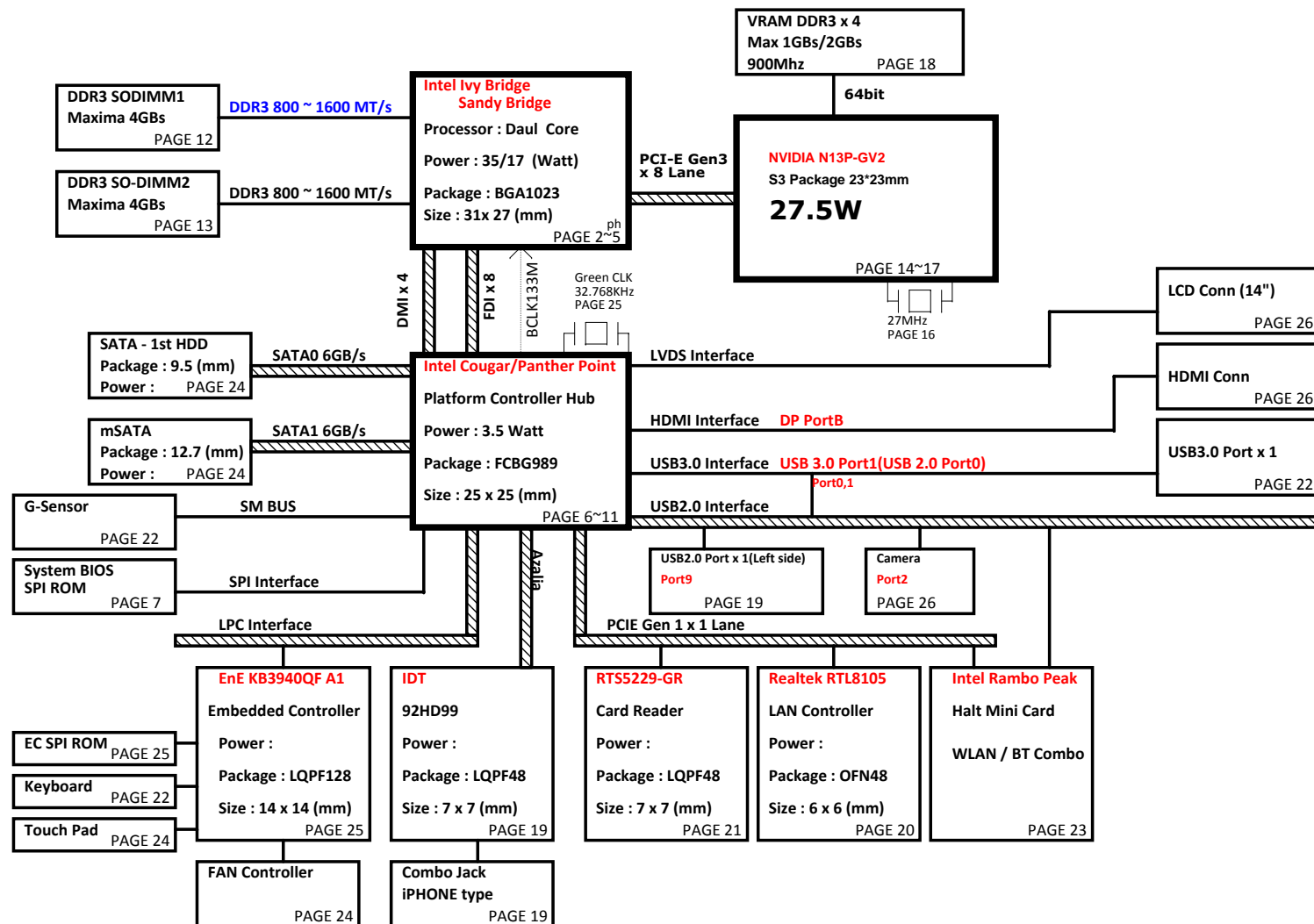


# Volks DIS/UMA (14"/15.6") Ultra/Slim Intel Chief River Platform Block Diagram



## PCB 6L STACK UP

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

## Power Source

**BQ24738**  
System Charge Power (+BATCHG)

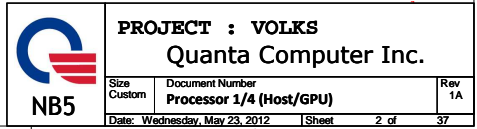
**Rictek RT8223P**  
System Power (+3VPCU/+5VPCU/  
+3VS5/+5VS5)

**NCP6132/NCP5911/RT8240P/  
TP551462RGER**  
Processor Power (+VCC\_CORE/  
+1.05\_VTT/+VCCSA)

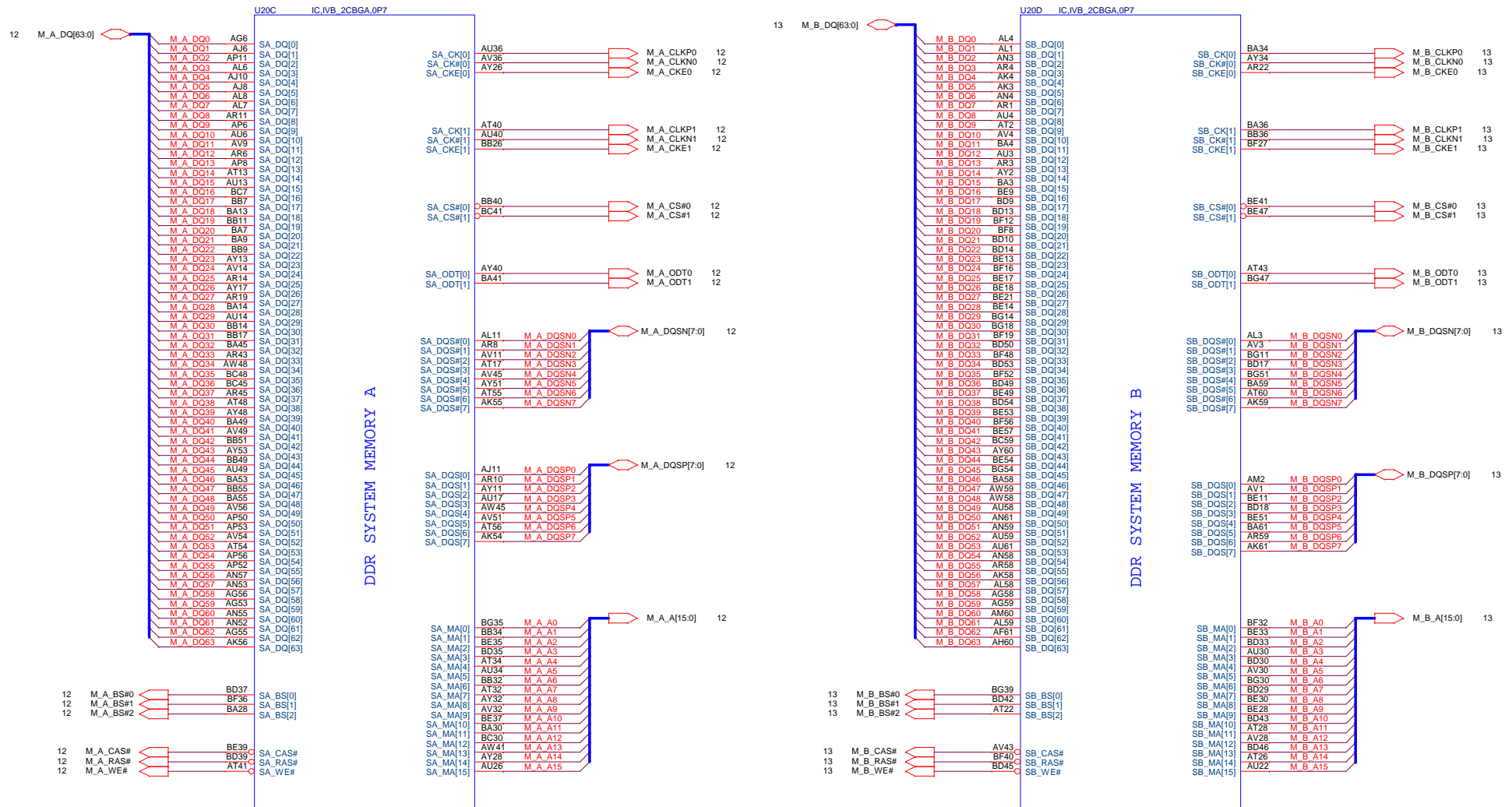
**SLG55448V**  
System Discharge Power  
(+1.5V/+3V/+5V)

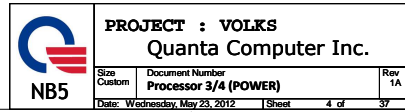
**Richtek RT8207**  
System Memory Power (+1.5VSUS/  
+0.75V\_DDR\_VTT)

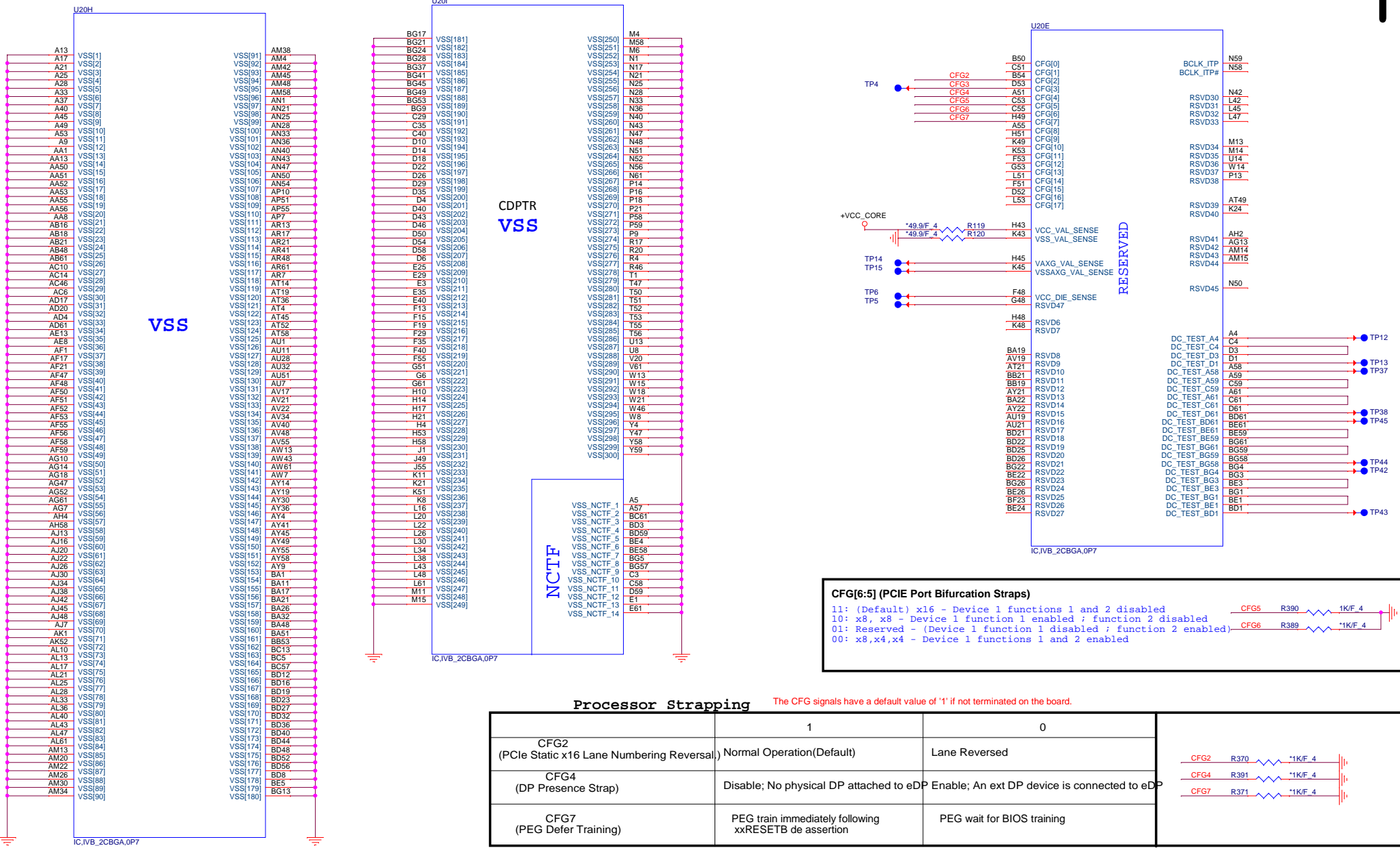
**NCP3218G**  
GPU core power(+VGACORE)



## Ivy Bridge Processor (DDR3)



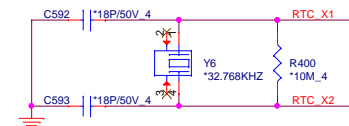




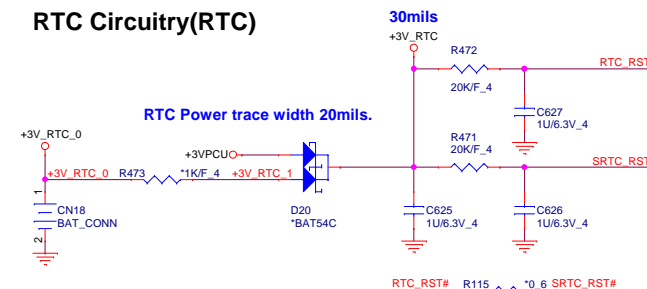




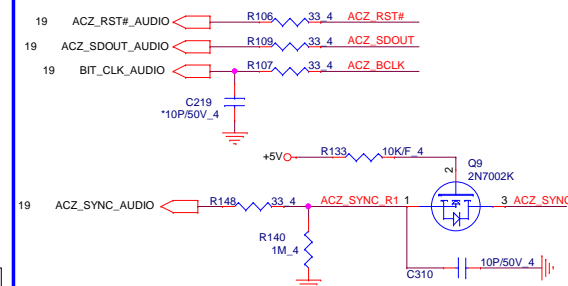
## 07



no stuff If use green Clock

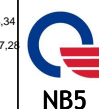
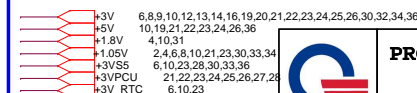
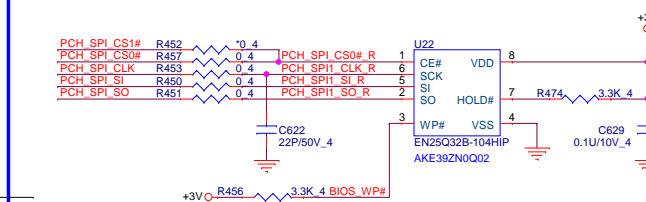


## HDA Bus(CLG)



☐ PCH SPI ROM(CLG)

Vender	Size	P/N
EON	4MB	AKE39ZN0Q02 (EN25Q32B-104HIP)
MX	4MB	AKE39FP0Z02 (MX25L3206EM2I-12G)
AMIC	4MB	AKE39F-0800 (A25LQ32AM-F/Q)
Socket		DFHS08FS023



**PROJECT : VOLKS**  
**Quanta Computer Inc.**

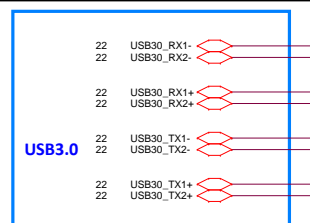
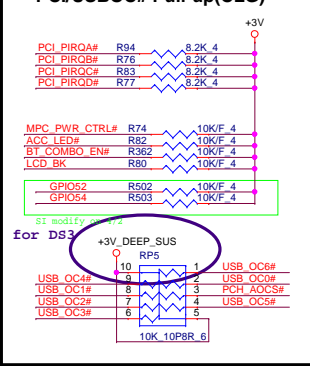
Size Custom	Document Number <b>PCH 2/6 (HDA/RTC/SATA/SPI)</b>	Rev 1.
Date: Wednesday, May 23, 2012	Sheet	7 of 37

### PCH Strap Table

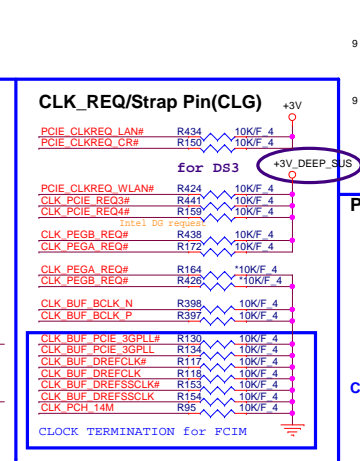
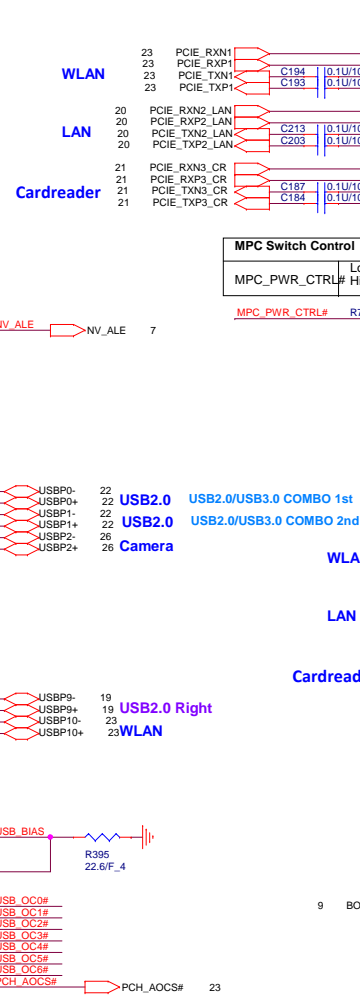
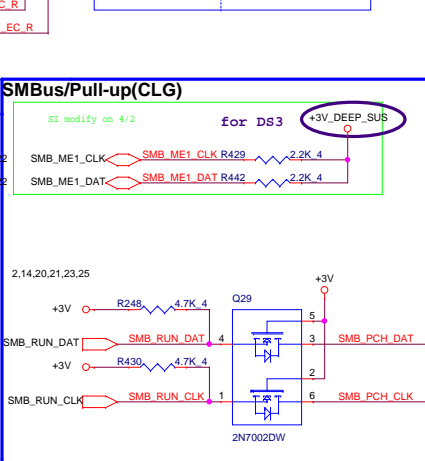
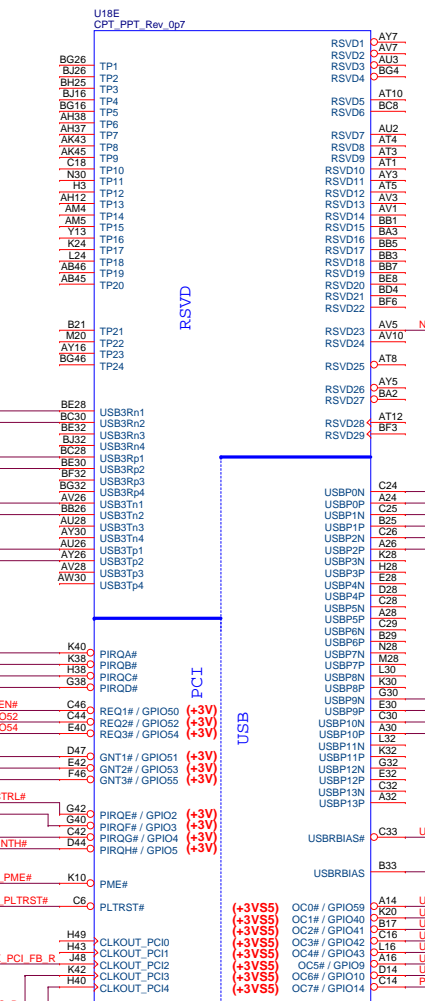
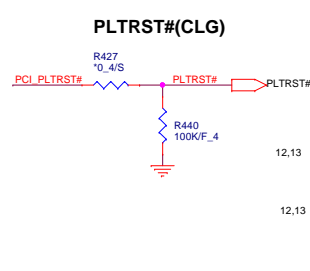
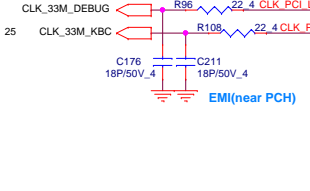
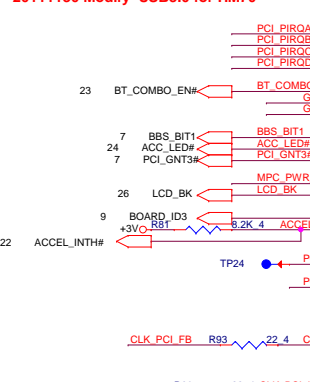
Pin Name	Strap description	Sampled	Configuration	Circuit						
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode							
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)							
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up							
HDA_DOCK_EN#/GPIO33	Flash Descriptor Security Only for Interposer	PWROK	0 = Override 1 = Default (weak pull-up 20K)							
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	<table border="1"><thead><tr><th>GNT1#</th><th>GNT0#</th><th>Boot Location</th></tr></thead><tbody><tr><td>0</td><td>0</td><td>SPI LPC</td></tr></tbody></table>	GNT1#	GNT0#	Boot Location	0	0	SPI LPC	
GNT1#	GNT0#	Boot Location								
0	0	SPI LPC								
GPIO19 <div>Different from Calpella</div>	Boot BIOS Selection 0 [bit-0]	PWROK								
GNT2# / GPIO53	ESI strap (Server only)	PWROK	Should not be pull-down (weak pull-up 20K)	USE GPIO PIN						
NV_ALE	Intel Anti-Theft HDD protection Only for Interposer	PWROK	0 = Disable (Internal pull-down 20kohm)							
NV_CLE	DMI Termination voltage	PWROK	weak pull-down 20kohm							
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.5V (weak pull-down) 1 = Support by 1.5V							
HDA_SDO	Flash Descriptor Security	PWROK	0 = Override 1 = Default (weak pull-up 20K)							
GPIO8	Integrated Clock Chip Enable	RSMRST#	Should be pull-down (weak pull-up 20K)							
GPIO28 <div>Different from Calpella</div>	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)							
SPI_MOSI	iTPM function Disable	APWROK	0 = Default (weak pull-down 20K) 1 = Enable							

Cougar Point-M/Panther Point (PCI,USB,NVRAM)

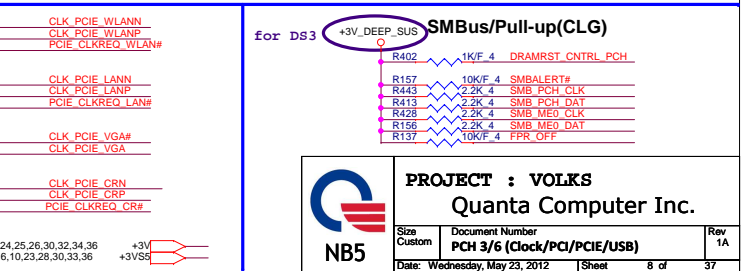
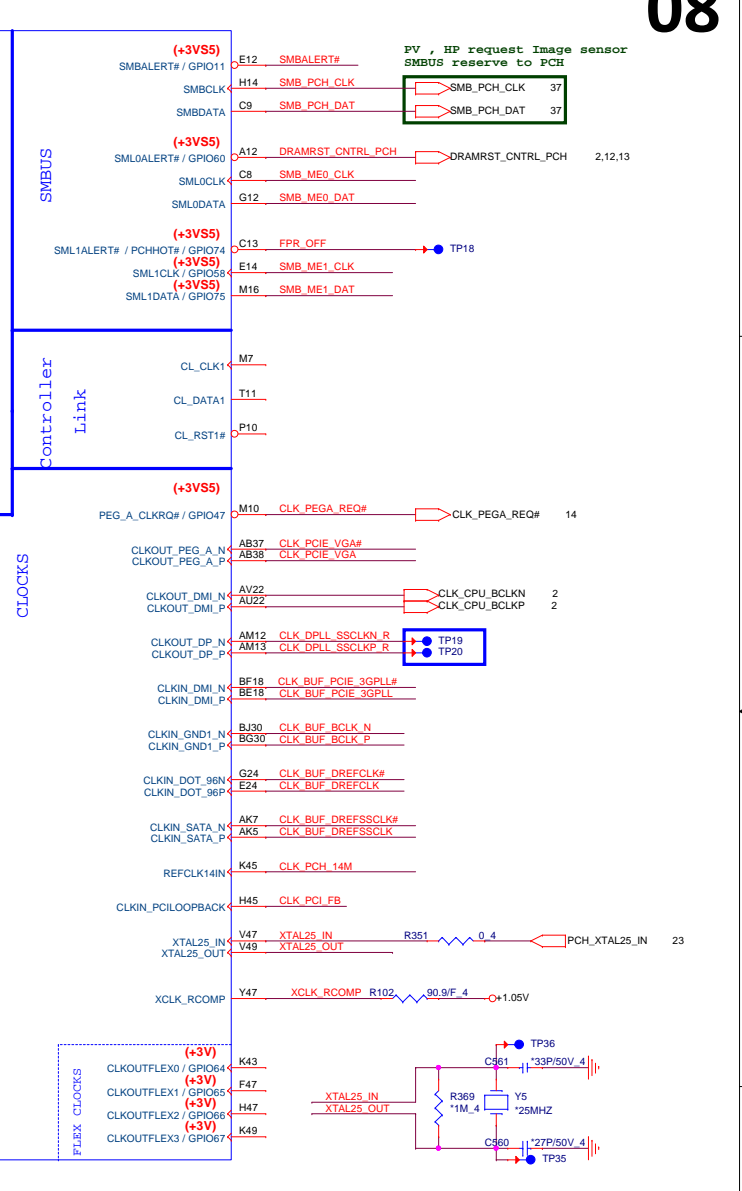
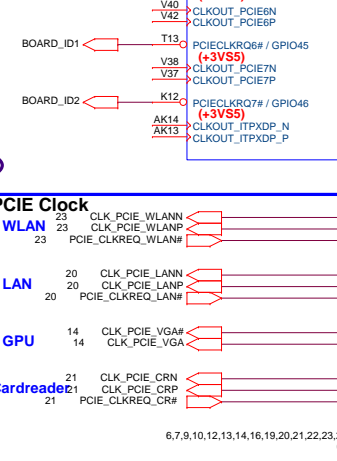
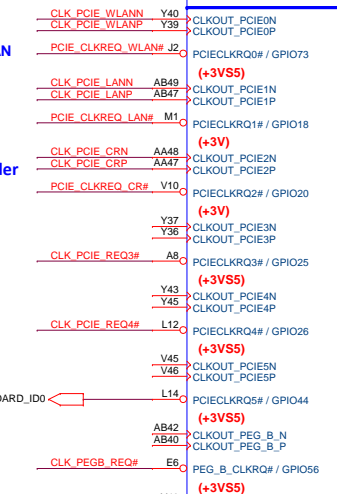
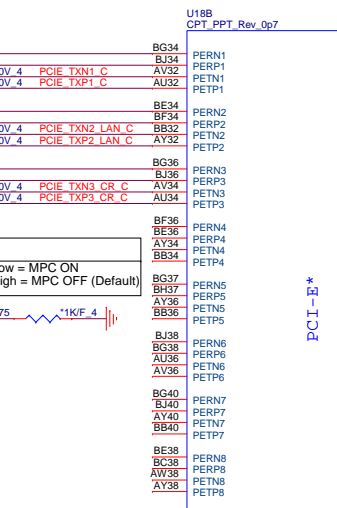
## PCI/USBOC# Pull-up(CLG)



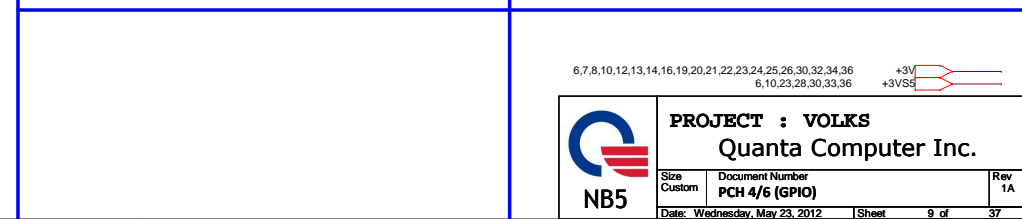
20111130 Modify USB3.0 for HM70




Cougar Point-M/Panther Point (PCI-E,SMBUS,CLK)



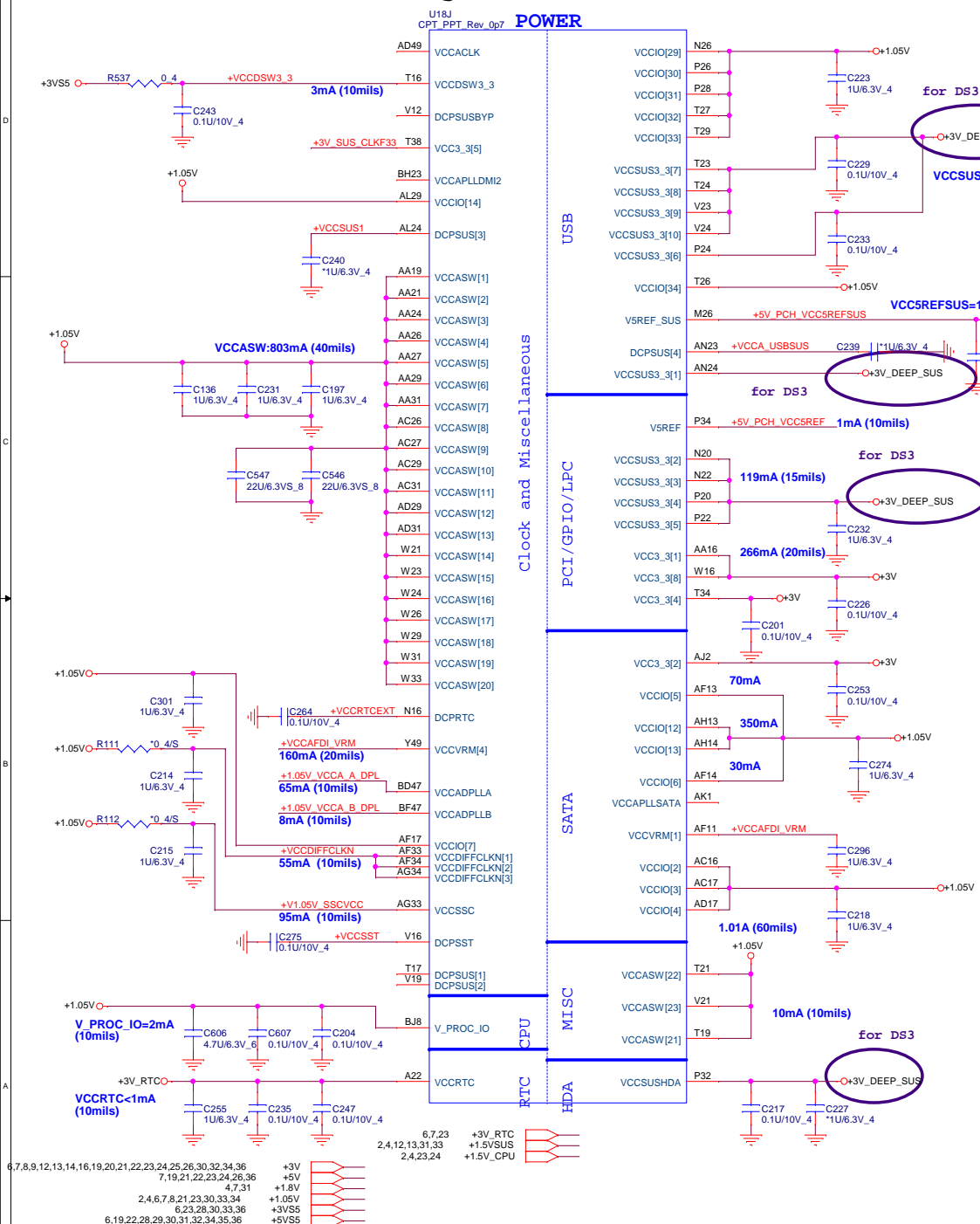




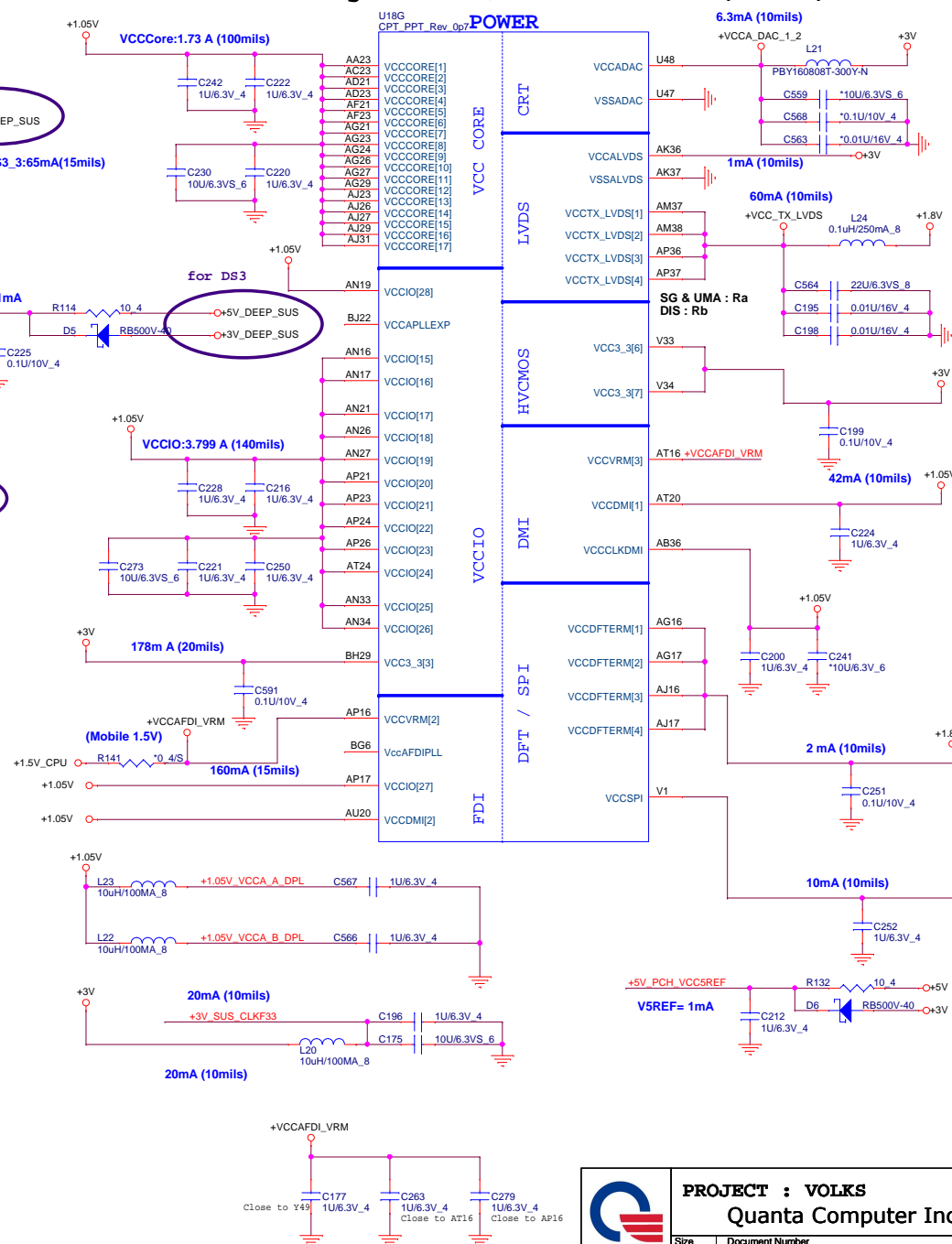
Model	BOARD_ID5	BOARD_ID4	BOARD_ID3	BOARD_ID2	BOARD_ID1	BOARD_ID0
U33 UMA	0	0	0	0	0	0
U33 DIS 128*16 VRAM	0	0	0	0	0	1
U33 DIS 256X16 VRAM	0	0	0	0	1	1
	0	0	0	1	1	1
U33 HM77	0	0	1	X	X	X
U33 HM70	0	0	0	X	X	X

 <b>NB5</b>	<b>PROJECT : VOLKS</b> <b>Quanta Computer Inc.</b>				
	Size Custom	Document Number <b>PCH 4/6 (GPIO)</b>			Rev 1A
	Date: Wednesday, May 23, 2012	Sheet	9 of	37	

Cougar Point/Panther Point (POWER)



Cougar Point/Panther Point (POWER)

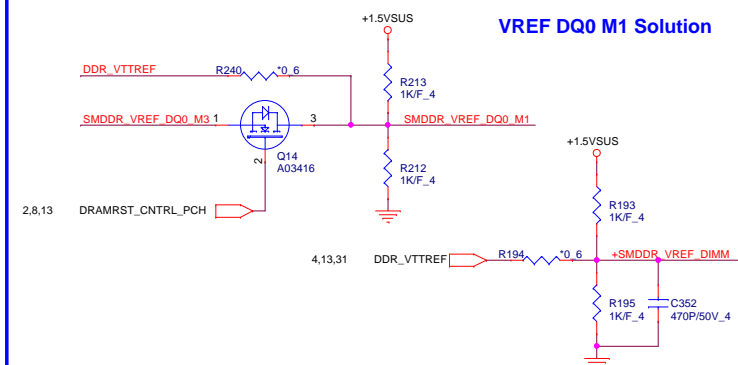
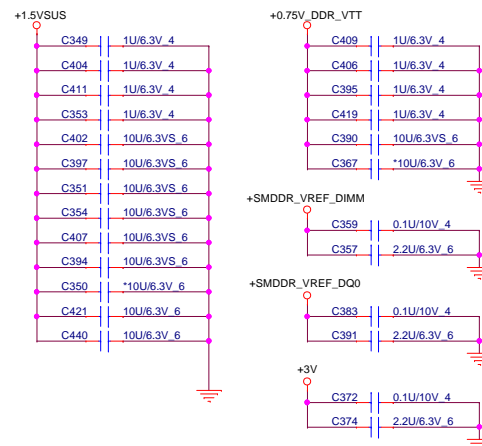
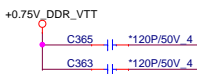
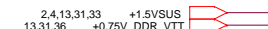
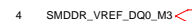


## Cougar Point/Panther Point (GND)

U18I CPT PPT_Rev_0p7		
AY4	VSS[159]	H46
AY42	VSS[160]	K18
AY46	VSS[161]	K26
AY8	VSS[162]	K39
B11	VSS[163]	K46
B15	VSS[164]	K7
B19	VSS[165]	L18
B23	VSS[166]	L2
B27	VSS[167]	L20
B31	VSS[168]	L26
B35	VSS[169]	L28
B39	VSS[170]	L36
B7	VSS[171]	L48
F45	VSS[172]	M12
BB12	VSS[173]	M16
BB16	VSS[174]	M18
BB20	VSS[175]	M22
BB22	VSS[176]	M24
BB24	VSS[177]	M30
BB28	VSS[178]	M32
BB30	VSS[179]	M34
BB38	VSS[180]	M38
BB4	VSS[181]	M4
BB46	VSS[182]	M42
BC14	VSS[183]	M46
BC18	VSS[184]	M8
BC2	VSS[185]	N18
BC22	VSS[186]	N30
BC26	VSS[187]	N47
BC32	VSS[188]	P11
BC34	VSS[189]	P18
BC36	VSS[190]	P30
BC40	VSS[191]	P40
BC42	VSS[192]	P43
BC48	VSS[193]	P47
BD46	VSS[194]	P7
BD5	VSS[195]	R2
BE22	VSS[196]	R48
BE26	VSS[197]	T12
BE40	VSS[198]	T31
BF10	VSS[199]	T4
BF12	VSS[200]	W34
BF16	VSS[201]	T46
BF20	VSS[202]	V36
BF22	VSS[203]	V39
BF24	VSS[204]	V43
BF26	VSS[205]	V7
BF28	VSS[206]	W17
BD3	VSS[207]	W19
BF30	VSS[208]	W2
BF38	VSS[209]	W27
BF40	VSS[210]	W48
BF8	VSS[211]	Y12
BG17	VSS[212]	Y8
BG21	VSS[213]	Y42
BG33	VSS[214]	Y46
BG44	VSS[215]	Y8
BG8	VSS[216]	Y42
BH11	VSS[217]	Y46
BH15	VSS[218]	Y8
BH17	VSS[219]	Y42
BH19	VSS[220]	Y46
H10	VSS[221]	Y8
BH27	VSS[222]	Y42
BH31	VSS[223]	Y46
BH33	VSS[224]	Y8
BH35	VSS[225]	Y42
BH39	VSS[226]	Y46
BH43	VSS[227]	Y8
BH7	VSS[228]	Y42
D3	VSS[229]	Y46
D12	VSS[230]	Y8
D16	VSS[231]	Y42
D18	VSS[232]	Y46
D22	VSS[233]	Y8
D24	VSS[234]	Y42
D26	VSS[235]	Y46
D30	VSS[236]	Y8
D32	VSS[237]	Y42
D34	VSS[238]	Y46
D38	VSS[239]	Y8
D42	VSS[240]	Y42
D8	VSS[241]	Y46
E18	VSS[242]	Y8
E26	VSS[243]	Y42
G18	VSS[244]	Y46
G20	VSS[245]	Y8
G26	VSS[246]	Y42
G28	VSS[247]	Y46
G36	VSS[248]	Y8
G48	VSS[249]	Y42
H12	VSS[250]	Y46
H18	VSS[251]	Y8
H22	VSS[252]	Y42
H24	VSS[253]	Y46
H26	VSS[254]	Y8
H30	VSS[255]	Y42
H32	VSS[256]	Y46
H34	VSS[257]	Y8
F3	VSS[258]	Y42

## Cougar Point/Panther Point (GND)

U18H CPT PPT_Rev_0p7		
HS	VSS[0]	
AA17	VSS[1]	AK38
AA2	VSS[2]	AK4
AA3	VSS[3]	VSS[80]
AA33	VSS[4]	VSS[81]
AA34	VSS[5]	VSS[82]
AB11	VSS[6]	VSS[83]
AB14	VSS[7]	VSS[84]
AB39	VSS[8]	VSS[85]
AB4	VSS[9]	VSS[86]
AB43	VSS[10]	VSS[87]
AB5	VSS[11]	VSS[88]
AB7	VSS[12]	VSS[89]
AC19	VSS[13]	VSS[90]
AC2	VSS[14]	VSS[91]
AC21	VSS[15]	VSS[92]
AC24	VSS[16]	VSS[93]
AC33	VSS[17]	VSS[94]
AC34	VSS[18]	VSS[95]
AC48	VSS[19]	VSS[96]
AD10	VSS[20]	VSS[97]
AD11	VSS[21]	VSS[98]
AD12	VSS[22]	VSS[99]
AD13	VSS[23]	VSS[100]
AD19	VSS[24]	VSS[101]
AD24	VSS[25]	VSS[102]
AD26	VSS[26]	VSS[103]
AD27	VSS[27]	VSS[104]
AD33	VSS[28]	VSS[105]
AD34	VSS[29]	VSS[106]
AD36	VSS[30]	VSS[107]
AD37	VSS[31]	VSS[108]
AD38	VSS[32]	VSS[109]
AD39	VSS[33]	VSS[110]
AD4	VSS[34]	VSS[111]
AD40	VSS[35]	VSS[112]
AD42	VSS[36]	VSS[113]
AD43	VSS[37]	VSS[114]
AD45	VSS[38]	VSS[115]
AD46	VSS[39]	VSS[116]
AD8	VSS[40]	VSS[117]
AE2	VSS[41]	VSS[118]
AE3	VSS[42]	VSS[119]
AF10	VSS[43]	VSS[120]
AF12	VSS[44]	VSS[121]
AD14	VSS[45]	VSS[122]
AD16	VSS[46]	VSS[123]
AF16	VSS[47]	VSS[124]
AF19	VSS[48]	VSS[125]
AF24	VSS[49]	VSS[126]
AF26	VSS[50]	VSS[127]
AF27	VSS[51]	VSS[128]
AF29	VSS[52]	VSS[129]
AF31	VSS[53]	VSS[130]
AF38	VSS[54]	VSS[131]
AF4	VSS[55]	VSS[132]
AF42	VSS[56]	VSS[133]
AF46	VSS[57]	VSS[134]
AF5	VSS[58]	VSS[135]
AF7	VSS[59]	VSS[136]
AF8	VSS[60]	VSS[137]
AG19	VSS[61]	VSS[138]
AG2	VSS[62]	VSS[139]
AG31	VSS[63]	VSS[140]
AG48	VSS[64]	VSS[141]
AH11	VSS[65]	VSS[142]
AH3	VSS[66]	VSS[143]
AH36	VSS[67]	VSS[144]
AH39	VSS[68]	VSS[145]
AH40	VSS[69]	VSS[146]
AH42	VSS[70]	VSS[147]
AH46	VSS[71]	VSS[148]
AH7	VSS[72]	VSS[149]
AJ19	VSS[73]	VSS[150]
AJ21	VSS[74]	VSS[151]
AJ24	VSS[75]	VSS[152]
AJ33	VSS[76]	VSS[153]
AJ34	VSS[77]	VSS[154]
AK12	VSS[78]	VSS[155]
AK3	VSS[79]	VSS[156]
		VSS[157]
		VSS[158]





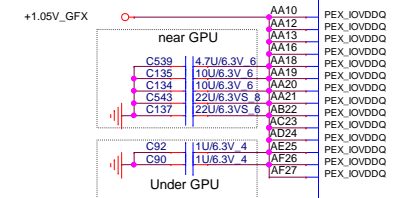
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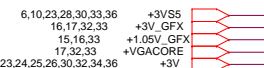
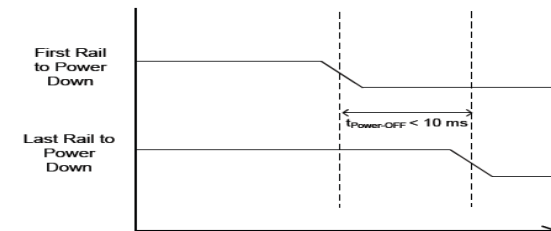
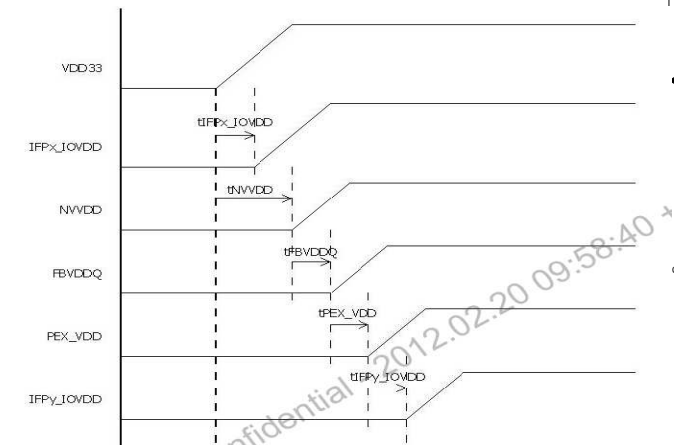
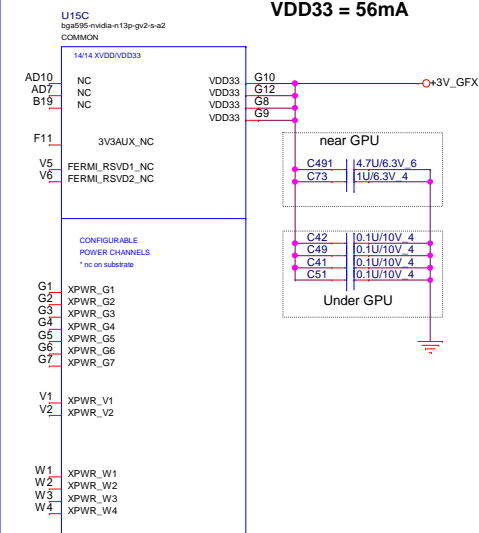
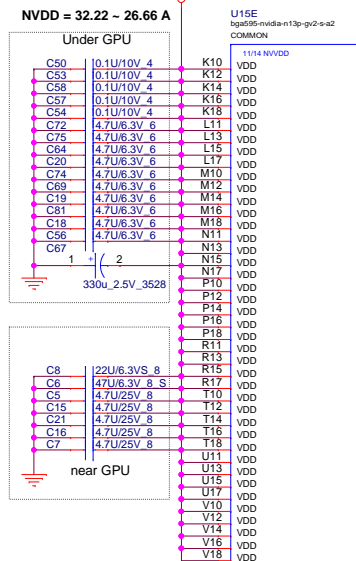
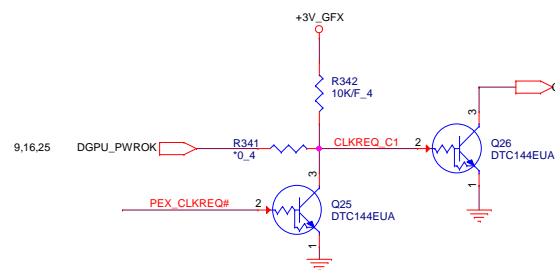
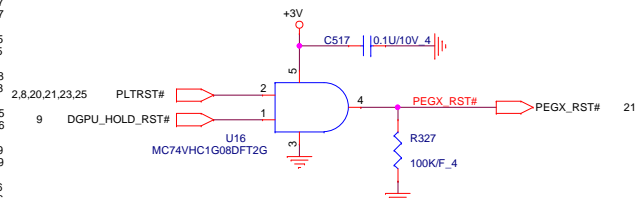
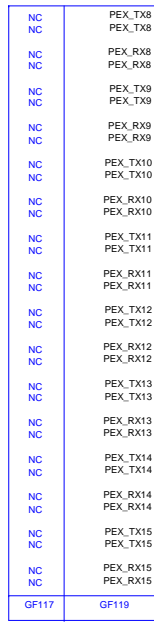
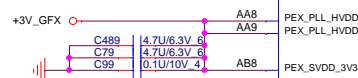
		Date: Wednes
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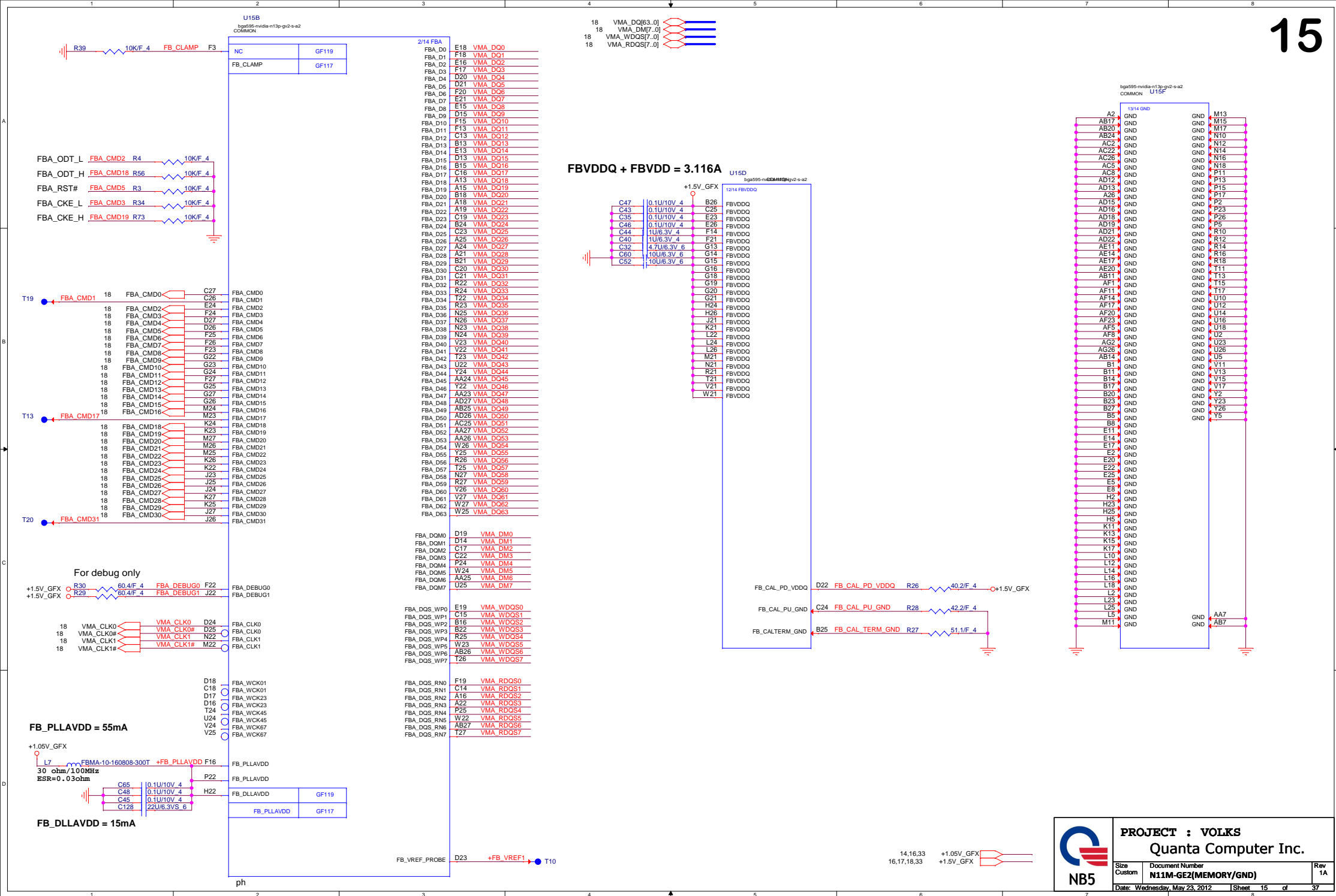


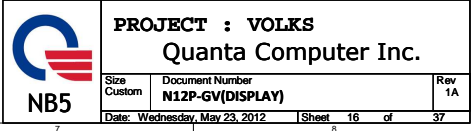




**PEX\_PLL\_HVDD +  
PEX\_SVDD 3V3 = 143mA**

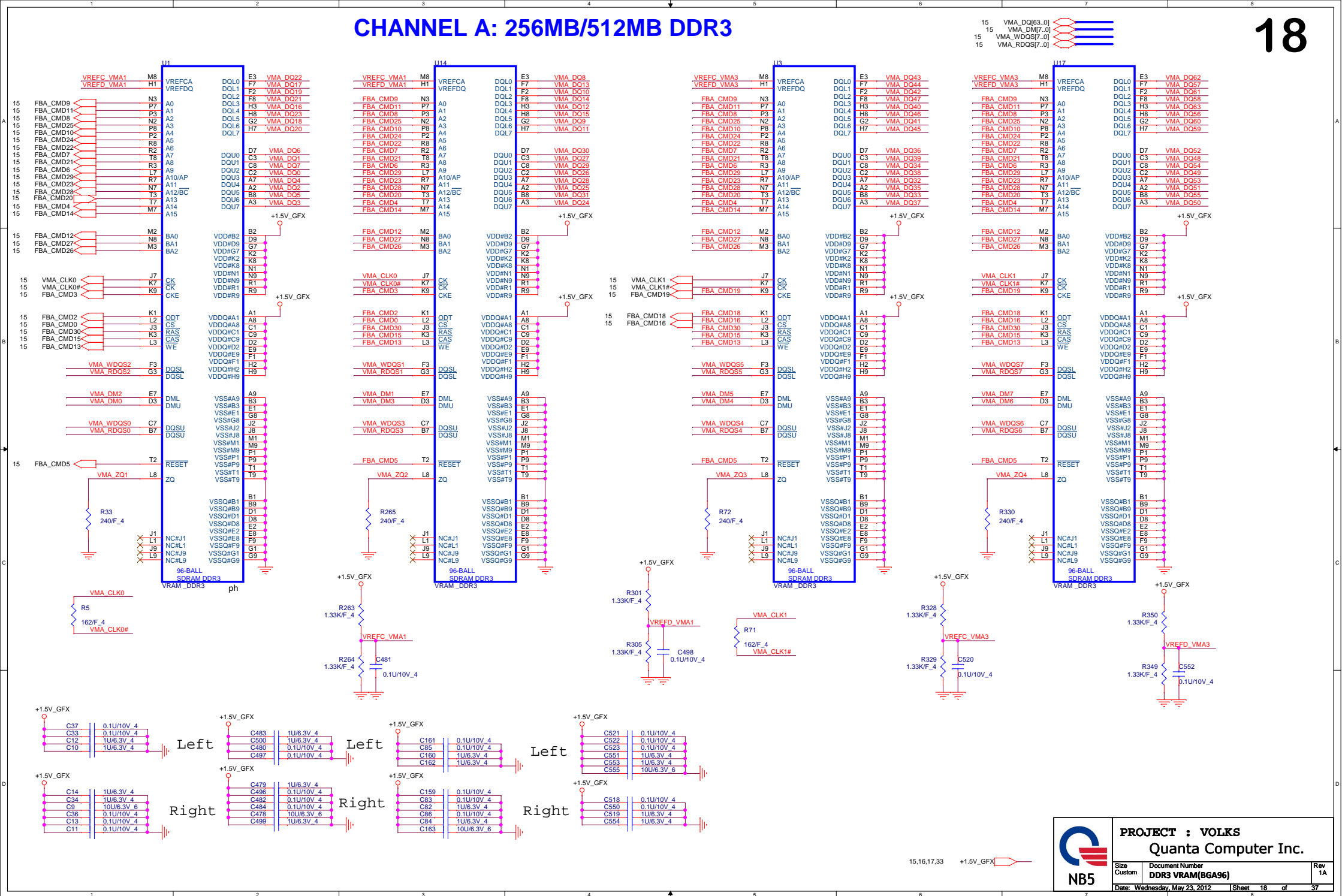








## 18

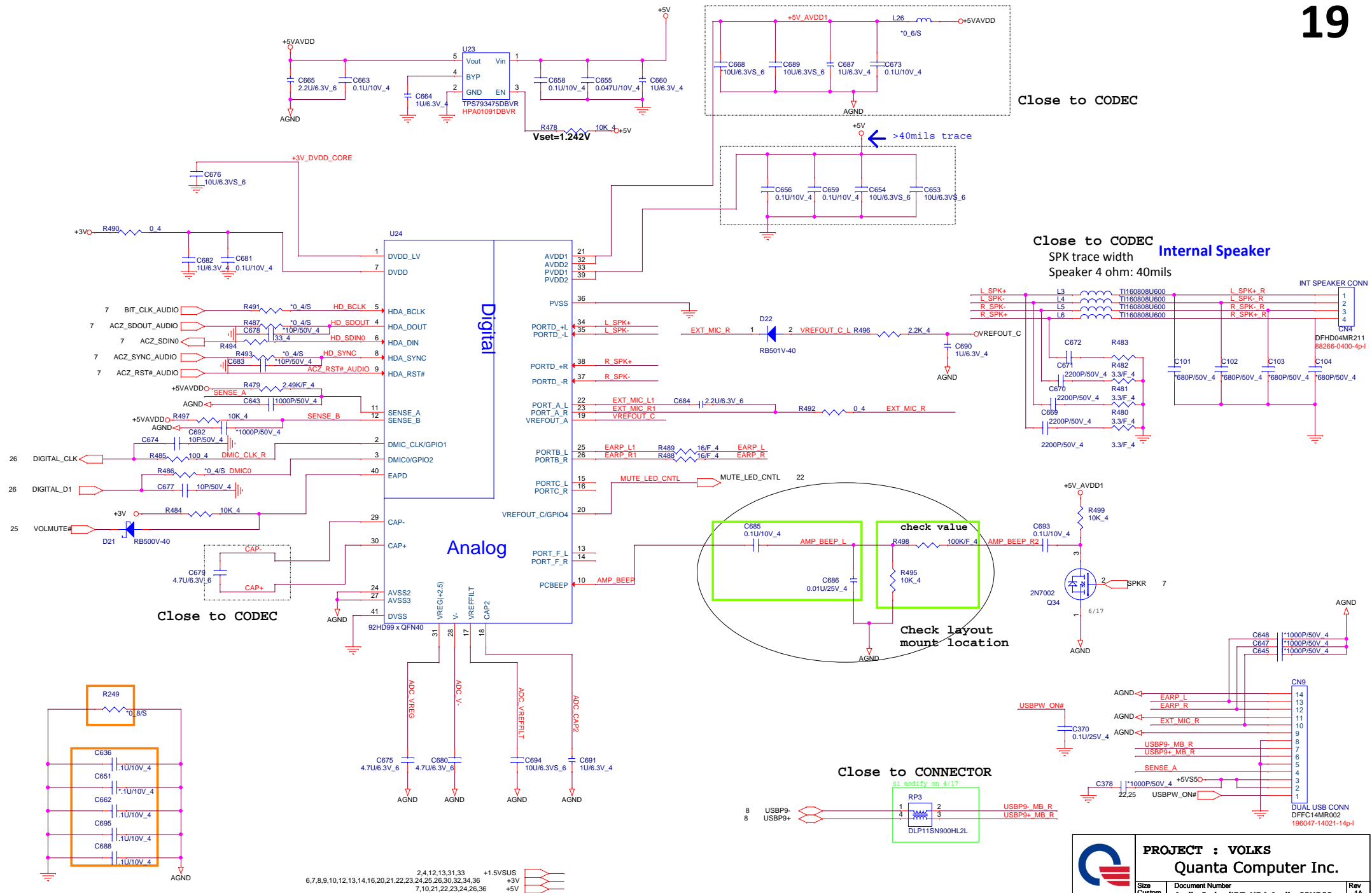




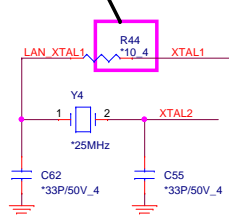
Close to CODEC  
SPK trace width  
Speaker 4 ohm: 40mils

~~Check layout  
mount location~~

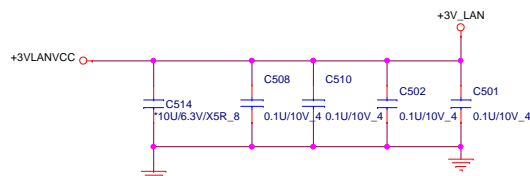
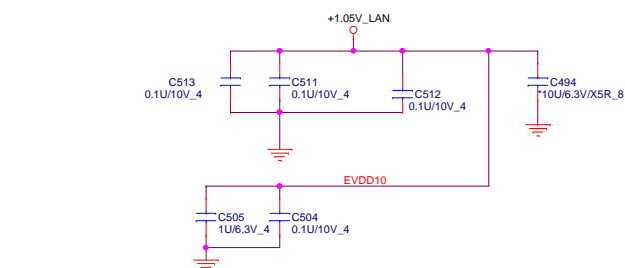
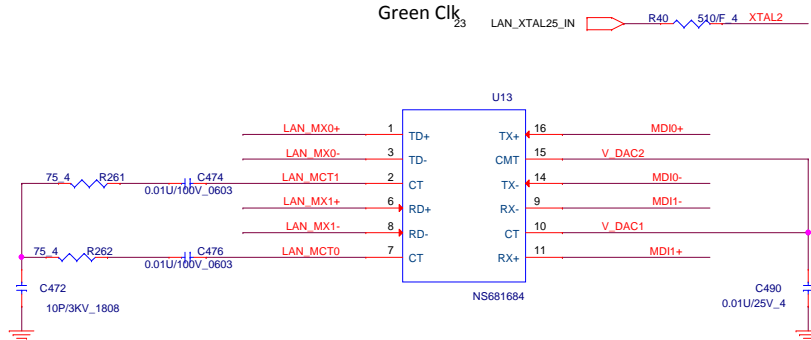
Close to CONNECTOR



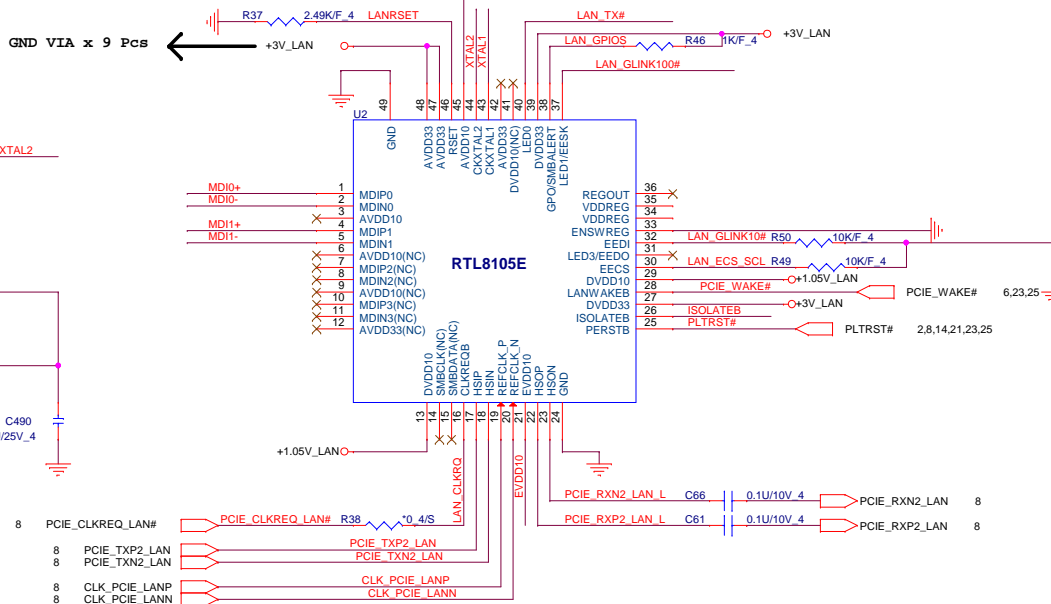
For EMI 0 ~ 22 ohm



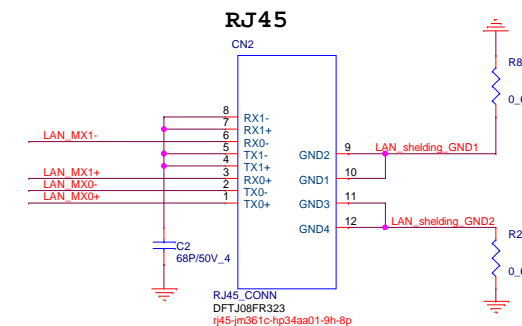
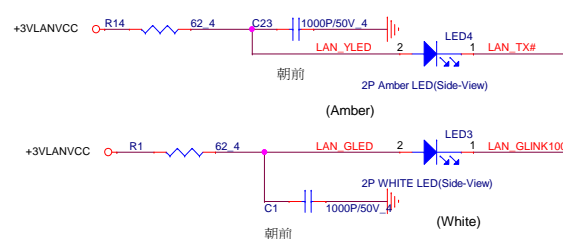
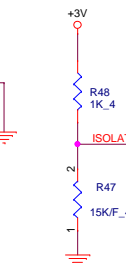
Green Clk



GND VIA x 9 Pcs

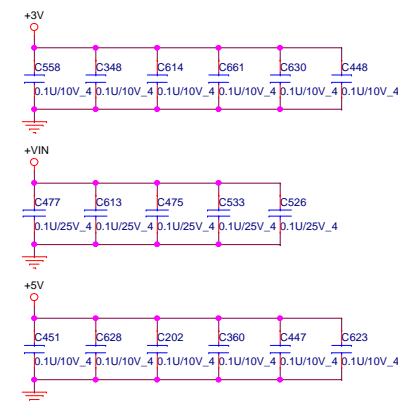
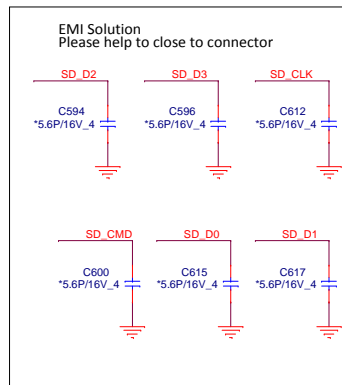


if ISOLATEB pin  
pull-low, the LAN  
chip will not drive  
it's PCI-E outputs  
( excluding  
PCIE\_WAKE# pin )



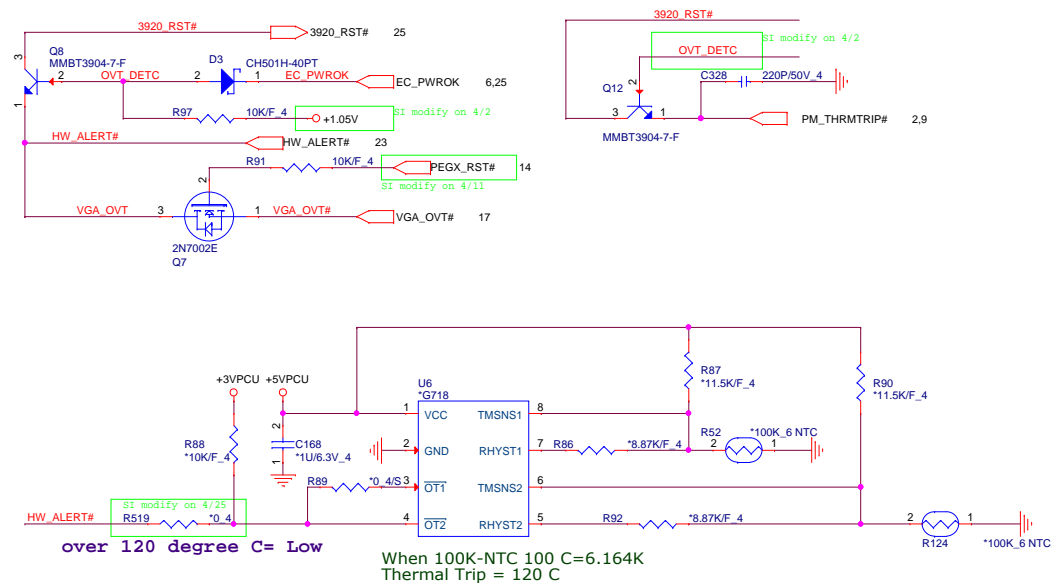
NB5	<b>PROJECT : VOLKS</b>		
	<b>Quanta Computer Inc.</b>		
	Size Custom	Document Number <b>LAN RTL8105/RJ45</b>	Rev 1A
	Date: Wednesday, May 23, 2012	Sheet 20of	37

## SD / MMC

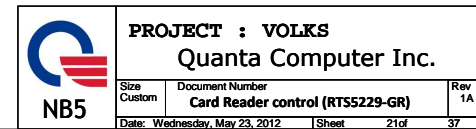
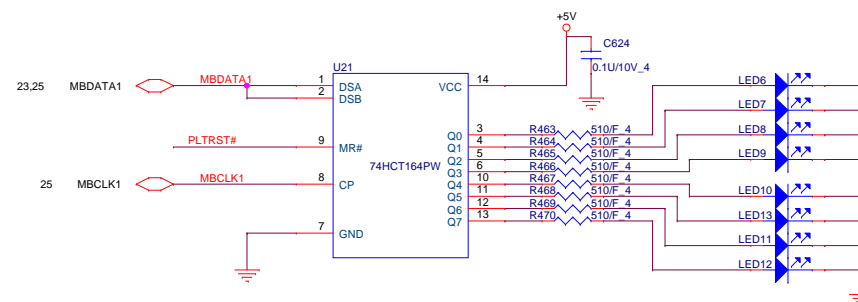


21

## Thermal HW protect

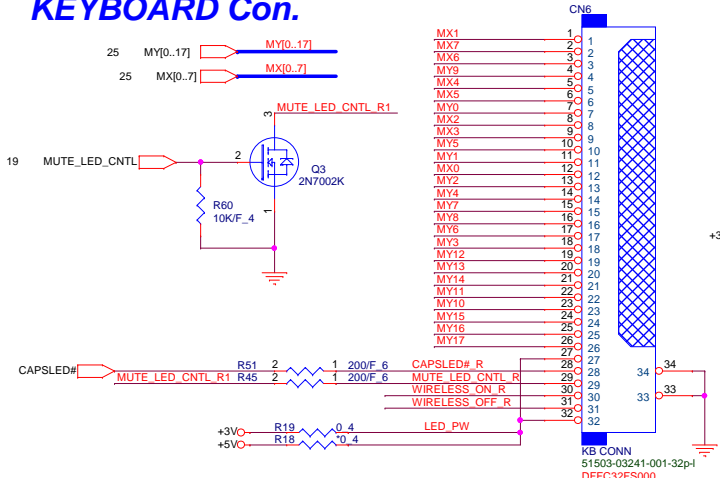


80 port

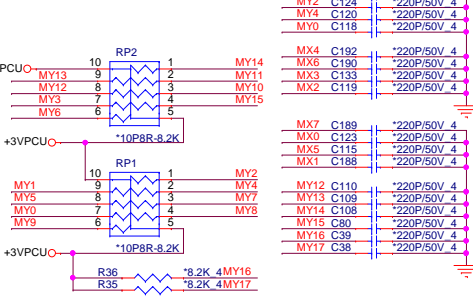


# KEYBOARD Con.

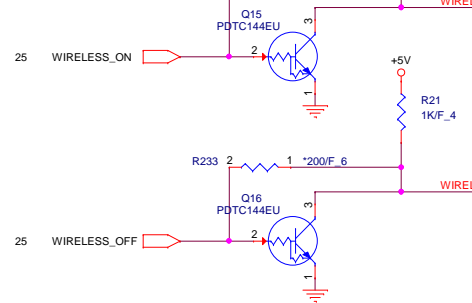
22



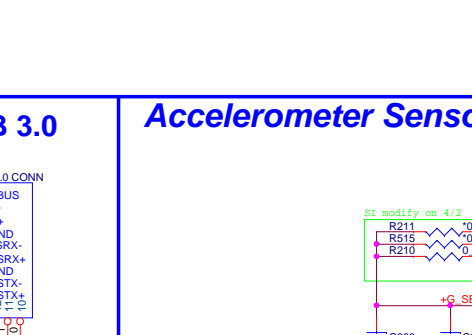
## KEYBOARD PULL-UP



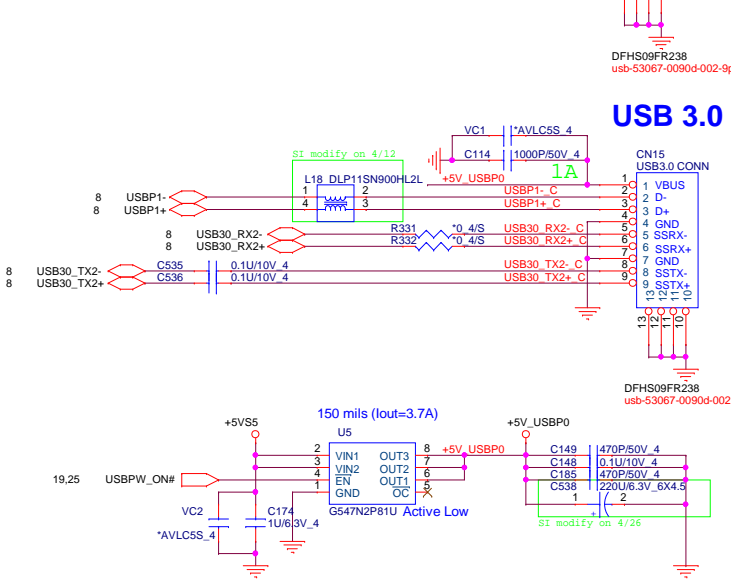
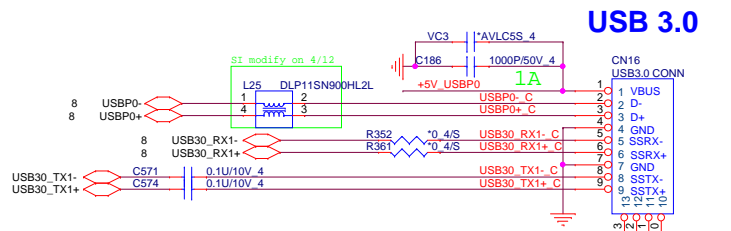
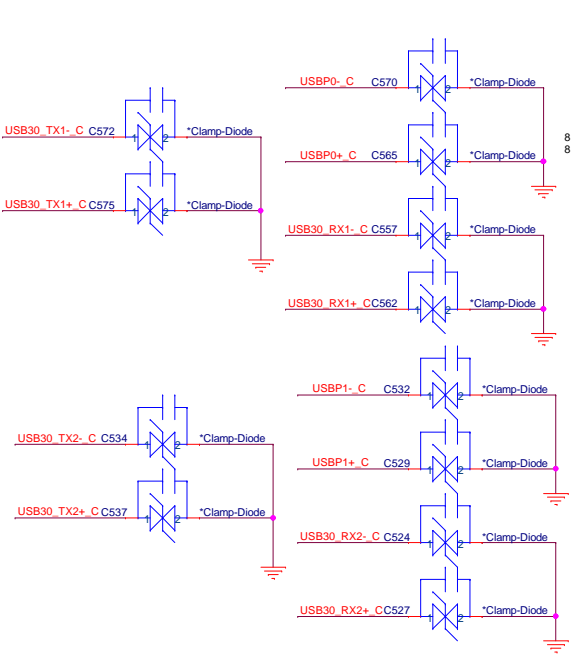
## WIRELESS ON R



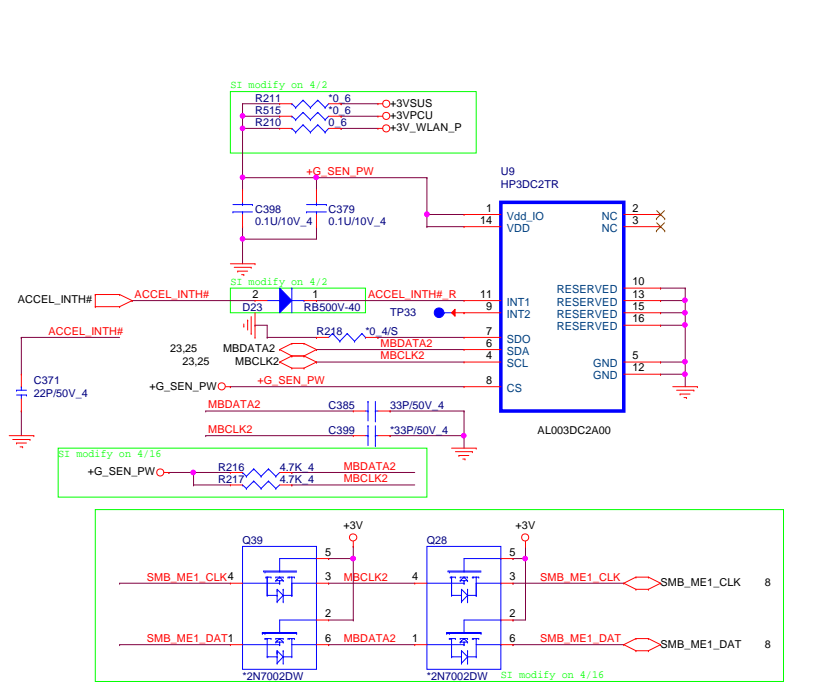
## WIRELESS OFF R



## USB 2.0/3.0 Combo

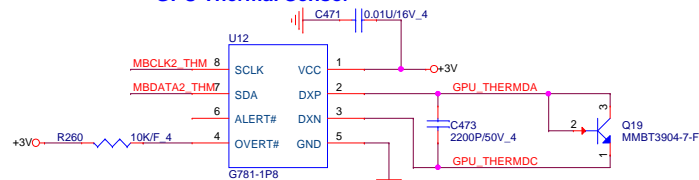


## Accelerometer Sensor

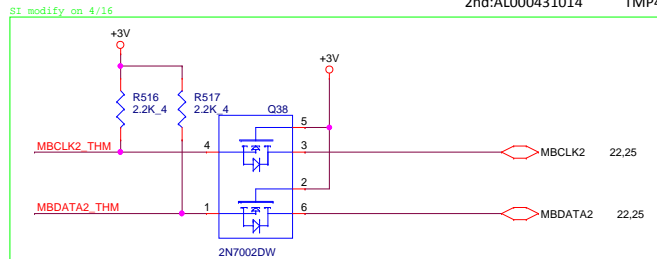
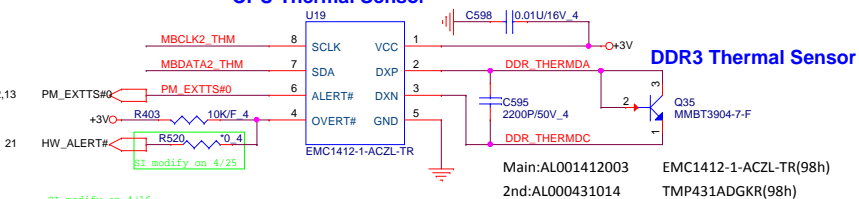




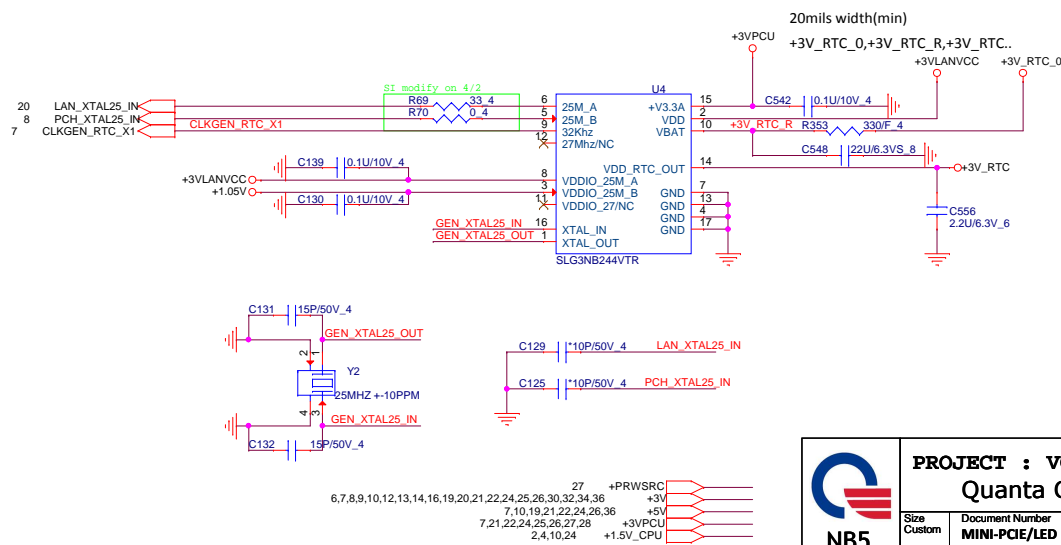
## GPU Thermal Sensor



### CPU Thermal Sensor



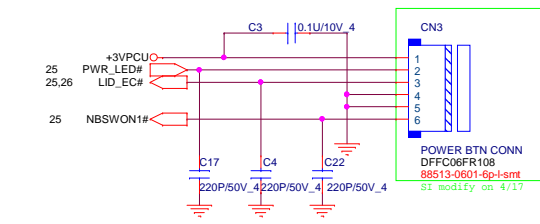
## Green CLK Circuitry



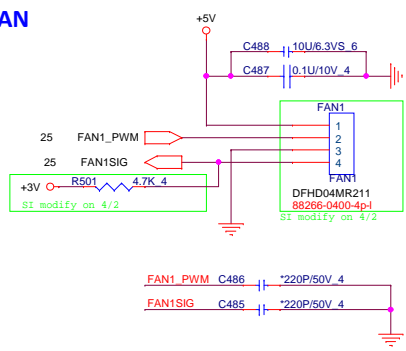


# Power Button Connector

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



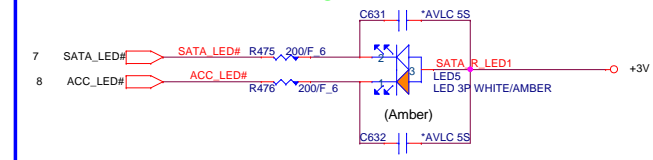
# FAN



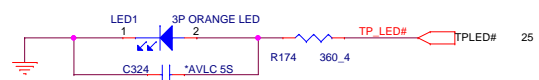
# PWR LED



# SATA LED

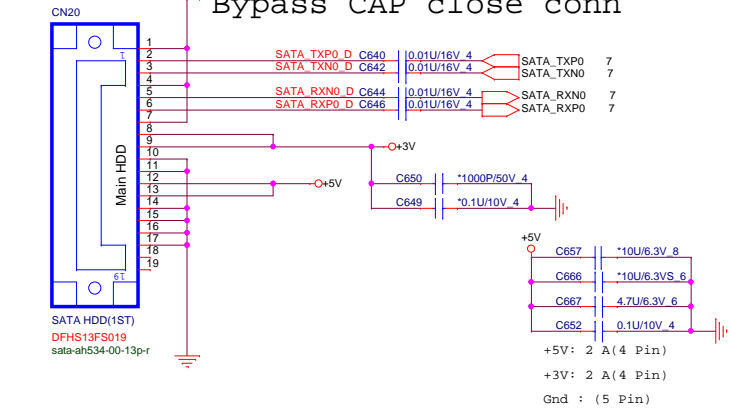


# 14" TP LED



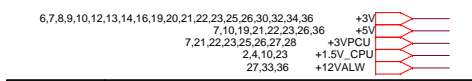
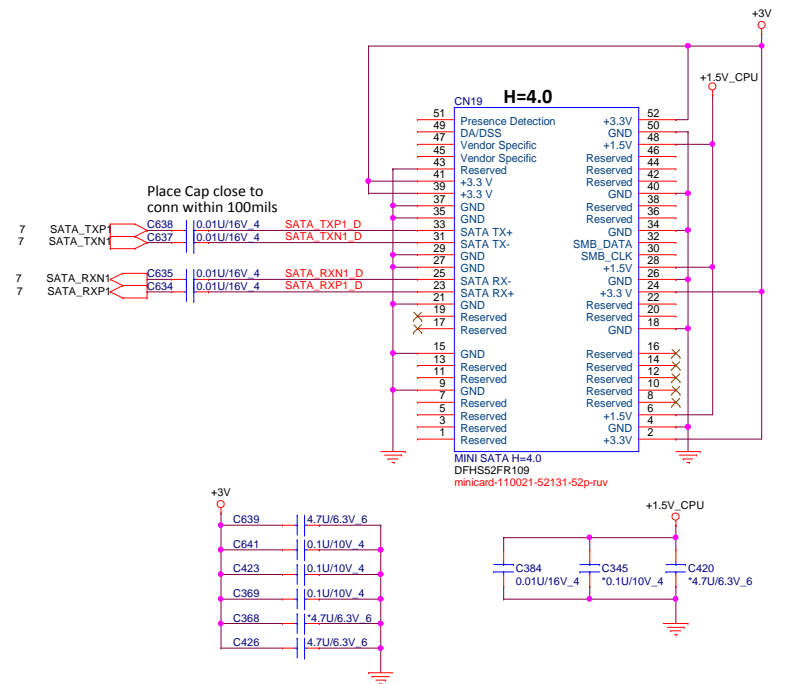
# SATA HDD Connector(Cable type)

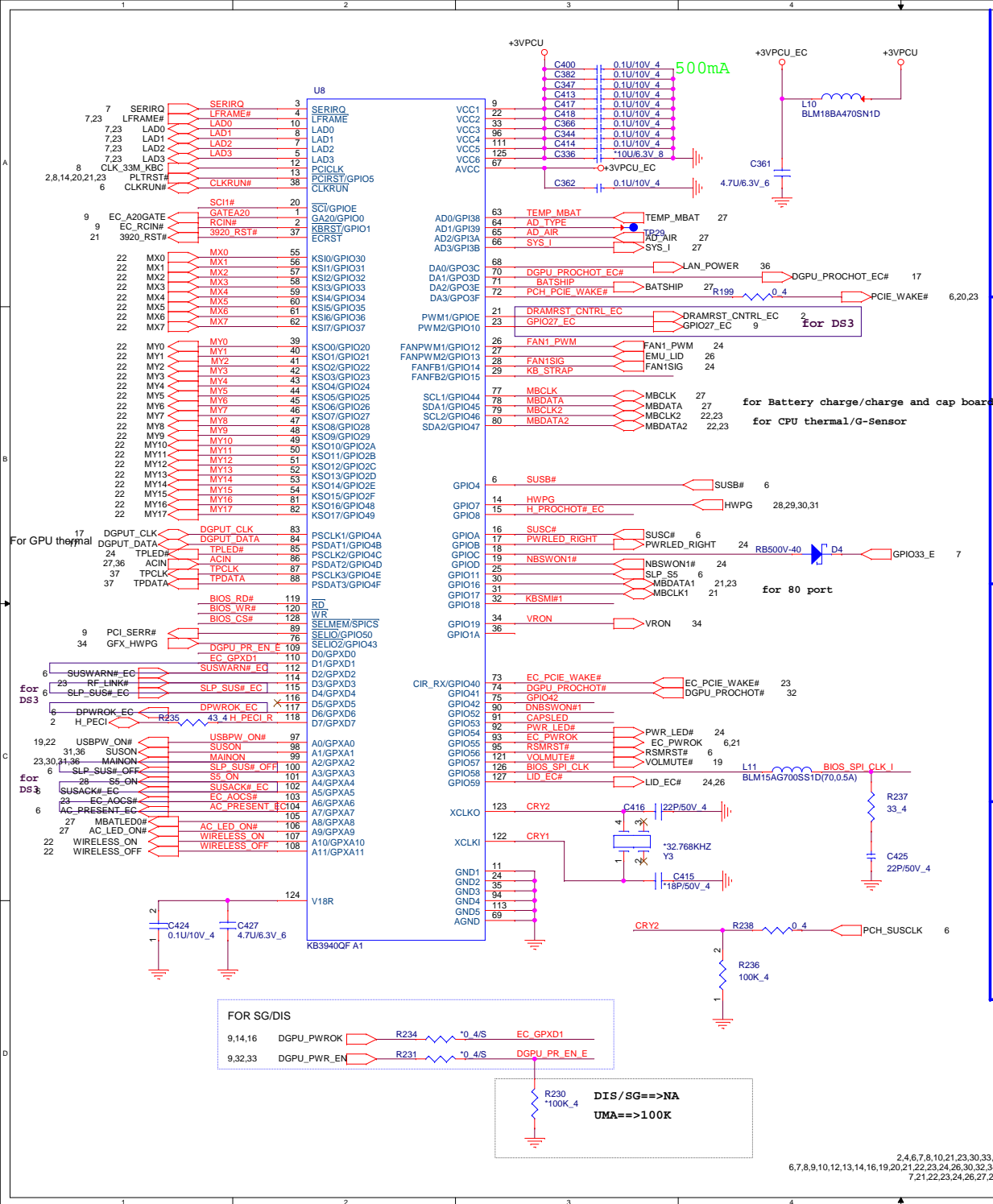
Bypass CAP close conn



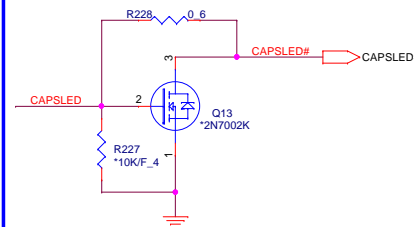
# Mini PCI-E Card 2- Full size mSATA

Place Cap close to conn within 100mils

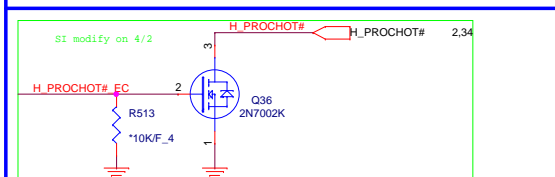
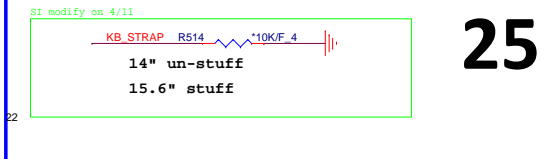
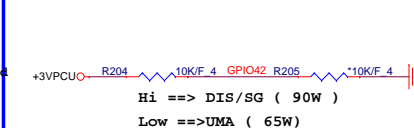




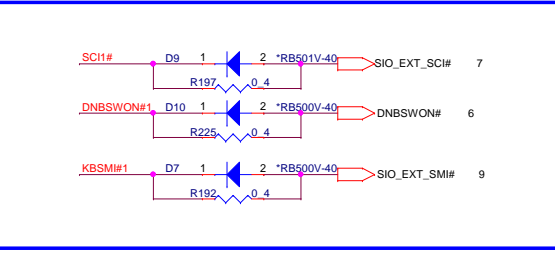
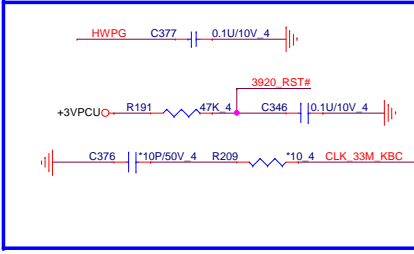
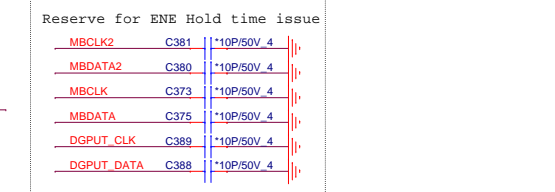
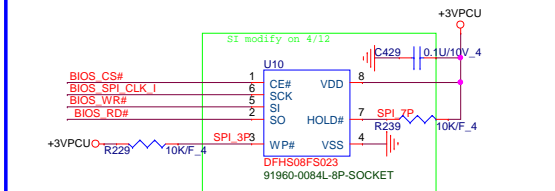
## Cap LED



## Adapter select for EC



Vender	Size	P/N
EON	1MB	AKE3GZNOQ01 (EON EN25Q80A-100HIP)
MX	1MB	AKE3GFP0Z00 (MX25L8006EM2I-12G)
AMIC	1MB	AKE3GZP0801 (A25L080M-F)
Socket		DFHS08FS023

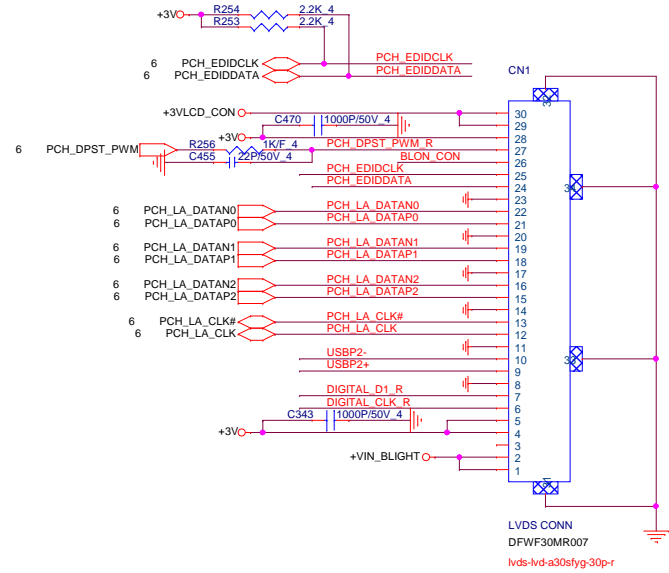
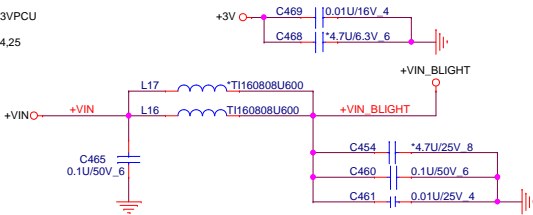
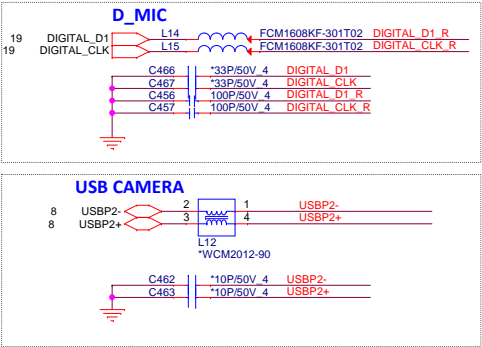
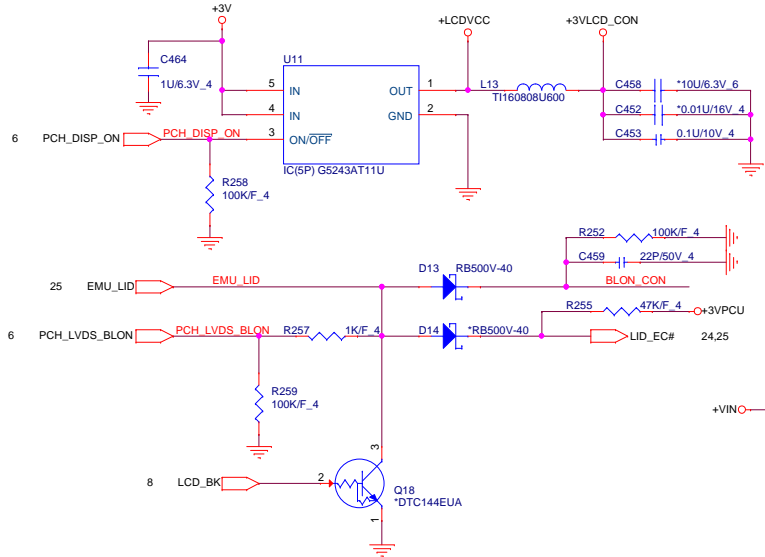


PROJECT : VOLKS		Quanta Computer Inc.	
Size	Document Number	Rev	
Custom	EC (KB3940 A1)/ROM	1A	
Date: Wednesday, May 23, 2012	Sheet	25	of 37

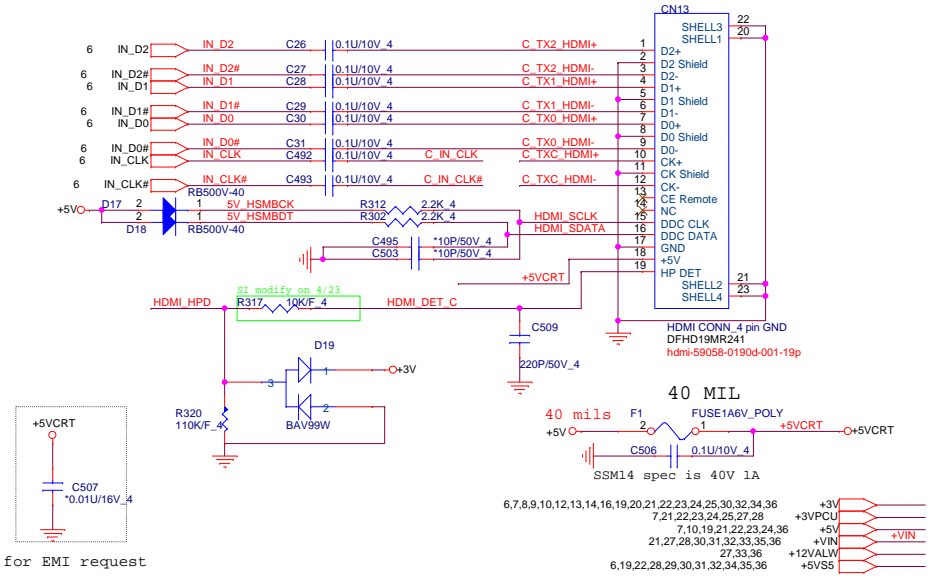
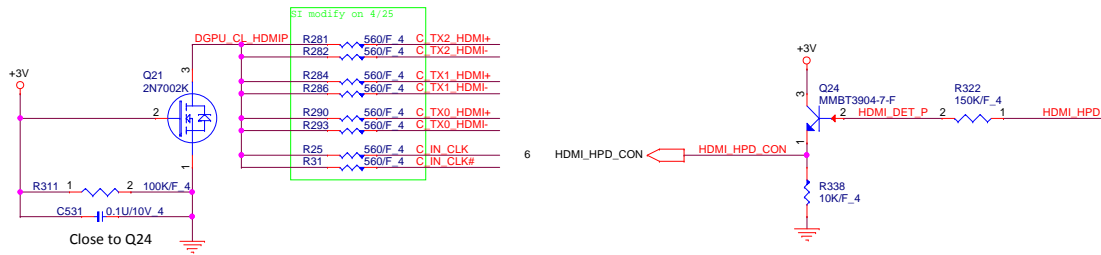
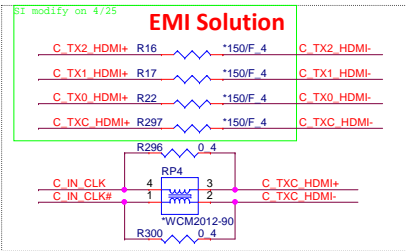
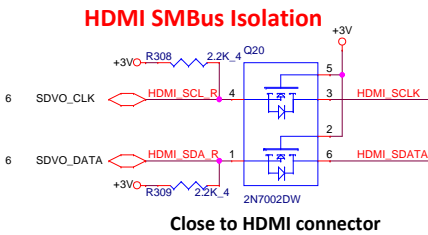


2,4,6,7,8,10,21,23,30,33,34  
6,7,8,9,10,12,13,14,16,19,20,21,22,23,24,26,30,32,34,36  
7,21,22,23,24,26,27,28

+1.05V  
+3V  
+3VPCU



HDMI Conn.



CN10	P/N
14"	DFAD08MR036
15"	DFAD08MR035

DC JACK  
90W

Do Not add test pad on BATDIS\_G signal

Place this ZVS close to  
Diode away +VINPlace this ZVS close to  
Far-Far away +VINPlace this cap  
close to ECPlace this cap  
close to ECPlace this cap  
close to EC

+VH28 36  
+3VPCU 7,21,22,23,24,25,26,28



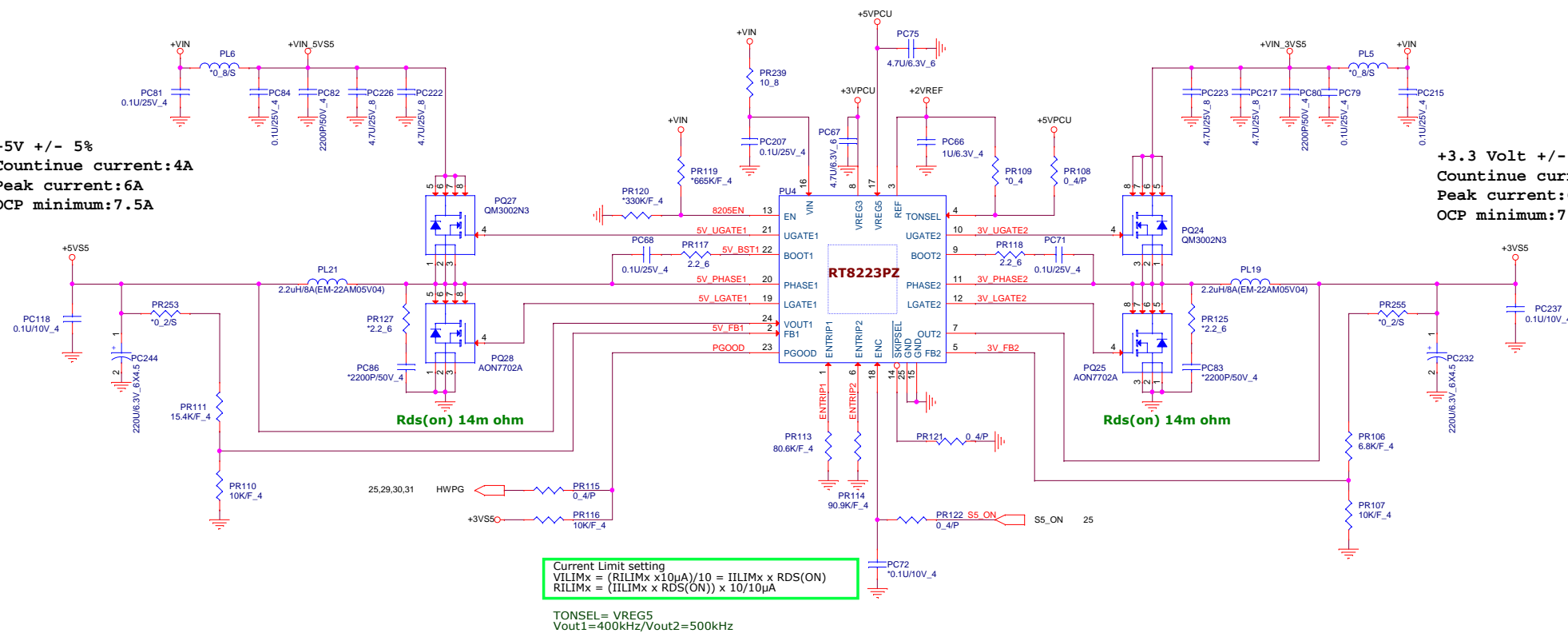
**PROJECT :VOLKS**  
**Quanta Computer Inc.**

Size	Document Number	Rev
Custom	Charger (028681)	A
Date: Wednesday, May 23, 2012	Sheet 27 of 37	

DC/DC +3V\_ALW/+5V\_ALW/+5V\_ALW2 /+15V\_ALW

**+5V +/- 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**



21,26,27,30,31,32,33,35,36 +VIN  
 6,10,23,30,33,36 +3VSS  
 6,19,22,29,30,31,32,34,35,36 +5VSS  
 7,21,22,23,24,25,26,27 +3VPCU

NB5	<b>PROJECT :VOLKS</b>		
	<b>Quanta Computer Inc.</b>		
Size	Document Number	Rev	
Custom	3/5VSS (RT8223P)	A	
Date: Wednesday, May 23, 2012	Sheet 26	of 37	

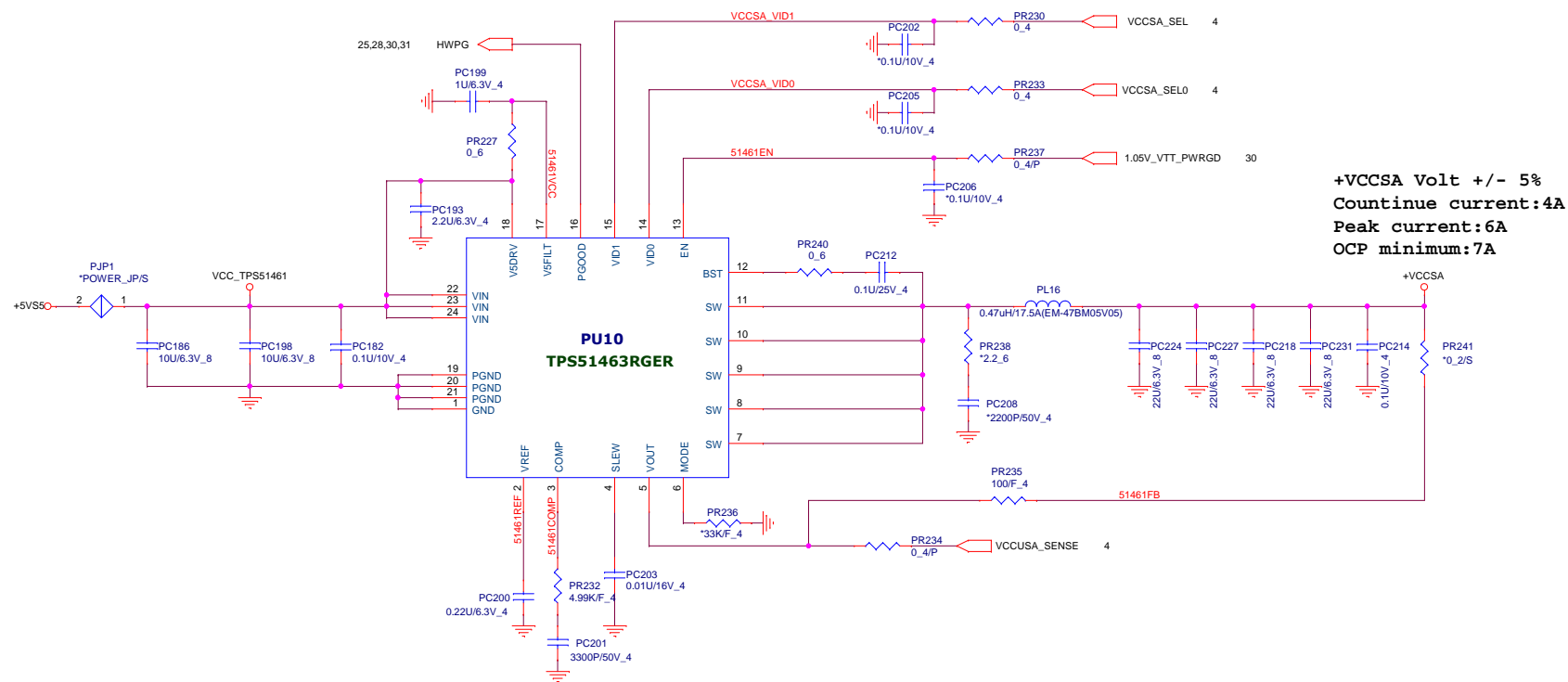


**TPS51462RGER/AL051462000**For CPU SV system agent  
voltage slew rate of 0.5 -10 mV/ $\mu$ s

SEL0	SEL1	+VCCSA
0	0	0.9V
0	1	0.8V
1	0	0.725V
1	1	0.675V

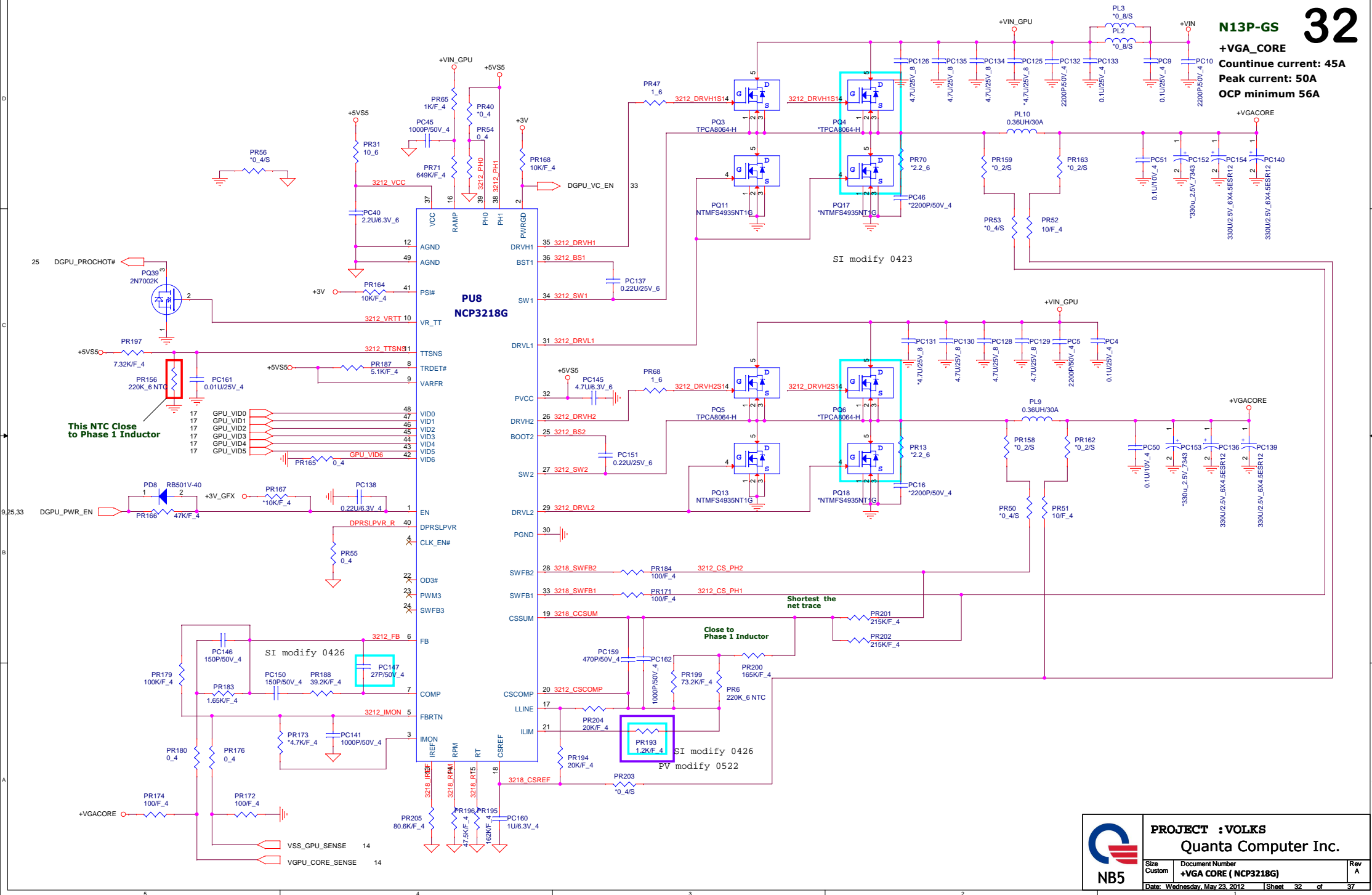
**TPS51463RGER/AL051463000**For CPU ULV system agent  
voltage slew rate of 0.5 -10 mV/ $\mu$ s

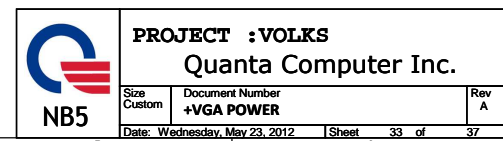
SEL0	SEL1	+VCCSA
0	0	0.9V
0	1	0.85V
1	0	0.775V
1	1	0.75V

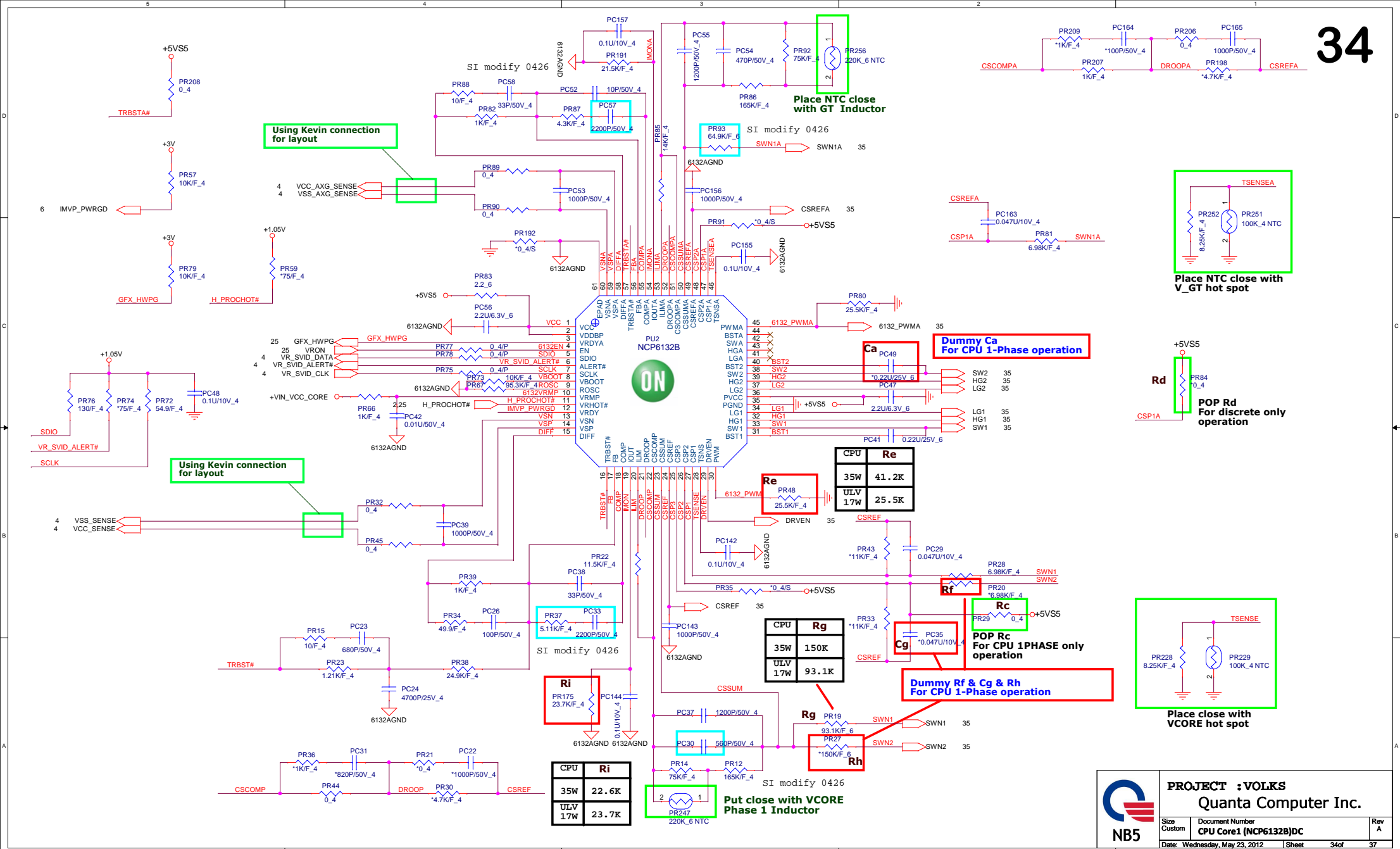










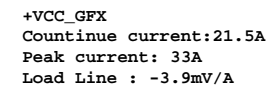


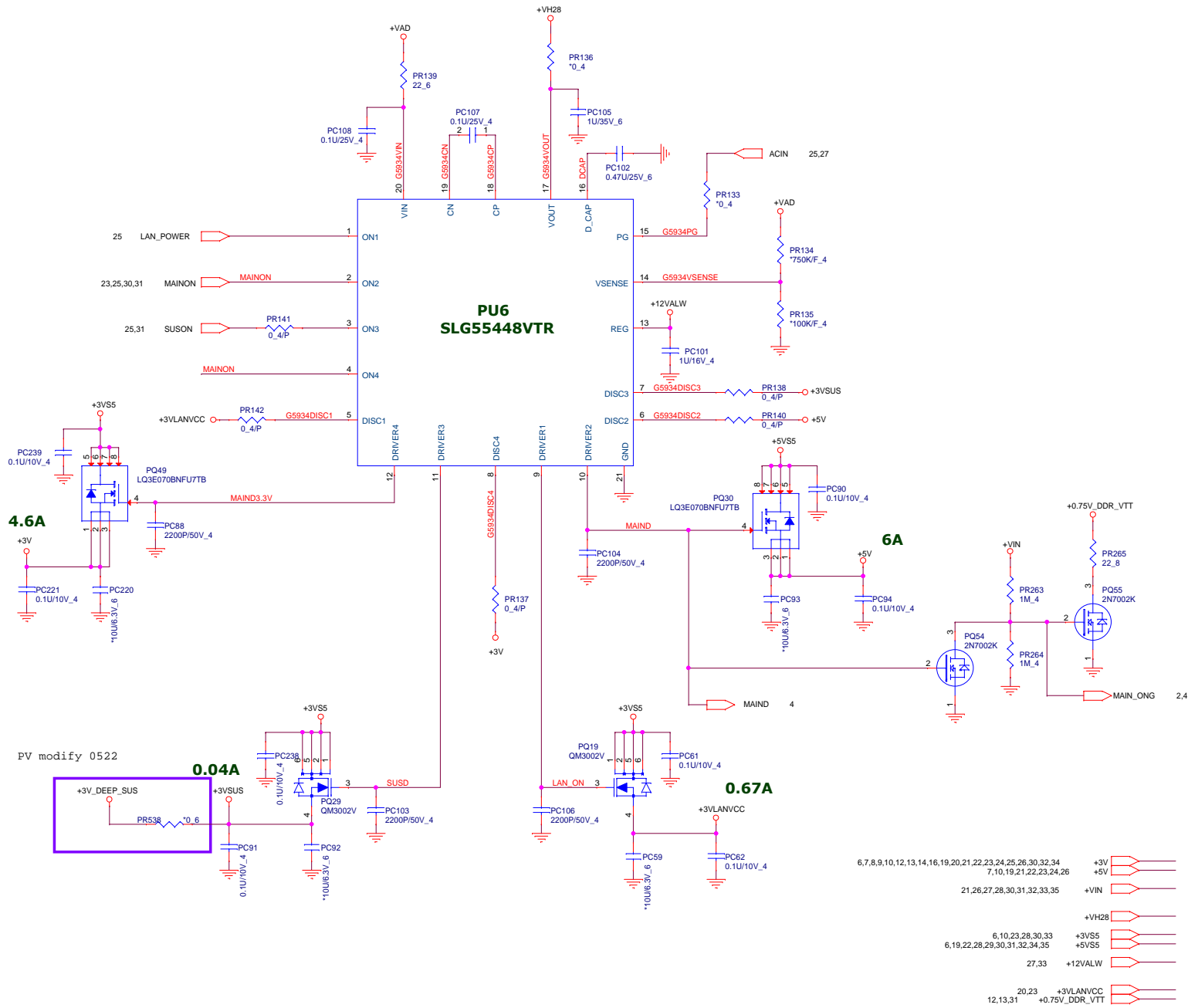




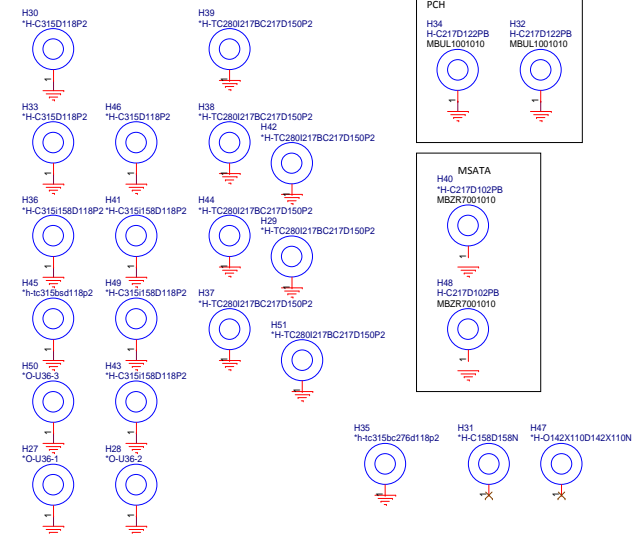
Countinue current:32A  
Peak current: 53A  
Load Line : -1.9mV/A

Countinue current:16A  
Peak current: 33A  
Load Line : -2.9mV/A





## 15" Hole



## Touch Pad Connector

