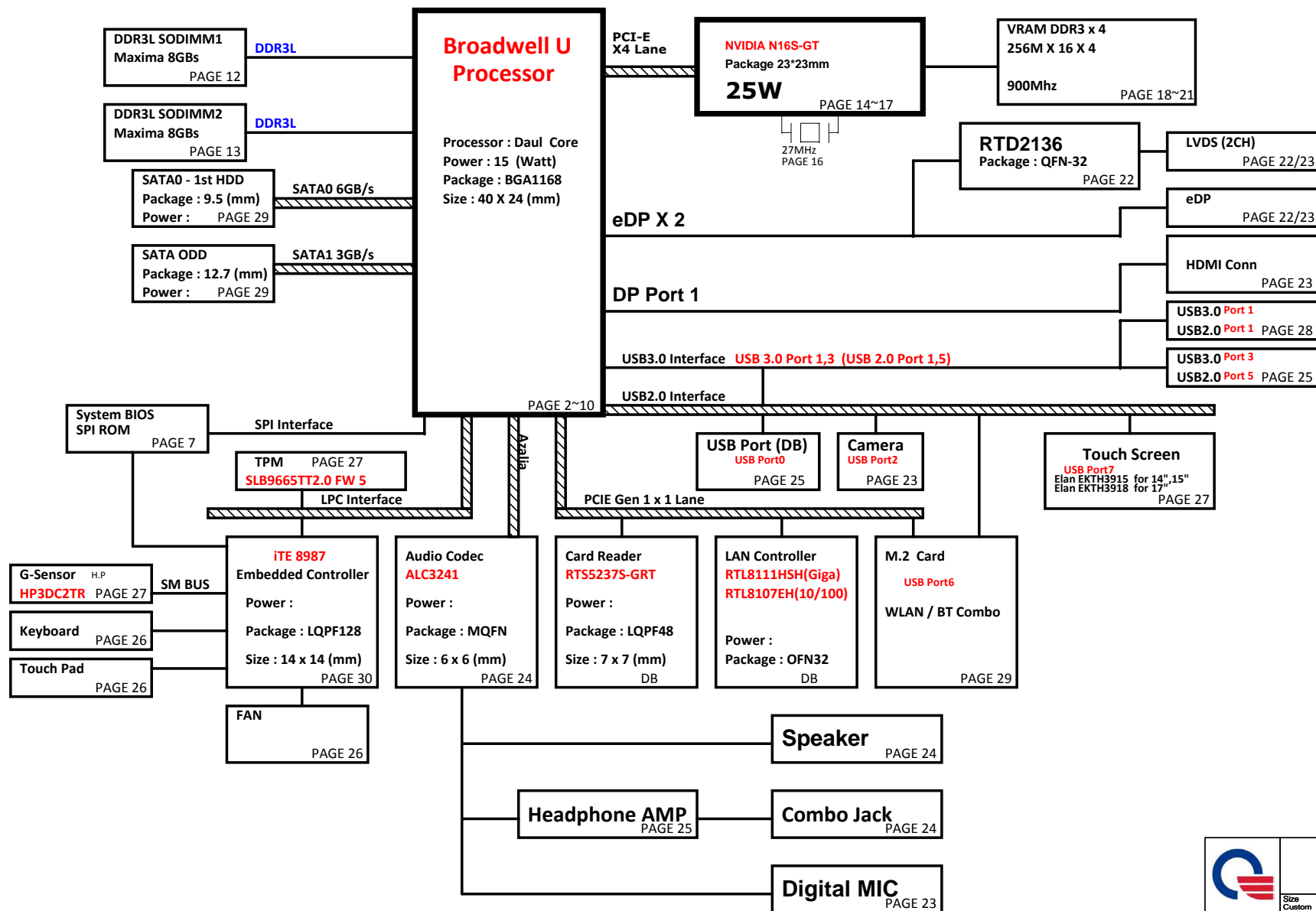
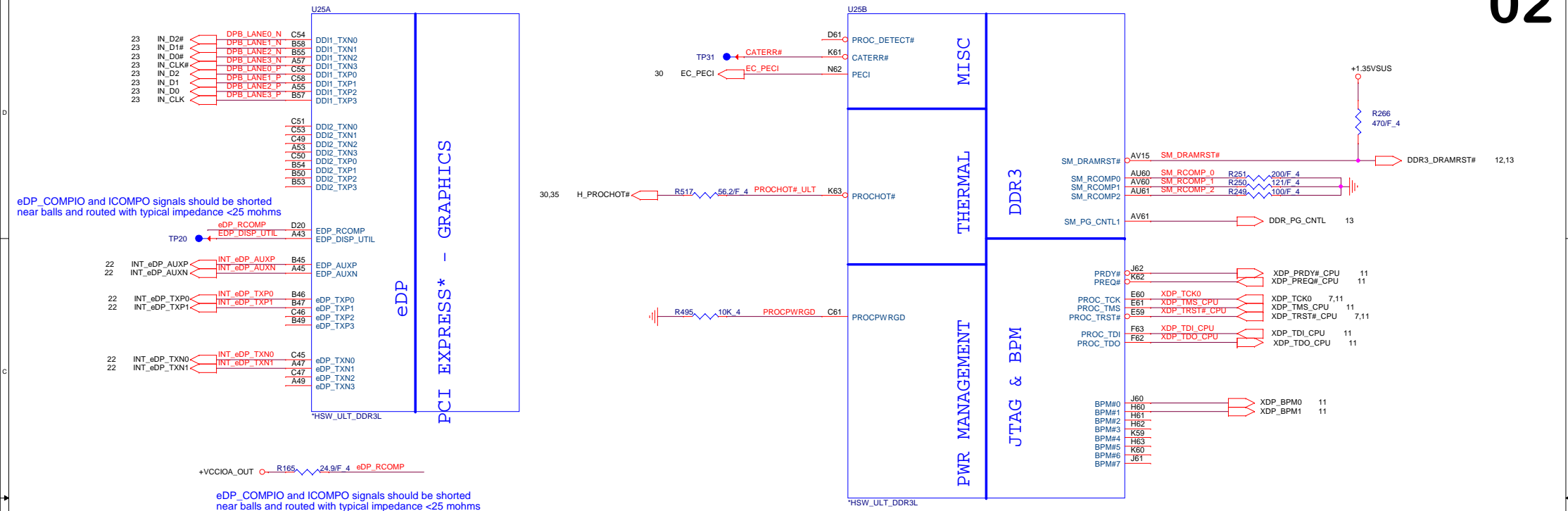
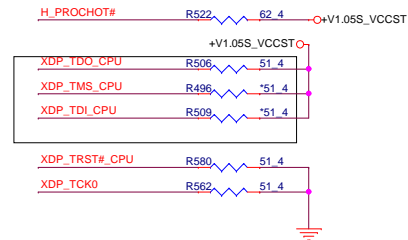


**LAYER 1 : TOP**  
**LAYER 2 : SGND**  
**LAYER 3 : IN1(High)**  
**LAYER 4 : IN2(Low)**  
**LAYER 5 : SVCC**  
**LAYER 6 : GND**

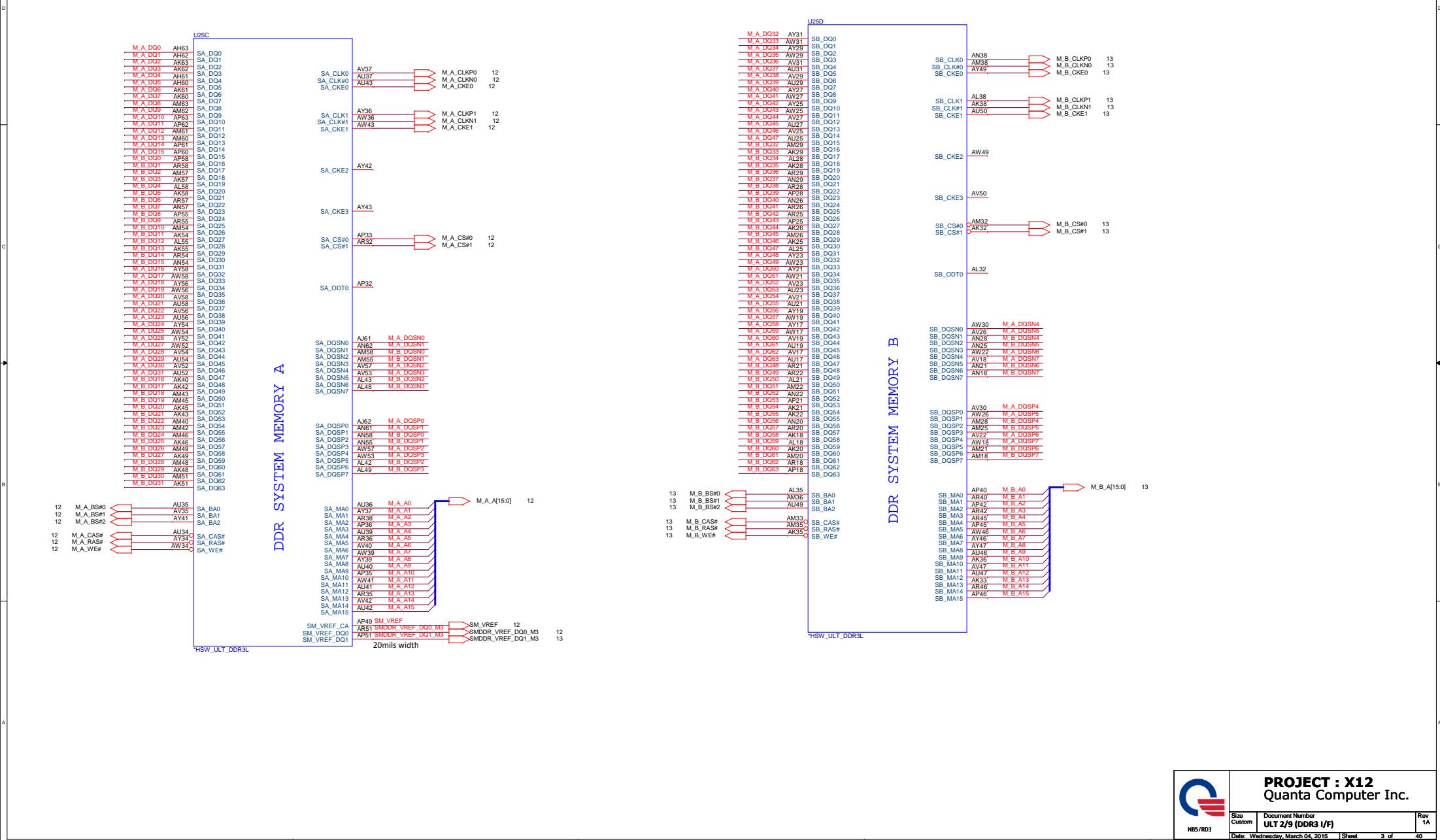


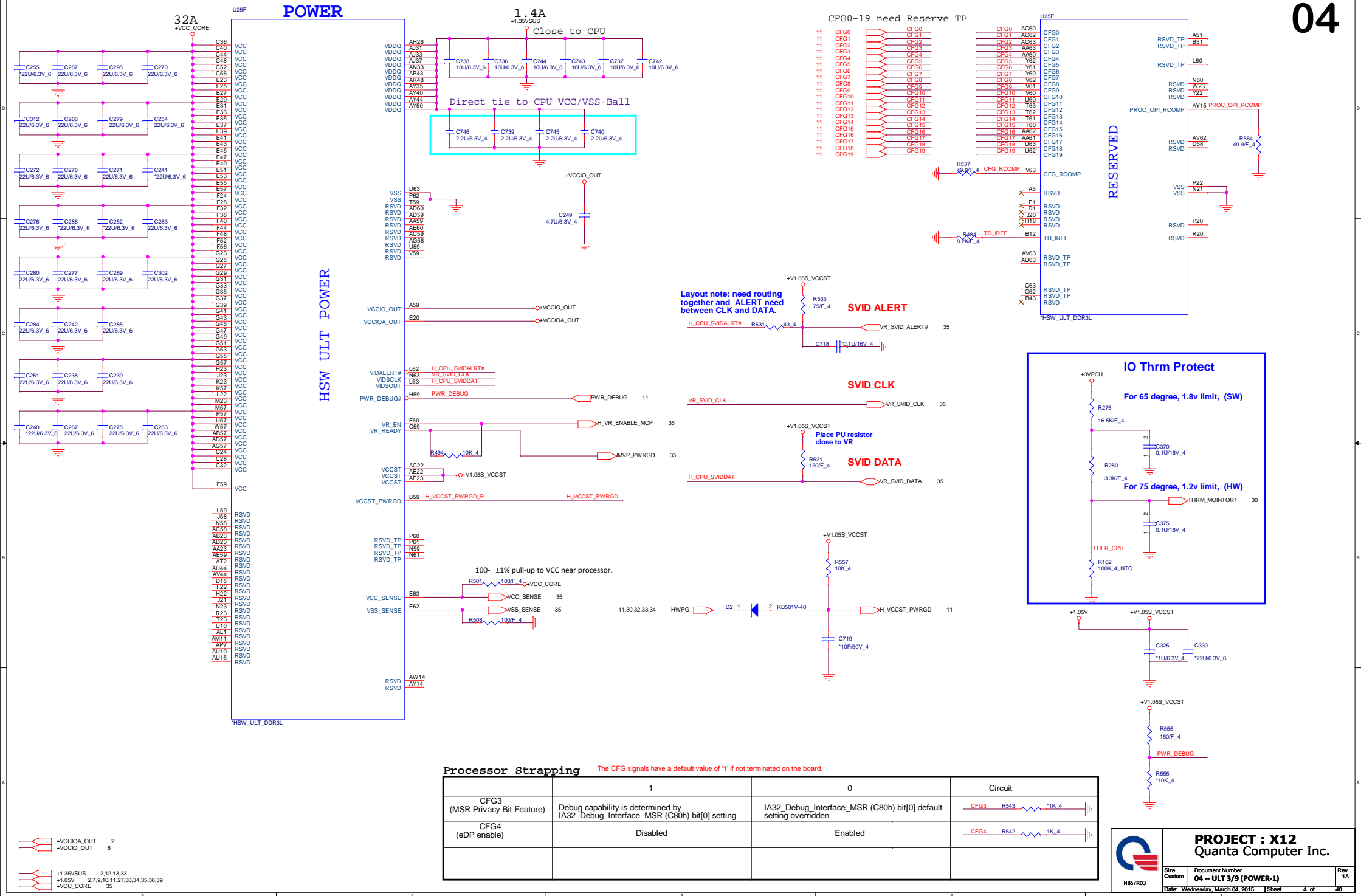


### Processor pull-up (CPU)



## Haswell ULT Processor (DDR3L)

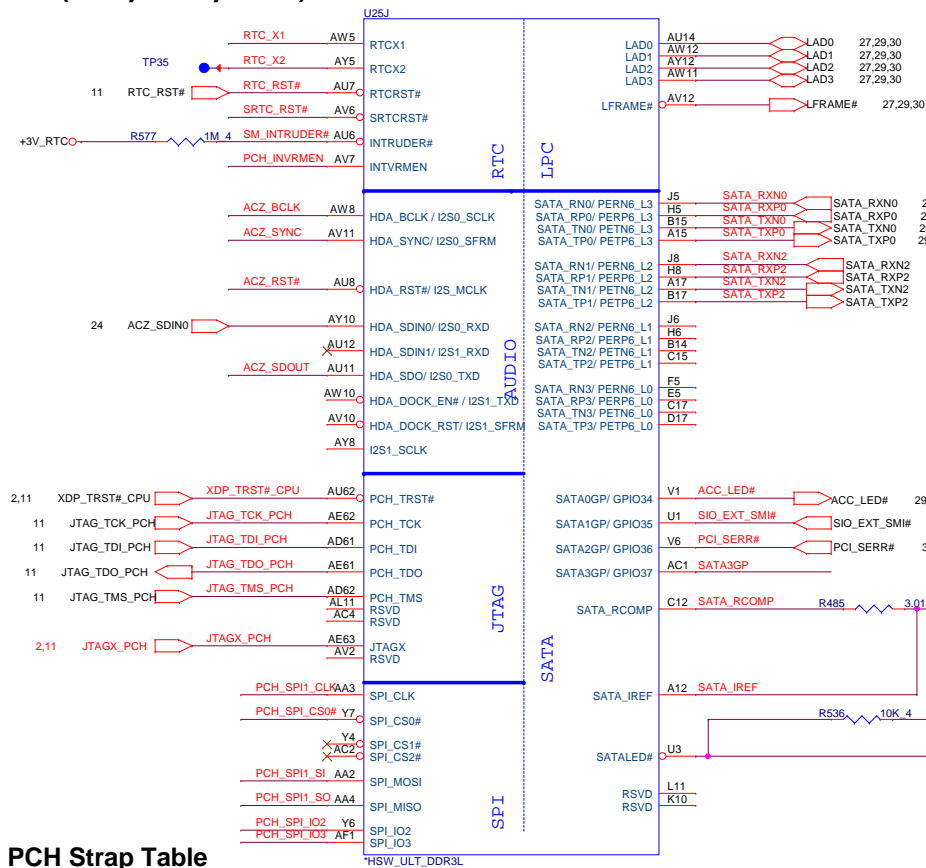














# Lynx Point-LP Platform Controller Hub (HDA,JTAG,SATA)

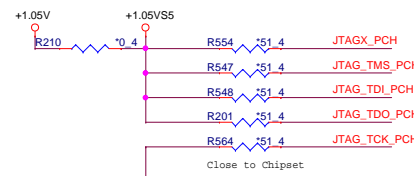


PCH Strap Table

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	+3V_RTC0—R575—330K_4—PCH_INVRMEN						
GSPI0_MOSI /GPIO86	Boot BIOS Selection	PWROK	<table><tr><th>GNT0#</th><th>Boot Location</th></tr><tr><td>1</td><td>LPC</td></tr><tr><td>0</td><td>SPI(Default)</td></tr></table>	GNT0#	Boot Location	1	LPC	0	SPI(Default)	30 GPIO33_EC  R581—1K_4—ACZ_SDOUT
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	+3V_RTC0—R576—330K_4—  DSWVRMEN 6						
				<div><div>30</div><div>PCH_SPI_CS0#_R</div><div></div><div>PCH_SPI_CS0#_R</div></div> <div><div>30</div><div>PCH_SPI1_CLK_R</div><div></div><div>PCH_SPI1_CLK_R</div></div> <div><div>30</div><div>PCH_SPI1_SI_R</div><div></div><div>PCH_SPI1_SI_R</div></div> <div><div>30</div><div>PCH_SPI1_SO_R</div><div></div><div>PCH_SPI1_SO_R</div></div>						

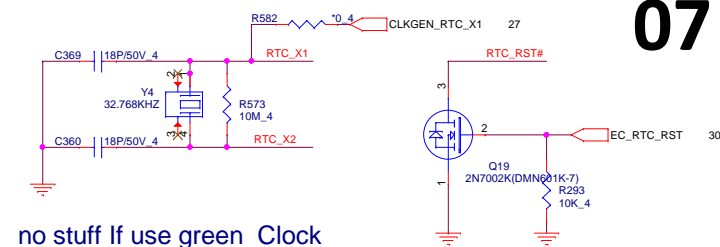
HDD (SATA3 6.0Gb/s)

ODD (SATA2 3.0Gb/s)

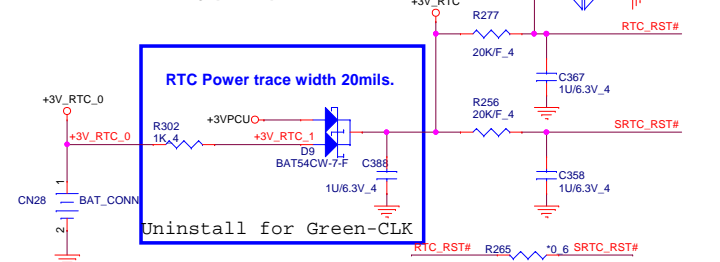


DG recommended that SATA AC coupling capacitors should be close to the connector (<100 mils) for optimal signal quality.

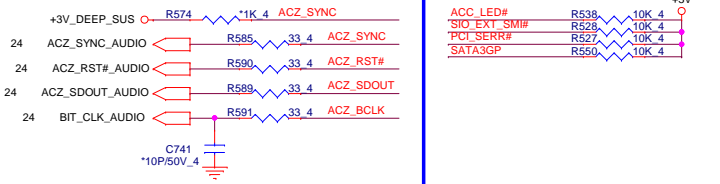
## RTC Clock 32.768KHz



## RTC Circuitry(RTC)



## HDA Bus(CLG)

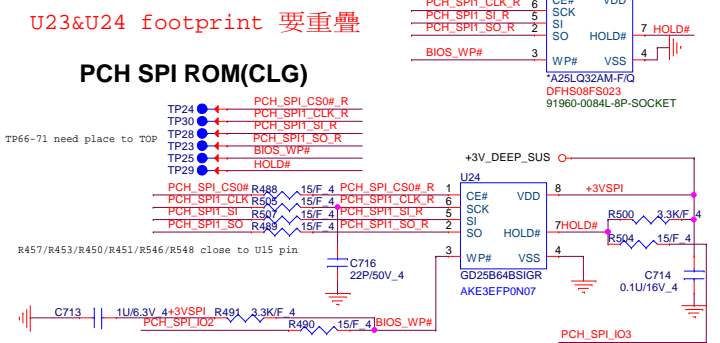


## GPIO Pull UP

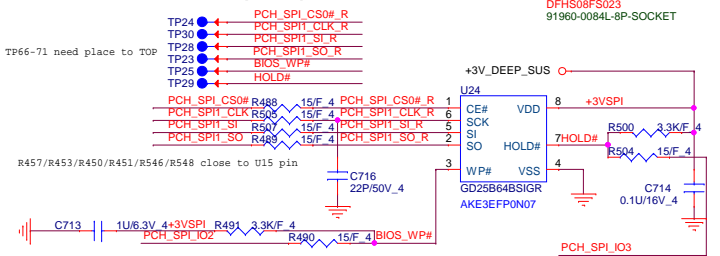


Vender	Size	P/N
EON	8MB	AKE3EZN0Q01 (EN25QH64-104HIP)
Winbond	8MB	AKE3EFP0N07 (W25Q64FVSSIQ)
GigaDevice	8MB	AKE3EGN0Q01 (GD25B64BSIGR)
Socket		DFHS08FS023

## 4M SPI ROM Socket



## PCH SPI ROM(CLG)



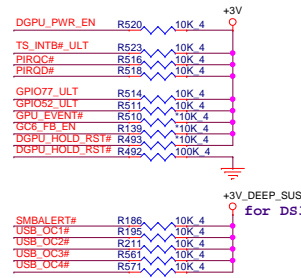
**PROJECT : X12**  
Quanta Computer Inc.

Size Custom	Document Number <b>ULT 6/9(SATA/HDA)</b>	Rev 1A
Date: Wednesday, March 04, 2015		Sheet 7 of 40

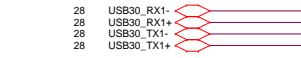


```
Lynx Point-LP Platform Controller Hub
(HDA,JTAG,SATA)
```

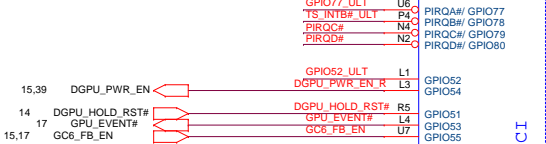
PCI/USBOC# Pull-up(CLG)



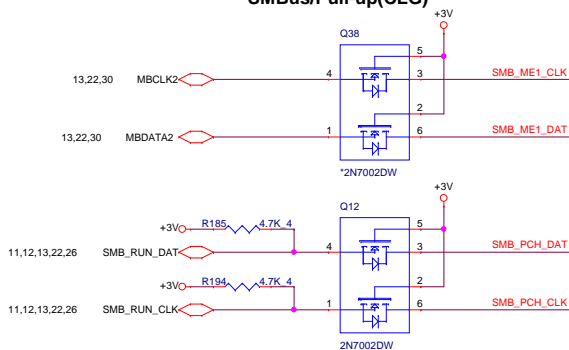
USB3.0 M/B



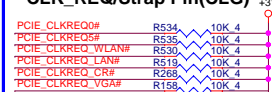
## GPIO77 ULT U6



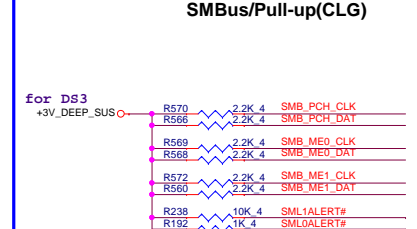
### SMBus/Pull-up(CLG)



### CLK\_REQ/Strap Pin(CLG)



### SMBus/Pull-up(CLG)

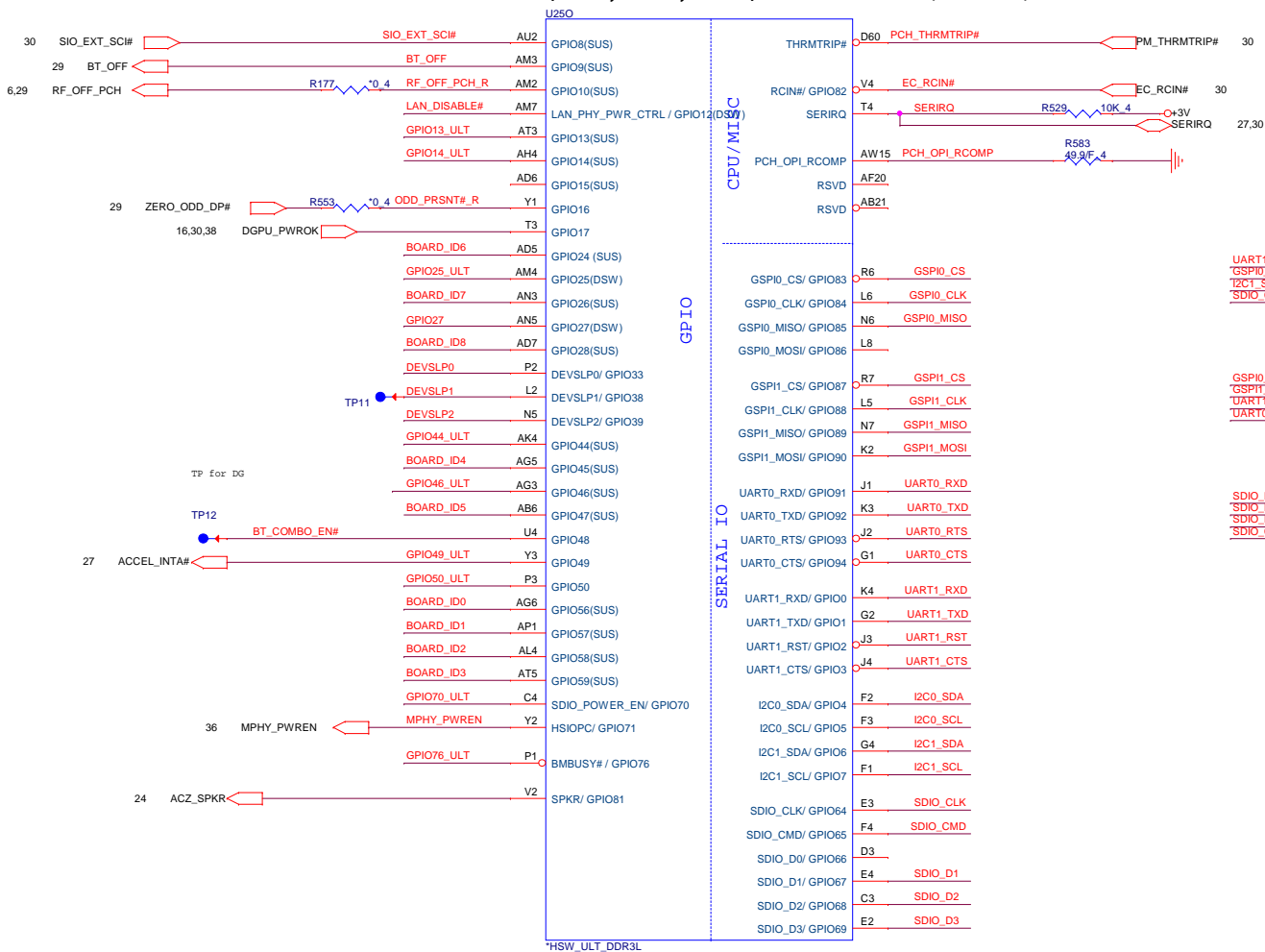


**PROJECT : X12**  
Quanta Computer Inc.

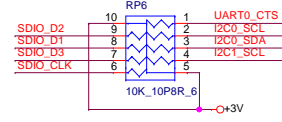
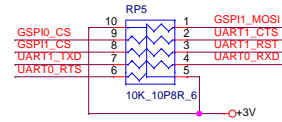
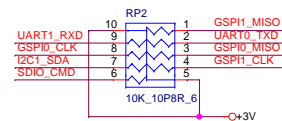
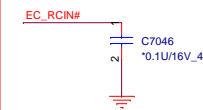
Size Custom	Document Number <b>ULT 7/9 (PCIE/USB/CLK)</b>	Rev 1A
Date: Wednesday, March 04, 2015	Sheet	8 of 40



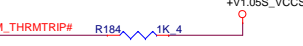
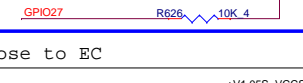
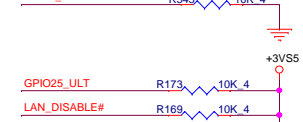
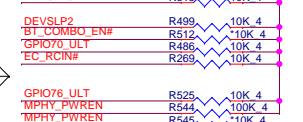
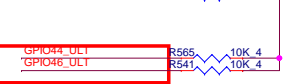
# Lynx Point-LP Platform Controller Hub (HDA,JTAG,SATA) Haswell (GPIO)



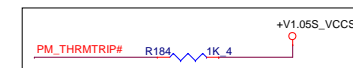
Add C7046 for EMI reserve



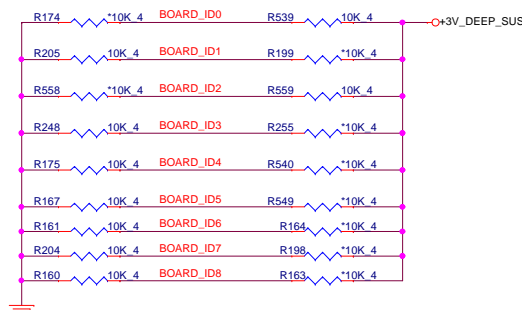
## GPIO Pull-up/Pull-down(CLG)



Close to EC



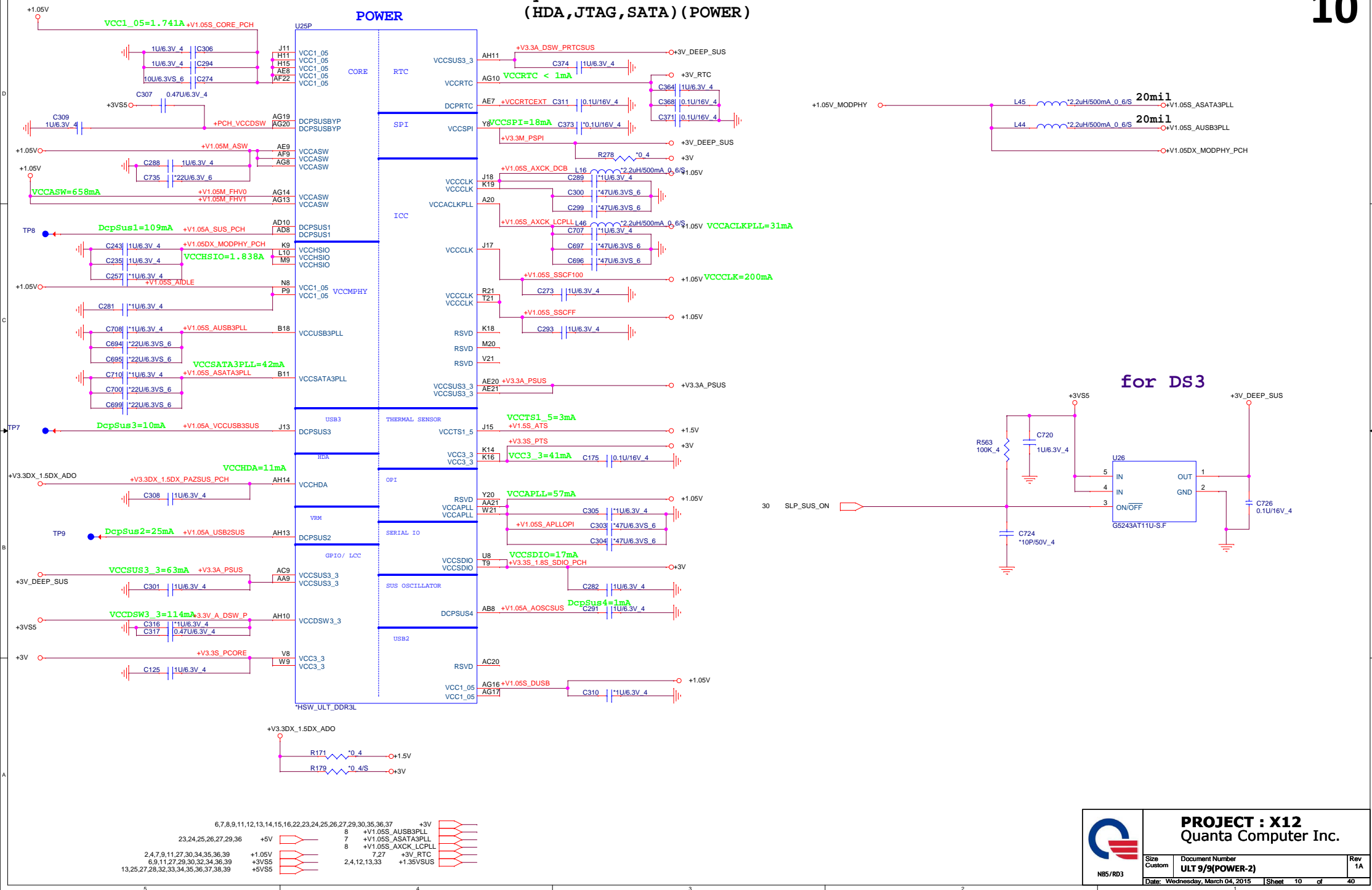
Model	BOARD_ID[8:7]	BOARD_ID[6:5]	Board ID [4:3]	BOARD_ID[2:1]	BOARD_ID0
Definition	Reserve (Default = 00)	Reserve (Default = 00)	00 Single Rank (X12) 01 DUAL Rank (X12) 10 Meso-AMD (X11) 11 Reserve	00 14" 01 15" 10 17"	0 : UMA 1 : DIS



6,7,8,10,11,12,13,14,15,16,22,23,24,25,26,27,29,30,35,36,37  
6,10,11,27,29,30,32,34,36,39

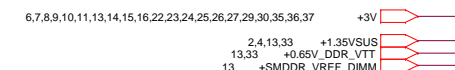
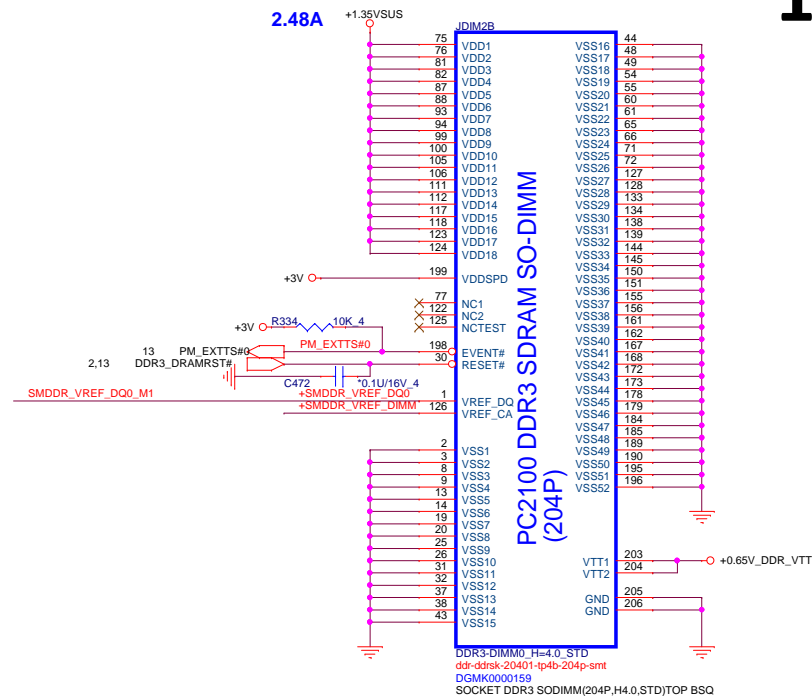
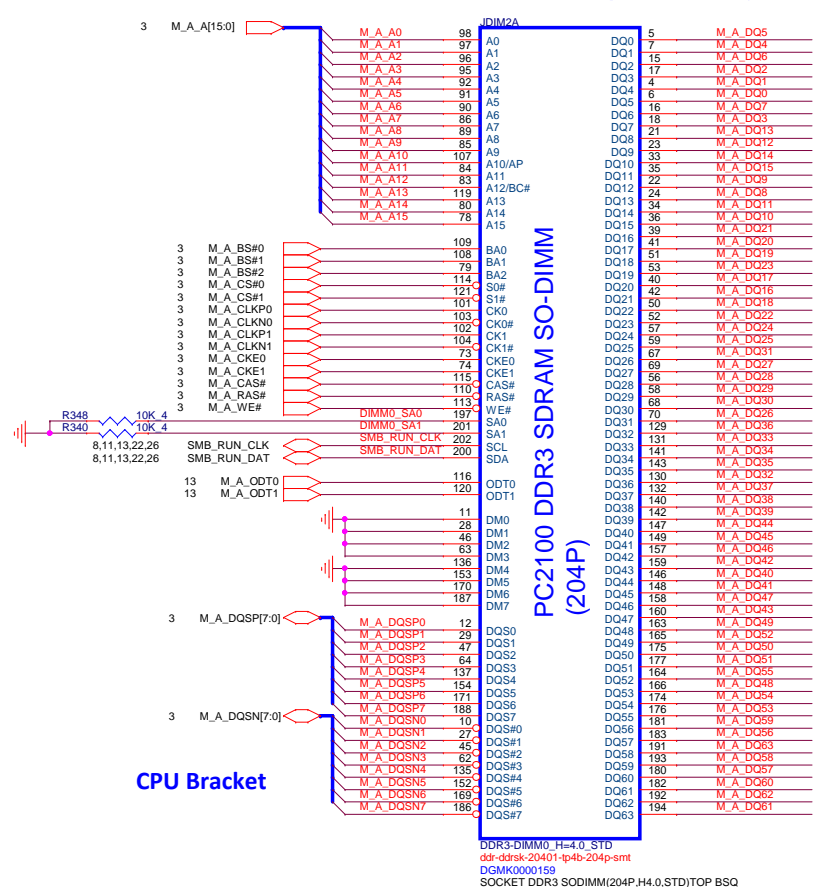
	PROJECT : X12 Quanta Computer Inc.		
	Size Custom	Document Number ULT 8/9 (GPIO/MISC)	Rev 1A
	Date: Wednesday, March 04, 2015	Sheet	9 of 40

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

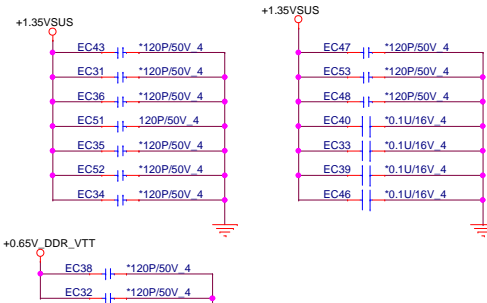




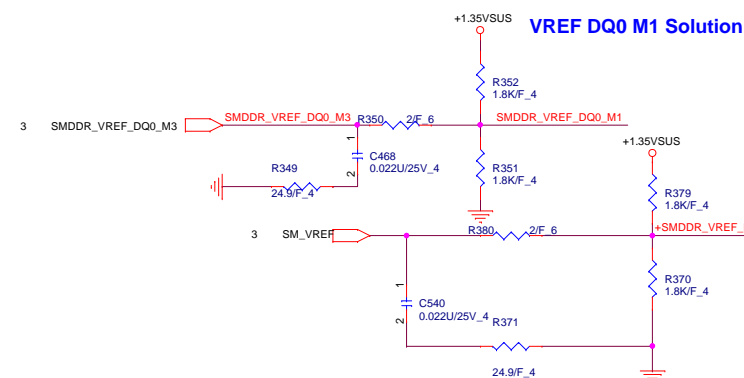
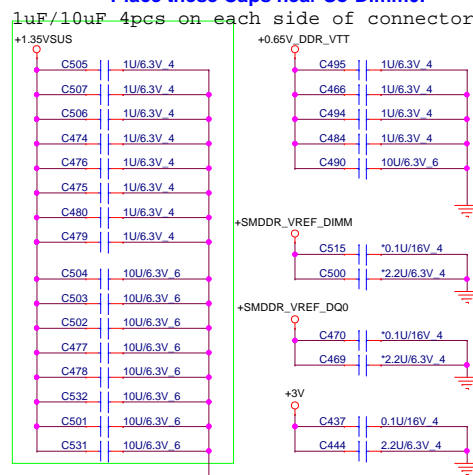
## DIMM &amp; Footprint 同Joshua提供



## For EMI RESERVE



## Place these Caps near So-Dimm0.

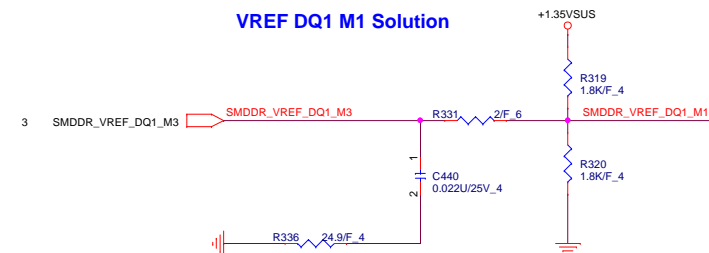
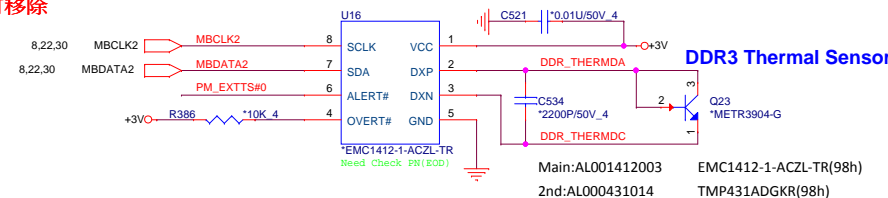


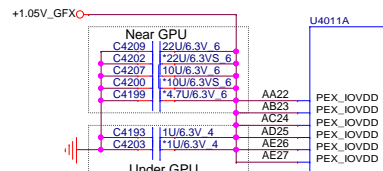
**PROJECT : X12**  
Quanta Computer Inc.

Size Custom Document Number  
NBS/RD3 DDR3 DIMM0-STD(4.0H)

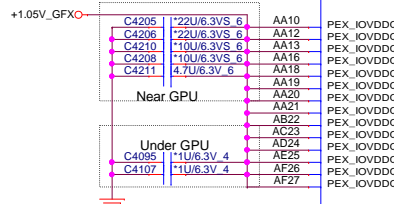
Date: Wednesday, March 04, 2015 Sheet 12 of 40

Rev 1A

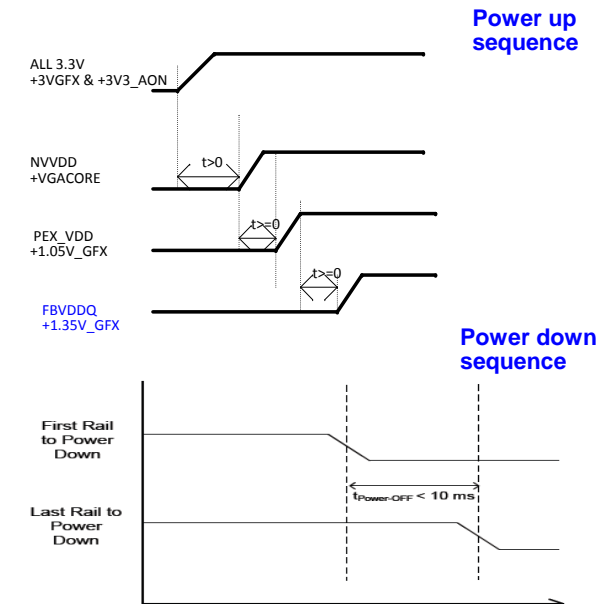
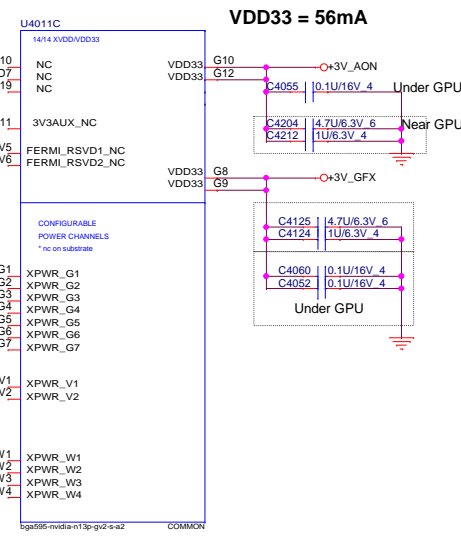
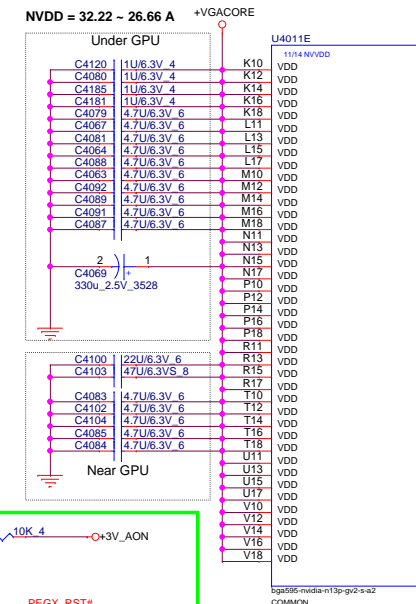
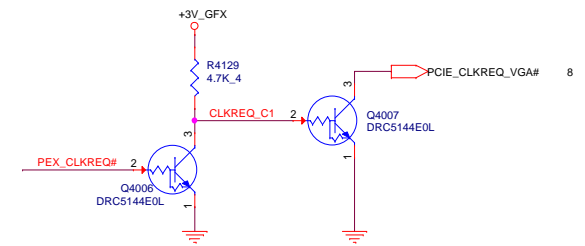
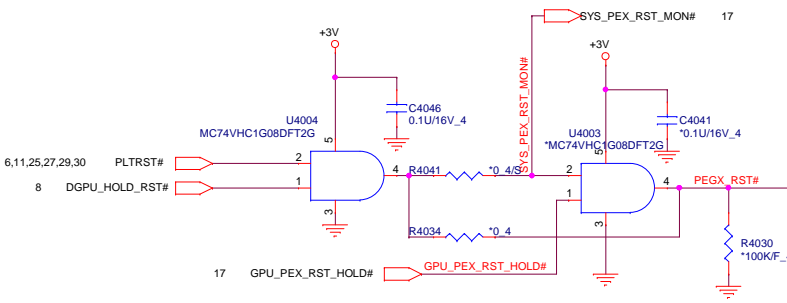
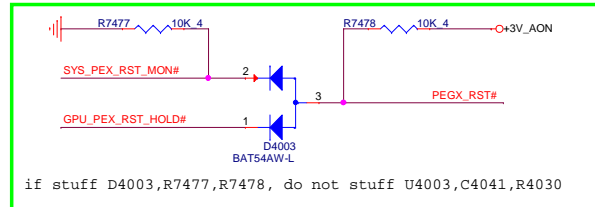
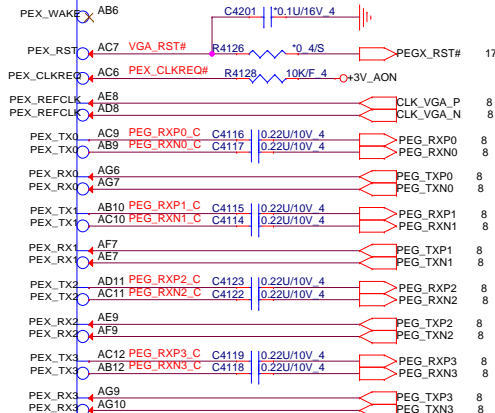
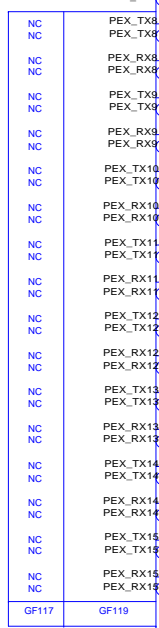
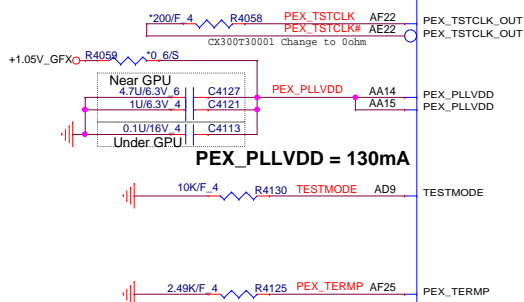
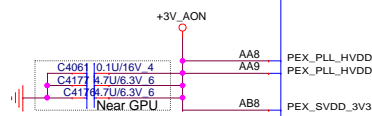





**PEX\_IOVDD + PEX\_IOVDDQ = 1.042A**

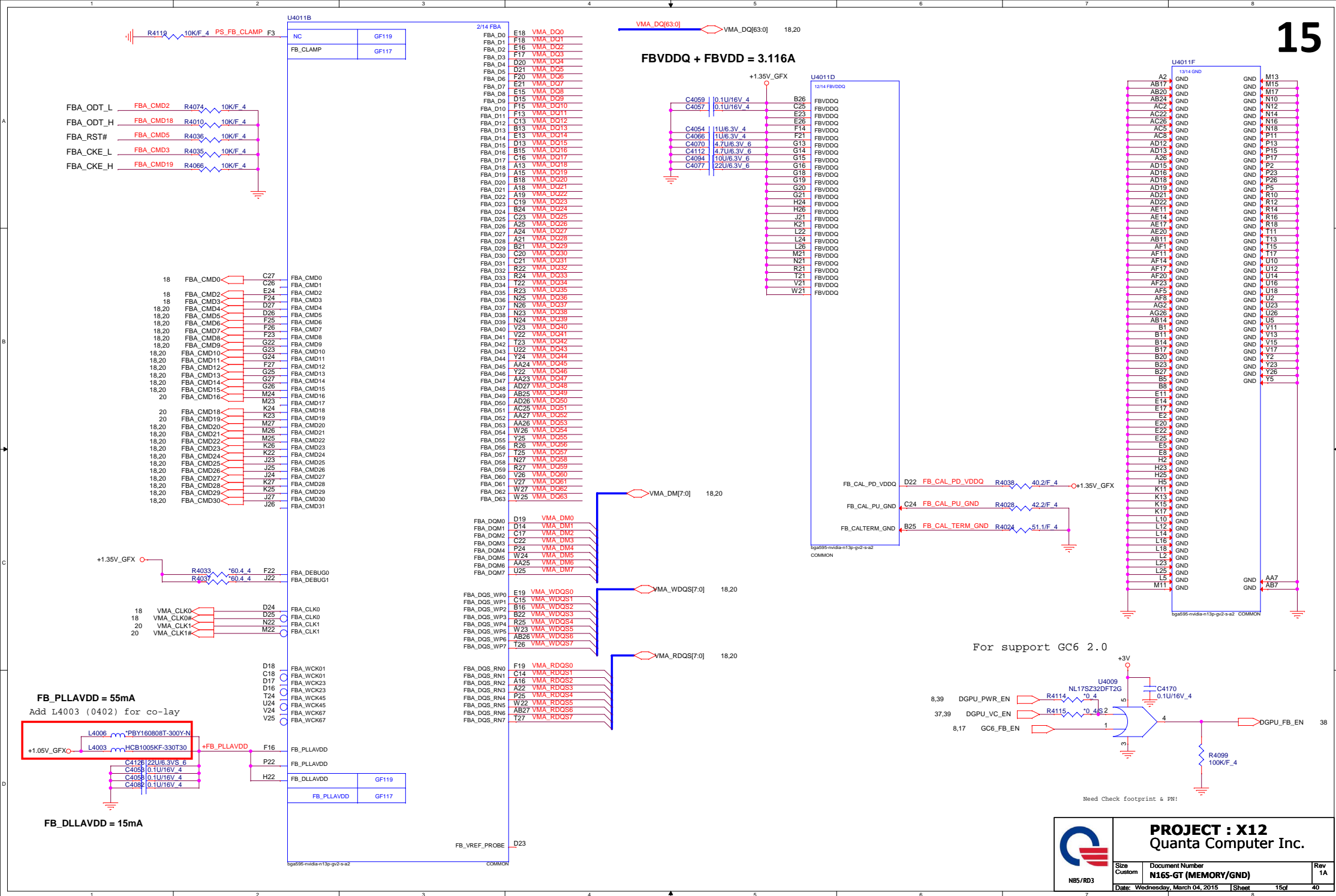


PEX\_PLL\_HVDD +  
PEX\_SVDD\_3V3 = 143mA

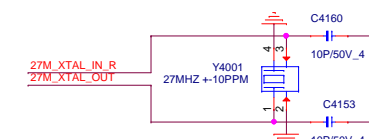
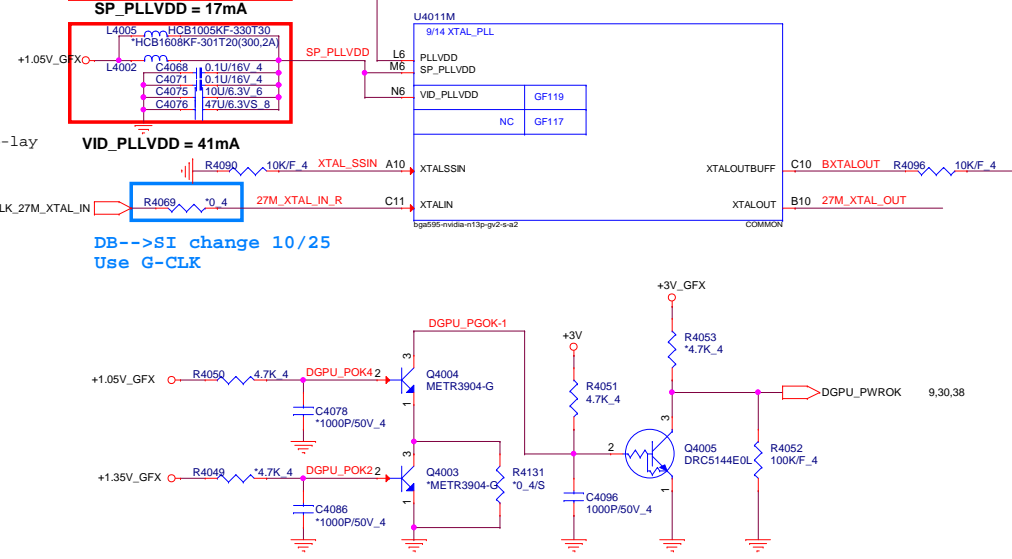
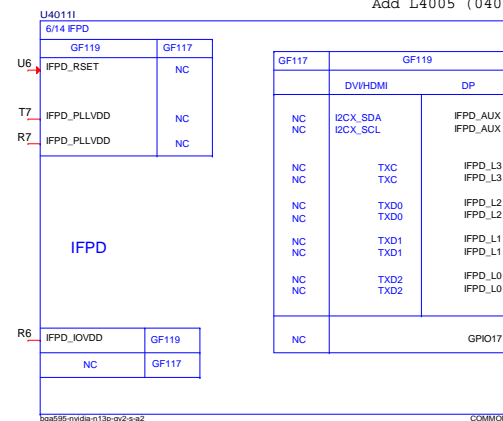
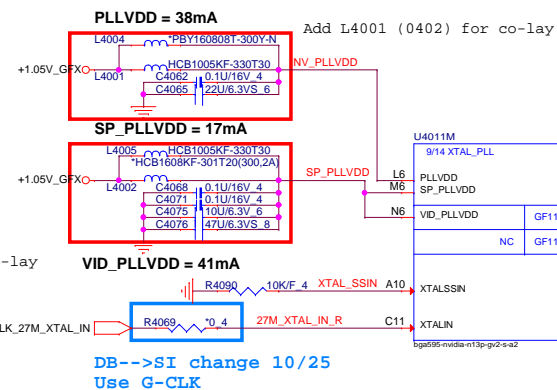
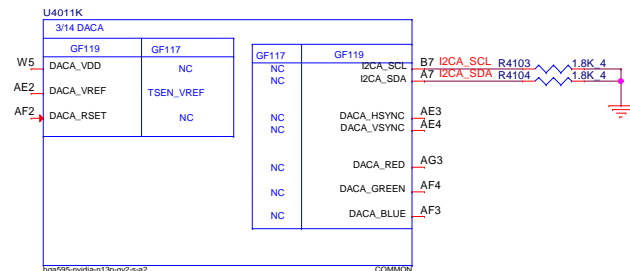
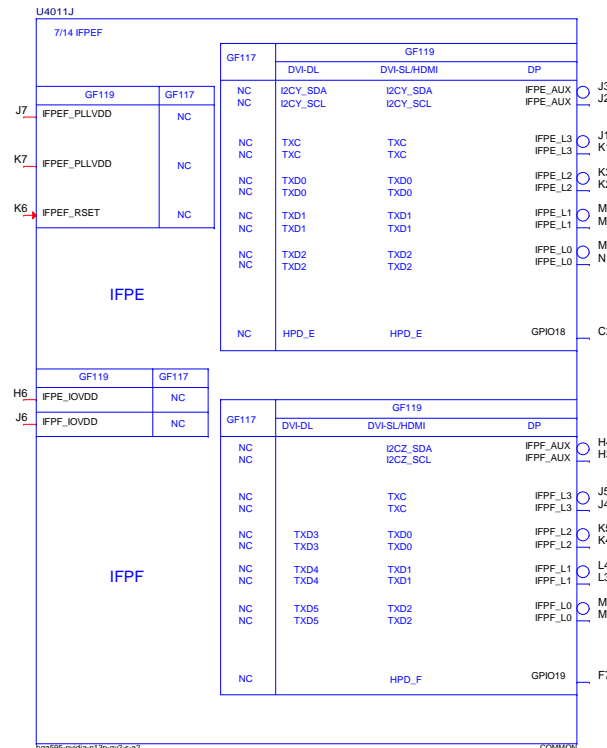


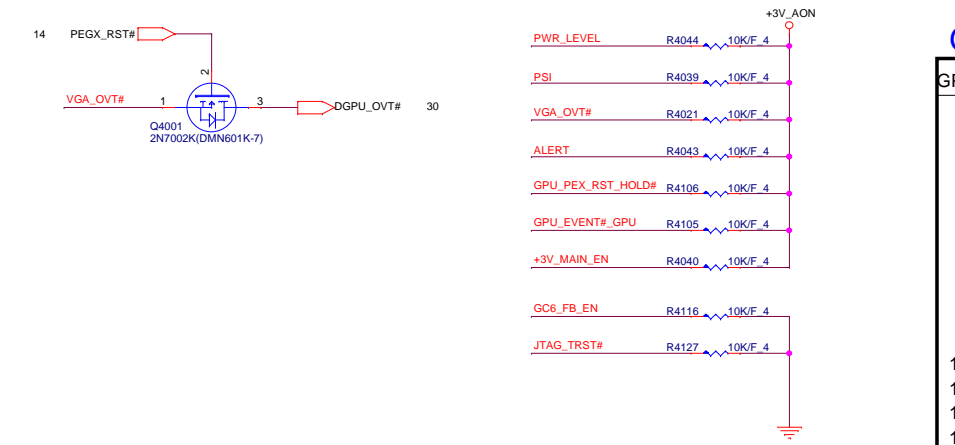
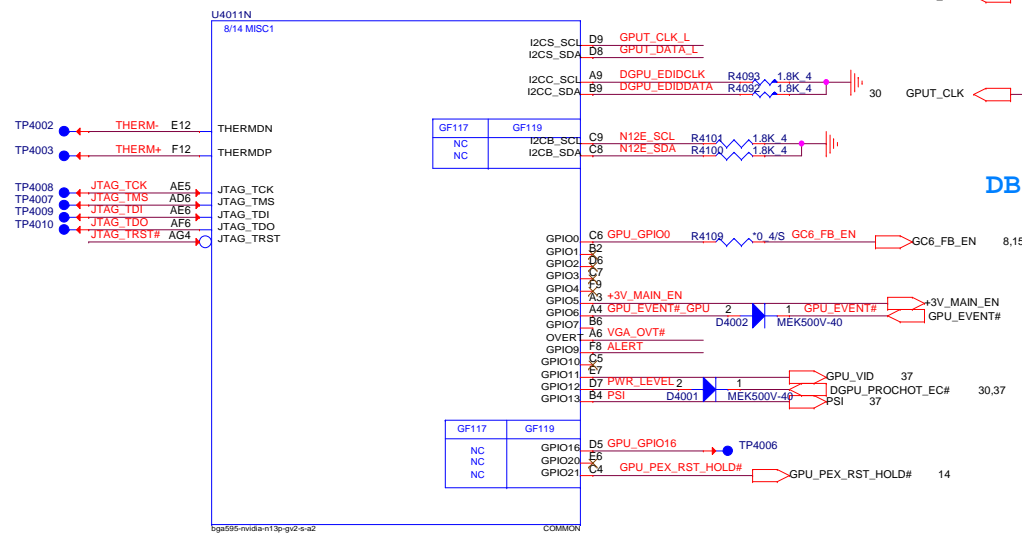
 NBS / RD3	<b>PROJECT : X12</b> <b>Qanta Computer Inc.</b>		
	Size Custom	Document Number <b>N165-GT (PCIe I/F) / NVDD</b>	Rev 1A
Date: Wednesday, March 04, 2015		Sheet 14 of	40













Resistor Values	Pull-Up to 3V3_MAIN	Pull-Down to GND
4.99 kΩ	1000	0000
10.0 kΩ	1001	0001
15.0 kΩ	1010	0010
20.0 kΩ	1011	0011
24.9 kΩ	1100	0100
30.1 kΩ	1101	0101
34.8 kΩ	1110	0110
45.3 kΩ	1111	0111

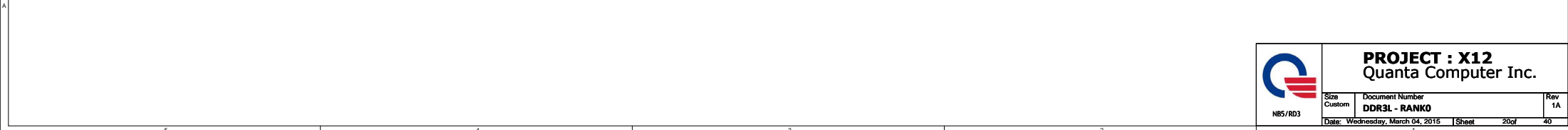
RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	Strapping	TOP B/S	QBC
0000	DDR3L 256Mx16, 64bit, 4Gb,900MHz	HYNIX	H5TC4G63CFR-N0C	0x2	AKD5PZDTW01	AKD5PZDTW02
0010	DDR3L 256Mx16, 64bit, 4Gb,900MHz	Micron	MT41J256M16HA-093G:E	0x4	AKD5PZSTL00	AKD5PZSTL01
0100	DDR3L 256Mx16, 64bit, 4Gb,900MHz	SAMSUNG	K4W4G1646E-BC1A	0x1	AKD5PGDT500	AKD5PGDT501


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

 NBS / RD3	<b>PROJECT : X12</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>N165-GT (GPIO/STRAPS)</b>	Rev 1A
Date: Wednesday, March 04, 2015		Sheet 17 of	40

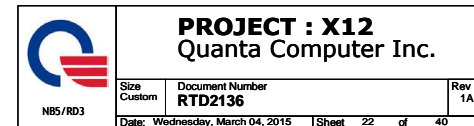
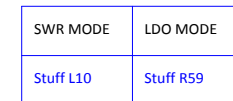
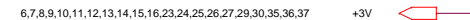
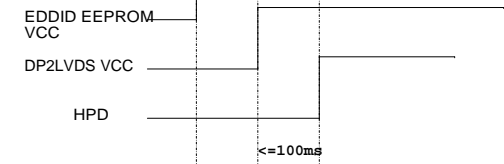


	<b>PROJECT :Y05</b> <b>Quanta Computer Inc.</b>		
	Size Custom	Document Number DDR3L - RANK1	Rev 1A
	Date: Wednesday, March 04, 2015   Sheet 19 of 40		



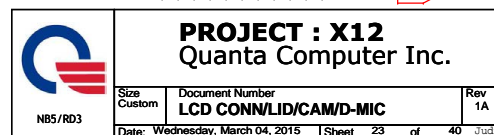
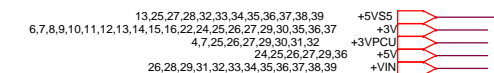
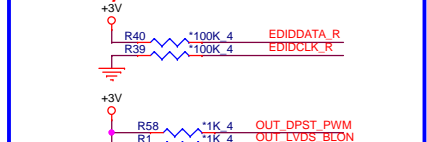
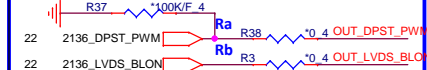
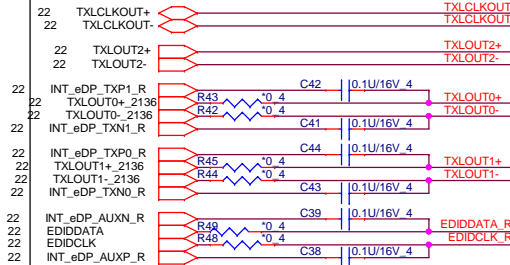
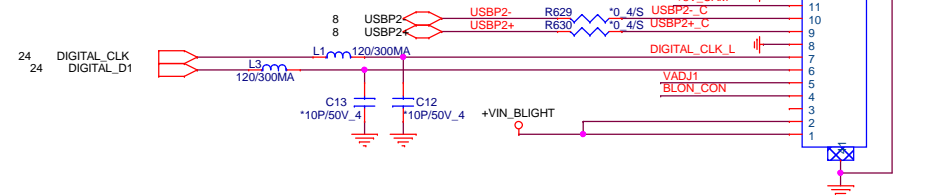
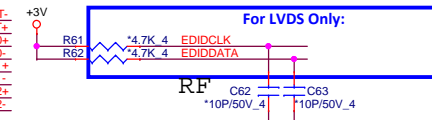
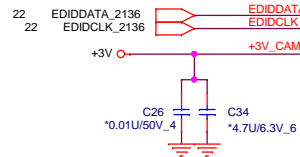
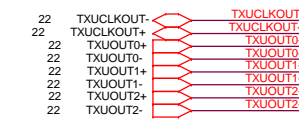
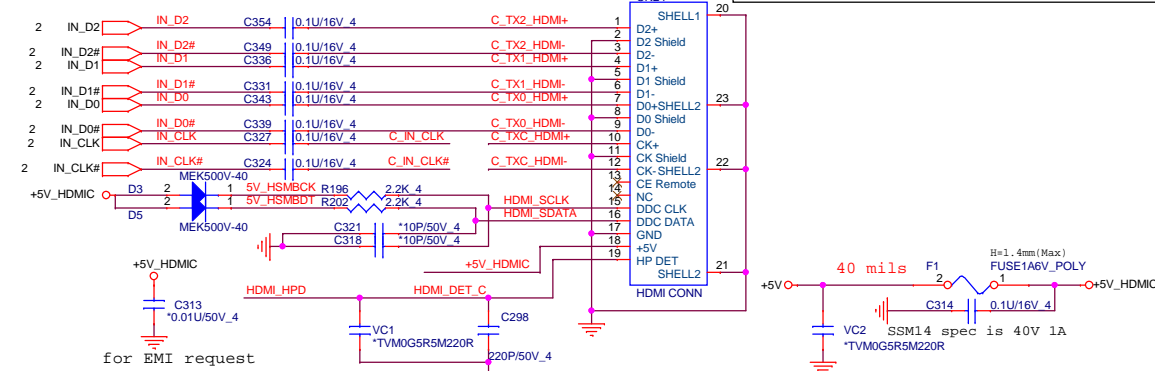
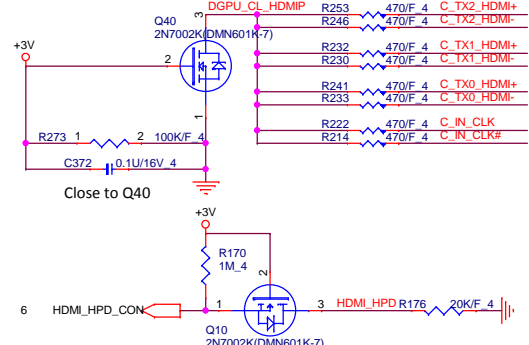
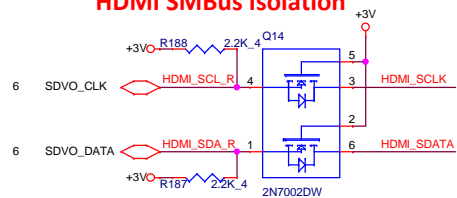
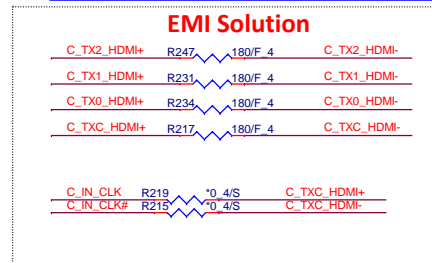
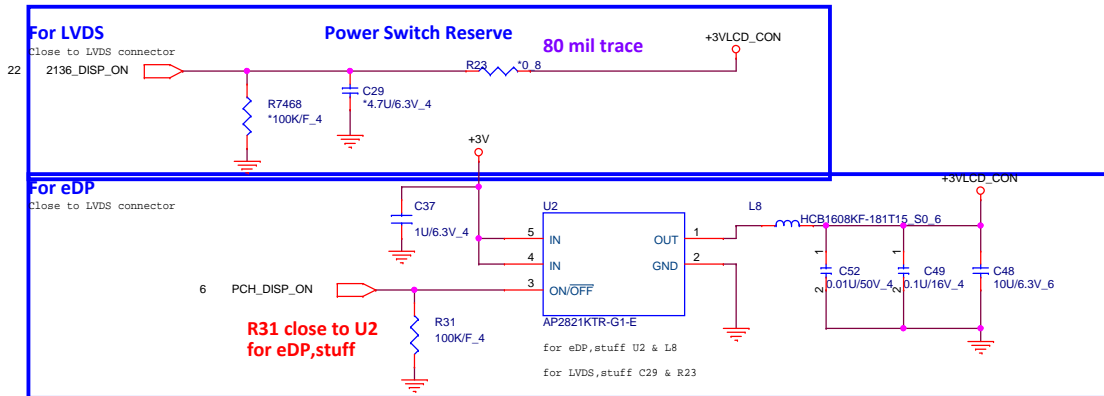
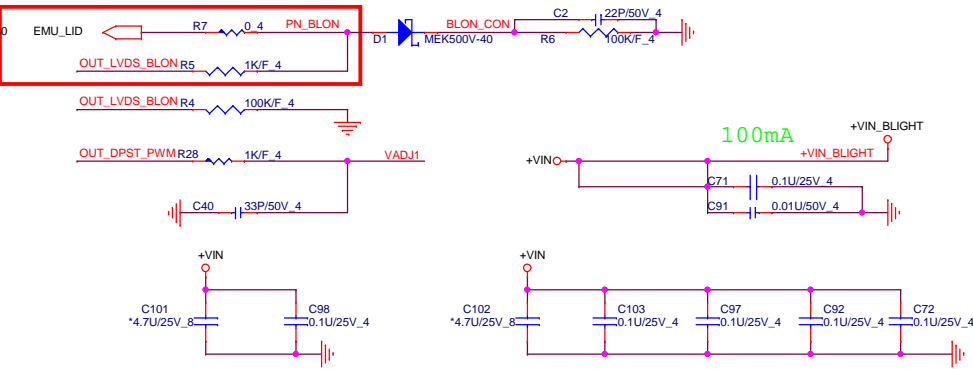
	<b>PROJECT :Y05</b> <b>Quanta Computer Inc.</b>		
	Size Custom	Document Number DDR3L - RANK1	Rev 1A
	Date: Wednesday, March 04, 2015   Sheet 21 of 40		

## 22



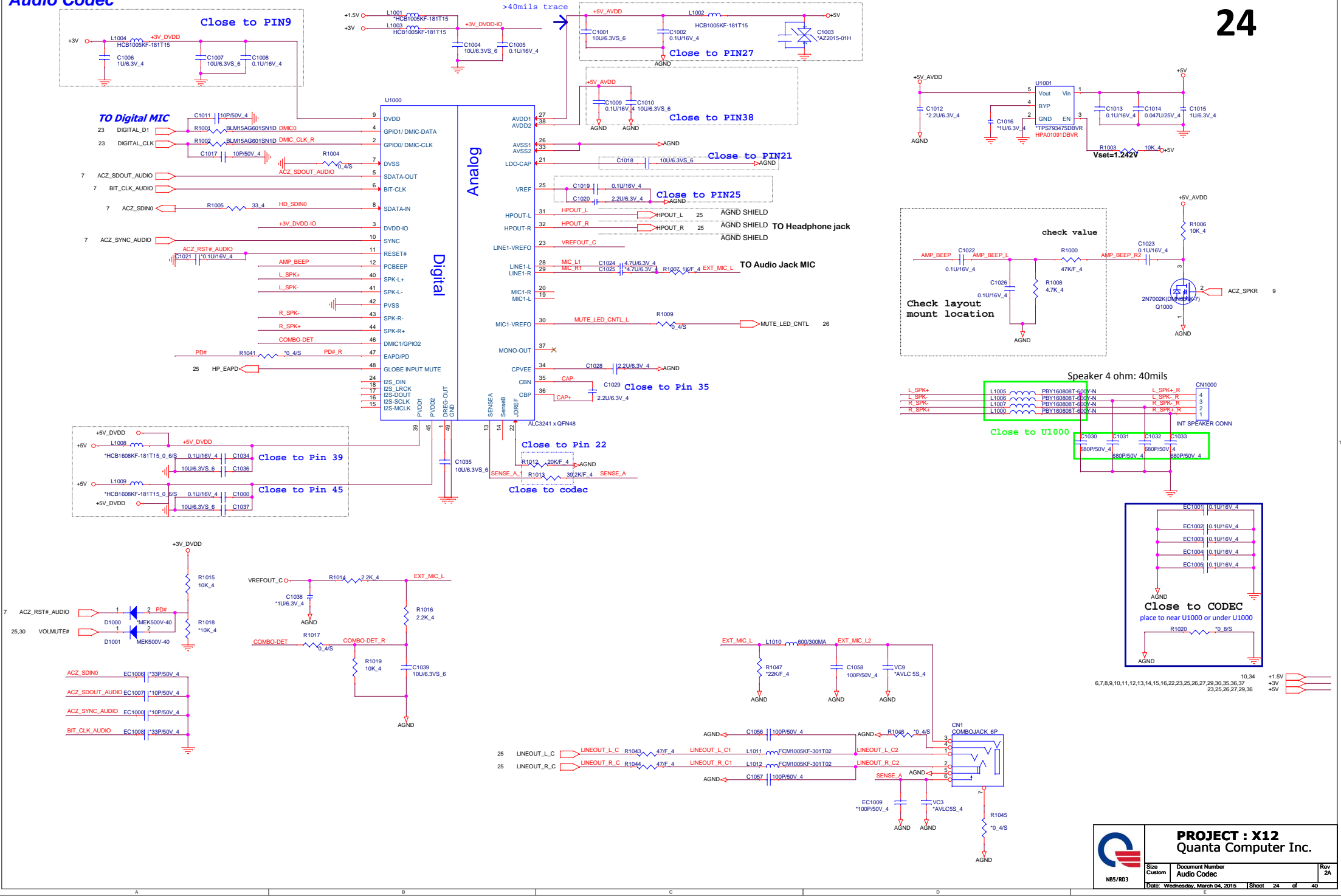


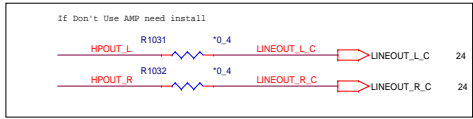
## LID Switch



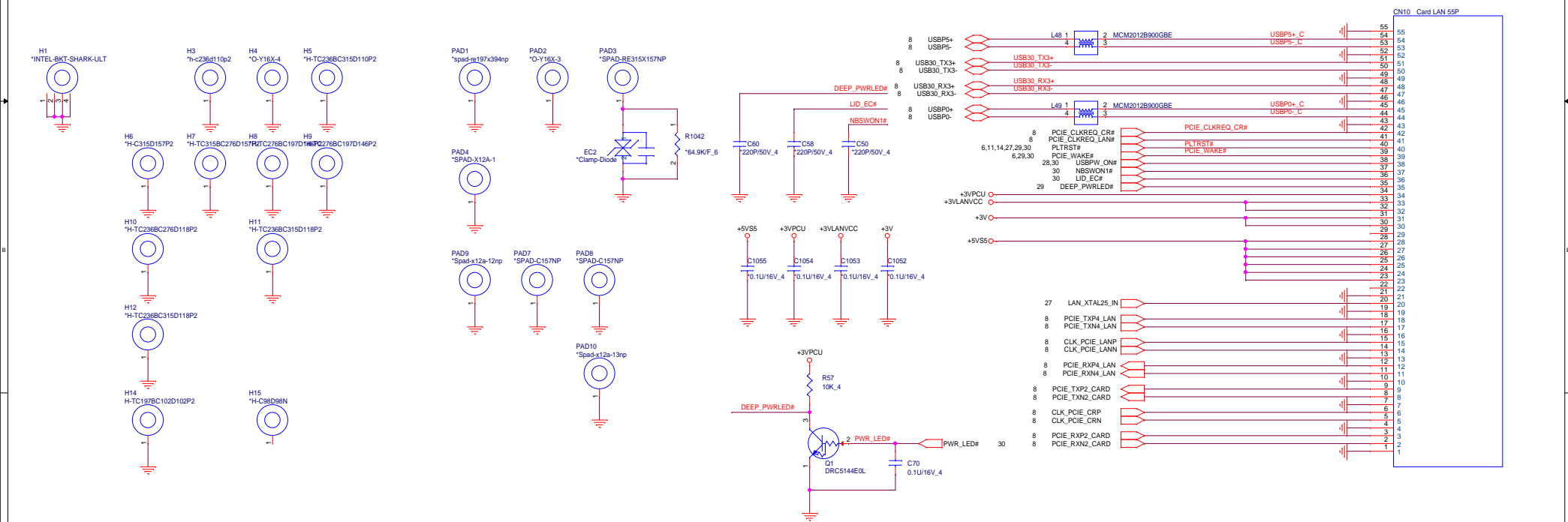
## LVDS Conn.

23

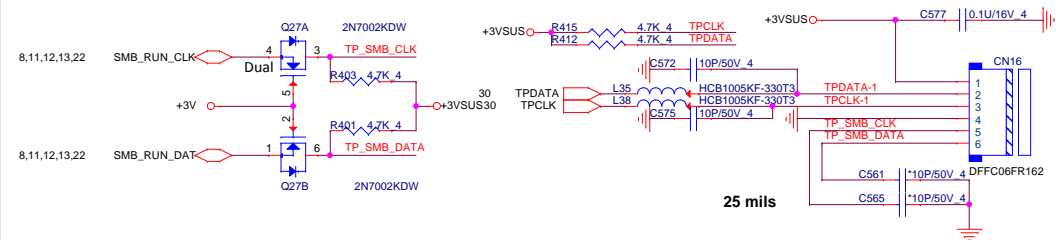




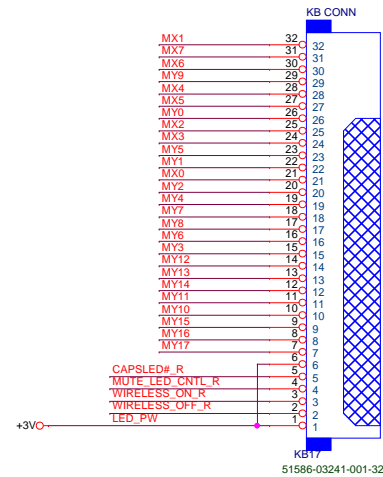
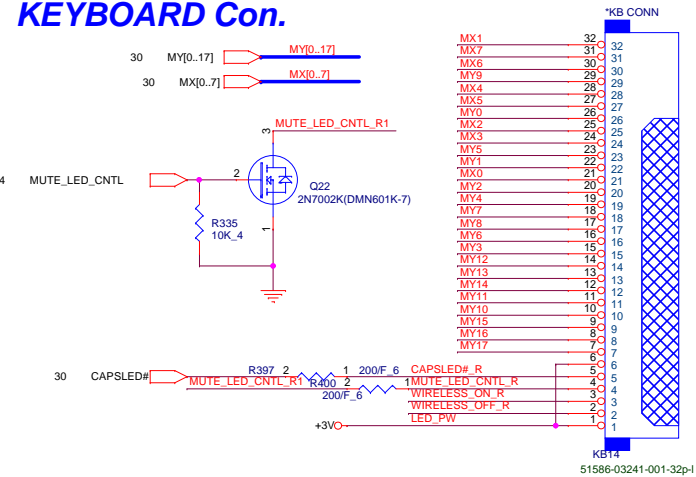
H1  
\*INTEL-BKT-SHARK-ULT



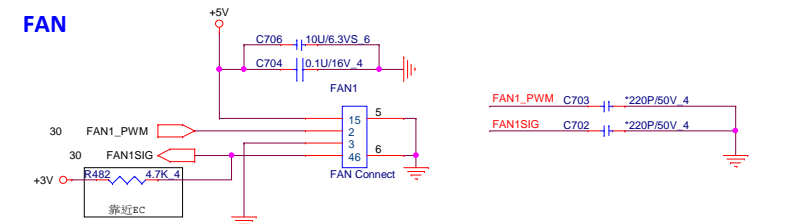
# Touch Pad Connector



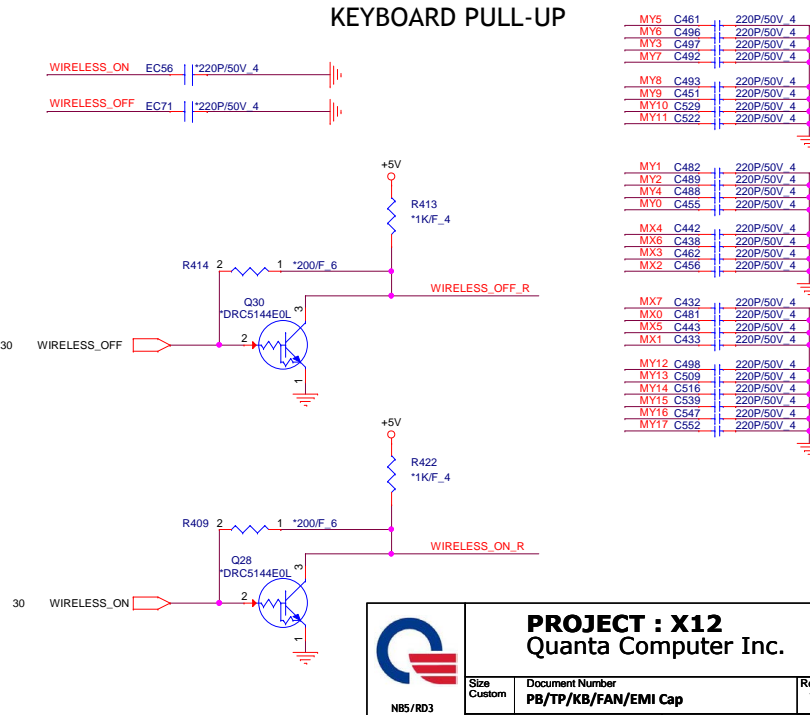
## KEYBOARD Con.



## FAN



## KEYBOARD PULL-UP



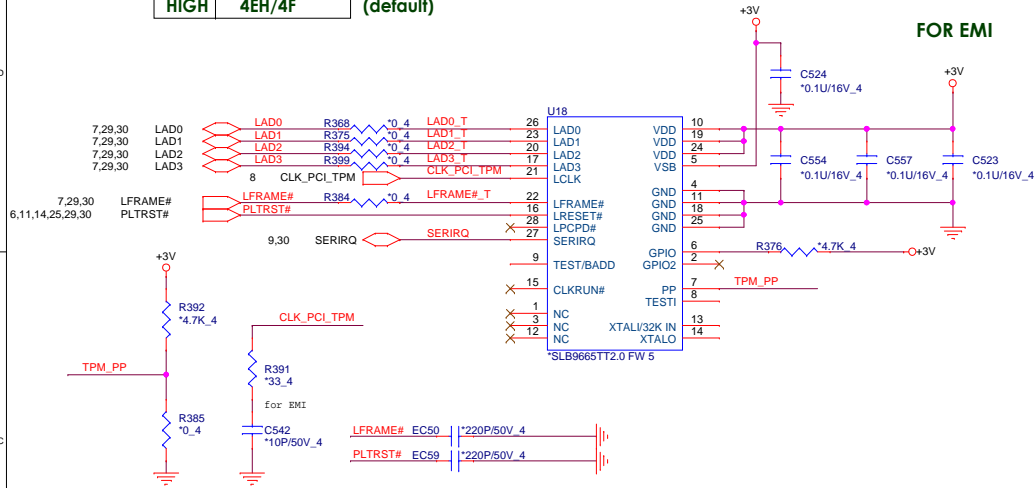
**PROJECT : X12**  
Quanta Computer Inc.

Size Custom	Document Number PB/TP/KB/FAN/EMI Cap	Rev 1A
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## TPM (2.0)

Address

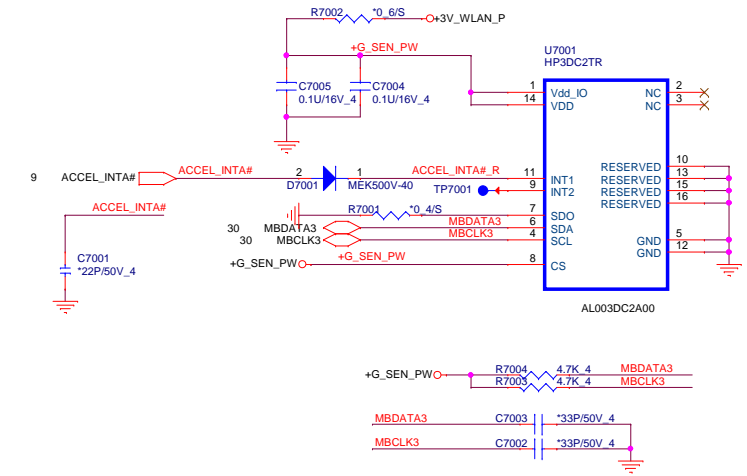
	BADD
HIGH	4EH/4F (default)



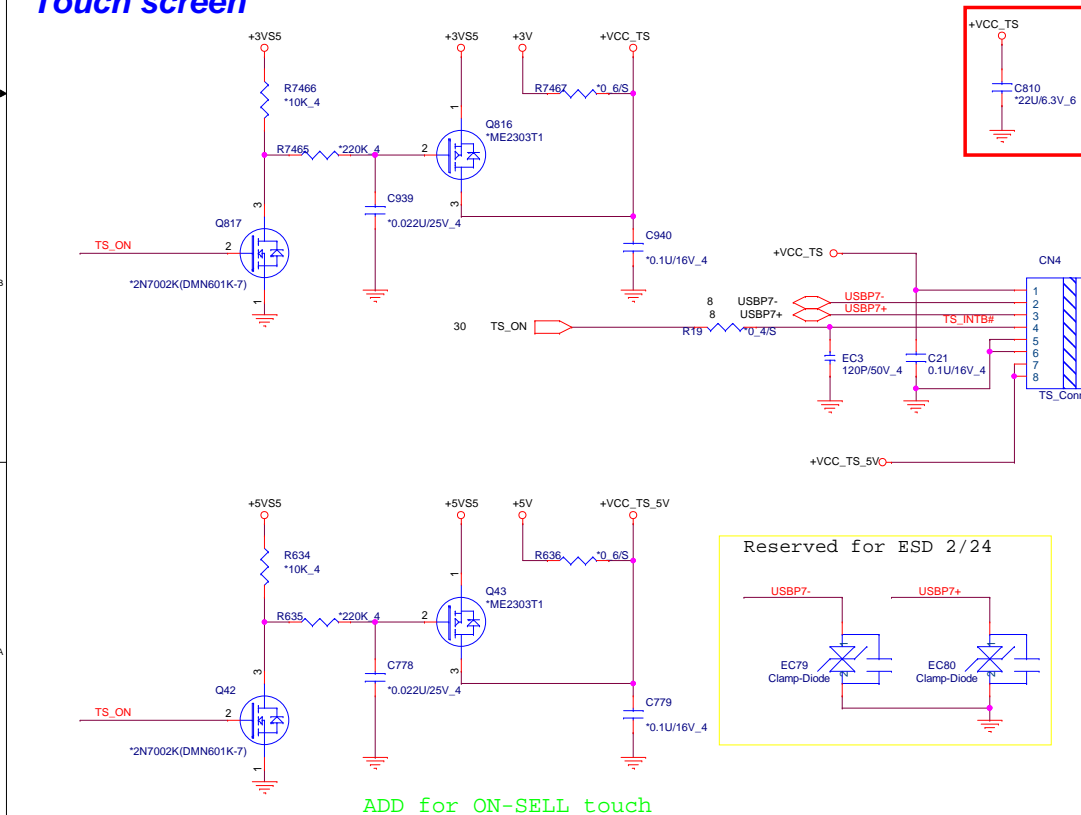
## Accelerometer Sensor

27

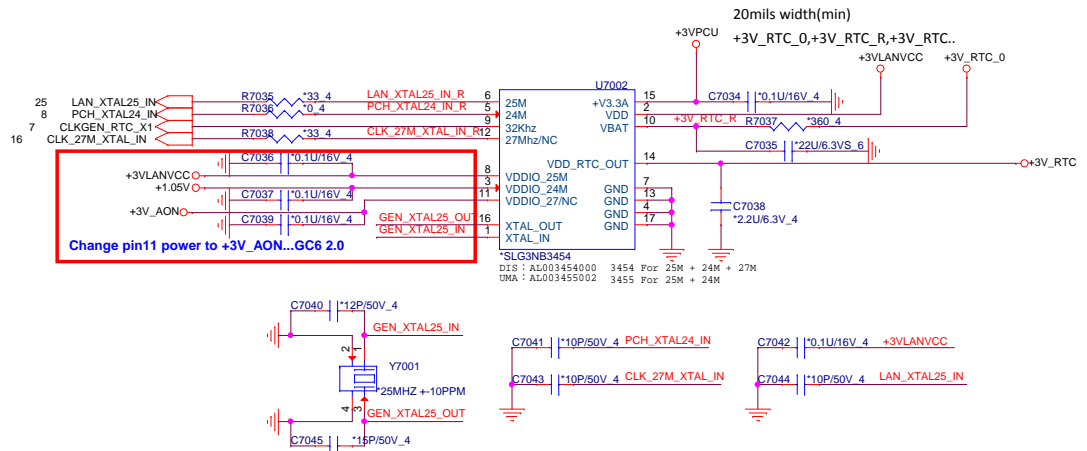
G-Sensor Power need check




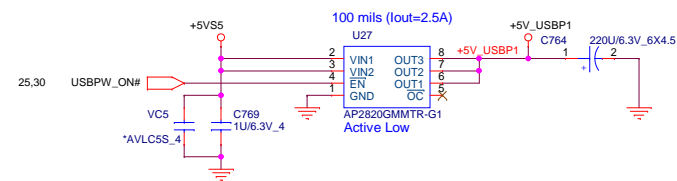
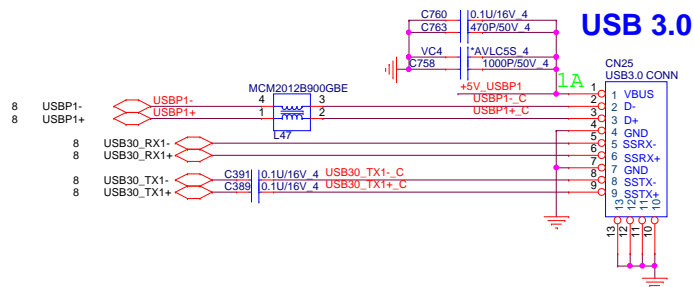
## Touch screen



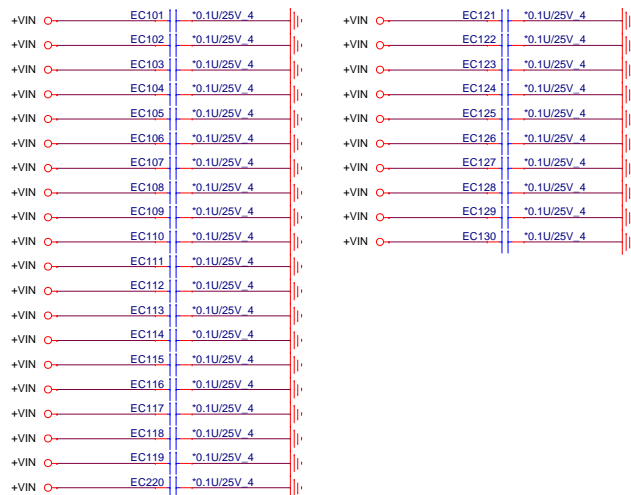
## Green CLK Circuitry




		<b>PROJECT : X12</b> <b>Quanta Computer Inc.</b>	
Size Custom	Document Number TPM/G-Sensor/G-CLK/TS/FP	Rev 1A	
Date: Wednesday, March 04, 2015	Sheet	27 of	40

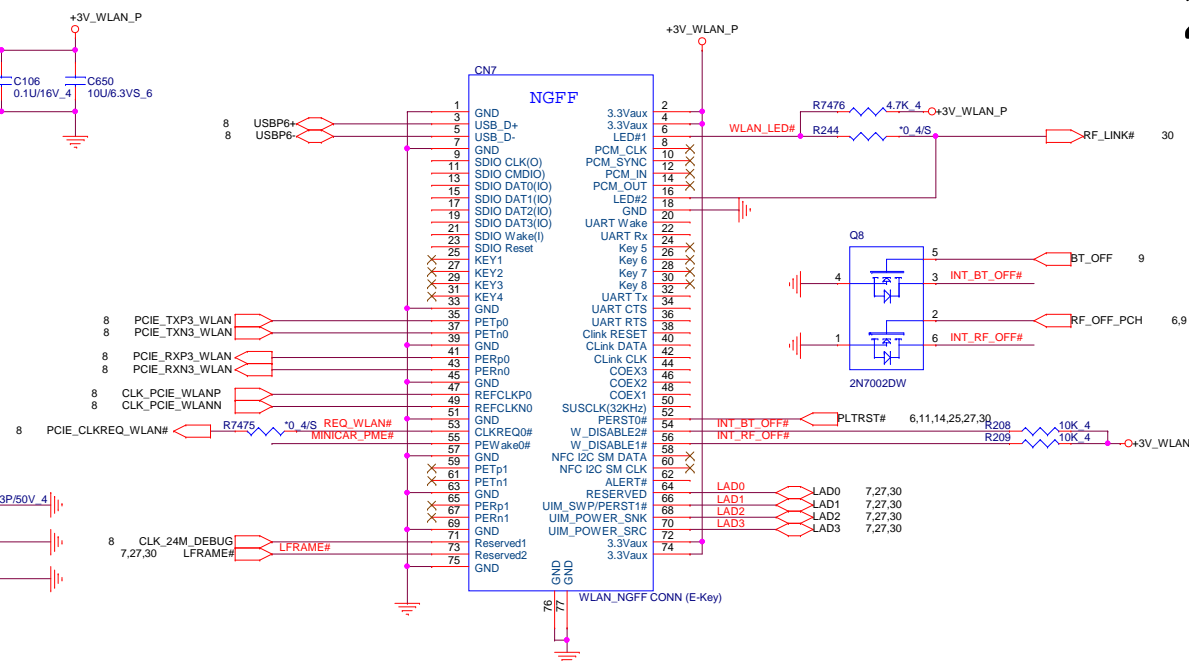
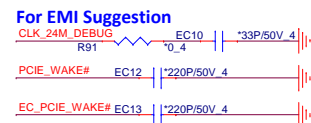
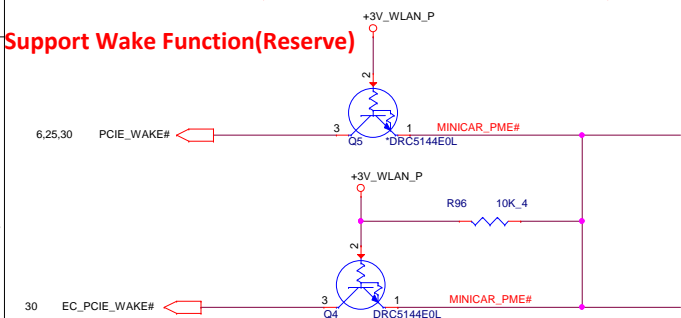


# EMI CAP

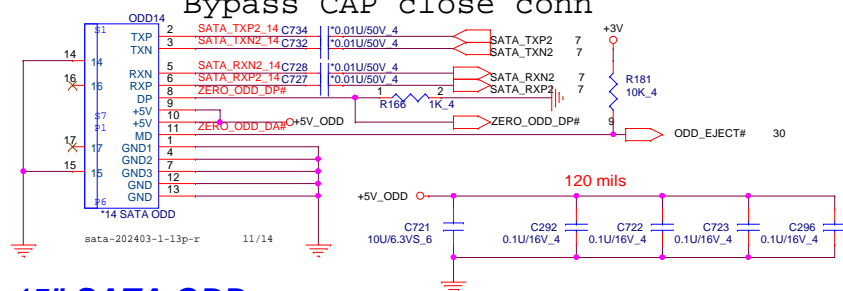


 NB5/RD3	<b>PROJECT : X12</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>USB 3.0</b>	Rev 1A
	Date: Wednesday, March 04, 2015   Sheet 28 of 40		

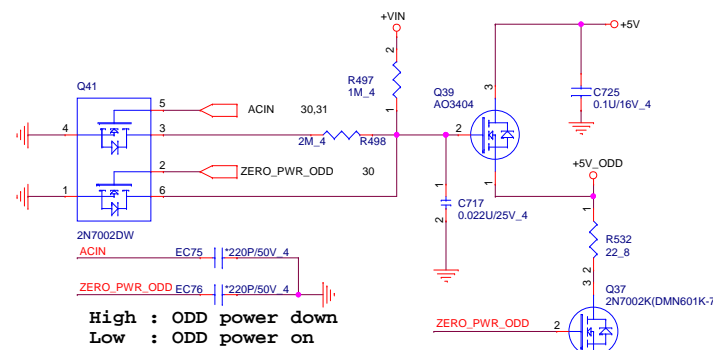
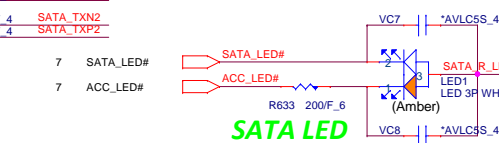
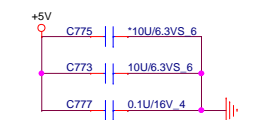
## Support Wake Function(Reserve)




Bypass CAP close conn

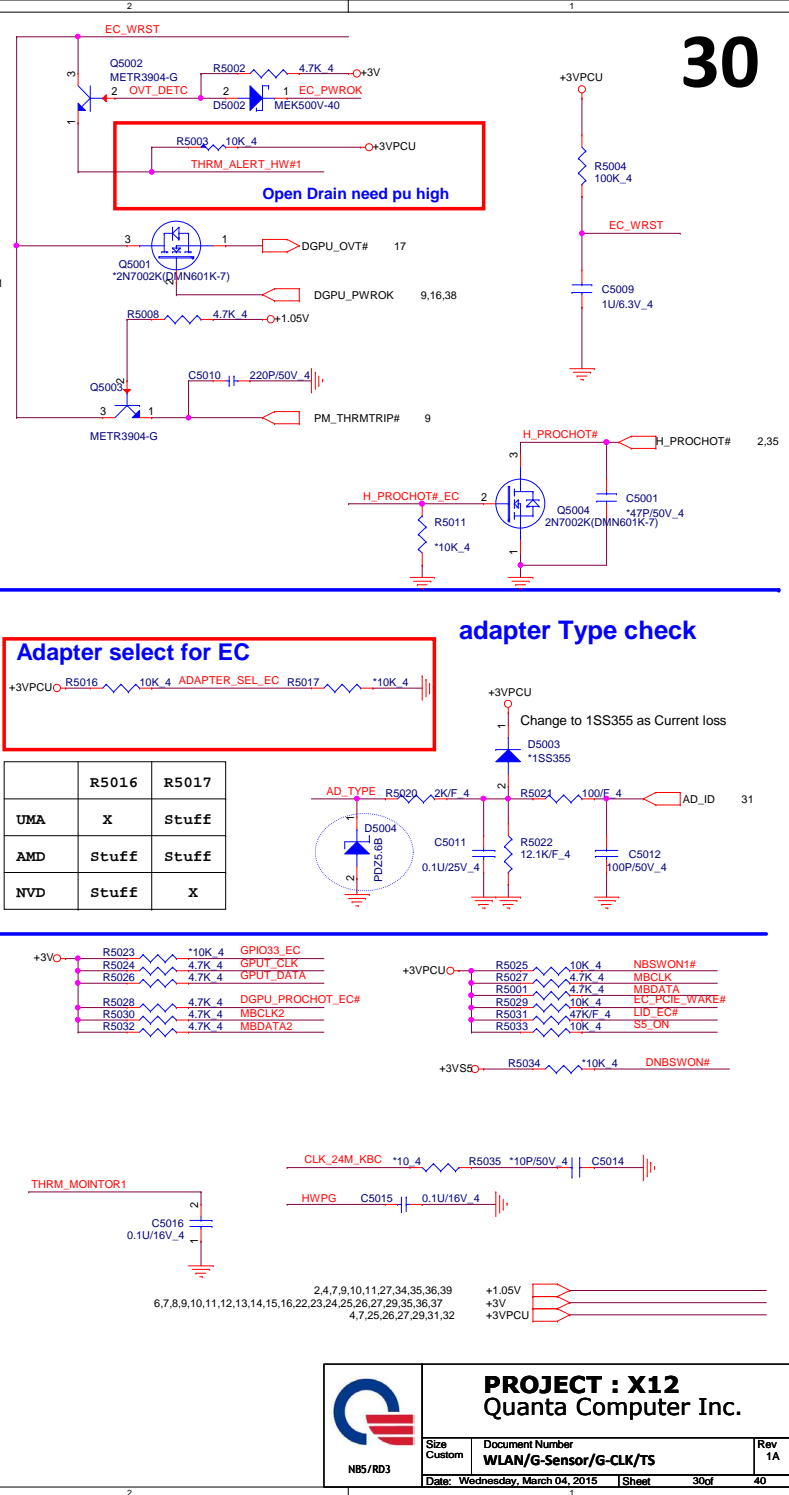
[illegible]

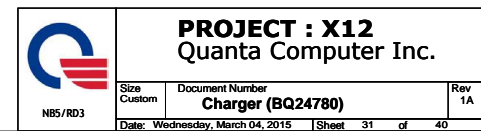
	<b>ODD CAP Setting</b>	C727 / C728 / C732 / C732	C729 / C730 / C731 / C733
	<b>ODD 14"</b>	<b>O</b>	<b>X</b>
Default	<b>ODD 15"/17"</b>	<b>X</b>	<b>O</b>

[illegible]

 NBS / RD3	<b>PROJECT : X12</b> <b>Quanta Computer Inc.</b>		
	Size Custom	Document Number <b>WLAN/NGFF/MSATA</b>	Rev 1A
Date: <b>Wednesday, March 04, 2015</b>		Sheet <b>29</b> of <b>40</b>	

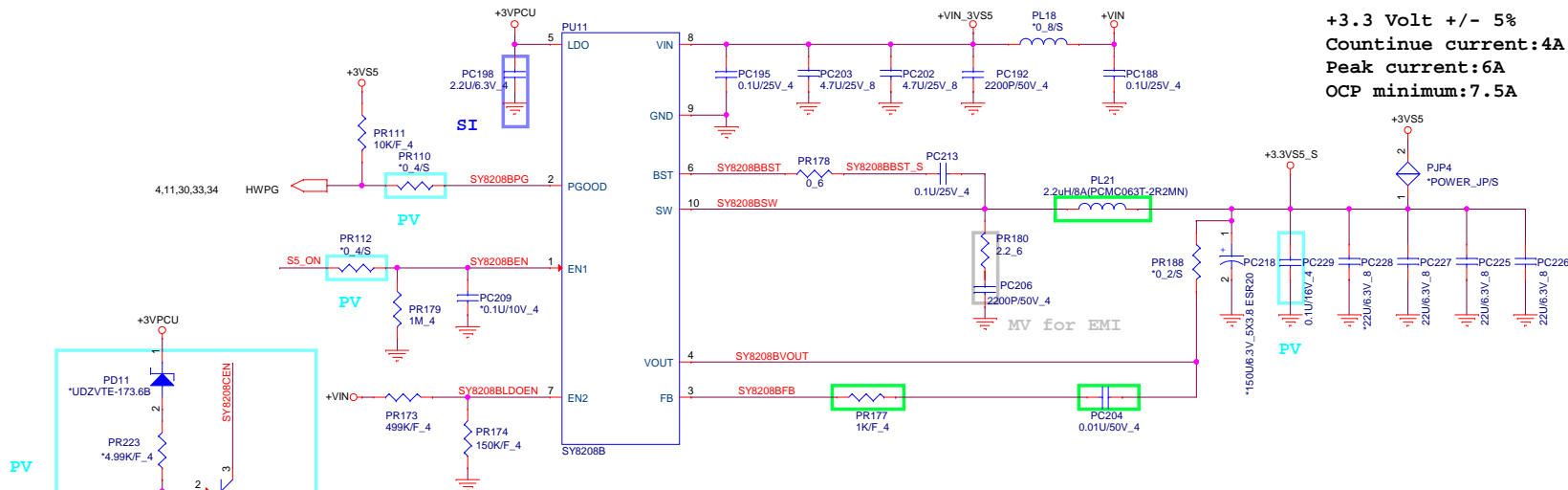




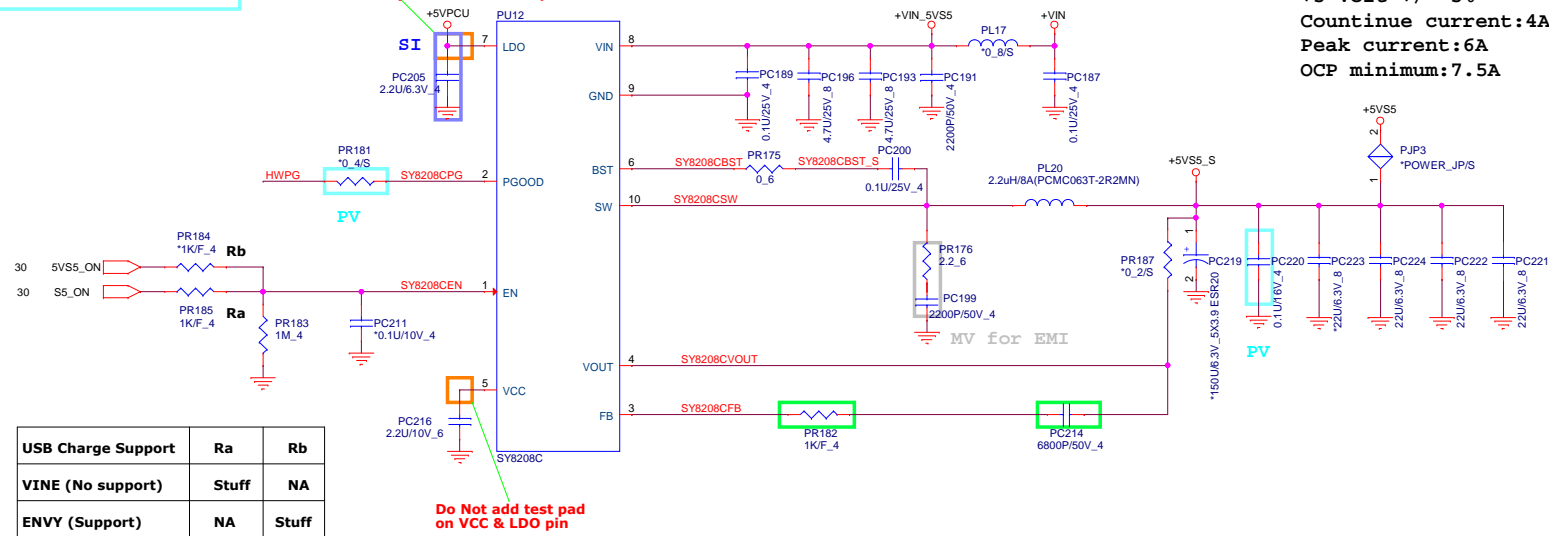


+3VS5 6,9,10,11,27,29,30,34,36,39  
+5VS5 13,25,27,28,33,34,35,36,37,38,39

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



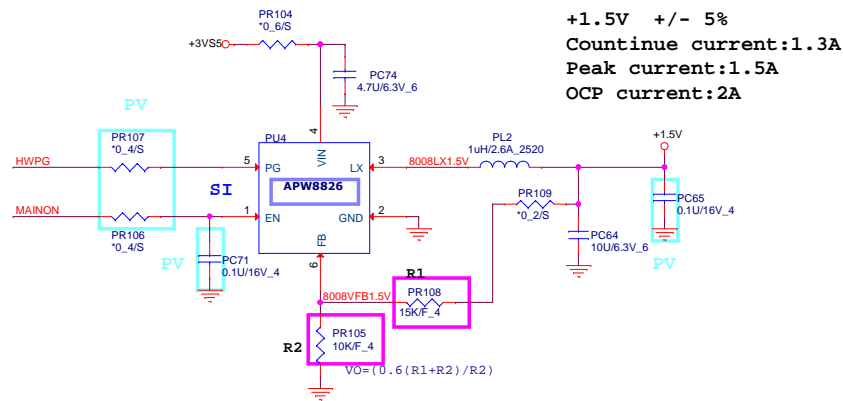
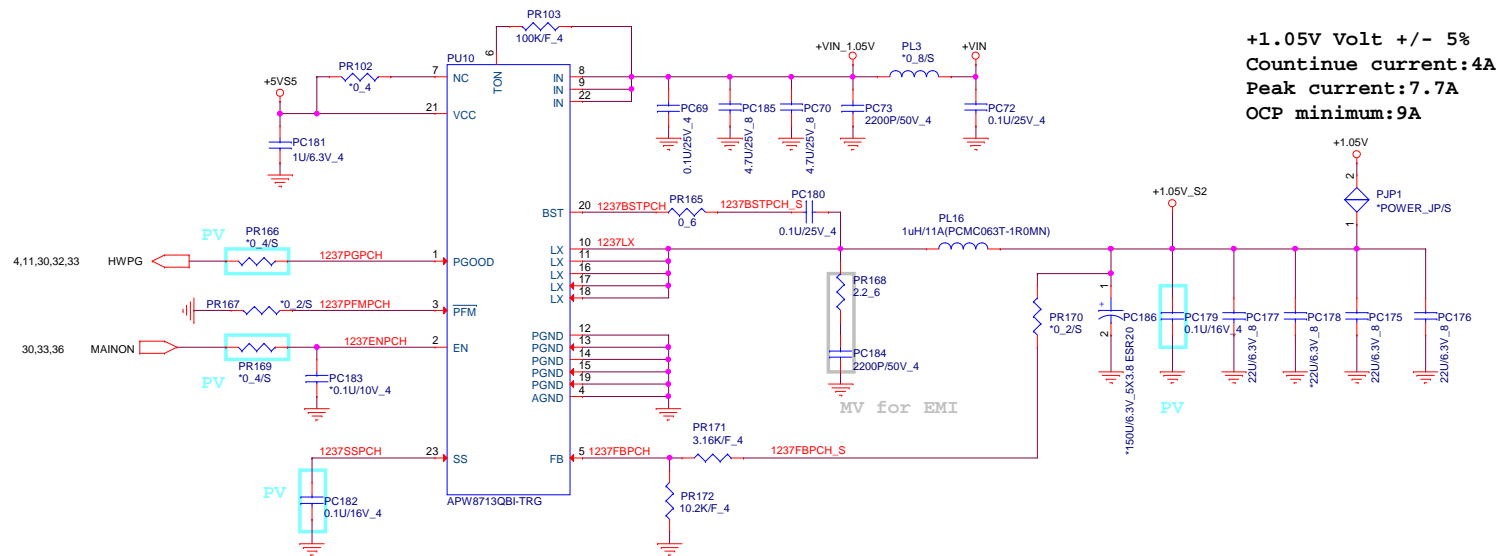
**+5 Volt +/- 5%**  
**Countinue current:4A**  
**Peak current:6A**  
**OCP minimum:7.5A**




USB Charge Support	Ra	Rb
VINE (No support)	Stuff	NA
ENVY (Support)	NA	Stuff

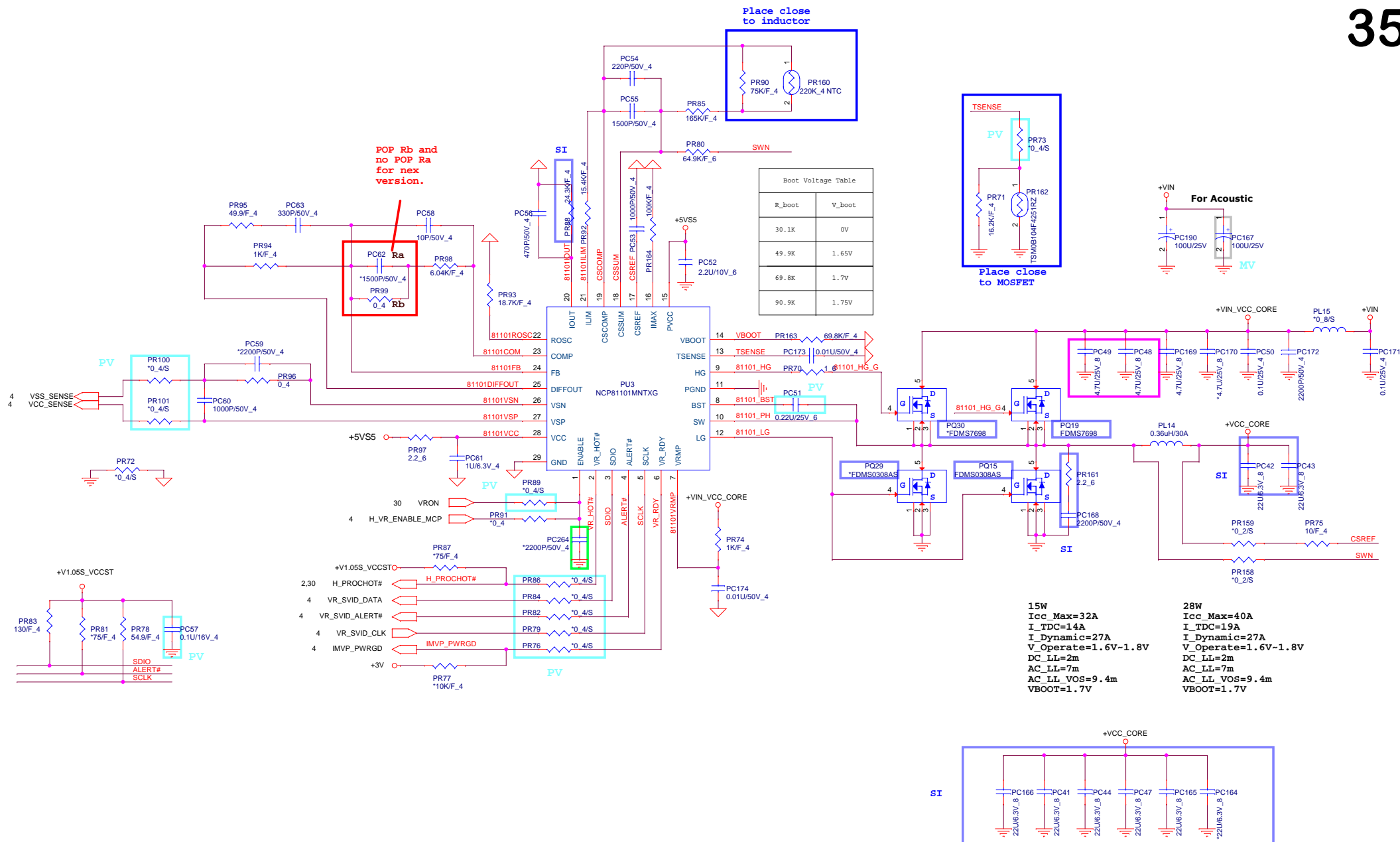


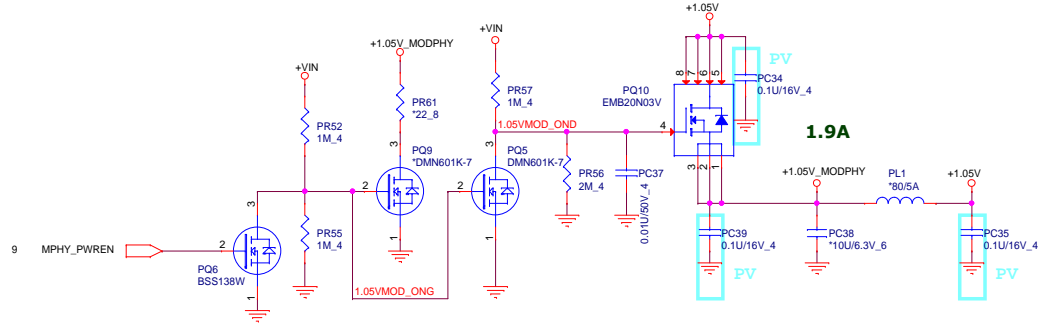
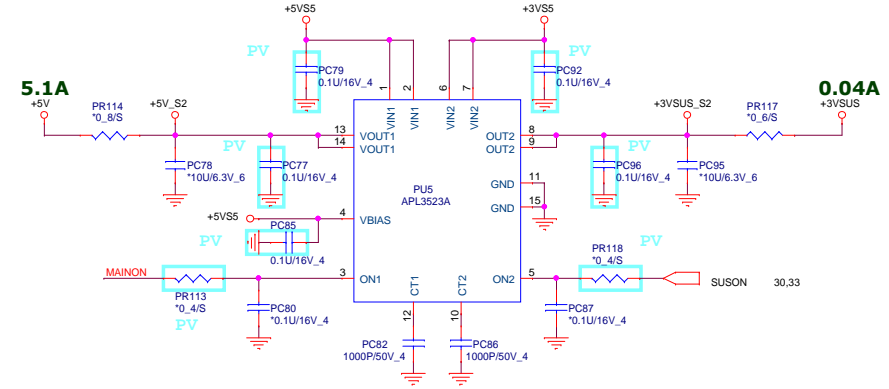
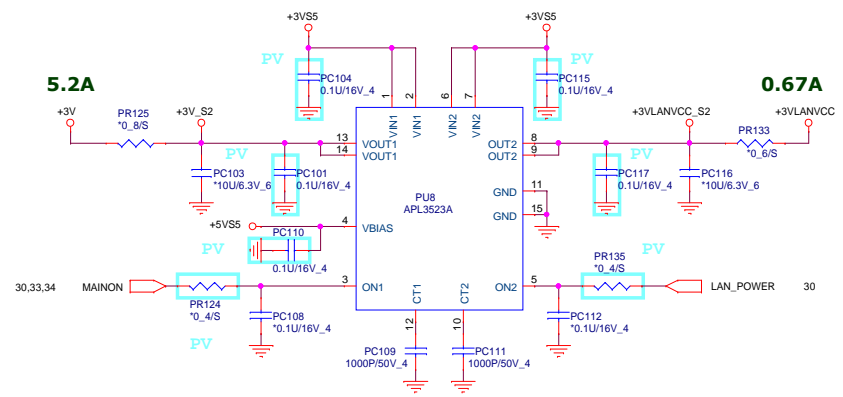
Size Custom	Document Number <b>DDR3 (RT8231A)/1.8VS5</b>	Rev 1A
Date: Wednesday, March 04, 2015	Sheet 33 of 40	




+VIN 23,26,28,29,31,32,33,35,36,37,38,39  
+3VS5 6,9,10,11,27,29,30,32,36,39  
+5VS5 13,25,27,28,32,33,35,36,37,38,39

 NBS/RD3	<b>PROJECT : X12</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>+1.1VS5 (RT8228)/2.5V</b>	Rev 1A
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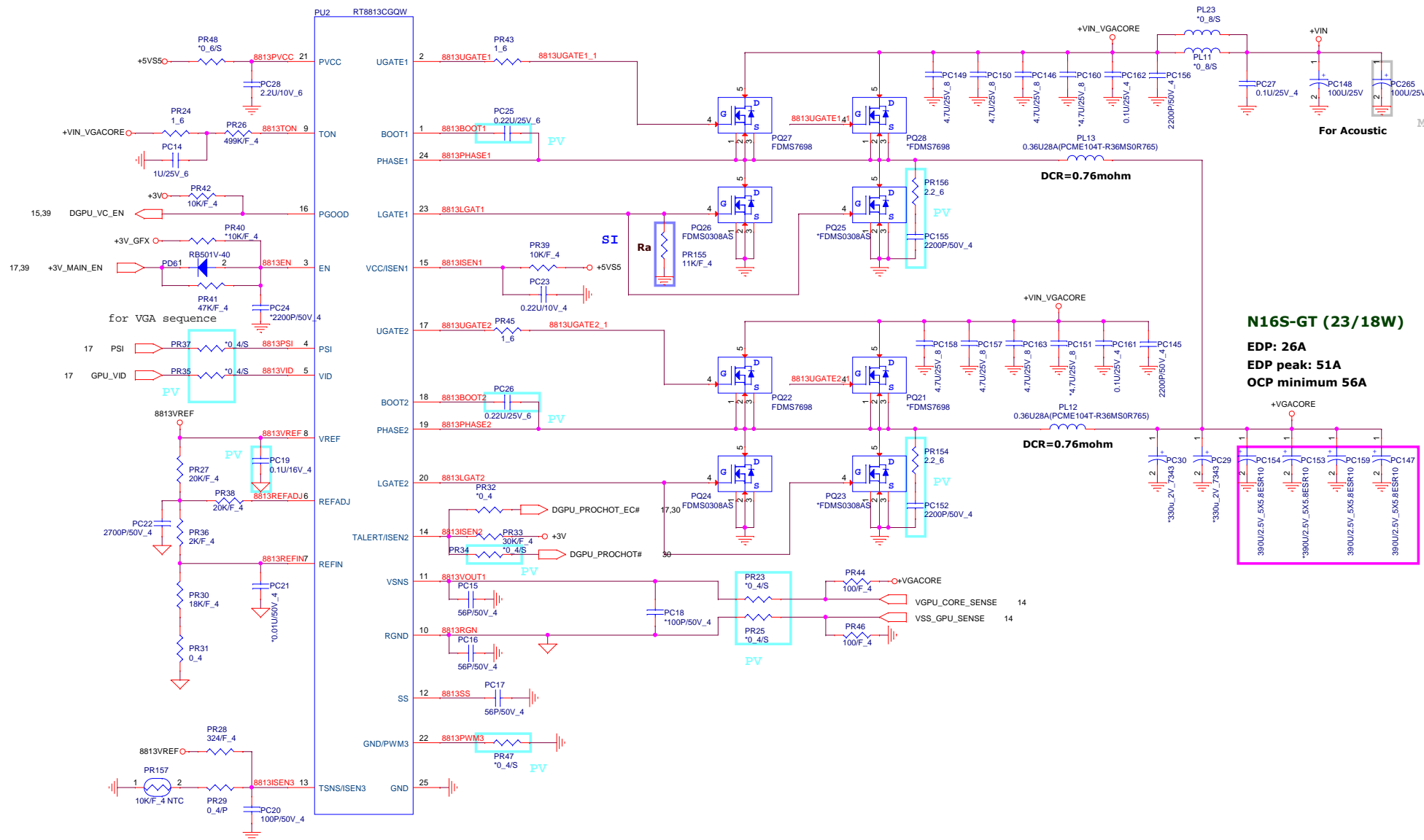
6,7,8,9,10,11,12,13,14,15,16,22,23,24,25,26,27,29,30,35,37	+3V
23,24,25,26,27,29	+5V
23,26,28,29,31,32,33,34,35,37,38,39	+VIN
6,9,10,11,27,29,30,32,34,39	+3VSS
13,25,27,28,32,33,34,35,37,38,39	+5VSS
25,27	+3VLANVCC



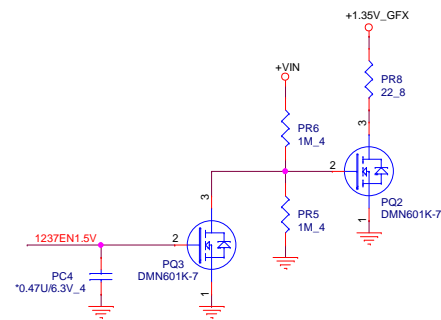
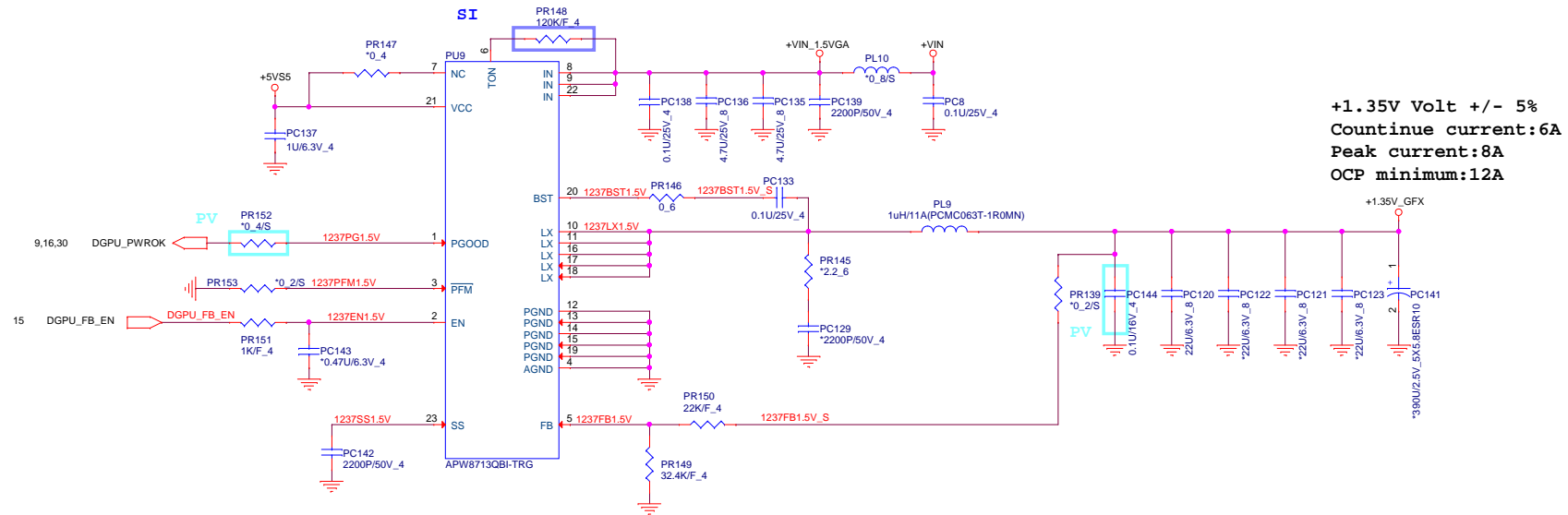
**PROJECT : X12**  
Quanta Computer Inc.

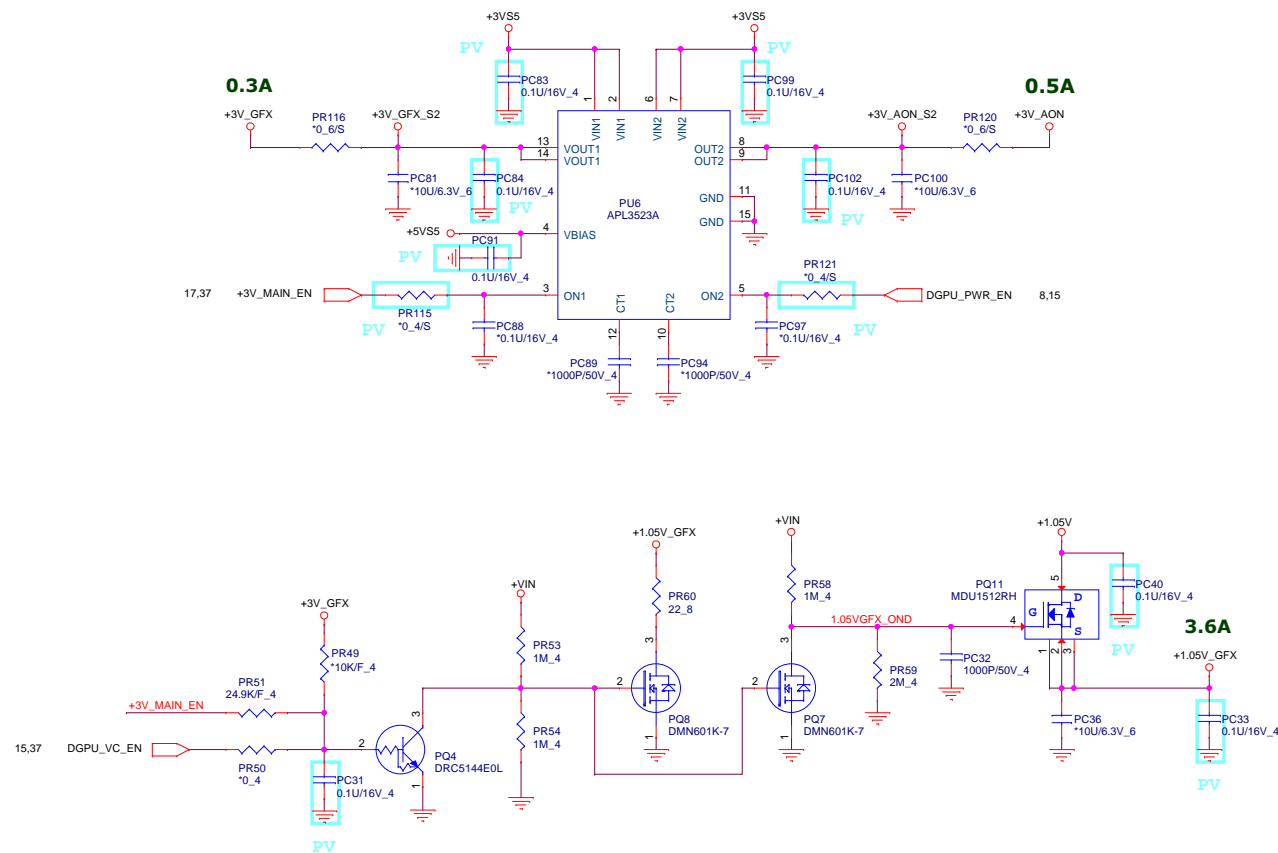
Size Custom	Document Number	Rev 1A
Dis-charge IC (SLG55448)		
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**N16S-GT (23/18W)**  
EDP: 26A  
EDP peak: 51A  
OCP minimum 56A



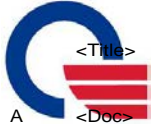


Battery Connector	Pavillion	ENVY
14"	-	-
15"	-	-
17"	-	-

USB Charge Support	PR185	PR184
Pavillion	Stuff	NA
ENVY (USB charge)	NA	Stuff

UMA	Disable Page 41 、 42 、 43 ,but keep below location
Page 41	PC161 、 PC162
Page 42	PC138 、 PC144 、 PC4 、 PC148
Page 43	PC84 、 PC102 、 PC88 、 PC97 、 PC40 、 PC33

Discrete	Location	Part Number
N15S (25W)	PR155	CS29532FB10
	PC151 、 PC160	NA
	PQ21 、 PQ23 、 PQ25 、 PQ28	NA
N15P (35W)	PR155	CS31242FB13
	PC151 、 PC160	Stuff
	PQ21 、 PQ23 、 PQ25 、 PQ28	Stuff

	<b>PROJECT : X12</b>		
	<b>Quanta Computer Inc.</b>		
	Size	Document Number	Rev
NB5/RD3		Wednesday, March 04, 2015	40 40
Date:		Sheet	of