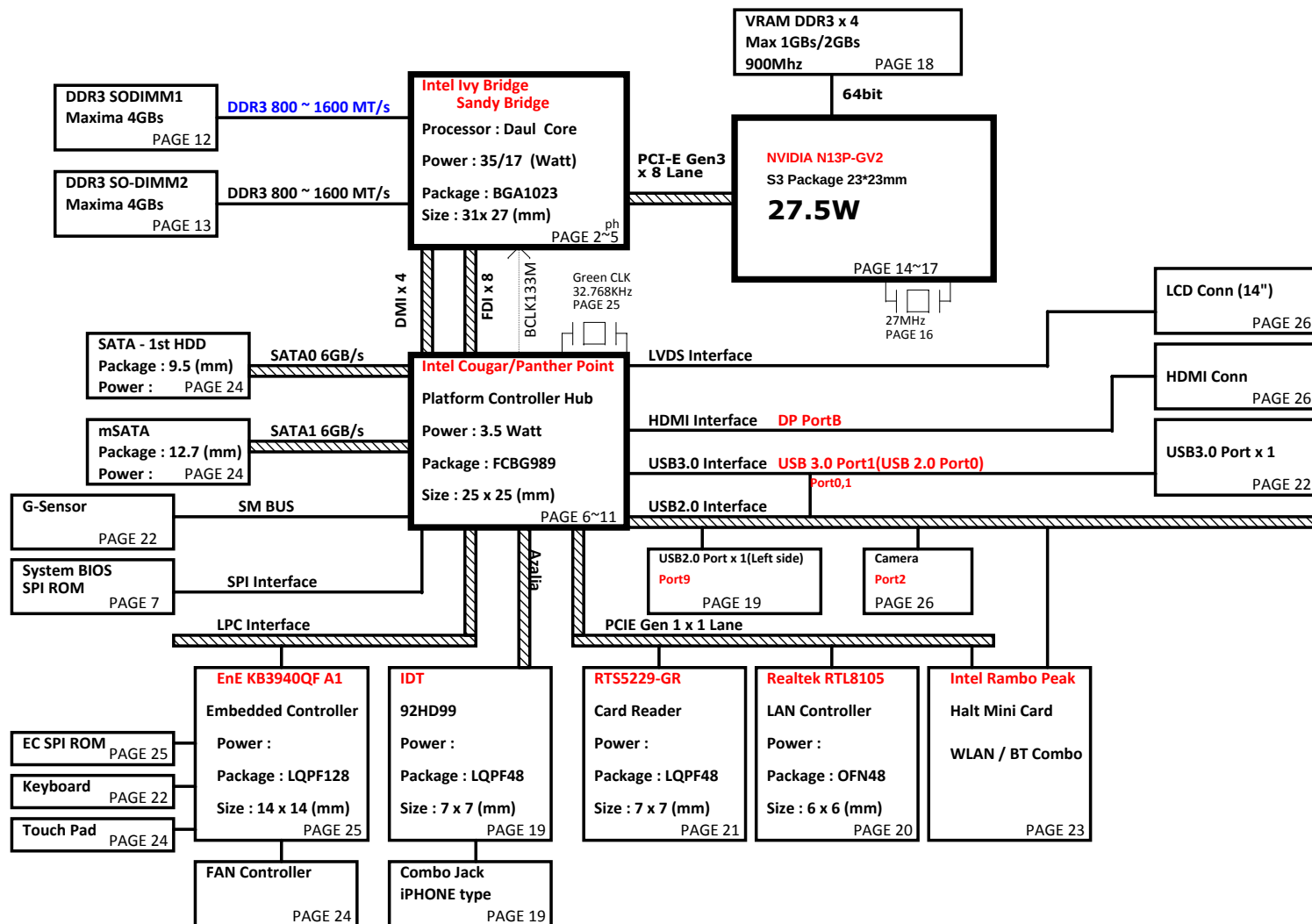


Volks DIS/UMA (14"/15.6") Ultra/Slim Intel Chief River Platform Block Diagram



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)

Ricktek RT8223P
System Power (+3VPCU/+5VPCU/
+3VS5/+5VS5)

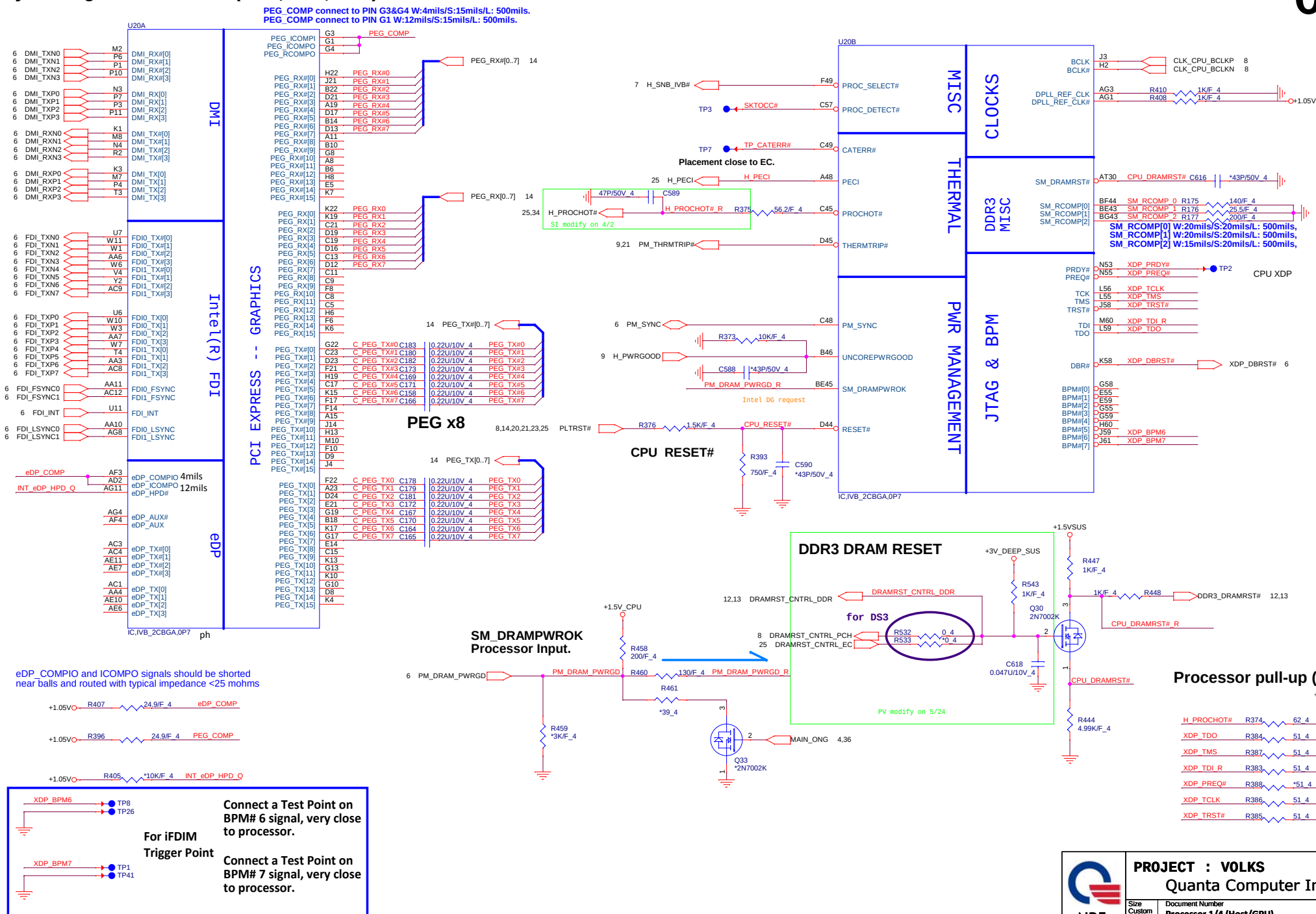
**NCP6132/NCP5911/RT8240P/
TP551462RGER**
Processor Power (+VCC_CORE/
+1.05_VTT/+VCCSA)

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

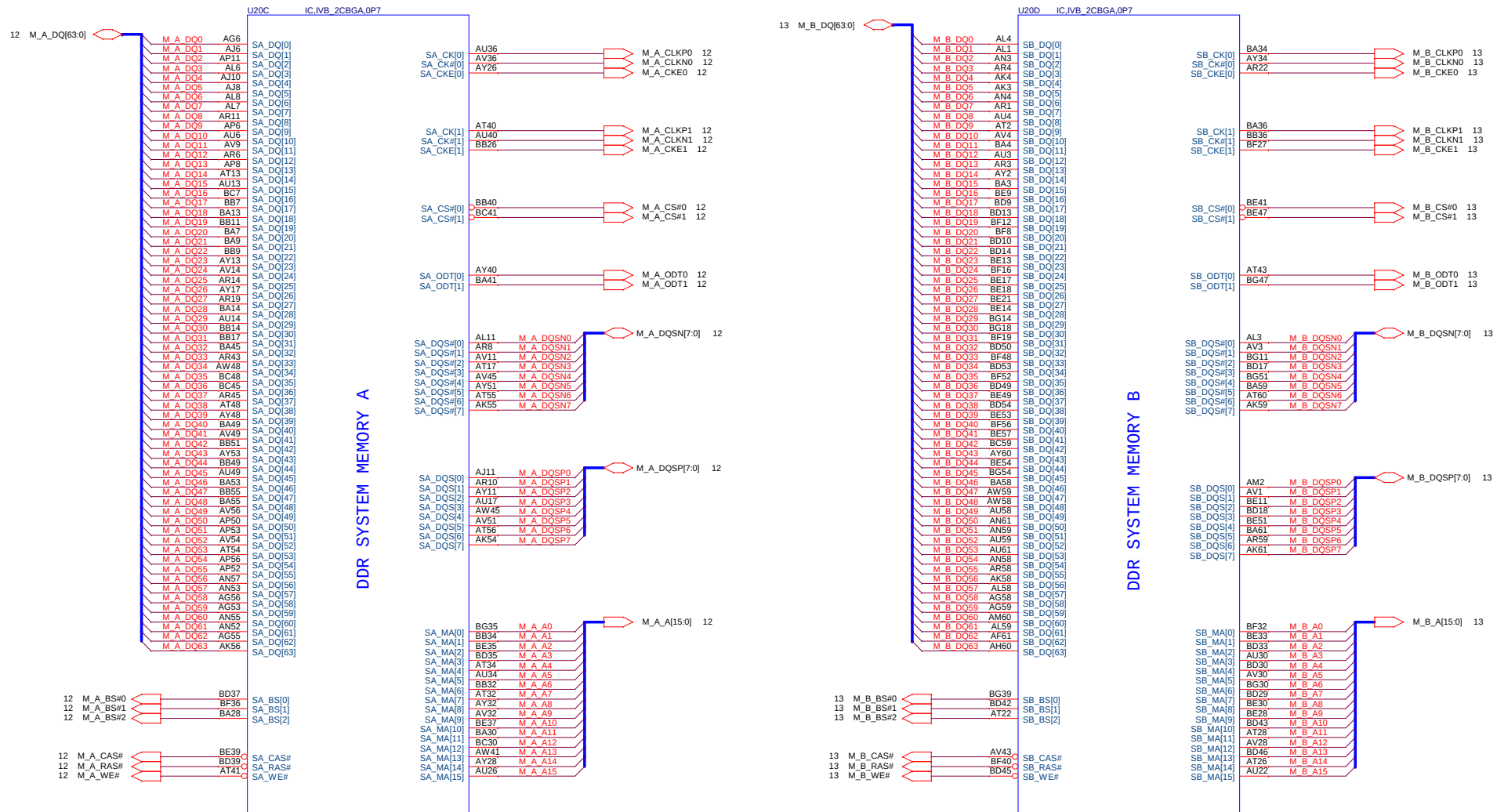
Richtek RT8207
System Memory Power (+1.5VSUS/
+0.75V_DDR_VTT)

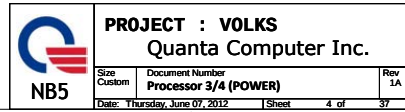
NCP3218G
GPU core power(+VGACORE)

Ivy Bridge Processor (DMI, PEG, FDI)

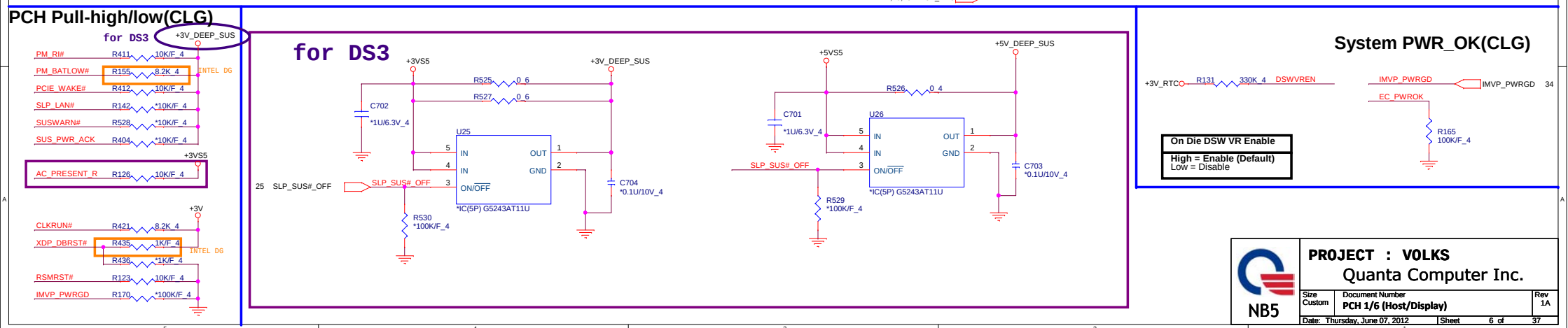


Ivy Bridge Processor (DDR3)

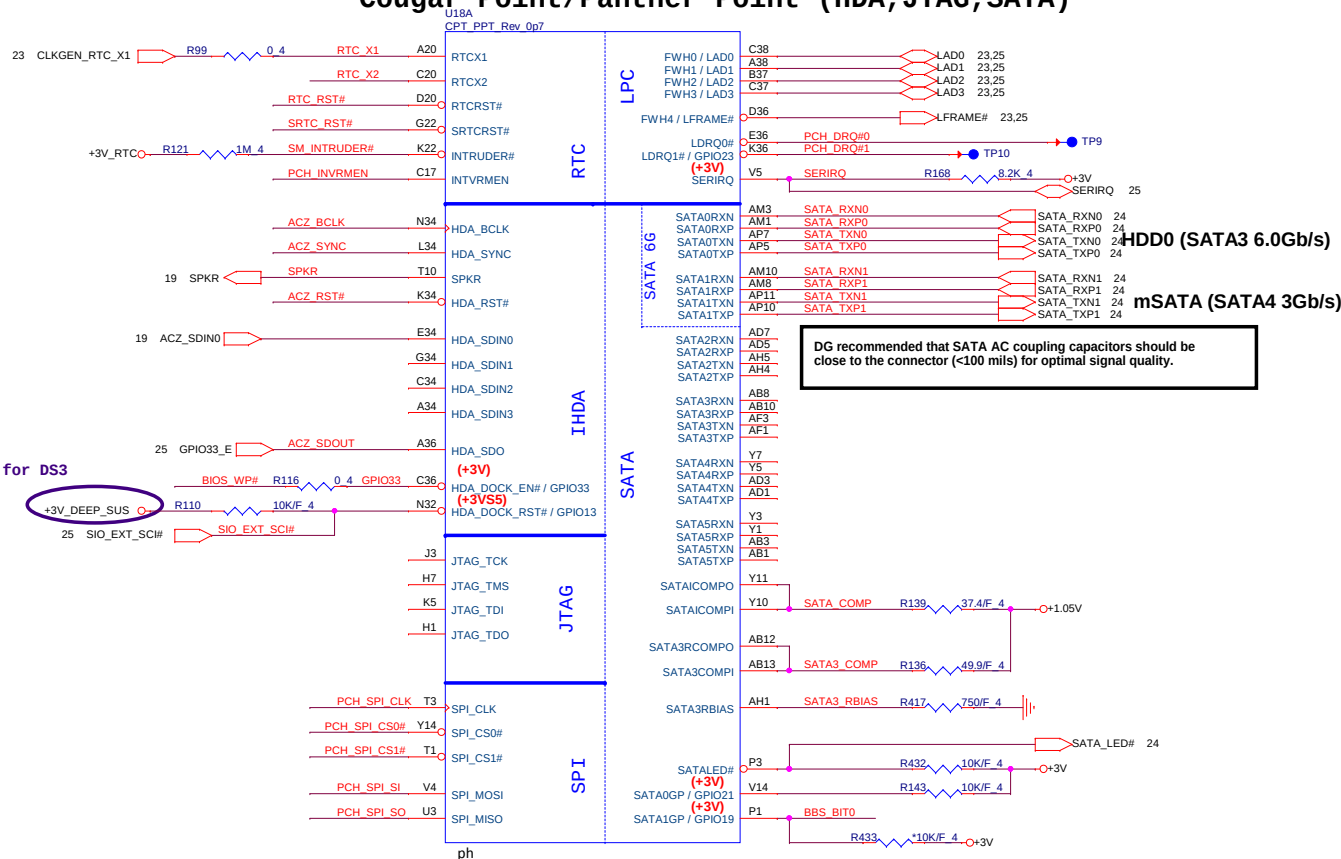








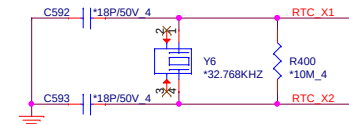
Cougar Point/Panther Point (HDA, JTAG, SATA)



PCH Strap Table

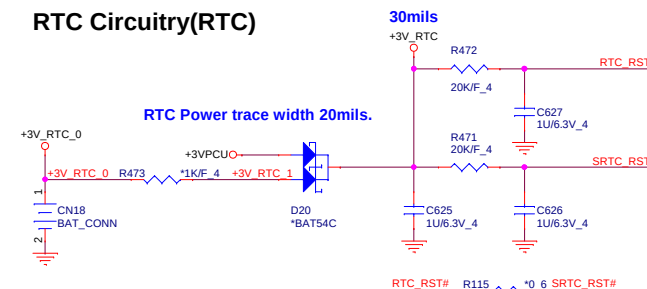
Pin Name	Strap description	Sampled	Configuration	Circuit									
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	+3V _o R152 1K/F 4 SPKR									
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	+3V _o R363 R364 1K/F 4 10K/F 4 PCI_GNT3# 8									
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	+3V _o RTC _o R122 330K 4 PCH_INVRMEN									
HDA_DOCK_EN#/GPIO33	Flash Descriptor Security Only for Interposer	PWROK	0 = Override 1 = Default (weak pull-up 20K)	GPIO33 R104 1K/F 4 ACZ_SDO _{OUT} ACZ_SDO _{OUT} 25									
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>1</td><td>0</td><td>SPI</td></tr><tr><td>0</td><td>1</td><td>LPC</td></tr></tbody></table>	GNT1#	GNT0#	Boot Location	1	0	SPI	0	1	LPC	(Need external pull-down for LPC BIOS) Default weak pull-up on GNT0/1# R419 1K/F 4 BBS_BIT0
GNT1#	GNT0#	Boot Location											
1	0	SPI											
0	1	LPC											
GPIO19 Different from Calpella	Boot BIOS Selection 0 [bit-0]	PWROK		R354 1K/F 4 BBS_BIT1 8									
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)	+1.8V _o R416 1K/F 4 NV_ALE 8									
NV_CLE	DMI Termination voltage	PWROK	weak pull-down 20kohm	+1.8V _o R415 2.2K 4 R414 1K/F 4 NV_CLE 9 H_SNB_IVB# 2									
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.8V (weak pull-down) 1 = Support by 1.5V	for DS3 +3V_DEEP_SUS _o R135 1K/F 4 ACZ_SYNC									
HDA_SDO	Flash Descriptor Security	PWROK	0 = Override 1 = Default (weak pull-up 20K)	+3V_DEEP_SUS _o R105 1K/F 4 ACZ_SDO _{OUT}									
GPIO8	Integrated Clock Chip Enable	RSMRST#	Should be pull-down (weak pull-up 20K)										
GPIO28 Different from Calpella	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										

RTC Clock 32.768KHz

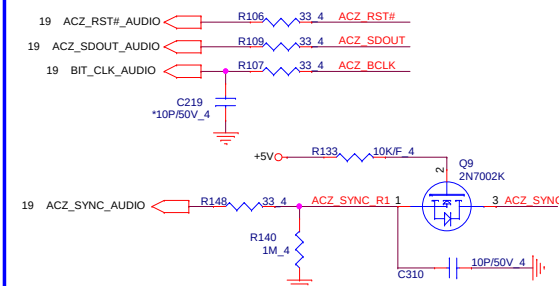


no stuff if use green Clock

RTC Circuitry(RTC)

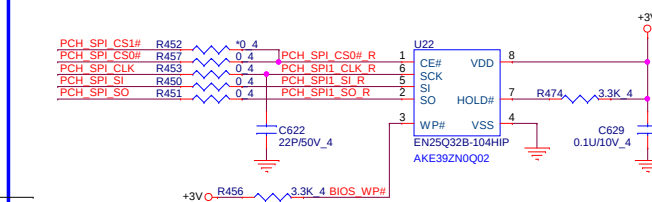


HDA Bus(CLG)



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

PCH SPI ROM(CLG)



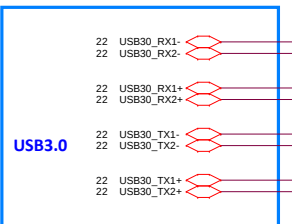
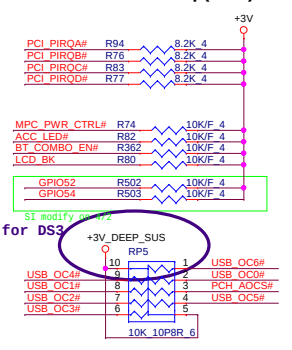
+3V	6,8,9,10,12,13,14,16,19,20,21,22,23,24,25,26,30,32,34,36
+5V	10,19,21,22,23,24,26,36
+1.8V	4,10,31
+1.05V	2,4,6,8,10,21,23,30,33,34
+3VSS	6,10,23,28,30,33,36
+3VPCU	21,22,23,24,25,26,27,28
+3V_RTC	6,10,23



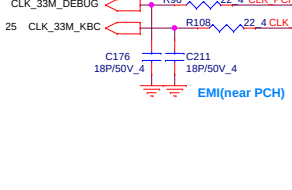
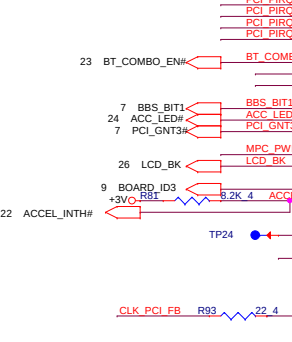
PROJECT : VOLKS
Quanta Computer Inc.

Size Custom	Document Number	Rev
	PCH 2/6 (HDA/RTC/SATA/SPI)	1A
Date: Thursday, June 07, 2012	Sheet	7 of 37

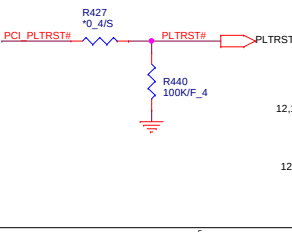
PCI/USBOC# Pull-up(CLG)



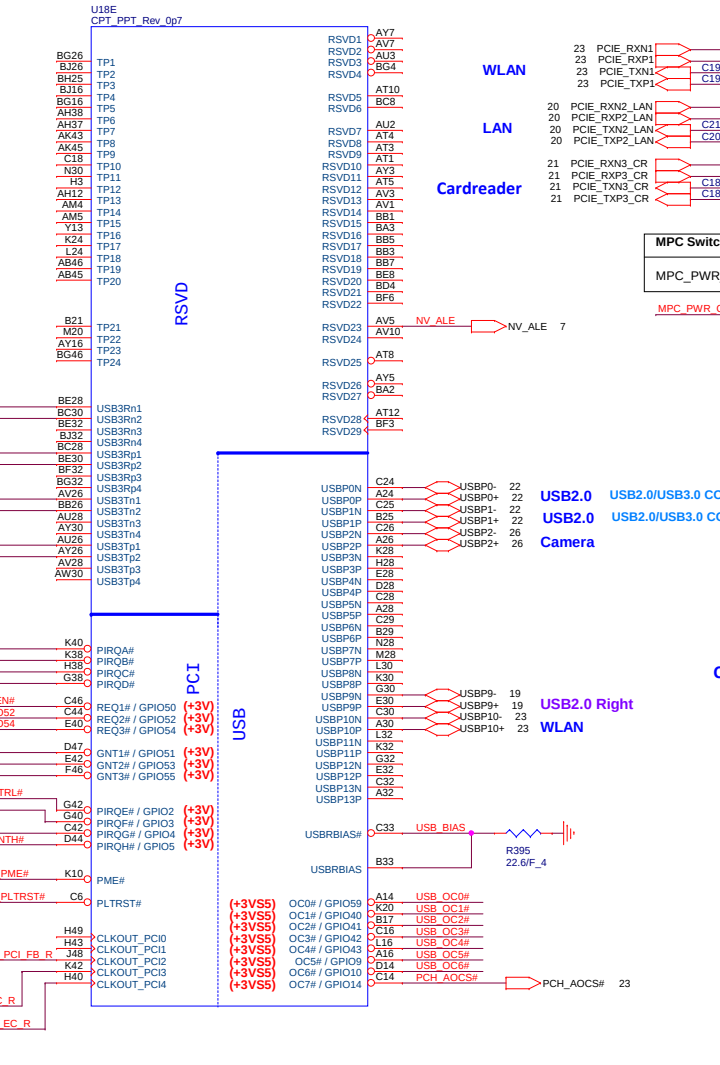
20111130 Modify USB3.0 for HM70



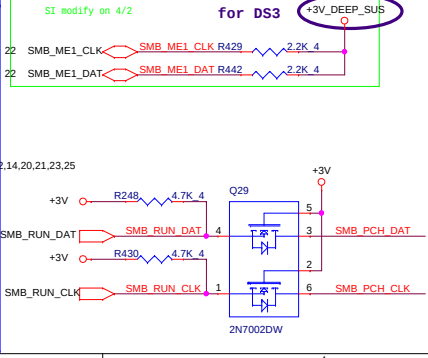
PLTRST#(CLG)



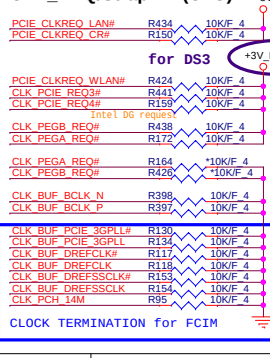
Cougar Point-M/Panther Point (PCI,USB,NVRAM)



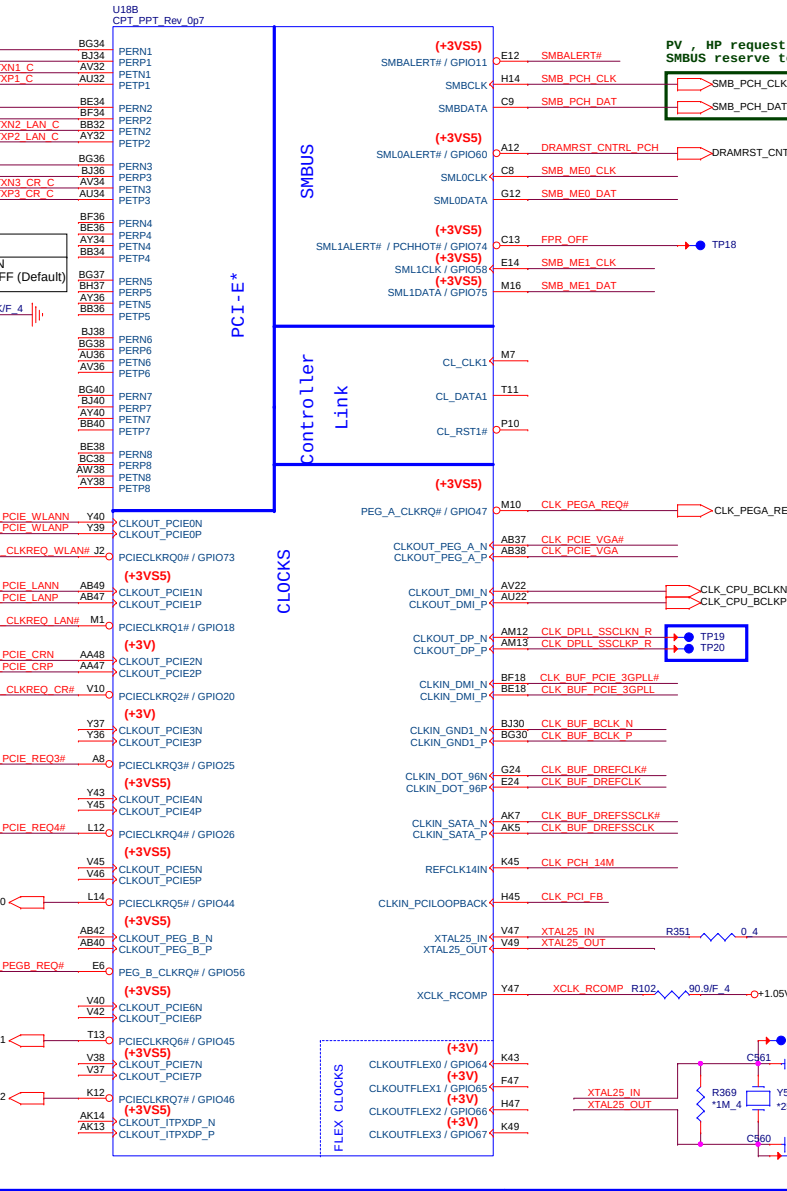
SMBus/Pull-up(CLG)



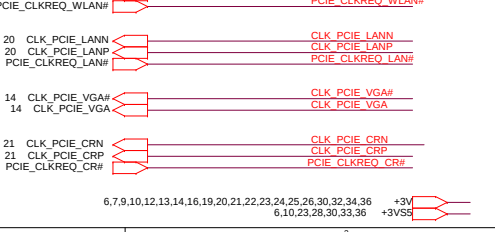
CLK. REQ/Strap Pin(CLG)



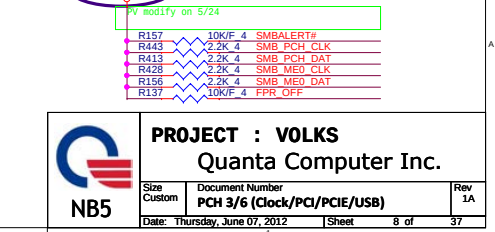
Cougar Point-M/Panther Point (PCI-E,SMBUS,CLK)



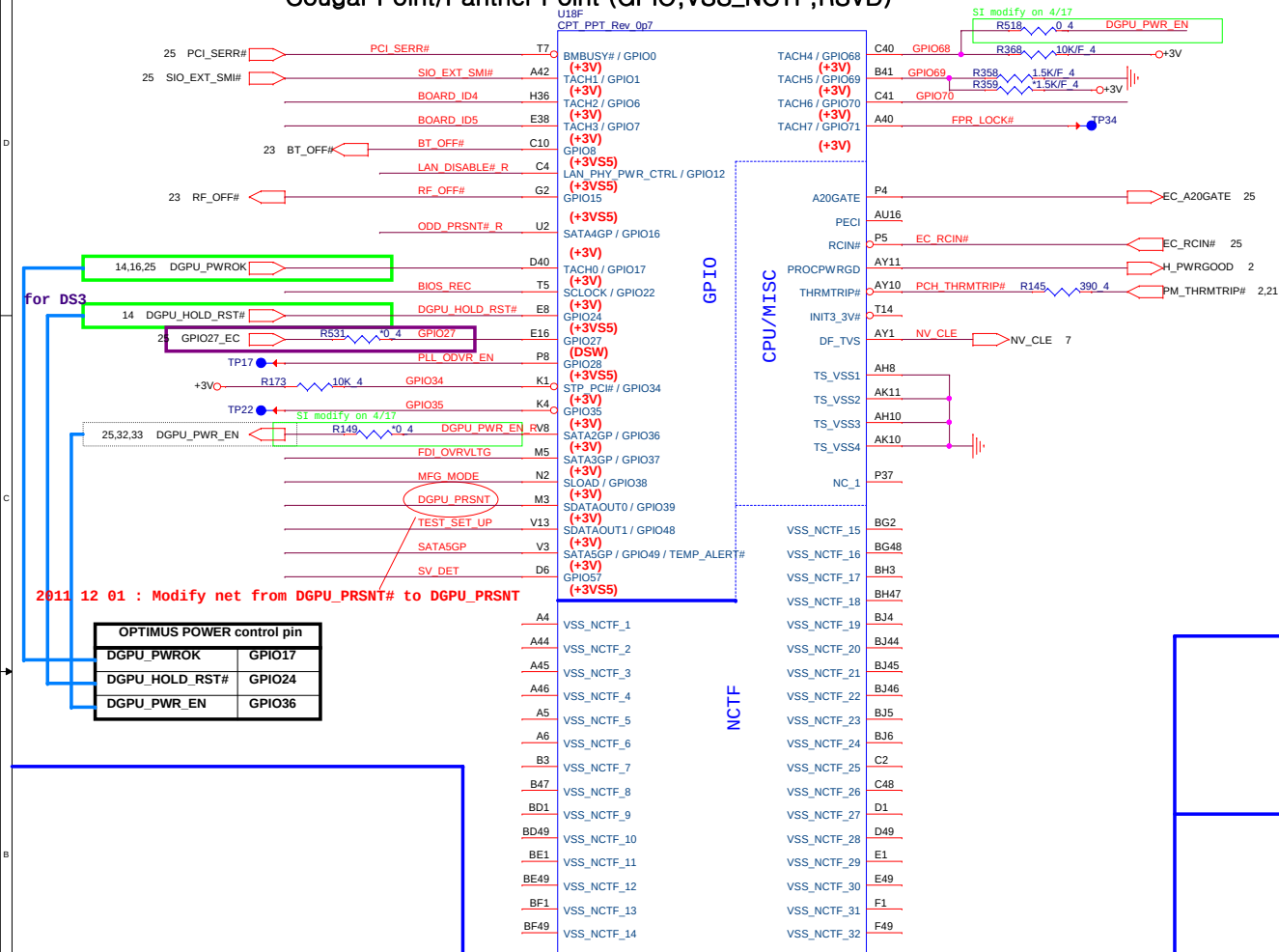
PCI-E Clock



SMBus/Pull-up(CLG)



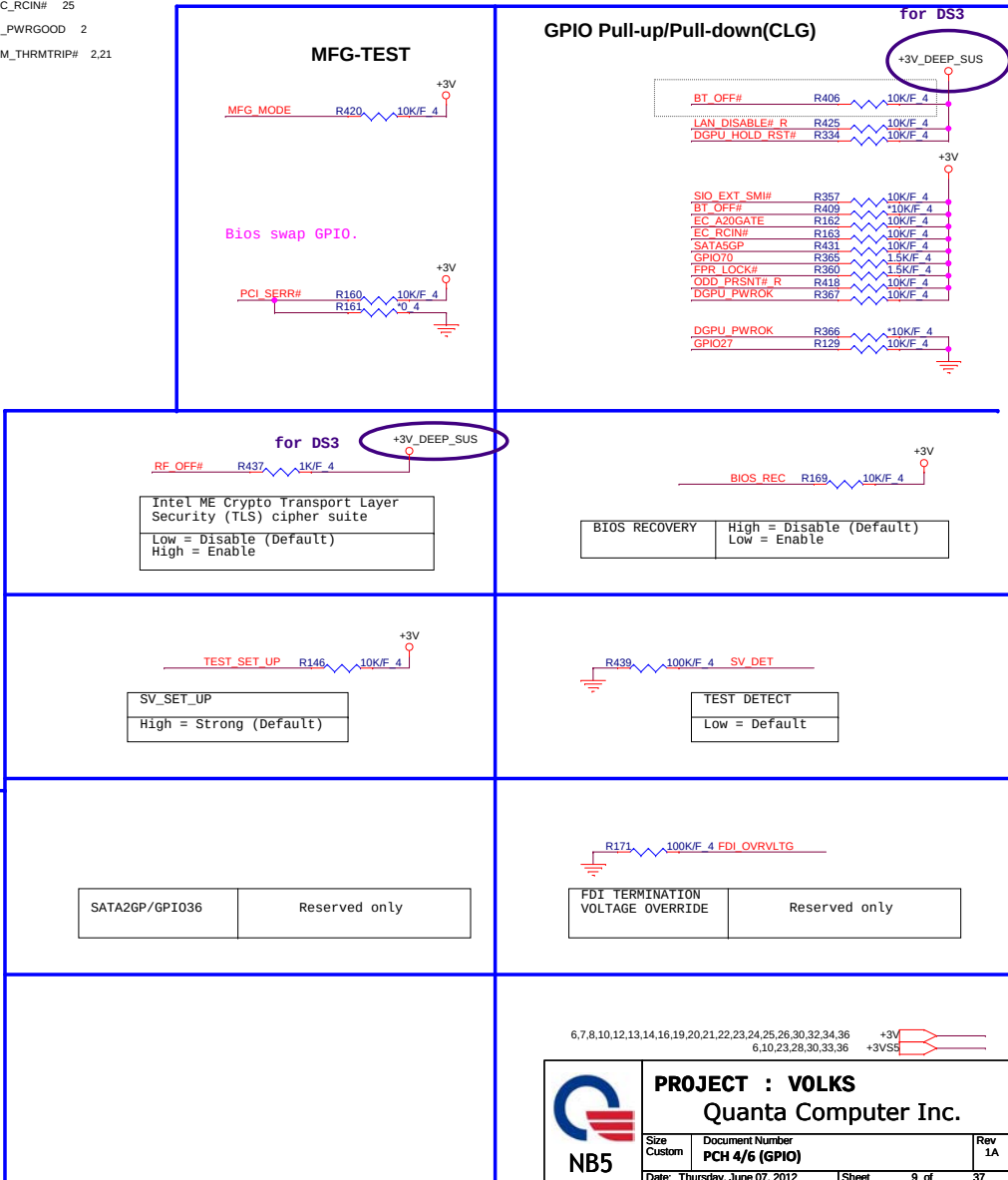
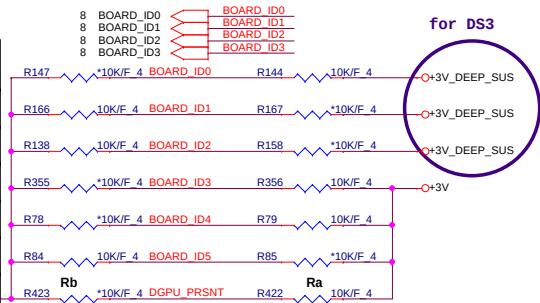
Cougar Point/Panther Point (GPIO,VSS_NCTF,RSVD)



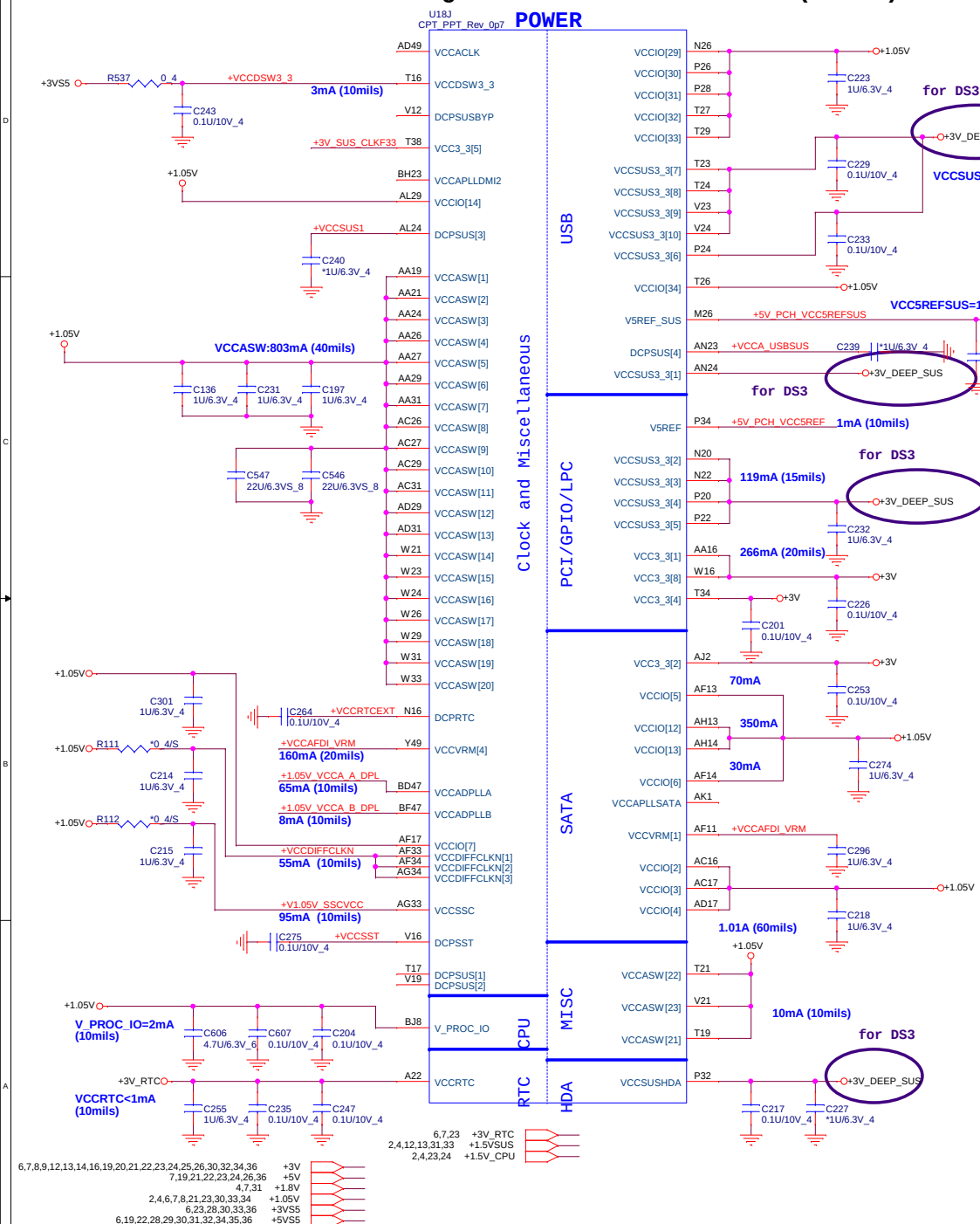
Chief River BOARD ID SETTING

Model	BOARD_ID5	BOARD_ID4 14": 0 15": 1	BOARD_ID3 HM70: 0 HM77: 1	BOARD_ID2	BOARD_ID1 1G: 0 2G: 1	BOARD_ID0 UMA: 0 DIS: 1
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

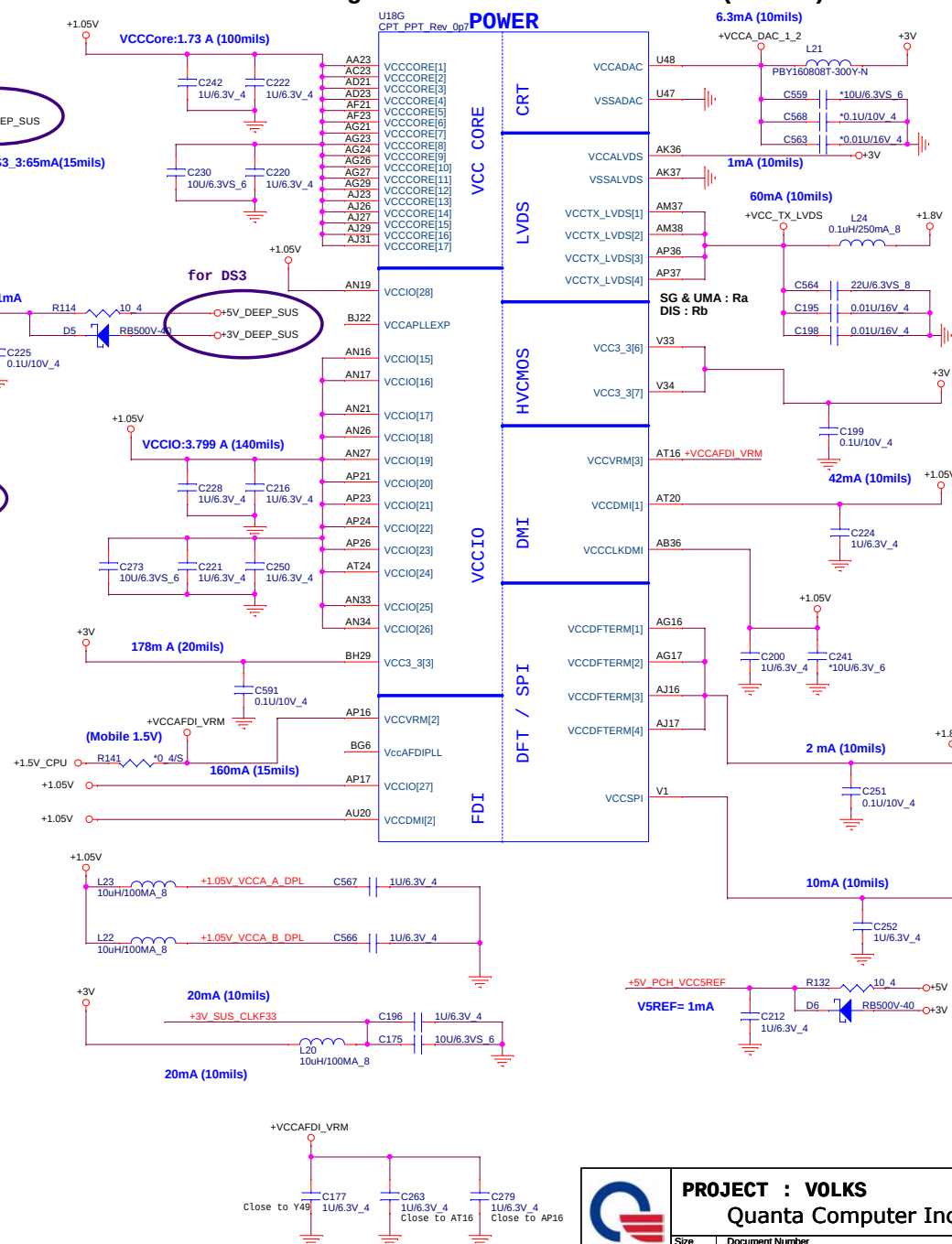
	SG	UMA
Stuff	Ra	Rb
NC	Rb	Ra



Cougar Point/Panther Point (POWER)

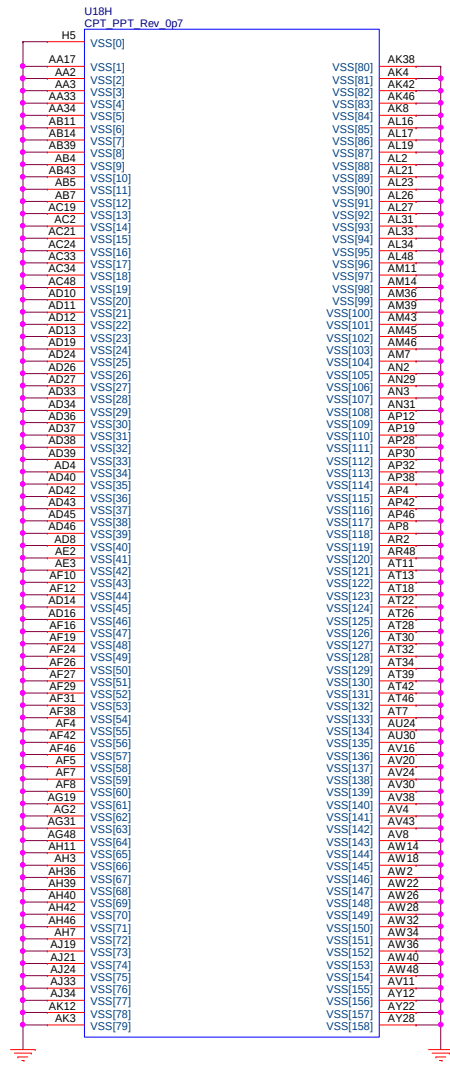
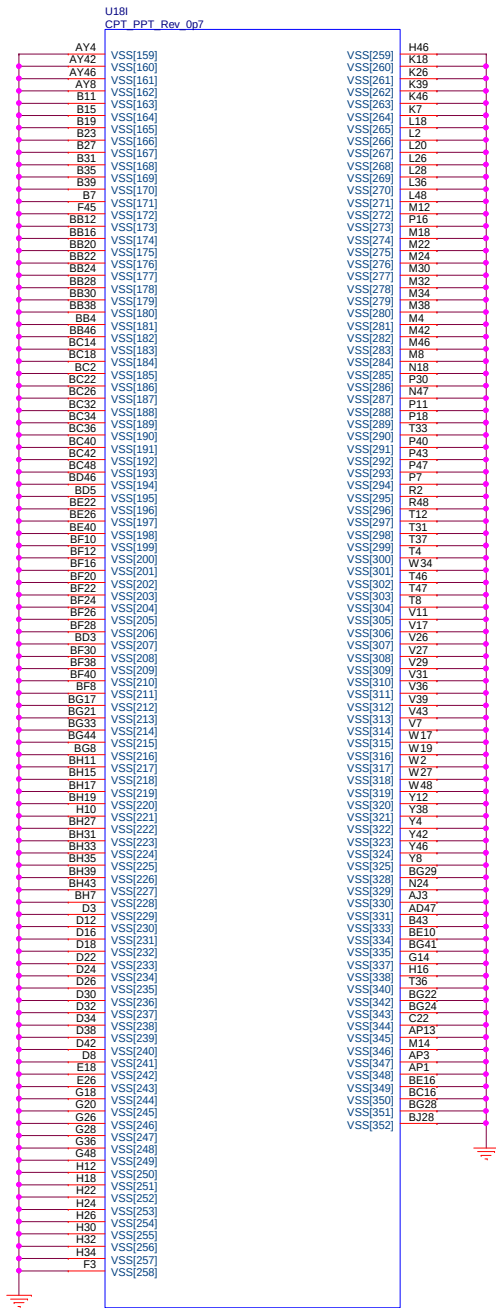


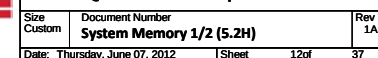
Cougar Point/Panther Point (POWER)

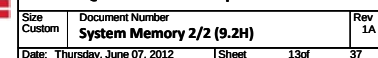
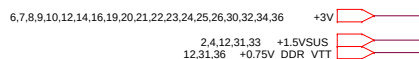


Cougar Point/Panther Point (GND)

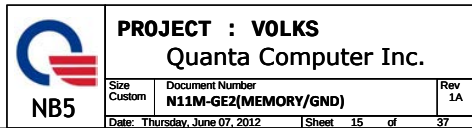
Cougar Point/Panther Point (GND)

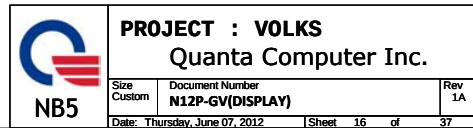




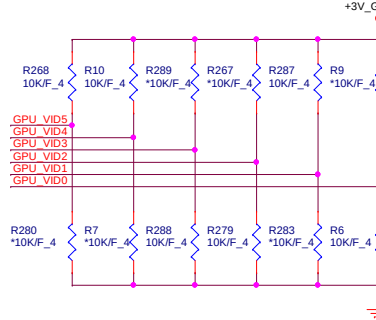




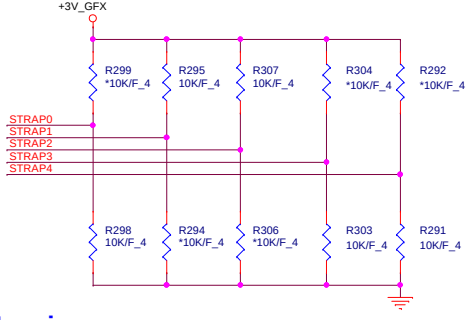
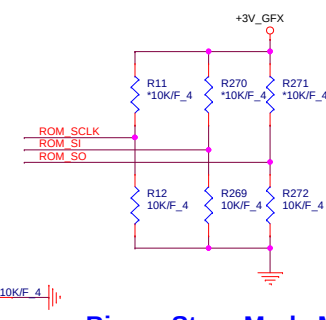
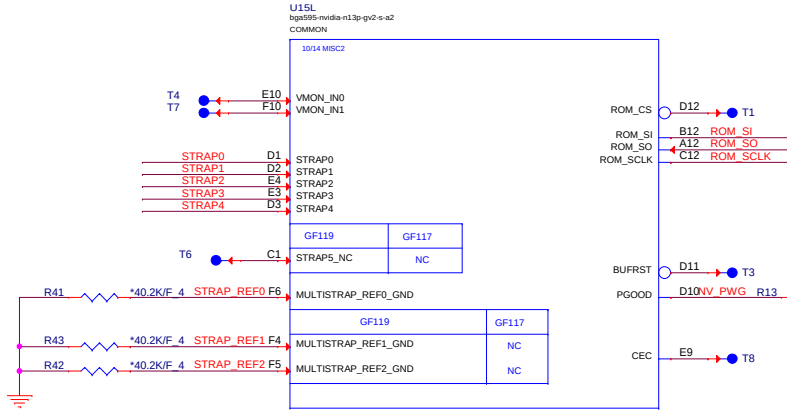




GPU_VID0				
----------	--	--	--	--



N13P-GV2 NVDD HW BOOT Voltage = 0.875V
VID = 0110010



Binary Strap Mode Mapping

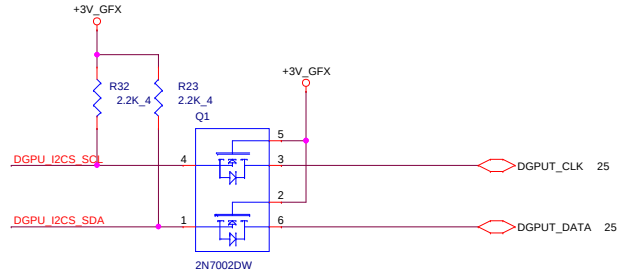
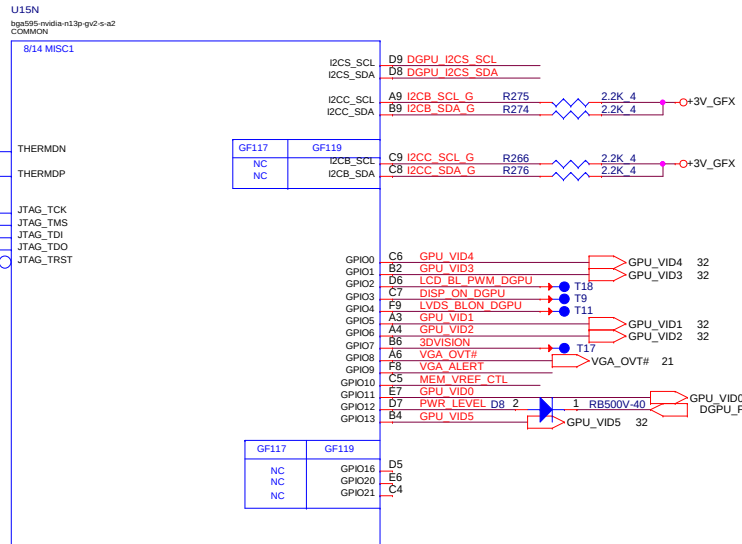
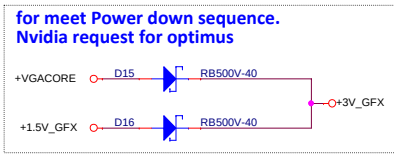
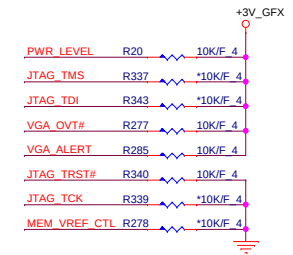
Strap Pin name	Strap Mapping	Resistance	Polarity
ROM_SCLK	SMB_ALT_ADDR	10Kohm	Pull-down to GND
ROM_SI	SUB_VENDOR	10Kohm	Pull-UP to 3V3 if VBIOS ROM Exists Pull-down to GND if no VBIOS ROM
ROM_SO	VGA_DEVICE	10Kohm	Pull-down to GND (no dispaly)
STRAP0	RAMCFG[0]	10Kohm	USER defined
STRAP1	RAMCFG[1]	10Kohm	USER defined
STRAP2	RAMCFG[2]	10Kohm	USER defined
STRAP3	RAMCFG[3]	10Kohm	USER defined
STRAP4	PCIE_MAX_SPEED	10Kohm	Pull-down to GND

VRAM Configuration Table

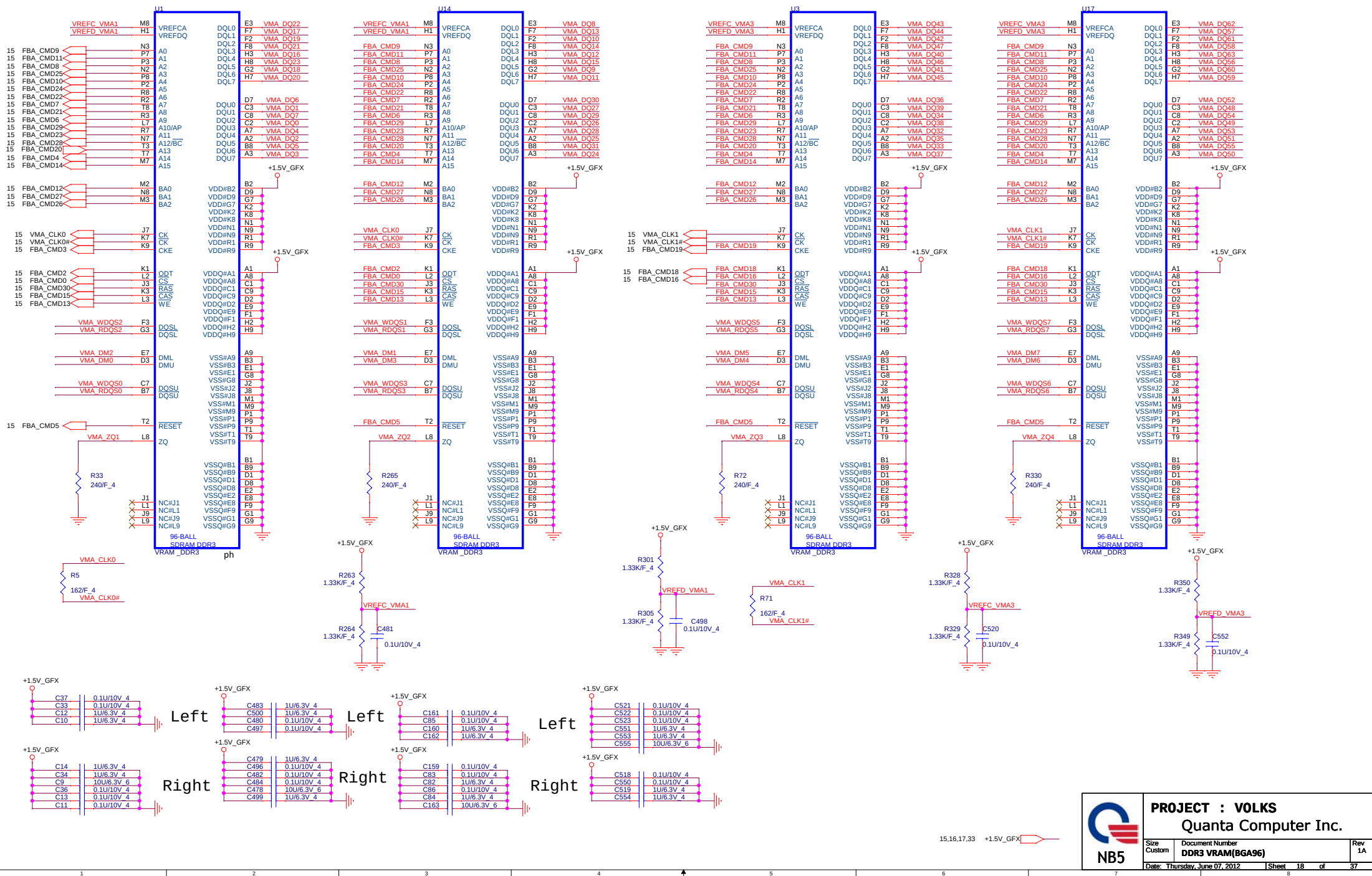
RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor PIN	QBCON PIN	HP PIN
	(MP)	Reserved			
0011	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Hynix	H5T04G63MFR-11C	AKD5PGWtW00	AKD5PGWtW01
0101	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Micron	MT41K256M16HA-107G:E	AKD5PGStL01	AKD5PGStL02
1100	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Hynix	H5T02G63DFR-11C	AKD5MGWtW12	AKD5MGWtW13
0101	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Samsung	K4W2G1646C-HC11	AKD5MGWtW13	AKD5MGWtW13
	(OOC)				
0001	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Samsung	K4W4G1646B-HC11	AKD5MGWtW18	AKD5MGWtW17
0100	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Hynix	H5T04G63AFR-11C	AKD5MGWtW18	AKD5MGWtW17
1011	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Samsung	K4W2G1646E-BC11	AKD5MGGtW21	AKD5MGGtW22

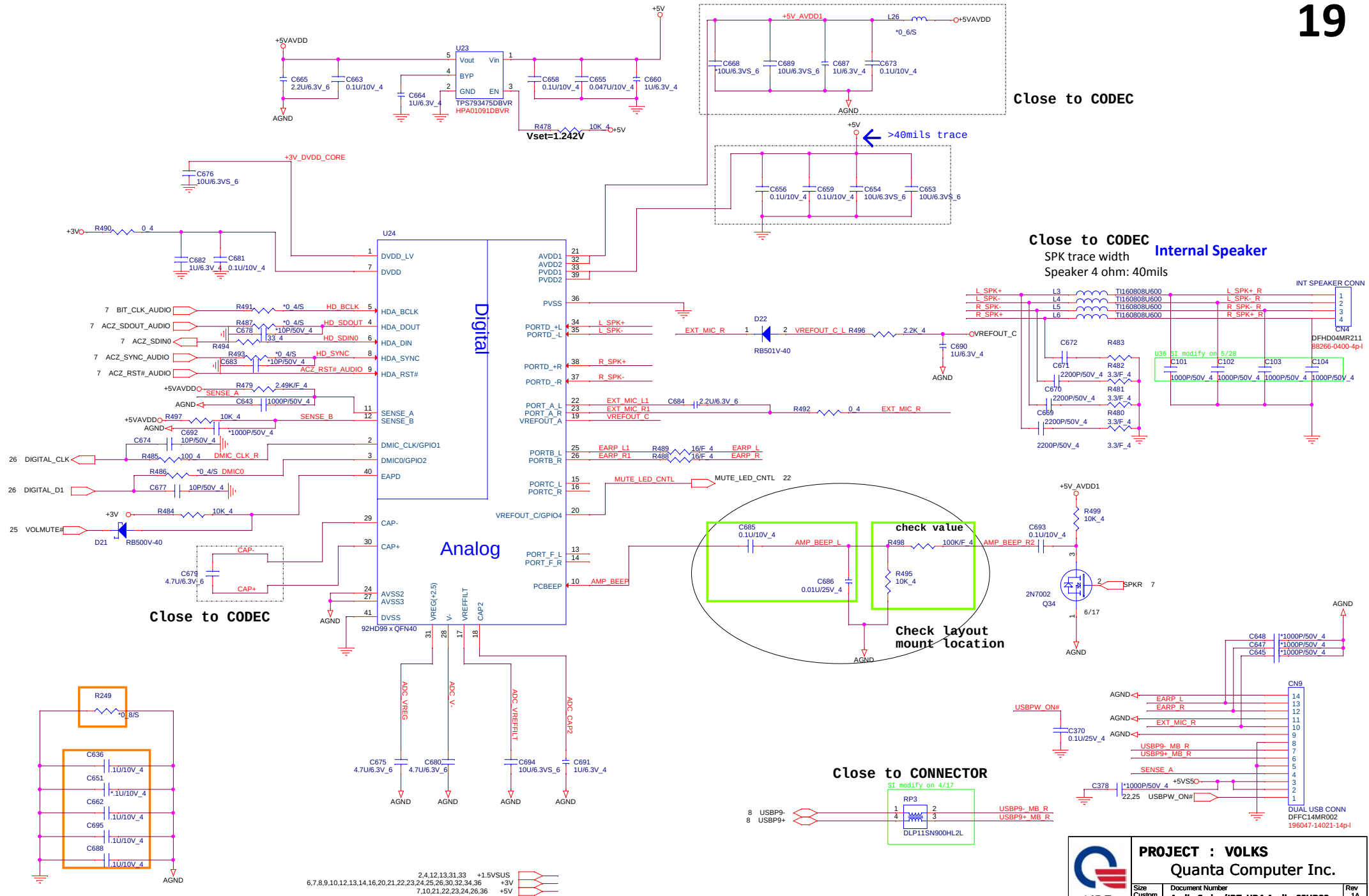
25 GB2-64 and GB4-128 GPIO Desdription

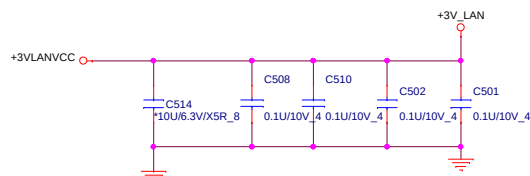
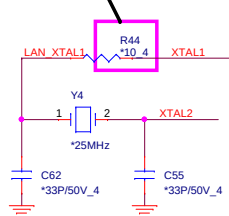
GPIO pin Name	Normal Function	I/O	Functional Description	Recommended Default Pull-up or Pull-down
GPIO0	GPU_VID4	0	GPU Core VDD VID4	Strap to boot HVVDD
GPIO1	GPU_VID3	0	GPU Core VDD VID3	Strap to boot HVVDD
GPIO2	LCD_BL_PWM	0	Panel Backlight PWM Brightness Control	100 K pull-down
GPIO3	LCD_VCC or PSI	0	Panel Power Enable or Phase Shedding	LCD_VCC: 100k pull-down PSI: 10k pull-up or pull-down; stuff as needed to disable phase shedding by default
GPIO4	LCD_BLEN	0	Panel Backlight Enable	100 K pull-down
GPIO5	GPU_VID1	0	GPU Core VDD VID1	Strap to boot HVVDD
GPIO6	GPU_VID2	0	GPU Core VDD VID2	Strap to boot HVVDD
GPIO7	3D Vision	0	3D Vision Left/Right signal	100 K pull-down
GPIO8	OVERT	I/O	Active Low Thermal Catastrophic Over Temperature	100 K pull-up
GPIO9	ALERT	I/O	Active Low Thermal Alert	100 K pull-up
GPIO10	MEM_VREF_CTL	0	Memory VREF Control	100 K pull-down
GPIO11	GPU_VID0	0	GPU Core VDD VID0	Strap to boot HVVDD
GPIO12	PWR_LEVEL	I	AC power detect or power supply overdraw input	100 K pull-up
GPIO13	GPU_VID5	0	GPU Core VDD VID5	Strap to boot HVVDD
GPIO14	HPD_AB	I	Hot Plug Detect for IFPAB	See Figure 76
GPIO15	HPD_C	I	Hot Plug Detect for IFPC	See Figure 76
GPIO16	PSI or MEM_VDD_CTL	0	Phase Shedding or Memory VDD VID	PSI: 10k pull-up or pull-down; stuff as needed to disable phase shedding by default MEM_VDD_CTL: Strap to boot FVDD/Q
GPIO17	HPD_D	I	Hot Plug Detect for IFPD	See Figure 76
GPIO18	HPD_E	I	Hot Plug Detect for IFPE	See Figure 76
GPIO19	HPD_F	I	Hot Plug Detect for IFPF	See Figure 76
GPIO20	Reserved			
GPIO21	Reserved			



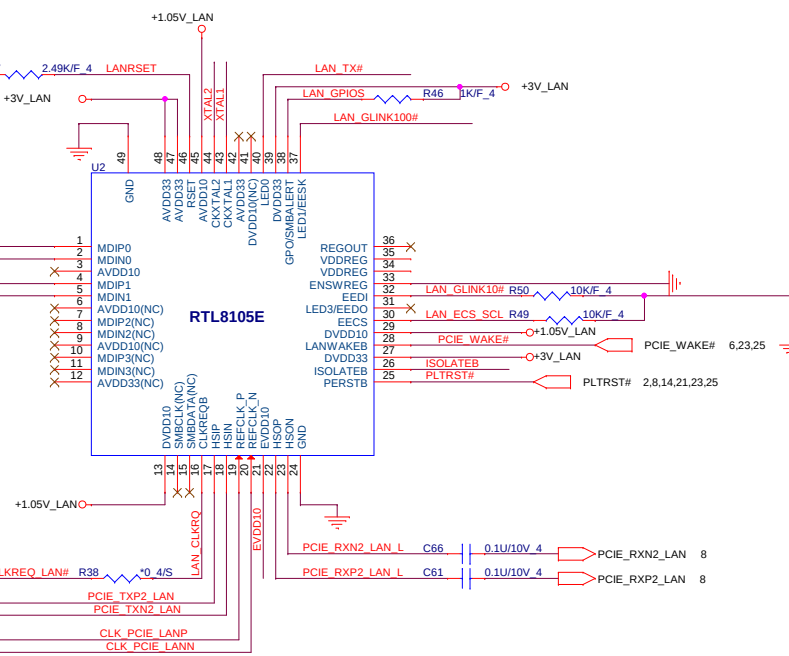
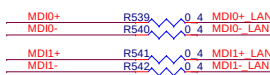
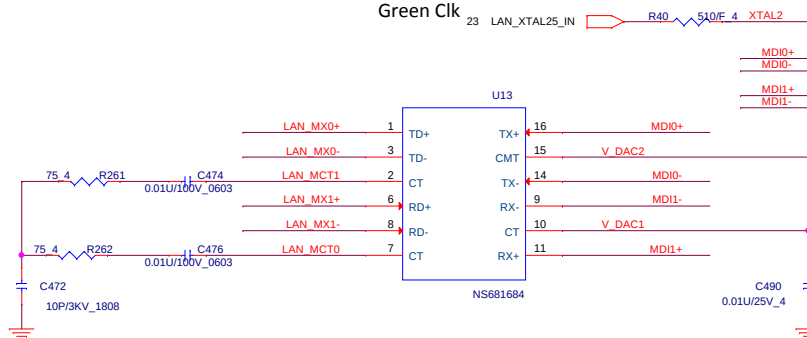
18



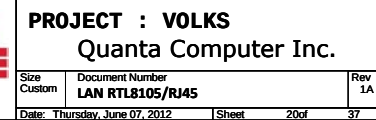
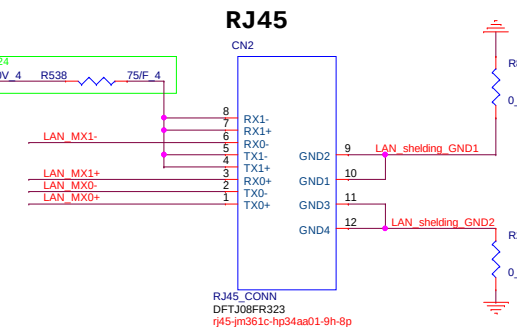
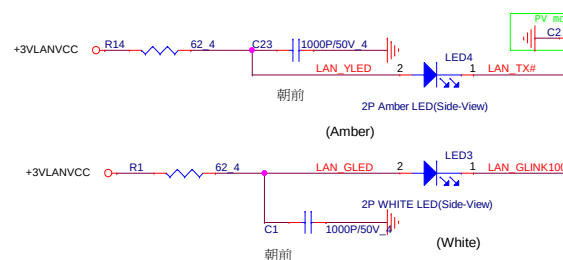
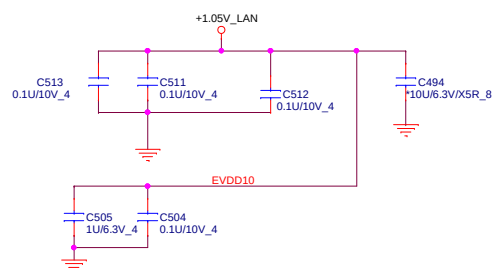
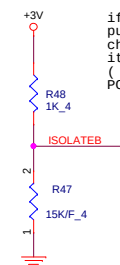




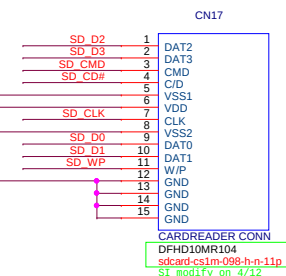
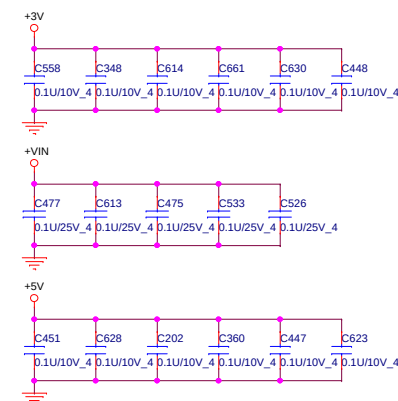
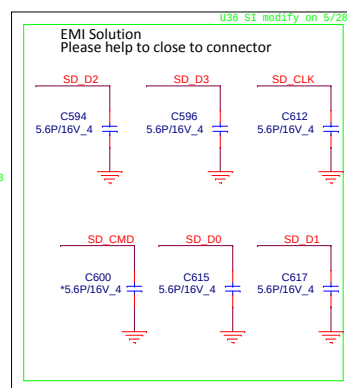
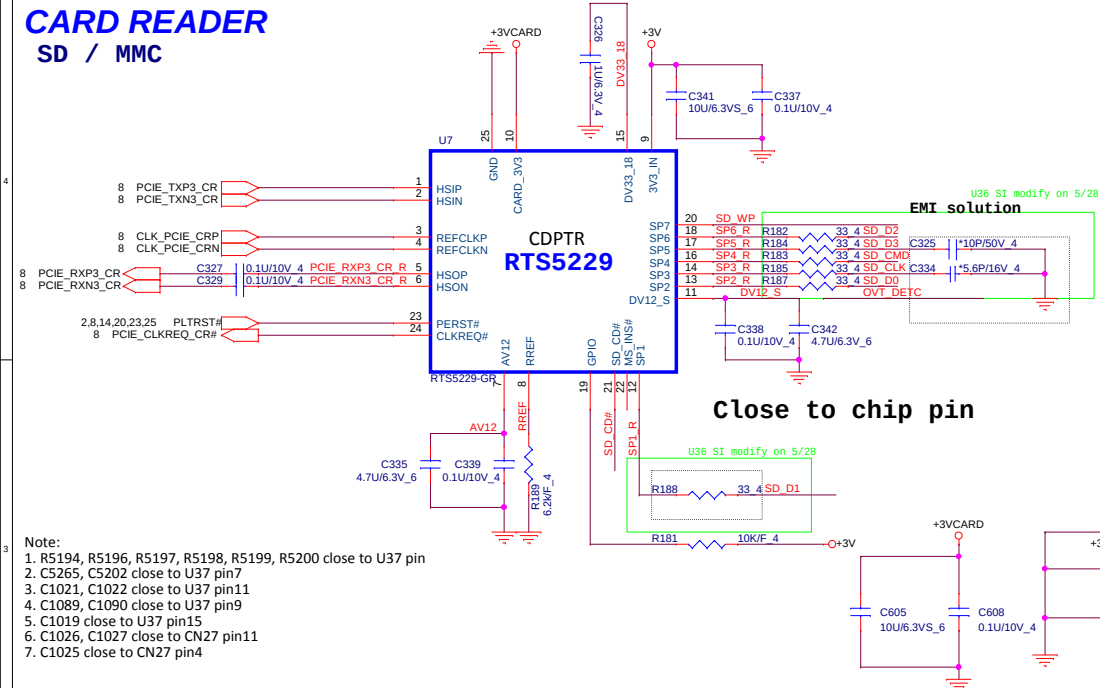
GND VIA x 9 Pcs



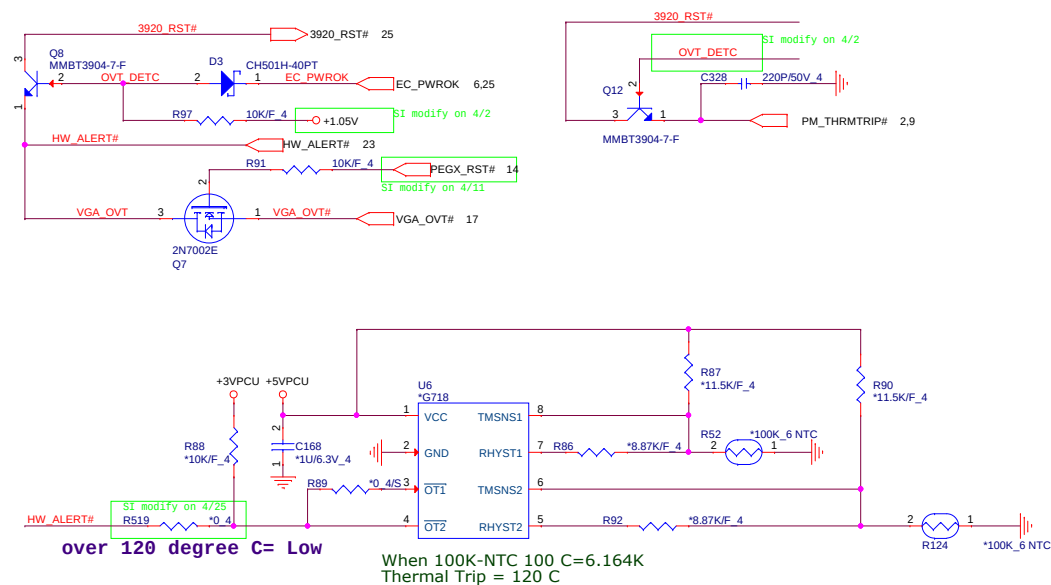
```
if ISOLATEB pin
pull-low, the LAN
chip will not drive
it's PCI-E outputs
( excluding
PCIE_WAKE# pin )
```



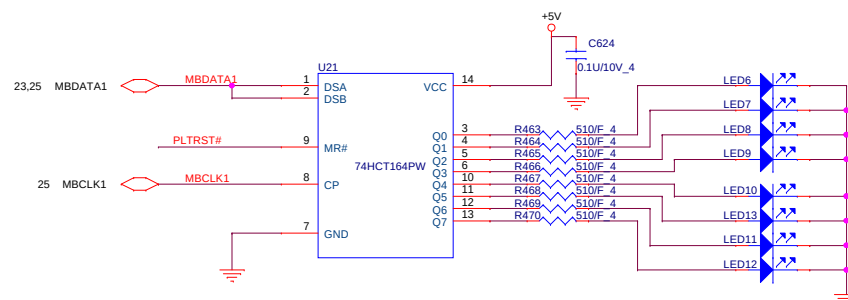
CARD READER
SD / MMC



Thermal HW protect

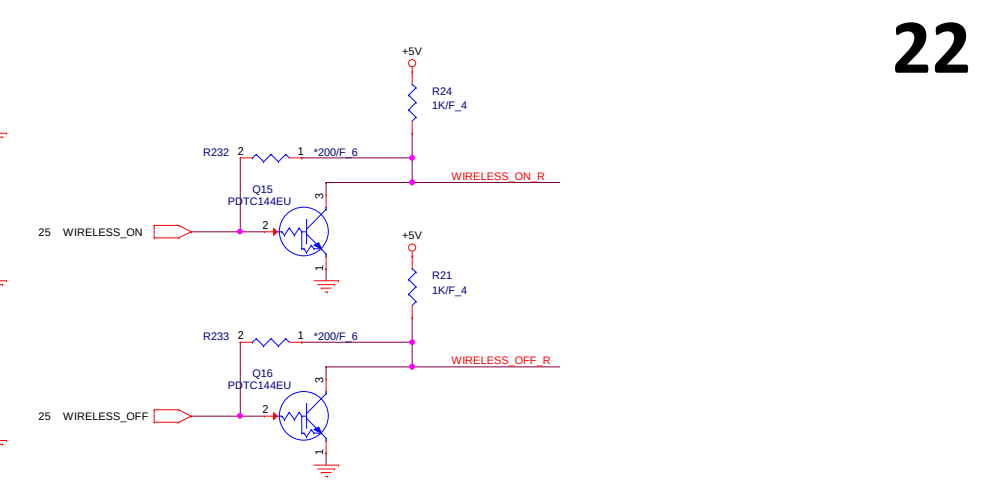
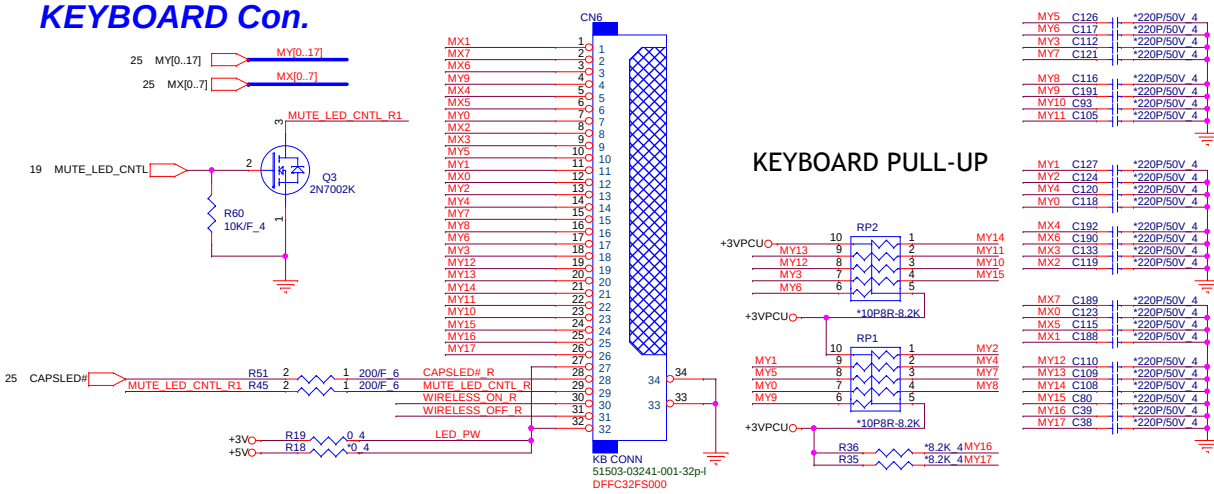


80 port

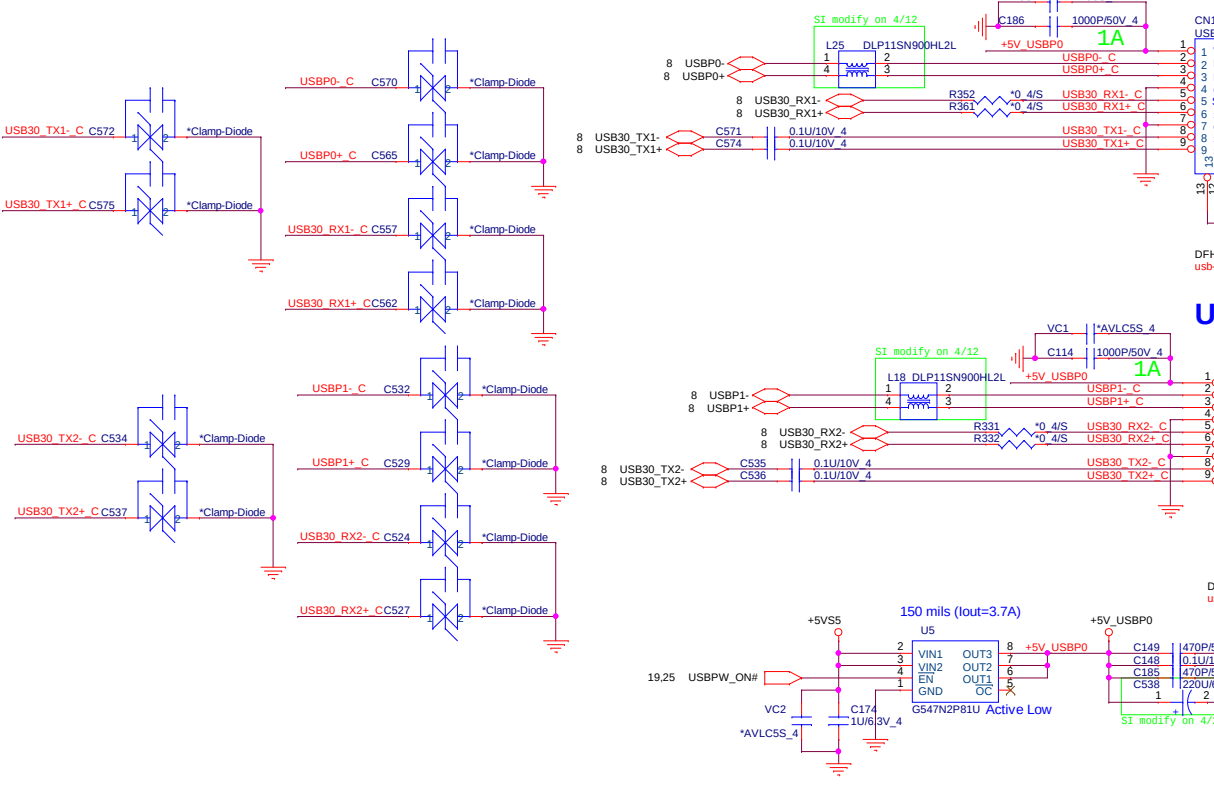


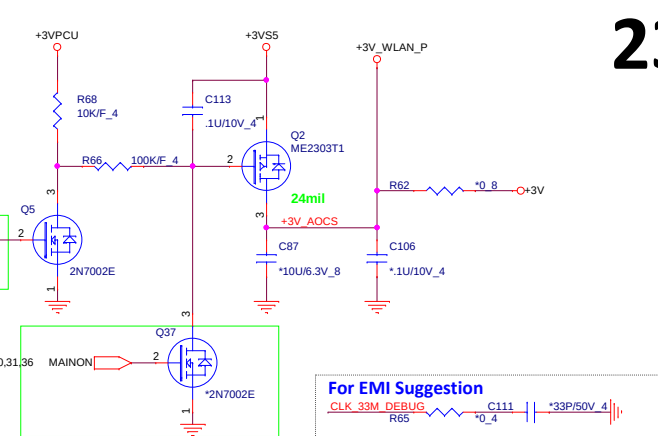
KEYBOARD Con.

22

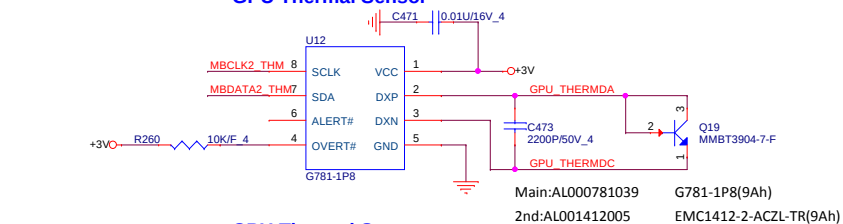


USB 2.0/3.0 Combo

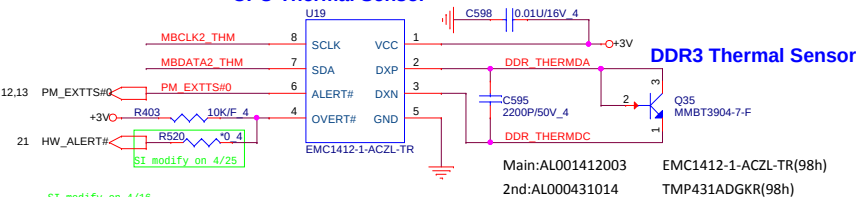




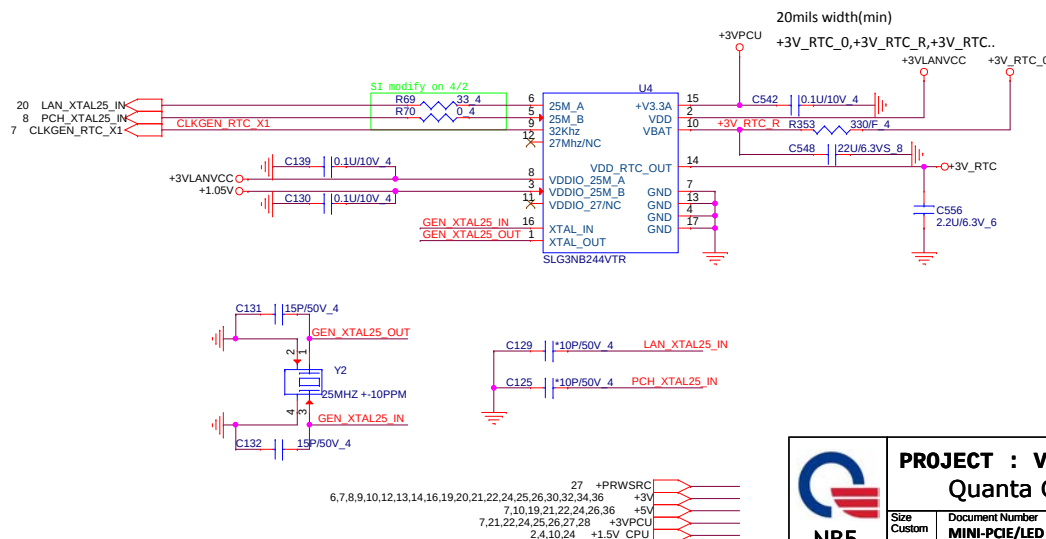
GPU Thermal Sensor



CPU Thermal Sensor

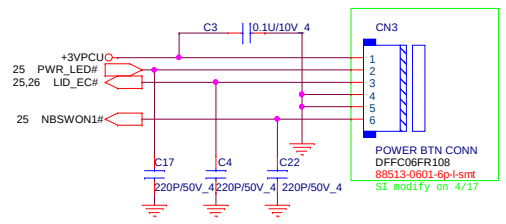


Green CLK Circuitry

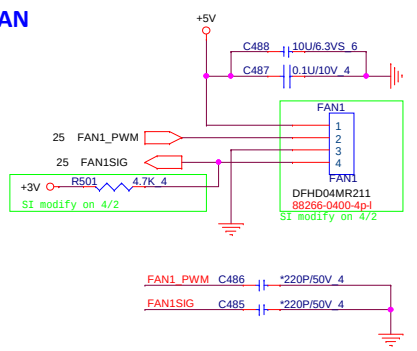


Power Button Connector

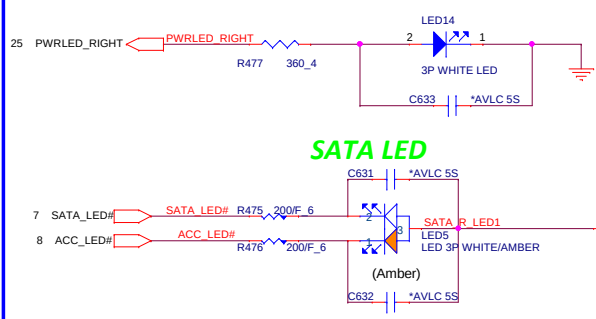
Pin1 : +3VPCU(LIDSWITCH PWR)
Pin2 : POWER LED
Pin3 : LIDSWITCH
Pin4 : GND
Pin5 : GND
Pin6 : POWERON#



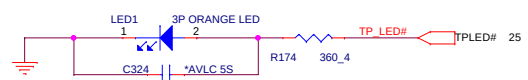
FAN



PWR LED

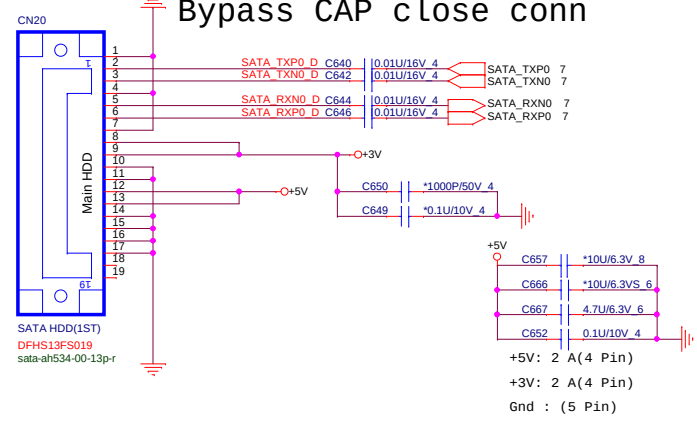


14" TP LED

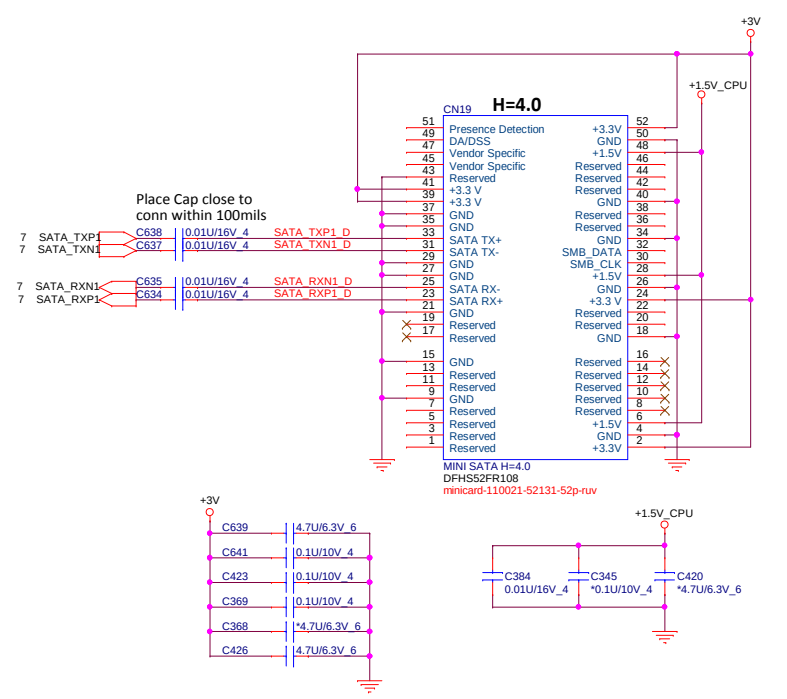


SATA HDD Connector(Cable type)

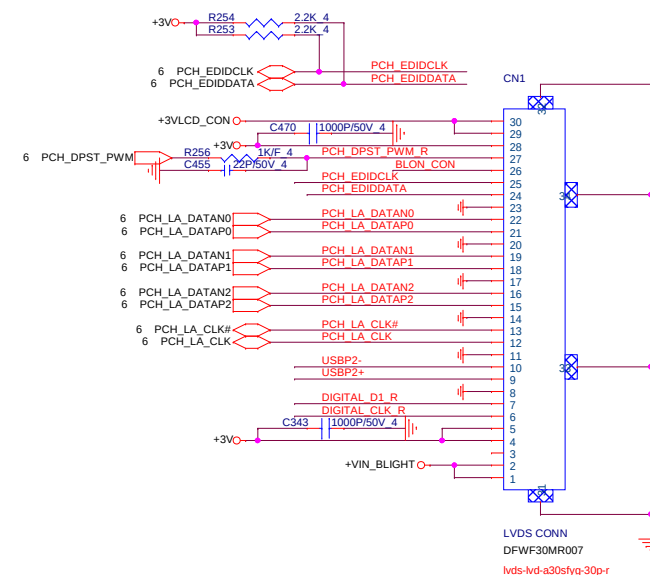
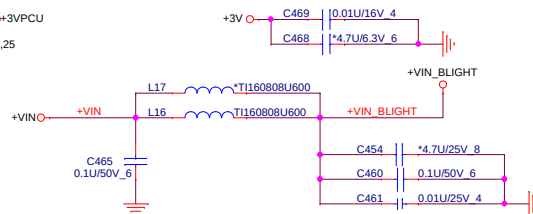
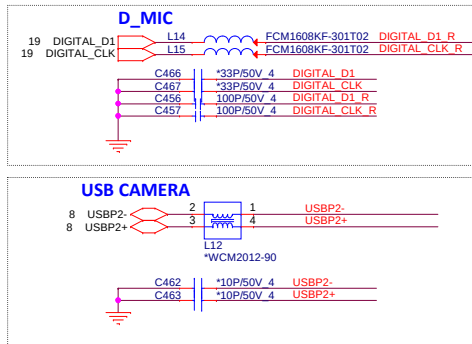
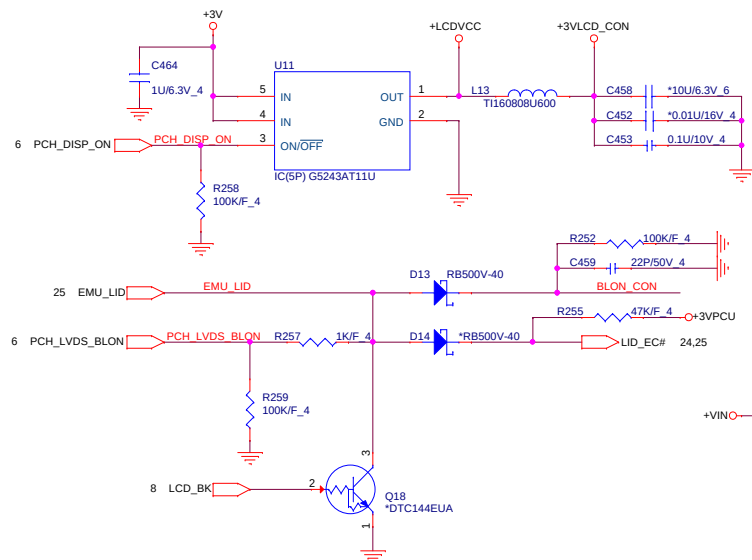
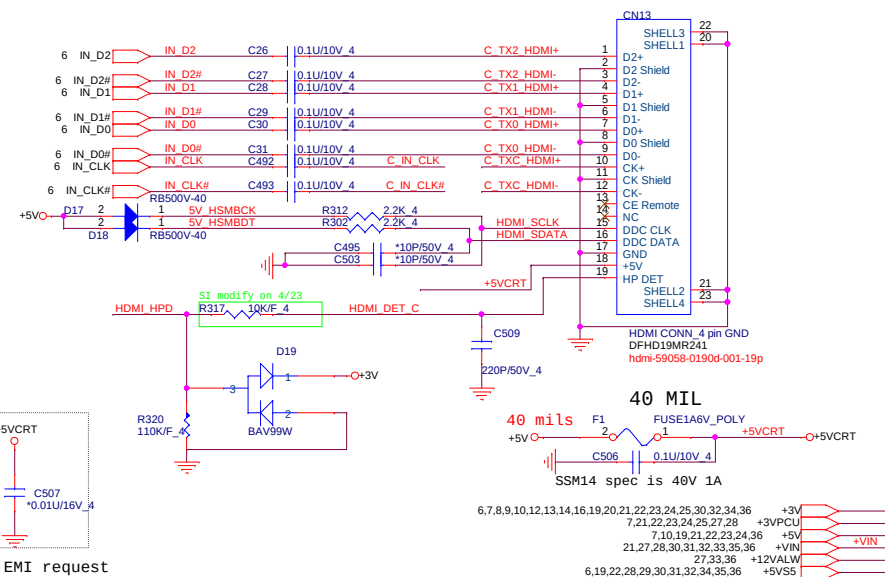
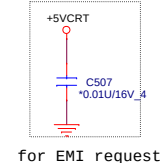
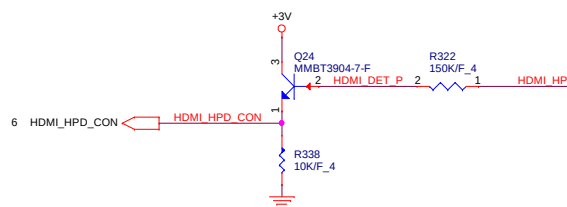
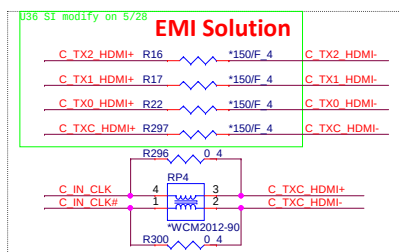
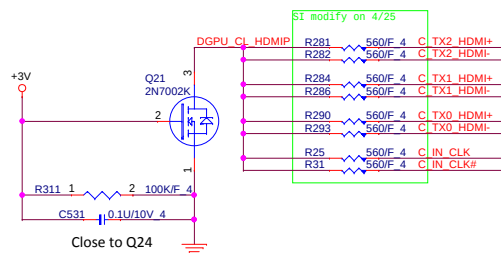
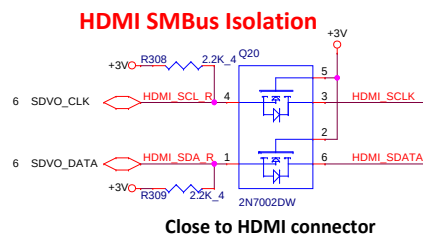
Bypass CAP close conn



Mini PCI-E Card 2- Full size mSATA



6,7,8,9,10,12,13,14,16,19,20,21,22,23,25,26,30,32,34,36	+3V
7,10,19,21,22,23,26,36	+5V
7,21,22,23,25,26,27,28	+3VPCU
2,4,10,23	+1.5V_CPU
27,33,36	+12VALW

**HDMI Conn.**

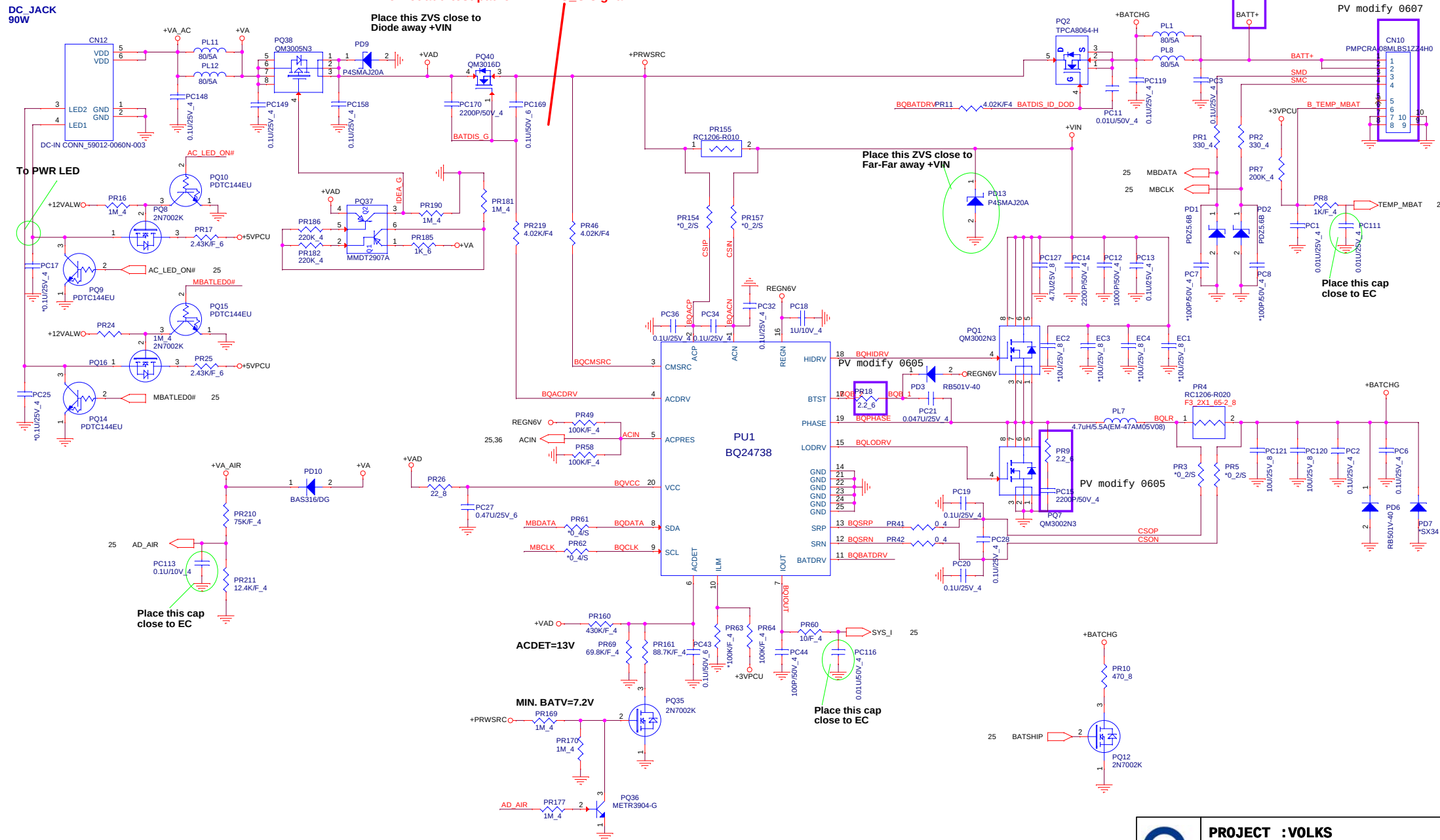


Do Not add test pad on BATDIS_G signal

Place this ZVS close to
Diode away +VIN

PV modify 0605

PV modify 0607



Place this cap
close to EC

Place this cap
close to EC

ACDET=13V

MIN. BATV=7.2V

AD_AIR PR177 2 PQ36
METR3904-G

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



PROJECT :VOLKS
Quanta Computer Inc.

Size Custom	Document Number Charger (OZ8681)	Rev A
Date: Thursday, June 07, 2012	Sheet 27 of 37	

TPS51462RGER/AL051462000

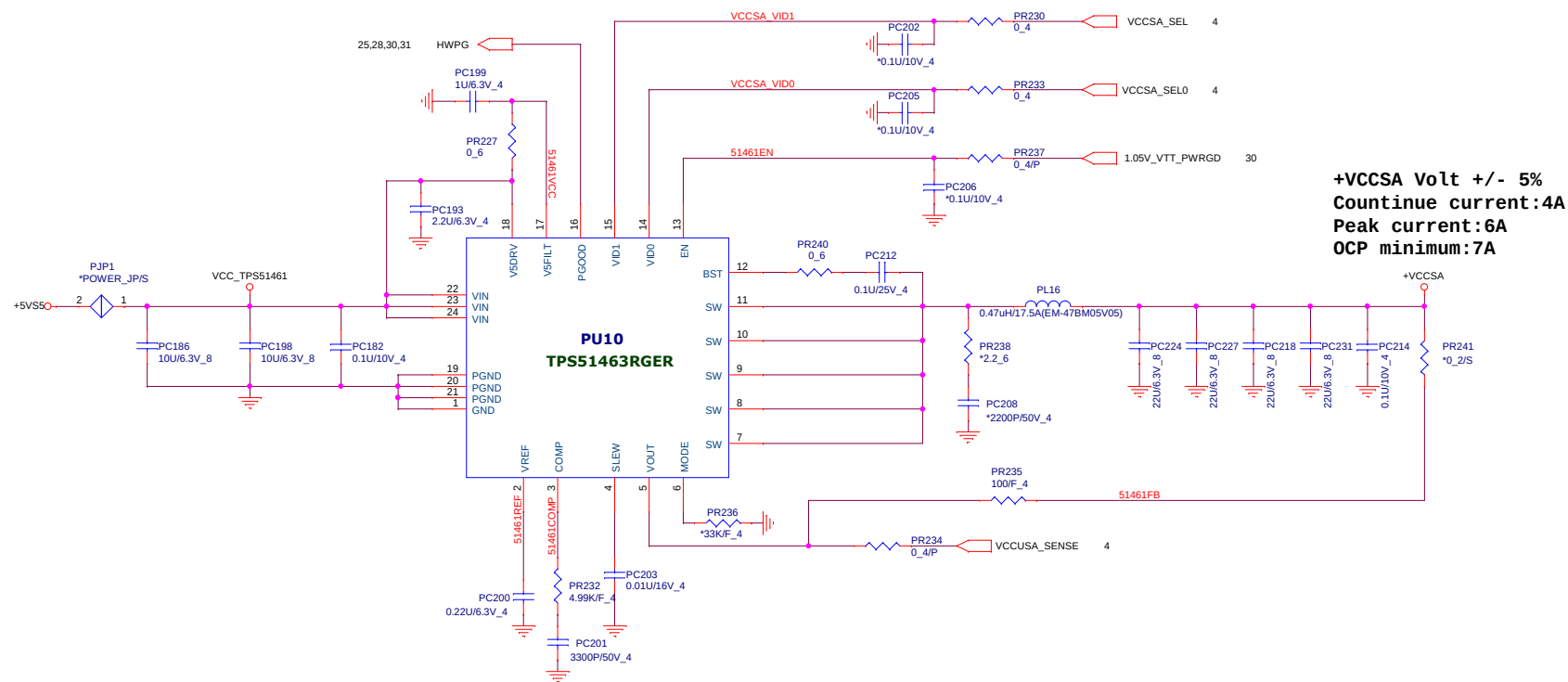
**For CPU SV system agent
voltage slew rate of 0.5 -10 mV/μs**

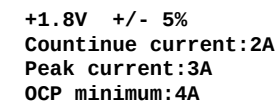
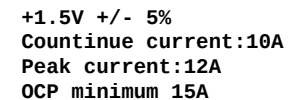
SEL0	SEL1	+VCCSA
0	0	0.9V
0	1	0.8V
1	0	0.725V
1	1	0.675V

TPS51463RGER/AL051463000

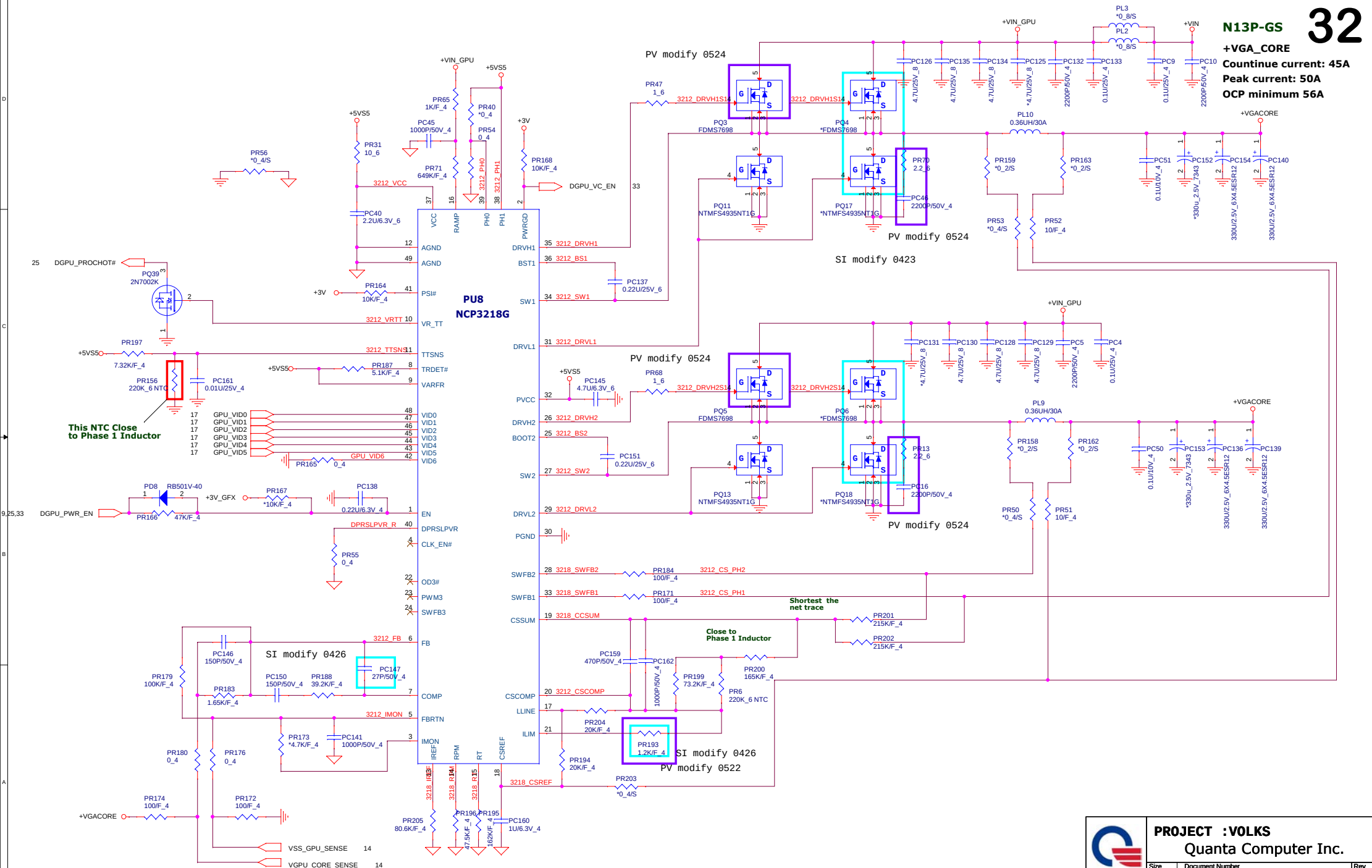
**For CPU ULV system agent
voltage slew rate of 0.5 -10 mV/μs**

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





 NB5	PROJECT :VOLKS Quanta Computer Inc.		
	Size Custom	Document Number DDR3 (RT8207)	Rev A
Date: Thursday, June 07, 2012		Sheet 31 of 37	

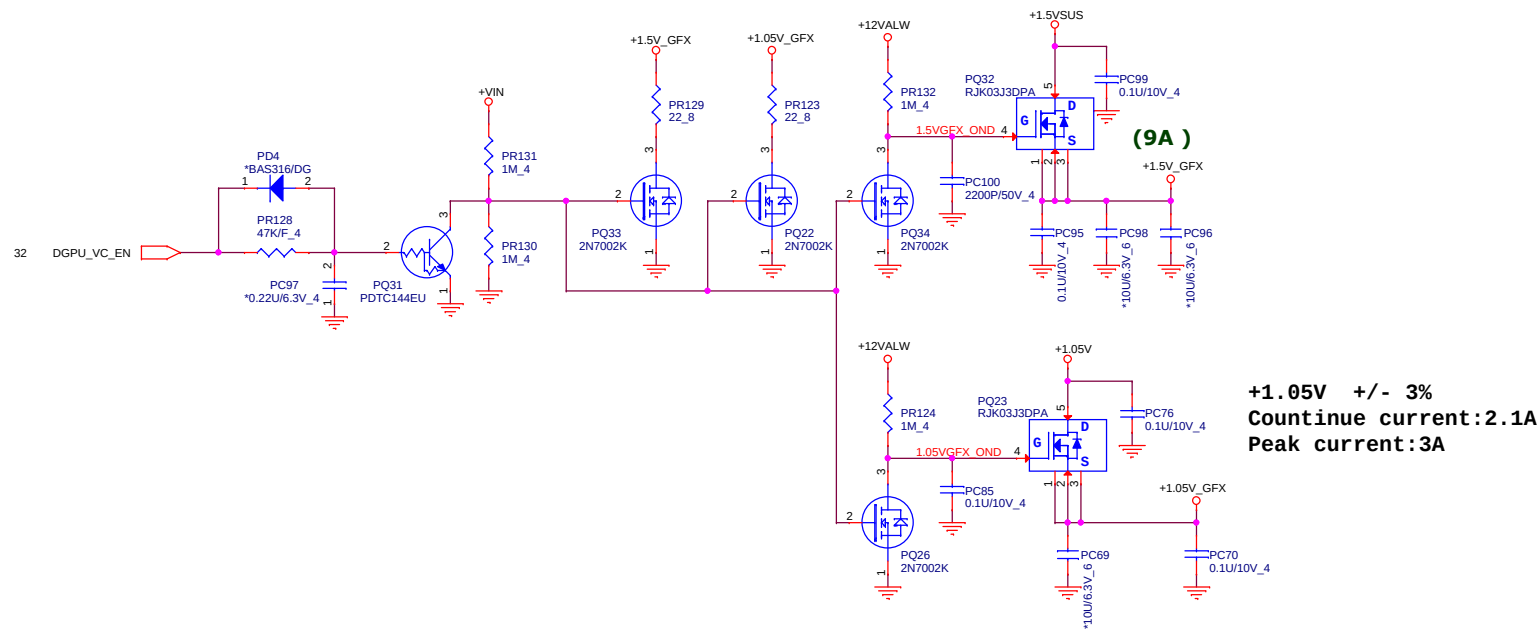
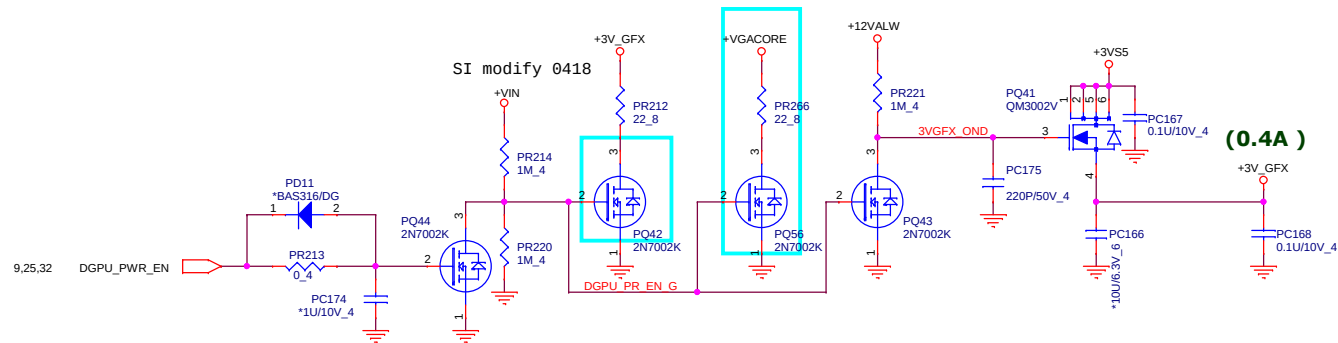


PROJECT :VOLKS
Quanta Computer Inc.

Size Custom	Document Number +VGA CORE (NCP3218G)	Rev A
Date: Thursday, June 07, 2012		Sheet 32 of 37

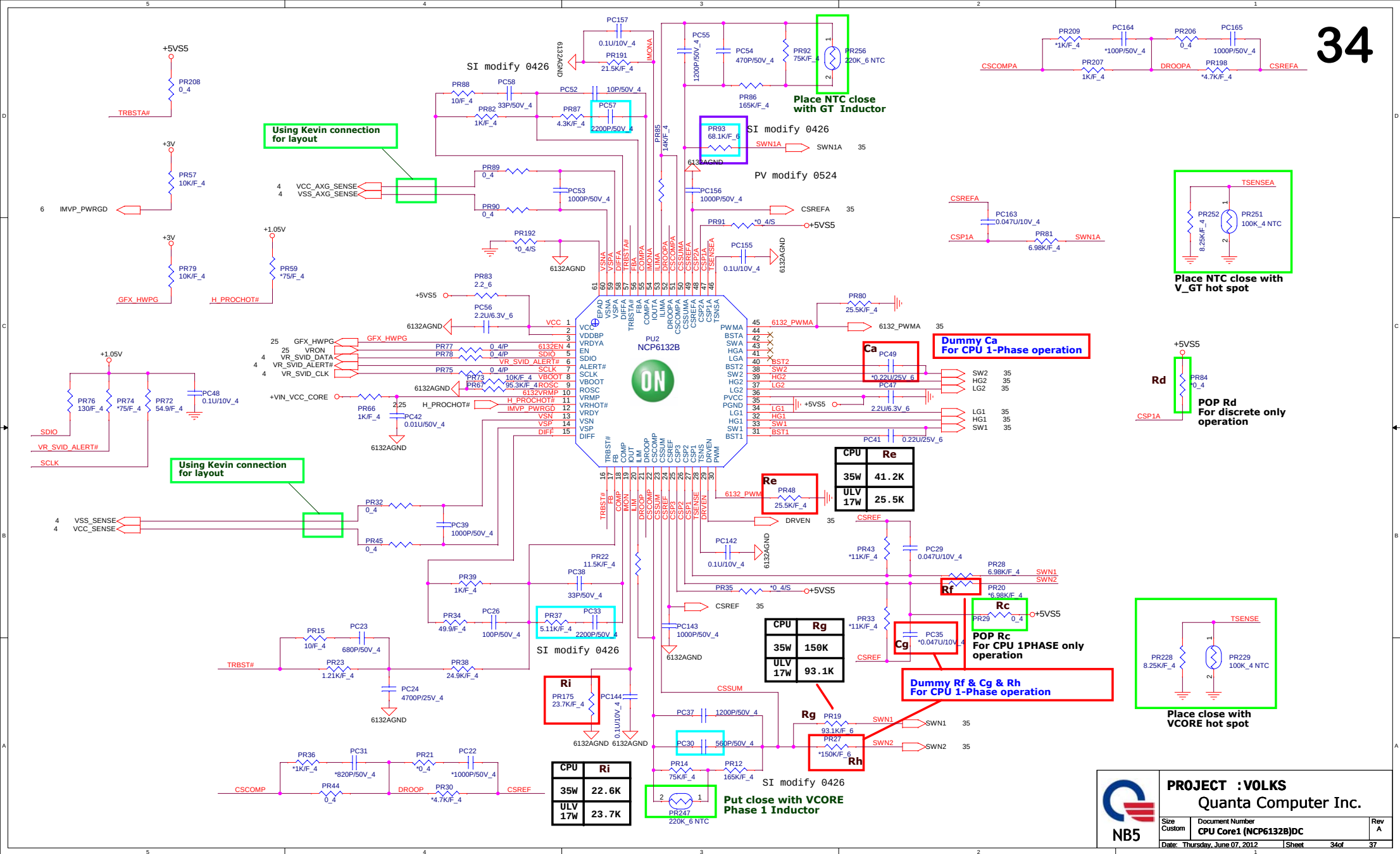
2,4,12,13,31 +1.5VSUS
 6,10,23,28,30,36 +3VSS
 14,16,17,32 +3V_GFX
 15,16,17,18 +1.5V_GFX
 14,15,16 +1.05V_GFX
 27,36 +12VALW
 2,4,6,7,8,10,21,23,30,34 +1.05V

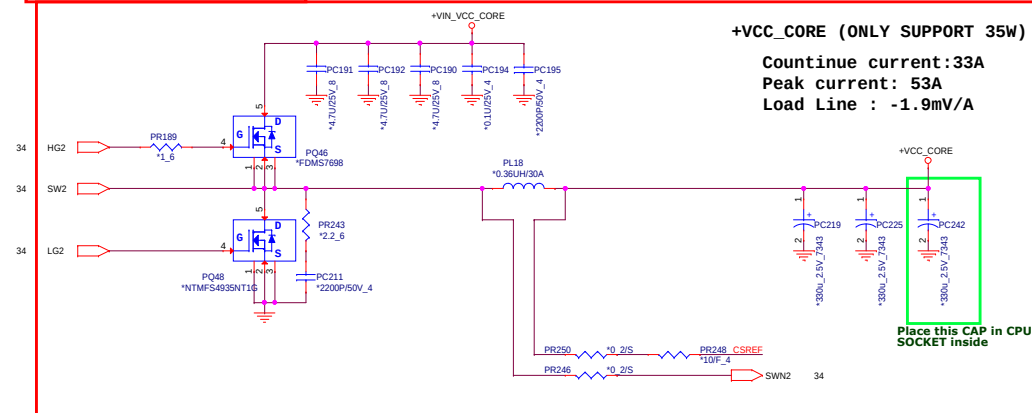
SI modify 0418



PROJECT :VOLKS
Quanta Computer Inc.

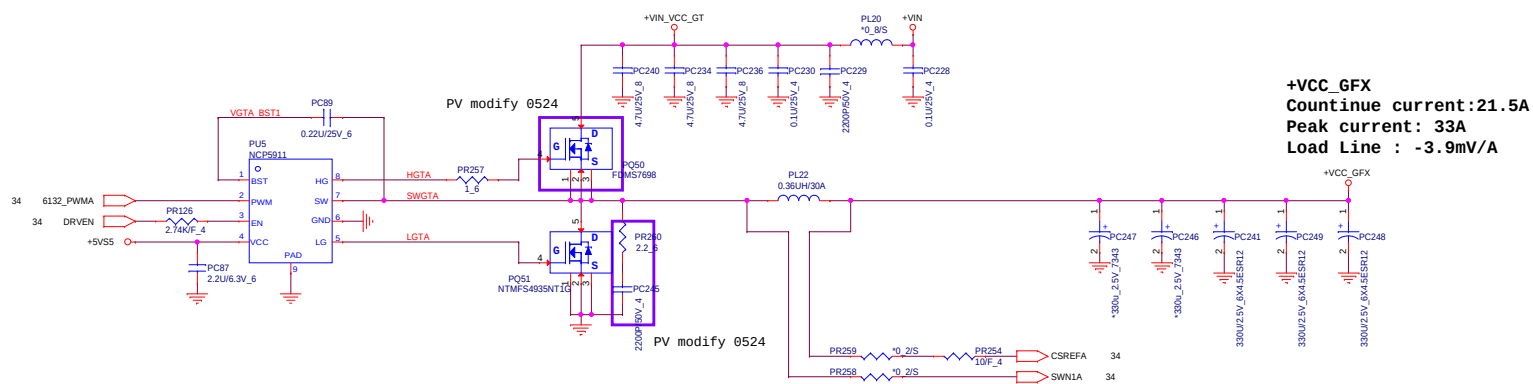
Size Custom	Document Number +VGA POWER	Rev A
Date: Thursday, June 07, 2012	Sheet 33 of 37	

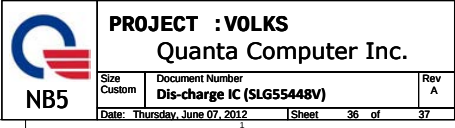




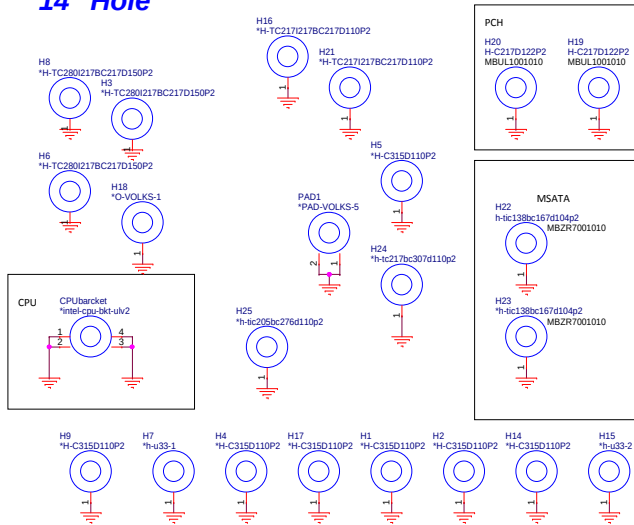
+VCC_CORE (ULV 17W)

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

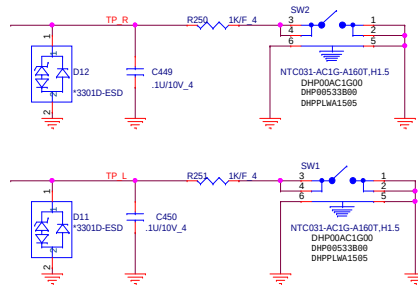
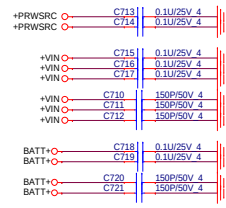




14" Hole



EMI CAP for 14"



Touch Pad Connector

