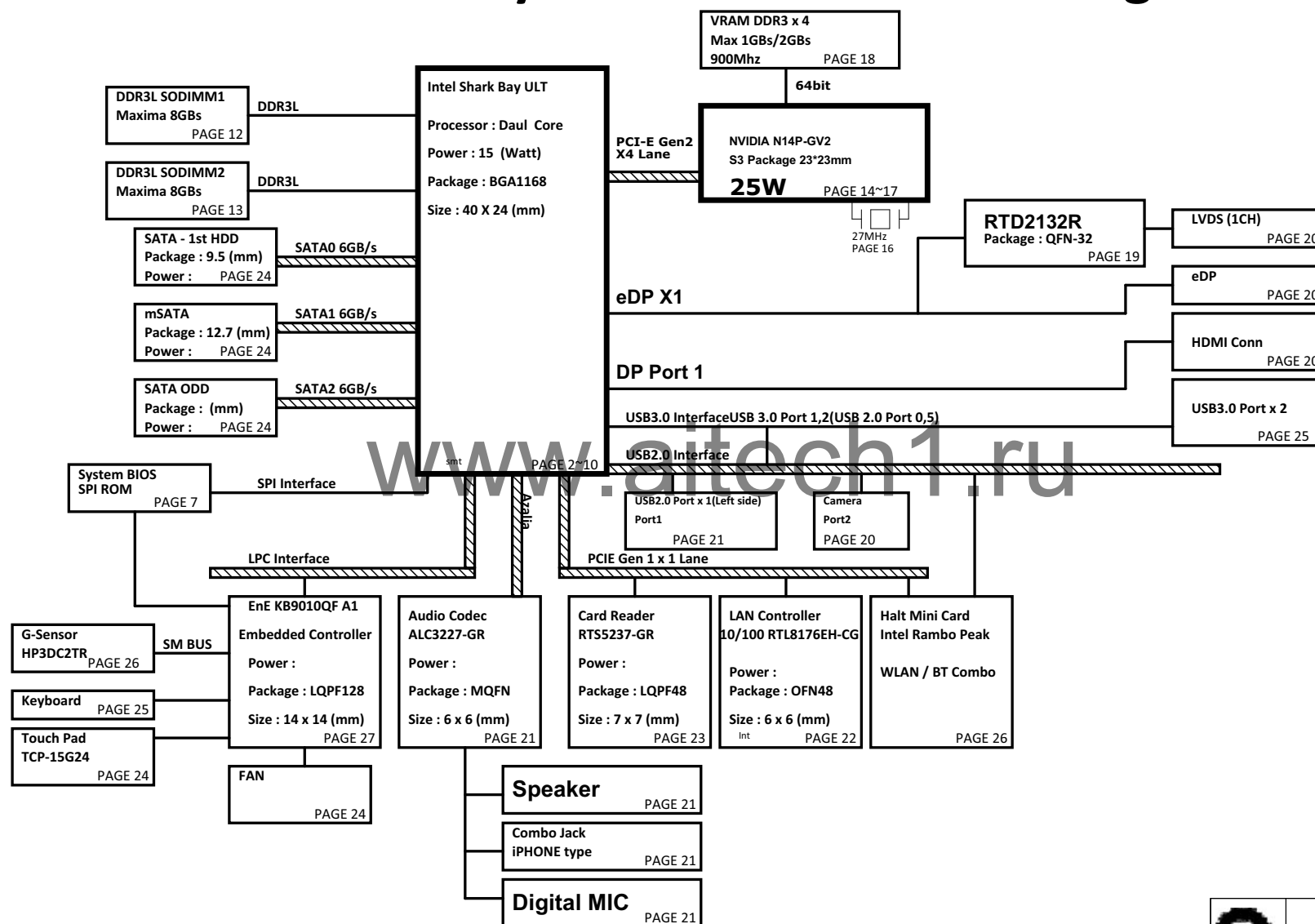


# U82 DIS (14"/15.6") Ultra/Slim Intel Shark Bay ULT Platform Block Diagram

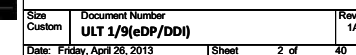
PCB 6L STACK UP

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

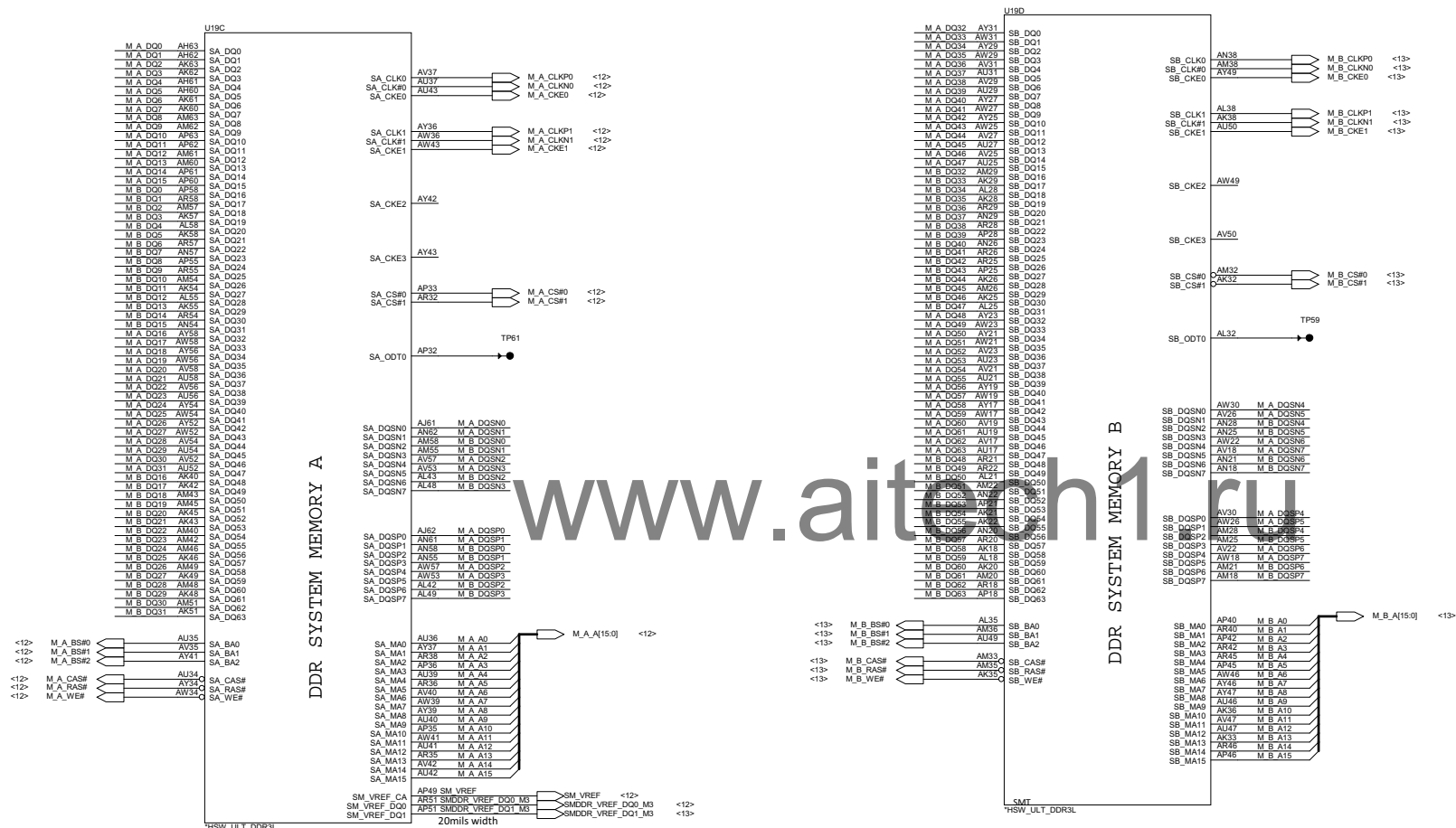


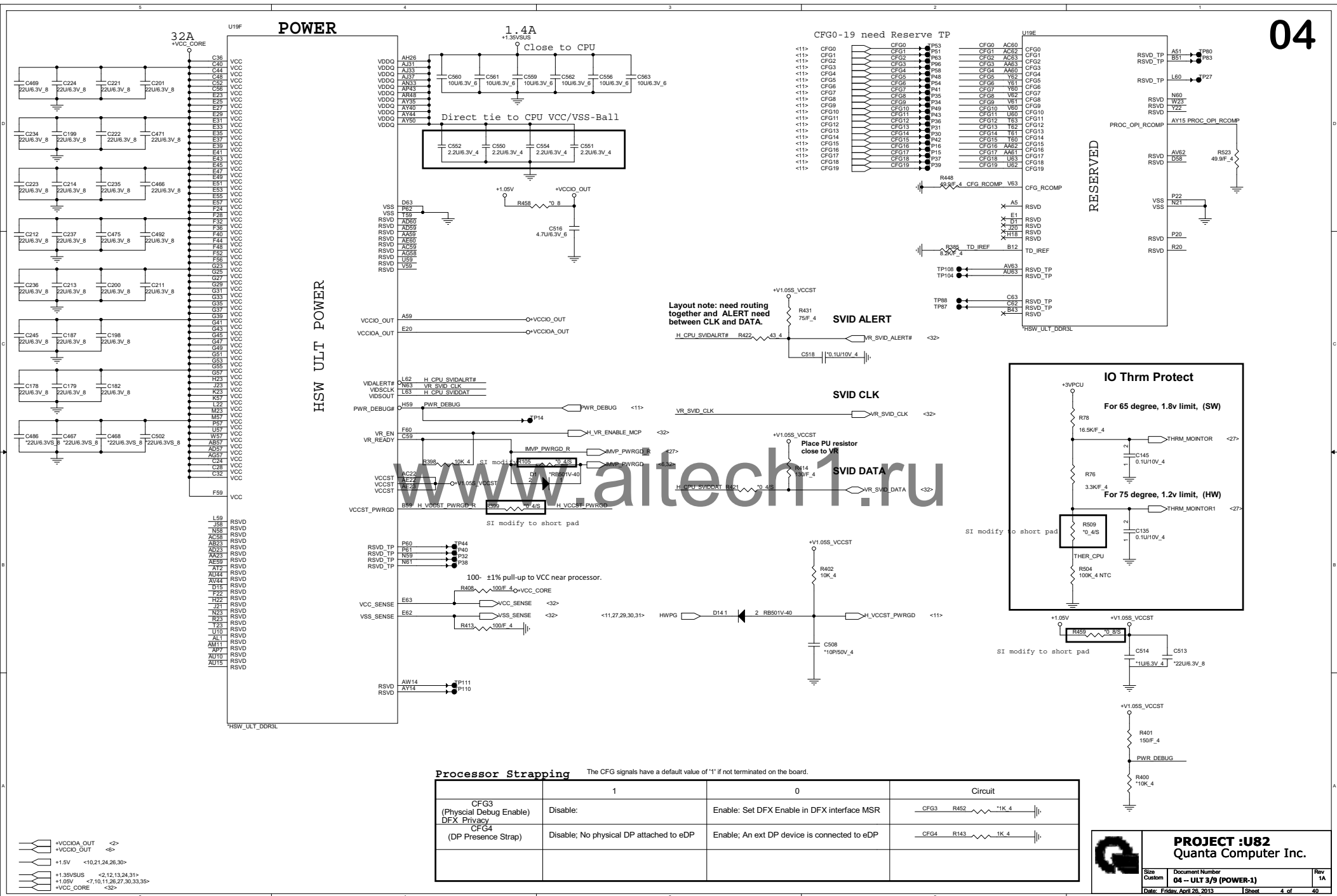
**PROJECT :U82**  
Quanta Computer Inc.

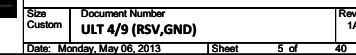
Size Custom	Document Number <b>Block Diagram</b>	Rev 1A
Date: Monday, May 06, 2013	Sheet	1 of 40

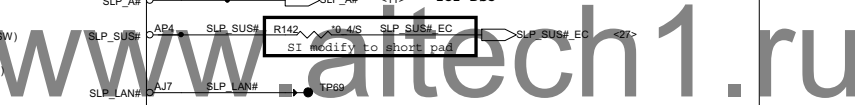


## Haswell ULT Processor (DDR3L)

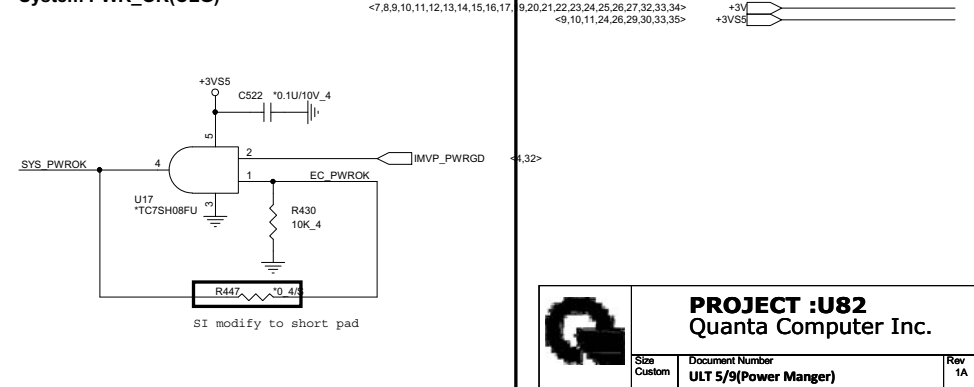






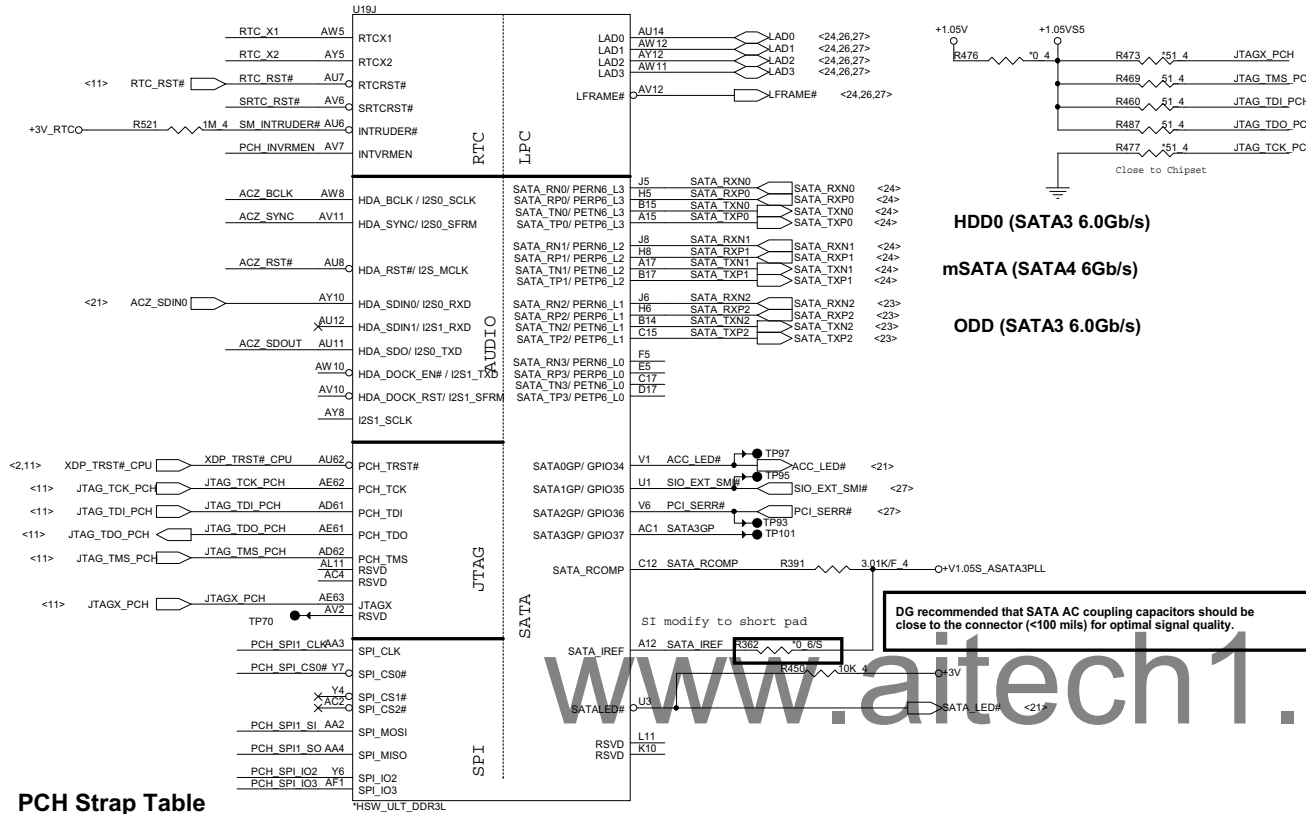


<7,8,9,10,11,12,13,14,15,16,17, 9,20,21,22,23,24,25,26,27,32,33,34>  
<9,10,11,24,26,29,30,33,35>

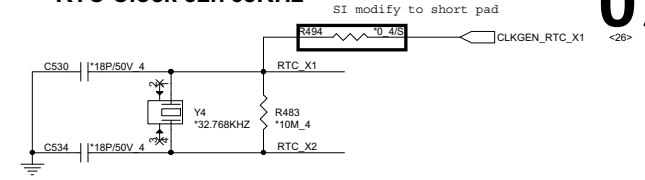


Size Custom	Document Number <b>ULT 5/9(Power Manger)</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet	6 of 40

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

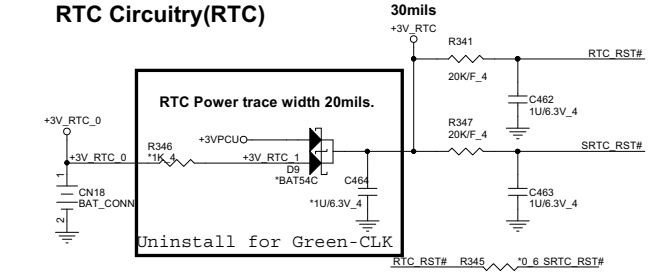


## RTC Clock 32.768KHz

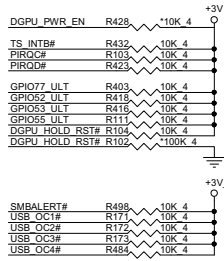


no stuff if use green Clock

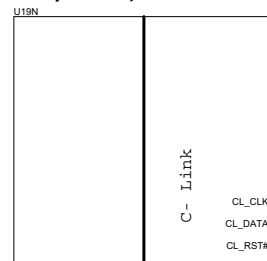
## RTC Circuitry(RTC)



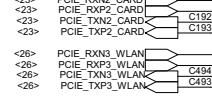
### PCI/USB0C# Pull-up(CLG)



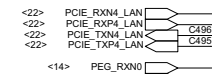
Lynx Point-LP Platform Controller Hub  
(HDA, JTAG, SATA)



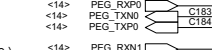
**Cardreader**



## WLAN



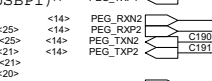
## LAN



**USB2.0(M/B-1) (USBP0)**

USB2.0/USB3.0 COMBO 1st  
USB2.0 Small board (TIS)

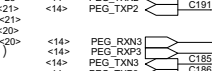
## USB2.0/USB3.0 COMBO 2nd



AN8  
AM8

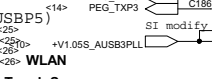
USBP0- <25  
USBP0+ <25

AR7		USBP1-	<21
AT7		USBP1+	<21

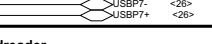


AR10	Camera (USBP2)
AT10	
AT15	

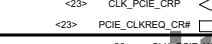
AM15  
AL15



## Touch Screen



## ST modify



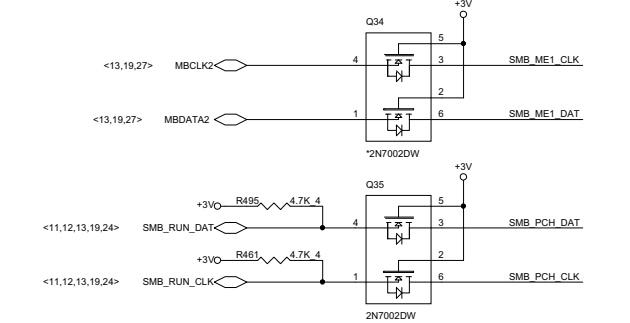
## WLAN



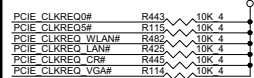
22

SI modify       

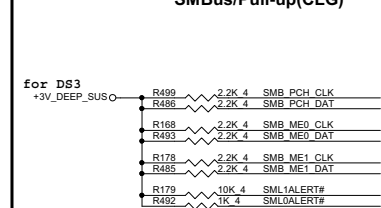
### SMBus/Pull-up(CLG)



CLK_REQ/Strap Pin(CLG)	+3
------------------------	----



## SMBus/Pull-up(C1 G)

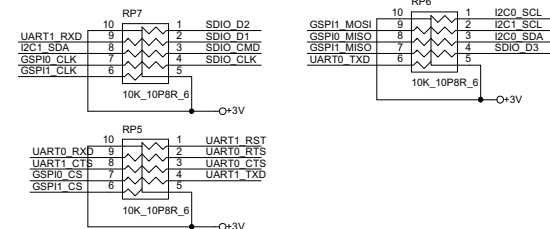


**PROJECT :U82**  
Quanta Computer Inc.

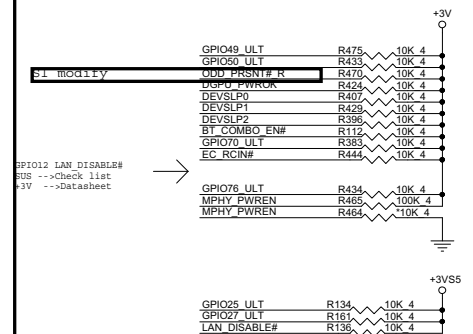
Size Custom	Document Number <b>ULT 7/9 (PCIE/USB/CLK)</b>	Rev 1/
Date: Friday, April 26, 2013	Sheet	8 of 40



## 09



SIO_EXT_SC1#	R174	10K 4
BT_OFF	R177	10K 4
RF_OFF	R139	10K 4
GPIO13_ULT	R176	10K 4
GPIO14_ULT	R489	10K 4
GPIO24_ULT	R488	10K 4
GPIO26_ULT	R180	10K 4
GPIO28_ULT	R126	10K 4
GPIO44_ULT	R491	10K 4
ACCEL_INTA#	R490	10K 4



PM\_THRMTRIP# R135 1K 4 +V1.05S\_VCCST

		DIS
Stuff	Ra	
NC	Rb	

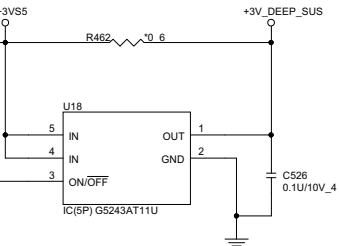
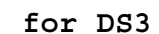
	DIS	UMA
Stuff	Ra	Rb
NC	Rb	Ra

<6,7,8,10,11,12,13,14,15,16,17,19,20,21,22,23,24,25,26,27,32,33,34> +3V  
<6,10,11,24,26,29,30,33,35> +3VS5



**PROJECT :U82**  
Quanta Computer Inc.

Size Custom	Document Number <b>ULT 8/9 (GPIO/MISC)</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet	9 of 40



<6,7,8,9,11,12,13,14,15,16,17,19,20,21,22,23,24,25,26,27,32,33,34> +3V  
 <6,20,21,23,24,25,26,33> +5V <<> <> +V1\_05S\_AUSB3PLL  
 <4,7,11,26,27,30,33,35> +1.05V <<> <> +V1\_05S\_ASATA3PLL  
 <6,9,11,24,26,29,30,33,35> +3VS5 <<> <> +V1\_05S\_AXCK\_LCPPLL  
 <13,21,24,25,29,31,32,33,34,36> +5VS5 <2,4,12,13,24,31> <7,26> +3V\_RTC  
 +1.35VSUS

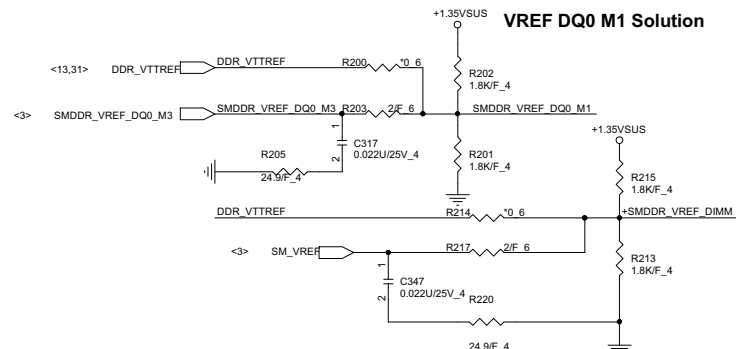
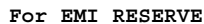


**PROJECT :U82**  
Quanta Computer Inc.

Size Custom	Document Number <b>ULT 9/9(Power-2)</b>	Rev 1A
Date: Monday, May 06, 2013	Sheet	10 of 40

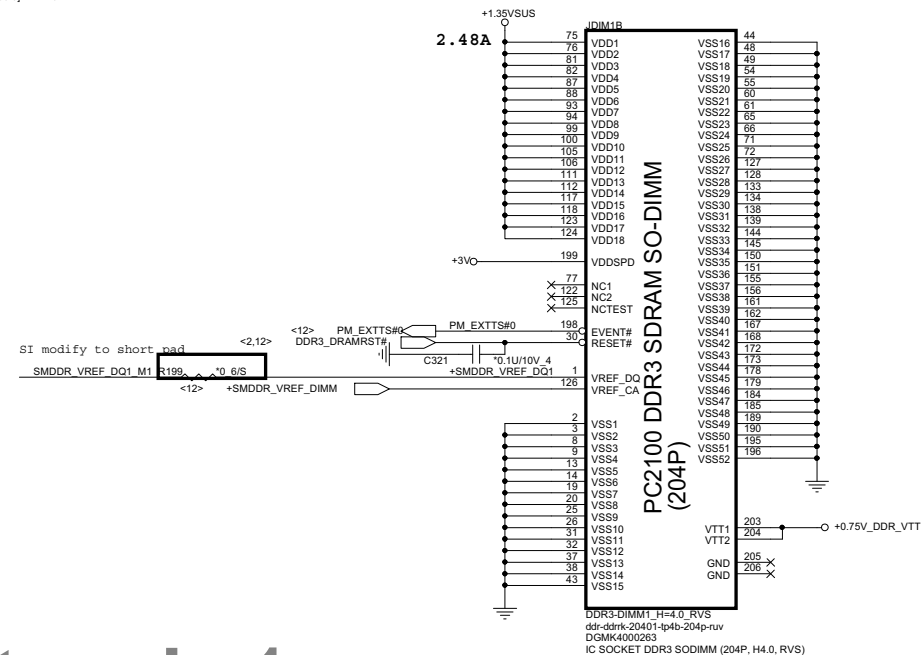


Friday, April 28, 2017	Shadet	60
------------------------	--------	----

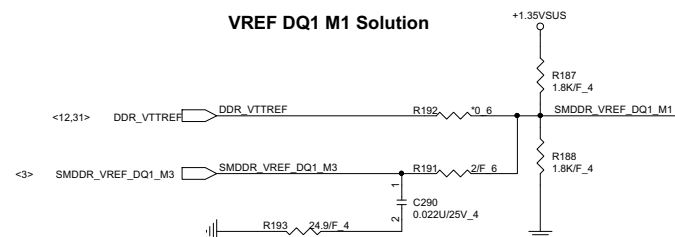
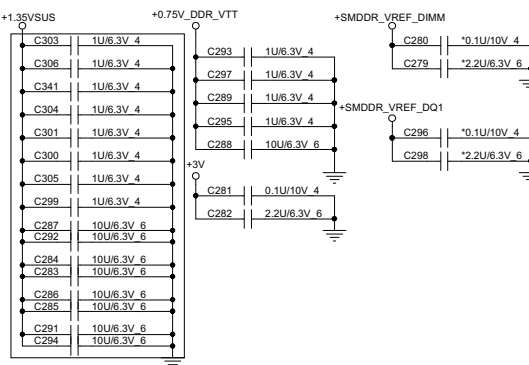
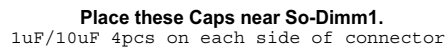
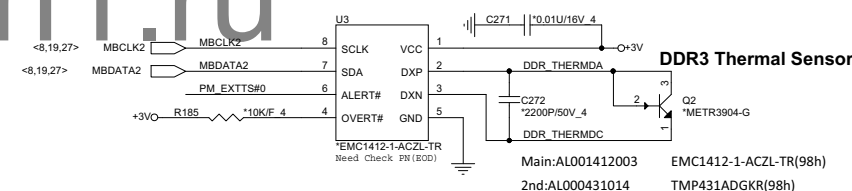


**PROJECT :U82**  
Quanta Computer Inc.

Size Custom	Document Number <b>DDR3 DIMM0-STD(4.0H)</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet	12 of 40

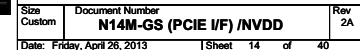


## Local Thermal Sensor



**PROJECT :U82**  
Quanta Computer Inc.

Size Custom	Document Number <b>DDR3 DIMM1-RVS(4.0H)</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet	13 of 40

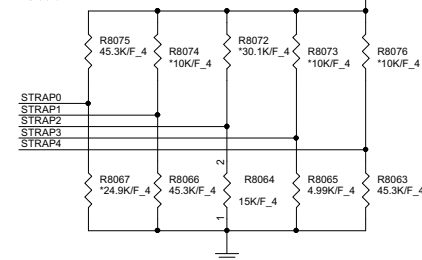
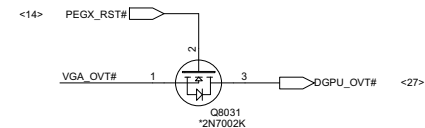
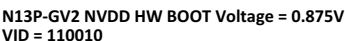




Size Custom	Document Number <b>N14M-GS (MEMORY/GND)</b>	Rev 2A
Date: Monday, May 06, 2013	Sheet 15 of 40	







RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	QCI P/N	
0000					
0000	DDR3 128Mx16x4, 64bit, 2Gb, 500MHz	Micron	MT41J128M16JT-107G:K	AKD5MGSTL06	AKD5MGSTL08
0001	DDR3 128Mx16x4, 64bit, 2Gb, 500MHz		H5TQ2G63D8R	AKD5MGWTW16	AKD5MGWTW13
0111	DDR3 128Mx16x4, 64bit, 2Gb, 500MHz	SAMSUNG	K4W2G1646E-BC11	AKD5MGGT520	AKD5MGGT522

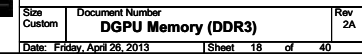
## GPIO ASSIGNMENTS

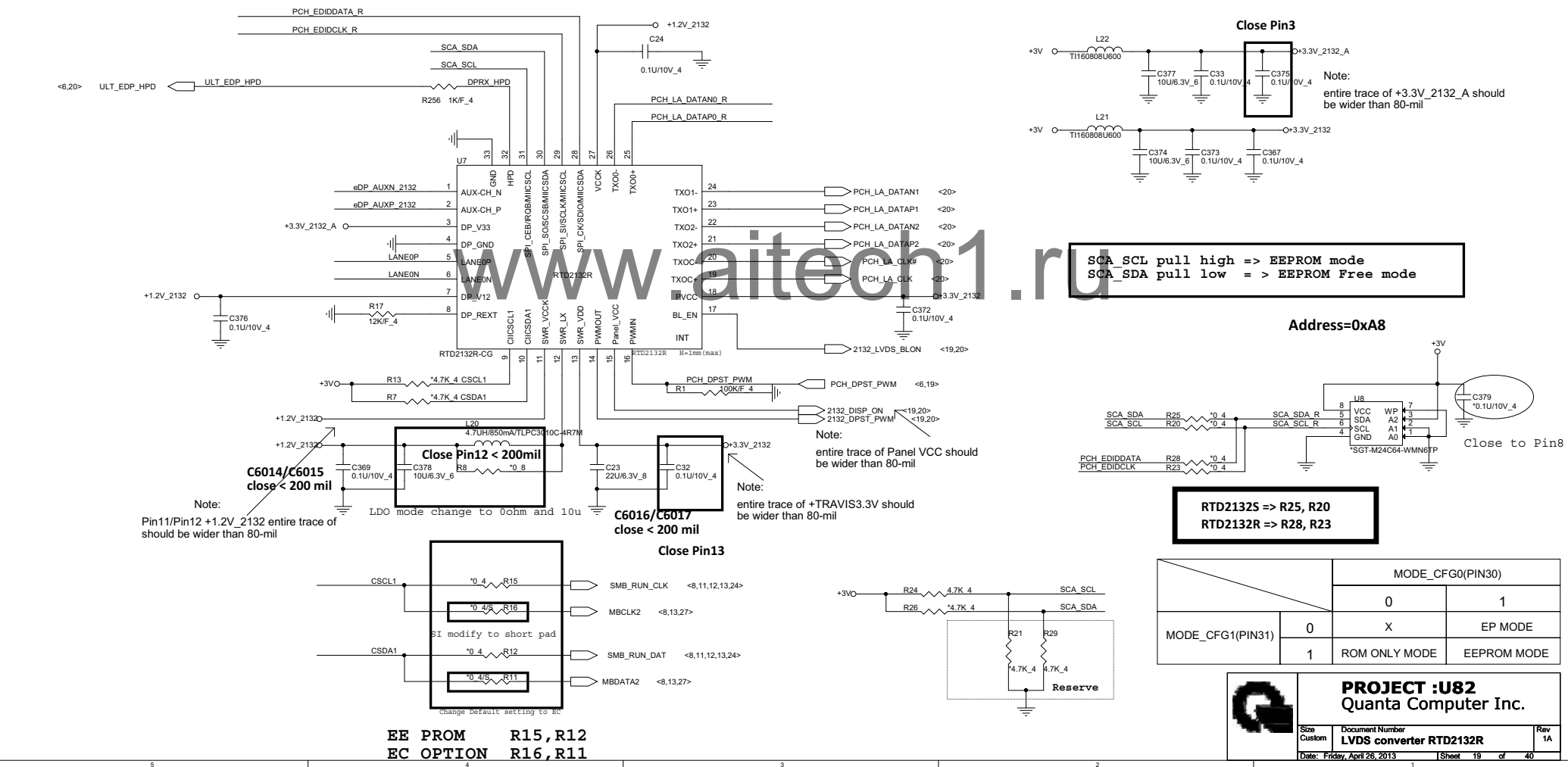
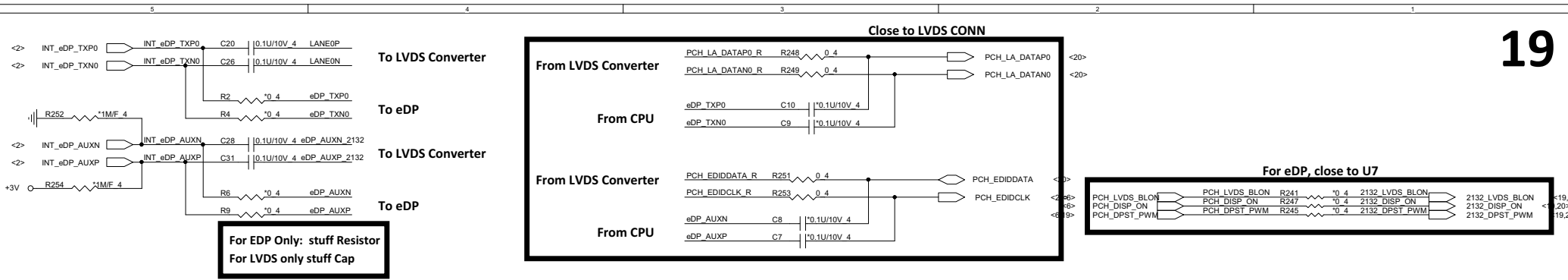
GPIO	I/O	PIN	USAGE
0	IN	FB_CLAMP_MON	FB Clamp monitor
1	OUT	MEM_VDD_CTL	Memory VDD VID
2	OUT	LCD_BL_PWM	Panel Backlight PWM
3	OUT	LCD_VCC	PANEL POWER ENABLE
4	OUT	LCD_BLEN	PANEL BACKLIGHT ENABLE
5	OUT	Reserved	--
6	OUT	FB_CLAMP_TGL_REQ	Active low FB Clamp toggle request
7	OUT	3D_VISION	3D VISION LEFT/RIGHT signal
8	I/O	OVERT	ACTIVE LOW THERMAL OVER TEMP
9	I/O	ALERT	ACTIVE LOW THERMAL ALERT
10	OUT	MEM_VREF_CTL	MEMORY_VREF CONTROL
11	OUT	PWR_VID	GPU_CORE_VDD PWM Control signal
12	IN	PWR_LEVEL	AC Power detect or power supply overdraw input
13	OUT	PSI	Phase Shedding




Size Custom	Document Number <b>N14M-GS (GPIO/STRAPS)</b>	Rev 2A
Date: Friday, April 26, 2013	Sheet 17 of 40	

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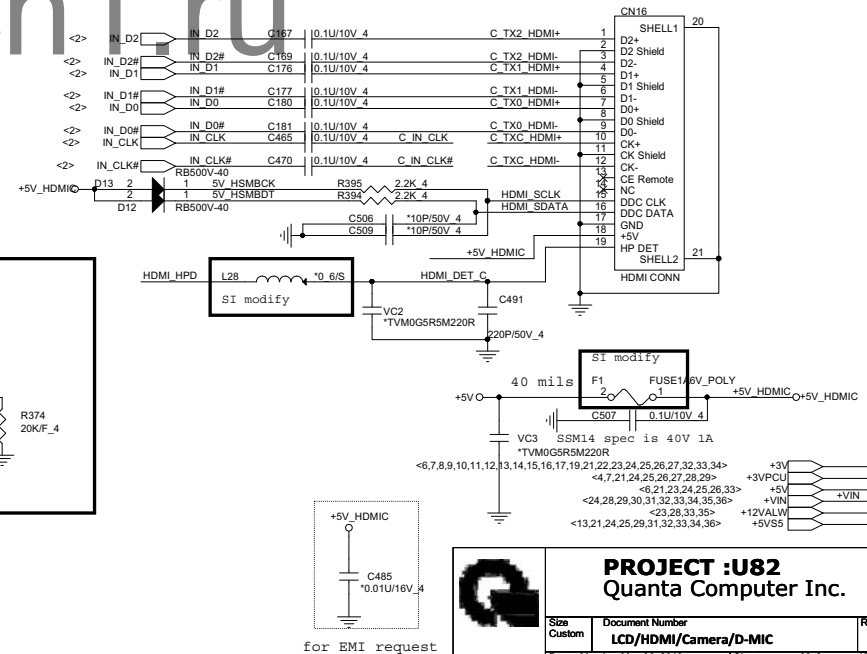




		MODE_CFG0(PIN30)	
		0	1
MODE_CFG1(PIN31)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

	<b>PROJECT :U82</b>		
	Quanta Computer Inc.		
Size Custom	Document Number <b>LVDS converter RTD2132R</b>	Rev 1A	
Date: Friday, April 26, 2013	Sheet	19	of 40

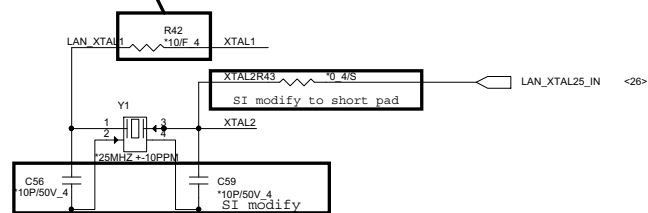
## 20



Size Custom	Document Number <b>LCD/HDMI/Camera/D-MIC</b>	Rev 1A
Date: Monday, May 06, 2013	Sheet 20 of	40



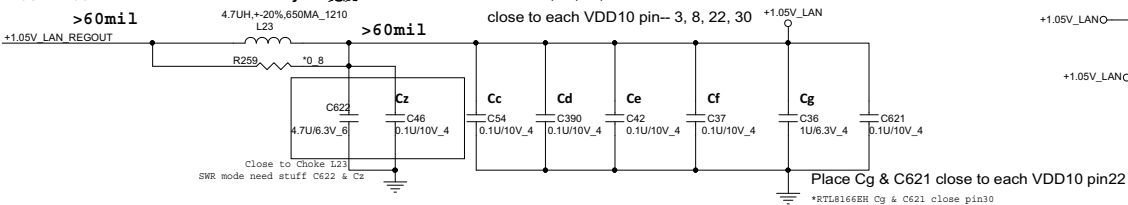
For EMI 0 ~ 22 ohm



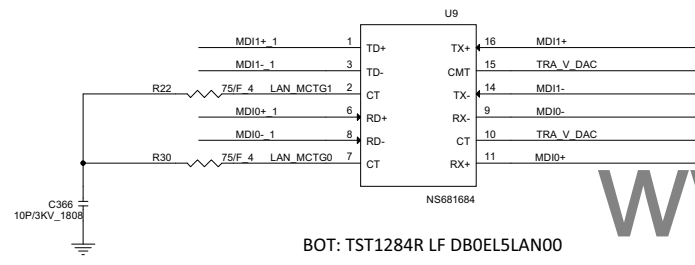
Trace<30 mil  
Width > 60 mil  
>60mil

Switch Mode:Stuff L23 For RTL 8176  
LDO Mode:Stuff R259 For RTL8166  
**Power trace Layout 寬度> 60mil**

Place Cc,Cd,Ce,Cf

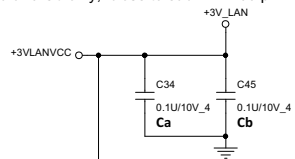


\*RTL8166EH Cg & C621 close pin30

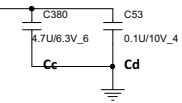


BOT: TST1284R LF DB0EL5LAN00

Stuff Ca and Cb only, close to each VDD33 pin-- 11, 32



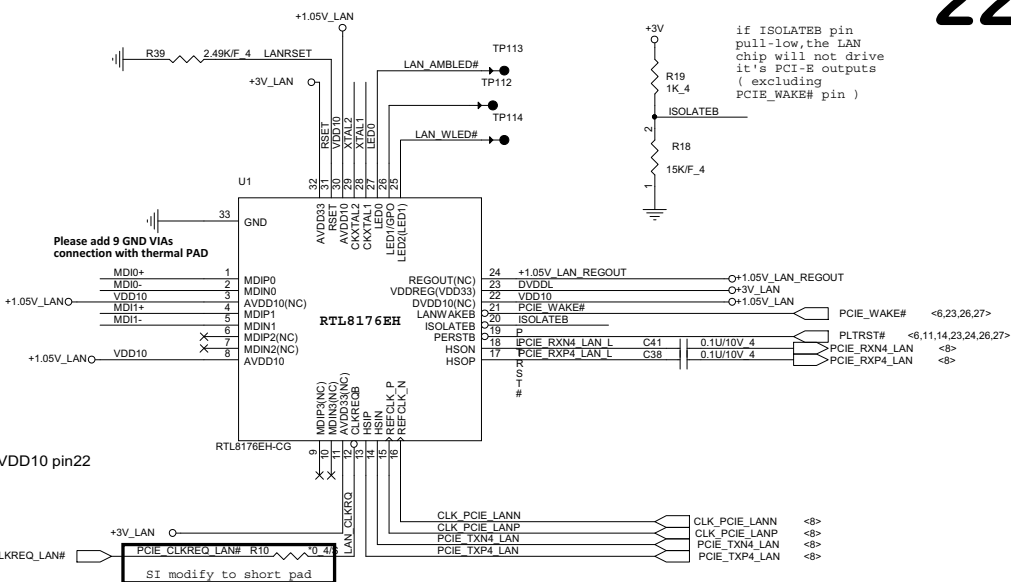
Place Cc and Cd close to each VDD33 pin-- 23



**Remove For Not Using SWR mode**

$\langle 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 32, 33, 34 \rangle$   
 $\langle 26, 33 \rangle$

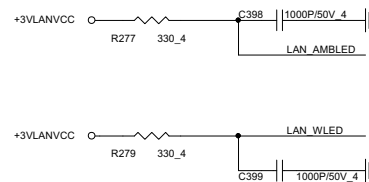
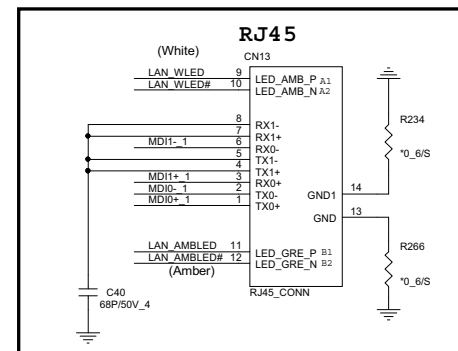
www.aitech1.ru



```
if ISOLATED pin
pull-low, the LAN
chip will not drive
it's PCI-E outputs
( excluding
PCIE WAKE# pin )
```

**LAN conn**

TWD Type

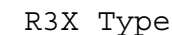


**PROJECT :U82**  
Quanta Computer Inc.

Size Custom	Document Number <b>LAN RTL8176EH/RJ45</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet 22 of 40	

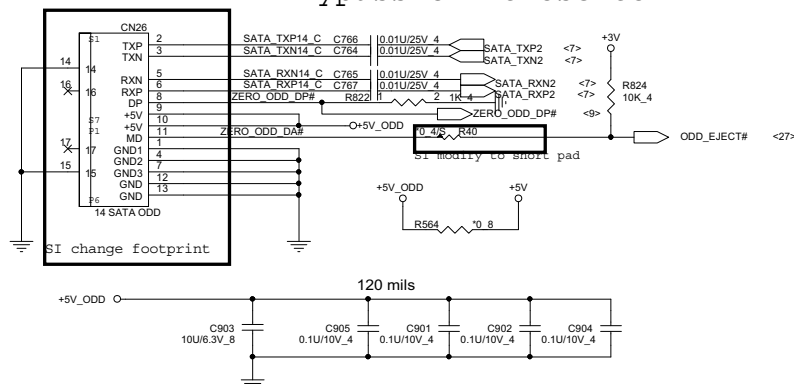
## Share Pin

SD / MMC



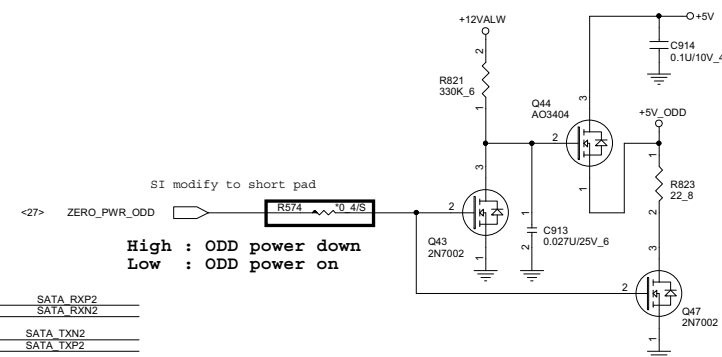
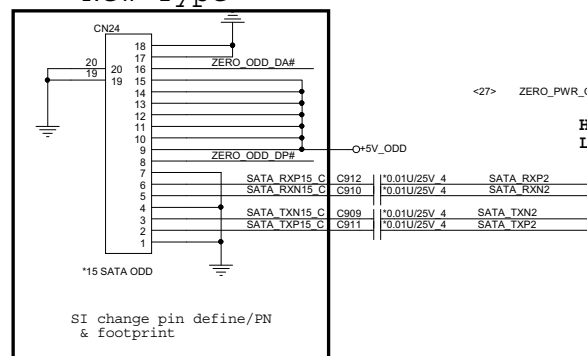
**14" SATA ODD**

Bypass CAP close conn



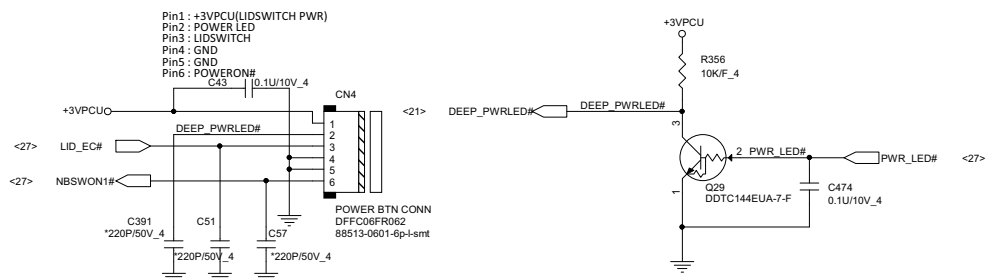
**15" SATA ODD**

New Type

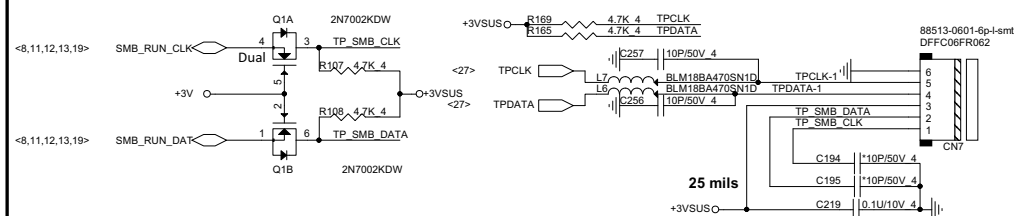


Size Custom	Document Number <b>CR RTS5237 &amp; CR SOCKET</b>	Rev 1A
Date: Friday, May 03, 2013	Sheet 23 of 40	

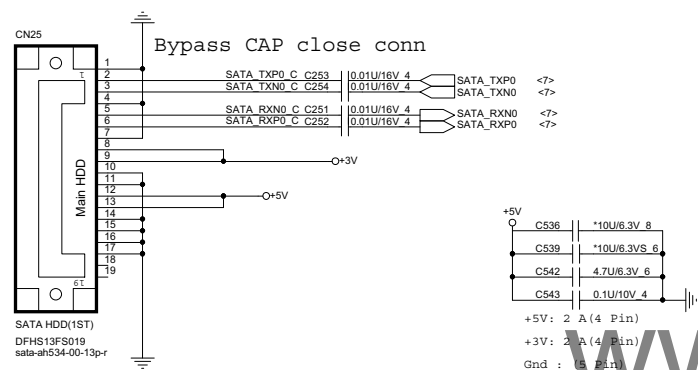
### Power Botton Connector



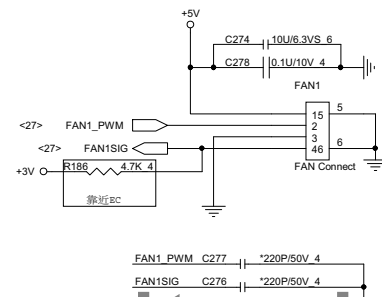
### Touch Pad Connector



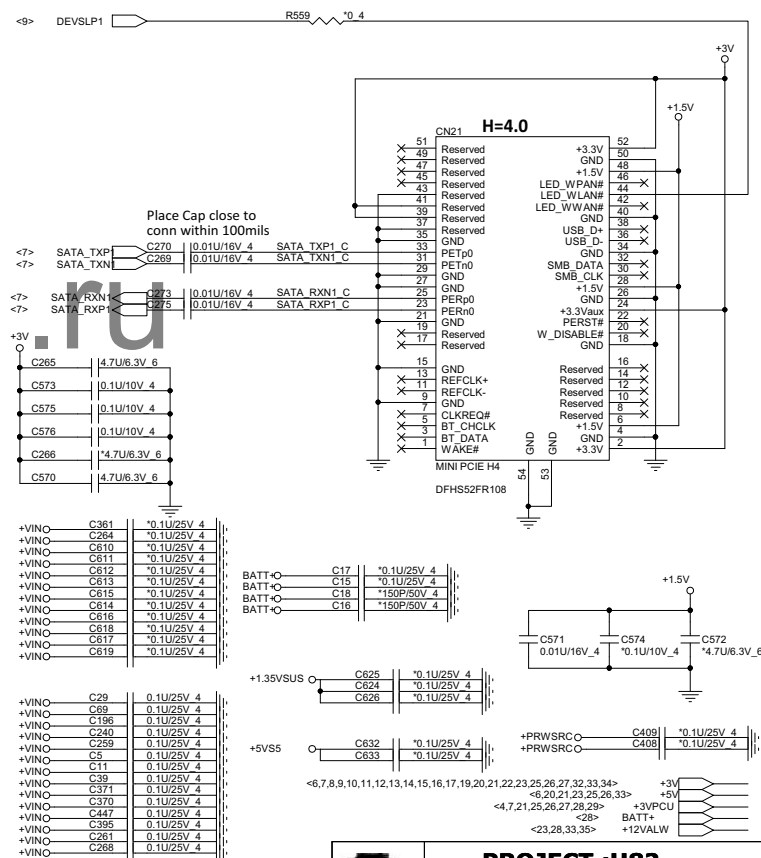
**SATA HDD Connector(Cable type)**



## FAN

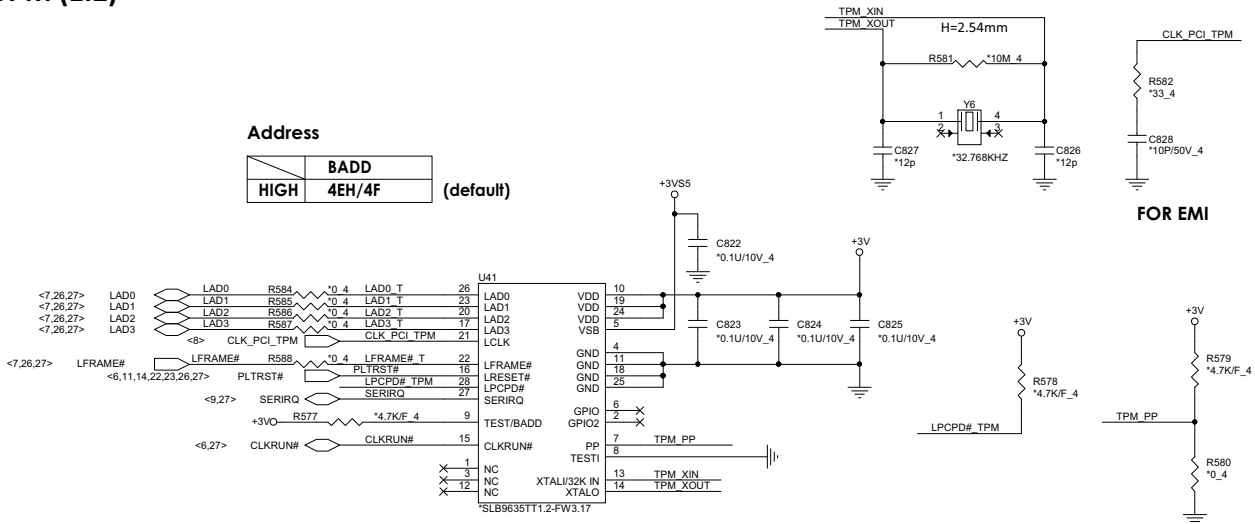


**Mini PCI-E Card 2- Full size mSATA**



## TPM (1.2)

	<b>BADD</b>	
<b>HIGH</b>	<b>4EH/4F</b>	<b>(default)</b>

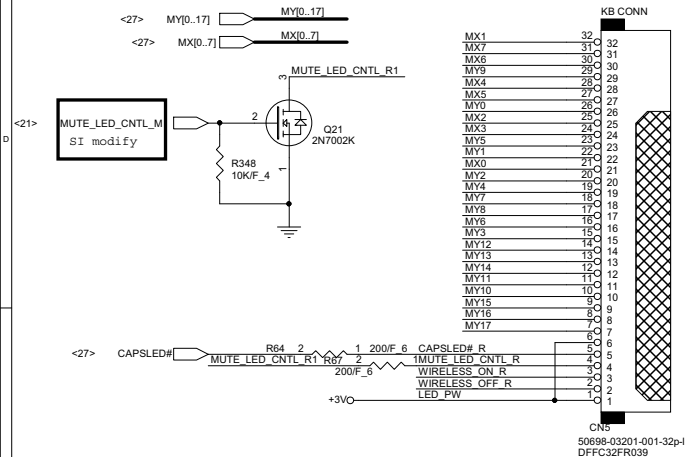


**PROJECT :U82**  
Quanta Computer Inc.

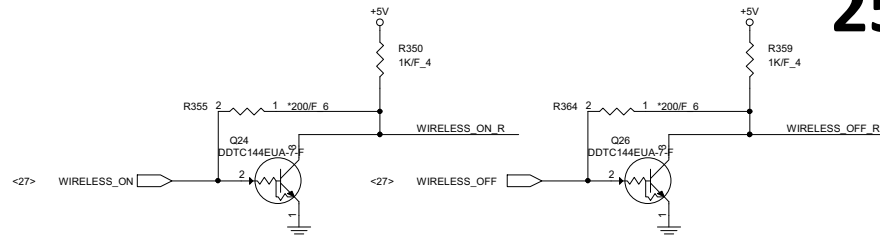
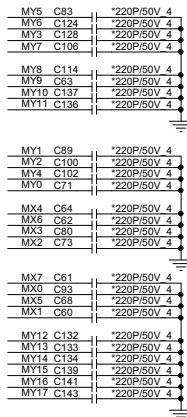
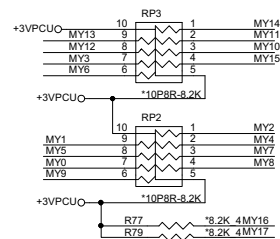
Size Custom	Document Number <b>HDD/mSATA/FAN/LED</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet	24 of 40



## KEYBOARD Con.



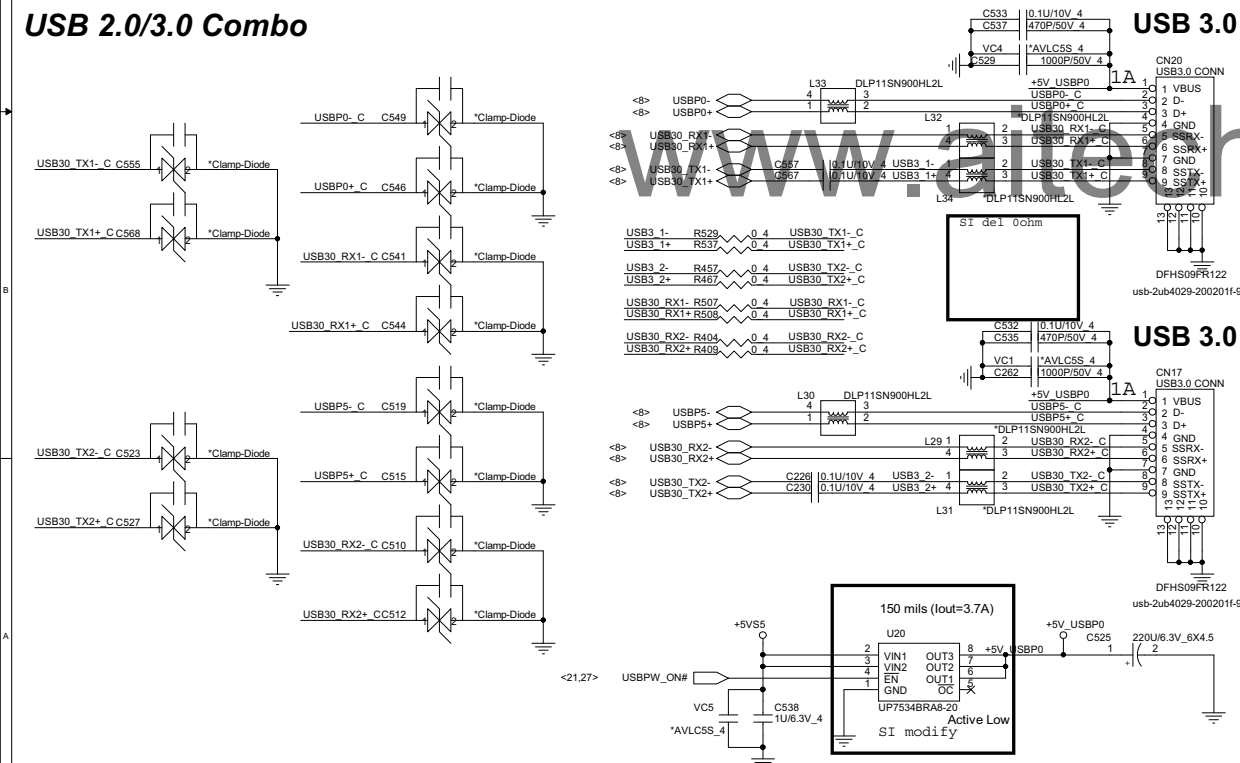
## KEYBOARD PULL-UP



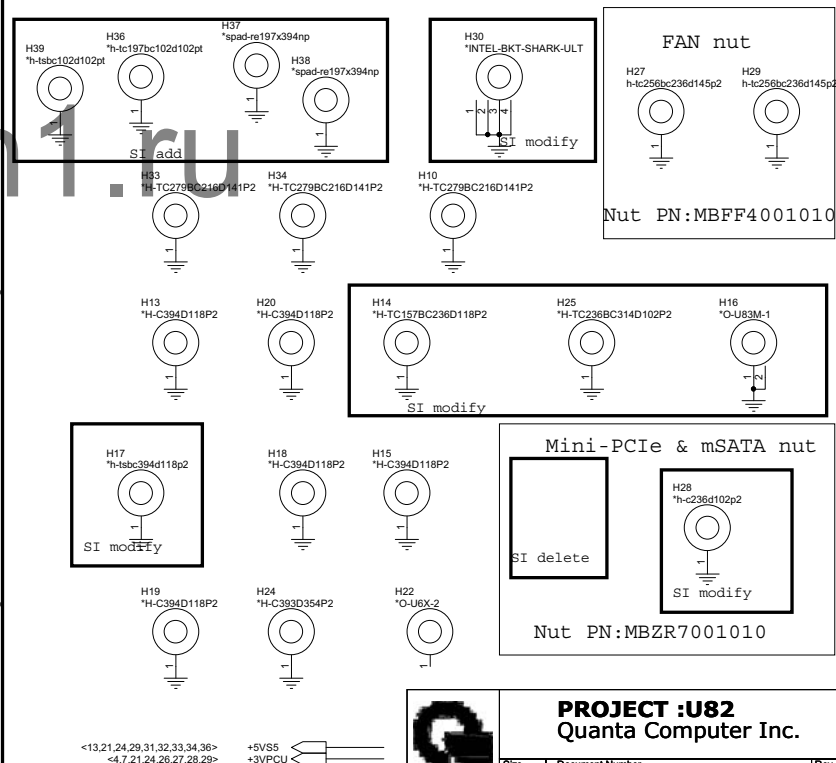
R6X Type

25

## USB 2.0/3.0 Combo



## Hole

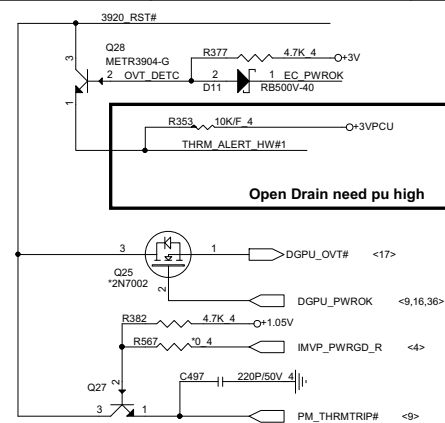
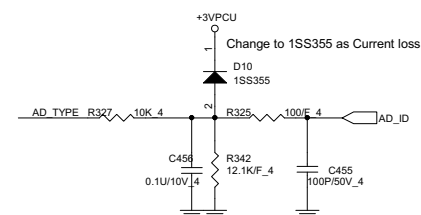


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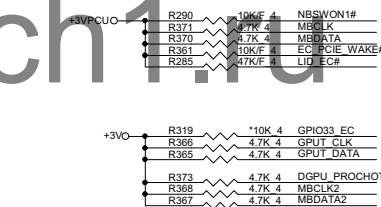
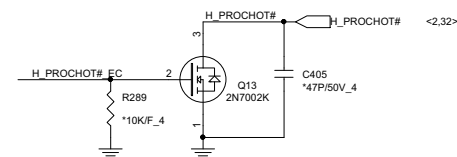
Size	Document Number	Rev
Custom	USB3.0/KB	1A
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## adapter Type check

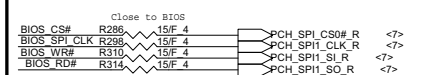


for Battery charge, charge  
for DDR Thermal IC



Reserve for ENB Hold time issue

MBCLK2	C479	*10P/50V_4
MBDATA2	C478	*10P/50V_4
MBCLK	C481	*10P/50V_4
MBDATA	C480	*10P/50V_4
GPURT_CLK	C477	*10P/50V_4
GPURT_DATA	C476	*10P/50V_4



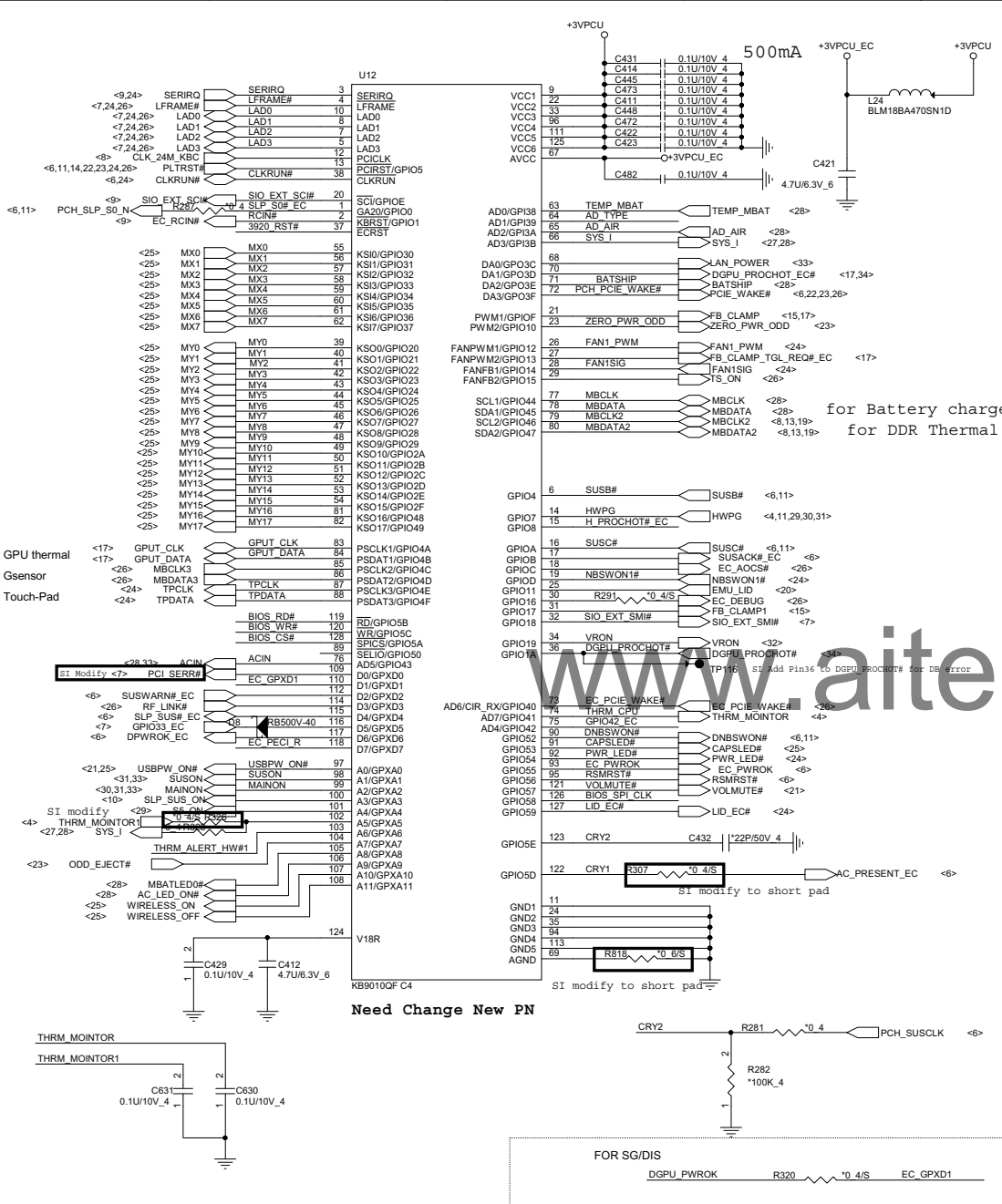
## DGPU Thermal protect



DEL Temp Fall 0314

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Custom	EC (KB9010QF C4)	1A
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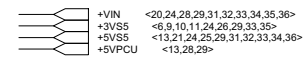
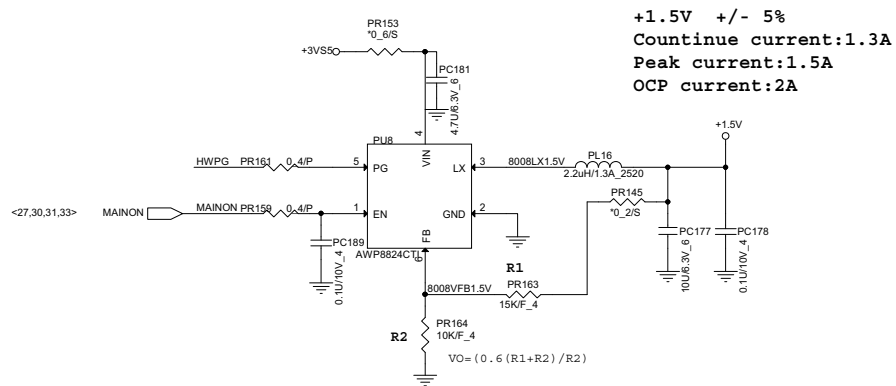
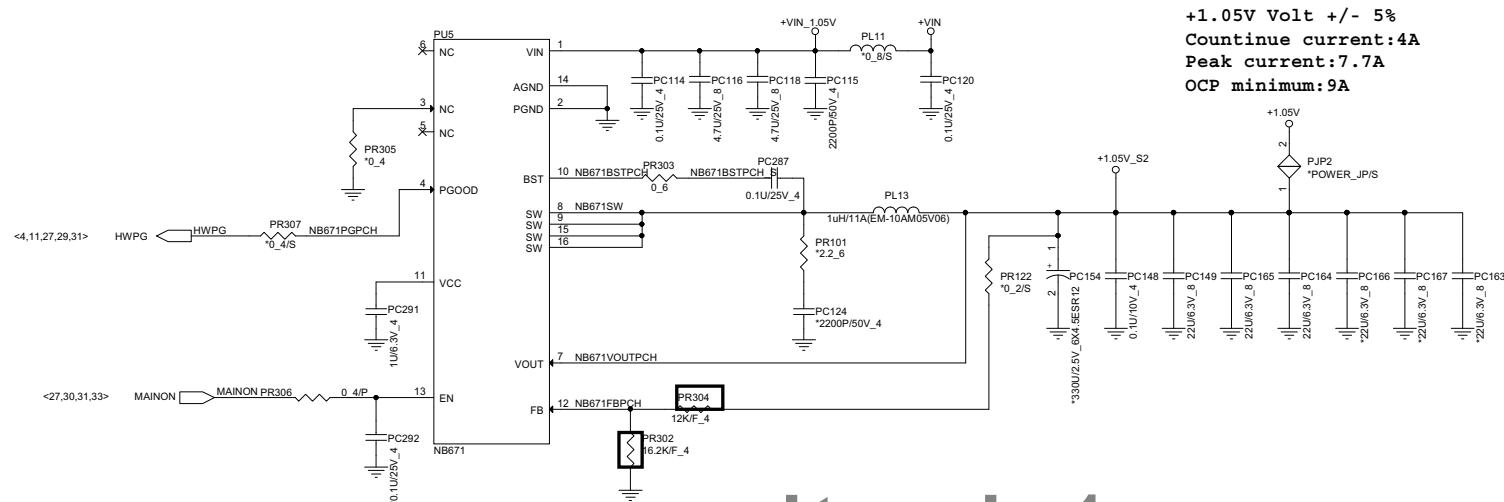
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+1.05V  
+3V  
+3VPCU



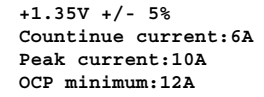
Size Custom	Document Number <b>Charger (BQ24738)</b>	Rev 1A
Date: Friday, April 26, 2013	Sheet 28 of 40	

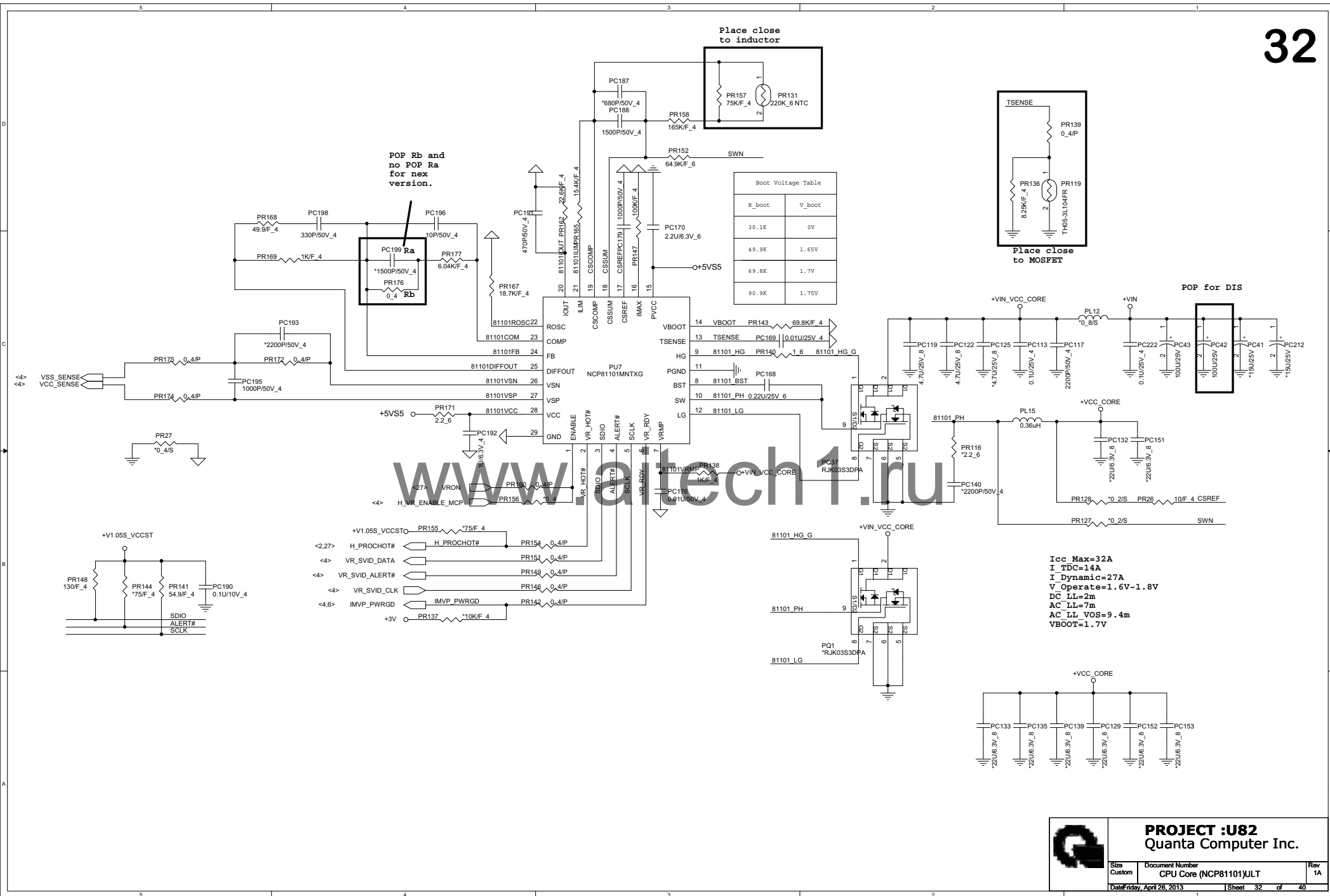




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Size	Document Number	Rev
Custom	<b>+1.05V (NB671)/1.5V</b>	1A
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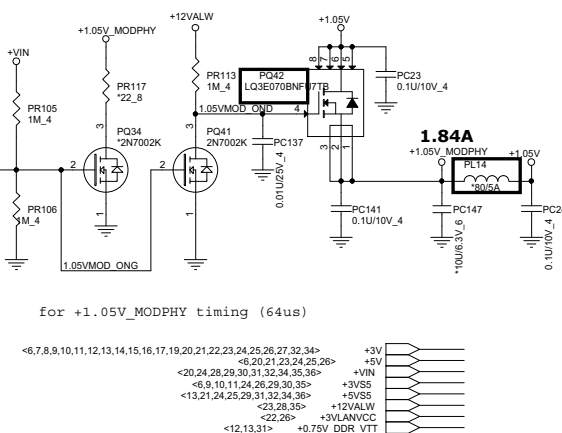
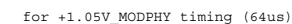




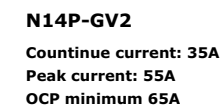
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Quanta Computer Inc.

Size	Document Number	Rev
Custom	CPU Core (NCP81101)JUL	1A
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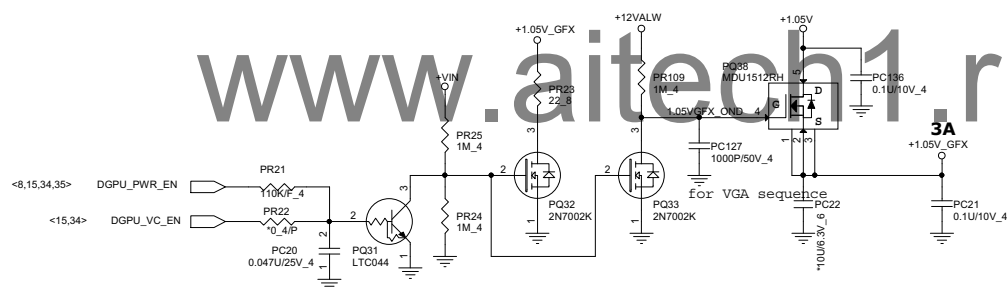
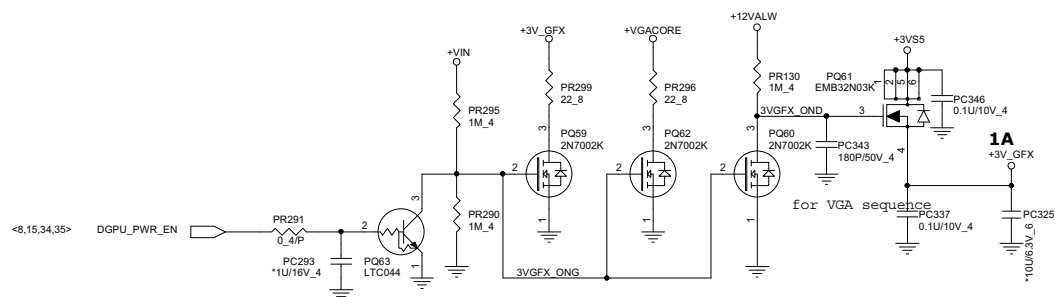




for +1.05V MODPHY timing (64us)

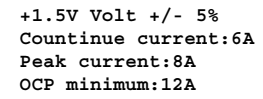


Size Custom	Document Number +VGACORE (RT8813A)	Re 1
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Custom	1.05V_VGA/3V_VGA	1A
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USB3.0	Port Assignment	Power control pin
PORT1	USB2.0/USB3.0 COMBO 1st	USBPW_ON# (from EC)
PORT2	USB2.0/USB3.0 COMBO 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	

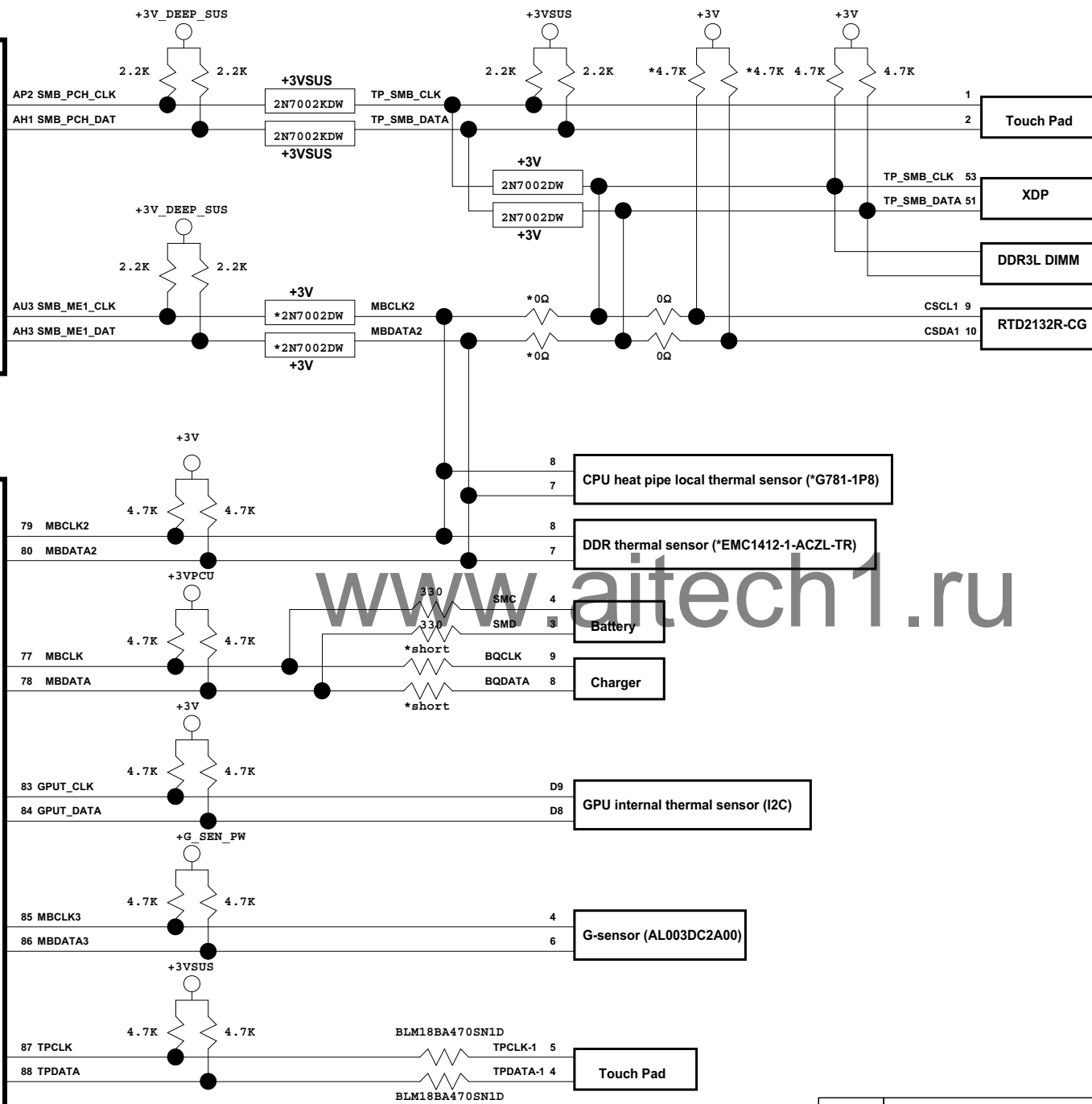


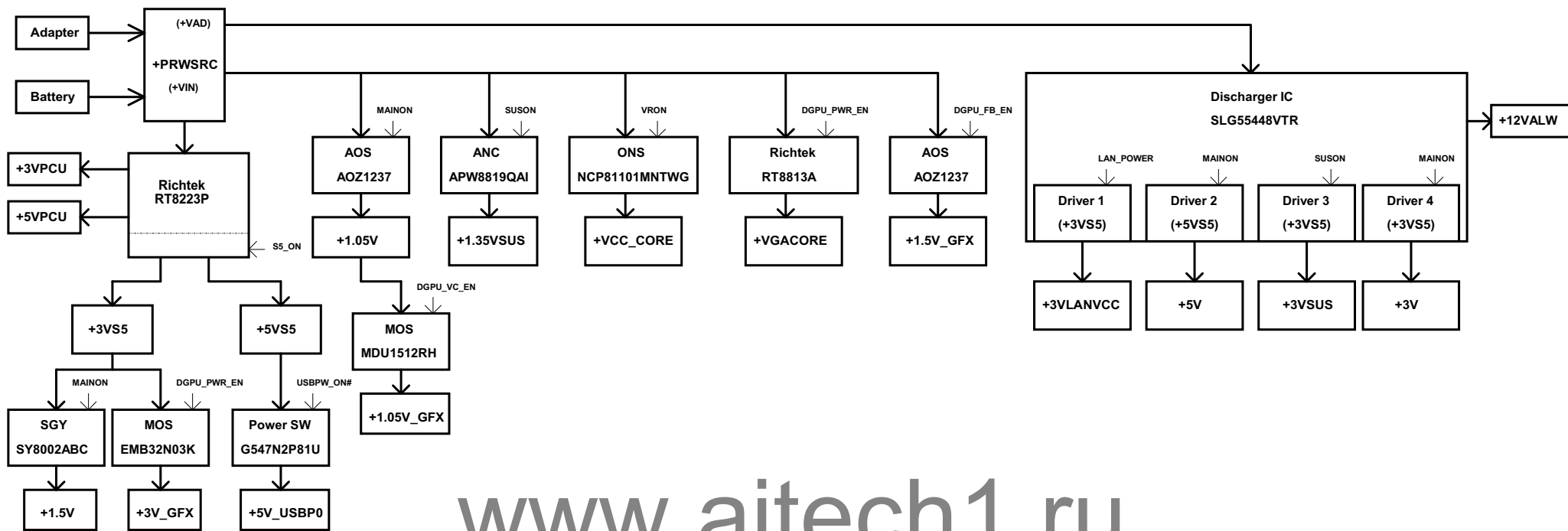
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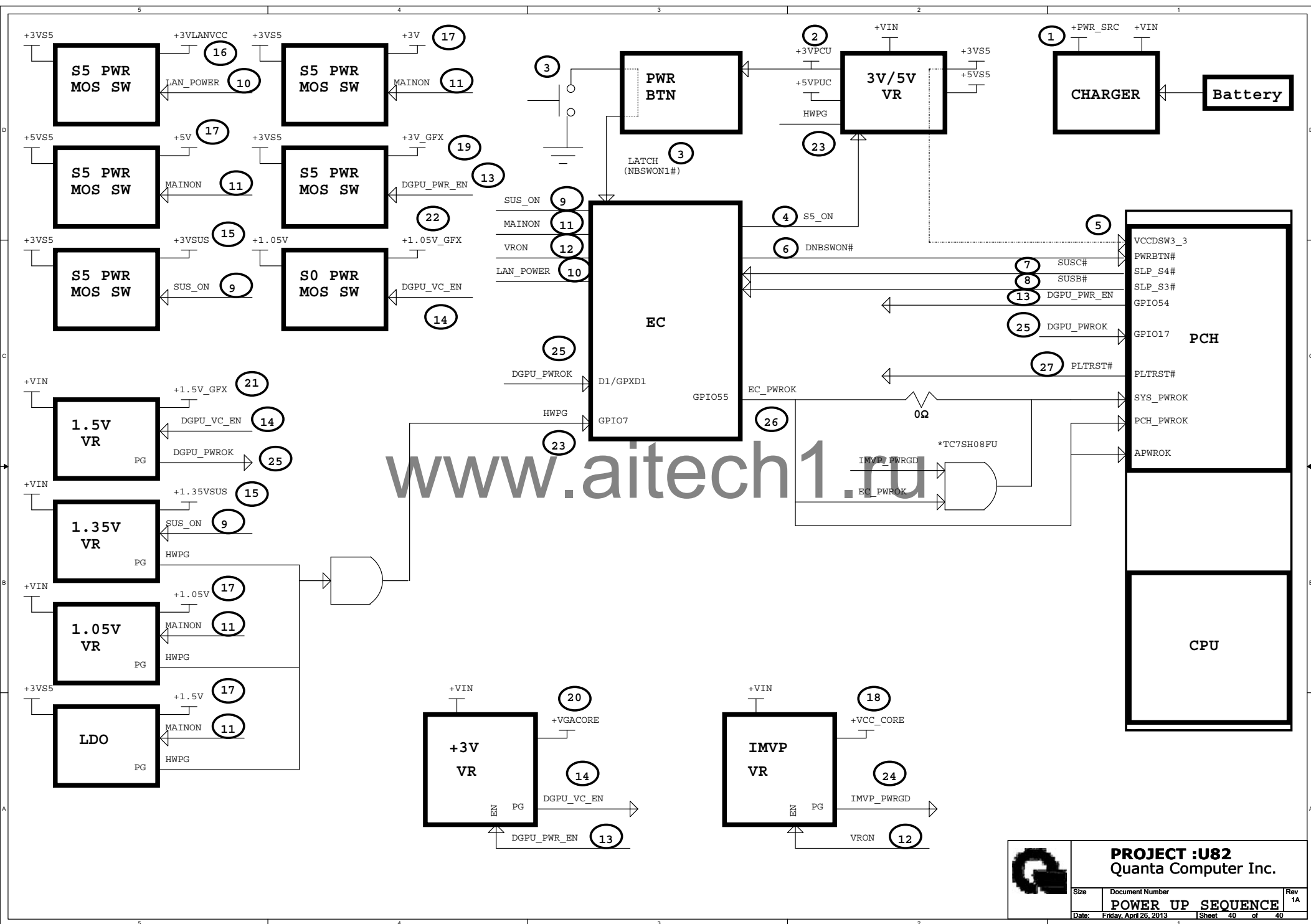
Haswell  
ULT

EC  
KB9010QF





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