QT6 BLOCK DIAGRAM

01

PCB STACK UP

8L

- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN2
- LAYER 4 : SGND1
- LAYER 5 : SVCC
- LAYER 6 : IN2
- LAYER 7 : SGND2
- LAYER 8 : BOT

Cable Docking PAGE 40
- VGA
- RJ-45
- CIR/Pwr btn
- SPDIF Out
- Stereo MIC
- Headphone Jack
- USB Port
- VOL Cntr

- SYSTEM CHARGER(ISL6251AHAZ-T) PAGE 41
- SYSTEM POWER ISL6237IRZ-T PAGE 42
- DDR II SMDDR_VTERM 1.8V/1.8VSUS(TPS51116REGR) PAGE 46
- VCCP +1.5V AND GMCH 1.05V(RT8204) PAGE 43
- VGACORE(1.025V)Oz8118 PAGE 45
- CPU CORE ISL6266A PAGE 44

CPU Penryn
478P (uPGA)/35W
PAGE 3,4

CPU THERMAL SENSOR PAGE 5

FSB 667/800/1066

14.318MHz

CLOCK GEN
ALPRS355B MLF64PIN
PAGE 2

CLK_CPU_BCLK, CLK_CPU_BCLK#
CLK_MCH_BCLK, CLK_MCH_BCLK#
DREFCLK, DREFCLK#
DREFSSCLK, DREFSSCLK#

NORTH BRIDGE
Cantiga
PM45,GM45
PAGE 5~9

PS8101 PAGE 20

27MHz

DDRII-SODIMM1 PAGE 12,13
DDRII 667/800 MHz

DDRII-SODIMM2 PAGE 12,13
DDRII 667/800 MHz

PCI-Express 16X

nVIDIA
NB9M-GE 64 Bit
NB9P-GS 128 Bit
PAGE 12~18
969p

Dual Link

HDMI CON PAGE 20

CRT PAGE 20

LCD CONN PAGE 19

DMI LINK

32.768KHz

NBSRCCLK, NBSRCCLK#

Mini PCI-E Card x2
Express Card x1
Cable Docking x1

4,7,10,11

SOUTH BRIDGE
ICH9-M
PAGE 21,22,23,24

SATA - HDD PAGE 36
SATA0 150MB

SATA - CD-ROM PAGE 36
SATA1 150MB

E-SATA PAGE 32
SATA5 150MB

Accelerometer LIS3LV02DL PAGE 32
SMBUS

USB2.0

0,1,8,9 **USB2.0 Ports X4** PAGE 33

5 **BlueTooth** PAGE 33

3 **Webcam** PAGE 33

2 **Fingerprint** PAGE 33

12MHz

6 **CR for UMA RTS5158E** PAGE 27

PCI-E

24.576Hz

Azalia

X2 **Mini PCI-E Card** (Wireless LAN/TV) PAGE 36

X1 **LAN** Realtek PCIE-LAN RTL8102E/8111C (10/100/GagaLAN) PAGE 31,32

25MHz

X1 **Express Card** (NEW CARD) PAGE 33

X1 **JMICRO 380 for Discrete** PAGE28

IEEE1394 connect for Discrete only PAGE 28

Memory CardReader PAGE 29

RJ45 PAGE 34

Analog IDT92HD71B7 PAGE 29

AUDIO Amplifier TPA6017A2 PAGE 31

MDC CONN PAGE 32

32.768KHz

LPC

ENE KBC
KB3926 C0
PAGE 37

Keyboard Touch Pad PAGE 37

Capacitive Sense SW PAGE 37

SPI PAGE 22

microphone PAGE 30

Audio Jacks (Phone/ MIC) PAGE 30

Jack to Speaker PAGE 31

GMT G9931P1U
FAN PAGE 40

SPI PAGE 38

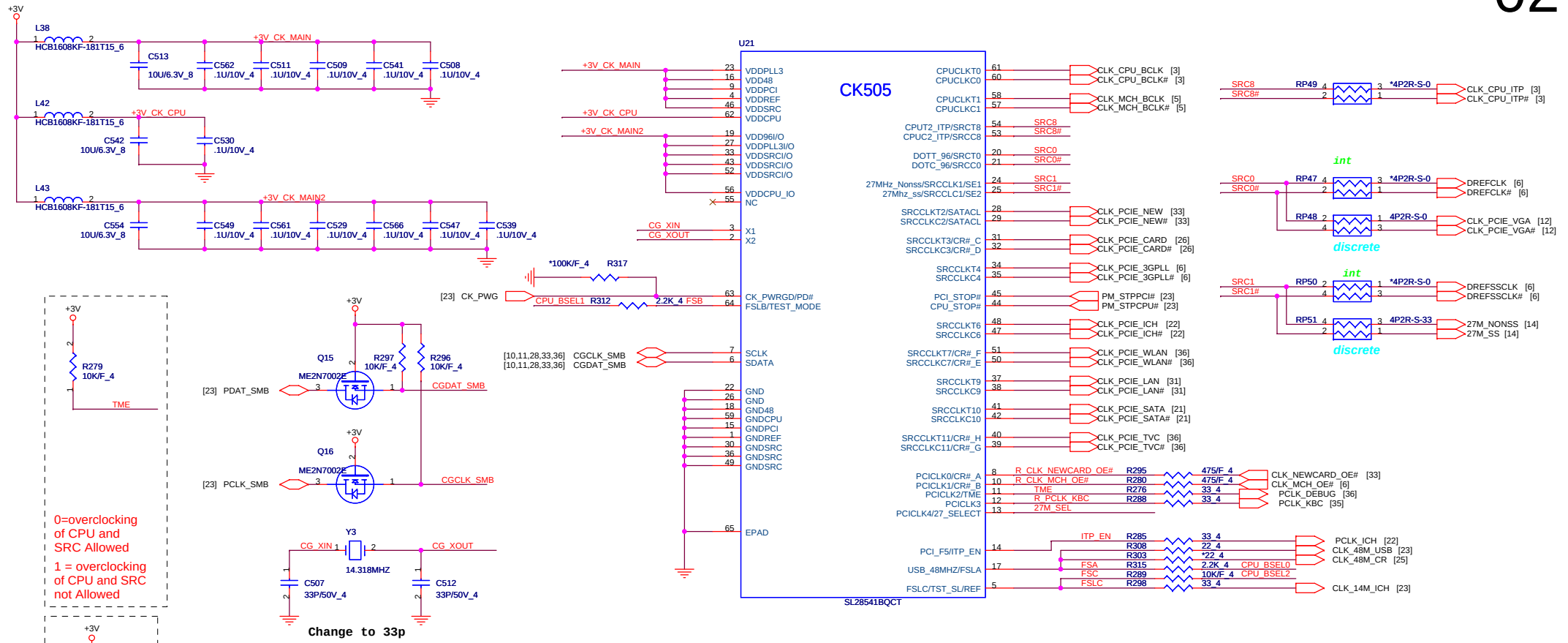
NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Block Diagram	1A

Date: Tuesday, February 26, 2008 | Sheet 1 of 44

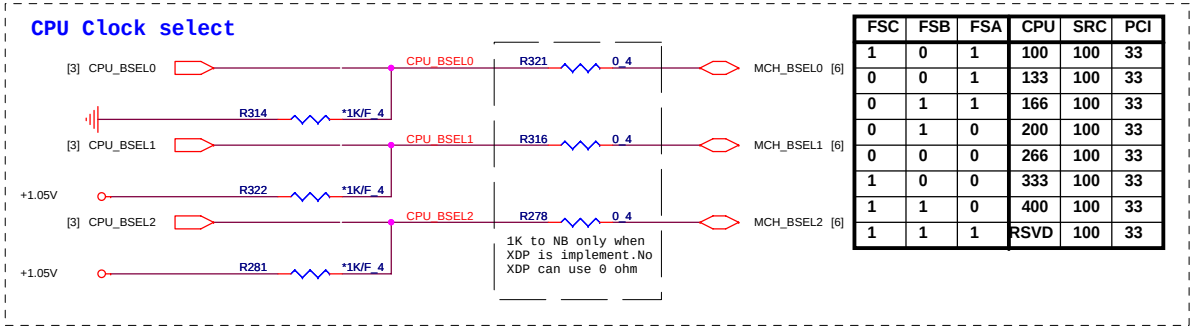
[4,6,9,10,11,12,14,15,19,20,21,22,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[3,4,5,6,8,9,21,24,34,40,41] +1.05V



CK505 QFN64

ICS	ICS9LPRS355BKLF	ALPRS355000
Silego	SLG8SP513VTR	AL8SP513000
Realtek	RTM875N-606-VD-GR	AL000875000

27M_SEL PIN13	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	SRCT1/LCDT_100	SRCT1/LCDT_100
1 = External VGA	SRCT0	SRCC0	27Mout-NSS	27Mout-SS



FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Clock Generator	1A

Date: Tuesday, February 26, 2008 Sheet 2 of 44

DGT^8000006
DGT^8000021

U34A

ADDR GROUP0
ADDR GROUP1
CONTROL
XDP/ITP SIGNALS
THERMAL
MISC
H CLK
Quard Core Only

SI-2

Add R61

R542 -->1.74K for Quad Core

Penryn Ball-out Rev 1a

U34B

DATA GRP 0
DATA GRP 1
DATA GRP 2
DATA GRP 3

Penryn Ball-out Rev 1a

For QC CPU

For QC Support

Don't install for DC

Change to +5V

SI-2

Populate ITP700Flex for bringup

JITP1

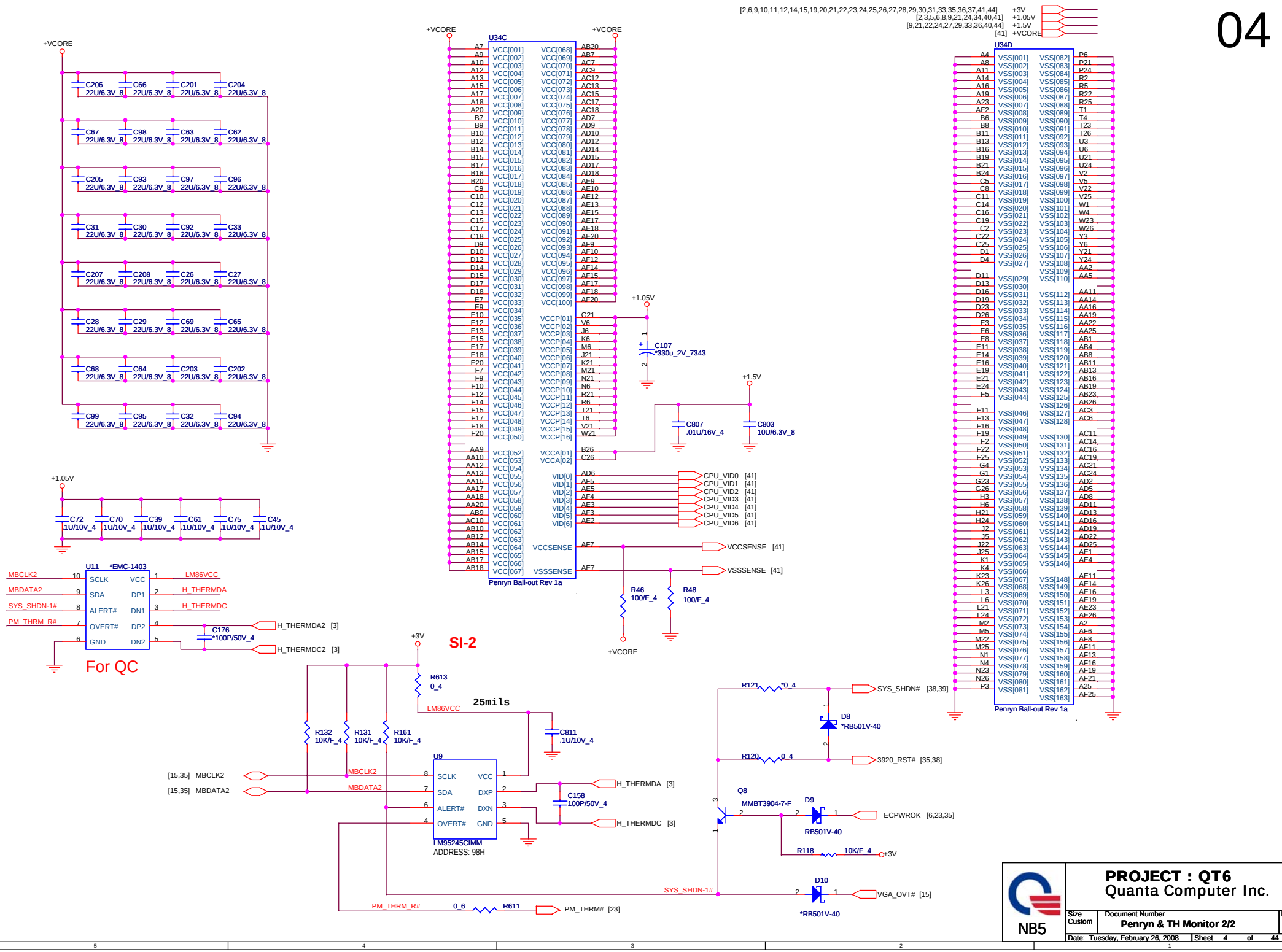
*ITP700Flex

PROJECT : QT6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	Penryn 1/2	2B

Date: Tuesday, February 26, 2008 Sheet 3 of 44



PROJECT : QT6
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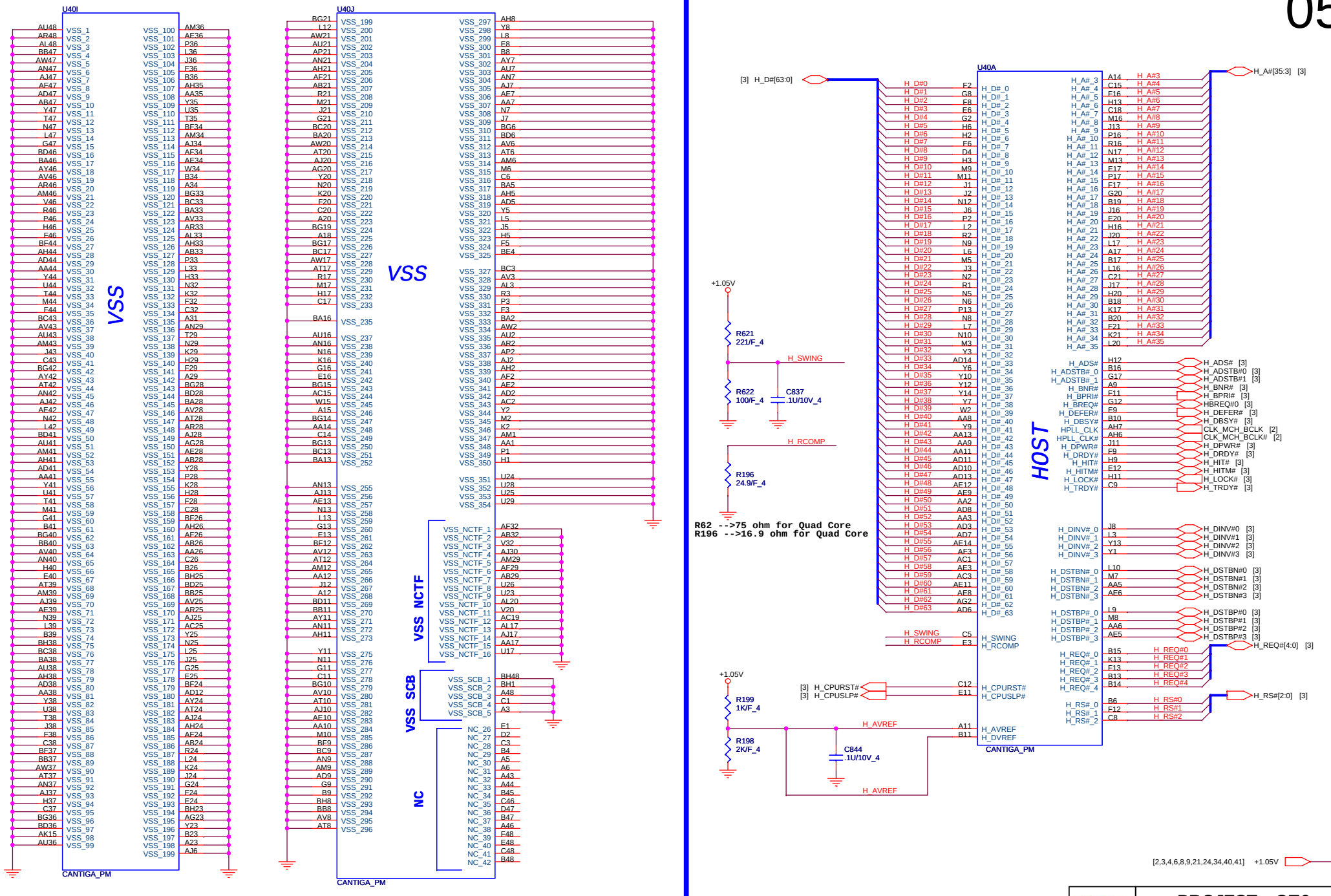
NB5

Size	Document Number	Rev
Custom	Penryn & TH Monitor 2/2	2B

Date: Tuesday, February 26, 2008 Sheet 4 of 44



PROJECT : QT6
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NB5

Size	Document Number	Rev
Custom	Cantiga Host & VSS 1/5	1A

Date: Tuesday, February 26, 2008 | Sheet 5 of 44

MCH_CFG_5 DMIx2 selection
Low = DMI X2
High = DMI X4 (Default)
MCH_CFG_16 FSB Dynamic ODT
Low = Dynamic ODT disabled
High = Dynamic ODT enabled (default)
MCH_CFG_9 PCI Express Graphic Lane
Low: Reverse Lane
High: Normal operation(Default)
MCH_CFG_19 DMI Lane Reversal
Low = Normal operation (Default)
High = Reverse Lanes
MCH_CFG_6 iTPM Host Interface
Low =The iTPM Host Interface is enabled2
High = The ITPM Host Interface is disabled (default)
MCH_CFG_7 Intel (R) Management Engine Crypto
Low: Intel (R) Management Engine Crypto
TLS cipher suite with no confidentiality
High: Intel (R) Management Engine Crypto
TLS cipher suite with no confidentiality (Default)
MCH_CFG_10 PCIe Lookback Enable
Low = Enabled3
High: Disabled (Default)
MCH_CFG_12/13 XOR/ALLZ/CLOCK Un-gating

MCH_CFG_13	MCH_CFG_12	Configuration
0	0	Reserved
1	0	XOR Mode enabled
0	1	All-Z Mode enabled
1	1	Normal operation (Default)

MCH_CFG_20
Digital Display Port (SDVO/DP/iHDMI) Concurrent with PCIE
Low = Only digital display port (SDVO/DP/iHDMI) or PCIE is operational (default)
High = Digital display port (SDVO/DP/iHDMI) and PCIE are operating simultaneously via the PEG port

MCH_CFG2:0
000 = FSB1066
010 = FSB800
011 = FSB667
Others = Reserved

U40B
CANTIGA_PM
RSVD
CLK_DDR_CLK/_CONTROL/COMPENSATION
ME_JTAG
CFG
DMI
GRAPHICS_VID
PM
ME
MISC
NC
HDA

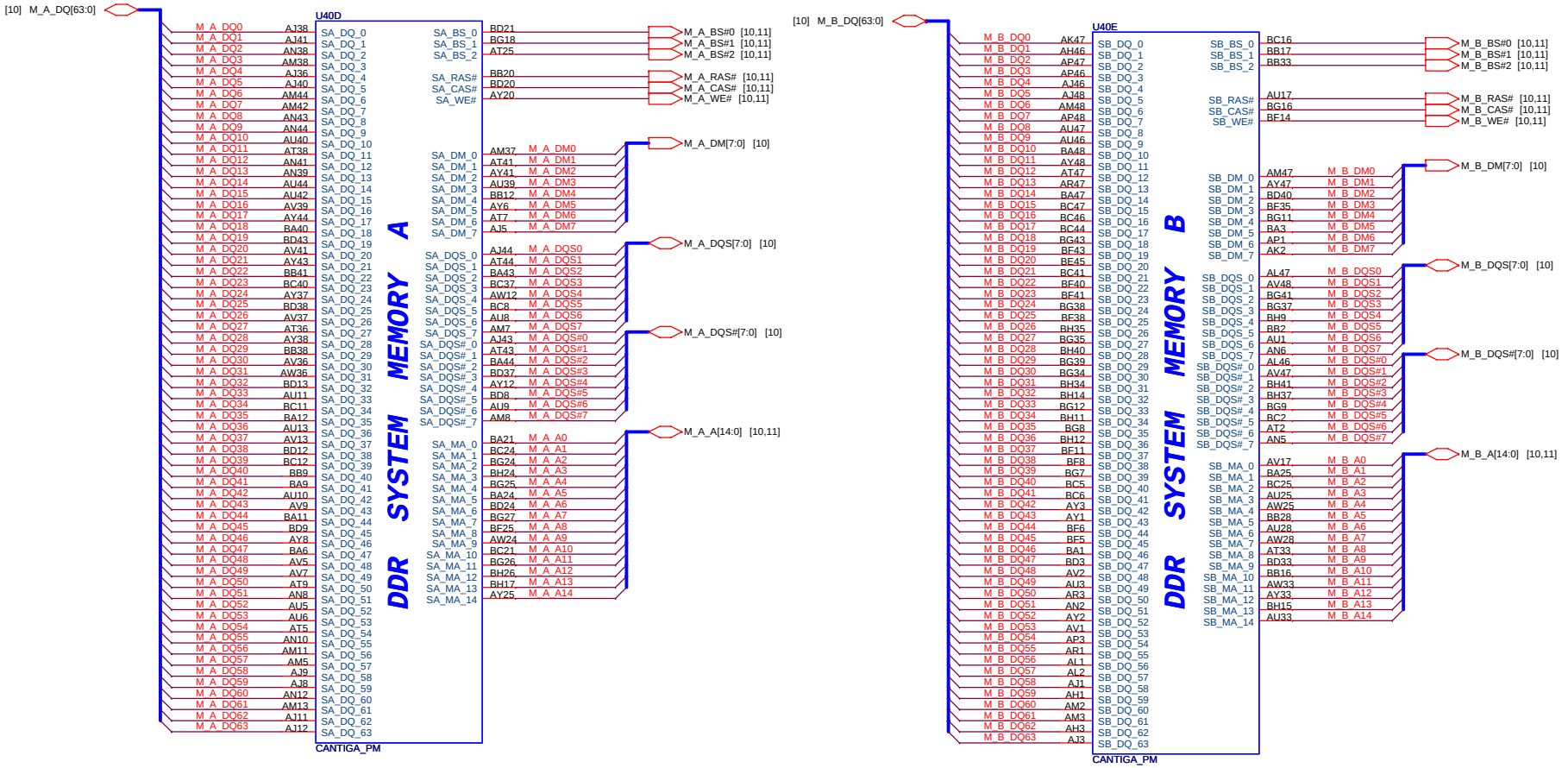
U40C
CANTIGA_PM
LVDS
TV
VGA
PCI-EXPRESS_GRAPHICS

Change to 75 ohm to GND
Change to 0 ohm to GND

For UMA HDMI Function
C416,C423,C440,C431
C419,C418,C430,C424
Need to install for GM
HPD# Inverting Level Shifting Circuit

HP SVTP TEST

PROJECT : QT6
Quanta Computer Inc.
NB5
Size: Custom
Document Number: Cantiga DMI/DISP 2/5
Rev: 1A
Date: Tuesday, February 26, 2008
Sheet 6 of 44



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Cantiga DDR2 3/5	1A

Date: Tuesday, February 26, 2008 | Sheet 7 of 44

[6,9,10,34,40,43] +1.8VSUS
[2,3,4,5,6,9,21,24,34,40,41] +1.05V

U40G

+1.8VSUS

2600mA

AP33 VCC_SM_1
AN33 VCC_SM_2
BH32 VCC_SM_3
BG32 VCC_SM_4
BF32 VCC_SM_5
BD32 VCC_SM_6
BC32 VCC_SM_7
BB32 VCC_SM_8
BA32 VCC_SM_9
AY32 VCC_SM_10
AW32 VCC_SM_11
AV32 VCC_SM_12
AU32 VCC_SM_13
AT32 VCC_SM_14
AR32 VCC_SM_15
AP32 VCC_SM_16
AN32 VCC_SM_17
BH31 VCC_SM_18
BG31 VCC_SM_19
BF31 VCC_SM_20
BG30 VCC_SM_21
BH29 VCC_SM_22
BG29 VCC_SM_23
BF29 VCC_SM_24
BD29 VCC_SM_25
BC29 VCC_SM_26
BB29 VCC_SM_27
BA29 VCC_SM_28
AY29 VCC_SM_29
AW29 VCC_SM_30
AV29 VCC_SM_31
AU29 VCC_SM_32
AT29 VCC_SM_33
AR29 VCC_SM_34
AP29 VCC_SM_35

VCC_SM_36 through VCC_SM_42 can be left as NC for DDR2 desgins.

BA36 VCC_SM_36/NC
BB24 VCC_SM_37/NC
BD16 VCC_SM_38/NC
BB21 VCC_SM_39/NC
AW16 VCC_SM_40/NC
AW13 VCC_SM_41/NC
AT13 VCC_SM_42/NC

VCC SM POWER

+1.05V

Y26 VCC_AXG_1
AE25 VCC_AXG_2
AB25 VCC_AXG_3
AA25 VCC_AXG_4
AE24 VCC_AXG_5
AC24 VCC_AXG_6
AA24 VCC_AXG_7
Y24 VCC_AXG_8
AE23 VCC_AXG_9
AC23 VCC_AXG_10
AB23 VCC_AXG_11
AA23 VCC_AXG_12
AJ21 VCC_AXG_13
AG21 VCC_AXG_14
AE21 VCC_AXG_15
AC21 VCC_AXG_16
AA21 VCC_AXG_17
Y21 VCC_AXG_18
AH20 VCC_AXG_19
AF20 VCC_AXG_20
AE20 VCC_AXG_21
AC20 VCC_AXG_22
AB20 VCC_AXG_23
AA20 VCC_AXG_24
T17 VCC_AXG_25
T16 VCC_AXG_26
AM15 VCC_AXG_27
AL15 VCC_AXG_28
AE15 VCC_AXG_29
AJ15 VCC_AXG_30
AH15 VCC_AXG_31
AG15 VCC_AXG_32
AF15 VCC_AXG_33
AB15 VCC_AXG_34
AA15 VCC_AXG_35
Y15 VCC_AXG_36
V15 VCC_AXG_37
U15 VCC_AXG_38
AN14 VCC_AXG_39
AM14 VCC_AXG_40
U14 VCC_AXG_41
T14 VCC_AXG_42

VCC GFX

+1.05V

R204 10_4
R202 10_4

VCC_AXG_SENSE AJ14
VSS_AXG_SENSE AH14

VCC_AXG_SENSE
VSS_AXG_SENSE

CANTIGA_PM

VCC_AXG_NCTF_1 W28
VCC_AXG_NCTF_2 V28
VCC_AXG_NCTF_3 W26
VCC_AXG_NCTF_4 V26
VCC_AXG_NCTF_5 W25
VCC_AXG_NCTF_6 V25
VCC_AXG_NCTF_7 W24
VCC_AXG_NCTF_8 V24
VCC_AXG_NCTF_9 W23
VCC_AXG_NCTF_10 V23
VCC_AXG_NCTF_11 AM21
VCC_AXG_NCTF_12 AL21
VCC_AXG_NCTF_13 AK21
VCC_AXG_NCTF_14 W21
VCC_AXG_NCTF_15 V21
VCC_AXG_NCTF_16 U21
VCC_AXG_NCTF_17 AM20
VCC_AXG_NCTF_18 AK20
VCC_AXG_NCTF_19 W20
VCC_AXG_NCTF_20 U20
VCC_AXG_NCTF_21 AM19
VCC_AXG_NCTF_22 AL19
VCC_AXG_NCTF_23 AK19
VCC_AXG_NCTF_24 AJ19
VCC_AXG_NCTF_25 AH19
VCC_AXG_NCTF_26 AG19
VCC_AXG_NCTF_27 AF19
VCC_AXG_NCTF_28 AE19
VCC_AXG_NCTF_29 AB19
VCC_AXG_NCTF_30 AA19
VCC_AXG_NCTF_31 Y19
VCC_AXG_NCTF_32 W19
VCC_AXG_NCTF_33 V19
VCC_AXG_NCTF_34 U19
VCC_AXG_NCTF_35 AM17
VCC_AXG_NCTF_36 AK17
VCC_AXG_NCTF_37 AH17
VCC_AXG_NCTF_38 AG17
VCC_AXG_NCTF_39 AE17
VCC_AXG_NCTF_40 AE17
VCC_AXG_NCTF_41 AC17
VCC_AXG_NCTF_42 AB17
VCC_AXG_NCTF_43 Y17
VCC_AXG_NCTF_44 W17
VCC_AXG_NCTF_45 V17
VCC_AXG_NCTF_46 AM16
VCC_AXG_NCTF_47 AL16
VCC_AXG_NCTF_48 AK16
VCC_AXG_NCTF_49 AJ16
VCC_AXG_NCTF_50 AH16
VCC_AXG_NCTF_51 AG16
VCC_AXG_NCTF_52 AF16
VCC_AXG_NCTF_53 AE16
VCC_AXG_NCTF_54 AC16
VCC_AXG_NCTF_55 AB16
VCC_AXG_NCTF_56 AA16
VCC_AXG_NCTF_57 Y16
VCC_AXG_NCTF_58 W16
VCC_AXG_NCTF_59 V16
VCC_AXG_NCTF_60 U16

VCC GFX NCTF

+1.05V

Ivcc_axg=6326.84mA

VCC_SM_LF1 AV44 +VCCSM_LF1
VCC_SM_LF2 BA37 +VCCSM_LF2
VCC_SM_LF3 AM40 +VCCSM_LF3
VCC_SM_LF4 AV21 +VCCSM_LF4
VCC_SM_LF5 AY5 +VCCSM_LF5
VCC_SM_LF6 AM10 +VCCSM_LF6
VCC_SM_LF7 BB13 +VCCSM_LF7

C315 .1U/10V_4
C304 .1U/10V_4
C285 .33U/6.3V_4
C331 .33U/6.3V_4
C402 .47U/6.3V_4
C398 10U/6.3V_4
C397 1U/6.3V_4

VCC SM LF

U40F

Ivcc=1930.4+508.12=2438.52mA

+1.05V

C825 *330u_2.5V_7343
C284 10U/6.3V_8
C460 10U/6.3V_8
C316 .33U/6.3V_4
C323 .33U/6.3V_4
C320 .1U/10V_4

AG34 VCC_1
AC34 VCC_2
AB34 VCC_3
AA34 VCC_4
Y34 VCC_5
V34 VCC_6
U34 VCC_7
AM33 VCC_8
AK33 VCC_9
AJ33 VCC_10
AG33 VCC_11
AE33 VCC_12
AE33 VCC_13
AC33 VCC_14
AA33 VCC_15
Y33 VCC_16
W33 VCC_17
V33 VCC_18
U33 VCC_19
AH28 VCC_20
AF28 VCC_21
AC28 VCC_22
AA28 VCC_23
AJ26 VCC_24
AG26 VCC_25
AE26 VCC_26
AC26 VCC_27
AH25 VCC_28
AG25 VCC_29
AF25 VCC_30
AG24 VCC_31
AJ23 VCC_32
AH23 VCC_33
AF23 VCC_34
T32 VCC_35

+1.8VSUS

C843 .1U/10V_4
C846 10U/6.3V_8
C854 10U/6.3V_8
C870 10U/6.3V_8
C857 10U/6.3V_8

+1.05V

C849 390U/2.5V_6X5.8ESR10

C328 .47U/6.3V_4
C313 1U/6.3V_4
C243 10U/6.3V_8
C244 10U/6.3V_8
C483 10U/6.3V_8
C324 1U/10V_4
C319 .1U/10V_4

VCC CORE POWER

CANTIGA_PM

+1.05V

VCC_NCTF_1 AM32
VCC_NCTF_2 AL32
VCC_NCTF_3 AK32
VCC_NCTF_4 AJ32
VCC_NCTF_5 AH32
VCC_NCTF_6 AG32
VCC_NCTF_7 AE32
VCC_NCTF_8 AC32
VCC_NCTF_9 AA32
VCC_NCTF_10 Y32
VCC_NCTF_11 W32
VCC_NCTF_12 U32
VCC_NCTF_13 AM30
VCC_NCTF_14 AL30
VCC_NCTF_15 AK30
VCC_NCTF_16 AH30
VCC_NCTF_17 AG30
VCC_NCTF_18 AF30
VCC_NCTF_19 AE30
VCC_NCTF_20 AC30
VCC_NCTF_21 AB30
VCC_NCTF_22 AA30
VCC_NCTF_23 Y30
VCC_NCTF_24 W30
VCC_NCTF_25 V30
VCC_NCTF_26 U30
VCC_NCTF_27 AL29
VCC_NCTF_28 AK29
VCC_NCTF_29 AJ29
VCC_NCTF_30 AH29
VCC_NCTF_31 AG29
VCC_NCTF_32 AE29
VCC_NCTF_33 AC29
VCC_NCTF_34 AA29
VCC_NCTF_35 Y29
VCC_NCTF_36 W29
VCC_NCTF_37 V29
VCC_NCTF_38 AL28
VCC_NCTF_39 AK28
VCC_NCTF_40 AL26
VCC_NCTF_41 AK26
VCC_NCTF_42 AK25
VCC_NCTF_43 AK24
VCC_NCTF_44 AK23

VCC NCTF

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Cantiga Vcc 4/5	1A

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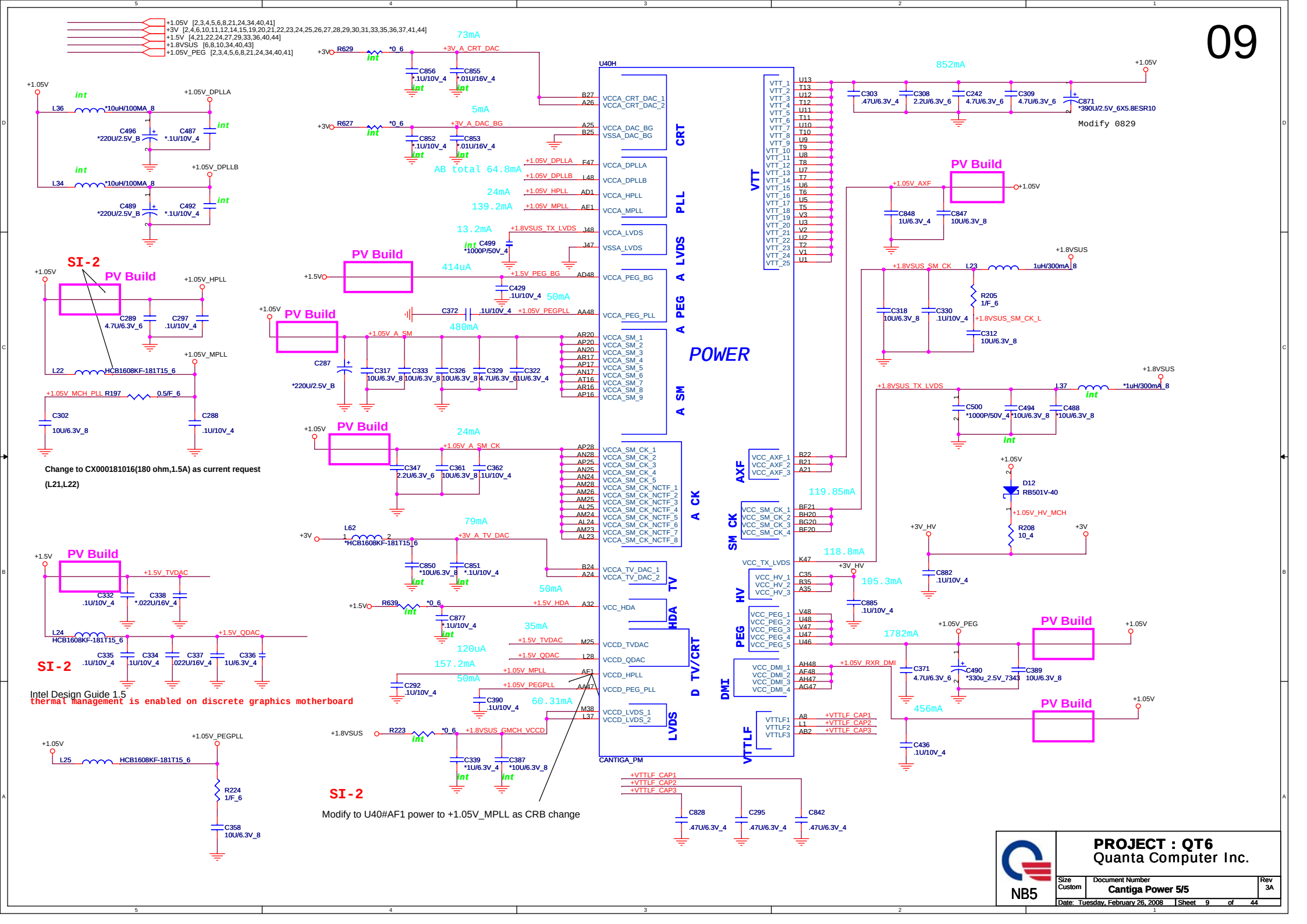
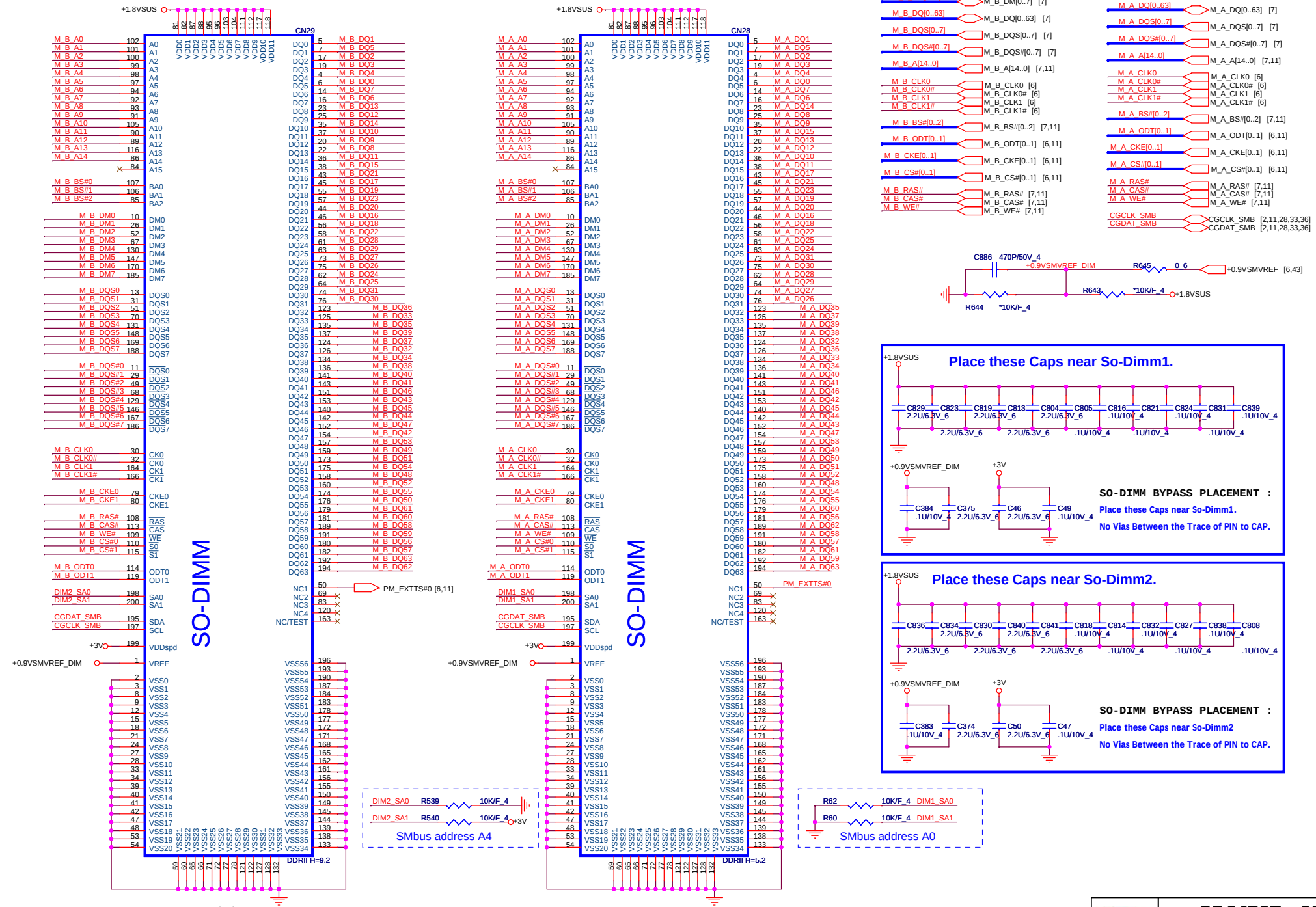


NB5	**PROJECT : QT6** Quanta Computer Inc.
Size: Custom	Document Number: Cantiga Power 5/5
Rev: 3A	
Date: Tuesday, February 26, 2008	Sheet 9 of 44



NB5

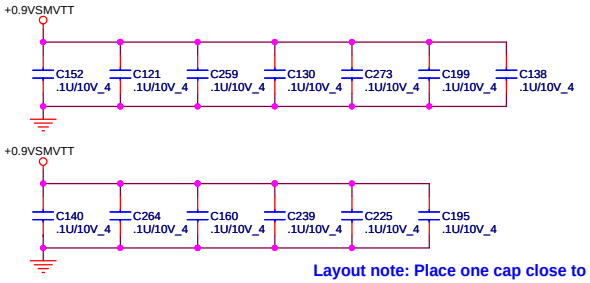
PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR2 DIMM	1A

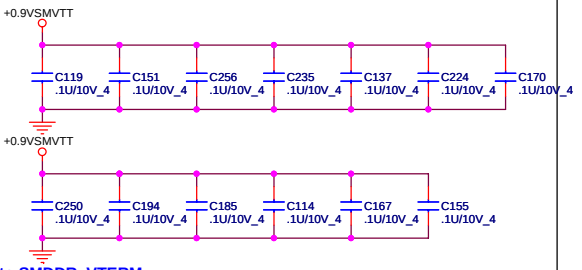
Date: Tuesday, February 26, 2008 Sheet 10 of 44

DDRII DUAL CHANNEL A,B.

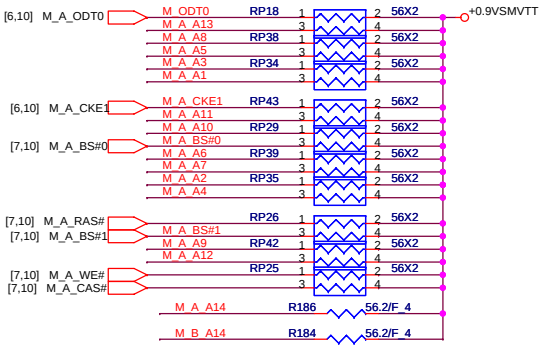
DDRII A CHANNEL

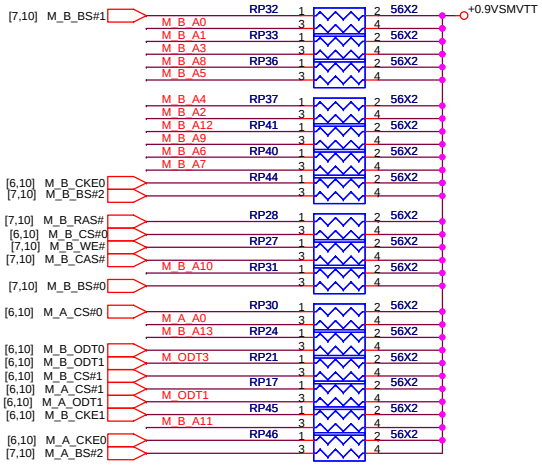


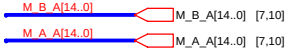
DDRII B CHANNEL

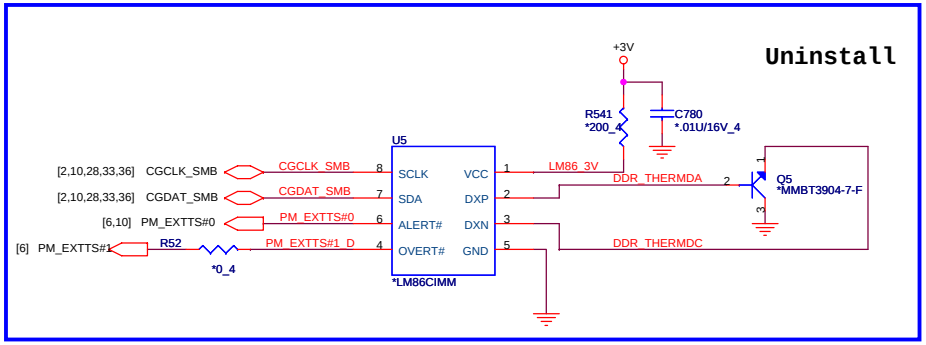


Layout note: Place one cap close to every 2 pullup resistors terminated to SMDDR_VTERM









+0.9VSMVTT [43]

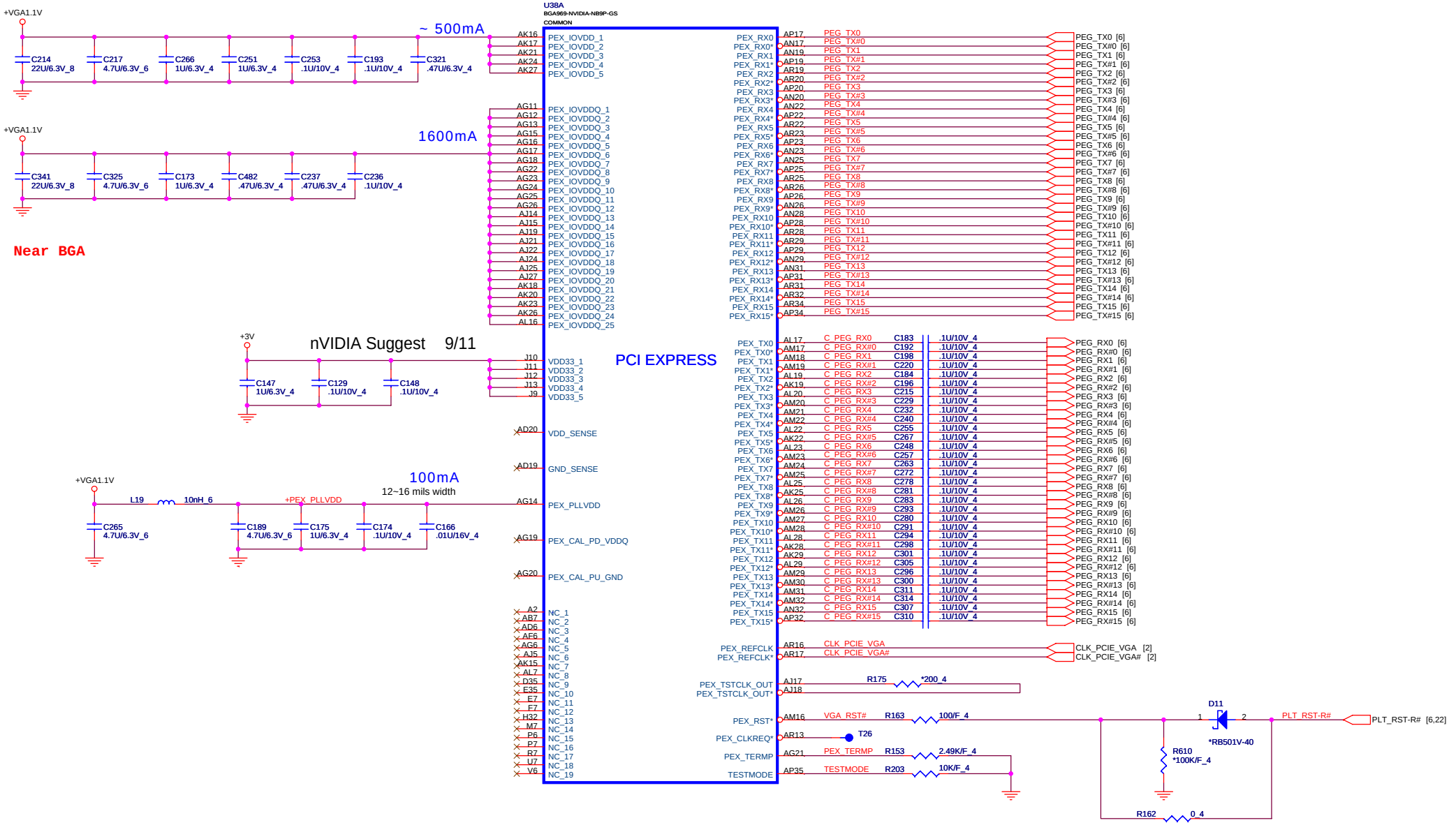
+3V [2,4,6,9,10,12,14,15,19,20,21,22,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44]

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR2 termination	1A

Date: Tuesday, February 26, 2008 | Sheet 11 of 44



PROJECT : QT6	
Quanta Computer Inc.	
NB5	
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U38B
BGA969-NVIDIA-NB9P-GS
COMMON

MEMORY I/F A

U38C
BGA969-NVIDIA-NB9P-GS
COMMON

MEMORY I/F B

for DDR2 need use CMD11(CKE) and CMD12(ODT)

use internal Vref, ext divider no stuff

15mils width

For Debug only

15mils width

G96 only

R192 Install for DDR3

R178 no stuff

For G96 only
For NB9P-GSonly

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U38D

BGA969-NVIDIA-NB9P-GS

COMMON

IFPAB(LVDS)

+1.8V

100 mA

L58 HCB1608KF-181T15_6 +IFPAB_PLLVDD AK9 IFPAB_PLLVDD

C801 4.7U/6.3V_6 C806 4700P/25V_4 C144 470P/50V_4

R106 *1K/F_4 AJ11 IFPAB_RSET

50 mA AG9 IFPA_IOVDD

L9 HCB1608KF-181T15_6 +IFPAB_IOVDD AG10 IFPB_IOVDD

C76 4.7U/6.3V_6 C74 4.7U/6.3V_6 C83 4700P/25V_4 C157 4700P/25V_4 C78 470P/50V_4 C141 470P/50V_4

IFPA_TXC+ AM11 EXT_TXLCLKOUT+ [19]
IFPA_TXC- AM12 EXT_TXLCLKOUT- [19]
IFPA_TXD0+ AM8 EXT_TXLOUT0+ [19]
IFPA_TXD0- AL8 EXT_TXLOUT0- [19]
IFPA_TXD1+ AM10 EXT_TXLOUT1+ [19]
IFPA_TXD1- AM9 EXT_TXLOUT1- [19]
IFPA_TXD2+ AK10 EXT_TXLOUT2+ [19]
IFPA_TXD2- AL10 EXT_TXLOUT2- [19]
IFPA_TXD3+ AK11
IFPA_TXD3- AL11
IFPB_TXC+ AP13 EXT_TXUCLKOUT+ [19]
IFPB_TXC- AN13 EXT_TXUCLKOUT- [19]
IFPB_TXD0+ AN8 EXT_TXUOUT0+ [19]
IFPB_TXD0- AP8 EXT_TXUOUT0- [19]
IFPB_TXD1+ AP10 EXT_TXUOUT1+ [19]
IFPB_TXD1- AN10 EXT_TXUOUT1- [19]
IFPB_TXD2+ AR11 EXT_TXUOUT2+ [19]
IFPB_TXD2- AR10 EXT_TXUOUT2- [19]
IFPB_TXD3+ AN11
IFPB_TXD3- AP11

IFPCD

+1.8V

L13 HCB1608KF-181T15_6 +IFPCD_PLLVDD AJ9 IFPCD_PLLVDD

C231 1U/6.3V_4 0827b C116 4.7U/6.3V_6 C135 4700P/25V_4 C123 470P/50V_4

R736 1K/F_4 AK7 IFPCD_RSET

+VGA1.1V

L14 HCB1608KF-181T15_6 +IFPCD_IOVDD AJ8 IFPC_IOVDD AK8 IFPD_IOVDD

C794 4.7U/6.3V_6 C128 1U/6.3V_4 C795 1U/6.3V_4 C127 4700P/25V_4 C136 470P/50V_4 C124 470P/50V_4

IFPC

AUX+ AN3
AUX- AP2
DPL3_TXC+ AR2 N_TXC_HDMI+ N_TXC_HDMI+ [20]
DPL3_TXC- AP1 N_TXC_HDMI- N_TXC_HDMI- [20]
DPL2_TXD0+ AM4 N_TX0_HDMI+ N_TX0_HDMI+ [20]
DPL2_TXD0- AM3 N_TX0_HDMI- N_TX0_HDMI- [20]
DPL1_TXD1+ AM5 N_TX1_HDMI+ N_TX1_HDMI+ [20]
DPL1_TXD1- AL5 N_TX1_HDMI- N_TX1_HDMI- [20]
DPL0_TXD2+ AM6 N_TX2_HDMI+ N_TX2_HDMI+ [20]
DPL0_TXD2- AM7 N_TX2_HDMI- N_TX2_HDMI- [20]

Fix Ball out and Pin Name

IFPD

AUX+ AN4
AUX- AP4
DPL3_TXC+ AR4
DPL3_TXC- AR5
DPL2_TXD0+ AP5
DPL2_TXD0- AN5
DPL1_TXD1+ AN7
DPL1_TXD1- AP7
DPL0_TXD2+ AR7
DPL0_TXD2- AR8

TMDS channel two

IFPEF

IFPEF_PLLVDD AJ6 T23 AL1 IFPEF_RSET

R140 10K/F_4

AE7 IFPE_IOVDD AD7 IFPF_IOVDD

R85 10K/F_4

IFPE_AUX+ AE4
IFPE_AUX- AD4
IFPE_L0+ AH6
IFPE_L0- AH5
IFPE_L1+ AH4
IFPE_L1- AG4
IFPE_L2+ AE4
IFPE_L2- AE5
IFPE_L3+ AE6
IFPE_L3- AE5
IFPF_AUX+ AE3
IFPF_AUX- AE2
IFPF_L0+ AL2
IFPF_L0- AL3
IFPF_L1+ AJ3
IFPF_L1- AJ2
IFPF_L2+ AJ1
IFPF_L2- AH1
IFPF_L3+ AH2
IFPF_L3- AH3

Display port output

DACA(CRT)

+3V

L10 HCB1608KF-181T15_6 +DACA_VDD AJ12 DACA_VDD

0827b C105 4.7U/6.3V_6 C154 4700P/25V_4 C108 470P/50V_4 C159 .1U/10V_4

DACA_VREF AK12 DACA_VREF

DACA_RSET AK13 DACA_RSET

R602 124/F_4

DACA_RED AM15 L_CRT_R R176 0_4 CRT_R [6,20]
DACA_GREEN AM14 L_CRT_G R169 0_4 CRT_G [6,20]
DACA_BLUE AL14 L_CRT_B R164 0_4 CRT_B [6,20]
DACA_HSYNC AM13 CRT_HSYNC R156 33_4 HSYNC_COM [6,20]
DACA_VSYNC AL13 CRT_VSYNC R160 33_4 VSYNC_COM [6,20]
I2CA_SCL G1 L_DDCCLK R566 0_4 DDCCLK [6,20]
I2CA_SDA G4 L_DDCDAT R565 0_4 DDCDATA [6,20]

L_CRT_R R172 150/F_4
L_CRT_G R168 150/F_4
L_CRT_B R165 150/F_4

Close to GPU

DACC(CRT2)

+DACB_VDD AG7 DACC_VDD

T25 AK6 DACC_VREF

T24 AH7 DACC_RSET

R79 10K/F_4

DACC_RED AK4
DACC_GREEN AL4
DACC_BLUE AJ4
DACC_HSYNC AM1
DACC_VSYNC AM2
I2CB_SCL G3 I2CB_SCL R76 2.2K_4
I2CB_SDA G2 I2CB_SDA R77 2.2K_4

+3V

DACB(TV)

10K/F_4 R749 +DACC_VD AC6 DACB_VDD

T34 AC5 DACB_VREF

T35 AB6 DACB_RSET

DACB_RED AA4
DACB_GREEN AB4
DACB_BLUE Y4
DACB_CSYNC AB5 T1

XTAL_PLL

+VGA1.1V

L17 HCB1608KF-181T15_6 +NV_PLLVDD AE9 PLLVDD

65mA

C156 1U/6.3V_4 C134 1U/6.3V_4 C143 1U/6.3V_4 C149 .1U/10V_4 C126 .1U/10V_4

50mA AD9 VID_PLLVDD

25mA AF9 SP_PLLVDD

XTAL_SSIN D2 XTAL_SSIN R97 0_4 27M_SS [2]
XTAL_OUTBUFF D1 BXTALOUT
XTAL_IN B1 XTALIN
XTAL_OUT B2 XTALOUT

Y1 *27MHZ

R88 0_4 27M_NONSS [2]

C85 *18P/50V_4 5*3 package C86 *18P/50V_4

PLACE CLOSE TO GPU

STUFF PDs on XTALSSIN and XTALOUTBUFF WHEN EXT_SS IS NOT USED

SPREAD SPECTRUM

+3V R64 *10K/F_4

+3V R65 *10K/F_4

SI Build

R80 *22_4 XTAL_SSIN

C73 *10P/50V_4

GFX27M_L

U8

ICSS_PD 8 PD# VDD 2 +3V_SSC

BXTALOUT 1 CLKIN CLKOUT 4

REFOUT 5 ICSS_RFO

EDIDCLK 7 SCL

EDIDDATA 6 SDA GND 3

[6,15,19] EDIDCLK
[6,15,19] EDIDDATA

R90 *10K/F_4

C91 *470P/50V_4 C87 *1U/10V_4 C109 *4.7U/6.3V_6 C106 *4.7U/6.3V_6

R117 *4.7_6 +3V

*ICS91730AMLF-T

I2C ADDRESS: 0xD4H

27M_SS

BXTALOUT

R107 *10K/F_4 R586 *10K/F_4

Install it when not connected to Spread spectrum device

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Quanta Computer Inc.

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Custom	NV9X (DISPLAY) 3/5	1A

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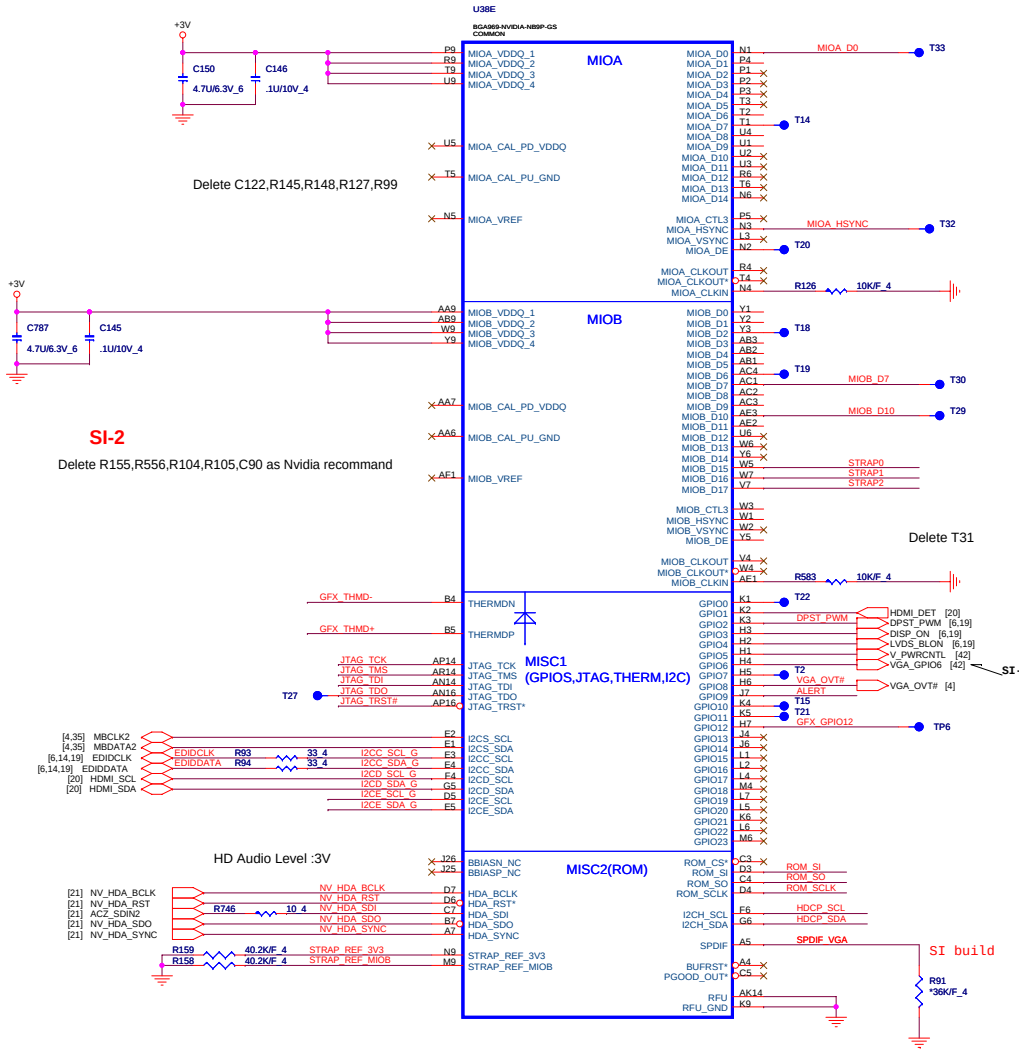
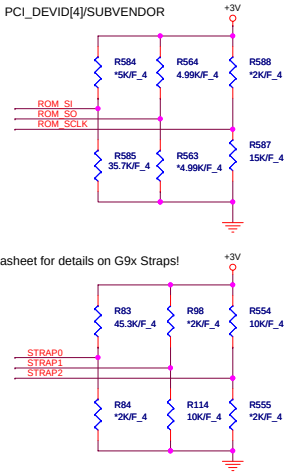


NB9P-GS (G96) Straps
NB9M-GE (G98) Straps
GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	PRIMARY DVI HOTPLUG
1	IN	N/A	SECONDARY DVI HOTPLUG
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	FBVDD VID0
8	IN	LOW	THERMAL ALERT
9	OUT	LOW	FAN PWM
10	OUT	N/A	FBVREF SELECT
11	OUT	N/A	SLI SYNC0
12	IN	N/A	AC DETECT
13	OUT	LOW	PS CONTROL OR HDMI_CEC
14	OUT	HIGH	PS CONTROL



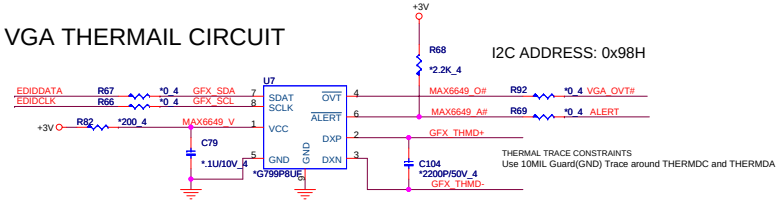
Logical Strap Bit Mapping

	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

	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0	
ROM_SO	XCLK_277	TVMODE2]	TVMODE[1]	TVMODE[0]	1000
ROM_SCLK	PCI_DEVIDE[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM100	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]	XXXX
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]	0001
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]	1111

VGA THERMAIL CIRCUIT

I2C ADDRESS: 0x98H



NB9X VRAM Configuration Table

RAM_CFG[3:0]	DESCRIPTION	Vendor	
0111	DDR2 32Mx16x8, 128bit, 512MB	Hynix	HY5PS121621CFP-25
0110	DDR2 32Mx16x8, 128bit, 512MB	Qimonda	HYB18T512161BZF-25
0101	DDR2 32Mx16x8, 128bit, 512MB	Samsung	K4N51163QE-ZC25
other	Reserved		

HDCP ROM

SI Build — Change P/N — U36 AT24C16B — Waiting Confirm from Nvidia

DHCP ROM	
HDCP_SCL	Low: Crypto ROM Hi: I2C ROM

PCI_DEVID: STRAP2 R554

NB9M-GE	0x06E	8	1000	PU	5K
NB9M-GS	0x06E	9	1001	PU	10K
NB9P-GE2	0x064	8	1000	PU	5K
NB9P-GS	0x064	9	1001	PU	10K

CS33572FB13 RES CHIP 35.7K 1/16W +-1%(0402)
CS34532FB18 RES CHIP 45.3K 1/16W +-1% (0402)

RAM ID: ROM_SI R585

SAM	0101	PD	30.1K
QIM	0110	PD	35.7K
HYN	0111	PD	45.3K

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C	NV9X (GPIO & STRRAPS) 4/5	2B
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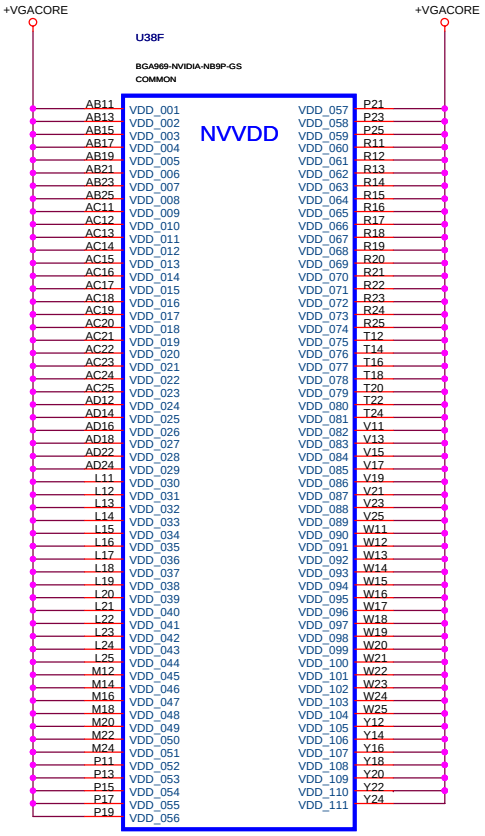
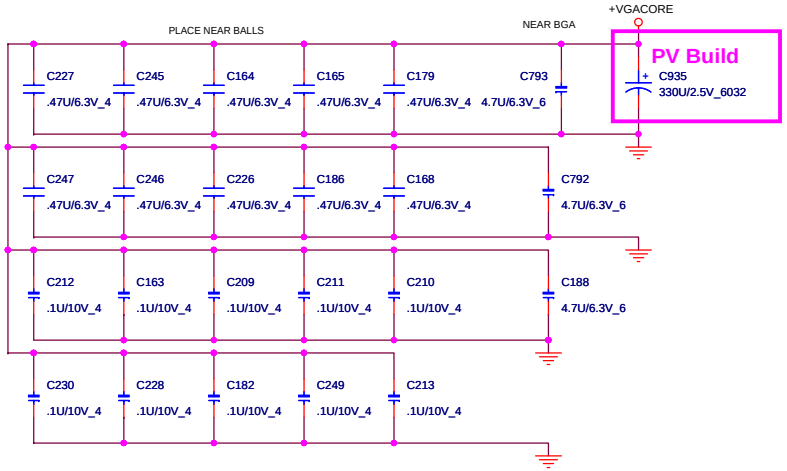
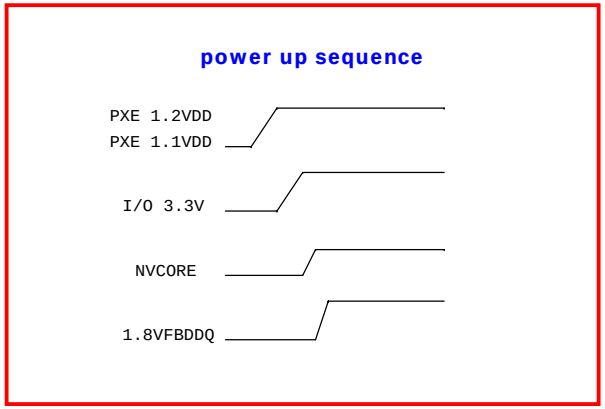
NVVDD Decoupling

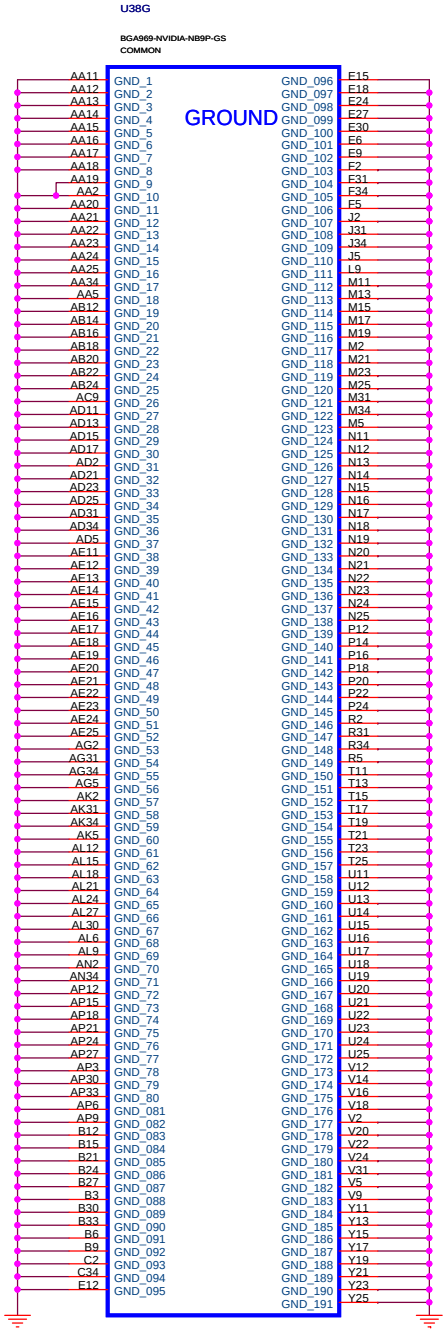




Follow Design Guide DG-03276-001 4.7uFx3 and 0.47x10 uF instead of 0.1uF x10

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





NB5

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Quanta Computer Inc.

Size	Document Number	Rev
Custom	NV9X (POWER & GND) 5/5	1A

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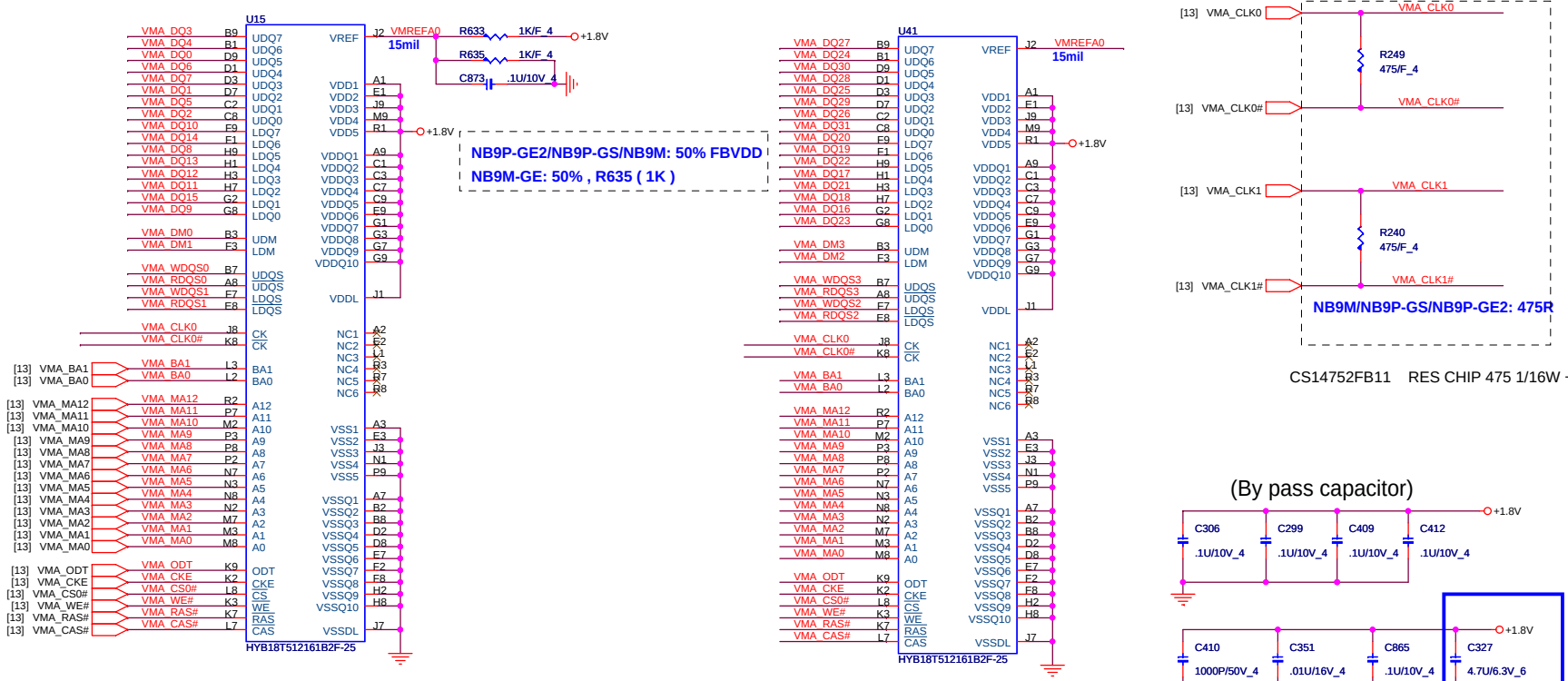
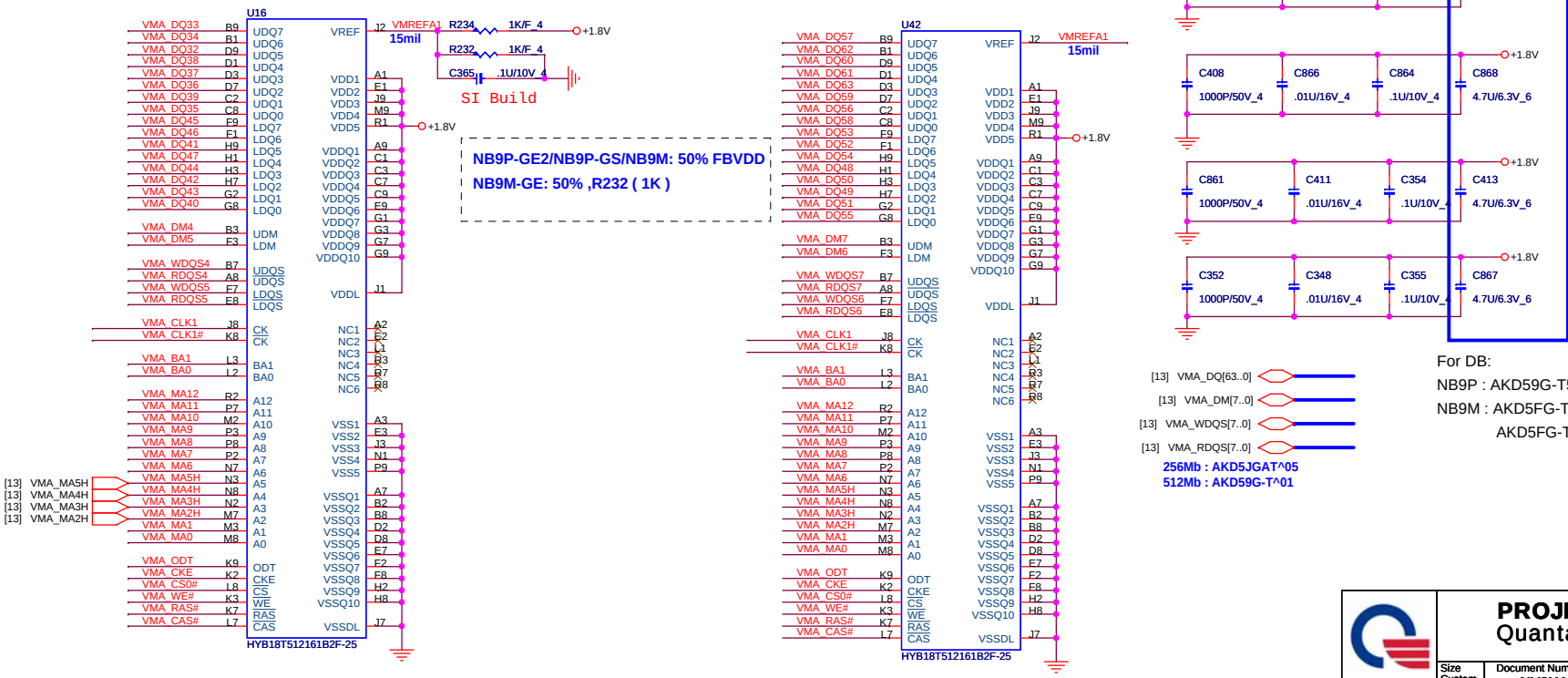


CS14752FB11 RES CHIP 475 1/16W +-1%(0402)



(By pass capacitor)

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

256Mb : AKD5JGAT^05
512Mb : AKD59G-T^01

For DB:
NB9P : AKD59G-T502(Samsung,32M*16)
NB9M : AKD5FG-TW31(Hynix,32M*16)
AKD5FG-T^03(Qimonda 32M*16)

NB5

PROJECT : QT6
Quanta Computer Inc.

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Custom	NV9X VRAM-1(GDDR2 BGA84)	1A

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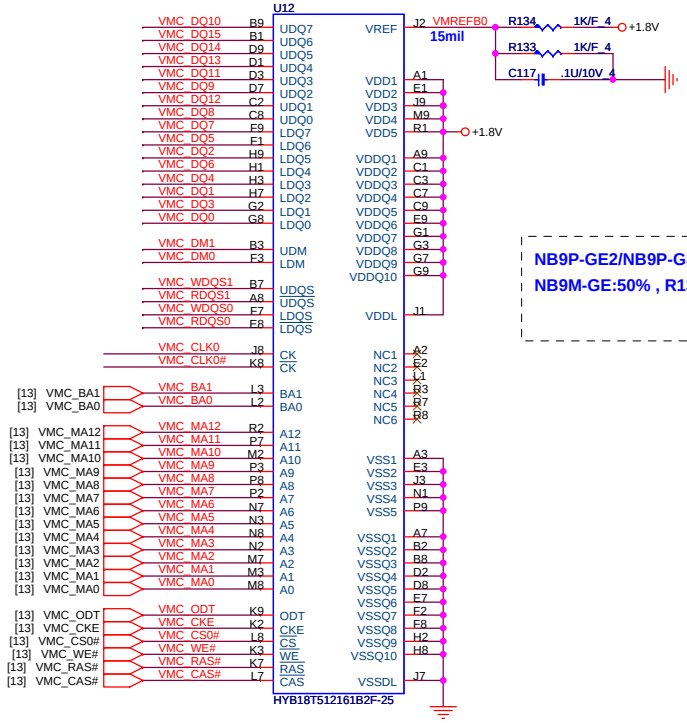
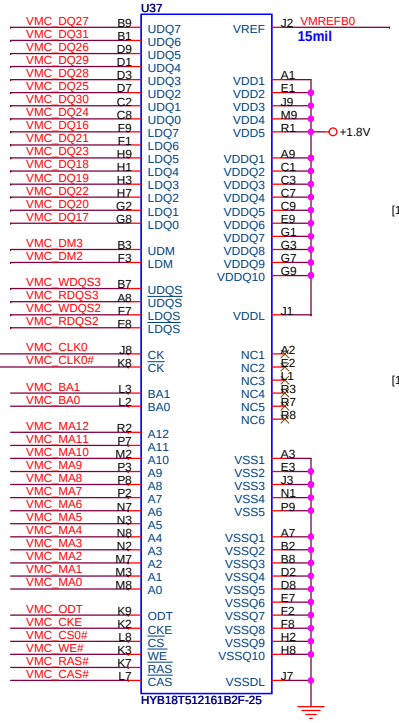
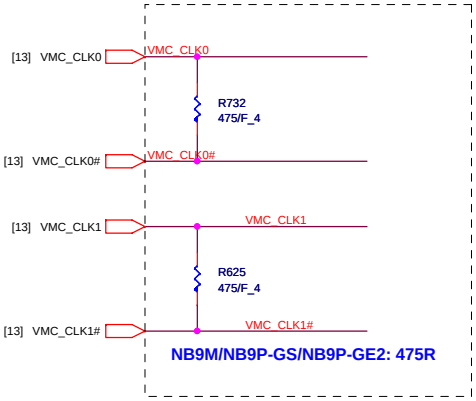
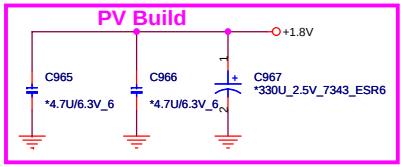
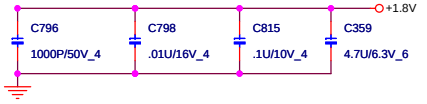


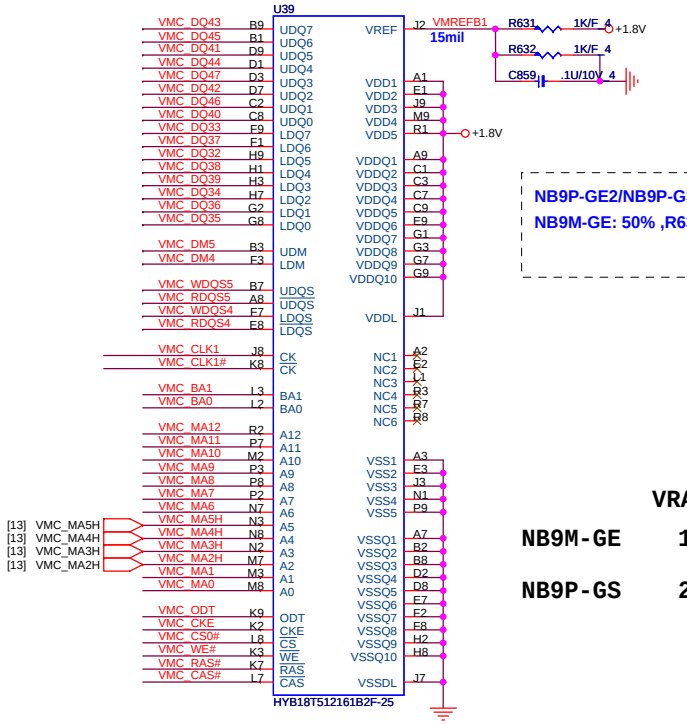


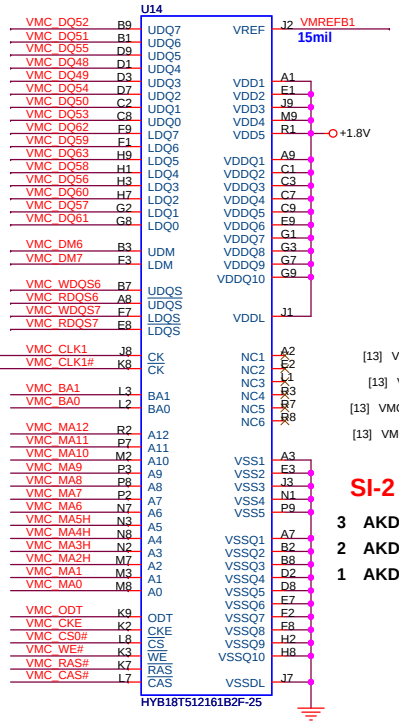


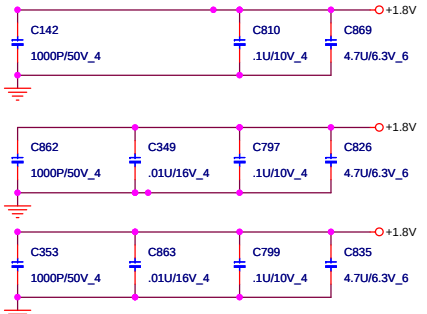
CS14752FB11 RES CHIP 475 1/16W +-1%(0402)











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

VRAM Vendor

NB9M-GE	1	3
NB9P-GS	2	

SI-2

3	AKD5FG-T501	IC SDRAM(84P) K4N51163QG-HC25(FBGA)	Samsung
2	AKD5FG-T^03	IC SDRAM(84P)HYB18T512161B2F-25(TFBGA)	Qimonda
1	AKD5FG-TW31	IC SDRAM(84P) HY5PS121621CFP-25(FBGA)	Hynix

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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

[6] LA_CLK	RP9	*4P2R-S-0	TXLCLKOUT+		
[6] LA_CLK#			TXLCLKOUT-		
[6] LA_DATAP0	RP1	*4P2R-S-0	TXLOUT0+		
[6] LA_DATAN0			TXLOUT0-		
[6] LA_DATAP1	RP4	*4P2R-S-0	TXLOUT1+		
[6] LA_DATAN1			TXLOUT1-		
[6] LA_DATAP2	RP7	*4P2R-S-0	TXLOUT2+		
[6] LA_DATAN2			TXLOUT2-		
[6] LB_CLK#	RP20	*4P2R-S-0	TXUCLKOUT-		
[6] LB_CLK			TXUCLKOUT+		
[6] LB_DATAP0	RP11	*4P2R-S-0	TXUOUT0+		
[6] LB_DATAN0			TXUOUT0-		
[6] LB_DATAP1	RP15	*4P2R-S-0	TXUOUT1+		
[6] LB_DATAN1			TXUOUT1-		
[6] LB_DATAN2	RP23	*4P2R-S-0	TXUOUT2-		
[6] LB_DATAP2			TXUOUT2+		

OPTION SIGNAL FROM Nvidia to VGA

[14] EXT_TXLCLKOUT+	RP8	4P2R-S-0	TXLCLKOUT+		
[14] EXT_TXLCLKOUT-			TXLCLKOUT-		
[14] EXT_TXLOUT0-	RP2	4P2R-S-0	TXLOUT0-		
[14] EXT_TXLOUT0+			TXLOUT0+		
[14] EXT_TXLOUT1+	RP3	4P2R-S-0	TXLOUT1+		
[14] EXT_TXLOUT1-			TXLOUT1-		
[14] EXT_TXLOUT2+	RP6	4P2R-S-0	TXLOUT2+		
[14] EXT_TXLOUT2-			TXLOUT2-		
[14] EXT_TXUCLKOUT+	RP19	4P2R-S-0	TXUCLKOUT+		
[14] EXT_TXUCLKOUT-			TXUCLKOUT-		
[14] EXT_TXUOUT0+	RP10	4P2R-S-0	TXUOUT0+		
[14] EXT_TXUOUT0-			TXUOUT0-		
[14] EXT_TXUOUT1-	RP14	4P2R-S-0	TXUOUT1-		
[14] EXT_TXUOUT1+			TXUOUT1+		
[14] EXT_TXUOUT2-	RP22	4P2R-S-0	TXUOUT2-		
[14] EXT_TXUOUT2+			TXUOUT2+		

+3V — R520 2.2K_4 EDIDCLK
R522 2.2K_4 EDIDDATA

[2,4,6,9,10,11,12,14,15,20,21,22,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[3,20,24,25,27,28,29,30,33,37,44] +5V
[37,38,39,40,41,42,43,44] +VIN
[21,29,30,34,35,37,38,39,44] +3VPCU
[27,29,39,44] +12VALW

Keep pin 5 NC to prevent burning

DFWF40MS002

+VIN — L53 FBM2125 HM330-T — +VIN_BLIGHT
C753 .1U/50V_6
C751 .01U/50V_4
C750 .1U/50V_6
C6 *10U/25V_12

PV Build
+3VLCD_CON
+3V
[6,14,15] EDIDDATA
+LOGO_PWR1
C9 1000P/50V_4
C758 1000P/50V_4

0090 use 100 ohm and must change back to 75ohm

PV Build
+5V — R12 75R/F_6 — +LOGO_PWR1

CN1 LCD CONN
Camera Pin
0823 Modify
SI-2
Change Pin define 12/18

+VIN_BLIGHT	1	2	+VIN_BLIGHT
	3	4	+VIN_BLIGHT
	5	6	+3VLCD_CON
	7	8	EDIDCLK [6,14,15]
	9	10	VADJ1
	11	12	
BLON_CON	13	14	
	15	16	
TXLCLKOUT+	17	18	TXUCLKOUT+
TXLCLKOUT-	19	20	TXUCLKOUT-
	21	22	
TXLOUT0+	23	24	TXUOUT0+
TXLOUT0-	25	26	TXUOUT0-
	27	28	
TXLOUT1+	29	30	TXUOUT1+
TXLOUT1-	31	32	TXUOUT1-
	33	34	
TXLOUT2+	35	36	TXUOUT2+
TXLOUT2-	37	38	TXUOUT2-
	39	40	
	41	42	

[6,15] DPST_PWM — R526 *0_4
[35] PWM_VADJ — R524 0_4 — VADJ1
C754 *4.7U/6.3V_6
C756 .1U/10V_4

PV Build
Delete CN20,R63,C761(Remove Logo light2)

PN_BLON — D1 RB501V-40 — BLON_CON
R4 100K/F_4
C8 22P/50V_4

+3VPCU
R8 33K_6
D2 RB501V-40
[6,15] LVDS_BLON — R6 1K/F_4
LID_EC# [34,35]
Close to EC

[23] LCD_BK — Q2 DTC144EUA

+5VSUS 14.5v
+12VALW
R527 100K/F_4
R10 330K_6
AO3404 ID current 5.8A
Q1 AO3404
+3V
C12 .1U/10V_4
+3VLCD
LCDONG
L52 PBY201209T-4A/08
+3VLCD_CON
R516 22_8
LCDDISCHG
C757 .01U/16V_4
C746 .1U/10V_4
C748 10U/6.3V_8
Q26 ME2N7002E
C759 .022U/16V_4
LCDON#
Q25 DTC144EUA
[6,15] DISP_ON
Q27 ME2N7002E

DISP_ON R525 100K/F_4
LVDS_BLON R7 100K/F_4

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
B	LCD CONN/Lid function	3A
Date: Tuesday, February 26, 2008	Sheet 19 of 44	

[2,4,6,9,10,11,12,14,15,19,21,22,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[3,19,24,25,27,28,29,30,33,37,44] +5V

DFDS15FR051

CRT PORT

PV Build
Change Layout footprint to dsub-070546fr015sx68zr-15p-v

F2 40 mils
FUSE1A6V_POLY SSM14 spec is 40V 1A

40 MIL

EMI

CRT CONN CN18

PV Build
Change ESD protection to +5V

D29 *BAV99W CRT_R_CON
D26 *BAV99W CRT_G_CON
D24 *BAV99W CRT_B_CON
D25 *BAV99W DDCCLK2
D27 *BAV99W PR_VSYNC
D28 *BAV99W PR_HSYNC
D30 *BAV99W DDCDAT2

CRT SWITCH

U3
74CBT3257

PV Build

inputs		function
/E	SET	
L	L	Y - port 0
L	H	Y - port 1
H	X	Disconnect

For UMA HDMI function

U35
POWER
CONTROL
GND
*PI3VDP411LSZDE

EQUALIZATION SETTING
PC1:PC0=0:0 8dB
PC1:PC0=0:1 4dB Recommanded
PC1:PC0=1:0 12dB
PC1:PC0=1:1 0dB

SCLZ/SDAZ Low-level input/output Voltage
CFG1:CFG0=0:0 VIL:<0.4V VOL:0.6V (Default)
CGF1:CGF0=0:1 VIL:<0.36V VOL:0.55V
CGF1:CGF0=1:0 VIL:<0.44V VOL:0.65V
CGF1:CGF0=1:1 VIL:<0.36V VOL:0.6V

For EXT VGA
UMA : 0R
NB9M-GE/NB9P-GS: 0.1uF

Only for NVIDIA

HDMI PORT

DFHD19MR021
CN27
HDMI CONN

for EMI request

PROJECT : QT6	
Quanta Computer Inc.	
NB5	Size C, Document Number CRT/PS8101 HDMI Conn, Rev 2B
	Date: Tuesday, February 26, 2008, Sheet 20 of 44

[19,29,30,34,35,37,38,39,44] +3VPCU
[24] +3VRTC
[2,4,6,9,10,11,12,14,15,19,20,22,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[4,9,22,24,27,29,33,36,40,44] +1.5V
[2,3,4,5,6,8,9,24,34,40,41] +1.05V
[22,23,24,33,44] +3VS5

SI build
RB500V-40 D19
D20 RB500V-40
SI build
+3VPCU
+3VRTC
+3VRTC_2
C905 1U/6.3V_4
R375 20K/F_4
R378 180K_4
C599 1U/6.3V_4
C624 .1U/10V_4
G3 *SHORT_PAD1
G4 *SHORT_PAD1
C908 15P/50V_4
C909 15P/50V_4
Y7 32.768KHZ
R335 10M_4
R393 1K/F_4
R346 1M/F_4
20MIL
+3VRTC_BAT
For CR2032(Large)
BT1 BAT_CONN
update footprint (0830)
+3V
C569 .1U/10V_4
R409 10K/F_4
U26 MC74VHC1G08DFT2G
[29] SATA_LED#
ICH_SATA_LED#
+1.5V
R320 24.9/F_4
GLAN_COMP

U45A

RTCX1 C23
RTCX2 C24
RTC_X1
RTC_X2
RTCRST# A25
SRTCRST# F20
INTRUDER# C22
RTC_RST#
SRTC_RST
SM_INTRUDER#
INTVRMEN B22
LAN100_SLP A22
ICH_INTVRMEN
LAN100_SLP
GLAN_CLK E25
LAN_RSTSYNC C13
LAN_RXD0 F14
LAN_RXD1 G13
LAN_RXD2 D14
LAN_TXD0 D13
LAN_TXD1 D12
LAN_TXD2 E13
GPIO56 B10
GLAN_COMPI B28
GLAN_COMPO B27
TP38
TP47
TP48
TP50
TP56
TP51
TP54
TP49
TP53
RTC
LPC
LAN / GLAN
CPU
IHDA
SATA

FWH0/LAD0 K5
FWH1/LAD1 K4
FWH2/LAD2 L6
FWH3/LAD3 K2
FWH4/LFRAME# K3
LDRQ0# J3
LDRQ1#/GPIO23 J1
A20GATE N7
A20M# AJ27
DPRSTP# AJ25
DPSLP# AF23
FERR# AJ26
CPUPWRGD AD22
IGNNE# AF25
INIT# AF22
INTR AG25
RCIN# L3
NMI AF23
SMI# AF24
STPCLK# AH27
THRMTRIP# AG26
TP12 AG27
LAD0 [35,36]
LAD1 [35,36]
LAD2 [35,36]
LAD3 [35,36]
LFRAME# [35,36]
ICH_DRQ#0
ICH_DRQ#1
TP60
TP80
R382 10K/F_4
GATEA20 [35]
H_A20M# [3]
H_DPRSTP# [3,6,41]
H_DPSLP# [3]
H_FERR# [3]
H_PWRGD [3]
H_IGNNE# [3]
H_INIT# [3]
H_INTR [3]
RCIN# [35]
R421 10K/F_4
H_NMI [3]
H_SMI# [3]
H_STPCLK# [3]
H_THERMTRIP_R
R326 54.9/F_4
PM_THRMTRIP# [3,6]
ICH_TP12
TP71
R329 *56.2/F_4
R337 *56.2/F_4
R331 56.2/F_4
R330 56.2/F_4
R327 56.2/F_4
+1.05V

ACZ_BCLK AE6
ACZ_SYNC AH4
ACZ_RST# AE7
HDA_BIT_CLK
HDA_SYNC
HDA_RST#
[27] ACZ_SDIN0 AF4
[29] ACZ_SDIN1 AG4
[15] ACZ_SDIN2 AH3
[6] ACZ_SDIN3 AE5
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
ACZ_SDOUT AG5
HDA_SDOUT
TP87 AG7
[36] BT_COMBO_EN# AE8
HDA_DOCK_EN#/GPIO33
HDA_DOCK_RST#/GPIO34
ICH_SATA_LED# AG8
SATALED#

SI-2
Notice: GPIO33 is also a strap pin. Don't pull it to high.

HP Request
BT_COMBO_EN#
R381 *1K/F_4

SATA HDD1
[33] SATA_RXN0 C583 .01U/16V_4 SATA_RXN0_C AJ16
[33] SATA_RXP0 C579 .01U/16V_4 SATA_RXP0_C AH16
[33] SATA_TXN0 C576 .01U/16V_4 SATA_TXN0_C AF17
[33] SATA_TXP0 C578 .01U/16V_4 SATA_TXP0_C AG17
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP

SATA ODD
[33] SATA_RXN1 C590 .01U/16V_4 SATA_RXN1_C AH13
[33] SATA_RXP1 C592 .01U/16V_4 SATA_RXP1_C AJ13
[33] SATA_TXN1 C588 .01U/16V_4 SATA_TXN1_C AG14
[33] SATA_TXP1 C584 .01U/16V_4 SATA_TXP1_C AF14
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP

SATA4RXN AH11
SATA4RXP AJ11
SATA4TXN AG12
SATA4TXP AF12
SATA5RXN AH9
SATA5RXP AJ9
SATA5TXN AE10
SATA5TXP AF10
SATA_RXN5_C C611 .01U/16V_4
SATA_RXP5_C C606 .01U/16V_4
SATA_TXN5_C C614 .01U/16V_4
SATA_TXP5_C C623 .01U/16V_4
SATA_RXN5 [30]
SATA_RXP5 [30]
SATA_TXN5 [30]
SATA_TXP5 [30]
E-SATA CONNECT
SATA_CLKN AH18
SATA_CLKP AJ18
CLK_PCIE_SATA# [2]
CLK_PCIE_SATA [2]
SATARBIAS# AJ7
SATARBIAS AH7
SATA_RBIAS_PN
R396 24.9/F_4

ICH9M REV 1.0

ACZ_RST# R388 33_4 ACZ_RST#_AUDIO [27]
ACZ_SDOUT R404 33_4 ACZ_SDOUT_AUDIO [27]
ACZ_SYNC R400 33_4 ACZ_SYNC_AUDIO [27]
ACZ_BCLK R390 33_4 BIT_CLK_AUDIO [27]
For HD Audio
C622 C632 C633 *10P/50V_4

ACZ_RST# R387 33_4 ACZ_RST#_MDC [29]
ACZ_SDOUT R394 33_4 ACZ_SDOUT_MDC [29]
ACZ_SYNC R406 33_4 ACZ_SYNC_MDC [29]
ACZ_BCLK R398 33_4 BIT_CLK_MDC [29]
For MDC
C629 C635 C628 *10P/50V_4

ACZ_RST# R389 *33_4 ACZ_RST#_MCH [6]
ACZ_SDOUT R376 *33_4 ACZ_SDOUT_MCH [6]
ACZ_SYNC R377 *33_4 ACZ_SYNC_MCH [6]
ACZ_BCLK R395 *33_4 ACZ_BITCLK_MCH [6]
For UMA
C631 C602 C601 *10P/50V_4

ACZ_RST# R745 22_4 NV_HDA_RST
ACZ_SDOUT R747 22_4 NV_HDA_SDO
ACZ_SYNC R748 22_4 NV_HDA_SYNC
ACZ_BCLK R744 22_4 NV_HDA_BCLK
NV_HDA_RST [15]
NV_HDA_SDO [15]
NV_HDA_SYNC [15]
NV_HDA_BCLK [15]
Close to U45
For Discrete
C691 C605 C693 *10P/50V_4

SB Strap

ICH9-M Internal VR Enable strap (Internal VR for Vccsus1_05,VccSus1_5 and VccCL1_5)

INTVRMEN	Low = Internal VR disable High = Internal VR enable(Default)

ICH9-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1.05)

LAN100_SLP	Low = Internal VR disable High = Internal VR enable(Default)

XOR Chain Entrance Strap

ICH_TP3	HDA_SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal opration(Default)
1	1	Set PCIE port config bit 1

+3VRTC R677 332K/F_4 ICH_INTVRMEN R674 *0_4
+3VRTC R679 332K/F_4 LAN100_SLP R678 *0_4
+3V R399 *1K/F_4 ACZ_SDOUT ICH_TP3 [23] R681 *1K/F_4

ICH9 Boot BIOS select

STRAP	PCI_GNT0#	SPI_CS#1
SPI	0	1
PCI	1	0
LPC	1	1

(default)

*1K/F_4 R392 GNT0# [22]
*1K/F_4 R348 SPI_CS#1_R [22]

A16 swap override strap

PCI_GNT#3	Low = A16 swap override enabled Hi = Default

*1K/F_4 R391 GNT3# [22]

No Reboot Strap	
ACZ_SPKR	Low: Default Hi: No reboot

+3V R384 *1K/F_4 ACZ_SPKR [23,27,28]

TPM physical presence	
ICH_GPIO57	Low: Default

+3VS5 R704 *10K/F_4 ICH_GPIO57 [23] R706 100K/F_4

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M Host 1/4	2B

Date: Tuesday, February 26, 2008 Sheet 21 of 44

SWAP PCIE PORT6 to PORT2 (Lan and New card swap) -->Rename the port name by function and port

[4,9,21,24,27,29,33,36,40,44] +1.5V
[2,4,6,9,10,11,12,14,15,19,20,21,23,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[23,25,30,36,40,41,42,44] +3VSUS

MINI CARD PCI-E(WLAN)

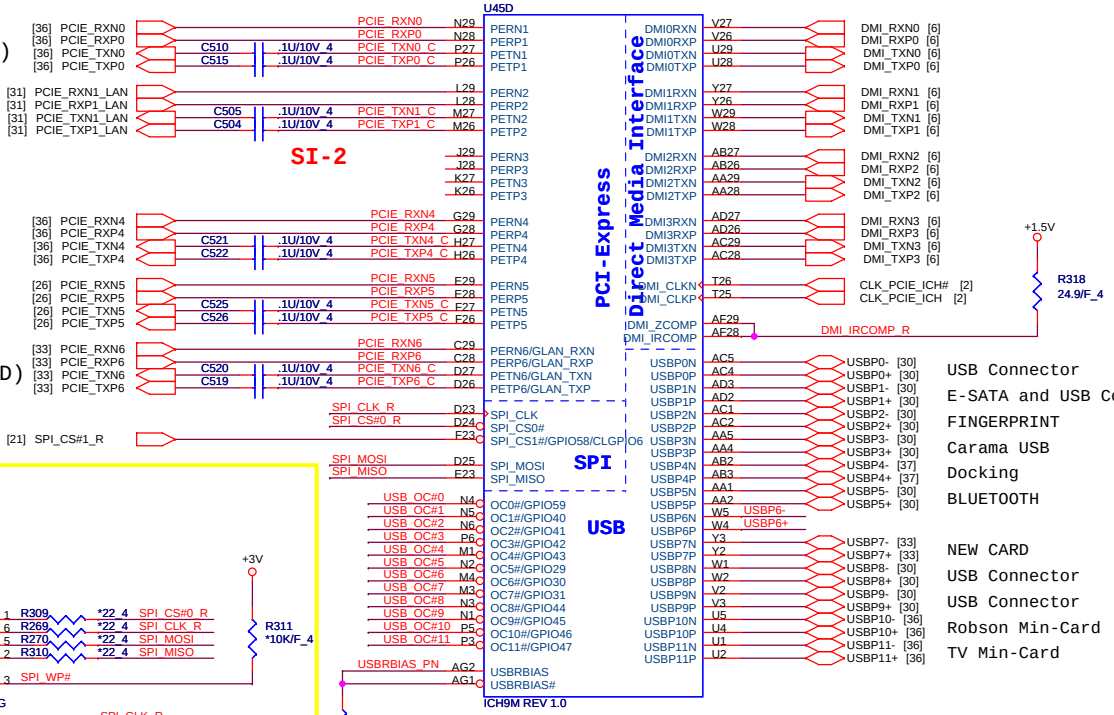
SI-2

PCIE-LAN

TV CARD PCI-E

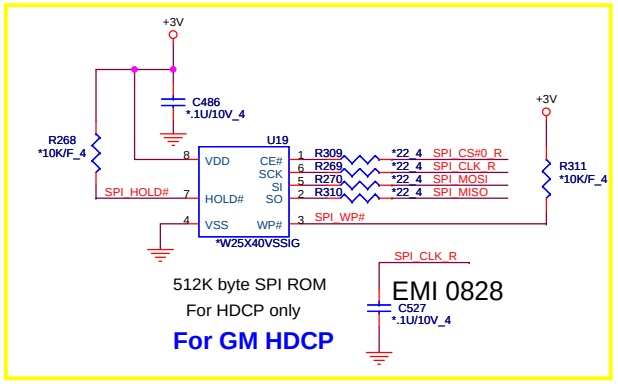
SI-2

EXPRESS CARD (NEW CARD)



USB Connector
E-SATA and USB Connector
FINGERPRINT
Carama USB
Docking
BLUETOOTH

NEW CARD
USB Connector
USB Connector
Robson Min-Card
TV Min-Card



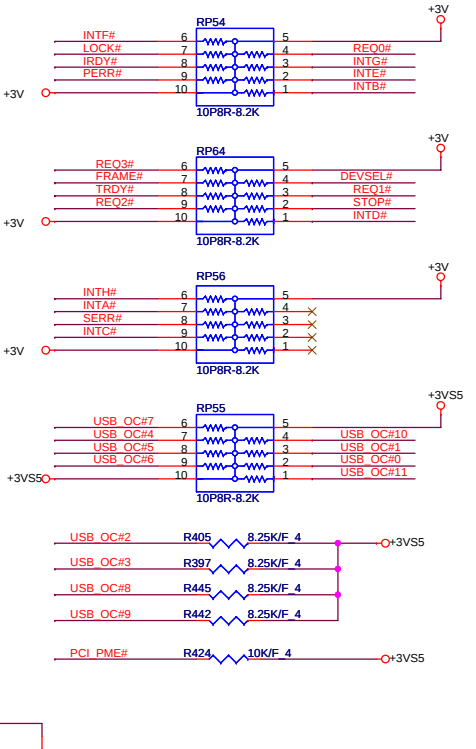
SI-2

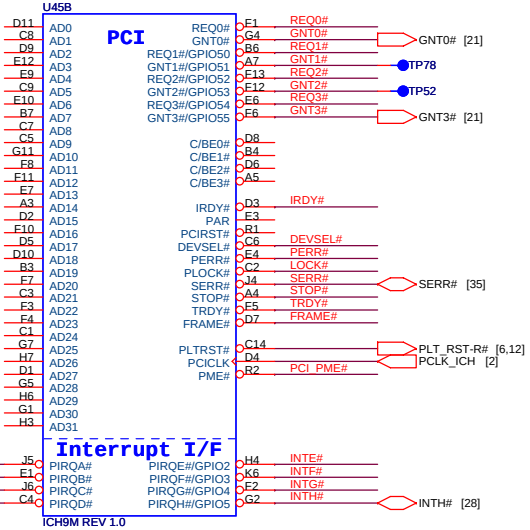
SI-2 Delete
Delete RP53,RP57 and tied from SB to CR(USB6)

des

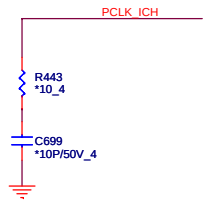
USBP6-
USBP6+
USBP6_CR- [25]
USBP6_CR+ [25]

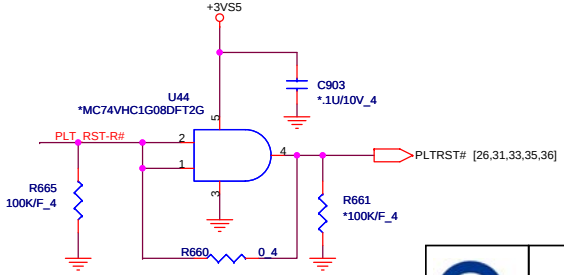
int





PV Build





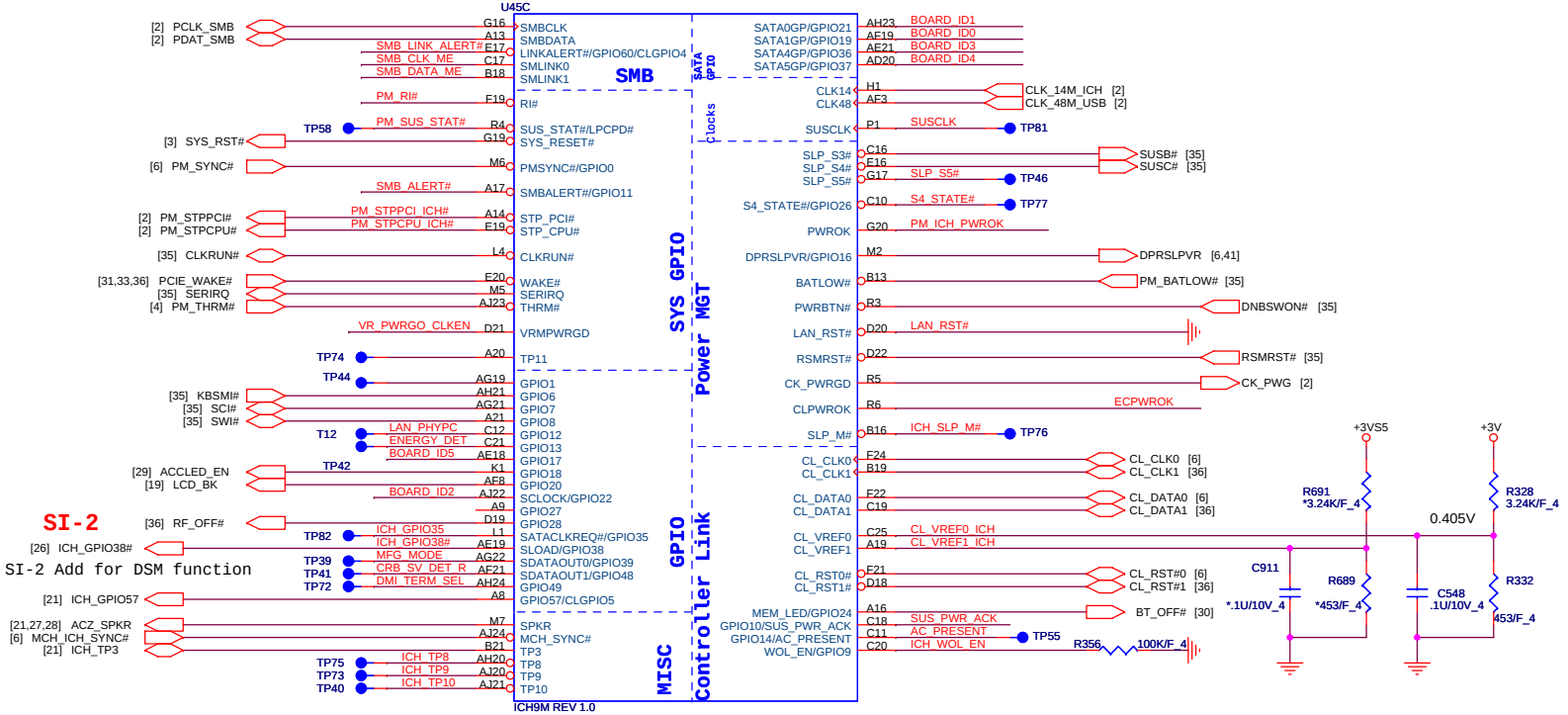
NB5

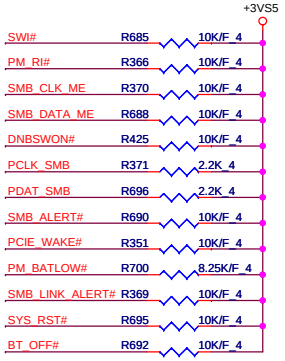
PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ICH9-M PCIE 2/4	2B

Date: Tuesday, February 26, 2008 Sheet 22 of 44

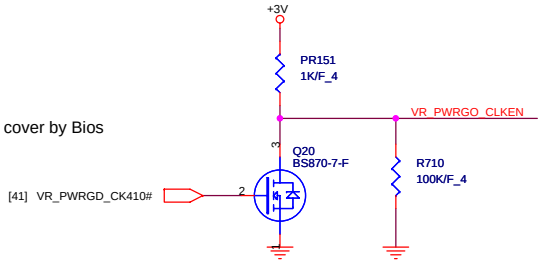
[4,9,21,22,24,27,29,33,36,40,44] +1.5V
[2,4,6,9,10,11,12,14,15,19,20,21,22,24,25,26,27,28,29,30,31,33,35,36,37,41,44] +3V
[21,22,24,33,44] +3VS5
[25,30,36,40,41,42,44] +3VSUS

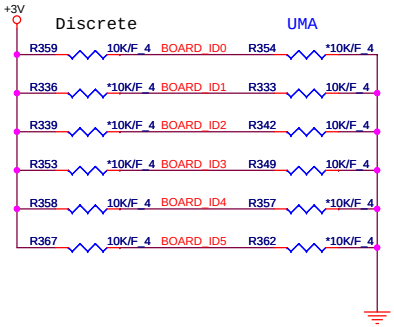


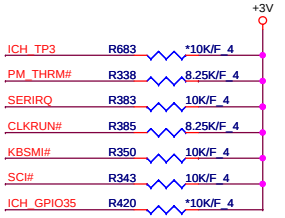


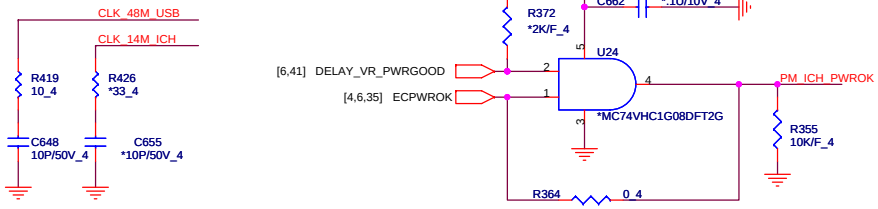
PV Build

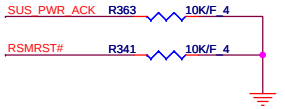
Delete R361,G2 as Bios_Rec can be cover by Bios











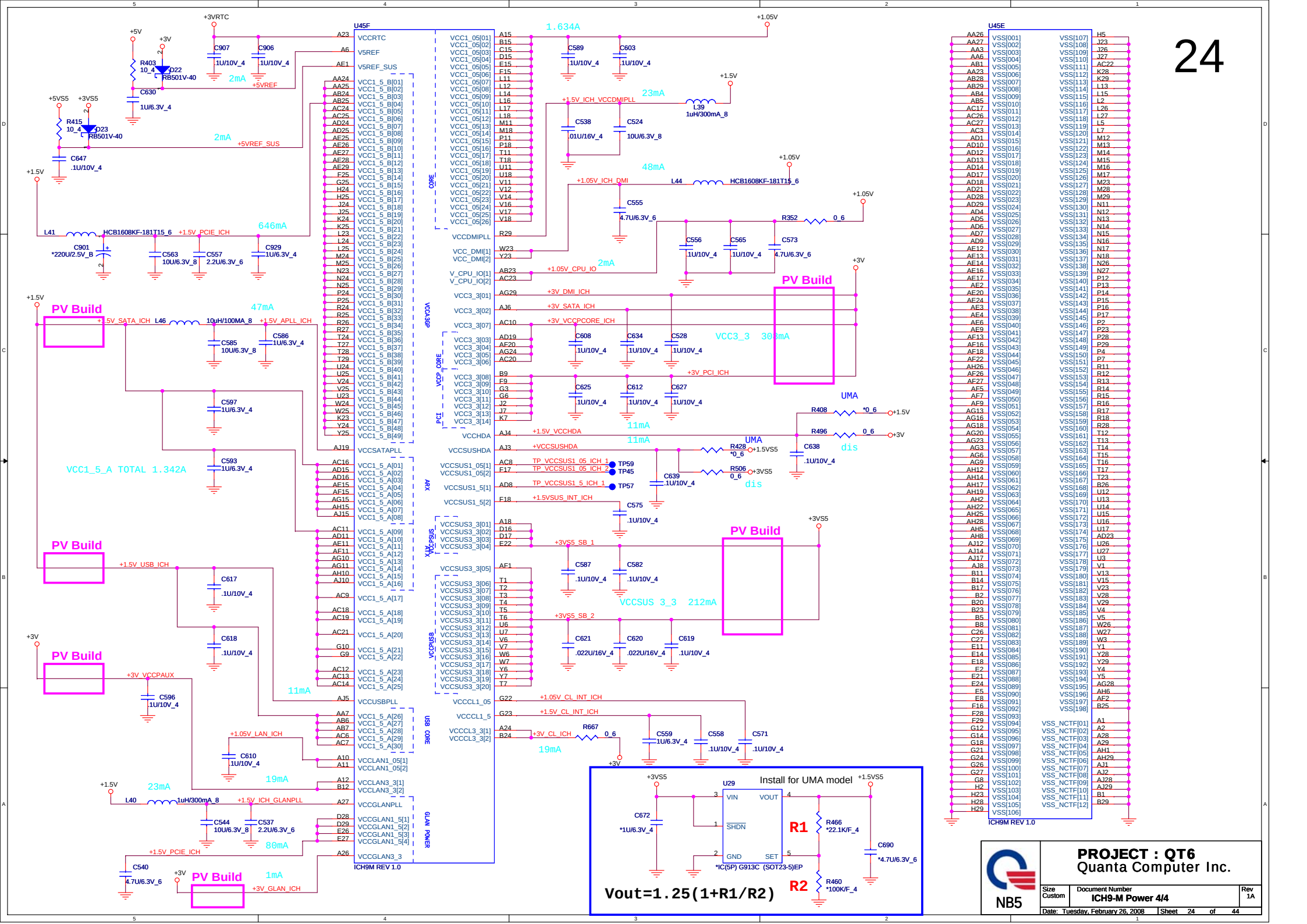
Board ID 0: 1-->Discrete , 0-->UMA
Board ID 1
Board ID 2
Board ID 3
Board ID 4
Board ID 5

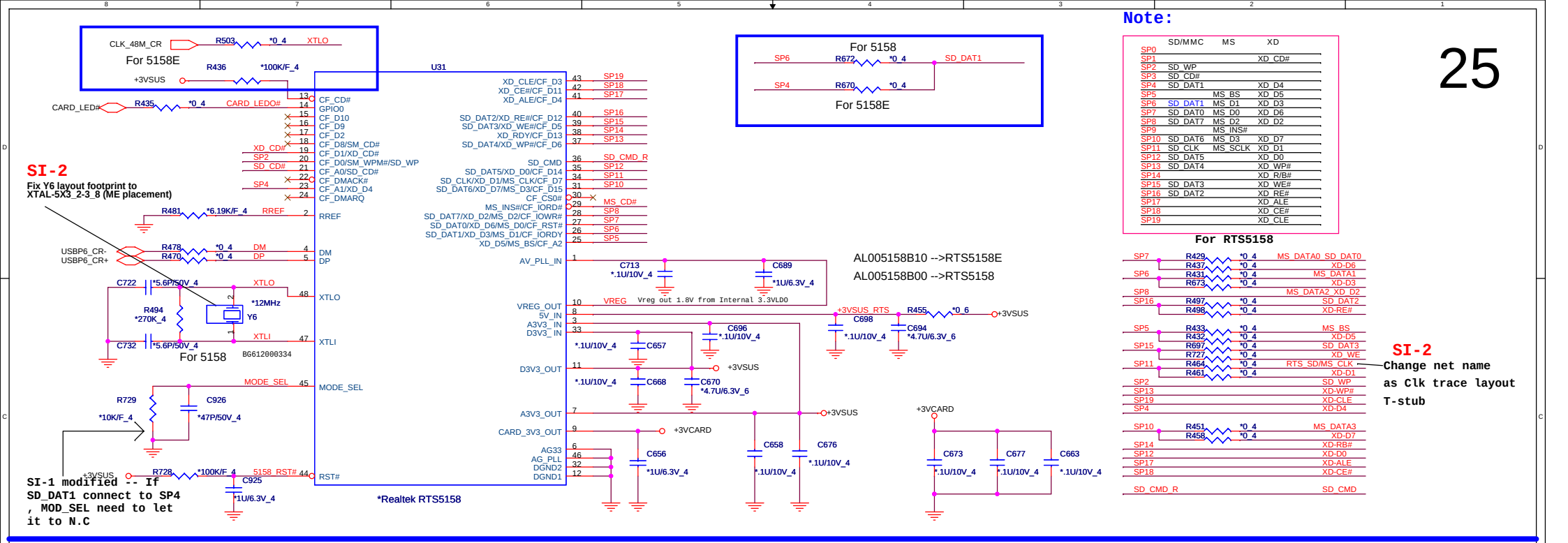
NB5

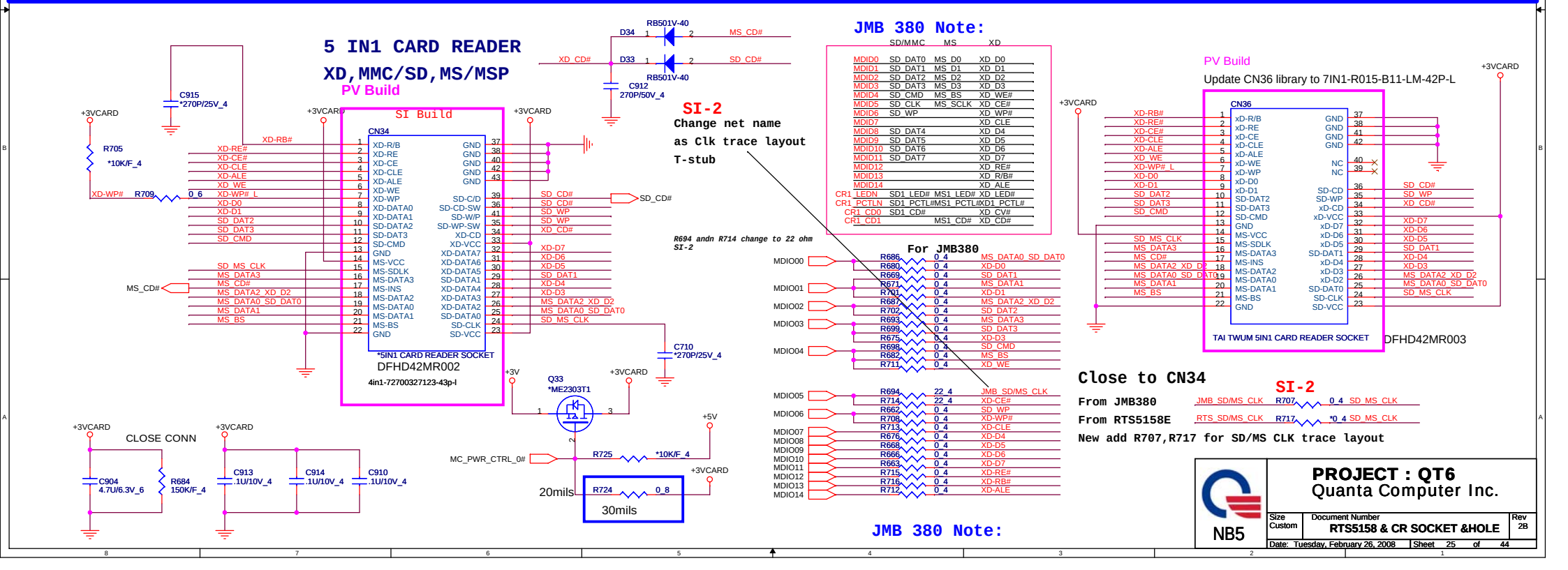
PROJECT : QT6
Quanta Computer Inc.

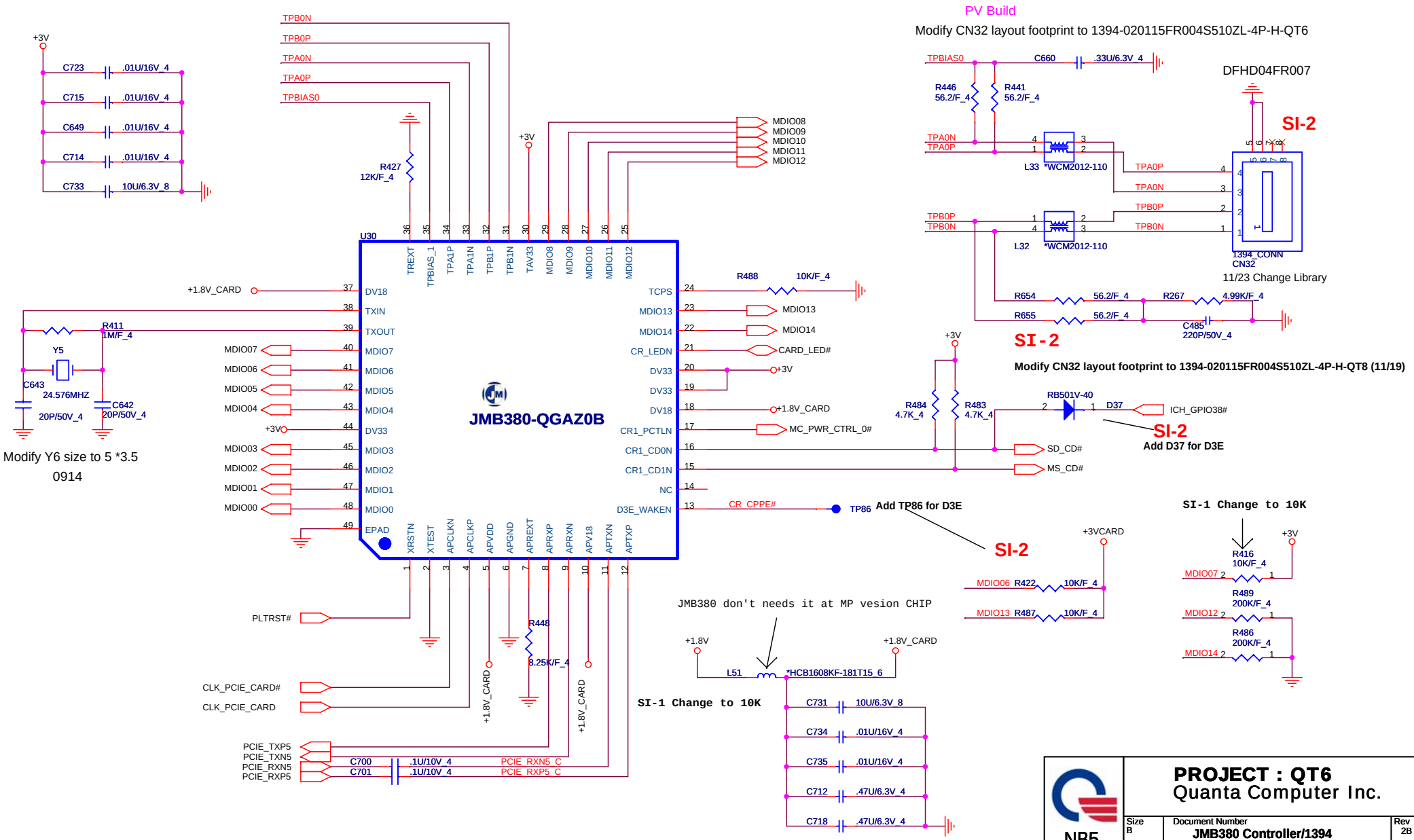
Size	Document Number	Rev
Custom	ICH9-M GPIO 3/4	1A

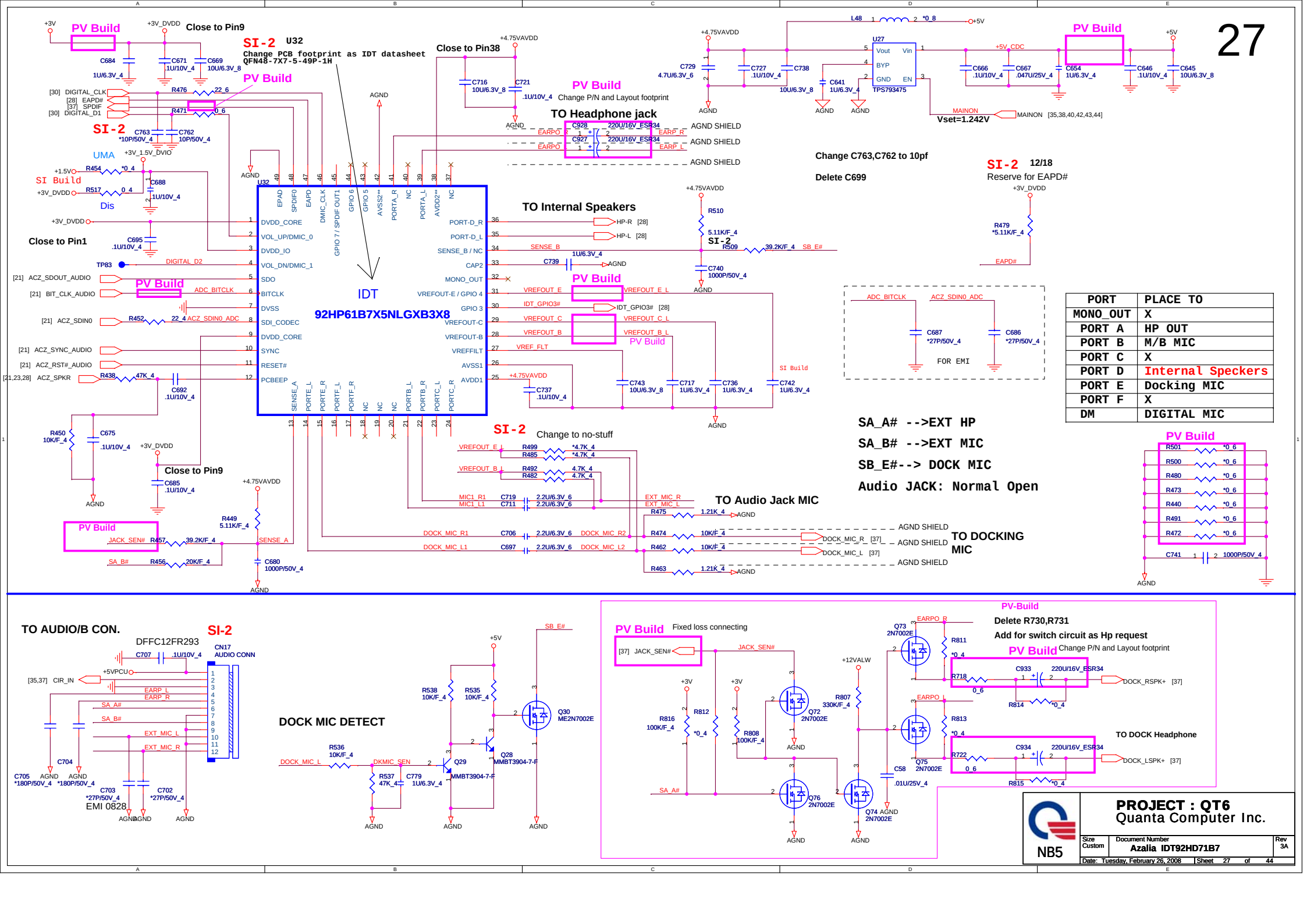
Date: Tuesday, February 26, 2008 Sheet 23 of 44


U45F
ICH9M REV 1.0
U45E
ICH9M REV 1.0
VCC1_5_A TOTAL 1.342A
VCC3_3 303mA
VCCSUS 3_3 212mA
1.634A
23mA
48mA
2mA
646mA
47mA
11mA
19mA
80mA
1mA
PV Build
UMA
dis
Install for UMA model
Vout=1.25(1+R1/R2)
*IC(5P) G913C (SOT23-5)EP
+3VRTC
+5V
+3V
+5VS5
+3VS5
+1.05V
+1.5V
+5VREF
+5VREF_SUS
+1.5V_PCIE_ICH
+1.5V_SATA_ICH
+1.5V_APLL_ICH
+1.5V_USB_ICH
+3V_VCCPAUX
+1.05V_LAN_ICH
+1.5V_ICH_GLANPLL
+3V_GLAN_ICH
+1.5V_ICH_VCCDMIPLL
+1.05V_ICH_DMI
+1.05V_CPU_IO
+3V_DMI_ICH
+3V_SATA_ICH
+3V_VCCPCORE_ICH
+3V_PCI_ICH
+1.5V_VCCHDA
+VCCSUSHDA
+1.5VSUS_INT_ICH
+3VS5_SB_1
+3VS5_SB_2
+1.05V_CL_INT_ICH
+3V_CL_ICH
TP_VCCSUS1_05_ICH_1
TP_VCCSUS1_05_ICH_2
TP_VCCSUS1_5_ICH_1
TP59
TP45
TP57
R403 10_4 D22 RB501V-40
R415 10_4 D23 RB501V-40
C630 1U/6.3V_4
C647 .1U/10V_4
L41 HCB1608KF-181T15_6
C901 *220U/2.5V_B
C563 10U/6.3V_8
C557 2.2U/6.3V_6
C929 1U/6.3V_4
L46 10uH/100MA_8
C585 10U/6.3V_8
C586 1U/6.3V_4
C597 1U/6.3V_4
C593 1U/6.3V_4
C617 .1U/10V_4
C618 .1U/10V_4
C596 .1U/10V_4
C610 1U/10V_4
L40 1uH/300mA_8
C544 10U/6.3V_8
C537 2.2U/6.3V_6
C540 4.7U/6.3V_6
C907 1U/10V_4
C906 1U/10V_4
C589 1U/10V_4
C603 1U/10V_4
C538 .01U/16V_4
C524 10U/6.3V_8
L39 1uH/300mA_8
C555 4.7U/6.3V_6
L44 HCB1608KF-181T15_6
R352 0_6
C556 .1U/10V_4
C565 .1U/10V_4
C573 4.7U/6.3V_6
C608 .1U/10V_4
C634 .1U/10V_4
C528 .1U/10V_4
C625 .1U/10V_4
C612 .1U/10V_4
C627 .1U/10V_4
R408 *0_6
R496 0_6
C638 .1U/10V_4
R428 *0_6
R506 0_6
C639 .1U/10V_4
C575 .1U/10V_4
C587 .1U/10V_4
C582 .1U/10V_4
C621 .022U/16V_4
C620 .022U/16V_4
C619 .1U/10V_4
R667 0_6
C559 1U/6.3V_4
C558 .1U/10V_4
C571 .1U/10V_4
U29
VIN
VOUT
SHDN
GND
SET
C672 *1U/6.3V_4
R466 *22.1K/F_4
R460 *100K/F_4
R1
R2
C690 *4.7U/6.3V_6
+1.5VS5
+3VS5
PROJECT : QT6
Quanta Computer Inc.
NB5
Size Custom
Document Number ICH9-M Power 4/4
Rev 1A
Date: Tuesday, February 26, 2008
Sheet 24 of 44


For 5158E
CLK_48M_CR
R503 *0_4 XTLO
R436 *100K/F_4
+3VSUS
R435 *0_4 CARD_LED0#
CARD_LED#
U31
CF_CD#
GPIO0
CF_D10
CF_D9
CF_D2
CF_D8/SM_CD#
CF_D1/XD_CD#
CF_D0/SM_WPM#/SD_WP
CF_A0/SD_CD#
CF_DMACK#
CF_A1/XD_D4
CF_DMARQ
XD_CD#
SD_CD#
SP2
SP4
SI-2
Fix Y6 layout footprint to
XTAL-5X3_2-3_8 (ME placement)
R481 *6.19K/F_4 RREF
USBP6_CR-
USBP6_CR+
R478 *0_4 DM
R470 *0_4 DP
C722 *5.6P/50V_4
R494 *270K_4
*12MHz
Y6
C732 *5.6P/50V_4
XTLO
XTLI
For 5158
BG6120000334
MODE_SEL
R729 *10K/F_4
C926 *47P/50V_4
R728 *100K/F_4
5158_RST#
C925 *1U/6.3V_4
RREF
DM
DP
XTLO
XTLI
MODE_SEL
RST#
XD_CLE/CF_D3
XD_CE#/CF_D11
XD_ALE/CF_D4
SD_DAT2/XD_RE#/CF_D12
SD_DAT3/XD_WE#/CF_D5
XD_RDY/CF_D13
SD_DAT4/XD_WP#/CF_D6
SD_CMD
SD_DAT5/XD_D0/CF_D14
SD_CLK/XD_D1/MS_CLK/CF_D7
SD_DAT6/XD_D7/MS_D3/CF_D15
CF_CS0#
MS_INS#/CF_IORD#
SD_DAT7/XD_D2/MS_D2/CF_IOWR#
SD_DAT0/XD_D6/MS_D0/CF_RST#
SD_DAT1/XD_D3/MS_D1/CF_IORDY
XD_D5/MS_BS/CF_A2
SD_CMD_R
MS_CD#
SP19
SP18
SP17
SP16
SP15
SP14
SP13
SP12
SP10
SP9
SP8
SP7
SP6
SP5
AV_PLL_IN
VREG_OUT
5V_IN
A3V3_IN
D3V3_IN
D3V3_OUT
A3V3_OUT
CARD_3V3_OUT
AG33
AG_PLL
DGND2
DGND1
C713 *.1U/10V_4
C689 *1U/6.3V_4
VREG
Vreg out 1.8V from Internal 3.3VLDO
C696 *.1U/10V_4
C657 *.1U/10V_4
C668 *.1U/10V_4
C670 *4.7U/6.3V_6
C656 *1U/6.3V_4
C658 *.1U/10V_4
C676 *.1U/10V_4
+3VSUS_RTS
C698 *.1U/10V_4
C694 *4.7U/6.3V_6
R455 *0_6
+3VSUS
+3VCARD
C673 *.1U/10V_4
C677 *.1U/10V_4
C663 *.1U/10V_4
*Realtek RTS5158
SI-1 modified -- If
SD_DAT1 connect to SP4
, MOD_SEL need to let
it to N.C
For 5158
SP6 R672 *0_4 SD_DAT1
SP4 R670 *0_4
For 5158E
AL005158B10 -->RTS5158E
AL005158B00 -->RTS5158
Note:
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 SD_DAT1 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
For RTS5158
SP7 R429 *0_4 MS_DATA0 SD_DAT0
R437 *0_4 XD-D6
SP6 R431 *0_4 MS_DATA1
R673 *0_4 XD-D3
SP8 MS_DATA2 XD_D2
SP16 R497 *0_4 SD_DAT2
R498 *0_4 XD-RE#
SP5 R433 *0_4 MS_BS
R432 *0_4 XD-D5
SP15 R697 *0_4 SD_DAT3
R727 *0_4 XD_WE
SP11 R464 *0_4 RTS_SD/MS_CLK
R461 *0_4 XD-D1
SP2 SD_WP
SP13 XD-WP#
SP19 XD-CLE
SP4 XD-D4
SP10 R451 *0_4 MS_DATA3
R458 *0_4 XD-D7
SP14 XD-RB#
SP12 XD-D0
SP17 XD-ALE
SP18 XD-CE#
SD_CMD_R SD_CMD
SI-2
Change net name
as Clk trace layout
T-stub


5 IN1 CARD READER
XD,MMC/SD,MS/MSP
PV Build
SI Build
CN34
*5IN1 CARD READER SOCKET
DFHD42MR002
4in1-72700327123-43p-I
C915 *270P/25V_4
R705 *10K/F_4
R709 0_6
XD-RB#
XD-RE#
XD-CE#
XD-CLE
XD-ALE
XD_WE
XD-WP#_L
XD-D0
XD-D1
SD_DAT2
SD_DAT3
SD_CMD
SD_MS_CLK
MS_DATA3
MS_CD#
MS_DATA2_XD_D2
MS_DATA0_SD_DAT0
MS_DATA1
MS_BS
MS_CD#
SD_CD#
RB501V-40
D34
D33
C912 270P/50V_4
XD_CD#
SD_CD#
SD_WP
XD_CD#
XD-D7
XD-D6
XD-D5
SD_DAT1
XD-D4
XD-D3
MS_DATA2_XD_D2
MS_DATA0_SD_DAT0
SD_MS_CLK
C710 *270P/25V_4
Q33 *ME2303T1
MC_PWR_CTRL_0#
R725 *10K/F_4
+5V
20mils
R724 0_8
30mils
CLOSE CONN
C904 4.7U/6.3V_6
R684 150K/F_4
C913 .1U/10V_4
C914 .1U/10V_4
C910 .1U/10V_4
SI-2
Change net name
as Clk trace layout
T-stub
R694 andn R714 change to 22 ohm
SI-2
JMB 380 Note:
SD/MMC MS XD
MDID0 SD_DAT0 MS_D0 XD_D0
MDID1 SD_DAT1 MS_D1 XD_D1
MDID2 SD_DAT2 MS_D2 XD_D2
MDID3 SD_DAT3 MS_D3 XD_D3
MDID4 SD_CMD MS_BS XD_WE#
MDID5 SD_CLK MS_SCLK XD_CE#
MDID6 SD_WP XD_WP#
MDID7 XD_CLE
MDID8 SD_DAT4 XD_D4
MDID9 SD_DAT5 XD_D5
MDID10 SD_DAT6 XD_D6
MDID11 SD_DAT7 XD_D7
MDID12 XD_RE#
MDID13 XD_R/B#
MDID14 XD_ALE
CR1_LEDN SD1_LED# MS1_LED# XD_LED#
CR1_PCTLN SD1_PCTL# MS1_PCTL# XD1_PCTL#
CR1_CD0 SD1_CD# XD_CV#
CR1_CD1 MS1_CD# XD_CD#
For JMB380
MDIO00 R686 0_4 MS_DATA0_SD_DAT0
R680 0_4 XD-D0
MDIO01 R669 0_4 SD_DAT1
R671 0_4 MS_DATA1
MDIO02 R701 0_4 XD-D1
R687 0_4 MS_DATA2_XD_D2
MDIO03 R702 0_4 SD_DAT2
R693 0_4 MS_DATA3
MDIO04 R699 0_4 SD_DAT3
R675 0_4 XD-D3
R698 0_4 SD_CMD
R682 0_4 MS_BS
R711 0_4 XD_WE
MDIO05 R694 22_4 JMB_SD/MS_CLK
MDIO06 R714 22_4 XD-CE#
R662 0_4 SD_WP
R708 0_4 XD-WP#
MDIO07 R713 0_4 XD-CLE
MDIO08 R676 0_4 XD-D4
MDIO09 R668 0_4 XD-D5
MDIO10 R666 0_4 XD-D6
MDIO11 R663 0_4 XD-D7
MDIO12 R715 0_4 XD-RE#
MDIO13 R716 0_4 XD-RB#
MDIO14 R712 0_4 XD-ALE
JMB 380 Note:
PV Build
Update CN36 library to 7IN1-R015-B11-LM-42P-L
CN36
TAI TWUM 5IN1 CARD READER SOCKET
DFHD42MR003
Close to CN34
From JMB380 JMB_SD/MS_CLK R707 0_4 SD_MS_CLK
From RTS5158E RTS_SD/MS_CLK R717 *0_4 SD_MS_CLK
New add R707,R717 for SD/MS CLK trace layout
SI-2
PROJECT : QT6
Quanta Computer Inc.
NB5
Size Custom
Document Number RTS5158 & CR SOCKET &HOLE
Rev 2B
Date: Tuesday, February 26, 2008
Sheet 25 of 44


PV Build
Modify CN32 layout footprint to 1394-020115FR004S510ZL-4P-H-QT6
DFHD04FR007
SI-2
1394_CONN
CN32
11/23 Change Library
SI-2
Modify CN32 layout footprint to 1394-020115FR004S510ZL-4P-H-QT8 (11/19)
JMB380-QGAZ0B
U30
Modify Y6 size to 5 *3.5
0914
SI-2
Add D37 for D3E
SI-2
Add TP86 for D3E
SI-1 Change to 10K
JMB380 don't needs it at MP vesion CHIP
SI-1 Change to 10K
PROJECT : QT6
Quanta Computer Inc.
NB5
JMB380 Controller/1394
Size B
Rev 2B
Date: Tuesday, February 26, 2008
Sheet 26 of 44



PORT	PLACE TO
MONO_OUT	X
PORT A	HP OUT
PORT B	M/B MIC
PORT C	X
PORT D	Internal Speckers
PORT E	Docking MIC
PORT F	X
DM	DIGITAL MIC

PROJECT : QT6
Quanta Computer Inc.

NB5

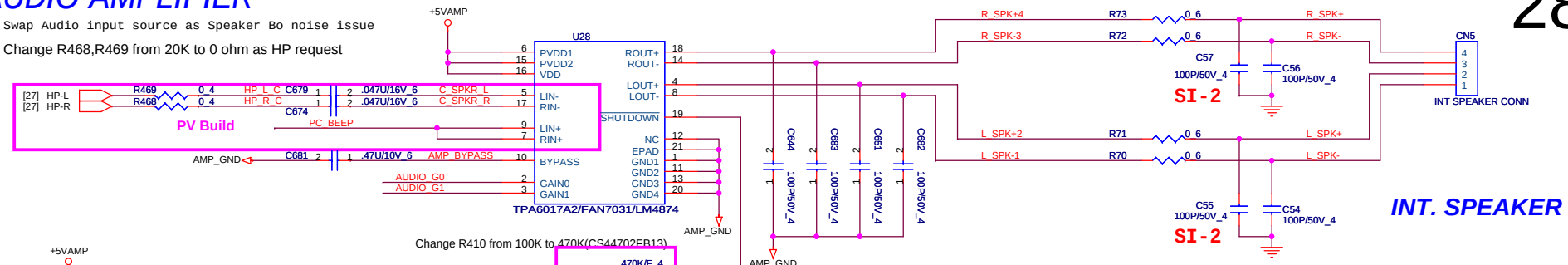
Size	Document Number	Rev
Custom	Azalia IDT92HD71B7	3A

Date: Tuesday, February 26, 2008 Sheet 27 of 44

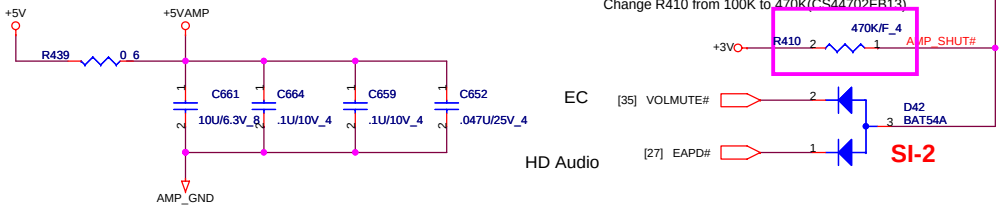
AUDIO AMPLIFIER

Swap Audio input source as Speaker Bo noise issue

Change R468,R469 from 20K to 0 ohm as HP request



INT. SPEAKER



AL001431K04
AL6017A2K12
APA2031 ,AL002031K00

6017A2 Gain Table

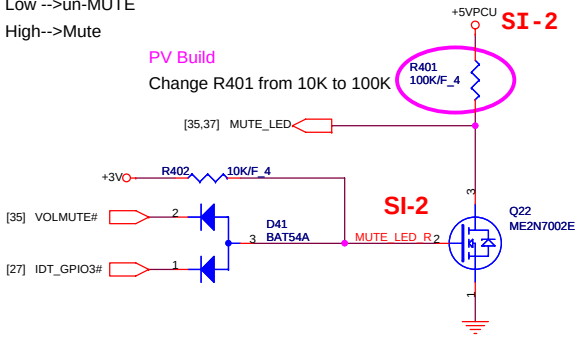
GAIN0	GAIN1	AV	RIN
0	0	6dB	90K
0	1	10dB	70K
1	0	15.6dB	45K
1	1	21.6dB	25K

MUTE_LED

Low -->un-MUTE

High-->Mute

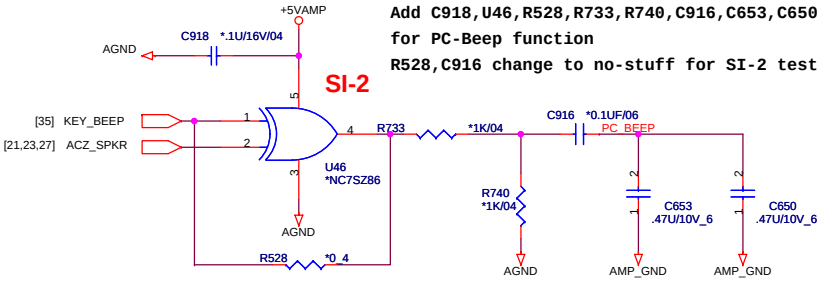
Change Power source to +5VPCU as power situation

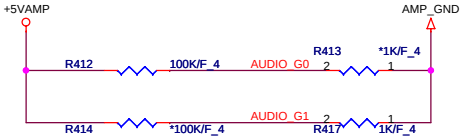


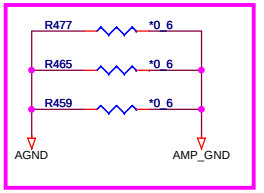
Add in SI-2

Add C918,U46,R528,R733,R740,C916,C653,C650 for PC-Beep function

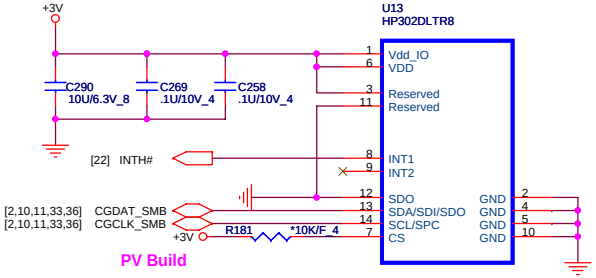
R528,C916 change to no-stuff for SI-2 test -->12/6





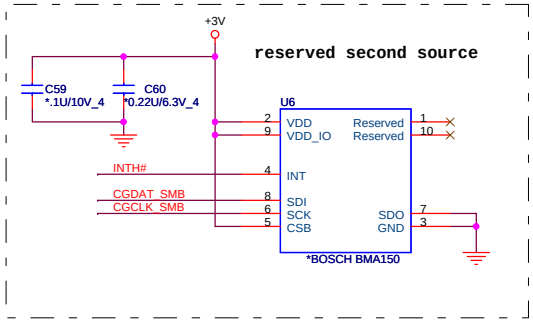


Accelerometer Sensor



Pin 12: Low 38hex

Pin 12: unconnected/floating 3Ahex



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	AMP_TPA6017/Accelerometer	3A

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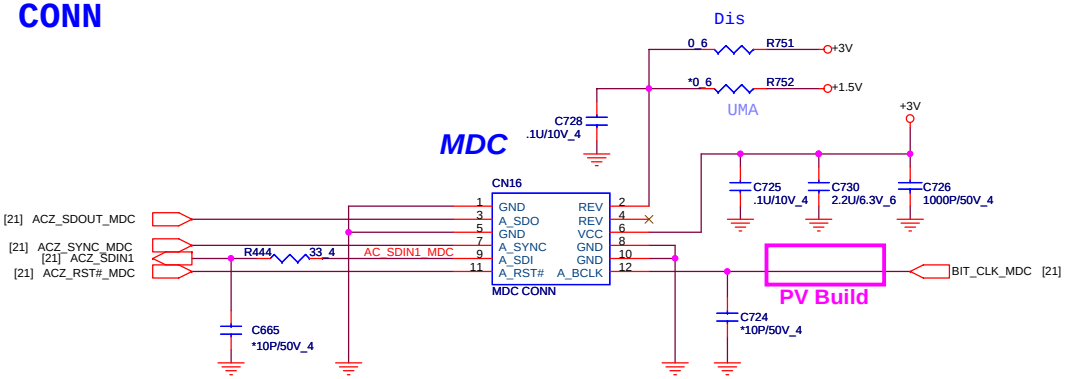
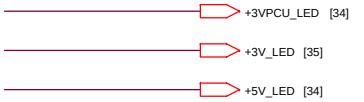
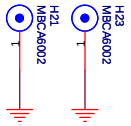
Modem CONN



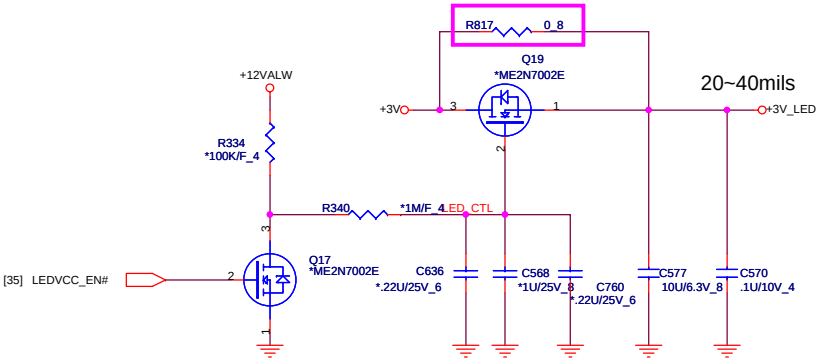


29

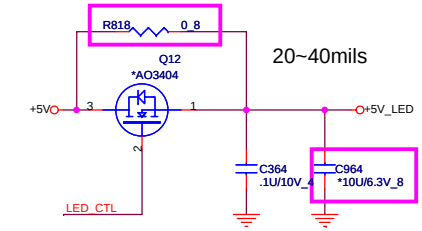


Needs to change Library as ME request

LED PWR CONTROL



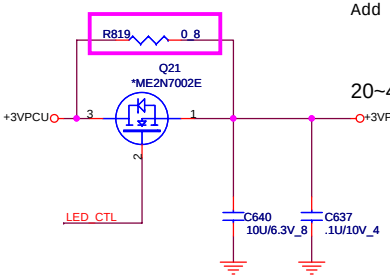
Change Q12 to AO3404 as LED current limited



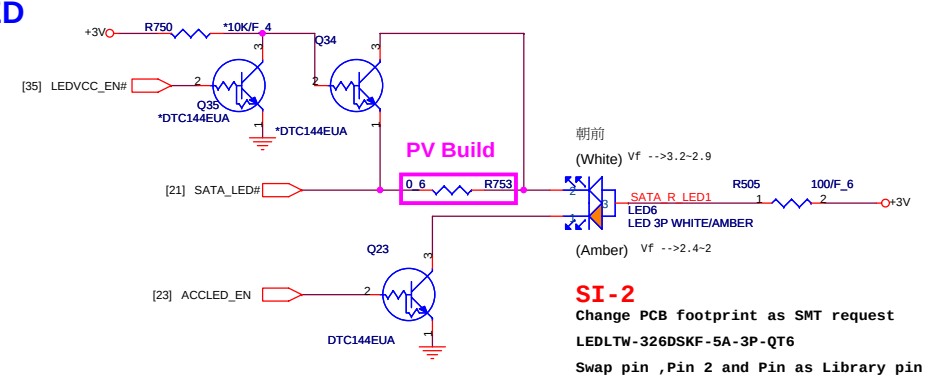
PV Build

Add R817,R818,R819 as HP LED spec change

Add C964 for reserve



LED



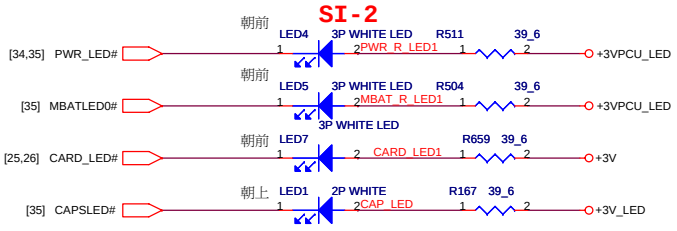
SI-2

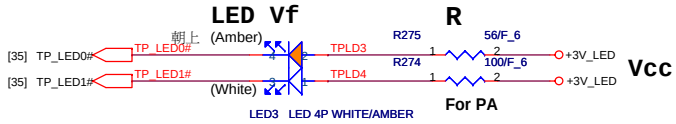
Change PCB footprint as SMT request

LEDLTW-326DSKF-5A-3P-QT6

Swap pin ,Pin 2 and Pin as Library pin

Modify LED4,LED5,LED7 layout footprint to ledl-s110kgct-3p-qt6 (11/19)





I = Vcc -Vf / R

NB5

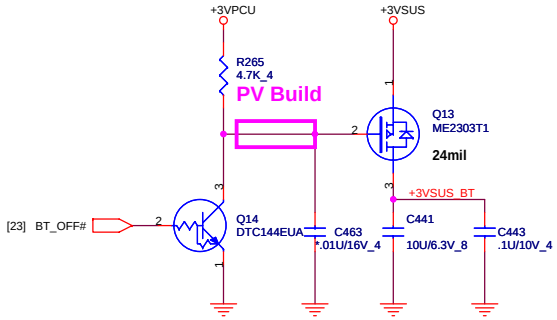
PROJECT : QT6

Quanta Computer Inc.

Size	Document Number	Rev
Custom	MDC/LED	3A

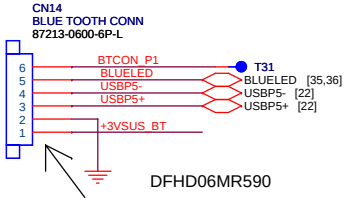
Date: Tuesday, February 26, 2008 | Sheet 29 of 44

BLUETOOTH



PV Build

Change CN14 P/N to DFHD06MR590



SI-2 **CN14 and CN9 87213-0600-6P-L**

Change footprint as ME request(pitch 1.25mm to 1.0mm)

Touch Screen

Delete Touch-Screen in SI-2

CN2,C10,L4

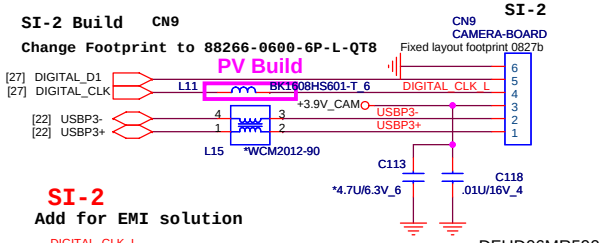
SI-2 Build

USB CAMERA /DIGITAL MIC CONNECT

SI-2 Build **CN9**

Change Footprint to 88266-0600-6P-L-QT8

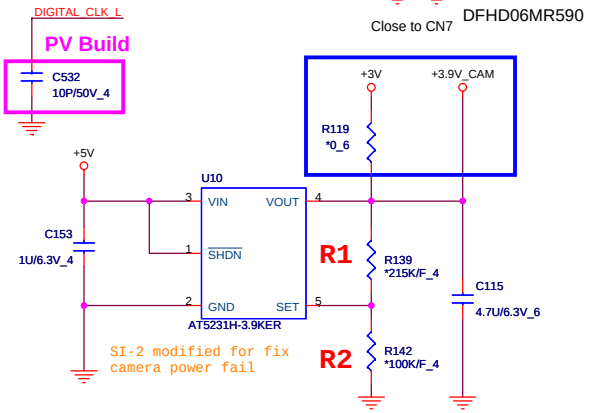
SI-2



SI-2

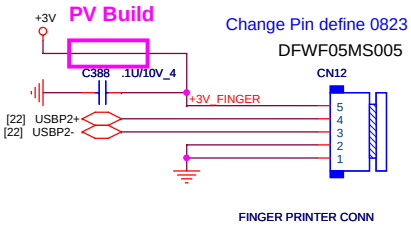
Add for EMI solution

Close to CN7 DFHD06MR590



Vout=1.25(1+R1/R2)

USB fingerprint CON



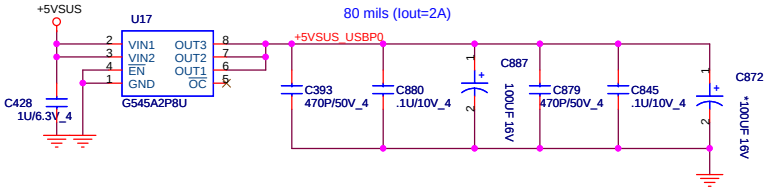
PV Build

Change CN12 to BL123-05R-5P-L-QT6-A

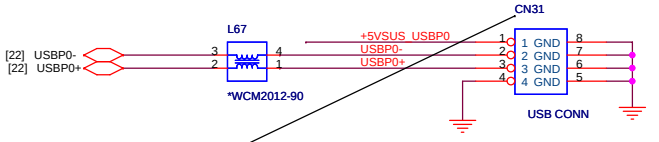
1. ESD GND
2. SYSTEM GND
3. USB-
4. USB+
5. USB PWR(+3V)

LEFT SIDE USBX1 and E-SATA/USB COMBO

30



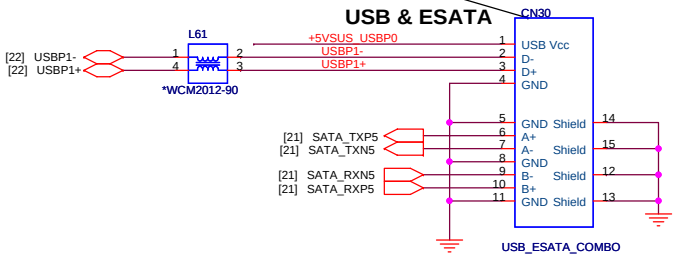
USB 0



SI-2 **CN30,CN31** **USB-020173MR004S51BZR-4P-R-H**

Change Connector layout type from SMD PAD to Dip as SMT request

USB & ESATA

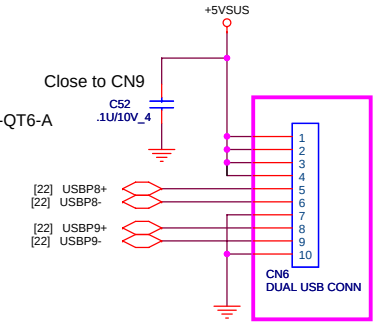


USB-C-2006102-11P-H-QT6

RIGHT SIDE USBX2

PV Build

Change CN6 to BL123-10R-10P-L-QT6-A



NB5	**PROJECT : QT6** Quanta Computer Inc.	
Size: Custom	Document Number: BT/WC/FT/TS/ESATA/USB	Rev: 3A
Date: Tuesday, February 26, 2008	Sheet 30 of 44	

T : Stuffed for RTL8111C(10/100/1000)

E : Stuffed for 8101E/8102E(10/100)

For 8102E/8111C

[32] +CTRL15 — R648 *0_6 — +CTRL15_E

SI-2 Stuffed for 8102E

[32] +FB12 — R641 0_6 — +LAN_A1.8_FB12

Stuffed for RTL8111C and nostuff 8102E

+LAN_D1.5 — R649 0_6 — +LAN_D1.5_SRVDD

Stuffed for 8102E/RTL8111C

+3VLANVCC — R647 0_6 — +CTRL15_E

C894 10U/6.3V_8 — C889 10U/6.3V_8 — C890 .1U/10V_4

+3VLANVCC — R247 0_6 — +3V_GVDD

enable switch regular

Stuffed for RTL8111C(10/100/1000)

Y2 25MHZ — C427 27P/50V_4 — C420 27P/50V_4 — C414 *.1U/10V_4 — C417 *.1U/10V_4 — R233 2.49K/F_4 — LANRSET

XTAL1, XTAL2, +3V_GVDD, +CTRL15_E

SI-2
8102E No Mount
8111C No Mount ,R247 mount

U18#63 wider than 40 mils
U18#1 wider than 60 mils

LAN_TX#, +LAN_D1.5_SRVDD, +3V_A_LAN, LAN_LED_100# — R255 0_4 — LAN_GLINK100#, LAN_GLINK10#, LAN_GLINK1000#

+3V_LAN, LAN_CABLE_DETECT [35]

+LAN_D1.5

Isolate pull low:
1.Can only disable RTL8111C.
2.RTL8101E can't disable

for 93C56 used. NC if 93C46 is used.

R653 *10K/F_4 — +3V_LAN

U43 *M93C46-WMN6TP

EECS, EESK, EEDI, EEDO — CS, SK, DI, DO, VCC, DC, ORG, GND

C897 *.1U/10V_4

3.24K/F_4 R652 — +3V_LAN

U18 RTL8111C-VB-GR

Pin 65

SROUT12, AVDD33, MDIP0, MDIN0, FB12, MDIP1, MDIN1, AVDD12, MDIP2, MDIN2, AVDD12, MDIP3, MDIN3, AVDD12, NC, VDD33

MDI0+, MDI0-, MDI1+, MDI1-, MDI2+, MDI2-, MDI3+, MDI3-

+LAN_A1.8_FB12, +LAN_A1.8, +LAN_D1.5, +3V_LAN — R434 *0_4

EESK, EEDI/AUX, VDD33, EEDO, EECS, DVDD12, NC, ISOLATEB#, CLKREQB

+3V — R263 *1K/F_4 — ISOLATEB — R262 15K/F_4

PV Build
Change back to R261 at 1/24

R261 100/F_4 — D38 — *RB501V-40 — LAN_DISABLE# [35]

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

PV Build

R252 *0_6, R259 *0_6 — LAN-AGND

C531 .1U/10V_4 — **SI-2**

New add and Close to Pin 5
From Vendor EMI suggest

SI-2 R434
8111C = No Mount
8102E = Mount

T3, T4

[23,33,36] PCIE_WAKE# — PCIE_WAKE#

+LAN_D1.5, +LAN_E1.8

[22] PCIE_TXP1_LAN — PCIE_TXP1_LAN
[22] PCIE_TXN1_LAN — PCIE_TXN1_LAN

[22,26,33,35,36] PLTRST# — R248 0_4

[35] LAN_REST# — R246 *0_4

PCIE_RXN1_LAN_L, PCIE_RXP1_LAN_L — C452 .1U/10V_4, C442 .1U/10V_4 — PCIE_RXN1_LAN [22], PCIE_RXP1_LAN [22]

CLK_PCIE_LAN#, CLK_PCIE_LAN — +LAN_E1.8 — CLK_PCIE_LAN# [2], CLK_PCIE_LAN [2]

LAN-AGND

SI-2

Swap PCIE from Port 6 to PCIE Port 1

SI-2

Swap PCIE from Port 6 to PCIE Port 2

AL08111C001 IC CTRL(64P) RTL8111C-VB-GR(QFN)
AL08102E001 IC CTRL(64P) RTL8102E-VB-GR(QFN)

PV Build
Remove 8111B and 8101E support in PV Build
1. Delete R264 (For 8111B)
2. Delete R650 and T28
3. Delete R651 and U18#33 for 8111B support
4. Delete R231 as RSET
5. Delete R242,R243,R244,R245,C394,C395 8101E support

+LAN_A1.8 — R589 *0_4 — **Stuffed for RTL8101E**

Add C898,C899,C900,C902 as HP request

U33 NS892402

V_DAC, TCT1, TD1+, TD1-, TCT2, TD2+, TD2-, TCT3, TD3+, TD3-, TCT4, TD4+, TD4-
MCT1, MX1+, MX1-, MCT2, MX2+, MX2-, MCT3, MX3+, MX3-, MCT4, MX4+, MX4-

C782 .01U/16V_4, C783 .01U/16V_4, C789 .01U/16V_4, C790 .01U/16V_4

MDI0+, MDI0-, MDI1+, MDI1-, MDI2+, MDI2-, MDI3+, MDI3-

SI Build
LAN_MCT0 — C898 0.01U/100V_0603 — R544 75/F_4 — LAN_MX0+ [37], LAN_MX0- [37]
LAN_MCT1 — C899 0.01U/100V_0603 — R545 75/F_4 — LAN_MX1+ [37], LAN_MX1- [37]
LAN_MCT2 — C900 0.01U/100V_0603 — R547 75/F_4 — LAN_MX2+ [37], LAN_MX2- [37]
LAN_MCT3 — C902 0.01U/100V_0603 — R548 75/F_4 — LAN_MX3+ [37], LAN_MX3- [37]

C781 1000P/3KV_1808

LAN_GLINK10# — 2
LAN_GLINK100# — 1
D36 BAT54A — 3
LAN_GLINK1000# — D35 — 1 — 2 — RB501V-40 — LAN_GLED#
LAN_TX# — R109 0_4 — LAN_YLED#

C48 *.01U/16V_4 — C88 *.01U/16V_4

Link

FOR EMI
C89 *.1U/10V_4 — +3V_LAN — R89 330/F_4 — SI Build — LAN_GLED, LAN_GLED#

DFTJ12FR031
RJ45
CN24

LAN_MX3-, LAN_MX3+, LAN_MX1-, LAN_MX2-, LAN_MX2+, LAN_MX1+, LAN_MX0-, LAN_MX0+
RX1-, RX1+, RX0-, TX1-, TX1+, RX0+, TX0-, TX0+, GND1, GND

FOR EMI
+3V_LAN — R87 330/F_4 — SI Build — LAN_YLED, LAN_YLED#
LED_YEL_P, LED_YEL_N

LED_GRE_P, LED_GRE_N

RJ45_CONN

C81 *.1U/10V_4

NS892402:GIGABIT DB0AT9LAN05

NS892405:10/100 DB0ZB1LAN04

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RTL8111C/8101E/RJ45	2B

Date: Tuesday, February 26, 2008 Sheet 31 of 44

T : Stuffed for RTL8111C(10/100/1000)

E : Stuffed for 8101E/8102E(10/100)

LANVCC
1.2W
364mA

PV Build

+3VLANVCC

Power trace Layout 寬度> 30mil

+3V_LAN

C385 4.7U/6.3V_6
C480 .1U/10V_4
C454 .1U/10V_4
C475 .1U/10V_4
C477 .1U/10V_4
C399 .1U/10V_4

these CAP are for LAN CHIP LANVCC pins--16, 37, 46 and 53.placement close lan chip

PV Build

+3V_A_LAN

C401 .1U/10V_4
C434 .1U/10V_4

these CAP are for LAN CHIP LAN_A3.3 pins-- 2 and 59.placement close lan chip

8111C CV-4706MN00
8102E CS00004JA40

For Giga must change L65 to Inductor (Chipset include switch power)

+CTRL18 will become to switch power phase

placement close to lan chipset

L54 for Gaga lan use 4.7uH power choke
A>500mA tolerance ±15%

SI Build

+CTRL18

L65 4.7UH_2016

C884 *4.7U/6.3V_6

For 8102E

C931 *10U/6.3V_8 SI build
C930 10U/6.3V_8 SI build
C881 4.7U/6.3V_6
C876 4.7U/6.3V_6
C878 .1U/10V_4

+FB12 [31]

L63 0_8

Power trace Layout 寬度> 30mil

+LAN_A1.8

C891 .1U/10V_4
C892 .1U/10V_4
C875 .1U/10V_4
C893 .1U/10V_4

these cap are for lan chip LAN_A1.8 pins--5, 8, 11 and 14. placement close chip

+LAN_E1.8

STUFF 100 ohm BEAD

R250 0_8

C422 Change to 1u for 8102E

C421 .1U/10V_4
C422 1U/6.3V_4

these cap are for lan chip LAN_D1.8 pins, such as 22 and 28. placement close lan chip

LAN-AGND

SI-2
Remove R250,L63,L66 -->For 8102E

L66 0_8

Only For 8111C application

Power trace Layout 寬度> 30mil

+LAN_D1.5

PV Build
C422 change to 1uf

[31] +CTRL15

L64 *0_8

C883 *4.7U/6.3V_6
C888 *4.7U/6.3V_6
C895 *4.7U/6.3V_6
C896 *.1U/10V_4

For 8102E

C474 .1U/10V_4
C479 .1U/10V_4
C459 .1U/10V_4
C456 .1U/10V_4
C472 .1U/10V_4
C461 .1U/10V_4
C476 .1U/10V_4
C415 .1U/10V_4
C478 .1U/10V_4
C400 .1U/10V_4

these cap are for lan chip LAN_D1.5 pins-- 15, 21, 32, 33, 38, 41, 43, 49, 52 and 58.placement close lan chip

Power domain chart

	RTL8111C(P) RTL8102E
LANVCC	3.3V
LAN_D1.8	1.2V
LAN_A1.8	1.2V
LAN_D1.5	1.2V

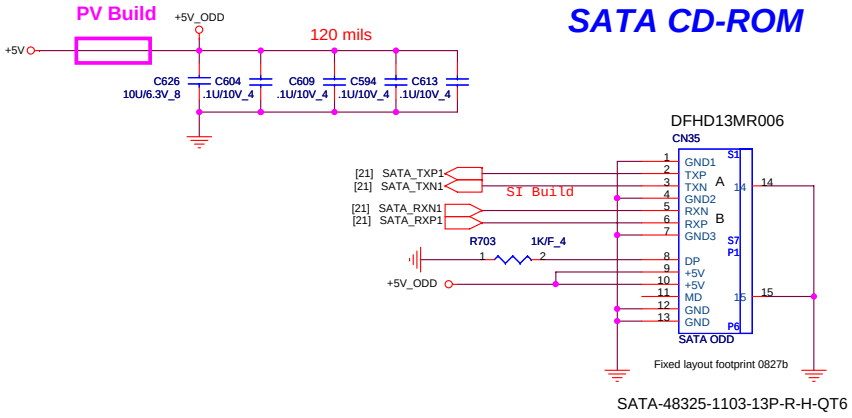
PROJECT : QT6
Quanta Computer Inc.

NB5

Size A3 | Document Number LAN Power | Rev 1A

Date: Tuesday, February 26, 2008 | Sheet 32 of 44

SATA CD-ROM

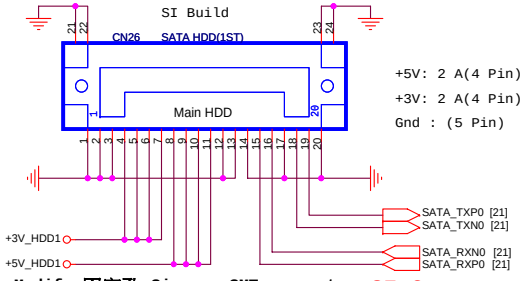


SATA-48325-1103-13P-R-H-QT6

SATA HDD CONNECTOR

DFHD20MR005

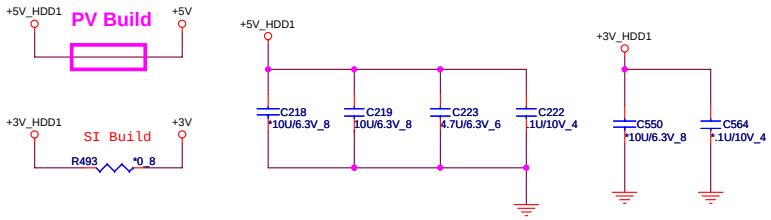
DC Current rating: 0.5 A



Modify 固定孔 Size as SMT request

SI-2

GS12201-1011-9F-20P-L-QT6

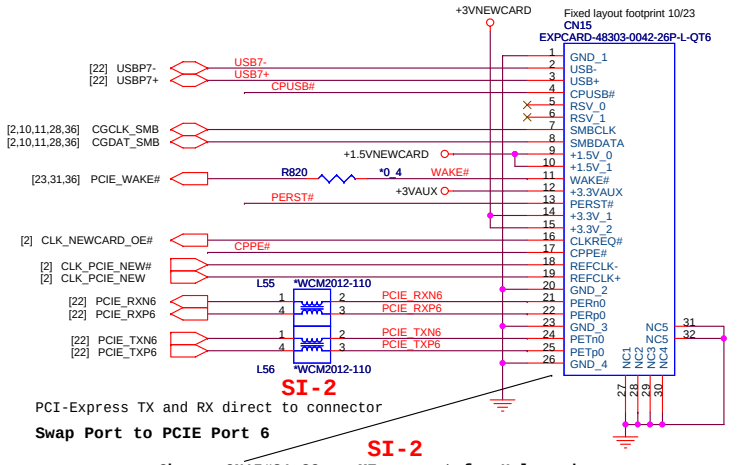


NEWCARD

NEWCARD (PCIEXPRESS*1 + USB*1)

SI Build

Fixed layout footprint 10/23



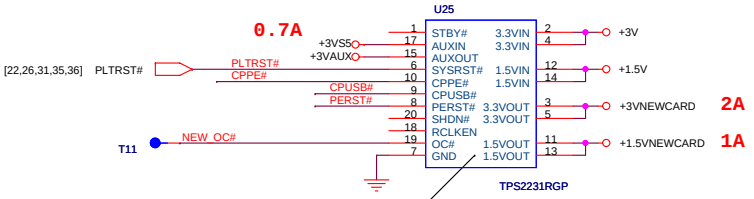
SI-2

PCI-Express TX and RX direct to connector

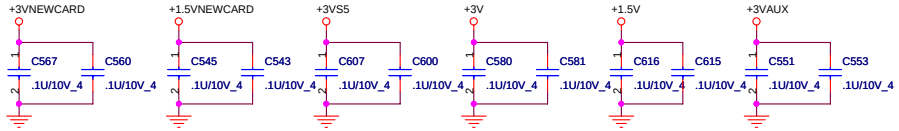
Swap Port to PCIE Port 6

SI-2

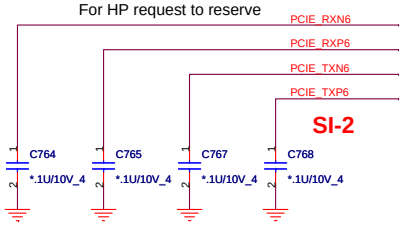
Change CN15#31,32 as ME request for Hole pad
expcard-48303-0042-26p-l-qt6 as ME modify Pad size(pin31,32)
Move CN15#29,30 Pin as ME request(Molex confirm drawing)



SI-2 add Pin 21~25 as U25 Thermal pad tied to Gnd



For HP request to reserve



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	ODD/HDD/NEW CARD	2B

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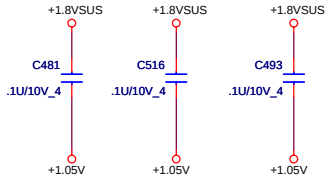
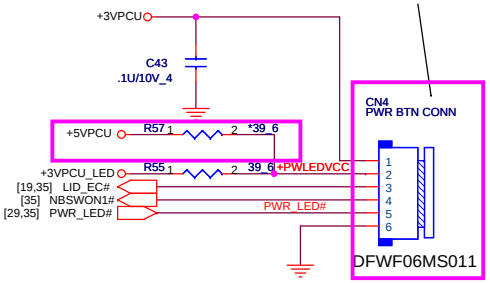


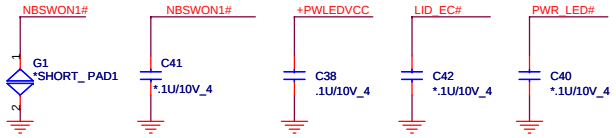
Close to U21 For EMI

PV Build
Change CN4 to BL123-06R-6P-L-QT6-A



1. +3VPCU(LIDSWITCH PWR)
2. LEDVCC(+3VPCU)
3. LIDSWITCH
4.POWERON#
5. PWRLED#
6. GND

POWER BOTTON CONNECT

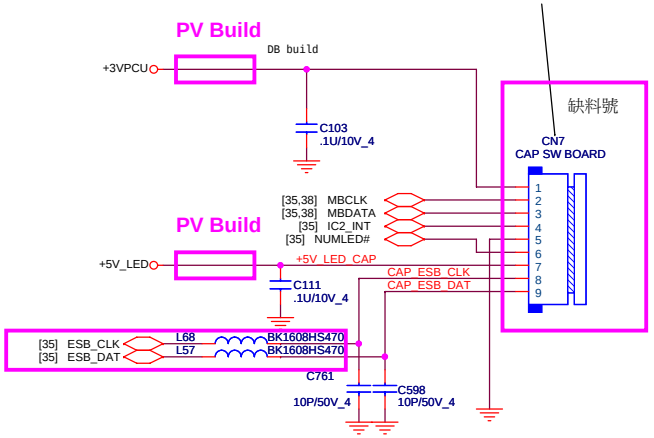


EMI 0828

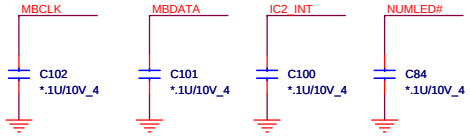
POWRER SW CONNECT

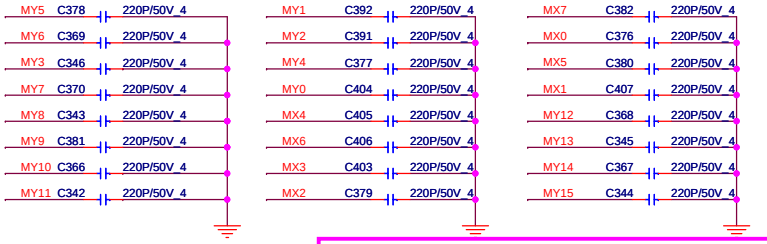
CAP SW CONNECT

PV Build
Change CN7 to BL123-09R-9P-L-QT6-A

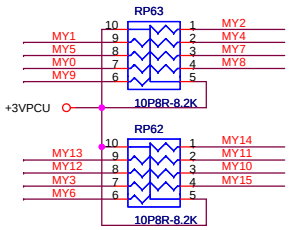


1. +3VPCU
2. MBCLK
3. MBDATA
4. CAP_INT
5. GND
6. NUM LOCK LED
7. +5V_LED
8. ESB_CLK
9. ESB_DAT



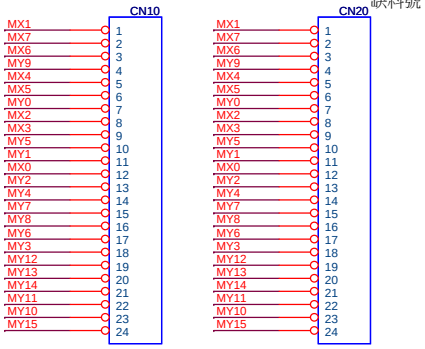


KEYBOARD PULL-UP

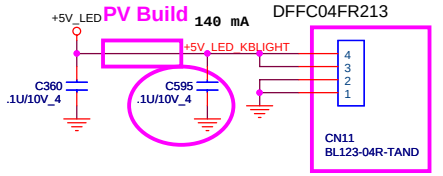


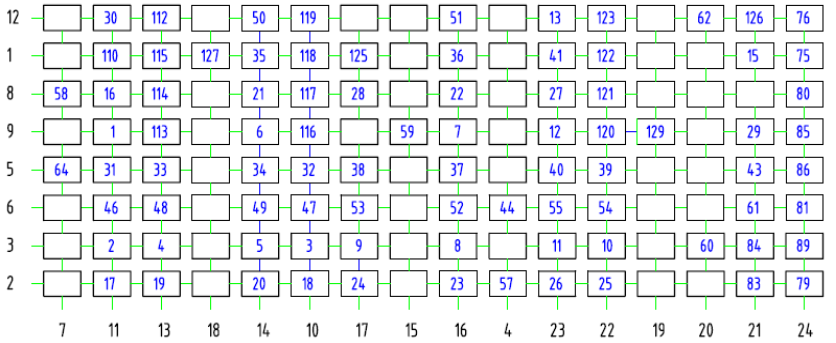
FOX DFFC24FR006 SCY

缺料號



PV Build
Add C595 and close to CN11
Change CN11 to BL123-04R-4P-L-QT6-A
Change CN10 to GB1RF240-1253-XF-24P-L as Foxconn drawing





NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	KB/CAP/POWER CONN	2B

Date: Tuesday, February 26, 2008 Sheet 34 of 44

Change U20 layout footprint
to LQFP128-16X16-4-AA1

U20

KB3926QF C0

SI-2

PV Build

Add in SI-2

R323 remove for KB3926 C version

For KB3926 B, C version

SI-2

Add Pin 117,103 for DSM,116 for Bluetooth,Pin 23 for Key Beep to Amplifier
Add T37,T38,T39 for EC
Delete T10 and tie pin 117 from Lan for DSM

PV Build
Change to RB500 as Current loss

SI-2
Add for Power request

R273
64.9K -->65W CS36492FB17
33.2K -->90W CS33322FB13
Change to 1SS355 as Current loss

SI-2
Add for EMI solution

TOUCH PAD CONNECTOR

PV Build
25 mils

CN13
TOUCH PAD CONN
DFFC12FR293

PV Build
Change to SW2,SW3,SW6 to BA1G as vendor sugesst

TOUCH PAD L/R

TOUCH PAD ON/OFF

close conn

PV Build
R430 Change to 100k ohm ,pull low

SI-2
Add R430 and tied to U20 Pin 115 and change Q18 footprint to SOT23
Delete Q18 and tied to U20#116 direction

Socket: DG008000031

MXIC	AKE5GFK0Z09
WINBOND	AKE3GFP0N08
PME	AKE3GZP0500
EON	AKE3GZP0Q00
AIT	AKE3GZP0801

1M byte
SPI
BIOS

PV Build

SPI ROM SOCKET

SI-2
Change Layout footprint to X6179-10XXXX-8P-SOCKET(Socket)

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	KB3926/ROM/TP	3A

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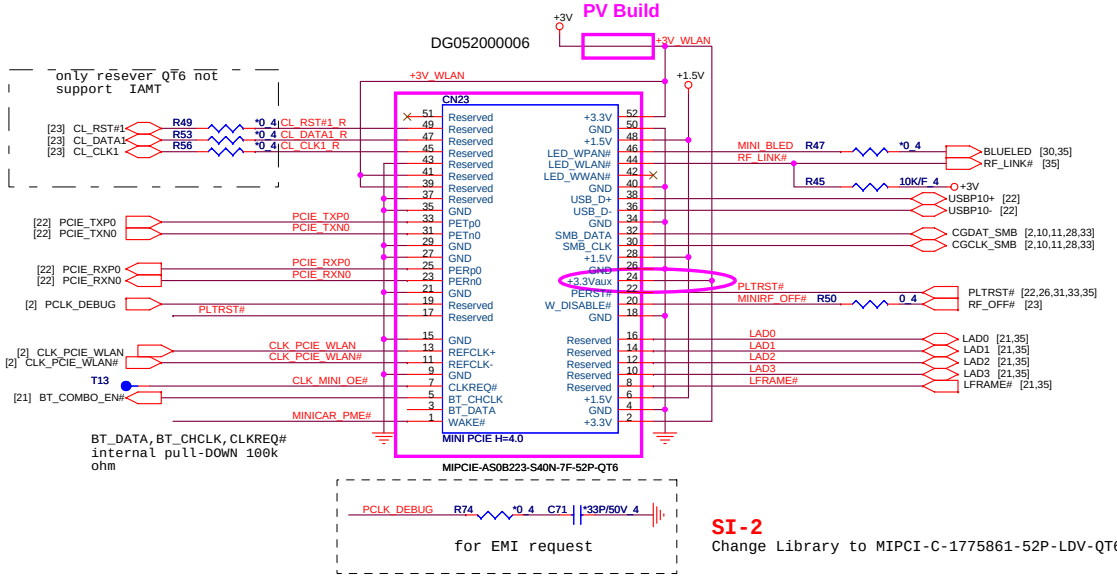
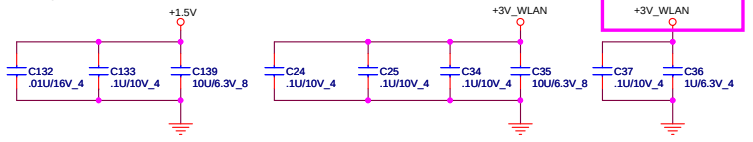
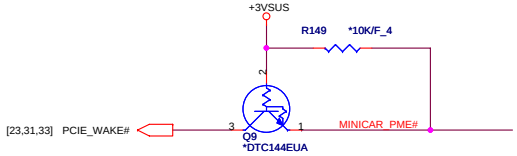
Mini PCI-E Card 1 WLAN

PV Build Delete R78 and tied the CN23#24 to R110 direction
Change CN23 layout footprint to MIPCIE-AS0B223-S40N-7F-52P-QT6 as ME drawing





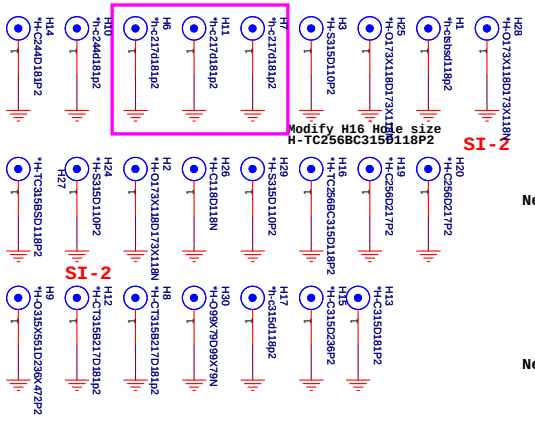
PV Build
Change net name
+3V_WLAN



SI-2
Change Library to MIPCI-C-1775861-52P-LDV-QT6 12/11

M/B Screw Hole

SI-2,h-e276x315d118p2



SI-2
New add as ME request

RF PAD

PAD10 PAD9 PAD6
*EMIPAD *EMIPAD *EMIPAD

New add as RF request

PAD13 PAD12 PAD11
*EMIPAD *EMIPAD *EMIPAD

New add as RF request

PAD22 PAD23
PAD24
PAD20 PAD21
*EMIPAD *EMIPAD

ME PAD

PAD5 PAD4
*EMIPAD *EMIPAD

PAD8 PAD7
*EMIPAD *EMIPAD

ME Routed spring

PAD17 PAD19
Emi157x79 ME_SPRING
PAD18
Emi157x79

PV Build

Routed spring

PV Build
Delete PAD14

PAD15
*MDC_SPRING
PAD16
*MDC_SPRING

EMI PAD

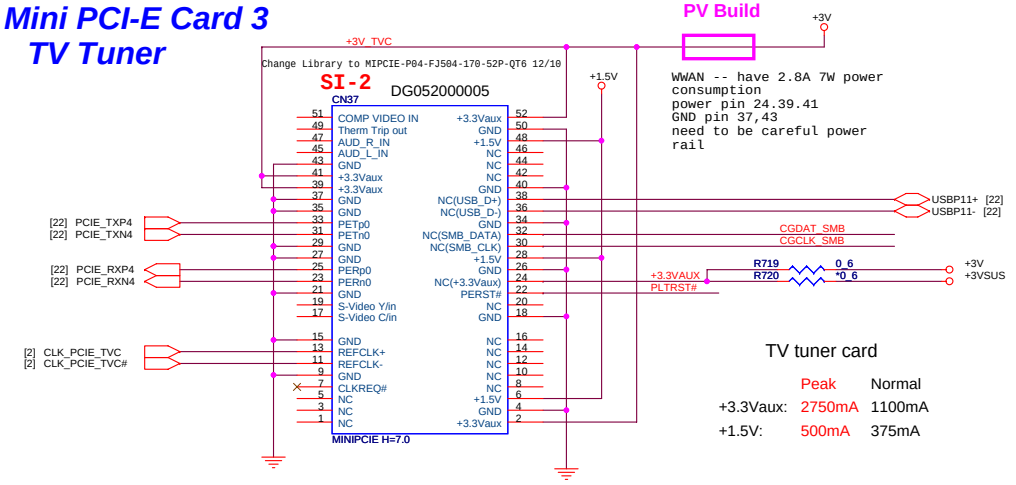
PAD2 PAD1
*EMIPAD *EMIPAD
PAD3
*EMIPAD

PV Build

	Change H1 to h-ctsbsd118p2
1/25	Add PAD17 (Emi157x79)
	Add PAD18 (Emi157x79)
	Add PAD19 (Emi236x59)
1/29	Delete H4,H5 and modify battery connector
1/31	Change H6,H7,H11 to h-c217d181p2 as ME drawing update

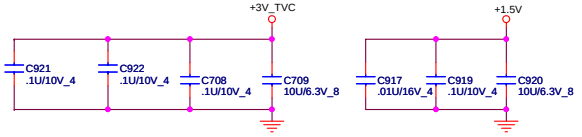
Mini PCI-E Card 3 TV Tuner

PV Build



TV tuner card

	Peak	Normal
+3.3Vaux:	2750mA	1100mA
+1.5V:	500mA	375mA



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI PCIE CONN X2 & HOLE	2B

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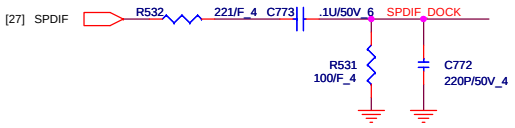
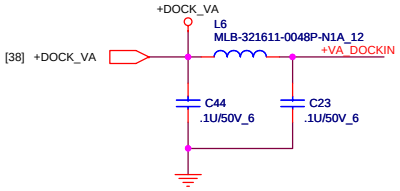
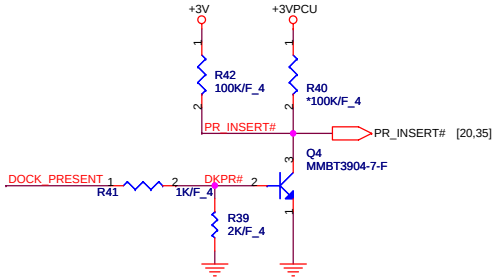
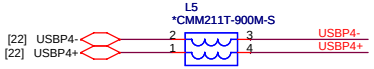
CABLE DOCK

support 6A 200mils
CX000480005

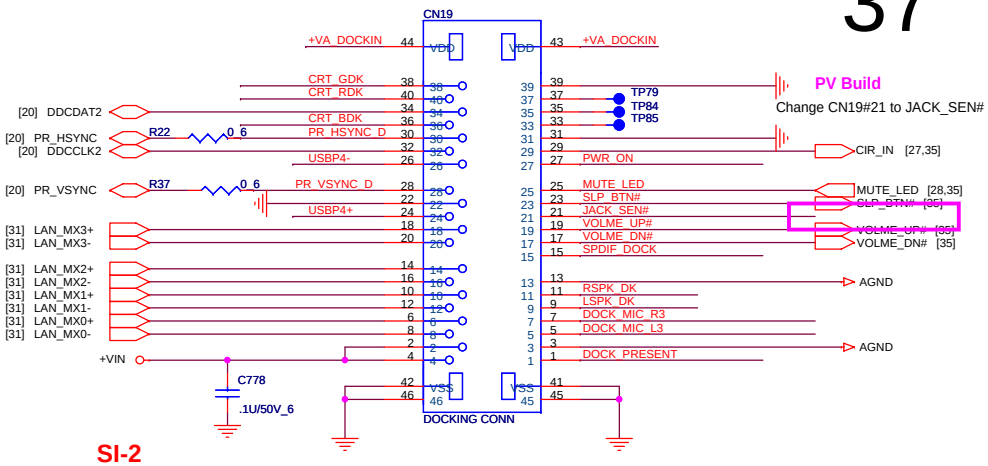








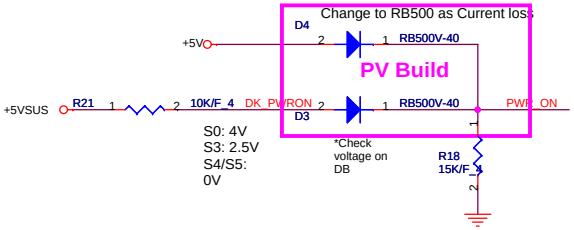
DFHS44FRC04

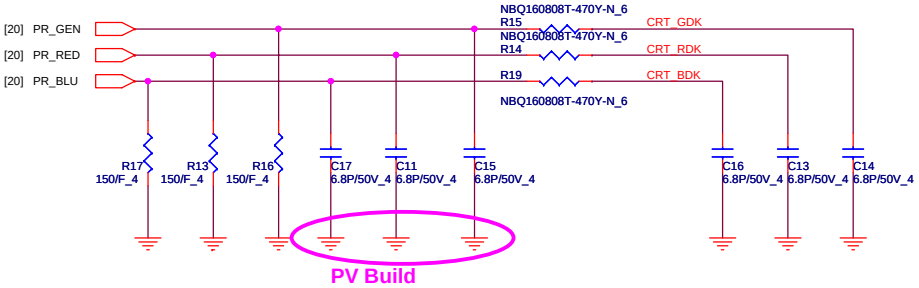


PV Build
Change CN19#21 to JACK_SEN#

CIR_IN [27,35]
MUTE_LED [28,35]
SLP_BTN# [35]
VOLME_UP# [35]
VOLME_DN# [35]

SI-2
R13,R16,R17 Change to install

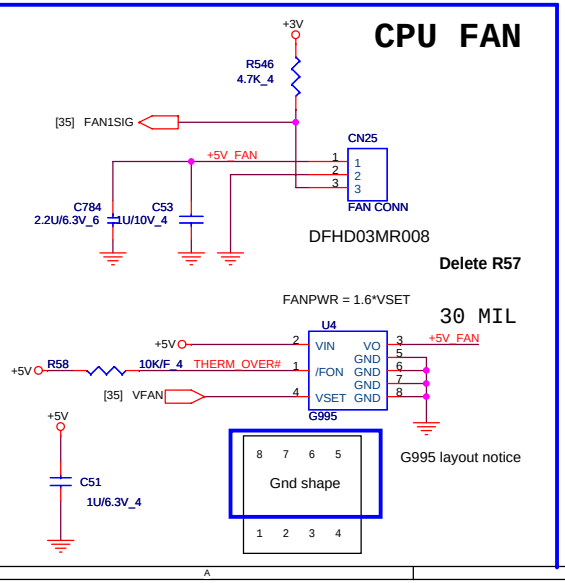


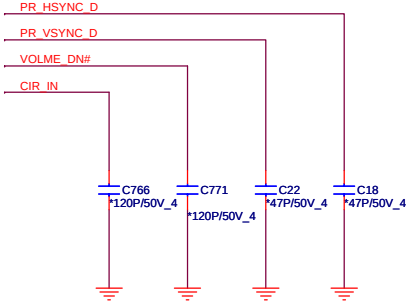


PV Build

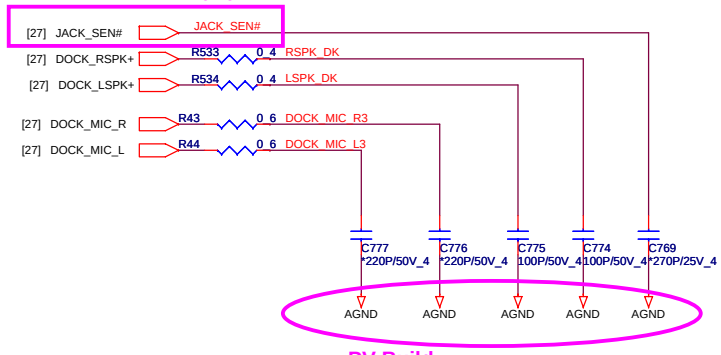
Add Loss net(GND Net)

CPU FAN





PV Build



PV Build
Change to Analog Gnd

PROJECT : QT6
Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	CABLE DOCKING/FAN	2B

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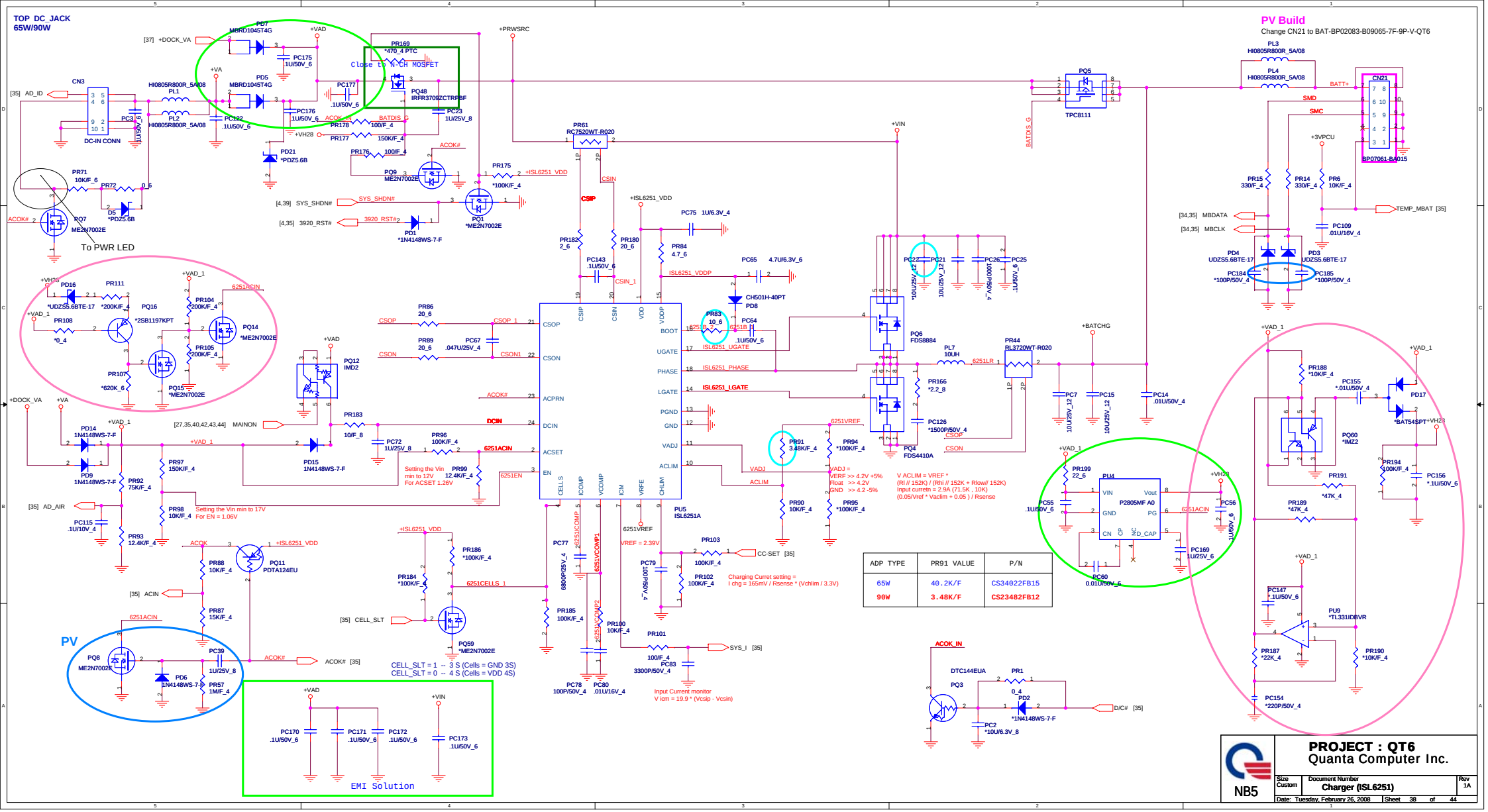
TOP DC_JACK
65W/90W

PV Build
Change CN21 to BAT-BP02083-B09065-7F-9P-V-QT6



ADP TYPE	PR91 VALUE	P/N
65W	40.2K/F	CS34022FB15
90W	3.48K/F	CS23482FB12

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Quanta Computer Inc.

NB5

Size	Document Number	Rev
Custom	Charger (ISL6251)	1A

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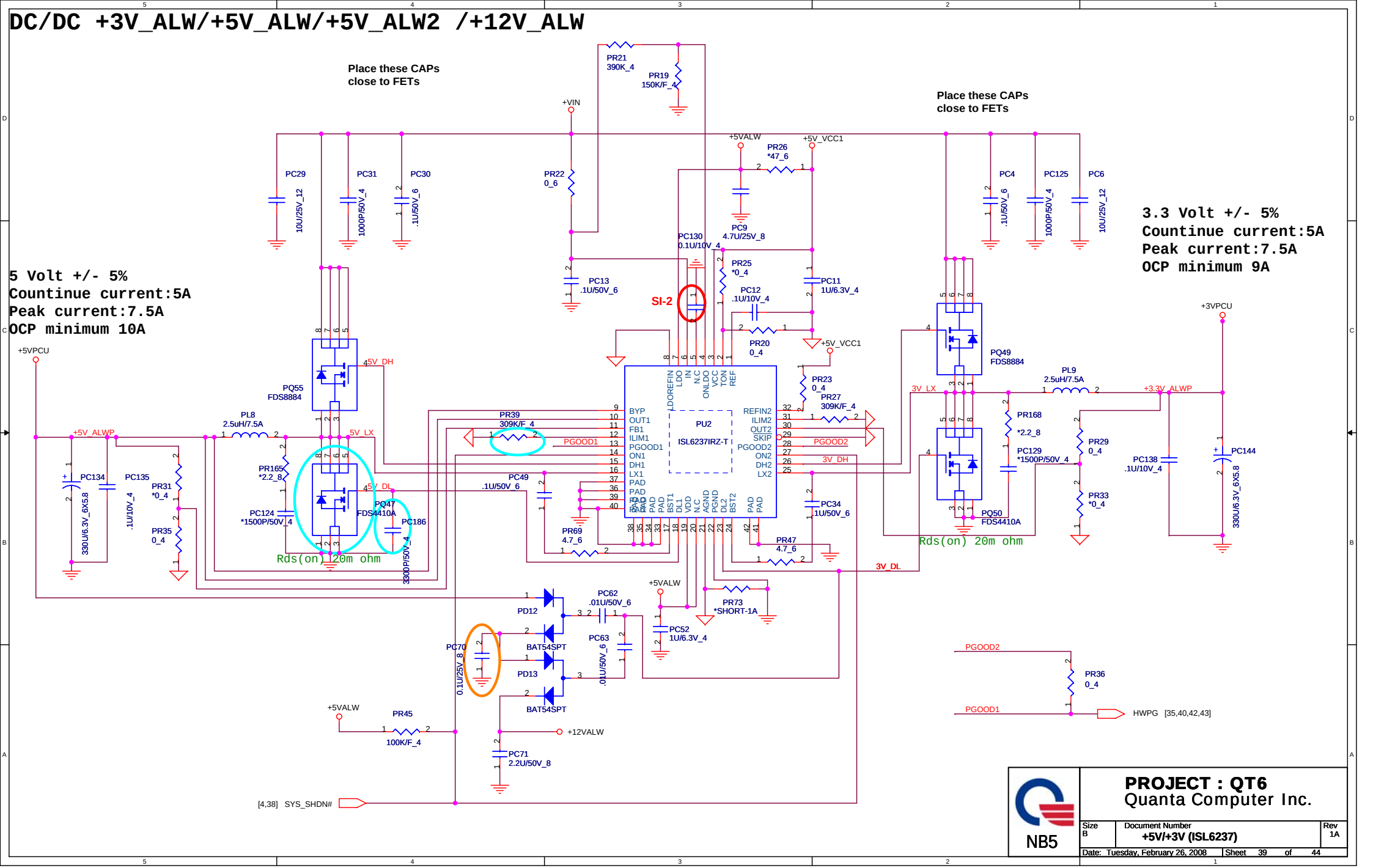
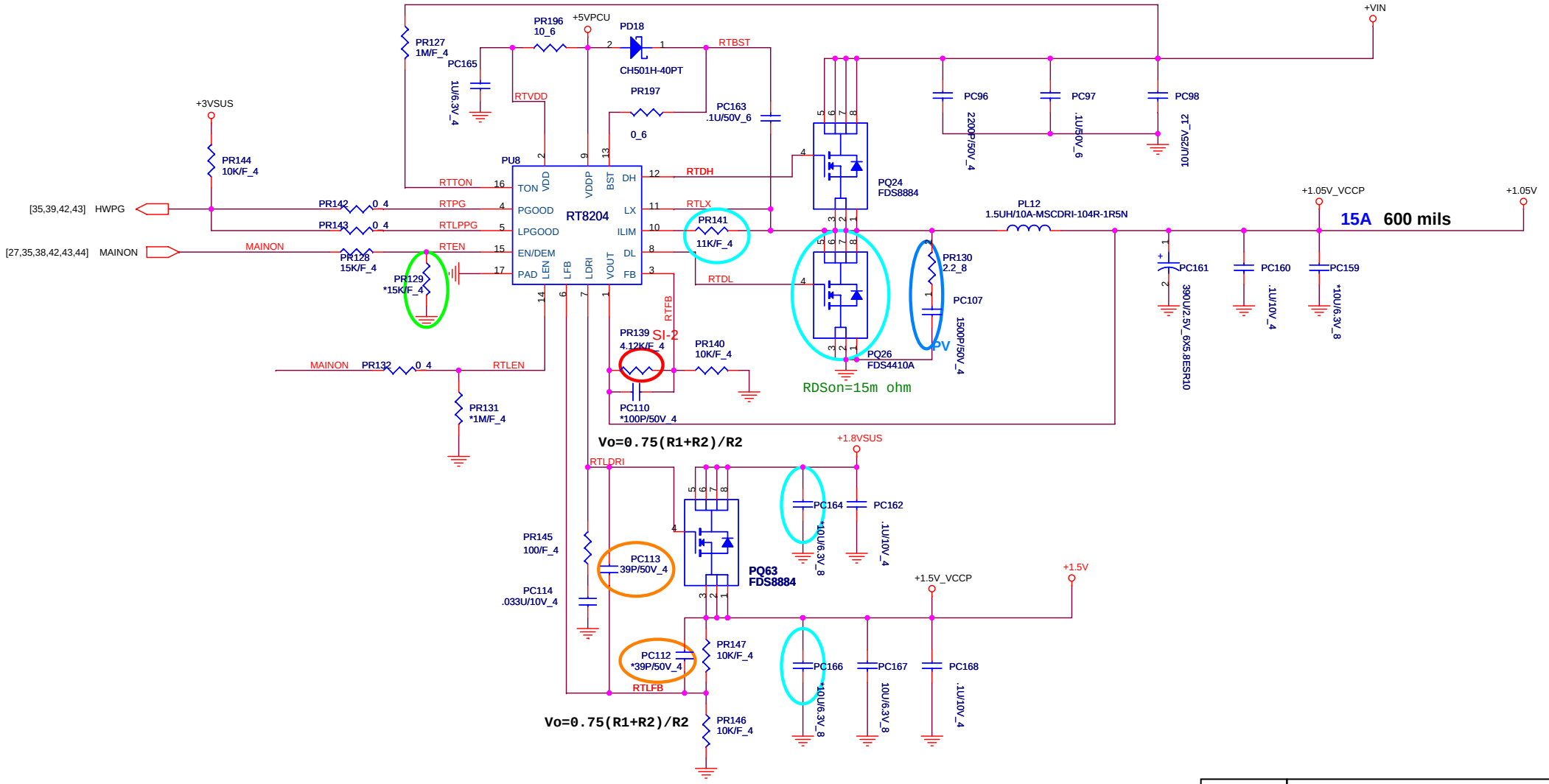
DC/DC +3V_ALW/+5V_ALW/+5V_ALW2 /+12V_ALW



NB5	**PROJECT : QT6** Quanta Computer Inc.	
Size B	Document Number +5V/+3V (ISL6237)	Rev 1A
Date: Tuesday, February 26, 2008	Sheet 39 of 44	

VCCP1.05V & +1.5V

+1.05Volt +/- 5%
Countinue current:7.5A
Peak current:10A
OCP minimum 15A



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
B	+1.05V/+1.5V (RT8204)	1A

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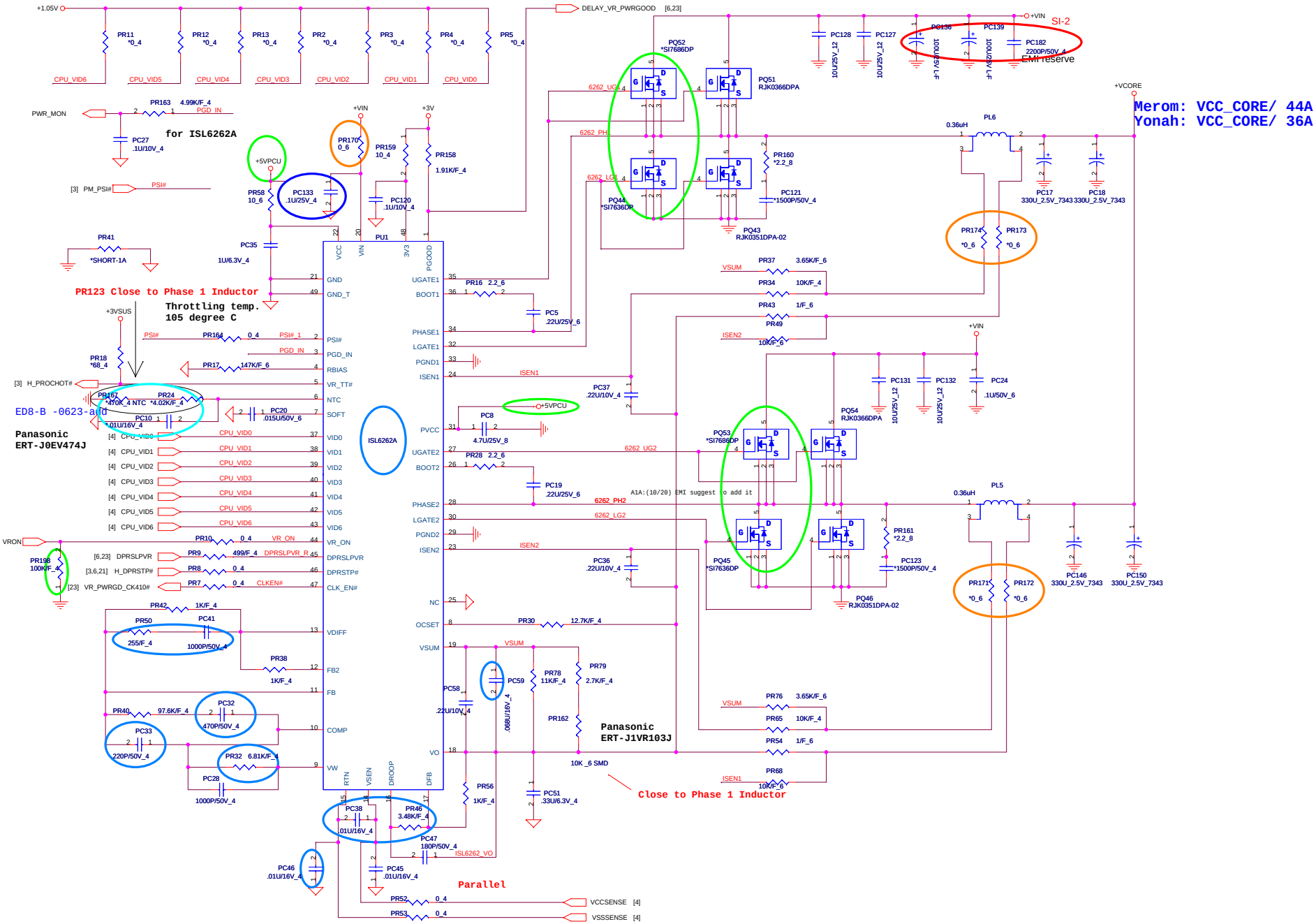
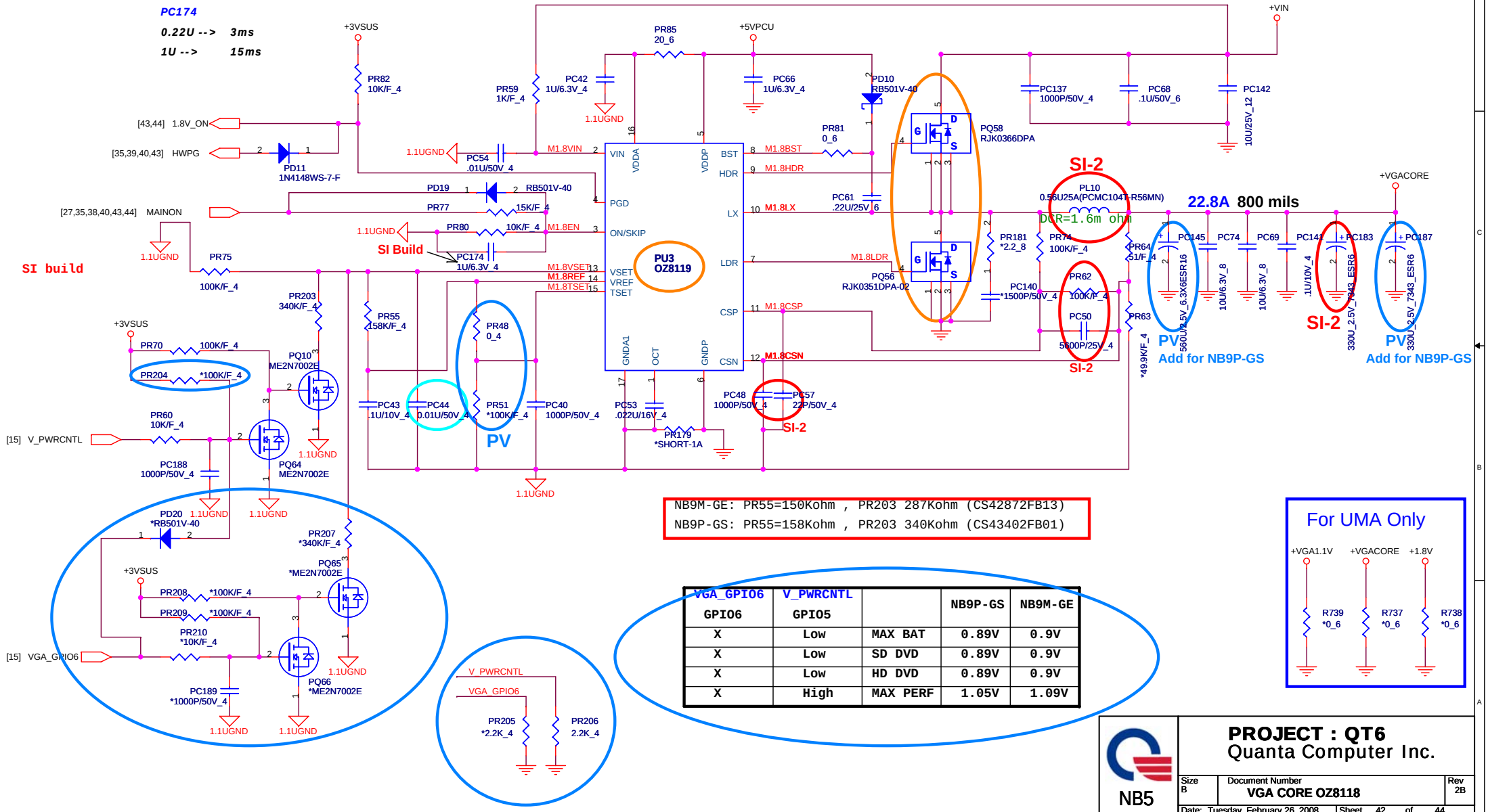

Merom: VCC_CORE/ 44A
Yonah: VCC_CORE/ 36A
for ISL6262A
PR123 Close to Phase 1 Inductor
Throttling temp.
105 degree C
ED8-B -0623-a/d
Panasonic
ERT-J0EV474J
Panasonic
ERT-J1VR103J
Close to Phase 1 Inductor
Parallel
EMI reserve
SI-2
ISL6262A
A1A:(10/20) EMI suggest to add it
PROJECT : QT6
Quanta Computer Inc.
NB5
CPU Core (ISL6266A)
Tuesday, February 26, 2008

VGA Core & VCC1.1

+1.1Volt +/- 5%
Countinue current:17.54A
Peak current:22.8A
OCP minimum 23A



VGA_GPIO6 GPIO6	V_PWRCNTL GPIO5		NB9P-GS	NB9M-GE
X	Low	MAX BAT	0.89V	0.9V
X	Low	SD DVD	0.89V	0.9V
X	Low	HD DVD	0.89V	0.9V
X	High	MAX PERF	1.05V	1.09V

NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
B	VGA CORE OZ8118	2B

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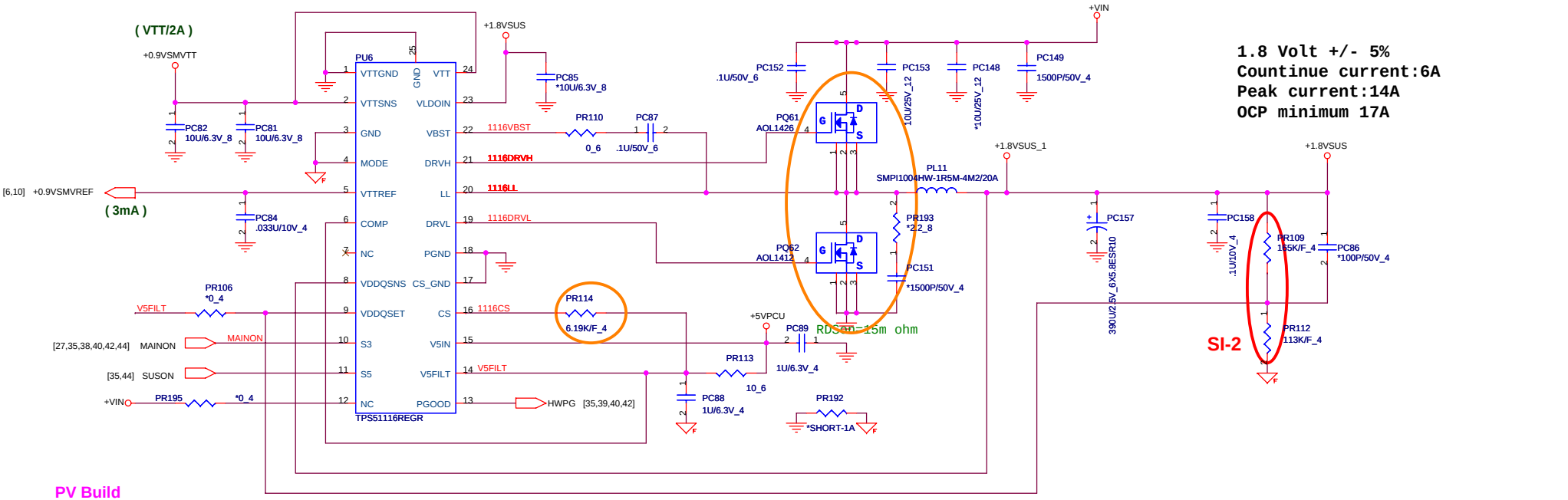
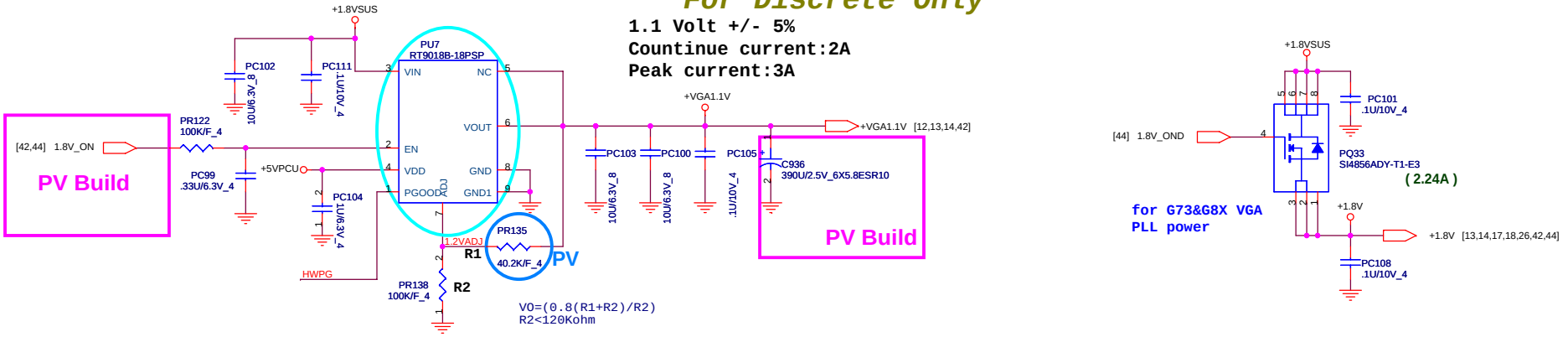


PV Build

Change PR122 tied to 1.8V_ON as power sequence reuqest



NB5

PROJECT : QT6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	1.8V/DDR_VTER/+1.8v/+1.1V	3A

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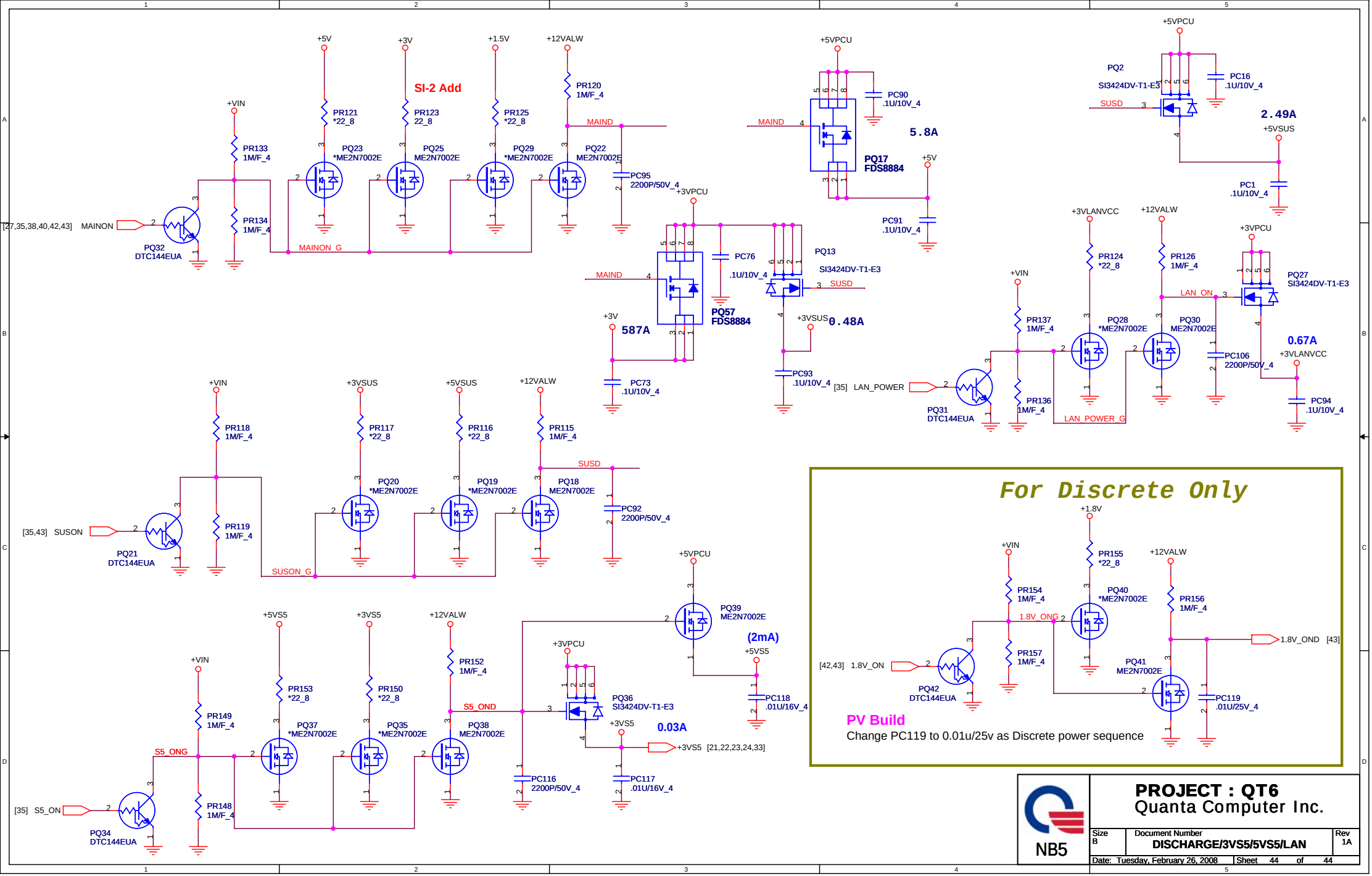
SI-2 Add
+5V
+3V
+1.5V
+12VALW
+VIN
PR121 *22_8
PR123 22_8
PR125 *22_8
PR120 1M/F_4
PR133 1M/F_4
PR134 1M/F_4
PQ23 *ME2N7002E
PQ25 ME2N7002E
PQ29 *ME2N7002E
PQ22 ME2N7002E
MAINON
[27,35,38,40,42,43] MAINON
PQ32 DTC144EUA
MAINON_G
MAIND
PC95 2200P/50V_4
+5VPCU
PC90 .1U/10V_4
PC91 .1U/10V_4
5.8A
PQ17 FDS8884
+3VPCU
PC76 .1U/10V_4
PQ57 FDS8884
PQ13 SI3424DV-T1-E3
SUSD
+3VSUS
0.48A
+3V
587A
PC73 .1U/10V_4
PC93 .1U/10V_4
[35] LAN_POWER
PQ31 DTC144EUA
PQ2 SI3424DV-T1-E3
PC16 .1U/10V_4
2.49A
+5VSUS
PC1 .1U/10V_4
+3VLANVCC
+12VALW
PR124 *22_8
PR126 1M/F_4
PR137 1M/F_4
PR136 1M/F_4
PQ28 *ME2N7002E
PQ30 ME2N7002E
LAN_ON
PQ27 SI3424DV-T1-E3
PC106 2200P/50V_4
0.67A
PC94 .1U/10V_4
LAN_POWER_G
[35,43] SUSON
PQ21 DTC144EUA
PR118 1M/F_4
PR119 1M/F_4
PR117 *22_8
PR116 *22_8
PR115 1M/F_4
PQ20 *ME2N7002E
PQ19 *ME2N7002E
PQ18 ME2N7002E
SUSD
PC92 2200P/50V_4
SUSON_G
For Discrete Only
+1.8V
PR155 *22_8
PR154 1M/F_4
PR157 1M/F_4
PR156 1M/F_4
PQ40 *ME2N7002E
PQ41 ME2N7002E
1.8V_ONG
[42,43] 1.8V_ON
PQ42 DTC144EUA
1.8V_OND [43]
PC119 .01U/25V_4
PV Build
Change PC119 to 0.01u/25v as Discrete power sequence
+5VS5
+3VS5
PR153 *22_8
PR150 *22_8
PR152 1M/F_4
PR149 1M/F_4
PR148 1M/F_4
PQ37 *ME2N7002E
PQ35 *ME2N7002E
PQ38 ME2N7002E
S5_ONG
S5_OND
PQ39 ME2N7002E
(2mA)
PC118 .01U/16V_4
PQ36 SI3424DV-T1-E3
0.03A
+3VS5 [21,22,23,24,33]
PC116 2200P/50V_4
PC117 .01U/16V_4
[35] S5_ON
PQ34 DTC144EUA
PROJECT : QT6
Quanta Computer Inc.
NB5
Size B
Document Number DISCHARGE/3VS5/5VS5/LAN
Rev 1A
Date: Tuesday, February 26, 2008
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