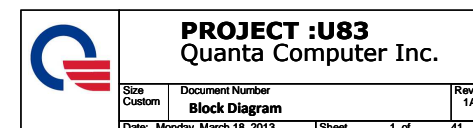
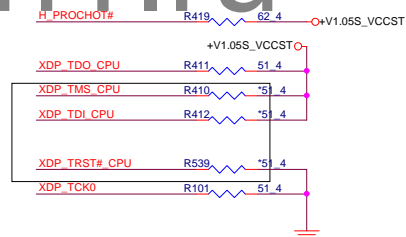


LAYER 1 : TOP  
LAYER 2 : SGND  
LAYER 3 : IN1(High)  
LAYER 4 : IN2(Low)  
LAYER 5 : SVCC  
LAYER 6 : BOT

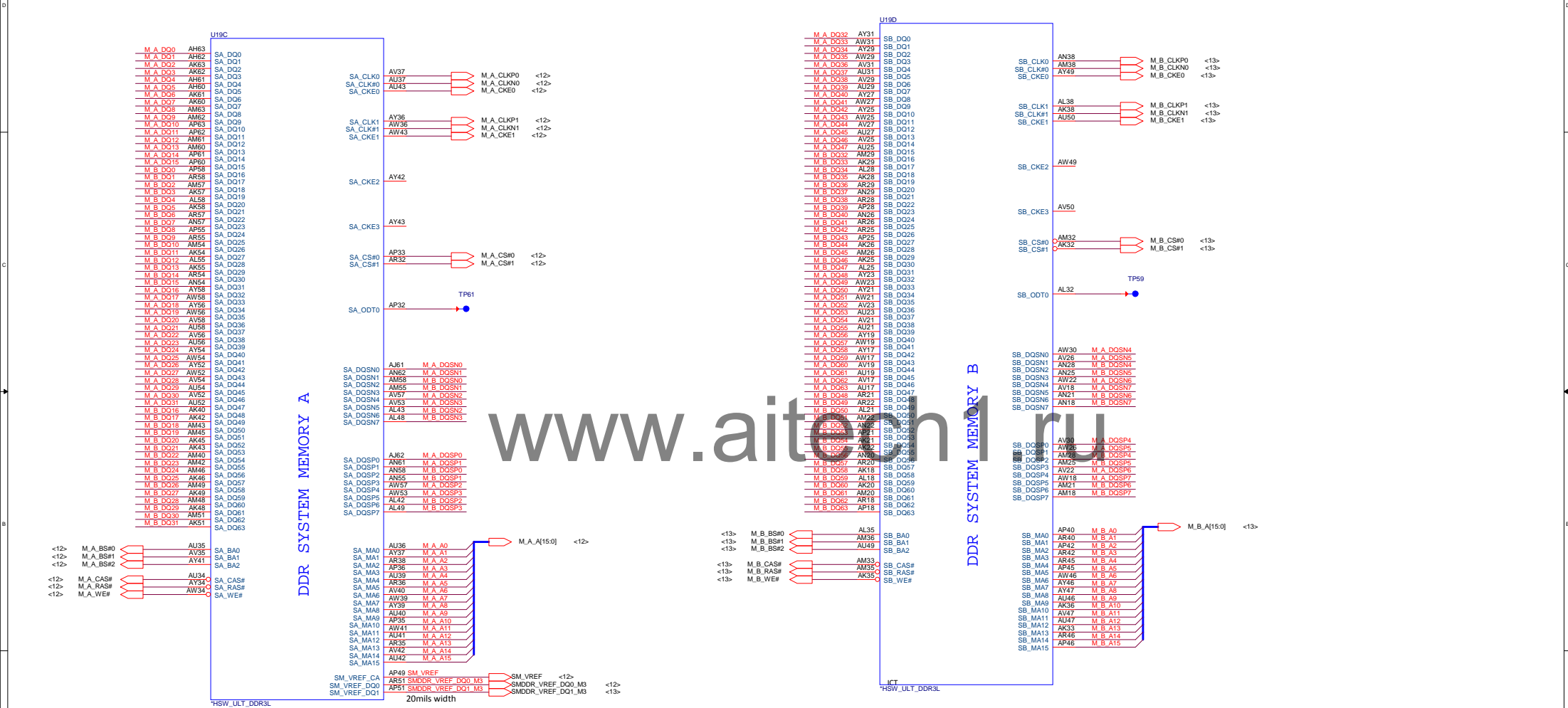


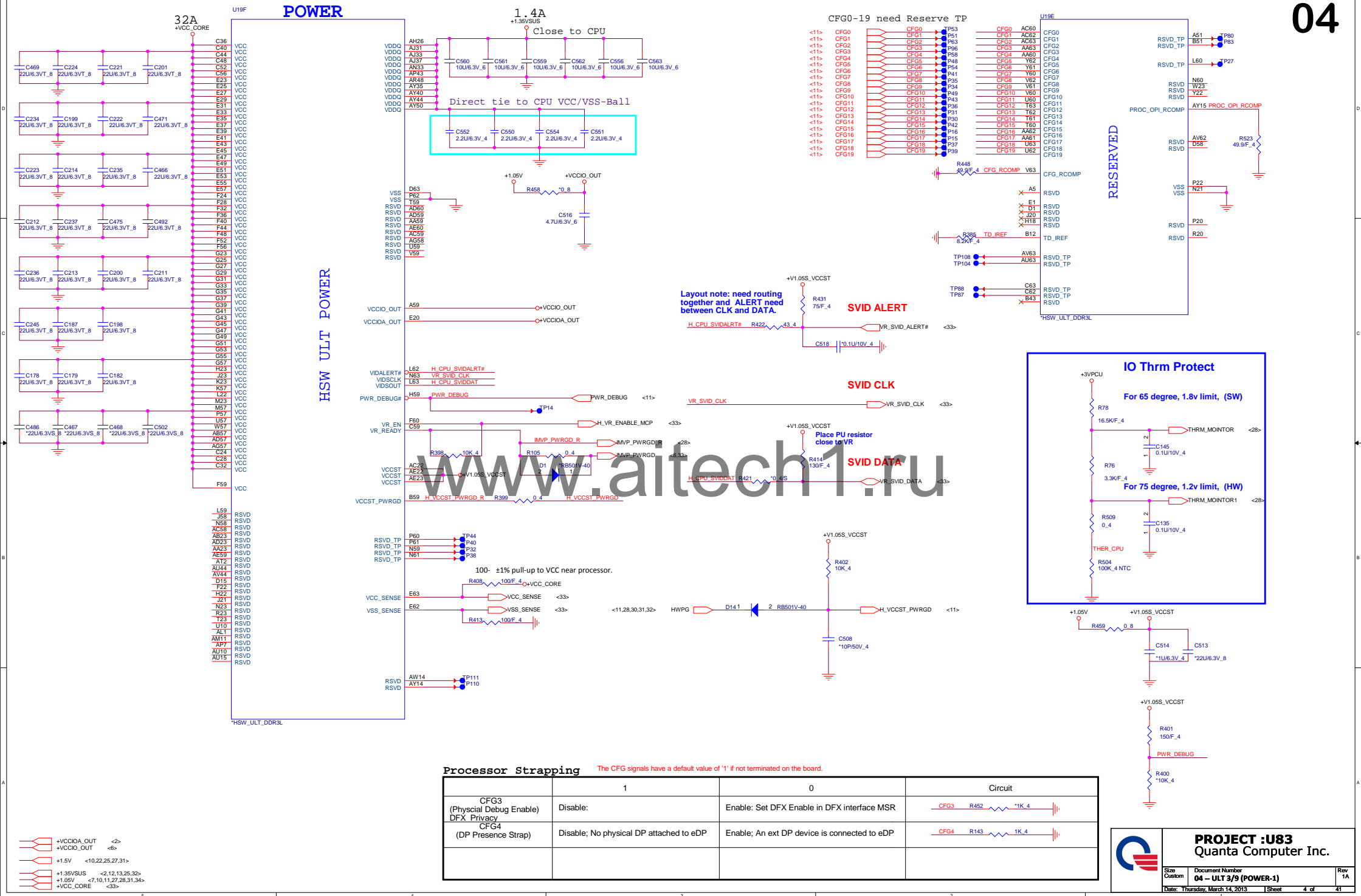


DEL or not?

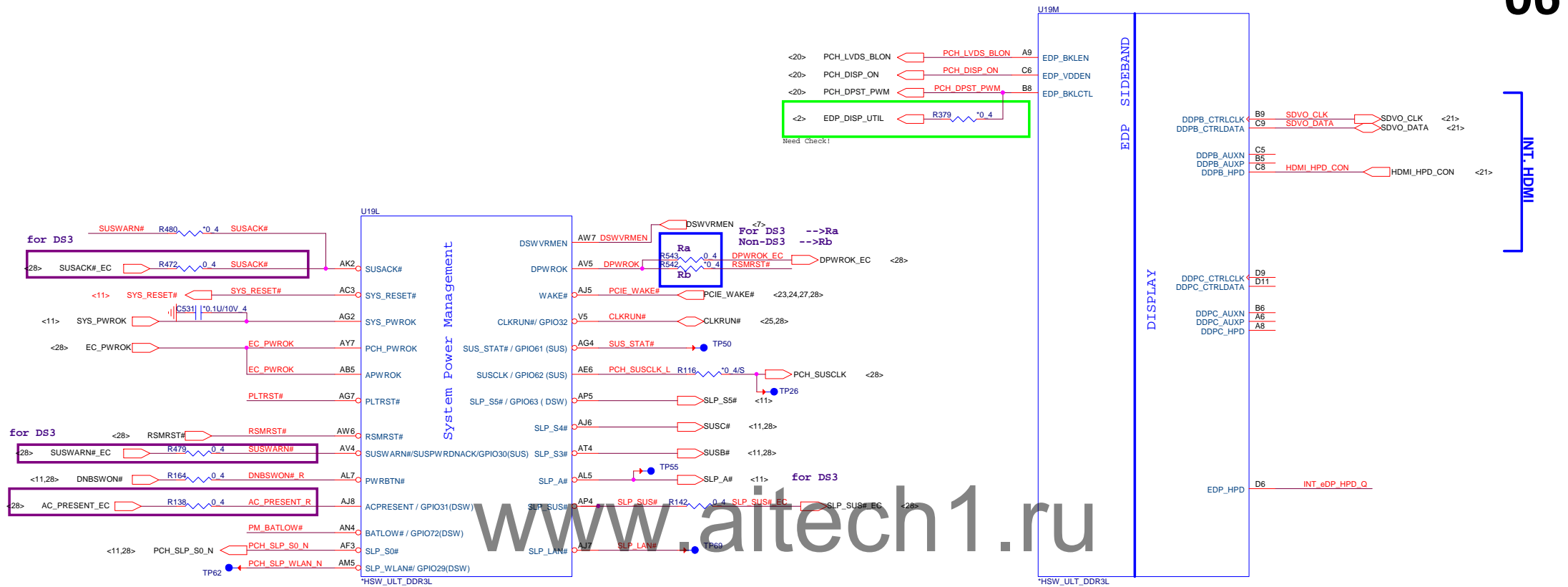


## Haswell ULT Processor (DDR3L)

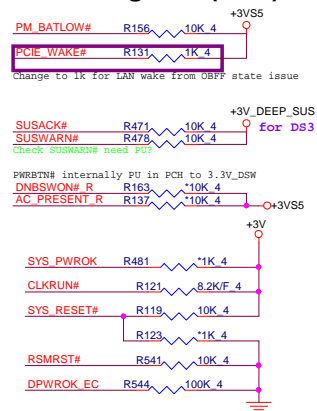




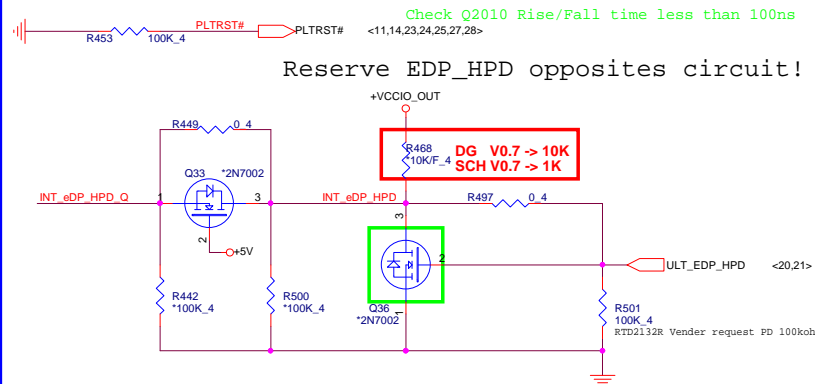




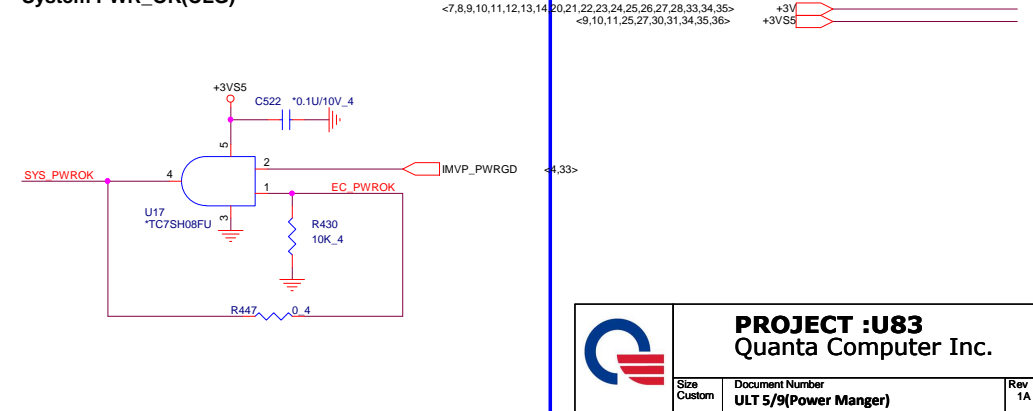
## PCH Pull-high/low(CLG)



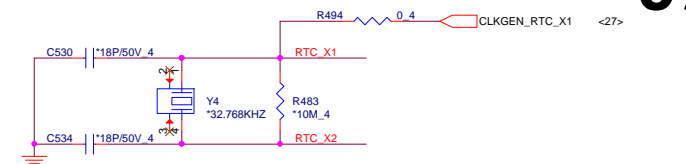
## PLTRST#(CLG)



## System PWR\_OK(CLG)

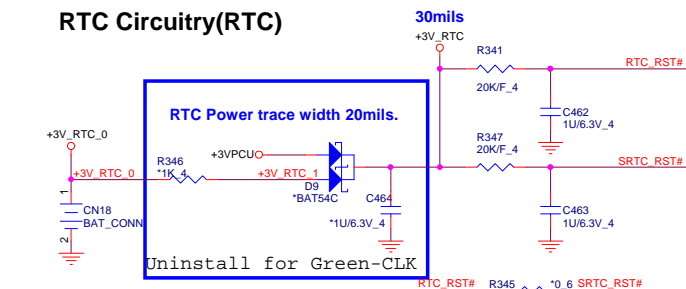


## 07

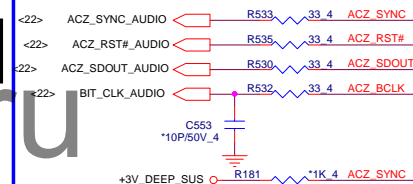


no stuff If use green Clock

### RTC Circuitry(RTC)



## HDA Bus(CLG)

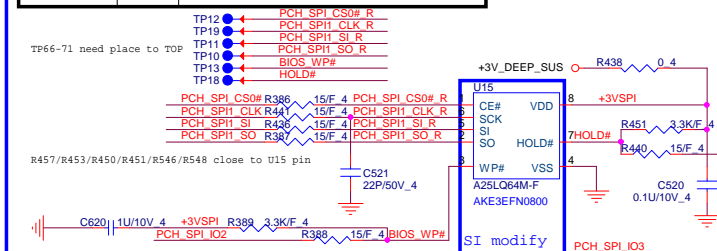


## GPIO Pull UP



☐ PCH SPI ROM(CLG)

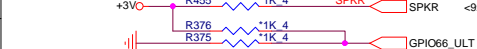




Vender	Size	P/N
AMIC	8MB	AKE3EFN0800 (A25LQ64M-F)
Winbond	8MB	AKE3EFP0N07 (W25Q64FVSSIQ)
GigaDevice	8MB	AKE3EGN0Q01 (GD25B64BSIGR)
Socket		DFHS08FS023



**PROJECT :U83**  
Quanta Computer Inc.

Size Custom	Document Number <b>ULT 6/9(SATA/HDA)</b>	Rev 1.
Date: Thursday, March 14, 2013	Sheet	7 of 41

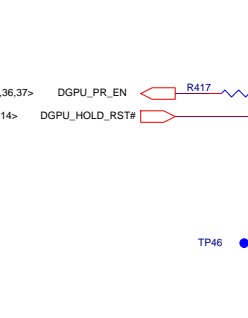
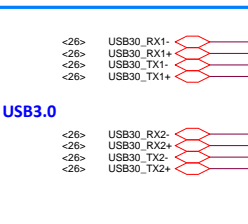
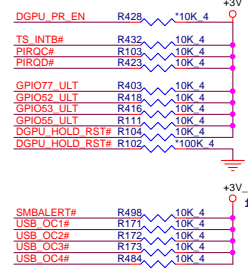
## PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	Circuit						
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode							
SDIO_D0 /GPIO66	Top-Block Swap	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)							
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up							
HDA_SDO /I2S0_TXD	Flash Descriptor Security Only for Interposer	PWROK	0 = Default (weak pull-down 20K) 1 = Can be Overriden							
GPIO0_MOSI /GPIO86	Boot BIOS Selection	PWROK	<table border="1" data-bbox="721 1131 904 1181"><thead><tr><th>GNT0#</th><th>Boot Location</th></tr></thead><tbody><tr><td>1</td><td>LPC</td></tr><tr><td>0</td><td>SPI(Default)</td></tr></tbody></table>	GNT0#	Boot Location	1	LPC	0	SPI(Default)	
GNT0#	Boot Location									
1	LPC									
0	SPI(Default)									
GPIO15	TLS Confidentiality	PWROK	0 = ME Crypto Transport Layer Security cipher suite with no confidentiality(Default) 1 = Intel ME Crypto TLS cipher suite with confidentiality							
DSWVRMEN	Deep Sx Well On-Die Voltage Regulator Enable	ALWAYS	Should be always pull-up							
				<div data-bbox="1097 1382 1431 1437"><div>&lt;28&gt;</div><div>PCH_SPI_CS0#_R</div><div>PCH_SPI_CS0#_R</div><div>&lt;28&gt;</div><div>PCH_SPI_CLK_R</div><div>PCH_SPI_CLK_R</div><div>&lt;28&gt;</div><div>PCH_SPI_SI_R</div><div>PCH_SPI_SI_R</div><div>&lt;28&gt;</div><div>PCH_SPI_SO_R</div><div>PCH_SPI_SO_R</div></div>						

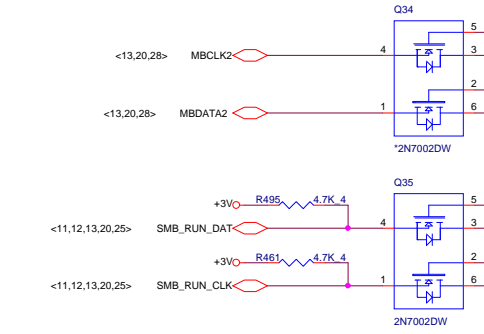


Lynx Point-LP Platform Controller Hub  
(HDA, JTAG, SATA)

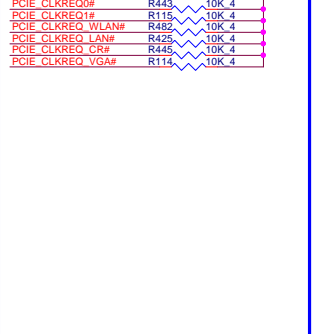
PCI/USBOC# Pull-up(CLG)



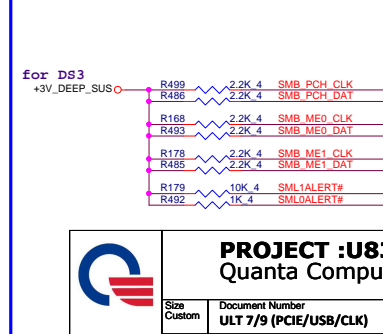
SMBus/Pull-up(CLG)



CLK\_REQ/Strap Pin(CLG)



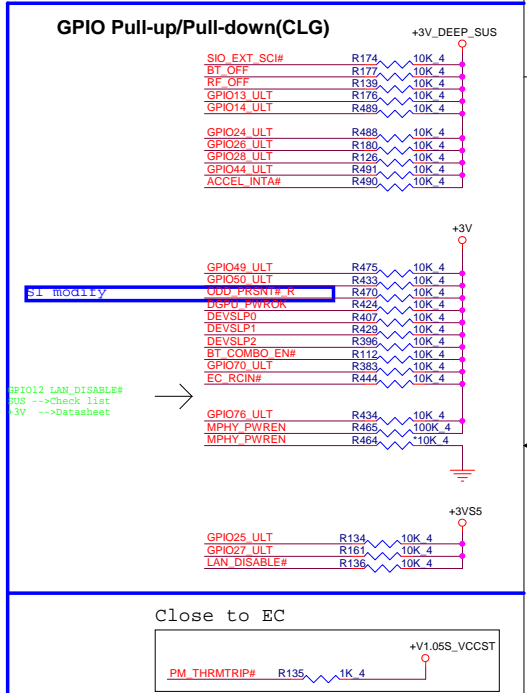
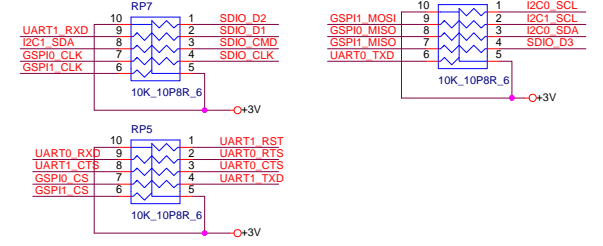
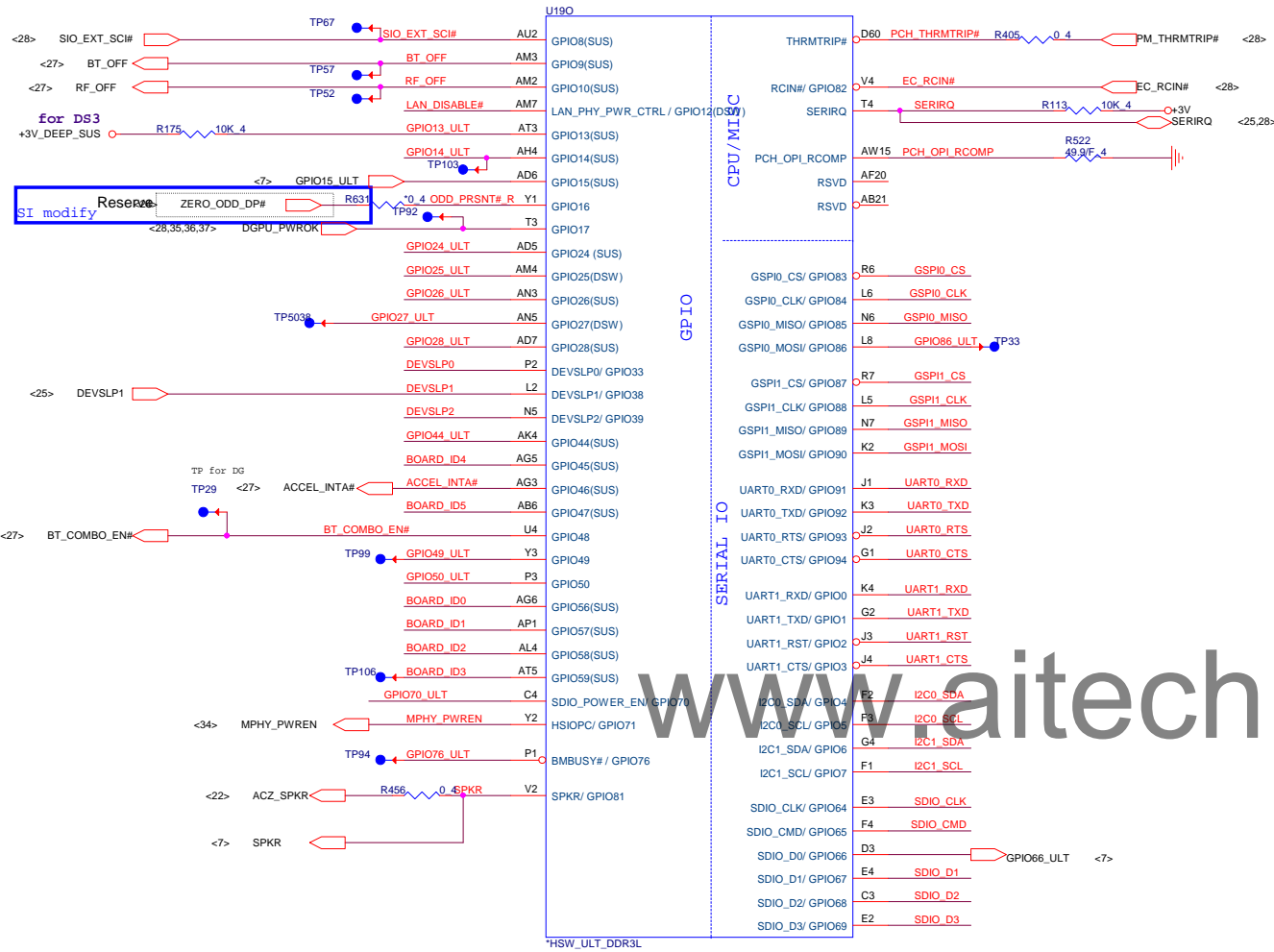
SMBus/Pull-up(CLG)



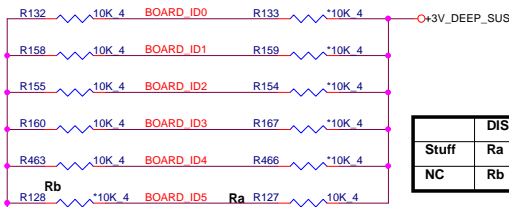


Lynx Point-LP Platform Controller Hub  
(HDA,JTAG,SATA) Haswell (GPIO)

09



Model	BOARD_ID5 UMA:0 DIS:1	BOARD_ID4 14:0 15:1	BOARD_ID3	BOARD_ID2	BOARD_ID1	BOARD_ID0
U83 DIS-14	1	0	0	0	0	0
U83 UMA-15	0	1	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0

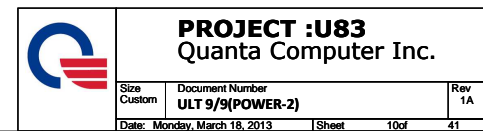


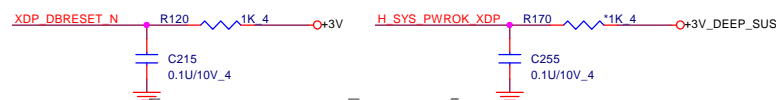
Stuff	DIS	UMA
NC	Rb	Ra

PROJECT :U83  
Quanta Computer Inc.

Size Custom Document Number ULT 8/9 (GPIO/MISC) Rev 1A

Date: Thursday, March 14, 2013 Sheet 9 of 41

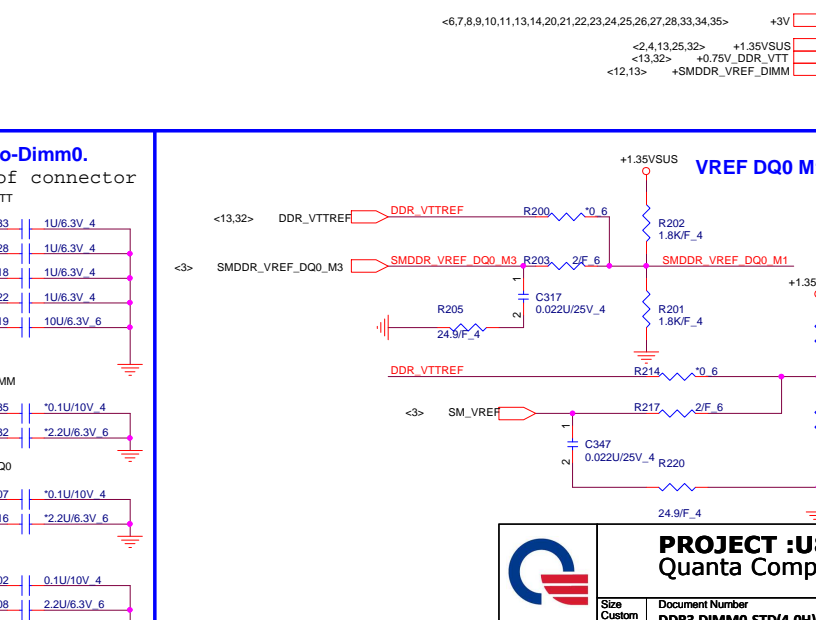
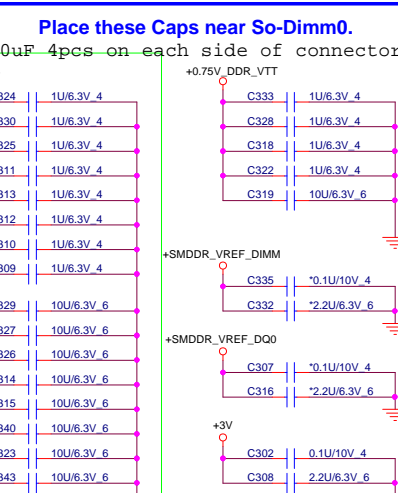
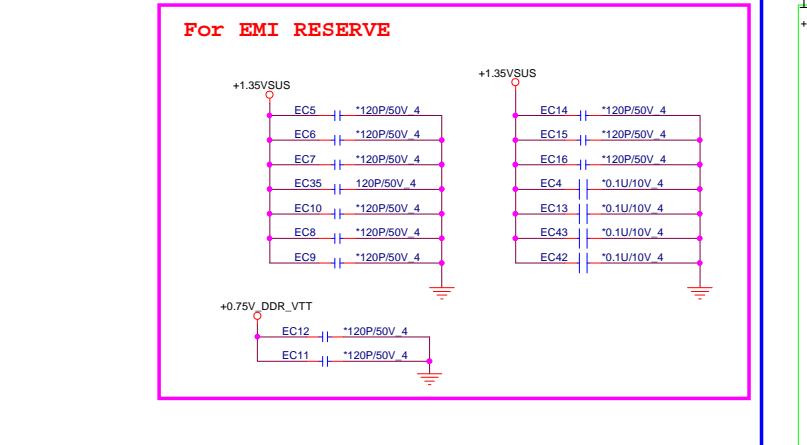


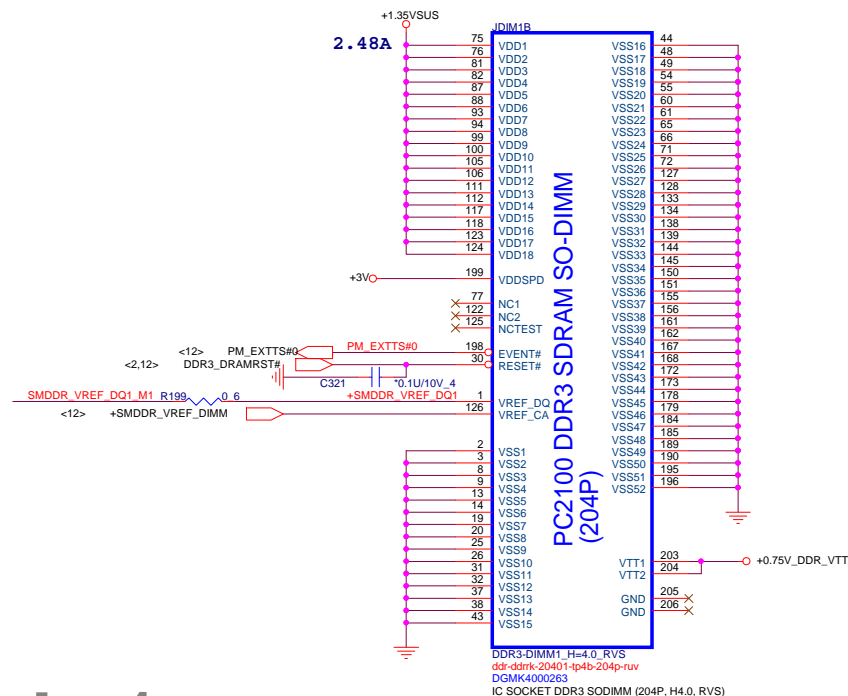


+3V



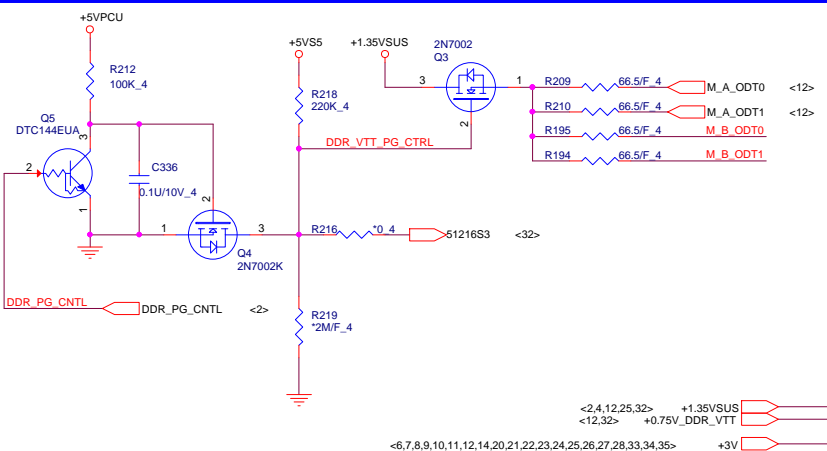
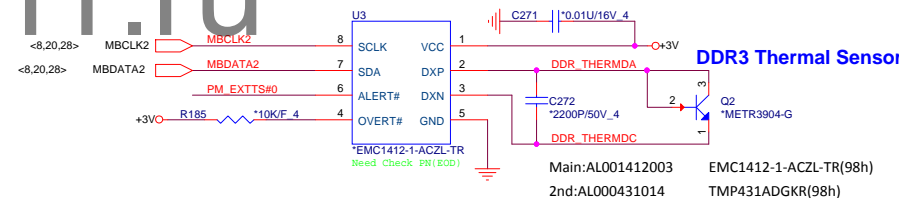
Thursday, **Date** 14, 2013 **Sheet** e



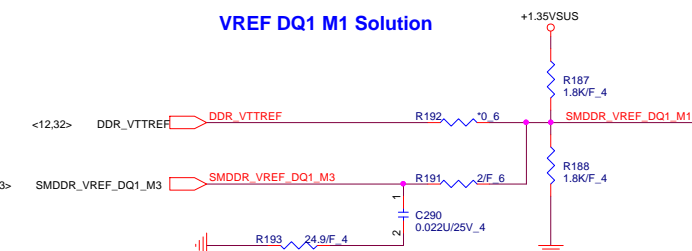
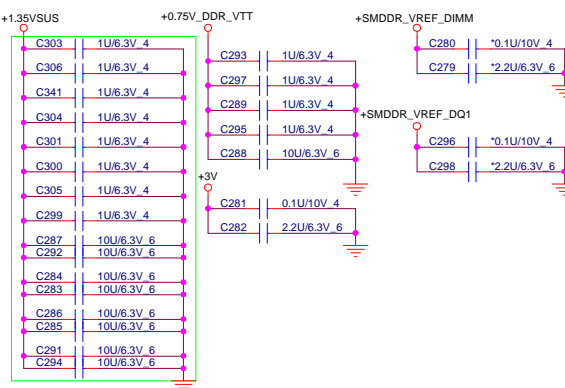


DDR3-DIMM1\_H=4.0\_RVS  
ddr-ddrrk-20401-tp4b-204p-ruv  
DGMK4000263  
IC SOCKET DDR3 SODIMM (204P, H4.0, RVS)

## Local Thermal Sensor

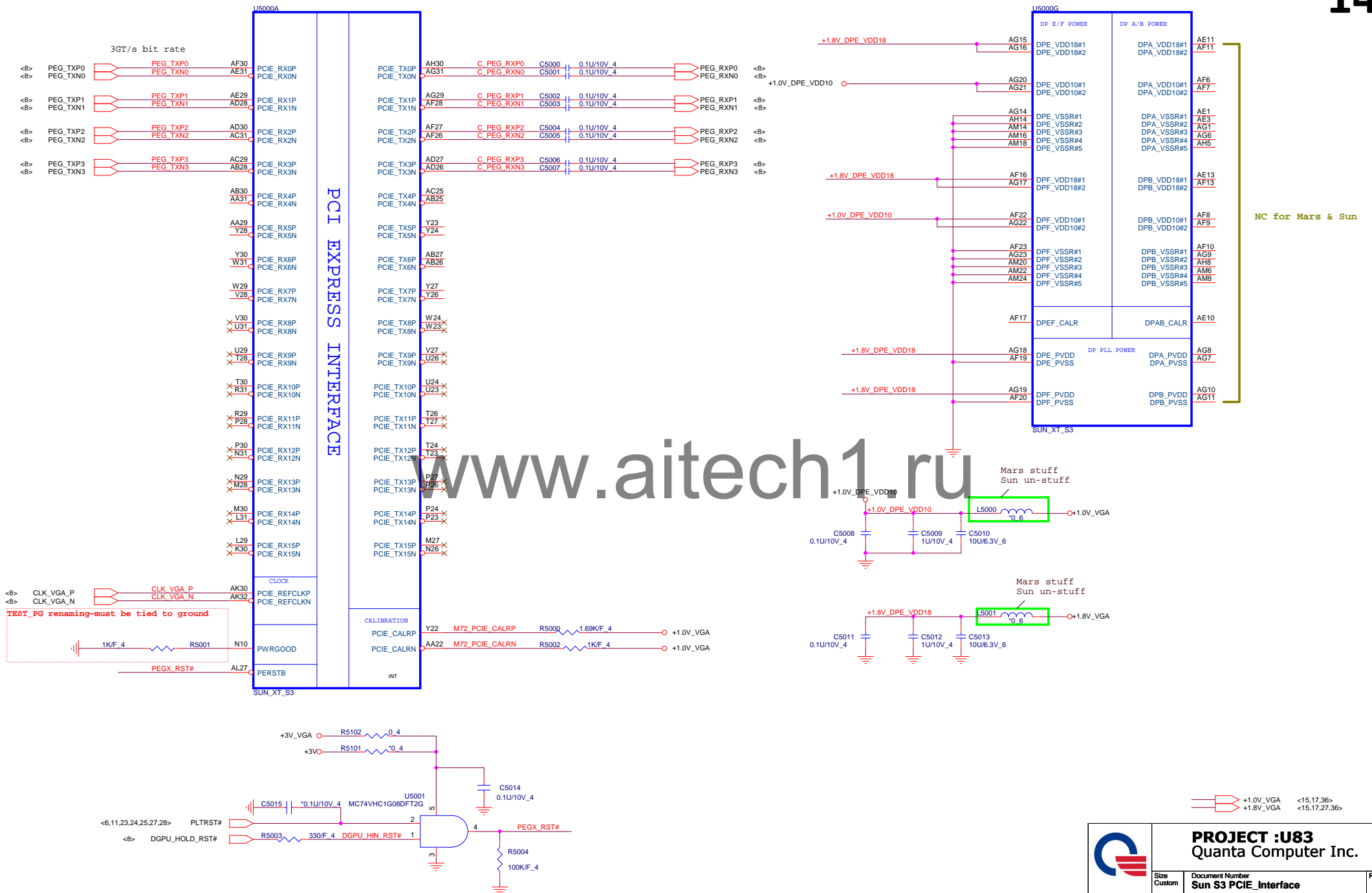


**Place these Caps near So-Dimm1.**  
1uF/10uF 4pcs on each side of connector



**PROJECT :U83**  
Quanta Computer Inc.

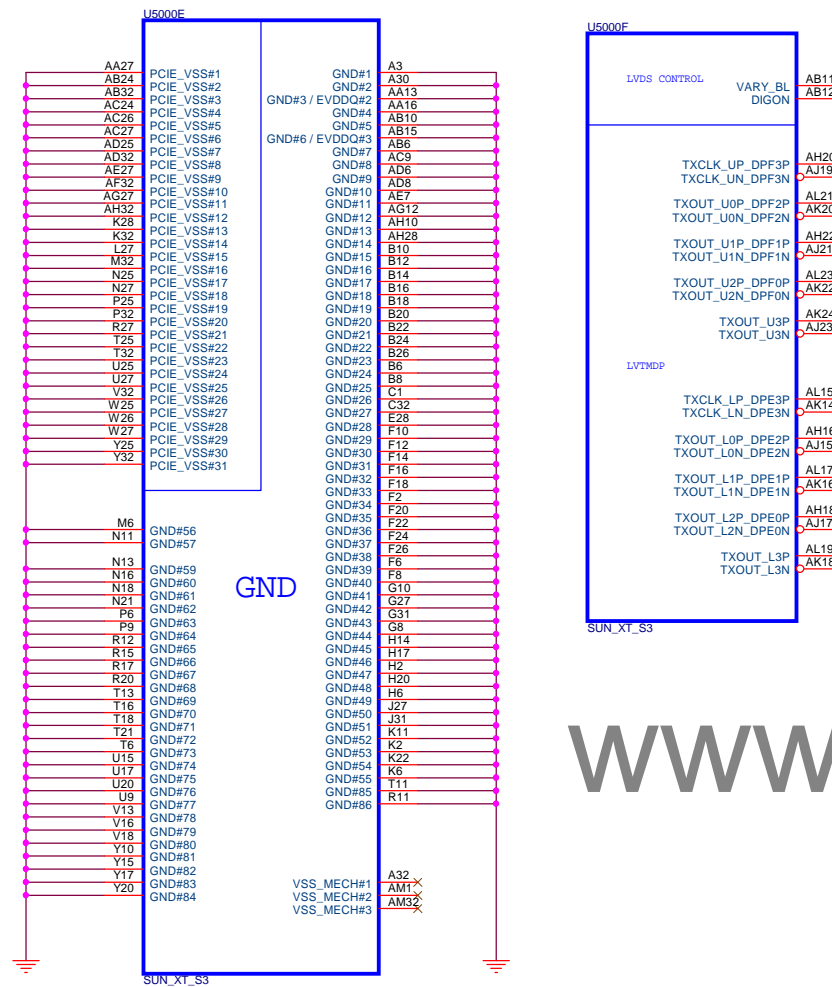
Size Custom	Document Number <b>DDR3 DIMM1-RV5(4.0H)</b>	Rev 1A
Date: Thursday, March 14, 2013	Sheet 13 of	41











### CONFIGURATION STRAPS-- SEE EACH DATABOOK FOR STRAP DETAILS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED, THEY MUST NOT CONFLICT DURING RESET

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING	0
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	X
RSVD	GPIO2	RESERVED	0
RSVD	GPIO8	RESERVED	0
BIF_VGA_DIS	GPIO9	VGA ENABLED	0
RSVD	GPIO21	RESERVED	0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	0
ROMIDCFG(2:0)	GPIO[13:1]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 1
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS (Removed on Seymour/Whistler)	0
RSVD	H2SYNC	RESERVED	0
AUD[1]	HSYNC	SEE DATABOOK FOR DETAIL	0
AUD[0]	VSYS	SEE DATABOOK FOR DETAIL	0
RSVD	GENERICC	RESERVED	0

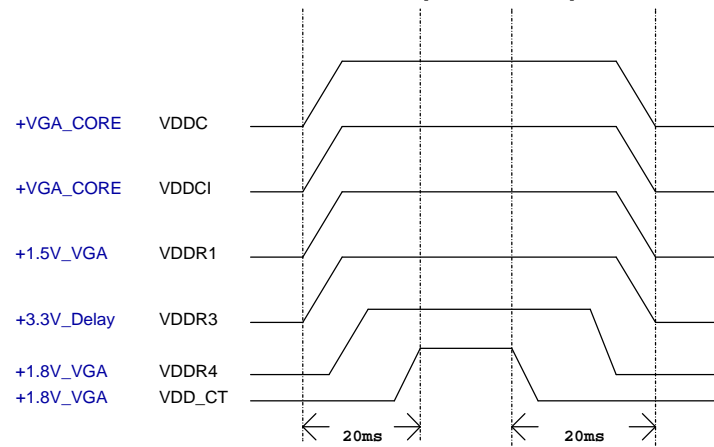
RECOMMENDED SETTINGS  
 0 = DO NOT INSTALL RESISTOR  
 1 = INSTALL 3K RESISTOR  
 X = DESIGN DEPENDANT  
 NA = NOT APPLICABLE

### NOTE1: AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS BUT DO NOT INSTALL RESISTOR. IF THESE GPIOs ARE USED, THEY MUST KEEP "LOW" AND NOT CONFLICT DURING RESET.

GPIO21 H2SYNC GENERICC GPIO8 GPIO2

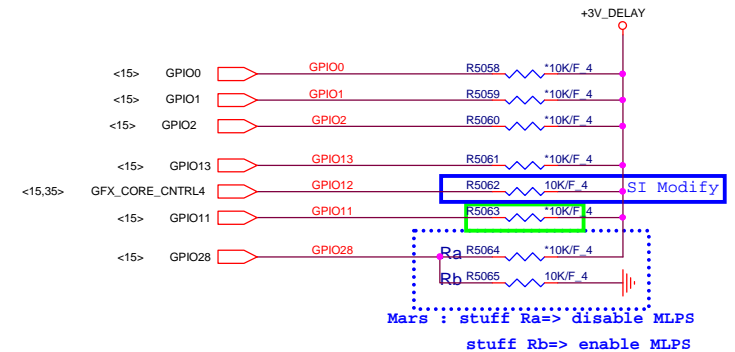
### Power Up/Down Sequence



### Memory Aperture size(Seymour)

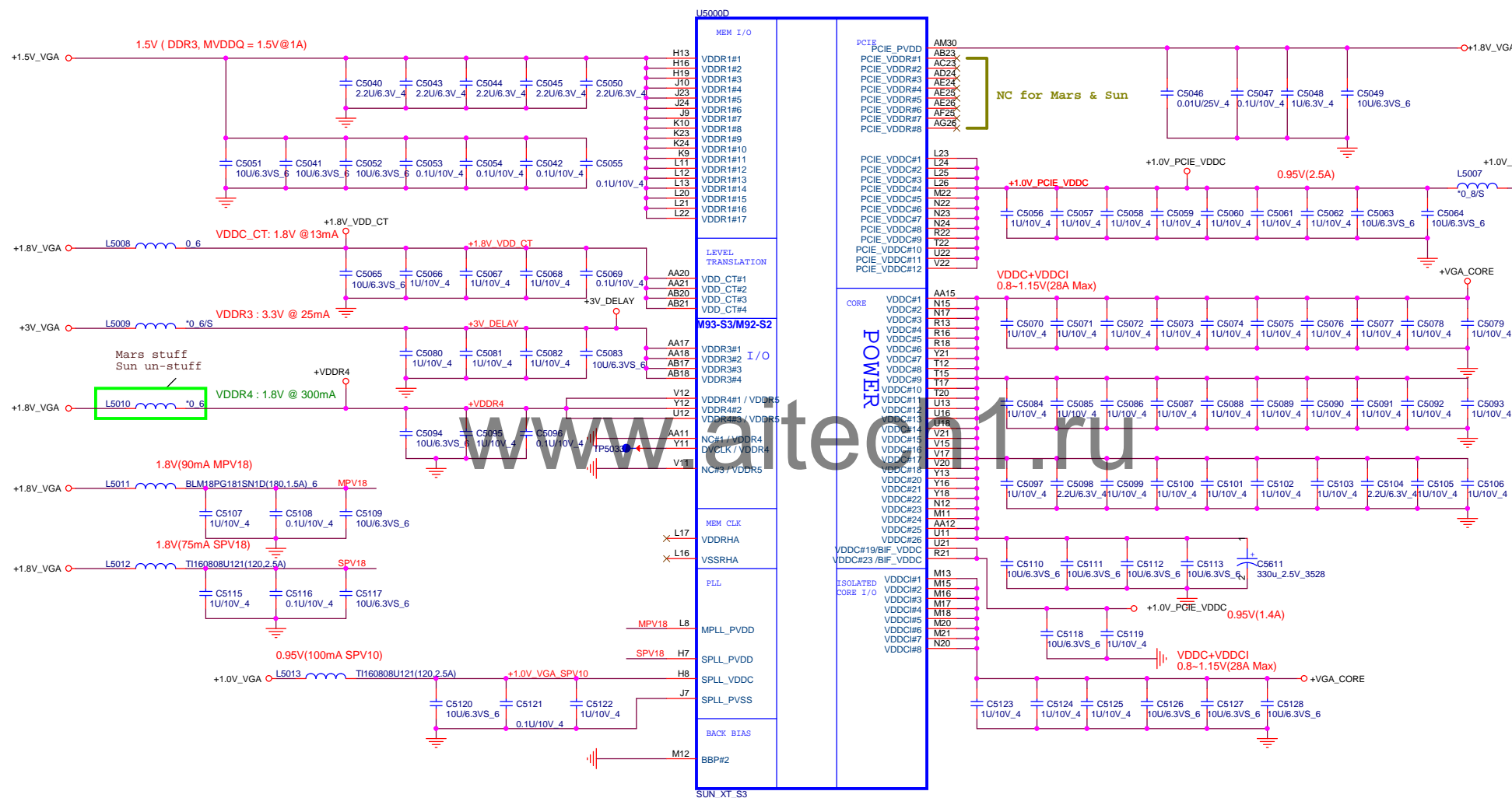
GPIO9		GPIO13	GPIO12	GPIO11
BIOSROM		ROMIDCFG2	ROMIDCFG1	ROMIDCFG0
0	128M	0	0	0
0	256M	0	0	1
0	64M	0	1	0
0	32M	0	1	1
0	512M	1	0	0
0	1G	1	0	1
0	2G	1	1	0
0	4G	1	1	1

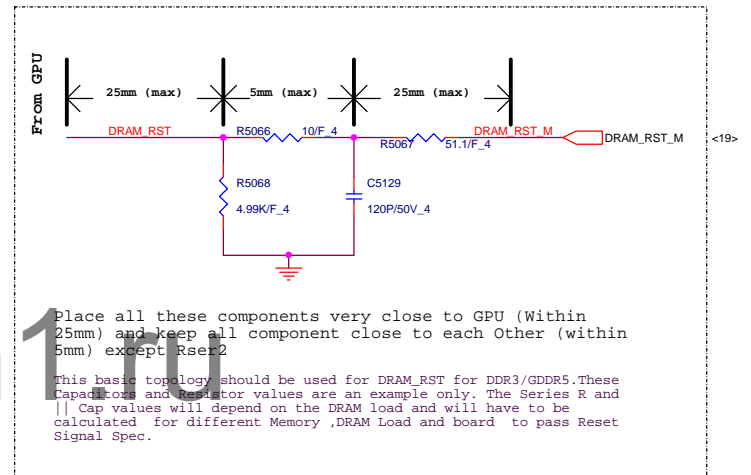
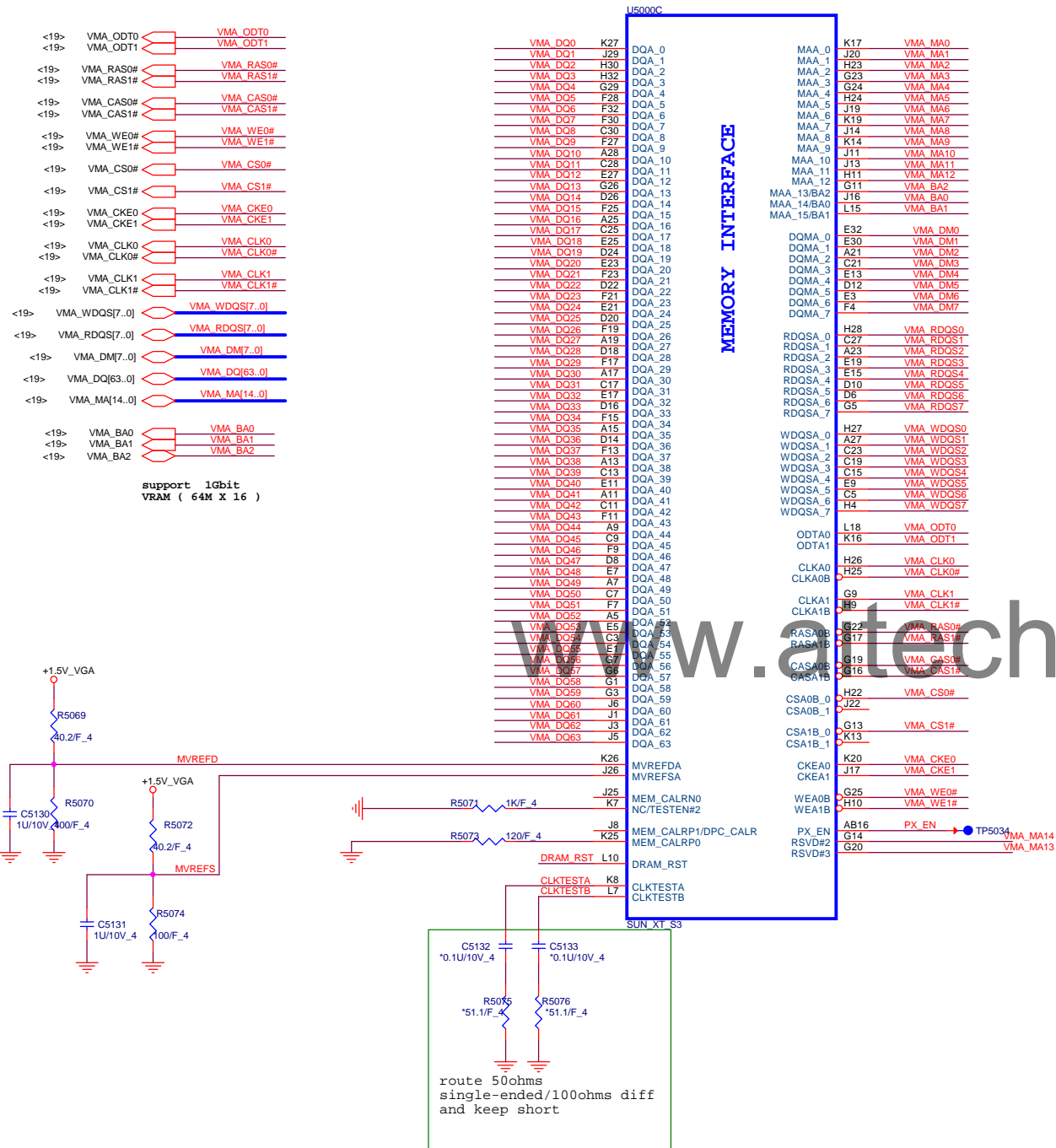
It is a shared pin strap with CONFIG[2:0] if BIOS\_ROM\_EN is set to 0.



**PROJECT :U83**  
**Quanta Computer Inc.**

Size Custom	Document Number	Rev 1A
	<b>Sun S3 GND / LVDS/ Straps</b>	
Date: Thursday, March 14, 2013	Sheet 16 of 41	



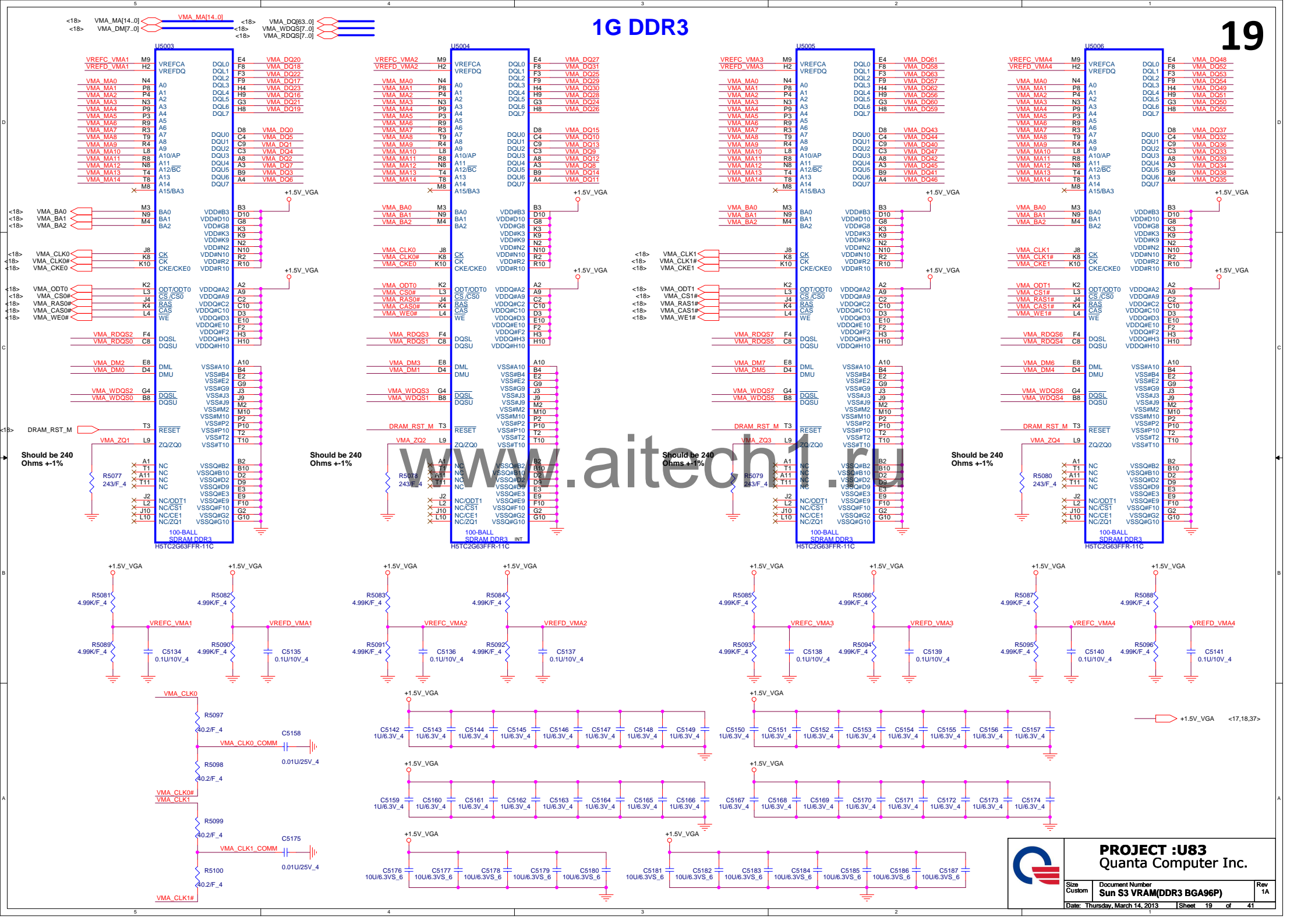


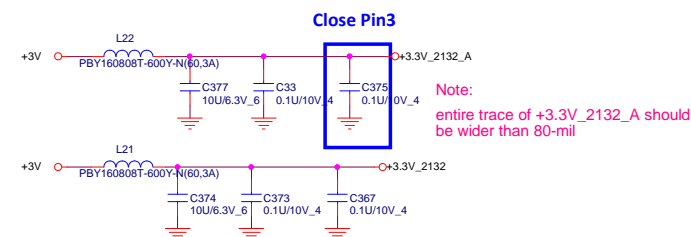
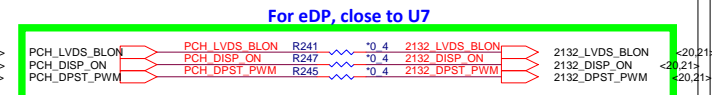
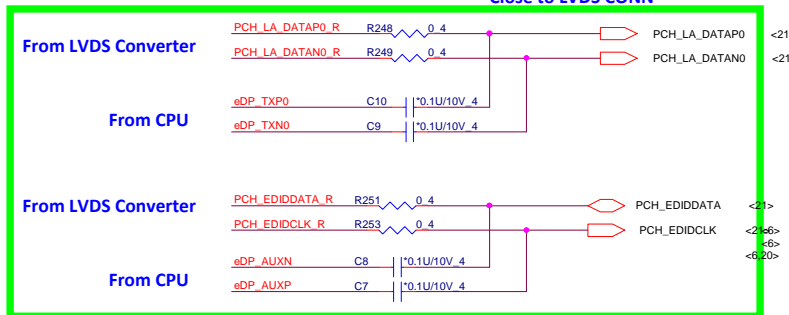
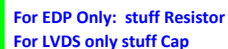
**PROJECT :U83**  
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Sun S3 MEM_Interface	1A
Date: Thursday, March 14, 2013	Sheet 18 of 41	

# 1G DDR3

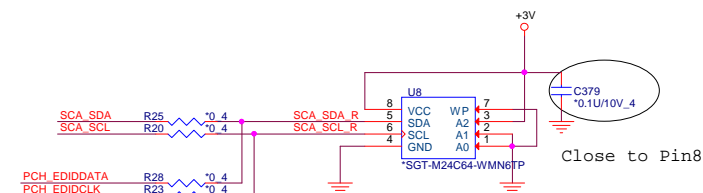
19



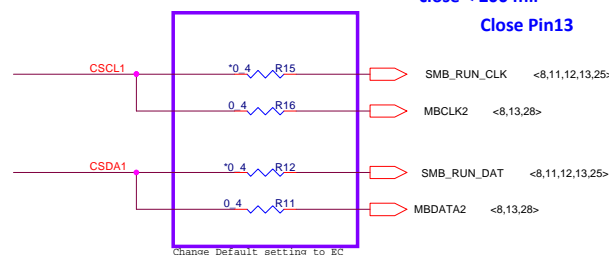


```
SCA_SCL pull high => EEPROM mode
SCA_SDA pull low  => EEPROM Free mode
```

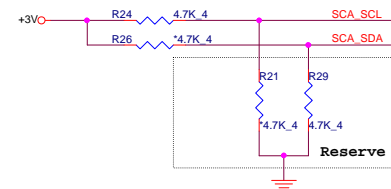
**Address=0xA8**



RTD2132S => R25, R20  
RTD2132R => R28, R23



EE PROM	R15,R12
EC OPTION	R16,R11

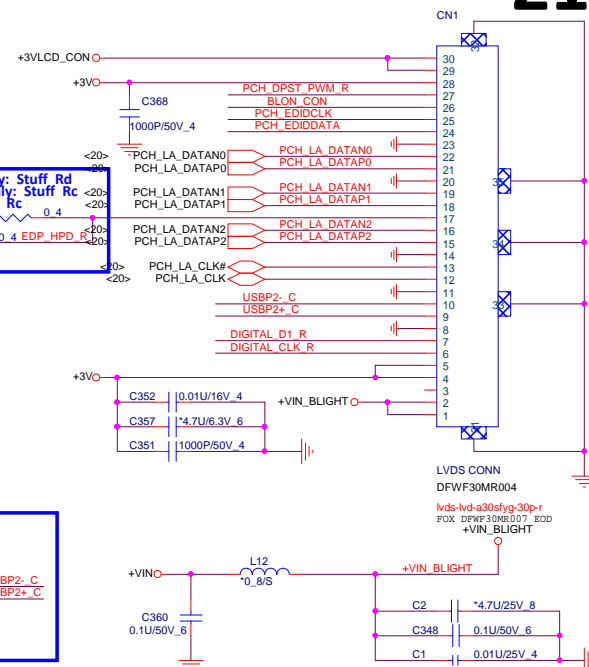
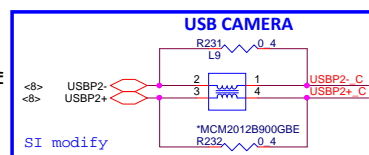
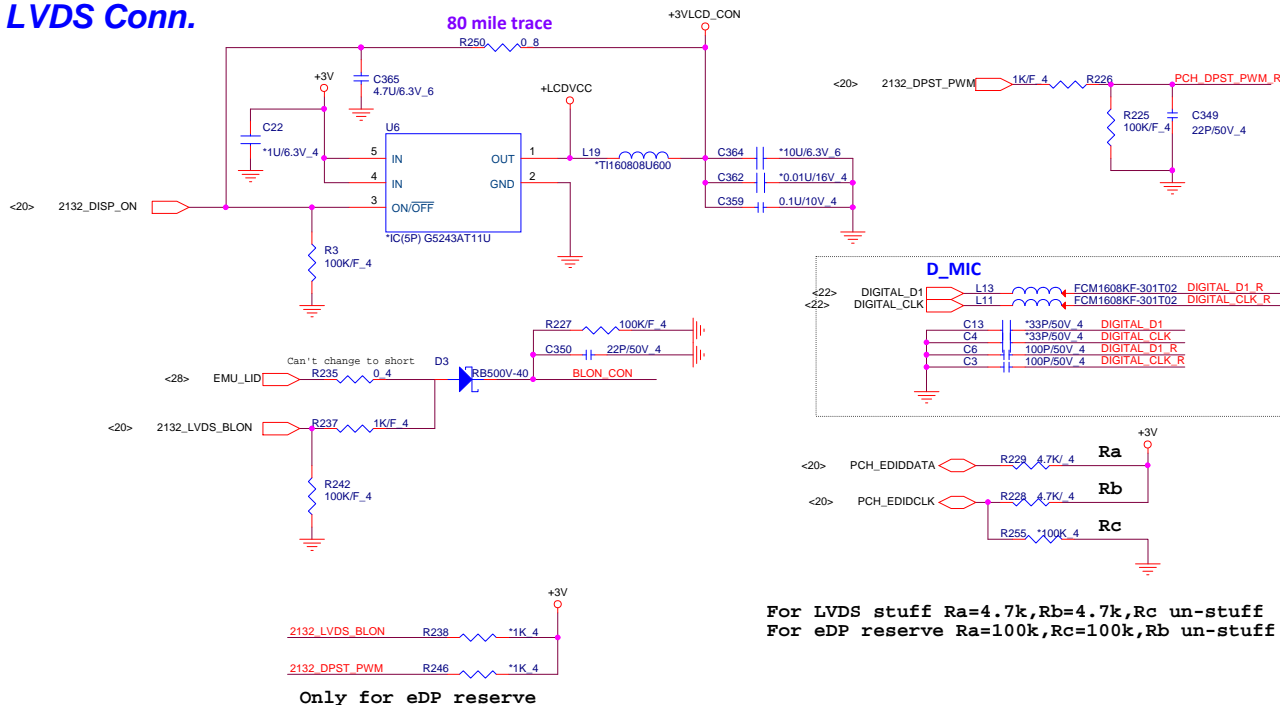
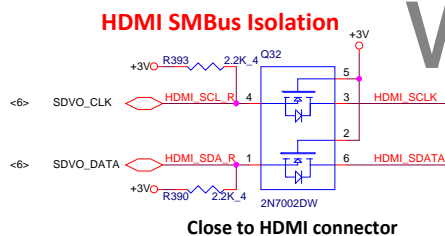


		MODE_CFG0(PIN30)	
		0	1
MODE_CFG1(PIN31)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

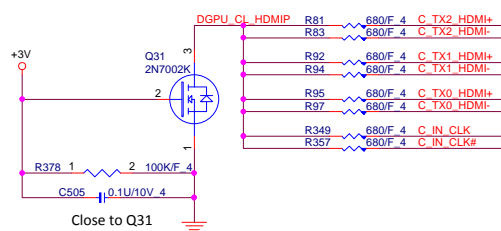


**PROJECT :U83**  
Quanta Computer Inc.

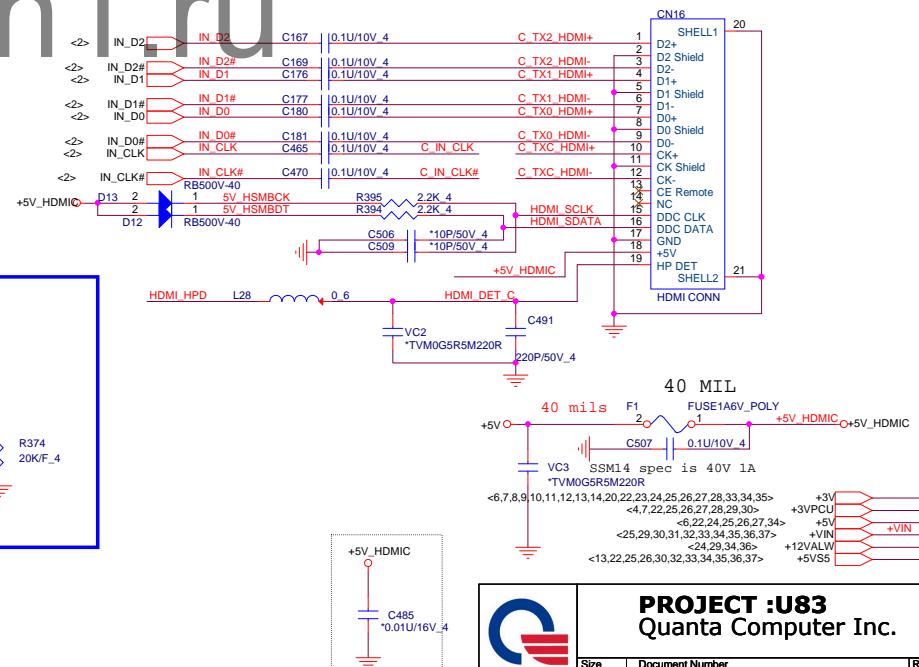
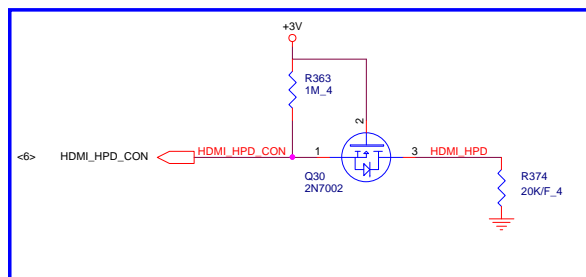
Size Custom	Document Number <b>LVDS converter RTD2132R</b>	Rev 1A
Date: Monday, March 18, 2013	Sheet 20 of 41	

**HDMI Conn.**

**Close to HDMI connector**



Close to Q31



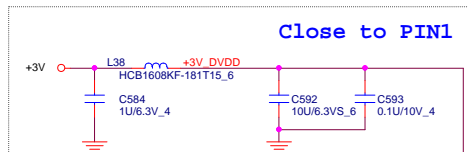
for EMI request



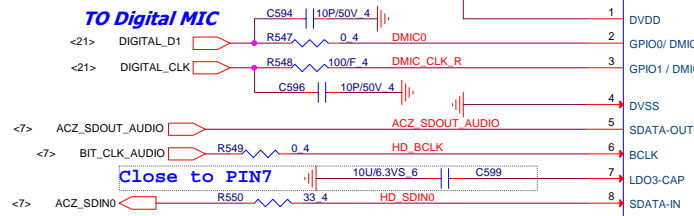
**PROJECT :U83**  
Quanta Computer Inc.

Size Custom	Document Number <b>LCD/HDMI/Camera/D-MIC</b>	Rev 1A
Date: Thursday, March 14, 2013	Sheet 21 of 41	

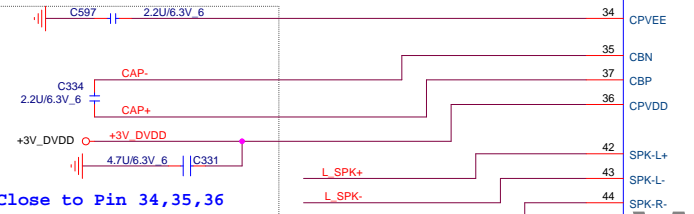
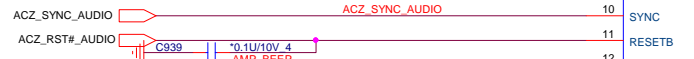
Close to PIN1



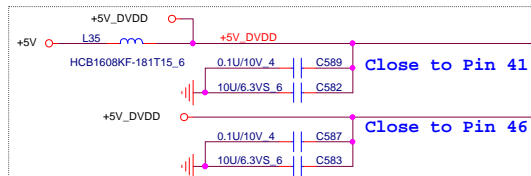
TO Digital MIC



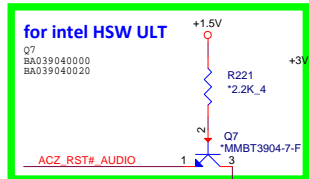
Close to PIN7



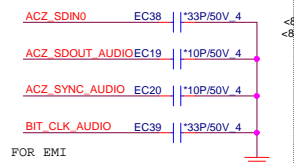
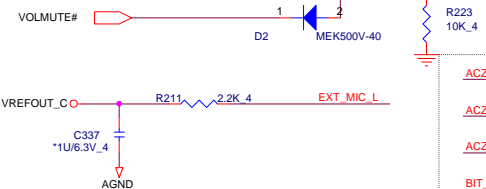
TO Internal Speakers



PD#



USB 2.0 AND AUDIO COMBO JACK

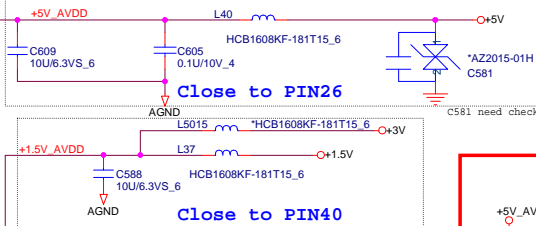
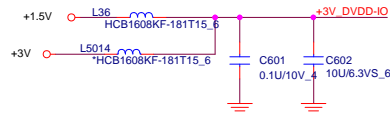


FOR EMI

Analog

Digital

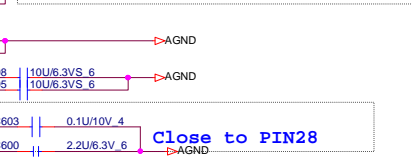
&gt;40mils trace



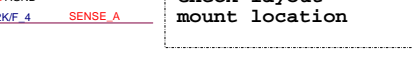
Close to PIN26



Close to PIN40



Close to PIN28

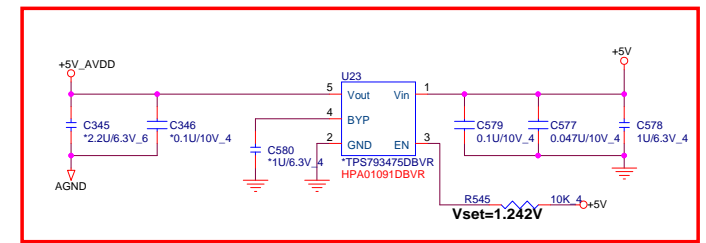
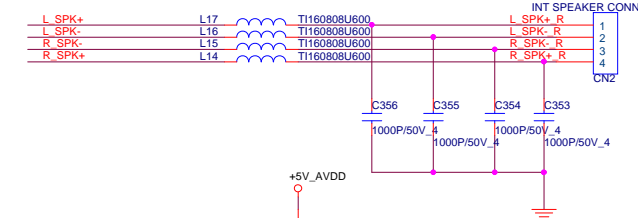
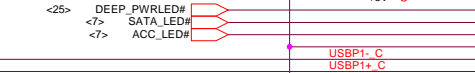
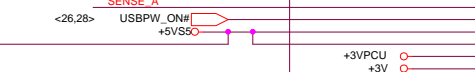
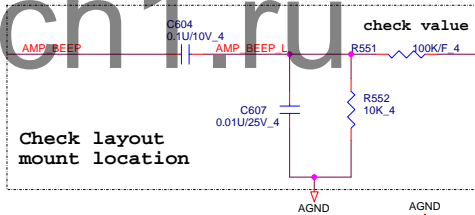


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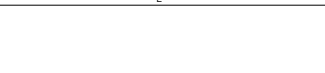
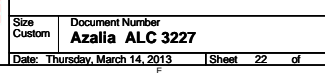
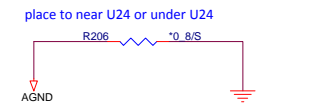
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&lt;6,7,8,9,10,11,12,13,14,20,21,23,24,25,26,27,28,33,34,35&gt;

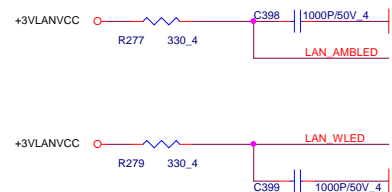
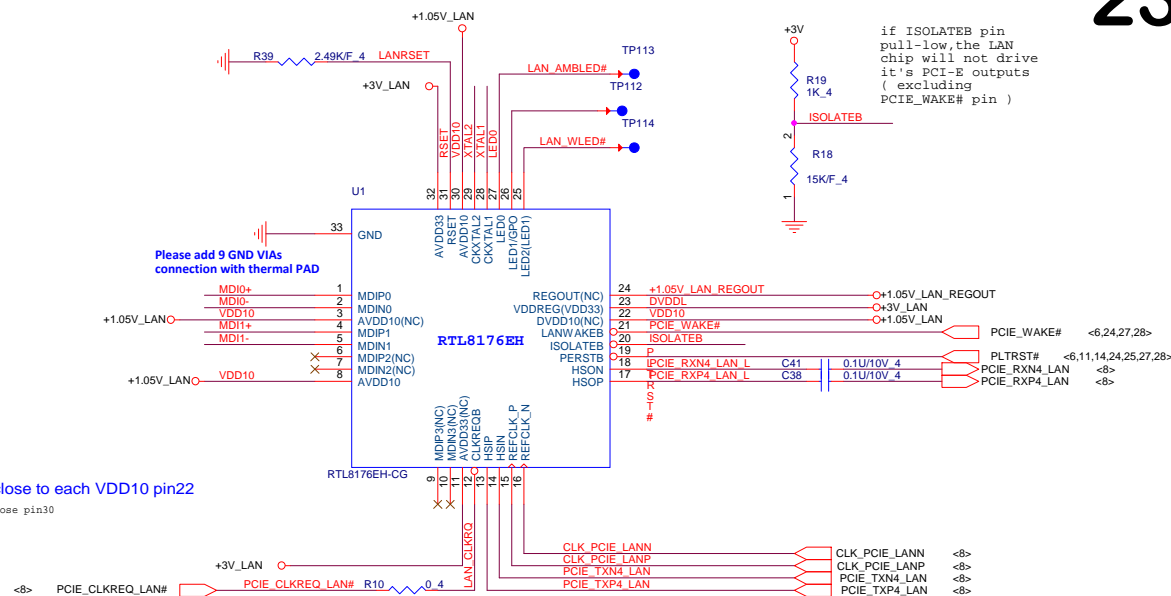
&lt;10,25,27,31&gt;

Close to Speaker  
Speaker 4 ohm: 40milsCheck layout  
mount location

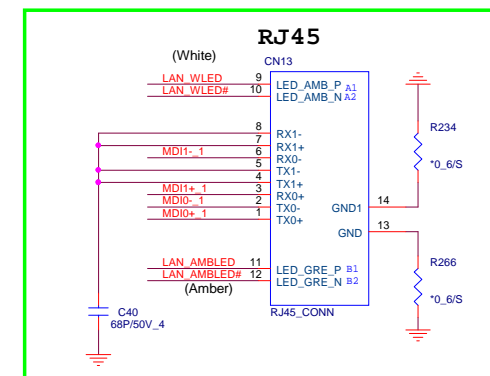
Close to CODEC

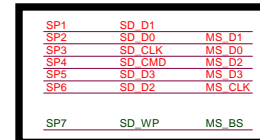
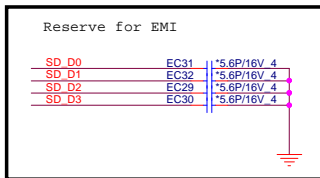
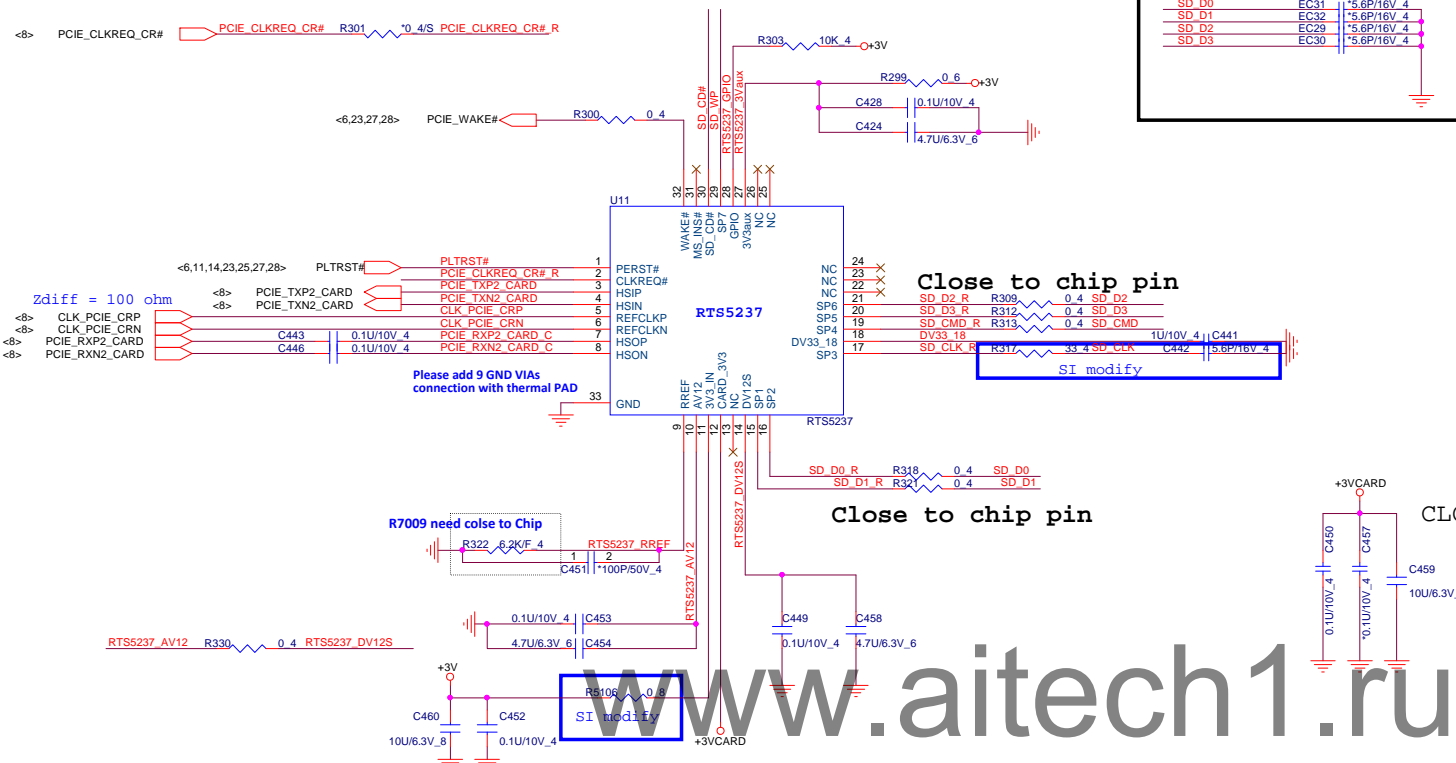






## TWD Type

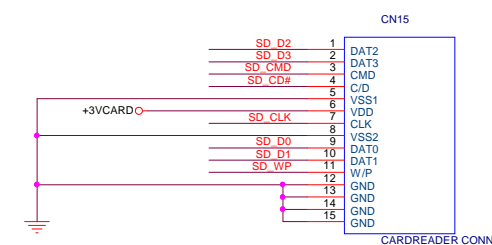




Share Pin

SD / MMC

## CARD READER

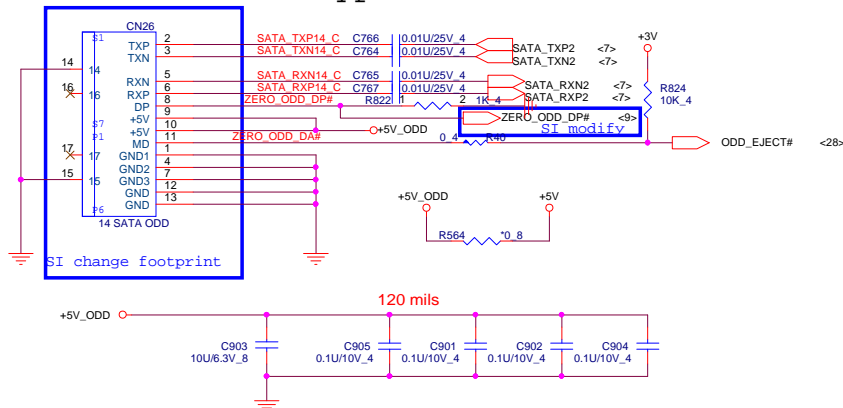


R3X Type

## SATA ODD CONNECTOR

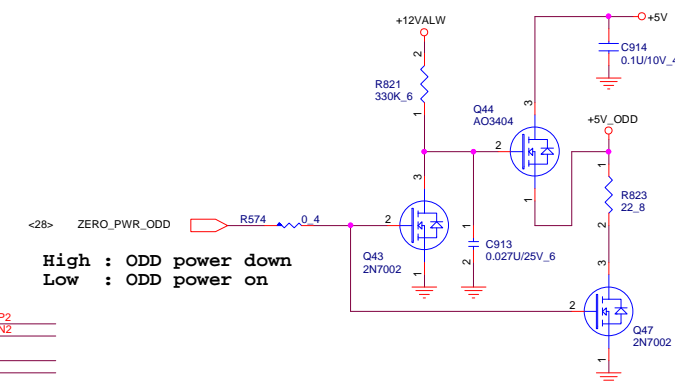
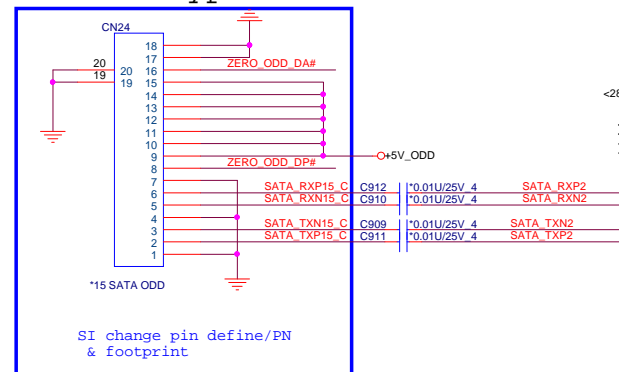
## 14" SATA ODD

Bypass CAP close conn

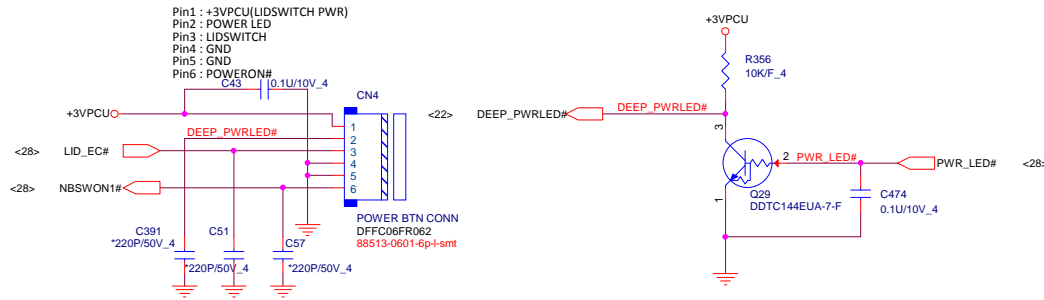


## 15" SATA ODD

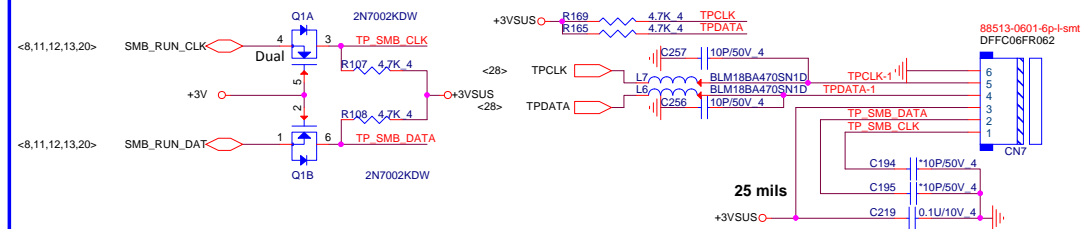
New Type



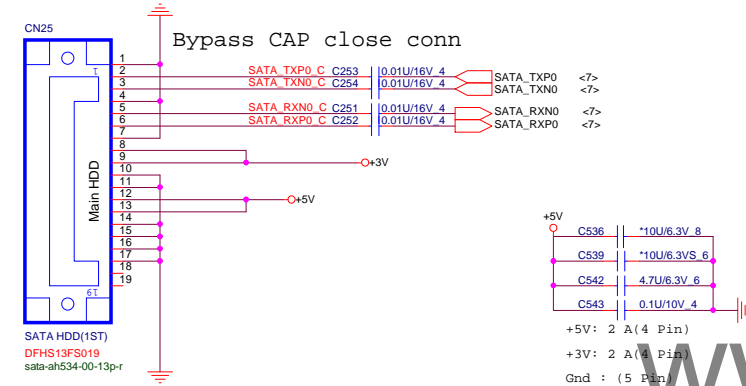
## Power Button Connector



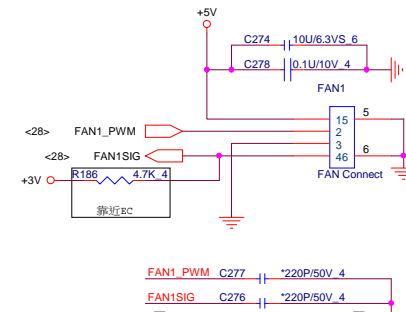
## Touch Pad Connector



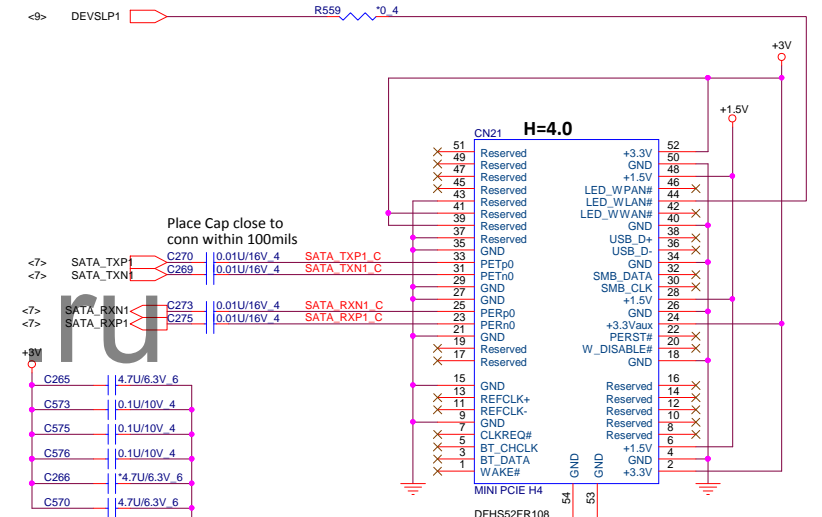
## SATA HDD Connector(Cable type)



## FAN

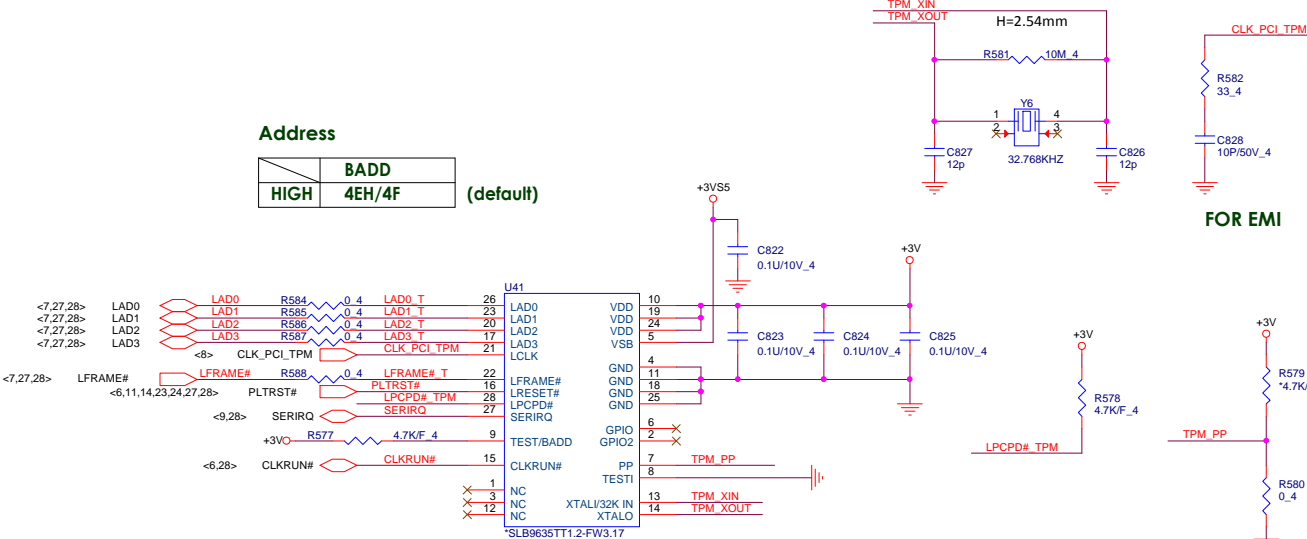


## Mini PCI-E Card 2- Full size mSATA



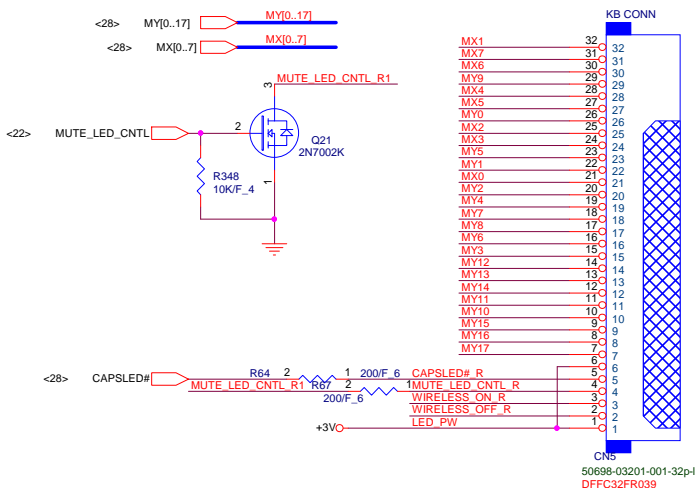
## TPM (1.2)

Address	BADD
HIGH	4EH/4F (default)

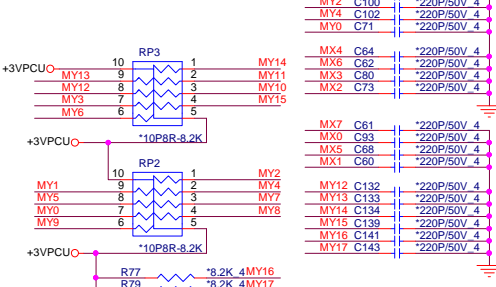


# KEYBOARD Con.

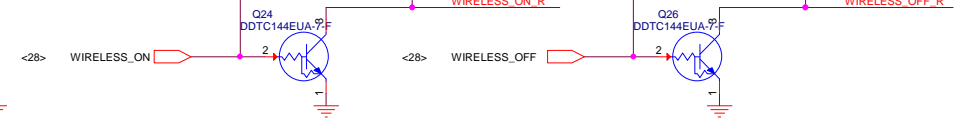
26



## KEYBOARD PULL-UP

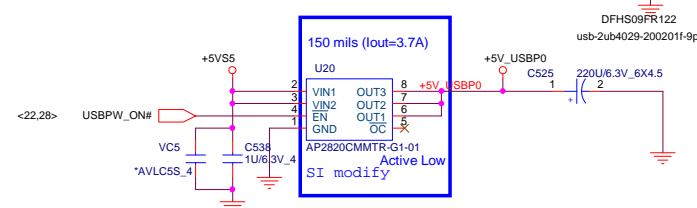
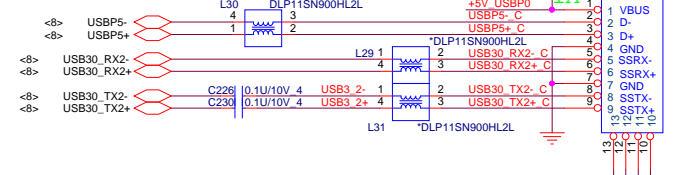
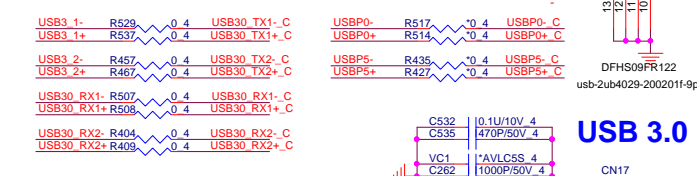
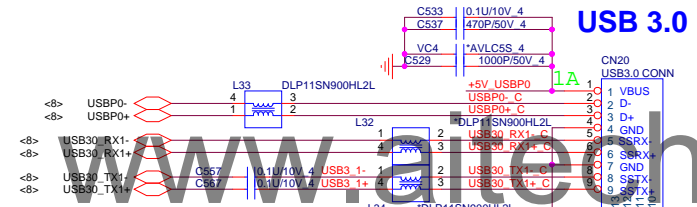
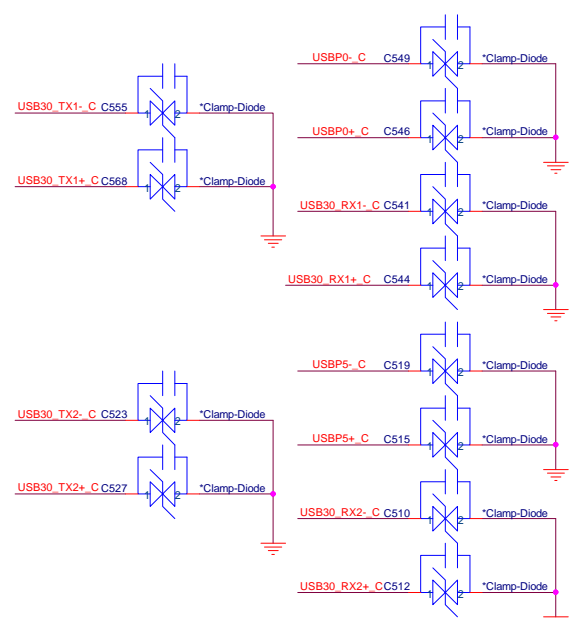


## WIRELESS ON/OFF

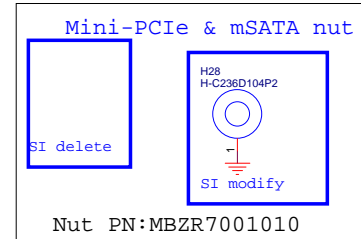
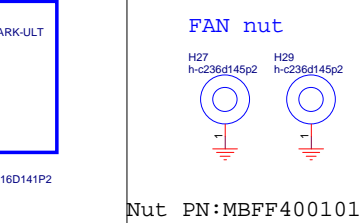
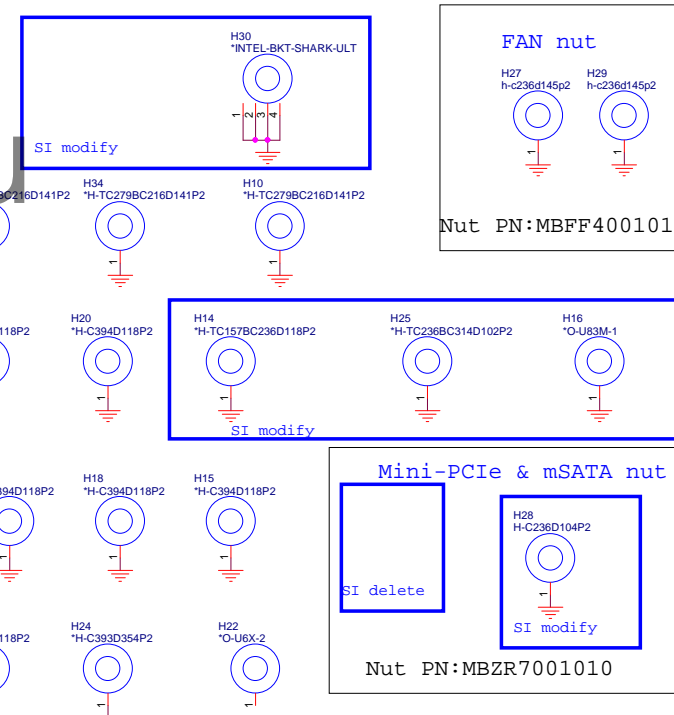


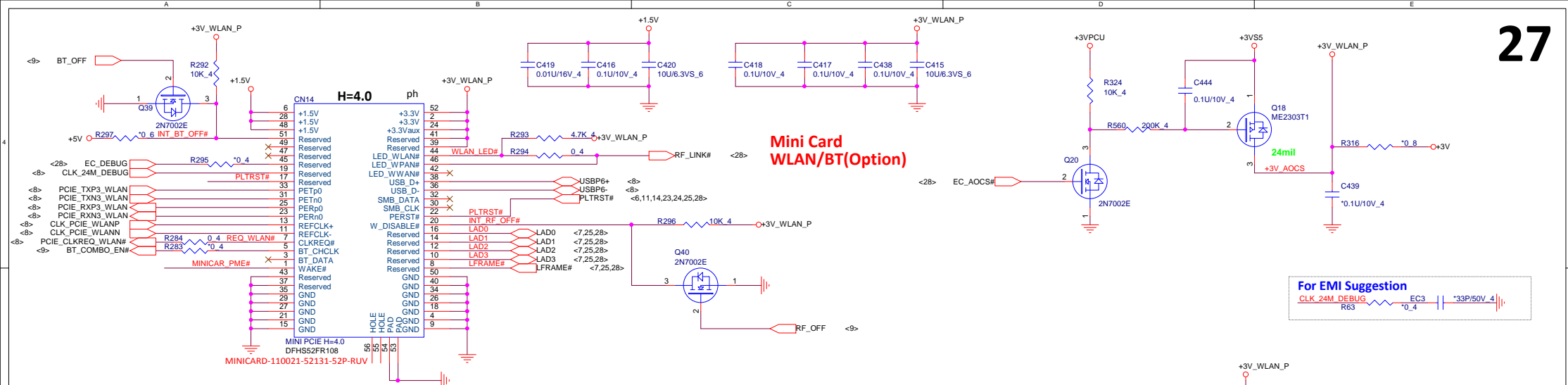
R6X Type

## USB 2.0/3.0 Combo

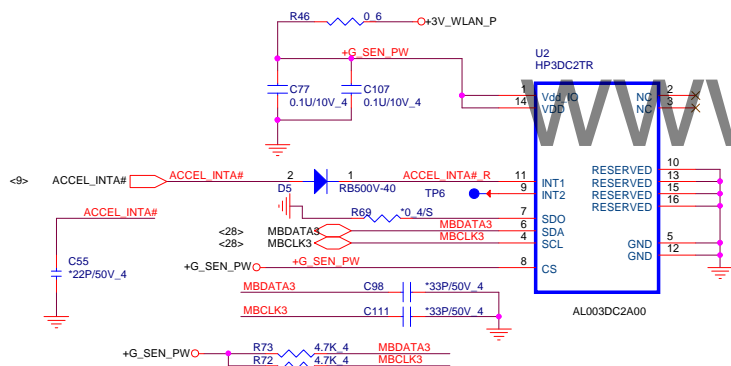


## Hole

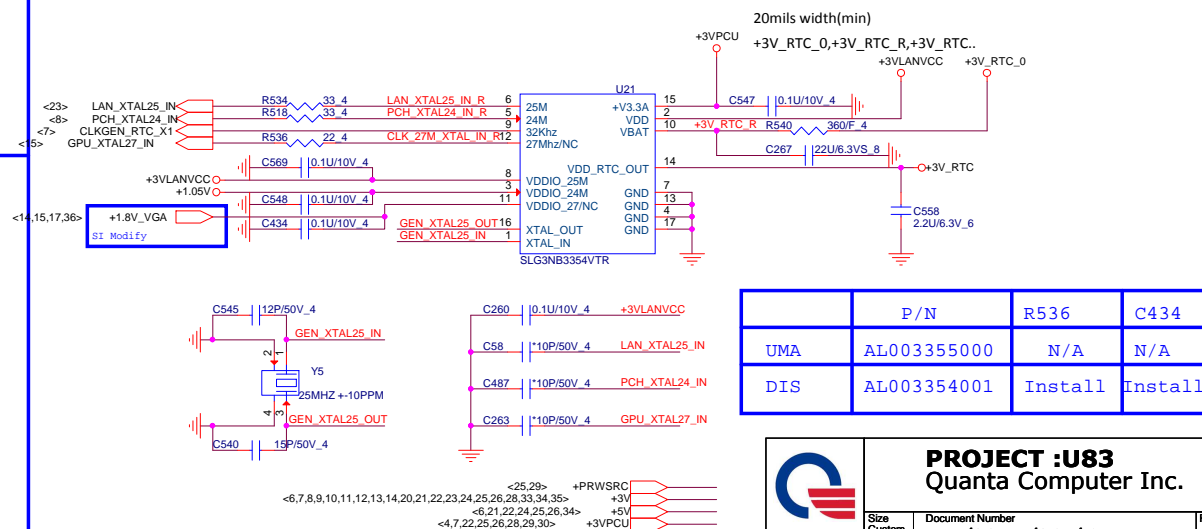




## Accelerometer Sensor

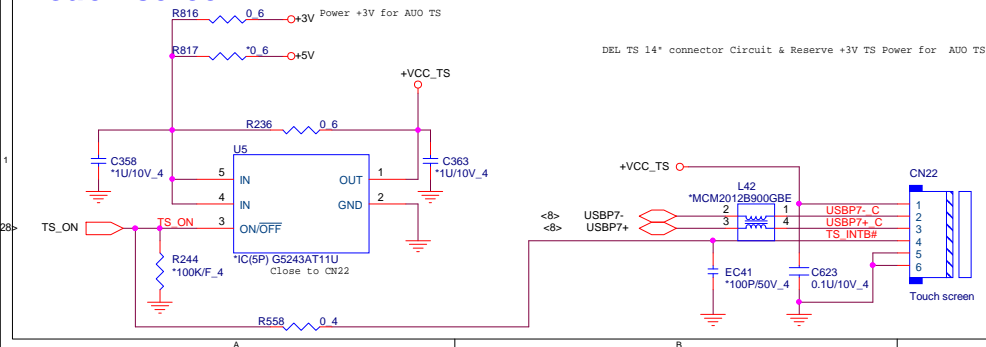


## Green CLK Circuitry

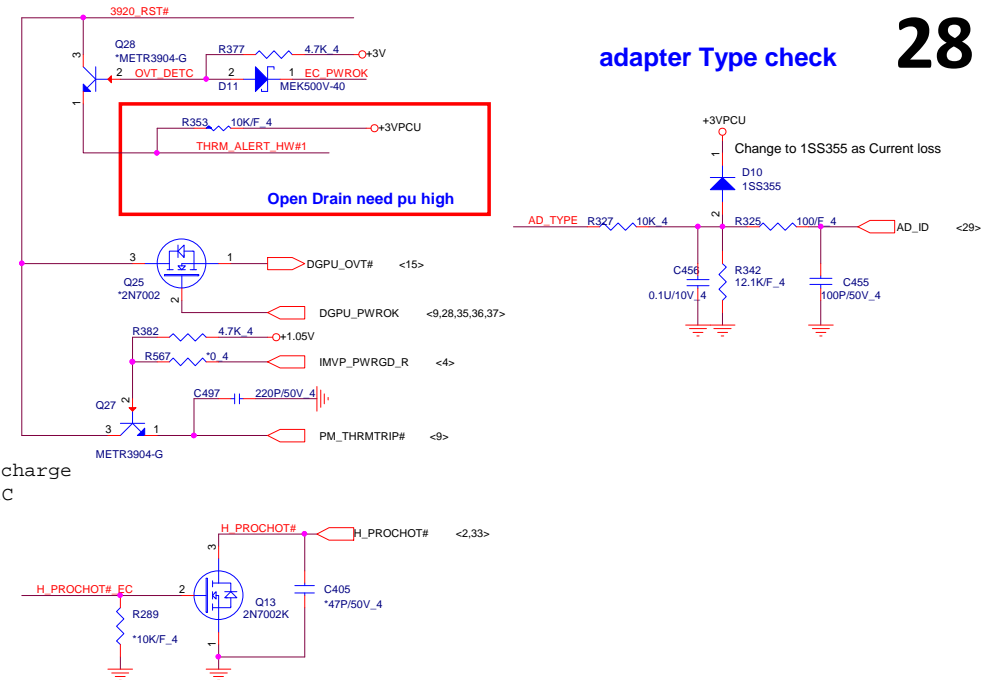


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Size Custom	Document Number WLAN/G-Sensor/G-CLK/TS	Rev 1A	
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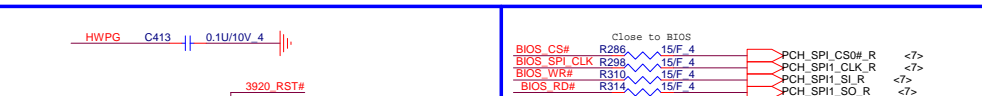
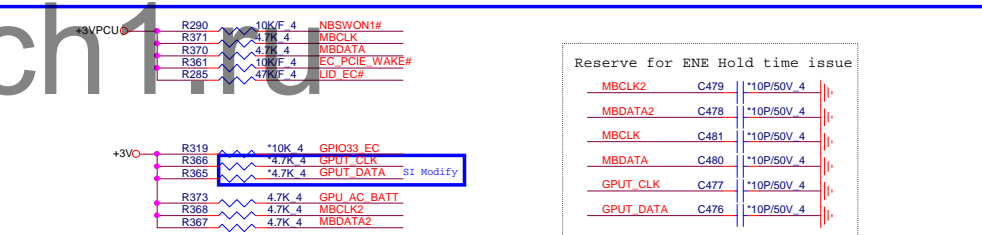
## Touch screen



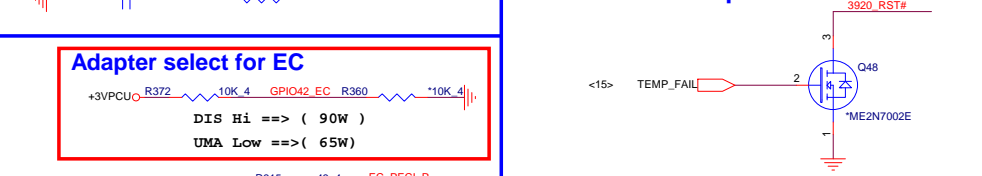
## adapter Type check



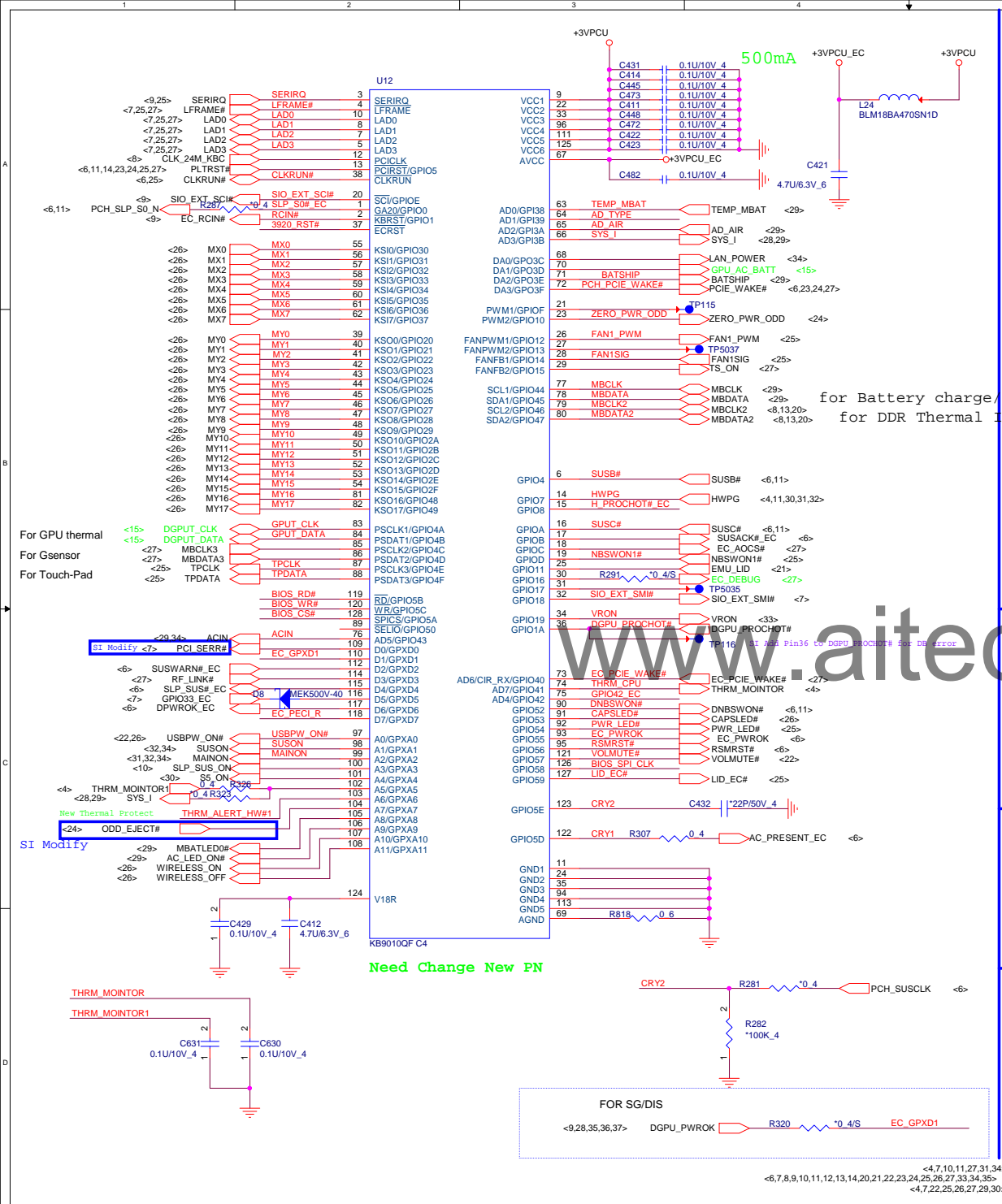
for Battery charge/charge  
for DDR Thermal IC

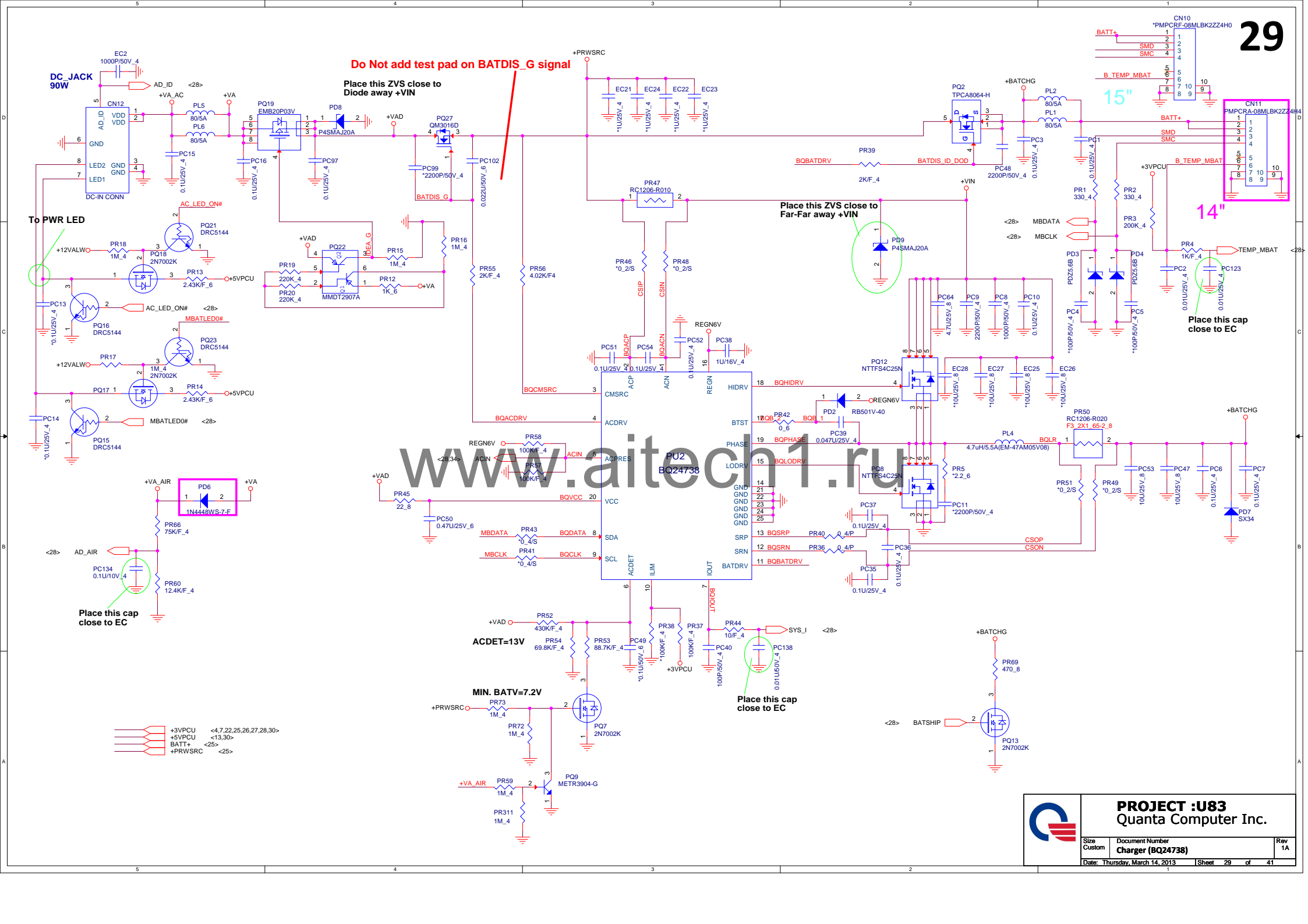


## DGPU Thermal protect

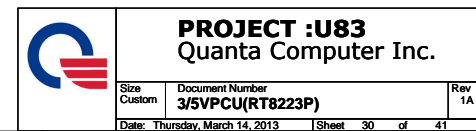


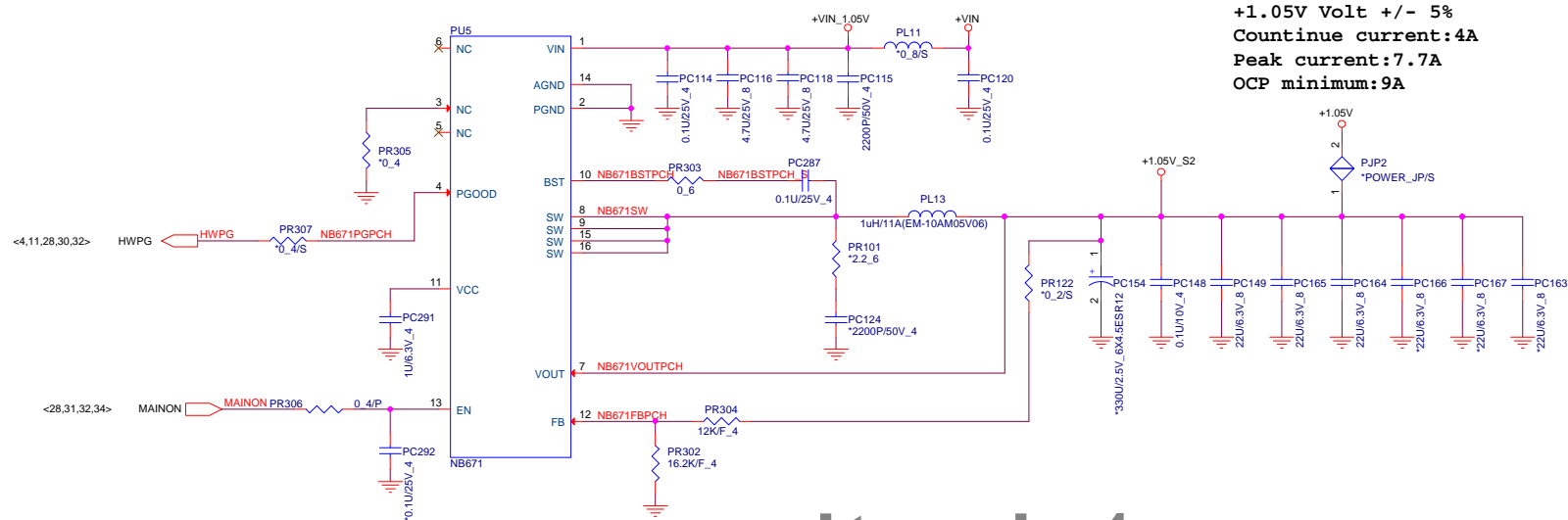
PROJECT :U83		
Quanta Computer Inc.		
Size	Document Number	Rev
Custom	EC (KB9010QF C4)	1A
Date: Thursday, March 14, 2013	Sheet	28 of 41



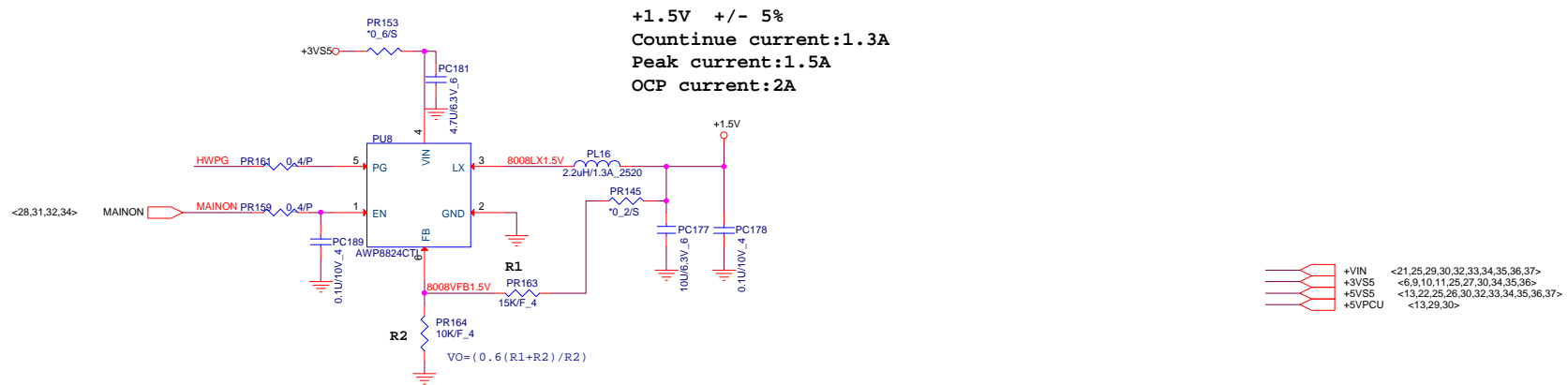


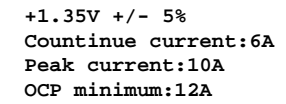






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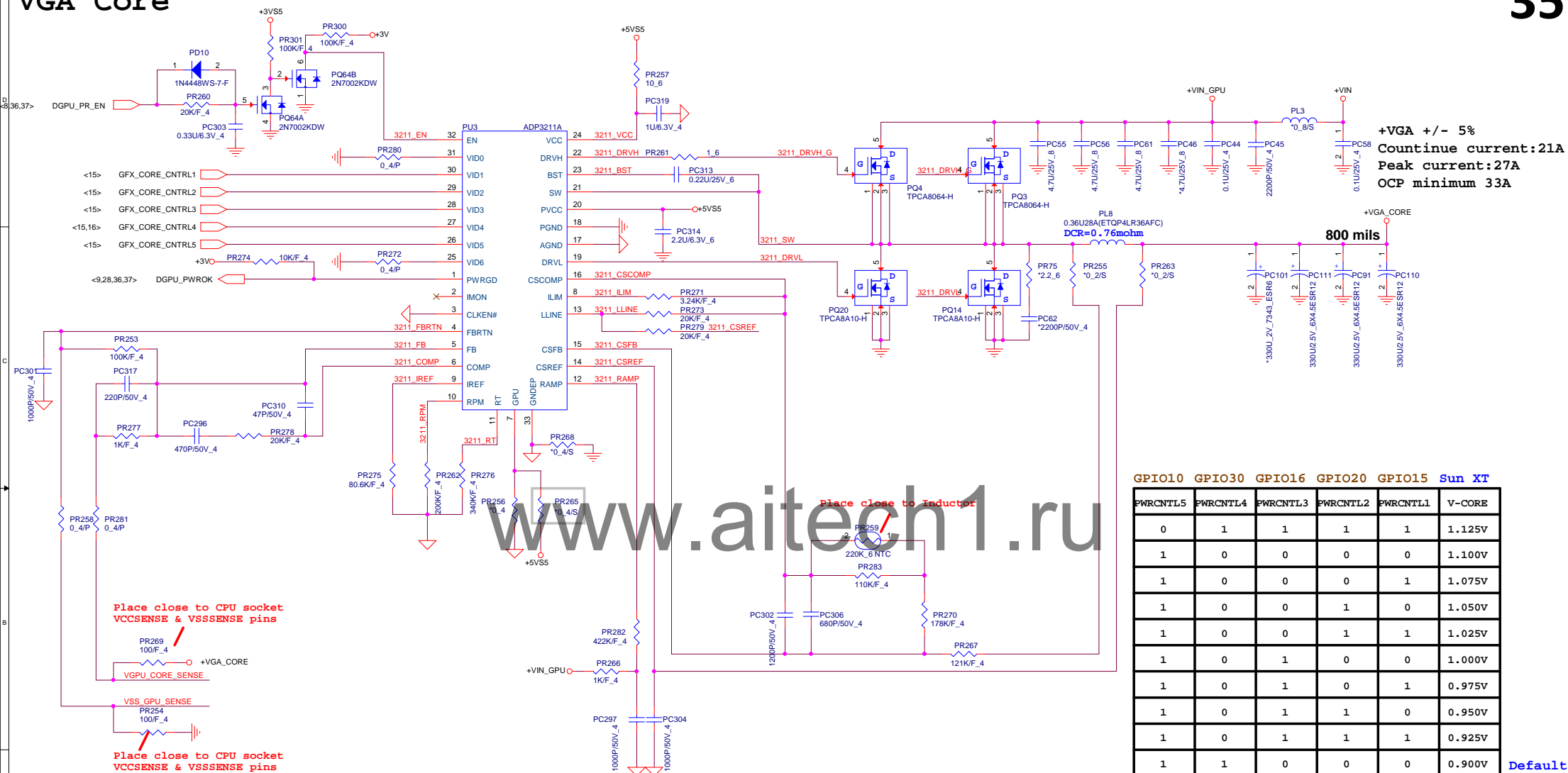






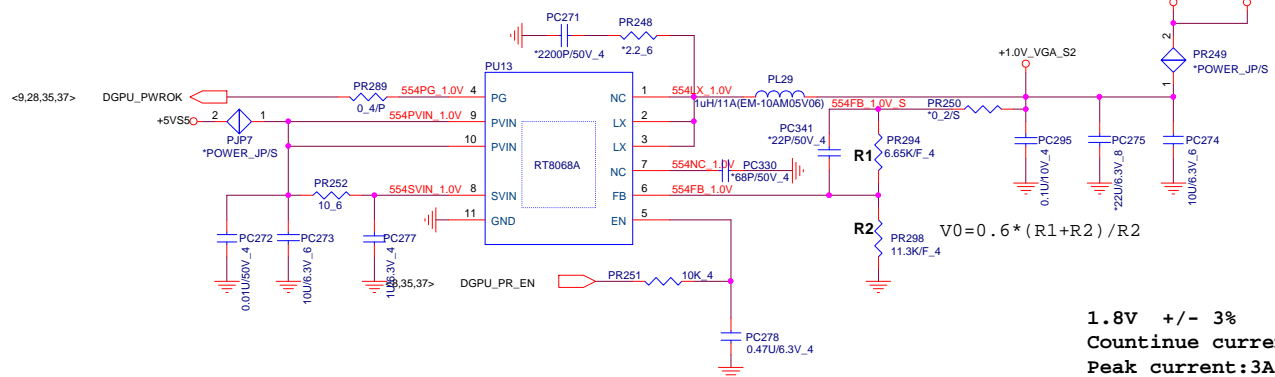


## VGA Core

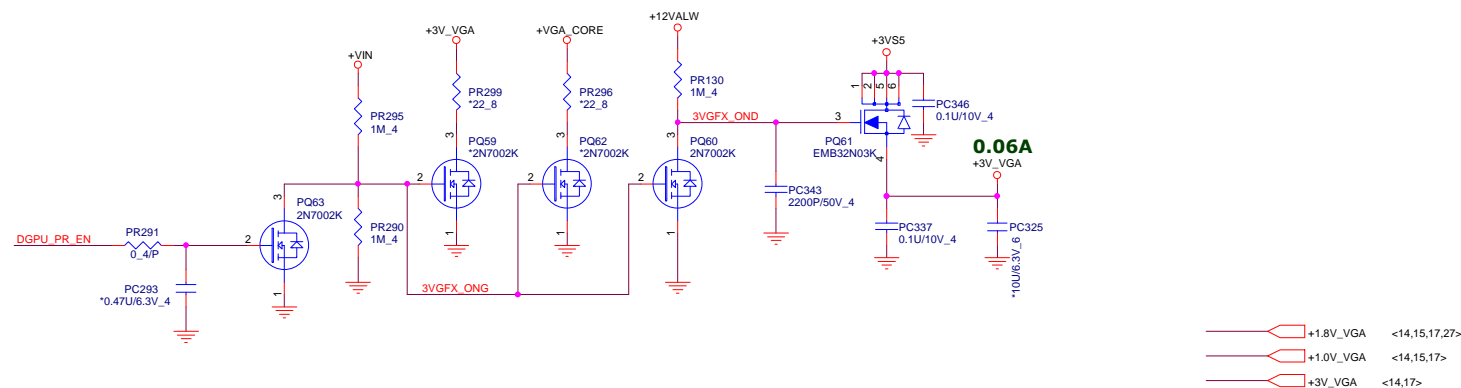
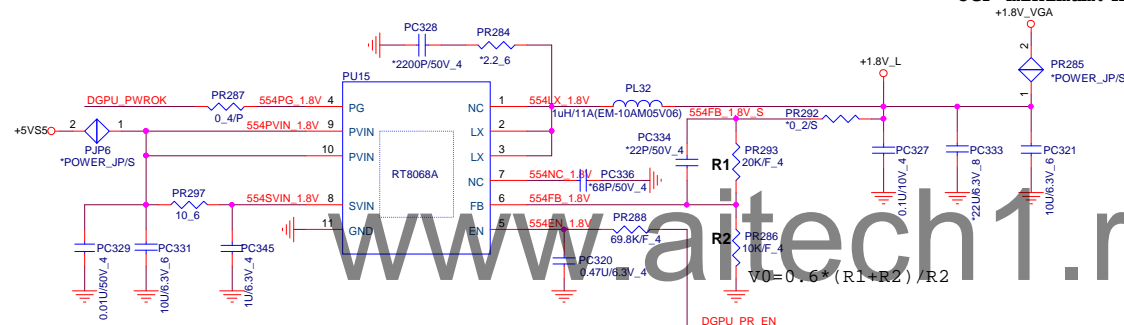


VGA TYPE	R2 Value	P/N	1.0V_VGA
Thems	10K	CS31002FB26	1.0V
MARS	11.3K	CS31132FB07	0.95V

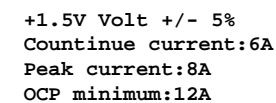
+0.95V +/- 3%  
 Countinue current:2A  
 Peak current:3A  
 OCP minimum:4A



1.8V +/- 3%  
 Countinue current:2A  
 Peak current:3A  
 OCP minimum:4A







USB3.0	Port Assignment	Power control pin
PORT1	USB2.0/USB3.0 COMBO 1st	USBPW_ON#(from EC)
PORT2	USB2.0/USB3.0 COMBO 2nd	USBPW_ON#(from EC)
PORT3	NC	N/A
PORT4	NC	N/A

USB2.0	Port Assignment	Power control pin
PORT0	USB2.0/USB3.0 COMBO 1st	USBPW_ON#(from EC)
PORT1	USB2.0/USB3.0 COMBO 2nd	USBPW_ON#(from EC)
PORT2	Camera	N/A
PORT3	NC	N/A
PORT4	NC	N/A
PORT5	Left side USB daughter B	USBPW_ON#(from EC)
PORT6	WLAN	N/A
PORT7	Touch Screen 15" used	TS_ON(from EC)

SATA Master	Port Assignment	Power control pin
SATA0	HDD	N/A
SATA1	mSATA	N/A
SATA2	NC	N/A
SATA3/PCIE	Card reader	N/A

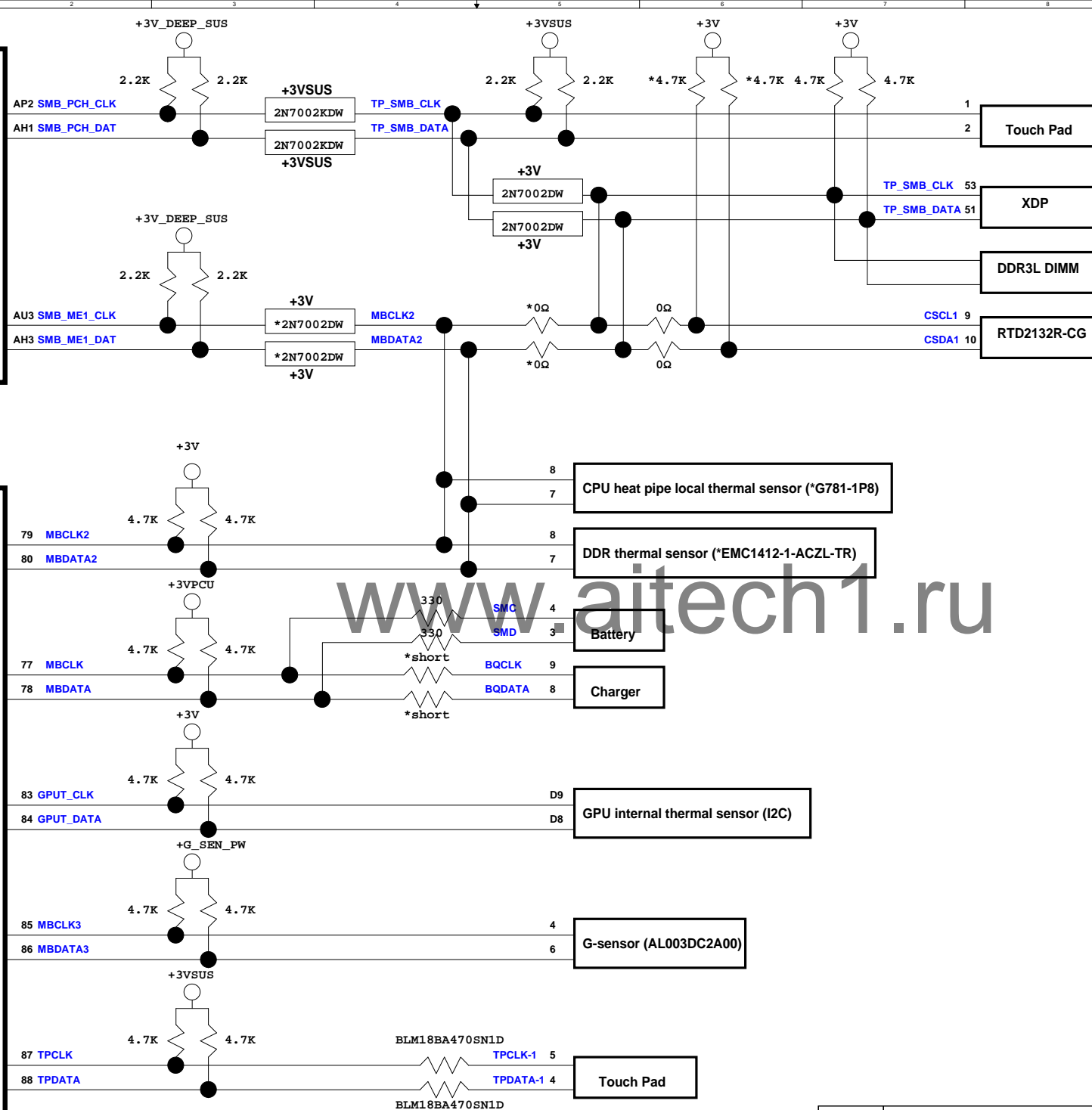
PCIE	Port Assignment	Control pin
PCIE 5_L0	PEG0	
PCIE 5_L1	PEG1	
PCIE 5_L2	PEG2	
PCIE 5_L3	PEG3	
PCIE 1	NC	
PCIE 2	NC	
PCIE 3	WLAN	
PCIE 4	LAN	

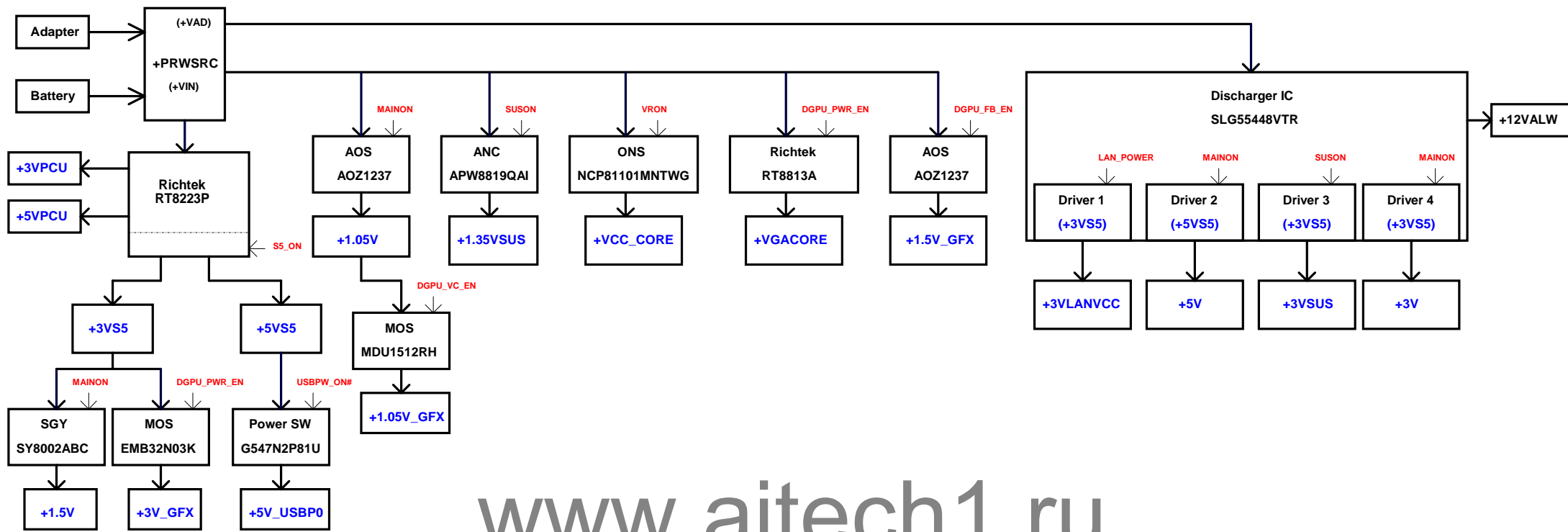


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Quanta Computer Inc.

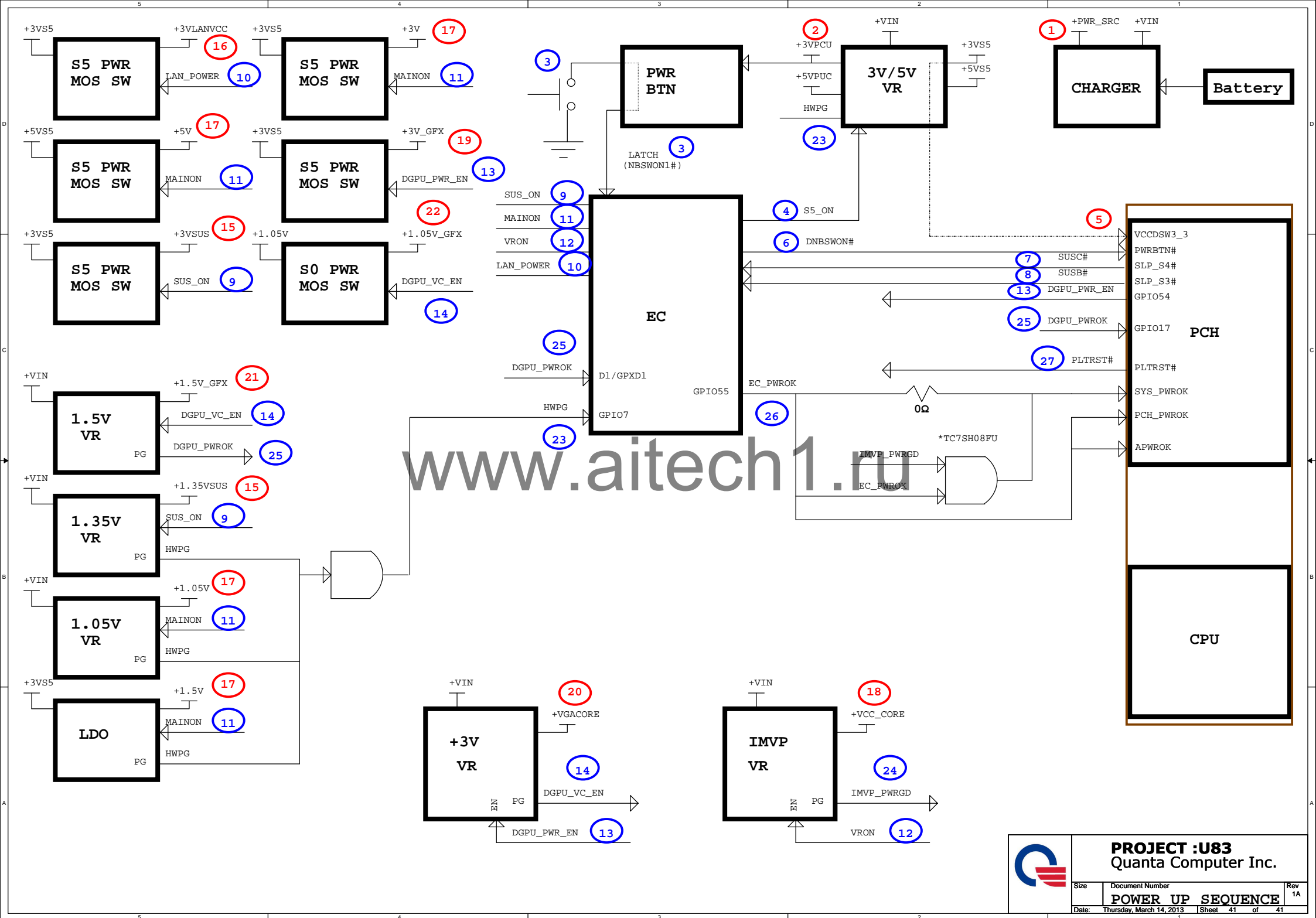
Haswell  
ULT

EC  
KB9010QF





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	<b>POWER UP SEQUENCE</b>	1A
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