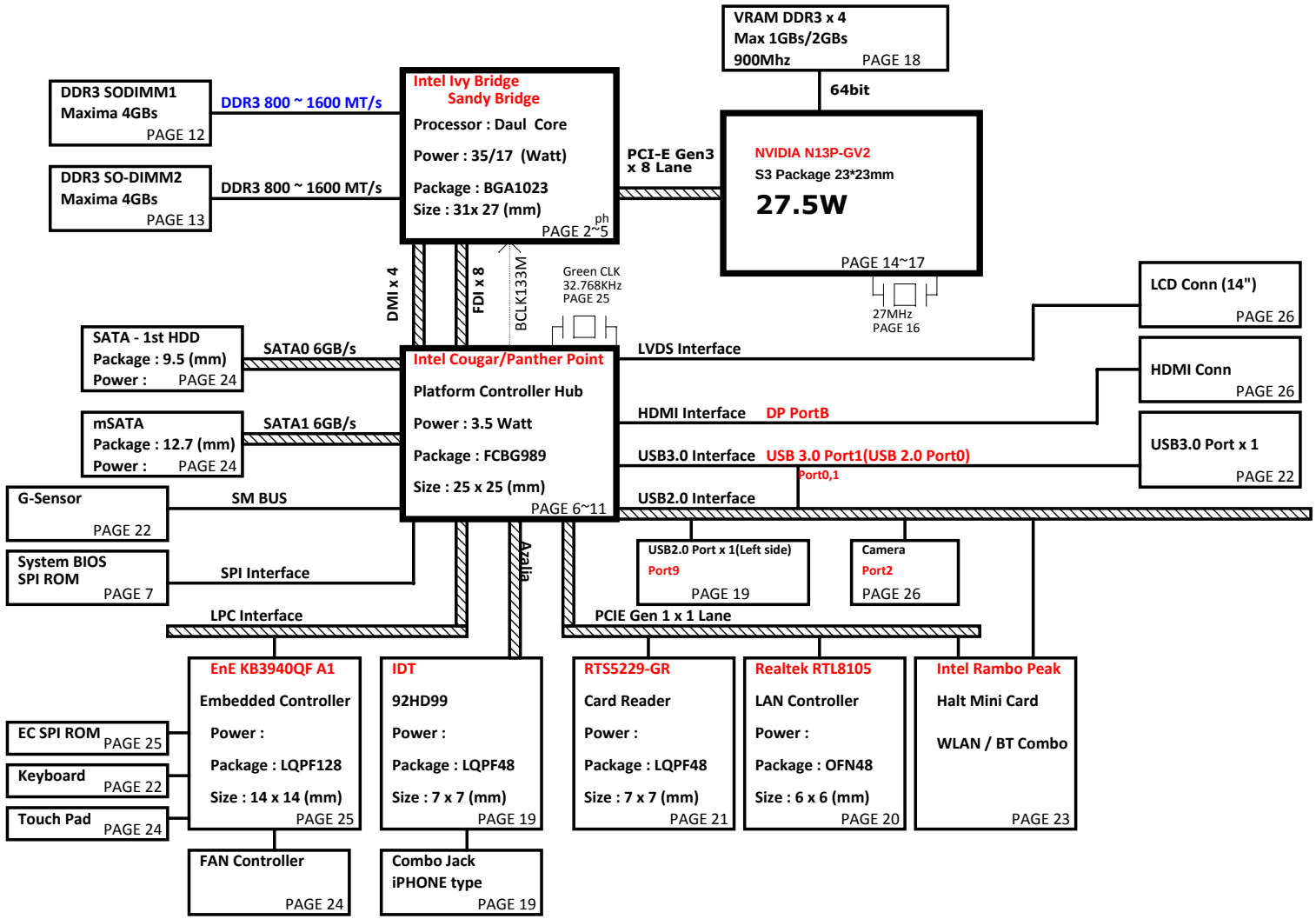
Volks DIS/UMA (14"/15.6") Ultra/Slim
Intel Chief River Platform Block Diagram



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/ TPS51462RGER
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)

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Block Diagram	1A

Date: Thursday, June 07, 2012 | Sheet 1 of 37

Ivy Bridge Processor (DMI,PEG,FDI)

02

PEG_COMP connect to PIN G3&G4 W:4mils/S:15mils/L: 500mils.
PEG_COMP connect to PIN G1 W:12mils/S:15mils/L: 500mils.

U20A

DMI
Intel(R) FDI
PCI EXPRESS - GRAPHICS
eDP

IC,IVB_2CBGA,0P7

U20B

MISC
CLOCKS
THERMAL
DDR3 MISC
JTAG & BPM
PWR MANAGEMENT

IC,IVB_2CBGA,0P7

Placement close to EC.

SI modify on 4/2

SM_RCOMP[0] W:20mils/S:20mils/L: 500mils,
SM_RCOMP[1] W:20mils/S:20mils/L: 500mils,
SM_RCOMP[2] W:15mils/S:20mils/L: 500mils,

CPU XDP

PEG x8

CPU RESET#

Intel DG request

DDR3 DRAM RESET

for DS3

PV modify on 5/24

SM_DRAMPWROK
Processor Input.

Processor pull-up (CPU)

eDP_COMPIO and ICOMPO signals should be shorted
near balls and routed with typical impedance <25 mohms

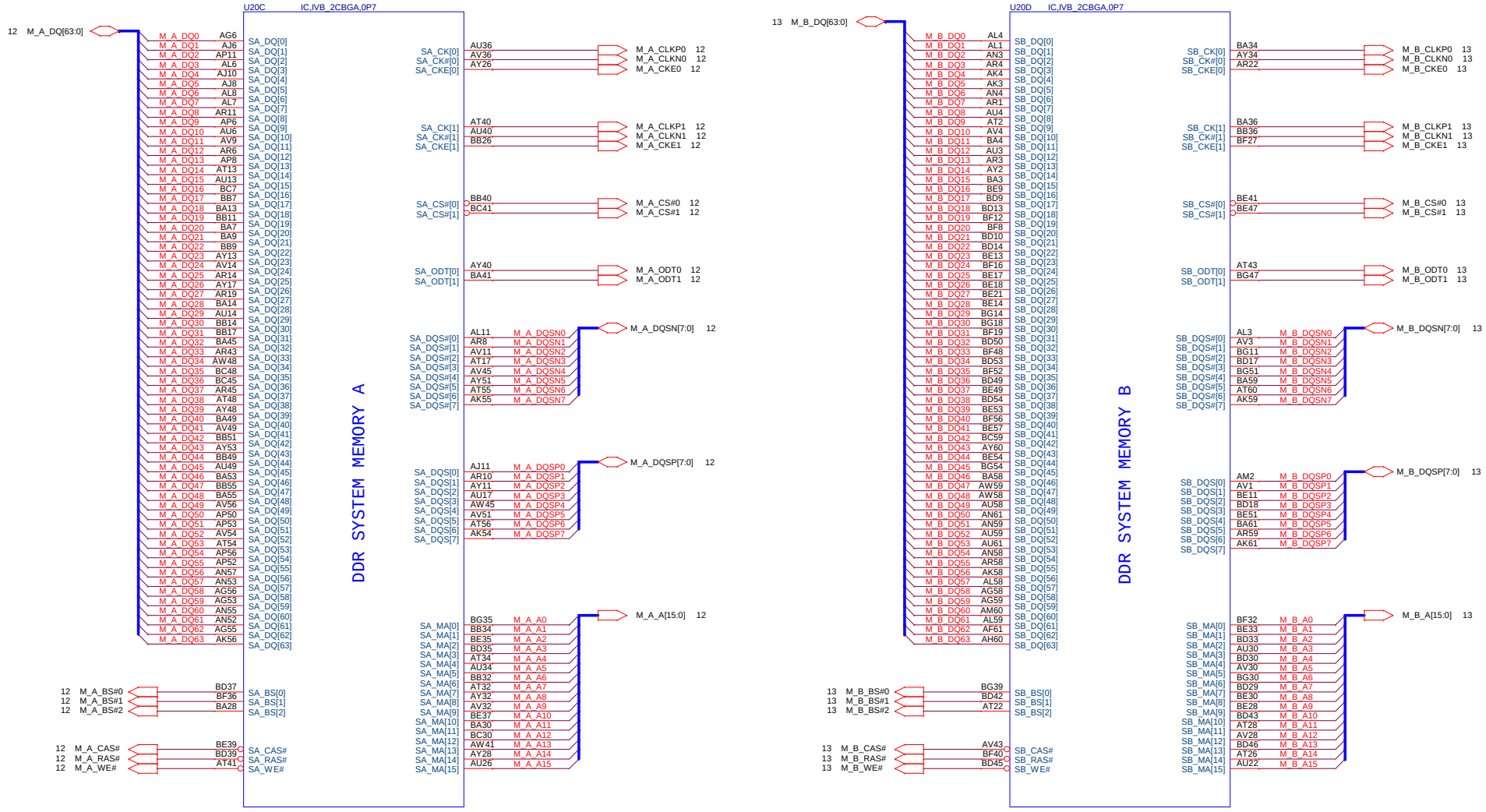
For iFDIM
Trigger Point

Connect a Test Point on BPM# 6 signal, very close to processor.

Connect a Test Point on BPM# 7 signal, very close to processor.

PROJECT : VOLKS	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: Processor 1/4 (Host/GPU); Rev: 1A
Date: Thursday, June 07, 2012	Sheet 2 of 37

Ivy Bridge Processor (DDR3)



NB5	PROJECT : VOLKS Quanta Computer Inc.		
	Size: Custom	Document Number: Processor 2/5 (DDR3 I/F)	Rev: 1A
	Date: Thursday, June 07, 2012	Sheet 3 of 37	

POWER

POWER

09

U20F

U20G

CORE SUPPLY

PEG IO AND DDR IO

SVID

SENSE LINES

QUIET RAILS

GRAPHICS

DDR3 - 1.5V RAILS

VREF

SENSE LINES

QUIET RAILS

1.8V RAIL

SA RAIL

SENSE LINES

VCCSA VID lines

IC,IVB_2CBGA,0P7

IC,IVB_2CBGA,0P7

+VCC_CORE

330uFx3pcs bulk BOT
22uFx14pcs cavity BOT
2.2uFx16pcs BGA TOP

IVB:8.5A

330uFx2pcs bulk BOT
22uFx12pcs cavity BOT
1uFx12pcs BGA TOP

330uFx2pcs bulk BOT
22uFx10pcs cavity BOT
2.2uFx13pcs BGA TOP

+VCC_GFX

IVB: 1.5A

330uF x1, 10uF_8 x1, 1uF_4 x2

+VCCSA

IVB: 6A

330uFx1, 10uFx4

100- ±1% pull-up to VCC near processor.

Zo impedance: 27.4ohm

Zo impedance: 27.4ohm

R close to CPU

CPU VDDQ

+VDDR_REF_CPU

+1.5V_CPU

CAD Note: +VDDR_REF_CPU should have 10 mil trace width

20mils width

+VDDR_REF_CPU and DDR_VTTREF must use 10mils width

IVB: 5A

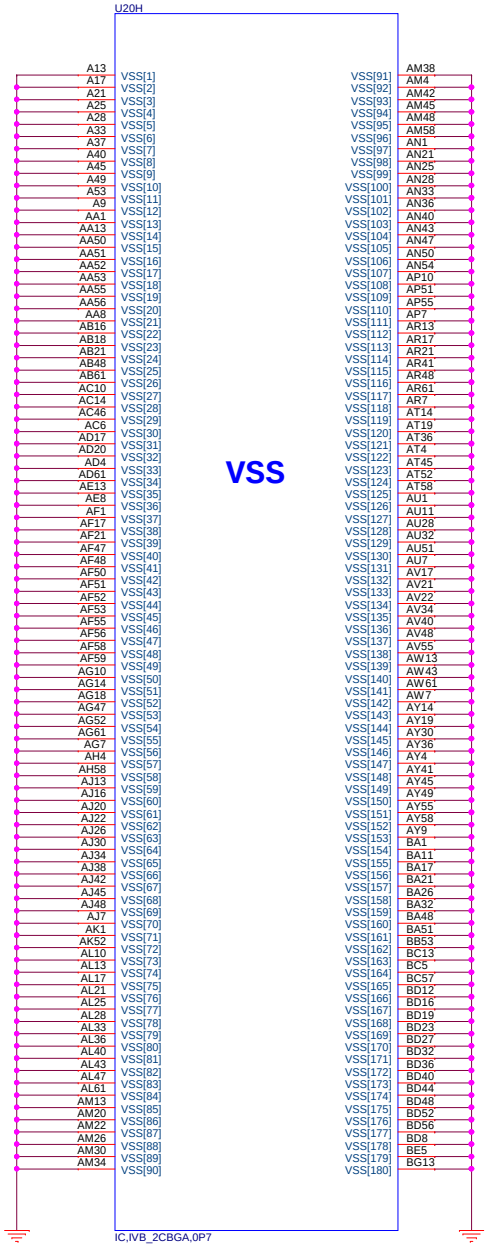
CPU center

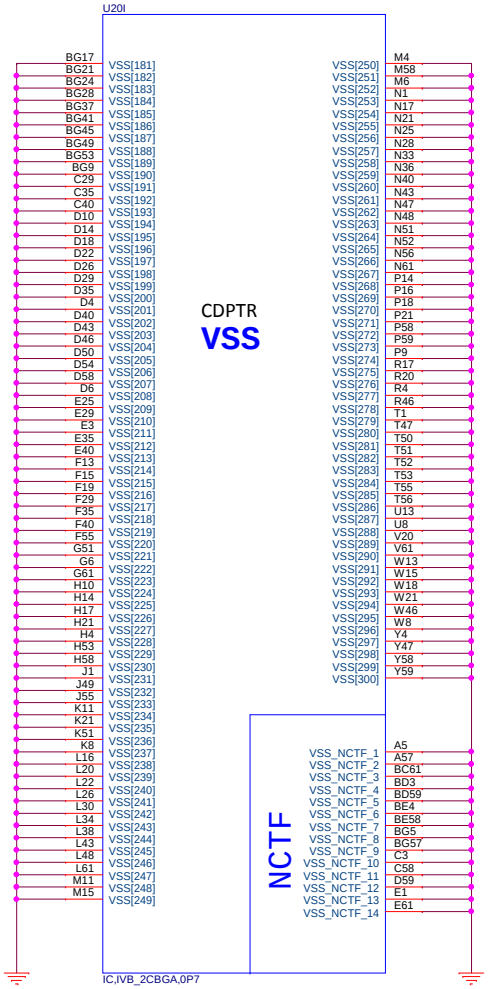
CRB: 1uf*1

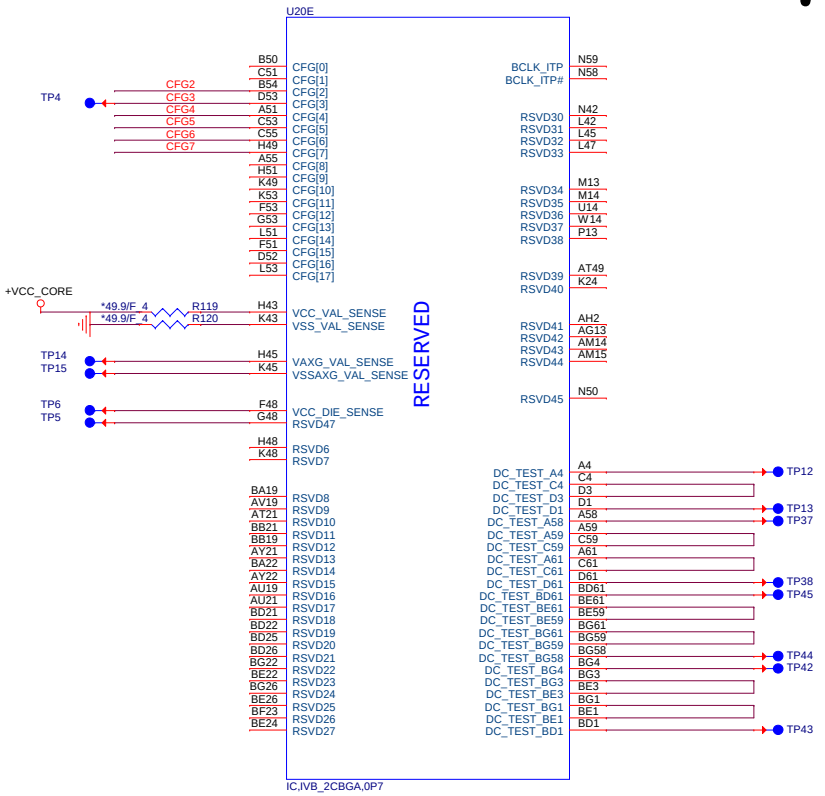
Zo:55 ohm

PROJECT : VOLKS
Quanta Computer Inc.
NB5

Size	Document Number	Rev
Custom	Processor 3/4 (POWER)	1A
Date: Thursday, June 07, 2012	Sheet 4 of 37	

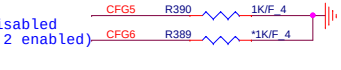






CFG[6:5] (PCIE Port Bifurcation Straps)

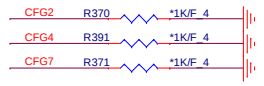
11: (Default) x16 - Device 1 functions 1 and 2 disabled
10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled



Processor Strapping

The CFG signals have a default value of '1' if not terminated on the board.

	1	0
CFG2 (PCIe Static x16 Lane Numbering Reversal.)	Normal Operation(Default)	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP
CFG7 (PEG Defer Training)	PEG train immediately following xxRESETB de assertion	PEG wait for BIOS training



NB5

PROJECT : VOLKS

Quanta Computer Inc.

Size	Document Number	Rev
Custom	Processor 4/4 (RSV,Ground)	1A
Date: Thursday, June 07, 2012	Sheet 5 of 37	

Cougar Point/Panther Point (DMI,FDI,PM)

Cougar Point/Panther Point (LVDS,DDI)

06

U18C
CPT_PPT_Rev_0p7

U18D
CPT_PPT_Rev_0p7

PCH Pull-high/low(CLG)

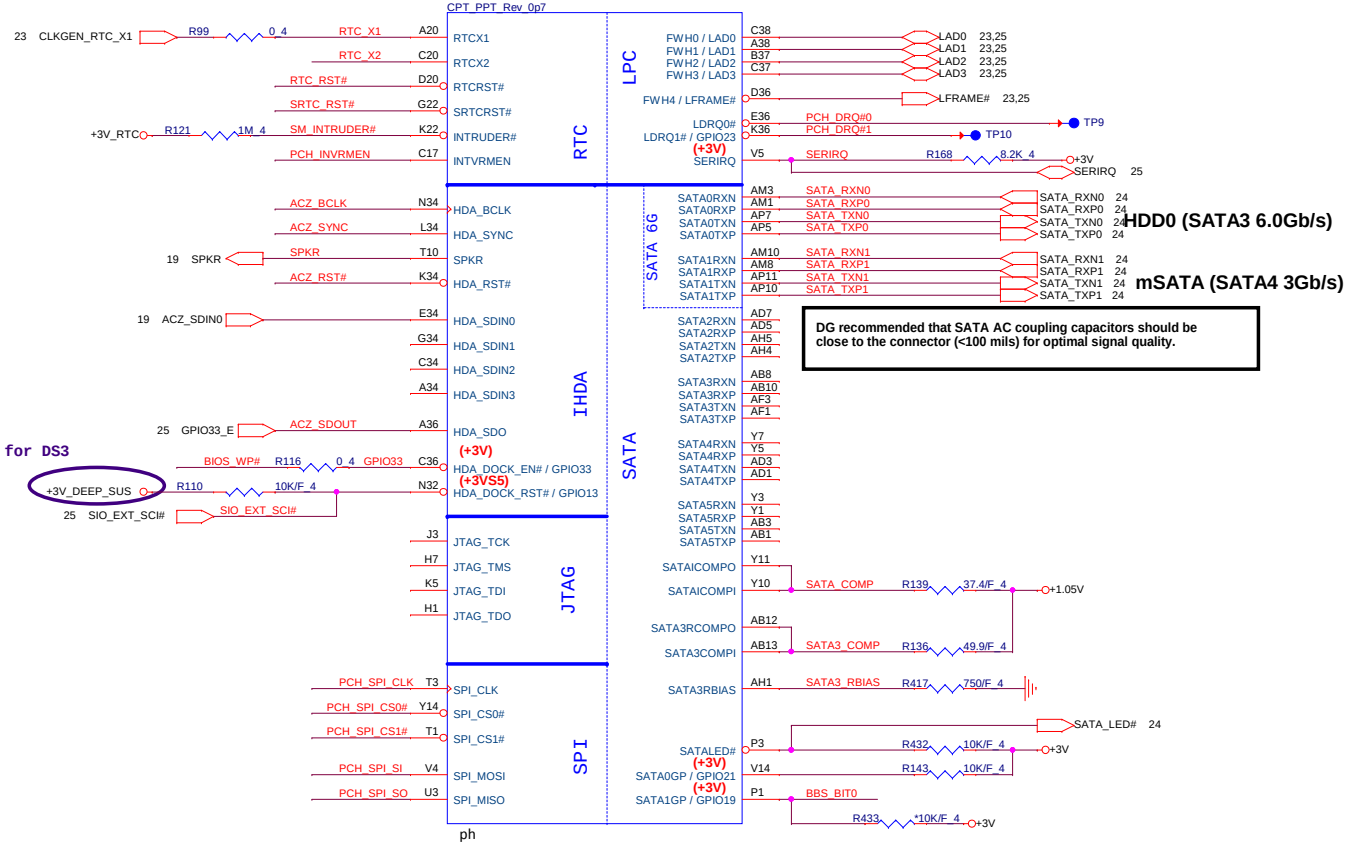
for DS3

System PWR_OK(CLG)

On Die DSW VR Enable
High = Enable (Default)
Low = Disable

PROJECT : VOLKS
Quanta Computer Inc.
NB5
Size: Custom | Document Number: PCH 1/6 (Host/Display) | Rev: 1A
Date: Thursday, June 07, 2012 | Sheet 6 of 37

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

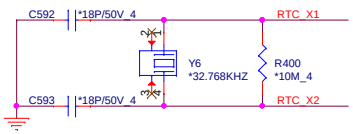


ph

PCH Strap Table

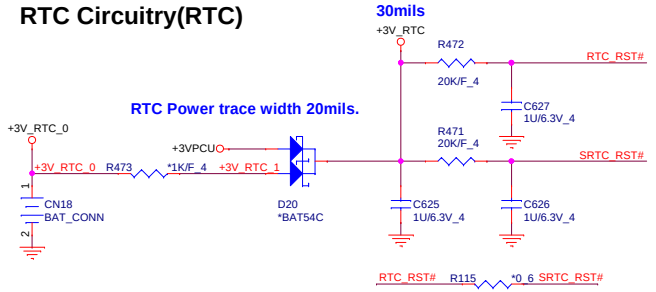
Pin Name	Strap description	Sampled	Configuration	Circuit
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	+3V R152 *1K/F_4 SPKR
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	+3V R363 *1K/F_4, R364 10K/F_4 PCI_GNT3# 8
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	+3V_RTC 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_SDOUT ACZ_SDOUT 25
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	GNT1# / GNT0# / Boot Location: 1 1 SPI; 1 0 LPC	[Need external pull-down for LPC BIOS] Default weak pull-up on GNT0/1#
GPIO19 Different from Calpella	Boot BIOS Selection 0 [bit-0]	PWROK		R419 *1K/F_4 BBS_BIT0 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 R416 *1K/F_4 NV_ALE 8
NV_CLE	DMI Termination voltage	PWROK	weak pull-down 20kohm	+1.8V 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 R135 1K/F_4 ACZ_SYNC
HDA_SDO	Flash Descriptor Security	PWROK	0 = Override 1 = Default (weak pull-up 20K)	+3V_DEEP_SUS R105 *1K/F_4 ACZ_SDOUT
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

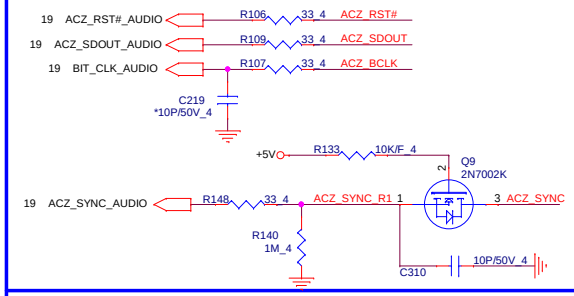


no stuff If use green Clock

RTC Circuitry(RTC)

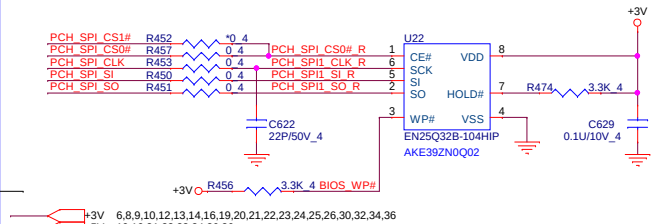


HDA Bus(CLG)



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



+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
+3VS5 6,10,23,28,30,33,36
+3VPCU 21,22,23,24,25,26,27,28
+3V_RTC 6,10,23

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PCH 2/6 (HDA/RTC/SATA/SPI)	1A
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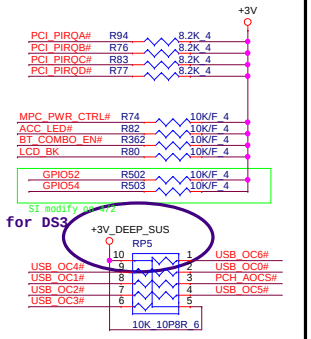
07

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

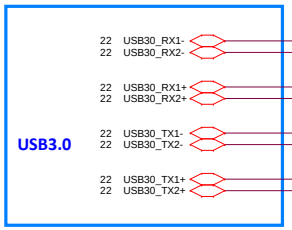
Cougar Point-M/Panther Point (PCI-E,SMBUS,CLK)

08

PCI/USBOC# Pull-up(CLG)



USB3.0



20111130 Modify USB3.0 for HM70

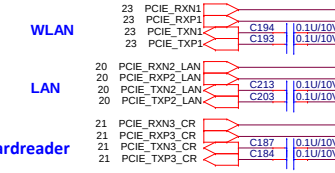
U18E CPT_PPT_Rev_0p7

RSVD

USB

PCI

WLAN / LAN / Cardreader



MPC Switch Control

MPC_PWR_CTRL#	Low = MPC ON High = MPC OFF (Default)

MPC_PWR_CTRL# R75 *1K/F_4

NV_ALE

USB2.0 / Camera / Right / WLAN

USB2.0 USB2.0/USB3.0 COMBO 1st

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

Camera

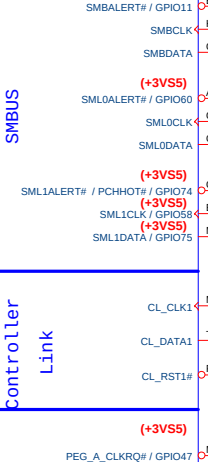
USB2.0 Right

WLAN

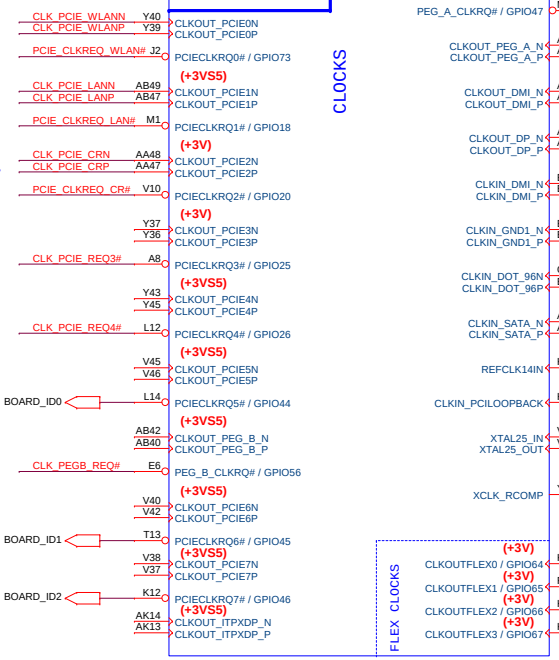
USBRBIAS# C33 USB_BIAS R395 22.6/F_4

USBRBIAS B33

PCI-E* / SMBUS / Controller Link



CLOCKS



PV , HP request Image sensor SMBUS reserve to PCH

SMB_PCH_CLK 37

SMB_PCH_DAT 37

DRAMRST_CNTRL_PCH 2

TP18

CLK_PEGA_REQ# 14

CLK_CPU_BCLKN 2

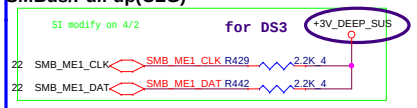
CLK_CPU_BCLKP 2

TP19

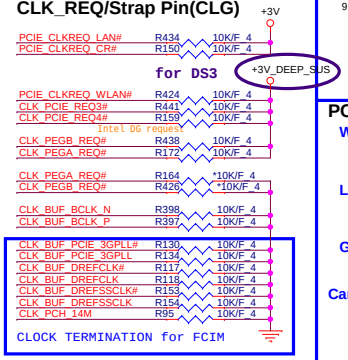
TP20

PCH_XTAL25_IN 23

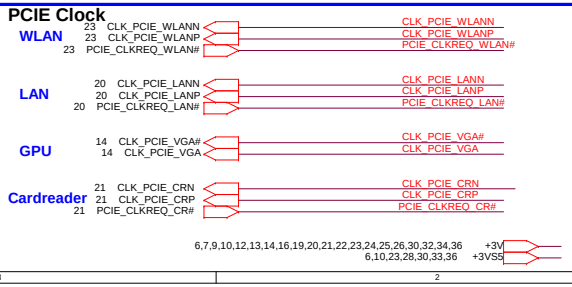
SMBus/Pull-up(CLG)



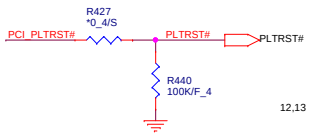
CLK_REQ/Strap Pin(CLG)



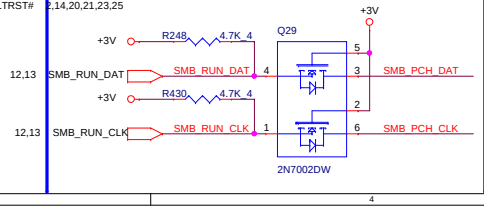
PCIE Clock



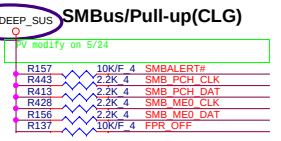
PLTRST#(CLG)



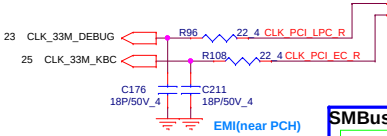
SMB_RUN_DAT / SMB_RUN_CLK

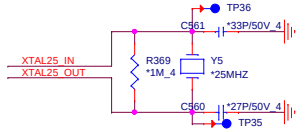


SMBus/Pull-up(CLG)



EMI(near PCH)

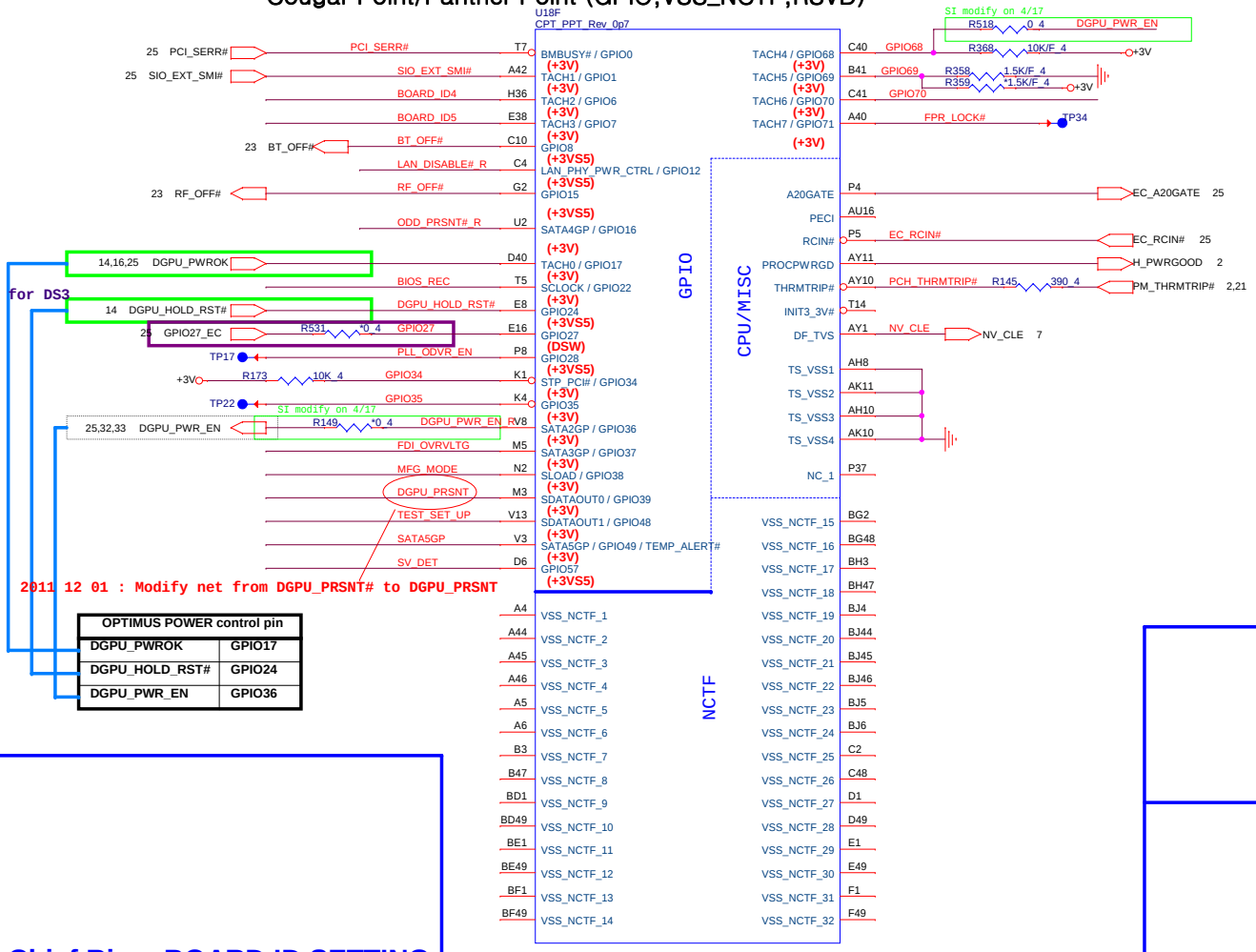




NB5	PROJECT : VOLKS Quanta Computer Inc.		
	Size: Custom	Document Number: PCH 3/6 (Clock/PCI/PCIE/USB)	Rev: 1A
	Date: Thursday, June 07, 2012	Sheet: 8 of 37	

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

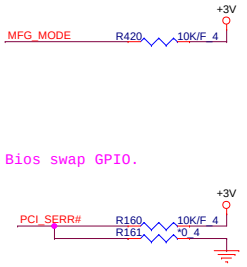
09



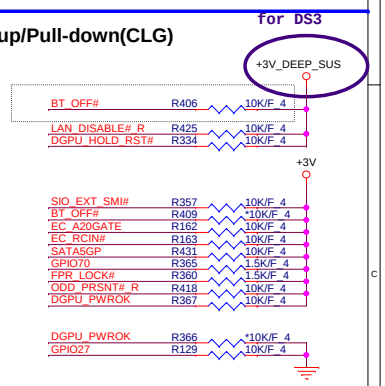
2011 12 01 : Modify net from DGPU_PRSNT# to DGPU_PRSNT

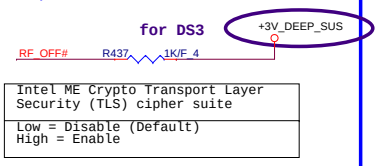
OPTIMUS POWER control pin	
DGPU_PWROK	GPIO17
DGPU_HOLD_RST#	GPIO24
DGPU_PWR_EN	GPIO36

MFG-TEST



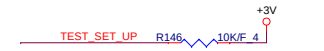
GPIO Pull-up/Pull-down(CLG)



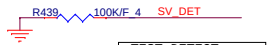


Intel ME Crypto Transport Layer Security (TLS) cipher suite	
Low = Disable (Default) High = Enable	

BIOS RECOVERY	High = Disable (Default) Low = Enable

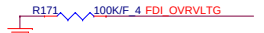


SV_SET_UP	
High = Strong (Default)	



TEST DETECT	
Low = Default	

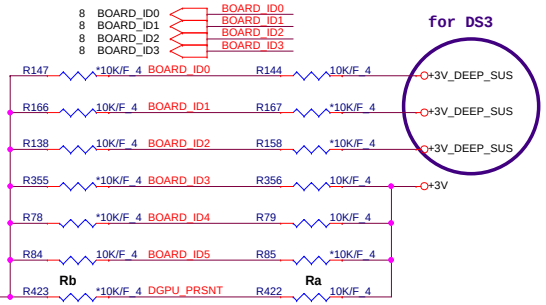
SATA2GP/GPIO36	Reserved only



FDI TERMINATION VOLTAGE OVERRIDE	Reserved only

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

6,7,8,10,12,13,14,16,19,20,21,22,23,24,25,26,30,32,34,36 +3V
6,10,23,28,30,33,36 +3VS5

NB5

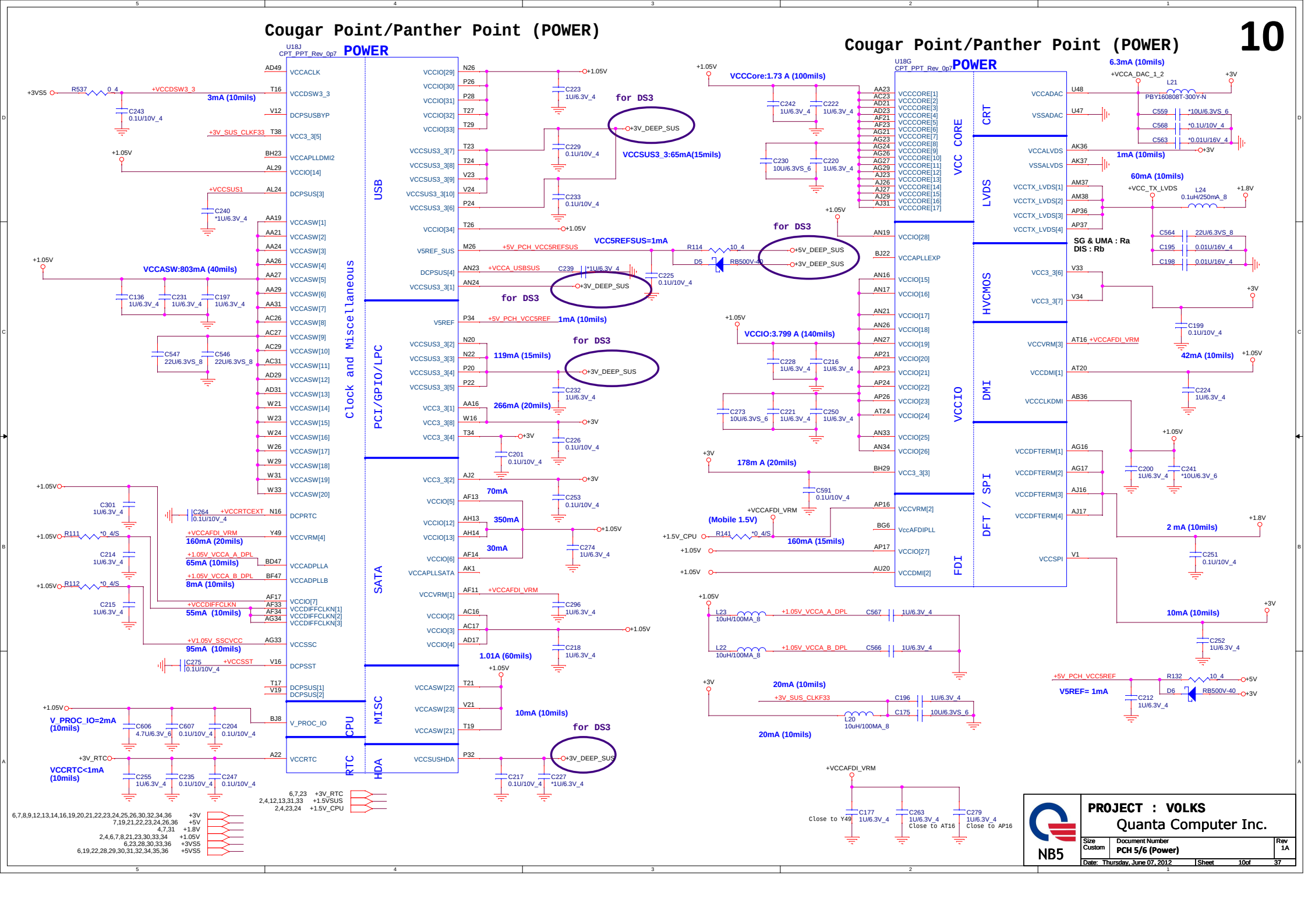
PROJECT : VOLKS

Quanta Computer Inc.

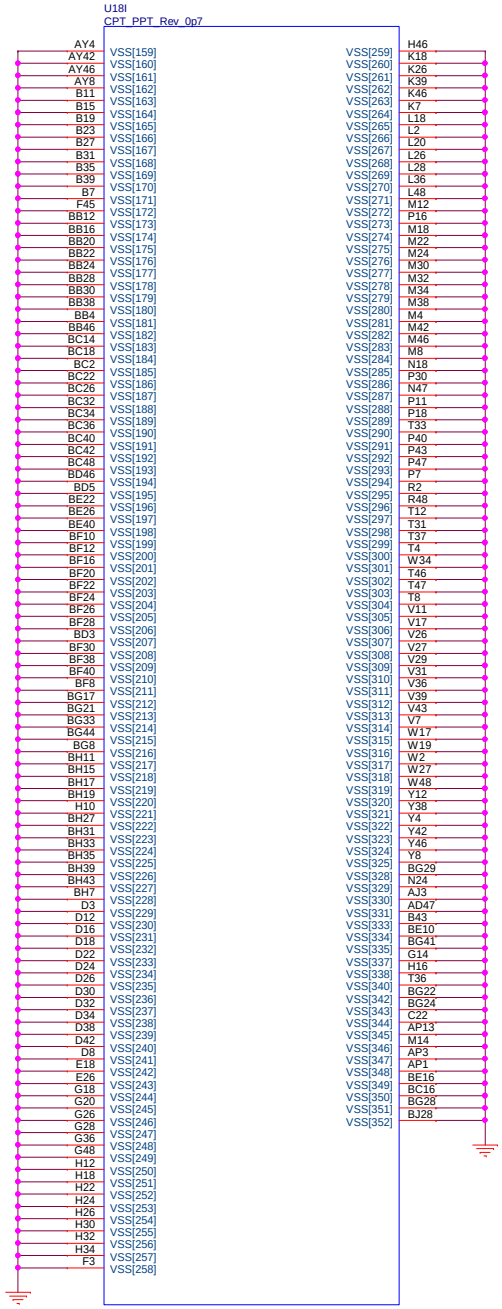
Size	Document Number	Rev
Custom	PCH 4/6 (GPIO)	1A
Date: Thursday, June 07, 2012	Sheet 9 of 37	

Cougar Point/Panther Point (POWER)

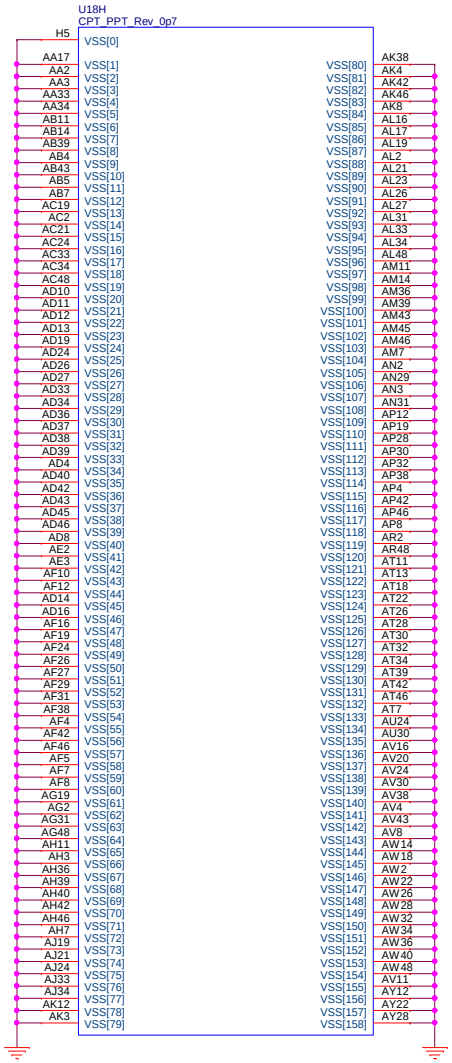
Cougar Point/Panther Point (POWER)



Cougar Point/Panther Point (GND)



Cougar Point/Panther Point (GND)



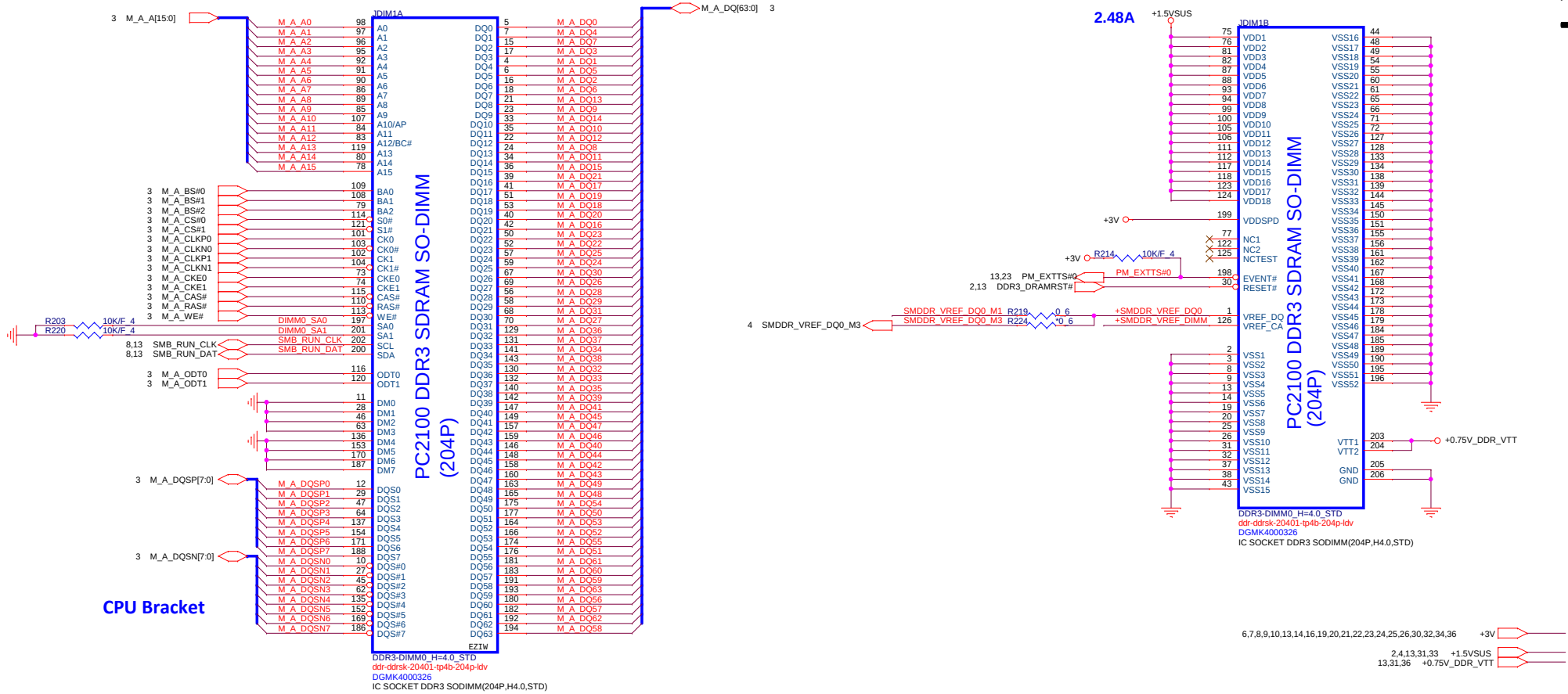
NB5

PROJECT : VOLKS

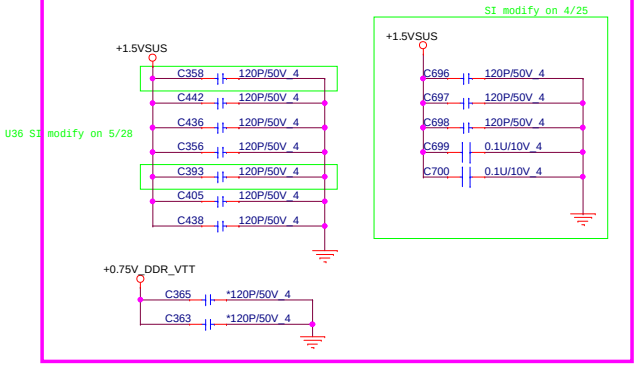
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PCH 6/6 (Ground)	1A

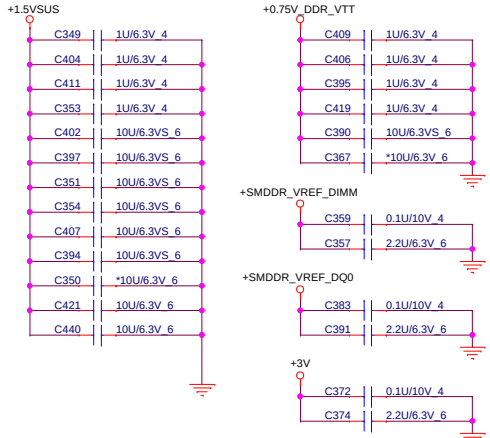
Date: Thursday, June 07, 2012 | Sheet 11of 37



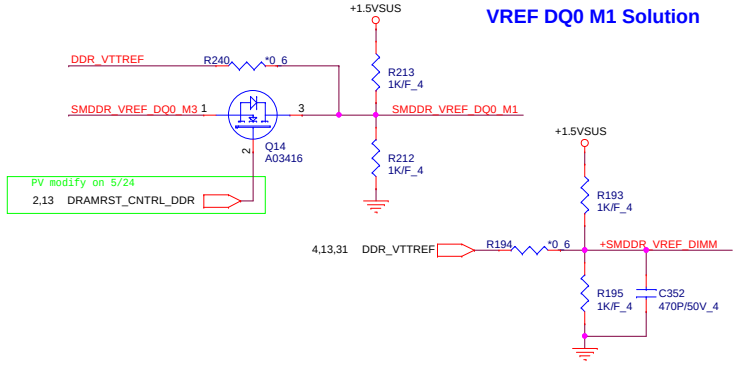
For EMI RESERVE 8/30



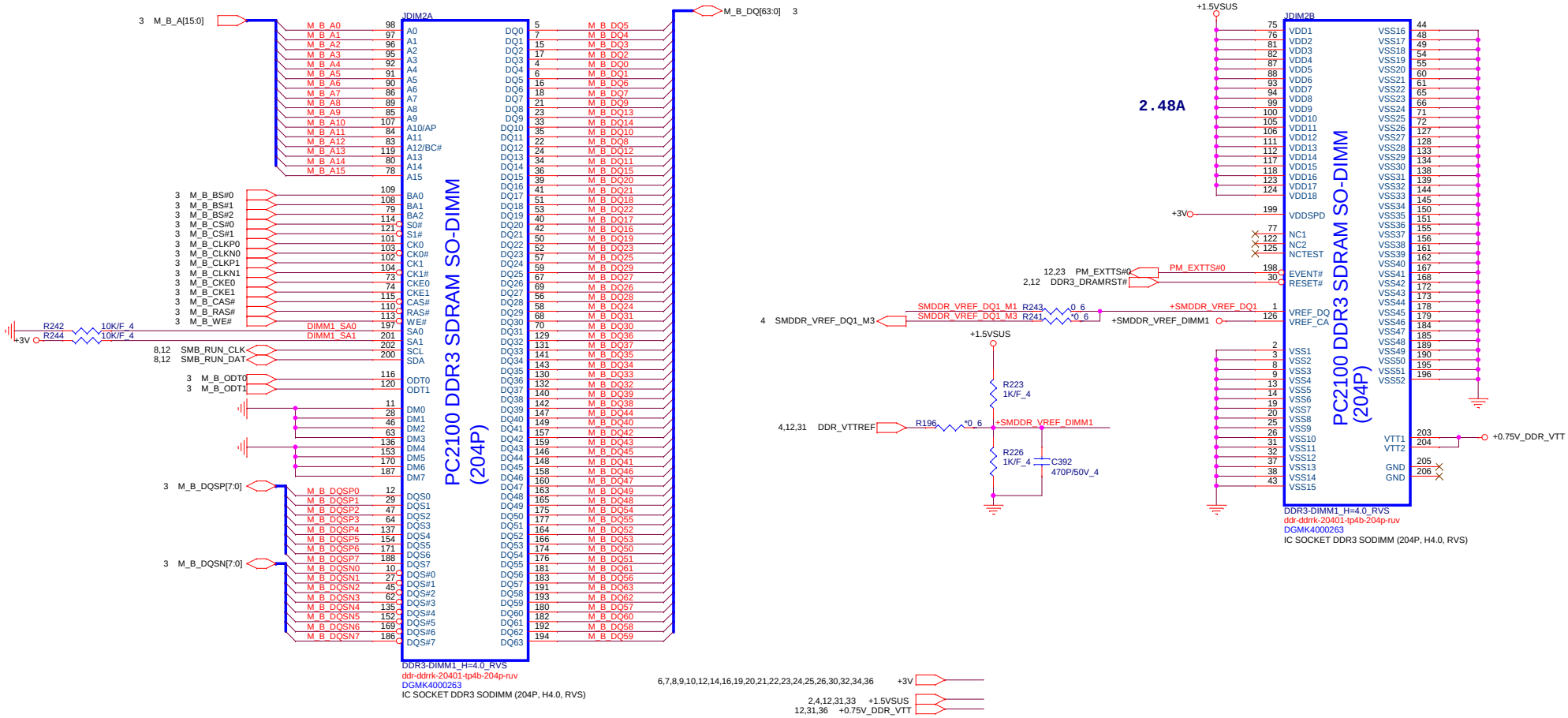
Place these Caps near So-Dimm0.



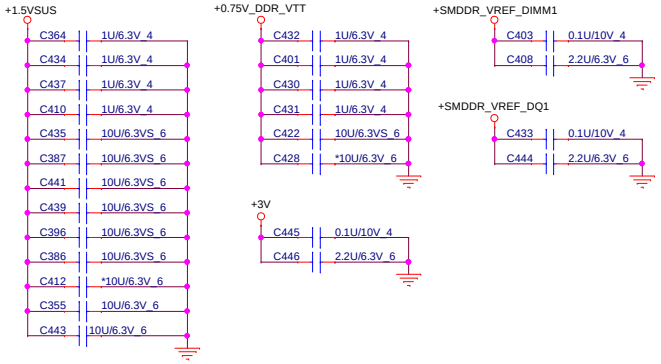
VREF DQ0 M1 Solution



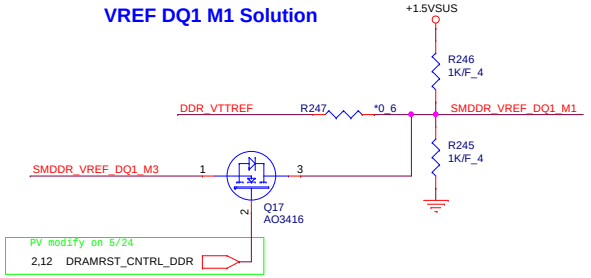
NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size: Custom	Document Number: System Memory 1/2 (5.2H)	Rev: 1A
Date: Thursday, June 07, 2012	Sheet: 12of	37



Place these Caps near So-Dimm1.



VREF DQ1 M1 Solution



NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size: Custom	Document Number: System Memory 2/2 (9.2H)	Rev: 1A
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N13P-GV2-S-A2 (GB2-64)
Max point NVCLK = 937.5 , MCLK = 900
TDP point NVCLK = 800 , MCLK = 900

PEX_IOVDD + PEX_IOVDDQ = 1.042A

PEX_PLL_HVDD + PEX_SVDD_3V3 = 143mA

PEX_PLLVDD = 130mA

NVDD = 32.22 ~ 26.66 A

VDD33 = 56mA

power up sequence

power down sequence

First Rail to Power Down

Last Rail to Power Down

tPower_OFF < 10 ms

PROJECT :	VOLKS
Quanta Computer Inc.	
Size: Custom	Document Number: N13P-GV2(PCIE/F)
Rev: 1A	
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NB5

U15B
bga595-nvidia-n13p-gv2-s-a2
COMMON

R39 10K/F_4 FB_CLAMP F3

NC	GF119
FB_CLAMP	GF117

2/14 FBA

FBA_ODT_L FBA_CMD2 R4 10K/F_4
FBA_ODT_H FBA_CMD18 R56 10K/F_4
FBA_RST# FBA_CMD5 R3 10K/F_4
FBA_CKE_L FBA_CMD3 R34 10K/F_4
FBA_CKE_H FBA_CMD19 R73 10K/F_4

T19 FBA_CMD1
T13 FBA_CMD17
T20 FBA_CMD31

For debug only

+1.5V_GFX R30 60.4/F_4 FBA_DEBUG0 F22
+1.5V_GFX R29 60.4/F_4 FBA_DEBUG1 J22

18 VMA_CLK0 VMA_CLK0 D24
18 VMA_CLK0# VMA_CLK0# D25
18 VMA_CLK1 VMA_CLK1 N22
18 VMA_CLK1# VMA_CLK1# M22

FB_PLLAVDD = 55mA

+1.05V_GFX
L7 FBMA-10-160808-300T +FB_PLLAVDD F16
30 ohm/100MHz
ESR=0.03ohm
P22
H22
C65 0.1U/10V_4
C48 0.1U/10V_4
C45 0.1U/10V_4
C128 22U/6.3VS_6

FB_DLLAVDD	GF119
FB_PLLAVDD	GF117

FB_DLLAVDD = 15mA

ph

FBA_D0	E18	VMA_DQ0
FBA_D1	F18	VMA_DQ1
FBA_D2	E16	VMA_DQ2
FBA_D3	F17	VMA_DQ3
FBA_D4	D20	VMA_DQ4
FBA_D5	D21	VMA_DQ5
FBA_D6	F20	VMA_DQ6
FBA_D7	E21	VMA_DQ7
FBA_D8	E15	VMA_DQ8
FBA_D9	D15	VMA_DQ9
FBA_D10	F15	VMA_DQ10
FBA_D11	F13	VMA_DQ11
FBA_D12	C13	VMA_DQ12
FBA_D13	B13	VMA_DQ13
FBA_D14	E13	VMA_DQ14
FBA_D15	D13	VMA_DQ15
FBA_D16	B15	VMA_DQ16
FBA_D17	C16	VMA_DQ17
FBA_D18	A13	VMA_DQ18
FBA_D19	A15	VMA_DQ19
FBA_D20	B18	VMA_DQ20
FBA_D21	A18	VMA_DQ21
FBA_D22	A19	VMA_DQ22
FBA_D23	C19	VMA_DQ23
FBA_D24	B24	VMA_DQ24
FBA_D25	C23	VMA_DQ25
FBA_D26	A25	VMA_DQ26
FBA_D27	A24	VMA_DQ27
FBA_D28	A21	VMA_DQ28
FBA_D29	B21	VMA_DQ29
FBA_D30	C20	VMA_DQ30
FBA_D31	C21	VMA_DQ31
FBA_D32	R22	VMA_DQ32
FBA_D33	R24	VMA_DQ33
FBA_D34	T22	VMA_DQ34
FBA_D35	R23	VMA_DQ35
FBA_D36	N25	VMA_DQ36
FBA_D37	N26	VMA_DQ37
FBA_D38	N23	VMA_DQ38
FBA_D39	N24	VMA_DQ39
FBA_D40	V23	VMA_DQ40
FBA_D41	V22	VMA_DQ41
FBA_D42	T23	VMA_DQ42
FBA_D43	U22	VMA_DQ43
FBA_D44	Y24	VMA_DQ44
FBA_D45	AA24	VMA_DQ45
FBA_D46	Y22	VMA_DQ46
FBA_D47	AA23	VMA_DQ47
FBA_D48	AD27	VMA_DQ48
FBA_D49	AB25	VMA_DQ49
FBA_D50	AD26	VMA_DQ50
FBA_D51	AC25	VMA_DQ51
FBA_D52	AA27	VMA_DQ52
FBA_D53	AA26	VMA_DQ53
FBA_D54	W26	VMA_DQ54
FBA_D55	Y25	VMA_DQ55
FBA_D56	R26	VMA_DQ56
FBA_D57	T25	VMA_DQ57
FBA_D58	N27	VMA_DQ58
FBA_D59	R27	VMA_DQ59
FBA_D60	V26	VMA_DQ60
FBA_D61	V27	VMA_DQ61
FBA_D62	W27	VMA_DQ62
FBA_D63	W25	VMA_DQ63

FBA_DQM0	D19	VMA_DM0
FBA_DQM1	D14	VMA_DM1
FBA_DQM2	C17	VMA_DM2
FBA_DQM3	C22	VMA_DM3
FBA_DQM4	P24	VMA_DM4
FBA_DQM5	W24	VMA_DM5
FBA_DQM6	AA25	VMA_DM6
FBA_DQM7	U25	VMA_DM7

FBA_DQS_WP0	E19	VMA_WDQS0
FBA_DQS_WP1	C15	VMA_WDQS1
FBA_DQS_WP2	B16	VMA_WDQS2
FBA_DQS_WP3	B22	VMA_WDQS3
FBA_DQS_WP4	R25	VMA_WDQS4
FBA_DQS_WP5	W23	VMA_WDQS5
FBA_DQS_WP6	AB26	VMA_WDQS6
FBA_DQS_WP7	T26	VMA_WDQS7

FBA_DQS_RN0	F19	VMA_RDQS0
FBA_DQS_RN1	C14	VMA_RDQS1
FBA_DQS_RN2	A16	VMA_RDQS2
FBA_DQS_RN3	A22	VMA_RDQS3
FBA_DQS_RN4	P25	VMA_RDQS4
FBA_DQS_RN5	W22	VMA_RDQS5
FBA_DQS_RN6	AB27	VMA_RDQS6
FBA_DQS_RN7	T27	VMA_RDQS7

FB_VREF_PROBE D23 +FB_VREF1 T10

18 VMA_DQ[63..0]
18 VMA_DM[7..0]
18 VMA_WDQS[7..0]
18 VMA_RDQS[7..0]

FBVDDQ + FBVDD = 3.116A

U15D
bga595-nvidia-n13p-gv2-s-a2
12/14 FBVDDQ

+1.5V_GFX
C47 0.1U/10V_4
C43 0.1U/10V_4
C35 0.1U/10V_4
C46 0.1U/10V_4
C44 1U/6.3V_4
C40 1U/6.3V_4
C32 4.7U/6.3V_6
C60 10U/6.3V_6
C52 10U/6.3V_6

B26	FBVDDQ
C25	FBVDDQ
E23	FBVDDQ
E26	FBVDDQ
F14	FBVDDQ
F21	FBVDDQ
G13	FBVDDQ
G14	FBVDDQ
G15	FBVDDQ
G16	FBVDDQ
G18	FBVDDQ
G19	FBVDDQ
G20	FBVDDQ
G21	FBVDDQ
H24	FBVDDQ
H26	FBVDDQ
J21	FBVDDQ
K21	FBVDDQ
L22	FBVDDQ
L24	FBVDDQ
L26	FBVDDQ
M21	FBVDDQ
N21	FBVDDQ
R21	FBVDDQ
T21	FBVDDQ
V21	FBVDDQ
W21	FBVDDQ

FB_CAL_PD_VDDQ D22 FB_CAL_PD_VDDQ R26 40.2/F_4 +1.5V_GFX
FB_CAL_PU_GND C24 FB_CAL_PU_GND R28 42.2/F_4
FB_CALTERM_GND B25 FB_CAL_TERM_GND R27 51.1/F_4

U15F
bga595-nvidia-n13p-gv2-s-a2
COMMON
13/14 GND

A2	GND	GND	M13
AB17	GND	GND	M15
AB20	GND	GND	M17
AB24	GND	GND	N10
AC2	GND	GND	N12
AC22	GND	GND	N14
AC26	GND	GND	N16
AC5	GND	GND	N18
AC8	GND	GND	P11
AD12	GND	GND	P13
AD13	GND	GND	P15
A26	GND	GND	P17
AD15	GND	GND	P2
AD16	GND	GND	P23
AD18	GND	GND	P26
AD19	GND	GND	P5
AD21	GND	GND	R10
AD22	GND	GND	R12
AE11	GND	GND	R14
AE14	GND	GND	R16
AE17	GND	GND	R18
AE20	GND	GND	T11
AB11	GND	GND	T13
AF1	GND	GND	T15
AF11	GND	GND	T17
AF14	GND	GND	U10
AF17	GND	GND	U12
AF20	GND	GND	U14
AF23	GND	GND	U16
AF5	GND	GND	U18
AF8	GND	GND	U2
AG2	GND	GND	U23
AG26	GND	GND	U26
AB14	GND	GND	U5
B1	GND	GND	V11
B11	GND	GND	V13
B14	GND	GND	V15
B17	GND	GND	V17
B20	GND	GND	V2
B23	GND	GND	Y23
B27	GND	GND	Y26
B5	GND	GND	Y5
B8	GND		
E11	GND		
E14	GND		
E17	GND		
E2	GND		
E20	GND		
E22	GND		
E25	GND		
E5	GND		
E8	GND		
H2	GND		
H23	GND		
H25	GND		
H5	GND		
K11	GND		
K13	GND		
K15	GND		
K17	GND		
L10	GND		
L12	GND		
L14	GND		
L16	GND		
L18	GND		
L2	GND		
L23	GND		
L25	GND		
L5	GND	GND	AA7
M11	GND	GND	AB7

14,16,33 +1.05V_GFX
16,17,18,33 +1.5V_GFX

PROJECT : VOLKS
Quanta Computer Inc.

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Custom	N11M-GE2(MEMORY/GND)	1A

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NB5

Optimus:
All unstuff , one Cap stuff 10K ohm

U15G
bga595-nvidia-n13p-gv2-s-a2
COMMON

4/14 IFPAB

IFPAB_RSET — NC
IFPAB_PLLVDD — NC
IFPAB_PLLVDD — NC
IFPA_IOVDD — NC
IFPB_IOVDD — NC

IFPA_TXC, IFPA_TXC — AC4, AC3
IFPA_TXD0, IFPA_TXD0 — Y3, Y4
IFPA_TXD1, IFPA_TXD1 — AA2, AA3
IFPA_TXD2, IFPA_TXD2 — AA1, AB1
IFPA_TXD3, IFPA_TXD3 — AA5, AA4
IFPB_TXC, IFPB_TXC — AB4, AB5
IFPB_TXD4, IFPB_TXD4 — AB2, AB3
IFPB_TXD5, IFPB_TXD5 — AD2, AD3
IFPB_TXD6, IFPB_TXD6 — AD1, AE1
IFPB_TXD7, IFPB_TXD7 — AD5, AD4
GPIO14 — B3

IFPAB

T16 — AA6
R319 10K/F_4 +IFPAB_PLLVDD — V7, W7
R321 10K/F_4 +IFPAB_IOVDD — W6, Y6

U15I
bga595-nvidia-n13p-gv2-s-a2
COMMON

6/14 IFPD

IFPD_RSET — NC
IFPD_PLLVDD — NC
IFPD_PLLVDD — NC
IFPD_IOVDD — NC

IFPD_AUX, IFPD_AUX — P4, P3
IFPD_L3, IFPD_L3 — R5, R4
IFPD_L2, IFPD_L2 — T5, T4
IFPD_L1, IFPD_L1 — U4, U3
IFPD_L0, IFPD_L0 — V4, V3
GPIO17 — D4

IFPD

T15 — U6
+IFPD_PLLVDD — T7, R7
R315 10K/F_4
+IFPD_IOVDD — R6
R318 10K/F_4

U15K
bga595-nvidia-n13p-gv2-s-a2
COMMON

3/14 DACA

DACA_VDD — NC
DACA_VREF — TSEN_VREF
DACA_RSET — NC

I2CA_SCL, I2CA_SDA — B7, A7
DACA_HSYNC, DACA_VSYNC — AE3, AE4
DACA_RED — AG3
DACA_GREEN — AF4
DACA_BLUE — AF3

R323 10K/F_4 +DACA_VDD — W5
C528 *0.1U/10V_4 DACA_VREF — AE2
R335 *124/F_4 DACA_RSET — AF2

U15H
bga595-nvidia-n13p-gv2-s-a2
COMMON

5/14 IFPC

IFPC_RSET — NC
IFPC_PLLVDD — NC
IFPC_PLLVDD — NC
IFPC_IOVDD — NC

IFPC_AUX, IFPC_AUX — N5, N4
IFPC_L3, IFPC_L3 — N3, N2
IFPC_L2, IFPC_L2 — R3, R2
IFPC_L1, IFPC_L1 — R1, T1
IFPC_L0, IFPC_L0 — T3, T2
GPIO15 — C3

IFPC

T14 — T6
R314 10K/F_4 +IFPC_PLLVDD — M7, N7
R316 10K/F_4 +IFPC_IOVDD — P6

U15J
bga595-nvidia-n13p-gv2-s-a2
COMMON

7/14 IFPEF

IFPEF_PLLVDD — NC
IFPEF_PLLVDD — NC
IFPEF_RSET — NC
IFPE_IOVDD — NC
IFPF_IOVDD — NC

I2CY_SDA, I2CY_SDA — IFPE_AUX, IFPE_AUX — J3, J2
I2CY_SCL, I2CY_SCL — IFPE_AUX, IFPE_AUX — J3, J2
TXC, TXC — IFPE_L3, IFPE_L3 — J1, K1
TXC, TXC — IFPE_L3, IFPE_L3 — J1, K1
TXD0, TXD0 — IFPE_L2, IFPE_L2 — K3, K2
TXD0, TXD0 — IFPE_L2, IFPE_L2 — K3, K2
TXD1, TXD1 — IFPE_L1, IFPE_L1 — M3, M2
TXD1, TXD1 — IFPE_L1, IFPE_L1 — M3, M2
TXD2, TXD2 — IFPE_L0, IFPE_L0 — M1, N1
TXD2, TXD2 — IFPE_L0, IFPE_L0 — M1, N1
HPD_E, HPD_E — GPIO18 — C2

IFPE

IFPE_PLLVDD — J7
R310 10K/F_4
T12 — K6
+IFPE_IOVDD — H6
R313 10K/F_4 — J6

I2CZ_SDA, I2CZ_SDA — IFPF_AUX, IFPF_AUX — H4, H3
I2CZ_SCL, I2CZ_SCL — IFPF_AUX, IFPF_AUX — H4, H3
TXC, TXC — IFPF_L3, IFPF_L3 — J5, J4
TXC, TXC — IFPF_L3, IFPF_L3 — J5, J4
TXD3, TXD0 — IFPF_L2, IFPF_L2 — K5, K4
TXD3, TXD0 — IFPF_L2, IFPF_L2 — K5, K4
TXD4, TXD1 — IFPF_L1, IFPF_L1 — L4, L3
TXD4, TXD1 — IFPF_L1, IFPF_L1 — L4, L3
TXD5, TXD2 — IFPF_L0, IFPF_L0 — M5, M4
TXD5, TXD2 — IFPF_L0, IFPF_L0 — M5, M4
HPD_F — GPIO19 — F7

IFPF

PLLVDD = 38mA

+1.05V_GFX — L1 FBMA-10-160808-300T — +NV_PLLVDD
C63 22U/6.3VS_6
C59 0.1U/10V_4

SP_PLLVDD = 17mA

+1.05V_GFX — L2 HCB1608KF-181T15 — +SP_PLLVDD
C68 0.1U/10V_4
C70 0.1U/10V_4
C76 22U/6.3VS_6
C71 4.7U/6.3V_6

VID_PLLVDD = 41mA

U15M
bga595-nvidia-n13p-gv2-s-a2
COMMON

9/14 XTAL_PLL

PLLVDD — L6
SP_PLLVDD — M6
VID_PLLVDD — N6
XTALSSIN — A10
XTALIN — C11
XTALOUTBUFF — C10 BXTALOUT
XTALOUT — B10 XTALOUT

R273 10K/F_4 XTAL_SSIN
XTALIN C11
Y1 27MHZ
C24 27P/50V_4
C25 27P/50V_4
R15 10K/F_4

+3V_GFX
R344 *4.7K_4
+3V
R324 4.7K_4
DGPU_PWROK 9,14,25
Q27 DTC144EUA
R345 100K/F_4
DGPU_PGOK-1
+1.05V_GFX — R325 4.7K_4 — DGPU_POK4 — Q22 MMBT3904-7-F — C516 1000P/50V_4 — C515 *1000P/50V_4
+1.5V_GFX — R336 4.7K_4 — DGPU_POK2 — Q23 MMBT3904-7-F — C530 *1000P/50V_4

14,15,33 +1.05V_GFX
14,17,32,33 +3V_GFX
6,7,8,9,10,12,13,14,19,20,21,22,23,24,25,26,30,32,34,36 +3V

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	N12P-GV(DISPLAY)	1A
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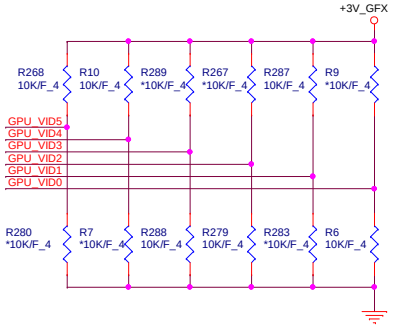
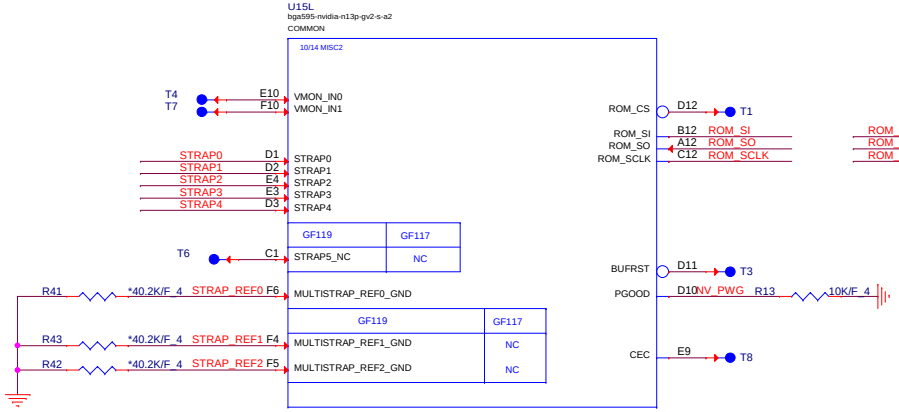
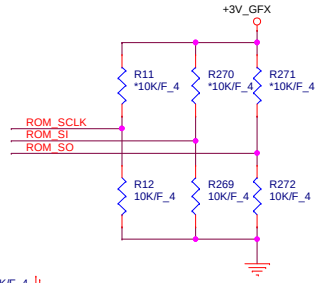
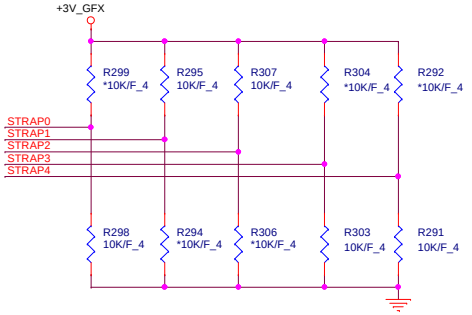


N13P-GV2 NVDD HW BOOT Voltage = 0.875V
VID = 0110010

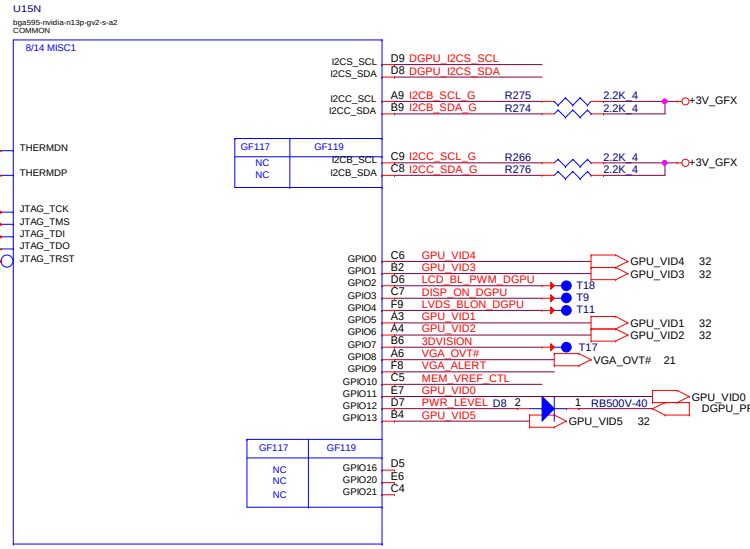




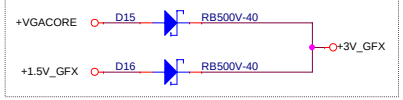


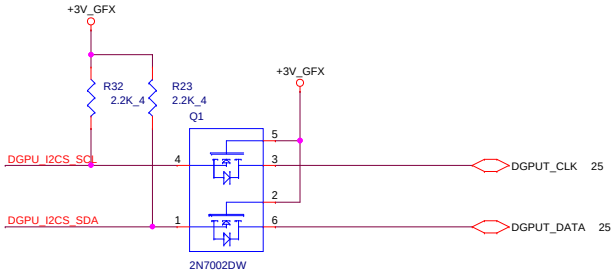
Binary Strap Mode Mapping

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 VBIO ROM
ROM_SO	VGA_DEVICE	10Kohm	Pull-down to GND (no dispaly)
STRAP0	RAMCFG[0]	10Kohm	USER defined
STRAP1	RAMCFG1]	10Kohm	USER defined
STRAP2	RAMCFG[2]	10Kohm	USER defined
STRAP3	RAMCFG[3]	10Kohm	USER defined
STRAP4	PCIE_MAX_SPEED	10Kohm	Pull-down to GND



for meet Power down sequence.
Nvidia request for optimus



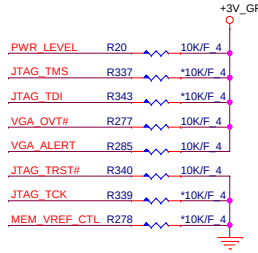


VRAM Configuration Table

RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	QBCON P/N	HP P/N
	(MP)	Reserved			
0011	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Hynix	H5TQ4G63MFR-11C	AKD5PGWTW00	AKD5PGWTW01
0101	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Micron	MT41K256M16HA-107G:E	AKD5PGSTL01	AKD5PGSTL02
1100	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Hynix	H5TQ2G63DFR-11C	AKD5MGWTW12	AKD5MGWTW13
0101	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Samsung	K4W2G1646C-HC11	AKD5MGWT513	AKD5MGWT508
	(OOC)				
0001	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Samsung	K4W4G1646B-HC11	AKD5MGWT518	AKD5MGWT517
0100	DDR3 256Mx16x4, 64bit, 2Gb,900MHz	Hynix	H5TQ4G63AFR-11C	applying	applying
1011	DDR3 128Mx16x4, 64bit, 1Gb,900MHz	Samsung	K4W2G1646E-BC11	AKD5MGGT521	AKD5MGGT522

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	O	GPU Core VDD VID4	Strap to boot NVVDD
GPIO1	GPU_VID3	O	GPU Core VDD VID3	Strap to boot NVVDD
GPIO2	LCD_BL_PWM	O	Panel Backlight PWM Brightness Control	100 K pull-down
GPIO3	LCD_VCC or PSI	O	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	O	Panel Backlight Enable	100 K pull-down
GPIO5	GPU_VID1	O	GPU Core VDD VID1	Strap to boot NVVDD
GPIO6	GPU_VID2	O	GPU Core VDD VID2	Strap to boot NVVDD
GPIO7	3DVision	O	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	O	Memory VREF Control	100 K pull-down
GPIO11	GPU_VID0	O	GPU Core VDD VID0	Strap to boot NVVDD
GPIO12	PWR_LEVEL	I	AC power detect or power supply overdraw input	100 K pull-up
GPIO13	GPU_VID5	O	GPU Core VDD VID5	Strap to boot NVVDD
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	O	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 FBVDD/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			



14,16,32,33 +3V_GFX

NB5

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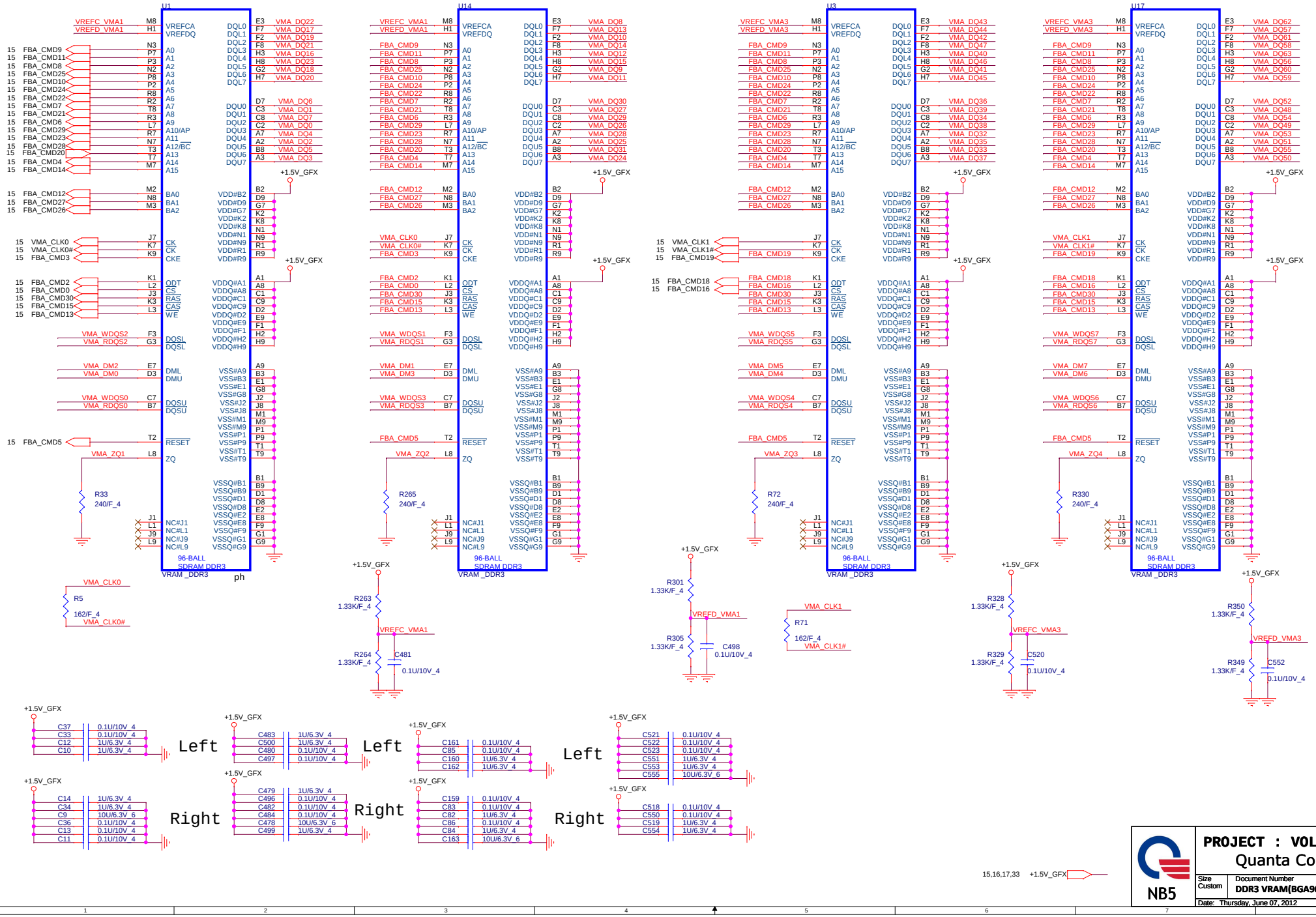
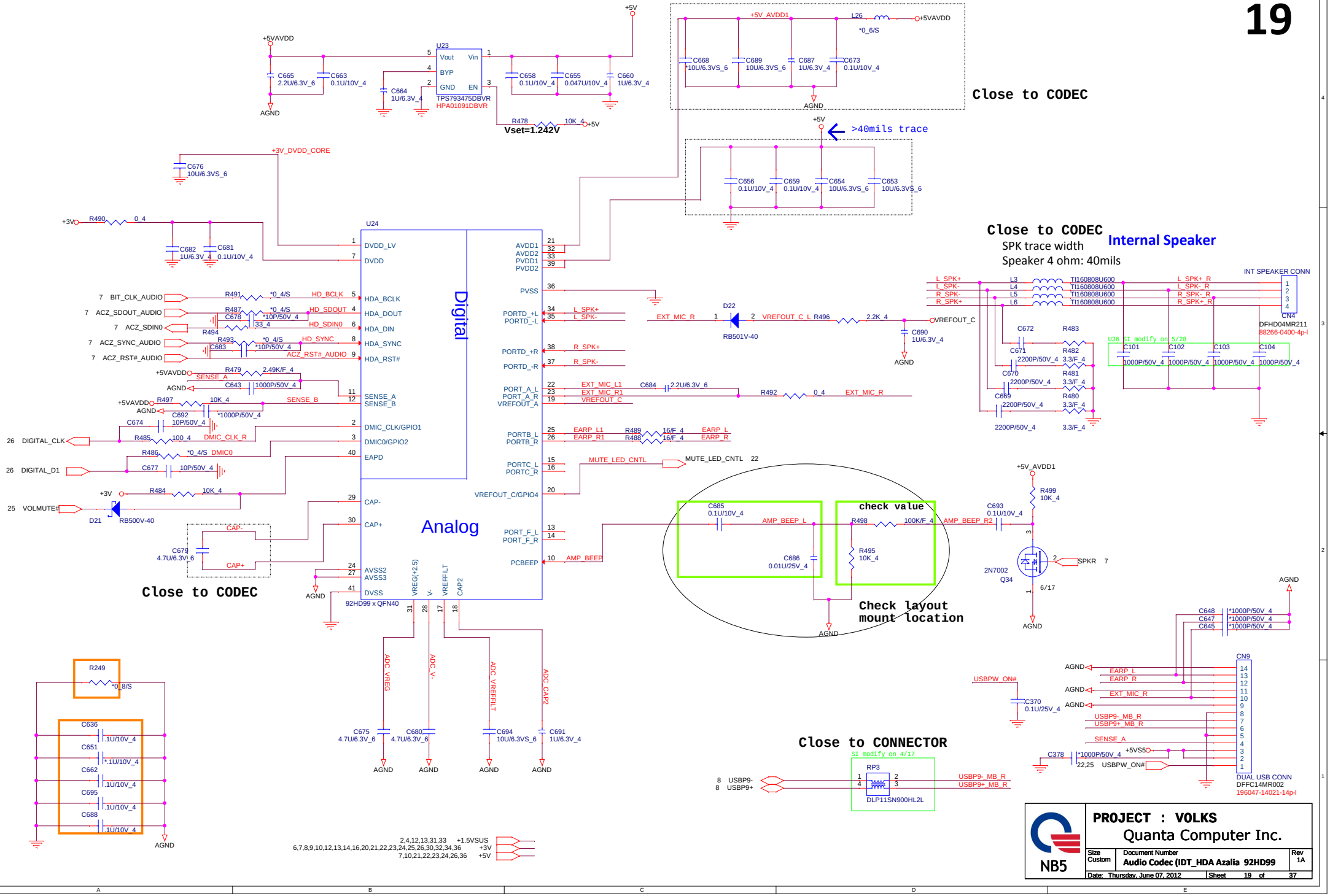
CHANNEL A: 256MB/512MB DDR3

15 VMA_DQ[63..0]
15 VMA_DM[7..0]
15 VMA_WDQS[7..0]
15 VMA_RDQS[7..0]



PROJECT : VOLKS	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: DDR3 VRAM(BGA96); Rev: 1A
Date: Thursday, June 07, 2012	Sheet 18 of 37


U23
TPS793475DBVR
HPA01091DBVR
Vset=1.242V
Close to CODEC
>40mils trace
U24
92HD99 x QFN40
Digital
Analog
Close to CODEC
SPK trace width
Speaker 4 ohm: 40mils
Internal Speaker
INT SPEAKER CONN
DFHD04MR211
88266-0400-4p-l
check value
Check layout
mount location
Close to CONNECTOR
SI modify on 4/17
RP3
DLP11SN900HL2L
DUAL USB CONN
DFFC14MR002
196047-14021-14p-l
PROJECT : VOLKS
Quanta Computer Inc.
NB5
Audio Codec (IDT_HDA Azalia 92HD99
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Sheet 19 of 37

For EMI 0 ~ 22 ohm

GND VIA x 9 Pcs

Green Clk

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

RTL8105E

NS681684

RJ45

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Quanta Computer Inc.			
Size: Custom	Document Number: LAN RTL8105/RJ45		Rev: 1A
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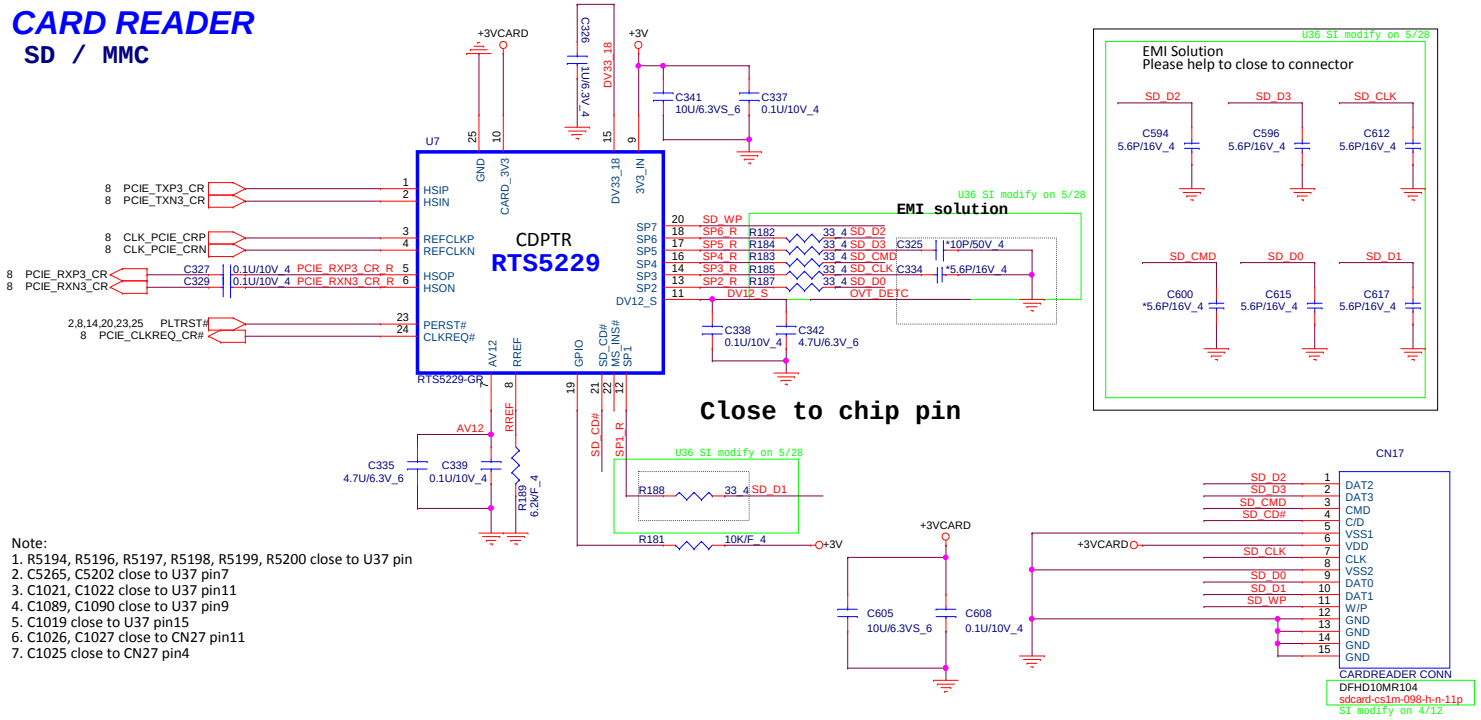
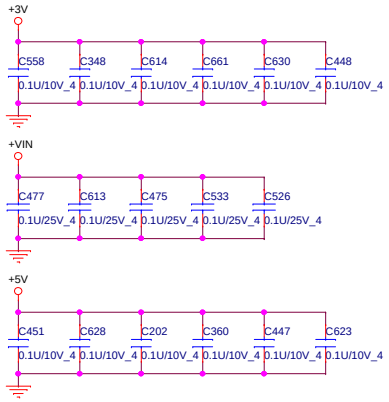
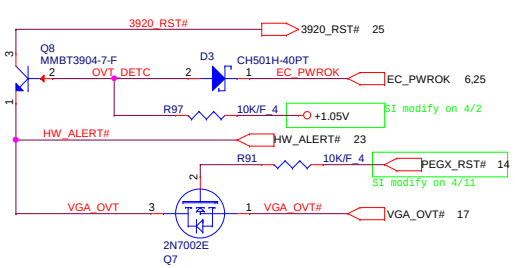
CARD READER
SD / MMC

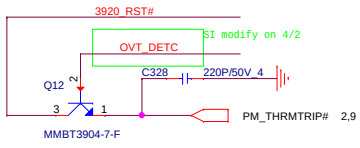


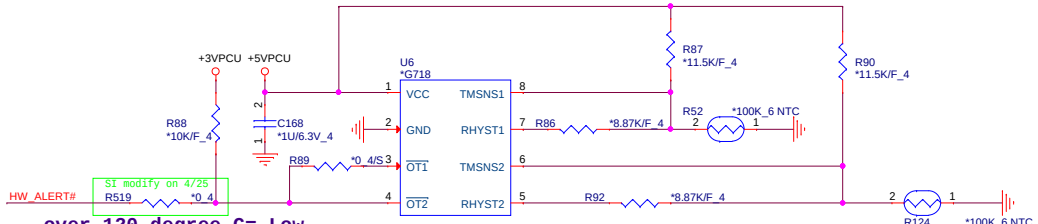


Note:
1. R5194, R5196, R5197, R5198, R5199, R5200 close to U37 pin
2. C5265, C5202 close to U37 pin7
3. C1021, C1022 close to U37 pin11
4. C1089, C1090 close to U37 pin9
5. C1019 close to U37 pin15
6. C1026, C1027 close to CN27 pin11
7. C1025 close to CN27 pin4

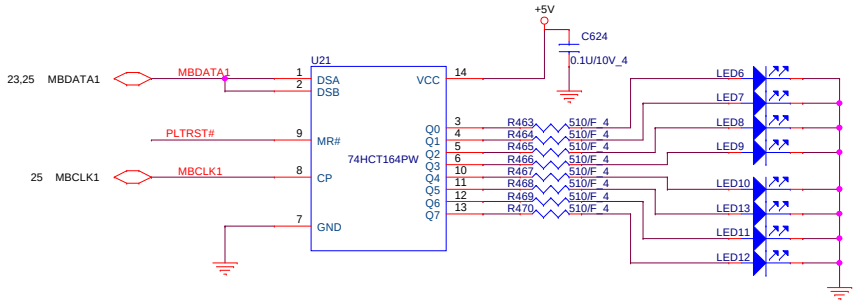
Thermal HW protect







80 port



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Quanta Computer Inc.

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Custom	Card Reader control (RTS5229-GR)	1A
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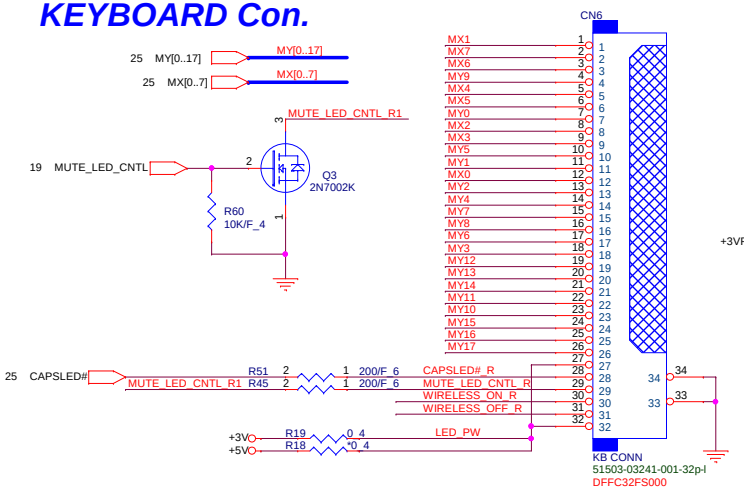
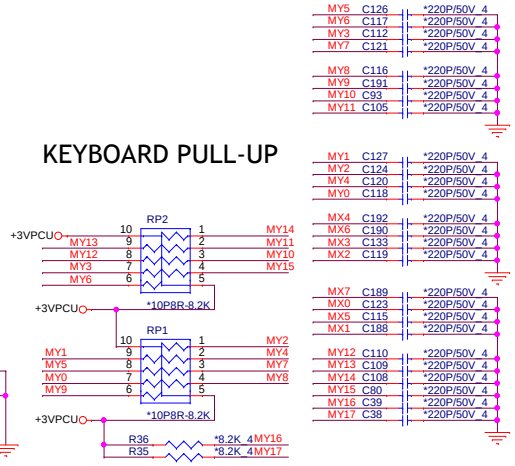
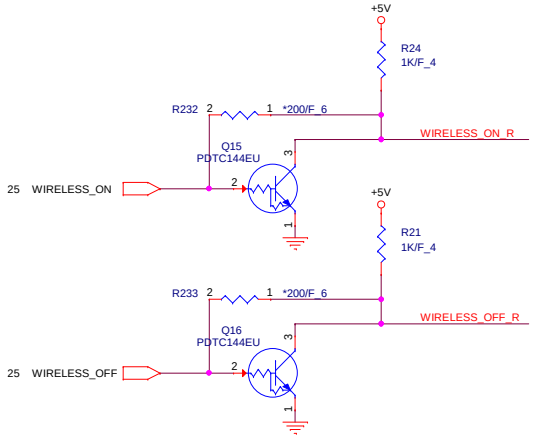
KEYBOARD Con.

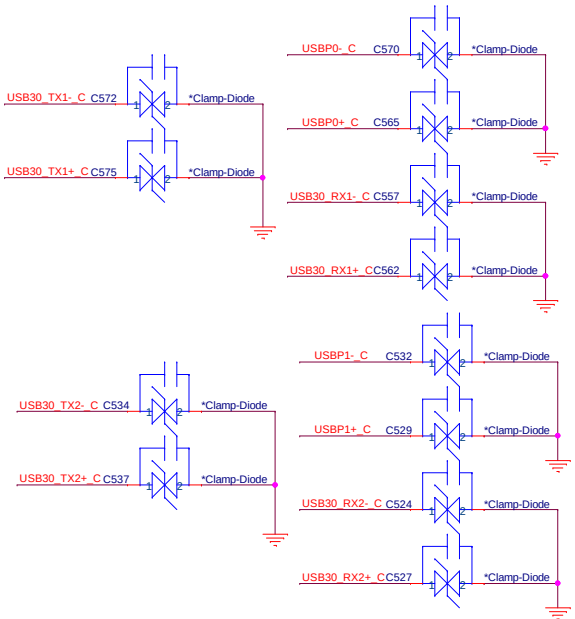


KEYBOARD PULL-UP

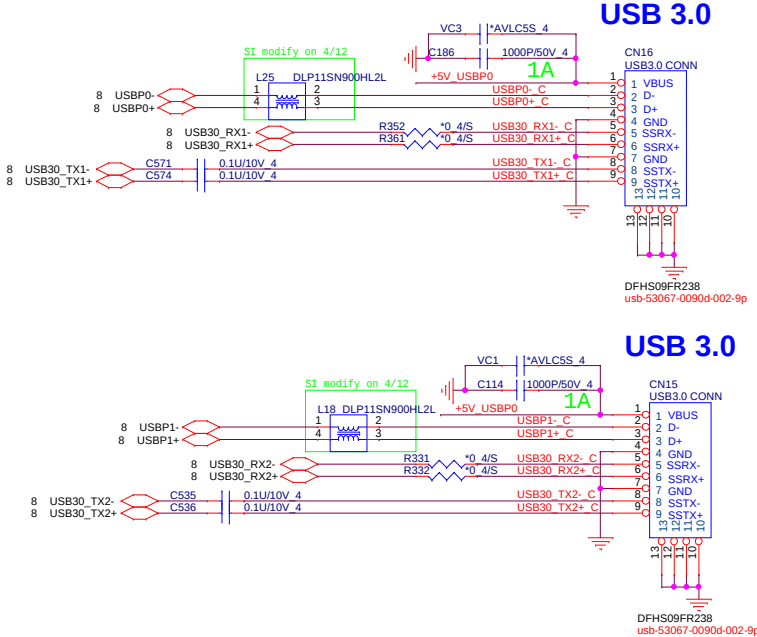


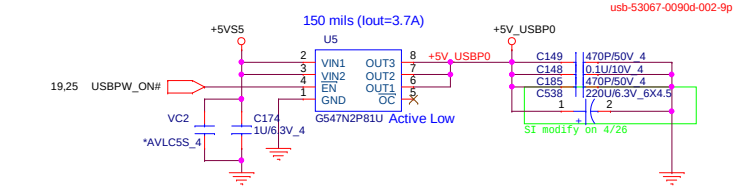


USB 2.0/3.0 Combo

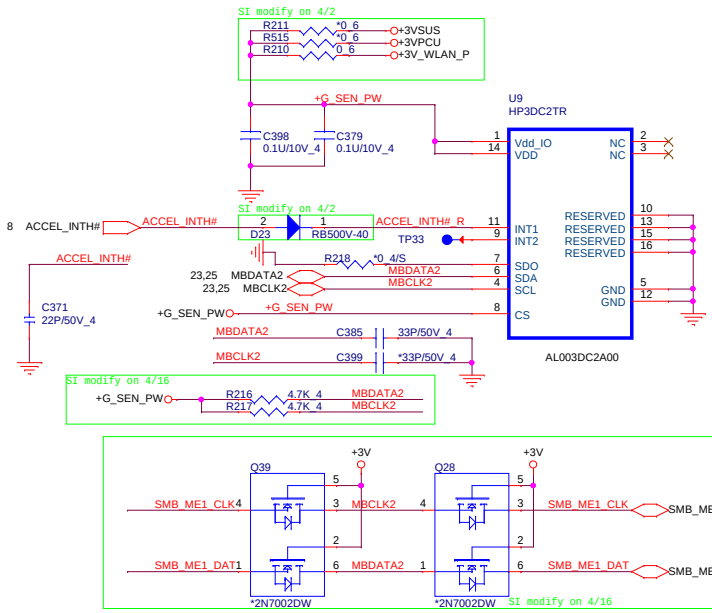


USB 3.0





Accelerometer Sensor



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Quanta Computer Inc.
NB5
Size: Custom
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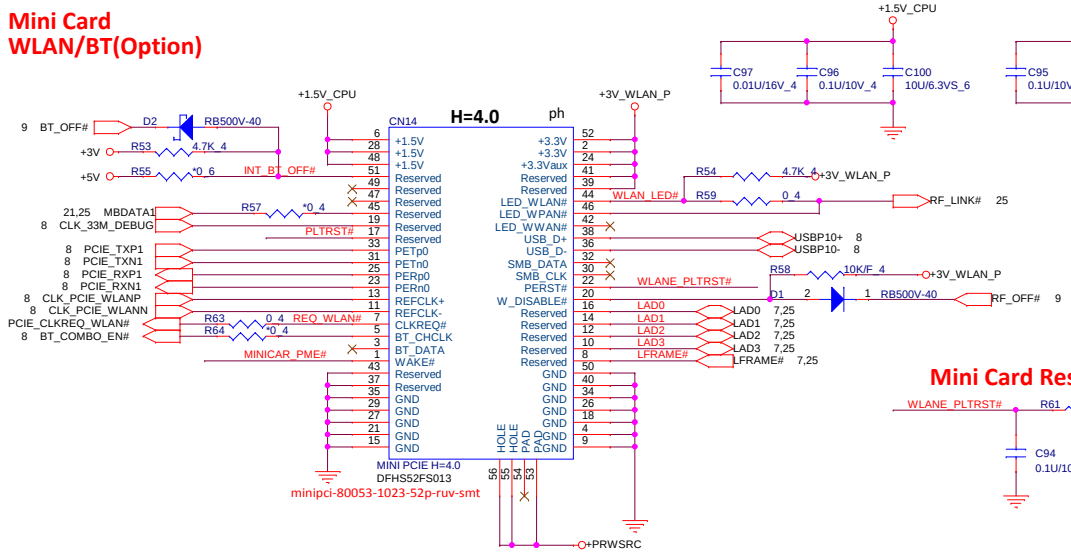
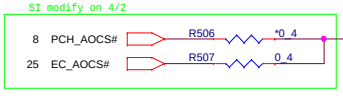
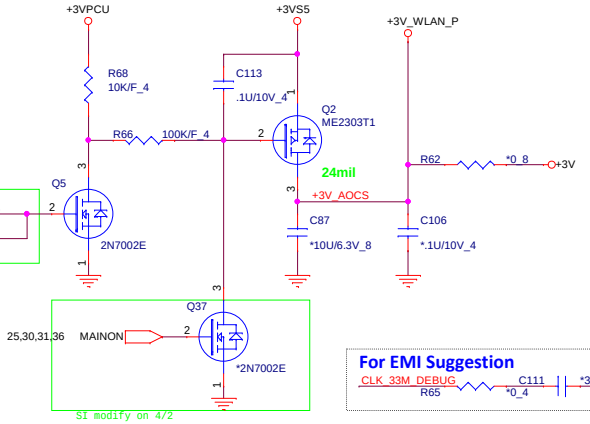
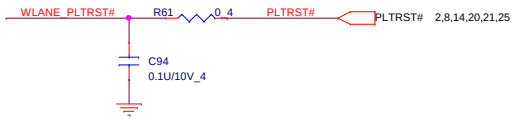
Mini Card WLAN/BT(Option)



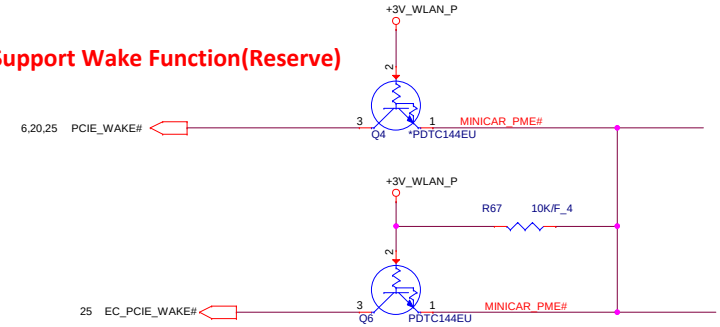




Mini Card Reset

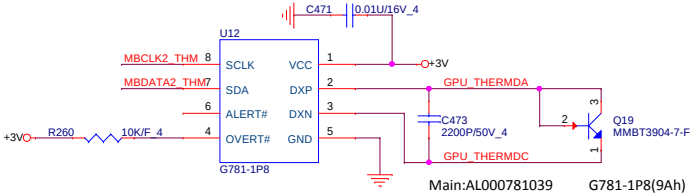


Support Wake Function(Reserve)



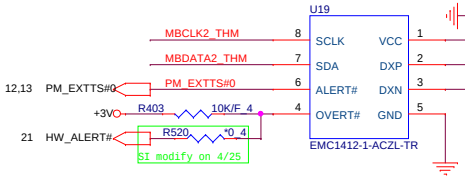
Local Thermal Sensor

GPU Thermal Sensor

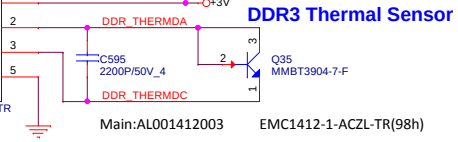


Main:AL000781039 G781-1P8(9Ah)
2nd:AL001412005 EMC1412-2-ACZL-TR(9Ah)

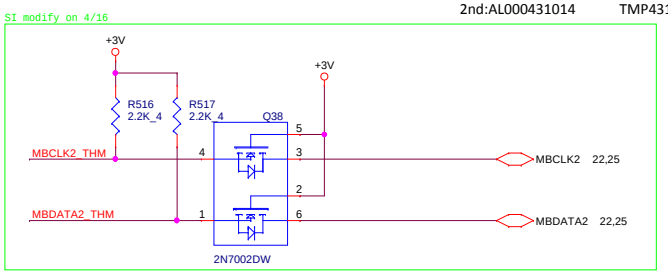
CPU Thermal Sensor



DDR3 Thermal Sensor

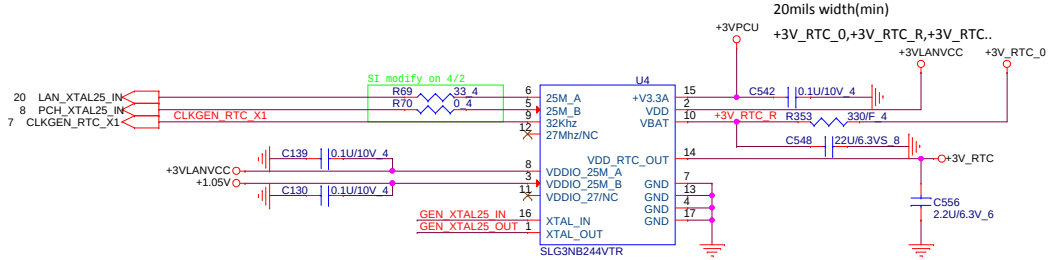


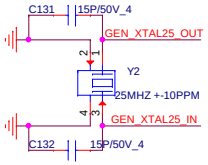
Main:AL001412003 EMC1412-1-ACZL-TR(98h)
2nd:AL000431014 TMP431ADGKR(98h)

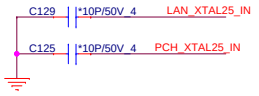


Green CLK Circuitry

20mils width(min)
+3V_RTC_0,+3V_RTC_R,+3V_RTC..







27 +PRWSRC
6,7,8,9,10,12,13,14,16,19,20,21,22,24,25,26,30,32,34,36 +3V
7,10,19,21,22,24,26,36 +5V
7,21,22,24,25,26,27,28 +3VPCU
2,4,10,24 +1.5V_CPU

NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size: Custom	Document Number: MINI-PCIE/LED	Rev: 1A
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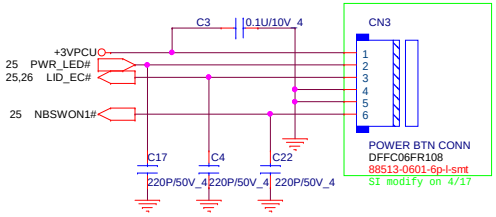
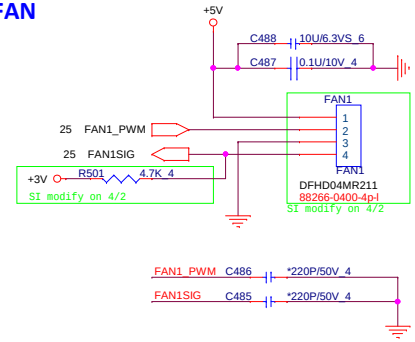
Power Botton Connector

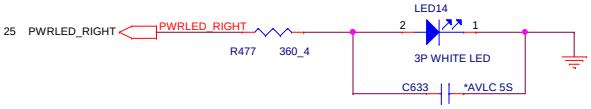
Pin1 : +3VPCU(LIDSWITCH PWR)
Pin2 : POWER LED
Pin3 : LIDSWITCH
Pin4 : GND
Pin5 : GND
Pin6 : POWERON#



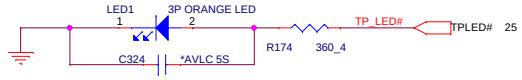
FAN



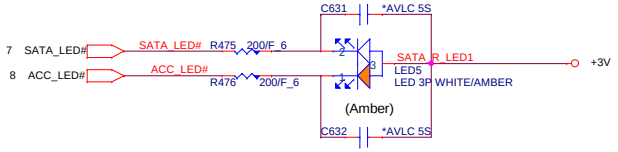
PWR LED



14" TP LED

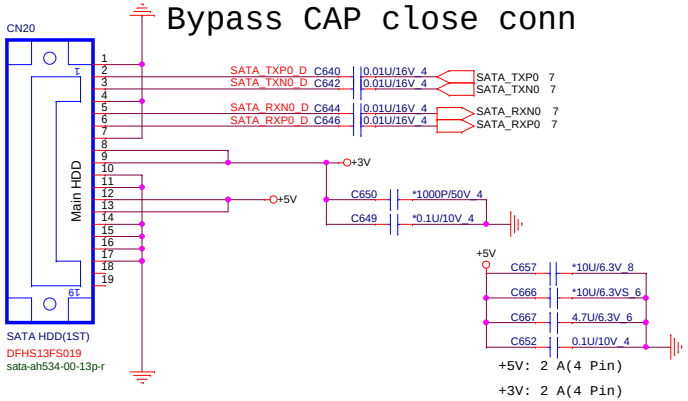


SATA LED



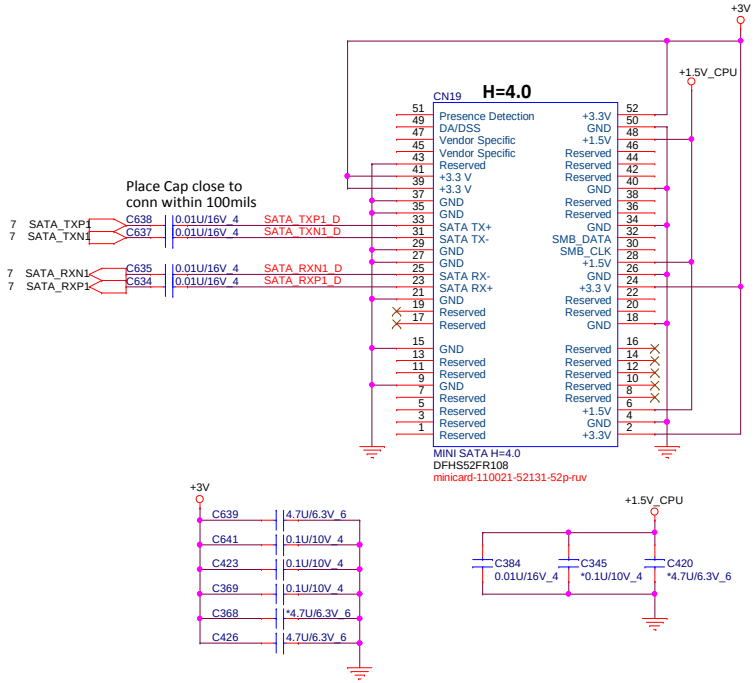
SATA HDD Connector(Cable type)

Bypass CAP close conn



+5V: 2 A(4 Pin)
+3V: 2 A(4 Pin)
Gnd : (5 Pin)

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

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Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	SATA HDD/ODD/MSATA CONN	1A
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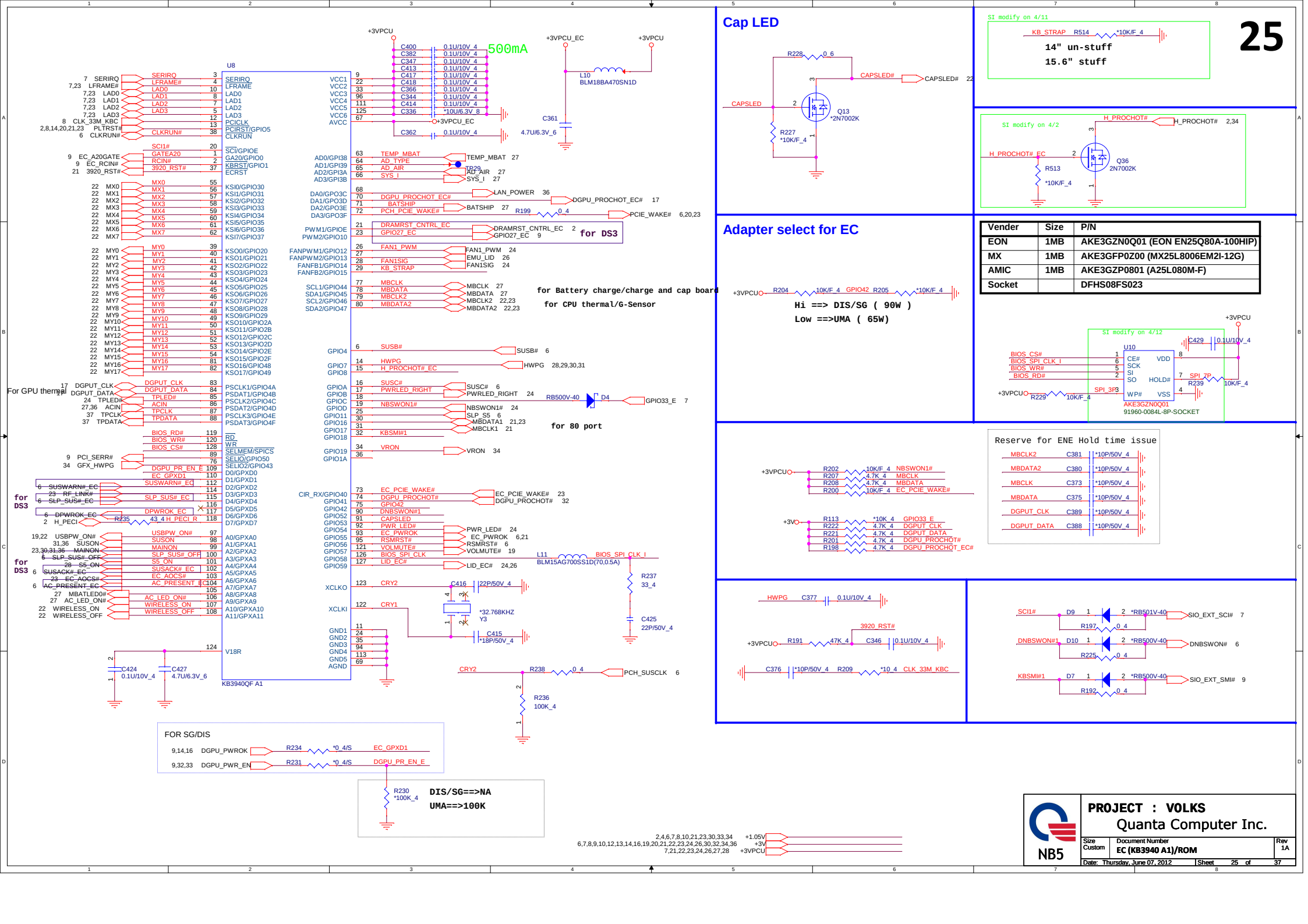
25
Cap LED
Adapter select for EC
U8
KB3940QF A1
for DS3
for 80 port
for Battery charge/charge and cap board
for CPU thermal/G-Sensor
For GPU thermal
Hi ==> DIS/SG (90W)
Low ==>UMA (65W)
Reserve for ENE Hold time issue
FOR SG/DIS
DIS/SG==>NA
UMA==>100K
14" un-stuff
15.6" stuff
Vender | Size | P/N
EON | 1MB | AKE3GZN0Q01 (EON EN25Q80A-100HIP)
MX | 1MB | AKE3GFP0Z00 (MX25L8006EM2I-12G)
AMIC | 1MB | AKE3GZP0801 (A25L080M-F)
Socket | | DFHS08FS023
PROJECT : VOLKS
Quanta Computer Inc.
NB5
Size Custom
Document Number
EC (KB3940 A1)/ROM
Rev 1A
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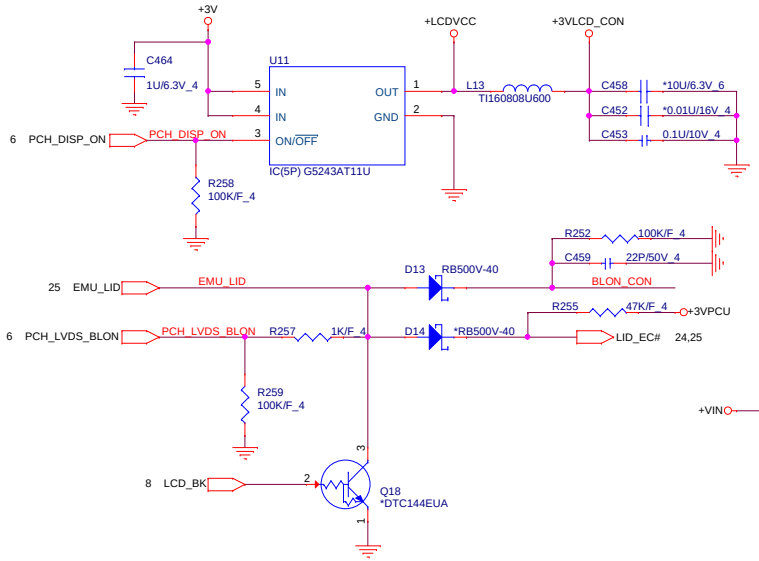
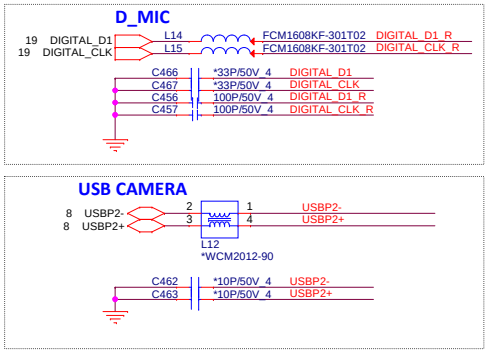
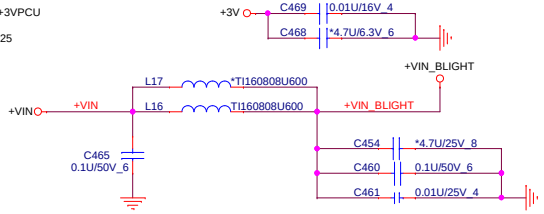
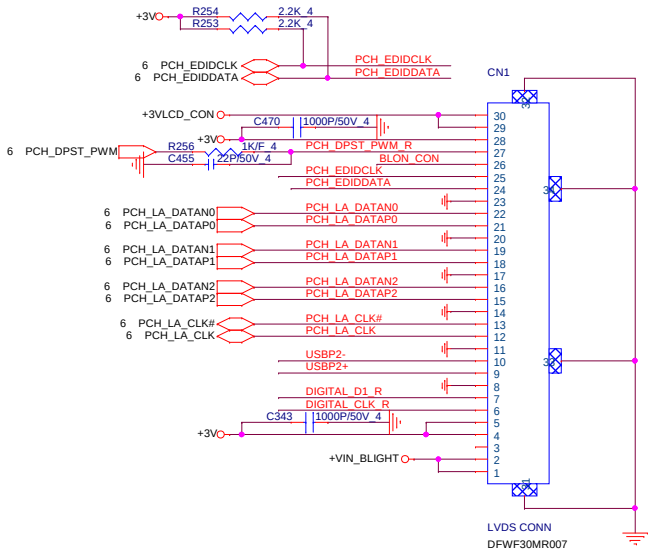
LVDS Conn.

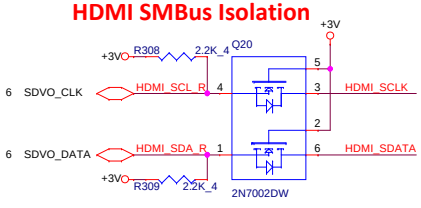


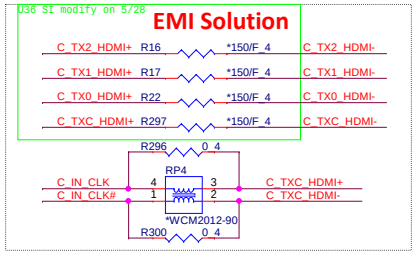


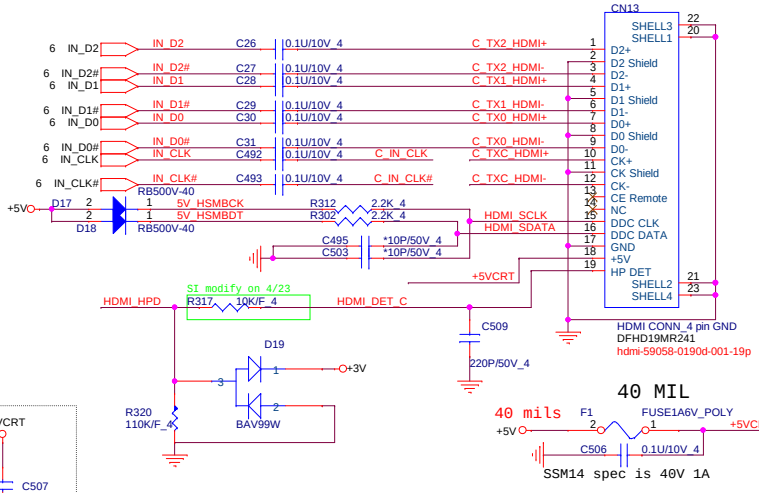


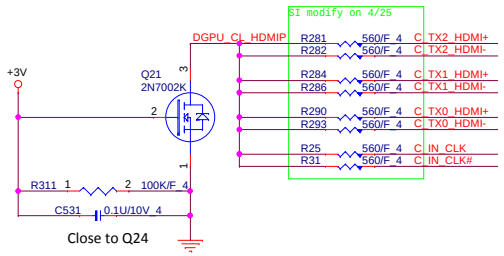


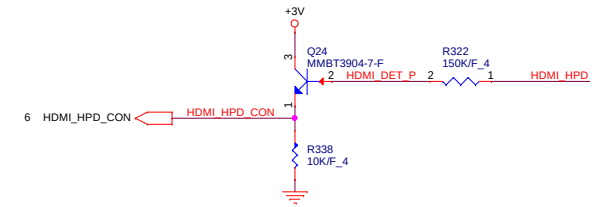
HDMI Conn.

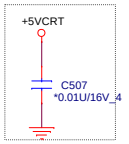




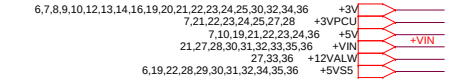








for EMI request



DC_JACK
90W

Do Not add test pad on BATDIS_G signal

Place this ZVS close to Diode away +VIN

PV modify 0605

PV modify 0607

To PWR LED

Place this ZVS close to Far-Far away +VIN

Place this cap close to EC

Place this cap close to EC

Place this cap close to EC

ACDET=13V

MIN. BATV=7.2V

PU1
BQ24738

DC-IN CONN_59012-0060N-003

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

PROJECT : VOLKS
Quanta Computer Inc.
NB5
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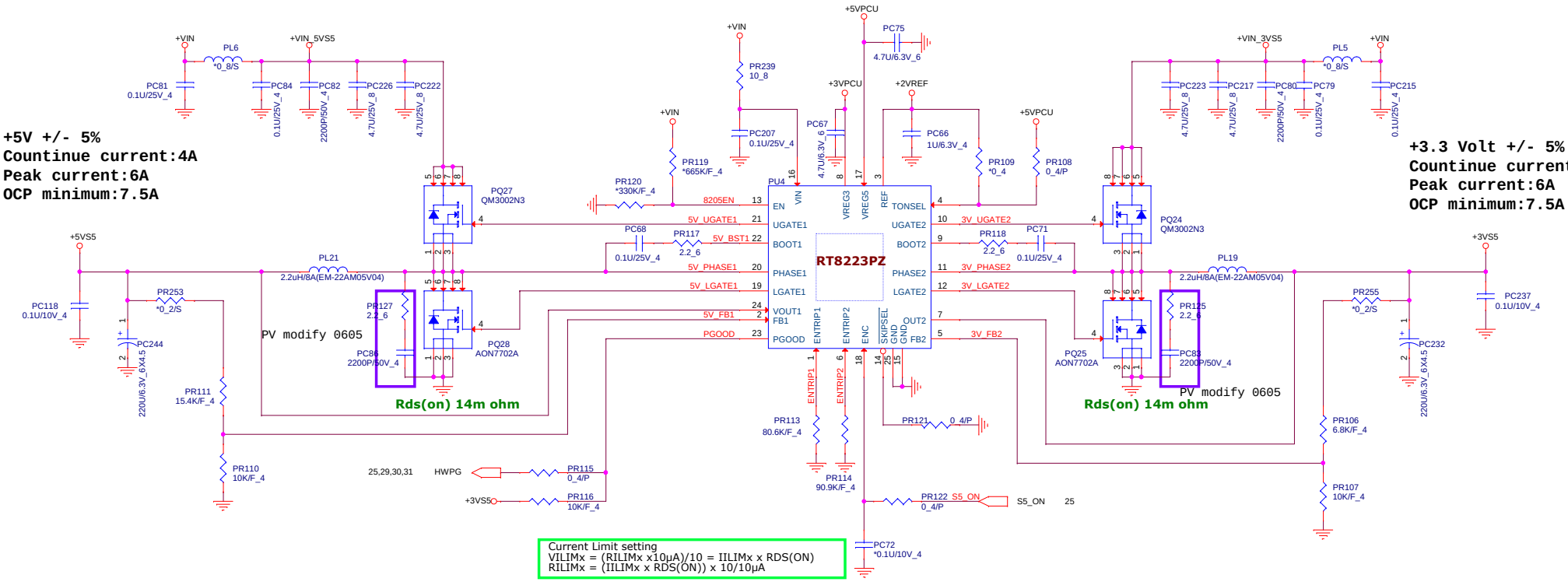
DC/DC +3V_ALW/+5V_ALW/+5V_ALW2 /+15V_ALW

+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 +3VS5
6,19,22,29,30,31,32,34,35,36 +5VS5
7,21,22,23,24,25,26,27 +3VPCU

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	3/5VS5 (RT8223P)	A

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TPS51462RGER/AL051462000

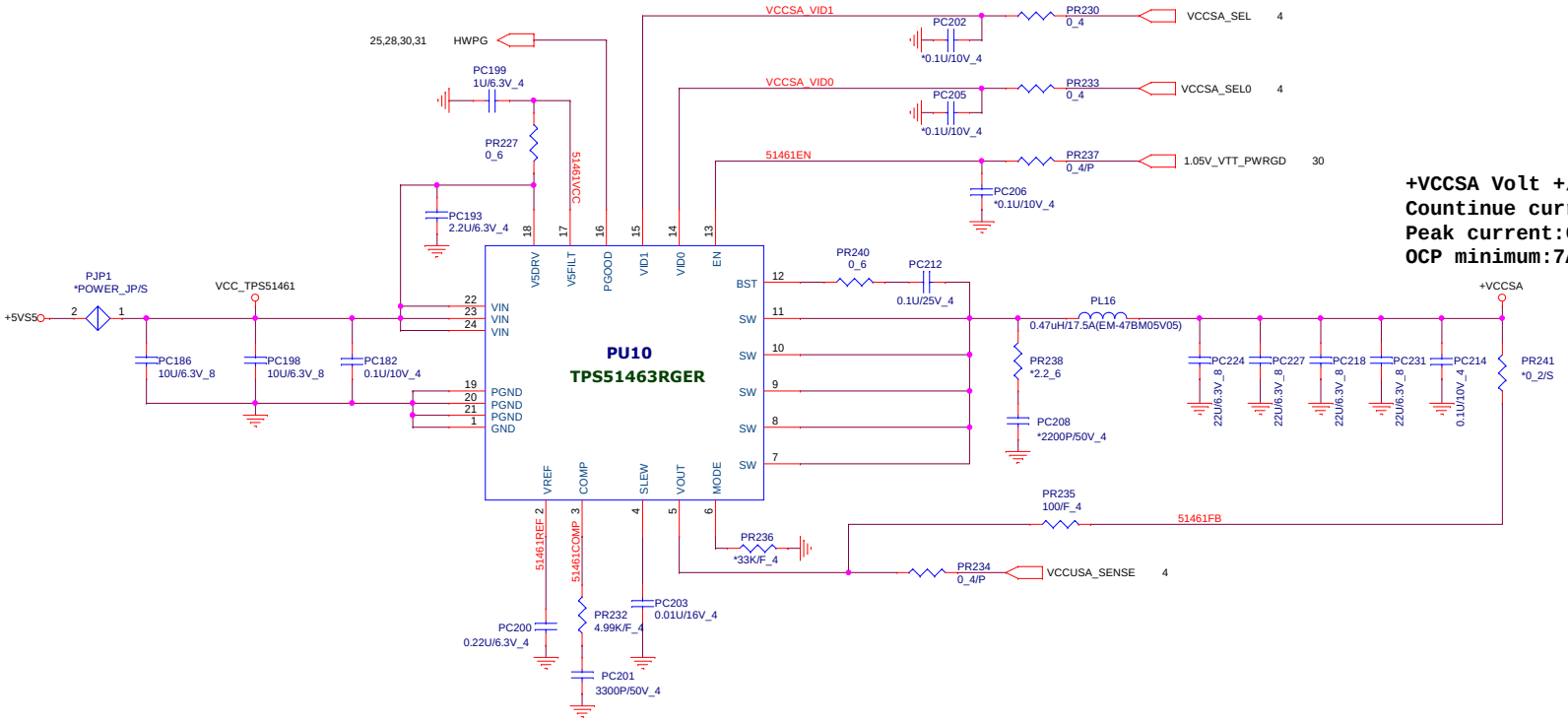
For CPU SV system agent voltage slew rate of 0.5 -10 mV/µs

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: +VCCSA (TPS51462RGER)	Rev: A
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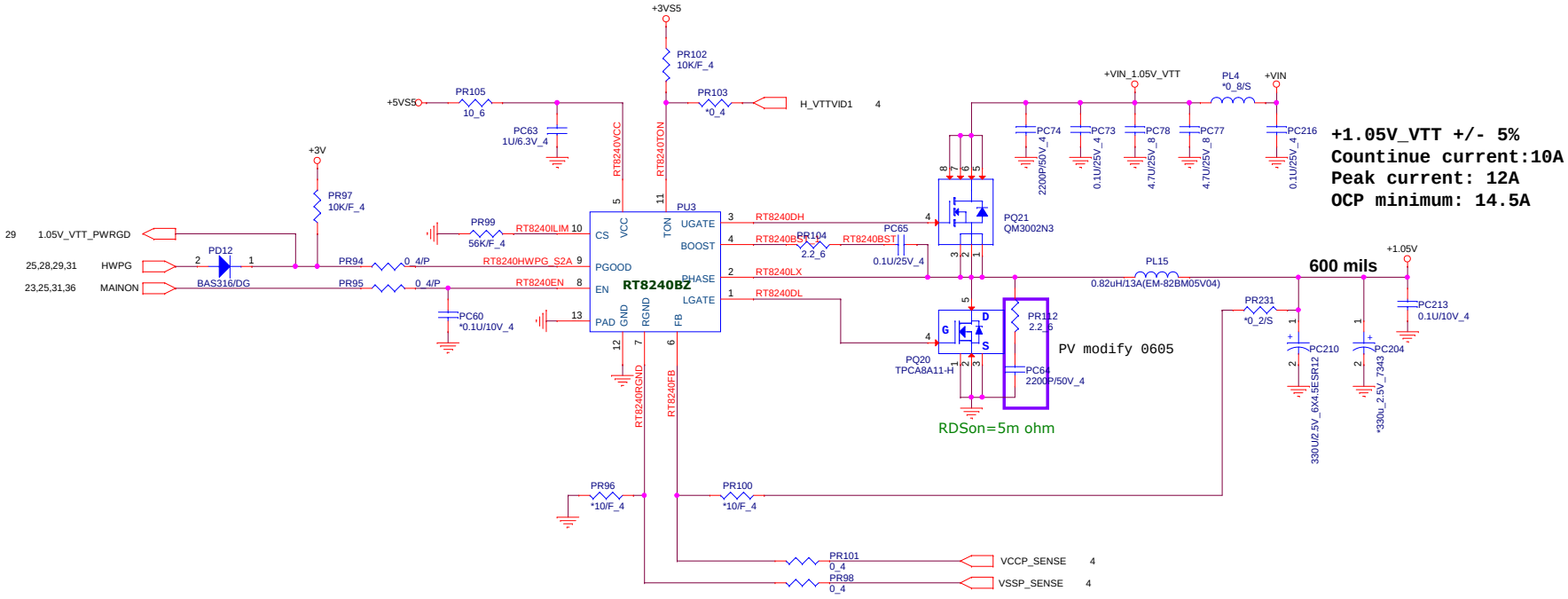
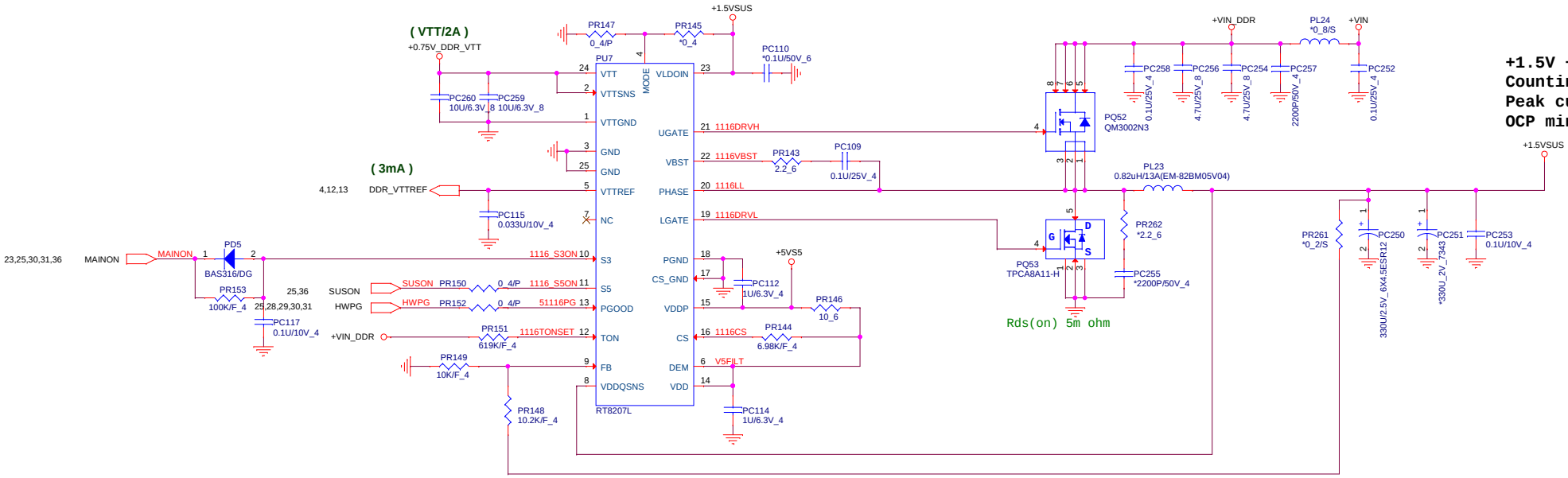
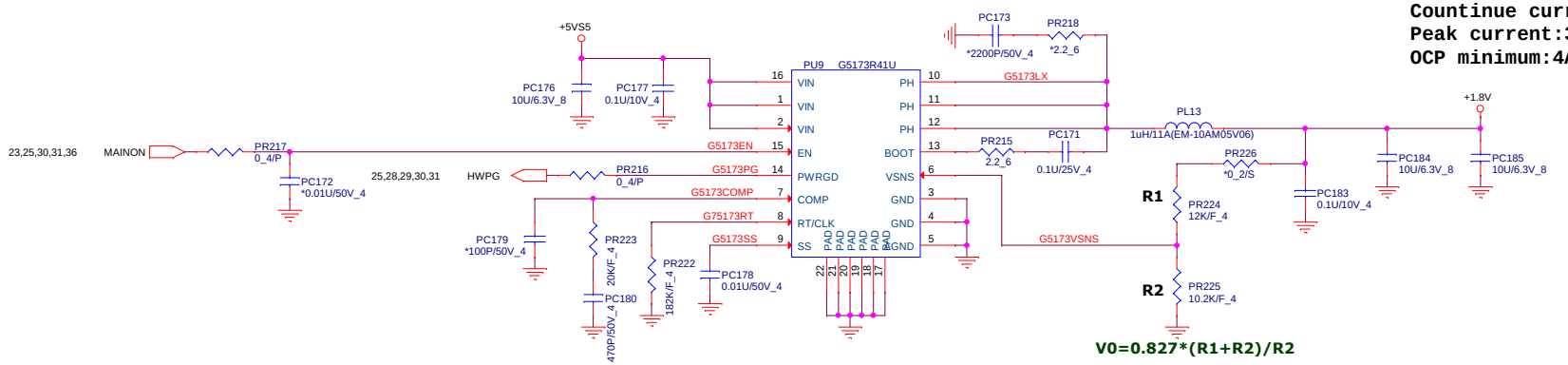


NB5	PROJECT : VOLKS Quanta Computer Inc.		
	Size: Custom	Document Number: +1.05V (RT8240B)	Rev: A
	Date: Thursday, June 07, 2012	Sheet 30of 37	



+1.5V +/- 5%
Countinue current:10A
Peak current:12A
OCP minimum 15A



+1.8V +/- 5%
Countinue current:2A
Peak current:3A
OCP minimum:4A

V0=0.827*(R1+R2)/R2

NB5	**PROJECT : VOLKS** Quanta Computer Inc.	
Size: Custom	Document Number: **DDR3 (RT8207)**	Rev: A
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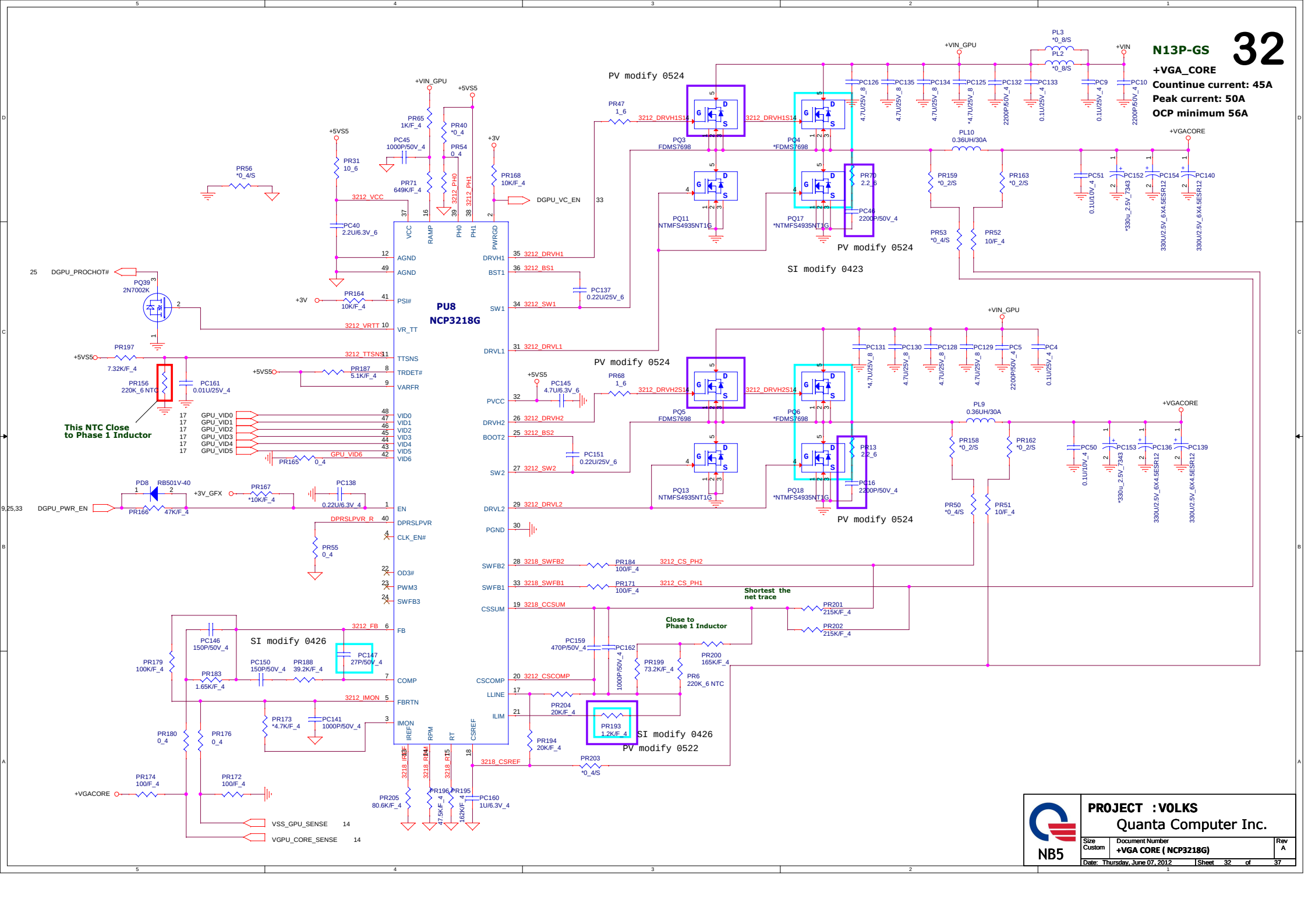
32
N13P-GS
+VGA_CORE
Countinue current: 45A
Peak current: 50A
OCP minimum 56A
PU8
NCP3218G
PV modify 0524
SI modify 0423
SI modify 0426
PV modify 0522
This NTC Close to Phase 1 Inductor
Close to Phase 1 Inductor
Shortest the net trace
+VIN_GPU
+VIN
+VGACORE
+5VS5
+3V
+3V_GFX
DGPU_PROCHOT#
DGPU_VC_EN
DGPU_PWR_EN
VSS_GPU_SENSE
VGPU_CORE_SENSE
PROJECT : VOLKS
Quanta Computer Inc.
NB5
Size Custom
Document Number +VGA CORE (NCP3218G)
Rev A
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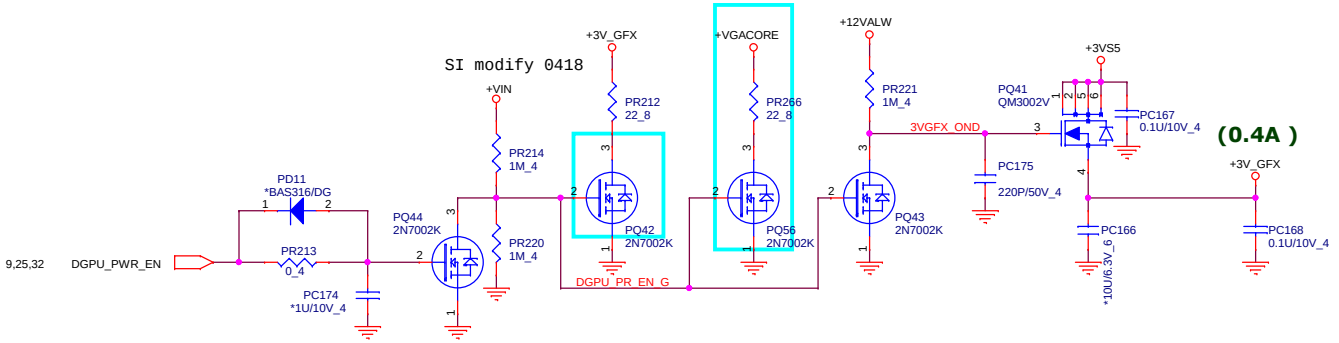
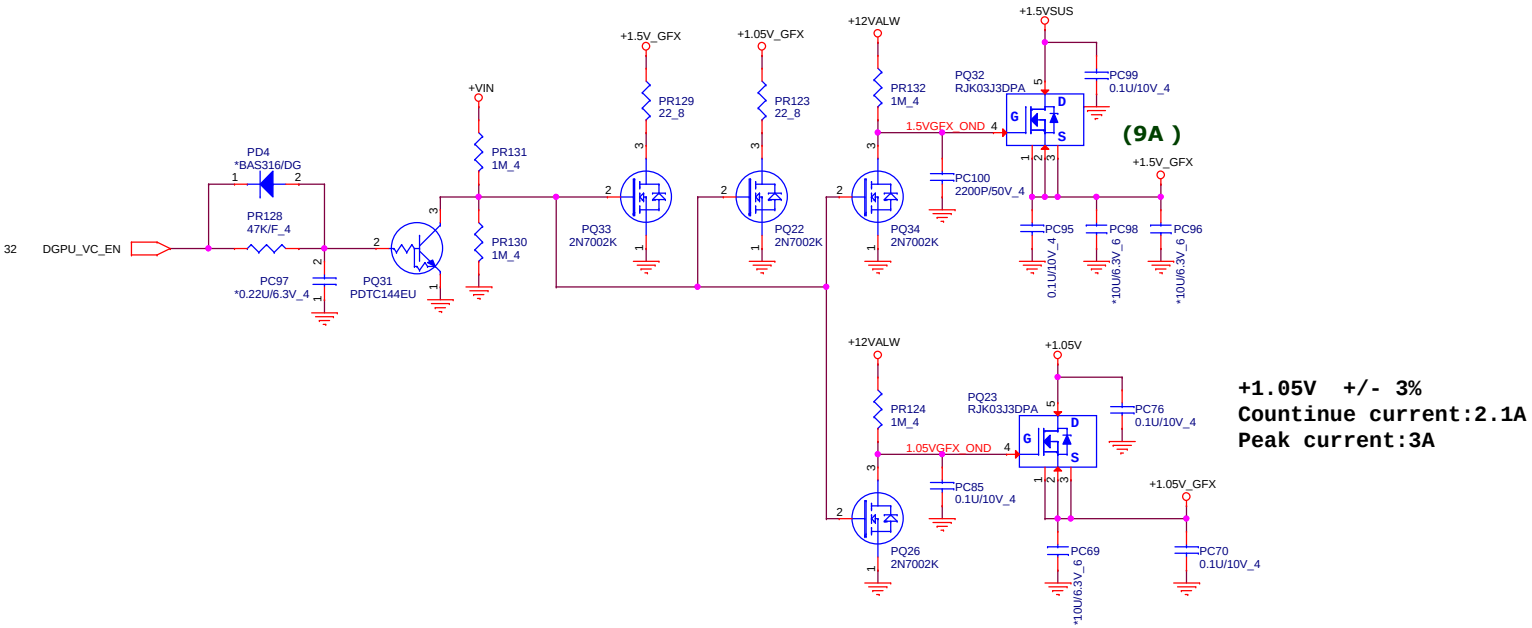
VGA

2,4,12,13,31 +1.5VSUS
6,10,23,28,30,36 +3VS5
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





+1.05V +/- 3%
Countinue current:2.1A
Peak current:3A

NB5

PROJECT :VOLKS
Quanta Computer Inc.

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Custom	+VGA POWER	A

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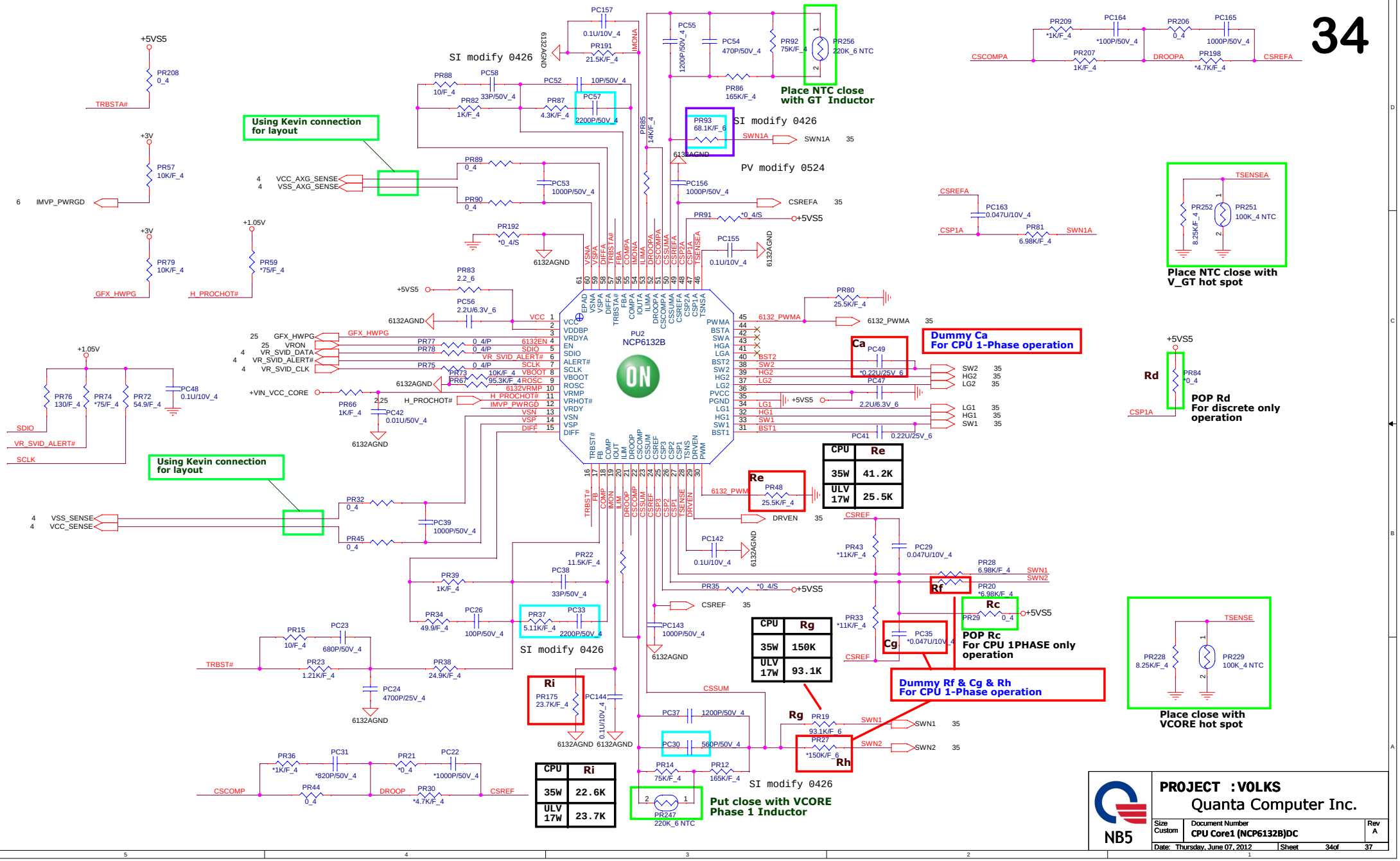
SI modify 0426
Using Kevin connection for layout
Place NTC close with GT Inductor
PV modify 0524
Dummy Ca For CPU 1-Phase operation
Place NTC close with V_GT hot spot
POP Rd For discrete only operation
POP Rc For CPU 1PHASE only operation
Dummy Rf & Cg & Rh For CPU 1-Phase operation
Place close with VCORE hot spot
Put close with VCORE Phase 1 Inductor
PU2 NCP6132B
CPU Re: 35W 41.2K; ULV 17W 25.5K
CPU Rg: 35W 150K; ULV 17W 93.1K
CPU Ri: 35W 22.6K; ULV 17W 23.7K
PROJECT : VOLKS
Quanta Computer Inc.
NB5
Size Custom
Document Number CPU Core1 (NCP6132B)DC
Rev A
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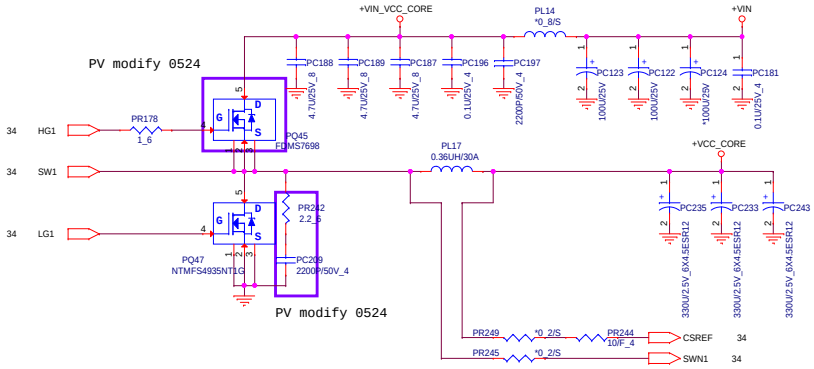
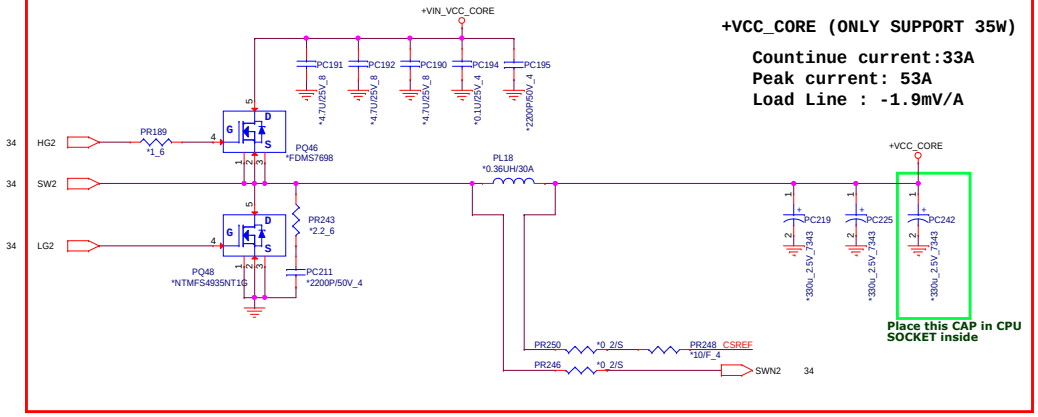


Dummy This Schematic
For CPU 1-Phase operation



+VCC_CORE (ONLY SUPPORT 35W)

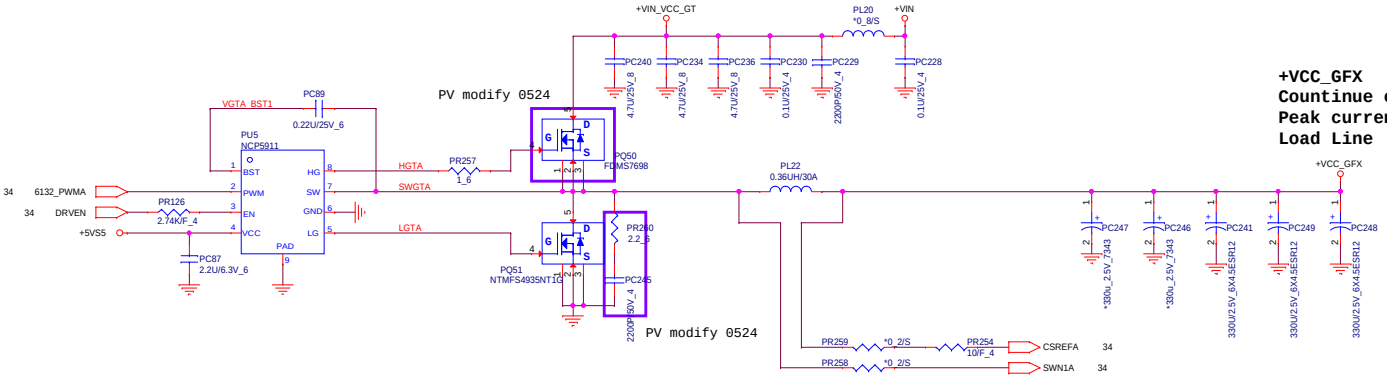
Countinue current:33A
Peak current: 53A
Load Line : -1.9mV/A

+VCC_CORE (ONLY SUPPORT 35W)

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

+VCC_CORE (ULV 17W)

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



+VCC_GFX
Countinue current:21.5A
Peak current: 33A
Load Line : -3.9mV/A

NB5	PROJECT : VOLKS Quanta Computer Inc.		
	Size: C	Document Number: CPU Core2 (NCP5911)DC	Rev: A
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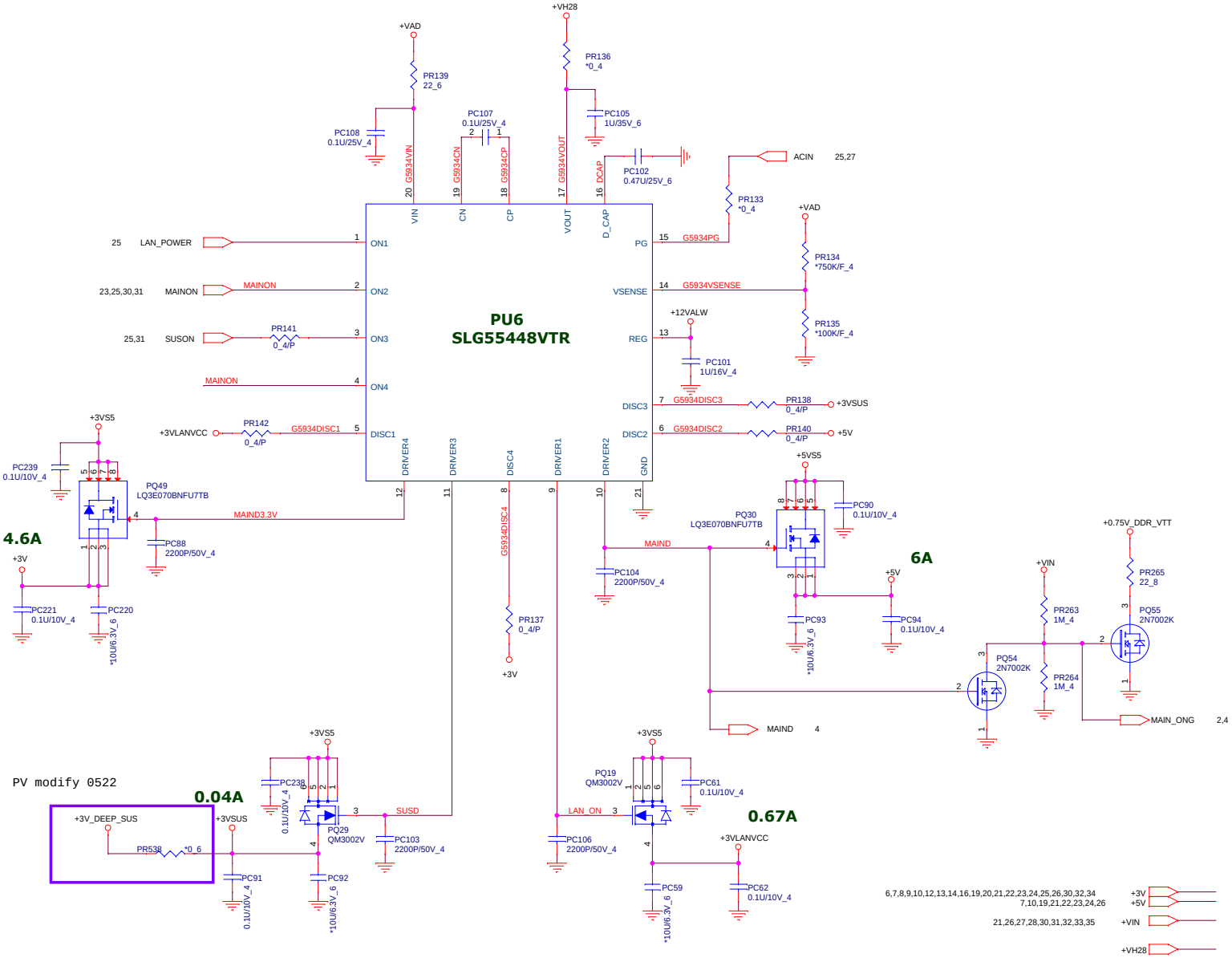

NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size: Custom	Document Number: Dis-charge IC (SLG55448V)	Rev: A
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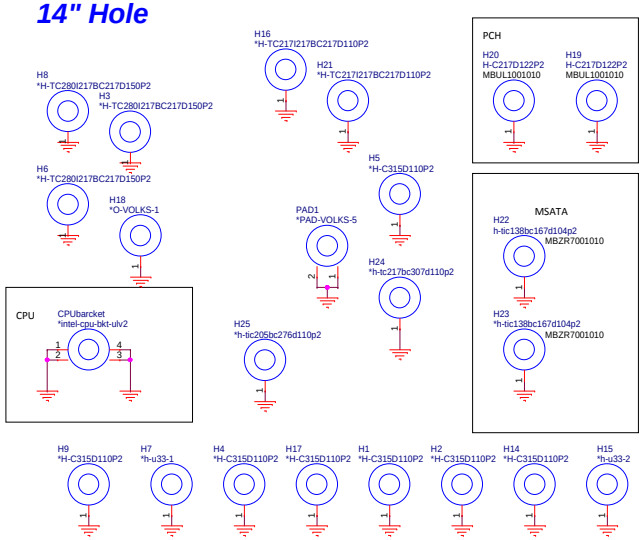
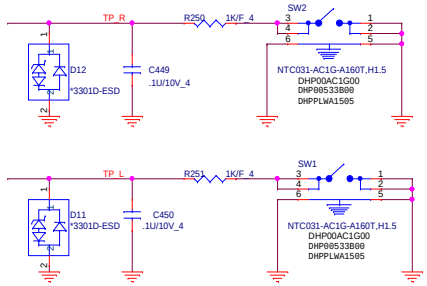
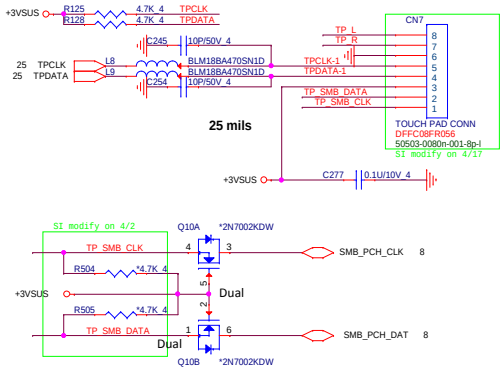
14" Hole

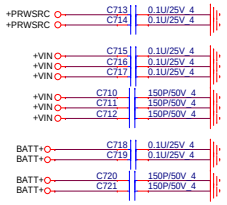




Touch Pad Connector



EMI CAP for 14"



PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
C	Hole	A
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NB5