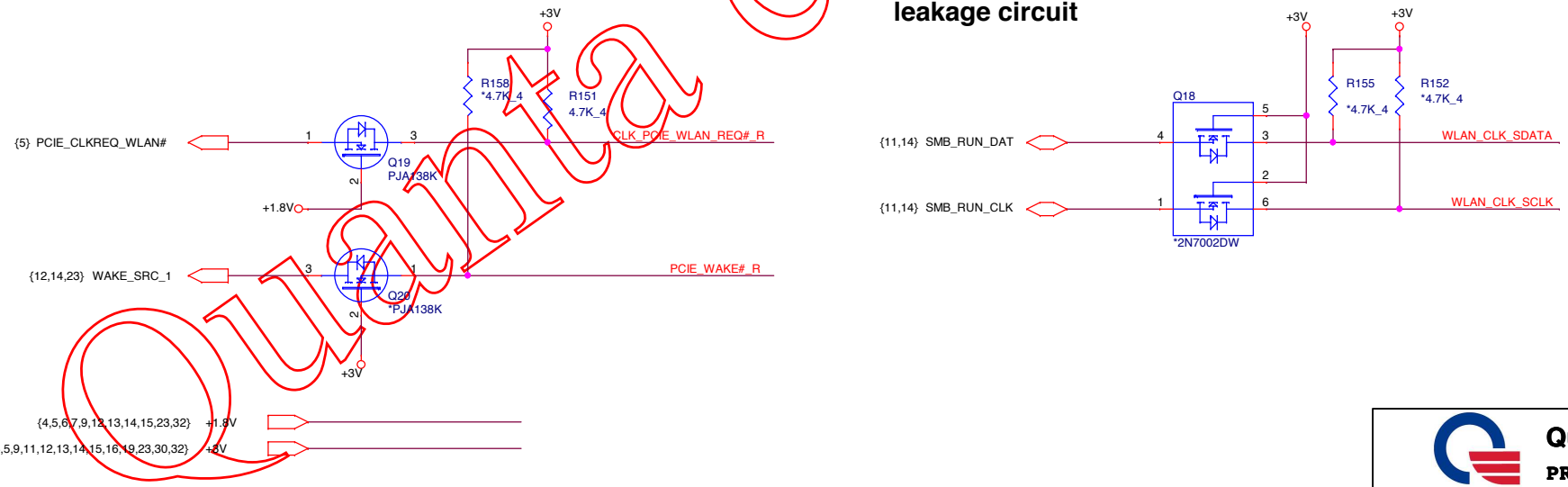
WLAN



leakage circuit



Quanta Computer Inc.

PROJECT : Z8A

Size	Document Number	Rev
	WiFi & BT	1A
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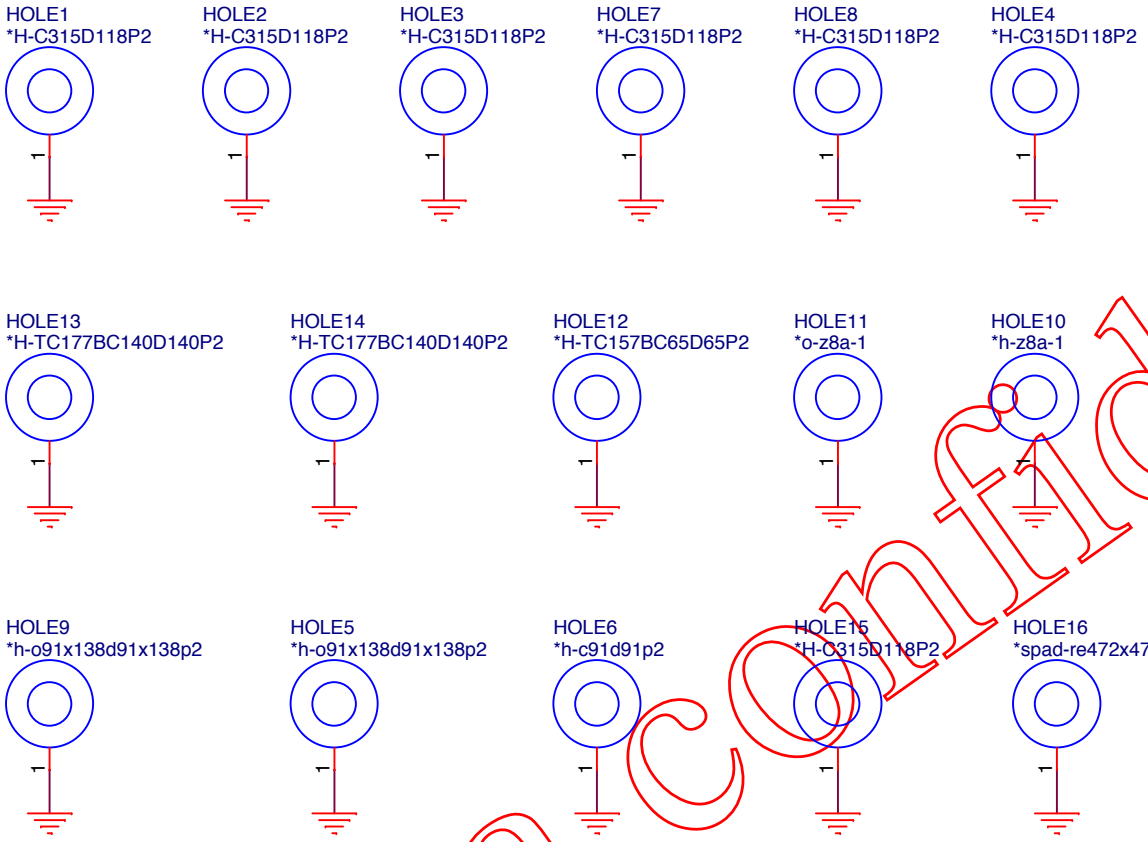

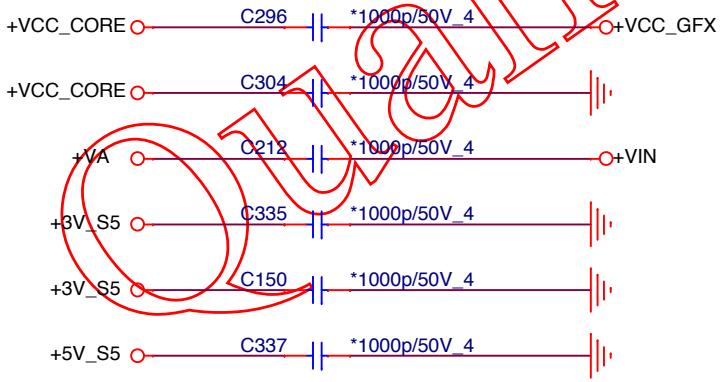

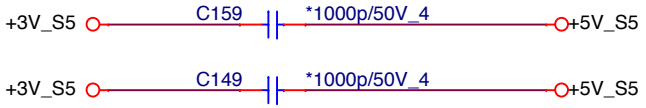

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Size	Document Number	Rev
	Thermal / Hole	1A
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EC(KBC)

30mil

0.03A(30mils)

10mA

SM BUS PU(KBC)

2013/07/31
SMBus Tr fall (spec 1000 ns max, result 1046 ns)
Change PU resister(R424,R428) from 10K to 4.7K

Q47 need Replacement at BOT layer.

EMI

Reserve for writing ME ROM

note: gpio27 -->TOUCH_PAD_INT

Note: GPIO75 (pin82) for TOUCHPANEL_ON
pin91 in 985L is 1.8V only

<20090721_FAE suggestion>
Stuff 100K and close to EC side
for improving power consumption

<20130722>Change power from +3V to +3V_S5 for power sequence issue

PECI interface should be used on Bay Trail platform, thus VTT pin can wire to GND and PECI signal can be left un-connected.

prevent leakage :
EC internal pull high

SM BUS ARRANGEMENT TABLE

SM Bus 1	Battery
SM Bus 2	PCH
SM Bus 3	GPU

Quanta Computer Inc.
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Size	Document Number	Rev
	NPCE885/FLASH	1A

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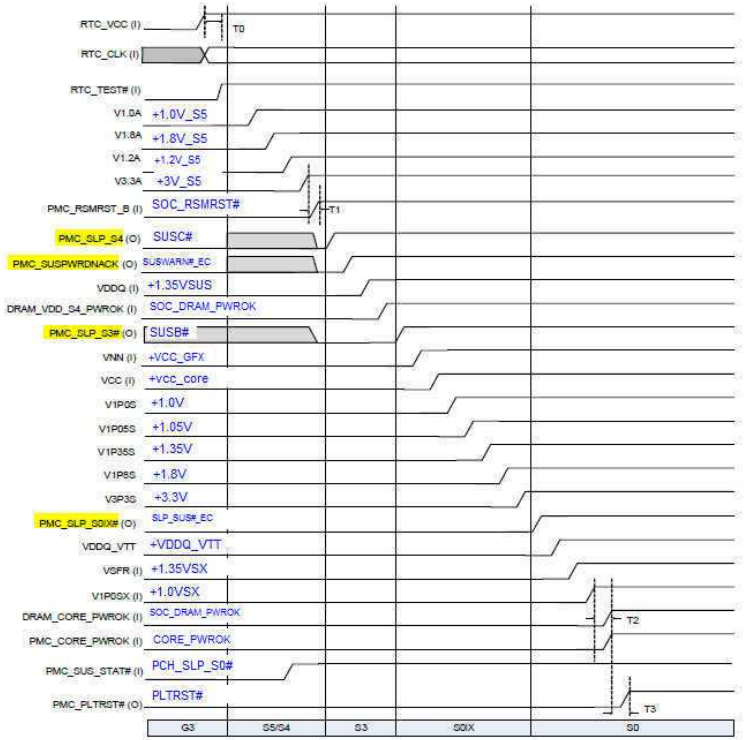
Bay Trail-M S4/S5 to S0 (Power up) Sequence



Quanta Computer Inc.		
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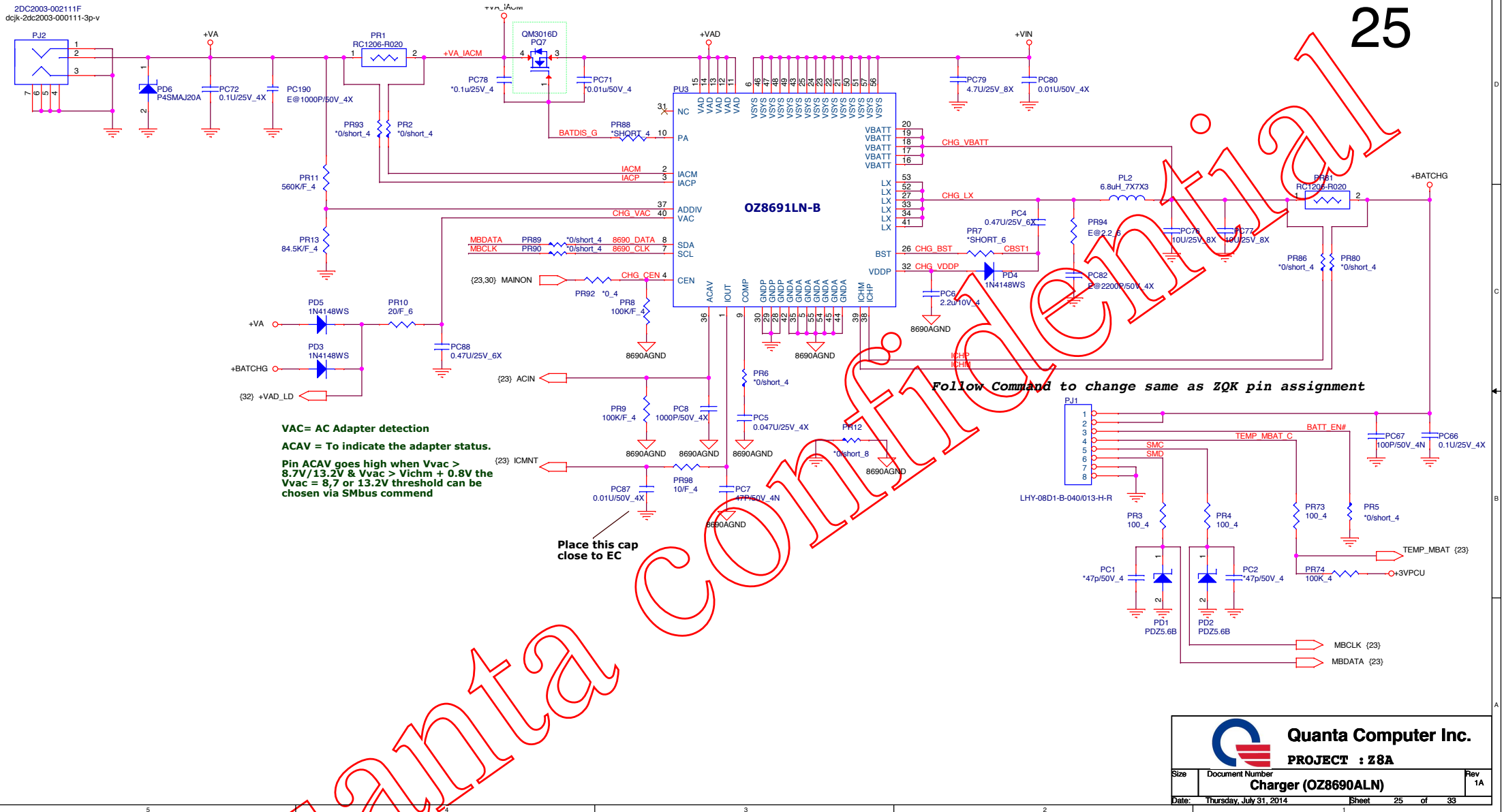
Size	Document Number: Power sequence	Rev: 1A
Date: Thursday, July 31, 2014	Sheet 24 of 33	

2DC2003-002111F
dcjk-2dc2003-000111-3p-v



Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	Charger (OZ8690ALN)	1A
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DC/DC +3VPCU/+5V_S5

+5V_S5 {18,22,28,29,30,31,32}

LDO(MAX)=100mA

+3.3 Volt +/- 5%
Countinue current:2A
Peak current:2.7A
OCP minimum:A

PU10 NB670LGQ-Z

+3V_LDO
SYS_SHDN# — PR151 10K/F_4 — PC147 10U/6.3V_6X
LDO
NC
CLK
PGOOD — SYS_HWPG — PR49 *SHORT_4 — NB670PG
PR47 10K/F_4 — +3VPCU
+VIN — PR53 *665K/F_4 — PR52 *330K/F_4 — NB670ENLDO
ENLDO
PR54 *SHORT_4 — {27,33} SYS_SHDN#
{23,28,32,33} S5_ON — PR55 *0_4 — PC49 *0.1u/10V_4 — NB670EN
EN
unstuff

VIN — PC152 0.1U/25V_4X — PC48 4.7U/25V_8X — PC153 4.7U/25V_8X — PC151 2200P/50V_4X — +VIN — PC150 0.1U/25V_4X
PGND
BST — PR156 1/F_6 — NB670BST — NB670BST_S — PC156 0.1U/25V_4X
SW — NB670SW — PL7 3.3uH_7X7X3 — +3VPCU
PR50 *2.2_6 — PC47 *2200P/50V_4
VCC — VL — PC155 1U/6.3V_4X — PR51 *SHORT_4
AGND — 670AGND 670AGND 670AGND
VOUT — PC45 *0.1u/10V_4
PC144 0.1U/10V_4X — PC143 22U/6.3V_6X — PC154 22U/6.3V_6X — PC157 22U/6.3V_6X — PC142 22U/6.3V_6X — PC158 *220uF/6.3V_6X4.2

+5 Volt +/- 5%
Countinue current:5.7A
Peak current:7.5A
OCP minimum: A

PU11 NB671GQ-Z

NC
LP# — PR157 *SHORT_4 — PR158 *SHORT_4
NC
PGOOD — SYS_HWPG — NB671PG
PR63 *SHORT_4 — PC180 1U/6.3V_4X — 671AGND
VCC
AGND
S5_ON — PR60 *SHORT_4 — PC55 *0.1u/10V_4 — NB671EN
EN
FB — NB671FB — PR160 82K/F_4 — PR159 11K/F_4 — 671AGND

VIN — PC171 0.1U/25V_4X — PC53 4.7U/25V_8X — PC173 4.7U/25V_8X — PC172 2200P/50V_4X — PC178 0.1U/25V_4X — +VIN — PC163 33u/25V_6x4.5
PGND
BST — PR161 1/F_6 — NB671BST — NB671BST_S — PC176 0.1U/25V_4X
SW — NB671SW — PL9 3.3uH_7X7X3 — +5V_S5
PR57 *2.2_6 — PC51 *2200P/50V_4
VOUT
PC162 0.1U/10V_4X — PC182 22U/6.3V_6X — PC177 22U/6.3V_6X — PC160 22U/6.3V_6X — PC159 22U/6.3V_6X — PC183 220u/6.3V_6X4.2

Quanta Computer Inc.
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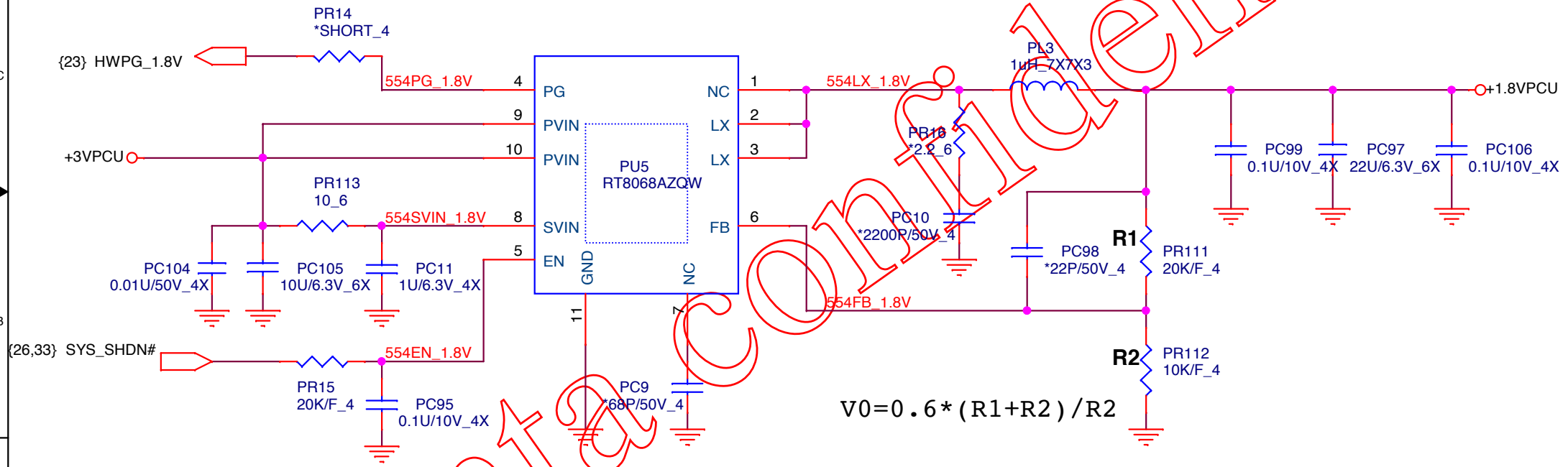
Size	Document Number	Rev
	3/5VS5 (NB670/NB671)	1A
Date: Thursday, July 31, 2014	Sheet 26 of 33	

{14,23,32} +1.8VPCU

{6,8,15,16,19,23,25,26,32} +3VPCU

+1.8V Volt +/- 5%
Countinue current:0.08A
Peak current:0.11A
OCP minimum:A



V0=0.6*(R1+R2)/R2

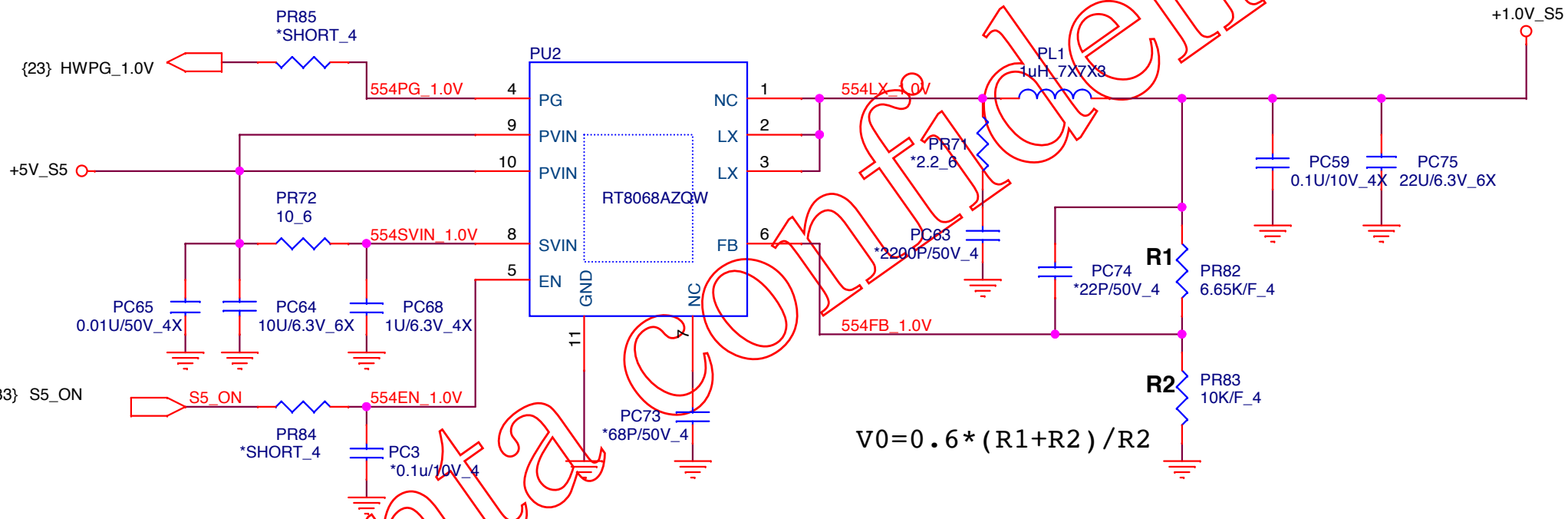
Quanta Computer Inc.		
PROJECT : Z8A		
Size	Document Number: **+1.8VPCU**	Rev: 1A
Date: Thursday, July 31, 2014	Sheet 27 of 33	

{9,32} +1.0V_S5

{18,22,26,29,30,31,32} +5V_S5

{2,9,12,14,15,16,22,23,29,30,32} +3V_S5

+1.0V Volt +/- 5%
Countinue current:2.4A
Peak current:3.2A
OCP minimum:A

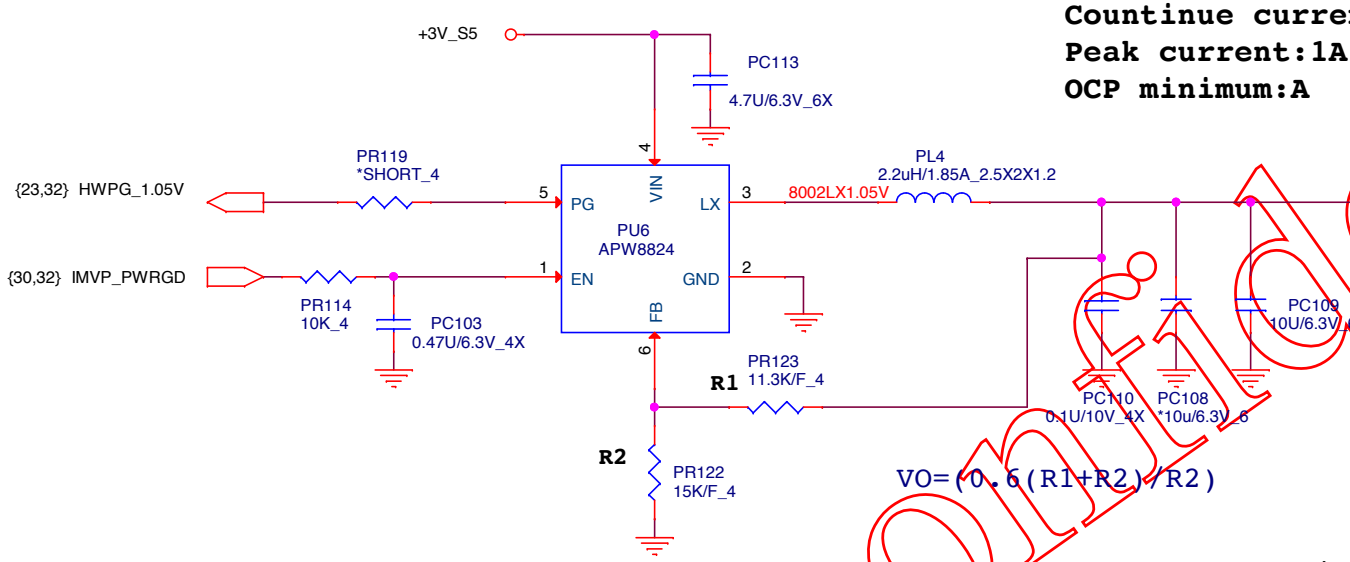


V0=0.6*(R1+R2)/R2

Quanta Computer Inc. PROJECT : Z8A		
Size	Document Number +1.0V	Rev 1A
Date: Thursday, July 31, 2014	Sheet 28 of 33	

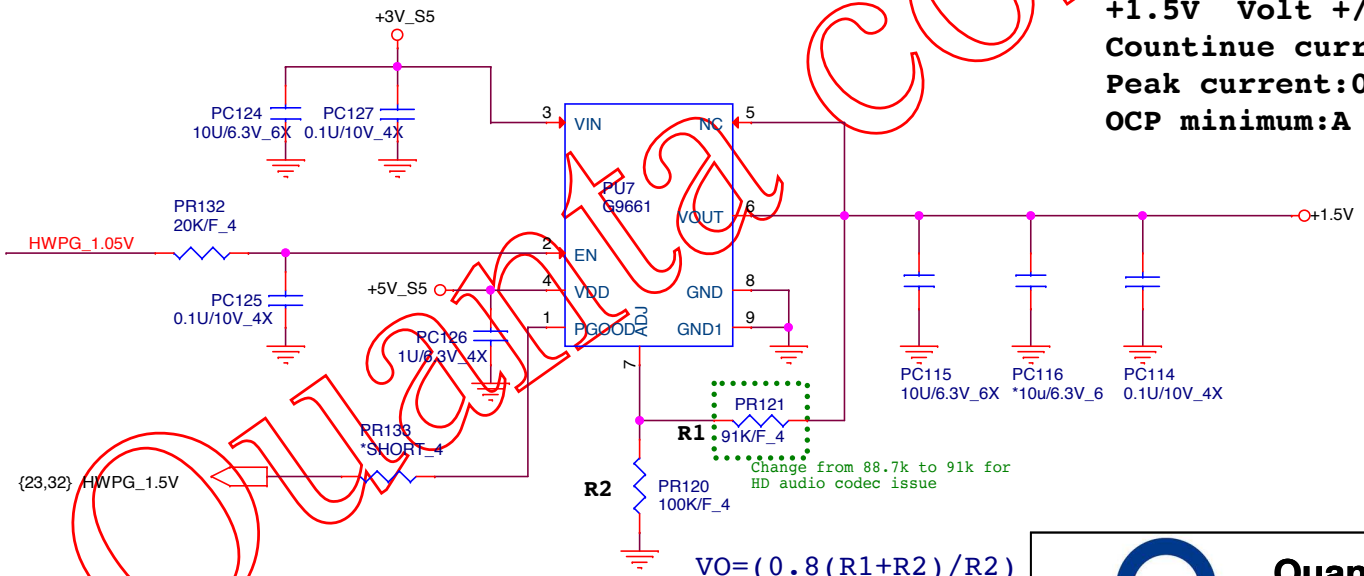
{2,9,12,14,15,16,22,23,30,32} +3V_S5
{9} +1.05V
{9,19} +1.5V

+1.05V Volt +/- 5%
Countinue current:0.75A
Peak current:1A
OCP minimum:A



VO=(0.6(R1+R2)/R2)

+1.5V Volt +/- 5%
Countinue current:0.023A
Peak current:0.03A
OCP minimum:A



VO=(0.8(R1+R2)/R2)
R2<120Kohm

Quanta Computer Inc.
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Size	Document Number	Rev
	+1.05V	1A
Date: Thursday, July 31, 2014	Sheet 29 of 33	

20130617 Change +1.05V to +1.0V

Close to VR

VR_SVID_ALERT# close to CPU

VR_SVID_DATA and VR_SVID_CLK close to VR

{5,6,9,32} +1.0V
{8,22} +VCC_GFX
{13,22,25,26,31,32,33} +VIN
{18,22,26,28,29,31,32} +5V_S5

AXG

+VCC_GFX
TDC : A
PEAK : 14A
OCP : A
Width : mil

GFX_CORE Load Line :
-5.9mV/A for 2.xW SDP

Core

+VCC_CORE
TDC : A
PEAK : 12A
OCP : A
Width : mil

VCORE Load Line :
-5.9mV/A for 2.xW SDP

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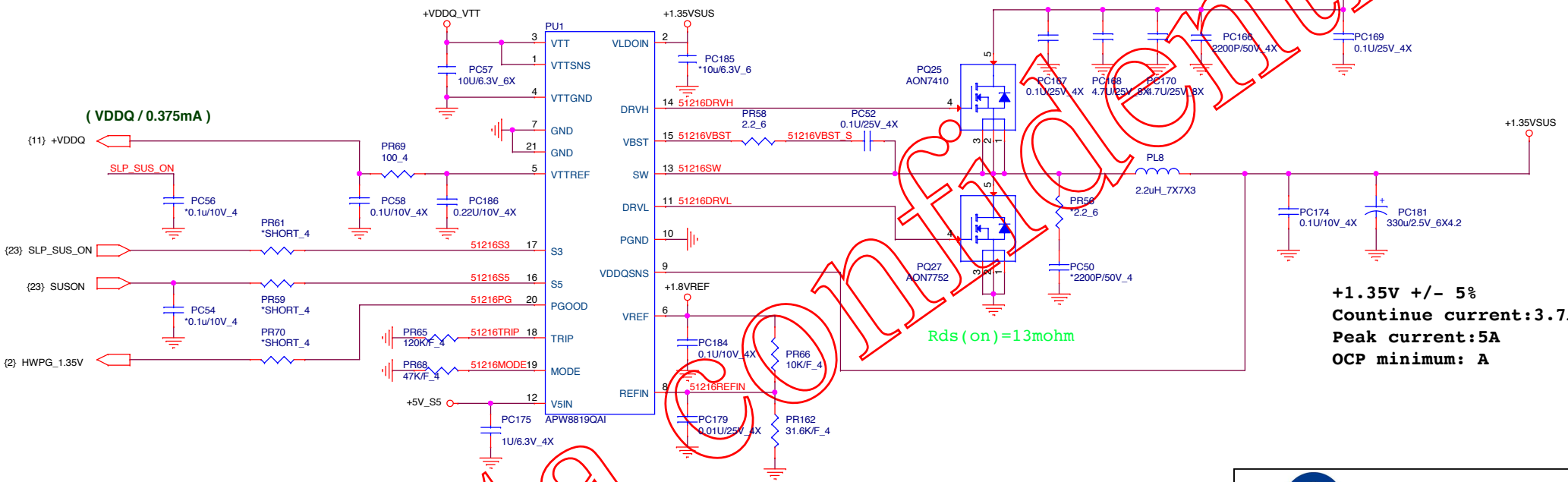
Size | Document Number: +VCC_CORE/+VGFX (ISL95833) | Rev 1A
Date: Thursday, July 31, 2014 | Sheet 30 of 33

{2,8,11,32} +1.35VSUS
{11} +VDDQ_VTT
{18,22,26,28,29,30,32} +5V_S5

(VTT / 0.75A)

(VDDQ / 0.375mA)



+1.35V +/- 5%
Countinue current:3.7A
Peak current:5A
OCP minimum: A

Quanta Computer Inc. PROJECT :Z8A		
Size	Document Number DDR3 (APW8819)	Rev 1A
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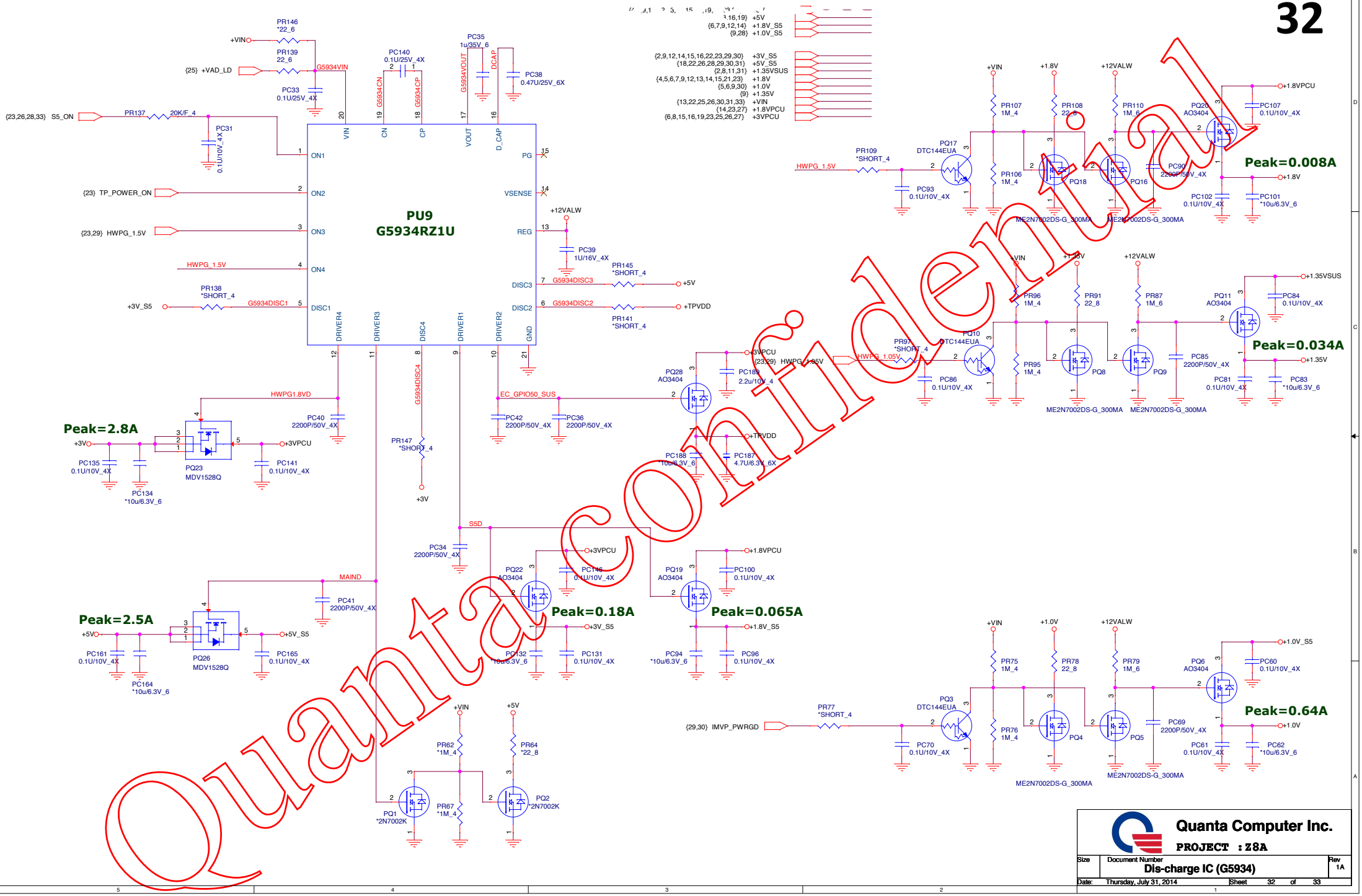

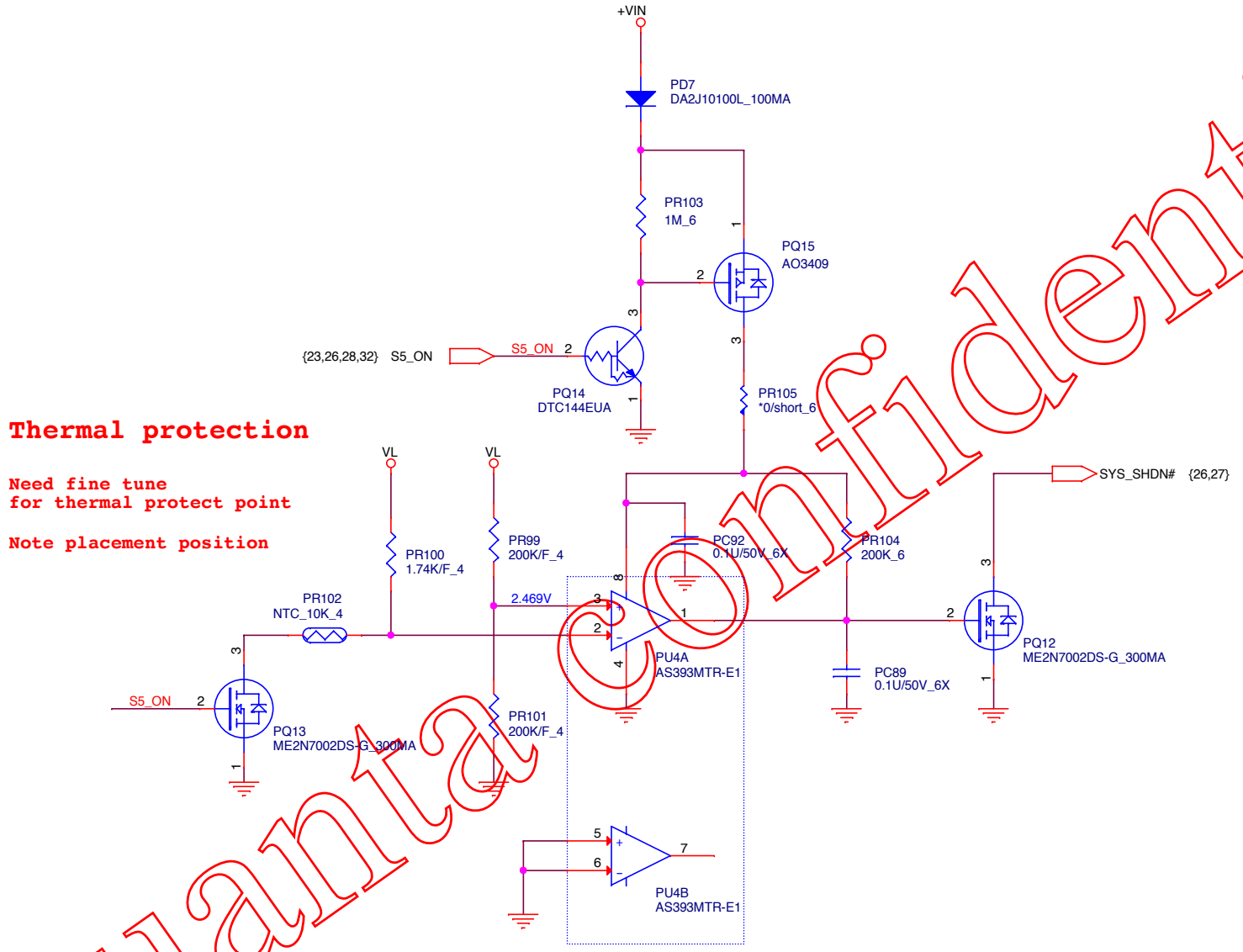

Thermal protection

Need fine tune
for thermal protect point

Note placement position

For EC control thermal protection (output 3.3V)

Quanta Computer Inc.		
PROJECT : Z8A		
Size	Document Number: Thermal	Rev: 1A
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Model	REV	CHANGE LIST
Z8A MB	A1A	1.First Release
	C3A	1.Change C19/C20 value from 10P to 12P for crystal Vendor EA suggestion 2.Swap USB3+/USB3- signals to correct pin define for CCD yellow mark issue 3.Change L4 to 90 ohm common mode chock for EMI 4.Change Hole10 and Hole16 footprint for ME DXF update 5.Reverse D24 and D25 ESD components for ESD 6.Add PC190 1000p cap for EMI suggestion 7.Mount PR94 and PC82 for EMI suggestion
	E3A	1.Change R223,R224,R225,R227 value for LED brightness 2.Change Hole5 and Hole6 and Hole9 and Hole10 footprint for ME DXF update

Quanta Computer Inc. PROJECT : Z8A Size / Document Number / Rev: Change list / 1A Date: Thursday, July 31, 2014 Sheet 34 of 34	DOC NO.	PROJECT MODEL :	Z8A	APPROVED BY:		DATE:
		PART NUMBER:		DRAWING BY:		REVISON: