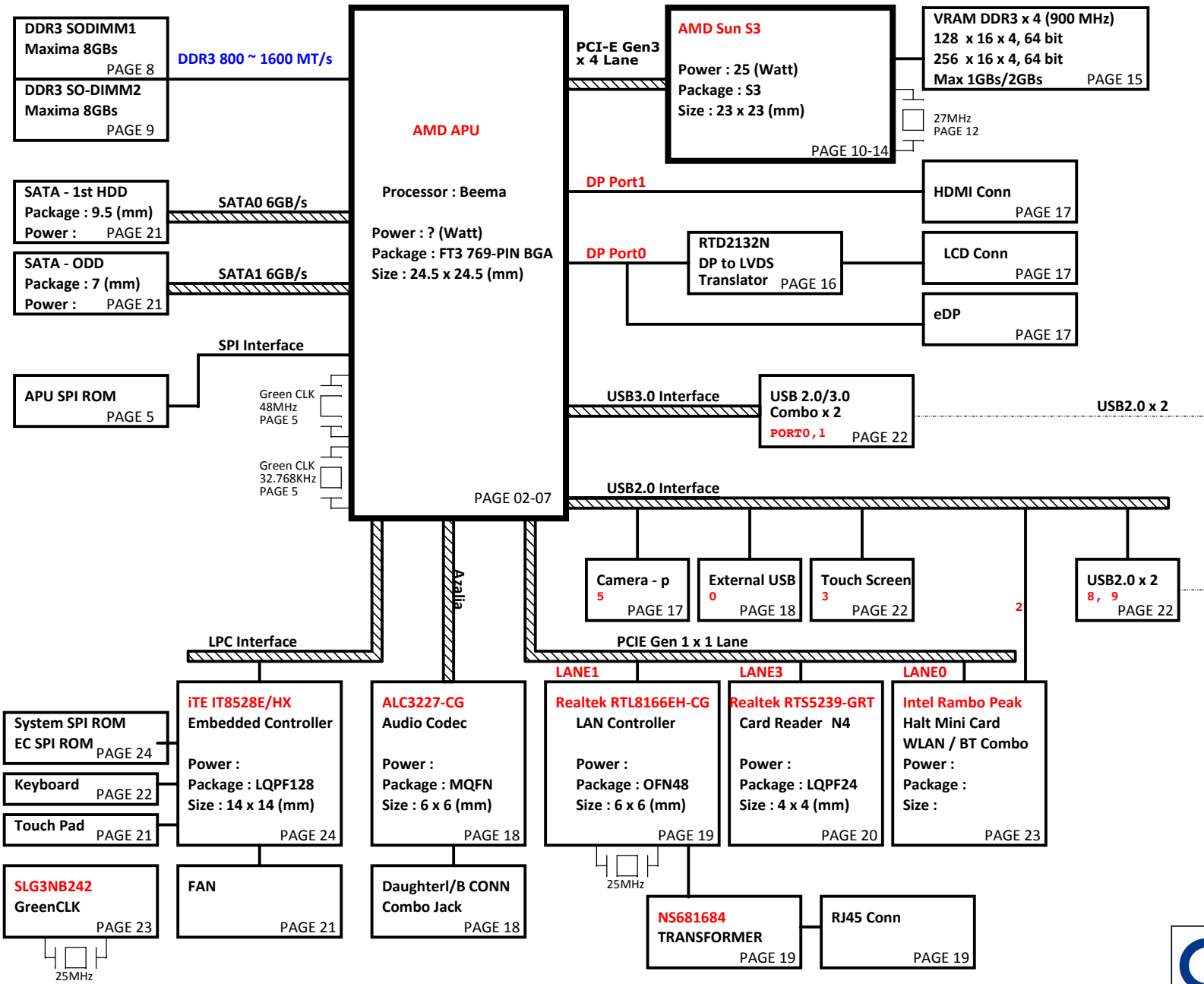
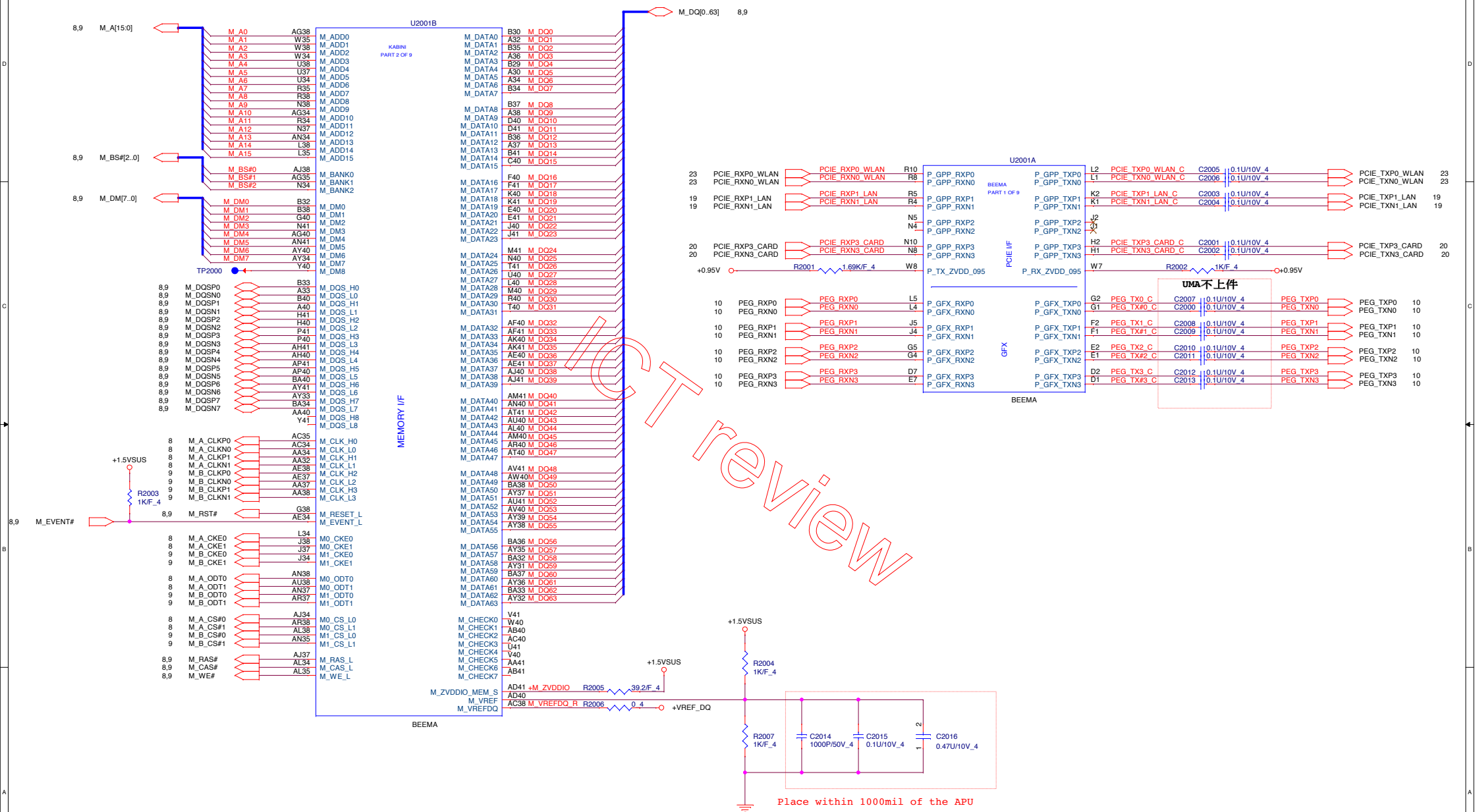


Lean G\_AMD Beema DIS/UMA (14"/15.6")



Ultra/Slim<sup>01</sup>

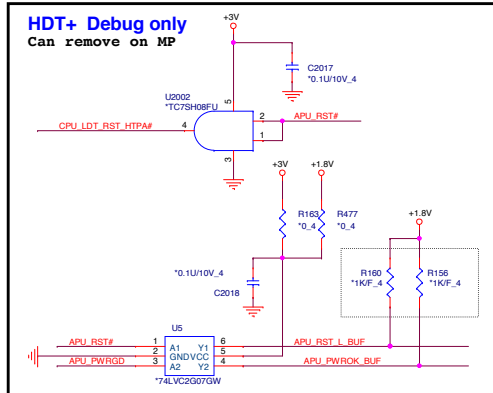
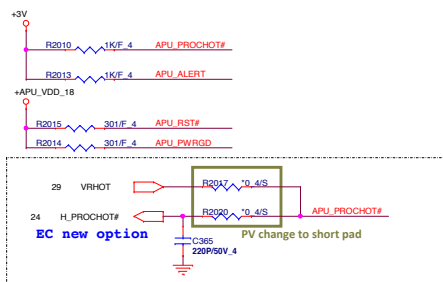


- PCB 6L STACK UP**
- LAYER 1 : TOP
  - LAYER 2 : SGND
  - LAYER 3 : IN1(High)
  - LAYER 4 : IN2(Low)
  - LAYER 5 : SVCC
  - LAYER 6 : BOT
- Power Source**
- TI BQ24728**  
System Charge Power (+BATCHG)  
PAGE 25
  - Ricteck RT8223PZ**  
System Power (+3VPCU/+5VPCU/  
+3VSS/+5VSS)  
PAGE 26
  - AOZ1237QI/APW8824CTI/G9183**  
KABINI Power (+0.95V/+0.95VSS  
/+1.5VSS)  
PAGE 27
  - TI TPS51216**  
System Memory Power (+1.5VSUS/  
+0.75V\_DDR\_VTT)  
**Ricteck RT8068A**  
KABINI Power (+1.8VSS)  
PAGE 28
  - Intersil ISL6277HRTZ/ISL6208BCRZ**  
Processor Power (+VCC\_CORE/  
+VDDNB\_CORE)  
PAGE 29~30
  - GMT G5934RZ1U**  
System Discharge Power  
(+1.5V/+3V/+5V)  
(+3VSUS/+3VLAVCC/+1.8V)  
PAGE 31
  - On-semi ADP3211A**  
VGA Power (+VGA\_CORE)  
PAGE 32
  - Ricteck RT8086A**  
DGPU Power (+1.0V\_VGA/+3V\_VGA  
/+1.5V\_VGA/+1.8V\_VGA/)  
PAGE 33

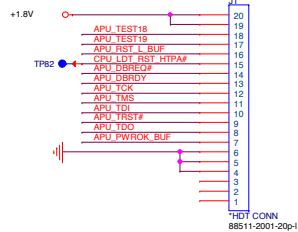
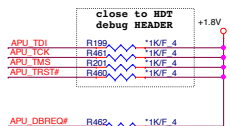


Place within 1000mil of the APU

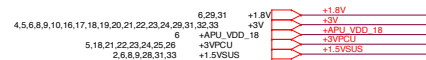
6,8,9,28,31,33	+1.5VSUS		+1.5VSUS
8,9	+VREF_DQ		+VREF_DQ
5,6,27	+0.95V		+0.95V



## HDT+ Connector for Debug only



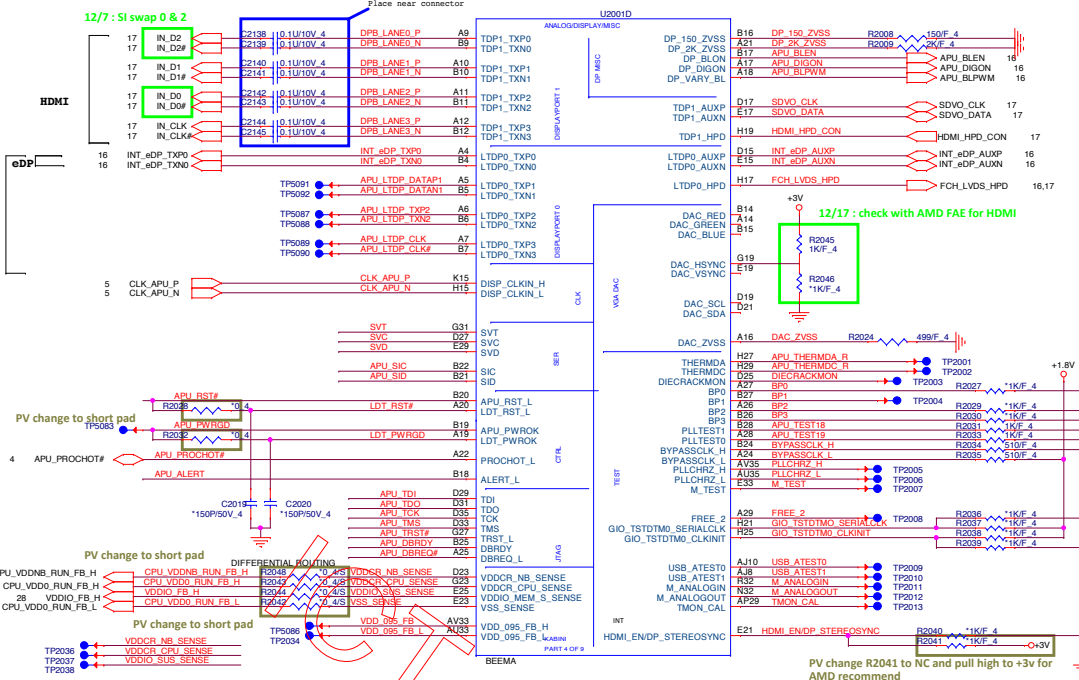
## Serial VID



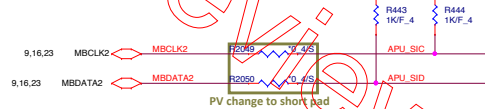
### VFIX MODE VID Override table (VDD)

SVC	SVD	Boot Voltage
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V

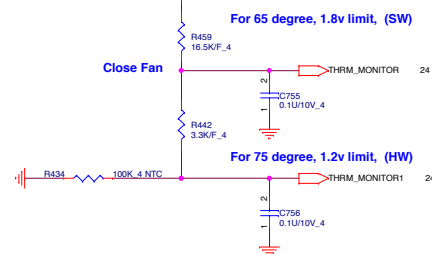
12/7: Si swap 0 &amp; 2

HDMI  
LVDS

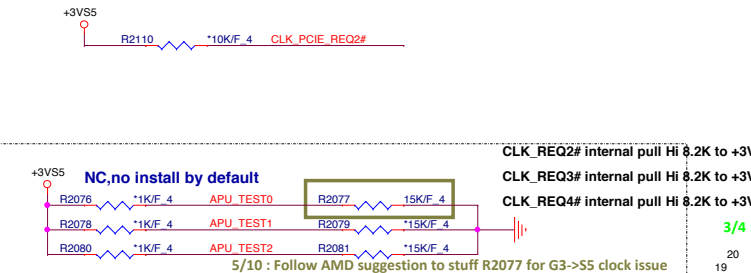
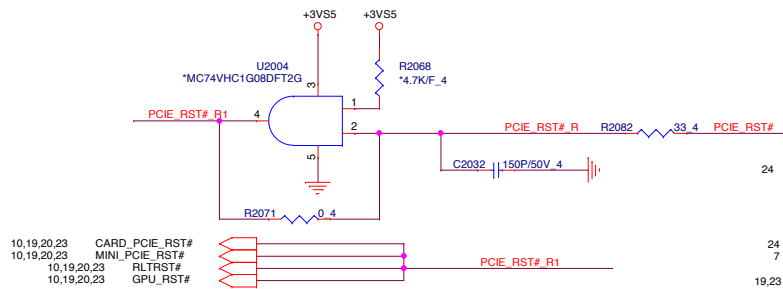
## Thermal Sensor



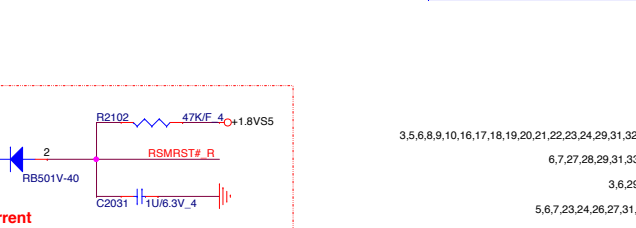
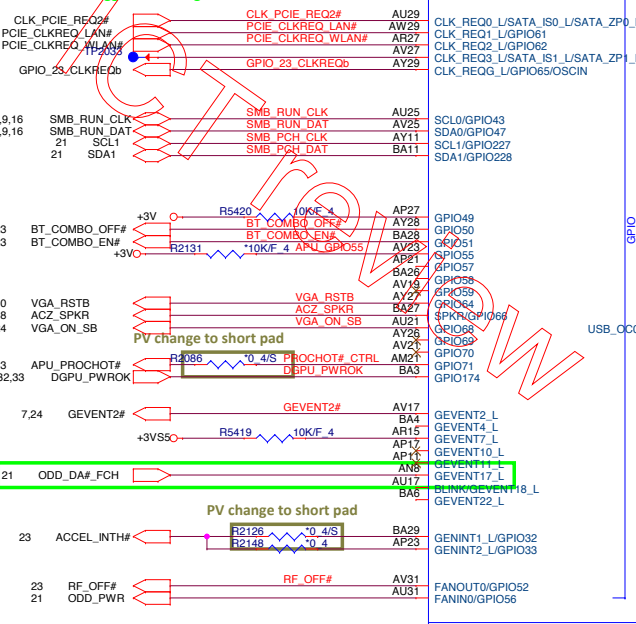
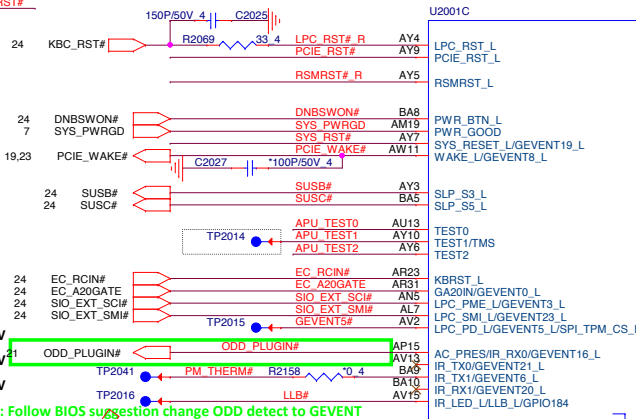
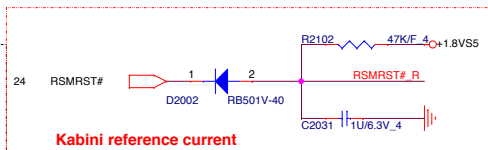
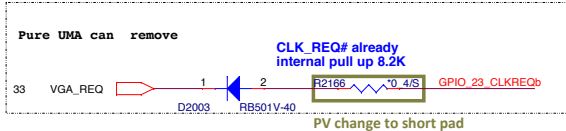
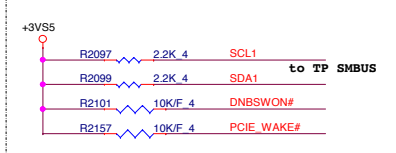
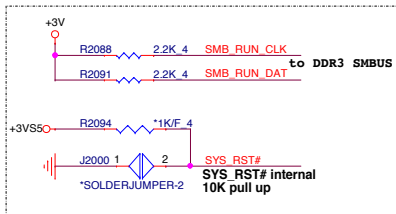
## IO Thrm Protect



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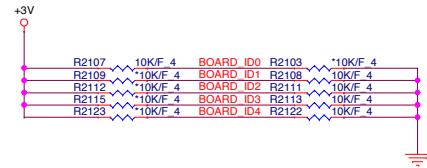
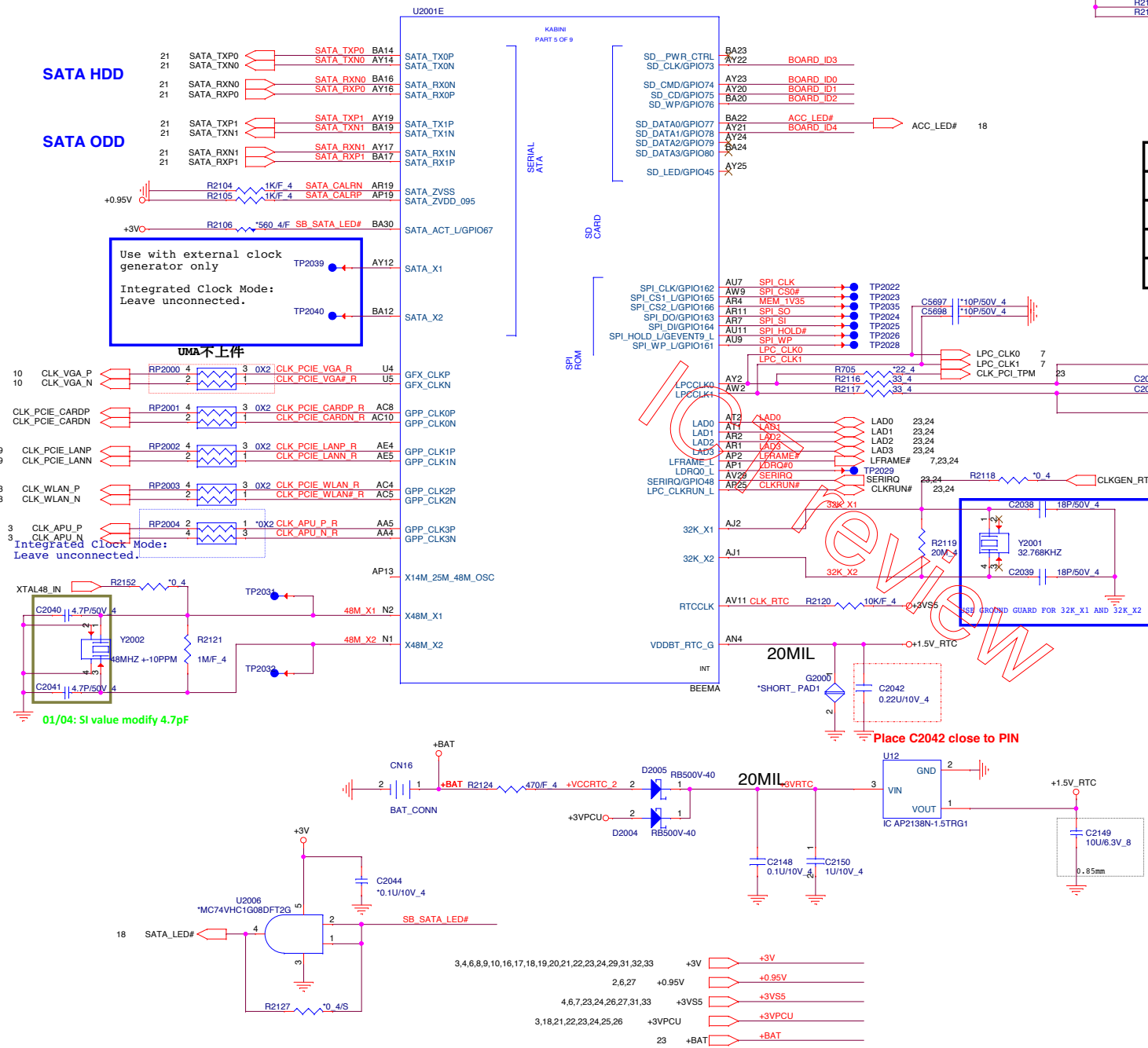


TEST2	TEST1	TEST0	Description
0	0	0	FCH TAP accessible from APU when TAPEN is asserted FCH JTAG pins are overloaded for multiple functions, in this configuration the FCH JTAG are used as non-JTAG pins
0	0	1	Reserved
0	1	X	Reserved
1	TMS	0	FCH JTAG multi-function pins are configured as JTAG pins, in this configuration the FCH TAP can be accessed from FCH JTAG pins
1	TMS	1	Use on ATE only Yuba JTAG enabled



SATA HDD

SATA ODD



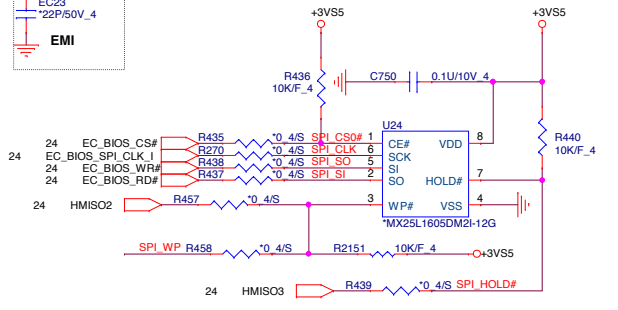
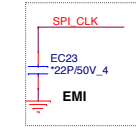
BOARD ID SETTING


Model	BOARD_ID0	BOARD_ID1	BOARD_ID2	BOARD_ID3	BOARD_ID4
14" UMA	0	0	0	0	0
15" UMA	0	1	0	0	0
14" DIS	1	0	0	0	0
15" DIS	1	1	0	0	0

APU SPI ROM

Replace to MX25L6436E

Vender	Size	P/N
AMIC	2M	AKE38ZN0801
WINBOND	2M	AKE38FP0N01
Socket		DFHS08FS023

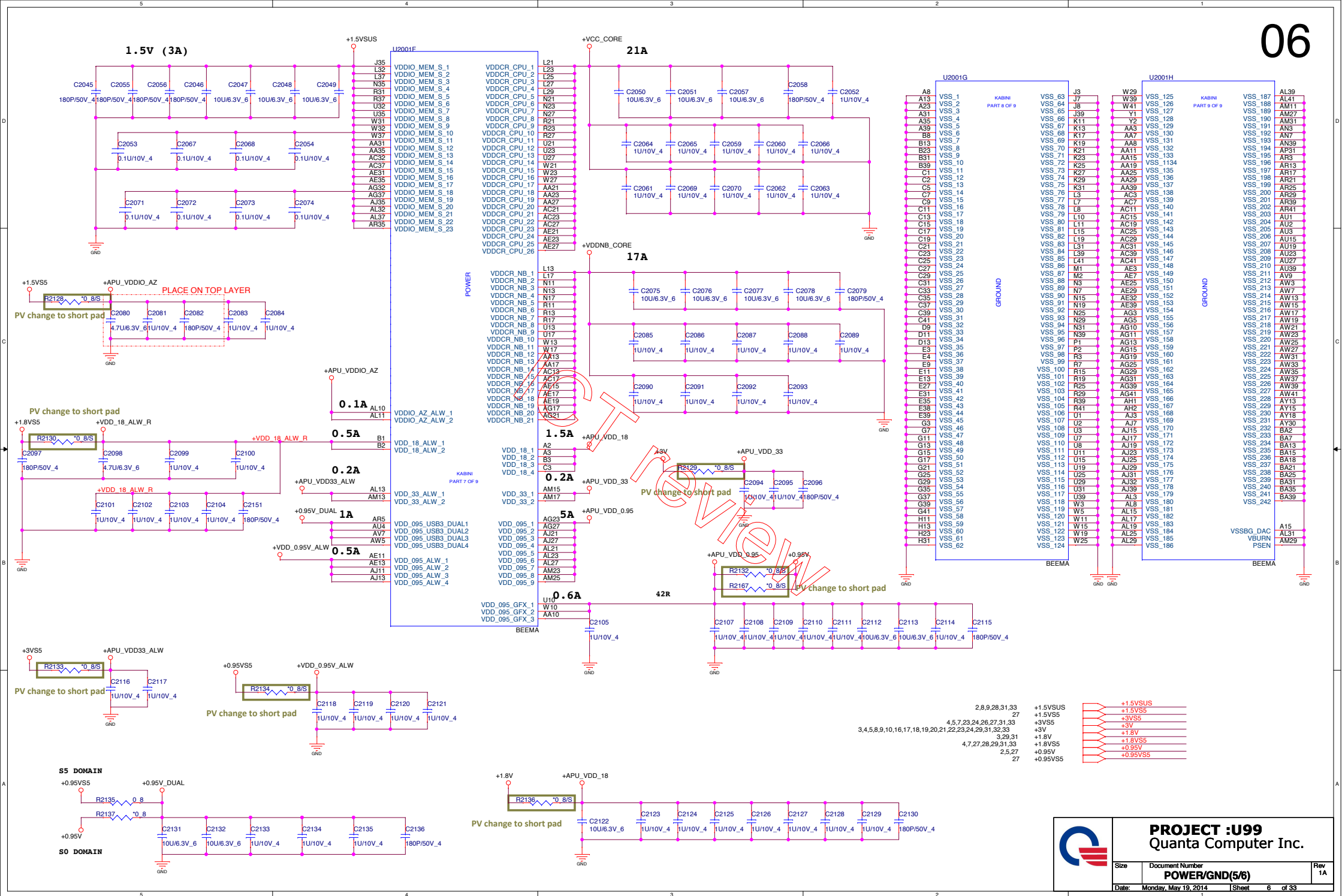




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Quanta Computer Inc.

Size	Document Number	Rev
	<b>SATA/CLK (4/6)</b>	<b>1A</b>
Date:	Monday, May 19, 2014	Sheet 5 of 33

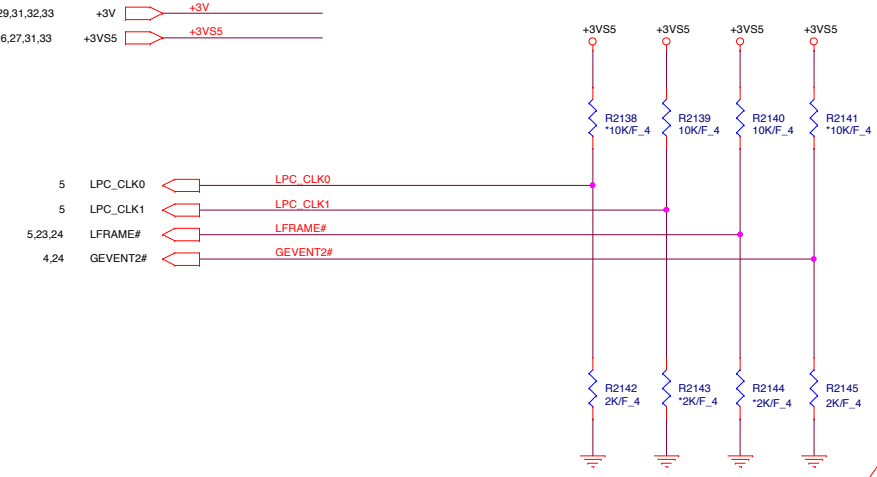




STRAPS PINS

OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

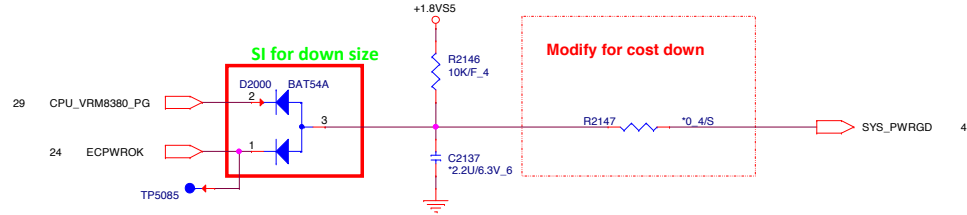
DEBUG STRAPS



REQUIRED STRAPS

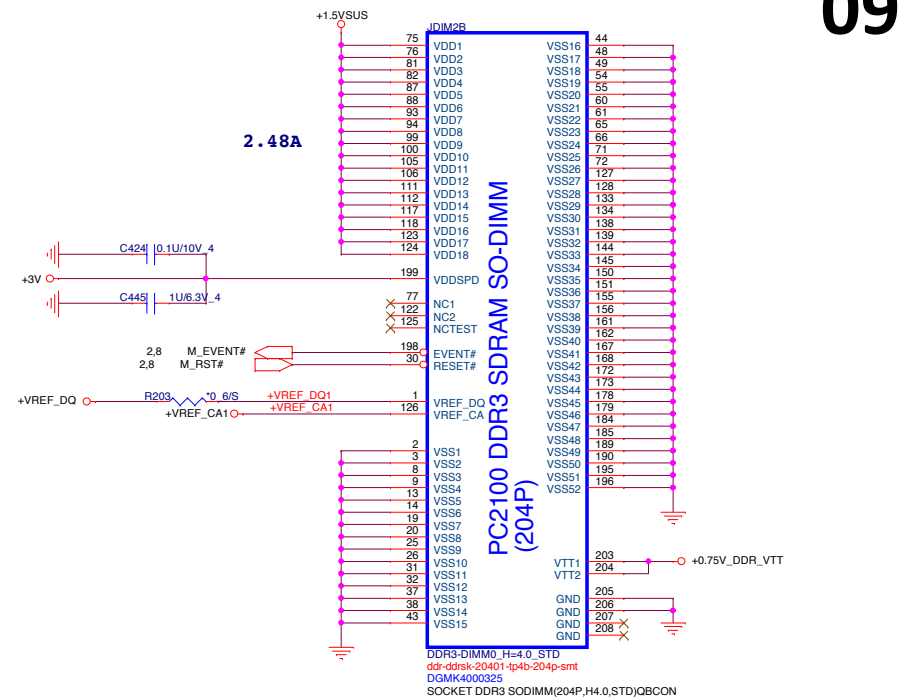
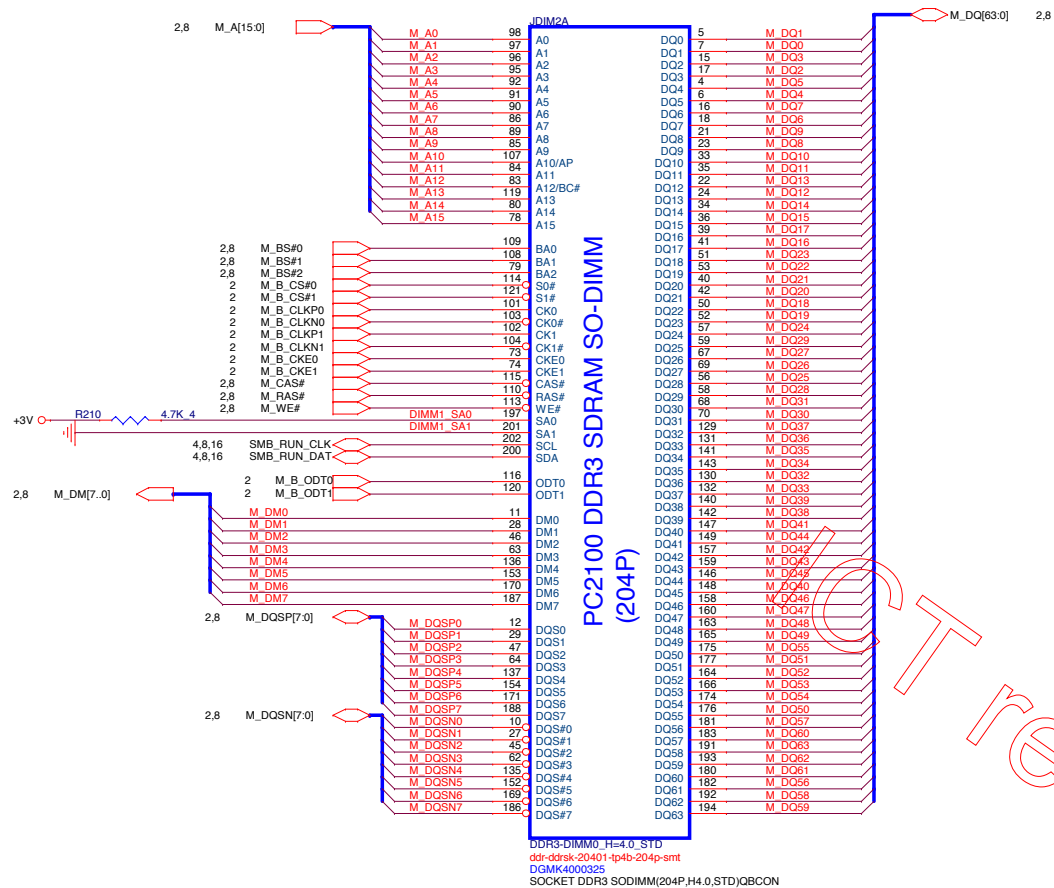
					LPC_CLK0	LPC_CLK1	LFRAME#	GEVENT2#
PULL HIGH					BOOT FAIL TIMER ENABLED	CLKGEN ENABLED DEFAULT	SPI ROM DEFAULT	1.8V SPI ROM
PULL LOW					BOOT FAIL TIMER DISABLED DEFAULT	CLKGEN DISABLED	LPC ROM	3.3V SPI ROM DEFAULT

SYS PWRGD

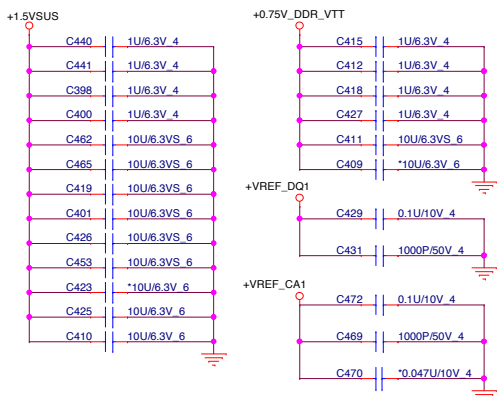
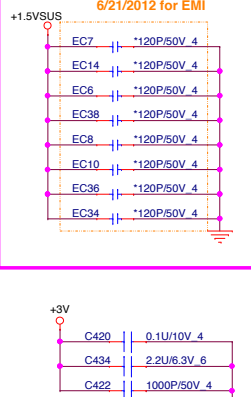






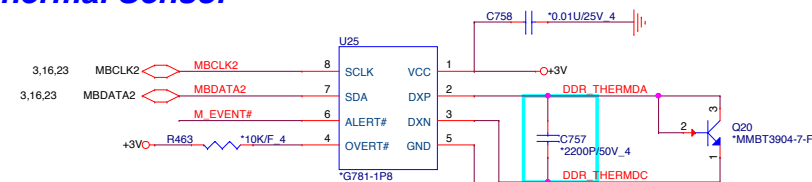


## Place these Caps near So-Dimm1.

For EMI RESERVE  
6/21/2012 for EMI

## Local Thermal Sensor

## DDR3 Thermal Sensor

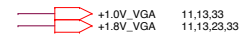
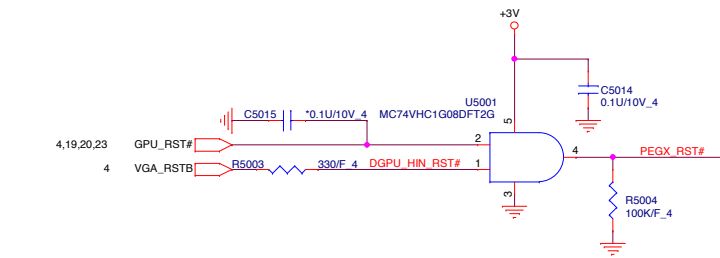


If use internal thermal IC, C9007 use 0ohm.

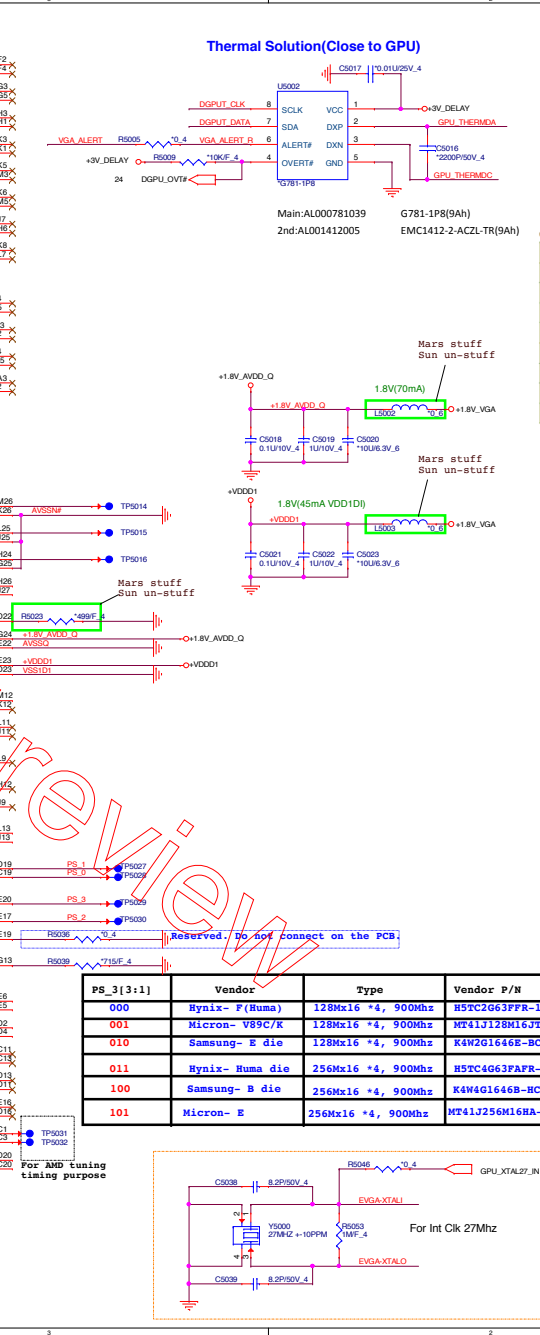
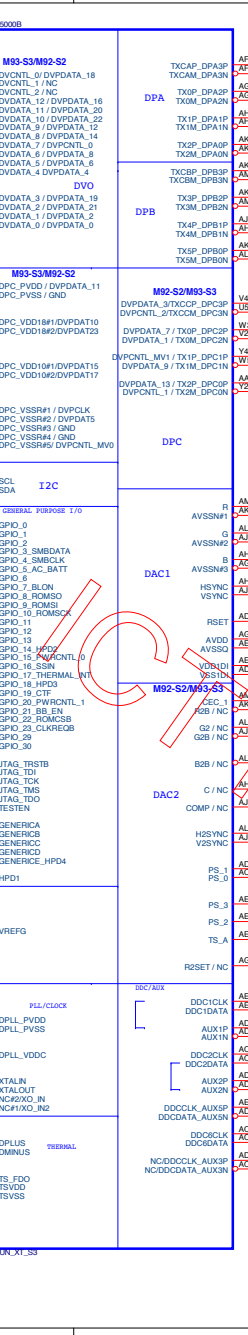
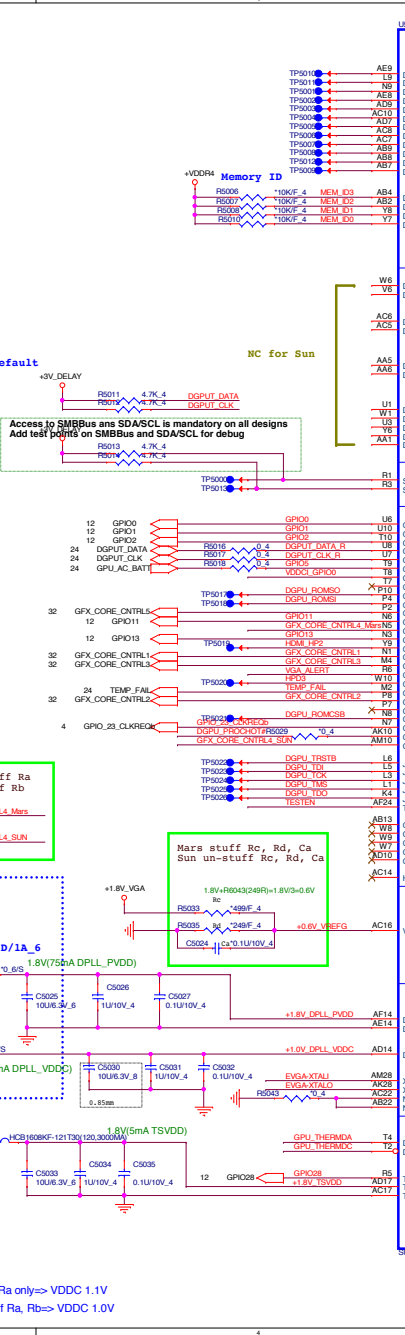
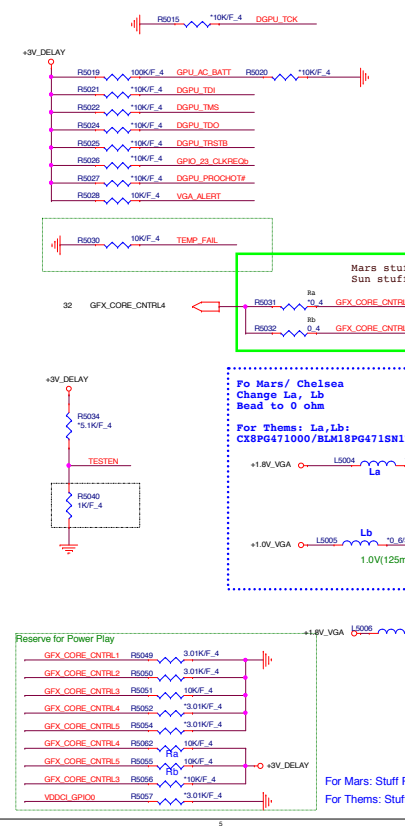
Main:AL000781039 G781-1P8(9Ah)  
2nd:AL001412005 EMC1412-2-ACZL-TR(9Ah)

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

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Quanta Computer Inc.		
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Custom	System Memory 2/2 (9.2H)	1A
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GPI010	GPI030	GPI016	GPI020	GPI015	Sun XT S3
PWRCNTL5	PWRCNTL4	PWRCNTL3	PWRCNTL2	PWRCNTL1	V-CORE
0	1	1	0	1	1.175V
0	1	1	1	0	1.150V
0	1	1	1	1	1.125V
1	0	0	0	0	1.100V
1	0	0	0	1	1.075V
1	0	0	1	0	1.050V
1	0	0	1	1	1.025V
1	0	1	0	0	1.000V
1	0	1	0	1	0.975V
1	0	1	1	1	0.950V
1	0	1	1	0	0.925V
1	1	0	0	0	0.900V
1	1	0	0	1	0.875V
1	1	0	1	0	0.850V
1	1	0	1	1	0.825V
1	1	1	0	0	0.800V
1	1	1	0	1	0.775V



### Thermal Solution(Close to GPU)

### Capacitor Lookup Table

C (nF)	Bits(5,4)
680	00
82	01
10	10
NC	11

### Resistor Divider Lookup Table

R <sub>pu</sub> (Ohm)	R <sub>pd</sub> (Ohm)	Bits(3,2,1)
NC	4750	000
8450	2000	001
4530	2000	010
6980	4990	011
4530	4990	100
3240	5620	101
3400	10000	110
4750	NC	111

### MLPS Implementation

- Connect GPIO\_28 to 10K pulldown to enable MLPS
- If any of PS\_0/1/2/3 is not used, leave "no connect"
- R<sub>pu</sub>, R<sub>pd</sub> and C must be properly populated per tables below
- Place MLPS circuit components as close to the ASIC as possible
- Total DC resistance of trace between PS pin and C should be less than 2 ohms
- Total DC resistance of trace between C and ground should be less than 2 ohms
- Trace capacitance should be less than 100pF. Resistors should be of +/-1% tolerance

### Capacitor and Resistor Values

Pin/Bit	Name	Description	Default	Legacy
PS_0[3:1]	romidfg[2:0]	Memory aperture size or ROM type select: If bios_rom_en = 0, romidfg[2:0] define memory aperture size If bios_rom_en = 1, romidfg[2:0] define ROM type	xxx	gpio_13 gpio_12 gpio_11
PS_0[4]	n/a	Reserved	1	genlk_vsync
PS_1[1]	bif_gen3_en_a	PCIe Gen3 capability: 1=Gen3 supported, 0=Gen3 not supported	x	gpio_2
PS_1[2]	bif_clk_pm_en	PCIe CLK PM capability: 1 = CLKREQB supported	x	gpio_8
PS_1[3]	n/a	Reserved		genlk_clk
PS_1[4]	tx_pwrsv_erb	PCIe Tx power savings: 0=50% swing, 1=full swing	x	gpio_0
PS_1[5]	tx_deemph_en	PCIe Tx de-emphasis: 1=Tx de-emphasis enabled	x	gpio_1
PS_2[1]	n/a	Reserved		n/a
PS_2[2]	n/a	Reserved		n/a
PS_2[3]	bios_rom_en	Enable external BIOS ROM: 1=External ROM connected	x	gpio_22
PS_2[4]	vga_dis	VGA disable: 1=Disable this GPU as the system's VGA controller	0	gpio_9
PS_2[5]	n/a	Reserved		n/a
PS_3[1]	MEM_Vendor_ID	MEM Vendor ID	0	n/a
PS_3[2]	MEM_Vendor_ID	MEM Vendor ID	0	n/a
PS_3[3]	MEM_Vendor_ID	MEM Vendor ID	0	n/a
PS_3[5]	aud_port_cp[2]	3-bit field indicating number of audio-capable display outputs	xxx	n/a
PS_3[4]	aud_port_cp[1]			
PS_0[5]	aud_port_cp[0]			

### BIT5 => BIT0

PS0	=>	11001
PS1	=>	01000
PS2	=>	00000
PS3	=>	11000

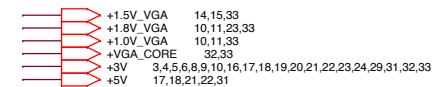
### PROJECT :U99

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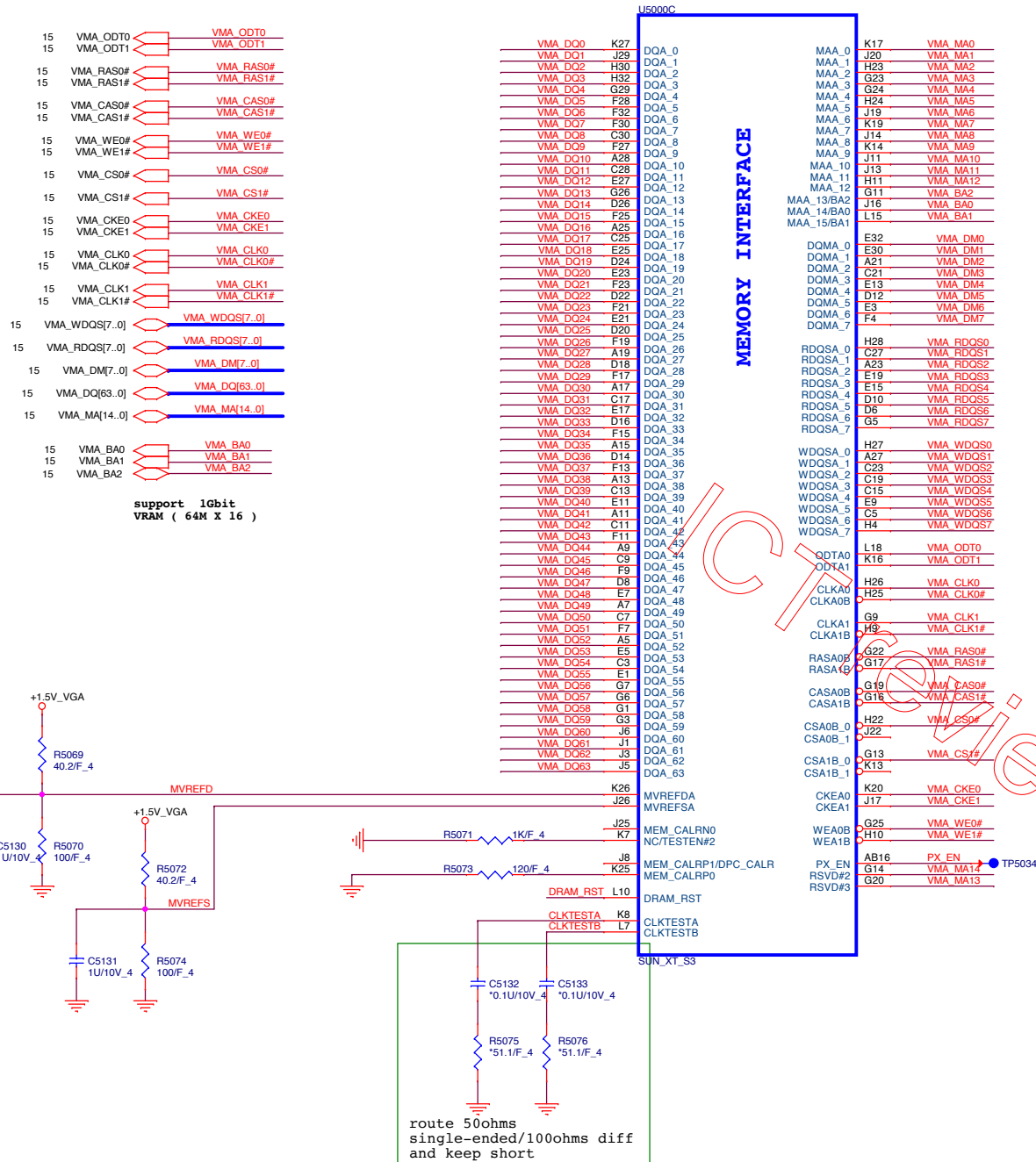
Doc Custom	Doc Number	Rev
	Sun S3 Main	1A

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## MEMORY INTERFACE



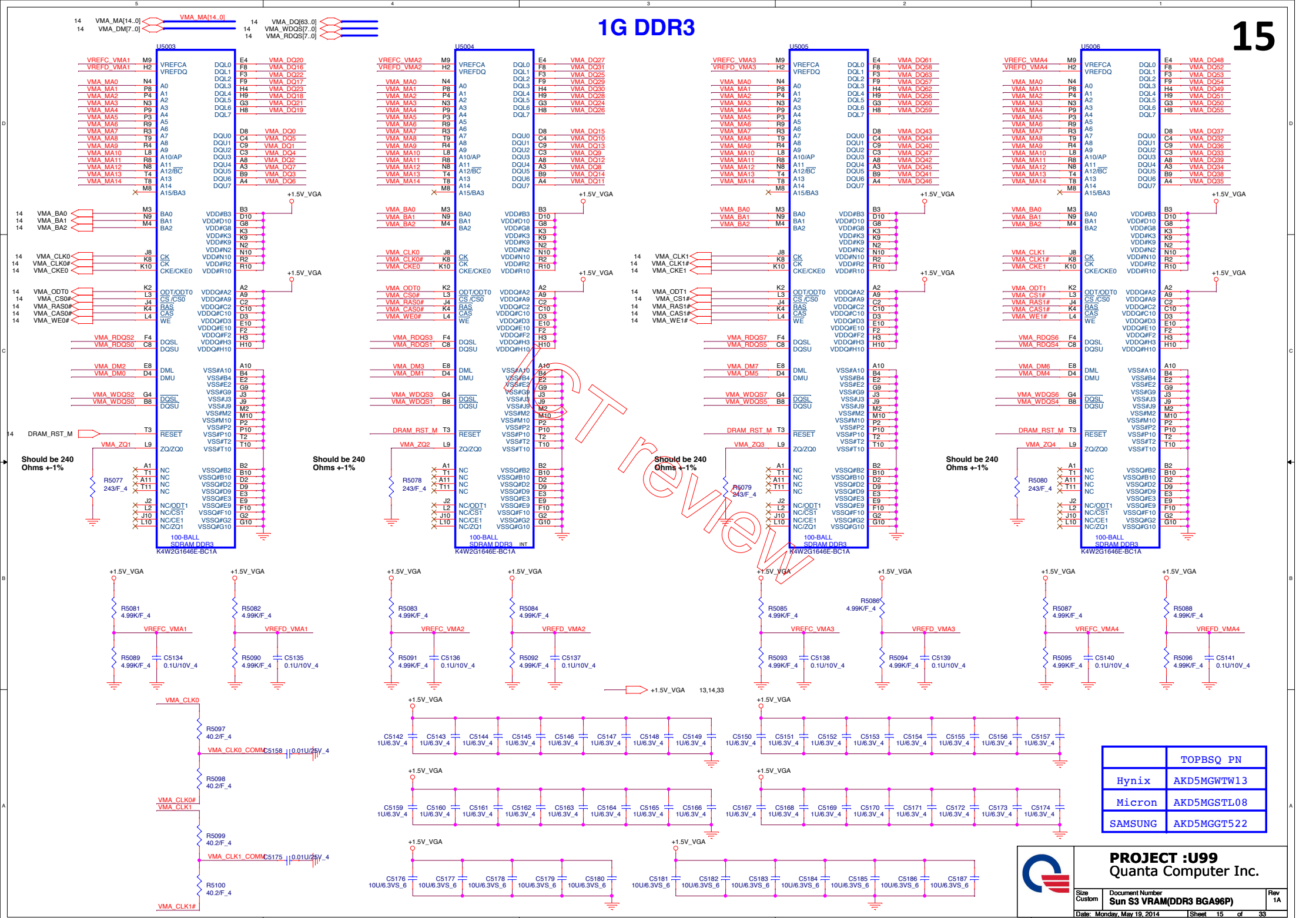
**PROJECT :U99**  
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Size Custom	Document Number Sun S3 MEM_Interface	Rev 1A
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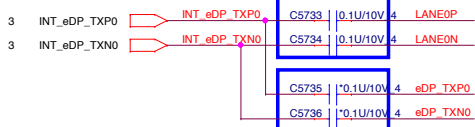


## 1G DDR3

15

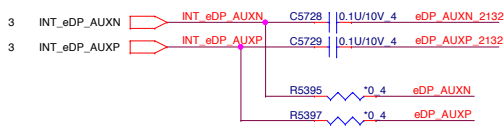
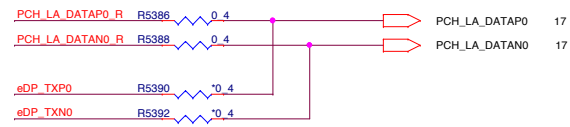


for Bemma LVDS need stuff 0.1u cap ; need change 0.1u on next stage



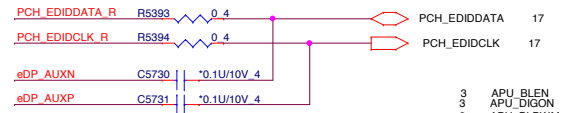
Bemba to LVDS Converter

From LVDS Converter

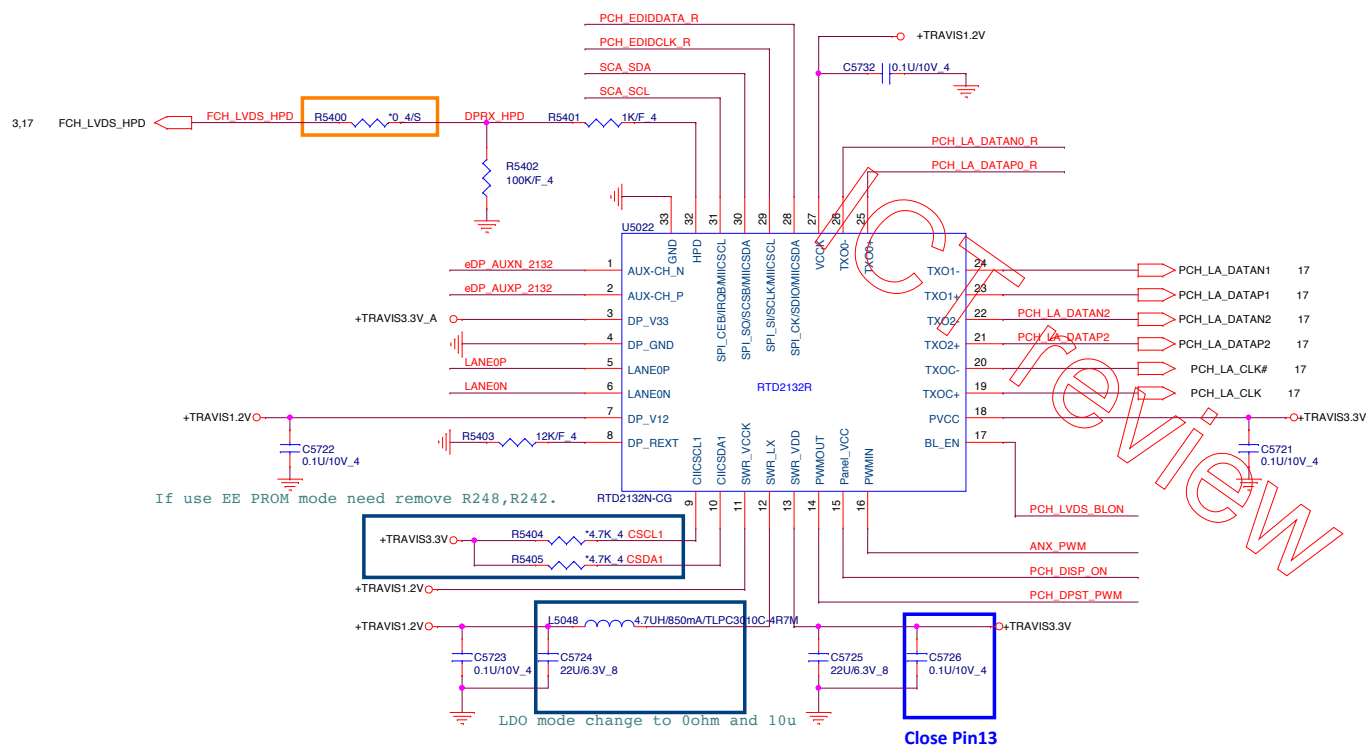
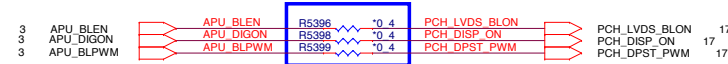


Bemba to LVDS Converter

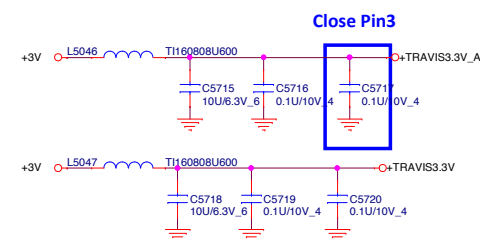
From LVDS Converter



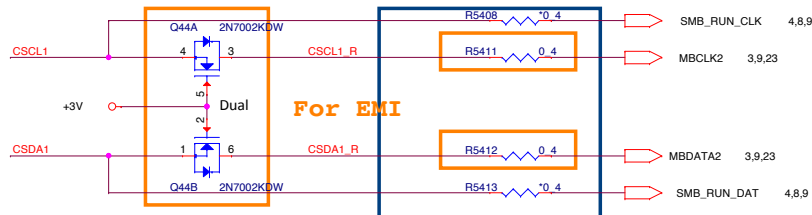
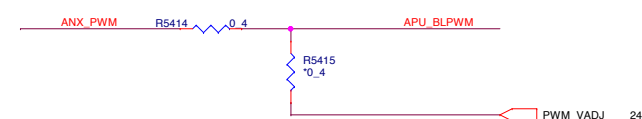
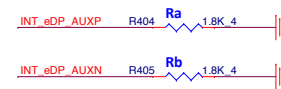
for Bemma eDP : stuff R5396 / R5398 / R5399  
for Bemma LVDS : Don't stuff R5396 / R5398 / R5399



If use EE PROM mode need remove R248,R242.



for Bemma LVDS only : stuff  
RA, RB eDP : no need stuff



EE PROM R5408,R5413  
EC OPTION R5411,R5412

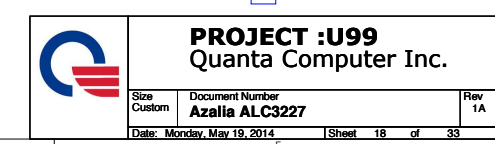
		MODE_CFG0(PIN30)	
		0	1
MODE_CFG1(PIN31)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

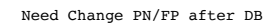
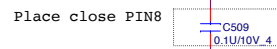
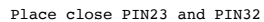
**PROJECT :U99**  
Quanta Computer Inc.

Size Custom Document Number  
R541325

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4 CLK\_PCIE\_REQ2# R392 0.4/S CLK\_PCIE\_REQ2# R

0429 : MV modify to short pad

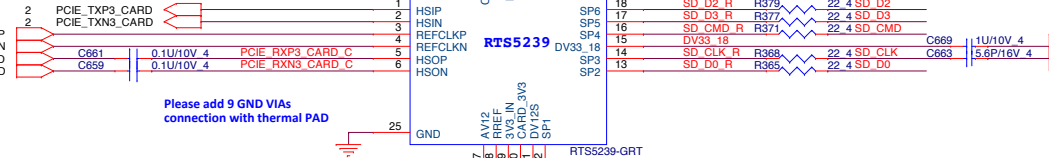
4,10,19,23 CARD\_PCIE\_RST#

CLK\_PCIE\_REQ2# R

Close to chip pin

zdiff = 100 ohm

5 CLK\_PCIE\_CARDP  
5 CLK\_PCIE\_CARDN  
2 PCIE\_RXP3\_CARD  
2 PCIE\_RXN3\_CARD



Please add 9 GND VIAs  
connection with thermal PAD

R363 need colse to Chip

Close to chip pin

CLOSE CONN

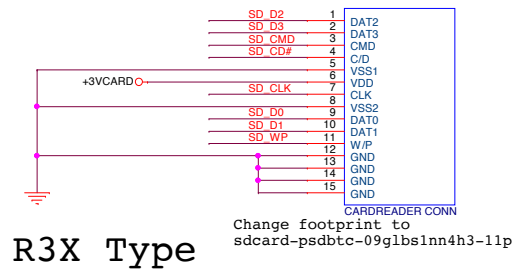
Share Pin

Reserve for EMI

SD D0 EC28 5.6P/16V 4  
SD D1 EC27 5.6P/16V 4  
SD D2 EC30 5.6P/16V 4  
SD D3 EC29 5.6P/16V 4

SD / MMC  
CARD READER

CN13



R3X Type

Change footprint to  
sdcard-psdbtc-09glbs1nn4h3-11p



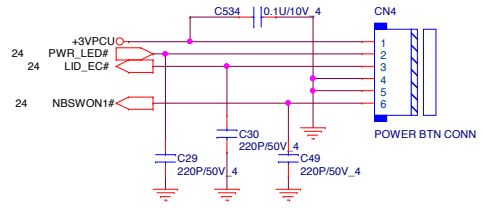
**PROJECT :U99**  
Quanta Computer Inc.

Size Custom Document Number RTS5239 & CR SOCKET Rev 1A  
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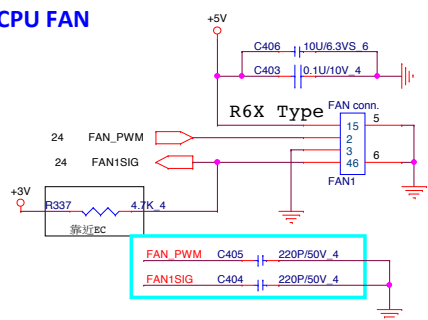


# Power Button Connector

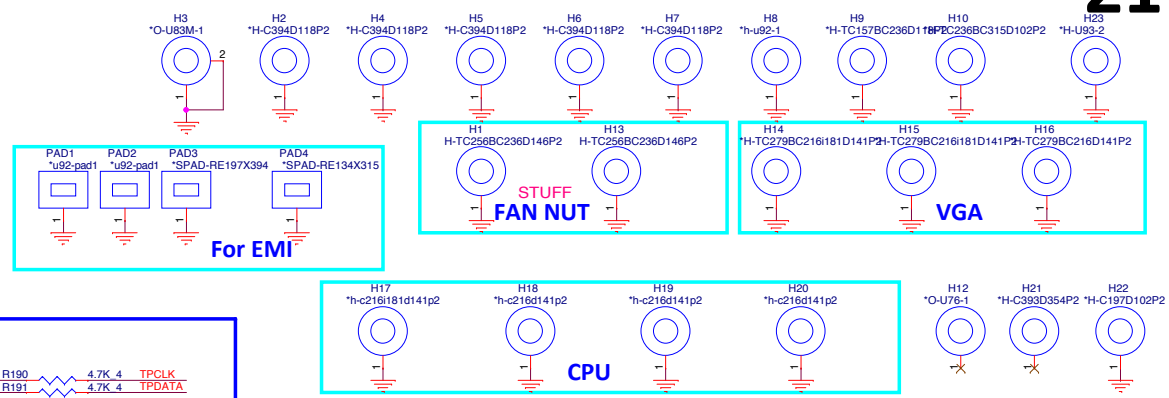
Pin1 : +3VPCU(LIDSWITCH PWR)  
Pin2 : POWER LED  
Pin3 : LIDSWITCH  
Pin4 : GND  
Pin5 : GND  
Pin6 : POWERON#



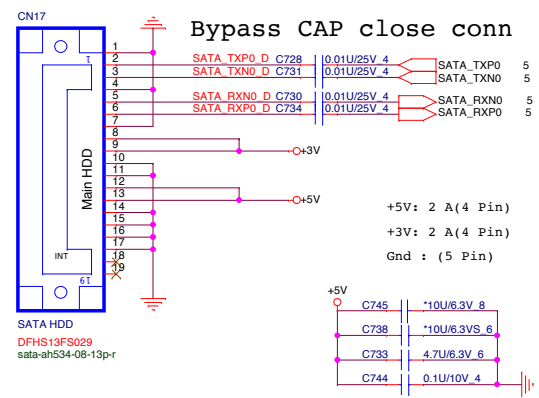
# CPU FAN



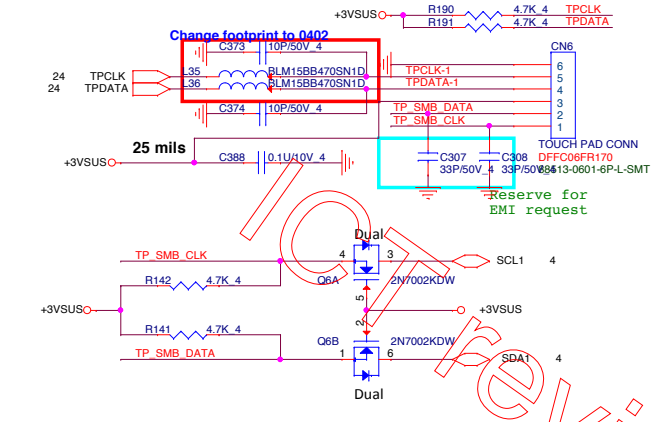
# Hole



# SATA HDD Connector(Cable type)

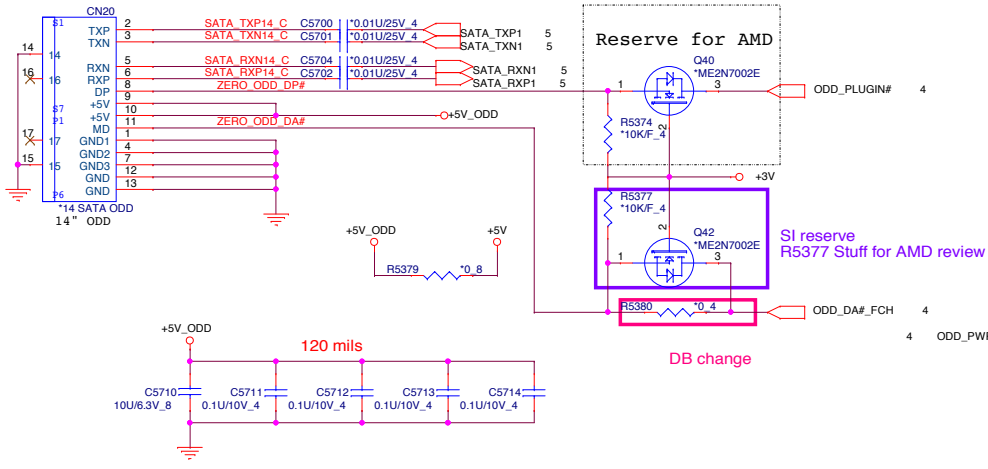


# Touch Pad



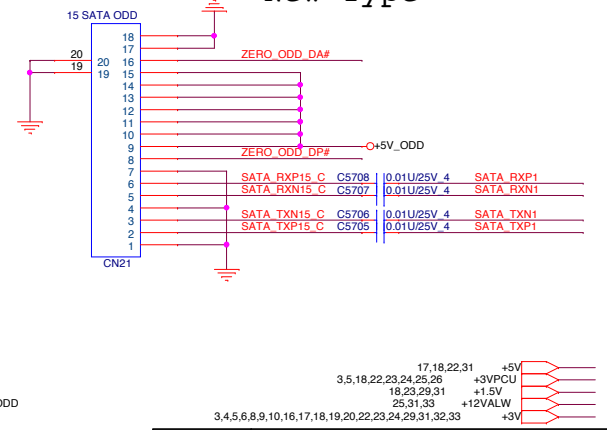
# SATA ODD CONNECTOR

## 14" SATA ODD Bypass CAP close conn

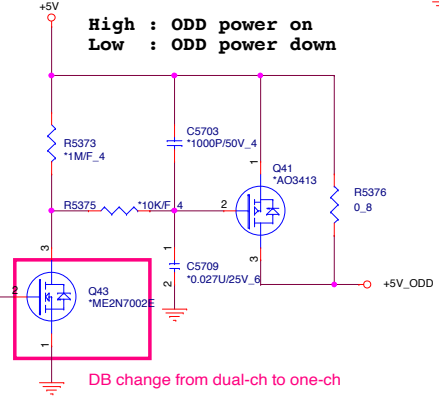


# 15" SATA ODD

## New Type

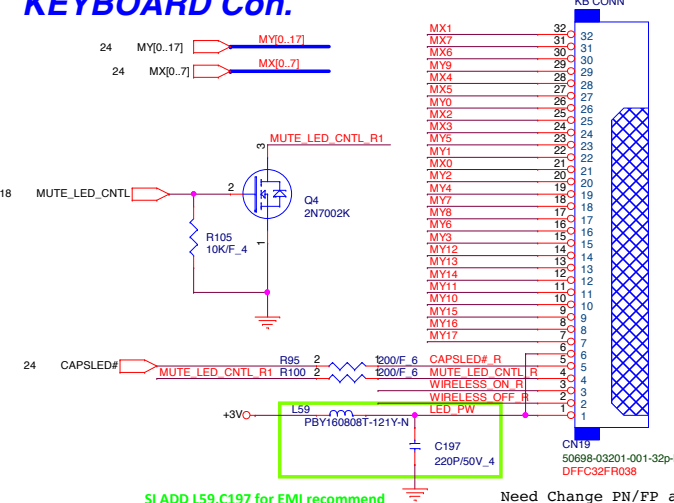


High : ODD power on  
Low : ODD power down



# KEYBOARD Con.

22

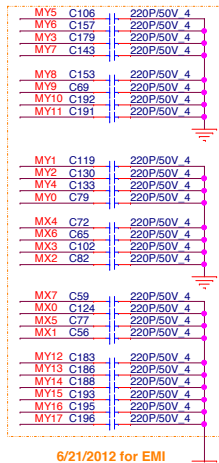
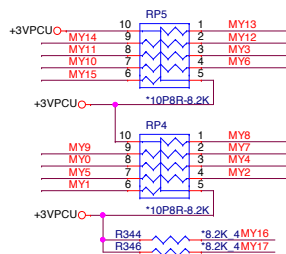


SI ADD L59,C197 for EMI recommend

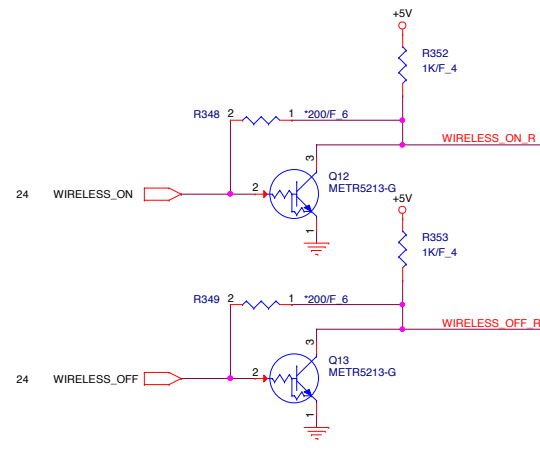
Need Change PN/FP after DB

NM9 Type

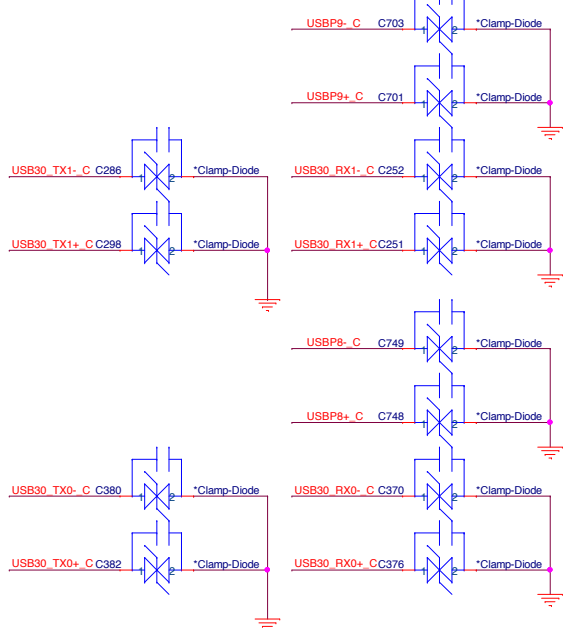
## KEYBOARD PULL-UP



6/21/2012 for EMI

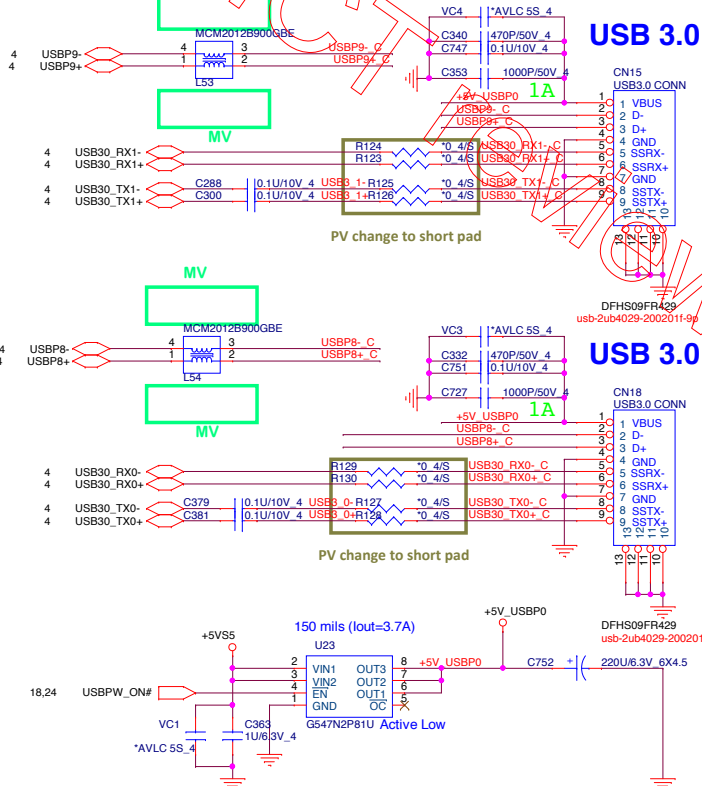


## USB 2.0/3.0 Combo

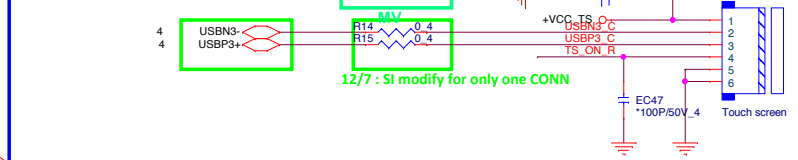


## SPS Type

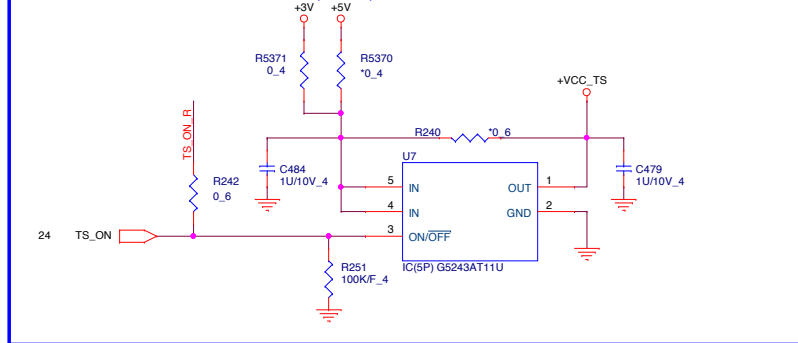
### USB 3.0



for 15" use only



close to TS connector (CN5).



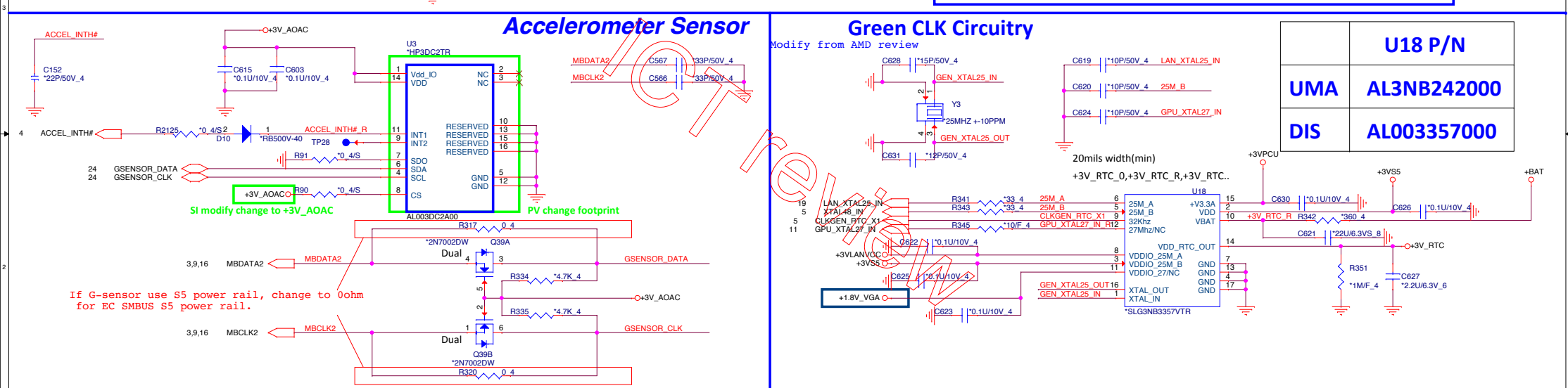
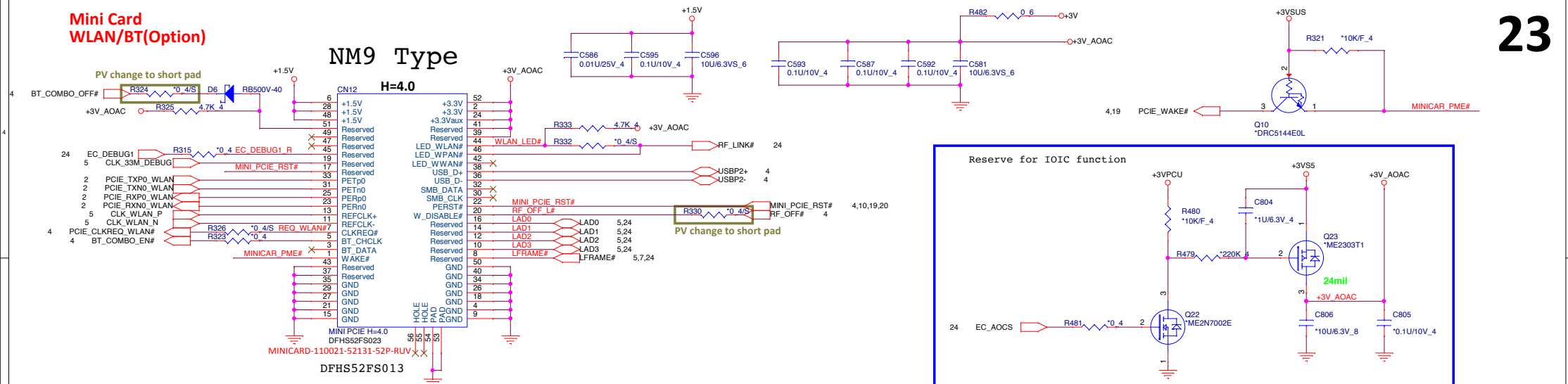
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Quanta Computer Inc.

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Custom	USB 3.0/KB/Green CLK	1A
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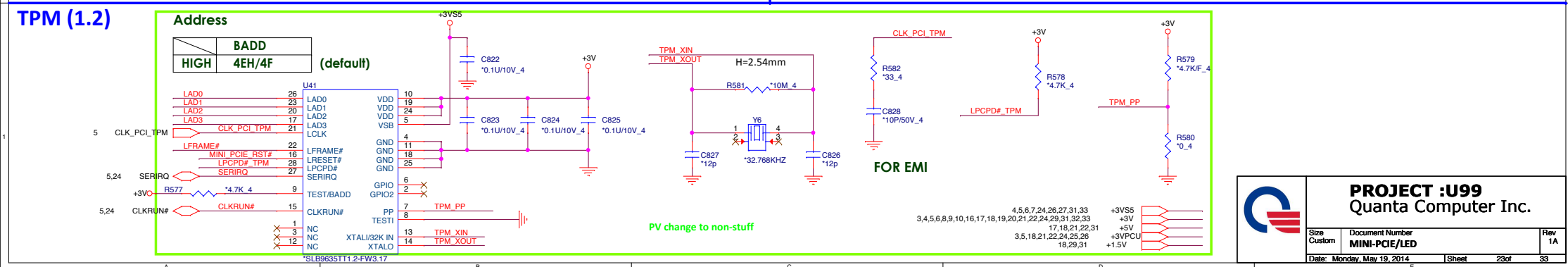
18,26,27,28,29,30,31,32  
3,5,18,21,23,24,25,26

+5VS5  
+3VPCU

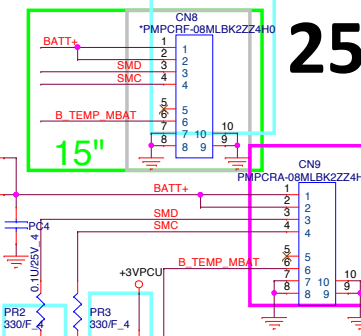
**Mini Card  
WLAN/BT(Optional)**



## TPM (1.2)

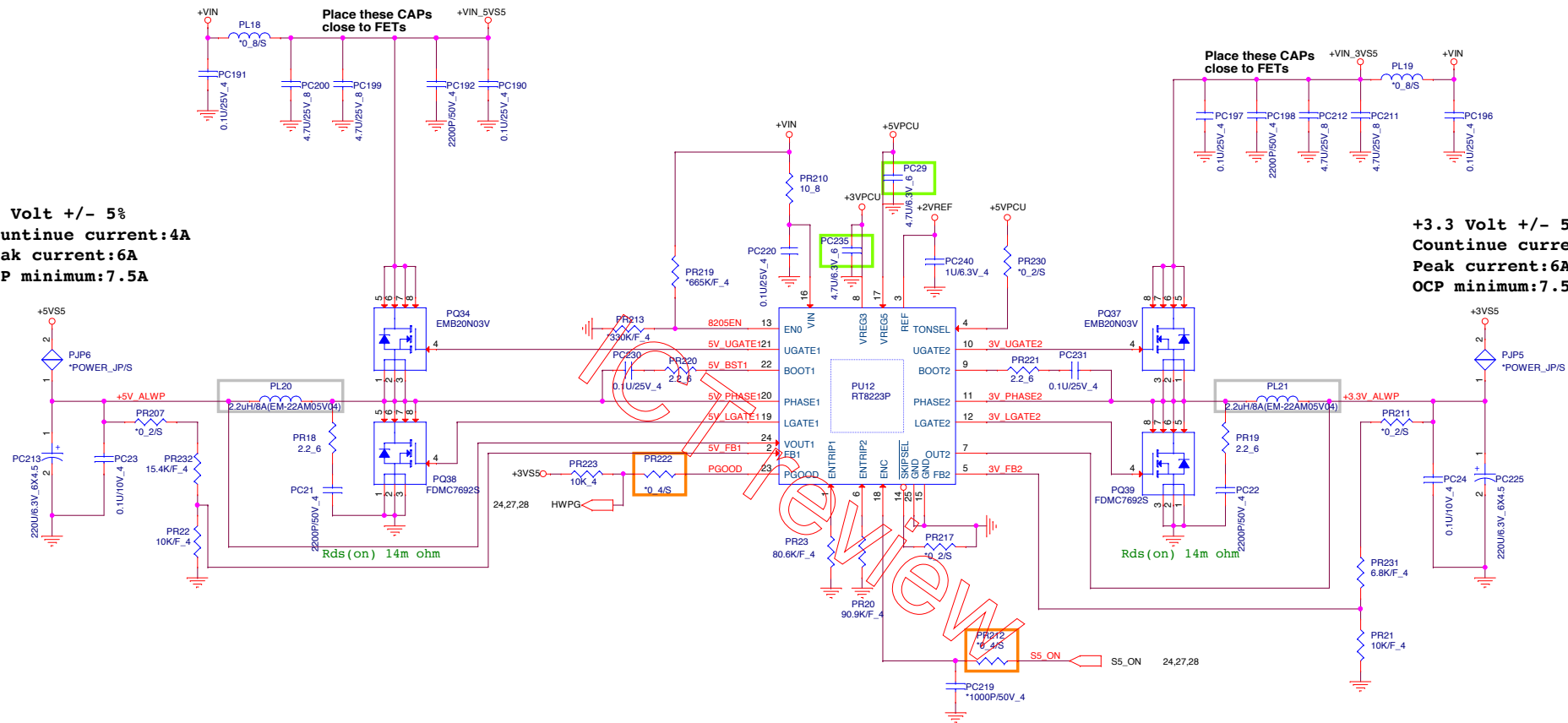




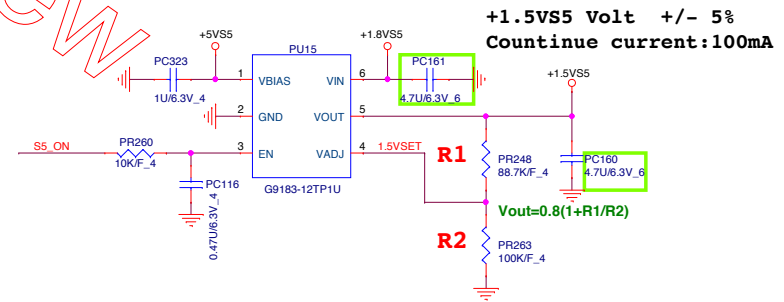
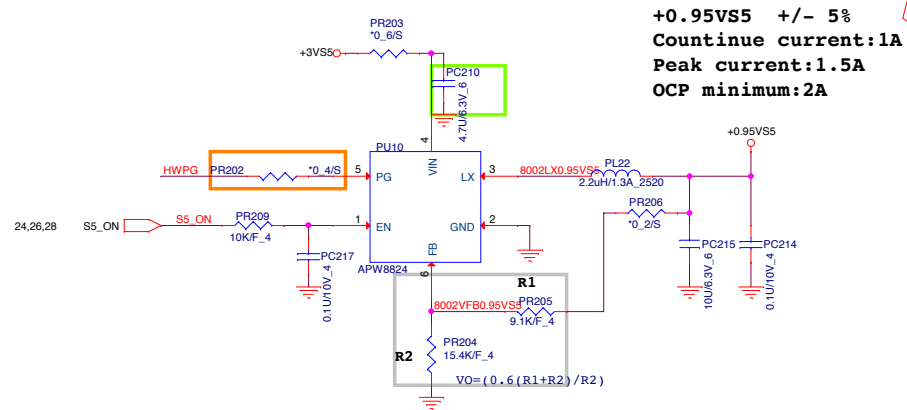
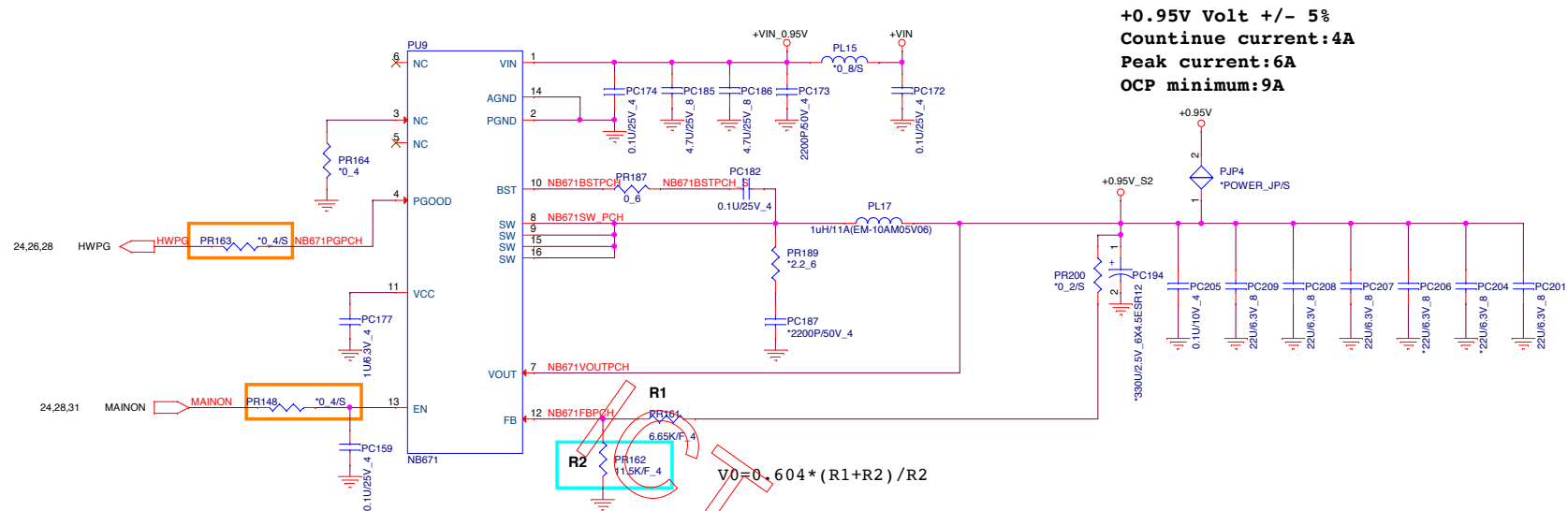


**+5 Volt +/- 5%**  
**Countinue current:4A**  
**Peak current:6A**  
**OCP minimum:7.5A**

**+3.3 Volt +/- 5%**  
**Countinue current:4A**  
**Peak current:6A**  
**OCP minimum:7.5A**



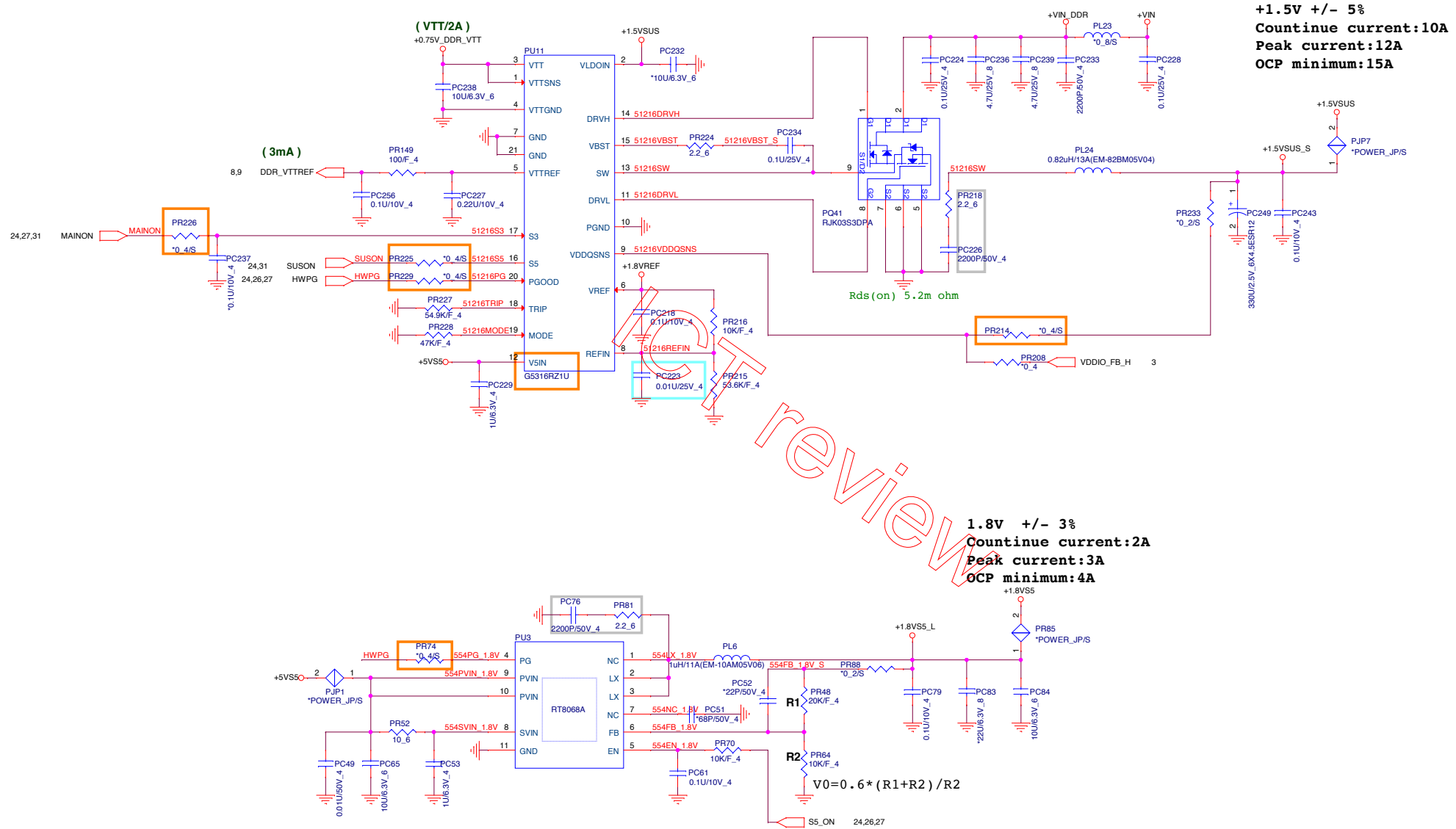




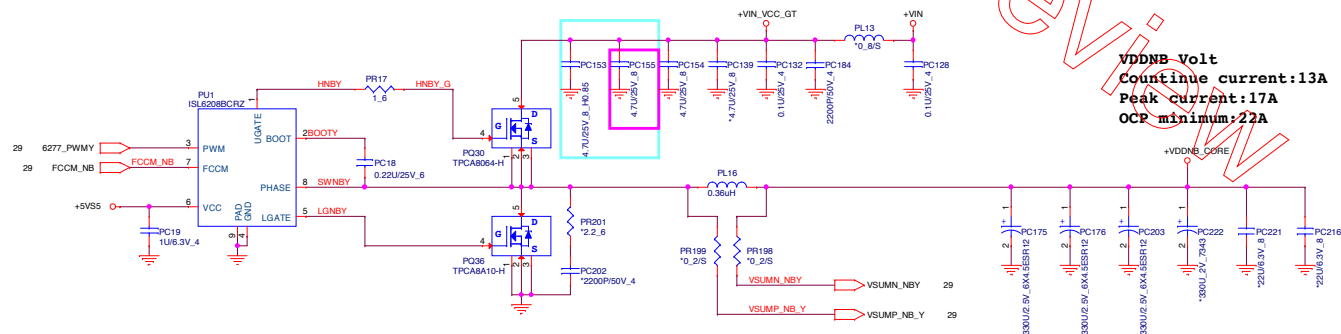
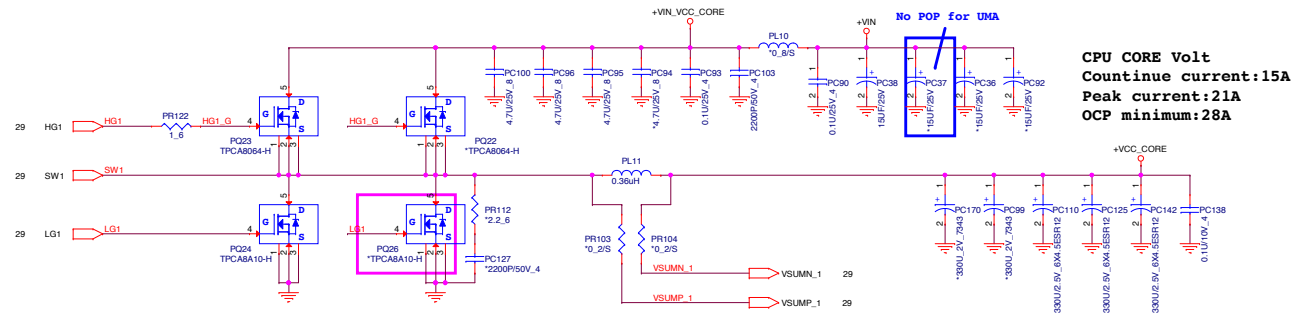
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**Quanta Computer Inc.**

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Custom	+1.2V (RT8228)	1A
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 +1.5VSUS 2,6,8,9,31,33





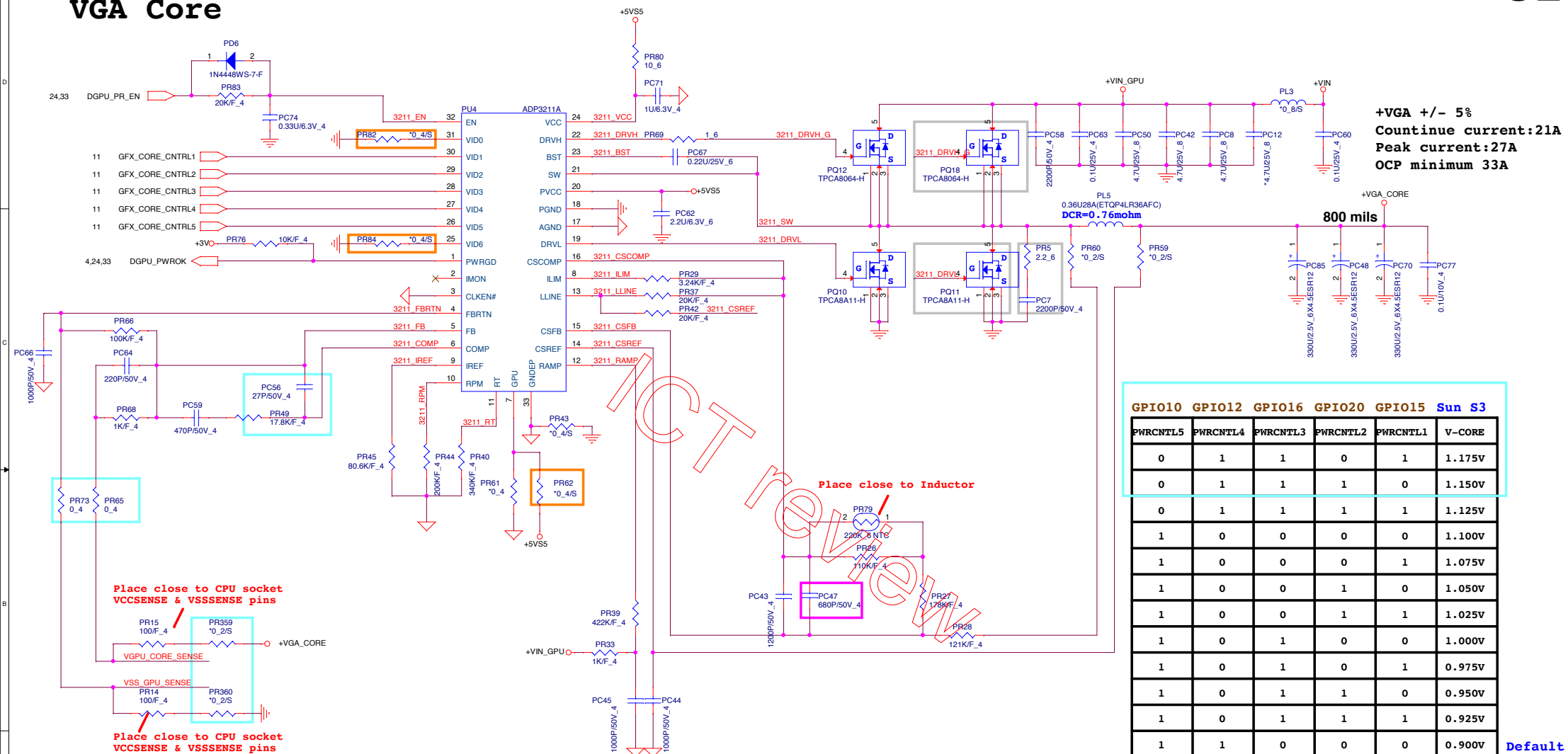


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 Quanta Computer Inc.

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Custom	ISL6208	1A
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## VGA Core



Default



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Quanta Computer Inc.

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**+0.95V +/- 3%**  
**Countinue current:2A**  
**Peak current:3A**  
**OCP minimum:4A**

