TW9D (15.6W) BLOCK DIAGRAM

01

PCB STACK UP

8L Dis. & UMA

- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1
- LAYER 4 : VCC
- LAYER 5 : IN2
- LAYER 6 : IN3
- LAYER 7 : SGND2
- LAYER 8 : BOT

DDRIII-SODIMM1 PAGE 12 — DDRIII 800/1066 MT/s, 1333MT/s CFD only

DDRIII-SODIMM2 PAGE 13 — DDRIII 800/1066 MT/s, 1333MT/s CFD only

CPU
Auburndale 35W
Clarksfield 45W
PAGE 3~6

27MHz

PCI-Express 16X

nVIDIA (40nm)
N11x-Fermi
128 Bit
GB2-128 29x29 973p
PAGE 41~42

Selection channel by Resistor

- HDMI CON PAGE 22
- CRT PAGE 22
- LCD CONN PAGE 21

DMI LINK

32.768KHz 25MHz

SATA - HDD PAGE 31 — SATA0 150MB

SATA - CD-ROM PAGE 31 — SATA1 150MB

E-SATA PAGE 30 — SATA5 150MB

HDMI
CRT
LVDS

PCH
Ibex-M
PAGE 7~11

CLOCK GEN 9LRS3197 PAGE 2 — 14.318MHz

Mini PCI-E Card x2
Express Card x1

USB2.0 — 7,10,11

- 0,1,2 USB2.0 Ports X3 PAGE 24
- 8 BlueTooth PAGE 24
- 9 Webcam PAGE 21
- 6 RTS5159 PAGE 23

PCI-E

- X1 Mini PCI-E Card WWAN/TV PAGE 30
- X1 LAN Atheros PCIE-LAN AR8131(M) GagaLAN PAGE 26 — 25MHz — RJ45 PAGE 26
- X1 Express Card PAGE 27

Azalia

- Analog ALC272 PAGE 24
  - AUDIO Amplifier TPA6017A2 PAGE 25
    - microphone PAGE 24
    - Audio Jacks (Phone/ MIC) PAGE 24
    - Jack to Speaker PAGE 25

32.768KHz

Keyboard PAGE 28
Touch Pad PAGE 27

ENE KBC
KB3926 C0
PAGE 29

LPC

- GMT G9931P1U FAN PAGE 28
- SPI PAGE 29

ONFI

- Braidwood PAGE 31
- SPI PAGE 7
- MDC CONN PAGE 26

- UMA GPU CORE (RT8152A) PAGE 32
- SYSTEM POWER RT8206B PAGE 33
- VCCP +1.1VTT(RT8208A) AND PCH 1.05V(RT8204) PAGE 34
- CPU CORE ISL6288 PAGE 35
- VGACORE(1.025V) RT8208A PAGE 36
- DDR III SMDDR_VTERM 1.5V/1.5VSUS(RT8207) PAGE 37
- SYSTEM CHARGER(ISL6251AHAZ-T) PAGE 39

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CLOCK GENERATOR

+1.05V — L23 HCB1608KF-181T15_6 — +VDDIO_CLK

C459 .1U/10V_4
C453 .1U/10V_4
C450 10U/6.3V_6S
C458 10U/6.3V_6S

Place each 0.1uF cap as close as possible to each VDD IO pin. Place the 10uF caps on the VDD_IO plane.

U19 RTM875N-632-GRT (QFN32)

+3V
C451 4.7U/6.3V_6
C471 4.7U/6.3V_6
C452 .1U/10V_4
C454 .1U/10V_4
C470 .1U/10V_4
C469 .1U/10V_4
C464 .1U/10V_4

VDD_USB, VDD_LCD, VDD_SRC, VDD_CPU, VDD_REF
+VDDIO_CLK
VDD_CPU_IO, VDD_SRC_IO

[12,13,27,30,8] CGDAT_SMB
[12,13,27,30,8] CGCLK_SMB
SDATA, SCLK

[8] CLK_ICH_14M — C465 10P/50V_4 — R296 10K/F_4 — R300 33_4 — CPU_SEL
CPU_STOP#, REF_0/CPU_SEL

CK_PWRGD_R
CK_PWRGD/PD#_3.3

XTAL_OUT, XTAL_IN
XOUT, XIN

VSS_SATA, VSS_USB, VSS_LCD

CPU-0, CPU-0#
CPU-1, CPU-1#
DOT96T_LPR, DOT96C_LPR
SRC-1, SRC-1#
SATA, SATA#
27MHz_nonSS, 27MHz_SS
GND, VSS_REF, VSS_CPU, VSS_SRC

CLK_BUF_BCLK_P [8]
CLK_BUF_BCLK_N [8]
133 or 100 Mhz output to PCH

CLK_BUF_DREFCLK [8]
CLK_BUF_DREFCLK# [8]
96Mhz output for generate 48Mhz (USB) and 24 Mhz (HDA)clk

CLK_BUF_PCIE_3GPLL [8]
CLK_BUF_PCIE_3GPLL# [8]
100Mhz output for DMI reference clk

CLK_BUF_DREFSSCLK [8]
CLK_BUF_DREFSSCLK# [8]
100Mhz output for SATA reference clk

CLK_VGA_27M_NOSS R308 33_4 → CLK_27M_NONSS [16]
CLK_VGA_27M_SS R309 33_4 → CLK_27M_SS [16]
Discrete only

Place the 33 ohm resistors close to the CK 505

+3V — R295 1K/F_4 — CK_PWRGD_R — Q10 2N7002E — R297 100K/F_4
[37] VR_PWRGD_CLKEN#

Y3 14.318MHZ
XTAL_IN — C461 33P/50V_4
XTAL_OUT — C457 33P/50V_4

+3V — R303 *10K/F_4 — CPU_SEL — R306 10K/F_4

	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

CPU bracket Hole.

H5 *h-tc295bc220d161p2
H6 *h-tc295bc220d161p2
H10 *h-tc295bc220d161p2
H11 *h-tc295bc220d161p2

B-stage change

VGA bracket Hole.

H8 *h-tc295bc220d161p2
H12 *h-tc295bc220d161p2
H13 *h-tc295bc220d161p2

B-stage change

PAD and HOLE

H1 *h-tj4-1
H7 *h-c315d106p2
H2 *h-c315d106p2
H22 *h-tj4-3
H25 *H-C315D106P2
H15 *h-c315d106p2
H16 *h-c315d106p2
H18 *H-HC130bc197d130pb
H14 *O-O236X669D236X669N
H17 *h-tc421x335bc315d106p2
H23 *h-c315d106p2
H4 *H-C315D106P2
H9 *h-tj4-2
H3 *H-C315D130P2
H24 *H-TC130BC197D130PB

PAD2 MDC_SPRING
PAD1 MDC_SPRING

PAD3 *EMI_PAD
PAD4 *EMI_PAD
PAD5 *EMI_PAD
PAD6 *EMI_PAD
PAD7 *EMI_PAD
PAD8 *EMI_PAD

MINI CARD Hole.

H26 *h-t67bc276d67p2
H30 *H-TC161BC276D161P2
H27 *H-TC161BC276D161P2
H29 *h-t67bc276d67p2
H28 *h-t67bc276d67p2
H20 *H-TC161BC276D161P2

H31 *EMIPAD236X591B
H32 *emipad6472x1220
H33 *emipad236x591b

[11,29,34,36,42,7,8,9] +1.05V
[10,11,12,13,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V

MDC Hole.

H21 *h-tc146bc256d146p2
H19 *h-tc146bc256d146p2

EMI solution.

C773 .1U/25V_4 — +VIN
C966 .1U/25V_4 — +VIN
R796 0_4 — LAN_AGND1

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	DIS	UMA
Ra	NA	0 ohm
Rb	0 ohm	NA
Rc	0 ohm	NA

03

U29A

DMI

Intel(R) FDI

PCI EXPRESS -- GRAPHICS

IC,AUB_CFD_rPGA,R1P0

2.7GT/s data rate

U29B

MISC

THERMAL

CLOCKS

DDR3 MISC

PWR MANAGEMENT

JTAG & BPM

IC,AUB_CFD_rPGA,R1P0

U14 MC74VHC1G08DFT2G

Q76 MMBT3904-7-F

Q78 MMBT3904-7-F

Q77 DTC144EUA

1.1V

Use a voltage divider with VDDQ (1.5V) rail (ON in S3) and resistor combination of 4.75K (to VDDQ)/12K(to GND) to generate the required voltage.
Note: CRB uses a 3.3V (always ON) rail with 2K and 1K combination.

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Quanta Computer Inc.

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Size	Document Number	Rev
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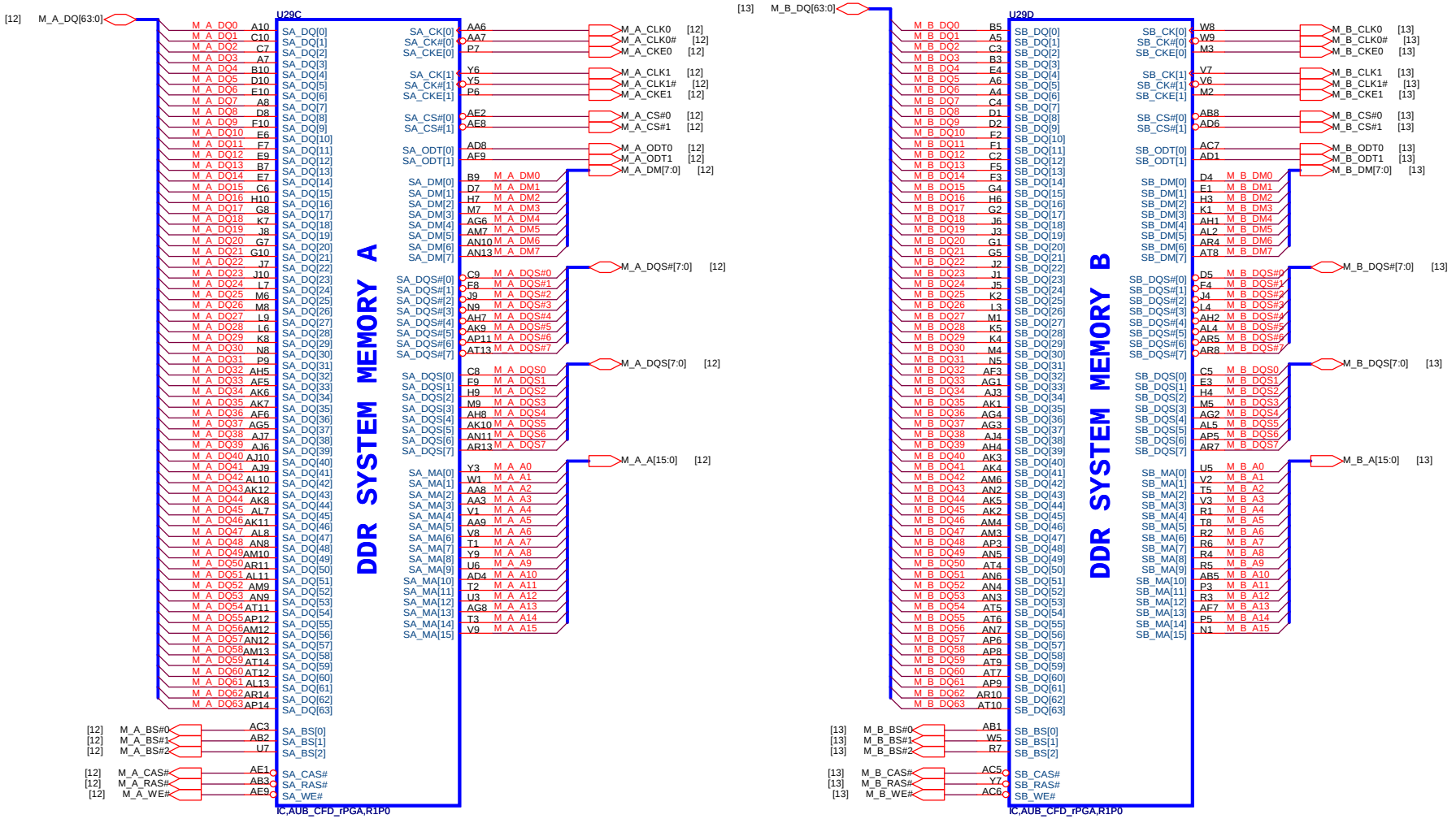
AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



PROJECT : TW9D
Quanta Computer Inc.

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	DIS	UMA
Rc	NA	470
Rd	NA	0 ohm
Re	NA	0 ohm
Rf	NA	NA

U29F

+VCORE

C86 22U/6.3V_8
C28 22U/6.3V_8
C593 22U/6.3V_8
C584 22U/6.3V_8
C104 22U/6.3V_8
C89 22U/6.3V_8
C88 22U/6.3V_8
C601 22U/6.3V_8
C581 22U/6.3V_8
C108 22U/6.3V_8
C116 22U/6.3V_8
C595 22U/6.3V_8
C590 22U/6.3V_8
C120 22U/6.3V_8
C130 22U/6.3V_8
C604 22U/6.3V_8
C109 22U/6.3V_8
C85 22U/6.3V_8
C580 22U/6.3V_8
C582 22U/6.3V_8
C98 22U/6.3V_8
C118 22U/6.3V_8
C119 22U/6.3V_8
C598 22U/6.3V_8
C87 22U/6.3V_8
C26 22U/6.3V_8
C27 22U/6.3V_8
C117 22U/6.3V_8
C122 .1U/10V_4
C121 .1U/10V_4

AG35 AG34 AG33 AG32 AG31 AG30 AG29 AG28 AG27 AG26 AF35 AF34 AF33 AF32 AF31 AF30 AF29 AF28 AF27 AF26 AD35 AD34 AD33 AD32 AD31 AD30 AD29 AD28 AD27 AD26 AC35 AC34 AC33 AC32 AC31 AC30 AC29 AC28 AC27 AC26 AA35 AA34 AA33 AA32 AA31 AA30 AA29 AA28 AA27 AA26 Y35 Y34 Y33 Y32 Y31 Y30 Y29 Y28 Y27 Y26 V35 V34 V33 V32 V31 V30 V29 V28 V27 V26 U35 U34 U33 U32 U31 U30 U29 U28 U27 U26 R35 R34 R33 R32 R31 R30 R29 R28 R27 R26 P35 P34 P33 P32 P31 P30 P29 P28 P27 P26

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48 VCC49 VCC50 VCC51 VCC52 VCC53 VCC54 VCC55 VCC56 VCC57 VCC58 VCC59 VCC60 VCC61 VCC62 VCC63 VCC64 VCC65 VCC66 VCC67 VCC68 VCC69 VCC70 VCC71 VCC72 VCC73 VCC74 VCC75 VCC76 VCC77 VCC78 VCC79 VCC80 VCC81 VCC82 VCC83 VCC84 VCC85 VCC86 VCC87 VCC88 VCC89 VCC90 VCC91 VCC92 VCC93 VCC94 VCC95 VCC96 VCC97 VCC98 VCC99 VCC100

IC,AUB_CFD_rPGA,R1P0

CPU CORE SUPPLY

POWER

1.1V RAIL POWER

VTT0_1 VTT0_2 VTT0_3 VTT0_4 VTT0_5 VTT0_6 VTT0_7 VTT0_8 VTT0_9 VTT0_10 VTT0_11 VTT0_12 VTT0_13 VTT0_14 VTT0_15 VTT0_16 VTT0_17 VTT0_18 VTT0_19 VTT0_20 VTT0_21 VTT0_22 VTT0_23 VTT0_24 VTT0_25 VTT0_26 VTT0_27 VTT0_28 VTT0_29 VTT0_30 VTT0_31 VTT0_32

AH14 AH12 AH11 AH10 J14 J13 H14 H12 G14 G13 G12 G11 F14 F13 F12 F11 E14 E12 D14 D13 D12 D11 C14 C13 C12 C11 B14 B12 A14 A13 A12 A11

+1.1V_VTT

C596 10U/6.3V_8
C592 10U/6.3V_8
C575 10U/6.3V_8
C571 10U/6.3V_8
C32 10U/6.3V_8
C589 10U/6.3V_8
C586 10U/6.3V_8
C102 22U
C123 22U
C96 22U
C574 10U/6.3V_8
C579 10U/6.3V_8

Please note that +VCC_GFX_CORE should be 1.05V in Auburndale

VTT0_33 VTT0_34 VTT0_35 VTT0_36 VTT0_37 VTT0_38 VTT0_39 VTT0_40 VTT0_41 VTT0_42 VTT0_43 VTT0_44

AF10 AE10 AC10 AB10 Y10 W10 U10 T10 J12 J11 J16 J15

+1.1V_VTT

C111 22U
C106 22U

VTT Rail Values are
Auburndal VTT=1.05V
Clarksfield VTT=1.1V

	DIS	UMA
Ra	0 ohm	NA

Ra R126 0_8

CPU VIDS

PSI# AN33 H_PSI# [37]

VID[0] AK35 CPU_VID0 [37]
VID[1] AK33 CPU_VID1 [37]
VID[2] AK34 CPU_VID2 [37]
VID[3] AL35 CPU_VID3 [37]
VID[4] AL33 CPU_VID4 [37]
VID[5] AM33 CPU_VID5 [37]
VID[6] AM35 CPU_VID6 [37]
PROC_DPRSLPVR AM34 DPRSLPVR [37]

VTT_SELECT G15 H_VTTVID1 [38]

H_VTTVID1=Low, 1.1V
H_VTTVID1=High, 1.05V

SENSE LINES

ISENSE AN35 I_MON [37]

VTT_SENSE B15 VTT_SENSE [38]
VSS_SENSE_VTT A15

VCC_SENSE AJ34 VCCSENSE [37]
VSS_SENSE AJ35 VSSSENSE [37]

R404 100/F_4 +VCORE
R408 100/F_4

U29G

+VGACORE_UMA

C242 *22U
C243 *22U
C244 *10U/6.3V_8
C245 *10U/6.3V_8

AT21 AT19 AT18 AT16 AR21 AR19 AR18 AR16 AP21 AP19 AP18 AP16 AN21 AN19 AN18 AN16 AM21 AM19 AM18 AM16 AL21 AL19 AL18 AL16 AK21 AK19 AK18 AK16 AJ21 AJ19 AJ18 AJ16 AH21 AH19 AH18 AH16

VAXG1 VAXG2 VAXG3 VAXG4 VAXG5 VAXG6 VAXG7 VAXG8 VAXG9 VAXG10 VAXG11 VAXG12 VAXG13 VAXG14 VAXG15 VAXG16 VAXG17 VAXG18 VAXG19 VAXG20 VAXG21 VAXG22 VAXG23 VAXG24 VAXG25 VAXG26 VAXG27 VAXG28 VAXG29 VAXG30 VAXG31 VAXG32 VAXG33 VAXG34 VAXG35 VAXG36

GRAPHICS

POWER

FDI PEG & DMI

+1.1V_VTT

C68 22U
C544 22U

J24 J23 H25

VTT1_45 VTT1_46 VTT1_47

+1.1V_VTT

C33 22U
C69 22U
C34 22U
C597 22U

K26 J27 J26 J25 H27 G28 G27 G26 F26 E26 E25

VTT1_48 VTT1_49 VTT1_50 VTT1_51 VTT1_52 VTT1_53 VTT1_54 VTT1_55 VTT1_56 VTT1_57 VTT1_58

SENSE LINES

VAXG_SENSE AR22
VSSAXG_SENSE AT22

VCC_AXG_SENSE [34]
VSS_AXG_SENSE [34]

GRAPHICS VIDS

GFX_VID[0] AM22
GFX_VID[1] AP22
GFX_VID[2] AN22
GFX_VID[3] AP23
GFX_VID[4] AM23
GFX_VID[5] AP24
GFX_VID[6] AN24

GFXVR_VID_0 [34]
GFXVR_VID_1 [34]
GFXVR_VID_2 [34]
GFXVR_VID_3 [34]
GFXVR_VID_4 [34]
GFXVR_VID_5 [34]
GFXVR_VID_6 [34]

GFX_VR_EN Rc R132 *470/F_4

GFX_VR_EN AR25
GFX_DPRSLPVR AT25
GFX_IMON AM24

Rd R145 *0_4
Re R144 *0_4
Rf R143 *1K/F_4

GFXVR_EN [34]
GFXVR_DPRSLPVR [34]
GFXVR_IMON [34]

DDR3 - 1.5V RAILS

VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16 VDDQ17 VDDQ18

AJ1 AF1 AE7 AE4 AC1 AB7 AB4 Y1 W7 W4 U1 T7 T4 P1 N7 N4 L1 H1

C110 1U/6.3V_4
C103 1U/6.3V_4
C114 1U/6.3V_4
C112 1U/6.3V_4
C107 1U/6.3V_4
C100 22U
C101 22U
C94 330u_2.5V_7343

+1.5VSUS_CPU

+1.5VSUS

R813 *0_8
R811 *0_8
R812 *0_8

C788 .1U/25V_4

Q3 AON6426L

[40] MAIND

1.1V

VTT0_59 VTT0_60 VTT0_61 VTT0_62 VTT0_63 VTT0_64 VTT0_65 VTT0_66 VTT0_67 VTT0_68

P10 N10 L10 K10 J22 J20 J18 H21 H20 H19

+1.1V_VTT

C76 10U/6.3V_8
C92 10U/6.3V_8
C545 22U
C576 22U

1.8V

VCCPLL1 VCCPLL2 VCCPLL3

L26 L27 M26

+1.8V

C67 22U
C63 4.7U/6.3V_6
C62 2.2U/6.3V_6
C66 1U/6.3V_4
C65 1U/6.3V_4

+1.5VSUS_CPU

R27 220_8

DS_1.5VS

[12,40] MAINON_G

Q34 BSS138

IC,AUB_CFD_rPGA,R1P0

CPU_VID0 R413 1K/F_4
CPU_VID1 R418 *1K/F_4
CPU_VID2 R412 1K/F_4
CPU_VID3 R417 *1K/F_4
CPU_VID4 R427 1K/F_4
CPU_VID5 R422 *1K/F_4
CPU_VID6 R428 *1K/F_4
DPRSLPVR R423 1K/F_4
H_PSI# R414 *1K/F_4
R419 1K/F_4
R433 1K/F_4
R435 *1K/F_4
R415 *1K/F_4
R420 1K/F_4
R424 1K/F_4
R429 *1K/F_4
R425 *1K/F_4
R430 1K/F_4

+1.1V_VTT

HFM_VID : Max 1.4V
LFM_VID : Min 0.65V

[34] +VGACORE_UMA
[37] +VCORE
[10,11,3,34,38] +1.1V_VTT
[12,13,39,40,42] +1.5VSUS
[10,11,31,36,40,42] +1.8V

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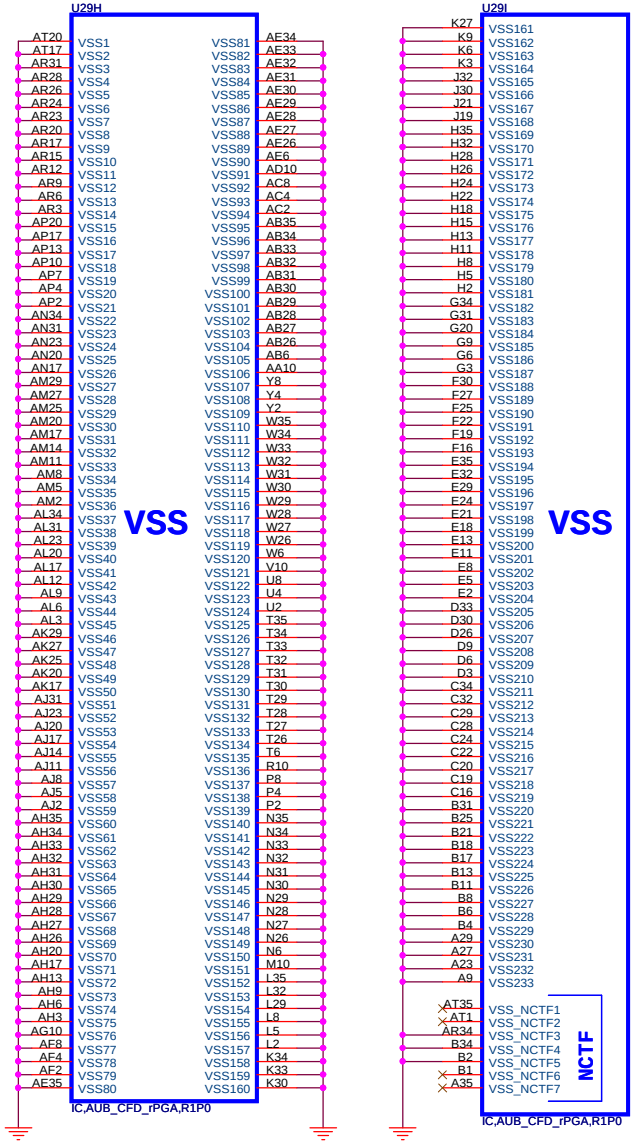
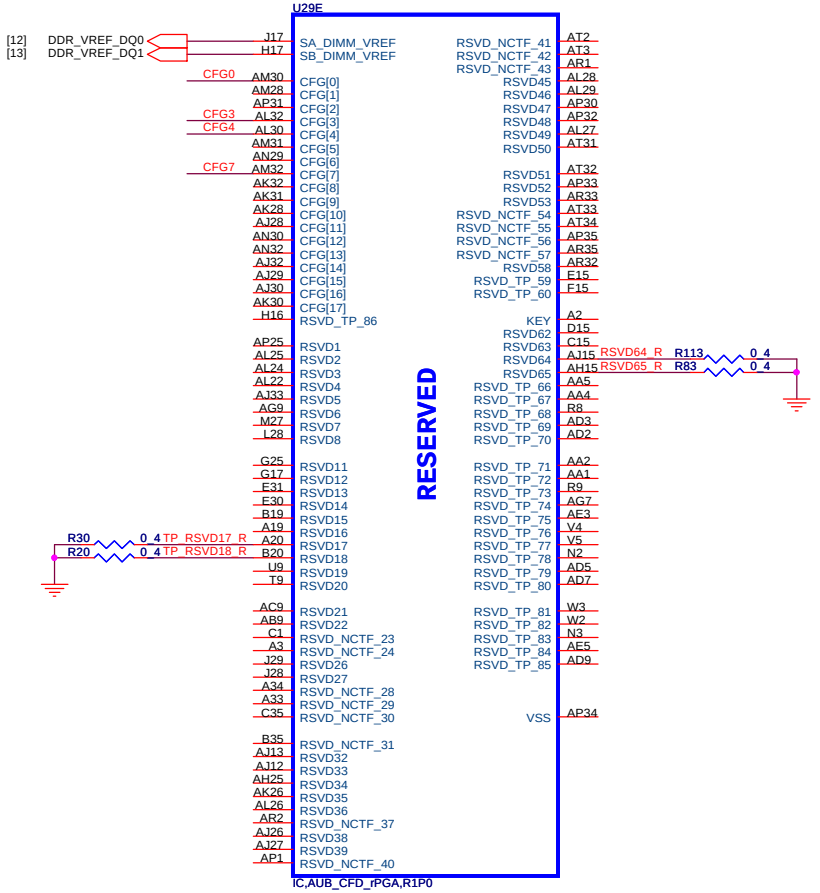
AUBURNDALE/CLARKSFIELD PROCESSOR (GND)

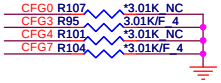


AUBURNDALE/CLARKSFIELD PROCESSOR(RESERVED, CFG)



The Clarkfield processor's PCI Express interface may not meet PCI Express 2.0 jitter specifications. Intel recommends placing a 3.01K +/- 5% pull down resistor to VSS on CFG[7] pin for both rPGA and BGA components. This pull down resistor should be removed when this issue is fixed.

	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed 15 -> 0 , 14 -> 1



For Discrete only

CFG[1:0] - PCI_Epress Configuration Select
*** 11= 1 x 16 PEG**
*** 10= 2 x 8 PEG**

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INTVRMEN - Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs

IBEX PEAK-M (HDA,JTAG,SATA)

U35A

Ibex-M 1 OF 10

RTC
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN

LPC
FWH0 / LAD0
FWH1 / LAD1
FWH2 / LAD2
FWH3 / LAD3
FWH4 / LFRAME#
LDRQ0#
(+3V) LDRQ1# / GPIO23
SERIRQ

IHDA
HDA_BCLK
HDA_SYNC
SPKR
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDO
HDA_DOCK_EN# / GPIO33 (+3V)
HDA_DOCK_RST# / GPIO13 (+3V_S5)

JTAG
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
TRST#

SPI
SPI_CLK
SPI_CS0#
SPI_CS1#
SPI_MOSI
SPI_MISO

SATA
SATA0RXN SATA0RXP SATA0TXN SATA0TXP
SATA1RXN SATA1RXP SATA1TXN SATA1TXP
SATA2RXN SATA2RXP SATA2TXN SATA2TXP
SATA3RXN SATA3RXP SATA3TXN SATA3TXP
SATA4RXN SATA4RXP SATA4TXN SATA4TXP
SATA5RXN SATA5RXP SATA5TXN SATA5TXP
SATAICOMPO
SATAICOMPI
SATALED#
(+3V) SATA0GP / GPIO21
(+3V_S5) SATA1GP / GPIO19

Y5 32.768KHZ
12PF/50V_4 C667
C665 12PF/50V_4
R492 10M_4
RTC_X1 RTC_X2
RTC_RST#
SRTC_RST#
SM_INTRUDER#
+RTC_CELL R497 330K_6 PCH_INVRMEN
ACZ_BCLK ACZ_SYNC ACZ_RST#
[10,24] SPKR
[24] ACZ_SDIN0
[25] ACZ_SDIN1
ACZ_SDOUT
[10,29] PCH_GPIO33
R248 51_4
TP40 PCH_JTAG_TCK_BUF
TP37 PCH_JTAG_TMS
TP43 PCH_JTAG_TDI
TP42 PCH_JTAG_TDO
TP41 PCH_JTAG_RST#
must add test point.
SPI_CLK_R
SPI_CS0#_R
TP38 SPI_CS1#
SPI_SI_R
SPI_SO
IbexPeak-M_Rev1_0

FWH0 / LAD0 [29,30] LAD0 D33
FWH1 / LAD1 [29,30] LAD1 B33
FWH2 / LAD2 [29,30] LAD2 C32
FWH3 / LAD3 [29,30] LAD3 A32
FWH4 / LFRAME# [29,30] C34
LDRQ0# A34
(+3V) LDRQ1# / GPIO23 F34
SERIRQ AB9
R255 10K/F_4 +3V SERIRQ [29]

SATA HDD1
SATA0RXN AK7 SATA_RXN0_C [27]
SATA0RXP AK6 SATA_RXP0_C [27]
SATA0TXN AK11 SATA_TXN0 [27]
SATA0TXP AK9 SATA_TXP0 [27]
SATA1RXN AH6 SATA_RXN1_C [27]
SATA1RXP AH5 SATA_RXP1_C [27]
SATA1TXN AH9 SATA_TXN1 [27]
SATA1TXP AH8 SATA_TXP1 [27]

SATA ODD
Port2 and Port3 HM55 not support

SATA2RXN AF11
SATA2RXP AF9
SATA2TXN AF7
SATA2TXP AF6
SATA3RXN AH3
SATA3RXP AH1
SATA3TXN AF3
SATA3TXP AF1

E-SATA
SATA3RXN AD9
SATA3RXP AD8
SATA3TXN AD6
SATA3TXP AD5
SATA5RXN AD3 SATA_RXN5_C [28]
SATA5RXP AD1 SATA_RXP5_C [28]
SATA5TXN AB3 SATA_TXN5 [28]
SATA5TXP AB1 SATA_TXP5 [28]

SATAICOMPO AF16
SATAICOMPI AF15 SATA_COMP R213 37.4/F_4 +1.05V
SATALED# T3 SATA_LED# SATA_LED# [25]
Y9 SATA_DET0#
V1 SATA_DET1#

Stuff on Hybrid and UMA
+3V R783 *2.2K_4 EDIDCLK_PCH
R785 *2.2K_4 EDIDDATA_PCH

UMA and Hybird_LVDS & CRT signals

[17,21,32] LVDS_BLON R181 *0_4 LVDS_BLON_PCH T48
[17,21,32] DISP_ON R168 *0_4 DISP_ON_PCH T47
DPST_PWM [17,21,32] R182 *0_4 DPST_PWM_PCH Y48
EDIDCLK [29,30] [17,21,32] R183 *0_4 EDIDCLK_PCH AB48
EDIDDATA [17,21,32] R139 *0_4 EDIDDATA_PCH Y45
No stuff on Hybrid
+3V R170 *10K/F_4 L_CTRL_CLK AB46
R169 *10K/F_4 L_CTRL_DATA V48
R176 *2.37K/F_4 LVDS_IBG AP39
LVDS_VBG AP41
TP3
AT43
AT42

U35D

L_BKLTEN T48
L_VDD_EN T47
L_BKLTCTL Y48
L_DDC_CLK AB48
L_DDC_DATA Y45
L_CTRL_CLK AB46
L_CTRL_DATA V48
LVD_IBG AP39
LVD_VBG AP41
LVD_VREFH AT43
LVD_VREFL AT42

LVDS--A
LVDSA_CLK# AV53
LVDSA_CLK AV51
[21,32] LA_CLK#
[21,32] LA_CLK
LVDSA_DATA#0 BB47
LVDSA_DATA#1 BA52
LVDSA_DATA#2 AY48
LVDSA_DATA#3 AV47
[21,32] LA_DATAN0
[21,32] LA_DATAN1
[21,32] LA_DATAN2
LVDSA_DATA0 BB48
LVDSA_DATA1 BA50
LVDSA_DATA2 AY49
LVDSA_DATA3 AV48
[21,32] LA_DATAP0
[21,32] LA_DATAP1
[21,32] LA_DATAP2

LVDS--B
LVDSB_CLK# AP48
LVDSB_CLK AP47
[21,32] LB_CLK#
[21,32] LB_CLK
LVDSB_DATA#0 AY53
LVDSB_DATA#1 AT49
LVDSB_DATA#2 AU52
LVDSB_DATA#3 AT53
[21,32] LB_DATAN0
[21,32] LB_DATAN1
[21,32] LB_DATAN2
[21,32] LB_DATAP0
[21,32] LB_DATAP1
[21,32] LB_DATAP2
LVDSB_DATA0 AY51
LVDSB_DATA1 AT48
LVDSB_DATA2 AU50
LVDSB_DATA3 AT51

CRT_BLUE AA52
CRT_GREEN AB53
CRT_RED AD53
CRT_DDC_CLK V51
CRT_DDC_DATA V53
CRT_HSYNC Y53
CRT_VSYNC Y51
DAC_IREF AD48
CRT_IRTN AB51

No stuff on Hybrid
CRT_B R399 *0_4 CRT_B_PCH R448 *0_4 CRT_B_1
R454 *150/F_4
CRT_G R400 *0_4 CRT_G_PCH R449 *0_4 CRT_G_1
R455 *150/F_4
CRT_R R401 *0_4 CRT_R_PCH R453 *0_4 CRT_R_1
R452 *150/F_4
[16,22,32] DDCCLK R396 *0_4 DDCCLK_PCH R446 *0_4 DDCCLK_INT
[16,22,32] DDCDATA R397 *0_4 DDCDATA_PCH R447 *0_4 DDCDATA_INT
[16,22,32] HSYNC_COM R167 *0_4 HSYNC_PCH R147 *0_4 HSYNC
[16,22,32] VSYNC_COM R191 *0_4 VSYNC_PCH R141 *0_4 VSYNC
R154 1K/F_4 DAC_IREF

CRT

Ibex-M 4 OF 10

SDVO
SDVO_TVCLKINN BJ46
SDVO_TVCLKINP BG46
SDVO_STALLN BJ48
SDVO_STALLP BG48
SDVO_INTN BF45
SDVO_INTP BH45
SDVO_CTRLCLK T51 DPB_CTRL_CLK
SDVO_CTRLDATA T53 DPB_CTRL_DATA

DISPLAY PORT B
DDPB_AUXN BG44
DDPB_AUXP BJ44
DDPB_HPD AU38 DPB_HPD_Q
DDPB_0N BD42 DPB_LANE0_N
DDPB_0P BC42 DPB_LANE0_P
DDPB_1N BJ42 DPB_LANE1_N
DDPB_1P BG42 DPB_LANE1_P
DDPB_2N BB40 DPB_LANE2_N
DDPB_2P BA40 DPB_LANE2_P
DDPB_3N AW38 DPB_LANE3_N
DDPB_3P BA38 DPB_LANE3_P

DISPLAY PORT C
DDPC_CTRLCLK Y49
DDPC_CTRLDATA AB49
DDPC_AUXN BE44
DDPC_AUXP BD44
DDPC_HPD AV40
DDPC_0N BE40
DDPC_0P BD40
DDPC_1N BF41
DDPC_1P BH41
DDPC_2N BD38
DDPC_2P BC38
DDPC_3N BB36
DDPC_3P BA36

DISPLAY PORT D
DDPD_CTRLCLK U50
DDPD_CTRLDATA U52
DDPD_AUXN BC46
DDPD_AUXP BD46
DDPD_HPD AT38
DDPD_0N BJ40
DDPD_0P BG40
DDPD_1N BJ38
DDPD_1P BG38
DDPD_2N BF37
DDPD_2P BH37
DDPD_3N BE36
DDPD_3P BD36

Digital Display Interface

IbexPeak-M_Rev1_0

TP32
TP33

[32] LVDS_BLON_PCH
[32] DISP_ON_PCH
[32] DPST_PWM_PCH
[32] EDIDCLK_PCH
[32] EDIDDATA_PCH
[32] CRT_B_PCH
[32] CRT_G_PCH
[32] CRT_R_PCH
[32] DDCCLK_PCH
[32] DDCDATA_PCH
[32] HSYNC_PCH
[32] VSYNC_PCH

1205 The SATALED# signal is open-collector and requires a weak external pull-up (8.2 k to 10 k) to +V3.3.
+3V R557 10K/F_4 SATA_LED#
R270 *10K/F_4 SATA_DET0#
R559 *10K/F_4 SATA_DET1#
R274 10K/F_4
R632 10K/F_4

UMA HDMI signals

DPB_CTRL_CLK R444 *0_4 SDVO_CLK [33]
DPB_CTRL_DATA R445 *0_4 SDVO_DATA [33]
DPB_LANE0_N C291 *.1U/10V_4 IN_D2# [33]
DPB_LANE0_P C324 *.1U/10V_4 IN_D2 [33]
DPB_LANE1_N C630 *.1U/10V_4 IN_D1# [33]
DPB_LANE1_P C633 *.1U/10V_4 IN_D1 [33]
DPB_LANE2_N C325 *.1U/10V_4 IN_D0# [33]
DPB_LANE2_P C328 *.1U/10V_4 IN_D0 [33]
DPB_LANE3_N C335 *.1U/10V_4 IN_CLK# [33]
DPB_LANE3_P C331 *.1U/10V_4 IN_CLK [33]

+3V Q4 *2N7002K
DPB_HPD_Q
HDMI_HPD_CON [33]
R159 *100K_4
R158 *0_4

For AUDIO

[24] ACZ_RST#_AUDIO R462 33_4 ACZ_RST#
[24] ACZ_SDOUT_AUDIO R467 33_4 ACZ_SDOUT
C641 *10P/50V_4
[24] ACZ_SYNC_AUDIO R477 33_4 ACZ_SYNC
C656 *10P/50V_4
[24] BIT_CLK_AUDIO R192 33_4 ACZ_BCLK
C339 10P/50V_4

For MDC

[25] ACZ_RST#_MDC R465 33_4 ACZ_RST#
[25] ACZ_SDOUT_MDC R469 33_4 ACZ_SDOUT
C645 *10P/50V_4
[25] ACZ_SYNC_MDC R474 33_4 ACZ_SYNC
C652 *10P/50V_4
[25] BIT_CLK_MDC R198 33_4 ACZ_BCLK
C347 *10P/50V_4

RTC

+RTC_CELL
+3VPCU RB500V-40 D27 C655 1U/6.3V_4
+3VRTC_2 RB500V-40 D26
R482 20K/F_4 RTC_RST#
C660 1U/6.3V_4 G2 *SHORT_PAD1
R487 20K/F_4 SRTC_RST#
C664 1U/6.3V_4 G3 *SHORT_PAD1
R476 1M_4 SM_INTRUDER#
R489 1K/F_4 +3VRTC_1 BT1 BAT_CONN

2M byte SPI ROM for ME

U40
+3V
SPI_HOLD# R568 10K/F_4 C440 .1U/10V_4
VDD CE# SCK SI HOLD# SO VSS WP#
SPI_CS0# R538 short0402*0_4/S SPI_CS0#_R
SPI_CLK R564 short0402*0_4/S SPI_CLK_R
SPI_SI R563 short0402*0_4/S SPI_SI_R
SPI_SO_R R539 short0402*0_4/S SPI_SO
SPI_WP# R540 10K/F_4 +3V
2M SPI ROM
AKE38FP0Z00
X6179-10XXXX-8P-SOCKET

[11,2,29,34,36,42,8,9] +1.05V
[10,11,12,13,2,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,8,9] +3V
[21,25,28,29,3,30,34,35,36,38,40,41,42] +3VPCU

2M byte SPI ROM for ME
MXIC: AKE38FP0Z00
WINBOND: AKE38FP0N01
AIT: AKE38ZN0800

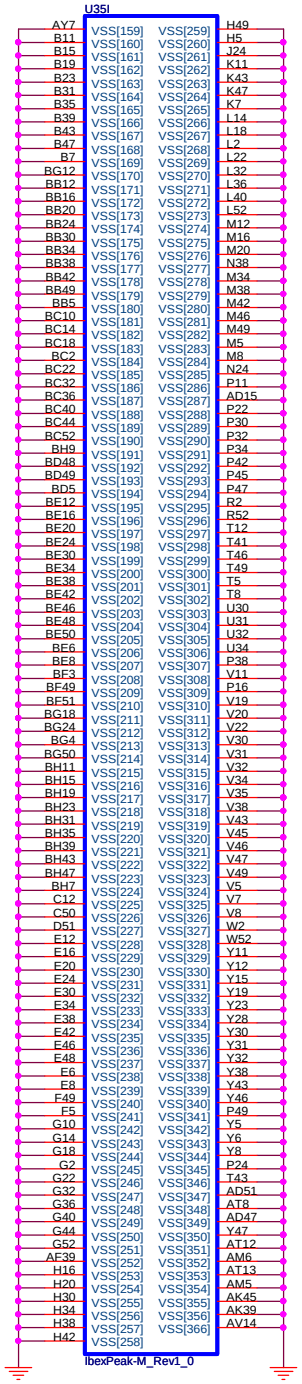
SPI ROM Socket
DG008000031

NB5

PROJECT : TW9D
Quanta Computer Inc.

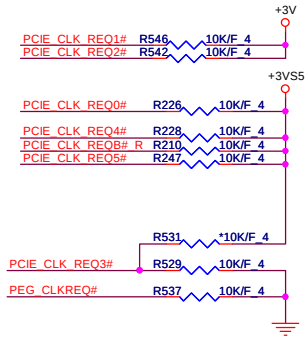
Size	Document Number	Rev
Custom	PCH 1/5 (SATA,HDA,LPC)	A
Date: Thursday, April 15, 2010	Sheet 7 of 43	

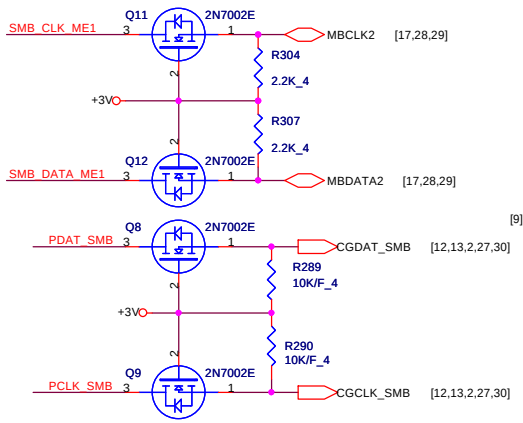
IBEX PEAK-M (GND)

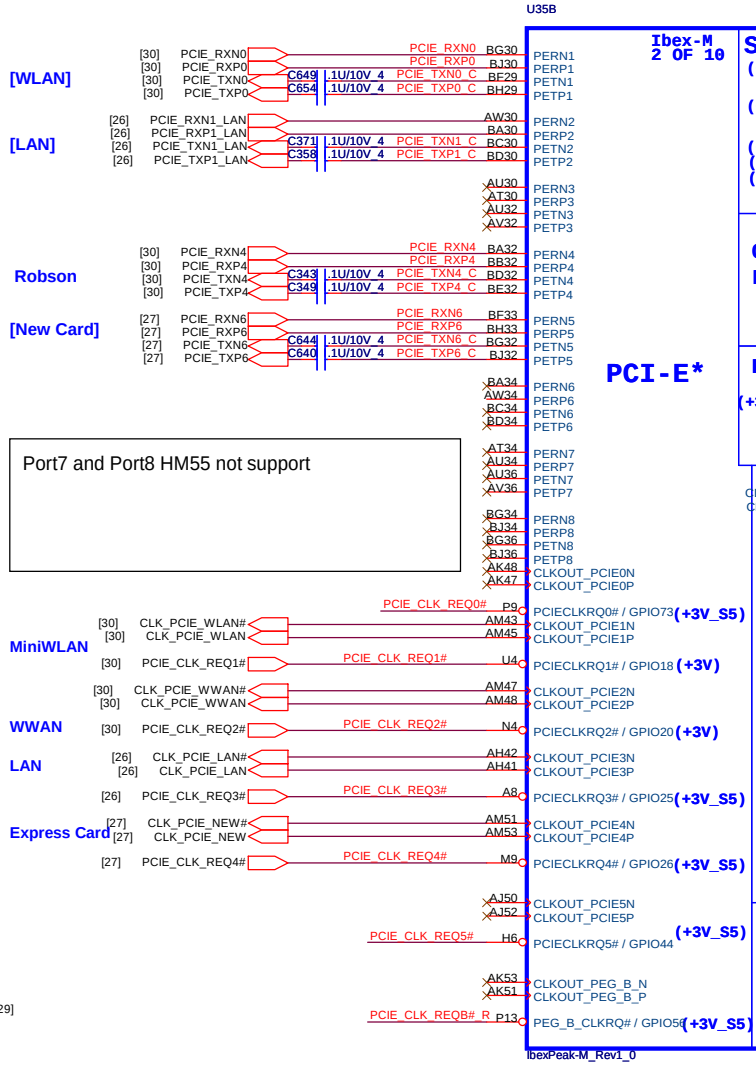


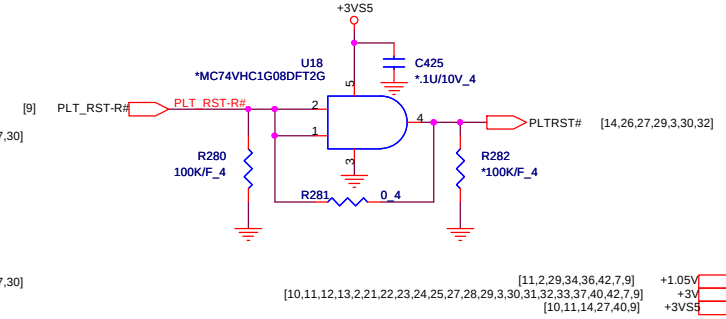
IBEX PEAK-M (PCI-E,SMBUS,CLK)

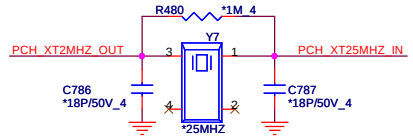
08











NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PCH 2/5 (PCIE, SMBUS,CK)	A
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IBEX PEAK-M (PCI,USB,NVRAM)

U35E

Ibex-M
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PCI

AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7 AD8 AD9 AD10 AD11 AD12 AD13 AD14 AD15 AD16 AD17 AD18 AD19 AD20 AD21 AD22 AD23 AD24 AD25 AD26 AD27 AD28 AD29 AD30 AD31

C/BE0# C/BE1# C/BE2# C/BE3#

PCI_PIRQA# PCI_PIRQB# PCI_PIRQC# PCI_PIRQD#

PIRQA# PIRQB# PIRQC# PIRQD#

REQ0# REQ1# GPIO50 (+5V) REQ2# GPIO52 (+5V) REQ3# GPIO54 (+5V)

[10] GNT0# [10] GNT1# PCI_GNT2# [10,30] GNT3#

GNT0# GNT1# GPIO51 (+3V) GNT2# GPIO53 (+3V) GNT3# GPIO55 (+3V)

[17] DGPU_IDLE_INT# R776 *0_4 PIRQE#

PIRQE# GPIO2 (+5V) PIRQF# GPIO3 (+5V) PIRQG# GPIO4 (+5V) PIRQH# GPIO5 (+5V)

PCIRST#

[29] PCI_SERR# PCI_SERR# PCI_PERR#

SERR# PERR#

PCI_IRDY# PCI_DEVSEL# PCI_FRAME# PCI_PLOCK# PCI_STOP# PCI_TRDY#

IRDY# PAR DEVSEL# FRAME# PLOCK# STOP# TRDY#

TP6 PME#

[8] PLT_RST-R#

PME# PLTRST#

[30] CLK_33M_DEBUG R456 33_4 CLK_33M_DEBUG_R
[29] CLK_33M_KBC R443 33_4 CLK_33M_KBC_R
[8] CLK_PCI_FB R442 22_4 CLK_PCI_FB_C

CLKOUT_PCI0 CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3 CLKOUT_PCI4

NVRAM

NV_CE#0 NV_CE#1 NV_CE#2 NV_CE#3

NV_DQS0 NV_DQS1

NV_DQ0 / NV_IO0 … NV_DQ15 / NV_IO15

NV_ALE NV_CLE

NV_RCOMP R536 32.4/F_4

NV_RB#

NV_WR#0_RE# NV_WR#1_RE#

NV_WE#_CK0 NV_WE#_CK1

USB

USBP0N/P … USBP13N/P

USB_BIAS R479 22.6/F_4

USBRBIAS# USBRBIAS

(+3V_S5) OC0# / GPIO59 … OC7# / GPIO14

USB_OC0# … USB_OC7#

USB
USB
ESATA-USB
Card reader
Camera

Port6 and Port7 HM55 not support

NEWCARD
WLAN
WWAN
Blue tooth

IbexPeak-M_Rev1_0

For Switchable only

[29,32] DGPU_HOLD_RST# R798 *0_4 SATA2GP → SATA2GP [10]
[29,42] DGPU_PWR_EN R773 *0_4 REQ1#
[29,32,33] DGPU_SELECT# R775 *0_4 REQ2#
[29,32] EDID_SELECT# R774 *0_4 REQ3#
[32] PWM_SELECT# R781 *0_4 PCI_GNT2#
[14,29,32] DGPU_PWROK R799 *0_4 SATA3GP → SATA3GP [10]

+3VS5
PCH_GPIO61 R771 10K/F_4

Discrete Only

FDI_INT R491 1K/F_4
FDI_FSYNC0 R500 1K/F_4
FDI_FSYNC1 R496 1K/F_4
FDI_LSYNC0 R498 1K/F_4
FDI_LSYNC1 R494 1K/F_4

IBEX PEAK-M (DMI,FDI,GPIO)

U35C

Ibex-M
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DMI

[3] DMI_RXN0 … DMI_RXN3 → DMI0RXN … DMI3RXN
[3] DMI_RXP0 … DMI_RXP3 → DMI0RXP … DMI3RXP
[3] DMI_TXN0 … DMI_TXN3 → DMI0TXN … DMI3TXN
[3] DMI_TXP0 … DMI_TXP3 → DMI0TXP … DMI3TXP

+1.05V R208 49.9/F_4 DMI_COMP
DMI_ZCOMP DMI_IRCOMP

FDI

FDI_RXN0 … FDI_RXN7
FDI_RXP0 … FDI_RXP7
FDI_TXN0 … FDI_TXN7 [3]
FDI_TXP0 … FDI_TXP7 [3]

FDI_INT FDI_FSYNC0 FDI_FSYNC1 FDI_LSYNC0 FDI_LSYNC1

System Power Management

[3] XDP_DBRESET#
[37] IMVP_PWRGD R262 0_4
[29] ECPWROK R263 *0_4 PCH_PWROK
RSV_ICH_LAN_RST#
[3] PM_DRAM_PWRGD
[29] RSMRST#
[29] DNBSWON# → DNBSWON#
PM_RI#
[26,27,30] PCIE_WAKE#
[3] PM_SYNC

SYS_RESET# SYS_PWROK PWROK MEPWROK LAN_RST# DRAMPWROK RSMRST# PWRBTN# RI# WAKE# PMSYNCH

SLP_S3# SLP_S4# SLP_M# TP23

(+3V_S5) SUS_PWR_DN_ACK / GPIO30
(+3V_S5) ACPRESENT / GPIO31
(+3V) CLKRUN# / GPIO32
(+3V_S5) SUS_STAT# / GPIO61
(+3V_S5) SUSCLK / GPIO62
(+3V_S5) SLP_S5# / GPIO63
(+3V_S5) BATLOW# / GPIO72
(+3V_S5) SLP_LAN# / GPIO29

SUSB# [29] SUSC# [29]
AC_PRESENT
CLKRUN# [29]
PCH_GPIO61
SUSCLK
SLP_S5#
PM_BATLOW# [29]
BOARD_ID6 [10]

TP4 TP47 TP39

IbexPeak-M_Rev1_0

RP33 (10P8R-8.2K)

GNT3# R190 *1K/F_4

PCI_IRDY# PCI_STOP# PCI_PIRQA# PCI_PIRQC# → PCI_PIRQD# PCI_SERR# REQ1# PCI_FRAME# → +3V

RP38 (10P8R-8.2K)

USB_OC4# USB_OC5# USB_OC6# USB_OC7# → USB_OC0# USB_OC1# USB_OC2# USB_OC3# → +3VS5

RP32 (10P8R-8.2K)

REQ3# PCI_DEVSEL# PCI_TRDY# INTH# → PCI_PLOCK# PCI_PERR# REQ0# PCI_PIRQB# → +3V

REQ2# R166 8.25K/F_4
PIRQE# R165 8.25K/F_4
PIRQF# R460 8.25K/F_4
PIRQG# R179 8.25K/F_4

CLKRUN# R549 8.25K/F_4
XDP_DBRESET# R259 1K/F_4

PM_RI# R215 10K/F_4
PM_BATLOW# R530 10K/F_4
PCIE_WAKE# R221 1K/F_4

SUS_PWR_ACK R541 10K/F_4
AC_PRESENT R233 10K/F_4

RSMRST# R209 10K/F_4
RSV_ICH_LAN_RST# R499 10K/F_4
PCH_PWROK R484 10K/F_4

[11,2,29,34,36,42,7,8] +1.05V
[10,11,12,13,2,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8] +3V
[10,11,14,27,40,8] +3VS5

EMI

CLK_33M_DEBUG C620 *33P/50V_4
CLK_33M_KBC C618 *33P/50V_4
CLK_PCI_FB C617 *33P/50V_4

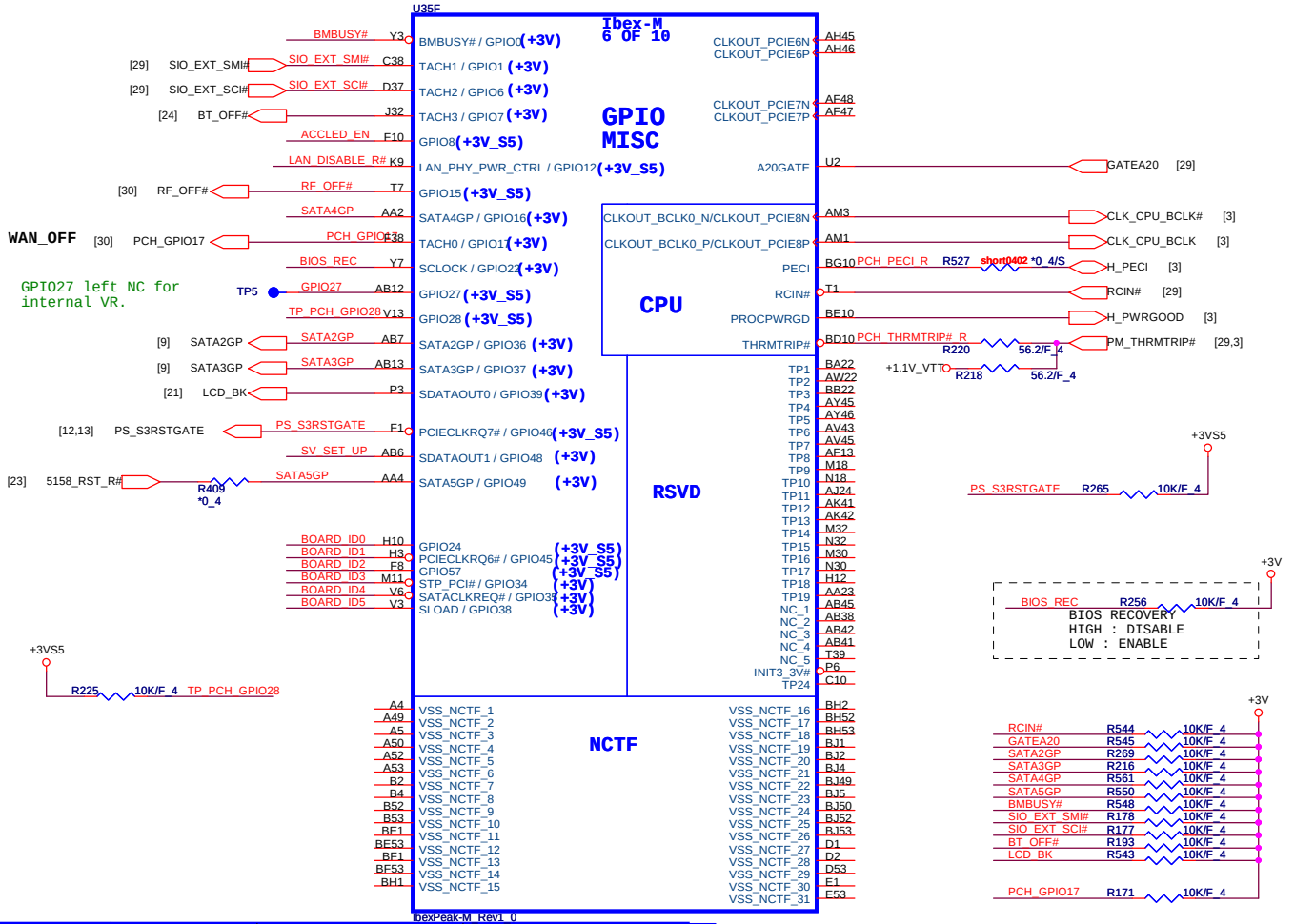
C671 *10P/50V_4 USBP4-
C775 *10P/50V_4 USBP4+
C666 *10P/50V_4 USBP8-
C670 *10P/50V_4 USBP8+
C780 *10P/50V_4 USBP10-
C781 *10P/50V_4 USBP10+
C782 *10P/50V_4 USBP11-
C783 *10P/50V_4 USBP11+
C778 *10P/50V_4 USBP12-
C779 *10P/50V_4 USBP12+

NB5

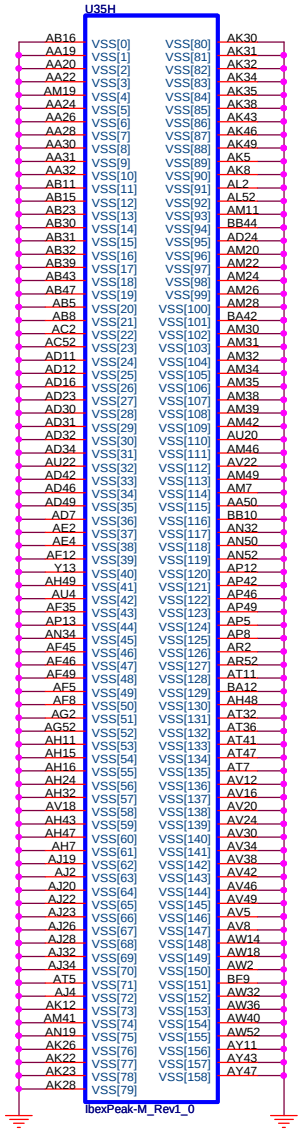
PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PCH 3/5(PCI,ONFI,USB,DMI)	A
Date: Thursday, April 15, 2010	Sheet 9 of 43	

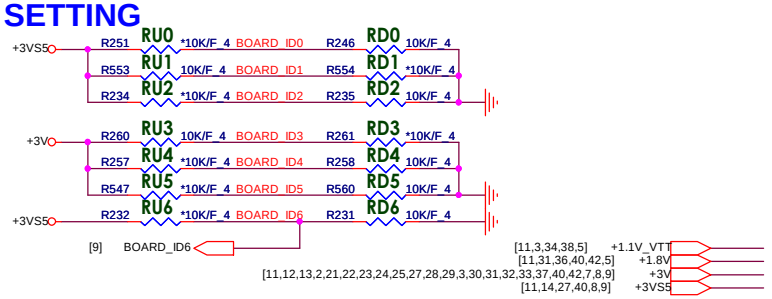
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)



IBEX PEAK-M (GND)



BOARD ID SETTING



Board ID	ID0	ID1	ID2	ID3	ID4	ID5	ID6
LG/CB	0=LG 1=CB						
UMA/Dis.		0=UMA 1=Dis.					
15.6"/ 14"			0=QL4/TW9 1=QL2/SW9				
				0=TW9(A) 1=TW9F			
Switchable						1=YES 0=NO	

Board ID	ID6	ID5	ID4	ID3	ID2	ID1	ID0
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RD2 (0)	RD1 (0)	RU0 (1)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RD2 (0)	RU1 (1)	RD0 (0)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RD2 (0)	RU1 (1)	RU0 (1)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RU2 (1)	RD1 (0)	RD0 (0)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RU2 (1)	RD1 (0)	RU0 (1)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RU2 (1)	RU1 (1)	RD0 (0)
TBD	RD6 (0)	RD5 (0)	RD4 (0)	RD3 (0)	RU2 (1)	RU1 (1)	RU0 (1)

[30,9] GNT3# R461 *10K_NC

A16 swap override Strap/Top-Block Swap Override jumper	
GNT3#	Low = A16 swap override/Top-Block Swap Override enabled High = Default

SV_SET_UP R271 10K/F_4 +3V

SV_SET_UP	1-X High = Strong (Default)

[9] GNT0# GNT0# R155 *1K/F_4
[9] GNT1# GNT1# R157 *1K/F_4

Boot BIOS Strap		
PCI_GNT0#	GNT#1	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

[31,9] NV_ALE R534 *1K/F_4
[31,9] NV_CLE R535 *1K/F_4 +1.8V

Danbury Technology Enabled	
NV_ALE	High = Enable Low = Disable

DMI Termination Voltage	
NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH

No Reboot Strap

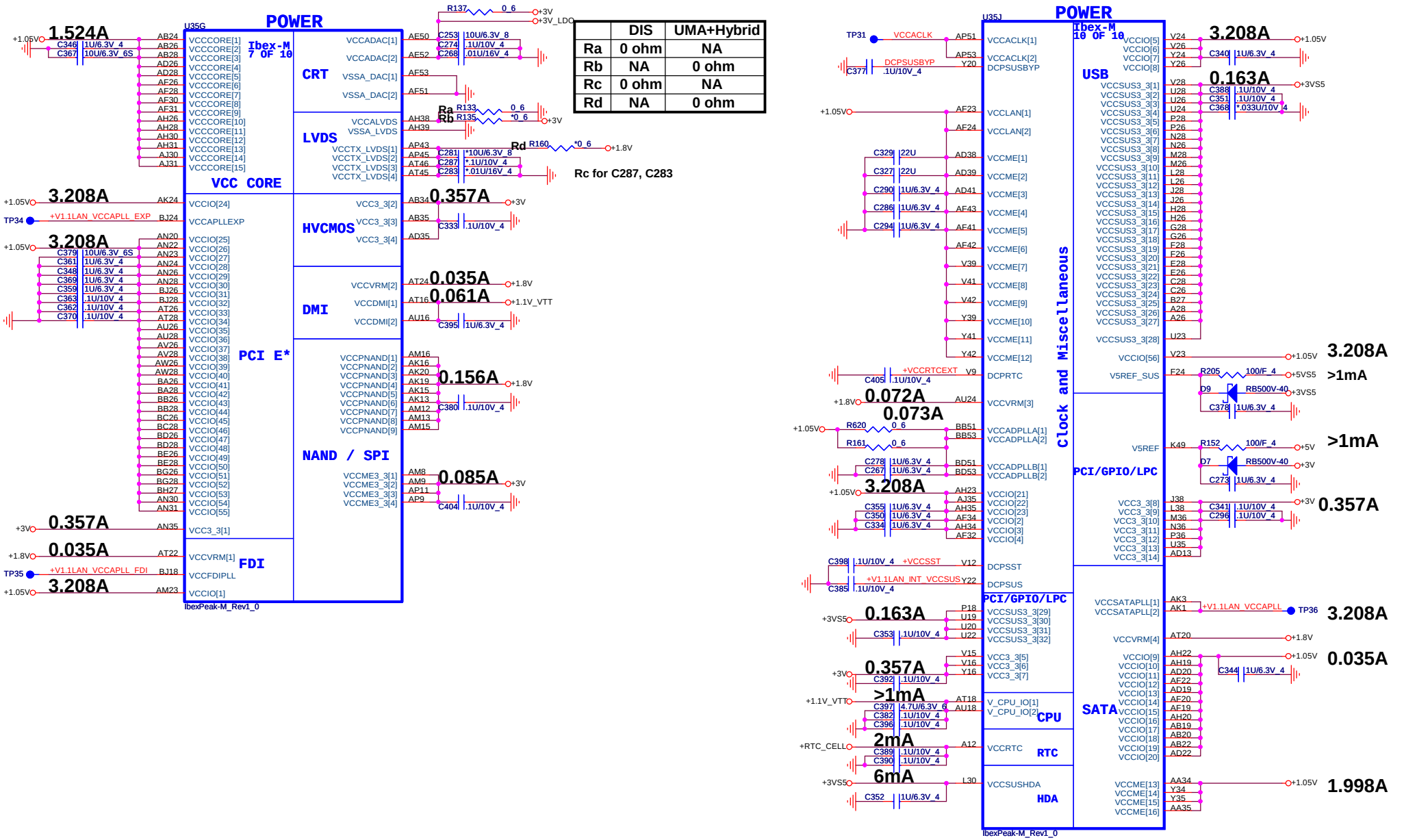
[24,7] SPKR SPKR *1K/F_4 R556 +3V

[29,7] PCH_GPIO33 R194 *10K/F_4 +3V

PROJECT : TW9D
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	PCH 4/5 (GPIO & Strap)	A
Date: Thursday, April 15, 2010	Sheet 10 of 43	



	DIS	UMA+Hybrid
Ra	0 ohm	NA
Rb	NA	0 ohm
Rc	0 ohm	NA
Rd	NA	0 ohm

Rc for C287, C283

[2,29,34,36,42,7,8,9] +1.05V
[10,3,34,38,5] +1.1V_VTT
[10,31,36,40,42,5] +1.8V
[10,12,13,2,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V
[10,14,27,40,8,9] +3VS5
[22,24,25,27,28,30,32,40] +5V
[40] +5VS5

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PCH 5/5 (POWER)	A
Date: Thursday, April 15, 2010	Sheet 11 of 43	

SO-DIMMA SPD Address is 0XA0
SO-DIMMA TS Address is 0X30

JDIM2A

PC2100 DDR3 SDRAM SO-DIMM (204P)

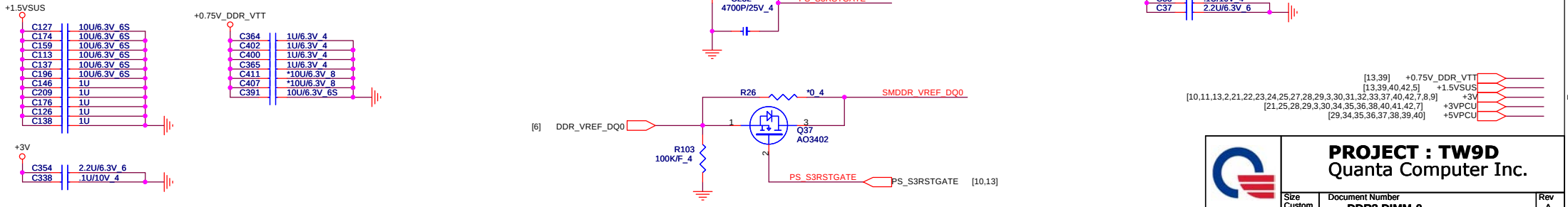
DDR3-DIMM0

JDIM2B

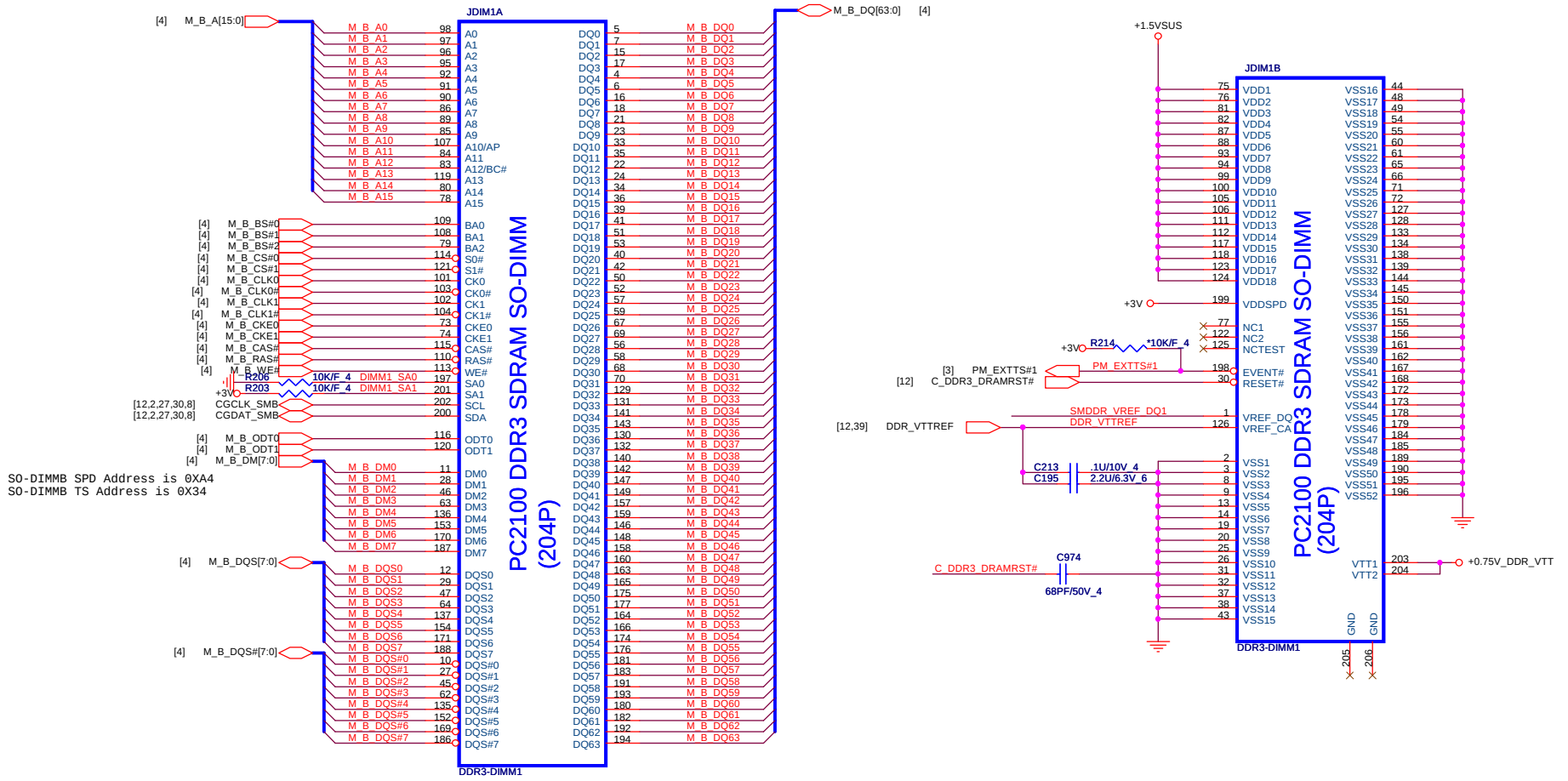
PC2100 DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM0

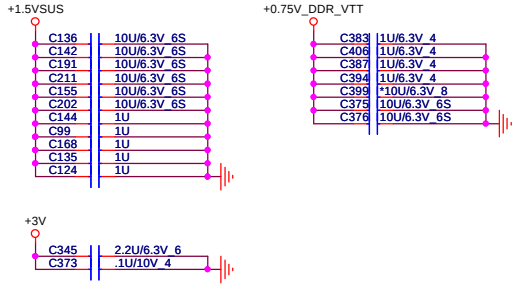
Place these Caps near So-Dimm0.

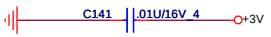


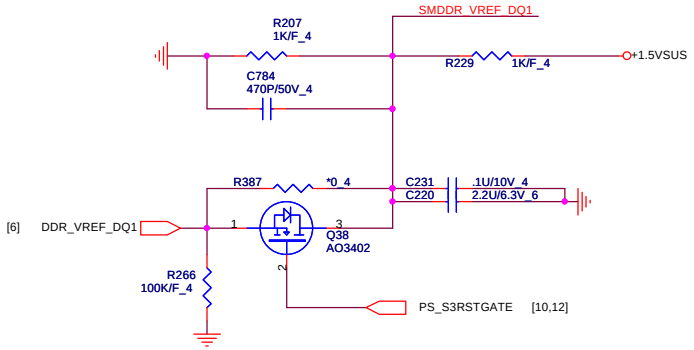
NB5	PROJECT : TW9D Quanta Computer Inc.		
	Size: Custom	Document Number: DDR3 DIMM-0	Rev: A
	Date: Thursday, April 15, 2010	Sheet 12 of 43	



Place these Caps near So-Dimm1.







[12,39] +0.75V_DDR_VTT
[12,39,40,42,5] +1.5VSUS
[10,11,12,2,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V
[21,25,28,29,3,30,34,35,36,38,40,41,42,7] +3VPCU
[29,34,35,36,37,38,39,40] +5VPCU

NB5	**PROJECT : TW9D** Quanta Computer Inc.	
Size: Custom	Document Number: DDR3 DIMM-1	Rev: A
Date: Thursday, April 15, 2010	Sheet 13 of 43	

PEX_IOVDD+PEX_IOVDDQ+PEX_PLLVDD >2.2A

~ 500mA

1600mA

12~16 mils width

110mA

12~16 mils width

B-stage change to 100nH

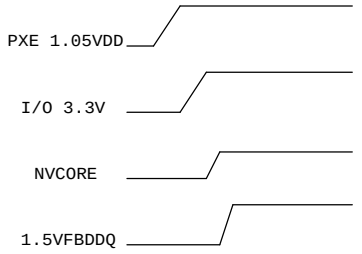
U33A
BGA969-NVIDIA-NB9P-GS
COMMON

PCI EXPRESS

R450 un-mount for switchable function

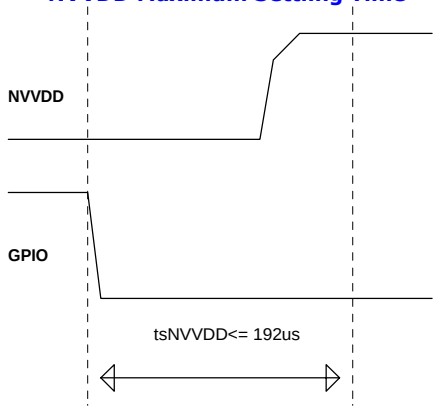
Only for Hybrid

power up sequence

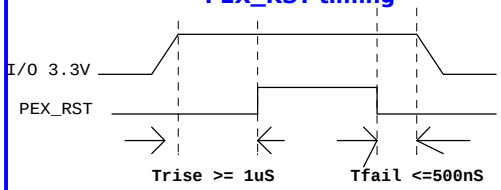


NB9M: VGACORE +0.90V (Normal) , +1.09V

NVVDD Maximum Settling Time



PEX_RST timing



PROJECT : TW9D	Quanta Computer Inc.
Size: Custom	Document Number: N11x-Fermi
Rev: A	
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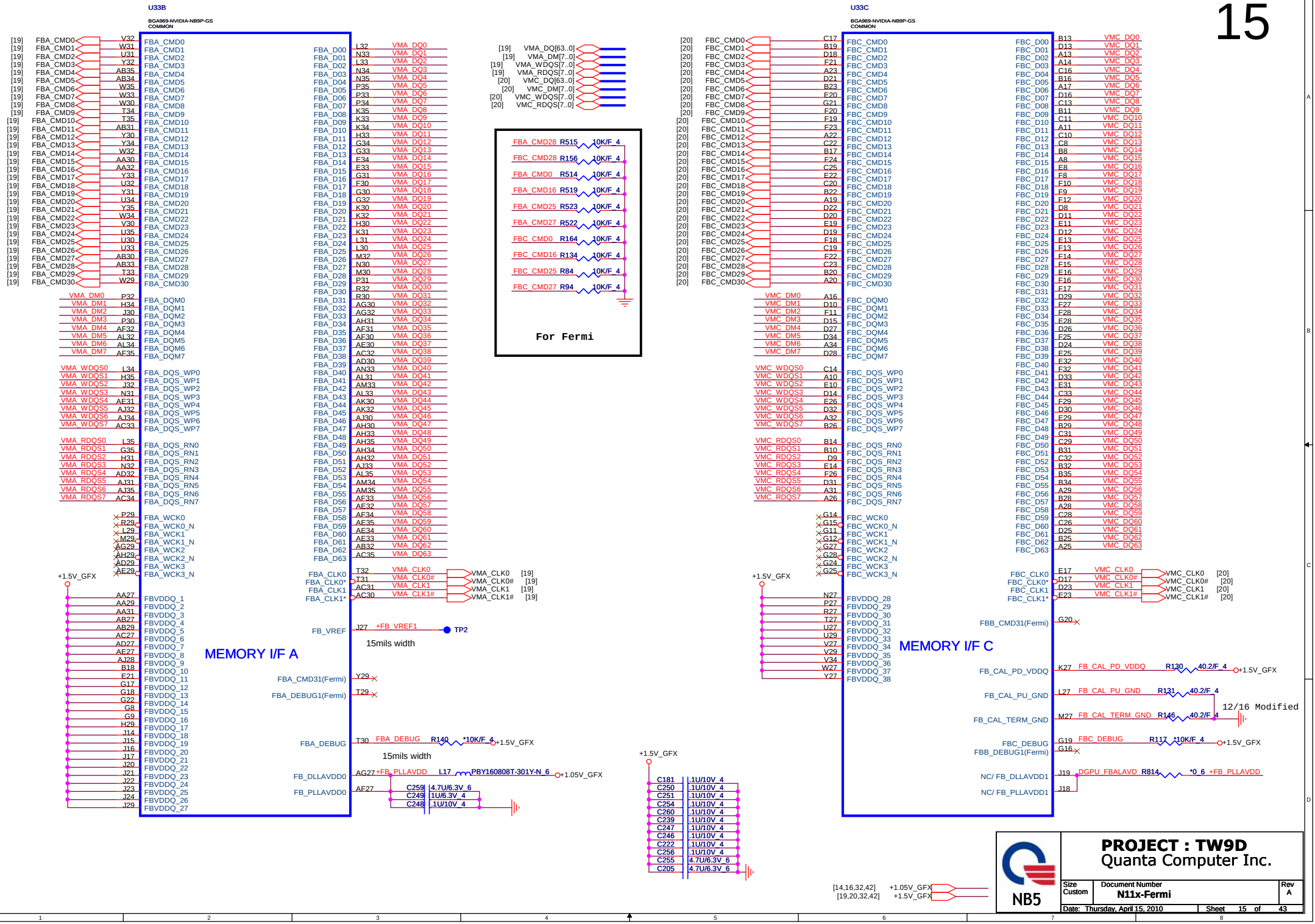
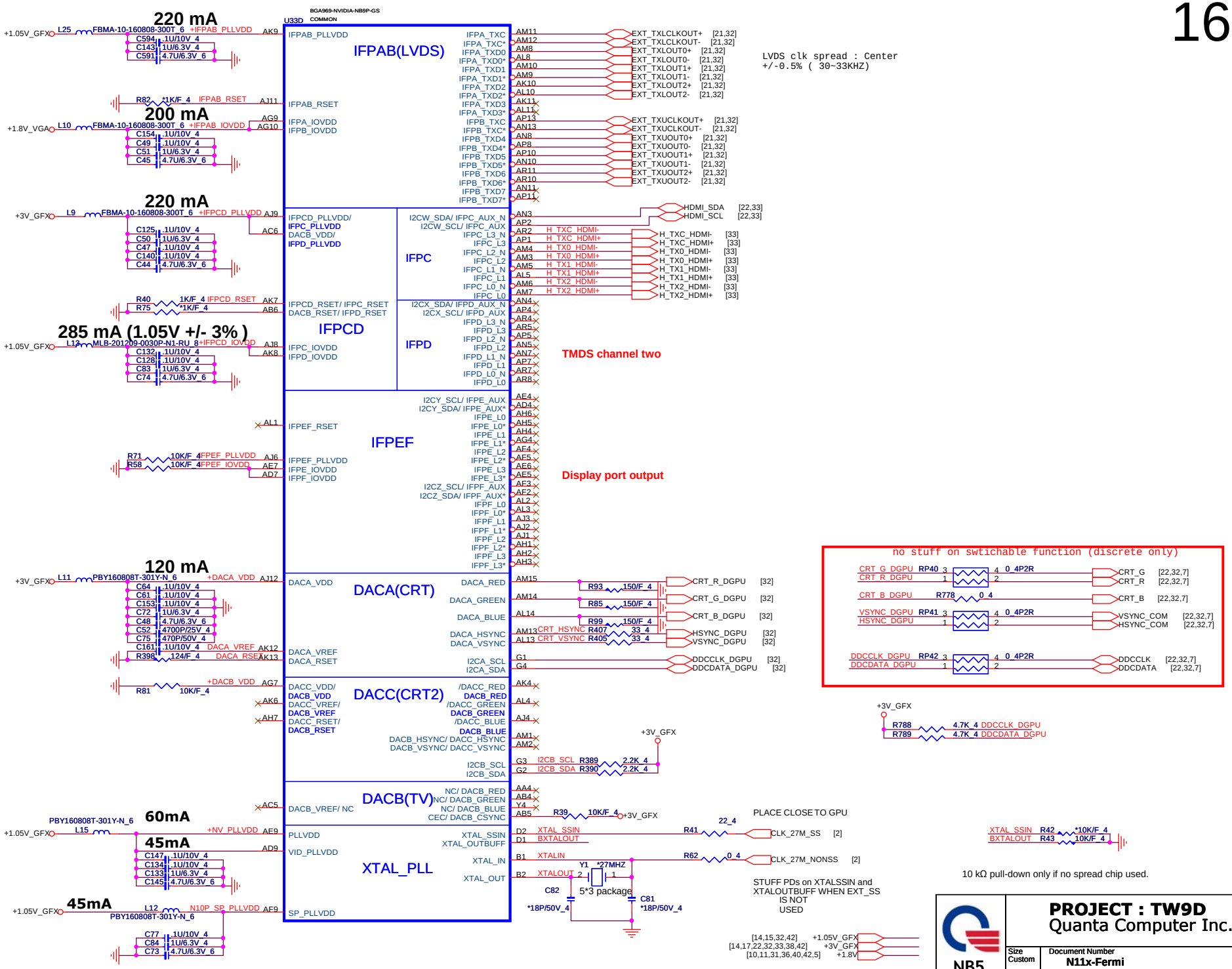
NB5


U33B
BGA969-NVIDIA-NB9P-GS
COMMON
MEMORY I/F A
U33C
BGA969-NVIDIA-NB9P-GS
COMMON
MEMORY I/F C
For Fermi
15mils width
15mils width
12/16 Modified
PROJECT : TW9D
Quanta Computer Inc.
NB5
N11x-Fermi
Size Custom
Rev A
Date: Thursday, April 15, 2010
Sheet 15 of 43

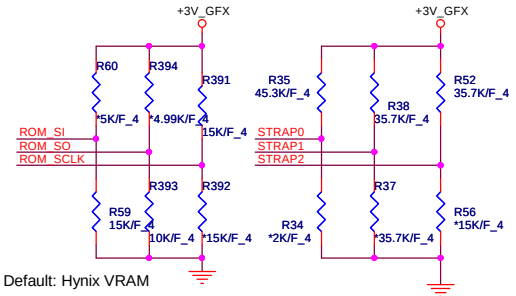

BGA969-NVIDIA-NB9P-GS
U33D COMMON
IFPAB(LVDS)
IFPCD
IFPC
IFPD
IFPEF
DACA(CRT)
DACC(CRT2)
DACB(TV)
XTAL_PLL
TMDS channel two
Display port output
LVDS clk spread : Center
+/-0.5% (30~33KHZ)
220 mA
200 mA
220 mA
285 mA (1.05V +/- 3%)
120 mA
60mA
45mA
45mA
no stuff on swtichable function (discrete only)
PLACE CLOSE TO GPU
STUFF PDs on XTALSSIN and XTALOUTBUFF WHEN EXT_SS IS NOT USED
10 kΩ pull-down only if no spread chip used.
PROJECT : TW9D
Quanta Computer Inc.
NB5
N11x-Fermi
Rev A
Date: Thursday, April 15, 2010
Sheet 16 of 43

N11P-GS ES
Strap2 = 35K Pull High
ROM_CLK=15k Pull High

N11P-GS QS
Strap2 = 5K Pull down
ROM_CLK=15k Pull High

Logical Strap Bit Mapping

	PU-VDD	PD
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111



Default: Hynix VRAM

4.99K/F_4: CS24992FB26 [RES CHIP 4.99K 1/16W +1%(0402)]
10K/F_4: CS31002FB26 [RES CHIP 10K 1/16W +1% (0402)]
15K/F_4: CS31502FB24 [RES CHIP 15K 1/16W +1% (0402)]
30.1K/F_4: CS33012FB18 [RES CHIP 30.1K 1/16W +-1%(0402)]
35.7K/F_4: CS33572FB13 [RES CHIP 35.7K 1/16W +-1%(0402)]
45.3K/F_4: CS34532FB18 [RES CHIP 45.3K 1/16W +-1% (0402)]
20K/F_4: CS32002FB29 RES CHIP 20K 1/16W +-1%(0402)

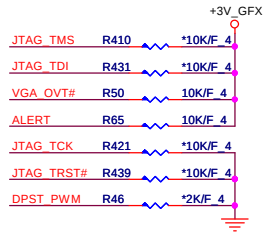
	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0	
ROM_SO NB10X	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE	0001
ROM_SCLK	PCI_DEVIDE[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM	0010
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]	XXXX
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]	1000
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]	0001
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]	1111

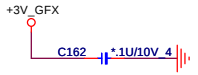
VRAM Configuration Table

	RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	ROM_SI
	0000		Reserved		
AKD58GGT^01	0001	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Qimonda	IDGH1G-04A1F1C-16X	PD 10K
AKD5LZGTW00	0010	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Hynix	H5TQ1G63BFR-12C	PD 15K
AKD5LGGT502	0011	DDR3 64Mx16x8, 128bit, 1GB,800MHz	Samsung	K4W1G1646E-HC12	PD 20K
	0101		Reserved		
	0110				
	XXXX	DDR3 64Mx16x8, 128bit, 1GB,667MHz	Hynix	H5TQ1G63AFR-14C	
	XXXX	DDR3 64Mx16x8, 128bit, 1GB,667MHz	Samsung	K4W1G1646D-EC12	

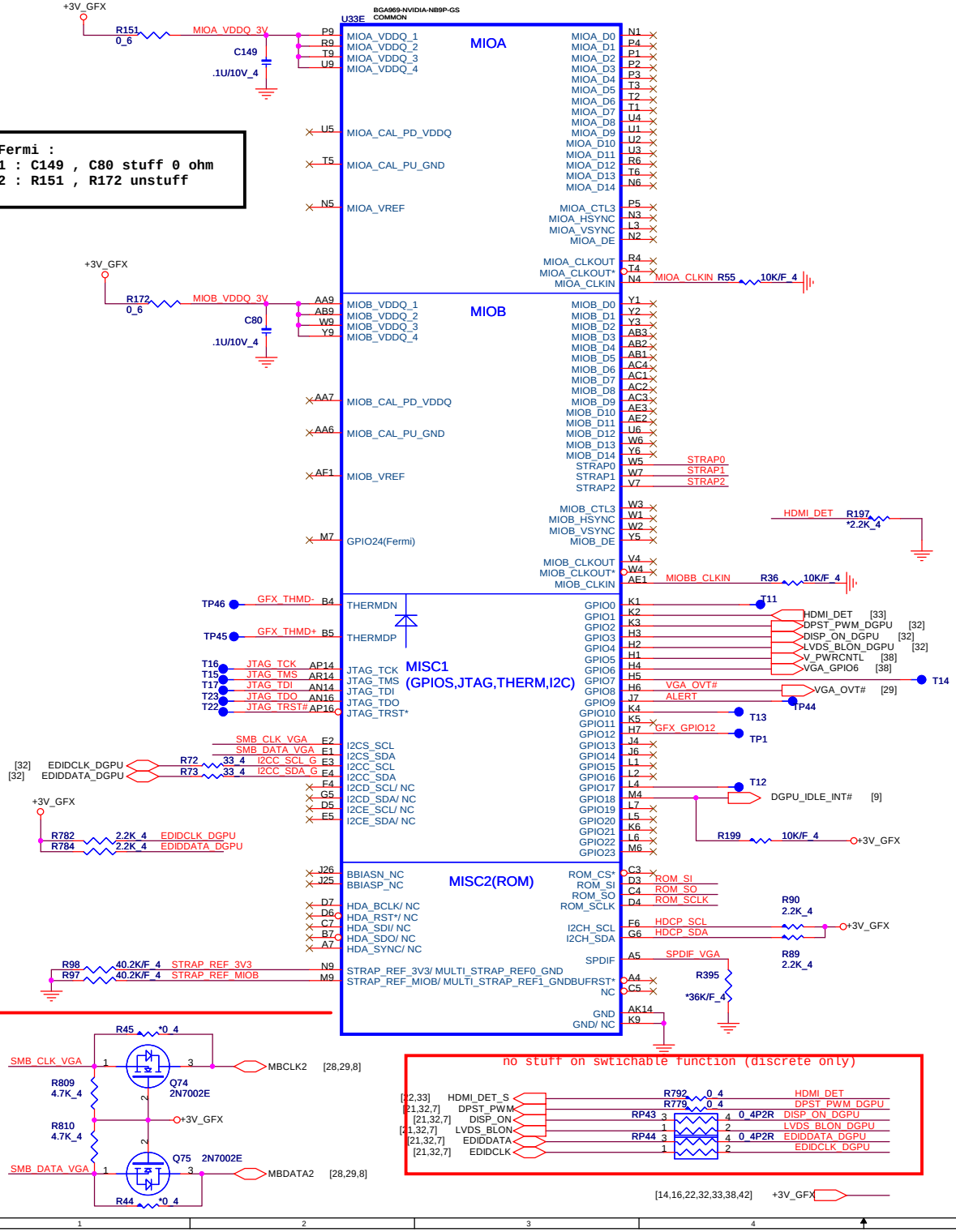
GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	N/A	N/A	
1	IN	N/A	Hot plug detect for IFP link C
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	N/A	NVVDD VID0
6	OUT	N/A	NVVDD VID1
7	OUT	N/A	NVVDD VID2 11/13
8	I/O	LOW	OVERT
9	I/O	LOW	ALERT
10	OUT	N/A	FBVREF SELECT
11	OUT	N/A	SLI SYNC0
12	IN	N/A	PWR_LEVEL 11/13
13	OUT	N/A	MEM_VID or power supply control
14	OUT	N/A	PS CONTROL





Fermi :
1 : C149 , C80 stuff 0 ohm
2 : R151 , R172 unstuff



U33F

BGA969-NVIDIA-NB9P-GS
COMMON

+VGACORE +VGACORE

NVVDD

AB11	VDD_001	VDD_057	P21		
AB13	VDD_002	VDD_058	P23		
AB15	VDD_003	VDD_059	P25		
AB17	VDD_004	VDD_060	R11		
AB19	VDD_005	VDD_061	R12		
AB21	VDD_006	VDD_062	R13		
AB23	VDD_007	VDD_063	R14		
AB25	VDD_008	VDD_064	R15		
AC11	VDD_009	VDD_065	R16		
AC12	VDD_010	VDD_066	R17		
AC13	VDD_011	VDD_067	R18		
AC14	VDD_012	VDD_068	R19		
AC15	VDD_013	VDD_069	R20		
AC16	VDD_014	VDD_070	R21		
AC17	VDD_015	VDD_071	R22		
AC18	VDD_016	VDD_072	R23		
AC19	VDD_017	VDD_073	R24		
AC20	VDD_018	VDD_074	R25		
AC21	VDD_019	VDD_075	T12		
AC22	VDD_020	VDD_076	T14		
AC23	VDD_021	VDD_077	T16		
AC24	VDD_022	VDD_078	T18		
AC25	VDD_023	VDD_079	T20		
AD12	VDD_024	VDD_080	T22		
AD14	VDD_025	VDD_081	T24		
AD16	VDD_026	VDD_082	V11		
AD18	VDD_027	VDD_083	V13		
AD22	VDD_028	VDD_084	V15		
AD24	VDD_029	VDD_085	V17		
L11	VDD_030	VDD_086	V19		
L12	VDD_031	VDD_087	V21		
L13	VDD_032	VDD_088	V23		
L14	VDD_033	VDD_089	V25		
L15	VDD_034	VDD_090	W11		
L16	VDD_035	VDD_091	W12		
L17	VDD_036	VDD_092	W13		
L18	VDD_037	VDD_093	W14		
L19	VDD_038	VDD_094	W15		
L20	VDD_039	VDD_095	W16		
L21	VDD_040	VDD_096	W17		
L22	VDD_041	VDD_097	W18		
L23	VDD_042	VDD_098	W19		
L24	VDD_043	VDD_099	W20		
L25	VDD_044	VDD_100	W21		
M12	VDD_045	VDD_101	W22		
M14	VDD_046	VDD_102	W23		
M16	VDD_047	VDD_103	W24		
M18	VDD_048	VDD_104	W25		
M20	VDD_049	VDD_105	Y12		
M22	VDD_050	VDD_106	Y14		
M24	VDD_051	VDD_107	Y16		
P11	VDD_052	VDD_108	Y18		
P13	VDD_053	VDD_109	Y20		
P15	VDD_054	VDD_110	Y22		
P17	VDD_055	VDD_111	Y24		
P19	VDD_056				

U33G

BGA969-NVIDIA-NB9P-GS
COMMON

GROUND

AA11	GND_1	GND_096	E15
AA12	GND_2	GND_097	E18
AA13	GND_3	GND_098	E24
AA14	GND_4	GND_099	E27
AA15	GND_5	GND_100	E30
AA16	GND_6	GND_101	E6
AA17	GND_7	GND_102	E9
AA18	GND_8	GND_103	F2
AA19	GND_9	GND_104	F31
AA2	GND_10	GND_105	F34
AA20	GND_11	GND_106	F5
AA21	GND_12	GND_107	J2
AA22	GND_13	GND_108	J31
AA23	GND_14	GND_109	J34
AA24	GND_15	GND_110	J5
AA25	GND_16	GND_111	L9
AA34	GND_17	GND_112	M11
AA5	GND_18	GND_113	M13
AB12	GND_19	GND_114	M15
AB14	GND_20	GND_115	M17
AB16	GND_21	GND_116	M19
AB18	GND_22	GND_117	M2
AB20	GND_23	GND_118	M21
AB22	GND_24	GND_119	M23
AB24	GND_25	GND_120	M25
AC9	GND_26	GND_121	M31
AD11	GND_27	GND_122	M34
AD13	GND_28	GND_123	M5
AD15	GND_29	GND_124	N11
AD17	GND_30	GND_125	N12
AD2	GND_31	GND_126	N13
AD21	GND_32	GND_127	N14
AD23	GND_33	GND_128	N15
AD25	GND_34	GND_129	N16
AD31	GND_35	GND_130	N17
AD34	GND_36	GND_131	N18
AD5	GND_37	GND_132	N19
AE11	GND_38	GND_133	N20
AE12	GND_39	GND_134	N21
AE13	GND_40	GND_135	N22
AE14	GND_41	GND_136	N23
AE15	GND_42	GND_137	N24
AE16	GND_43	GND_138	N25
AE17	GND_44	GND_139	P12
AE18	GND_45	GND_140	P14
AE19	GND_46	GND_141	P16
AE20	GND_47	GND_142	P18
AE21	GND_48	GND_143	P20
AE22	GND_49	GND_144	P22
AE23	GND_50	GND_145	P24
AE24	GND_51	GND_146	R2
AE25	GND_52	GND_147	R31
AG2	GND_53	GND_148	R34
AG31	GND_54	GND_149	R5
AG34	GND_55	GND_150	T11
AG5	GND_56	GND_151	T13
AK2	GND_57	GND_152	T15
AK31	GND_58	GND_153	T17
AK34	GND_59	GND_154	T19
AK5	GND_60	GND_155	T21
AL12	GND_61	GND_156	T23
AL15	GND_62	GND_157	T25
AL18	GND_63	GND_158	U11
AL21	GND_64	GND_159	U12
AL24	GND_65	GND_160	U13
AL27	GND_66	GND_161	U14
AL30	GND_67	GND_162	U15
AL6	GND_68	GND_163	U16
AL9	GND_69	GND_164	U17
AN2	GND_70	GND_165	U18
AN34	GND_71	GND_166	U19
AP12	GND_72	GND_167	U20
AP15	GND_73	GND_168	U21
AP18	GND_74	GND_169	U22
AP21	GND_75	GND_170	U23
AP24	GND_76	GND_171	U24
AP27	GND_77	GND_172	U25
AP3	GND_78	GND_173	V12
AP30	GND_79	GND_174	V14
AP33	GND_80	GND_175	V16
AP6	GND_081	GND_176	V18
AP9	GND_082	GND_177	V2
B12	GND_083	GND_178	V20
B15	GND_084	GND_179	V22
B21	GND_085	GND_180	V24
B24	GND_086	GND_181	V31
B27	GND_087	GND_182	V5
B3	GND_088	GND_183	V9
B30	GND_089	GND_184	Y11
B33	GND_090	GND_185	Y13
B6	GND_091	GND_186	Y15
B9	GND_092	GND_187	Y17
C2	GND_093	GND_188	Y19
C34	GND_094	GND_189	Y21
E12	GND_095	GND_190	Y23
		GND_191	Y25

+VGACORE

PLACE UNDER BALLS

C235	.01U/16V_4
C226	.01U/16V_4
C164	.01U/16V_4
C179	.01U/16V_4
C223	.01U/16V_4
C193	.01U/16V_4
C158	.033U/10V_4
C199	.033U/10V_4
C166	.033U/10V_4
C227	.047U/25V_4
C200	.047U/25V_4
C212	.047U/25V_4
C165	.1U/10V_4
C182	1U/6.3V_4
C170	1U/6.3V_4
C163	1U/6.3V_4

PLACE NEAR BALLS

C169	4.7U/6.3V_6
C215	10U/6.3V_8
C184	10U/6.3V_8

C131

330U/2.5V_6032

[38] +VGACORE

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	N11x-Fermi	A

Date: Thursday, April 15, 2010 Sheet 18 of 43

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]

U15 VRAM _DDR3 — 96-BALL SDRAM DDR3

U37 VRAM _DDR3 — 96-BALL SDRAM DDR3

U16 VRAM _DDR3 — 96-BALL SDRAM DDR3

U36 VRAM _DDR3 — 96-BALL SDRAM DDR3

Should be 240 Ohms +-1%

R464 243/F_4

R524 243/F_4

R516 243/F_4

R463 243/F_4

+1.5V_GFX

VREFC_VMA1 VREFD_VMA1 VREFC_VMA3 VREFD_VMA3

VMA_CLK0 VMA_CLK0# VMA_CLK1 VMA_CLK1#

VMA_ZQ1 VMA_ZQ2 VMA_ZQ3 VMA_ZQ4

R511 243/F_4

R510 243/F_4

Fermi : Change to 160 ohm
1 : CS11602JB00 ,RES CHIP 160 1/16W +-5%(0402)
2 : CS11622FB07 ,RES CHIP 162 1/16W +-1%(0402)

R520 1.33K/F_4 R521 1.33K/F_4 C676 .1U/10V_4

R526 1.33K/F_4 R525 1.33K/F_4 C677 .1U/10V_4

R518 1.33K/F_4 R517 1.33K/F_4 C674 .1U/10V_4

R512 1.33K/F_4 R513 1.33K/F_4 C673 .1U/10V_4

[15] FBA_CMD15 FBA_CMD15 TP7
[15] FBA_CMD23 FBA_CMD23 TP8

C271 C663 C639 C615 1U/6.3V_4

C697 C635 C266 C612 C609 C636 4.7U/6.3V_6 .1U/10V_4

C228 C624 C616 C625 C623 C607 C695 C680 4.7U/6.3V_6 .1U/10V_4

C693 C634 C638 C619 C637 C236 C685 C692 4.7U/6.3V_6 .1U/10V_4

C683 C678 C686 C675 4.7U/6.3V_6 .1U/10V_4

[15,20,32,42] +1.5V_GFX

NB5

PROJECT : TW9D
Quanta Computer Inc.

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Custom	N11x-Fermi	A
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CHANNEL B: 256MB/512MB DDR3

[15] VMC_DQ[63..0]
[15] VMC_DM[7..0]
[15] VMC_WDQS[7..0]
[15] VMC_RDQS[7..0]

U31 VRAM _DDR3 — 96-BALL SDRAM DDR3
U8 VRAM _DDR3 — 96-BALL SDRAM DDR3
U13 VRAM _DDR3 — 96-BALL SDRAM DDR3
U34 VRAM _DDR3 — 96-BALL SDRAM DDR3

Should be 240 Ohms +-1%
R402 243/F_4
R411 243/F_4
R150 243/F_4
R457 243/F_4

VMC_CLK0 R102 243/F_4 VMC_CLK0#
VMC_CLK1 R153 243/F_4 VMC_CLK1#

Fermi : Change to 160 ohm
1 : CS11602JB00 ,RES CHIP 160 1/16W +-5%(0402)
2 : CS11622FB07 ,RES CHIP 162 1/16W +-1%(0402)

+1.5V_GFX
R118 1.33K/F_4 VREFC_VMC1 R106 1.33K/F_4 C183 .1U/10V_4
R69 1.33K/F_4 VREFD_VMC1 R74 1.33K/F_4 C139 .1U/10V_4
R138 1.33K/F_4 VREFC_VMC3 R142 1.33K/F_4 C264 .1U/10V_4
R459 1.33K/F_4 VREFD_VMC3 R458 1.33K/F_4 C626 .1U/10V_4

C342 4.7U/6.3V_6
C210 4.7U/6.3V_6
C219 C295 C606 C608 1U/6.3V_4
C632 C696 C614 C621 .1U/10V_4
C613 C599 C661 C336 C622 C658 C605 C330 .1U/10V_4
C684 C201 C600 C602 C326 C610 C611 C629 .1U/10V_4

[15] FBC_CMD15 FBC_CMD15 TP9
[15] FBC_CMD23 FBC_CMD23 TP10

[15,19,32,42] +1.5V_GFX

NB5

PROJECT : TW9D
Quanta Computer Inc.

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1. If LCD connector near GPU, then place these series Resistors near GPU
2. If LCD connector near N/B, then place these series Resistors near N/B

OPTION SIGNAL FROM NB FOR UMA VGA

[32,7]	LA_CLK#	RP8	*0_4P2R	TXLCLKOUT-	
[32,7]	LA_CLK			TXLCLKOUT+	
[32,7]	LA_DATAP0	RP2	*0_4P2R	TXLOUT0+	
[32,7]	LA_DATAN0			TXLOUT0-	
[32,7]	LA_DATAP1	RP4	*0_4P2R	TXLOUT1+	
[32,7]	LA_DATAN1			TXLOUT1-	
[32,7]	LA_DATAN2	RP6	*0_4P2R	TXLOUT2-	
[32,7]	LA_DATAP2			TXLOUT2+	
[32,7]	LB_CLK	RP16	*0_4P2R	TXUCLKOUT+	
[32,7]	LB_CLK#			TXUCLKOUT-	
[32,7]	LB_DATAN0	RP10	*0_4P2R	TXUOUT0-	
[32,7]	LB_DATAP0			TXUOUT0+	
[32,7]	LB_DATAN1	RP12	*0_4P2R	TXUOUT1-	
[32,7]	LB_DATAP1			TXUOUT1+	
[32,7]	LB_DATAP2	RP14	*0_4P2R	TXUOUT2+	
[32,7]	LB_DATAN2			TXUOUT2-	

OPTION SIGNAL FROM Nvidia to VGA

[16,32]	EXT_TXLCLKOUT-	RP7	0_4P2R	TXLCLKOUT-	
[16,32]	EXT_TXLCLKOUT+			TXLCLKOUT+	
[16,32]	EXT_TXLOUT0-	RP1	0_4P2R	TXLOUT0-	
[16,32]	EXT_TXLOUT0+			TXLOUT0+	
[16,32]	EXT_TXLOUT1-	RP3	0_4P2R	TXLOUT1+	
[16,32]	EXT_TXLOUT1+			TXLOUT1-	
[16,32]	EXT_TXLOUT2-	RP5	0_4P2R	TXLOUT2-	
[16,32]	EXT_TXLOUT2+			TXLOUT2+	
[16,32]	EXT_TXUCLKOUT-	RP15	0_4P2R	TXUCLKOUT-	
[16,32]	EXT_TXUCLKOUT+			TXUCLKOUT+	
[16,32]	EXT_TXUOUT0-	RP9	0_4P2R	TXUOUT0-	
[16,32]	EXT_TXUOUT0+			TXUOUT0+	
[16,32]	EXT_TXUOUT1-	RP11	0_4P2R	TXUOUT1+	
[16,32]	EXT_TXUOUT1+			TXUOUT1-	
[16,32]	EXT_TXUOUT2-	RP13	0_4P2R	TXUOUT2+	
[16,32]	EXT_TXUOUT2+			TXUOUT2-	

CN2

+3VLCD_CON			
+3V	C4	1000P/50V_4	
[17,32,7]	EDIDCLK	EDIDCLK	
[17,32,7]	EDIDDATA	EDIDDATA	
[32]	TXLOUT0-	TXLOUT0-	
[32]	TXLOUT0+	TXLOUT0+	
[32]	TXLOUT1-	TXLOUT1-	
[32]	TXLOUT1+	TXLOUT1+	
[32]	TXLOUT2-	TXLOUT2-	
[32]	TXLOUT2+	TXLOUT2+	
[32]	TXLCLKOUT-	TXLCLKOUT-	
[32]	TXLCLKOUT+	TXLCLKOUT+	
[32]	TXUOUT0-	TXUOUT0-	
[32]	TXUOUT0+	TXUOUT0+	
[32]	TXUOUT1-	TXUOUT1-	
[32]	TXUOUT1+	TXUOUT1+	
[32]	TXUOUT2-	TXUOUT2-	
[32]	TXUOUT2+	TXUOUT2+	
[32]	TXUCLKOUT-	TXUCLKOUT-	
[32]	TXUCLKOUT+	TXUCLKOUT+	
[17,32,7]	DPST_PWM	R5 0_4	BLON_CON
[29]	PWM_VADJ	R4 *0_4	
		C6 *4.7U/6.3V_6	
		C8 *.1U/10V_4	
+VIN_BLIGHT			

FOX-GS12401-1011

+5VSUS **14.5v** +15VALW +3V

AO3404 ID current 5.8A

R377 100K/F_4 · R375 330K_6 · C542 .1U/10V_4

Q18 AO3404 · LCDONG · +3VLCD · +3VLCD_CON

L1 PBY201209T-4A/08

C1 *.01U/25V_4 · C3 .1U/10V_4 · C2 *10U/6.3V_8

R374 22_8 · LCDDISCHG

Q21 2N7002E · C541 .027U/25V_6 · LCDON#

Q20 DTC144EUA · [17,32,7] DISP_ON

Q19 2N7002E

DISP_ON R376 100K/F_4

LVDS_BLON R9 100K/F_4

+VIN_BLIGHT

+VIN · L2 FBM2125 HM330-T +VIN_BLIGHT

C7 .1U/50V_6 · C9 *10U/25V_12 · C10 .1U/50V_6 · C11 .01U/25V_4

R6 100K/F_4 · C12 22P/50V_4

PN_BLON · D2 RB500V-40 · BLON_CON

Close to EC

R7 47K_4 · +3VPCU

[17,32,7] LVDS_BLON · R8 1K/F_4

D3 RB500V-40 · LID_EC# [28,29]

D14 *RB501V-40 · HWPG [29,3,34,35,36,38,39]

[10] LCD_BK · Q1 DTC144EUA

[10,11,12,13,2,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9]	+3V
[25,28,29,3,30,34,35,36,38,40,41,42,7]	+3VPCU
[11,22,24,25,27,28,30,32,40]	+5V
[24,27,28,40]	+5VSUS
[35,40]	+15VALW
[2,34,35,36,37,38,39,40,41,42]	+VIN

NB5

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Quanta Computer Inc.

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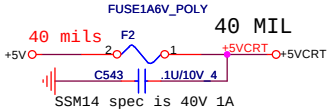
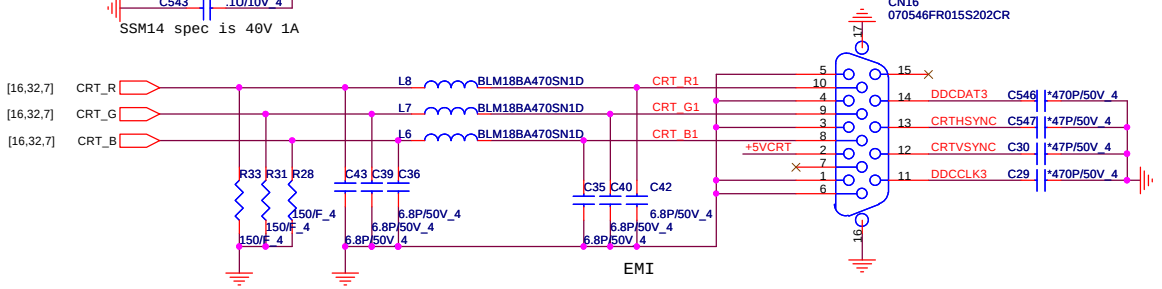
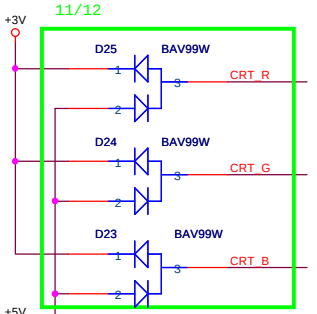
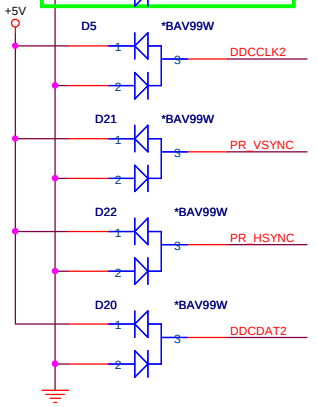
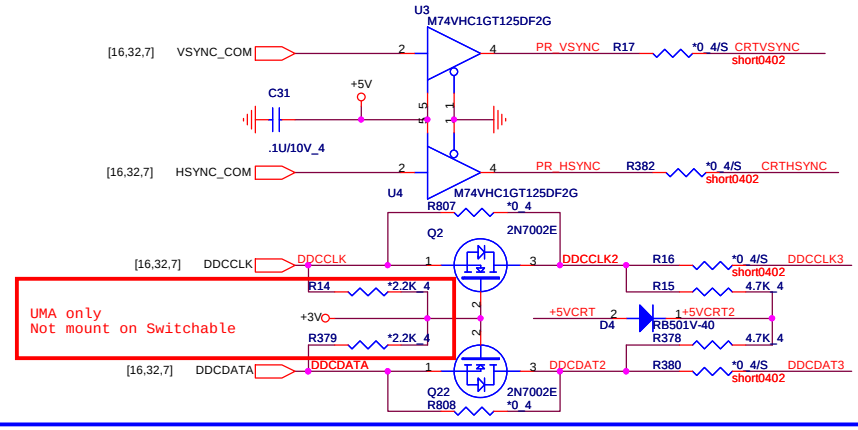
CRT PORT

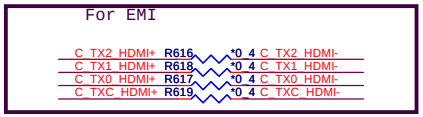




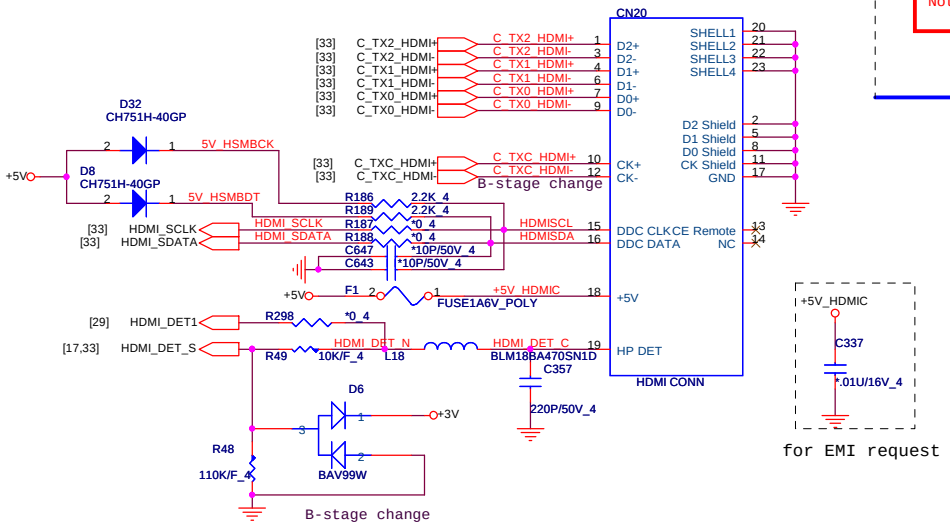




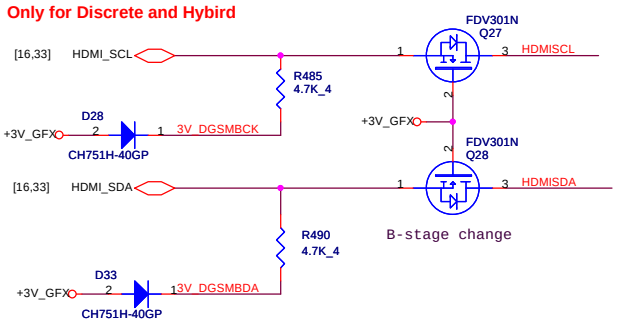




HDMI PORT



for EMI request



R187 / R188 for Switchable / UMA

[10,11,12,13,2,21,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V
[11,24,25,27,28,30,32,40] +5V

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CRT/HDMI Conn	A
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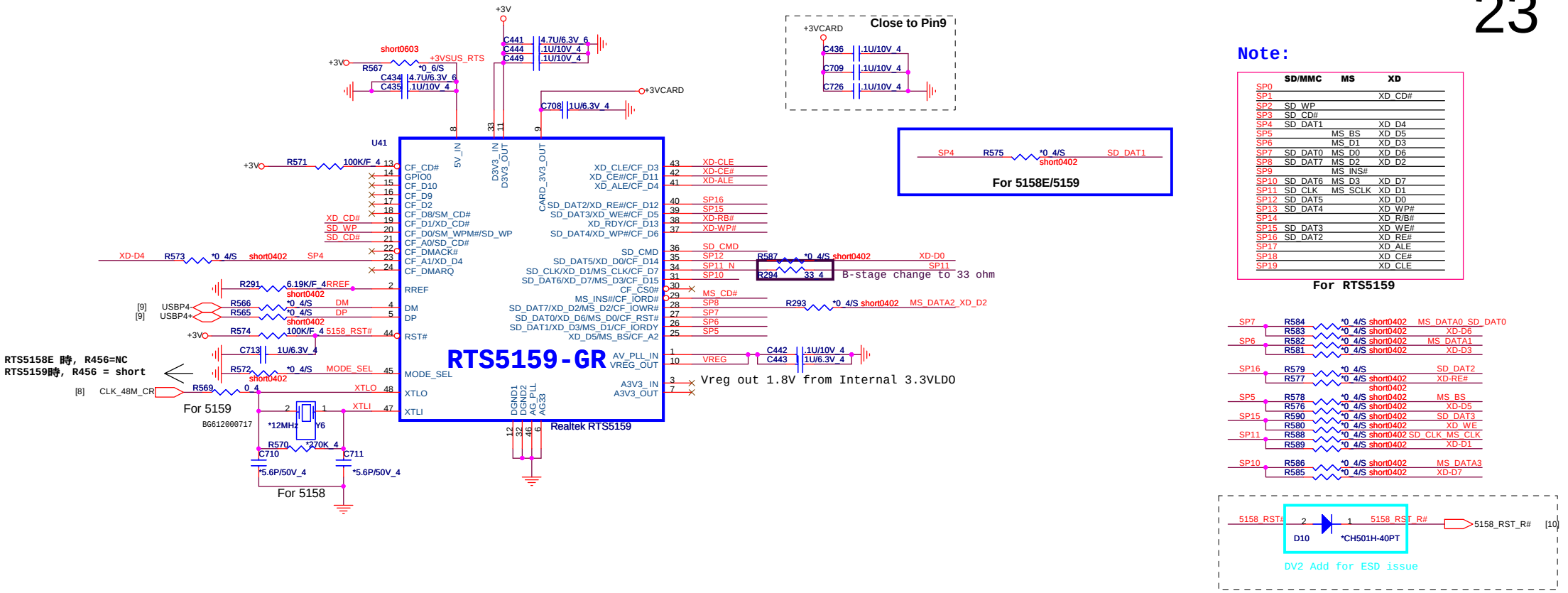
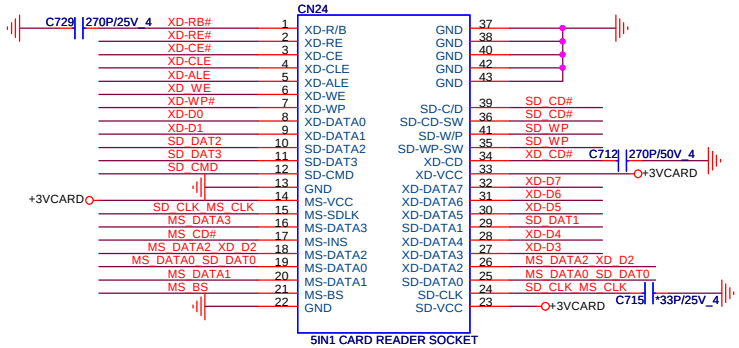


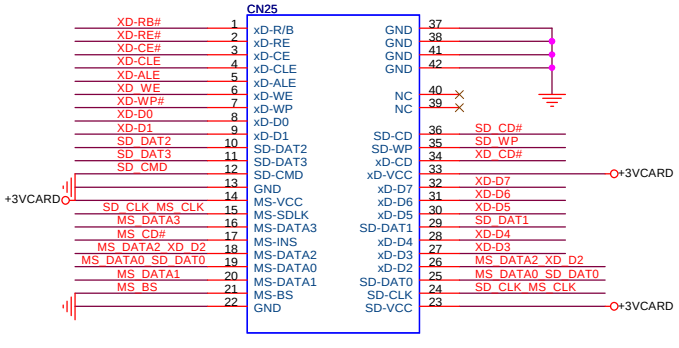
	SD/MMC	MS	XD
SP0			
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4	SD_DAT1		XD_D4
SP5		MS_BS	XD_D5
SP6		MS_D1	XD_D3
SP7	SD_DAT0	MS_D0	XD_D6
SP8	SD_DAT7	MS_D2	XD_D2
SP9		MS_INS#	
SP10	SD_DAT6	MS_D3	XD_D7
SP11	SD_CLK	MS_SCLK	XD_D1
SP12	SD_DAT5		XD_D0
SP13	SD_DAT4		XD_WP#
SP14			XD_R/B#
SP15	SD_DAT3		XD_WE#
SP16	SD_DAT2		XD_RE#
SP17			XD_ALE
SP18			XD_CE#
SP19			XD_CLE

5 IN1 CARD READER
XD,MMC/SD,MS/MSP

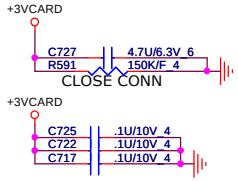


PV change footprint

DV2 add 2'nd source



PV change footprint



[10,11,12,13,2,21,22,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V

NB5	PROJECT : TW9D Quanta Computer Inc.		
	Size: Custom	Document Number: RTS5159 &CR SOCKET	Rev: A
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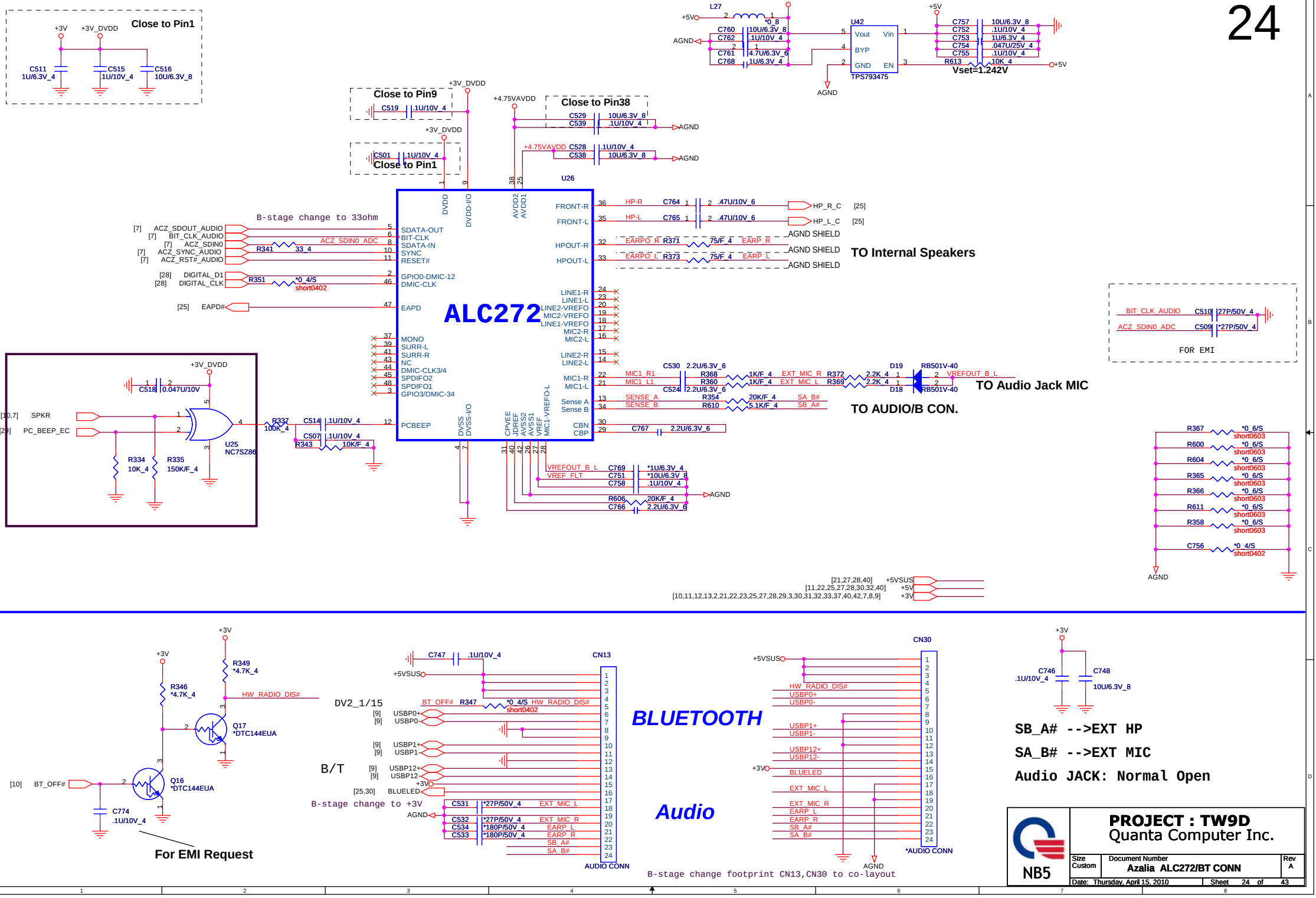
Close to Pin1
+3V
+3V_DVDD
C511 1U/6.3V_4
C515 .1U/10V_4
C516 10U/6.3V_8
L27
+4.75VAVDD
+5V
AGND
C760 10U/6.3V_8
C762 .1U/10V_4
C761 4.7U/6.3V_6
C768 .1U/6.3V_4
U42
Vout
Vin
BYP
GND
EN
TPS793475
C757 10U/6.3V_8
C752 .1U/10V_4
C753 1U/6.3V_4
C754 .047U/25V_4
C755 .1U/10V_4
R613 10K_4
Vset=1.242V
Close to Pin9
C519 .1U/10V_4
Close to Pin1
C501 .1U/10V_4
Close to Pin38
C529 10U/6.3V_8
C539 .1U/10V_4
C528 1U/10V_4
C538 10U/6.3V_8
U26
DVDD
DVDD-I/O
AVDD2
AVDD1
B-stage change to 33ohm
[7] ACZ_SDOUT_AUDIO
[7] BIT_CLK_AUDIO
[7] ACZ_SDIN0
[7] ACZ_SYNC_AUDIO
[7] ACZ_RST#_AUDIO
ACZ_SDIN0_ADC
R341 33_4
SDATA-OUT
BIT-CLK
SDATA-IN
SYNC
RESET#
[28] DIGITAL_D1
[28] DIGITAL_CLK
R351 *0_4/S short0402
GPIO0-DMIC-12
DMIC-CLK
[25] EAPD#
EAPD
ALC272
MONO
SURR-L
SURR-R
NC
DMIC-CLK3/4
SPDIFO2
SPDIFO1
GPIO3/DMIC-34
PCBEEP
DVSS
DVSS-I/O
FRONT-R
FRONT-L
HPOUT-R
HPOUT-L
HP-R C764 .47U/10V_6
HP-L C765 .47U/10V_6
HP_R_C [25]
HP_L_C [25]
AGND SHIELD
EARPO_R R371 75/F_4 EARP_R
EARPO_L R373 75/F_4 EARP_L
TO Internal Speakers
LINE1-R
LINE1-L
LINE2-VREFO
MIC2-VREFO
LINE1-VREFO
MIC2-R
MIC2-L
LINE2-R
LINE2-L
MIC1-R
MIC1-L
Sense A
Sense B
CBN
CBP
C767 2.2U/6.3V_6
CPVEE
JDREF
AVSS2
AVSS1
VREF
MIC1-VREFO-L
VREFOUT_B_L C769 *1U/6.3V_4
VREF_FLT C751 *10U/6.3V_8
C758 .1U/10V_4
R606 20K/F_4
C766 2.2U/6.3V_6
MIC1_R1
MIC1_L1
C530 2.2U/6.3V_6
R368 1K/F_4 EXT_MIC_R
R360 1K/F_4 EXT_MIC_L
C524 2.2U/6.3V_6
R372 2.2K_4
R369 2.2K_4
D19 RB501V-40
D18 RB501V-40
VREFOUT_B_L
TO Audio Jack MIC
SENSE_A
SENSE_B
R354 20K/F_4 SA_B#
R610 5.1K/F_4 SB_A#
TO AUDIO/B CON.
BIT_CLK_AUDIO C510 27P/50V_4
ACZ_SDIN0_ADC C509 *27P/50V_4
FOR EMI
+3V_DVDD
C518 0.047U/10V
[10,7] SPKR
[29] PC_BEEP_EC
R334 10K_4
R335 150K/F_4
U25 NC7SZ86
R337 100K_4
C514 .1U/10V_4
C507 .1U/10V_4
R343 10K/F_4
R367 *0_6/S short0603
R600 *0_6/S short0603
R604 *0_6/S short0603
R365 *0_6/S short0603
R366 *0_6/S short0603
R611 *0_6/S short0603
R358 *0_6/S short0603
C756 *0_4/S short0402
AGND
[21,27,28,40] +5VSUS
[11,22,25,27,28,30,32,40] +5V
[10,11,12,13,2,21,22,23,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V
+3V
R349 *4.7K_4
R346 *4.7K_4
HW_RADIO_DIS#
Q17 *DTC144EUA
[10] BT_OFF#
Q16 *DTC144EUA
C774 .1U/10V_4
For EMI Request
C747 .1U/10V_4
+5VSUS
DV2_1/15
BT_OFF# R347 *0_4/S short0402 HW_RADIO_DIS#
[9] USBP0+
[9] USBP0-
[9] USBP1+
[9] USBP1-
B/T
[9] USBP12+
[9] USBP12-
+3V
[25,30] BLUELED
B-stage change to +3V
AGND
C531 *27P/50V_4 EXT_MIC_L
C532 *27P/50V_4 EXT_MIC_R
C534 *180P/50V_4 EARP_L
C533 *180P/50V_4 EARP_R
SB_A#
SA_B#
CN13
AUDIO CONN
BLUETOOTH
Audio
CN30
+5VSUS
HW_RADIO_DIS#
USBP0+
USBP0-
USBP1+
USBP1-
USBP12+
USBP12-
+3V
BLUELED
EXT_MIC_L
EXT_MIC_R
EARP_L
EARP_R
SB_A#
SA_B#
AGND
*AUDIO CONN
B-stage change footprint CN13,CN30 to co-layout
C746 .1U/10V_4
C748 10U/6.3V_8
SB_A# -->EXT HP
SA_B# -->EXT MIC
Audio JACK: Normal Open
PROJECT : TW9D
Quanta Computer Inc.
NB5
Size Custom
Document Number Azalia ALC272/BT CONN
Rev A
Date: Thursday, April 15, 2010
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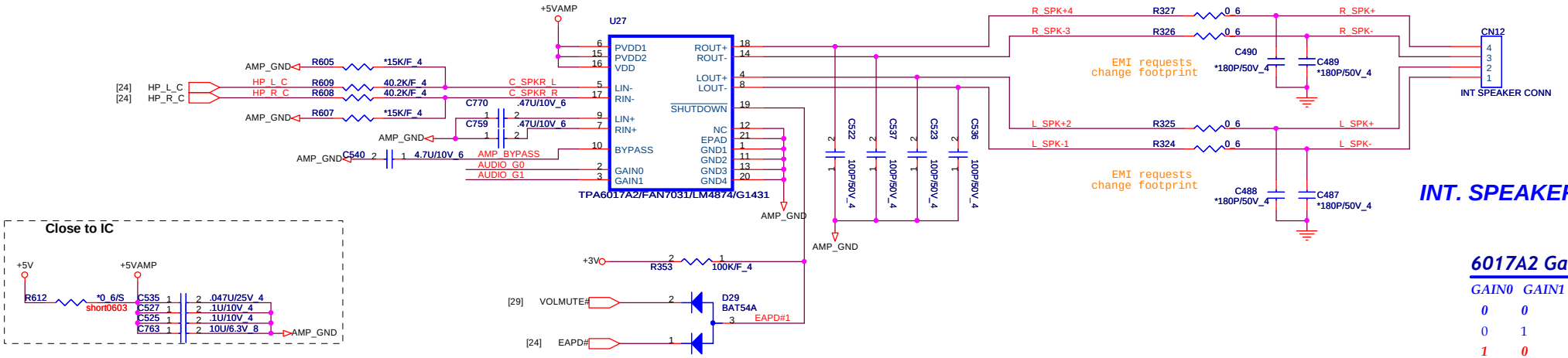
AUDIO AMPLIFIER

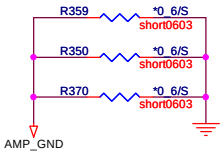


INT. SPEAKER

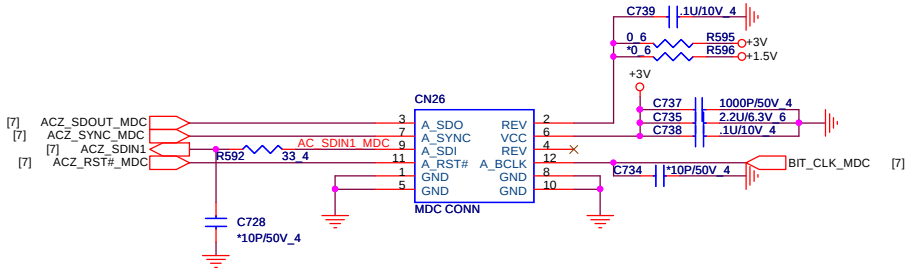
Close to IC

6017A2 Gain Table		
GAIN0	GAIN1	AV(INV)
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

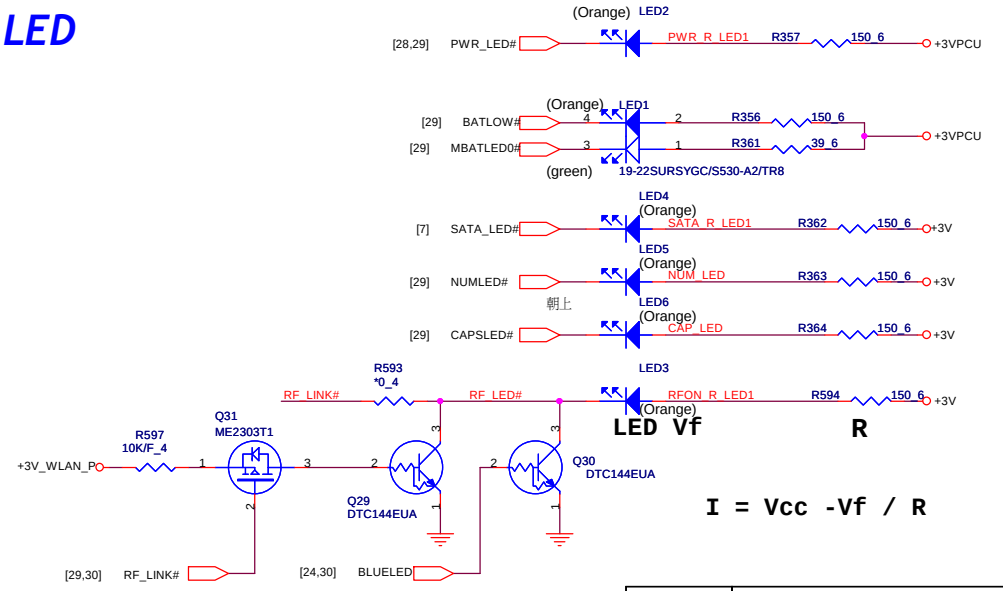
AL001431K04
AL6017A2K12
APA2031 ,AL002031K00



MDC CONNECTOR



LED

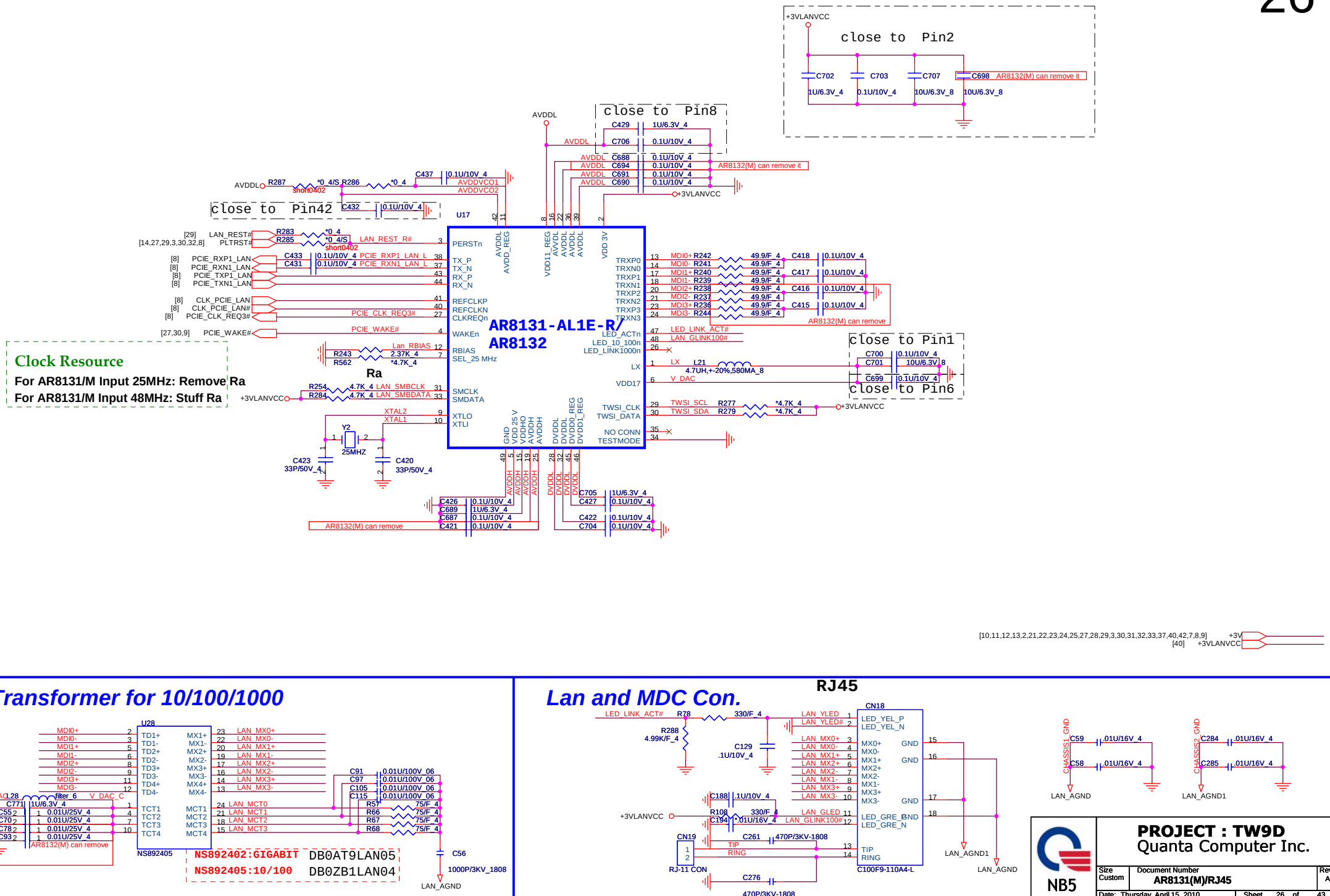


[11,22,24,27,28,30,32,40] +5V
[21,28,29,3,30,34,35,36,38,40,41,42,7] +3VPCU
[10,11,12,13,2,21,22,23,24,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	AMP_TPA6017/SPK/MDC/LED	A
Date: Thursday, April 15, 2010	Sheet 25 of 43	


+3VLANVCC
close to Pin2
C702 1U/6.3V_4
C703 0.1U/10V_4
C707 10U/6.3V_8
C698 AR8132(M) can remove it
10U/6.3V_8
AVDDL
close to Pin8
C429 1U/6.3V_4
C706 0.1U/10V_4
C688 0.1U/10V_4
C694 0.1U/10V_4
C691 0.1U/10V_4
C690 0.1U/10V_4
AR8132(M) can remove it
+3VLANVCC
R287 *0_4/S
R286 *0_4
short0402
C437 0.1U/10V_4
AVDDVCO1
AVDDVCO2
close to Pin42
C432 0.1U/10V_4
U17
AR8131-AL1E-R/
AR8132
PERSTn
TX_P
TX_N
RX_P
RX_N
REFCLKP
REFCLKN
CLKREQn
WAKEn
RBIAS
SEL_25 MHz
SMCLK
SMDATA
XTLO
XTLI
AVDDL
AVDD_REG
VDD11_REG
VDD 3V
TRXP0
TRXN0
TRXP1
TRXN1
TRXP2
TRXN2
TRXP3
TRXN3
LED_ACTn
LED_10_100n
LED_LINK1000n
LX
VDD17
TWSI_CLK
TWSI_DATA
NO CONN
TESTMODE
GND
VDD 25 V
VDDHO
AVDDH
DVDDL
DVDD0_REG
DVDD1_REG
[29] LAN_REST#
[14,27,29,3,30,32,8] PLTRST#
LAN_REST_R#
[8] PCIE_RXP1_LAN
[8] PCIE_RXN1_LAN
[8] PCIE_TXP1_LAN
[8] PCIE_TXN1_LAN
C433 0.1U/10V_4 PCIE_RXP1_LAN_L
C431 0.1U/10V_4 PCIE_RXN1_LAN_L
[8] CLK_PCIE_LAN
[8] CLK_PCIE_LAN#
[8] PCIE_CLK_REQ3#
PCIE_CLK_REQ3#
[27,30,9] PCIE_WAKE#
PCIE_WAKE#
R243 2.37K_4
R562 *4.7K_4
Lan_RBIAS
Ra
R254 4.7K_4 LAN_SMBCLK
R284 4.7K_4 LAN_SMBDATA
+3VLANVCC
XTAL2
XTAL1
Y2
25MHZ
C423 33P/50V_4
C420 33P/50V_4
MDI0+ R242 49.9/F_4
MDI0- R241 49.9/F_4
MDI1+ R240 49.9/F_4
MDI1- R239 49.9/F_4
MDI2+ R238 49.9/F_4
MDI2- R237 49.9/F_4
MDI3+ R236 49.9/F_4
MDI3- R244 49.9/F_4
C418 0.1U/10V_4
C417 0.1U/10V_4
C416 0.1U/10V_4
C415 0.1U/10V_4
AR8132(M) can remove
LED_LINK_ACT#
LAN_GLINK100#
L21 4.7UH,+-20%,580MA_8
V_DAC
close to Pin1
C700 0.1U/10V_4
C701 10U/6.3V_8
C699 0.1U/10V_4
close to Pin6
TWSI_SCL R277 *4.7K_4
TWSI_SDA R279 *4.7K_4
+3VLANVCC
C426 0.1U/10V_4
C689 1U/6.3V_4
C687 0.1U/10V_4
C421 0.1U/10V_4
AR8132(M) can remove
C705 1U/6.3V_4
C427 0.1U/10V_4
C422 0.1U/10V_4
C704 0.1U/10V_4
Clock Resource
For AR8131/M Input 25MHz: Remove Ra
For AR8131/M Input 48MHz: Stuff Ra
[10,11,12,13,2,21,22,23,24,25,27,28,29,3,30,31,32,33,37,40,42,7,8,9] +3V
[40] +3VLANVCC
Transformer for 10/100/1000
U28
MDI0+
MDI0-
MDI1+
MDI1-
MDI2+
MDI2-
MDI3+
MDI3-
TD1+
TD1-
TD2+
TD2-
TD3+
TD3-
TD4+
TD4-
MX1+
MX1-
MX2+
MX2-
MX3+
MX3-
MX4+
MX4-
LAN_MX0+
LAN_MX0-
LAN_MX1+
LAN_MX1-
LAN_MX2+
LAN_MX2-
LAN_MX3+
LAN_MX3-
V_DAC
L28 filter_6
V_DAC_C
C771 1U/6.3V_4
C55 0.01U/25V_4
C70 0.01U/25V_4
C78 0.01U/25V_4
C93 0.01U/25V_4
AR8132(M) can remove
TCT1
TCT2
TCT3
TCT4
MCT1
MCT2
MCT3
MCT4
LAN_MCT0
LAN_MCT1
LAN_MCT2
LAN_MCT3
C91 0.01U/100V_06
C97 0.01U/100V_06
C105 0.01U/100V_06
C115 0.01U/100V_06
R57 75/F_4
R66 75/F_4
R67 75/F_4
R68 75/F_4
NS892405
NS892402:GIGABIT DB0AT9LAN05
NS892405:10/100 DB0ZB1LAN04
C56 1000P/3KV_1808
LAN_AGND
RJ45
Lan and MDC Con.
LED_LINK_ACT#
R78 330/F_4
R288 4.99K/F_4
C129 .1U/10V_4
LAN_YLED
LAN_YLED#
LAN_GLED
LAN_GLINK100#
LED_GRE_P
LED_GRE_N
CN18
LED_YEL_P
LED_YEL_N
GND
C188 .1U/10V_4
R108 330/F_4
C194 .01U/16V_4
+3VLANVCC
CN19
RJ-11 CON
C261 470P/3KV-1808
TIP
RING
C276 470P/3KV-1808
C100F9-110A4-L
LAN_AGND1
LAN_AGND
CHASSIS1 GND
CHASSIS2 GND
C59 .01U/16V_4
C58 .01U/16V_4
C284 .01U/16V_4
C285 .01U/16V_4
NB5
PROJECT : TW9D
Quanta Computer Inc.
Size Custom
Document Number AR8131(M)/RJ45
Rev A
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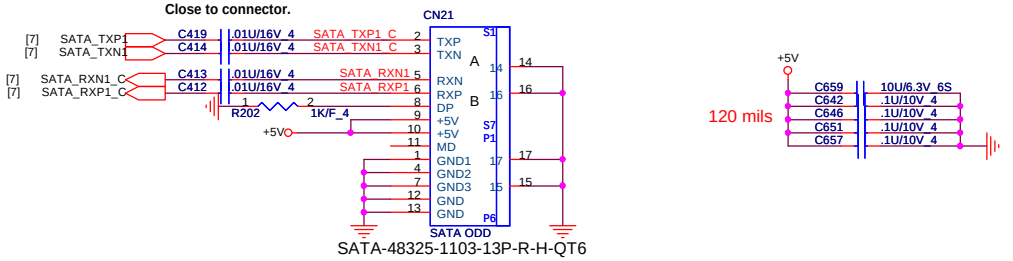
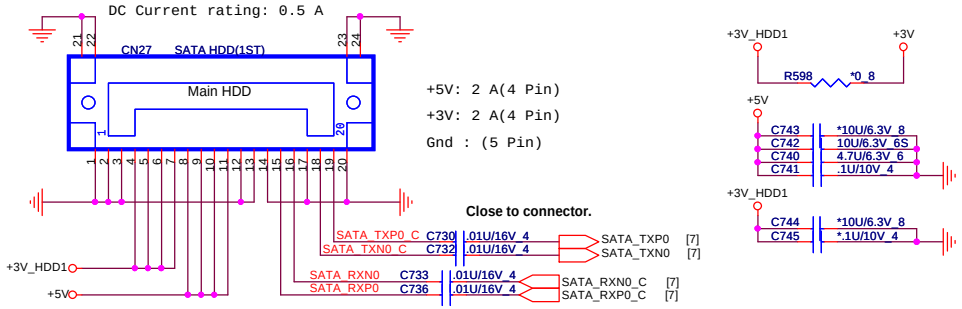
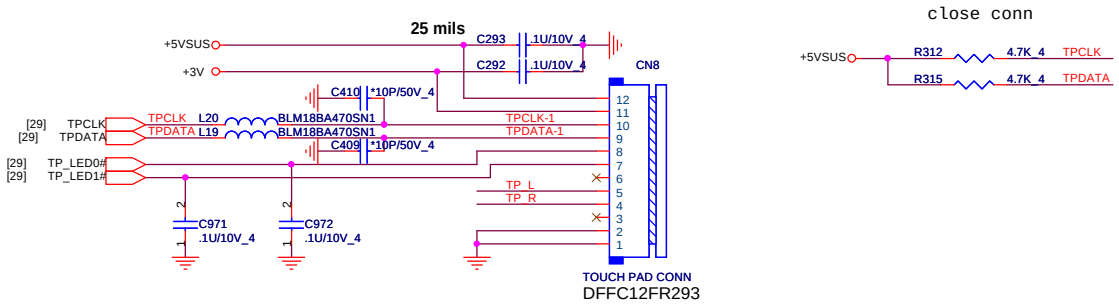
SATA ODD



SATA_1 CONNECTOR

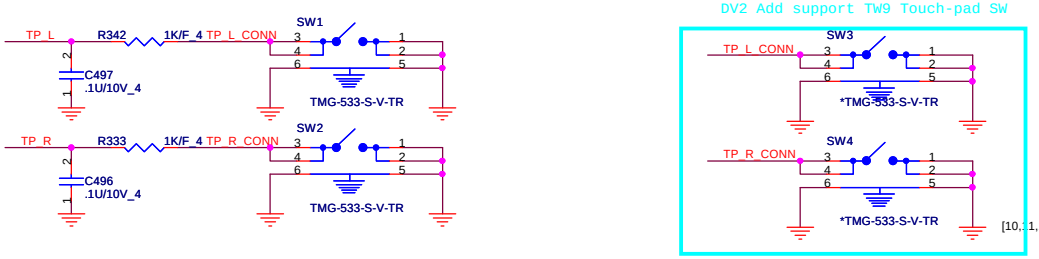


TOUCH PAD CONNECTOR



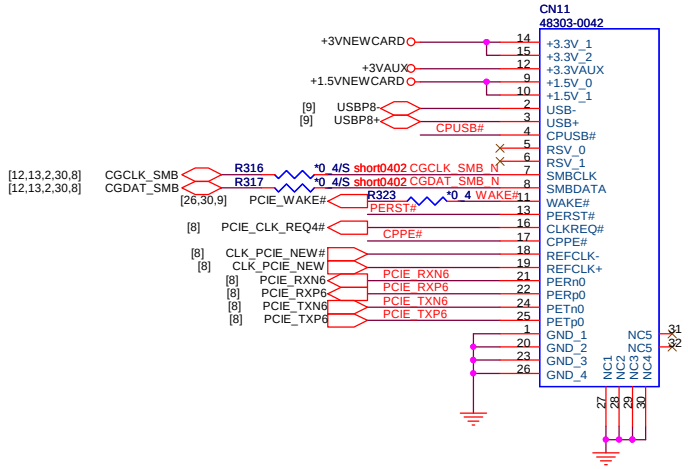
B-stage change footprint to BL121-12R-TAND-12P-L

TOUCH PAD L/R SW1,SW2 in QL4 use, SW3,SW4 in TW9 use

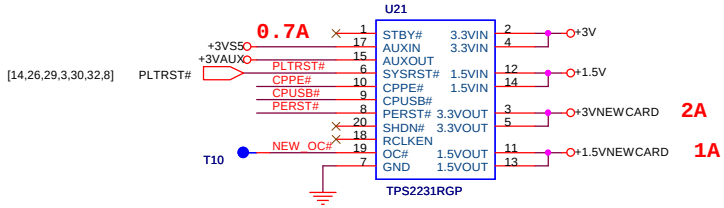


NEWCARD

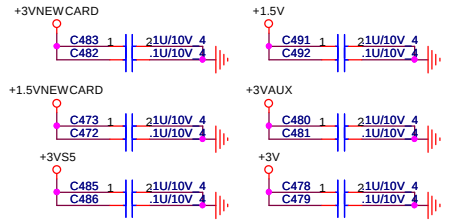
NEWCARD (PCIEXPRESS*1 + USB*1)

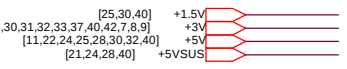


Change CN15#31,32 as ME request for Hole pad expcard-48303-0042-26p-l-qt6 as ME modify Pad size(pin31,32) Move CN15#29,30 Pin as ME request(Molex confirm drawing)



Change net name from 3V_NEWAUX to 3VAUX





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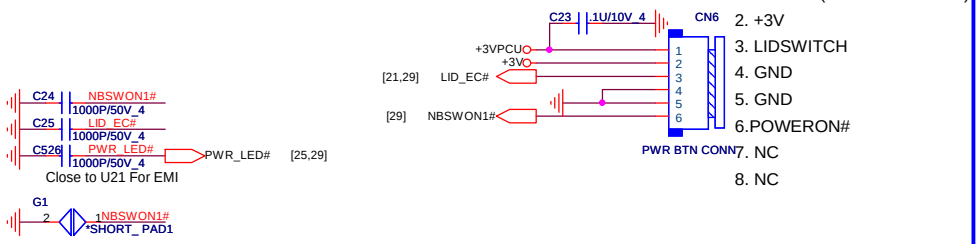
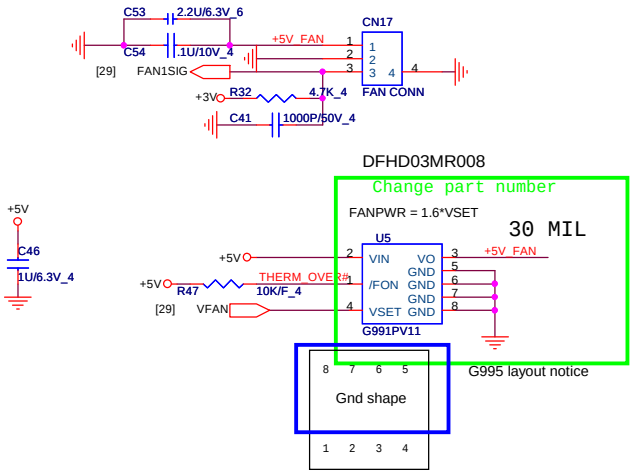
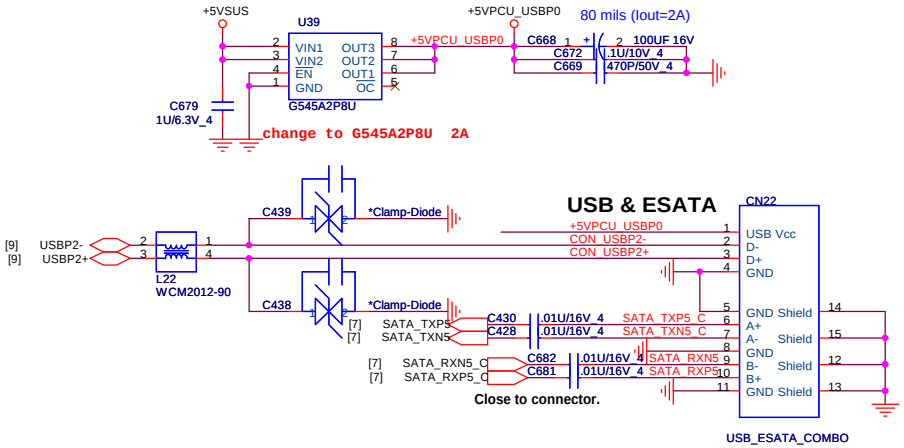
POWER BOTTON CONNECT



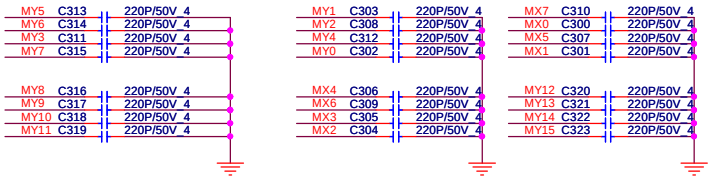
CPU FAN



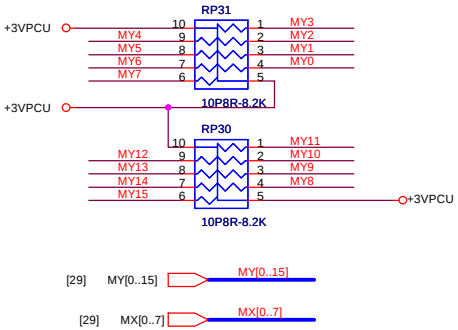
E-SATA/USB COMBO

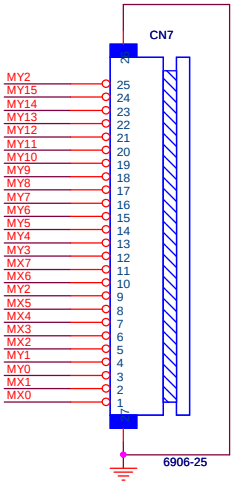


KEYBOARD Con.

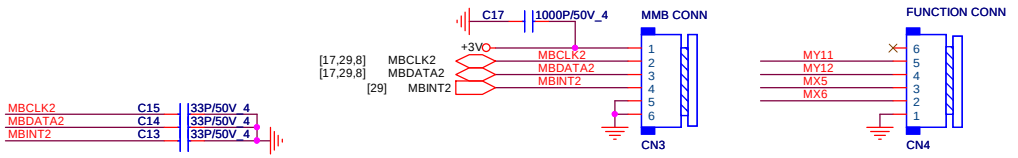


KEYBOARD PULL-UP

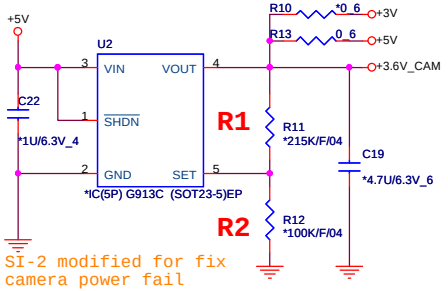


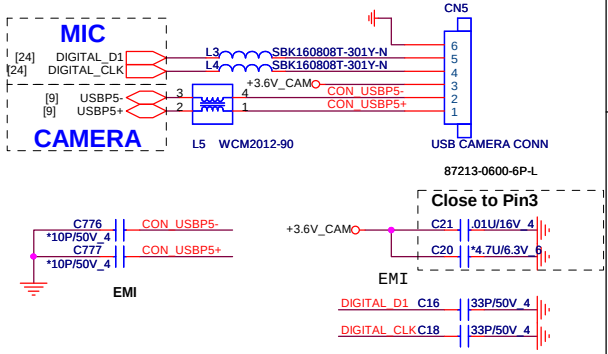


Capacity board Con.



USB CAMERA POWER





[11,22,24,25,27,30,32,40] +5V
[10,11,12,13,2,21,22,23,24,25,27,29,3,30,31,32,33,37,40,42,7,8,9] +3V
[21,25,29,3,30,34,35,36,38,40,41,42,7] +3VPCU
[29,34,35,36,37,38,39,40] +5VPCU

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	KB/PWR/ESATA/FAN/CAM/MIC	A
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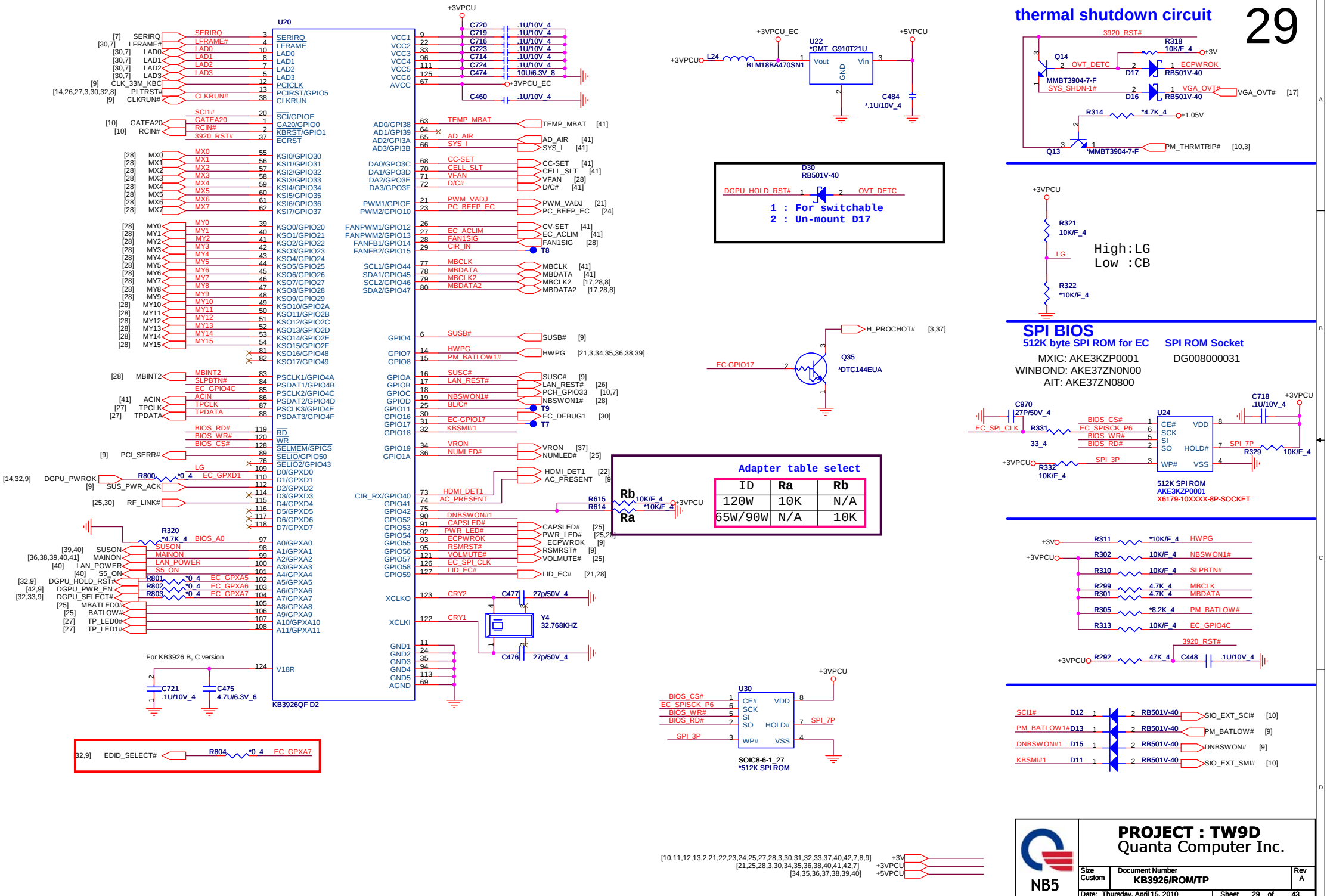

PROJECT	TW9D
Quanta Computer Inc.	
NB5	
Size: Custom	Document Number: KB3926/ROM/TP
Rev	A
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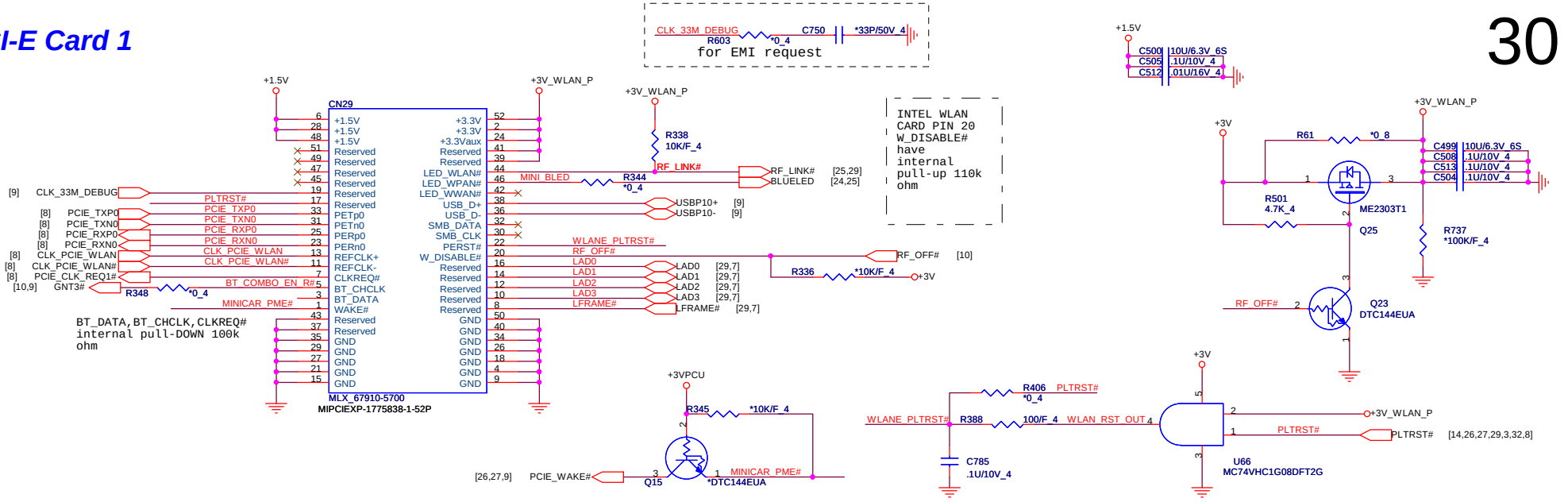
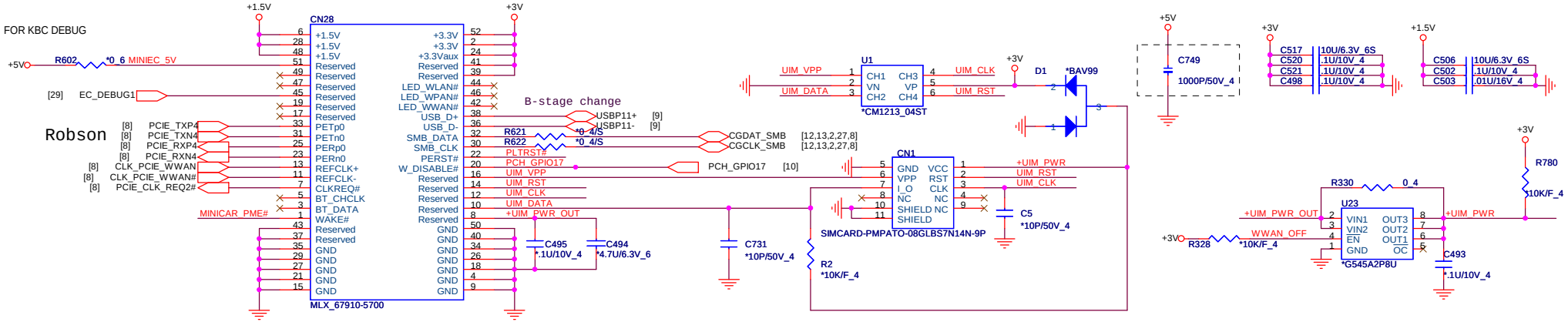
Mini PCI-E Card 1

WLAN



Mini PCI-E Card 2

WWAN& Robson



[25,27,40] +1.5V
[10,11,12,13,2,21,22,23,24,25,27,28,29,3,31,32,33,37,40,42,7,8,9] +3V
[21,25,28,29,3,34,35,36,38,40,41,42,7] +3VPCU
[11,22,24,25,27,28,32,40] +5V

NB5

PROJECT : TW9D
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI PCIE CONN X2	A
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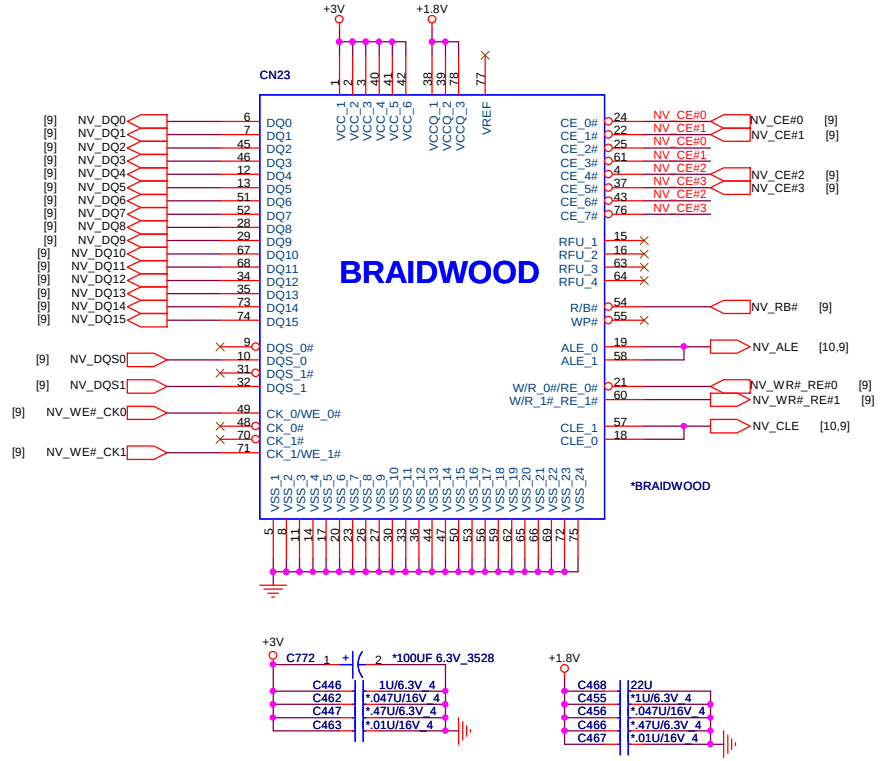

[10,11,3,34,38,5] +1.1V_VTT
[11,2,29,34,36,42,7,8,9] +1.05V
[10,11,36,40,42,5] +1.8V
[10,11,12,13,2,21,22,23,24,25,27,28,29,3,30,32,33,37,40,42,7,8,9] +3V
[10,11,14,27,40,8,9] +3VS5

NB5

PROJECT : TW9D
Quanta Computer Inc.

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Custom	XDP/BRAIDWOOD	A
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LVDS Channel Switch

DGPU_Channel-A/B

IGPU_Channel-A /B

U38

PI3LVD1012

To LVDS Conn.

BKLTCTL_PWM

To LVDS Conn.

BKLTEN / LVDDEN

SEL	FUNCTION
LOW	DGPU
HIGH	IGPU

SELx	Ay
LOW	B1
HIGH	B2

LVDS/CRT DDC Switch

U59

74CBT3257

VGA SWITCH

U62

PI3V512

U65

74LVC1G3157GW

S	Yn
0	B0
1	B1

U63 MC74VHC1G08DFT2G

Q67 MMBT3904-7-F

Q70 MMBT3904-7-F

Q69 MMBT3904-7-F

Q71 MMBT3904-7-F

Q73 *MMBT3904-7-F

PROJECT : TW9D
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	HDMI Switch / Power CRTL	A
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DGPU_HDMI

[16] H_TXC_HDMI+ — C374 .1U/10V_4 — DGPU_TXC_HDMI+
[16] H_TXC_HDMI- — C360 .1U/10V_4 — DGPU_TXC_HDMI-
[16] H_TX0_HDMI+ — C386 .1U/10V_4 — DGPU_TX0_HDMI+
[16] H_TX0_HDMI- — C381 .1U/10V_4 — DGPU_TX0_HDMI-
[16] H_TX1_HDMI+ — C401 .1U/10V_4 — DGPU_TX1_HDMI+
[16] H_TX1_HDMI- — C393 .1U/10V_4 — DGPU_TX1_HDMI-
[16] H_TX2_HDMI+ — C403 .1U/10V_4 — DGPU_TX2_HDMI+
[16] H_TX2_HDMI- — C408 .1U/10V_4 — DGPU_TX2_HDMI-

HDMISwitch

U64 — PI3HDMI201

+3V → VDD (48, 41, 35, 19, 13, 7, 1)

DGPU_TXC_HDMI- 55 — DGPU_TXC_HDMI+ 56 — DGPU_TX0_HDMI- 2 — DGPU_TX0_HDMI+ 3 — DGPU_TX1_HDMI- 5 — DGPU_TX1_HDMI+ 6 — DGPU_TX2_HDMI- 8 — DGPU_TX2_HDMI+ 9
CLK-A, CLK+A, D0-A, D0+A, D1-A, D1+A, D2-A, D2+A

HPD_SINK 47 HDMI_DET_S → HDMI_DET_S [17,22]
SDA_SINK 46 → HDMI_SDATA [22]
SCL_SINK 45 → HDMI_SCLK [22]

[17] HDMI_DET — 51
[16,22] HDMI_SDA — 52
[16,22] HDMI_SCL — 53
[7] HDMI_HPD_CON — 23
[7] SDVO_DATA — 24
[7] SDVO_CLK — 25
HPDA, SDAA, SCLA, HPDB, SDAB, SCLB

CLK- 43 → C_TXC_HDMI- [22]
CLK+ 42 → C_TXC_HDMI+ [22]
D0- 40 → C_TX0_HDMI- [22]
D0+ 39 → C_TX0_HDMI+ [22]
D1- 37 → C_TX1_HDMI- [22]
D1+ 36 → C_TX1_HDMI+ [22]
D2- 34 → C_TX2_HDMI- [22]
D2+ 33 → C_TX2_HDMI+ [22]

PAD_GND 57
GND 4, 10, 16, 22, 32, 38, 44, 54

To HDMI Conn.

IGPU_HDMI

[7] IN_CLK# — 11
[7] IN_CLK — 12
[7] IN_D0# — 14
[7] IN_D0 — 15
[7] IN_D1# — 17
[7] IN_D1 — 18
[7] IN_D2# — 20
[7] IN_D2 — 21
CLK-B, CLK+B, D0-B, D0+B, D1-B, D1+B, D2-B, D2+B

EQ_S1, EQ_S0, OC_S2, OC_S1, OC_S0, OE, SEL2, SEL1
26, 28, 29, 30, 31, 50, 27, 49
HSW_EQS1, HSW_EQS0, HSW_OCS2, HSW_OCS1, HSW_OCS0, HSW_ON#, HSW_SEL2, HSW_SEL1

+3V → R507 2.2K/F_4 SDVO_DATA
+3V → R508 2.2K/F_4 SDVO_CLK

C955 0.1U/10V_4
C954 0.1U/10V_4
C945 0.1U/10V_4
C950 0.1U/10V_4

OC SETTING
S2 S1 S0 = 1 : 1 : 1 500mV 0dB Defualt
S2 S1 S0 = 1 : 1 : 0 750mV 0dB
S2 S1 S0 = 1 : 0 : 1 1000mV 0dB
S2 S1 S0 = 1 : 0 : 0 600mV 0dB
S2 S1 S0 = 0 : 1 : 1 500mV 0dB
S2 S1 S0 = 0 : 1 : 0 500mV 1.5dB
S2 S1 S0 = 0 : 0 : 1 500mV 3.5dB
S2 S1 S0 = 0 : 0 : 0 500mV 6dB

EQ SETTING
S1 S0 = 1 : 1 3dB Defualt
S1 S0 = 1 : 0 8dB
S1 S0 = 0 : 1 3dB
S1 S0 = 0 : 0 15dB

OE#	SEL2	SEL1	Ay
0	X	1	A
0	1	0	B

HSW_EQS1 R629 *4.7K_4
HSW_EQS0 R628 *4.7K_4
HSW_OCS2 R627 *4.7K_4
HSW_OCS1 R626 *4.7K_4
HSW_OCS0 R624 *4.7K_4
HSW_ON# R623 4.7K_4

+3V → R630 4.7K_4
HSW_SEL1 → R793 *4.7K_4
Q33 DTC144EUA
DGPU_SELECT# → DGPU_SELECT# [29,32,9]
R631 0_4 HSW_SEL2
R794 *4.7K_4 → +3V

Mount R793 and R794 for UMA only

Only for NVIDIA

Q26 2N7002E
+3V_GFX

R493 499/F_4 DGPU_TXC_HDMI+
R495 499/F_4 DGPU_TXC_HDMI-
R488 499/F_4 DGPU_TX0_HDMI+
R486 499/F_4 DGPU_TX0_HDMI-
R483 499/F_4 DGPU_TX1_HDMI+
R481 499/F_4 DGPU_TX1_HDMI-
R478 499/F_4 DGPU_TX2_HDMI+
R475 499/F_4 DGPU_TX2_HDMI-

DGPU_TXC_HDMI- / DGPU_TXC_HDMI+ — RP19 — 0_4P2R — C_TXC_HDMI- / C_TXC_HDMI+
DGPU_TX0_HDMI- / DGPU_TX0_HDMI+ — RP18 — 0_4P2R — C_TX0_HDMI- / C_TX0_HDMI+
DGPU_TX1_HDMI- / DGPU_TX1_HDMI+ — RP20 — 0_4P2R — C_TX1_HDMI- / C_TX1_HDMI+
DGPU_TX2_HDMI+ / DGPU_TX2_HDMI- — RP17 — 0_4P2R — C_TX2_HDMI+ / C_TX2_HDMI-

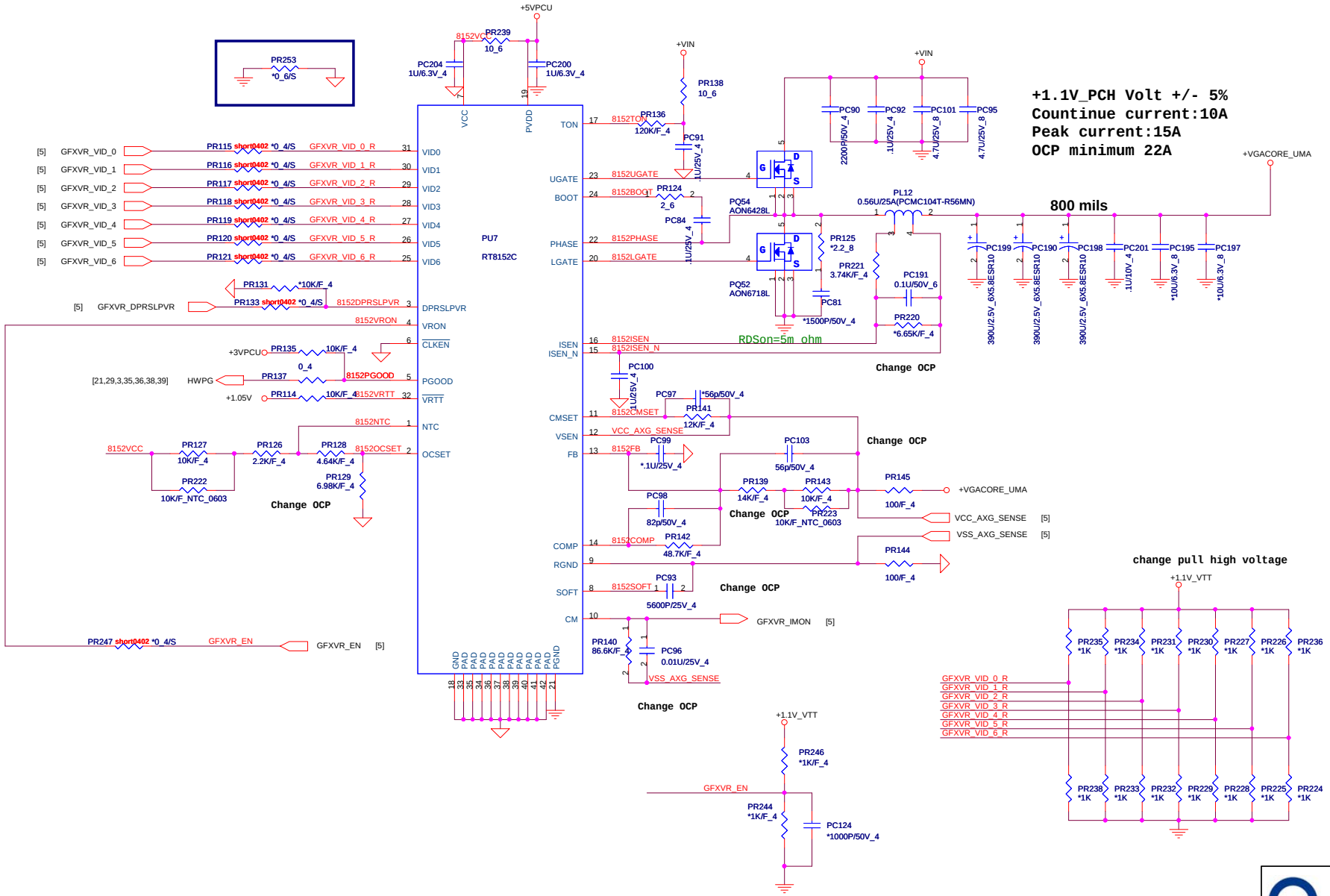
Un-mount for switchable function

NB5

PROJECT : TW9D
Quanta Computer Inc.

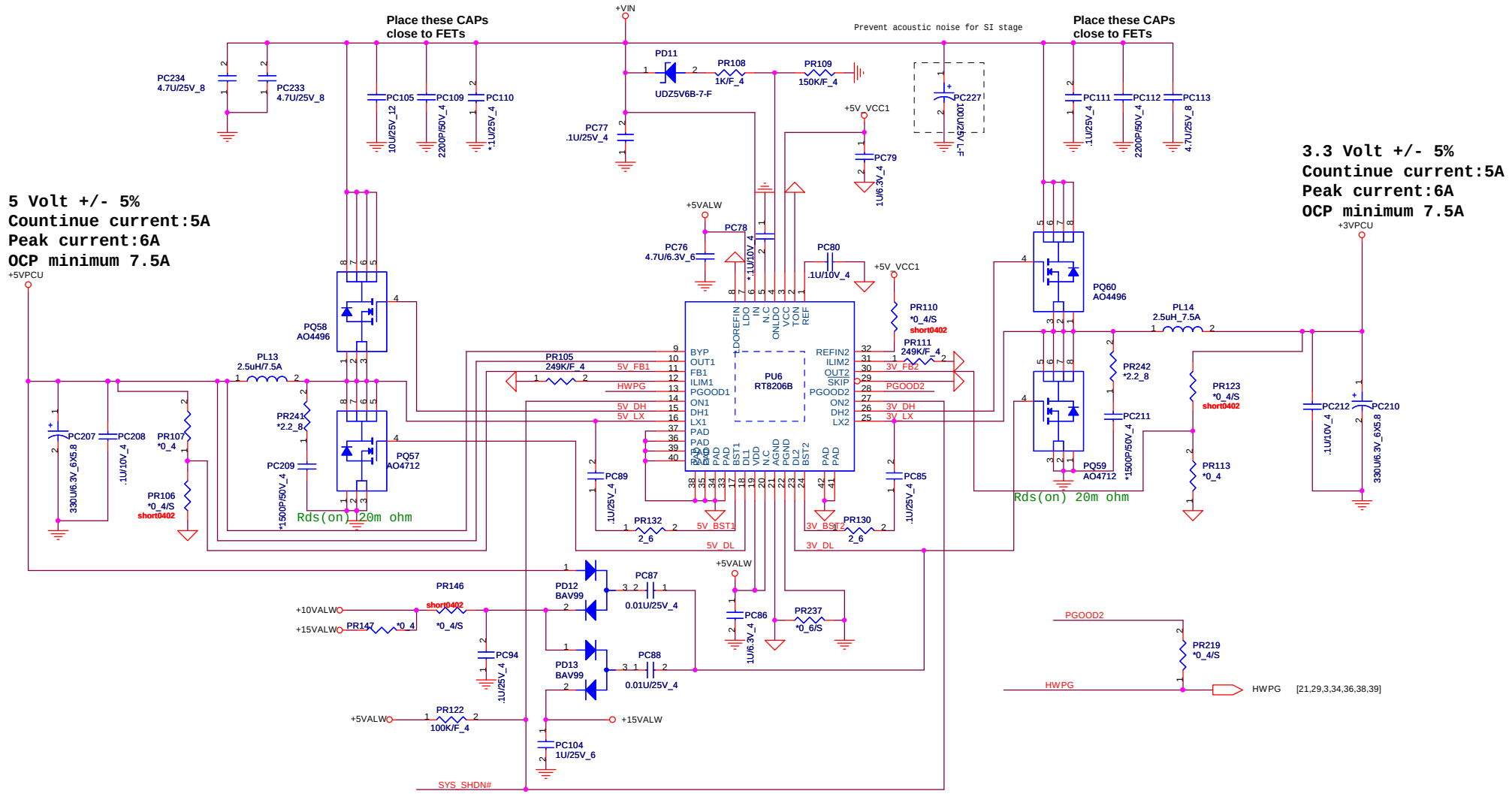
Size	Document Number	Rev
A3	HDMI Switch / Power CRTL	A

Date: Thursday, April 15, 2010 Sheet 33 of 43



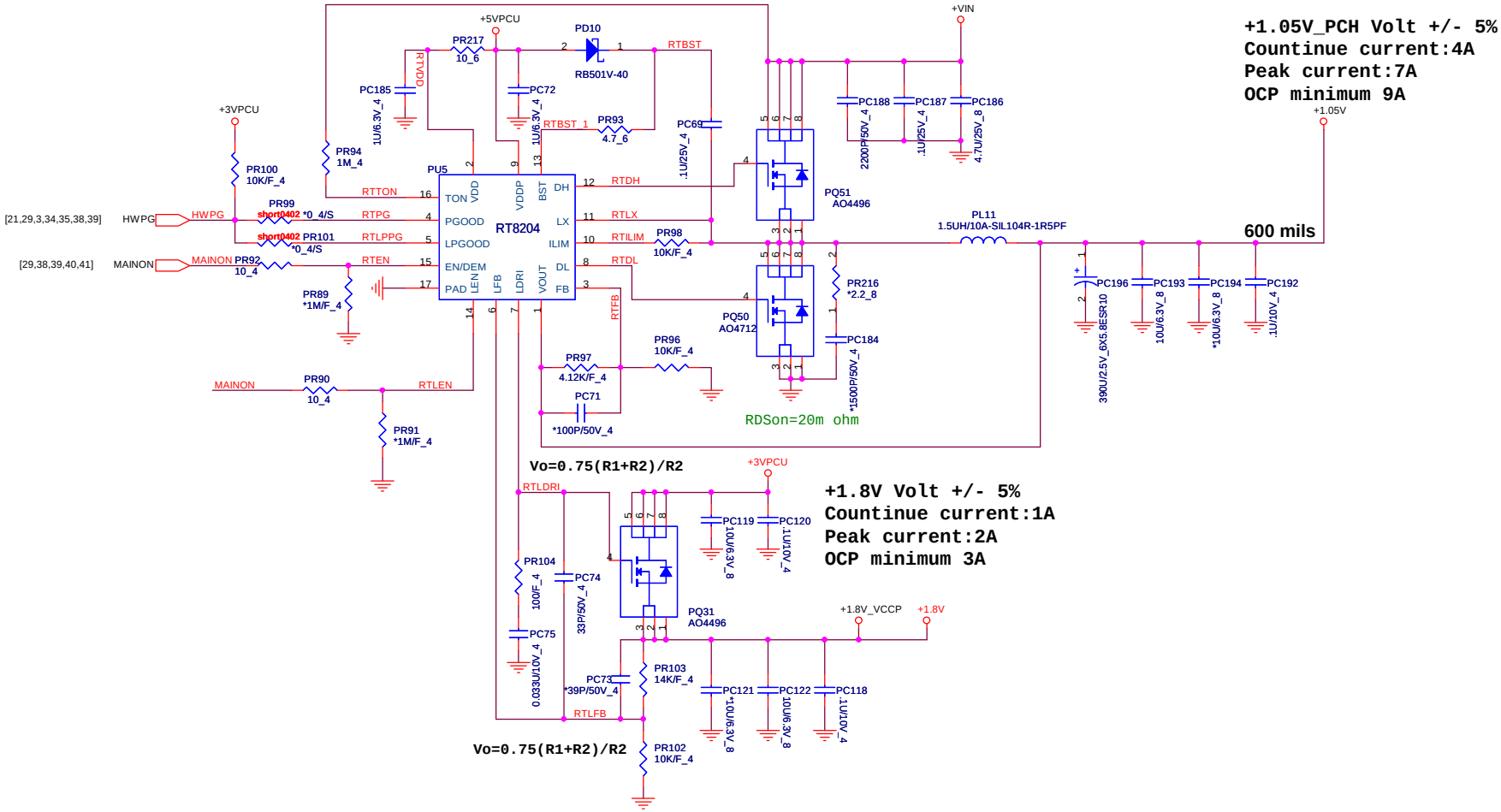
NB5	**PROJECT : TW9D** Quanta Computer Inc.		
	Size: Custom	Document Number: UMA GPU CORE (RT8152A)	Rev: A
	Date: Thursday, April 15, 2010	Sheet 34 of 43	

DC/DC +3V_ALW/+5V_ALW/+5V_ALW2 /+15V_ALW

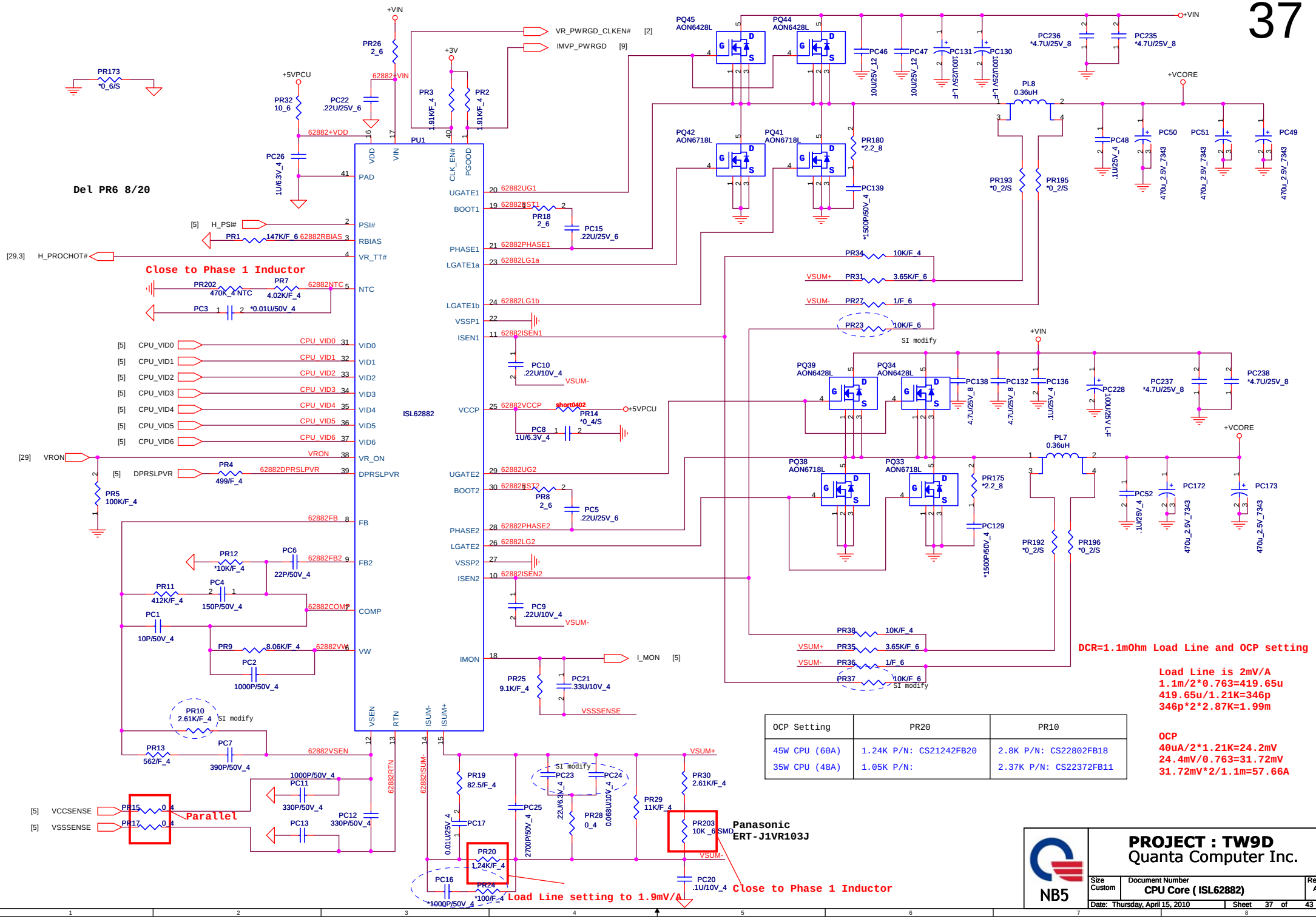


PROJECT : TW9D	Quanta Computer Inc.
Size: Custom	Document Number: +5V/+3V (RT8206B)
Rev: A	
Date: Thursday, April 15, 2010	Sheet 35 of 43

NB5



NB5	PROJECT : TW9D Quanta Computer Inc.	
Size: Custom	Document Number: PCH +1.05V (RT8204)	Rev: A
Date: Thursday, April 15, 2010	Sheet 36 of 43	



OCP Setting	PR20	PR10
45W CPU (60A)	1.24K P/N: CS21242FB20	2.8K P/N: CS22802FB18
35W CPU (48A)	1.05K P/N:	2.37K P/N: CS22372FB11

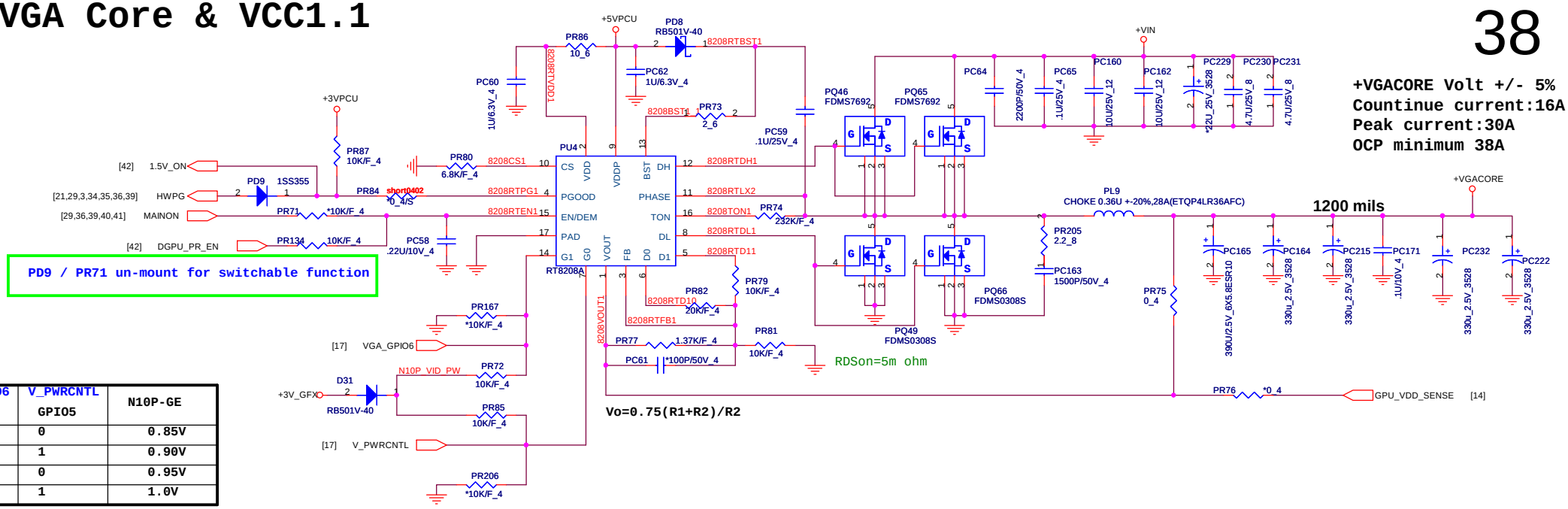
PROJECT : TW9D
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	CPU Core (ISL62882)	A
Date: Thursday, April 15, 2010	Sheet 37 of 43	

VGA Core & VCC1.1

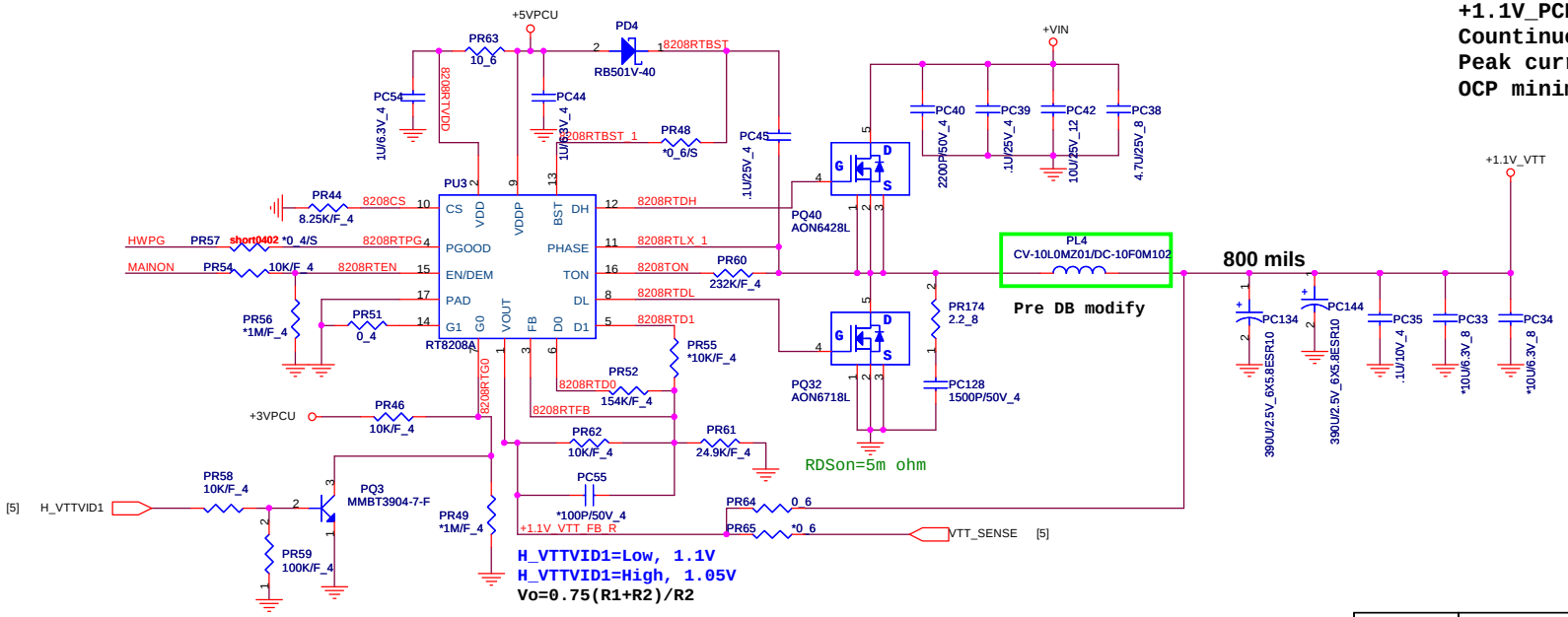
+VGACORE Volt +/- 5%
Countinue current:16A
Peak current:30A
OCP minimum 38A



VGA_GPIO6	V_PWRCNTL	N10P-GE
GPIO6	GPIO5	
0	0	0.85V
0	1	0.90V
1	0	0.95V
1	1	1.0V

PD9 / PR71 un-mount for switchable function

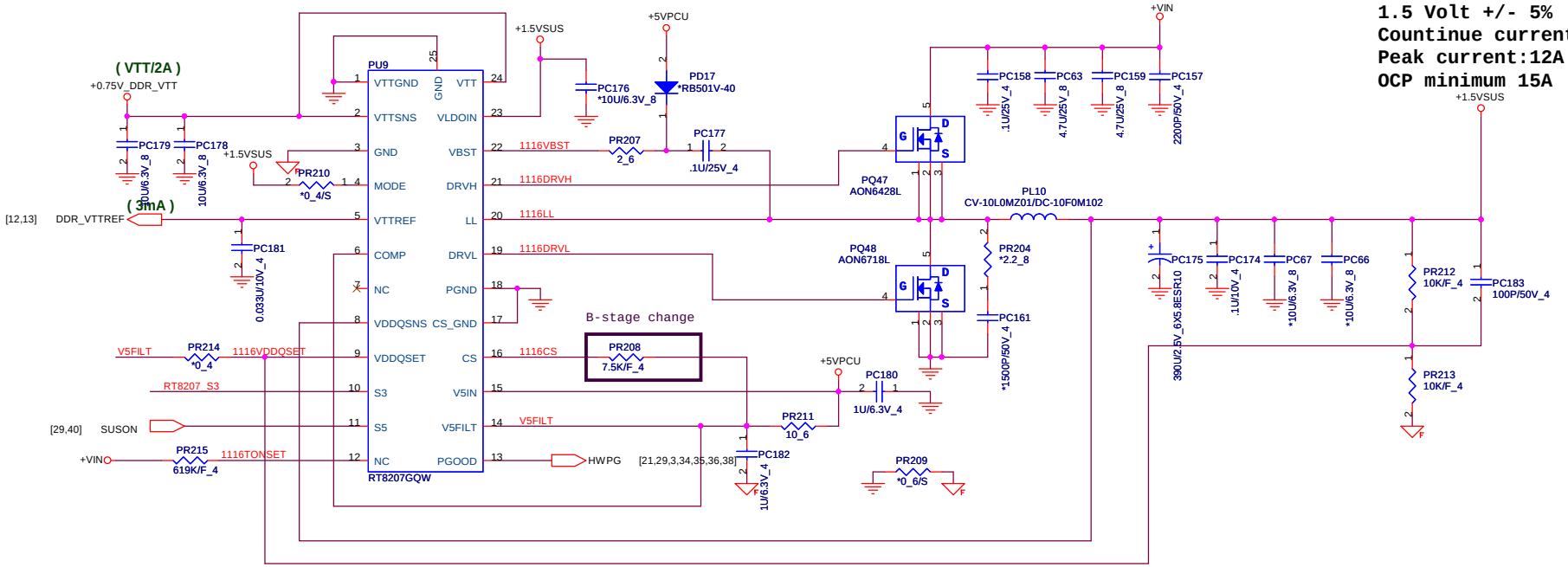
+1.1V_PCH Volt +/- 5%
Countinue current:12A
Peak current:15A
OCP minimum 18A

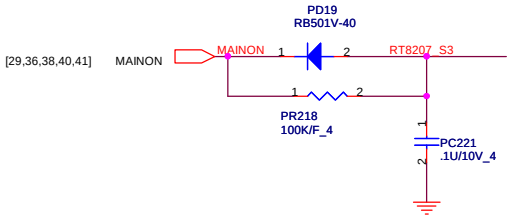


PROJECT : TW9D
Quanta Computer Inc.

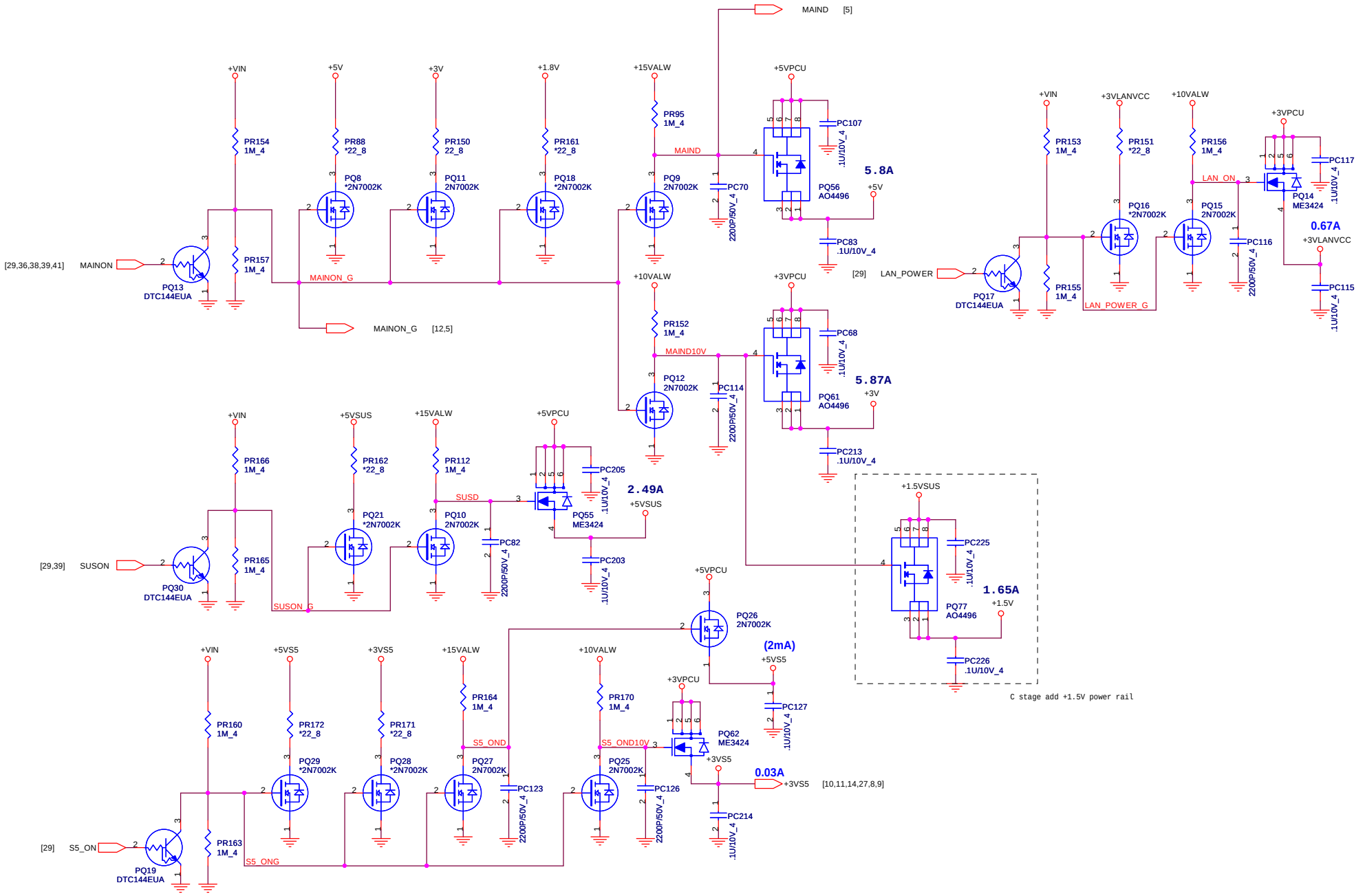
NB5

Size	Document Number	Rev
Custom	+1.1V_VTT/VGA Core RT820A	A
Date: Thursday, April 15, 2010	Sheet 38 of 43	

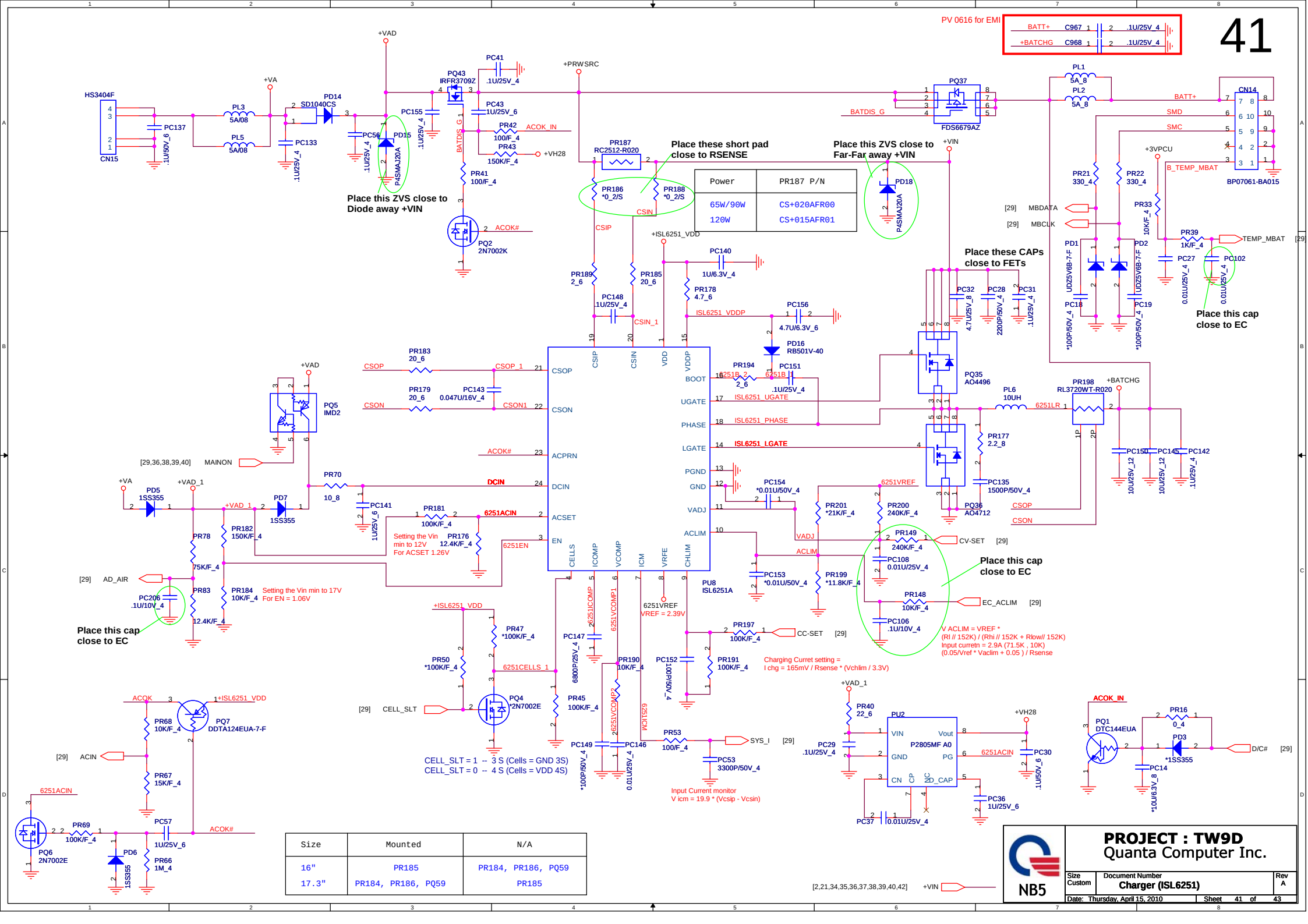




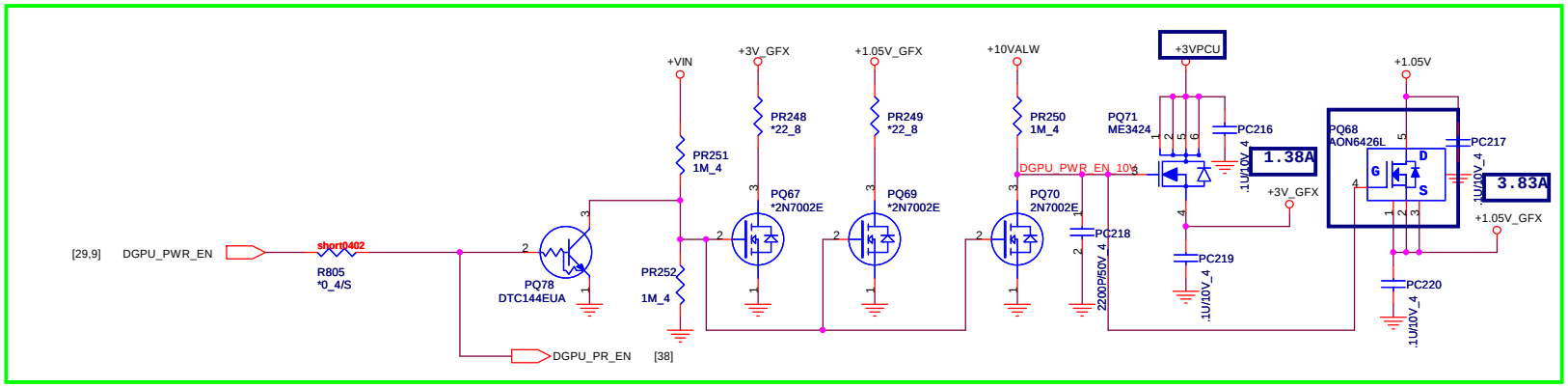
NB5	PROJECT : TW9D Quanta Computer Inc.	
Size: Custom	Document Number: DDR3 (RT8207)	Rev: A
Date: Thursday, April 15, 2010	Sheet 39 of 43	



NB5	**PROJECT : TW9D** Quanta Computer Inc.	
Size: Custom	Document Number: DISCHARGE/3VS5/5VS5/LAN	Rev: A
Date: Thursday, April 15, 2010	Sheet 40 of 43	

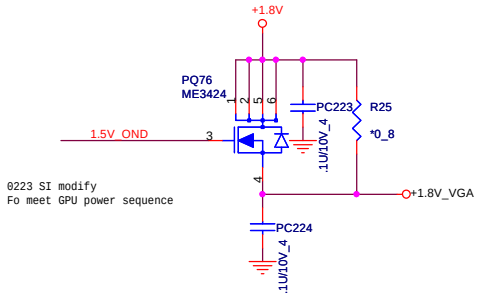


Size	Mounted	N/A
16"	PR185	PR184, PR186, PQ59
17.3"	PR184, PR186, PQ59	PR185

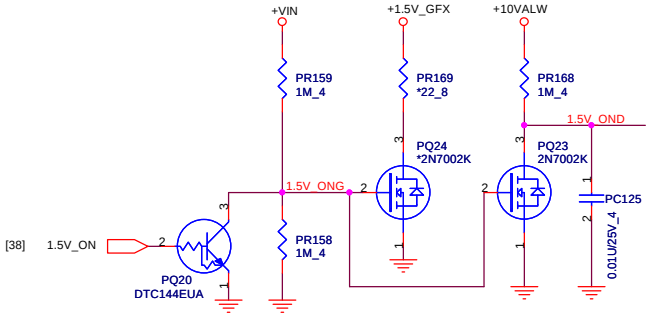


For Discrete or switchable Only

+1.8 Volt +/- 0.1V
Countinue current:0.3A
Peak current:1A

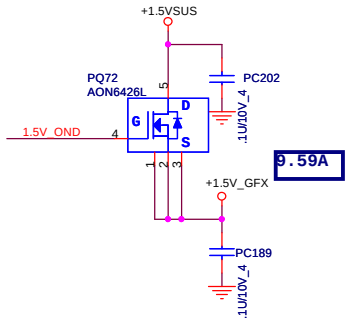


For Discrete or switchable Only



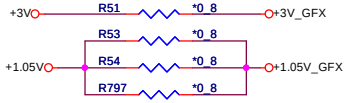
Change PC119 to 0.01u/25v as Discrete power sequence

For Discrete or switchable Only



R51 co-lay PQ71
R53/R54 co-lay PQ68

For Discrete Only



SEL	FUNCTION
LOW	DGPU
HIGH	IGPU

For Hybrid DGPU Power Rails Sequence
1. **+3V_GFX, +1.05V_GFX**
2. **+VGA_CORE -> DGPU_PG**
3. **1.5V_GFX, +1.8V_GFX**

PROJECT : TW9D
Quanta Computer Inc.

NB5

Size	Document Number	Rev
A3	Switchable Power	A

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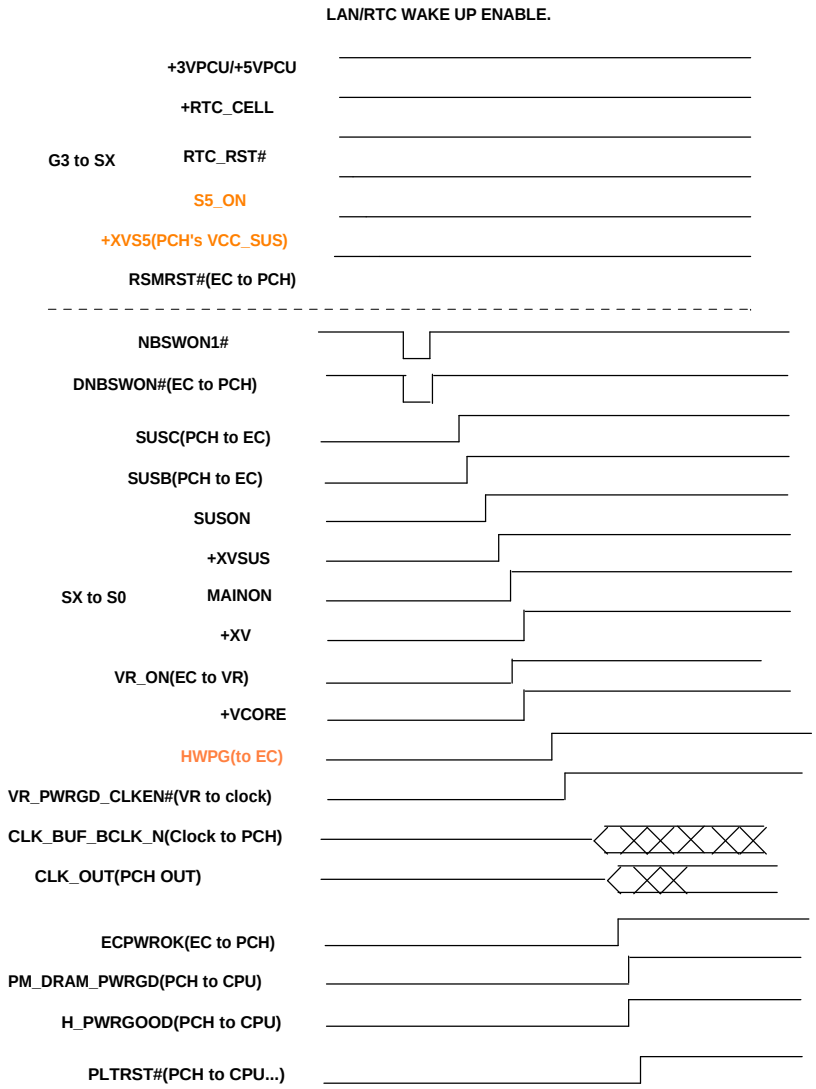
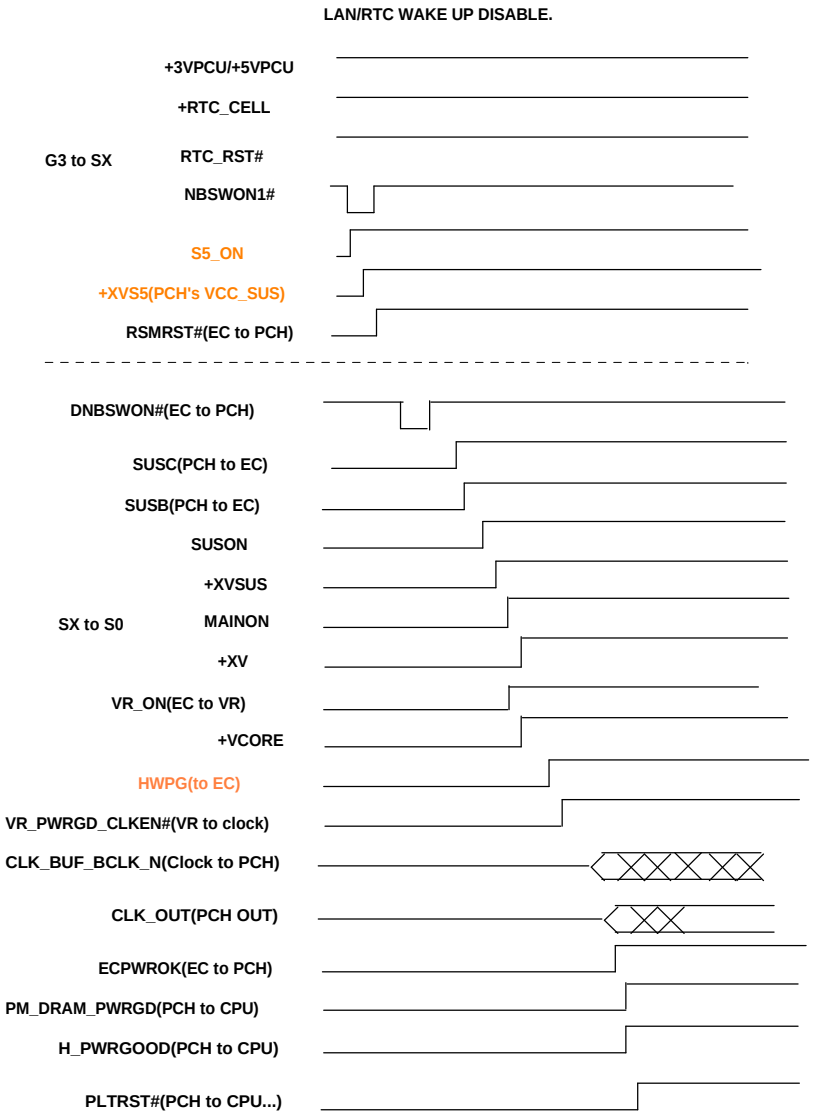
Power up sequence





NB5	**PROJECT : TW9D** Quanta Computer Inc.	
Size: Custom	Document Number: **Power up sequence**	Rev: A
Date: Thursday, April 15, 2010	Sheet 43 of 43	