Soyuz 3.0 SYSTEM DIAGRAM

AMD Smarter Choice

01

PCB STACK UP

- LAYER 1 : TOP
- LAYER 2 : SGND1
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : IN3
- LAYER 7 : SGND2
- LAYER 8 : BOT

DDRII-SODIMM1 PAGE 8,9 — DDRII 667/800 MHz

DDRII-SODIMM2 PAGE 8,9 — DDRII 667/800 MHz

AMD Griffin Lion Sabie
S1G2 Processor
638P (uPGA)/35W
PAGE 5,6,7

CPU THERMAL SENSOR PAGE 7

14.318MHz

CLOCK GEN
ICS9LPRS476AKLFT-->HP
SLG8SP626VTR-->HP
RTM880N-795 -->HP
PAGE 4

CPU_CLK
NBGFX_CLK
NBGPP_CLK
SBLINK_CLK

HT3

PCI-E

NORTH BRIDGE
RS780M
21mm X 21mm, 528pin BGA
PAGE 10,11,12,13

CRT PAGE 20

LVDS PAGE 19

Side port

256mb RAM PAGE 10

PCIE X4

SBSRC_CLK

(2.0/1.1)
Express Card x1
Cable Docking x1
WLAN X1
PAGE 28,32

2,4,8

Cable Docking PAGE 32
- TV_OUT
- VGA
- RJ-45
- CIR/Pwr btn
- SPDIF Out
- Stereo MIC
- Headphone Jack
- USB Port
- VOL Cntr

LAN
Realtek PCIE-LAN
RTL8111C
(10/100/GagaLAN)
PAGE 26,27

RJ45 PAGE 26

Express Card (NEW CARD) PAGE 28

Mini PCI-E Card (Wireless LAN/ROBSON/TV) PAGE 31

SATA - HDD PAGE 28 — SATA0 150MB

SATA - CD-ROM PAGE 28 — SATA0 150MB

SOUTH BRIDGE
SB700
21mm X 21mm, 528pin BGA
4.5W(Ext)
4.3W(Int)
PAGE 14,15.16.17.18

USB2.0

0,1,6	7	12	13	9	3
USB2.0 Ports X3 PAGE 25 (2.0/1.1)	**Camera** PAGE 19 (2.0)	**Fingerprint** PAGE 19 (1.1)	**Touch Screen** PAGE 19 (1.1)	**Bluetooth** PAGE 25 (2.0)	**Card Reader RTS5158** PAGE 21 (2.0)

Memory CardReader PAGE 21

Azalia

LPC

SYSTEM CHARGER(ISL6251A) PAGE 39

SYSTEM POWER MAX1631A PAGE 33

DDR II SMDDR_VTERM 1.8V/1.8VSUS PAGE 36

VCCP +1.1V AND +1.2V(RT8204) PAGE 34

CPU CORE ISL6265A PAGE 35

Keyboard PAGE 29

CIR X2 PAGE 30

Touch Pad PAGE 30

ENE KBC
KB3926 Cx
PAGE 30

FAN PAGE 32

SPI PAGE 30

MDC DAA PAGE 24

ALC268 PAGE 22

AUDIO Amplifier PAGE 23

Digital MIC PAGE 22

AUDIO CONN (Phone/ MIC) PAGE 22

SPEAKER Conn PAGE 23

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Block Diagram	1A

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INDEX

* --> Un-stuff (ex. *1K/04)

04-- 0402 footprint
06-- 0603 footprint
08-- 0805 footprint
12-- 1206 footprint
F-- 1% tolerance

Power & Ground

Label	ACTIVE	Description	Control Signal
+VIN	S0, S3, S4, S5	AC ADAPTER (18.5V)	
+BATT	S0, S3, S4, S5	MAIN BATTERY + (6.2V-8.4V)	
+AVBAT	S0, S3, S4, S5	RTC & KBC POWER (3.3V)	
+12VALW	S0, S3, S4, S5	+12V	
+VCORE	S0	CPU CORE POWER (0.375-1.5V)	VRON
+CPUVDDNB	S0	CPU CORE POWER (1.375-1.5V)	VRON
+1.1V_NB	S0	+1.1 to +1.0 DYN	VRON
+1.1V	S0	+1.1V	VRON
+1.2VS5	S0, S3, S4, S5		S5_ON
+1.2V	S0	+1.2V	VRON
+3V	S0		MAINON
+3VSUS	S0, S3		SUSON
+3VS5	S0, S3, S4, S5		S5_ON
+3VPCU	S0, S3, S4, S5	ALWAYS POWER (3V)	
+5V	S0		MAIND
+5VSUS	S0, S3		SUSON
+5VPCU	S0, S3, S4, S5	ALWAYS POWER (5V)	
+1.5V	S0		MAIND
+1.8VSUS	S0, S3	DDR CORE POWER	SUSON
+1.8V	S0		MAINON
+2.5V	S0	CPU VDDA	VR2.5_ON
+0.9VSMVTT	S0	DDR COMMAND & CONTROL PULL UP POWER	MAINON
+0.9VSMVREF_DIMM	S0, S3	DDR REF POWER	SUSON
+AVDD	S0	AUDIO ANALOG POWER (5V)	MAINON
+3VLANVCC	S0, S3, S4, S5	LAN Power	LAN_ON
GND	ALL PAGES	DIGITAL GROUND	
AGND		AUDIO GND	

SMBUS	SMBUS function define
SMBCLK0 SMBDAT0	DDR / DDR THER / CLOCK GEN (+3V)
SMBCLK1 SMBDAT1	Mini Card (+3VS5)
SMBCLK2 SMBDAT2	New CARD (+3VS5)

02

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	System Information	1A

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CPU Power Group A

EC Pin98
SUSON
→ +1.8VSUS → HWPG
→ +0.9VSMVTT

EC Pin102
VR2.5_ON
→ +2.5V

CPU Power Group B

EC Pin33
VR_ON
→ +VCORE0 → VRM_PWRGD
→ +VCORE1
→ +CPUVDDNB
→ +1.2V → HWPG

EC Pin101
S5_ON
→ Delay → S5_OND → +3VS5
EC Pin101
S5_ON
→ +1.2VS5

EC Pin98
SUSON
→ Delay → SUSD → +5VSUS
→ +3VSUS

EC Pin99
MAINON
→ Delay → MAIND → +5V
→ +3V

EC Pin33
VR_ON
→ +1.1V → HWPG

EC Pin33
VR_ON
→ +1.1V DYN → HWPG

EC Pin99
MAINON
→ +1.5V → HWPG

EC Pin99
MAINON
→ Delay → 1.8V_OND → +1.8V

EC Pin100
LAN_POWER
→ Delay → LAN_ON → +3VLANVCC

3VPCU/5VPCU
NBSWON1#
DNBSWON#
S5_ON
RSMRST#
SUSC
SUSB
SUSON
MAINON
VR_ON
VR2.5_ON
HWPG
VRM_PWRGD
ECPWROK
NB_PWRGD_IN
SB_PWRGD_IN
CPU CLK IN
CPU RESET
CPU POWER OK
CPU_LDTSTOP#

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Power control	1A

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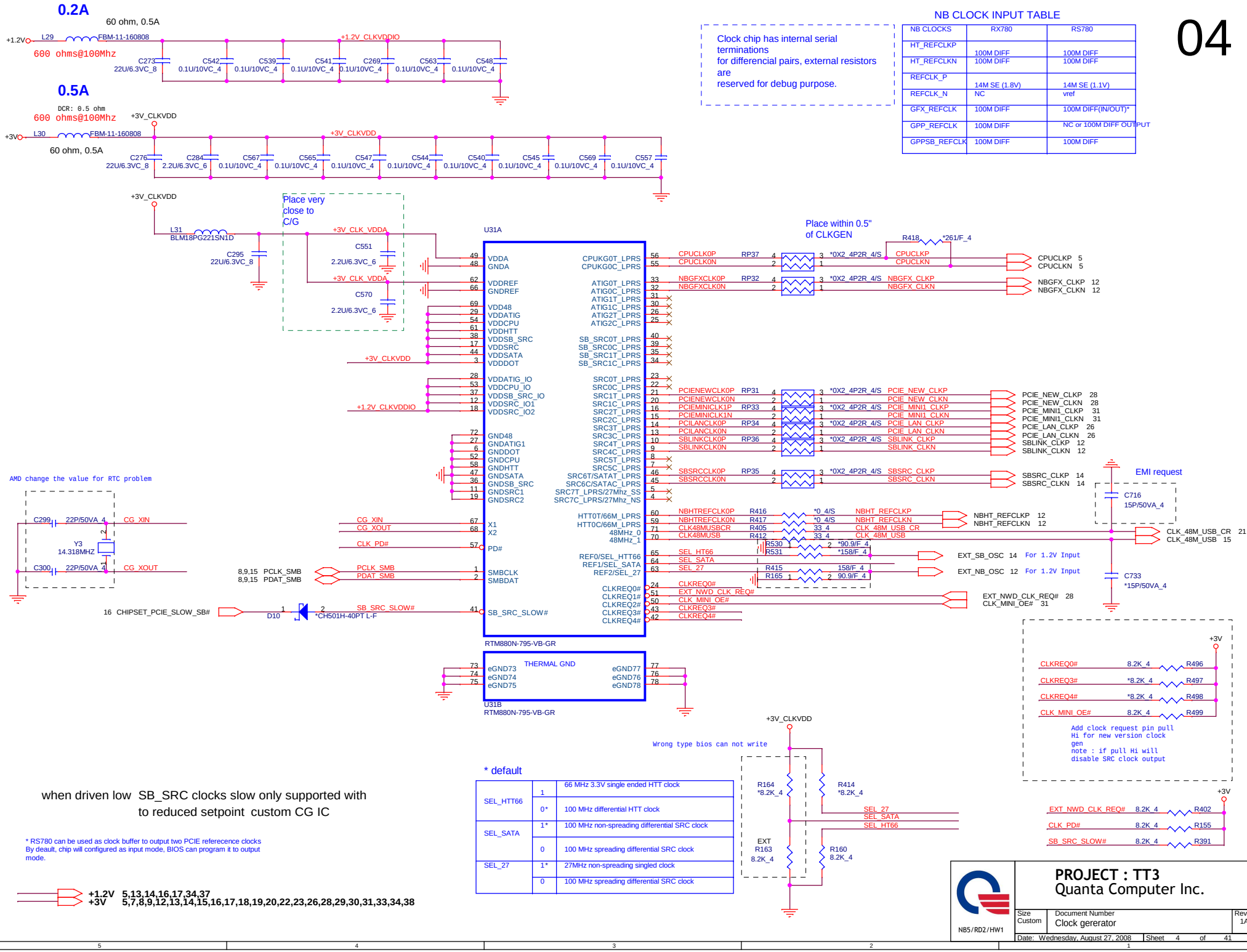
0.2A
60 ohm, 0.5A
+1.2V
L29
FBM-11-160808
600 ohms@100Mhz
+1.2V_CLKVDDIO
C273 22U/6.3VC_8
C542 0.1U/10VC_4
C539 0.1U/10VC_4
C541 0.1U/10VC_4
C269 0.1U/10VC_4
C563 0.1U/10VC_4
C548 0.1U/10VC_4
0.5A
DCR: 0.5 ohm
600 ohms@100Mhz
+3V_CLKVDD
+3V
L30
FBM-11-160808
60 ohm, 0.5A
C276 22U/6.3VC_8
C284 2.2U/6.3VC_6
C567 0.1U/10VC_4
C565 0.1U/10VC_4
C547 0.1U/10VC_4
C544 0.1U/10VC_4
C540 0.1U/10VC_4
C545 0.1U/10VC_4
C569 0.1U/10VC_4
C557 0.1U/10VC_4
Clock chip has internal serial terminations
for differencial pairs, external resistors are
reserved for debug purpose.
NB CLOCK INPUT TABLE
NB CLOCKS | RX780 | RS780
HT_REFCLKP | 100M DIFF | 100M DIFF
HT_REFCLKN | 100M DIFF | 100M DIFF
REFCLK_P | 14M SE (1.8V) | 14M SE (1.1V)
REFCLK_N | NC | vref
GFX_REFCLK | 100M DIFF | 100M DIFF(IN/OUT)*
GPP_REFCLK | 100M DIFF | NC or 100M DIFF OUTPUT
GPPSB_REFCLK | 100M DIFF | 100M DIFF
04
Place very close to C/G
L31
BLM18PG221SN1D
C295 22U/6.3VC_8
C551 2.2U/6.3VC_6
C570 2.2U/6.3VC_6
U31A
VDDA
GNDA
VDDREF
GNDREF
VDD48
VDDATIG
VDDCPU
VDDHTT
VDDSB_SRC
VDDSRC
VDDSATA
VDDDOT
VDDATIG_IO
VDDCPU_IO
VDDSB_SRC_IO
VDDSRC_IO1
VDDSRC_IO2
GND48
GNDATIG1
GNDDOT
GNDCPU
GNDHTT
GNDSATA
GNDSB_SRC
GNDSRC1
GNDSRC2
CPUKG0T_LPRS
CPUKG0C_LPRS
ATIG0T_LPRS
ATIG0C_LPRS
ATIG1T_LPRS
ATIG1C_LPRS
ATIG2T_LPRS
ATIG2C_LPRS
SB_SRC0T_LPRS
SB_SRC0C_LPRS
SB_SRC1T_LPRS
SB_SRC1C_LPRS
SRC0T_LPRS
SRC0C_LPRS
SRC1T_LPRS
SRC1C_LPRS
SRC2T_LPRS
SRC2C_LPRS
SRC3T_LPRS
SRC3C_LPRS
SRC4T_LPRS
SRC4C_LPRS
SRC5T_LPRS
SRC5C_LPRS
SRC6T/SATAT_LPRS
SRC6C/SATAC_LPRS
SRC7T_LPRS/27Mhz_SS
SRC7C_LPRS/27Mhz_NS
HTT0T/66M_LPRS
HTT0C/66M_LPRS
48MHz_0
48MHz_1
REF0/SEL_HTT66
REF1/SEL_SATA
REF2/SEL_27
CLKREQ0#
CLKREQ1#
CLKREQ2#
CLKREQ3#
CLKREQ4#
SMBCLK
SMBDAT
PD#
SB_SRC_SLOW#
RTM880N-795-VB-GR
THERMAL GND
eGND73
eGND74
eGND75
eGND77
eGND76
eGND78
U31B
RTM880N-795-VB-GR
Place within 0.5" of CLKGEN
CPUCLK0P
CPUCLK0N
NBGFXCLK0P
NBGFXCLK0N
PCIENEWCLK0P
PCIENEWCLK0N
PCIEMINICLK1P
PCIEMINICLK1N
PCILANCLK0P
PCILANCLK0N
SBLINKCLK0P
SBLINKCLK0N
SBSRCCLK0P
SBSRCCLK0N
NBHTREFCLK0P
NBHTREFCLK0N
CLK48MUSBCR
CLK48MUSB
SEL_HT66
SEL_SATA
SEL_27
CLKREQ0#
EXT_NWD_CLK_REQ#
CLK_MINI_OE#
CLKREQ3#
CLKREQ4#
RP37
RP32
RP31
RP33
RP34
RP36
RP35
R416
R417
R405
R412
R530
R531
R415
R165
R418
*261/F_4
*0X2_4P2R_4/S
*0_4/S
33_4
*90.9/F_4
*158/F_4
158/F_4
CPUCLKP
CPUCLKN
NBGFX_CLKP
NBGFX_CLKN
PCIE_NEW_CLKP
PCIE_NEW_CLKN
PCIE_MINI1_CLKP
PCIE_MINI1_CLKN
PCIE_LAN_CLKP
PCIE_LAN_CLKN
SBLINK_CLKP
SBLINK_CLKN
SBSRC_CLKP
SBSRC_CLKN
NBHT_REFCLKP
NBHT_REFCLKN
CLK_48M_USB_CR
CLK_48M_USB
EMI request
C716 15P/50VA_4
C733 *15P/50VA_4
EXT_SB_OSC 14 For 1.2V Input
EXT_NB_OSC 12 For 1.2V Input
EXT_NWD_CLK_REQ# 28
CLK_MINI_OE# 31
AMD change the value for RTC problem
C299 22P/50VA_4
C300 22P/50VA_4
Y3 14.318MHZ
CG_XIN
CG_XOUT
CLK_PD#
8,9,15 PCLK_SMB
8,9,15 PDAT_SMB
PCLK_SMB
PDAT_SMB
16 CHIPSET_PCIE_SLOW_SB#
D10 *CH501H-40PT L-F
SB_SRC_SLOW#
Wrong type bios can not write
+3V_CLKVDD
R164 *8.2K_4
R414 *8.2K_4
R163 8.2K_4
R160 8.2K_4
EXT
SEL_27
SEL_SATA
SEL_HT66
CLKREQ0# 8.2K_4 R496
CLKREQ3# *8.2K_4 R497
CLKREQ4# *8.2K_4 R498
CLK_MINI_OE# 8.2K_4 R499
Add clock request pin pull Hi for new version clock gen
note : if pull Hi will disable SRC clock output
EXT_NWD_CLK_REQ# 8.2K_4 R402
CLK_PD# 8.2K_4 R155
SB_SRC_SLOW# 8.2K_4 R391
* default
SEL_HTT66: 1 66 MHz 3.3V single ended HTT clock; 0* 100 MHz differential HTT clock
SEL_SATA: 1* 100 MHz non-spreading differential SRC clock; 0 100 MHz spreading differential SRC clock
SEL_27: 1* 27MHz non-spreading singled clock; 0 100 MHz spreading differential SRC clock
when driven low SB_SRC clocks slow only supported with to reduced setpoint custom CG IC
* RS780 can be used as clock buffer to output two PCIE refererence clocks By deault, chip will configured as input mode, BIOS can program it to output mode.
+1.2V 5,13,14,16,17,34,37
+3V 5,7,8,9,12,13,14,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38
NB5/RD2/HW1
PROJECT : TT3
Quanta Computer Inc.
Size Custom
Document Number Clock gererator
Rev 1A
Date: Wednesday, August 27, 2008
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+1.2V 4,13,14,16,17,34,37
+1.8V 10,12,13,14,15,18,31,36,38
+1.8VSUS 6,7,8,9,31,35,36,37
+2.5V 37
+3V 4,7,8,9,12,13,14,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38

+2.5V — L8 BLM21PG221SN1D LS0805-100M-N — +CPUVDDA
C74 10U/6.3VC_8 | C80 4.7U/6.3VC_6 | C86 0.22U/6.3VC_4 | C94 3300P/25VB_4

W/S= 15 mil/20mil

U27A — HT LINK

C130 4.7U/6.3VC_6 +1.2V_VLDT
C121 4.7U/6.3VC_6 +1.2V_VLDT
C129 0.22U/6.3VC_4 +1.2V_VLDT
180P/50VA_4 +1.2V_VLDT

VLDT_A0	D1	VLDT_B0	AE2	+1.2V_VLDT	4.7U/6.3VC_6 C223
VLDT_A1	D2	VLDT_B1	AE3	+1.2V_VLDT	0.22U/6.3VC_4 C226
VLDT_A2	D3	VLDT_B2	AE4	+1.2V_VLDT	180P/50VA_4 C224
VLDT_A3	D4	VLDT_B3	AE5	+1.2V_VLDT	

HT_NB_CPU_CAD_H0	E3	L0_CADIN_H0	L0_CADOUT_H0	AD1 HT_CPU_NB_CAD_H0
HT_NB_CPU_CAD_L0	E2	L0_CADIN_L0	L0_CADOUT_L0	AC1 HT_CPU_NB_CAD_L0
HT_NB_CPU_CAD_H1	E1	L0_CADIN_H1	L0_CADOUT_H1	AC2 HT_CPU_NB_CAD_H1
HT_NB_CPU_CAD_L1	F1	L0_CADIN_L1	L0_CADOUT_L1	AC3 HT_CPU_NB_CAD_L1
HT_NB_CPU_CAD_H2	G3	L0_CADIN_H2	L0_CADOUT_H2	AB1 HT_CPU_NB_CAD_H2
HT_NB_CPU_CAD_L2	G2	L0_CADIN_L2	L0_CADOUT_L2	AA1 HT_CPU_NB_CAD_L2
HT_NB_CPU_CAD_H3	G1	L0_CADIN_H3	L0_CADOUT_H3	AA2 HT_CPU_NB_CAD_H3
HT_NB_CPU_CAD_L3	H1	L0_CADIN_L3	L0_CADOUT_L3	AA3 HT_CPU_NB_CAD_L3
HT_NB_CPU_CAD_H4	J1	L0_CADIN_H4	L0_CADOUT_H4	W2 HT_CPU_NB_CAD_H4
HT_NB_CPU_CAD_L4	K1	L0_CADIN_L4	L0_CADOUT_L4	W3 HT_CPU_NB_CAD_L4
HT_NB_CPU_CAD_H5	L3	L0_CADIN_H5	L0_CADOUT_H5	V1 HT_CPU_NB_CAD_H5
HT_NB_CPU_CAD_L5	L2	L0_CADIN_L5	L0_CADOUT_L5	U1 HT_CPU_NB_CAD_L5
HT_NB_CPU_CAD_H6	L1	L0_CADIN_H6	L0_CADOUT_H6	U2 HT_CPU_NB_CAD_H6
HT_NB_CPU_CAD_L6	M1	L0_CADIN_L6	L0_CADOUT_L6	U3 HT_CPU_NB_CAD_L6
HT_NB_CPU_CAD_H7	N3	L0_CADIN_H7	L0_CADOUT_H7	T1 HT_CPU_NB_CAD_H7
HT_NB_CPU_CAD_L7	N2	L0_CADIN_L7	L0_CADOUT_L7	R1 HT_CPU_NB_CAD_L7
HT_NB_CPU_CAD_H8	E5	L0_CADIN_H8	L0_CADOUT_H8	AD4 HT_CPU_NB_CAD_H8
HT_NB_CPU_CAD_L8	F5	L0_CADIN_L8	L0_CADOUT_L8	AD3 HT_CPU_NB_CAD_L8
HT_NB_CPU_CAD_H9	F3	L0_CADIN_H9	L0_CADOUT_H9	AD5 HT_CPU_NB_CAD_H9
HT_NB_CPU_CAD_L9	F4	L0_CADIN_L9	L0_CADOUT_L9	AC5 HT_CPU_NB_CAD_L9
HT_NB_CPU_CAD_H10	G5	L0_CADIN_H10	L0_CADOUT_H10	AB4 HT_CPU_NB_CAD_H10
HT_NB_CPU_CAD_L10	H5	L0_CADIN_L10	L0_CADOUT_L10	AB3 HT_CPU_NB_CAD_L10
HT_NB_CPU_CAD_H11	H3	L0_CADIN_H11	L0_CADOUT_H11	AB5 HT_CPU_NB_CAD_H11
HT_NB_CPU_CAD_L11	H4	L0_CADIN_L11	L0_CADOUT_L11	AA5 HT_CPU_NB_CAD_L11
HT_NB_CPU_CAD_H12	K3	L0_CADIN_H12	L0_CADOUT_H12	Y5 HT_CPU_NB_CAD_H12
HT_NB_CPU_CAD_L12	K4	L0_CADIN_L12	L0_CADOUT_L12	W5 HT_CPU_NB_CAD_L12
HT_NB_CPU_CAD_H13	L5	L0_CADIN_H13	L0_CADOUT_H13	V4 HT_CPU_NB_CAD_H13
HT_NB_CPU_CAD_L13	M5	L0_CADIN_L13	L0_CADOUT_L13	V3 HT_CPU_NB_CAD_L13
HT_NB_CPU_CAD_H14	M3	L0_CADIN_H14	L0_CADOUT_H14	V5 HT_CPU_NB_CAD_H14
HT_NB_CPU_CAD_L14	M4	L0_CADIN_L14	L0_CADOUT_L14	U5 HT_CPU_NB_CAD_L14
HT_NB_CPU_CAD_H15	N5	L0_CADIN_H15	L0_CADOUT_H15	T4 HT_CPU_NB_CAD_H15
HT_NB_CPU_CAD_L15	P5	L0_CADIN_L15	L0_CADOUT_L15	T3 HT_CPU_NB_CAD_L15

C484

HT_NB_CPU_CLK_H0	J3	L0_CLKIN_H0	L0_CLKOUT_H0	Y1 HT_CPU_NB_CLK_H0
HT_NB_CPU_CLK_L0	J2	L0_CLKIN_L0	L0_CLKOUT_L0	W1 HT_CPU_NB_CLK_L0
HT_NB_CPU_CLK_H1	J5	L0_CLKIN_H1	L0_CLKOUT_H1	Y4 HT_CPU_NB_CLK_H1
HT_NB_CPU_CLK_L1	K5	L0_CLKIN_L1	L0_CLKOUT_L1	Y3 HT_CPU_NB_CLK_L1

HT_NB_CPU_CTL_H0	N1	L0_CTLIN_H0	L0_CTLOUT_H0	R2 HT_CPU_NB_CTL_H0
HT_NB_CPU_CTL_L0	P1	L0_CTLIN_L0	L0_CTLOUT_L0	R3 HT_CPU_NB_CTL_L0
HT_NB_CPU_CTL_H1	P3	L0_CTLIN_H1	L0_CTLOUT_H1	T5 HT_CPU_NB_CTL_H1
HT_NB_CPU_CTL_L1	P4	L0_CTLIN_L1	L0_CTLOUT_L1	R5 HT_CPU_NB_CTL_L1

SOCKET_638_PIN

10 HT_NB_CPU_CAD_H[15..0] — HT_NB_CPU_CAD_H[15..0]
10 HT_NB_CPU_CAD_L[15..0] — HT_NB_CPU_CAD_L[15..0]
10 HT_NB_CPU_CLK_H[1..0] — HT_NB_CPU_CLK_H[1..0]
10 HT_NB_CPU_CLK_L[1..0] — HT_NB_CPU_CLK_L[1..0]
10 HT_NB_CPU_CTL_H[1..0] — HT_NB_CPU_CTL_H[1..0]
10 HT_NB_CPU_CTL_L[1..0] — HT_NB_CPU_CTL_L[1..0]
10 HT_CPU_NB_CAD_H[15..0] — HT_CPU_NB_CAD_H[15..0]
10 HT_CPU_NB_CAD_L[15..0] — HT_CPU_NB_CAD_L[15..0]
10 HT_CPU_NB_CLK_H[1..0] — HT_CPU_NB_CLK_H[1..0]
10 HT_CPU_NB_CLK_L[1..0] — HT_CPU_NB_CLK_L[1..0]
10 HT_CPU_NB_CTL_H[1..0] — HT_CPU_NB_CTL_H[1..0]
10 HT_CPU_NB_CTL_L[1..0] — HT_CPU_NB_CTL_L[1..0]

1.5A

+1.2V — R336 *0_8/S — +1.2V_VLDT
R337 *0_8/S +1.2V_VLDT

250mA

U27D

+CPUVDDA	F8	VDDA1	KEY1	M11
+CPUVDDA	F9	VDDA2	KEY2	W18
CPUCLKIN	A9	CLKIN_H	SVC	A6 CPU_SVC_R
CPUCLKIN#	A8	CLKIN_L	SVD	A4 CPU_SVD_R
		RESET_L		
14 CPU_LDT_RST#	B7	PWROK		
14 CPU_PWRGD	A7	LDTSTOP_L	THERMTRIP_L	AF6 CPU_THERMTRIP_L#
12,14 CPU_LDT_STOP#	F10	LDTREQ_L	PROCHOT_L	AC7 CPU_PROCHOT_L# → CPU_PROCHOT_L# 32
CPU_LDT_REQ#_CPU	C6		MEMHOT_L	AA8 CPU_MEMHOT_L#
		SIC		
		SID		
		ALERT_L	THERMDC	W7 H_THRMDC → H_THRMDC 7
			THERMDA	W8 H_THRMDA → H_THRMDA 7
		HT_REF0		
		HT_REF1		
		VDD0_FB_H	VDDIO_FB_H	W9 VDDIO_FB_H → VDDIO_FB_H 36
		VDD0_FB_L	VDDIO_FB_L	Y9 VDDIO_FB_L → VDDIO_FB_L 36
		VDD1_FB_H	VDDNB_FB_H	H6 → CPU_VDDNB_RUN_FB_H 35
		VDD1_FB_L	VDDNB_FB_L	G6 → CPU_VDDNB_RUN_FB_L 35
		DBRDY		
		TMS	DBREQ_L	F10 CPU_DBREQ# R503 300/F_4 +1.8VSUS
		TCK		
		TRST_L	TDO	AF9 CPU_TDO
		TDI		
		TEST23	TEST28_H	J7 CPUTEST28H T20
		TEST18	TEST28_L	H8 CPUTEST28L T17
		TEST19	TEST17	D7 CPUTEST17 T12
			TEST16	E7 CPUTEST16 T13
		TEST25_H	TEST15	F7 CPUTEST15 T14
		TEST25_L	TEST14	C7 CPUTEST14 T11
		TEST21	TEST7	C3
		TEST20	TEST10	K8
		TEST24		
		TEST22	TEST8	C4
		TEST12		
		TEST27		
		TEST9	TEST29_H	C9 CPUTEST29H T3
		TEST6	TEST29_L	C8 CPUTEST29L T2
		RSVD1	RSVD10	H18
		RSVD2	RSVD9	H19
		RSVD3	RSVD8	AA7
		RSVD4	RSVD7	D5
		RSVD5	RSVD6	C5

SideBand Temp sense I2C

7 CPU_SIC — CPU_SIC AF4
7 CPU_SID — CPU_SID AF5
7 CPU_ALERT — CPU_ALERT AE6

R127 44.2/F_4 CPU_HTREF0 R6
+1.2V_VLDT — R121 44.2/F_4 CPU_HTREF1 P6
place them to CPU within 1.5"

35 CPU_VDD0_RUN_FB_H — F6
35 CPU_VDD0_RUN_FB_L — E6
35 CPU_VDD1_RUN_FB_H — Y6
35 CPU_VDD1_RUN_FB_L — AB6

CPU_DBRDY G10
CPU_TMS AA9
CPU_TCK AC9
CPU_TRST# AD9
CPU_TDI AF9

R516 300/F_4 CPUTEST23 AD7
T16 CPUTEST18 H10
T21 CPUTEST19 G9
R353 300/F_4 CPUTEST25H E9
+1.8VSUS — R354 300/F_4 CPUTEST25L E8
R504 300/F_4 CPUTEST21 AB8
R537 300/F_4 CPUTEST20 AF7
R505 300/F_4 CPUTEST24 AE7
R517 *300/F_4 CPUTEST22 AE8
CPUTEST12 AC8
+1.8VSUS — R529 300/F_4 CPUTEST27 AF8
R351 0_4 C2
AA6

Need check

A3 A5 B3 B5 C1

SOCKET_638_PIN

Serial VID

R63 *2.2K_4
R72 1K/F_4
+1.8VSUS — R331 1K/F_4
CPU_SVC_R R330 *0_4/S CPU_SVC
CPU_SVD_R R73 *0_4/S CPU_SVD
CPU_PWRGD R75 *0_4/S CPU_PWRGD_SVID_REG
R329 *220_4
R71 *220_4
R76 *220_4

CPU_SVC 35
CPU_SVD 35
CPU_PWRGD_SVID_REG 35

VFIX MODE — VID Override Circuit

SVC	SVD	Voltage Output
0	0	1.4V
0	1	1.2V
1	0	1.0V
1	1	0.8V

+1.8VSUS — C682 *0.1U/10VC_4 — +3VPCU
C683 *0.1U/10VC_4

CNTR_VREF — CNTR_VREF 7
C499 0.1U/10VC_4
+3V — R358 20K_4 — R357 34.8K/F_4
CNTR_VREF

Q33 *BSS138_NL/SOT23
CPU_LDT_REQ#_CPU 1 — 3 CPU_LDT_REQ# 12
R355 *0_4/S

R339 *0_4/S
CPU_LDT_RST# 1 — 2 Q32 BSS138_NL/SOT23 3 — CPU_LDT_RST_HTPA#
R340 1K/F_4 +3V

+1.8VSUS — R112 10K/F_4
+1.8VSUS — R114 300_4
CPU_MEMHOT_L# 3 — 2 Q11 MMBT3904 1 — CPU_MEMHOT# 9,15

+1.8VSUS — R136 10K/F_4
+1.8VSUS — R132 300_4
CPU_PROCHOT_L# 1 — 2 Q17 MMBT3904 3 — CPU_PROCHOT# 14

+1.8VSUS — R118 10K/F_4
+1.8VSUS — R119 300_4
CPU_THERMTRIP_L# 1 — 2 Q12 MMBT3904 3 — CPU_THERMTRIP# 15

AMD use +1.8V
+1.8V
CPU_LDT_RST# 300_4 R349
CPU_LDT_STOP# 300_4 R352
CPU_PWRGD 300_4 R74
CPU_LDT_REQ#_CPU 300_4 R356
G3
2 — 1 CPU_LDT_RST#
*SHORT_ PAD1

CPU CLK

4 CPUCLKP — CPUCLKP C477 3900P/25VB_4 CPUCLKIN
4 CPUCLKN — CPUCLKN C475 3900P/25VB_4 CPUCLKIN#
CPUCLKIN R332 169/F_4 CPUCLKIN#

Keep trace from resisor to CPU within 0.6"
keep trace from caps to CPU within 1.2"

HDT Connector

+1.8VSUS
CPU_DBREQ#
CPU_DBRDY
CPU_TCK
CPU_TMS
CPU_TDI
CPU_TRST#
CPU_TDO
C275 *0.1U/10VC_4
KEY
CPU_LDT_RST_HTPA#
CN6 *HDT CONN
<FUN>

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	S1G2 HT,CTL I/F 1/3	1A

Date: Wednesday, August 27, 2008 Sheet 5 of 41

Processor Memory Interface

06

PLACE THEM CLOSE TO CPU WITHIN 1"

750mA

U27B

SOCKET_638_PIN

U27C

MEM:DATA

SOCKET_638_PIN

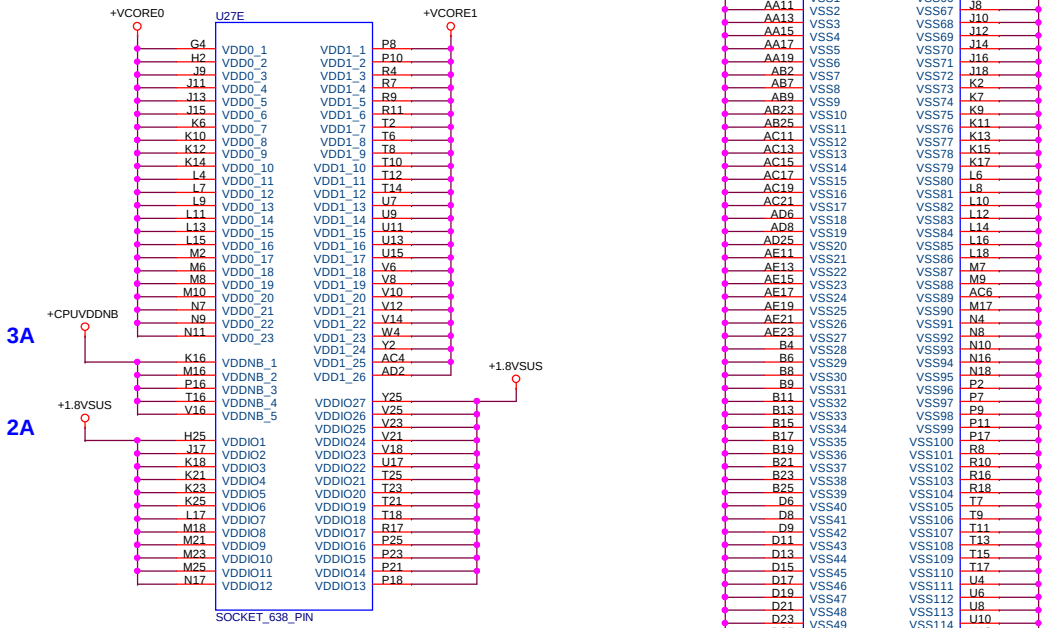
Place close to socket

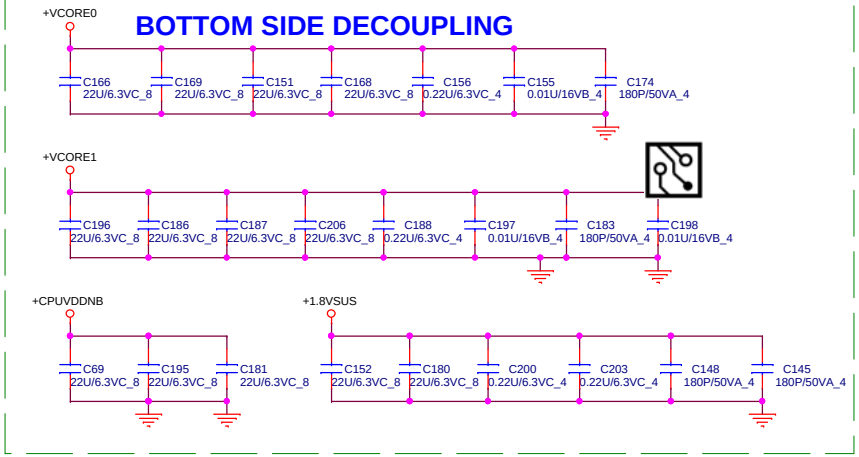
Close to CPU within 1500 mils

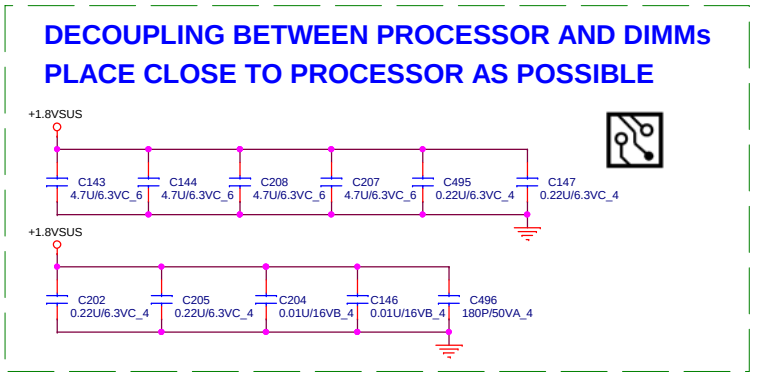
+0.9VSMVTT 9,31,36
+1.8VSUS 5,7,8,9,31,35,36,37

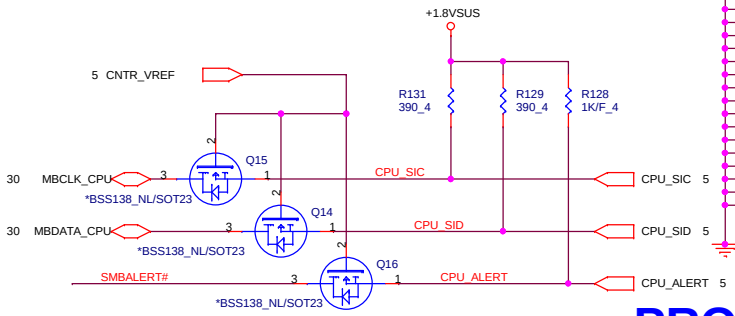
PROJECT : TT3	
Quanta Computer Inc.	
Size: Custom	Document Number: S1G2 DDRII MEMORY I/F 2/3
Rev: 1A	
NB5/RD2/HW1	Date: Wednesday, August 27, 2008 Sheet 6 of 41

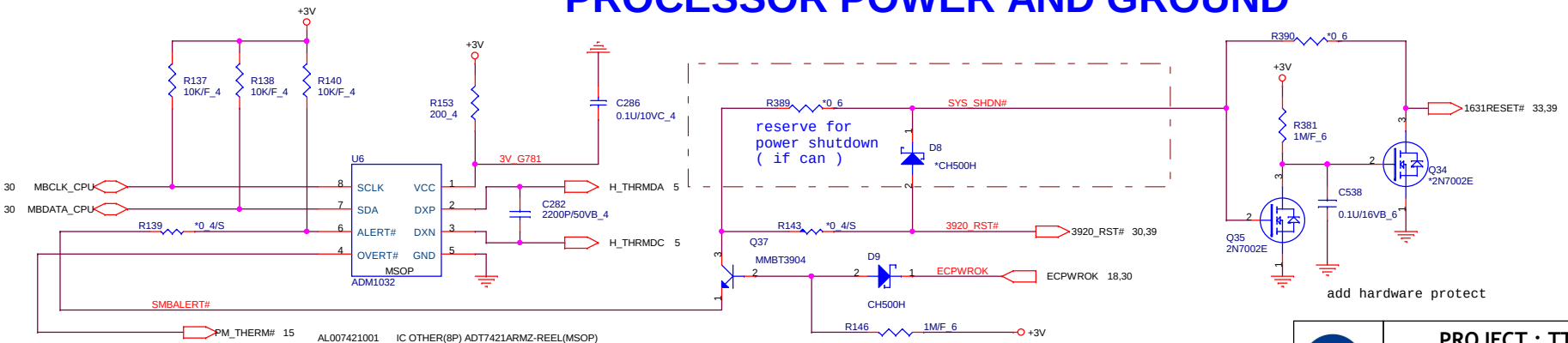
PROCESSOR POWER AND GROUND









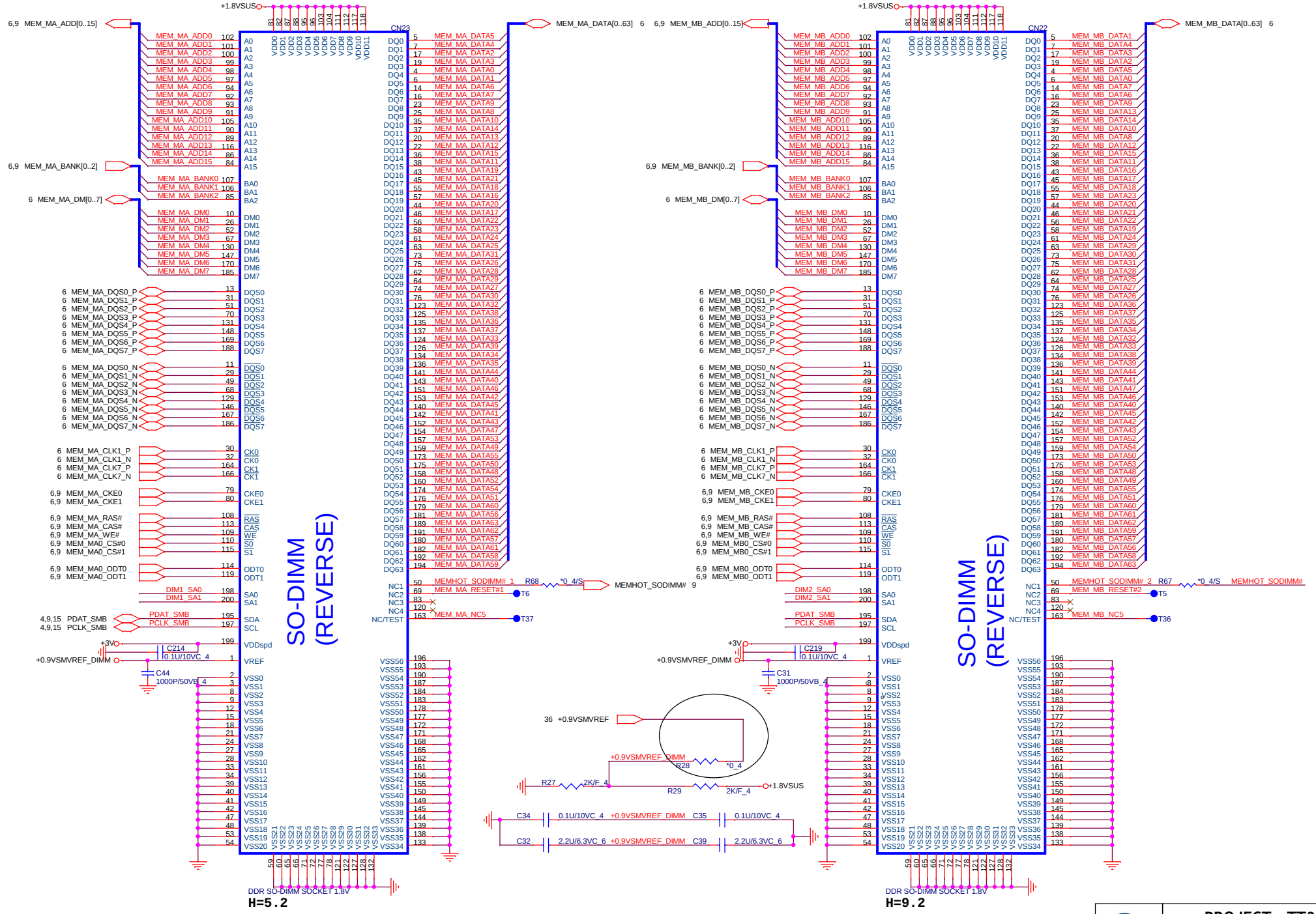


AL007421001 IC OTHER(8P) ADT7421ARMZ-REEL(MSOP)

AL006648012 IC(8P) MAX6648MUA+(SOP)LF

+VCORE0 35
+VCORE1 35
+CPUVDDNB35
+1.8VSUS 5,6,8,9,31,35,36,37
+3V 4,5,8,9,12,13,14,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38

NB5/RD2/HW1	**PROJECT : TT3** Quanta Computer Inc.	
Size: Custom	Document Number: S1G2 PWR & GND 3/3	Rev: 1A
Date: Wednesday, August 27, 2008	Sheet 7 of 41	



PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR2 SODIMMS: A/B CHANNEL	1A

NB5/RD2/HW1

Date: Wednesday, August 27, 2008 Sheet 8 of 41

6,8 MEM_MA_ADD[0..15] → MEM_MA_ADD[0..15]
6,8 MEM_MA_BANK[0..2] → MEM_MA_BANK[0..2]

6,8 MEM_MB_ADD[0..15] → MEM_MB_ADD[0..15]
6,8 MEM_MB_BANK[0..2] → MEM_MB_BANK[0..2]

+0.9VSMVTT

6,8 MEM_MA_CKE0 — RP5, RP9, RP12, RP16, RP18, RP22, RP27, RP2
6,8 MEM_MA_WE#
6,8 MEM_MA_CS#1
6,8 MEM_MA_CAS#
6,8 MEM_MA0_ODT1
6,8 MEM_MA_CKE1 — RP6, RP10, RP14, RP26
6,8 MEM_MA0_ODT0
6,8 MEM_MA0_CS#0
6,8 MEM_MA_RAS# — RP19, RP23

MEM_MA_CKE0 MEM_MA_BANK2 MEM_MA_ADD12 MEM_MA_ADD9 MEM_MA_ADD8 MEM_MA_ADD5 MEM_MA_ADD3 MEM_MA_ADD1 MEM_MA_BANK0 MEM_MA_ADD10 MEM_MA_WE# MEM_MA_CS#1 MEM_MA_CAS# MEM_MA_ODT1 MEM_MA_ADD15 MEM_MA_CKE1 MEM_MA_ADD14 MEM_MA_ADD7 MEM_MA_ADD6 MEM_MA_ADD11 MEM_MA_ADD2 MEM_MA_ADD4 MEM_MA0_ODT0 MEM_MA0_CS#0 MEM_MA_RAS# MEM_MA_ADD0 MEM_MA_ADD13 MEM_MA_BANK1

47RX2_4P2R_4

C115 C107 C116 C135 C157 C104 C128 C150 C110 C106 C100 C158 C141 C160 C138 C108 — 0.1U/10VC_4

+1.8VSUS

PLACE CLOSE TO PROCESSOR
WITHIN 1.5 INCH

6,8 MEM_MB_CKE0 — RP3, RP7, RP11, RP15, RP20, RP24, RP28, RP4
6,8 MEM_MB_WE#
6,8 MEM_MB_CAS#
6,8 MEM_MB0_ODT1
6,8 MEM_MB0_CS#1
6,8 MEM_MB_CKE1 — RP1, RP8, RP13, RP17, RP21, RP25
6,8 MEM_MB_CS#0
6,8 MEM_MB_RAS#
6,8 MEM_MB0_ODT0

MEM_MB_CKE0 MEM_MB_BANK2 MEM_MB_ADD9 MEM_MB_ADD12 MEM_MB_ADD8 MEM_MB_ADD5 MEM_MB_ADD3 MEM_MB_ADD1 MEM_MB_BANK0 MEM_MB_ADD10 MEM_MB_WE# MEM_MB_CAS# MEM_MB0_ODT1 MEM_MB0_CS#1 MEM_MB_ADD7 MEM_MB_ADD14 MEM_MB_CKE1 MEM_MB_ADD15 MEM_MB_ADD4 MEM_MB_ADD11 MEM_MB_ADD2 MEM_MB_ADD6 MEM_MB_BANK1 MEM_MB_ADD0 MEM_MB0_CS#0 MEM_MB_RAS# MEM_MB_ADD13 MEM_MB0_ODT0

47RX2_4P2R_4

C132 C490 C140 C120 C131 C109 C118 C111 C102 C123 C153 C98 C134 C119 C165 — 0.1U/10VC_4

+1.8VSUS

PLACE CLOSE TO PROCESSOR
WITHIN 1.5 INCH

Emi request

+0.9VSMVTT
C220 100P/50VA_4
C79 *1200P/50VB_4
C222 *2200P/50VB_4
C77 100P/50VA_4
C221 0.1U/10VC_4
C78 0.1U/10VC_4

+1.8VSUS
C498 C137 C494 C105 C482 C488 — 0.1U/10VC_4

PLACE CLOSE TO SOCKET(PER EMI/EMC)

+1.8VSUS
C489 C486 C501 C125 C491 C112 — 0.1U/10VC_4

PLACE CLOSE TO SOCKET(PER EMI/EMC)

Remove

Close DDR2 socket

+3VS5 for leakage
+3VS5
R115 10K/F_4
+3V
R116 *10K/F_4
CPU_MEMHOT# 5,15
MEMHOT_1# R113 *33_4 MEMHOT_2#
Q10 *2N7002E-G
Q13 *2N7002E-G

U28
A0 A1 A2 SDA SCL +VS O.S GND
C215 *0.1U/10VC_4
MEMHOT_SODIMM#
PDAT_SMB
PCLK_SMB
4,8,15 PDAT_SMB
4,8,15 PCLK_SMB
*DS75U+T&R
Address:92h

+3V R117 10K/F_4 MEMHOT_SODIMM# → MEMHOT_SODIMM# 8

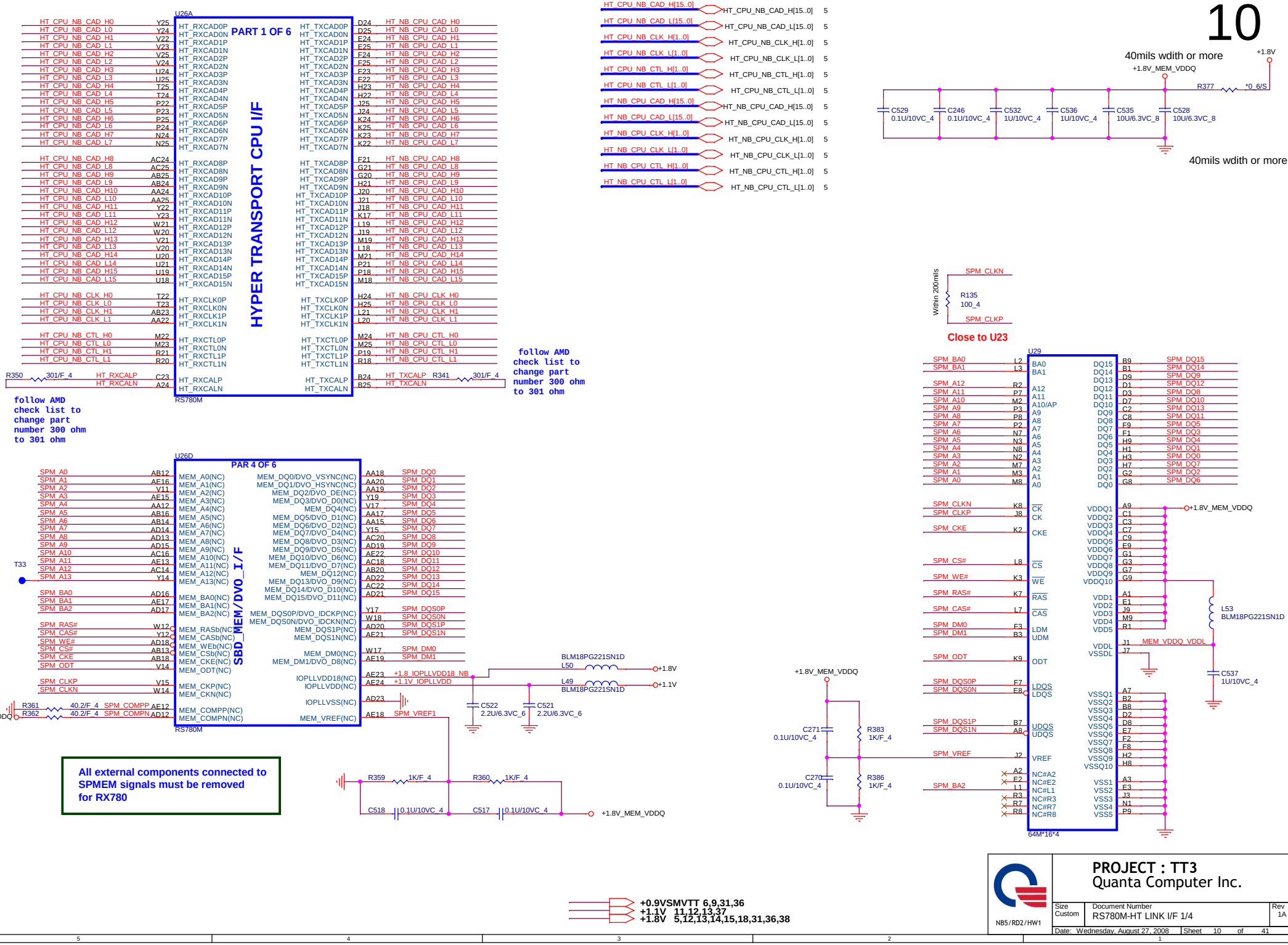
+0.9VSMVTT 6,31,36
+1.8VSUS 5,6,7,8,31,35,36,37
+3V 4,5,7,8,12,13,14,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38

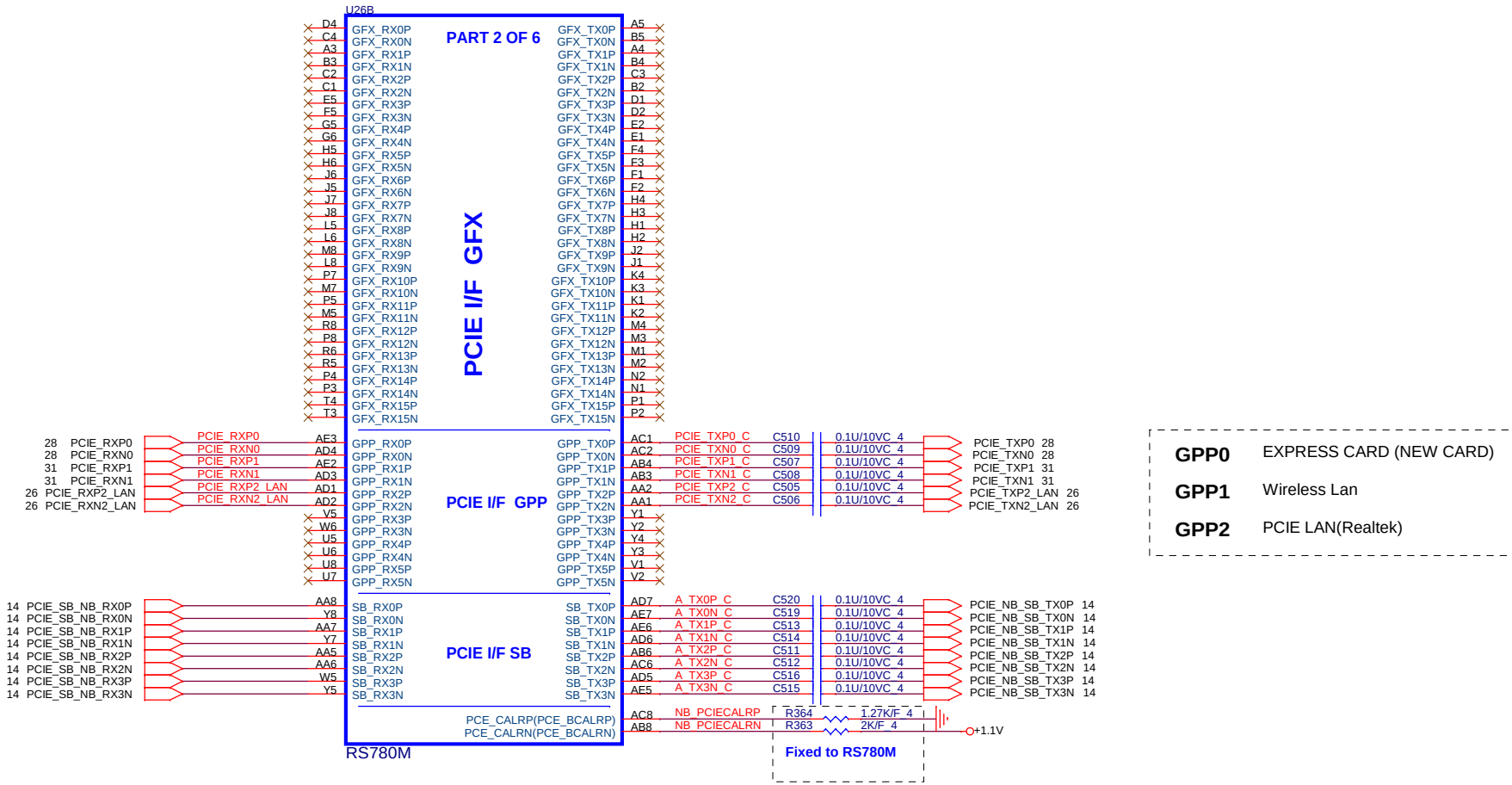
NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR2 SODIMMS TERMINATIONS	1A

Date: Wednesday, August 27, 2008 Sheet 9 of 41


U26A
PART 1 OF 6
HYPER TRANSPORT CPU I/F
RS780M
HT_CPU_NB_CAD_H0
HT_CPU_NB_CAD_L0
HT_CPU_NB_CAD_H1
HT_CPU_NB_CAD_L1
HT_CPU_NB_CAD_H2
HT_CPU_NB_CAD_L2
HT_CPU_NB_CAD_H3
HT_CPU_NB_CAD_L3
HT_CPU_NB_CAD_H4
HT_CPU_NB_CAD_L4
HT_CPU_NB_CAD_H5
HT_CPU_NB_CAD_L5
HT_CPU_NB_CAD_H6
HT_CPU_NB_CAD_L6
HT_CPU_NB_CAD_H7
HT_CPU_NB_CAD_L7
HT_CPU_NB_CAD_H8
HT_CPU_NB_CAD_L8
HT_CPU_NB_CAD_H9
HT_CPU_NB_CAD_L9
HT_CPU_NB_CAD_H10
HT_CPU_NB_CAD_L10
HT_CPU_NB_CAD_H11
HT_CPU_NB_CAD_L11
HT_CPU_NB_CAD_H12
HT_CPU_NB_CAD_L12
HT_CPU_NB_CAD_H13
HT_CPU_NB_CAD_L13
HT_CPU_NB_CAD_H14
HT_CPU_NB_CAD_L14
HT_CPU_NB_CAD_H15
HT_CPU_NB_CAD_L15
HT_CPU_NB_CLK_H0
HT_CPU_NB_CLK_L0
HT_CPU_NB_CLK_H1
HT_CPU_NB_CLK_L1
HT_CPU_NB_CTL_H0
HT_CPU_NB_CTL_L0
HT_CPU_NB_CTL_H1
HT_CPU_NB_CTL_L1
R350 301/F_4
HT_RXCALP
HT_RXCALN
HT_TXCALP R341 301/F_4
HT_TXCALN
follow AMD check list to change part number 300 ohm to 301 ohm
follow AMD check list to change part number 300 ohm to 301 ohm
HT_CPU_NB_CAD_H[15..0] HT_CPU_NB_CAD_H[15..0] 5
HT_CPU_NB_CAD_L[15..0] HT_CPU_NB_CAD_L[15..0] 5
HT_CPU_NB_CLK_H[1..0] HT_CPU_NB_CLK_H[1..0] 5
HT_CPU_NB_CLK_L[1..0] HT_CPU_NB_CLK_L[1..0] 5
HT_CPU_NB_CTL_H[1..0] HT_CPU_NB_CTL_H[1..0] 5
HT_CPU_NB_CTL_L[1..0] HT_CPU_NB_CTL_L[1..0] 5
HT_NB_CPU_CAD_H[15..0] HT_NB_CPU_CAD_H[15..0] 5
HT_NB_CPU_CAD_L[15..0] HT_NB_CPU_CAD_L[15..0] 5
HT_NB_CPU_CLK_H[1..0] HT_NB_CPU_CLK_H[1..0] 5
HT_NB_CPU_CLK_L[1..0] HT_NB_CPU_CLK_L[1..0] 5
HT_NB_CPU_CTL_H[1..0] HT_NB_CPU_CTL_H[1..0] 5
HT_NB_CPU_CTL_L[1..0] HT_NB_CPU_CTL_L[1..0] 5
40mils wdith or more
+1.8V_MEM_VDDQ
+1.8V
R377 *0_6/S
C529 0.1U/10VC_4
C246 0.1U/10VC_4
C532 1U/10VC_4
C536 1U/10VC_4
C535 10U/6.3VC_8
C528 10U/6.3VC_8
40mils wdith or more
SPM_CLKN
R135 100_4
SPM_CLKP
Within 200mils
Close to U23
U26D
PAR 4 OF 6
SBD_MEM/DVO_I/F
RS780M
T33
SPM_A0
SPM_A1
SPM_A2
SPM_A3
SPM_A4
SPM_A5
SPM_A6
SPM_A7
SPM_A8
SPM_A9
SPM_A10
SPM_A11
SPM_A12
SPM_A13
SPM_BA0
SPM_BA1
SPM_BA2
SPM_RAS#
SPM_CAS#
SPM_WE#
SPM_CS#
SPM_CKE
SPM_ODT
SPM_CLKP
SPM_CLKN
SPM_DQ0
SPM_DQ1
SPM_DQ2
SPM_DQ3
SPM_DQ4
SPM_DQ5
SPM_DQ6
SPM_DQ7
SPM_DQ8
SPM_DQ9
SPM_DQ10
SPM_DQ11
SPM_DQ12
SPM_DQ13
SPM_DQ14
SPM_DQ15
SPM_DQS0P
SPM_DQS0N
SPM_DQS1P
SPM_DQS1N
SPM_DM0
SPM_DM1
SPM_VREF1
+1.8_IOPLLVDD18_NB
+1.1V_IOPLLVDD
BLM18PG221SN1D L50
BLM18PG221SN1D L49
+1.8V
+1.1V
C522 2.2U/6.3VC_6
C521 2.2U/6.3VC_6
R361 40.2/F_4 SPM_COMPP
R362 40.2/F_4 SPM_COMPN
+1.8V_MEM_VDDQ
R359 1K/F_4
R360 1K/F_4
C518 0.1U/10VC_4
C517 0.1U/10VC_4
+1.8V_MEM_VDDQ
All external components connected to SPMEM signals must be removed for RX780
U29
64M*16*4
SPM_BA0
SPM_BA1
SPM_A12
SPM_A11
SPM_A10
SPM_A9
SPM_A8
SPM_A7
SPM_A6
SPM_A5
SPM_A4
SPM_A3
SPM_A2
SPM_A1
SPM_A0
SPM_CLKN
SPM_CLKP
SPM_CKE
SPM_CS#
SPM_WE#
SPM_RAS#
SPM_CAS#
SPM_DM0
SPM_DM1
SPM_ODT
SPM_DQS0P
SPM_DQS0N
SPM_DQS1P
SPM_DQS1N
SPM_VREF
SPM_BA2
SPM_DQ15
SPM_DQ14
SPM_DQ9
SPM_DQ12
SPM_DQ8
SPM_DQ10
SPM_DQ13
SPM_DQ11
SPM_DQ5
SPM_DQ3
SPM_DQ4
SPM_DQ1
SPM_DQ0
SPM_DQ7
SPM_DQ2
SPM_DQ6
+1.8V_MEM_VDDQ
L53 BLM18PG221SN1D
MEM_VDDQ_VDDL
C537 1U/10VC_4
C271 0.1U/10VC_4
R383 1K/F_4
C270 0.1U/10VC_4
R386 1K/F_4
+0.9VSMVTT 6,9,31,36
+1.1V 11,12,13,37
+1.8V 5,12,13,14,15,18,31,36,38
NB5/RD2/HW1
PROJECT : TT3
Quanta Computer Inc.
Size Custom
Document Number RS780M-HT LINK I/F 1/4
Rev 1A
Date: Wednesday, August 27, 2008
Sheet 10 of 41



GPP0	EXPRESS CARD (NEW CARD)
GPP1	Wireless Lan
GPP2	PCIE LAN(Realtek)

+1.1V 10,12,13,37

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
B	RS780M-PCIE I/F 2/4	1A

Date: Wednesday, August 27, 2008 Sheet 11 of 41

Enables the Test Debug Bus using GPIO.
0 : Enable
1 : Disable
(RS780 use VSYNC#)

VSYNC_COM R344 3K_4 +3V
R345 *3K_4

Enables Side port memory
0: Enable (RS780)
1: Disable(RS780)
(RS780 use HSYNC#)

HSYNC_COM R95 *3K_4 +3V
R96 3K_4

default values if not connected
RS780:SUS_STAT

RS780_AUX_CAL R100 3K_4

AUX CAL Value need update

DYN_1.1_NB R91 *4.7K_4 +3V
R90 2.2K_4
AMD sighting update

MV AMD recommend 0.5"~1"
R347 140/F_4 CRT_R
R346 150/F_4 CRT_G
R343 150/F_4 CRT_B

Del S-Video

U26C
PART 3 OF 6

+3V_AVDD_NB F12 AVDD1(NC)
F12 AVDD2(NC)
+1.8V_AVDDDI_NB G15 AVDDDI(NC)
G15 AVSSDI(NC)
+1.8V_AVDDQ_NB H15 AVDDQ(NC)
H14 AVSSQ(NC)

T161 E17 C_Pr(DFT_GPIO5)
T162 F17 Y(DFT_GPIO2)
T163 F15 COMP_Pb(DFT_GPIO4)

CRT/TVOUT

20 CRT_R CRT_R G18 RED(DFT_GPIO0)
20 CRT_G CRT_G G17 REDb(NC)
20 CRT_B CRT_B E18 GREEN(DFT_GPIO1)
E18 GREENb(NC)
E19 BLUE(DFT_GPIO3)
F19 BLUEb(NC)

20 HSYNC_COM HSYNC_COM A11 DAC_HSYNC(PWM_GPIO4)
20 VSYNC_COM VSYNC_COM B11 DAC_VSYNC(PWM_GPIO6)
20 DDCDATA DDCDATA E8 DAC_SDA(PCE_TCALRN)
20 DDCCLK DDCCLK F8 DAC_SCL(PCE_RCALRN)

R98 715/F_6 DAC_RSET_NB G14 DAC_RSET(PWM_GPIO1)

PLL PWR LVTM

+1.1V_PLLVDD A12 PLLVDD(NC)
+1.8V_PLLVDD18 D14 PLLVDD18(NC)
B12 PLLVSS(NC)

+1.8V_VDDA18HTPLL H17 VDDA18HTPLL

+1.8V_VDDA18PCIEPLL D7 VDDA18PCIEPLL1
E7 VDDA18PCIEPLL2

PM

14 PLTRST# R102 *0_4/S NB_RST#_IN D8 SYSRESETb
18 NB_PWRGD_IN NB_PWRGD_IN A10 POWERGOOD
NB_LDT_STOP# C10 LDTSTOPb
NB_ALLOW_LDTSTOP C12 ALLOW_LDTSTOP

NBHT_REFCLKP C25 HT_REFCLKP
NBHT_REFCLKN C24 HT_REFCLKN

CLOCKS

4 EXT_NB_OSC E11 REFCLK_P/OSCIN(OSCIN)
+1.1V R105 4.7K_4 R106 4.7K_4 F11 REFCLK_N(PWM_GPIO3)

NBGFX_CLKP T2 GFX_REFCLKP
NBGFX_CLKN T1 GFX_REFCLKN I/O

U1 GPP_REFCLKP
U2 GPP_REFCLKN I/O

SBLINK_CLKP V4 GPPSB_REFCLKP(SB_REFCLKP)
SBLINK_CLKN V3 GPPSB_REFCLKN(SB_REFCLKN)

MIS.

19 EDIDDATA EDIDDATA A9 I2C_DATA
19 EDIDCLK EDIDCLK B9 I2C_CLK
+3V R94 *4.7K_4 HDTV_DET B8 DDC_DATA/AUX0N(NC)
T10 A8 DDC_CLK/AUX0P(NC)
T8 RS740_DFT_GPIO1 B7 AUX1P(NC)
T7 A7 AUX1N(NC)

34 DYN_1.1_NB B10 STRP_DATA

T19 G11 RSVD

RS740_AUX_CAL C8 AUX_CAL(NC)

RS780M

As output to the voltage regulator for PWM of RS780M core voitage.

TXOUT_L0P(NC) A22 LA_DATAP0
TXOUT_L0N(NC) B22 LA_DATAN0
TXOUT_L1P(NC) A21 LA_DATAP1
TXOUT_L1N(NC) B21 LA_DATAN1
TXOUT_L2P(NC) B20 LA_DATAP2
TXOUT_L2N(DBG_GPIO0) A20 LA_DATAN2
TXOUT_L3P(NC) A19
TXOUT_L3N(DBG_GPIO2) B19

LA_DATAP0 19
LA_DATAN0 19
LA_DATAP1 19
LA_DATAN1 19
LA_DATAP2 19
LA_DATAN2 19

TXOUT_U0P(NC) B18
TXOUT_U0N(NC) A18
TXOUT_U1P(PCIE_RESET_GPIO3) A17
TXOUT_U1N(PCIE_RESET_GPIO2) B17
TXOUT_U2P(NC) D20
TXOUT_U2N(NC) D21
TXOUT_U3P(PCIE_RESET_GPIO5) D18
TXOUT_U3N(NC) D19

TXCLK_LP(DBG_GPIO1) B16 LA_CLK
TXCLK_LN(DBG_GPIO3) A16 LA_CLK#
TXCLK_UP(PCIE_RESET_GPIO4) D16
TXCLK_UN(PCIE_RESET_GPIO1) D17

LA_CLK 19
LA_CLK# 19

VDDLTP18(NC) A13 +1.8V_VDDLTP18_NB
VSSLTP18(NC) B13

VDDLT18_1(NC) A15 +1.8V_VDDLT_18_NB
VDDLT18_2(NC) B15
VDDLT33_1(NC) A14
VDDLT33_2(NC) B14

VSSLT1(VSS) C14
VSSLT2(VSS) D15
VSSLT3(VSS) C16
VSSLT4(VSS) C18
VSSLT5(VSS) C20
VSSLT6(VSS) E20
VSSLT7(VSS) C22

LVDS_DIGON(PCE_TCALRP) F9 DISP_ON
LVDS_BLON(PCE_RCALRP) F7 DPST_PWM
LVDS_ENA_BL(PWM_GPIO2) G12 LVDS_BLON

DISP_ON 19
DPST_PWM 19
LVDS_BLON 19

Swap PWM and Balon

TMDS_HPD(NC) D9 TMDS_HPD0
HPD(NC) D10 TMDS_HPD1

T9
T15

TVCLKIN(PWM_GPIO5) D12 SUS_STAT_1# R99 *0_4/S SUS_STAT# 15

THERMALDIODE_P AE8 T40
THERMALDIODE_N AD8 T39

TESTMODE D13 TEST_EN
R348 1.82K/F_4

5,14 CPU_LDT_STOP# R511 *0_4/S NB_LDT_STOP#

AMD sighting update

5 CPU_LDT_REQ# R512 *0_4/S NB_ALLOW_LDTSTOP
14 ALLOW_LDTSTOP R66 *0_4/S

0.135A for AVDD

+3V L42 BLM18PG221SN1D +3V_AVDD_NB
C480 2.2U/6.3VC_6

+1.8V R333 *0_6/S +1.8V_AVDDDI_NB
C478 0.1U/16VB_6

L45 BLM18PG221SN1D +1.8V_AVDDQ_NB
C485 2.2U/6.3VC_6

0.15A for PLLs 1.1V

+1.1V L41 BLM18PG221SN1D +1.1V_PLLVDD
C479 2.2U/6.3VC_6

0.1A for PLLs 1.8V

+1.8V L13 BLM18PG221SN1D +1.8V_VDDA18PCIEPLL
20mils width
C127 2.2U/6.3VC_6
20mils width
L44 BLM18PG221SN1D +1.8V_VDDA18HTPLL
C154 2.2U/6.3VC_6

+1.8V L10 BLM18PG221SN1D +1.8V_PLLVDD18
C93 10U/6.3VC_8
C136 2.2U/6.3VC_6

0.08A for VDDLT18

+1.8V L43 BLM18PG221SN1D +1.8V_VDDLTP18_NB
C483 2.2U/6.3VC_6

L9 BLM21PG221SN1D +1.8V_VDDLT_18_NB
C99 4.7U/6.3VC_6
C103 0.1U/10VC_4

4 NBHT_REFCLKP NBHT_REFCLKP
4 NBHT_REFCLKN NBHT_REFCLKN

4 SBLINK_CLKP SBLINK_CLKP
4 SBLINK_CLKN SBLINK_CLKN

4 NBGFX_CLKP NBGFX_CLKP
4 NBGFX_CLKN NBGFX_CLKN

+1.1V 10,11,13,37
+1.8V 5,10,13,14,15,18,31,36,38
+3V 4,5,7,8,9,13,14,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38
+12VALW 19,28,31,33,38

PROJECT : TT3
Quanta Computer Inc.

NB5/RD2/HW1

Size	Document Number	Rev
C	RS780M-SYSTEM I/F 3/4	1A

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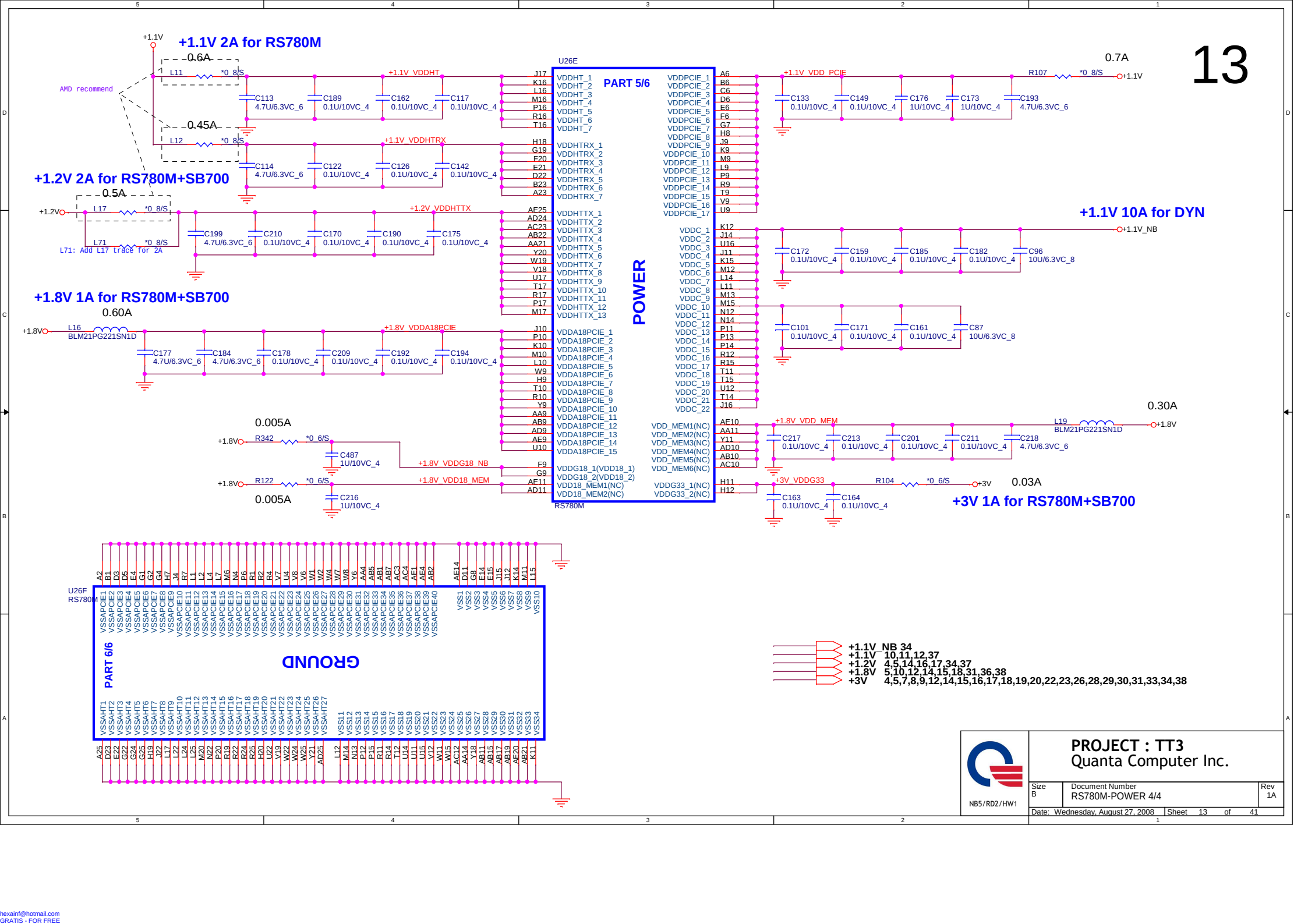

PLACE THESE
PCIE AC
COUPLING CAPS
CLOSE TO U600

To RS780

1.PCIE Reference Clk(Ext Clk Gen)
2. A-link Clk to North Bridge(Int Clk Gen)

MV AMD recommend

SB700
Part 1 of 5

PCI EXPRESS INTERFACE
PCI CLKS
PCI INTERFACE
CLOCK GENERATOR
RTC XTAL
LPC
CPU
RTC

80mA
100MHZ
20MIL
20MIL

AMD sighting update
GPIO pin for leakage
AMD recommend for leakage

14

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SB700-PCIE/PCI/CPU/LPC 1/4	1A

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NB5/RD2/HW1

+1.2V 4,5,13,16,17,34,37
+1.8V 5,10,12,13,15,18,31,36,38
+3V 4,5,7,8,9,12,13,15,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38
+3VPCU 5,19,25,29,30,32,33,35,37,39

SB700 SBTEST0/1/2 has internal 10K PD.

+3VS5
R241 *2.2K_4 SB_TEST0
R468 *2.2K_4 SB_TEST1
R469 *2.2K_4 SB_TEST2

+3VS5
R226 2.2K_4 PCLK_SMB_S5
R225 2.2K_4 PDAT_SMB_S5
R224 1K_4 PWR_BTN#

For SATA ODD hot plug

+3V
R203 2.2K_4 PCLK_SMB
R195 2.2K_4 PDAT_SMB
R227 4.7K_4 SUS_STAT#
R198 10K/F_4 SATA_IS1

G1
2 1 SYS_RST#
*SHORT_ PAD1

5,9 CPU_MEMHOT# 1 D19 2 CPU_MEMHOT# _IN
CH501H-40PT L-F
30 RSMRST# R239 *0_4/S RSMRST# _1

To Azalia

ACZ_SDOUT R465 33_4 ACZ_SDOUT_AUDIO 22
C657 *10P/50VA_4
ACZ_SYNC R455 33_4 ACZ_SYNC_AUDIO 22
C648 *10P/50VA_4
MV AMD recommend
ACZ_BCLK R463 33_4 BIT_CLK_AUDIO 22
R526 *10K_4 C655 *10P/50VA_4
ACZ_RST# R471 33_4 ACZ_RST#_AUDIO 22
ACZ_SDIN0_R R450 *0_4/S ACZ_SDIN0 22
R527 *10K_4
MV AMD recommend

To Modem Board

ACZ_SDOUT R464 33_4 ACZ_SDOUT_AUDIO_MDC 24
C656 *10P/50VA_4
ACZ_SYNC R454 33_4 ACZ_SYNC_AUDIO_MDC 24
C647 *10P/50VA_4
ACZ_BCLK R462 33_4 BIT_CLK_AUDIO_MDC 24
C654 *10P/50VA_4
ACZ_RST# R472 33_4 ACZ_RST#_AUDIO_MDC 24
MV AMD recommend
ACZ_SDIN1_R R449 33_4 ACZ_SDIN1 24
R528 *10K_4

+3V
4,8,9 PCLK_SMB 1 2 3 PCLK_SMB_S5 28,31
Q44
BSS138_NL/SOT23
+3V
4,8,9 PDAT_SMB 1 2 3 PDAT_SMB_S5 28,31
Q45
BSS138_NL/SOT23

Fix for IMC problem

Fix New card wake up issue

28 NEWCARD_DETECT R513 0_4 NEWCARD_DETECT_1
T88 RI# E2
T123 H7
18,30 SUSB# R461 *0_4/S SLP_S3# E5
30 SUSC# R222 *0_4/S SLP_S5# G1
30 DNBSWON# R223 *0_4/S PWR_BTN# H2
18 SB_PWRGD_IN SB_PWRGD_IN H1
12 SUS_STAT# SUS_STAT# K3
SB_TEST2 H5
SB_TEST1 H4
SB_TEST0 H3
30 GATEA20 GATEA20 Y15
30 RCIN# RCIN# W15
30 SCI# SCI# K4
30 KBSMI# KBSMI# K24
T86 S3_STATES F1
SYS_RST# J2
26,31 PCIE_WAKE# R514 *0_4/S PCIE_WAKE#_1 H6
30 SW# R238 *0_4/S F2
5 CPU_THERMTRIP# CPU_THERMTRIP# J6
18 WD_PWRGD WD_PWRGD W14
RSMRST#_1 D3

T70 SATA_IS1 AE18
AD18
AA19
W17
28 SB_NWD_CLK_REQ# R442 *0_4/S V17
W20
23 ACZ_SPKR R439 *0_4/S SB_SPKR_1 W21
4,8,9 PCLK_SMB PCLK_SMB AA18
4,8,9 PDAT_SMB PDAT_SMB W18
T139 K1
T140 K2
T115 AA20
IMC problem
T117 Y18
30 PM_BATLOW# PM_BATLOW# C1
SES_INT Y19
T118 GEVENT7# G5
T137

7 PM_THERM# *0_4 CPU_MEMHOT#_IN B9
28 NEWCARD_WAKE# R209 *0_4 SMBALERT#_1 B8
R515 *0_4 A8
SB_JTAG_TDO A9
SB_JTAG_TCK E5
SB_JTAG_TDI F8
SB_JTAG_RST# E4
Fix New card wake up issue

ACZ_BCLK M1
ACZ_SDOUT M2
ACZ_SDIN0_R J7
ACZ_SDIN1_R J8
T122 L8
T85 M3
ACZ_SYNC L6
18 ACZ_RST# ACZ_RST# M4
L5

+1.8V R178 *20K_4 HDD_AUX_RST# H19
H20
H21
SPI_CS2#/IMC_GPIO2 F25
IDE_RST#/F_RST#/IMC_GPO3
D22
E24
E25
D23

U16D

SB700 Part 4 of 5

PCI_PME#/GEVENT4#
RI#/EXTEVNT0#
SLP_S2/GPM9#
SLP_S3#
SLP_S5#
PWR_BTN#
PWR_GOOD
SUS_STAT#
TEST2
TEST1
TEST0
GA20IN/GEVENT0#
KBRST#/GEVENT1#
LPC_PME#/GEVENT3#
LPC_SMI#/EXTEVNT1#
S3_STATE/GEVENT5#
SYS_RESET#/GPM7#
WAKE#/GEVENT8#
BLINK/GPM6#
SMBALERT#/THRMTRIP#/GEVENT2#
NB_PWRGD
RSMRST#

ACPI / WAKE UP EVENTS

SATA_IS0#/GPIO10
CLK_REQ3#/SATA_IS1#/GPIO6
SMARTVOLT/SATA_IS2#/GPIO4
CLK_REQ0#/SATA_IS3#/GPIO0
CLK_REQ1#/SATA_IS4#/FANOUT3/GPIO39
CLK_REQ2#/SATA_IS5#/FANIN3/GPIO40
SPKR/GPIO2
SCL0/GPOC0#
SDA0/GPOC1#
SCL1/GPOC2#
SDA1/GPOC3#
DDC1_SCL/GPIO9
DDC1_SDA/GPIO8
LLB#/GPIO66
SHUTDOWN#/GPIO5
DDR3_RST#/GEVENT7#

GPIO

USB_OC6#/IR_TX1/GEVENT6#
USB_OC5#/IR_TX0/GPM5#
USB_OC4#/IR_RX0/GPM4#
USB_OC3#/IR_RX1/GPM3#
USB_OC2#/GPM2#
USB_OC1#/GPM1#
USB_OC0#/GPM0#

USB OC

AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO42
AZ_SDIN1/GPIO43
AZ_SDIN2/GPIO44
AZ_SDIN3/GPIO46
AZ_SYNC
AZ_RST#
AZ_DOCK_RST#/GPM8#

HD AUDIO

IMC_GPIO0
IMC_GPIO1
SPI_CS2#/IMC_GPIO2
IDE_RST#/F_RST#/IMC_GPO3
IMC_GPIO4
IMC_GPIO5
IMC_GPIO6
IMC_GPIO7

INTEGRATED uC

USB MISC

USBCLK/14M_25M_48M_OSC
USB_RCOMP

USB 1.1

USB 2.0

INTEGRATED uC

IMC_GPIO8
IMC_GPIO9
IMC_PWM0/IMC_GPIO10
SCL2/IMC_GPIO11
SDA2/IMC_GPIO12
SCL3_LV/IMC_GPIO13
SDA3_LV/IMC_GPIO14
IMC_PWM1/IMC_GPIO15
IMC_PWM2/IMC_GPIO16
IMC_PWM3/IMC_GPIO17
IMC_GPIO18
IMC_GPIO19
IMC_GPIO20
IMC_GPIO21
IMC_GPIO22
IMC_GPIO23
IMC_GPIO24
IMC_GPIO25
IMC_GPIO26
IMC_GPIO27
IMC_GPIO28
IMC_GPIO29
IMC_GPIO30
IMC_GPIO31
IMC_GPIO32
IMC_GPIO33
IMC_GPIO34
IMC_GPIO35
IMC_GPIO36
IMC_GPIO37
IMC_GPIO38
IMC_GPIO39
IMC_GPIO40
IMC_GPIO41

SB700

CLK_48M_USB
R205 *10_6
C8 CLK_48M_USB CLK_48M_USB 4
C344 *10P/50VA_4
G8 USB_RCOMP_SB R448 11.8K/F_6

Touch screen
USB_FSD13P E6 USBP13+ 19
USB_FSD13N E7 USBP13- 19
FINGE RPRINTER
USB_FSD12P F7 USBP12+ 19
USB_FSD12N E8 USBP12- 19
Fix ESD problem
C728 PJSD05TS
C729 PJSD05TS
C722 C723
PJSD05TS PJSD05TS
USB_HSD11P H11
USB_HSD11N J10
USB_HSD10P E11
USB_HSD10N F11
USB_HSD9P A11 USBP9+ 25
USB_HSD9N B11 USBP9- 25 BLUETOOTH
USB_HSD8P C10 USBP8+ 28
USB_HSD8N D10 USBP8- 28 NEW CARD
USB_HSD7P G11 USBP7+ 19
USB_HSD7N H12 USBP7- 19 USB Carama
USB_HSD6P E12 USBP6+ 25
USB_HSD6N E14 USBP6- 25 USB Connector (Dual)
USB_HSD5P C12
USB_HSD5N D12
USB_HSD4P B12 USBP4+ 31
USB_HSD4N A12 USBP4- 31 WLAN Mini card
USB_HSD3P G12 USBP3+ 21
USB_HSD3N G14 USBP3- 21 USB Card Reader
USB_HSD2P H14 USBP2+ 32
USB_HSD2N H15 USBP2- 32 Docking
USB_HSD1P A13 USBP1+ 25
USB_HSD1N B13 USBP1- 25 USB Connector (Dual)
USB_HSD0P B14 USBP0+ 25
USB_HSD0N A14 USBP0- 25 USB Connector
Fix for IMC problem
T141
T142
SB_SCLK3 T110
SB_SDATA3 T68
SB_GPIO16 18
SB_GPIO17 18 SPI/LPC define

+3VSUS
CN7
C293 10P/50VA_4
SB_JTAG_TCK
SB_JTAG_TDO
SB_JTAG_TDI
SB_TEST1
SB_JTAG_RST#
*S/W JTAG DEBUG

SB JTAG

+1.8VSUS 5,6,7,8,9,31,35,36,37
+1.8V 5,10,12,13,14,18,31,36,38
+3VSUS 21,24,25,29,31,33,34,35,36,38
+3VS5 9,14,16,17,18,28,33,38
+3V 4,5,7,8,9,12,13,14,16,17,18,19,20,22,23,26,28,29,30,31,33,34,38

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SB700-ACPI/GPIO/USB 2/4	1A

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PLACE SATA AC COUPLING CAPS CLOSE TO SB600

SATA1

SATA ODD

U16B

SB700
Part 2 of 5

SATA_TXP0 28 — C353 0.01U/16VB_4 SATA_TXP0_C — AD9 SATA_TX0P
SATA_TXN0 28 — C356 0.01U/16VB_4 SATA_TXN0_C — AE9 SATA_TX0N
SATA_RXN0 28 — C641 0.01U/16VB_4 SATA_RXN0_C — AB10 SATA_RX0N
SATA_RXP0 28 — C639 0.01U/16VB_4 SATA_RXP0_C — AC10 SATA_RX0P
SATA_TXP1 28 — C351 0.01U/16VB_4 SATA_TXP1_C — AE10 SATA_TX1P
SATA_TXN1 28 — C349 0.01U/16VB_4 SATA_TXN1_C — AD10 SATA_TX1N
SATA_RXN1 28 — C345 0.01U/16VB_4 SATA_RXN1_C — AD11 SATA_RX1N
SATA_RXP1 28 — C346 0.01U/16VB_4 SATA_RXP1_C — AE11 SATA_RX1P

AB12 SATA_TX2P
AC12 SATA_TX2N
AE12 SATA_RX2N
AD12 SATA_RX2P
AD13 SATA_TX3P
AE13 SATA_TX3N
AB14 SATA_RX3N
AC14 SATA_RX3P
AE14 SATA_TX4P
AD14 SATA_TX4N
AD15 SATA_RX4N
AE15 SATA_RX4P
AB16 SATA_TX5P
AC16 SATA_TX5N
AE16 SATA_RX5N
AD16 SATA_RX5P

SERIAL ATA

R453 1K/F_4 SATA_RBIAS_PN — V12 SATA_CAL
SATA_X1 — Y12 SATA_X1
SATA_X2 — AA12 SATA_X2
19 SATA_LED# — W11 SATA_ACT#/GPIO67
+3V — R458 10K/F_4 — +1.2V_PLLVDD_SATA — AA11 PLLVDD_SATA
+3V_XTLVDD_SATA — W12 XTLVDD_SATA

SATA PWR

PLACE SATA_CAL RES VERY CLOSE TO BALL OF U600

NOTE :
R635 IS 1K 1% FOR 25MHz XTAL, 4.99K 1% FOR 100MHz INTERNAL CLOCK

C352 27P/50VA_4 — SATA_X1
Y5 25MHZ R207 10M_6
C355 27P/50VA_4 — SATA_X2

IDE_IORDY AA24 — T55
IDE_IRQ AA25 — T64
IDE_A0 Y22 — T109
IDE_A1 AB23 — T57
IDE_A2 Y23 — T97
IDE_DACK# AB24 — T56
IDE_DRQ AD25 — T66
IDE_IOR# AC25 — T65
IDE_IOW# AC24 — T58
IDE_CS1# Y25 — T63
IDE_CS3# Y24 — T105

IDE_D0/GPIO15 AD24 — T143
IDE_D1/GPIO16 AD23 — T67
IDE_D2/GPIO17 AE22 — T144
IDE_D3/GPIO18 AC22 — T145
IDE_D4/GPIO19 AD21 — T146
IDE_D5/GPIO20 AE20 — T147
IDE_D6/GPIO21 AB20 — T148
IDE_D7/GPIO22 AD19 — T149
IDE_D8/GPIO23 AE19 — T150
IDE_D9/GPIO24 AC20 — T116
IDE_D10/GPIO25 AD20 — T69
IDE_D11/GPIO26 AE21 — T151
IDE_D12/GPIO27 AB22 — T152
IDE_D13/GPIO28 AD22 — T153
IDE_D14/GPIO29 AE23 — T61
IDE_D15/GPIO30 AC23 — T59

ATA 66/100/133

IF THERE IS NO IDE, TEST POINTS FOR DEBUG BUS IS MANDATORY

SPI_DI/GPIO12 G6 — SB_BIOS_WR# — T154
SPI_DO/GPIO11 D2 — SB_BIOS_RD# — T155
SPI_CLK/GPIO47 D1 — SB_SPI_CLK — T156
SPI_HOLD#/GPIO31 F4 — SB_SPI_7P — T157
SPI_CS#/GPIO32 F3 — SB_BIOS_CS# — T158

SPI ROM

LAN_RST#/GPIO13 U15 — R186 *0_4/S — BT_OFF# 25
ROM_RST#/GPIO14 J1 — CHIPSET_PCIE_SLOW_SB# 4

FANOUT0/GPIO3 M8 — SB_FANOUT0 — T120
FANOUT1/GPIO48 M5 — BAYON 14,28
FANOUT2/GPIO49 M7 — T127

FANIN0/GPIO50 P5 — SB_FANTACH0 — T136
FANIN1/GPIO51 P8 — SB_FANTACH1 — T125
FANIN2/GPIO52 R8 — PORT_80_PWR_DWN — T129

TEMP_COMM C6
TEMPIN0/GPIO61 B6 — R187 *0_4/S — BTLED 29
TEMPIN1/GPIO62 A6 — T159
TEMPIN2/GPIO63 A5 — DGT_RESET 19
TEMPIN3/TALERT#/GPIO64 B5

VIN0/GPIO53 A4
VIN1/GPIO54 B4
VIN2/GPIO55 C4 — R438 *0_4/S — BT_COMBO_EN# 31 / AMPBEEP_EN 23
VIN3/GPIO56 D4
VIN4/GPIO57 D5 — BOARDID0
VIN5/GPIO58 D6 — BOARDID1
VIN6/GPIO59 A7 — BOARDID2
VIN7/GPIO60 B7 — T71

HW MONITOR

fix leakage
5mA
AVDD F6 — +3V_VDD_HWM — L67 *0_6/S — +3VS5
AVSS G7 — C642 *0.1U/10VC_4 — C643 *2.2U/6.3VC_6

SB700

VRAM / Clock Gen / Board ID	Samsung Realtek (0.0.0)	Qimonda ICS (1.0.0)	Hynix Silego (0.1.0)
BOARDID0	R192 Stuff	R193 Stuff	R192 Stuff
BOARDID1	R430 Stuff	R430 Stuff	R431 Stuff
BOARDID2	R188 Stuff	R188 Stuff	R188 Stuff

DB2 MODIFY

SYS BOARD ID

+3VS5
R192 *10K_4 BOARDID0 R193 10K_4
R430 10K_4 BOARDID1 R431 *10K_4
R188 10K_4 BOARDID2 R189 *10K_4
SB internal pull Hi to 3VS5

0.1A

+1.2V — +1.2V_PLLVDD_SATA — L66 BLM21PG221SN1D
(1.2V @ 60mA)
C636 22U/6.3VC_8
C717 22U/6.3VC_8
C635 0.1U/10VC_4
MV AMD recommend

+3V — L64 BLM18PG221SN1D — +3V_XTLVDD_SATA
1mA
(3.3V @ 1.2mA)
C631 1U/10VC_4
Place near ball

+1.2V 4,5,13,14,17,34,37
+3V 4,5,7,8,9,12,13,14,15,17,18,19,20,22,23,26,28,29,30,31,33,34,38

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SB700-SATA/IDE/HWM/SPI 3/4	1A

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PLACE ALL THE DECOUPLING CAPS ON
THIS SHEET CLOSE TO SB AS POSSIBLE.

1.8V : FLASH MEMORY MODE(DEFAULT)

SB700
Part 3 of 5

POWER

GROUND

SB700
Part 5 of 5

+3VS5 9,14,15,16,18,28,33,38
+1.2VS5 37
+1.2V 4,5,13,14,16,34,37
+3VS5 9,14,15,16,18,28,33,38
+3V 4,5,7,8,9,12,13,14,15,16,18,19,20,22,23,26,28,29,30,31,33,34,38
+5V 20,22,23,28,31,32,33,37,38,39
+1.8V 5,10,12,13,14,15,18,31,36,38

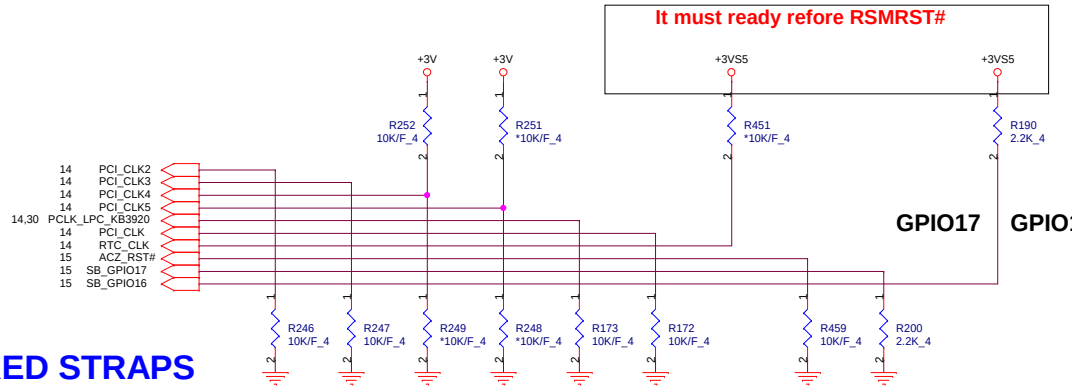
PROJECT : TT3
Quanta Computer Inc.

NB5/RD2/HW1

Size	Document Number	Rev
Custom	SB700-PWR/DECOUPLING 4/4	1A

Date: Wednesday, August 27, 2008 Sheet 17 of 41

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC_CLK



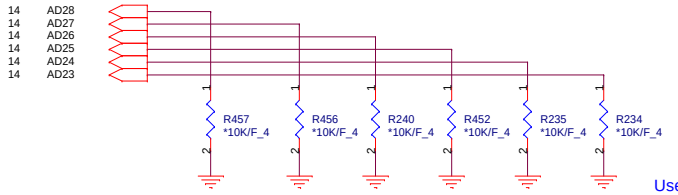
OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

REQUIRED STRAPS

	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	PCLK_LPC_KB3920	PCI_CLK	RTC_CLK	AZ_RST#	GP17 GP16
PULL HIGH	BOOTFAIL TIMER ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	EC ENABLED	CLKGEN ENABLED	INTERNAL RTC DEFAULT	ENABLE PCI MEM BOOT	ROM TYPE: H, H = Reserved
PULL LOW	BOOTFAIL TIMER DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			EC DISABLED DEFAULT	CLKGEN DISABLED DEFAULT	EXT. RTC (PD on X1, apply 32KHz to RTC_CLK)	DISABLE PCI MEM BOOT DEFAULT	H, L = SPI ROM L, H = LPC ROM DEFAULT L, L = FWH ROM

DEBUG STRAPS

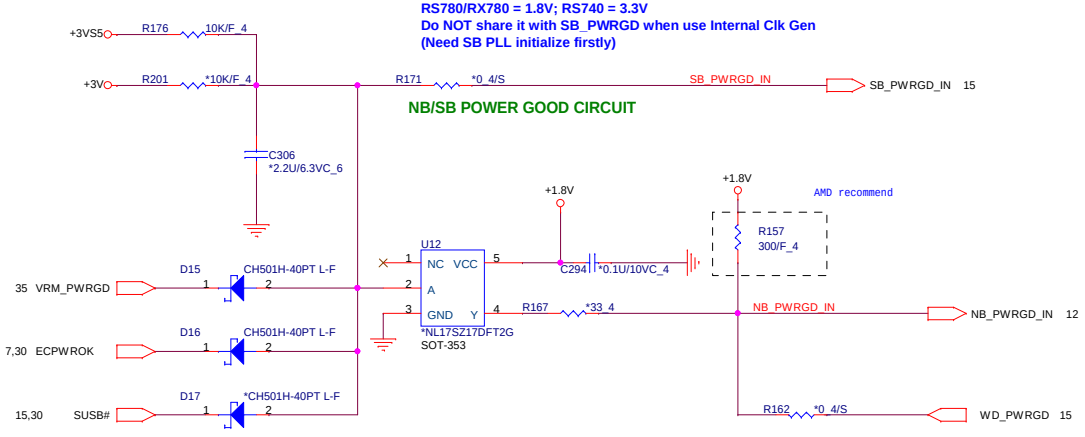
SB700 HAS 15K INTERNAL PU FOR PCI_AD[28:23]



Use 2.2K PD.

	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	

NB_PWRGD_IN:
RS780/RX780 = 1.8V; RS740 = 3.3V
Do NOT share it with SB_PWRGD when use Internal Clk Gen
(Need SB PLL initialize firstly)



AL17SZ17000	IC(5P) NL17SZ17DFT2G(SOT-353)	SOT-353
ALUC1G17000	IC OTHER(5P) SN74AUC1G17DBVR(SOT23-5)	SOT23-5

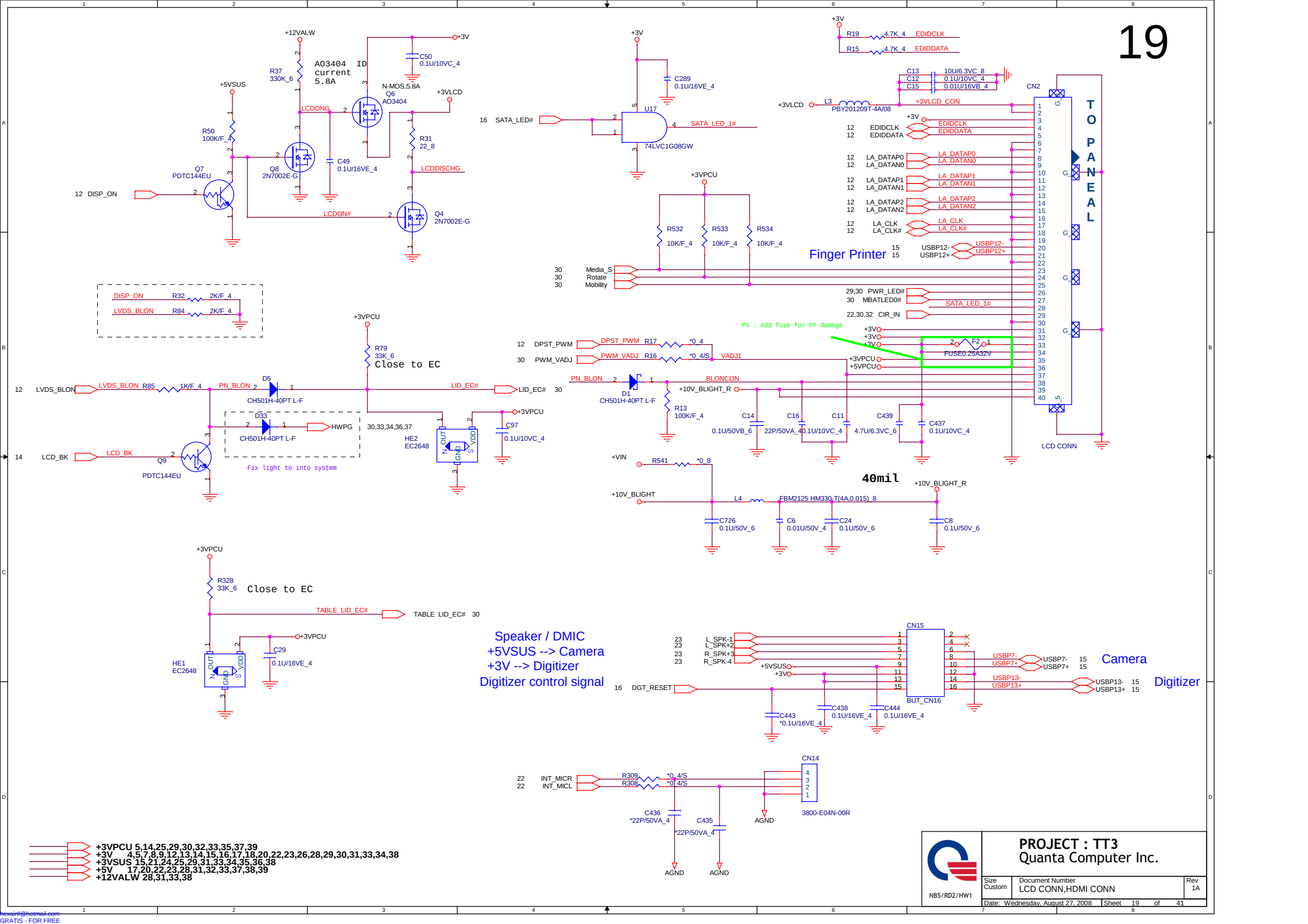
+1.8V 5,10,12,13,14,15,31,36,38
+3V 4,5,7,8,9,12,13,14,15,16,17,19,20,22,23,26,28,29,30,31,33,34,38
+3VS5 9,14,15,16,17,28,33,38

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SB700-STRAPS,PWRGD	1A

Date: Wednesday, August 27, 2008 Sheet 18 of 41



+3VPCU 5,14,25,29,30,32,33,35,37,39
+3V 4,5,7,8,9,12,13,14,15,16,17,18,20,22,23,26,28,29,30,31,33,34,38
+3VSUS 15,21,24,25,29,31,33,34,35,36,38
+5V 17,20,22,23,28,31,32,33,37,38,39
+12VALW 28,31,33,38

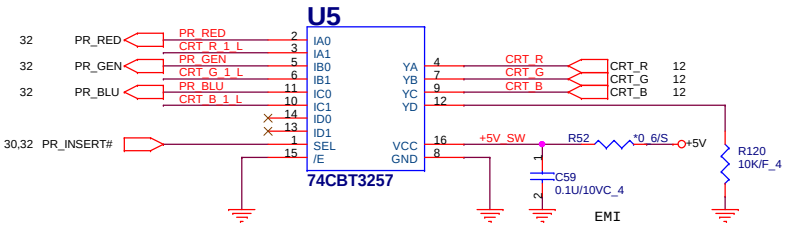
NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD CONN,HDMI CONN	1A

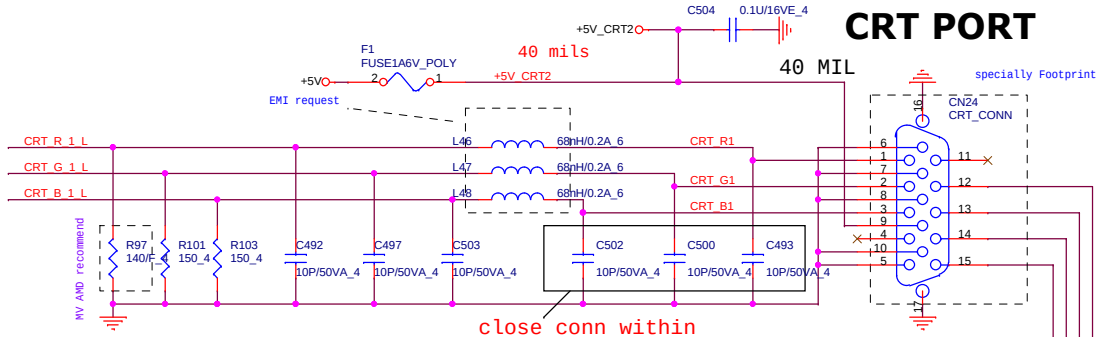
Date: Wednesday, August 27, 2008 Sheet 19 of 41

CRT SWITCH

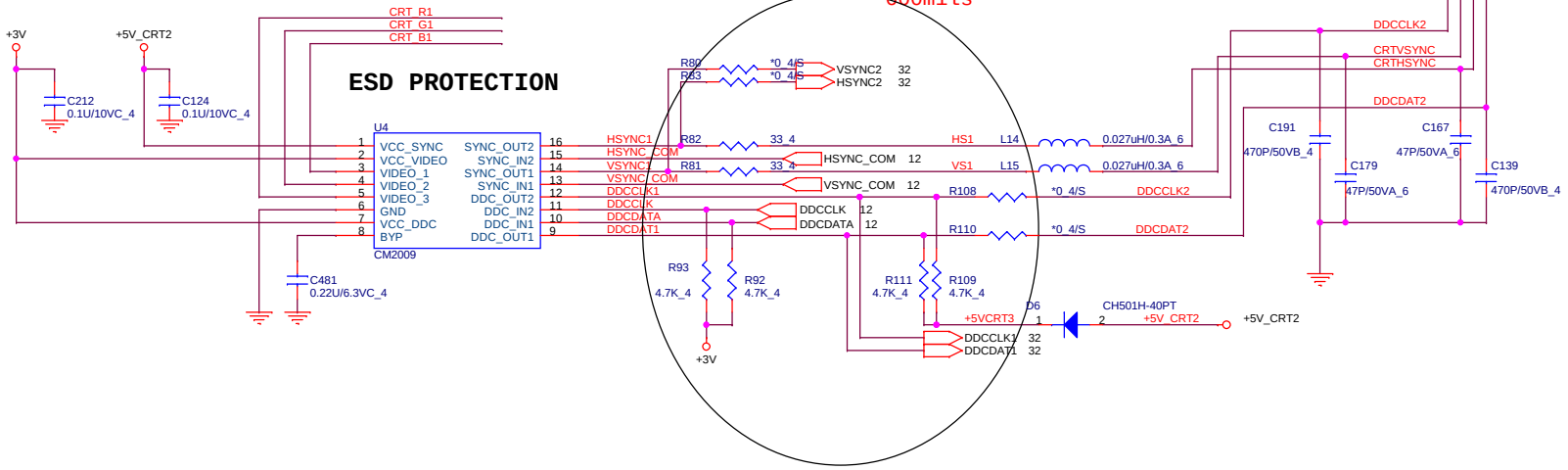


inputs		function
/E	SET	
L	L	Y - port 0
L	H	Y - port 1
H	X	Disconnect

CRT PORT



ESD PROTECTION



Del S-Video

+3V 4,5,7,8,9,12,13,14,15,16,17,18,19,22,23,26,28,29,30,31,33,34,38
+5V 17,22,23,28,31,32,33,37,38,39

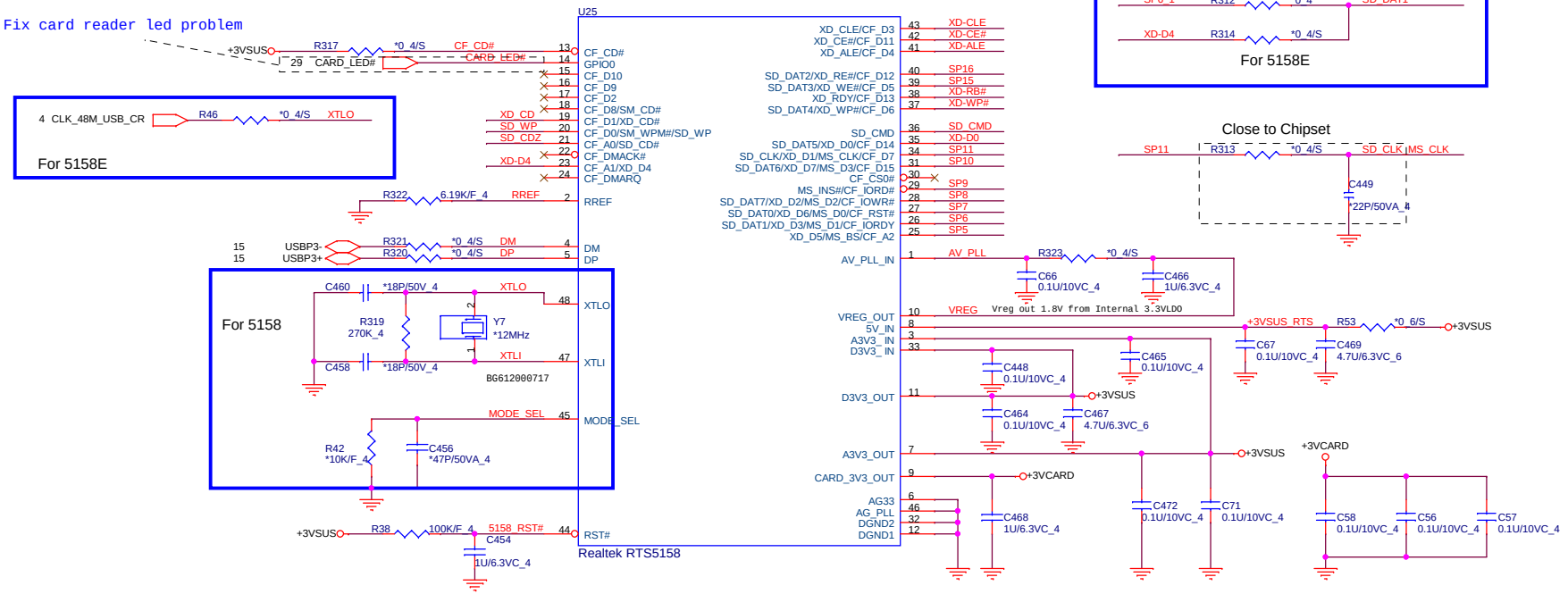
NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CRT,TV_OUT	1A

Date: Wednesday, August 27, 2008 | Sheet 20 of 41

Fix card reader led problem

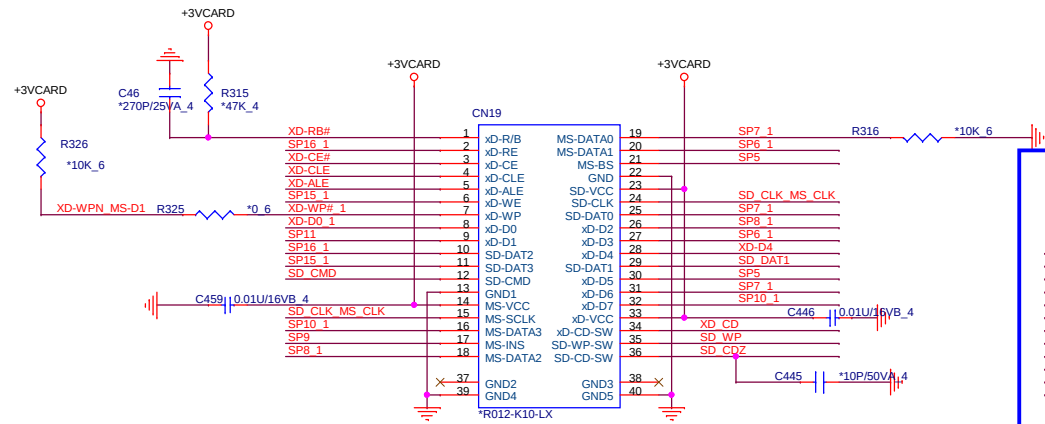


Note:

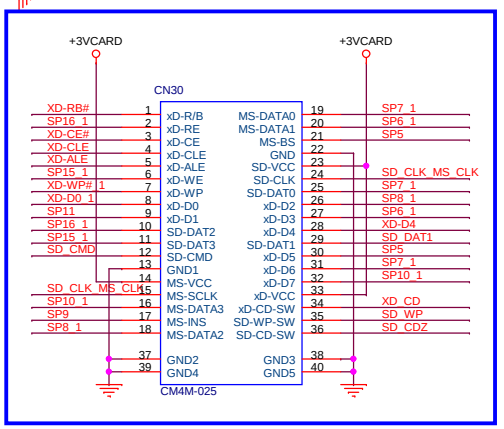
	SD/MMC	MS	XD
SP0			
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4			XD_D4
SP5		MS_BS	XD_D5
SP6		MS_D1	XD_D3
SP7	SD_DAT0	MS_D0	XD_D6
SP8	SD_DAT7	MS_D2	XD_D2
SP9		MS_INS#	
SP10	SD_DAT6	MS_D3	XD_D7
SP11	SD_CLK	MS_SCLK	XD_D1
SP12	SD_DAT5		XD_D0
SP13	SD_DAT4		XD_WP#
SP14			XD_R/B#
SP15	SD_DAT3		XD_WE#
SP16	SD_DAT2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

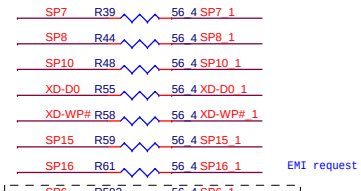
4 IN1 CARD READER

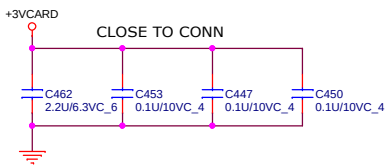
XD,MMC/SD,MS/MSP



Add Connector for EMI request



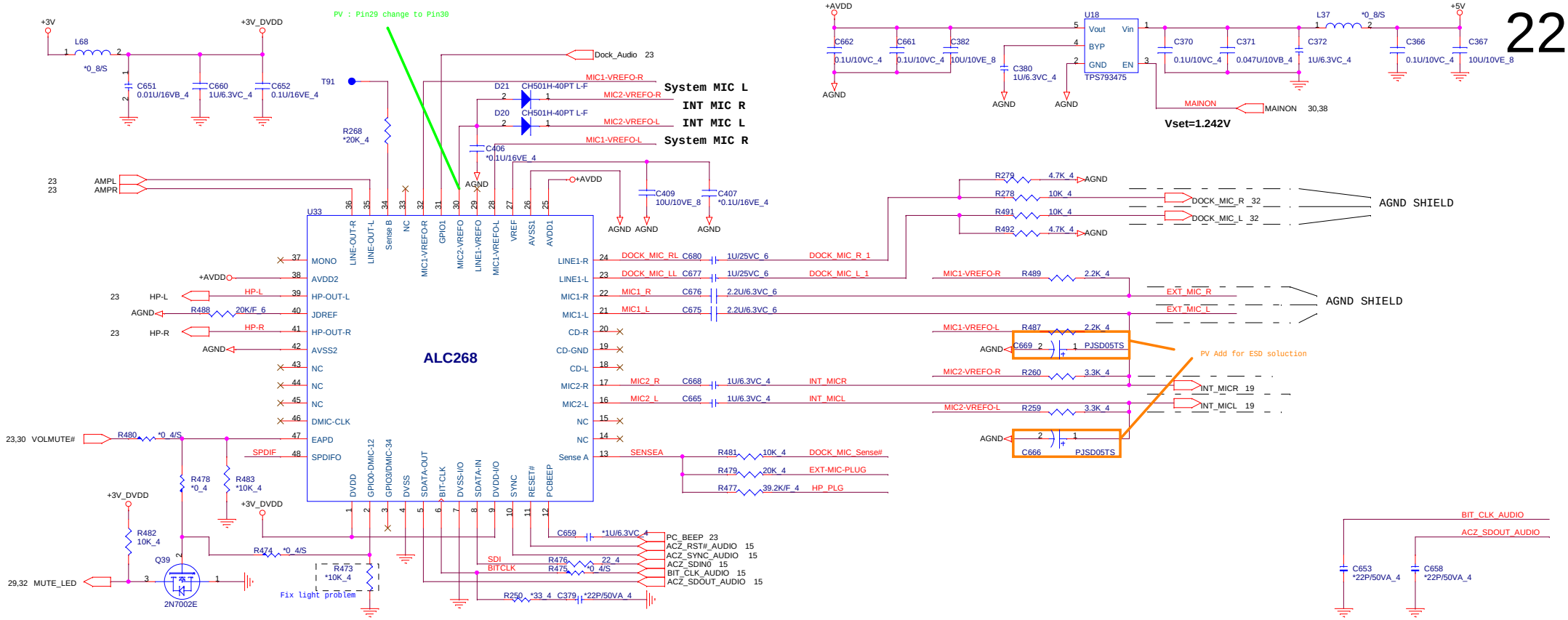


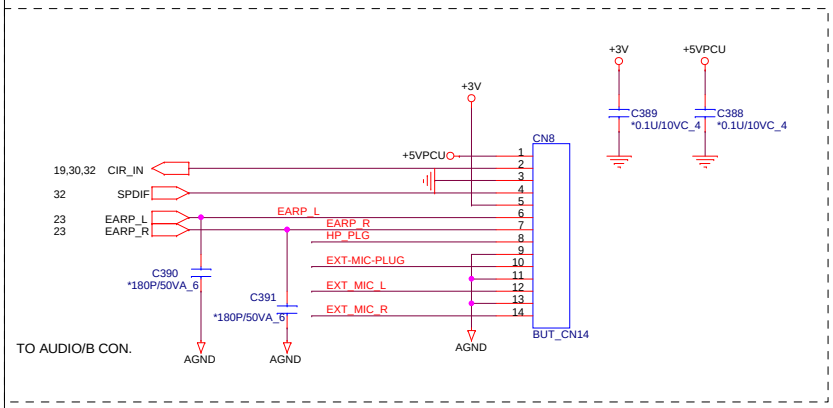


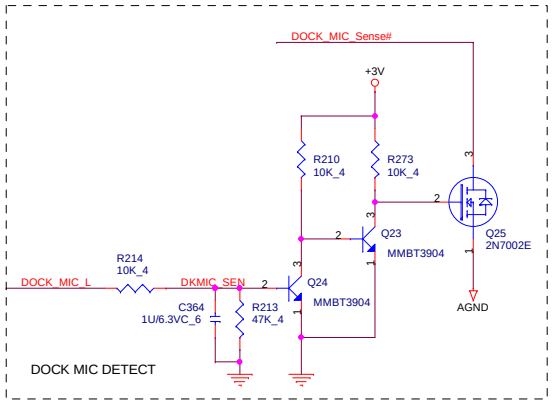
+3VSUS 15,24,25,29,31,33,34,35,36,38

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RT5158 CARD READER CONTROLLER	1A
NB5/RD2/HW1	Date: Wednesday, August 27, 2008	Sheet 21 of 41







+3V 4,5,7,8,9,12,13,14,15,16,17,18,19,20,23,26,28,29,30,31,33,34,38
+5V 17,20,23,28,31,32,33,37,38,39
+AVDD 23
+5VPCU 19,28,29,30,33,34,35,36,37

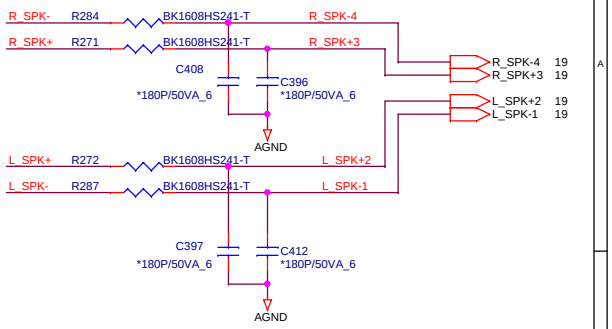
PROJECT : TT3
Quanta Computer Inc.

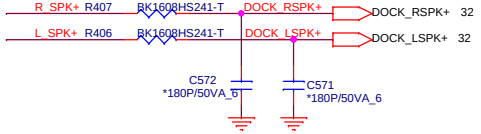
Size	Document Number	Rev
Custom	Realtek Azalia ALC268	1A
Date: Wednesday, August 27, 2008	Sheet 22 of 41	

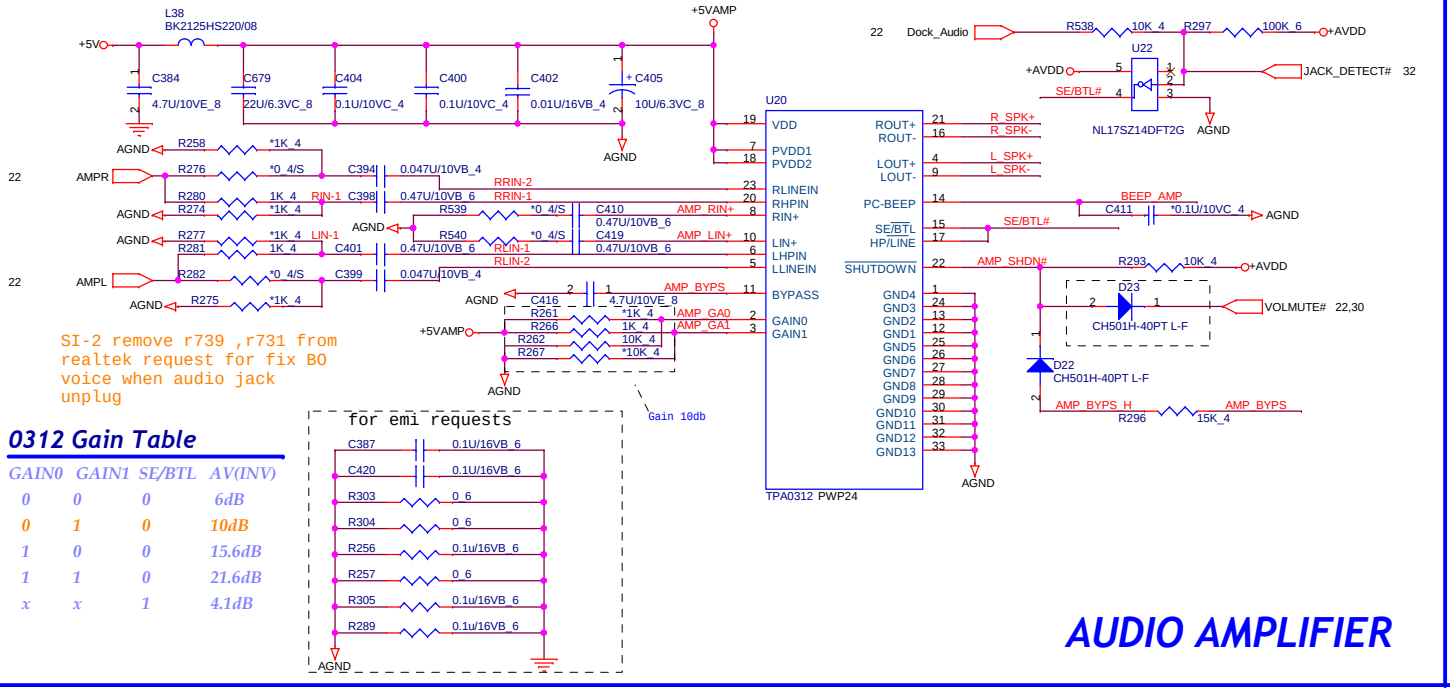
NB5/RD2/HW1

AUDIO AMPLIFIER

INT. SPEAKER



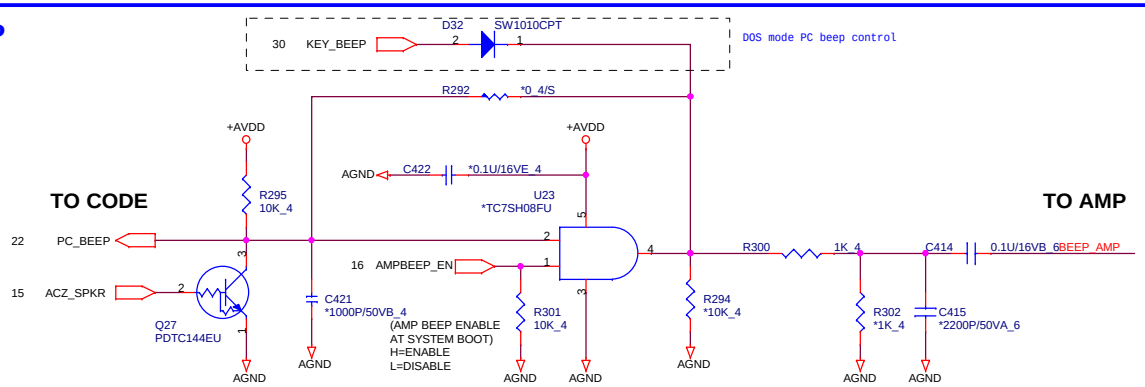




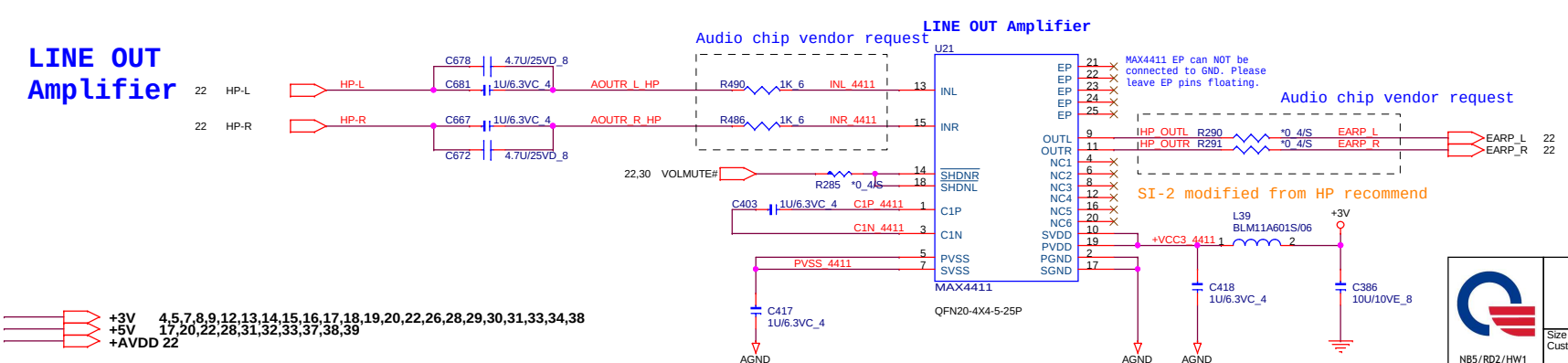
0312 Gain Table

GAIN0	GAIN1	SE/BTL	AV(INV)
0	0	0	6dB
0	1	0	10dB
1	0	0	15.6dB
1	1	0	21.6dB
x	x	1	4.1dB

PCSPK BEEP



LINE OUT Amplifier



+3V 4,5,7,8,9,12,13,14,15,16,17,18,19,20,22,26,28,29,30,31,33,34,38
+5V 17,20,22,28,31,32,33,37,38,39
+AVDD 22

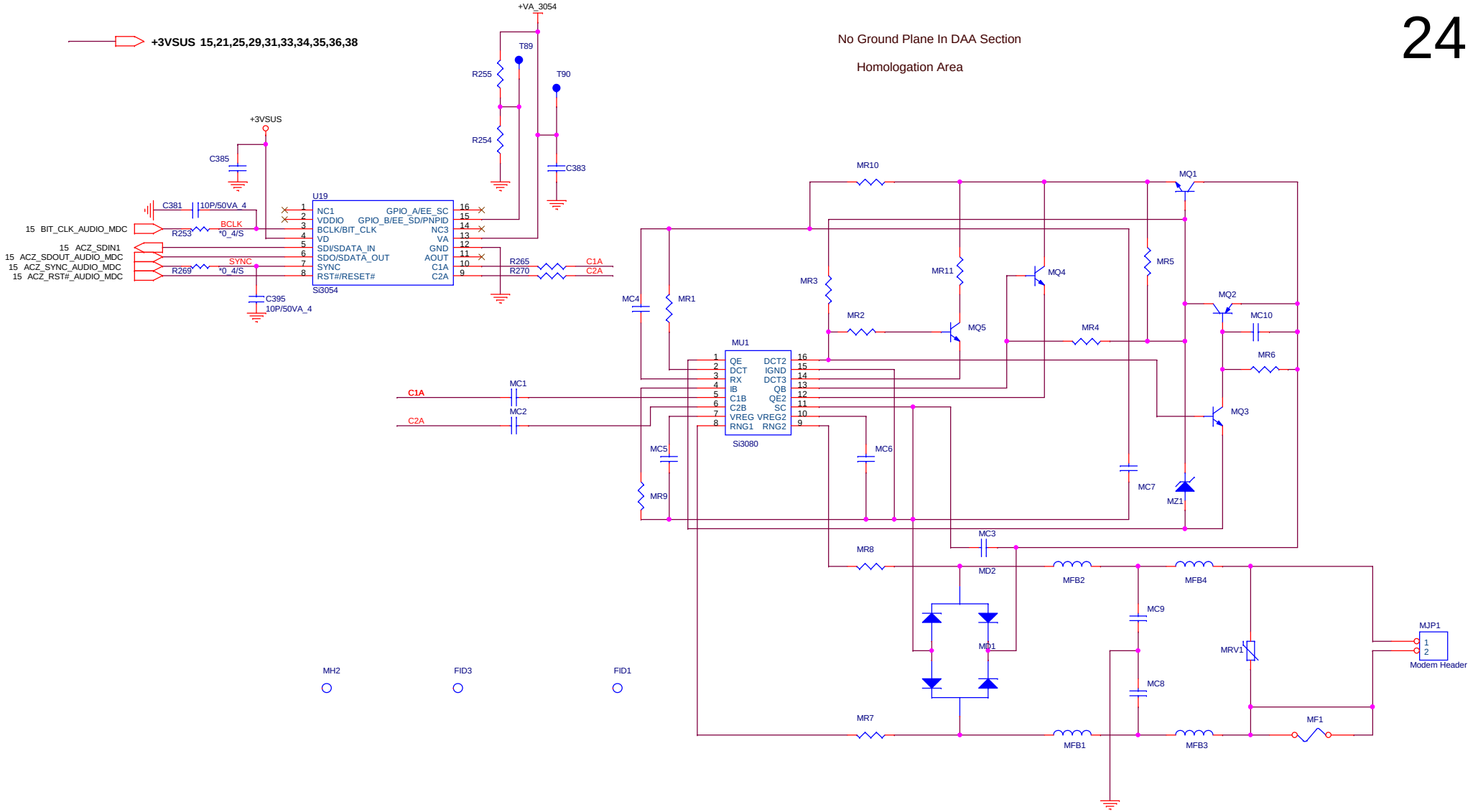
PROJECT : TT3	
Quanta Computer Inc.	
Size: Custom	Document Number: JACK/AMP_TAP0312
Rev: 1A	
Date: Wednesday, August 27, 2008	Sheet 23 of 41

NB5/RD2/HW1

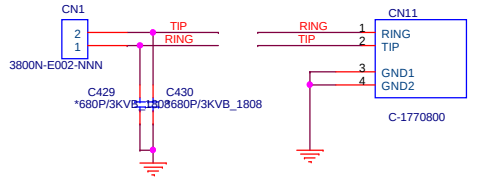
+3VSUS 15,21,25,29,31,33,34,35,36,38

No Ground Plane In DAA Section

Homologation Area



RJ11



DESIGN SUBJECT TO CHANGE

SILICON LABORATORIES CONFIDENTIAL

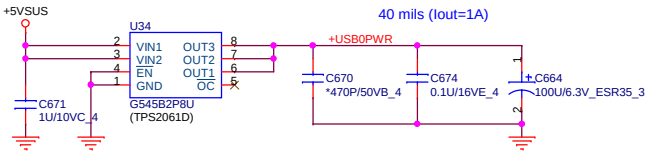
NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

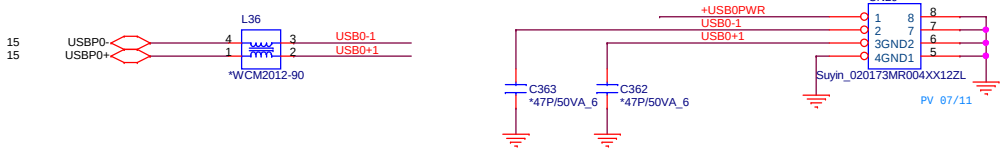
Size	Document Number	Rev
Custom	MODEM (DAA)	1A

Date: Wednesday, August 27, 2008 Sheet 24 of 41

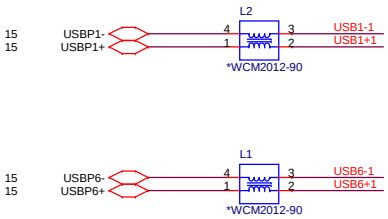
USBX1



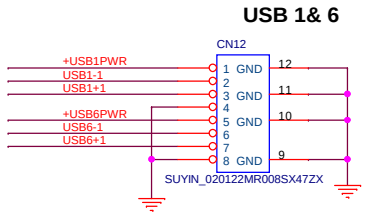
USB 0

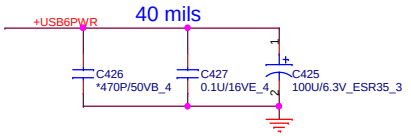


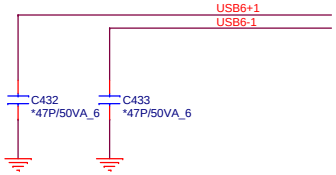
USBX2

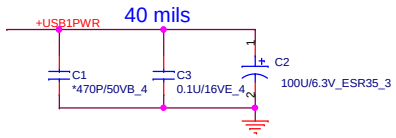


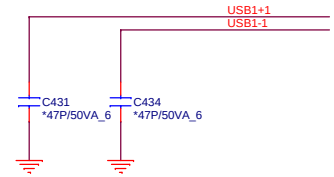
USB 1& 6

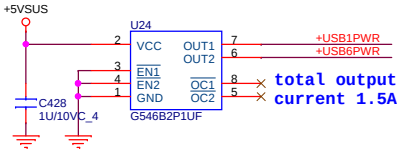




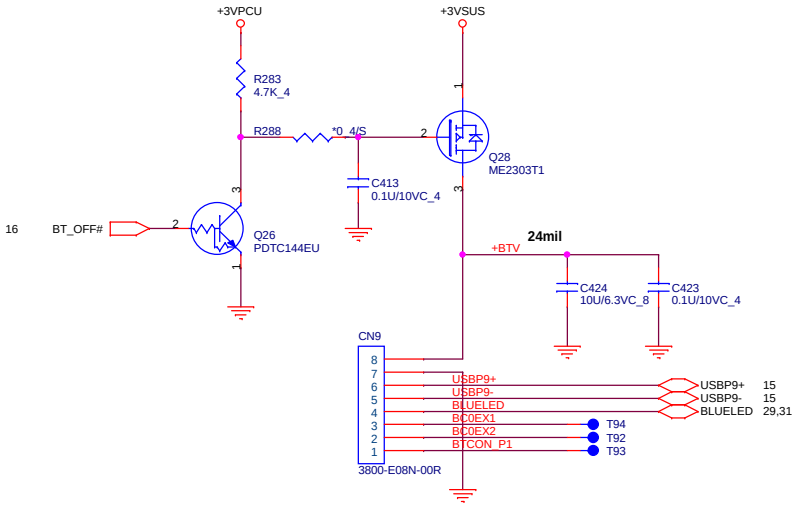








BLUETOOTH



+3VPCU 5,14,19,29,30,32,33,35,37,39
+3VSUS 15,21,24,29,31,33,34,35,36,38
+5VSUS 19,30,32,33,38

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Blue Tooth/USBX3	1A

Date: Wednesday, August 27, 2008 Sheet 25 of 41

RTL8111C(10/100/1000)

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

Remove LAN EEPROM

for +3VLANVCC > 40mil

for +CTRL18 > 60mil

Control LAN power

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

If disable DSM mode remove R395

RJ45

From HP recommend

FOR EMI

*AT93C46DN-SH-T

RTL8111C

NS892402

C100F9-110A4-L

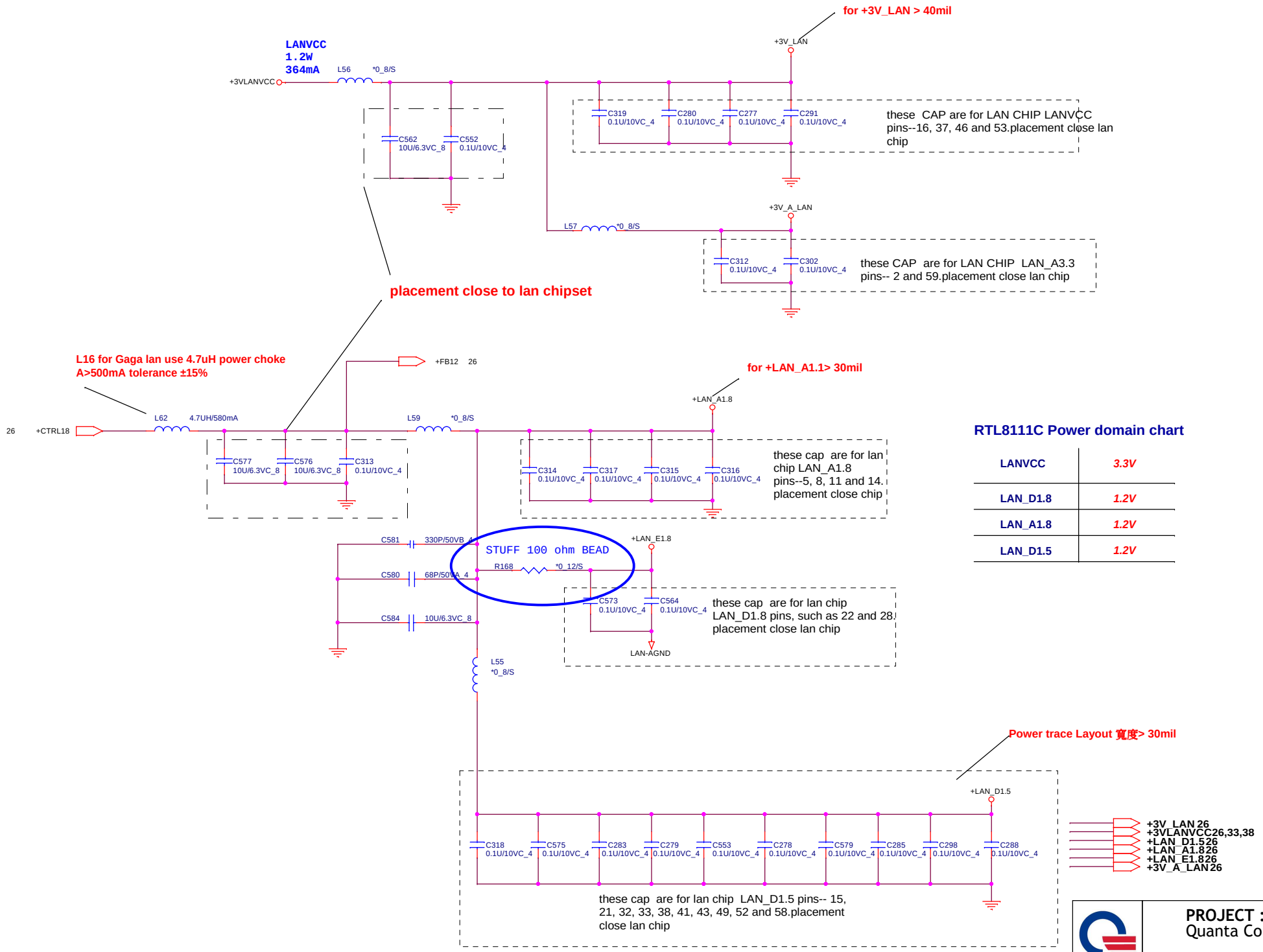
+3V_LAN 27
+3VLANVCC 27,33,38
+LAN_D1.5 27
+LAN_A1.8 27

PROJECT : TT3
Quanta Computer Inc.

NB5/RD2/HW1

Size	Document Number	Rev
Custom	Pealtek RTL8111C	1A

Date: Wednesday, August 27, 2008 Sheet 26 of 41



RTL8111C Power domain chart

LANVCC	3.3V
LAN_D1.8	1.2V
LAN_A1.8	1.2V
LAN_D1.5	1.2V

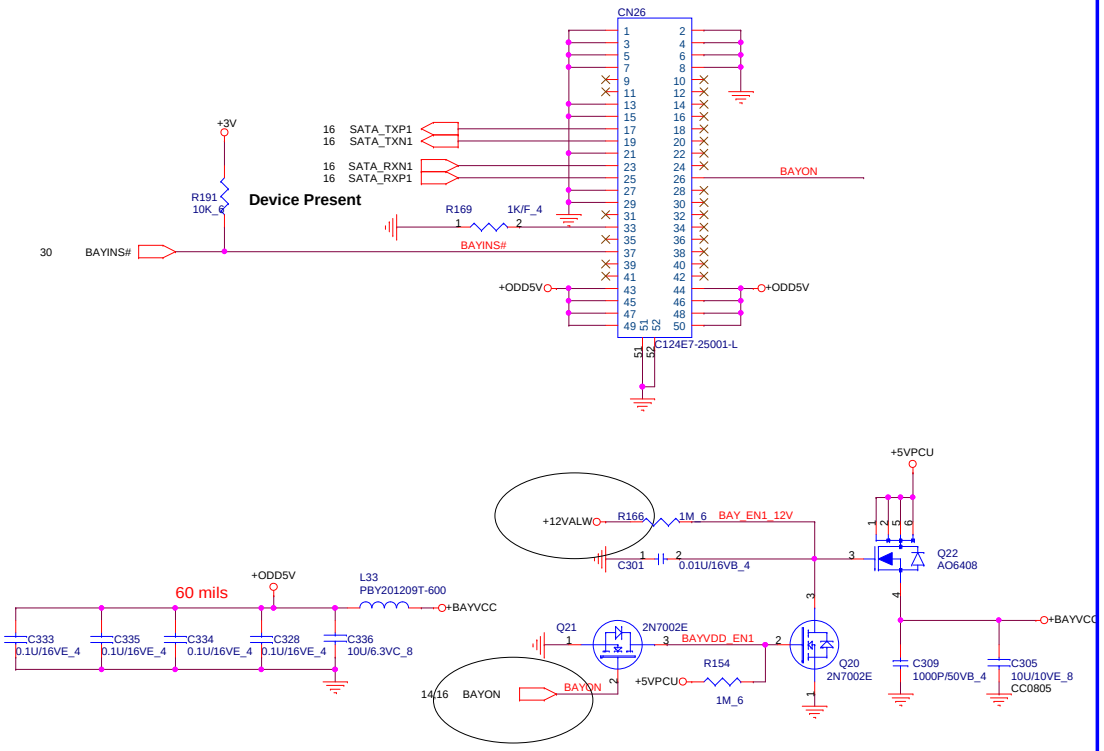
PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
A3	LAN POWER	1A

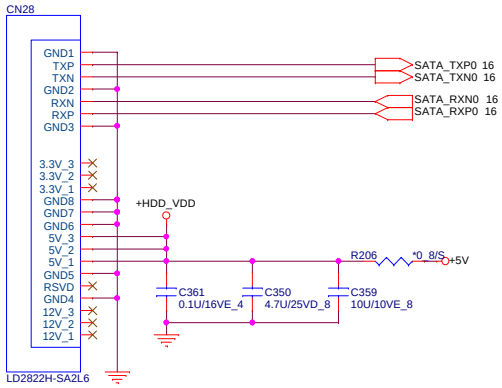
NB5/RD2/HW1

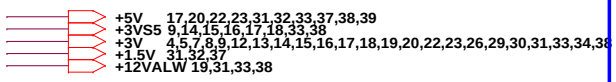
Date: Wednesday, August 27, 2008 Sheet 27 of 41

SATA ODD



SATA CONNECTOR

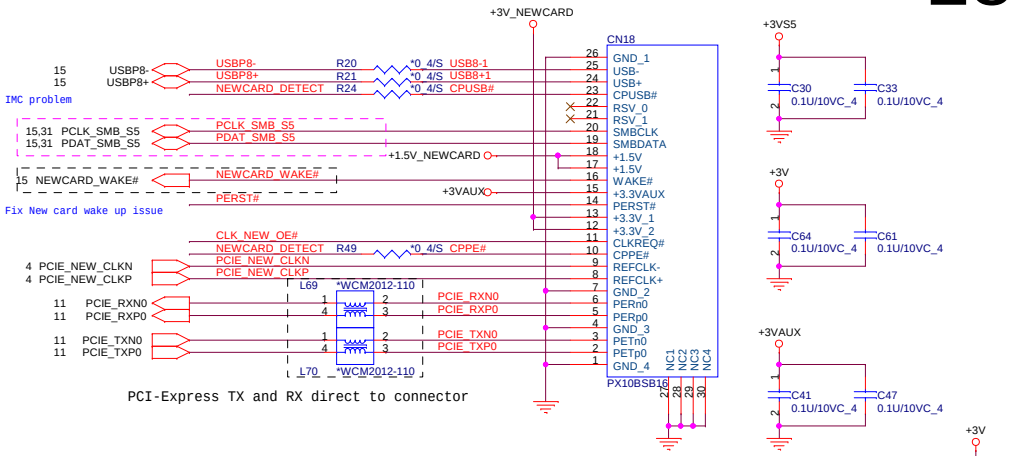


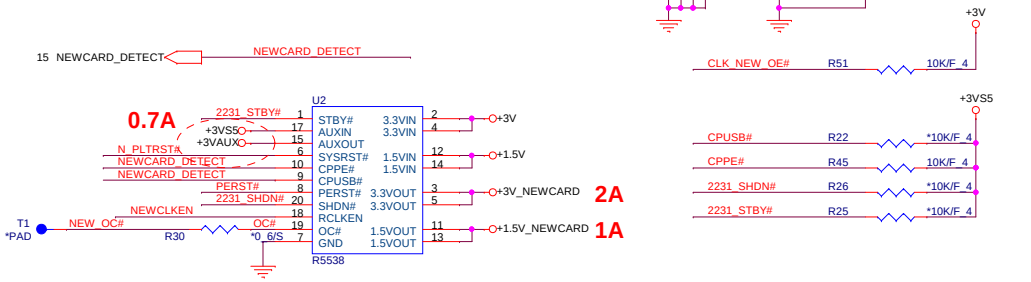


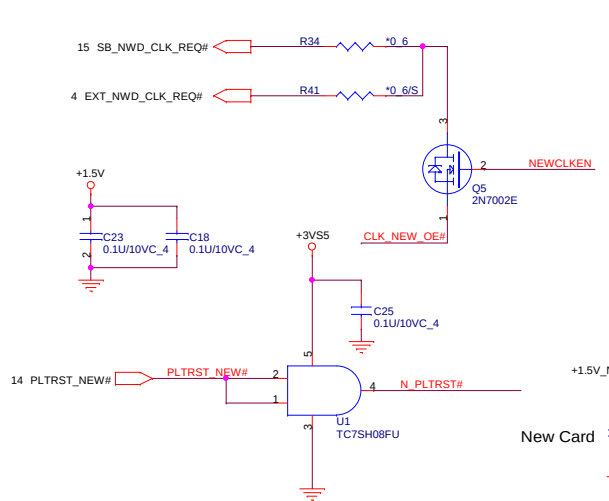
NEWCARD

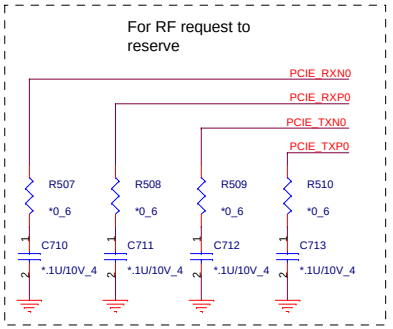
NEWCARD (PCIEXPRESS*1 + USB*1)

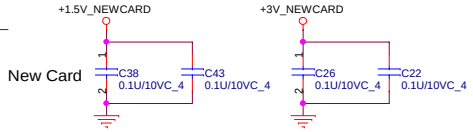
28











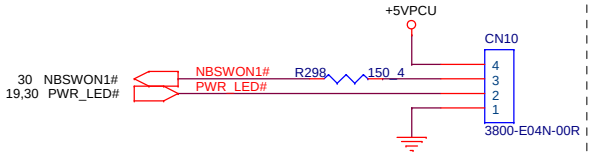
NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

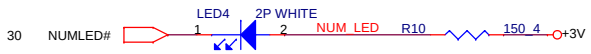
Size	Document Number	Rev
Custom	NEW CARD/SATA ODD/SATA HDD	1A

Date: Wednesday, August 27, 2008 Sheet 28 of 41

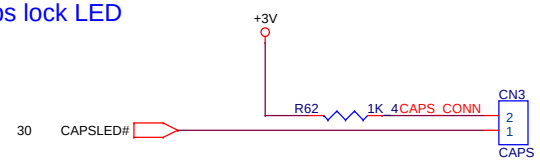
FOR POWER ON SW BOARD



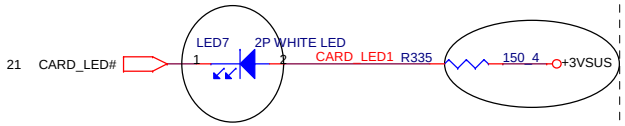
Num lock LED



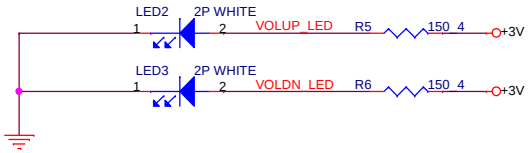
Caps lock LED



Card Reader LED

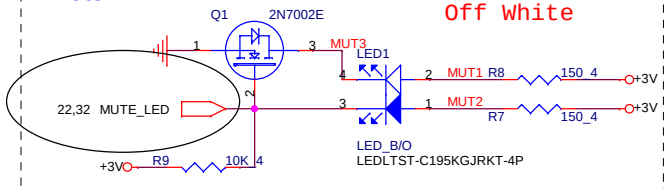


Volume up/down LED

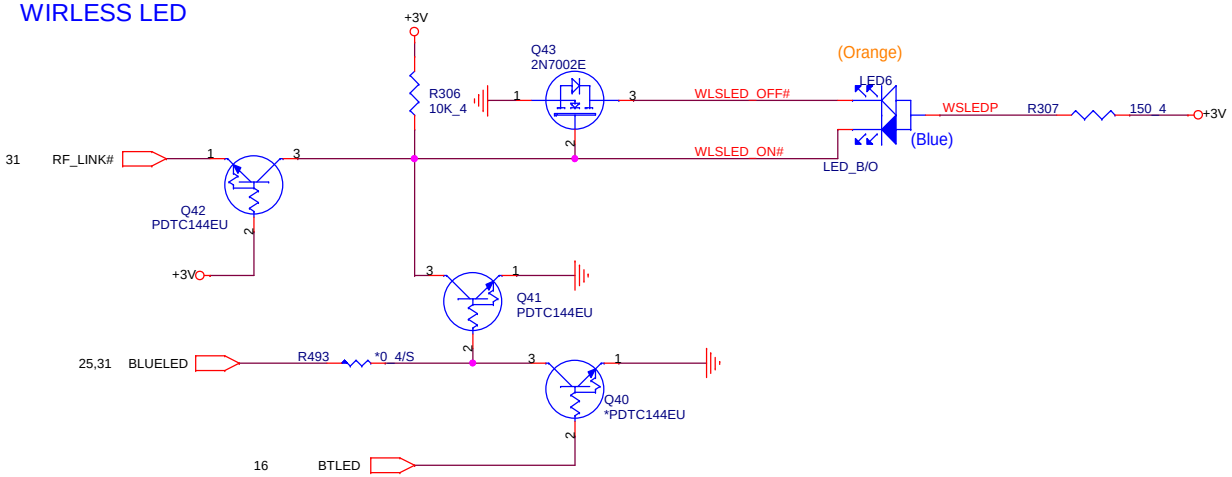


Mute LED

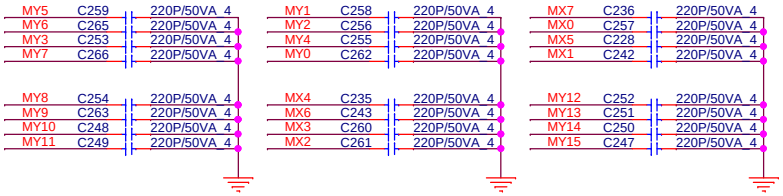
On Blue
Off White



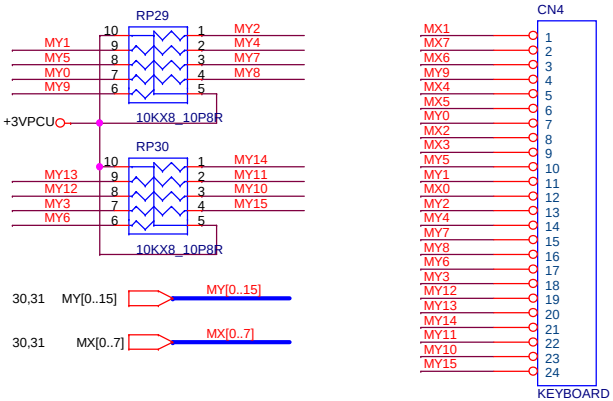
WIRLESS LED



Keyboard



KEYBOARD PULL-UP



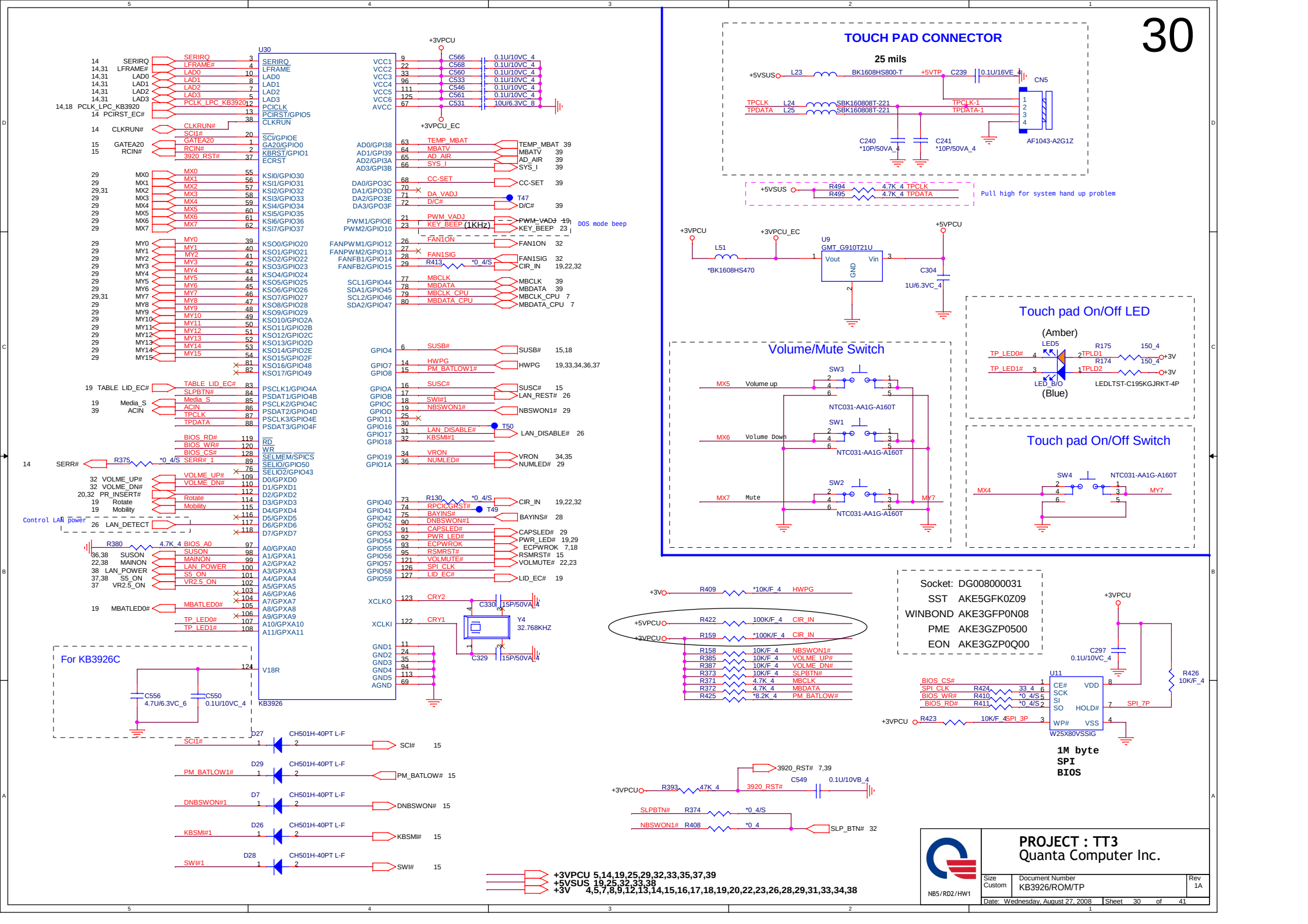
+5VPCU 19,22,28,30,33,34,35,36,37
+3V 4,5,7,8,9,12,13,14,15,16,17,18,19,20,22,23,26,28,30,31,33,34,38
+3VSUS 15,21,24,25,31,33,34,35,36,38

NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
B	LED/KEYBOARD/SW	1A

Date: Wednesday, August 27, 2008 Sheet 29 of 41


TOUCH PAD CONNECTOR
25 mils
CN5
AF1043-A2G1Z
Pull high for system hand up problem
Touch pad On/Off LED
(Amber)
(Blue)
LEDLTST-C195KGJRKT-4P
Volume/Mute Switch
Volume up
Volume Down
Mute
NTC031-AA1G-A160T
Touch pad On/Off Switch
U30
KB3926
For KB3926C
Socket: DG008000031
SST AKE5GFK0Z09
WINBOND AKE3GFP0N08
PME AKE3GZP0500
EON AKE3GZP0Q00
W25X80VSSIG
1M byte
SPI
BIOS
+3VPCU 5,14,19,25,29,32,33,35,37,39
+5VSUS 19,25,32,33,38
+3V 4,5,7,8,9,12,13,14,15,16,17,18,19,20,22,23,26,28,29,31,33,34,38
PROJECT : TT3
Quanta Computer Inc.
NB5/RD2/HW1
Size Custom
Document Number KB3926/ROM/TP
Rev 1A
Date: Wednesday, August 27, 2008
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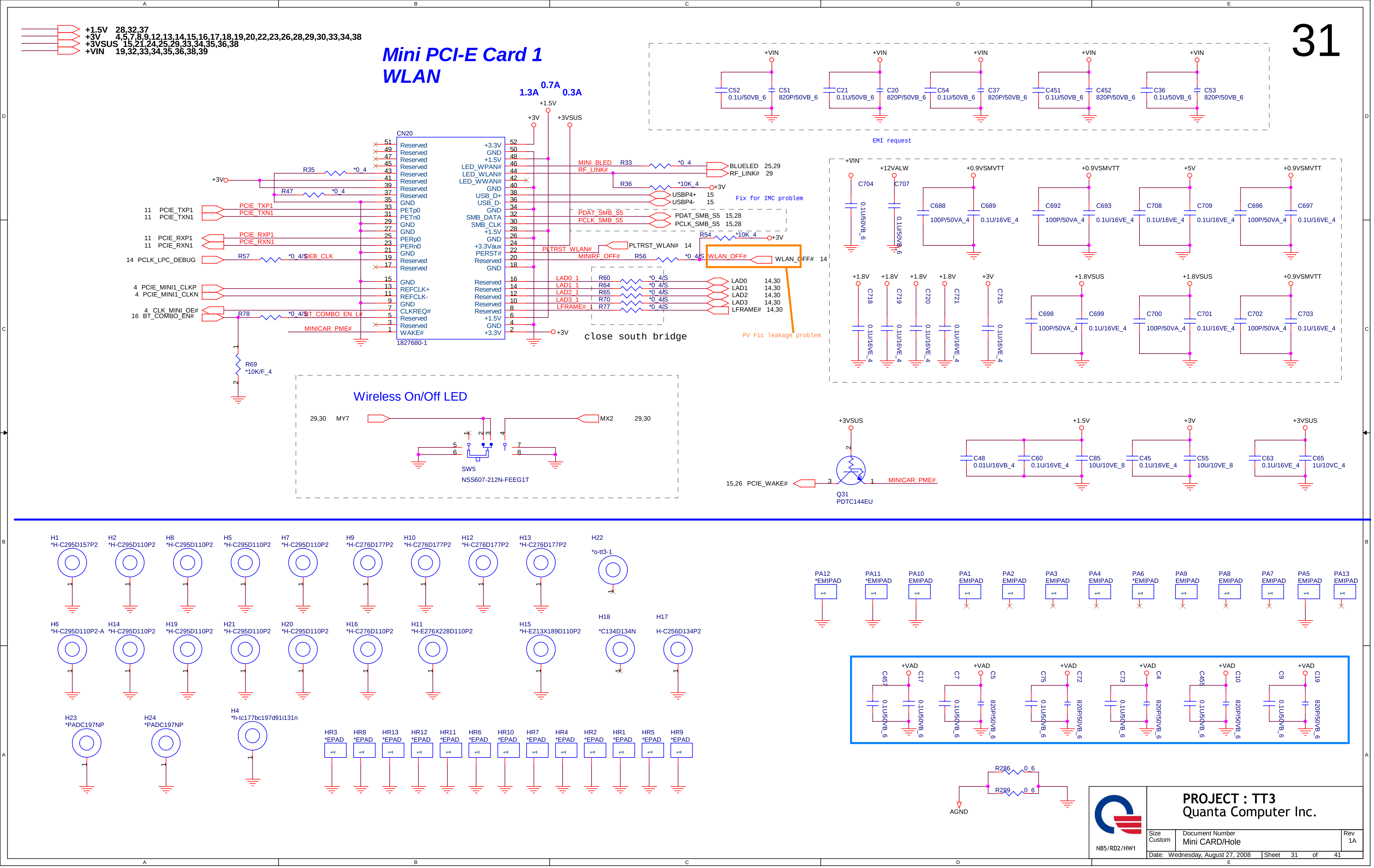
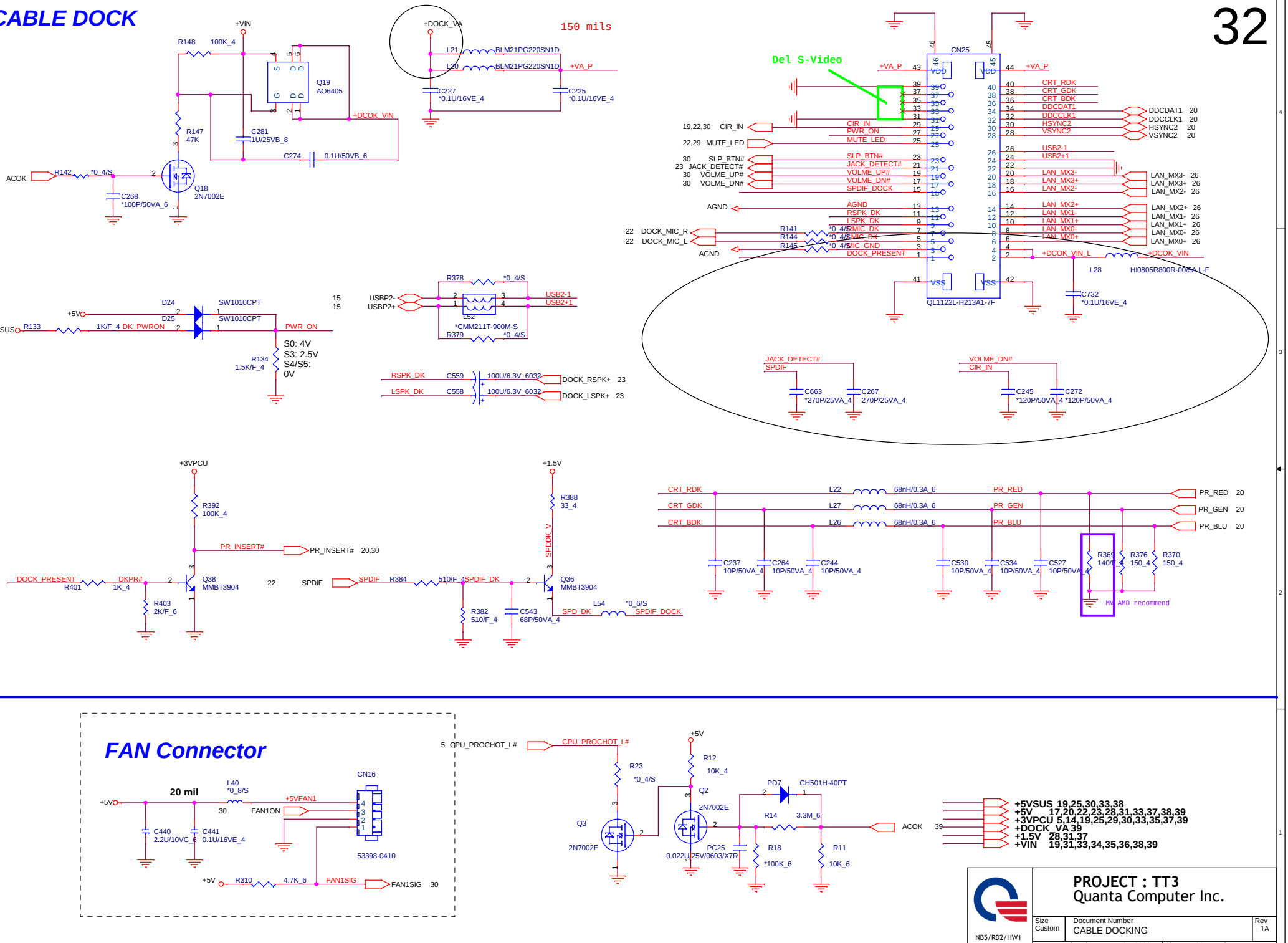


CABLE DOCK



FAN Connector

+5VSUS 19,25,30,33,38
+5V 17,20,22,23,28,31,33,37,38,39
+3VPCU 5,14,19,25,29,30,33,35,37,39
+DOCK_VA 39
+1.5V 28,31,37
+VIN 19,31,33,34,35,36,38,39

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CABLE DOCKING	1A

NB5/RD2/HW1

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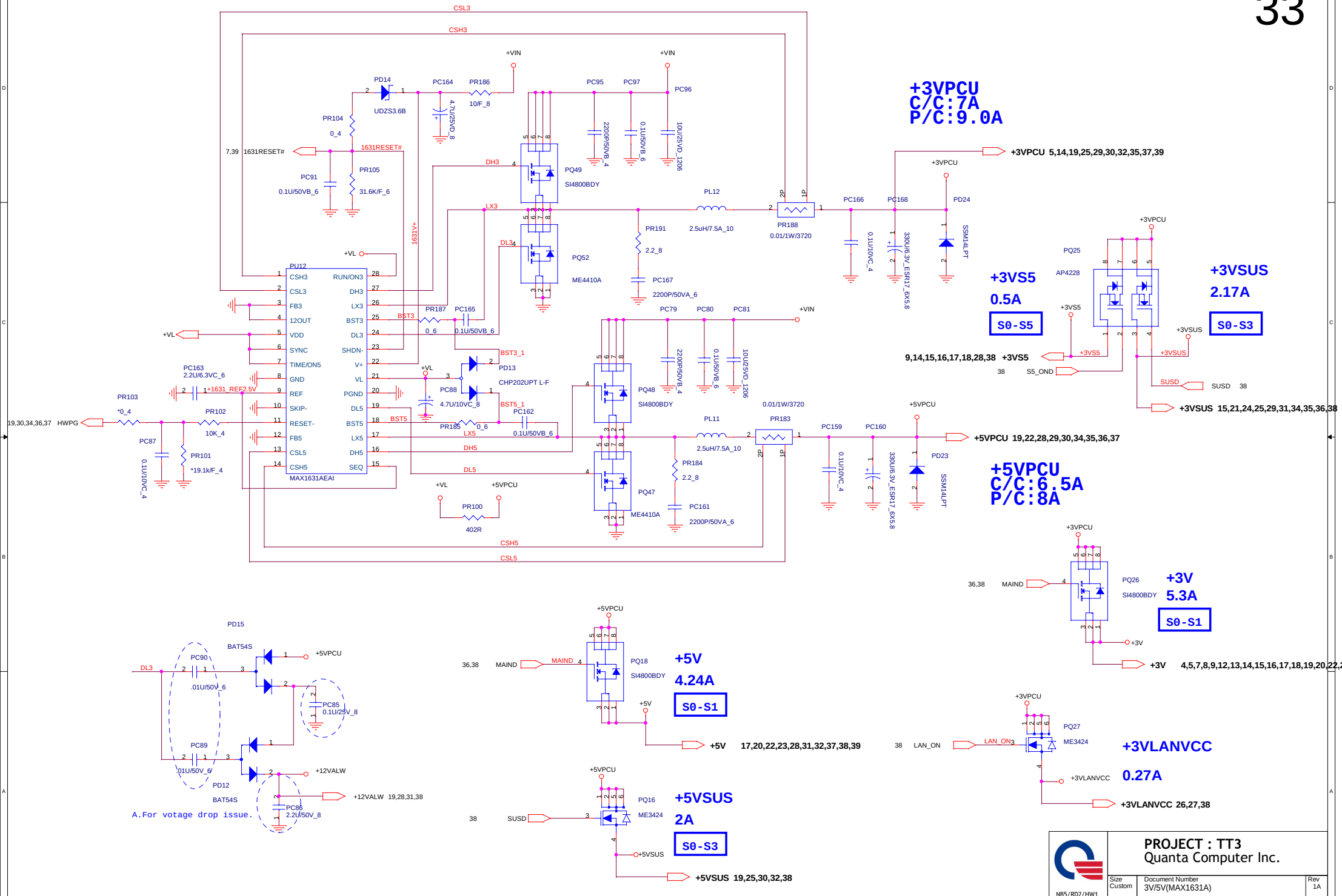
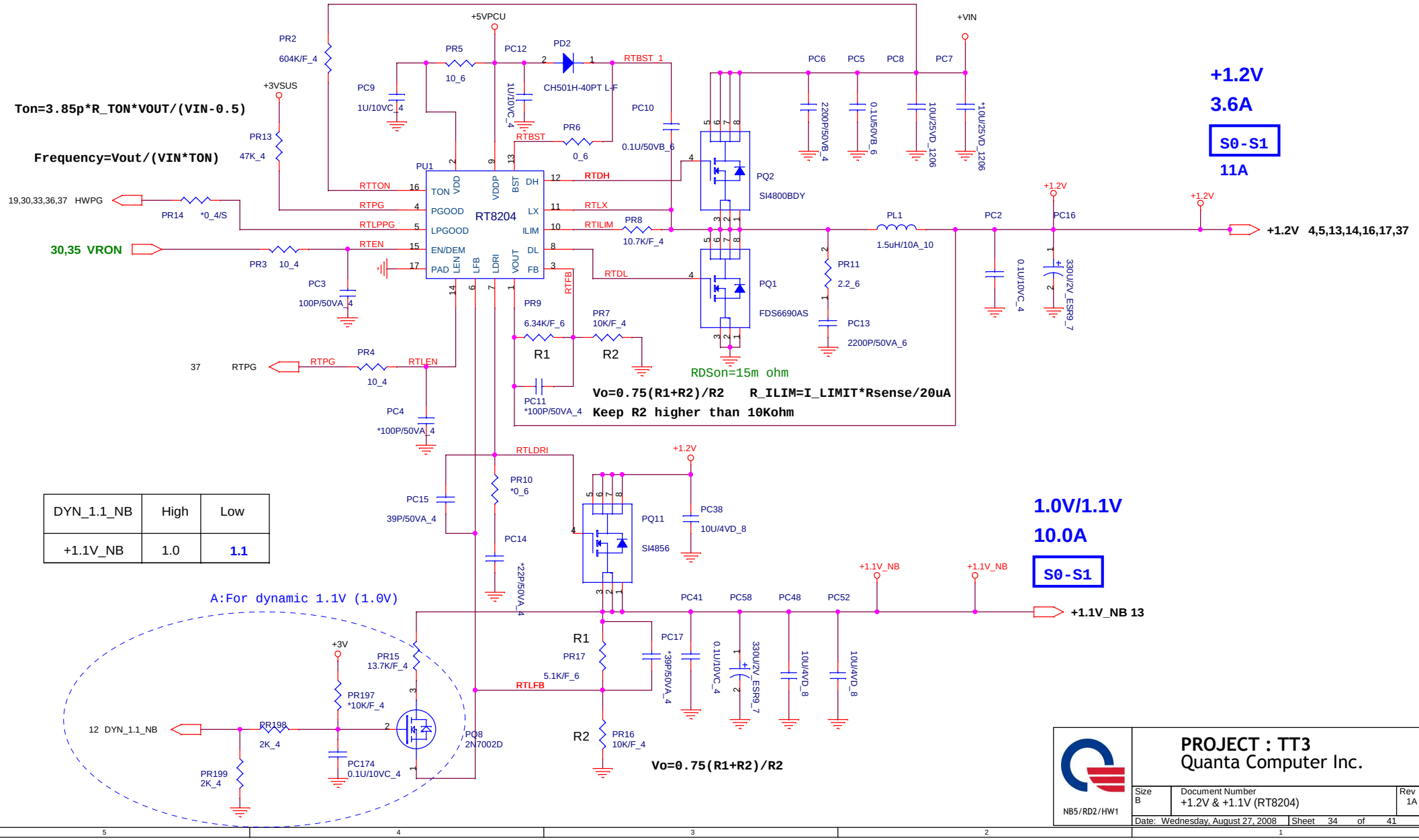


VCCP1.05V & +1.5V



DYN_1.1_NB	High	Low
+1.1V_NB	1.0	1.1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
B	+1.2V & +1.1V (RT8204)	1A

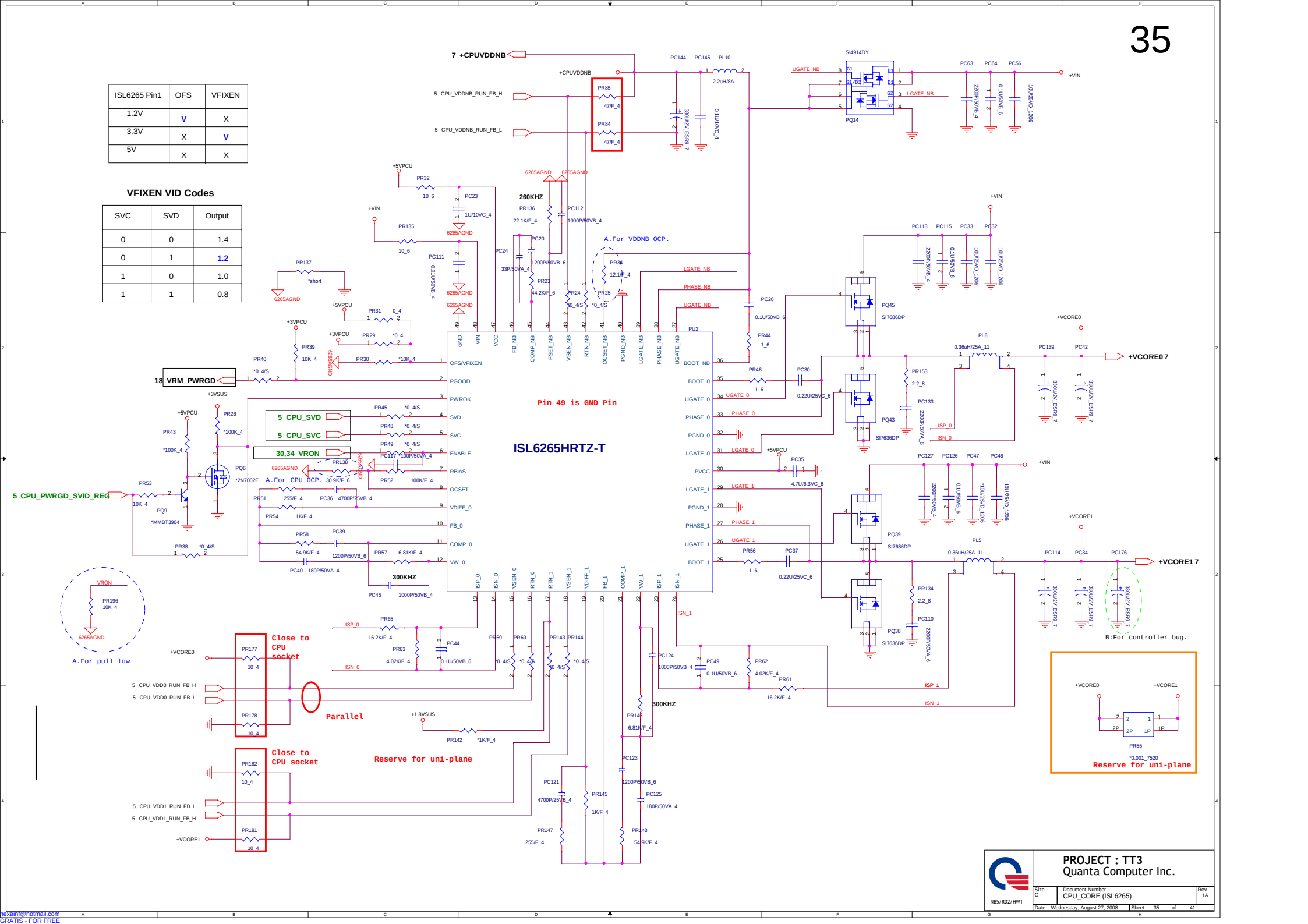
NB5/RD2/HW1

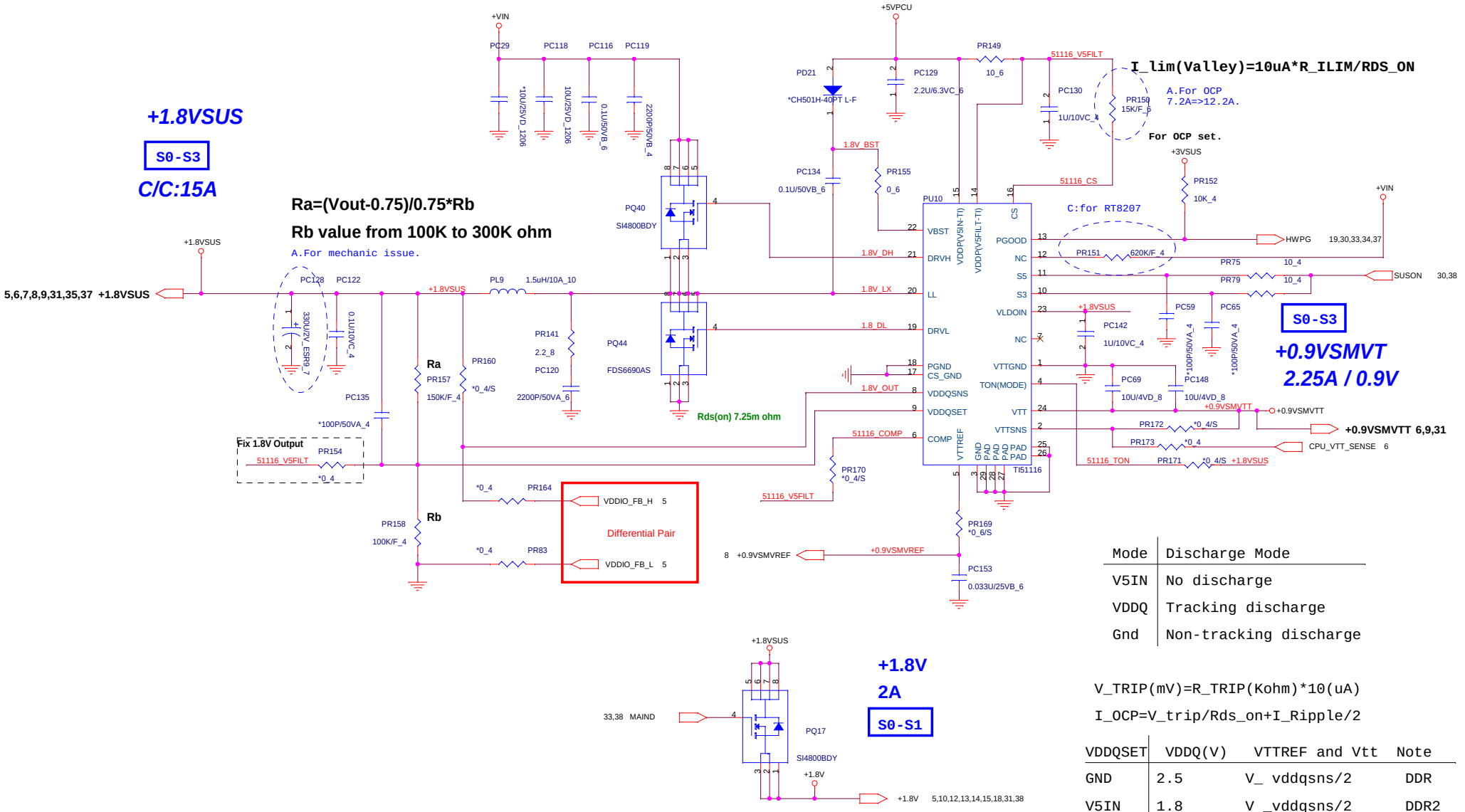
Date: Wednesday, August 27, 2008 Sheet 34 of 41

ISL6265 Pin1	OFS	VFIXEN
1.2V	V	X
3.3V	X	V
5V	X	X

VFIXEN VID Codes

SVC	SVD	Output
0	0	1.4
0	1	1.2
1	0	1.0
1	1	0.8





Mode	Discharge Mode
V5IN	No discharge
VDDQ	Tracking discharge
Gnd	Non-tracking discharge

V_TRIP(mV)=R_TRIP(Kohm)*10(uA)

I_OCP=V_trip/Rds_on+I_Ripple/2

VDDQSET	VDDQ(V)	VTTREF and Vtt	Note
GND	2.5	V_ vddqsns/2	DDR
V5IN	1.8	V _vddqsns/2	DDR2
FB	adjustable	V_VDDQSNS/2	1.5V<VDDQ<3V

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	1.8VSUS/DDR_VTER/+1.8V/2.5V	1A

NB5/RD2/HW1

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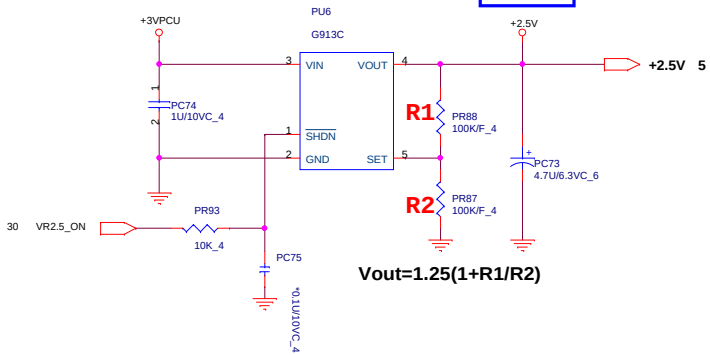
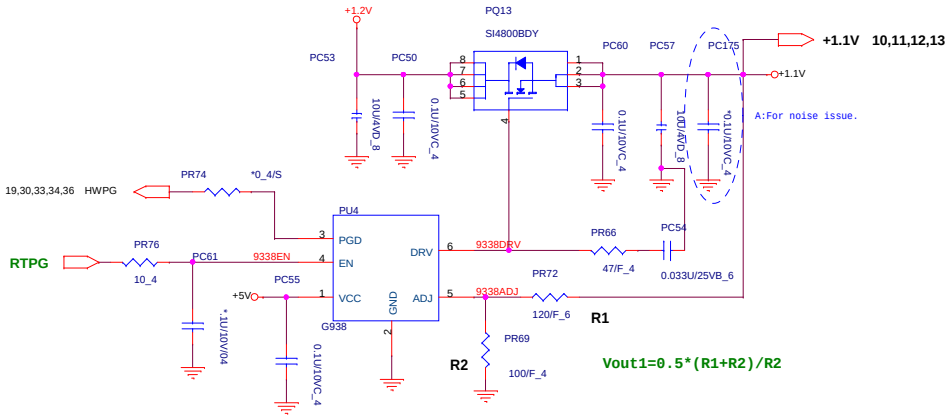
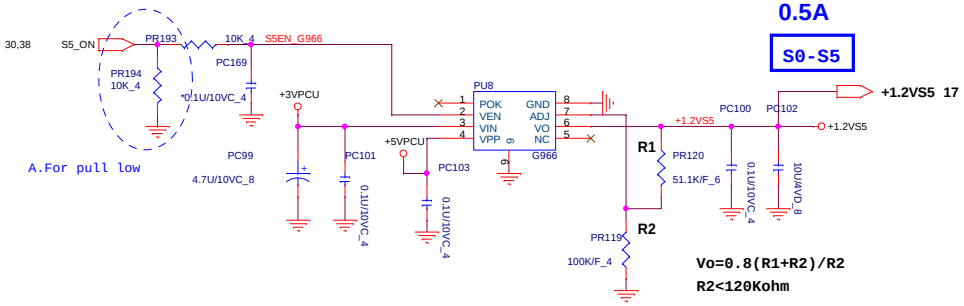
+2.5V
0.25A
S0-S1



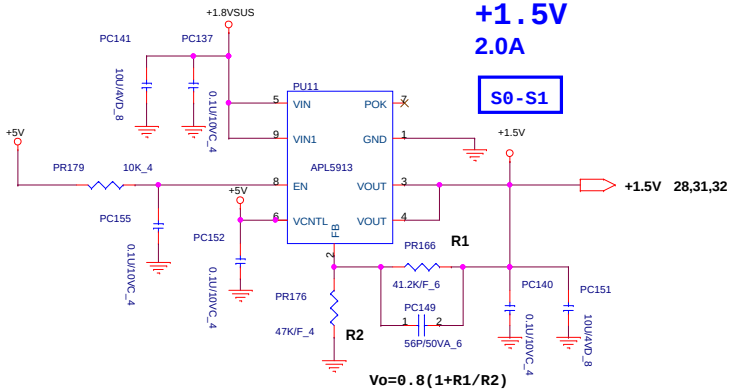
+1.1V
2.A
S0-S1



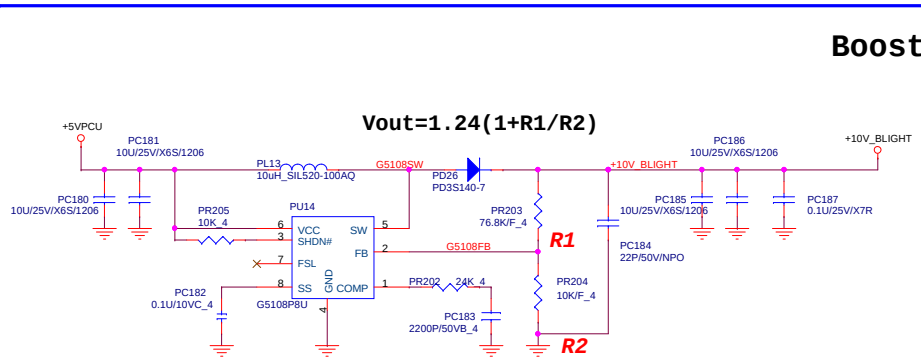
+1.2VS5
0.5A
S0-S5



+1.5V
2.0A
S0-S1



Boost 10V



PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	+1.2V_S5/+1.5/+1.1V/+2.5V	1A
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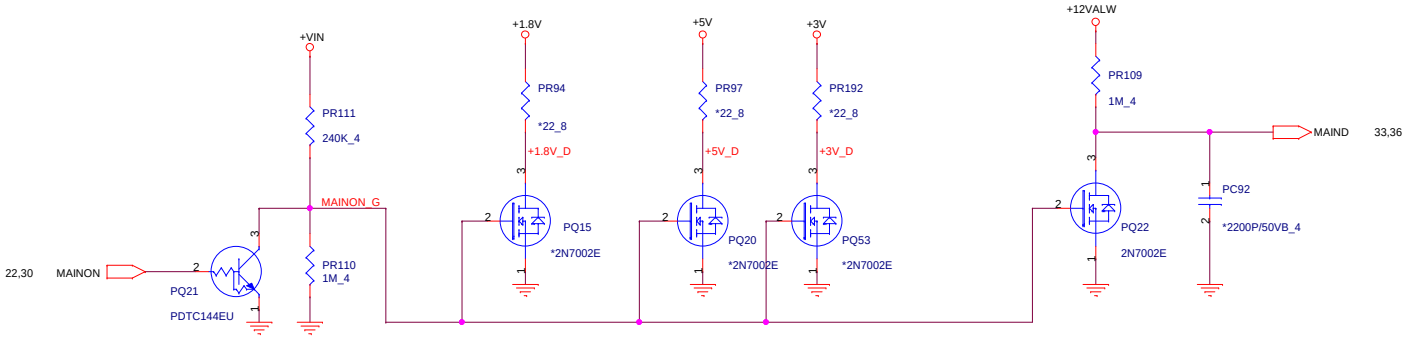
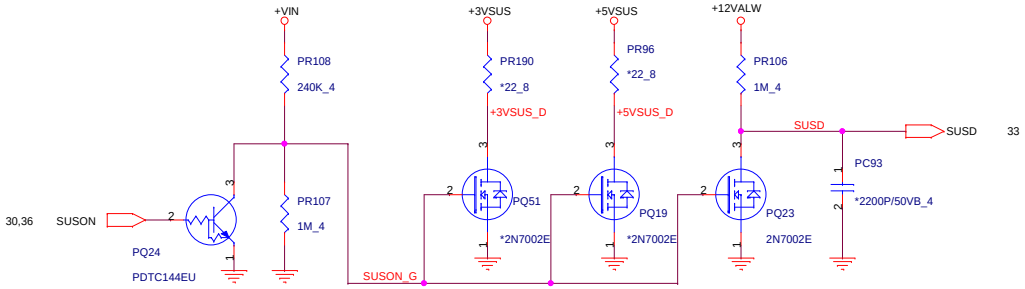
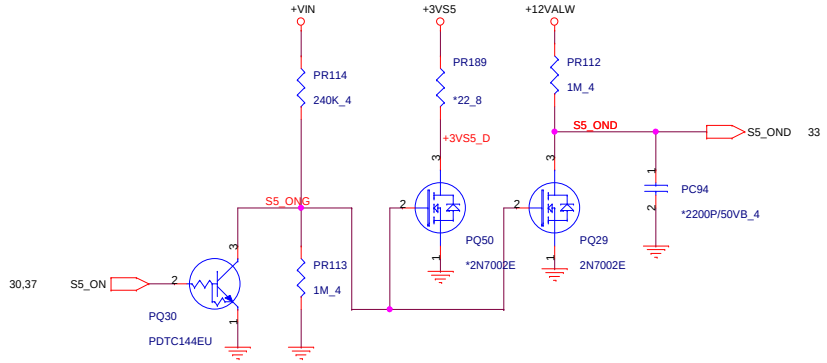
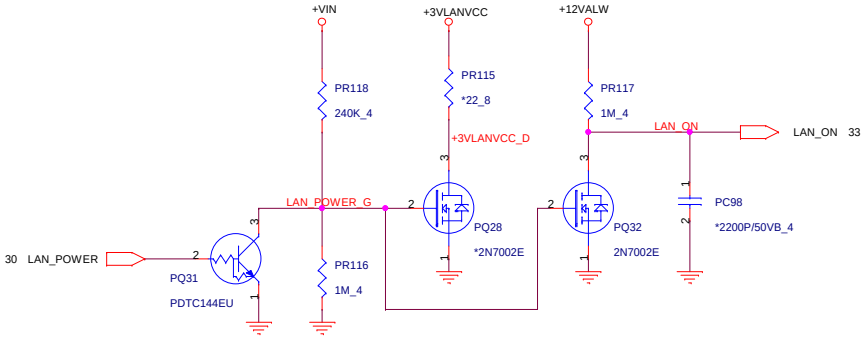
NB5/RD2/HW1









NB5/RD2/HW1

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DISCHARGE	1A

Date: Wednesday, August 27, 2008 Sheet 38 of 41

Charge current:
4 & 6 cell =>3A
8 cell =>3.5A

MP:For EC damage.

MP:For resonance voltage.

Close to PQ37.

Close to AC soft start MOSFET

A:For power rating.

B: for noise.

C:For mosfet burn.

A:For boost 28V.

Ra

Setting the Vin min to 11.42V
For ACSET 1.26V

Setting the Vin min to 15.88V
For EN = 1.06V

CELL_SET = 1 -- 3 S (Cells = GND 3S)
CELL_SET = 0 -- 4 S (Cells = VDD 4S)
CELL_SET = Float -- 2 S

Charging Curret setting =
I chg = (165mV / Rsense) * (Vchlim / 3.3V)

Input Current monitor
V icm = 19.9 * (Vcsip - Vcsin)

V ACLIM = VREF *
(Rhi // 152K) / (Rhi // 152K + Rlow// 152K)
Input curretn = 2.9A (71.5K , 10K)
(0.05/Vref * Vaclim + 0.05) / Rsense

VADJ =
VERF >> 4.2V +5%
Float >> 4.2V
GND >> 4.2 -5%

Vout=50*0.05*I

ADP TYPE	Ra VALUE	
65W	31.6K/F_4	CS33162FB14
90W	2.55K/F_4	CS22552FB01

PROJECT : TT3
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Charger (ISL6251)	1A

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NB5/RD2/HW1