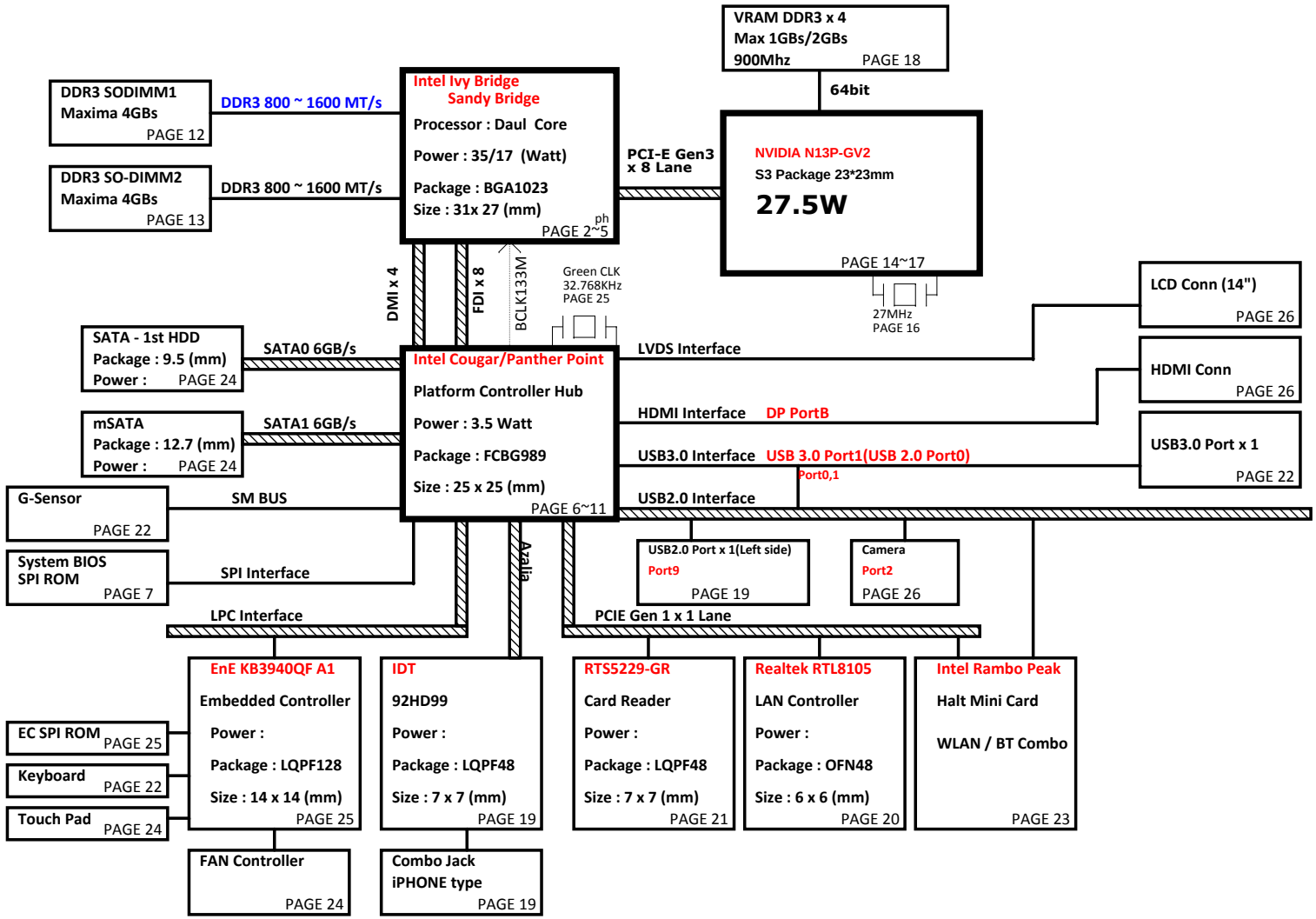
Volks DIS/UMA (14"/15.6") Ultra/Slim
Intel Chief River Platform Block Diagram



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

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
THERMAL
PWR MANAGEMENT
CLOCKS
DDR3 MISC
JTAG & BPM

IC,IVB_2CBGA,0P7

PEG x8

CPU RESET#

Placement close to EC.

SI modify on 4/2

Intel DG request

CPU XDP

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,

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.

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Processor 1/4 (Host/GPU)	1A

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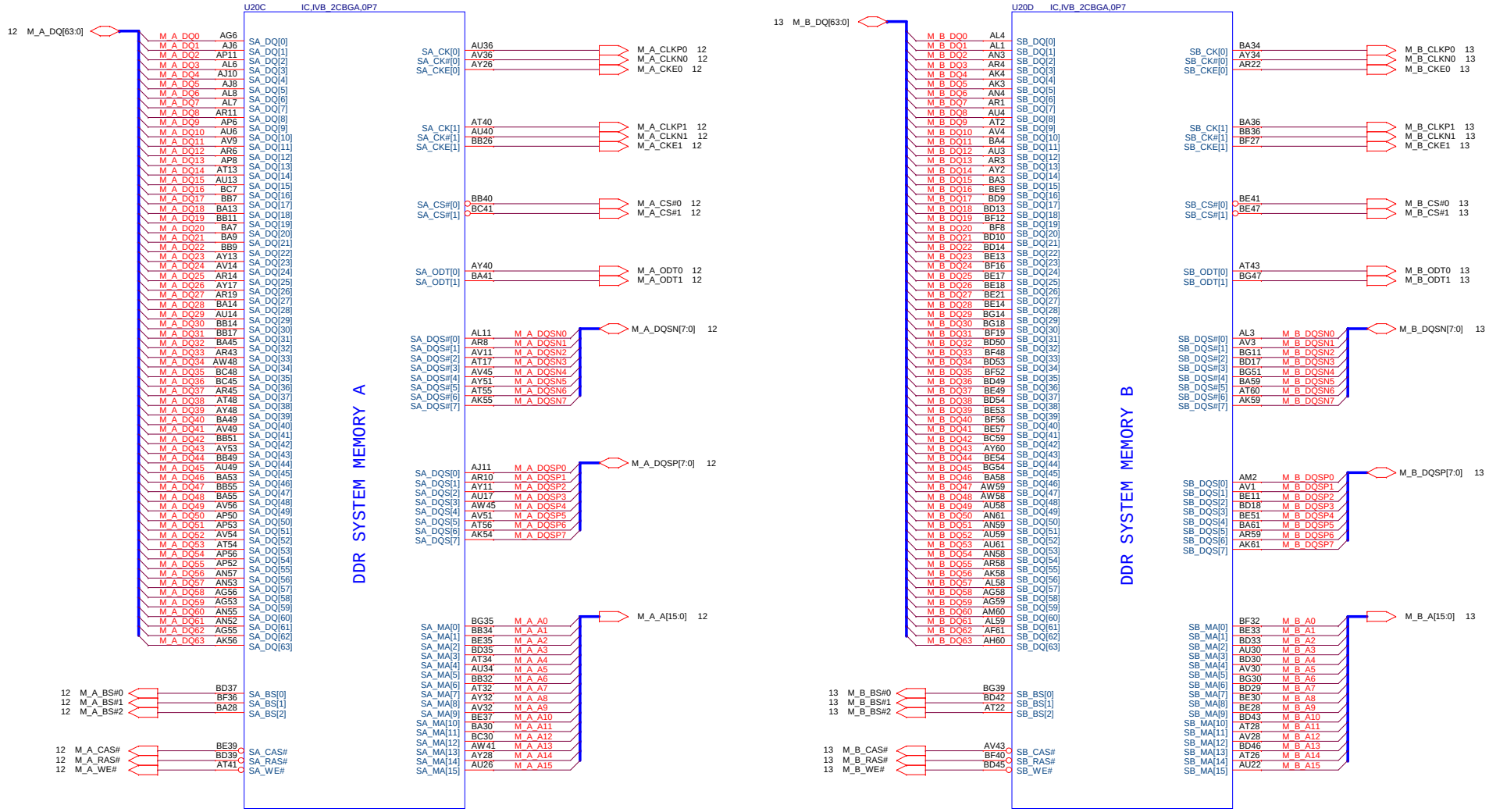
Ivy Bridge Processor (DDR3)



NB5

PROJECT : VOLKS

Quanta Computer Inc.

Size	Document Number	Rev
Custom	Processor 2/5 (DDR3 I/F)	1A

Date: Thursday, June 07, 2012 | Sheet 3 of 37

CAD Note: +VDDR_REF_CPU should have 10 mil trace width

+VDDR_REF_CPU and DDR_VTTREF must use 10mils width

IVB:8.5A

IVB: 5A

IVB: 1.5A

IVB: 6A

CPU center

CRB: 1uf*1

330uFx3pcs bulk BOT
22uFx14pcs cavity_BOT
2.2uFx16pcs BGA TOP

330uFx2pcs bulk BOT
22uFx12pcs cavity_BOT
1uFx12pcs BGA TOP

330uFx2pcs bulk BOT
22uFx10pcs cavity_BOT
2.2uFx13pcs BGA TOP

330uF x1, 10uF_8 x1, 1uF_4 x2

330uFx1, 10uFx4

20mils width

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

Zo impedance: 27.4ohm

Zo impedance: 27.4ohm

Zo:55 ohm

R close to CPU

CPU VDDQ

CORE SUPPLY

PEG IO AND DDR IO

GRAPHICS

DDR3 - 1.5V RAILS

VREF

QUIET RAILS

1.8V RAIL

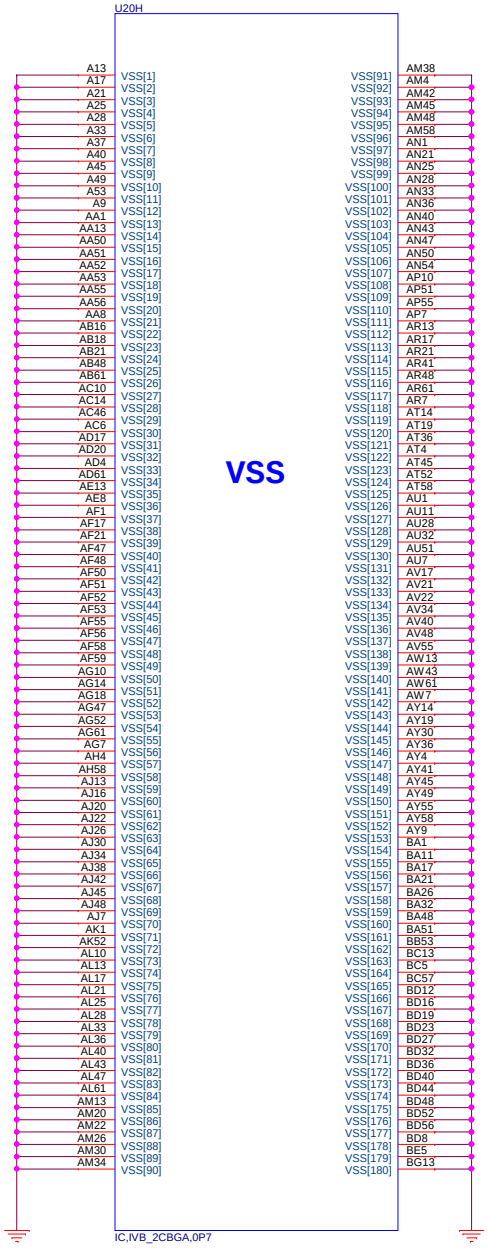
SA RAIL

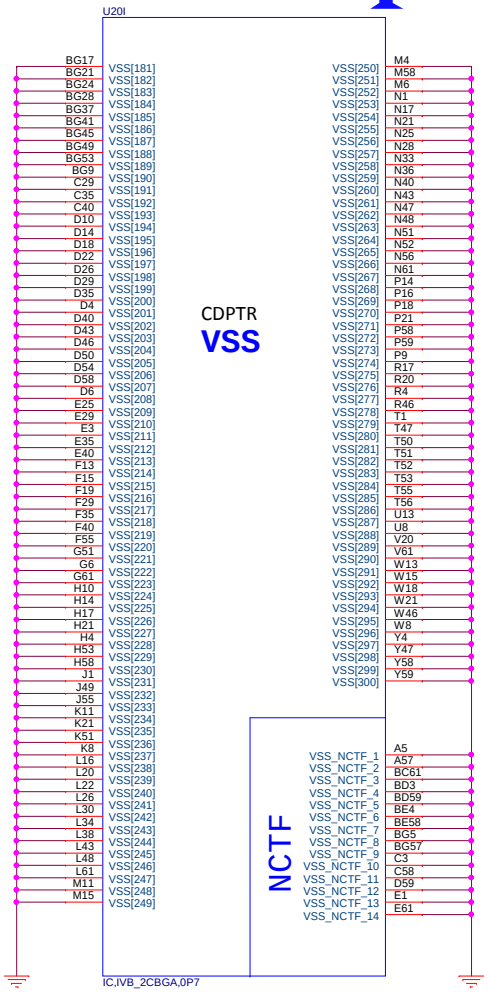
SENSE LINES

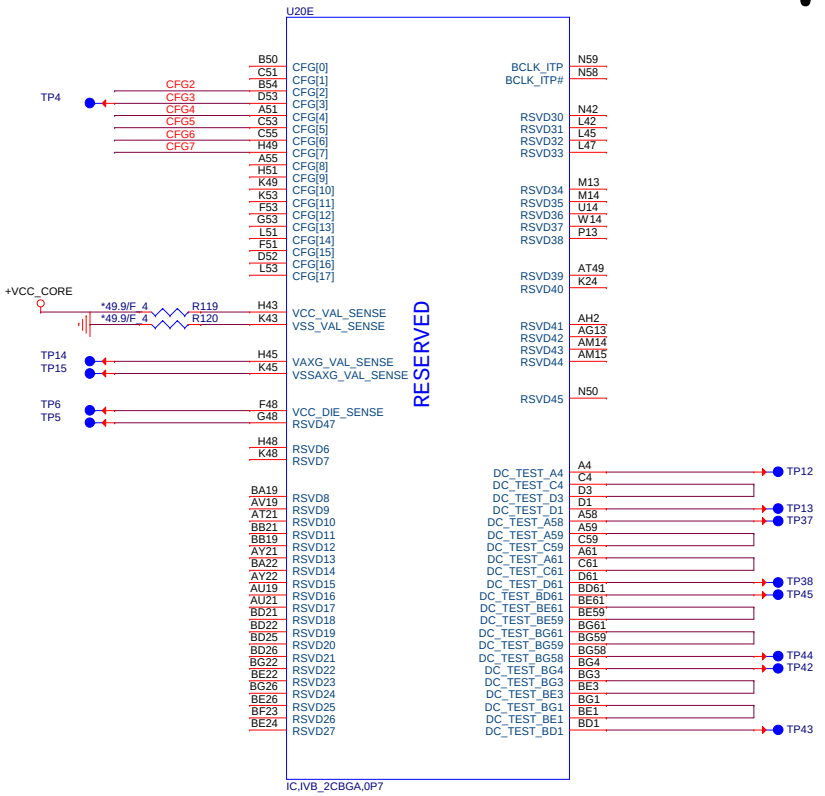
SVID

VCCSA VID lines

IC,IVB_2CBGA,0P7







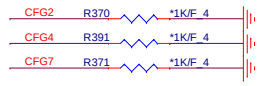
CFG[6:5] (PCIE Port Bifurcation Straps)

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

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

Cougar Point/Panther Point (LVDS,DDI)

U18C
CPT_PPT_Rev_0p7

DMI
DMI_RXN0 BC24 DMI0RXN
DMI_RXN1 BE20 DMI1RXN
DMI_RXN2 BG18 DMI2RXN
DMI_RXN3 BG20 DMI3RXN
DMI_RXP0 BE24 DMI0RXP
DMI_RXP1 BC20 DMI1RXP
DMI_RXP2 BJ18 DMI2RXP
DMI_RXP3 BJ20 DMI3RXP
DMI_TXN0 AW24 DMI0TXN
DMI_TXN1 AW20 DMI1TXN
DMI_TXN2 BB18 DMI2TXN
DMI_TXN3 AV18 DMI3TXN
DMI_TXP0 AY24 DMI0TXP
DMI_TXP1 AY20 DMI1TXP
DMI_TXP2 AY18 DMI2TXP
DMI_TXP3 AU18 DMI3TXP
BJ24 DMI_ZCOMP
+1.05V R399 49.9/F_4 DMI_COMP BG25 DMI_IRCOMP
R401 750/F_4 DMI_RBIAS BH21 DMI2RBIAS

FDI
FDI_RXN0 BJ14 FDI_TXN0 2 → FDI_TXN0
FDI_RXN1 AY14 FDI_TXN1 2 → FDI_TXN1
FDI_RXN2 BE14 FDI_TXN2 2 → FDI_TXN2
FDI_RXN3 BH13 FDI_TXN3 2 → FDI_TXN3
FDI_RXN4 BC12 FDI_TXN4 2 → FDI_TXN4
FDI_RXN5 BJ12 FDI_TXN5 2 → FDI_TXN5
FDI_RXN6 BG10 FDI_TXN6 2 → FDI_TXN6
FDI_RXN7 BG9 FDI_TXN7 2 → FDI_TXN7
FDI_RXP0 BG14 FDI_TXP0 2 → FDI_TXP0
FDI_RXP1 BB14 FDI_TXP1 2 → FDI_TXP1
FDI_RXP2 BF14 FDI_TXP2 2 → FDI_TXP2
FDI_RXP3 BG13 FDI_TXP3 2 → FDI_TXP3
FDI_RXP4 BE12 FDI_TXP4 2 → FDI_TXP4
FDI_RXP5 BG12 FDI_TXP5 2 → FDI_TXP5
FDI_RXP6 BJ10 FDI_TXP6 2 → FDI_TXP6
FDI_RXP7 BH9 FDI_TXP7 2 → FDI_TXP7
FDI_INT AW16 → FDI_INT 2
FDI_FSYNC0 AV12 → FDI_FSYNC0 2
FDI_FSYNC1 BC10 → FDI_FSYNC1 2
FDI_LSYNC0 AV14 → FDI_LSYNC0 2
FDI_LSYNC1 BB10 → FDI_LSYNC1 2

System Power Management

for DS3
SUSWARN# R536 0_4 SUS_PWR_ACK
25 SUSACK#_EC R521 *0_4 SUS_PWR_ACK C12 SUSACK#
2 XDP_DBRST# XDP_DBRST# K3 SYS_RESET#
C323 *1U/6.3V_4
IMVP_PWRGD P12 SYS_PWROK
21,25 EC_PWROK EC_PWROK L22 PWROK
EC_PWROK L10 APWROK
2 PM_DRAM_PWRGD B13 DRAMPWROK
for DS3
25 RSMRST# RSMRST# C21 RSMRST#
(+3VS5)
25 SUSWARN#_EC R522 0_4 SUSWARN# K16 SUSWARN#/SUSPWRDNACK/GPIO30
25 DNBSWON# DNBSWON# E20 PWRBTN#
(DSW)
25 AC_PRESENT_EC R523 *0_4 AC_PRESENT_R H20 ACPRESENT / GPIO31
(+3VS5)
for DS3
PM_BATLOW# E10 BATLOW# / GPIO72
PM_RI# A10 RI#

DSWVRMEN A18 DSWVREN
for DS3
DPWROK E22 DPWROK R535 *0_4 DPWROK_EC R534 0_4 RSMRST# DPWROK_EC 25
WAKE# B9 PCIE_WAKE# PCIE_WAKE# 20,23,25
(+3V)
CLKRUN# / GPIO32 N3 CLKRUN# CLKRUN# 25
(+3VS5)
SUS_STAT# / GPIO61 G8 SUS_SATA# TP21
(+3VS5)
SUSCLK / GPIO62 N14 PCH_SUSCLK_L R151 *0_4/S PCH_SUSCLK 25
TP25
(+3VS5)
SLP_S5# / GPIO63 D10 SLP_S5 25
SLP_S4# H4 SUSC# 25
SLP_S3# F4 SUSB# 25
SLP_A# G10 TP23
for DS3
SLP_SUS# G16 SLP_SUS# R524 *0_4 SLP_SUS#_EC SLP_SUS#_EC 25
PMSYNCH AP14 PM_SYNC 2
(+3VS5)
SLP_LAN# / GPIO29 K14 SLP_LAN#

7,8,9,10,12,13,14,16,19,20,21,22,23,24,25,26,30,32,34,36 +3V
10,23,28,30,33,36 +3VS5
2,4,7,8,10,21,23,30,33,34 +1.05V
7,21,22,23,24,25,26,27,28 +3VPCU
7,10,23 +3V_RTC

U18D
CPT_PPT_Rev_0p7

LVDS
26 PCH_LVDS_BLON J47 L_BKLTEN
26 PCH_DISP_ON M45 L_VDD_EN
26 PCH_DPST_PWM P45 L_BKLTCTL
26 PCH_EDIDCLK PCH_EDIDCLK T40 L_DDC_CLK
26 PCH_EDIDDATA PCH_EDIDDATA K47 L_DDC_DATA
+3V R98 2.2K_4 CTRL_CLK T45 L_CTRL_CLK
R101 2.2K_4 CTRL_DATA P39 L_CTRL_DATA
R103 2.37K/F_4 LVD_IBG AF37 LVD_IBG
TP11 AF36 LVD_VBG
AE48 LVD_VREFH
AE47 LVD_VREFL
26 PCH_LA_CLK# PCH_LA_CLK# AK39 LVDSA_CLK#
26 PCH_LA_CLK PCH_LA_CLK AK40 LVDSA_CLK
26 PCH_LA_DATAN0 PCH_LA_DATAN0 AN48 LVDSA_DATA#0
26 PCH_LA_DATAN1 PCH_LA_DATAN1 AM47 LVDSA_DATA#1
26 PCH_LA_DATAN2 PCH_LA_DATAN2 AK47 LVDSA_DATA#2
AJ48 LVDSA_DATA#3
26 PCH_LA_DATAP0 PCH_LA_DATAP0 AN47 LVDSA_DATA0
26 PCH_LA_DATAP1 PCH_LA_DATAP1 AM49 LVDSA_DATA1
26 PCH_LA_DATAP2 PCH_LA_DATAP2 AK49 LVDSA_DATA2
AJ47 LVDSA_DATA3
AF40 LVDSB_CLK#
AF39 LVDSB_CLK
AH45 LVDSB_DATA#0
AH47 LVDSB_DATA#1
AF49 LVDSB_DATA#2
AF45 LVDSB_DATA#3
AH43 LVDSB_DATA0
AH49 LVDSB_DATA1
AF47 LVDSB_DATA2
AF43 LVDSB_DATA3

CRT
N48 CRT_BLUE
P49 CRT_GREEN
T49 CRT_RED
T39 CRT_DDC_CLK
M40 CRT_DDC_DATA
M47 CRT_HSYNC
M49 CRT_VSYNC
DAC_IREF T43 DAC_IREF
T42 CRT_IRTN
R100 1K/F_4

Digital Display Interface
SDVO_TVCLKINN AP43
SDVO_TVCLKINP AP45
SDVO_STALLN AM42
SDVO_STALLP AM40
SDVO_INTN AP39
SDVO_INTP AP40
SDVO_CTRLCLK P38 SDVO_CLK → SDVO_CLK 26
SDVO_CTRLDATA M39 SDVO_DATA → SDVO_DATA 26
DDPB_AUXN AT49
DDPB_AUXP AT47
DDPB_HPD AT40 HDMI_HPD_CON → HDMI_HPD_CON 26
DDPB_0N AV42 IN_D2# → IN_D2# 26
DDPB_0P AV40 IN_D2 → IN_D2 26
DDPB_1N AV45 IN_D1# → IN_D1# 26
DDPB_1P AV46 IN_D1 → IN_D1 26
DDPB_2N AU48 IN_D0# → IN_D0# 26
DDPB_2P AU47 IN_D0 → IN_D0 26
DDPB_3N AV47 IN_CLK# → IN_CLK# 26
DDPB_3P AV49 IN_CLK → IN_CLK 26
INT_HDMI
DDPC_CTRLCLK P46
DDPC_CTRLDATA P42
DDPC_AUXN AP47
DDPC_AUXP AP49
DDPC_HPD AT38
DDPC_0N AY47
DDPC_0P AY49
DDPC_1N AY43
DDPC_1P AY45
DDPC_2N BA47
DDPC_2P BA48
DDPC_3N BB47
DDPC_3P BB49
DDPD_CTRLCLK M43
DDPD_CTRLDATA M36
DDPD_AUXN AT45
DDPD_AUXP AT43
DDPD_HPD BH41
DDPD_0N BB43
DDPD_0P BB45
DDPD_1N BF44
DDPD_1P BE44
DDPD_2N BF42
DDPD_2P BE42
DDPD_3N BJ42
DDPD_3P BG42

PCH Pull-high/low(CLG)

for DS3 +3V_DEEP_SUS
PM_RI# R411 10K/F_4
PM_BATLOW# R155 8.2K_4 INTEL DG
PCIE_WAKE# R412 10K/F_4
SLP_LAN# R142 *10K/F_4
SUSWARN# R528 *10K/F_4
SUS_PWR_ACK R404 *10K/F_4
+3VS5
AC_PRESENT_R R126 10K/F_4
+3V
CLKRUN# R421 8.2K_4
XDP_DBRST# R435 1K/F_4
R436 *1K/F_4 INTEL DG
RSMRST# R123 10K/F_4
IMVP_PWRGD R170 *100K/F_4

for DS3

+3VS5 +3V_DEEP_SUS
R525 0_6
R527 0_6
C702 *1U/6.3V_4
U25
5 IN OUT 1
4 IN GND 2
25 SLP_SUS#_OFF SLP_SUS#_OFF 3 ON/OFF
*IC(5P) G5243AT11U
C704 *0.1U/10V_4
R530 *100K/F_4

+5VS5 +5V_DEEP_SUS
R526 0_4
C701 *1U/6.3V_4
U26
5 IN OUT 1
4 IN GND 2
SLP_SUS#_OFF 3 ON/OFF
*IC(5P) G5243AT11U
C703 *0.1U/10V_4
R529 *100K/F_4

System PWR_OK(CLG)

+3V_RTC R131 330K_4 DSWVREN
IMVP_PWRGD → IMVP_PWRGD 34
EC_PWROK
R165 100K/F_4

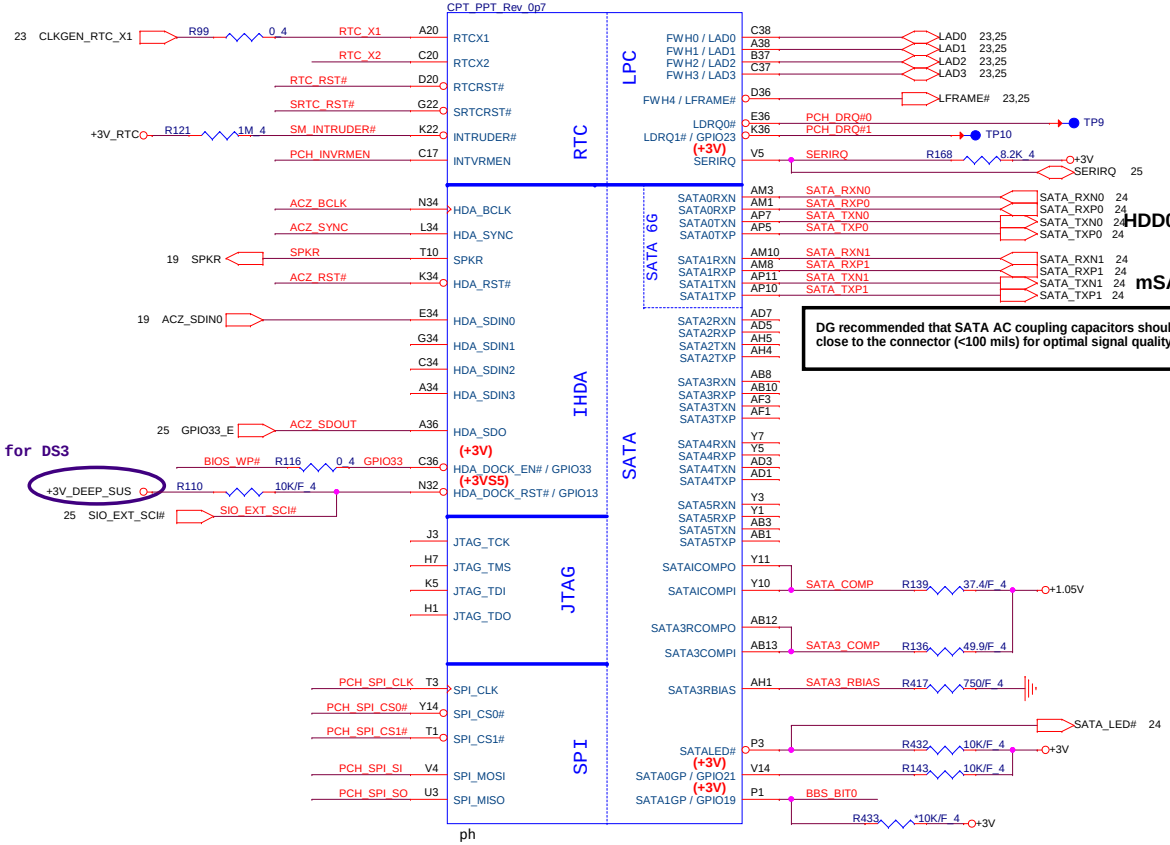
On Die DSW VR Enable
High = Enable (Default)
Low = Disable

NB5

PROJECT : VOLKS
Quanta Computer Inc.

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

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



HDD0 (SATA3 6.0Gb/s)

mSATA (SATA4 3Gb/s)

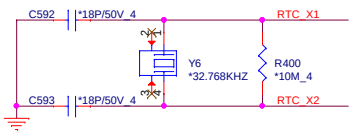
DG recommended that SATA AC coupling capacitors should be close to the connector (<100 mils) for optimal signal quality.

ph

PCH Strap Table

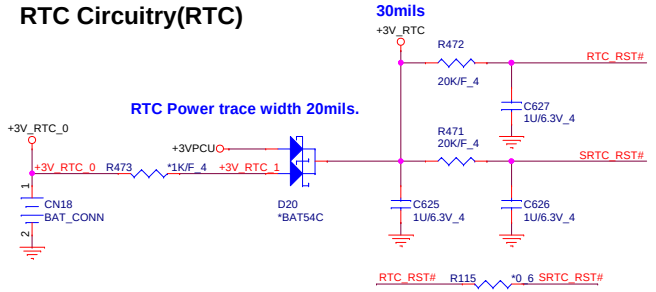
Pin Name	Strap description	Sampled	Configuration	Circuit
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	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	GNT1# 1 0 / GNT0# 1 0 / Boot Location SPI 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		
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 1.8V (weak pull-down) 1 = Support by 1.5V	for DS3
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 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

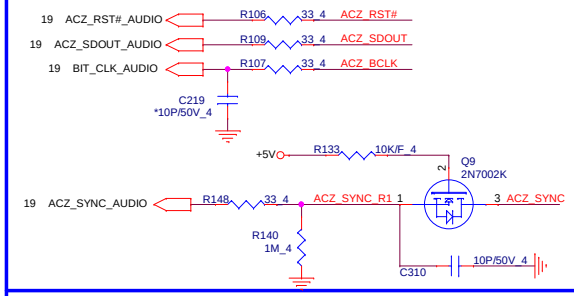


no stuff If use green Clock

RTC Circuitry(RTC)

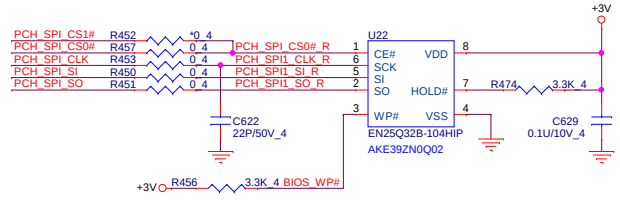


HDA Bus(CLG)



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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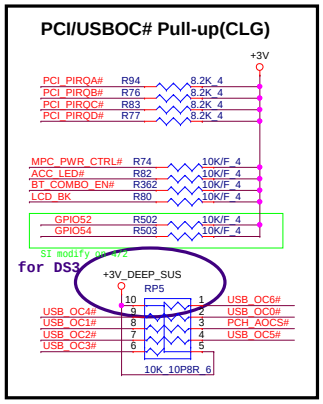
07

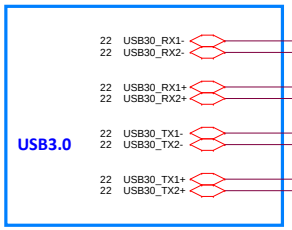
Cougar Point-M/Panther Point (PCI,USB,RTC,LPC)

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

PCI/USBOC# Pull-up(CLG)

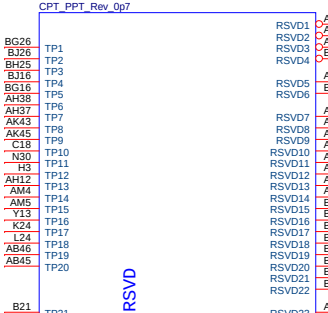


USB3.0

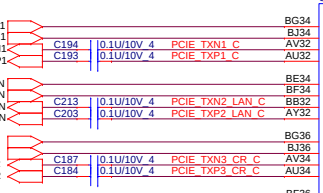


20111130 Modify USB3.0 for HM70

RSVD



WLAN / LAN / Cardreader

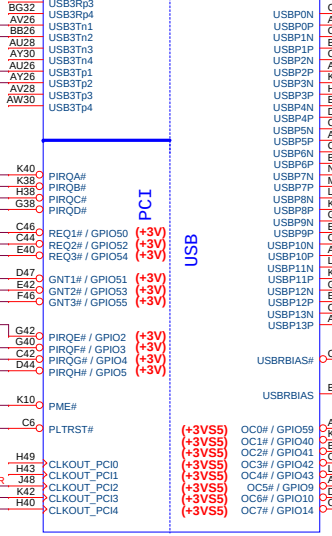


MPC Switch Control

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

MPC_PWR_CTRL# R75 *1K/F_4

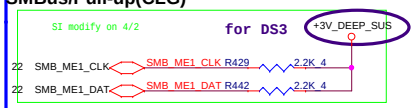
USB



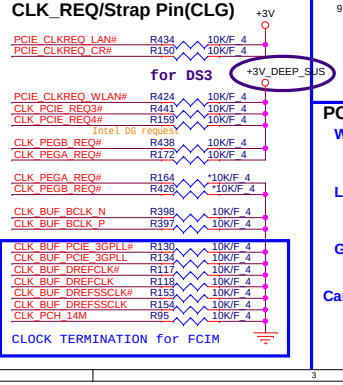
USB2.0 USB2.0/USB3.0 COMBO 1st
USB2.0 USB2.0/USB3.0 COMBO 2nd
Camera
USB2.0 Right
WLAN

PCI

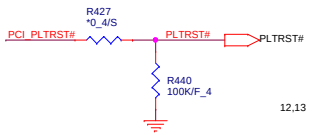
SMBus/Pull-up(CLG)

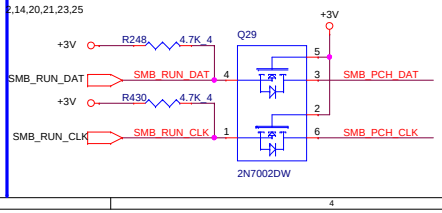


CLK_REQ/Strap Pin(CLG)

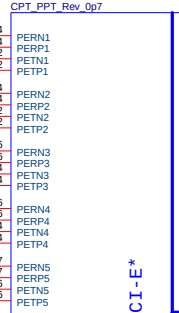


PLTRST#(CLG)

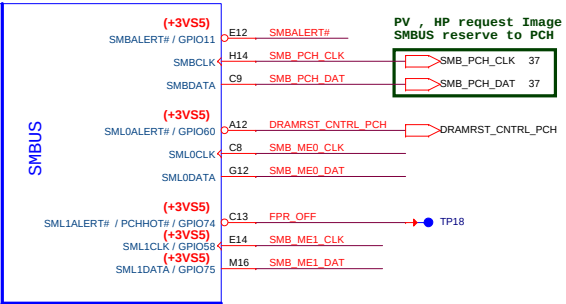




PCI-E*

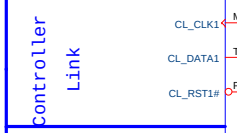


SMBUS

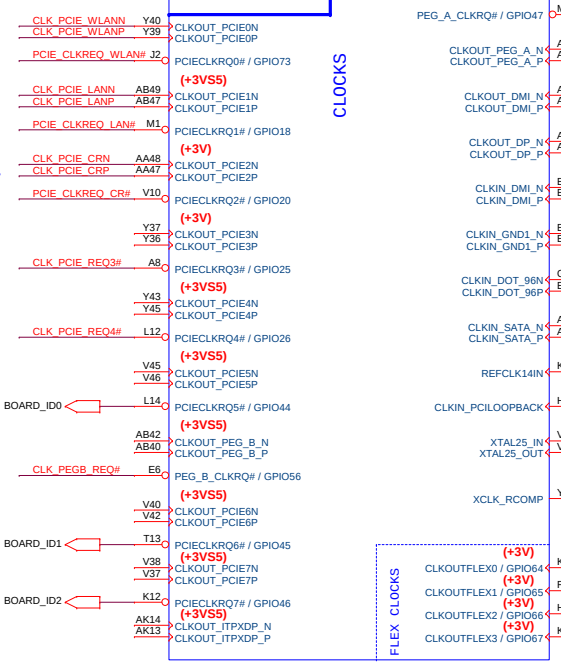


PV , HP request Image sensor SMBUS reserve to PCH

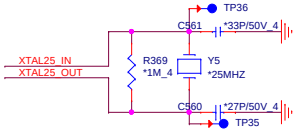
Controller Link



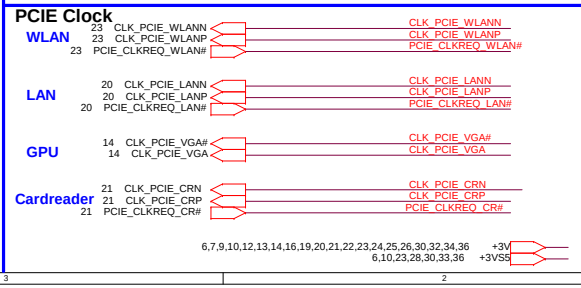
CLOCKS



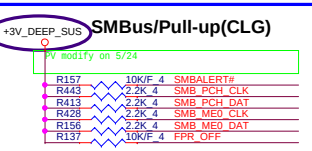
FLEX CLOCKS



PCIE Clock



SMBus/Pull-up(CLG)



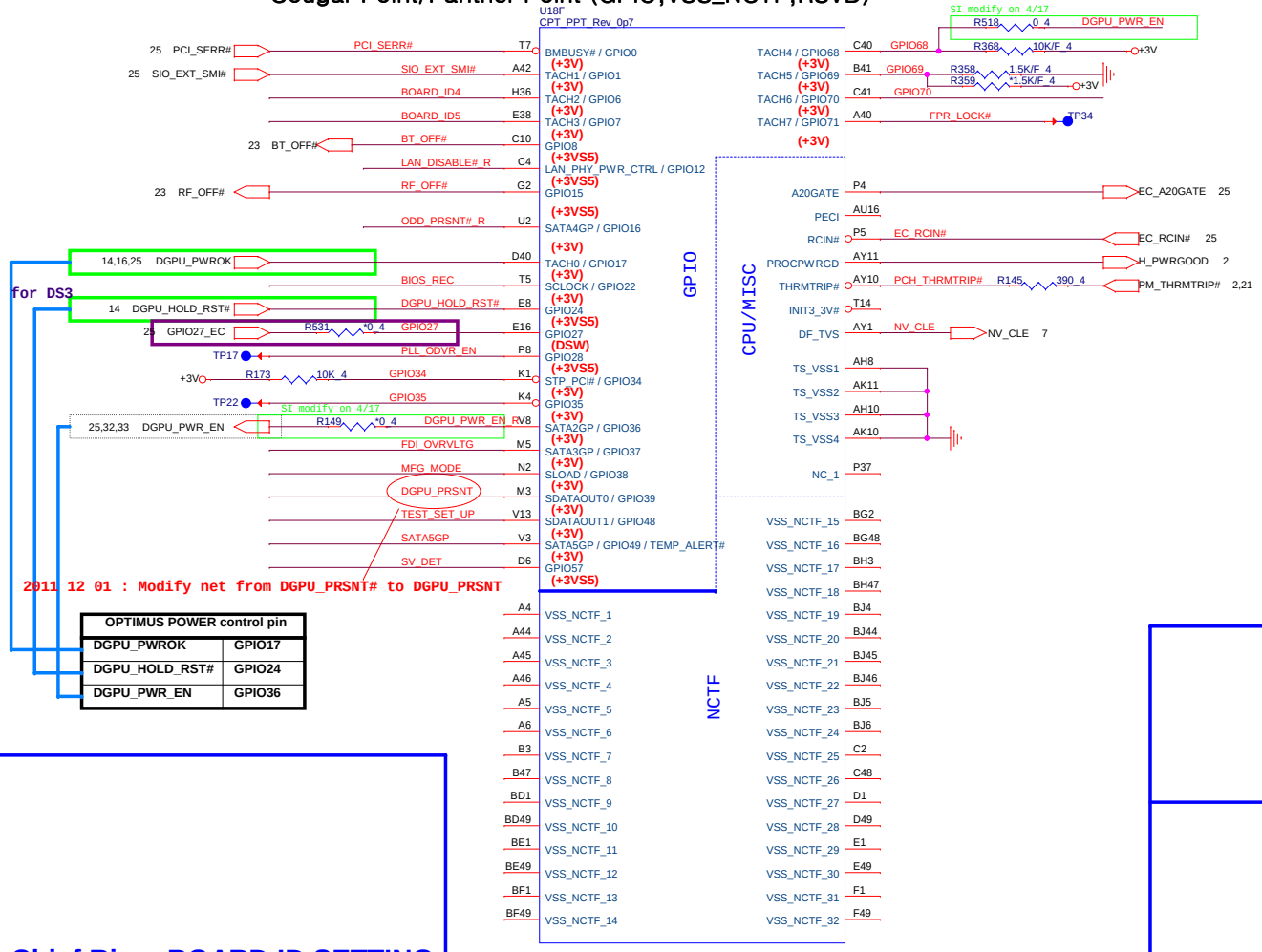
NB5

PROJECT : VOLKS

Quanta Computer Inc.

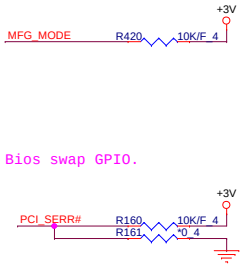
Size	Document Number	Rev
Custom	PCH 3/6 (Clock/PCI/PCIE/USB)	1A
Date: Thursday, June 07, 2012	Sheet 8 of 37	

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

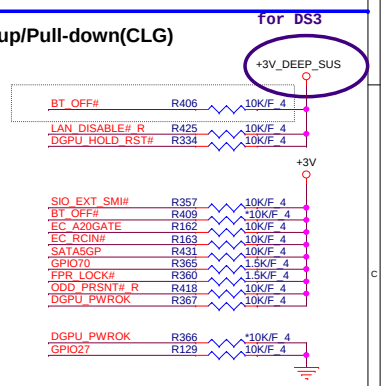


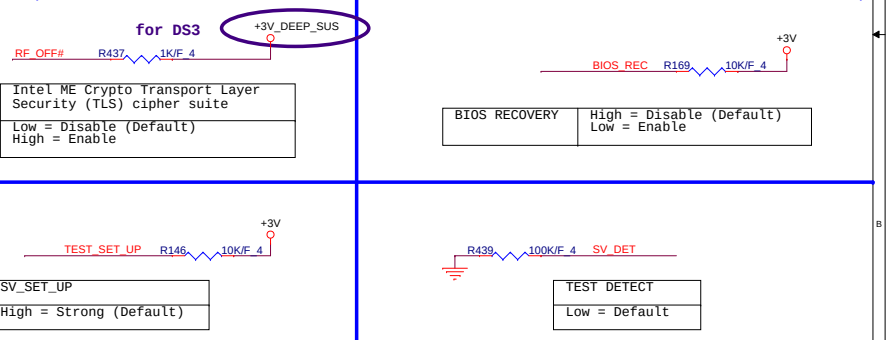
OPTIMUS POWER control pin	
DGPU_PWROK	GPIO17
DGPU_HOLD_RST#	GPIO24
DGPU_PWR_EN	GPIO36

MFG-TEST



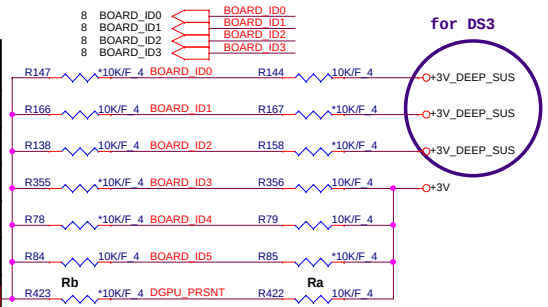
GPIO Pull-up/Pull-down(CLG)





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

PROJECT : VOLKS
Quanta Computer Inc.

NB5

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

Cougar Point/Panther Point (POWER)

U18J CPT_PPT_Rev_0p7 POWER

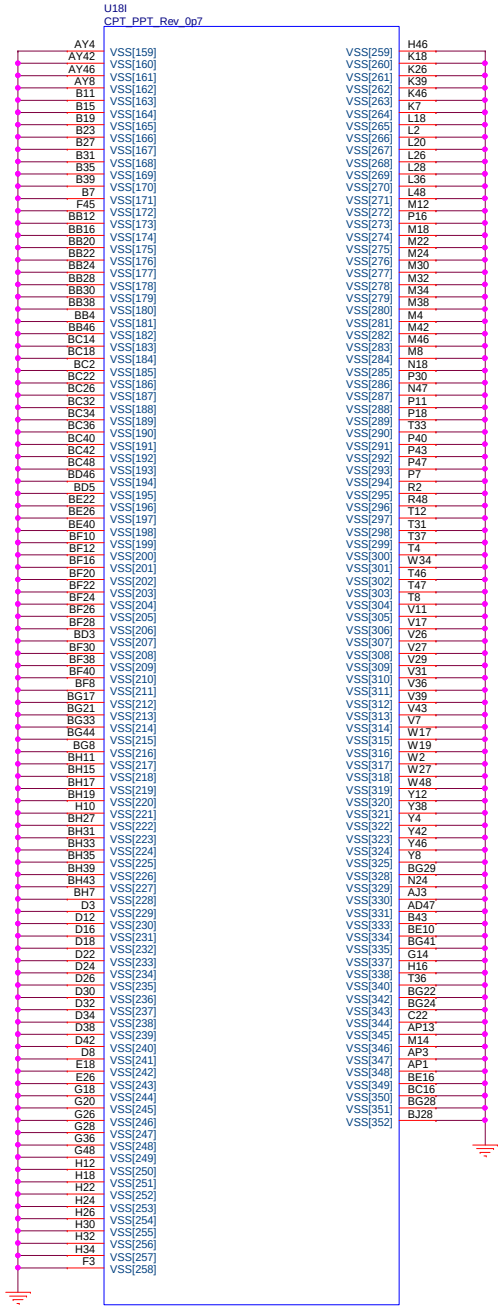
Clock and Miscellaneous | USB | PCI/GPIO/LPC | SATA | MISC | CPU | RTC | HDA

U18G CPT_PPT_Rev_0p7 POWER

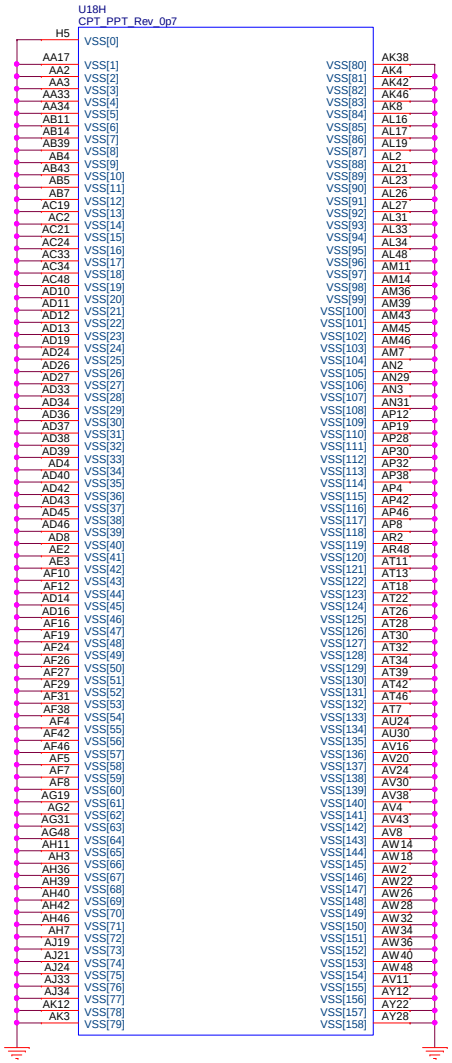
VCC CORE | CRT | LVDS | HVCMOS | DMI | VCCIO | DFT / SPI | FDI

PROJECT : VOLKS
Quanta Computer Inc.
NB5
Size: Custom | Document Number: PCH 5/6 (Power) | Rev: 1A
Date: Thursday, June 07, 2012 | Sheet 10 of 37

Cougar Point/Panther Point (GND)



Cougar Point/Panther Point (GND)



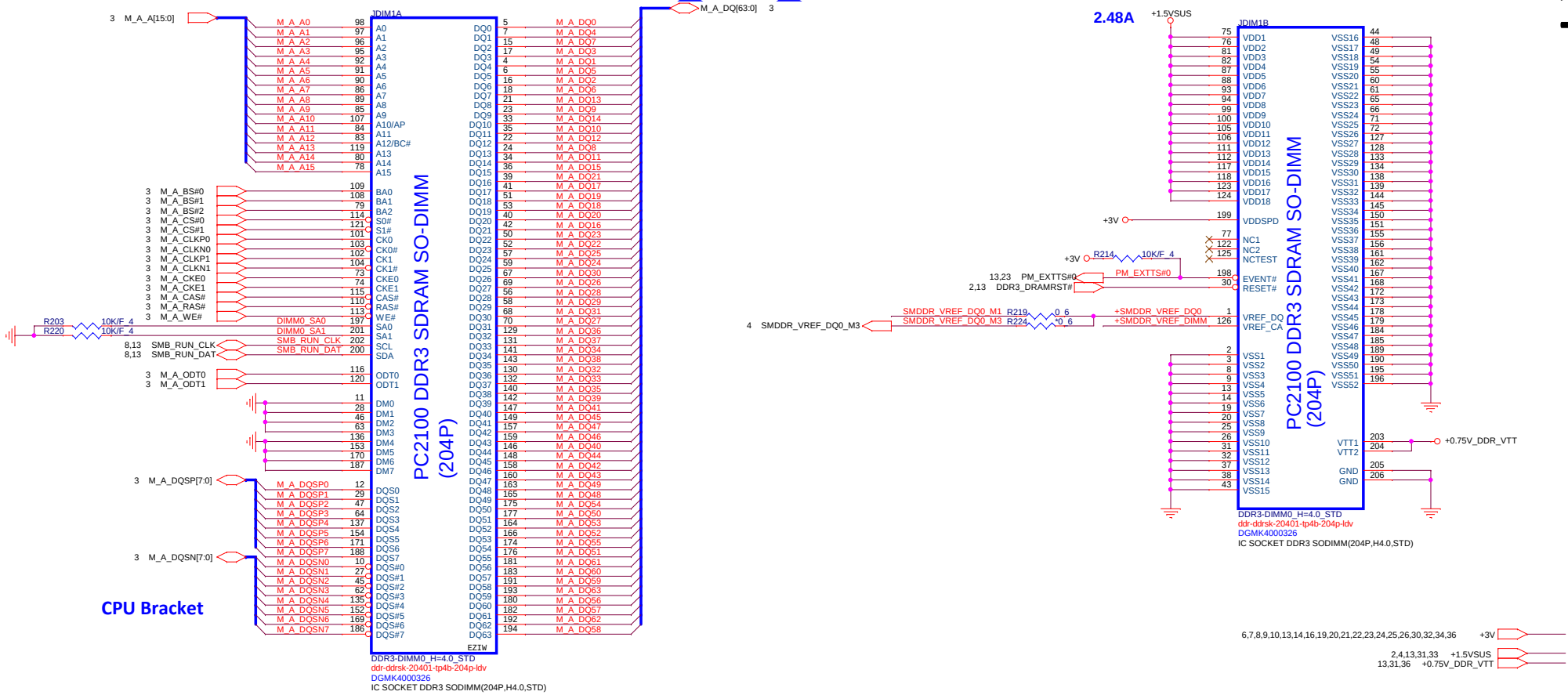
PROJECT : VOLKS

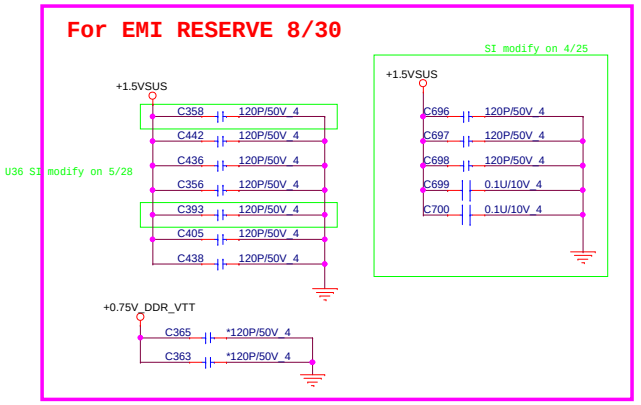
Quanta Computer Inc.

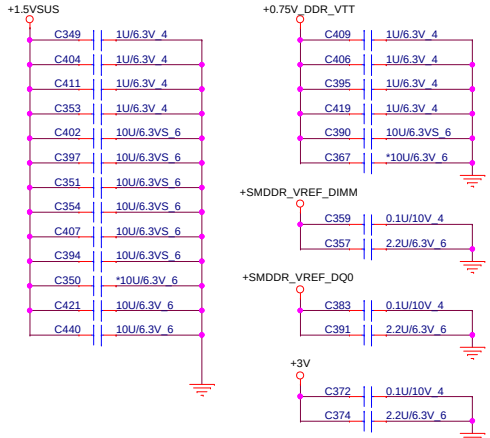
NB5

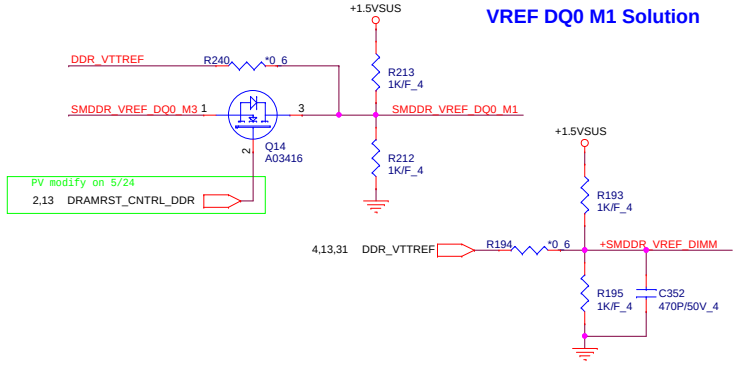
Size	Document Number	Rev
Custom	PCH 6/6 (Ground)	1A

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

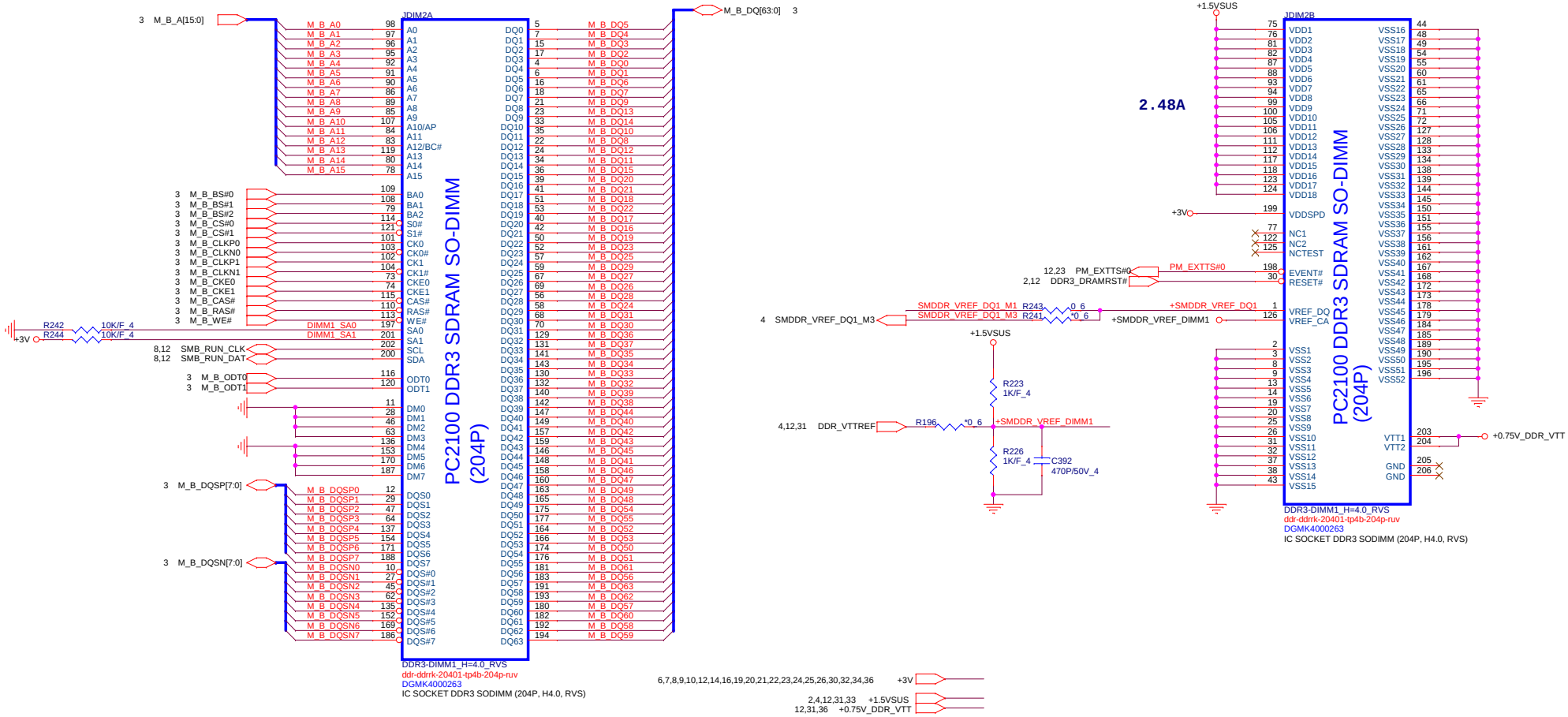




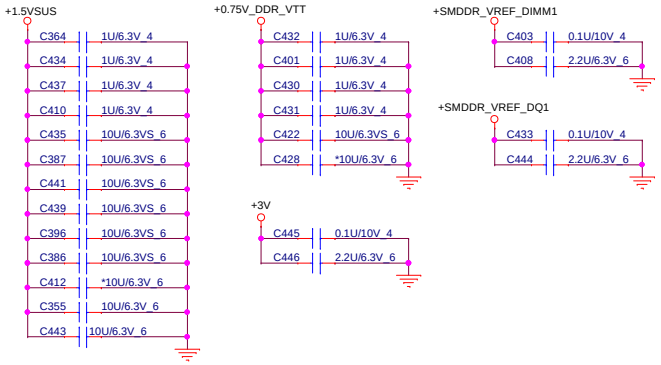




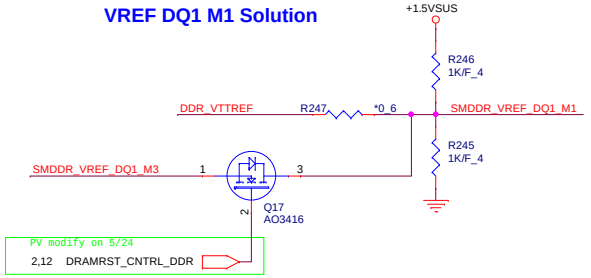
NB5	PROJECT : VOLKS Quanta Computer Inc.		
Size Custom	Document Number System Memory 1/2 (5.2H)		Rev 1A
Date: Thursday, June 07, 2012		Sheet 12of	37



Place these Caps near So-Dimm1.



VREF DQ1 M1 Solution



PROJECT : VOLKS

Quanta Computer Inc.

Size	Document Number	Rev
Custom	System Memory 2/2 (9.2H)	1A
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NB5

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

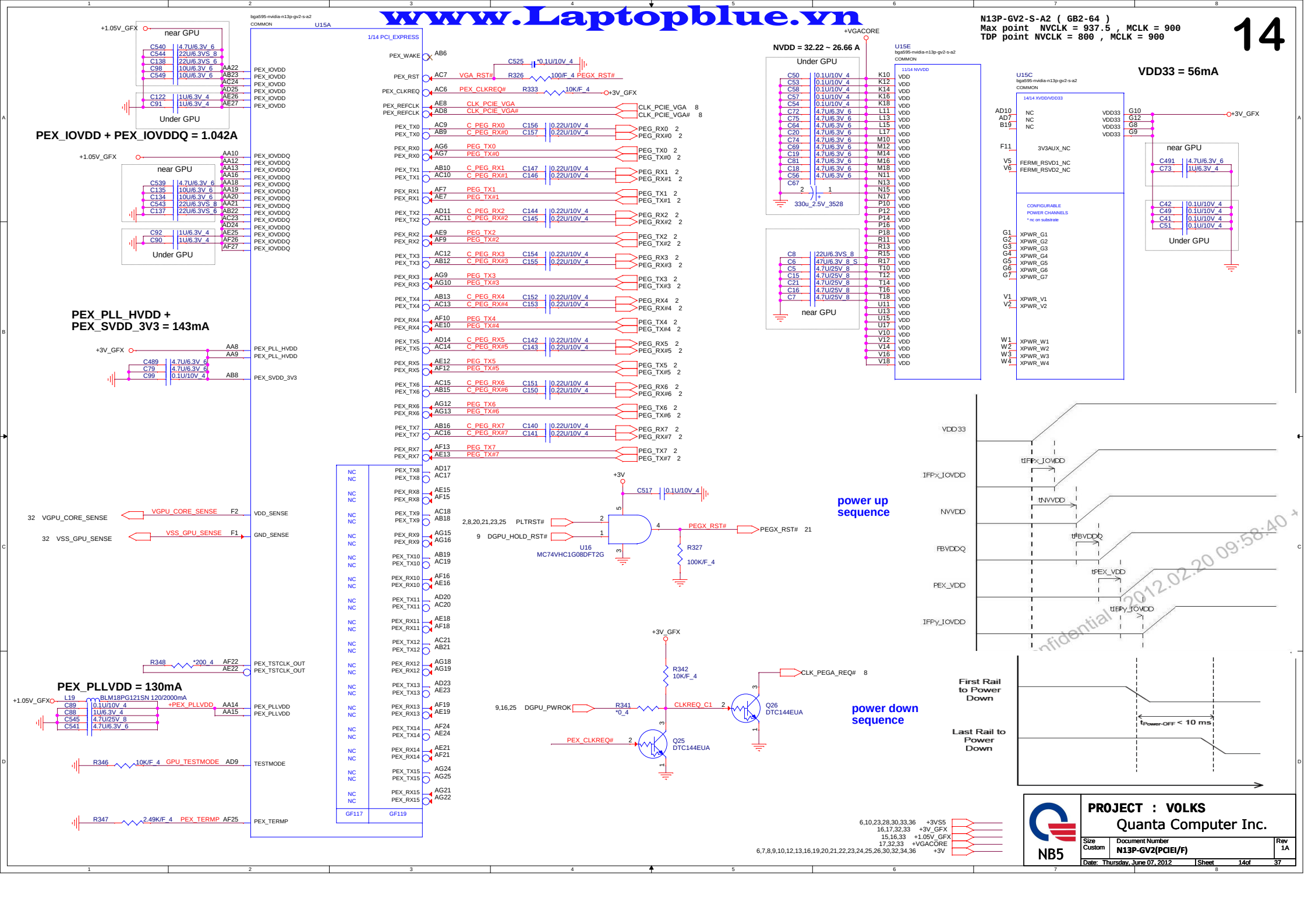
PEX_PLLVDD = 130mA

NVDD = 32.22 ~ 26.66 A

VDD33 = 56mA

power up sequence

power down sequence



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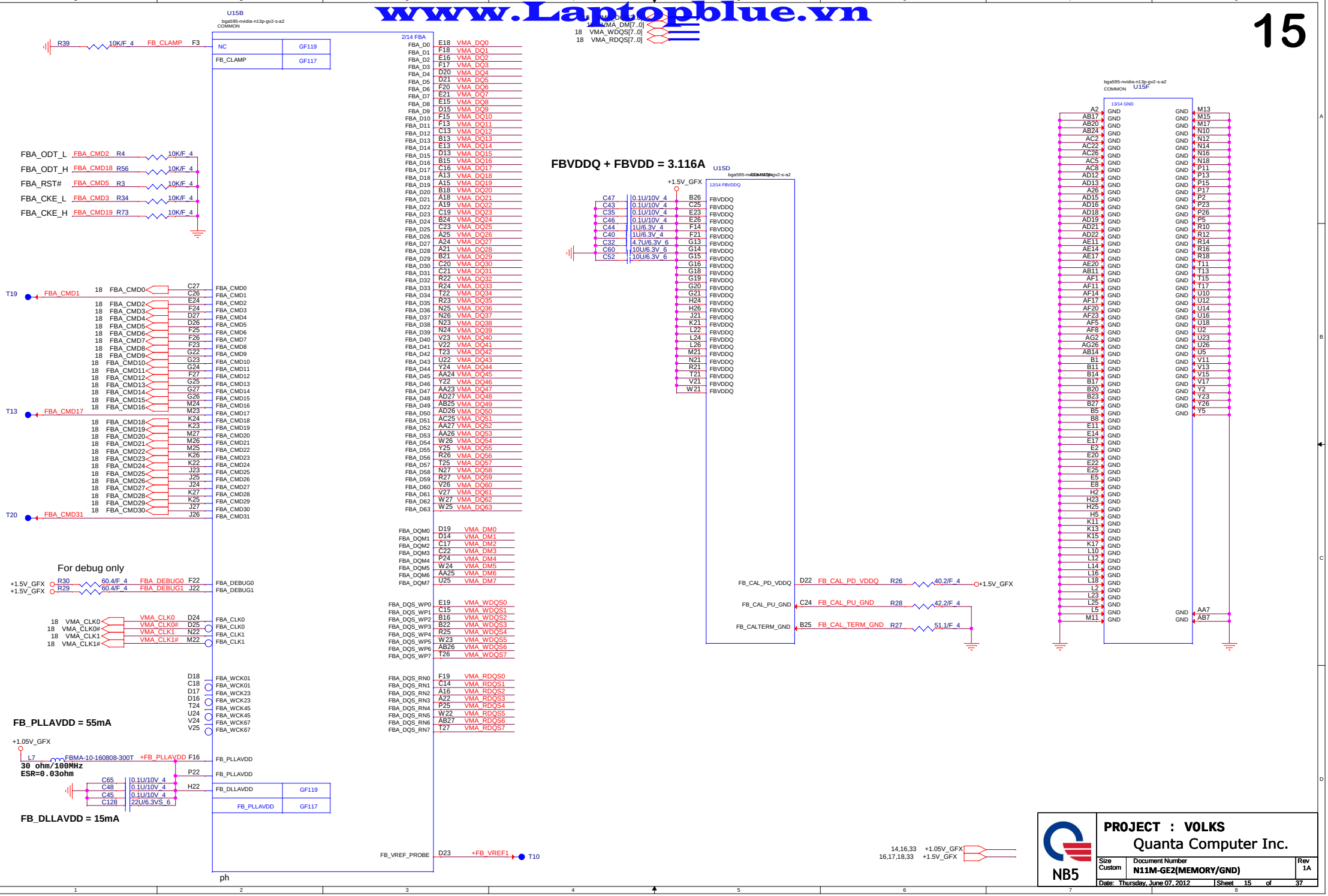


Optimus:
All unstuff , one Cap stuff 10K ohm

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

4/14 IFPAB

GF117	GF119		
NC	IFPA_TXC	AC4	
NC	IFPA_TXC	AC3	
NC	IFPA_TXD0	Y3	
NC	IFPA_TXD0	Y4	
NC	IFPA_TXD1	AA2	
NC	IFPA_TXD1	AA3	
NC	IFPA_TXD2	AA1	
NC	IFPA_TXD2	AB1	
NC	IFPA_TXD3	AA5	
NC	IFPA_TXD3	AA4	
NC	IFPB_TXC	AB4	
NC	IFPB_TXC	AB5	
NC	IFPB_TXD4	AB2	
NC	IFPB_TXD4	AB3	
NC	IFPB_TXD5	AD2	
NC	IFPB_TXD5	AD3	
NC	IFPB_TXD6	AD1	
NC	IFPB_TXD6	AE1	
NC	IFPB_TXD7	AD5	
NC	IFPB_TXD7	AD4	
NC	GPIO14	B3	

GF119	GF117	
IFPAB_RSET	NC	
IFPAB_PLLVDD	NC	
IFPAB_PLLVDD	NC	

T16 — AA6 — IFPAB_RSET
R319 10K/F_4 +IFPAB_PLLVDD — V7 — IFPAB_PLLVDD
W7 — IFPAB_PLLVDD

GF119	GF117
IFPA_IOVDD	NC
IFPB_IOVDD	NC

R321 10K/F_4 +IFPAB_IOVDD — W6 — IFPA_IOVDD
Y6 — IFPB_IOVDD

IFPAB

6/14 IFPD

GF119	GF117
IFPD_RSET	NC
IFPD_PLLVDD	NC
IFPD_PLLVDD	NC

T15 — U6 — IFPD_RSET
+IFPD_PLLVDD — T7 — IFPD_PLLVDD
R7 — IFPD_PLLVDD
R315 10K/F_4

GF117	GF119		
	DVI/HDMI	DP	
NC	I2CX_SDA	IFPD_AUX	P4
NC	I2CX_SCL	IFPD_AUX	P3
NC	TXC	IFPD_L3	R5
NC	TXC	IFPD_L3	R4
NC	TXD0	IFPD_L2	T5
NC	TXD0	IFPD_L2	T4
NC	TXD1	IFPD_L1	U4
NC	TXD1	IFPD_L1	U3
NC	TXD2	IFPD_L0	V4
NC	TXD2	IFPD_L0	V3
NC		GPIO17	D4

IFPD

+IFPD_IOVDD — R6 — IFPD_IOVDD
R318 10K/F_4

IFPD_IOVDD	GF119
NC	GF117

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

3/14 DACA

GF119	GF117
DACA_VDD	NC
DACA_VREF	TSEN_VREF
DACA_RSET	NC

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

GF117	GF119	
NC	I2CA_SCL	B7
NC	I2CA_SDA	A7
NC	DACA_HSYNC	AE3
NC	DACA_VSYNC	AE4
NC	DACA_RED	AG3
NC	DACA_GREEN	AF4
NC	DACA_BLUE	AF3

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

5/14 IFPC

GF119	GF117
IFPC_RSET	NC
IFPC_PLLVDD	NC
IFPC_PLLVDD	NC
IFPC_IOVDD	NC

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

IFPC

GF117	GF119		
	DVI/HDMI	DP	
NC	I2CW_SDA	IFPC_AUX	N5
NC	I2CW_SCL	IFPC_AUX	N4
NC	TXC	IFPC_L3	N3
NC	TXC	IFPC_L3	N2
NC	TXD0	IFPC_L2	R3
NC	TXD0	IFPC_L2	R2
NC	TXD1	IFPC_L1	R1
NC	TXD1	IFPC_L1	T1
NC	TXD2	IFPC_L0	T3
NC	TXD2	IFPC_L0	T2
NC		GPIO15	C3

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

7/14 IFPEF

GF119	GF117
IFPEF_PLLVDD	NC
IFPEF_PLLVDD	NC
IFPEF_RSET	NC

IFPE_PLLVDD — J7 — IFPEF_PLLVDD
K7 — IFPEF_PLLVDD
R310 10K/F_4 — T12 — K6 — IFPEF_RSET

GF117	GF119		
	DVI-DL	DVI-SL/HDMI	DP
NC	I2CY_SDA	I2CY_SDA	IFPE_AUX J3
NC	I2CY_SCL	I2CY_SCL	IFPE_AUX J2
NC	TXC	TXC	IFPE_L3 J1
NC	TXC	TXC	IFPE_L3 K1
NC	TXD0	TXD0	IFPE_L2 K3
NC	TXD0	TXD0	IFPE_L2 K2
NC	TXD1	TXD1	IFPE_L1 M3
NC	TXD1	TXD1	IFPE_L1 M2
NC	TXD2	TXD2	IFPE_L0 M1
NC	TXD2	TXD2	IFPE_L0 N1
NC	HPD_E	HPD_E	GPIO18 C2

IFPE

GF119	GF117
IFPE_IOVDD	NC
IFPF_IOVDD	NC

+IFPE_IOVDD — H6 — IFPE_IOVDD
R313 10K/F_4 — J6 — IFPF_IOVDD

GF117	GF119		
	DVI-DL	DVI-SL/HDMI	DP
NC		I2CZ_SDA	IFPF_AUX H4
NC		I2CZ_SCL	IFPF_AUX H3
NC		TXC	IFPF_L3 J5
NC		TXC	IFPF_L3 J4
NC	TXD3	TXD0	IFPF_L2 K5
NC	TXD3	TXD0	IFPF_L2 K4
NC	TXD4	TXD1	IFPF_L1 L4
NC	TXD4	TXD1	IFPF_L1 L3
NC	TXD5	TXD2	IFPF_L0 M5
NC	TXD5	TXD2	IFPF_L0 M4
NC		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

GF119	GF117
NC	GF117

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

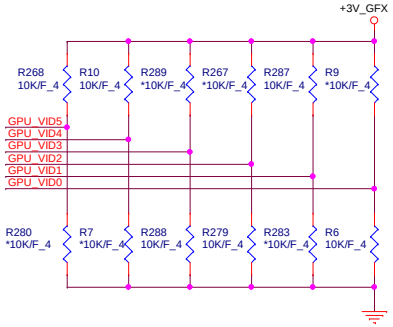
+3V_GFX
R344 *4.7K_4
+3V
R324 4.7K_4
DGPU_PWROK 9,14,25
Q27 DTC144EUA
R345 100K/F_4
DGPU_PGOK-1
+1.05V_GFX — R325 4.7K_4 — DGPU_POK4 — Q22 MMBT3904-7-F
C516 1000P/50V_4
C515 *1000P/50V_4
+1.5V_GFX — R336 4.7K_4 — DGPU_POK2 — Q23 MMBT3904-7-F
C530 *1000P/50V_4

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

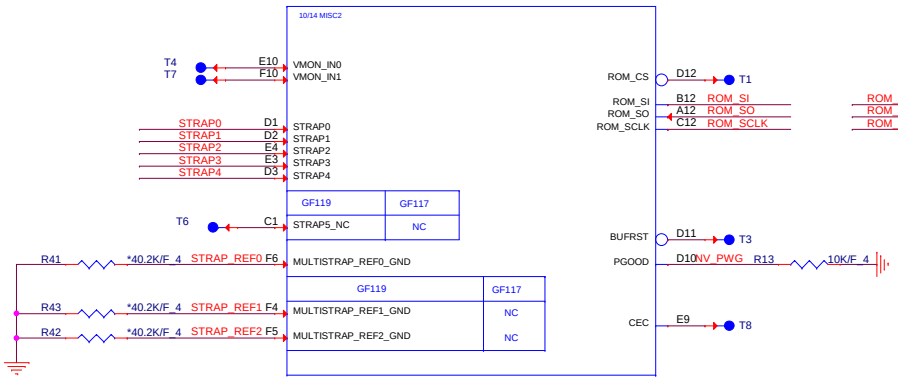
NB5

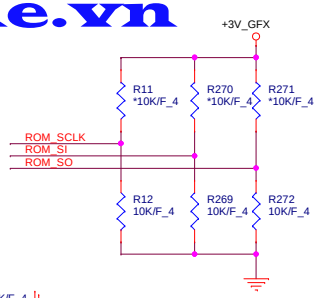
PROJECT : VOLKS
Quanta Computer Inc.

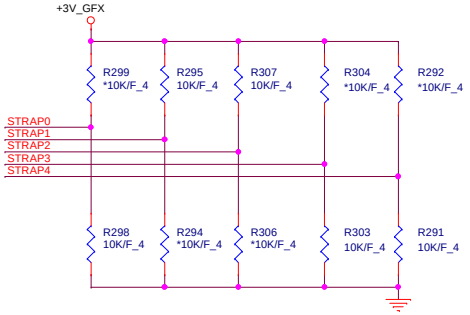
Size	Document Number	Rev
Custom	N12P-GV(DISPLAY)	1A
Date: Thursday, June 07, 2012	Sheet 16 of 37	



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





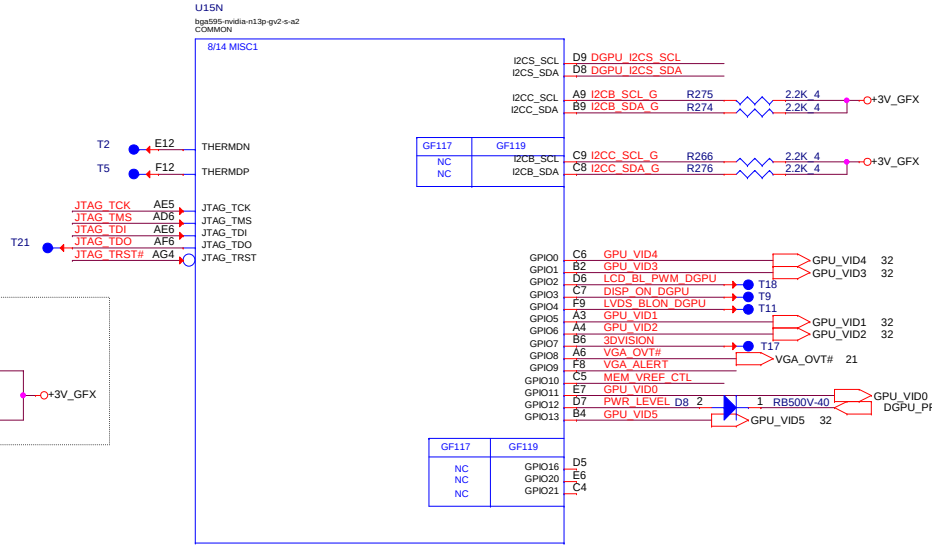


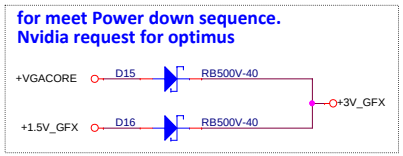
Binary Strap Mode Mapping

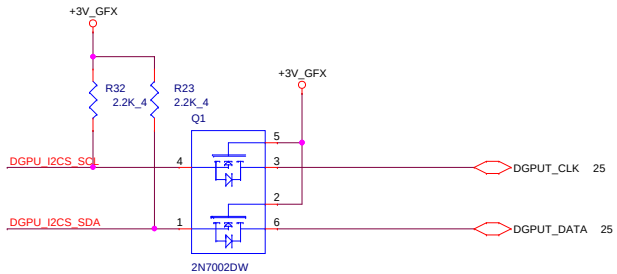
Strap Pin name	Strap Mapping	Resistance	Polarity
ROM_SCLK	SMB_ALT_ADDR	10Kohm	Pull-down to GND
ROM_SI	SUB_VENDOR	10Kohm	Pull-UP to 3V3 if VBIOS ROM Exists Pull-down to GND if no VBIO ROM
ROM_SO	VGA_DEVICE	10Kohm	Pull-down to GND (no dispaly)
STRAP0	RAMCFG[0]	10Kohm	USER defined
STRAP1	RAMCFG1]	10Kohm	USER defined
STRAP2	RAMCFG[2]	10Kohm	USER defined
STRAP3	RAMCFG[3]	10Kohm	USER defined
STRAP4	PCIE_MAX_SPEED	10Kohm	Pull-down to GND

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

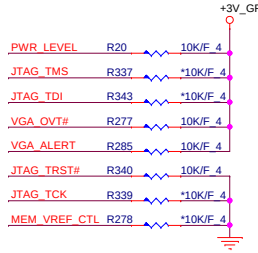






GB2-64 and GB4-128 GPIO Desdription

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

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	N12P-GV(GPIO/STRAPS)	1A
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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]

U1 — 96-BALL SDRAM DDR3 VRAM _DDR3 (ph)

U14 — 96-BALL SDRAM DDR3 VRAM _DDR3

U3 — 96-BALL SDRAM DDR3 VRAM _DDR3

U17 — 96-BALL SDRAM DDR3 VRAM _DDR3

+1.5V_GFX

VMA_CLK0 — R5 162/F_4 — VMA_CLK0#

R33 240/F_4

R265 240/F_4

R72 240/F_4

R330 240/F_4

R263 1.33K/F_4 — VREFC_VMA1 — R264 1.33K/F_4 — C481 0.1U/10V_4

R301 1.33K/F_4 — VREFD_VMA1 — R305 1.33K/F_4 — C498 0.1U/10V_4

VMA_CLK1 — R71 162/F_4 — VMA_CLK1#

R328 1.33K/F_4 — VREFC_VMA3 — R329 1.33K/F_4 — C520 0.1U/10V_4

R350 1.33K/F_4 — VREFD_VMA3 — R349 1.33K/F_4 — C552 0.1U/10V_4

Left
C37 0.1U/10V_4
C33 0.1U/10V_4
C12 1U/6.3V_4
C10 1U/6.3V_4

Left
C483 1U/6.3V_4
C500 1U/6.3V_4
C480 0.1U/10V_4
C497 0.1U/10V_4

Left
C161 0.1U/10V_4
C85 0.1U/10V_4
C160 0.1U/10V_4
C162 1U/6.3V_4

Left
C521 0.1U/10V_4
C522 0.1U/10V_4
C523 0.1U/10V_4
C551 1U/6.3V_4
C553 1U/6.3V_4
C555 10U/6.3V_6

Right
C14 1U/6.3V_4
C34 1U/6.3V_4
C9 10U/6.3V_6
C36 0.1U/10V_4
C13 0.1U/10V_4
C11 0.1U/10V_4

Right
C479 1U/6.3V_4
C496 0.1U/10V_4
C482 0.1U/10V_4
C484 0.1U/10V_4
C478 10U/6.3V_6
C499 1U/6.3V_4

Right
C159 0.1U/10V_4
C83 0.1U/10V_4
C82 1U/6.3V_4
C86 0.1U/10V_4
C84 1U/6.3V_4
C163 10U/6.3V_6

Right
C518 0.1U/10V_4
C550 0.1U/10V_4
C519 1U/6.3V_4
C554 1U/6.3V_4

15,16,17,33 +1.5V_GFX

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 VRAM(BGA96)	1A

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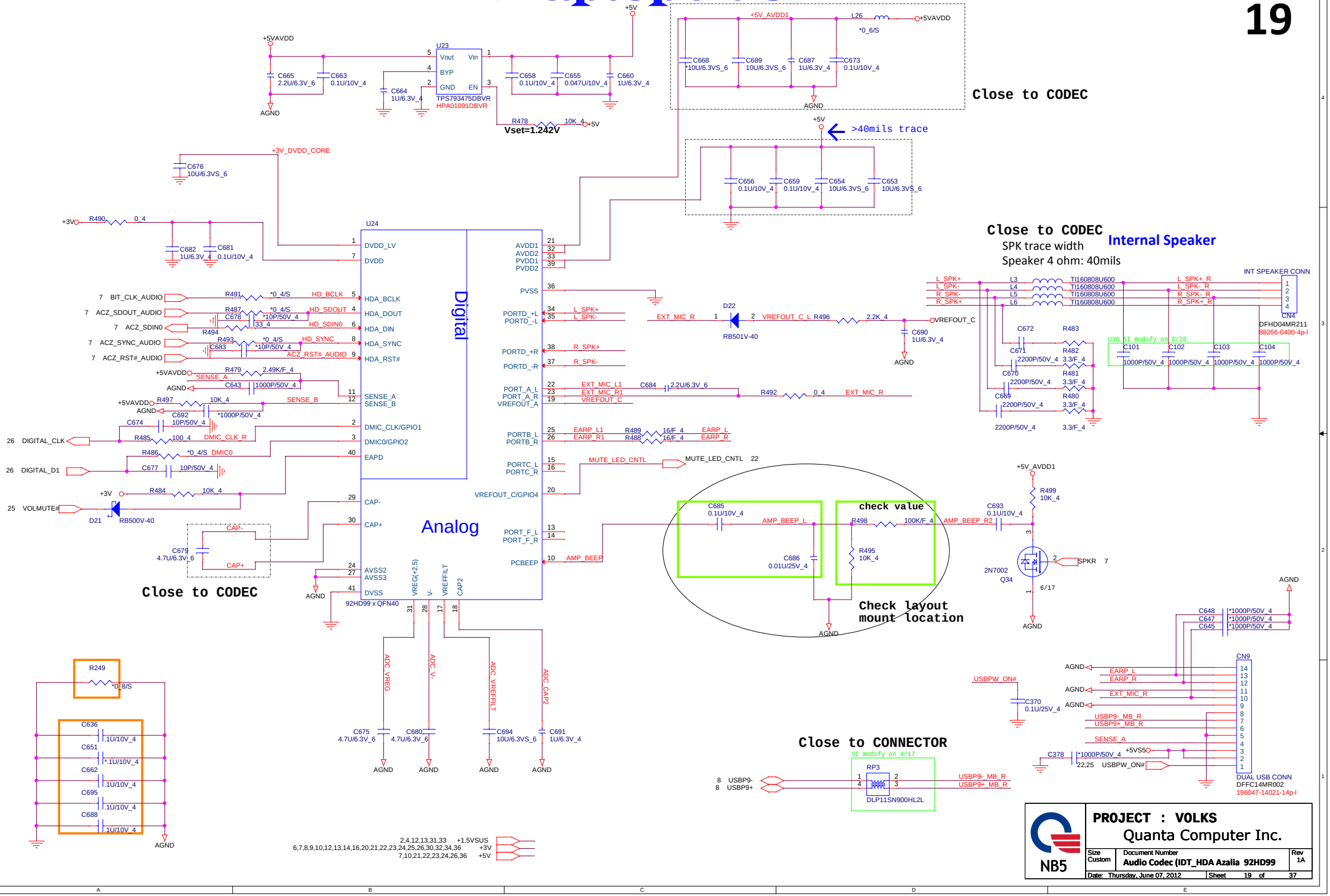

For EMI 0 ~ 22 ohm

GND VIA x 9 Pcs

Green Clk

RTL8105E

U2

U13

NS681684

RJ45

CN2

RJ45_CONN
DFTJ08FR323
rj45-jm361c-hp34aa01-9h-8p

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

PV modify on 5/24

朝前

2P Amber LED(Side-View)

(Amber)

2P WHITE LED(Side-View)

(White)

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LAN RTL8105/RJ45	1A

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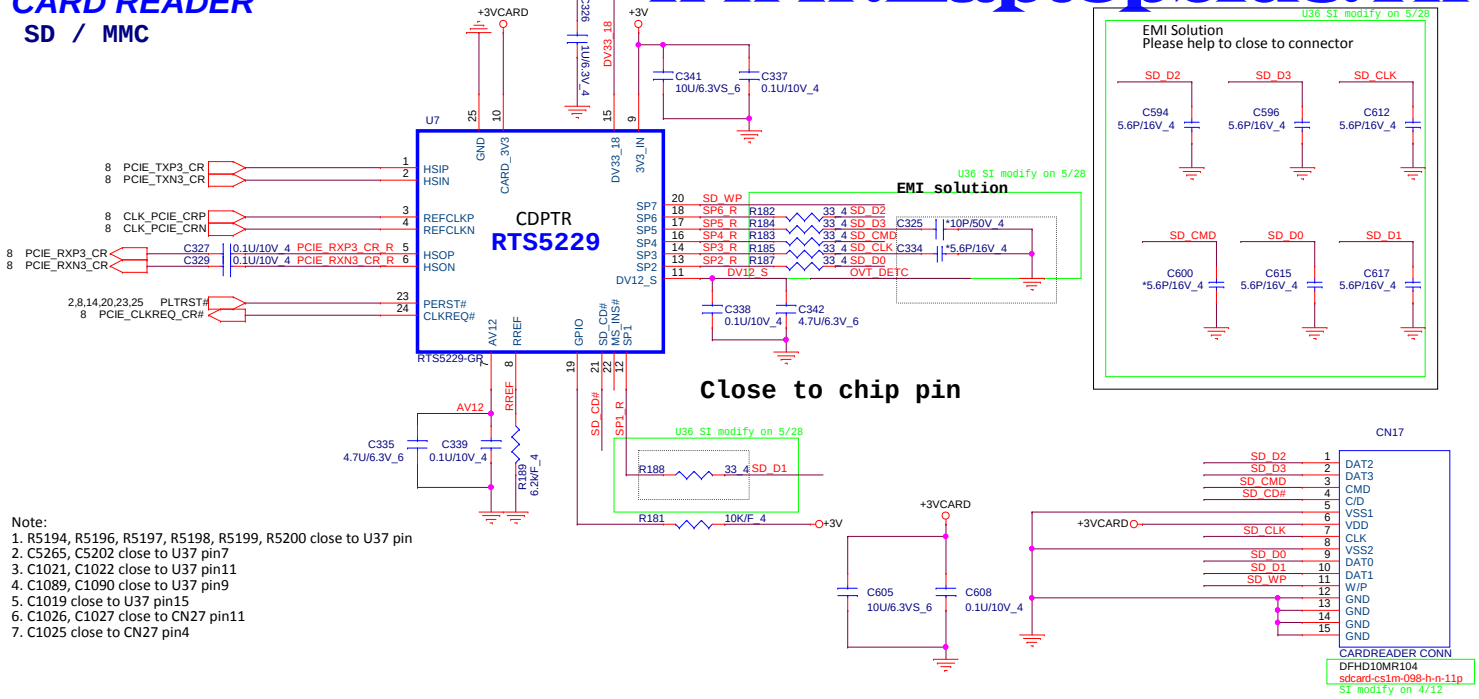
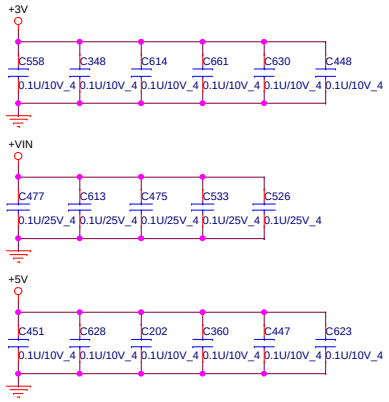
NB5

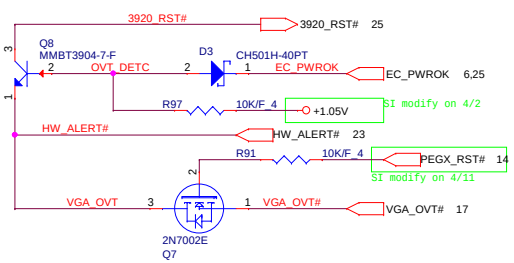
CARD READER
SD / MMC

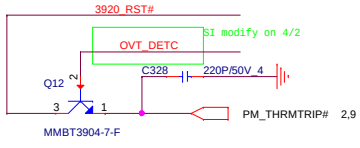


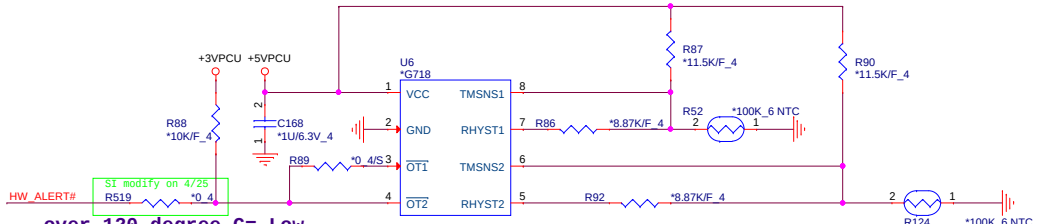


Note:
1. R5194, R5196, R5197, R5198, R5199, R5200 close to U37 pin
2. C5265, C5202 close to U37 pin7
3. C1021, C1022 close to U37 pin11
4. C1089, C1090 close to U37 pin9
5. C1019 close to U37 pin15
6. C1026, C1027 close to CN27 pin11
7. C1025 close to CN27 pin4

Thermal HW protect



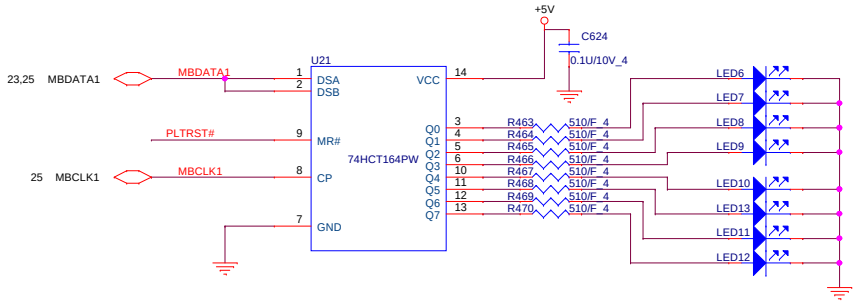




over 120 degree C= Low

When 100K-NTC 100 C=6.164K
Thermal Trip = 120 C

80 port



NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Card Reader control (RTS5229-GR)	1A
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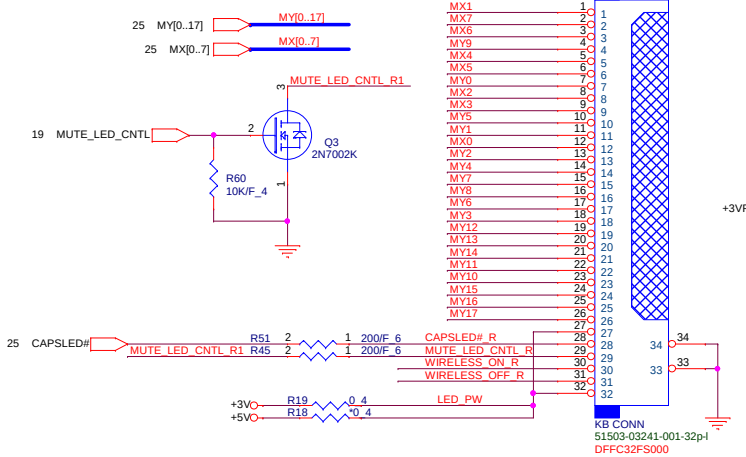
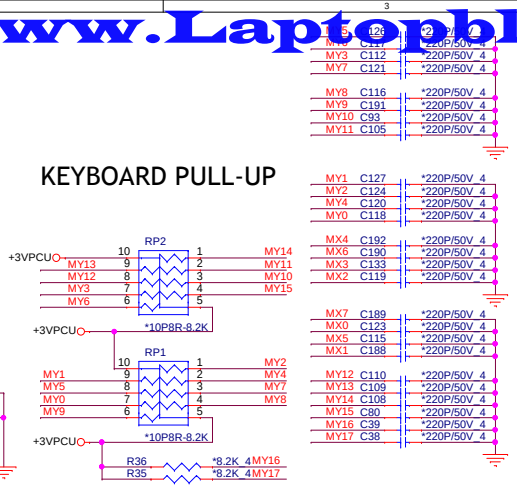
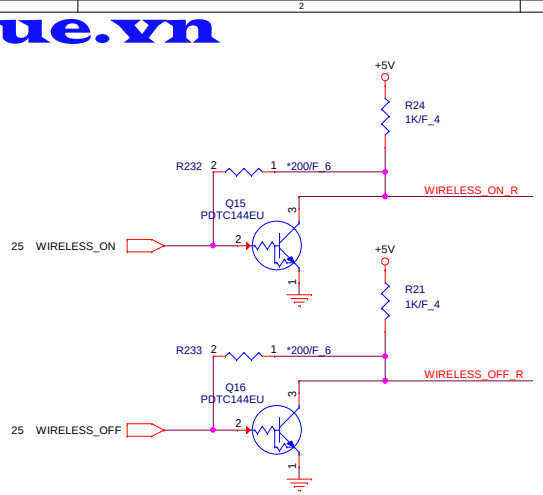
KEYBOARD Con.

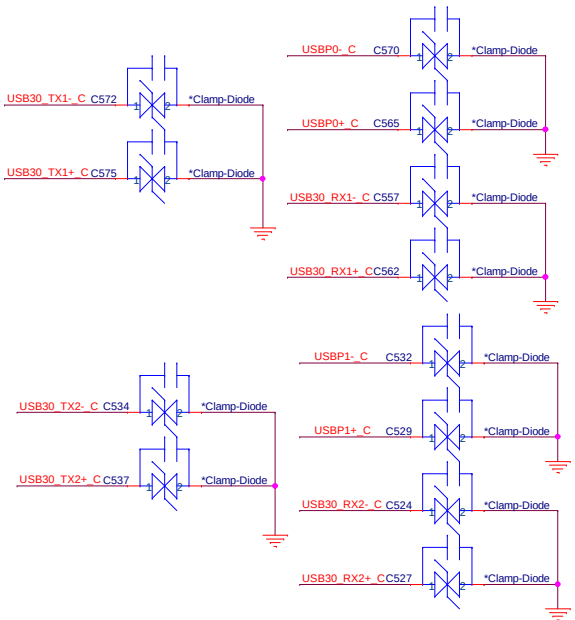


KEYBOARD PULL-UP

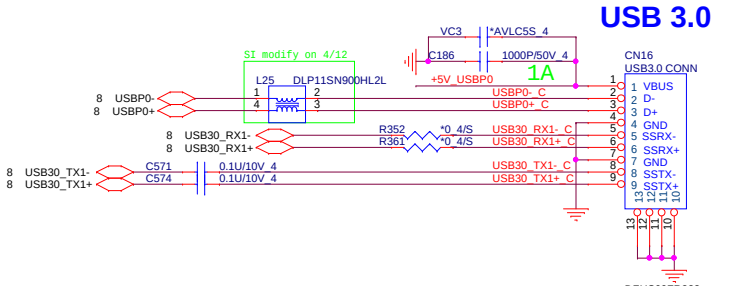




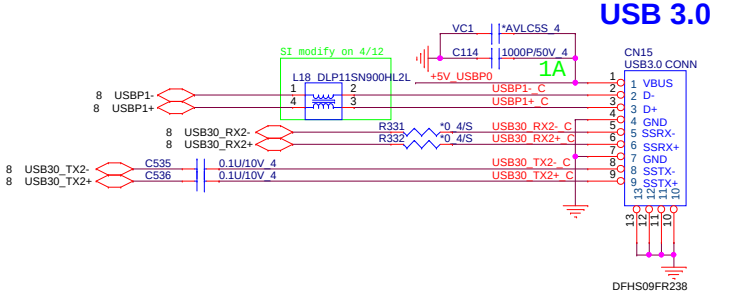
USB 2.0/3.0 Combo

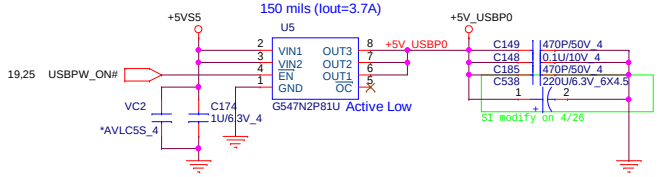


USB 3.0

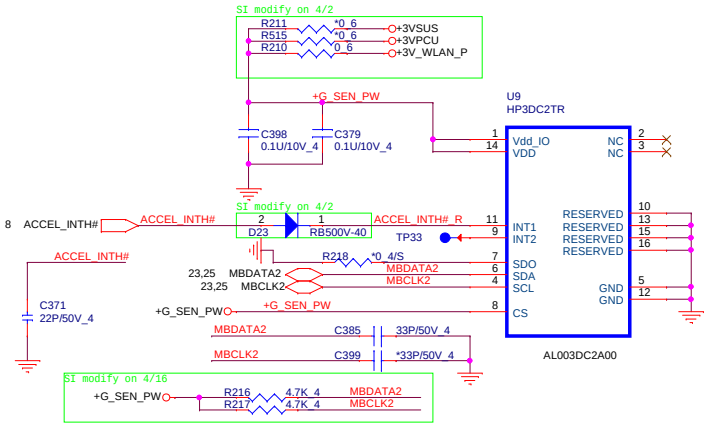


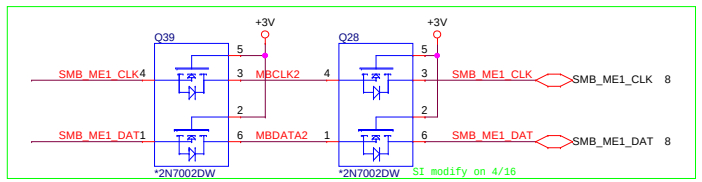
USB 3.0





Accelerometer Sensor





6,19,28,29,30,31,32,34,35,36
7,21,23,24,25,26,27,28
+5VS5
+3VPCU

PROJECT : VOLKS
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	USB 3.0/KB/Green CLK	1A
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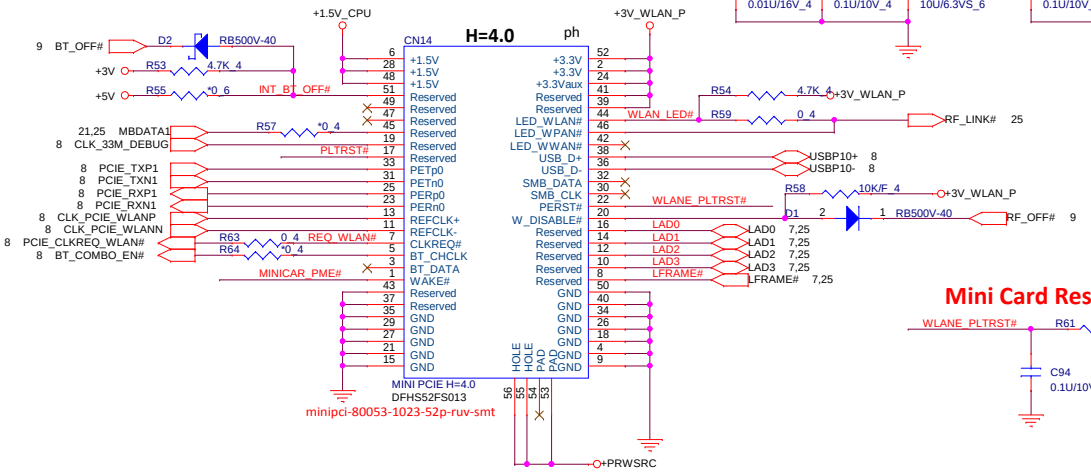
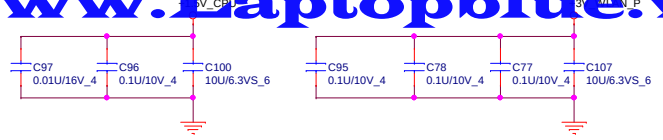
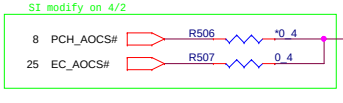
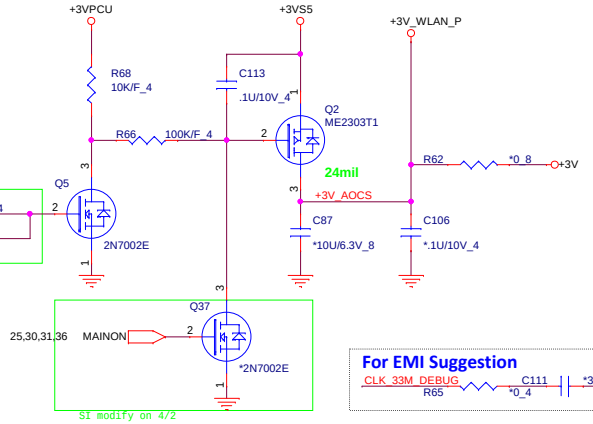
Mini Card WLAN/BT(Option)

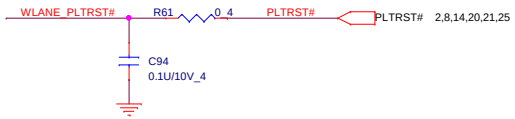




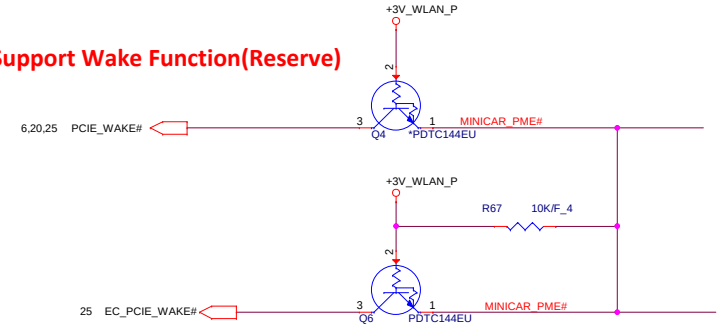




Mini Card Reset

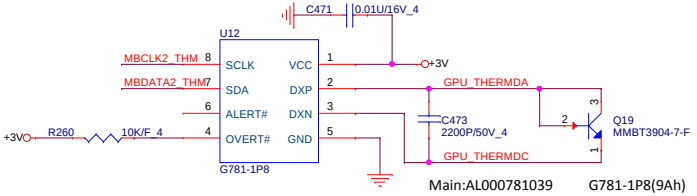


Support Wake Function(Reserve)



Local Thermal Sensor

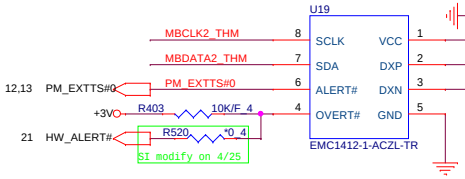
GPU Thermal Sensor



Main:AL000781039 G781-1P8(9Ah)

2nd:AL001412005 EMC1412-2-ACZL-TR(9Ah)

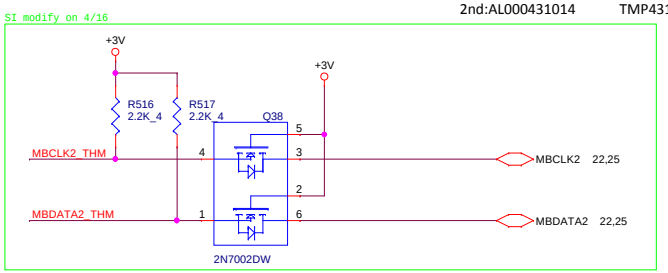
CPU Thermal Sensor



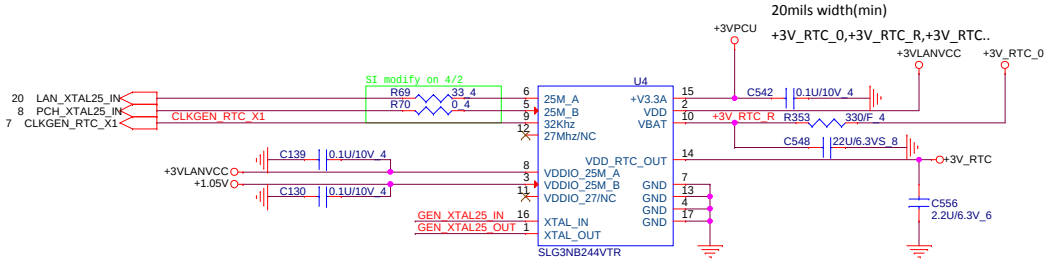
DDR3 Thermal Sensor

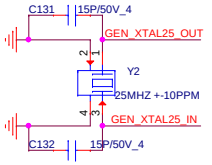
Main:AL001412003 EMC1412-1-ACZL-TR(98h)

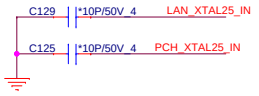
2nd:AL000431014 TMP431ADGKR(98h)



Green CLK Circuitry





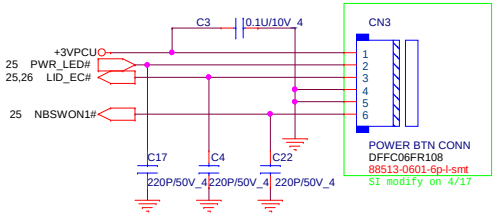


27 +PRWSRC
6,7,8,9,10,12,13,14,16,19,20,21,22,24,25,26,30,32,34,36 +3V
7,10,19,21,22,24,26,36 +5V
7,21,22,24,25,26,27,28 +3VPCU
2,4,10,24 +1.5V_CPU

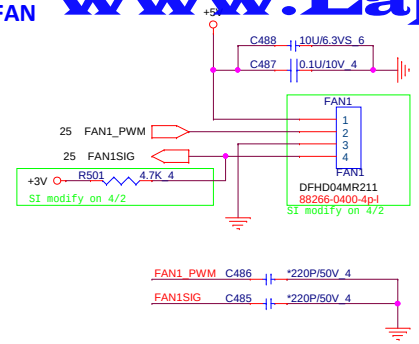
NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size Custom	Document Number MINI-PCIE/LED	Rev 1A
Date: Thursday, June 07, 2012	Sheet 23of 37	

Power Botton Connector

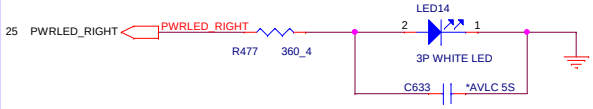
Pin1 : +3VPCU(LIDSWITCH PWR)
Pin2 : POWER LED
Pin3 : LIDSWITCH
Pin4 : GND
Pin5 : GND
Pin6 : POWERON#



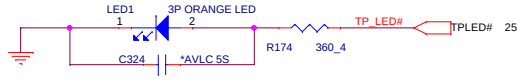
FAN



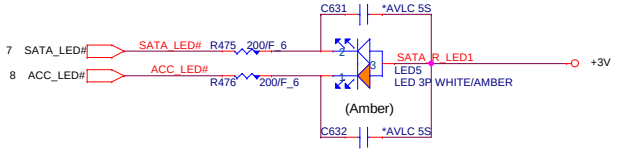
PWR LED



14" TP LED

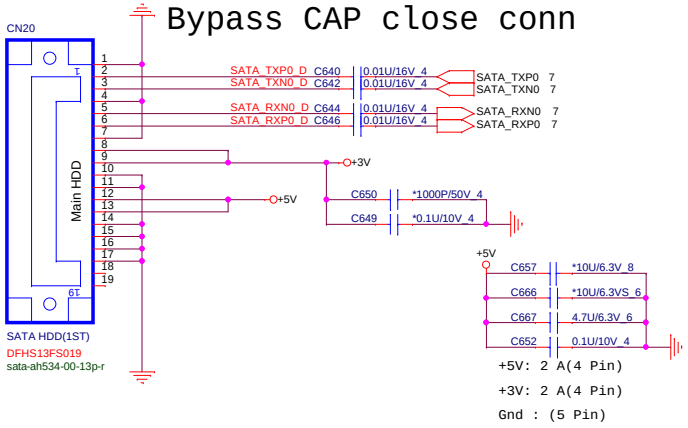


SATA LED



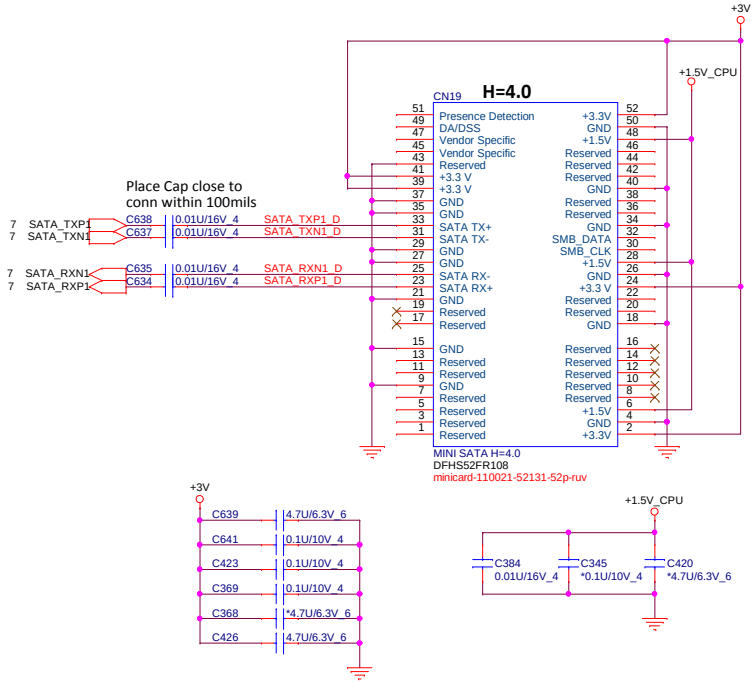
SATA HDD Connector(Cable type)

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

NB5

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SATA HDD/ODD/MSATA CONN	1A
Date: Thursday, June 07, 2012	Sheet 24of 37	

U8

KB3940QF A1

500mA

Cap LED

SI modify on 4/11

KB_STRAP R514 *10K/F_4

14" un-stuff

15.6" stuff

SI modify on 4/2

Adapter select for EC

Hi ==> DIS/SG (90W)

Low ==>UMA (65W)

Vender	Size	P/N
EON	1MB	AKE3GZN0Q01 (EON EN25Q80A-100HIP)
MX	1MB	AKE3GFP0Z00 (MX25L8006EM2I-12G)
AMIC	1MB	AKE3GZP0801 (A25L080M-F)
Socket		DFHS08FS023

SI modify on 4/12

AKE3GZN0Q01

91960-0084L-8P-SOCKET

Reserve for ENE Hold time issue

for GPU thermal

for DS3

for 80 port

for Battery charge/charge and cap board

for CPU thermal/G-Sensor

for DS3

FOR SG/DIS

DIS/SG==>NA

UMA==>100K

PROJECT : VOLKS

Quanta Computer Inc.

NB5

Size: Custom | Document Number: EC (KB3940 A1)/ROM | Rev: 1A

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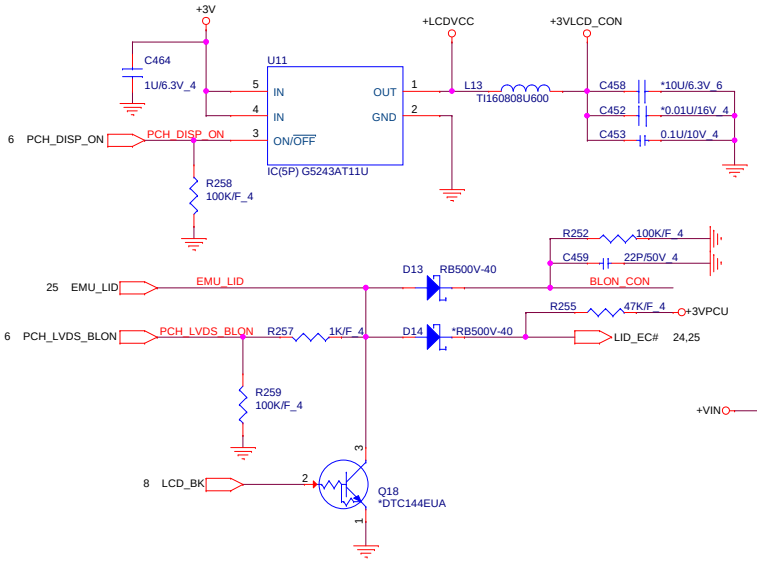
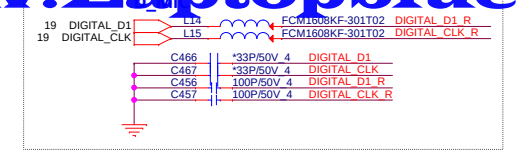
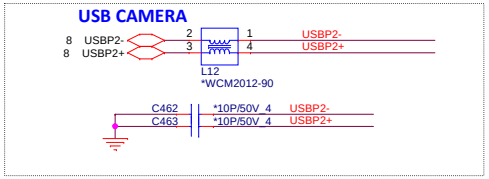
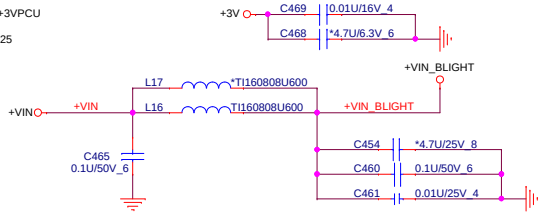
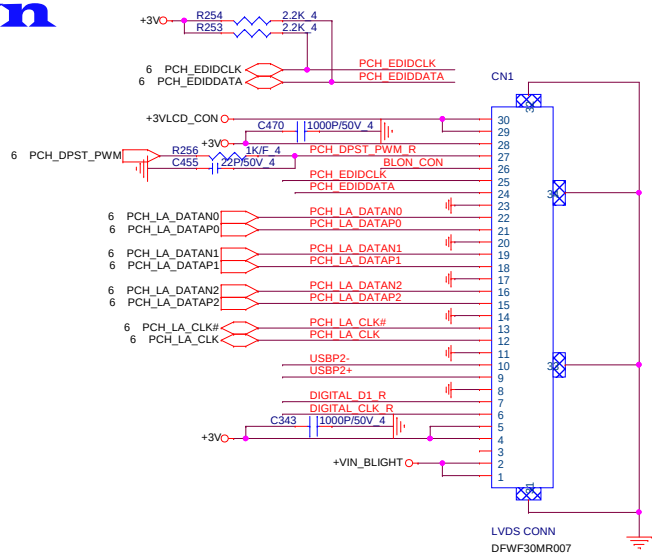
LVDS Conn.



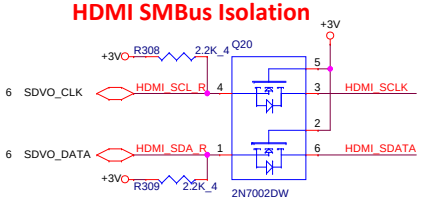


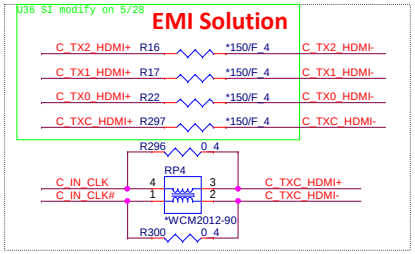


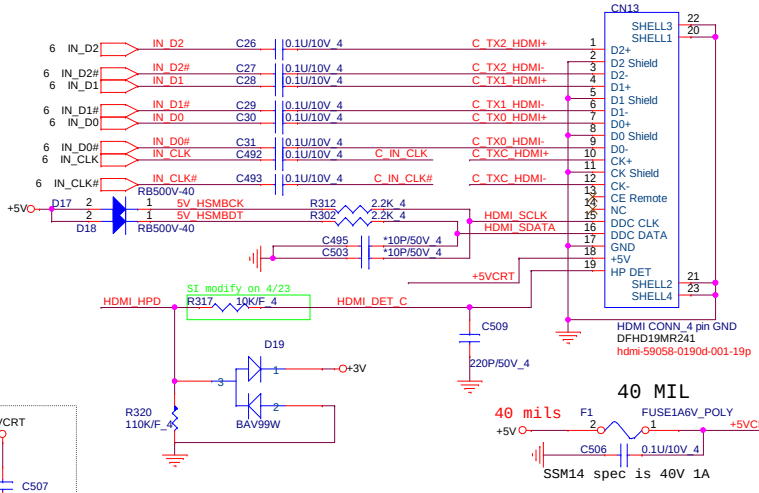


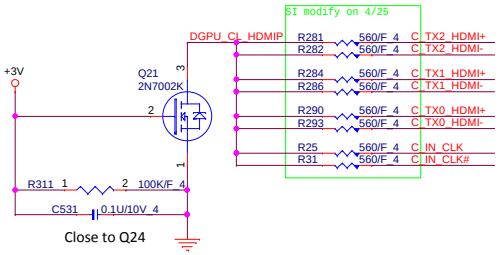


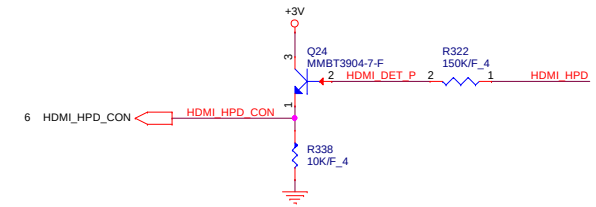
HDMI Conn.

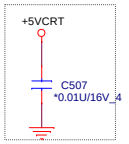




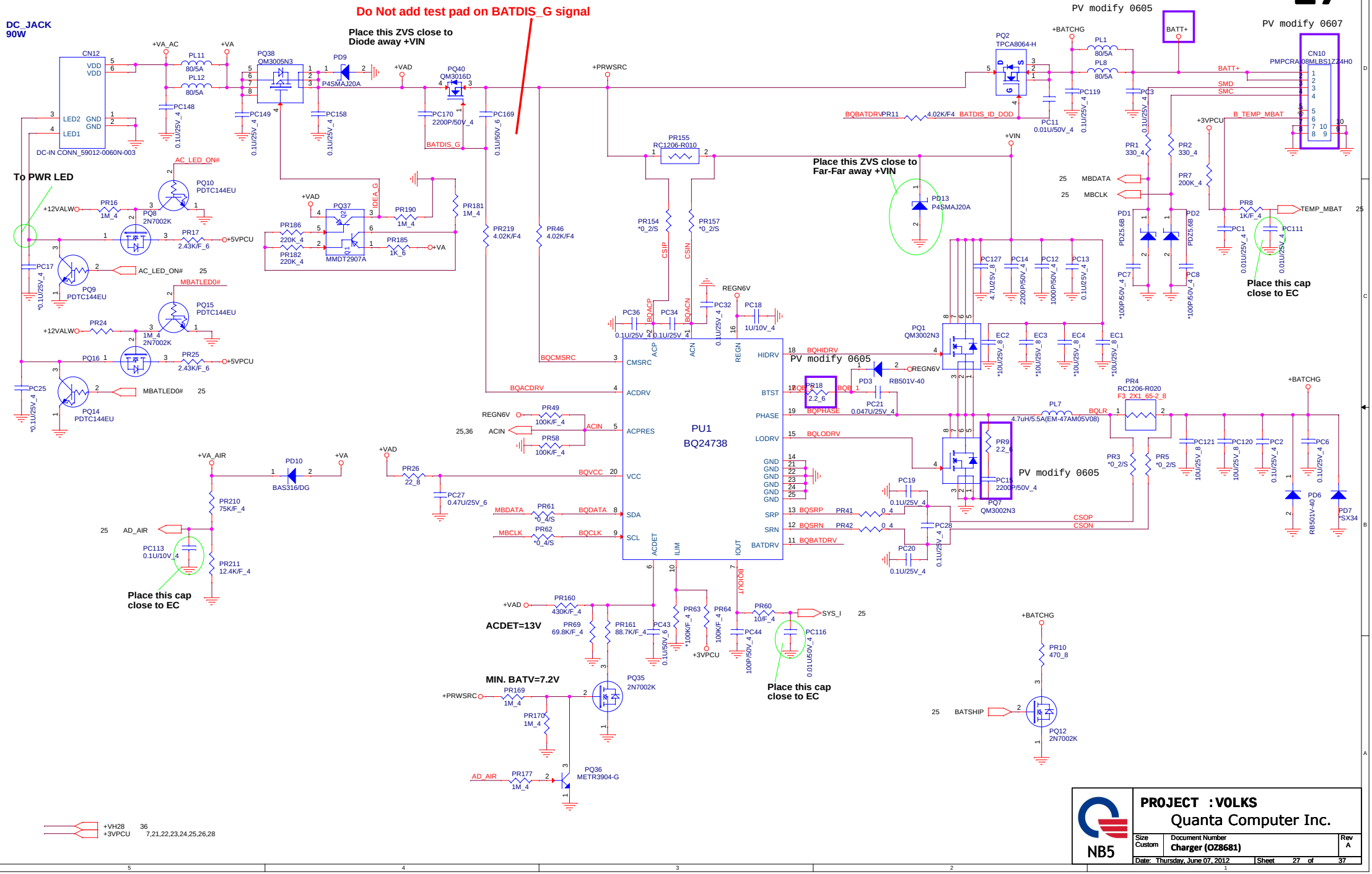






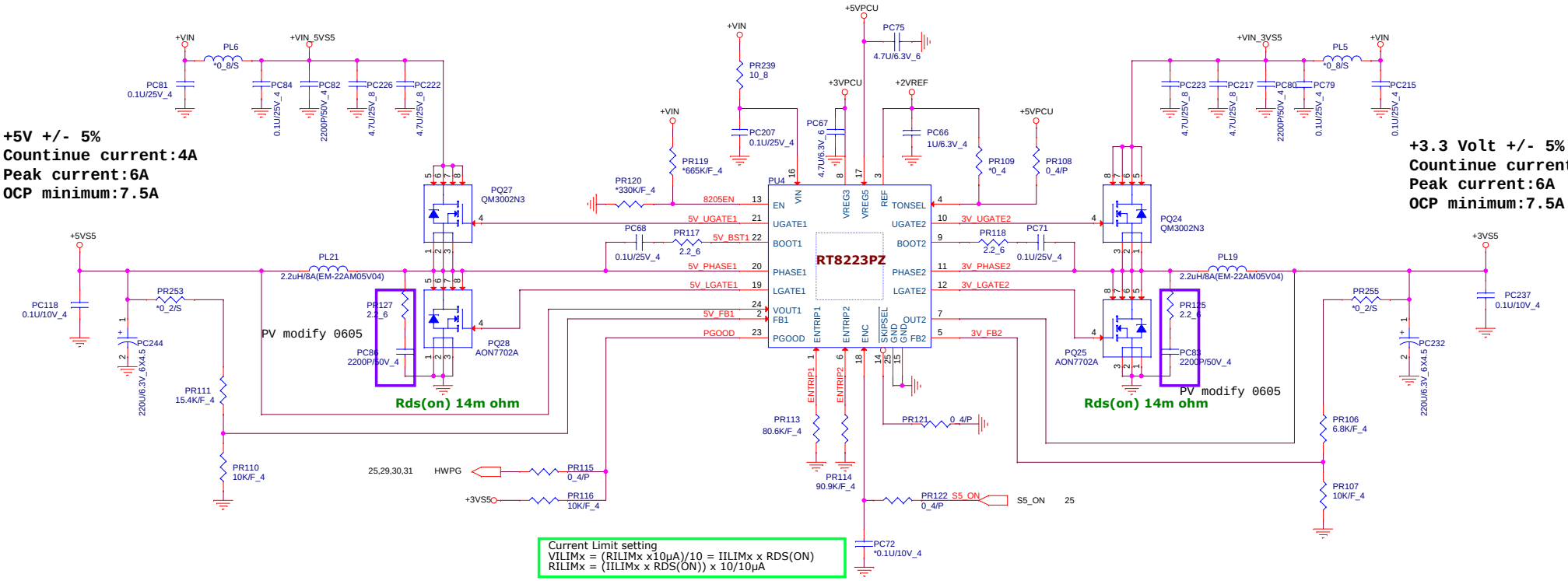


for EMI request



+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

PROJECT : VOLKS			
Quanta Computer Inc.			
NB5	Size: Custom	Document Number: 3/5VS5 (RT8223P)	Rev: A
	Date: Thursday, June 07, 2012	Sheet 28 of 37	

TPS51462RGER/AL051462000

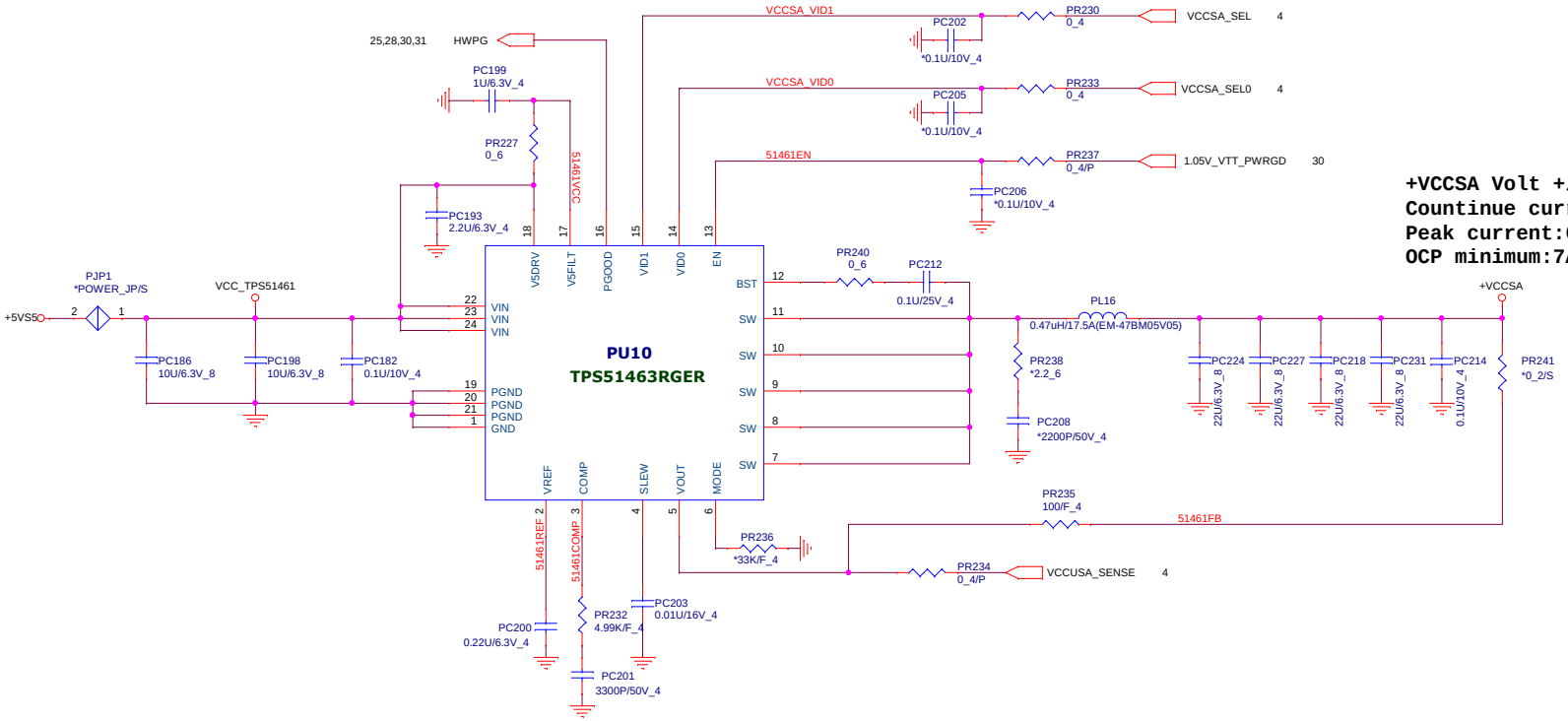
For CPU SV system agent voltage slew rate of 0.5 -10 mV/µs

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



+VCCSA Volt +/- 5%
Countinue current:4A
Peak current:6A
OCP minimum:7A

PROJECT : VOLKS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	+VCCSA (TPS51462RGER)	A

NB5

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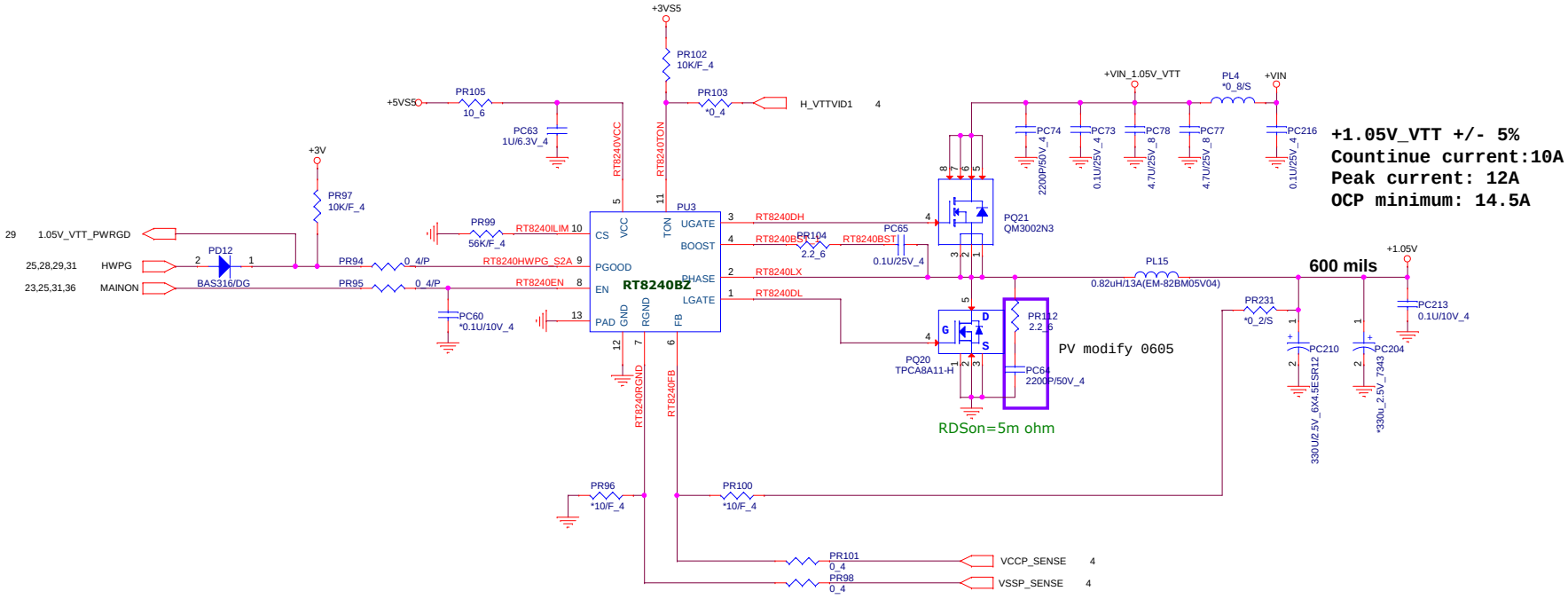
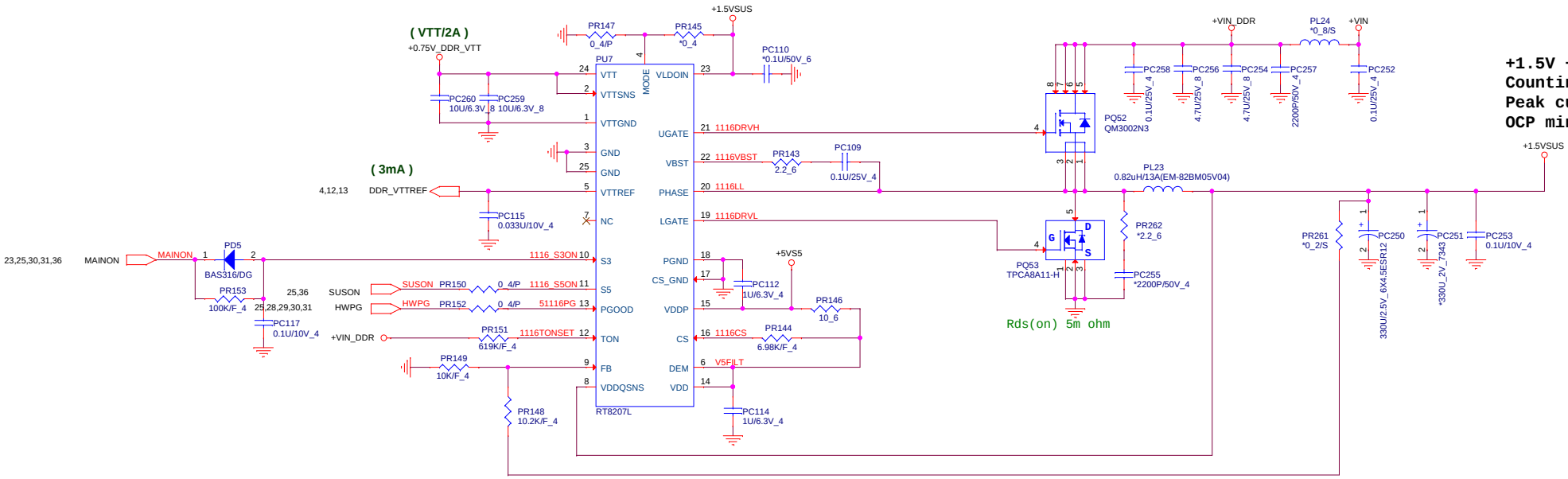
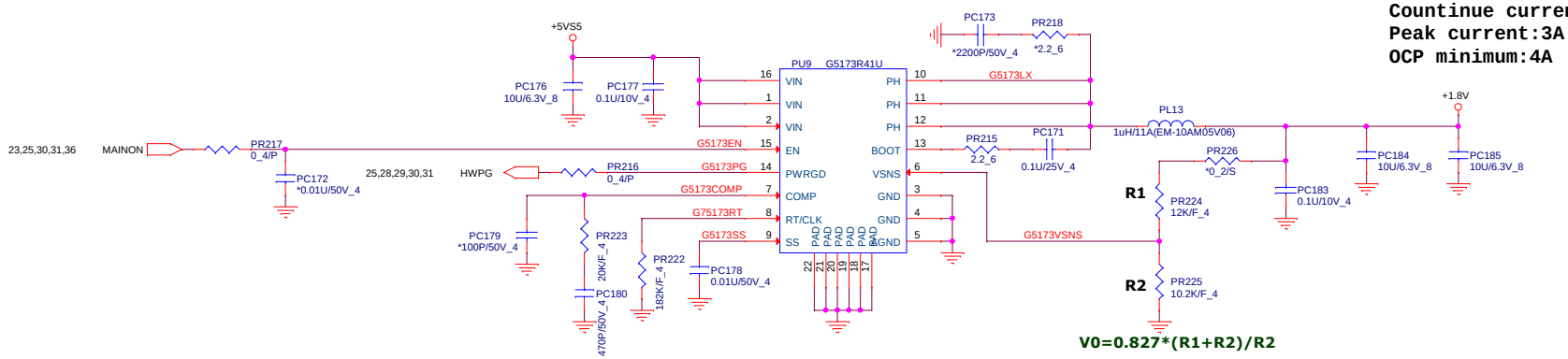


NB5	PROJECT : VOLKS Quanta Computer Inc.	
Size: Custom	Document Number: +1.05V (RT8240B)	Rev: A
Date: Thursday, June 07, 2012	Sheet 30of 37	



+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
Date: Thursday, June 07, 2012	Sheet 31 of 37	

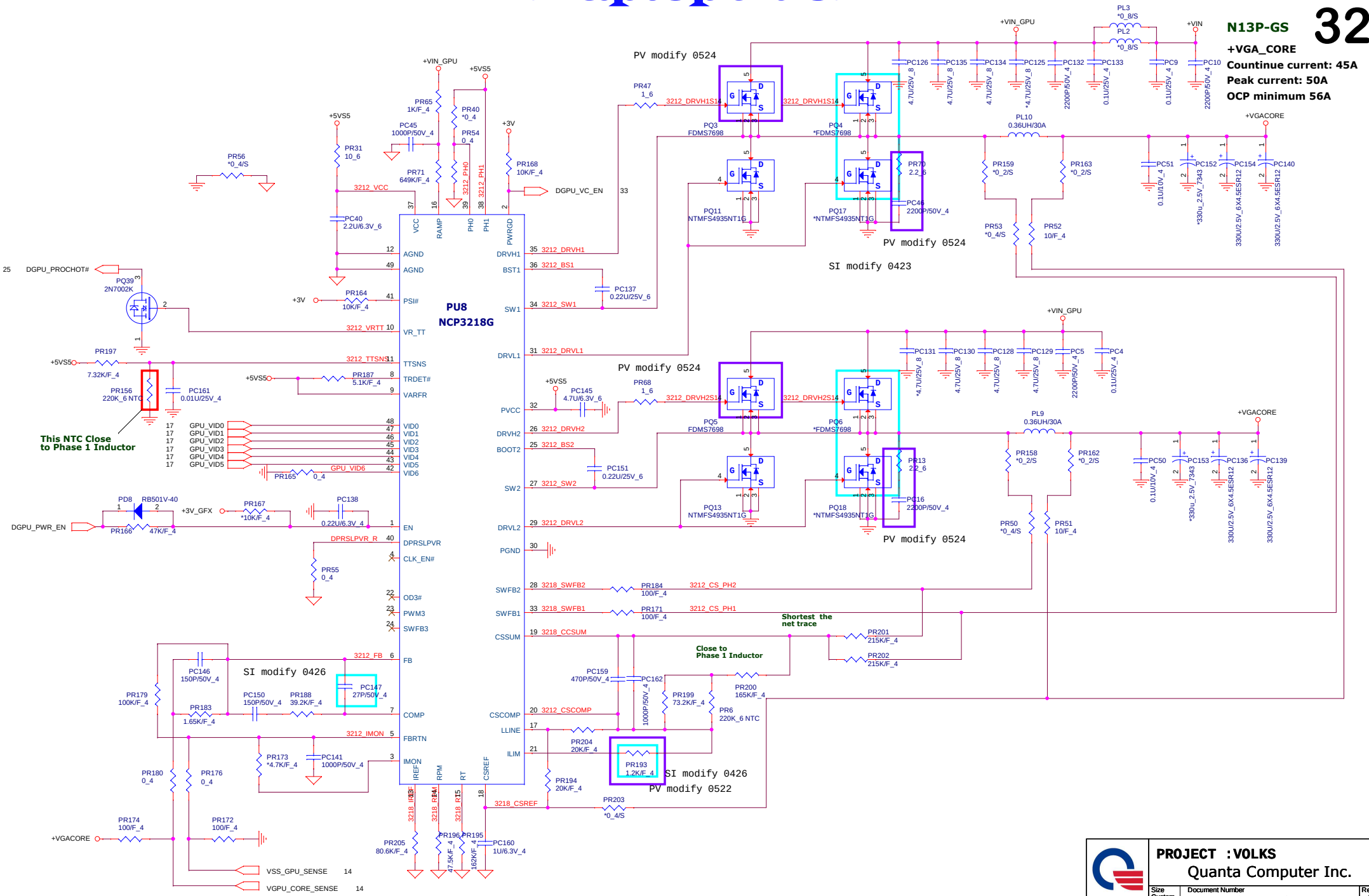
N13P-GS

+VGA_CORE

Countinue current: 45A

Peak current: 50A

OCP minimum 56A

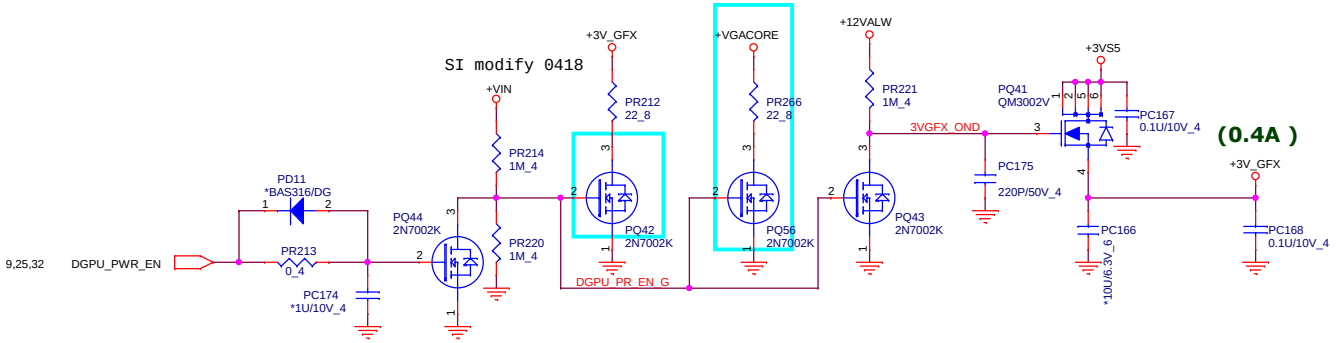


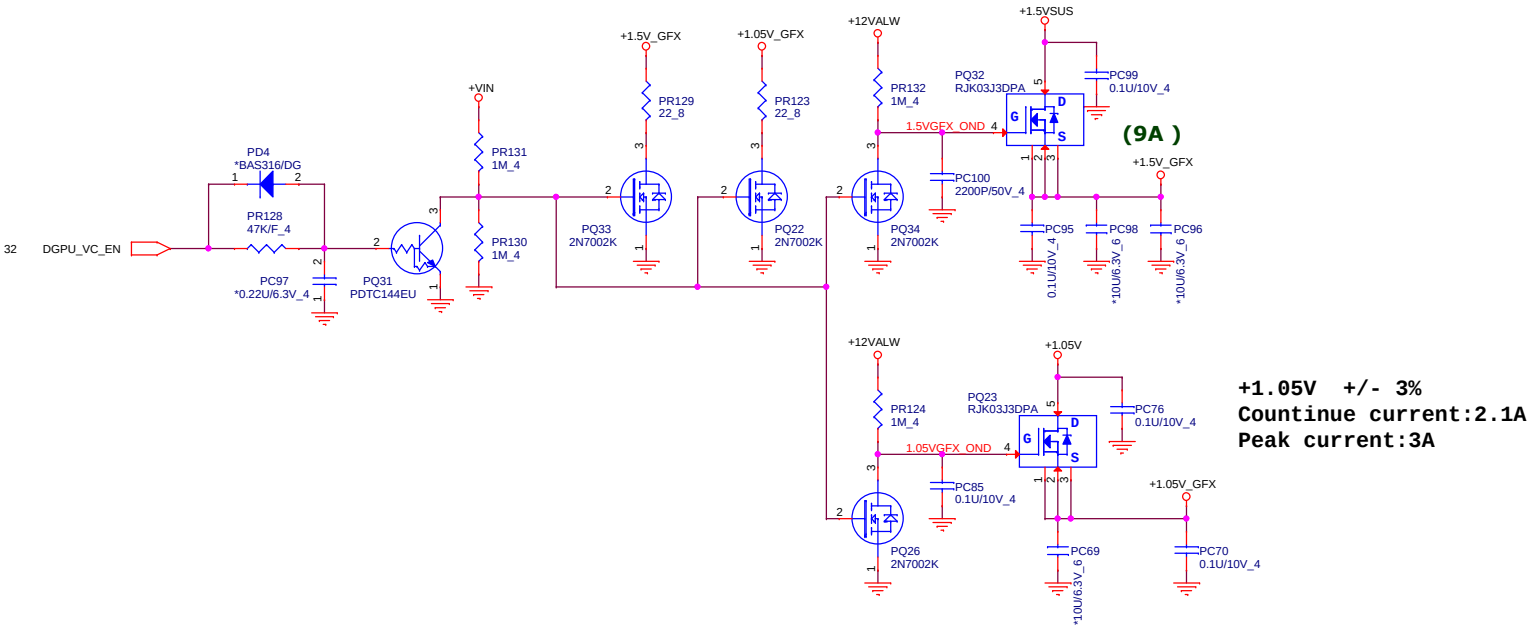
PROJECT : VOLKS		
Quanta Computer Inc.		
NB5	Size: Custom	Document Number: +VGA CORE (NCP3218G)
	Rev: A	
	Date: Thursday, June 07, 2012	Sheet 32 of 37

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.

Size	Document Number	Rev
Custom	+VGA POWER	A

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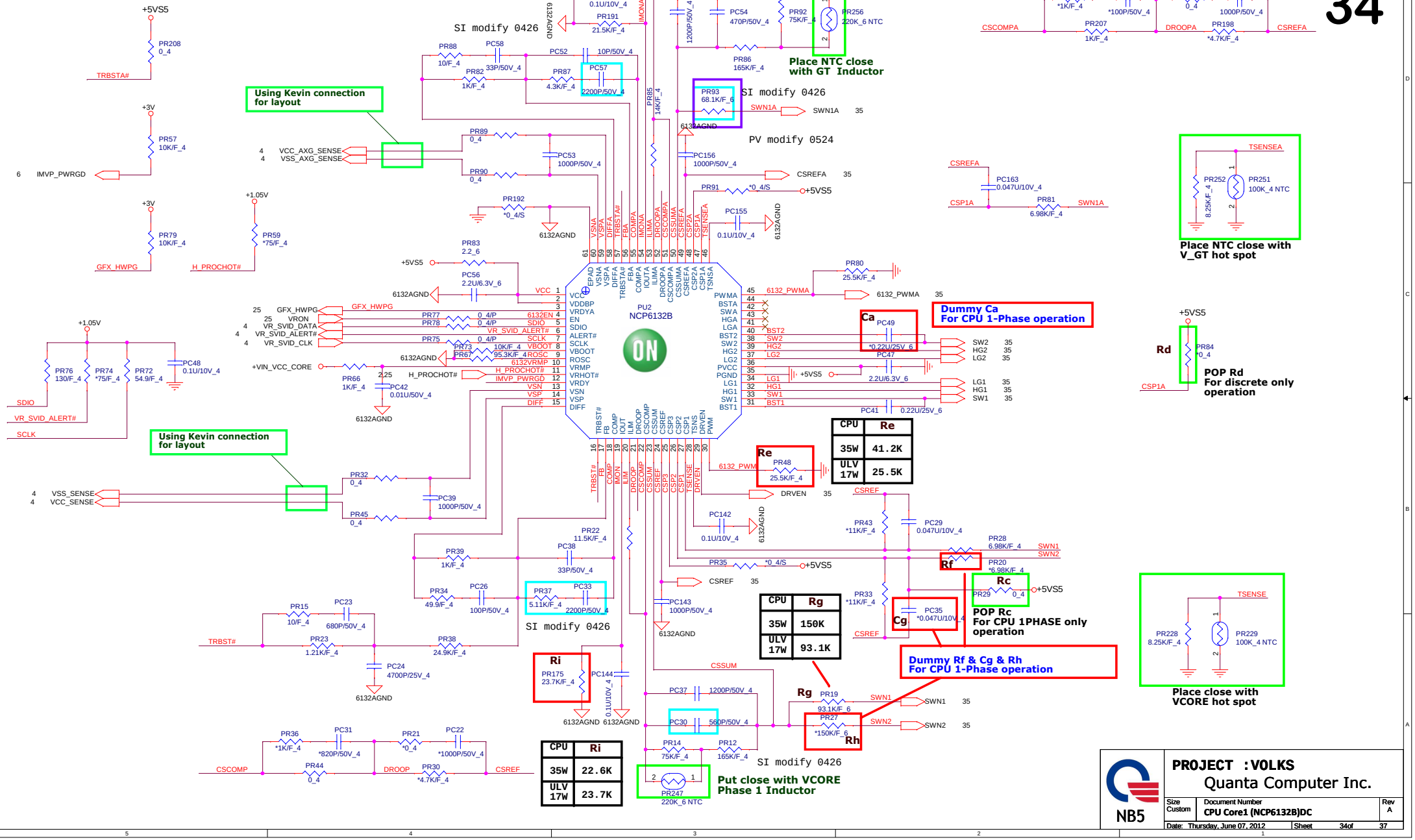
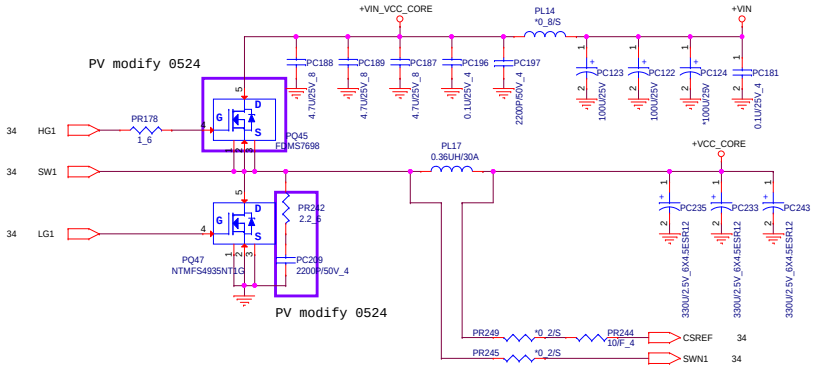
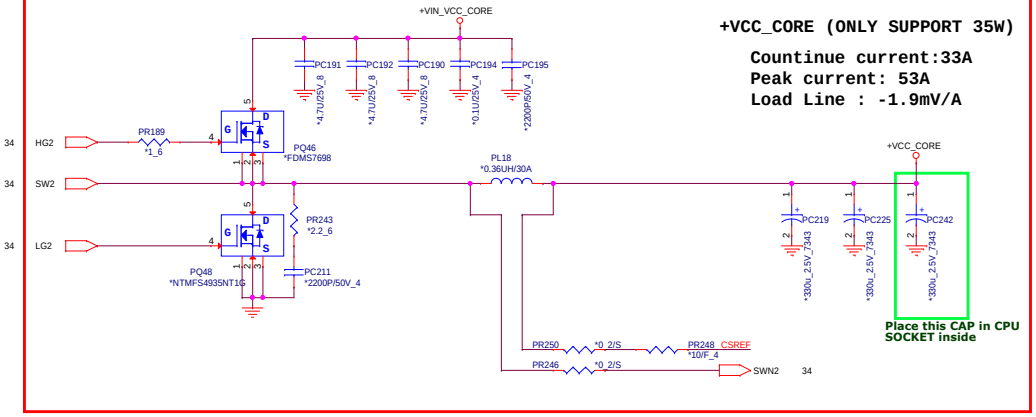




Dummy This Schematic
For CPU 1-Phase operation



+VCC_CORE (ONLY SUPPORT 35W)

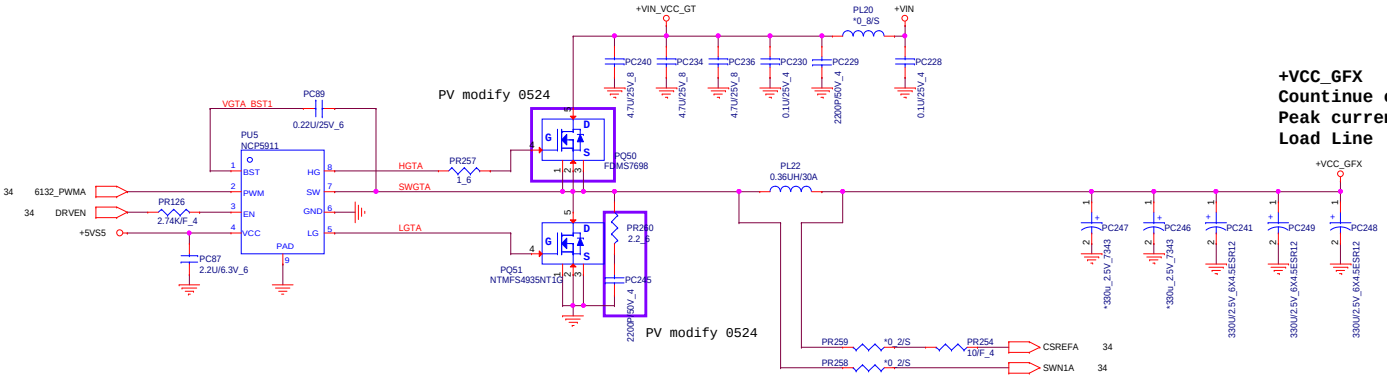
Countinue current:33A
Peak current: 53A
Load Line : -1.9mV/A

+VCC_CORE (ONLY SUPPORT 35W)

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

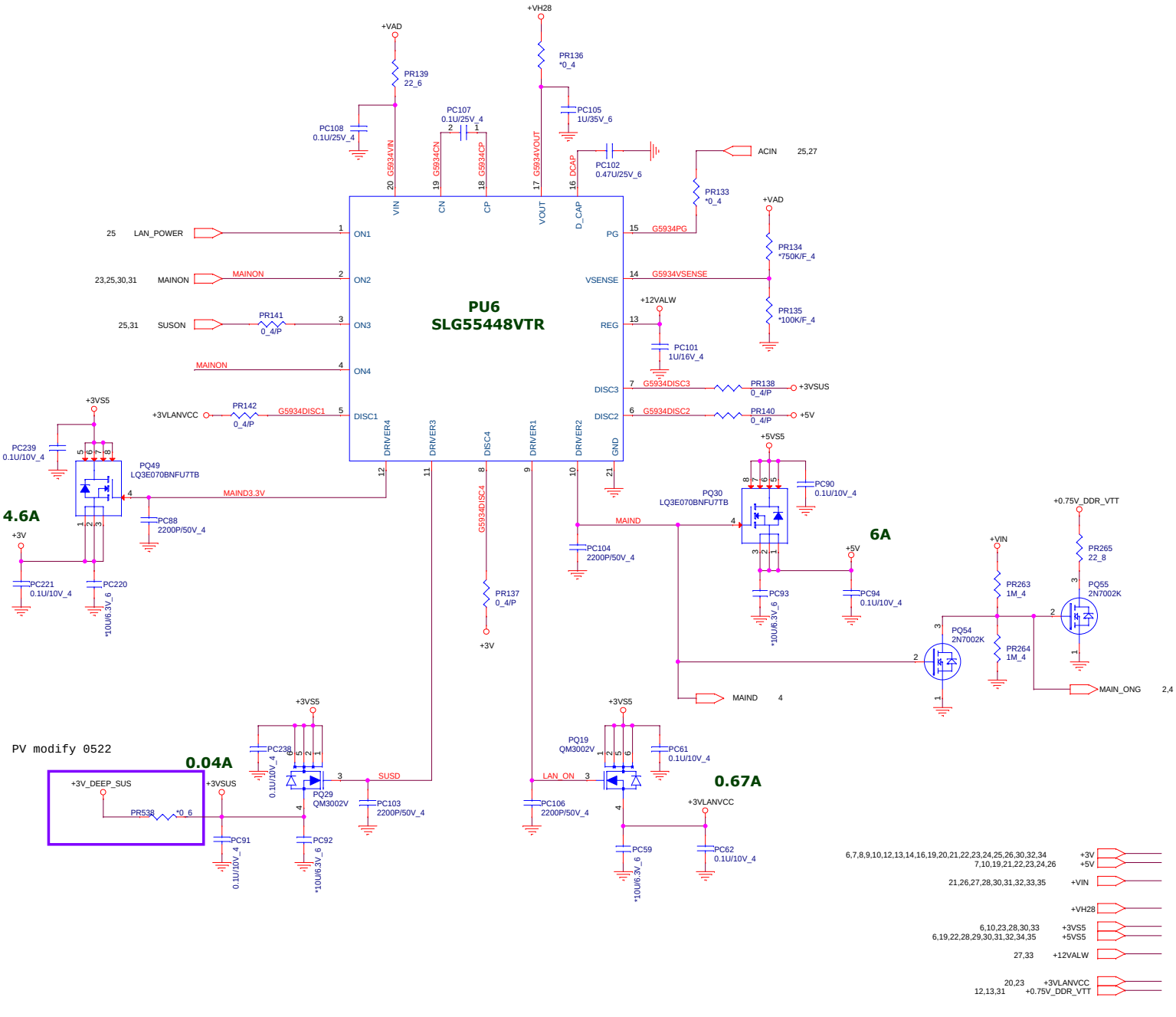
+VCC_CORE (ULV 17W)

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
Date: Thursday, June 07, 2012	Sheet: 35of 37	



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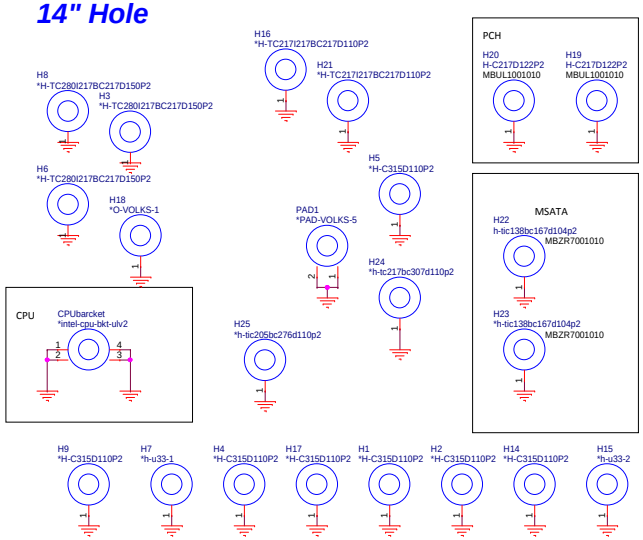
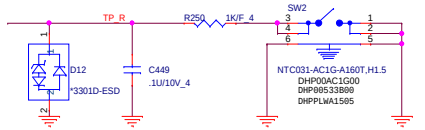
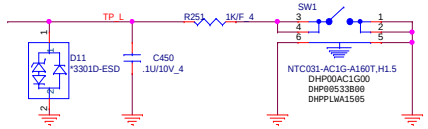
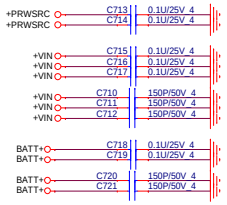
14" Hole



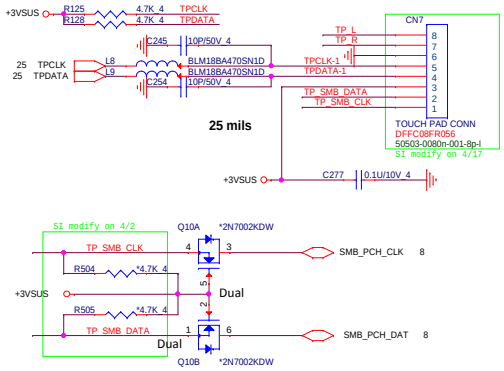




EMI CAP for 14"



Touch Pad Connector



PROJECT : VOLKS
Quanta Computer Inc.

NB5

Size	Document Number	Rev
C	Hole	A

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