FK1 SYSTEM DIAGRAM

PCB STACK UP

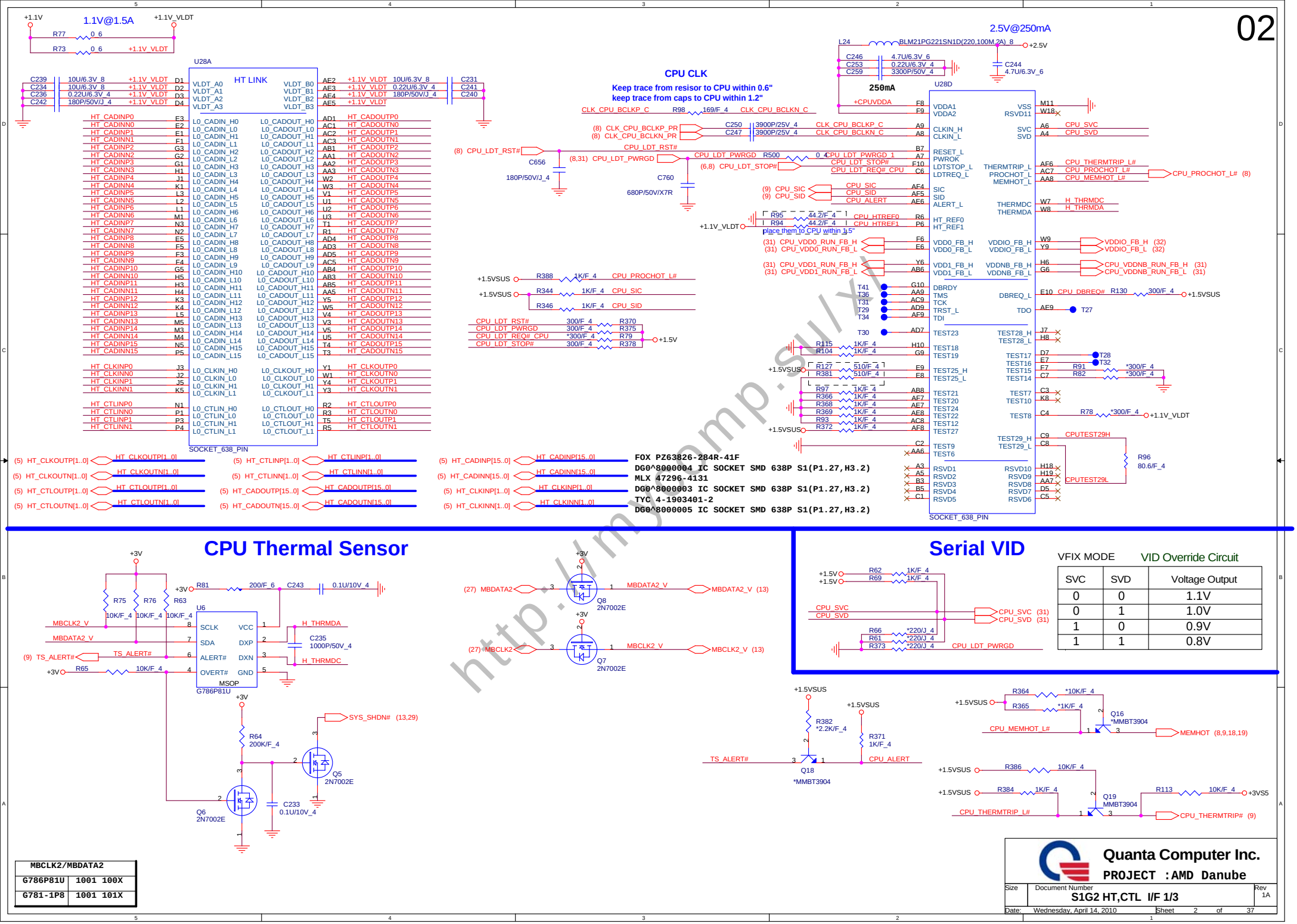
LAYER 1 : TOP
LAYER 2 : GND
LAYER 3 : IN1
LAYER 4 : IN2
LAYER 5 : VCC
LAYER 6 : BOT

DDRIII-SODIMM1 PAGE 19,20
DDRIII-SODIMM2 PAGE 19,20
DDRIII 1066 MHz
DDRIII 1066 MHz
AMD Champlain
35mm X 35mm
S1G4 Processor
638P (PGA) 25W
PAGE 3,4,5
CPU THERMAL SENSOR PAGE 38
32 Bit,DDR3*4
HT3
PCI-E
X1
X1
LAN
PCIE-LAN
RTL8103EL
(10/100)
PAGE 33
Mini PCI-E Card
(Wireless LAN)
PAGE 27
NORTH BRIDGE
RS880M
21mm X 21mm, 528pin BGA
PAGE 6,7,8,9
PCI-Express 16X
M93-S3/ Park-S3
23mm X 23mm, 631pin BGA
PAGE 15,16,17,18,19,20
CRT PAGE 25
LVDS PAGE 23
RJ45
ALINK X4
SYSTEM CHARGER(bq24740) PAGE 44,45
3/5VS5 RT8206B PAGE 43
+1.1V(RT8029)/+1.1VS5/+1.8V PAGE 41
DDR3 (RT8207)/+1.0V_VGA PAGE 42
VGACORE(1.1V~0.9V)RT8028A PAGE 40
CPU_CORE ISL6265 PAGE 39
SATA - HDD PAGE 30
SATA0 150MB
SATA - CD-ROM PAGE 30
SATA4 150MB
SOUTH BRIDGE
SB820M
23mm X 23mm, 605pin BGA
PAGE 10,11,12,13.14
Wireless LAN PAGE 27
USB2.0
3
0,1,8
9
2
5
USB2.0 Ports PAGE 29
Bluetooth PAGE 35
Webcam PAGE 23
Card Reader RTS5159-GR PAGE 26
Azalia
LPC
SPI
Audio Codec ALC269 PAGE 31
Keyboard PAGE 36
SMSC KBC
ITE8502
PAGE 34
Audio SPK conn
Audio Jacks
SPI
PS/2
FLASH 2Mbyts
Touchpad

SMBUS TABLE		
SB--SCL0/SD0	Clock gen/ wirless LAN/ New card/ DDR3/ DDR3 thermal/ Accelerometer/system thermal	+3V
EC -- AB1A	Battery charge/discharge	+3VPCU
EC -- AB2A	VGA thermal	+3V

Quanta Computer Inc.
PROJECT : AMD Danube

Size	Document Number	Rev
	Block Diagram	1A
Date: Wednesday, February 24, 2010	Sheet 1 of 37	



Processor Memory Interface

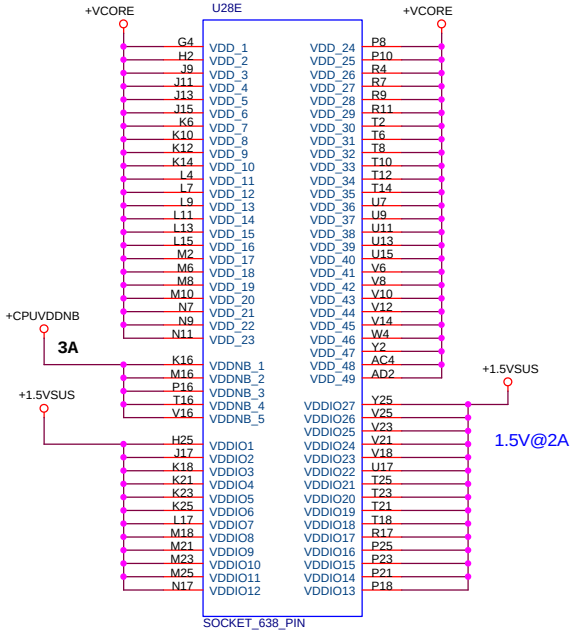
0.9V@1.5A

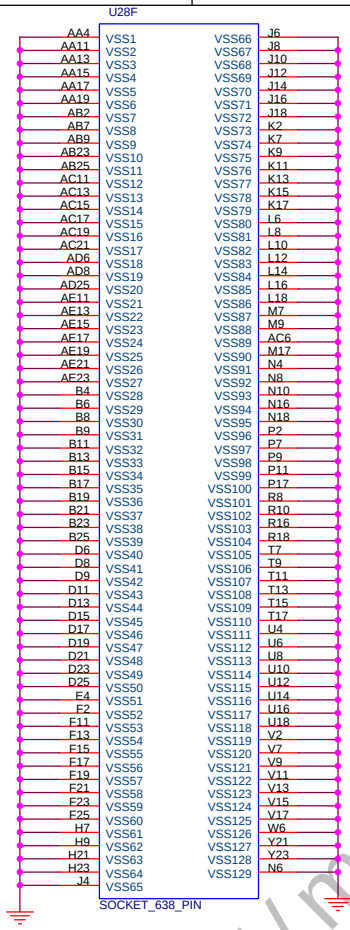
U28B — MEM:CMD/CTRL/CLK — SOCKET_638_PIN

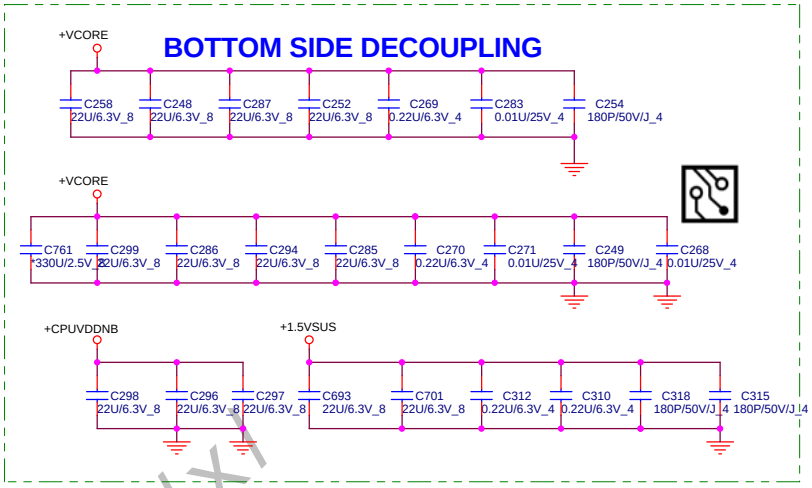
U28C — MEM:DATA — SOCKET_638_PIN

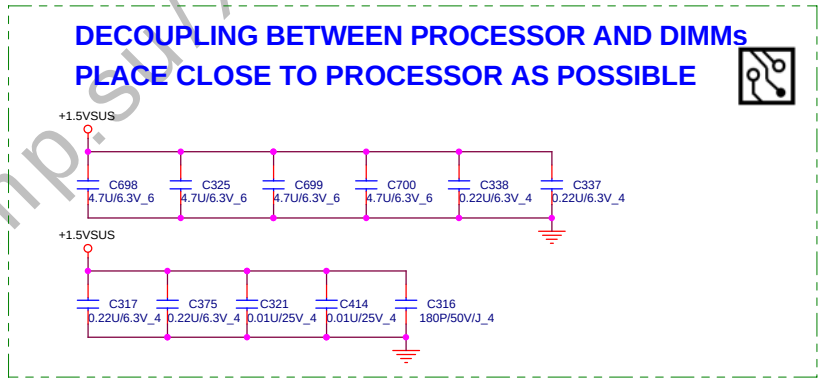
Place close to socket

Quanta Computer Inc.	
PROJECT : AMD Danube	
Size	Document Number: S1G2 DDRII MEMORY I/F 2/3 — Rev: 1A
Date: Wednesday, April 14, 2010	Sheet 3 of 37



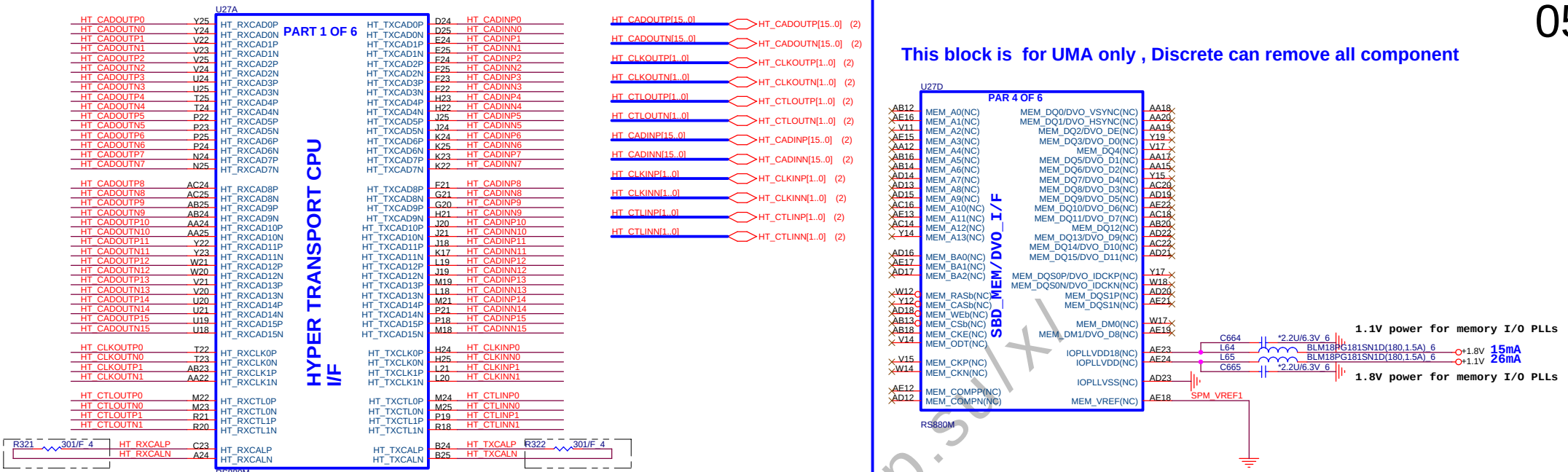




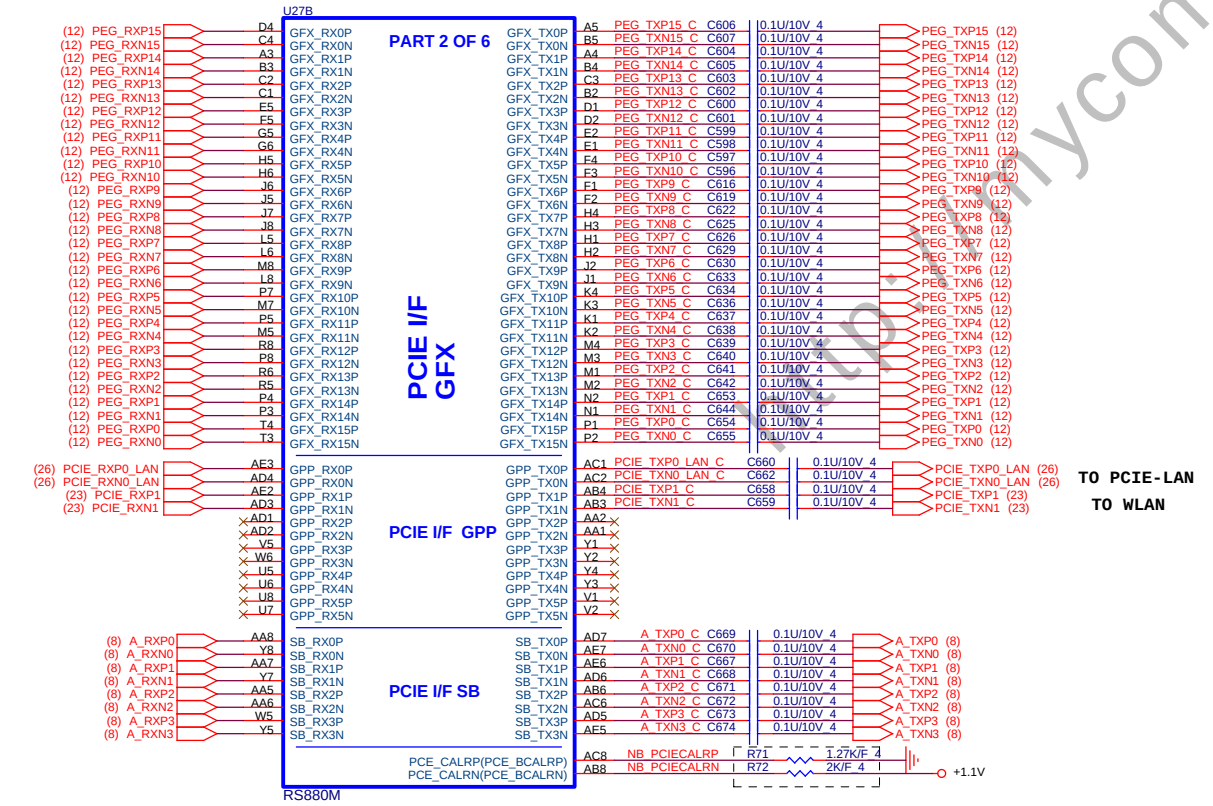


PROCESSOR POWER AND GROUND

Quanta Computer Inc.		
PROJECT : AMD Danube		
Size	Document Number	Rev
	S1G2 PWR & GND 3/3	1A
Date: Wednesday, April 14, 2010	Sheet 4 of 37	

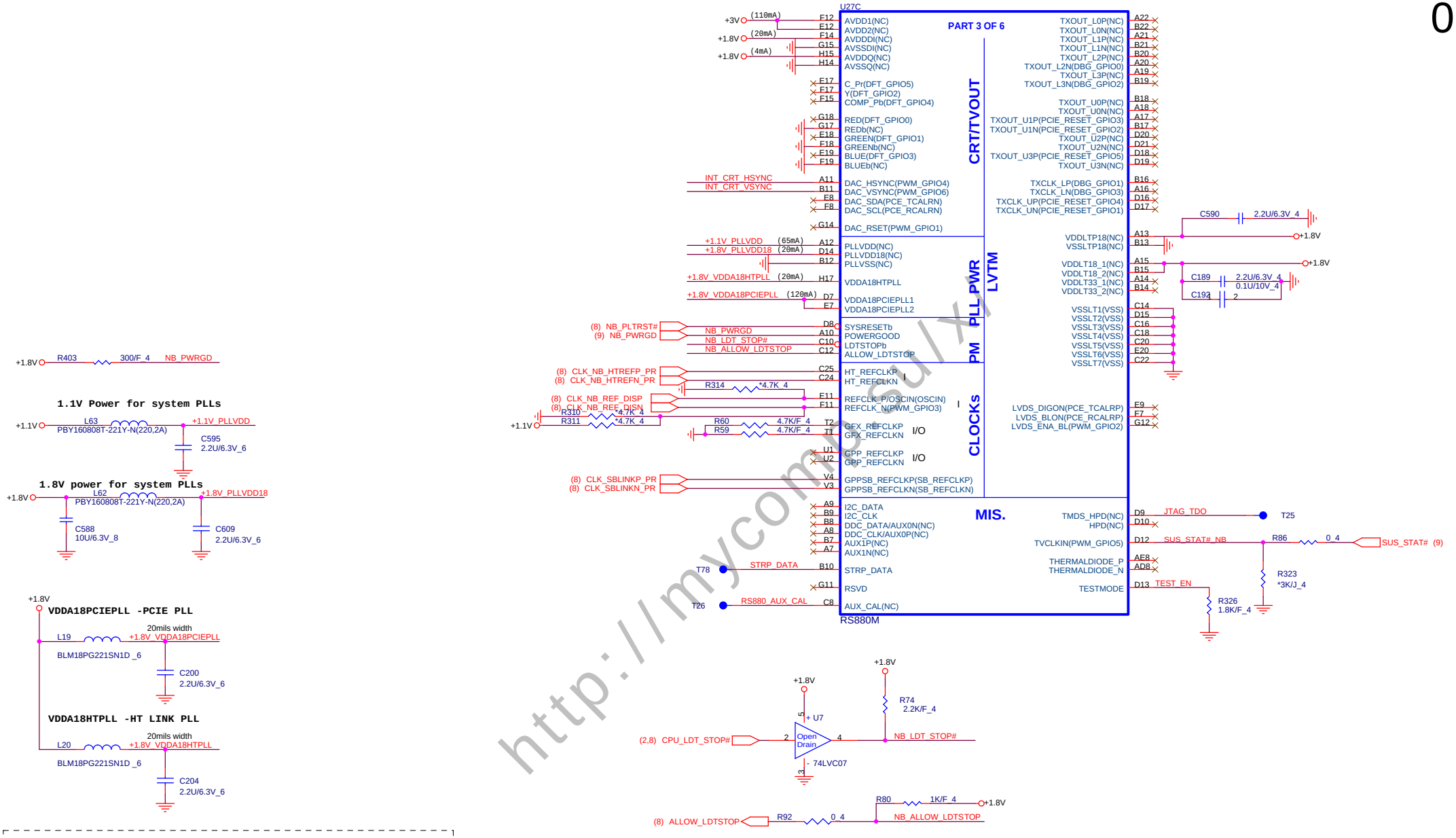


This block is for UMA only , Discrete can remove all component



Quanta Computer Inc.
PROJECT :AMD Danube

Size	Document Number	Rev
	RS880M LINK I/F 1/3	1A
Date: Wednesday, April 14, 2010	Sheet 5 of 37	

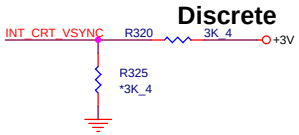


1.1V Power for system PLLs

1.8V power for system PLLs

Enables Debug Bus acess
through memory I/O pads and GPIO.
0 : Enable RS880M , Default
1 : Disable RS880M
(RX881 use DAC_VSYNC)

Discrete



Indicates if memory Side port
is available or not
0: Available
1: Not available

Discrete

Quanta Computer Inc.
PROJECT :AMD Danube

Size	Document Number	Rev
	RS880M-SYSTEM I/F 2/3	1A
Date: Wednesday, April 14, 2010	Sheet 6 of 37	

RX881/RS880 POWER DIFFERENCE TABLE

PIN NAME	RX881	RS880	PIN NAME	RX881	RS880
VDDHT	+1.1V	+1.1V	IOPLLVDD	+1.1V	+1.1V
VDDHTRX	+1.1V	+1.1V	AVDD	GND	+3.3V
VDDHTTX	+1.2V	+1.2V	AVDDDI	GND	+1.8V
VDDA18PCIE	+1.8V	+1.8V	AVDDQ	GND	+1.8V
VDDG18	+1.8V	+1.8V	PLLVDD	GND	+1.1V
VDD18_MEM	GND	+1.8V	PLLVDD18	GND	+1.8V
VDDPCIE	+1.1V	+1.1V	VDDA18PCIEPLL	+1.8V	+1.8V
VDDC	+1.1V	+1.1V	VDDA18HTPLL	+1.8V	+1.8V
VDD_MEM	GND	+1.8V/1.5V	VDDLTP18	GND	+1.8V
VDDG33	+3.3V	+3.3V	VDDLT18	GND	+1.8V
IOPLLVDD18	+1.8V	+1.8V	VDDLT33	NC	NC

PART 6/6 GROUND

PART 5/6 POWER

+1.1V 1.3A for RX881

+1.1V 0.4A for Rx881

+1.8V 1A for RX881

1.1V@2.5A VDDPCIE - PCIE-E Main power

0.95~1.1V@10A VDDC - Core Logic power

RX881 without side-port: Connected to GND plane.

60mA VDD33 - 3.3V I/O
Not applicable to RX780

VDD_MEM For UMA RS780 only
Not applicable to RX780
memory I/O transform

VDD18_MEM1/2
GND : W/O side Port
+1.8V : W side Port

Quanta Computer Inc.
PROJECT :AMD Danube

Size	Document Number	Rev
	RS880M-POWER5 3/3	1A
Date: Wednesday, March 24, 2010	Sheet 7 of 37	

	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT

SB800 HAS 15K INTERNAL PU FOR PCI_AD[27:23]

AD23 R133 2.2K/J_4
AD24 R111 2.2K/J_4
AD25 R112 2.2K/J_4
AD26 R361 2.2K/J_4
AD27 R362 2.2K/J_4

U29A
SB800 Part 1 of 5

C679 150P/50V_4
(6) NB_PLTRST# R356 33/J_4 A_RST#_SB
P1 PCIE_RST#
L1 A_RST#

(5) A_RXP0 C686 0.1U/10V_4 A_RXP0_C AD26
(5) A_RXN0 C688 0.1U/10V_4 A_RXN0_C AD27
(5) A_RXP1 C689 0.1U/10V_4 A_RXP1_C AC28
(5) A_RXN1 C690 0.1U/10V_4 A_RXN1_C AC29
(5) A_RXP2 C691 0.1U/10V_4 A_RXP2_C AB29
(5) A_RXN2 C692 0.1U/10V_4 A_RXN2_C AB28
(5) A_RXP3 C694 0.1U/10V_4 A_RXP3_C AB26
(5) A_RXN3 C695 0.1U/10V_4 A_RXN3_C AB27

A_TX0P A_TX0N A_TX1P A_TX1N A_TX2P A_TX2N A_TX3P A_TX3N

(5) A_TXP0 AE24 A_RX0P
(5) A_TXN0 AE23 A_RX0N
(5) A_TXP1 AD25 A_RX1P
(5) A_TXN1 AD24 A_RX1N
(5) A_TXP2 AC24 A_RX2P
(5) A_TXN2 AC25 A_RX2N
(5) A_TXP3 AB25 A_RX3P
(5) A_TXN3 AB24 A_RX3N

+1.1V_PCIE_VDDR
R400 590/F_4 PCIE_CALRP_SB AD29 PCIE_CALRP
R151 2K/F_4 PCIE_CALRN_SB AD28 PCIE_CALRN

PCI EXPRESS INTERFACES

AA28 GPP_TX0P
AA29 GPP_TX0N
Y29 GPP_TX1P
Y28 GPP_TX1N
Y26 GPP_TX2P
Y27 GPP_TX2N
W28 GPP_TX3P
W29 GPP_TX3N

AA22 GPP_RX0P
Y21 GPP_RX0N
AA25 GPP_RX1P
AA24 GPP_RX1N
W23 GPP_RX2P
V24 GPP_RX2N
W24 GPP_RX3P
W25 GPP_RX3N

+3V
C245 0.1U/16V_4
U8
(9) SB_GPIO_RST# 2
A_RST#_SB 1
R102 33/J_4 4
PLTRST# (22,23,26)
MC74VHC1G08DFT2G
3

PCI CLKS

PCICLK0 W2 T79
PCICLK1/GPO36 W1 PCI_CLK1 (10)
PCICLK2/GPO37 W3 PCI_CLK2 (10)
PCICLK3/GPO38 W4 PCI_CLK3 (10)
PCICLK4/14M_OSC/GPO39 Y1 PCI_CLK4 (10)
PCIRST# V2

PCI INTERFACE

AD0/GPIO0 AA1
AD1/GPIO1 AA4
AD2/GPIO2 AA3
AD3/GPIO3 AB1
AD4/GPIO4 AA5
AD5/GPIO5 AB2
AD6/GPIO6 AB6
AD7/GPIO7 AB5
AD8/GPIO8 AA6
AD9/GPIO9 AC2
AD10/GPIO10 AC3
AD11/GPIO11 AC4
AD12/GPIO12 AC1
AD13/GPIO13 AD1
AD14/GPIO14 AD2
AD15/GPIO15 AC6
AD16/GPIO16 AE2
AD17/GPIO17 AE1
AD18/GPIO18 AE8
AD19/GPIO19 AE3
AD20/GPIO20 AF1
AD21/GPIO21 AG1
AD22/GPIO22 AF2
AD23/GPIO23 AE9 AD23
AD24/GPIO24 AD9 AD24
AD25/GPIO25 AC11 AD25
AD26/GPIO26 AF6 AD26
AD27/GPIO27 AF4 AD27
AD28/GPIO28 AE3
AD29/GPIO29 AH2
AD30/GPIO30 AG2
AD31/GPIO31 AH3
CBE0# AA8
CBE1# AD5
CBE2# AD8
CBE3# AA10
FRAME# AE8
DEVSEL# AB9
IRDY# AJ3
TRDY# AE7
PAR AC5
STOP# AF5
PERR# AE6
SERR# AE4
REQ0# AE11 R134 10K/J_4 +3V
REQ1#/GPIO40 AH5 T81
REQ2#/CLK_REQ8#/GPIO41 AH4 T80
REQ3#/CLK_REQ5#/GPIO42 AC12 T51
GNT0# AD12 R139 10K/J_4 +3V
GNT1#/GPO44 AJ5 T83
GNT2#/GPO45 AH6 T82
GNT3#/CLK_REQ7#/GPIO46 AB12 T56
CLKRUN# AB11 T54
LOCK# AD7 T48
INTE#/GPIO32 AJ6 R126 10K/J_4 +3V
INTF#/GPIO33 AC6
INTG#/GPIO34 AG4
INTH#/GPIO35 AJ4 VGA_RST#

+3V
R347 *2.2K/F_4
R363 *2.2K/F_4
Q17 *MMBT3904
MEMHOT (2,9,18,19)

To NB
(6) CLK_SBLINKP_PR M23 PCIE_RCLKP/NB_LNK_CLKP
(6) CLK_SBLINKN_PR P23 PCIE_RCLKN/NB_LNK_CLKN

To NB
(6) CLK_NB_REF_DISP U29 NB_DISP_CLKP
(6) CLK_NB_REF_DISN U28 NB_DISP_CLKN

To NB
(6) CLK_NB_HTREFP_PR T26 NB_HT_CLKP
(6) CLK_NB_HTREFN_PR T27 NB_HT_CLKN

To CPU
(2) CLK_CPU_BCLKP_PR V21 CPU_HT_CLKP
(2) CLK_CPU_BCLKN_PR T21 CPU_HT_CLKN

To Park-S3
(12) CLK_PCIE_VGAP V23 SLT_GFX_CLKP
(12) CLK_PCIE_VGAN T23 SLT_GFX_CLKN

To LAN
(26) CLK_PCIE_LANP_PR L29 GPP_CLK0P
(26) CLK_PCIE_LANN_PR L28 GPP_CLK0N

N29 GPP_CLK1P
N28 GPP_CLK1N

To WLAN
(23) CLK_PCIE_WLANP_PR M29 GPP_CLK2P
(23) CLK_PCIE_WLANN_PR M28 GPP_CLK2N

T25 GPP_CLK3P
V25 GPP_CLK3N

L24 GPP_CLK4P
L23 GPP_CLK4N

P25 GPP_CLK5P
M25 GPP_CLK5N

P29 GPP_CLK6P
P28 GPP_CLK6N

N26 GPP_CLK7P
N27 GPP_CLK7N

T29 GPP_CLK8P
T28 GPP_CLK8N

CLOCK GENERATOR

+3V
R99 10K/J_4
(12) GFX_RST# D3 RB501V-40 A_RST#_SB
D4 RB501V-40 VGA_RST#

To Card Reader
(22) CLK_48M_CARD_R R401 22_4 L25 14M_25M_48M_OSC

C696 33P/50V_4
Y7 25MHZ/30PPM/20PF
R402 1M_4
C697 33P/50V_4
25M_X1 L26 25M_X1
25M_X2 L27 25M_X2

LPC

LPCCLK0 H24 LPC_CLK0 (10)
LPCCLK1 H25 R396 22_4 LPC_CLK1 (10)
R397 22_4 CLK_33M_LPC (23)
CLK_33M_KBC (27)
LAD0 J27 LAD0 (23,27)
LAD1 J26 LAD1 (23,27)
LAD2 H29 LAD2 (23,27)
LAD3 H28 LAD3 (23,27)
LFRAME# G28 LFRAME# (23,27)
C687 5.6P/50V_4
C685 22P/50V_4
LDRQ0# J25 T60
LDRQ1#/CLK_REQ6#/GPIO49 AA18 T58
SERIRQ/GPIO48 AB19 R163 *10K_4 +3V SERIRQ (27)

CPU

ALLOW_LDTSTP/DMA_ACTIVE# G21 ALLOW_LDTSTOP (6)
PROCHOT# H21 CPU_PROCHOT_L# (2)
LDT_PG K19 CPU_LDT_PWRGD (2,31)
LDT_STP# G22 CPU_LDT_STOP# (2,6)
LDT_RST# J24 CPU_LDT_RST# (2)

RTC

32K_X1 C1 RTC_X1
32K_X2 C2 RTC_X2
RTCCLK D2 RTC_CLK (27)
INTRUDER_ALERT# B2 T39
VDDBT_RTC_G B1

INTRUDER_ALERT# Left not connected (Southbridge has 50-kohm internal pull-up to VBAT).

20MIL
G1 *SHORT PAD1
G2 *SHORT PAD1
R100 510/F_4 +AVBAT
C251 0.1U/10V_4

0412 add G2 for RTC clean

RTC_X1
Y5
32.768K/10PPM
RTC_X2
R345 20M
C675 18P/50V_4
C676 18P/50V_4

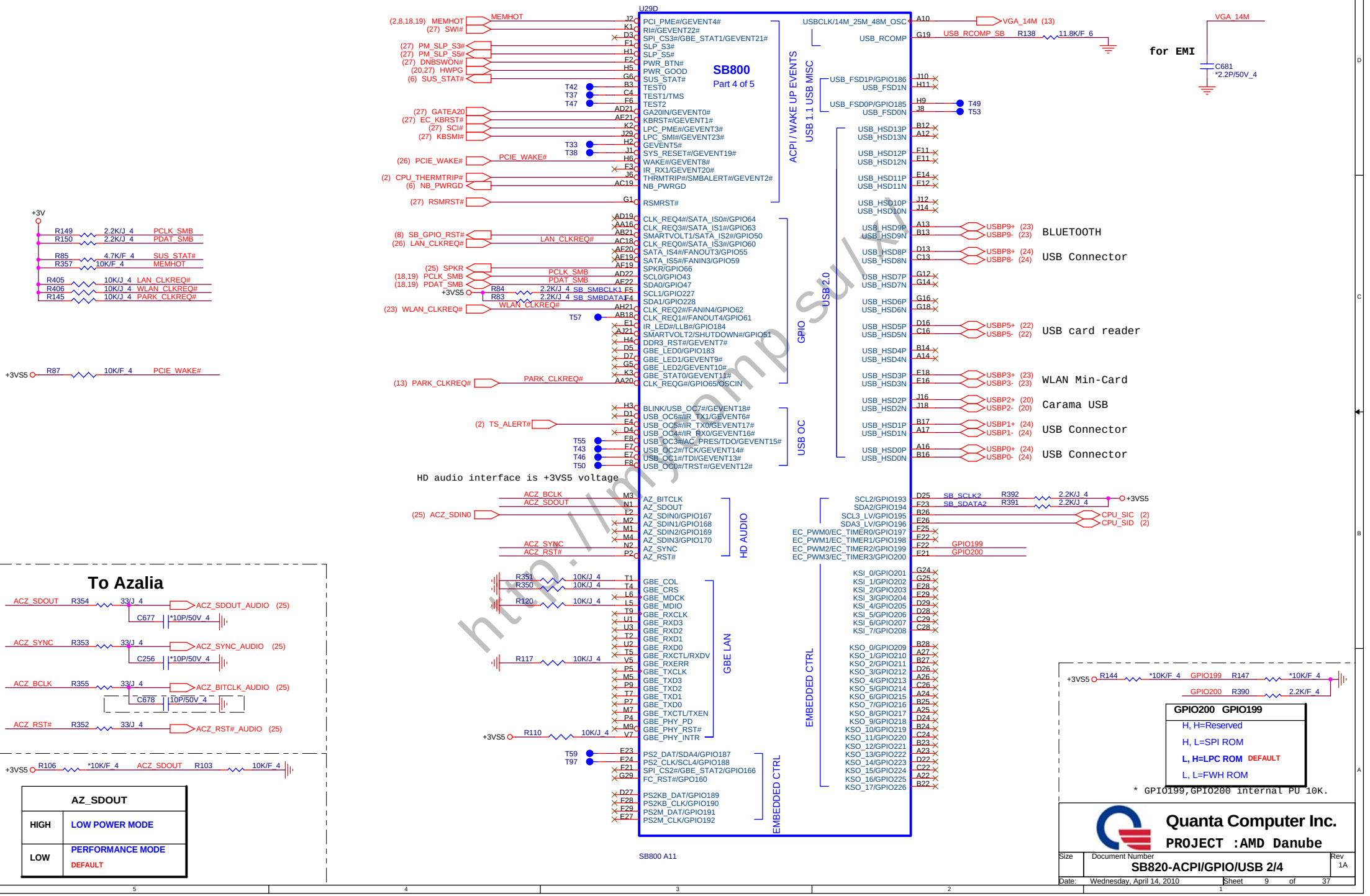
+3VPCU D17 SW1010CPT D18
+AVBAT
20MIL
C717 1U/10V_4
RB501V-40
20MIL
+VCCRTC_2
R412 1K/F_4
20MIL
+BAT
CON10
AAA-BAT-054-K01
bat-ap-aaa-bat-054-k01-2p

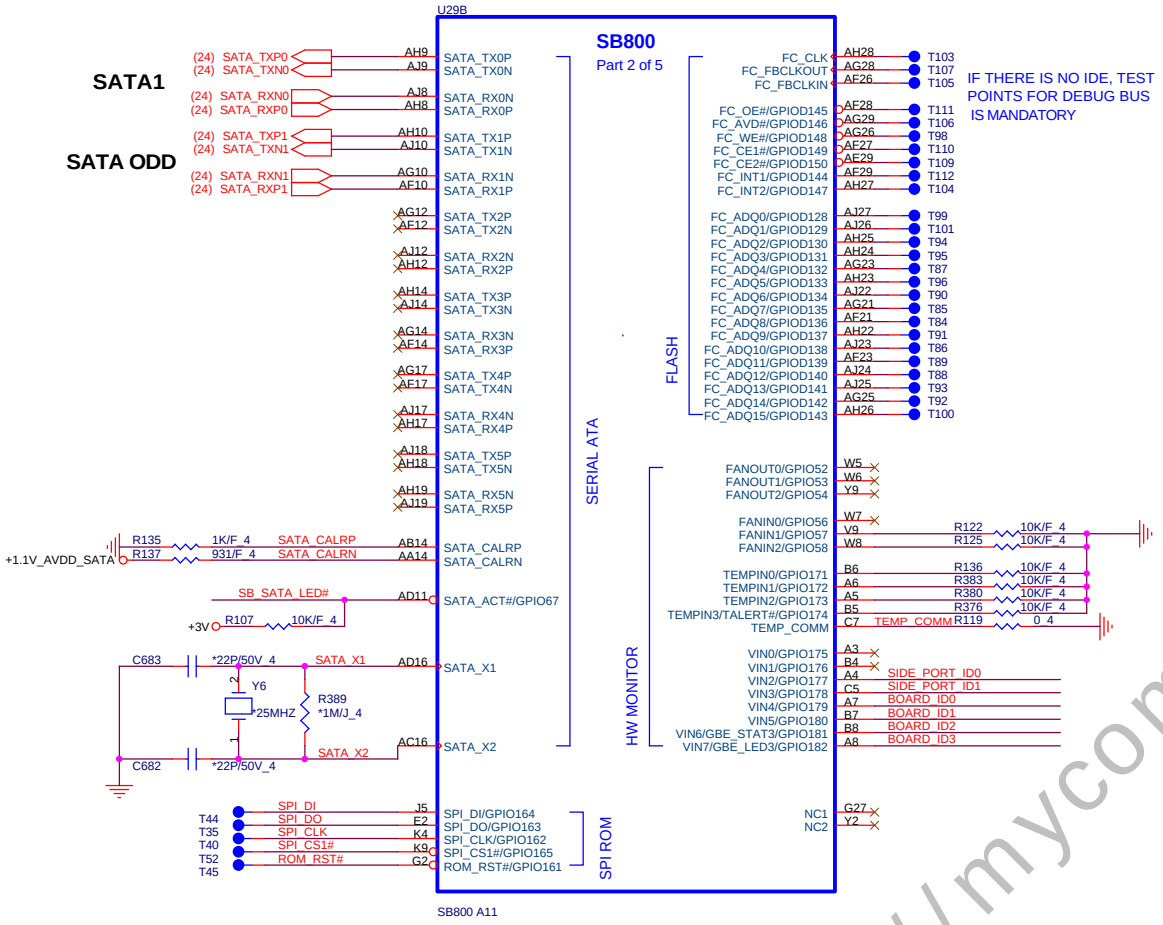
SB800 A11

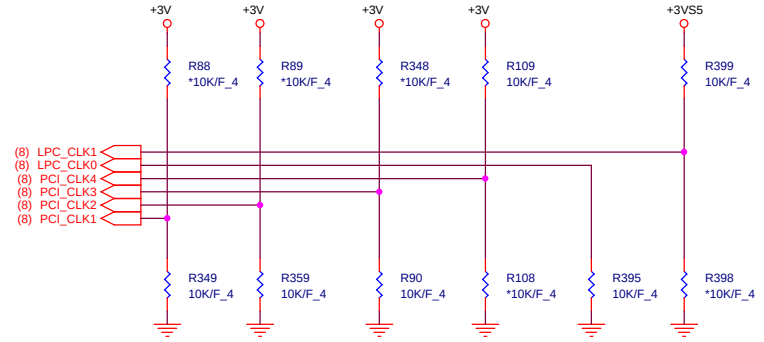
IC CTRL(528P) SB710 A14(218-0660017)
P/N : AJ066000T01

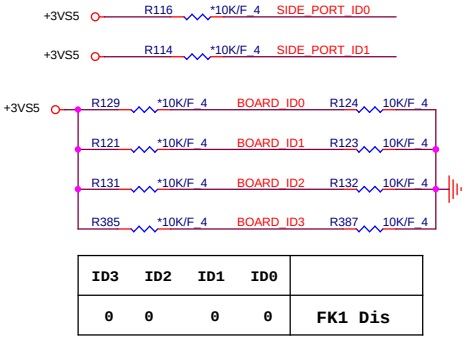
Quanta Computer Inc.
PROJECT :AMD Danube

Size	Document Number	Rev
	SB820-PCIE/PCI/CPU/LPC 1/4	1A
Date: Monday, April 19, 2010	Sheet 8 of 37	

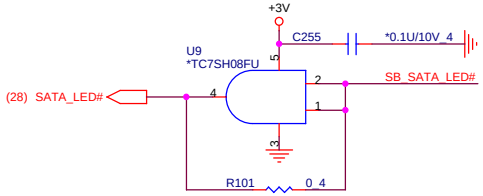

U29D
SB800
Part 4 of 5
ACPI / WAKE UP EVENTS
USB 1.1 USB MISC
USB 2.0
GPIO
USB OC
HD AUDIO
GBE LAN
EMBEDDED CTRL
EMBEDDED CTRL
PCI_PME#/GEVENT4#
RI#/GEVENT22#
SPI_CS3#/GBE_STAT1/GEVENT21#
SLP_S3#
SLP_S5#
PWR_BTN#
PWR_GOOD
SUS_STAT#
TEST0
TEST1/TMS
TEST2
GA20IN/GEVENT0#
KBRST#/GEVENT1#
LPC_PME#/GEVENT3#
LPC_SMI#/GEVENT23#
GEVENT5#
SYS_RESET#/GEVENT19#
WAKE#/GEVENT8#
IR_RX1/GEVENT20#
THRMTRIP#/SMBALERT#/GEVENT2#
NB_PWRGD
RSMRST#
CLK_REQ4#/SATA_IS0#/GPIO64
CLK_REQ3#/SATA_IS1#/GPIO63
SMARTVOLT1/SATA_IS2#/GPIO50
CLK_REQ0#/SATA_IS3#/GPIO60
SATA_IS4#/FANOUT3/GPIO55
SATA_IS5#/FANIN3/GPIO59
SPKR/GPIO66
SCL0/GPIO43
SDA0/GPIO47
SCL1/GPIO227
SDA1/GPIO228
CLK_REQ2#/FANIN4/GPIO62
CLK_REQ1#/FANOUT4/GPIO61
IR_LED#/LLB#/GPIO184
SMARTVOLT2/SHUTDOWN#/GPIO51
DDR3_RST#/GEVENT7#
GBE_LED0/GPIO183
GBE_LED1/GEVENT9#
GBE_LED2/GEVENT10#
GBE_STAT0/GEVENT11#
CLK_REQG#/GPIO65/OSCIN
BLINK/USB_OC7#/GEVENT18#
USB_OC6#/IR_TX1/GEVENT6#
USB_OC5#/IR_TX0/GEVENT17#
USB_OC4#/IR_RX0/GEVENT16#
USB_OC3#/AC_PRES/TDO/GEVENT15#
USB_OC2#/TCK/GEVENT14#
USB_OC1#/TDI/GEVENT13#
USB_OC0#/TRST#/GEVENT12#
AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO167
AZ_SDIN1/GPIO168
AZ_SDIN2/GPIO169
AZ_SDIN3/GPIO170
AZ_SYNC
AZ_RST#
GBE_COL
GBE_CRS
GBE_MDCK
GBE_MDIO
GBE_RXCLK
GBE_RXD3
GBE_RXD2
GBE_RXD1
GBE_RXD0
GBE_RXCTL/RXDV
GBE_RXERR
GBE_TXCLK
GBE_TXD3
GBE_TXD2
GBE_TXD1
GBE_TXD0
GBE_TXCTL/TXEN
GBE_PHY_PD
GBE_PHY_RST#
GBE_PHY_INTR
PS2_DAT/SDA4/GPIO187
PS2_CLK/SCL4/GPIO188
SPI_CS2#/GBE_STAT2/GPIO166
FC_RST#/GPO160
PS2KB_DAT/GPIO189
PS2KB_CLK/GPIO190
PS2M_DAT/GPIO191
PS2M_CLK/GPIO192
USBCLK/14M_25M_48M_OSC
USB_RCOMP
USB_FSD1P/GPIO186
USB_FSD1N
USB_FSD0P/GPIO185
USB_FSD0N
USB_HSD13P
USB_HSD13N
USB_HSD12P
USB_HSD12N
USB_HSD11P
USB_HSD11N
USB_HSD10P
USB_HSD10N
USB_HSD9P
USB_HSD9N
USB_HSD8P
USB_HSD8N
USB_HSD7P
USB_HSD7N
USB_HSD6P
USB_HSD6N
USB_HSD5P
USB_HSD5N
USB_HSD4P
USB_HSD4N
USB_HSD3P
USB_HSD3N
USB_HSD2P
USB_HSD2N
USB_HSD1P
USB_HSD1N
USB_HSD0P
USB_HSD0N
SCL2/GPIO193
SDA2/GPIO194
SCL3_LV/GPIO195
SDA3_LV/GPIO196
EC_PWM0/EC_TIMER0/GPIO197
EC_PWM1/EC_TIMER1/GPIO198
EC_PWM2/EC_TIMER2/GPIO199
EC_PWM3/EC_TIMER3/GPIO200
KSI_0/GPIO201
KSI_1/GPIO202
KSI_2/GPIO203
KSI_3/GPIO204
KSI_4/GPIO205
KSI_5/GPIO206
KSI_6/GPIO207
KSI_7/GPIO208
KSO_0/GPIO209
KSO_1/GPIO210
KSO_2/GPIO211
KSO_3/GPIO212
KSO_4/GPIO213
KSO_5/GPIO214
KSO_6/GPIO215
KSO_7/GPIO216
KSO_8/GPIO217
KSO_9/GPIO218
KSO_10/GPIO219
KSO_11/GPIO220
KSO_12/GPIO221
KSO_13/GPIO222
KSO_14/GPIO223
KSO_15/GPIO224
KSO_16/GPIO225
KSO_17/GPIO226
SB800 A11
BLUETOOTH
USB Connector
USB card reader
WLAN Min-Card
Carama USB
USB Connector
USB Connector
HD audio interface is +3VS5 voltage
for EMI
C681 *2.2P/50V_4
To Azalia
ACZ_SDOUT R354 33/J_4 ACZ_SDOUT_AUDIO (25)
C677 *10P/50V_4
ACZ_SYNC R353 33/J_4 ACZ_SYNC_AUDIO (25)
C256 *10P/50V_4
ACZ_BCLK R355 33/J_4 ACZ_BITCLK_AUDIO (25)
C678 10P/50V_4
ACZ_RST# R352 33/J_4 ACZ_RST#_AUDIO (25)
+3VS5 R106 *10K/F_4 ACZ_SDOUT R103 10K/F_4
AZ_SDOUT
HIGH LOW POWER MODE
LOW PERFORMANCE MODE DEFAULT
+3V R149 2.2K/J_4 PCLK_SMB R150 2.2K/J_4 PDAT_SMB
R85 4.7K/F_4 SUS_STAT# R357 10K/F_4 MEMHOT
R405 10K/J_4 LAN_CLKREQ# R406 10K/J_4 WLAN_CLKREQ# R145 10K/J_4 PARK_CLKREQ#
+3VS5 R87 10K/F_4 PCIE_WAKE#
+3VS5 R144 *10K/F_4 GPIO199 R147 *10K/F_4
GPIO200 R390 2.2K/F_4
GPIO200 GPIO199
H, H=Reserved
H, L=SPI ROM
L, H=LPC ROM DEFAULT
L, L=FWH ROM
* GPIO199,GPIO200 internal PU 10K.
Quanta Computer Inc.
PROJECT :AMD Danube
Size Document Number SB820-ACPI/GPIO/USB 2/4 Rev 1A
Date: Wednesday, April 14, 2010 Sheet 9 of 37







ID3	ID2	ID1	ID0	
0	0	0	0	FK1 Dis



	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1
PULL HIGH	ALLOW PCIE Gen2	Watchdog Timer Enable	USE DEBUG STRAPS	non_Fusion CLOCK MODE DEFAULT	EC ENABLED	CLKGEN ENABLED DEFAULT
PULL LOW	FORCE PCIE Gen1 DEFAULT	Watchdog Timer Disable DEFAULT	IGNORE DEBUG STRAPS DEFAULT	Fusion CLOCK MODE	EC DISABLED DEFAULT	CLKGEN DISABLED

Quanta Computer Inc.
PROJECT :AMD Danube

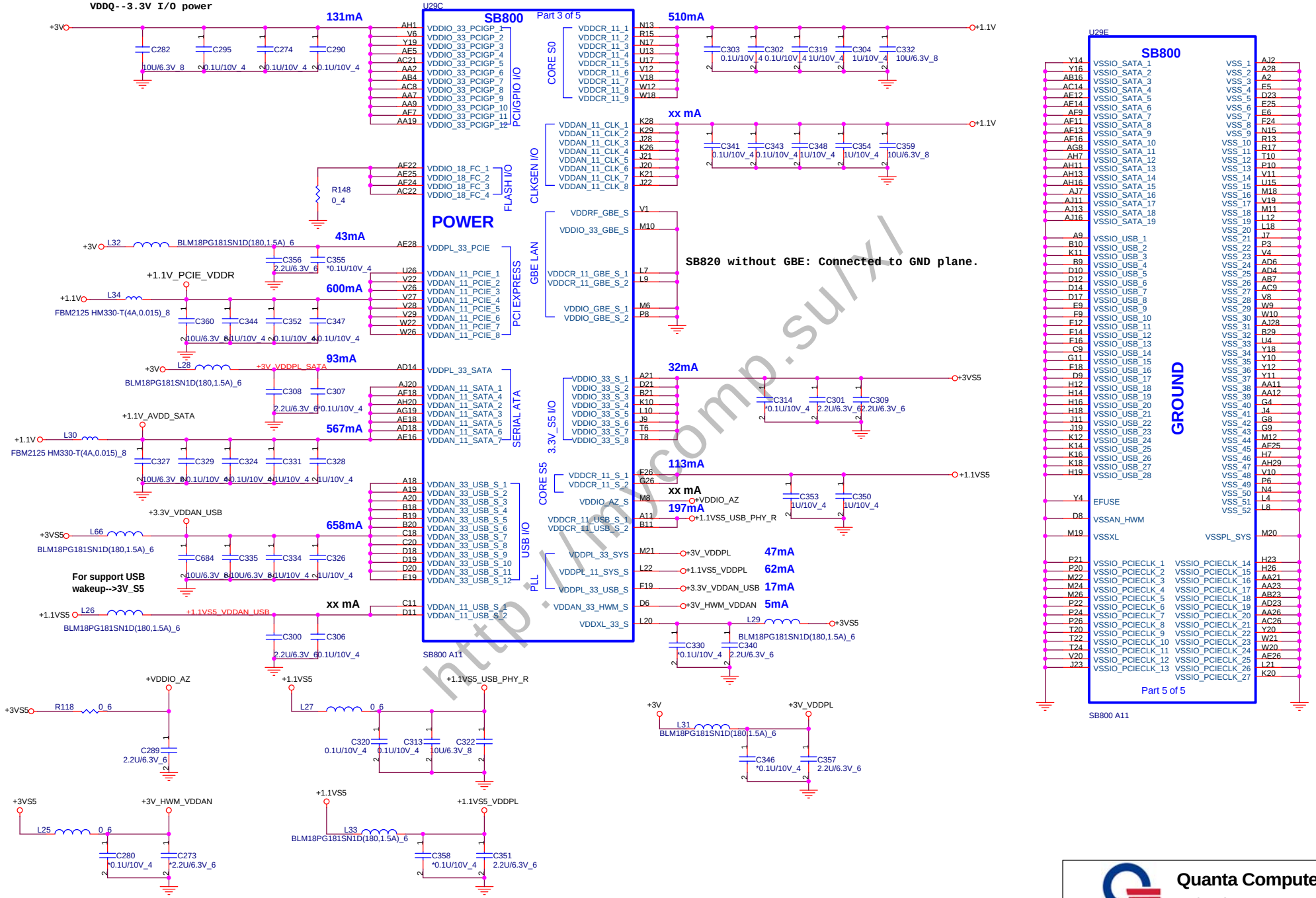
Size	Document Number	Rev
	SB820-SATA/IDE/HWM/SPI 3/4	1A

Date: Tuesday, March 23, 2010 Sheet 10 of 37

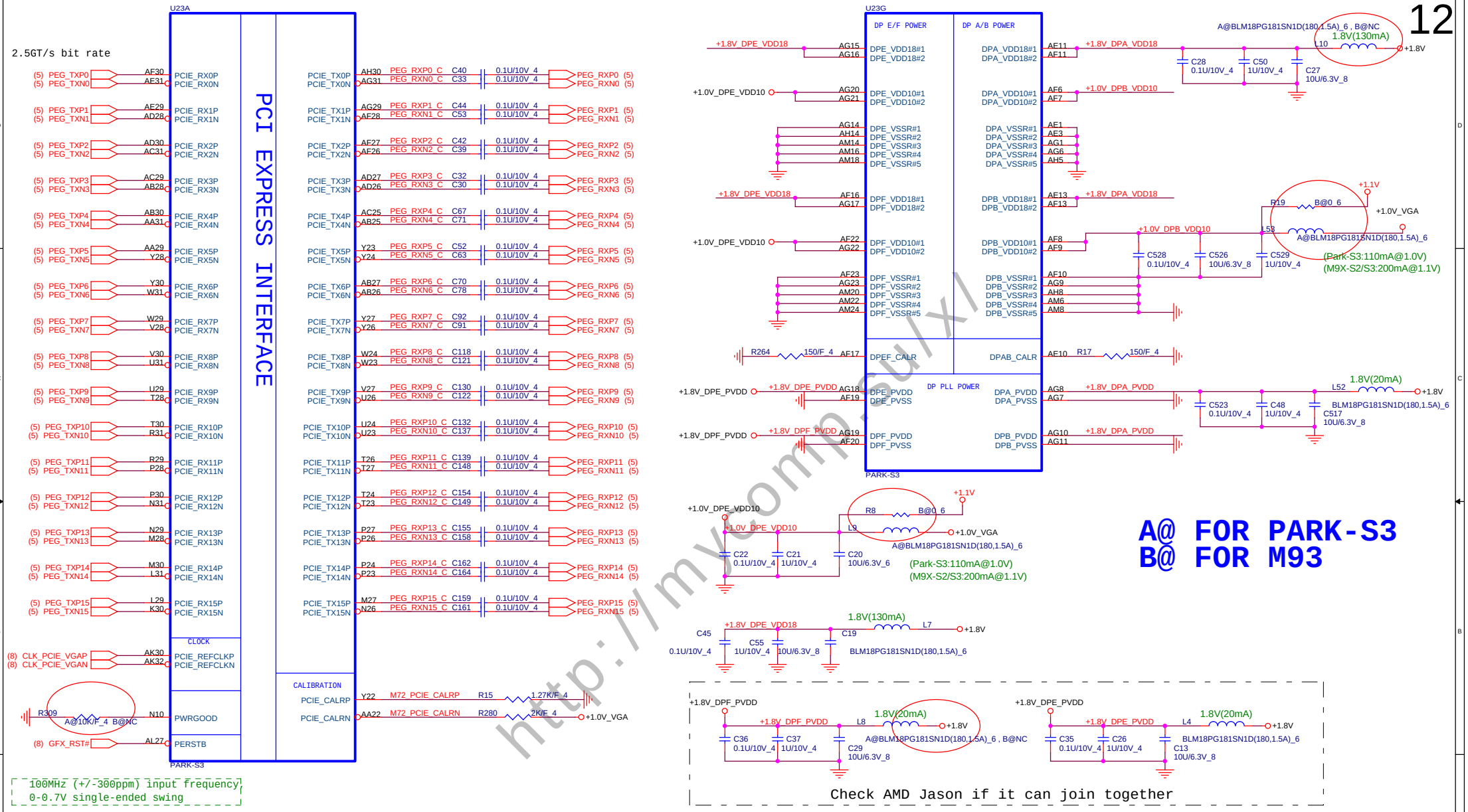
PLACE ALL THE DECOUPLING CAPS ON
THIS SHEET CLOSE TO SB AS POSSIBLE.

VDDQ--3.3V I/O power

VDD-- S/B CORE power



Quanta Computer Inc.		
PROJECT :AMD Danube		
Size	Document Number	Rev
	SB820-PWR/DECOUPLING 4/4	1A
Date: Wednesday, March 24, 2010	Sheet 11 of 37	



NB5/RD2	PROJECT : AX2/7 Quanta Computer Inc.	
Size: Custom	Document Number: PARK_PCIE_Interface	Rev: 1A
Date: Tuesday, March 02, 2010	Sheet 12 of 37	

MEM_ID[3:0]	Vendor	Type	Vendor P/N
0000	Samsung- E die	64*16-800MHZ	K4W1G1646E-HC12
0001	Hynix - Orion	64*16-800MHZ	H5TQ1G63BFR-12C
0010			Reserved
0011			Reserved
0100			Reserved
0101			Reserved
0110			Reserved
0111			Reserved
1000			Reserved
1001			Reserved
1010			Reserved
1011			Reserved
1100			Reserved
1101			Reserved
1110			Reserved
1111			Reserved

PWRCNTL1	V-CORE
1	0.9V
0	0.95V *

SI , provide 14M CLK source to slove Park JTAG test block intermittently fails to initialize correctly issue

SI , AMD Document Update change PU to PD

GPIO22(ROMCS#)
PD without external VBIOS ROM

Memory ID

For M93-S3: Use 150 Ohms Pull Down
For Park-S3: NC

A@ FOR PARK-S3
B@ FOR M93

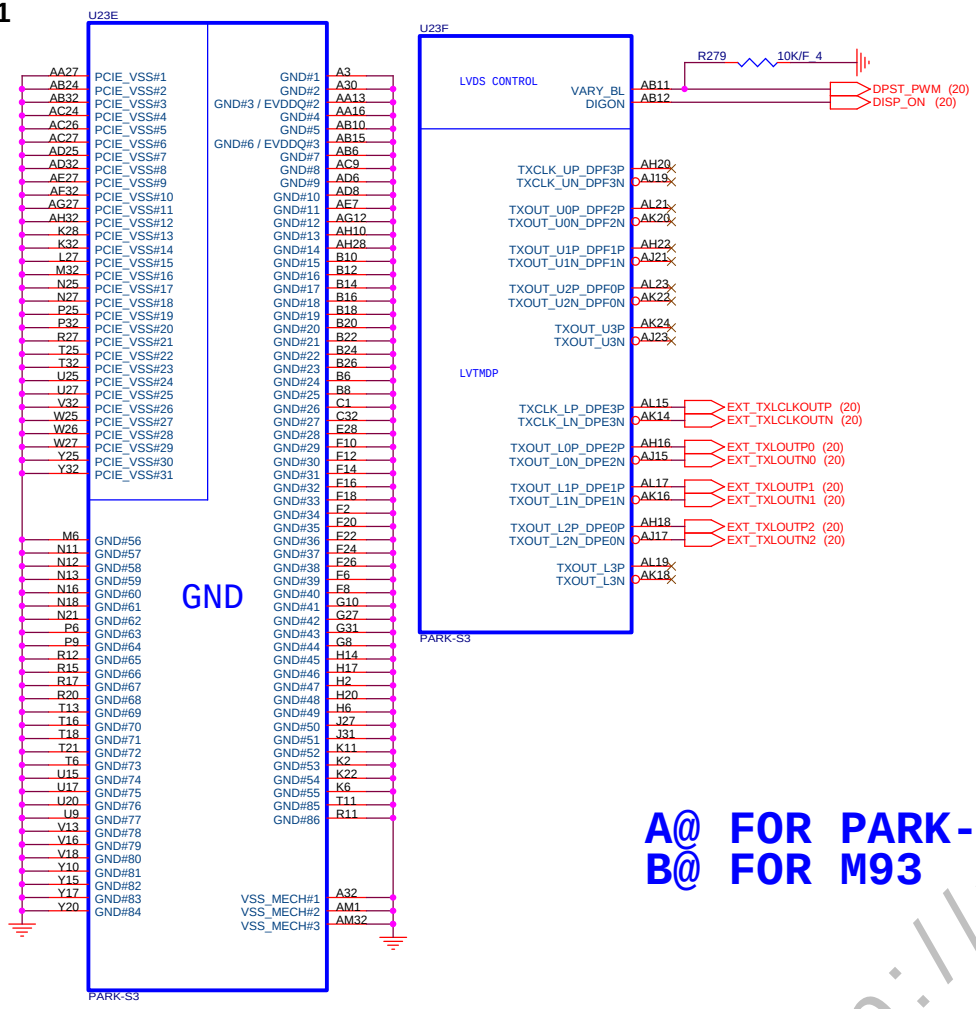
For Int Clk 27Mhz

Thermal Sensor

I2C ADDRESS: 9AH

SYSTEM SHUTDOWN

PROJECT : AX2 / 7
Quanta Computer Inc.
Size: Custom | Document Number: PARK_Main | Rev: 1A
Date: Thursday, April 15, 2010 | Sheet 13 of 37
NB5/RD2



CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	**Transmitter Power Savings Enable** 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	1
TX_DEEMPH_EN	GPIO1	**PCI Express Transmitter De-emphasis Enable** 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	1
BIF_GEN2_EN_A	GPIO2	Enable CLKREQ# Power Management 0 - CLKREQ# power management capability is disabled 1 - CLKREQ# power management capability is enabled	0
RSVD BIF_VGA_DIS RSVD	GPIO8 GPIO9 GPIO21	VGA ENABLED	0 0 0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	0
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 1
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	0
RSVD AUD[1] AUD[0]	GENERICC HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	0 0 11

AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

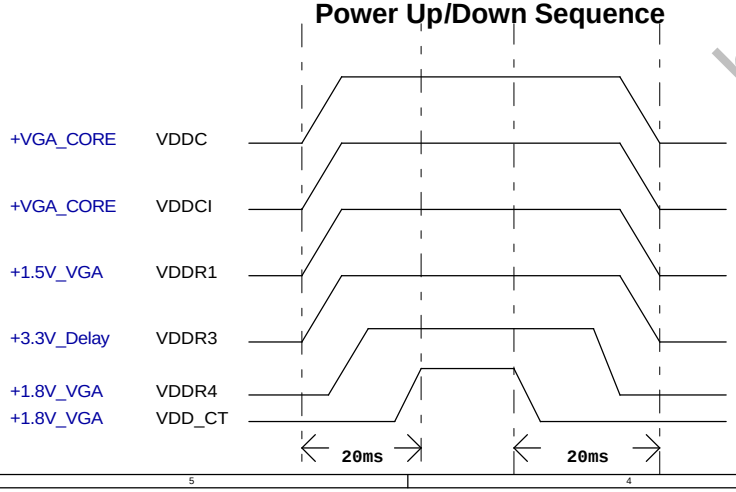
H2SYNC GENERICC

PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO21_BB_EN

A@ FOR PARK-S3
B@ FOR M93

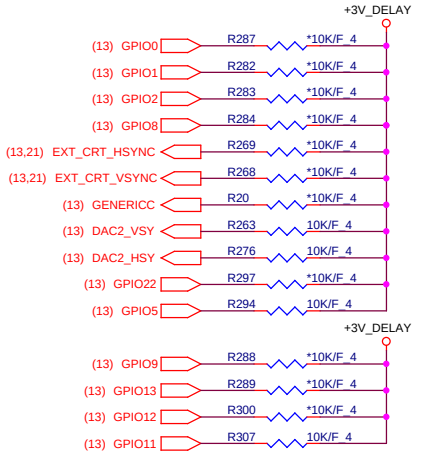
Power Up/Down Sequence



Memory Aperture size

GPIO9 BIOSROM		GPIO13 ROMIDCFG2	GPIO12 ROMIDCFG1	GPIO11 ROMIDCFG0
0	128M	0	0	0
0	256M	0	0	1
0	512M	0	0	1

Memory Aperture Size 512MB and 256MB GPIO setting is the same
It is a shared pin strap with CONFIG[2:0] if BIOS_ROM_EN is set to 0.

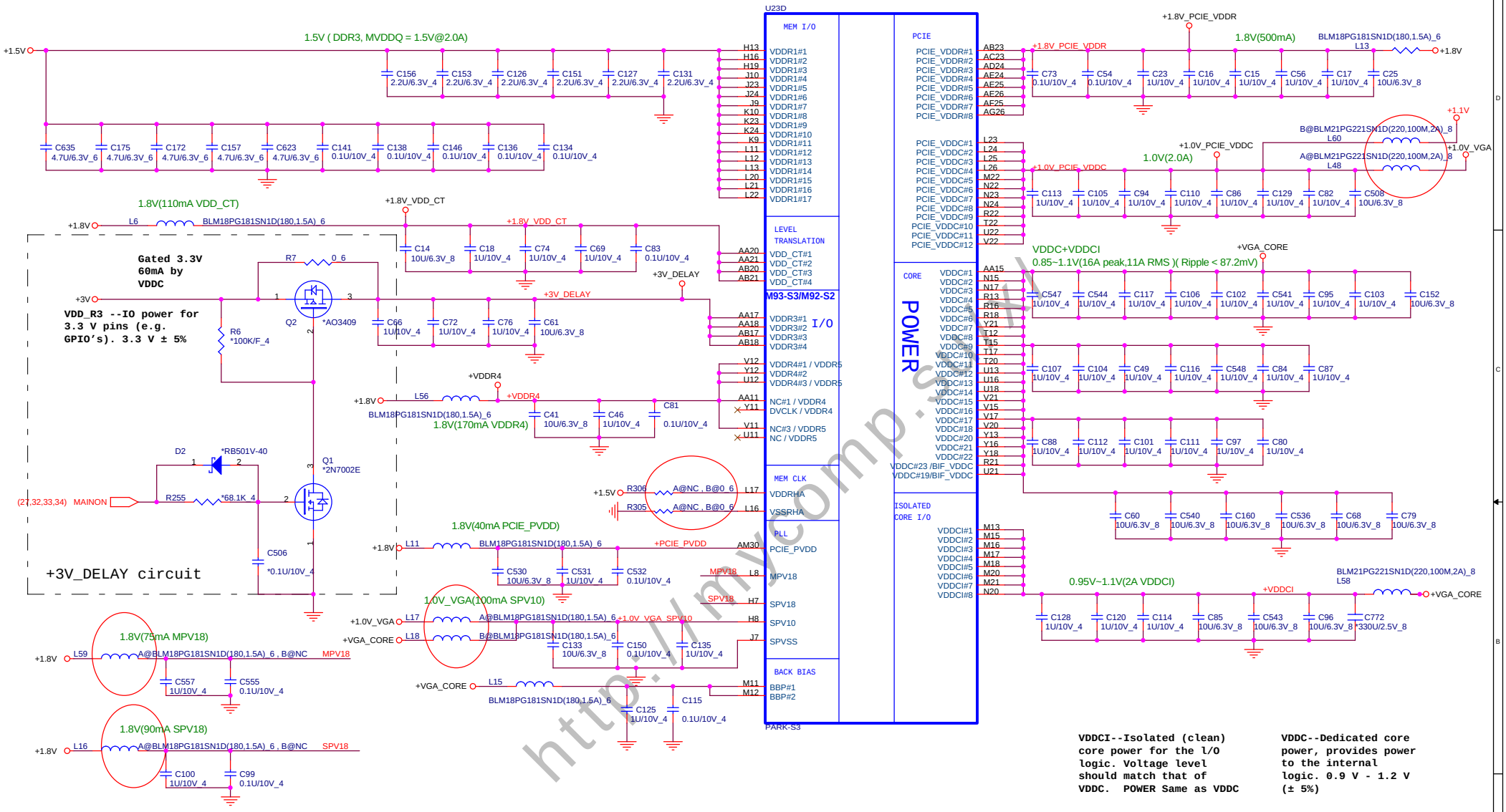


NB5/RD2

PROJECT : AX2 / 7
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PARK_GND / LVDS/ Straps	1A
Date: Tuesday, April 20, 2010	Sheet 14 of 37	

PCIE_VDDR--PCI-E I/O power. 1.8 V ± 5%



VDDCI--Isolated (clean) core power for the I/O logic. Voltage level should match that of VDDC. POWER Same as VDDC

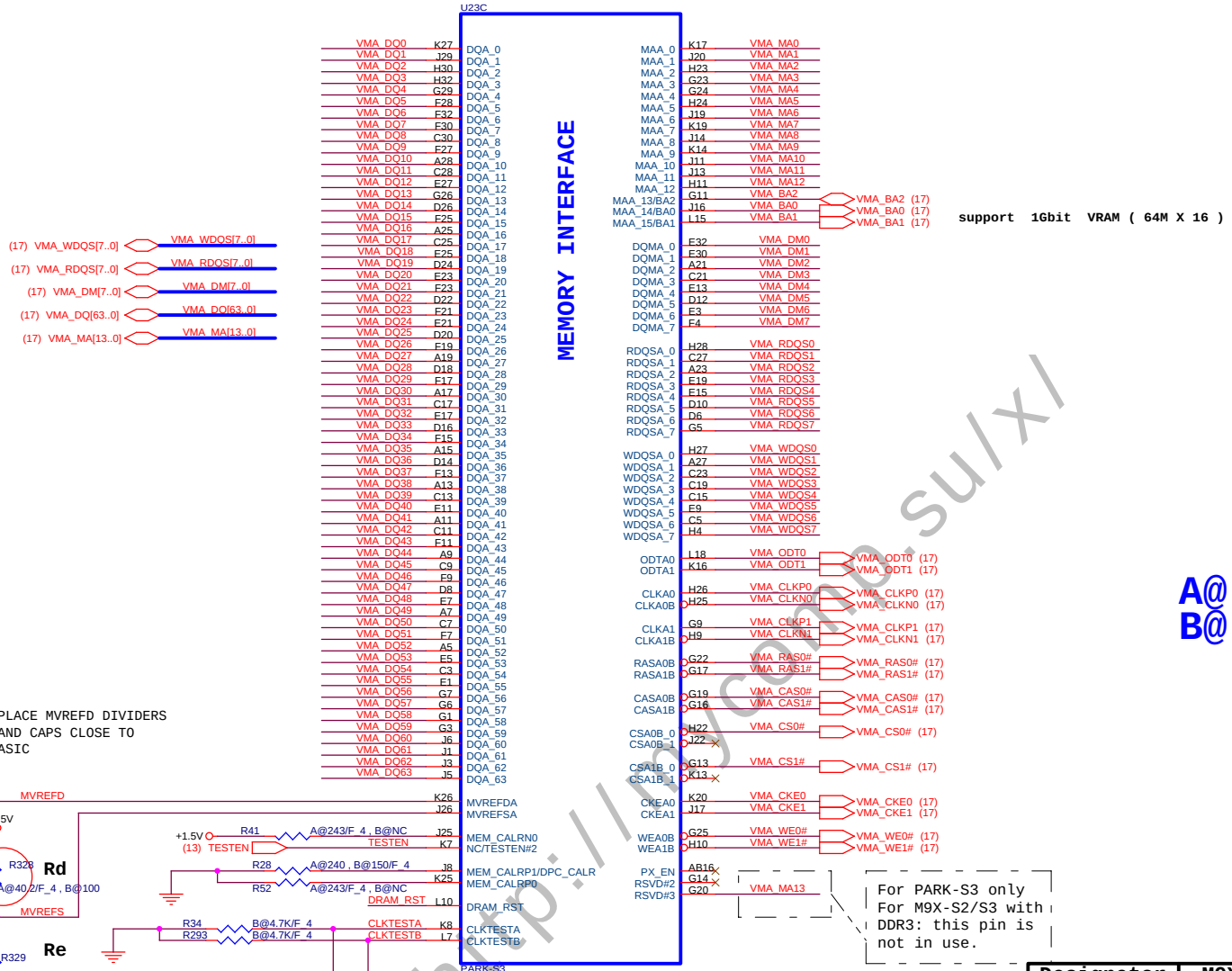
VDDC--Dedicated core power, provides power to the internal logic. 0.9 V - 1.2 V (± 5%)

PCIE_VDDC--PCI-E Digital Power Supply (Either 1.0 V or 1.1 V) 1.0 V -5% to 1.1 V +5%

VDDRH_1 & VDDRH_2 --Dedicated power pins for memory clock pads for each channel. Should have the same voltage level as VDDR1.

A@ FOR PARK-S3
B@ FOR M93

PROJECT : AX2/7 Quanta Computer Inc.		
Size: Custom	Document Number: PARK_Power_and_NC	Rev: 1A
NB5/RD2	Date: Wednesday, April 14, 2010	Sheet 15 of 37



DIVIDER RESISTORS	M93	PARK
MVREF TO 1.8V (Rd)	100R	40.2R
MVREF TO GND (Re)	100R	100R

Designator	M9X-S2 and M93-S3	Park-S3
Ra	DNI	10K
Rb	0R/Short	680R
Rc	2.2K	DNI
Ca	2.2nF	68pF

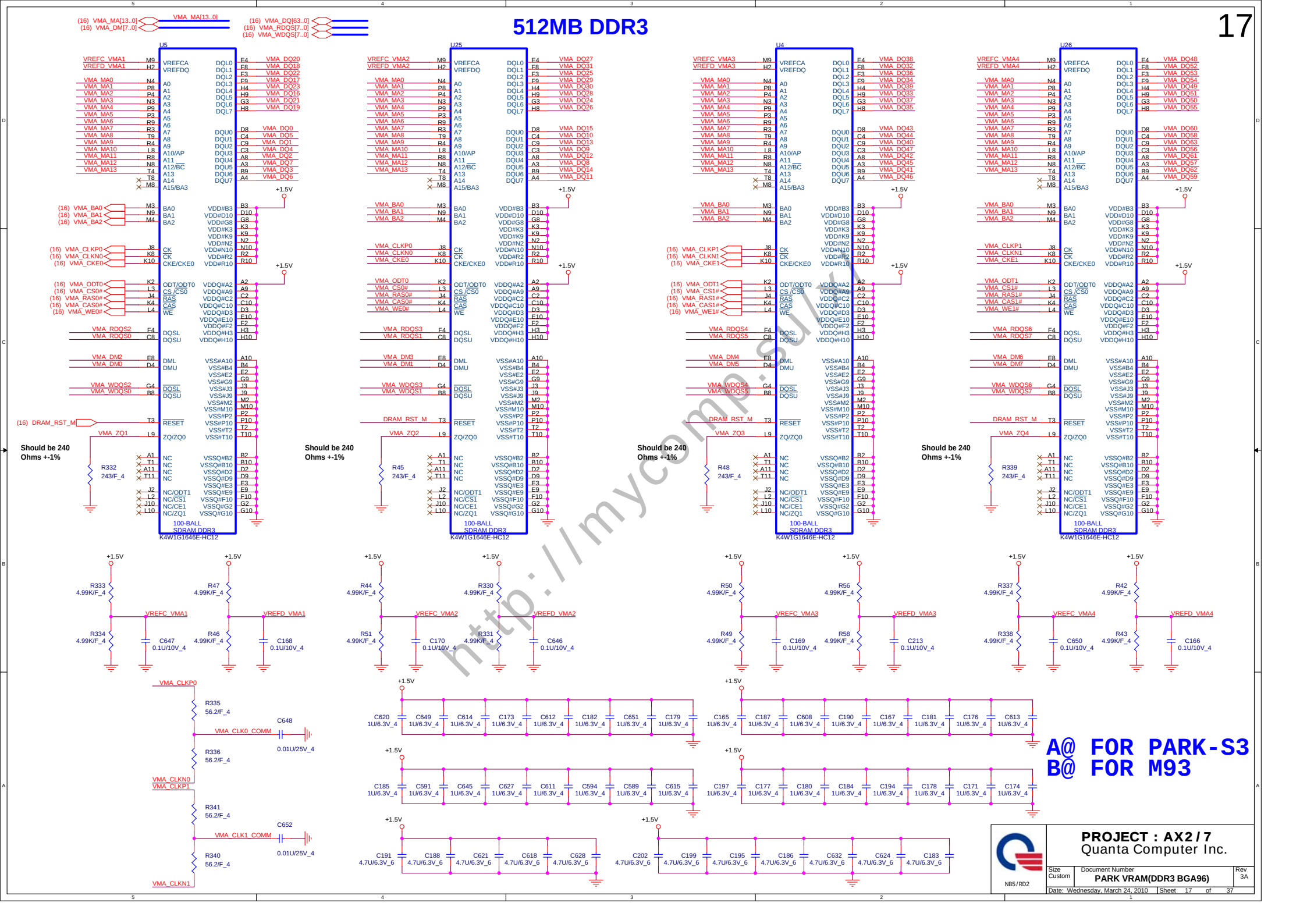
NB5/RD2

PROJECT : AX2/7
Quanta Computer Inc.

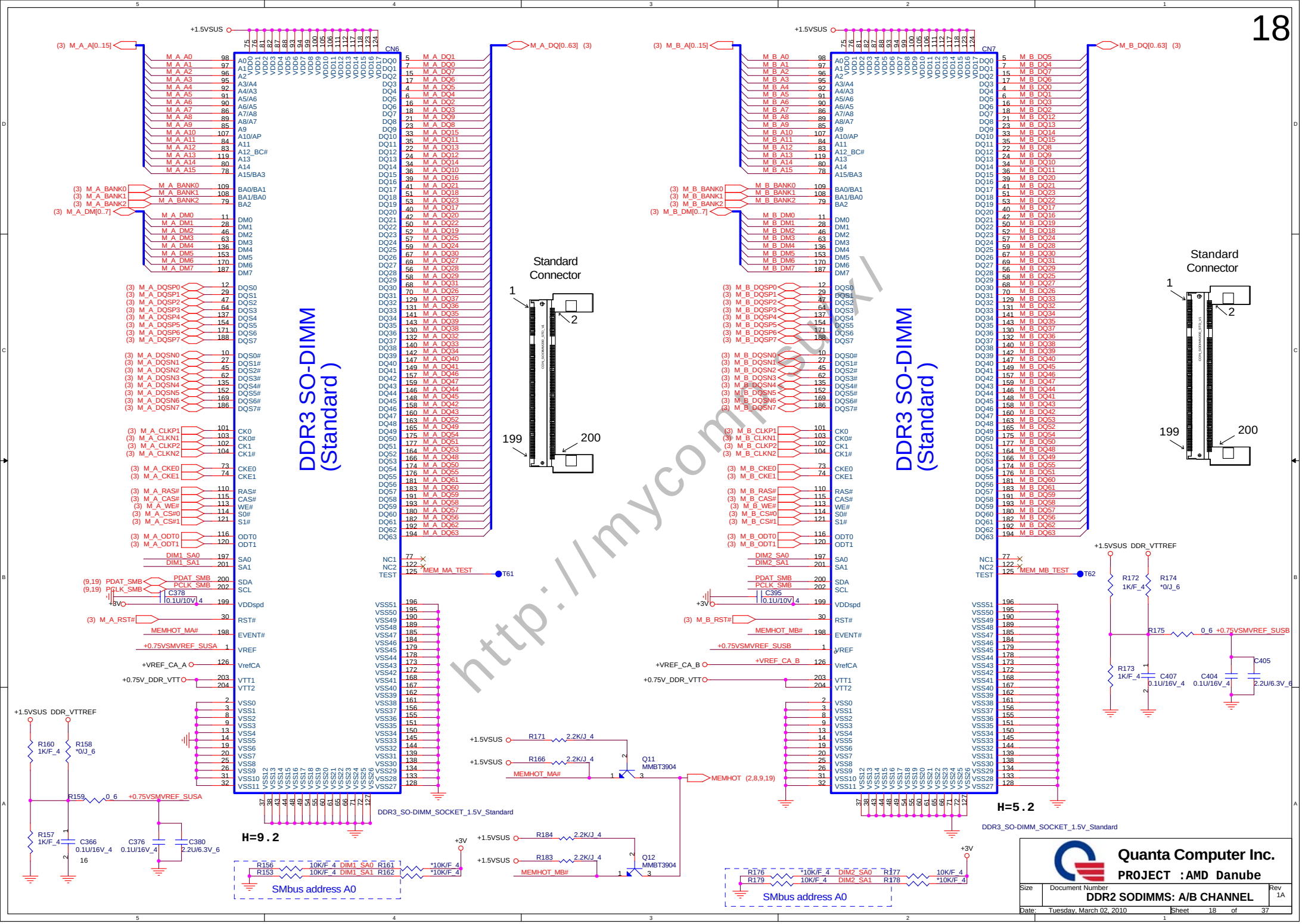
Size	Document Number	Rev
Custom	PARK/MEM_Interface	1A

Date: Wednesday, February 24, 2010 | Sheet 16 of 37

512MB DDR3

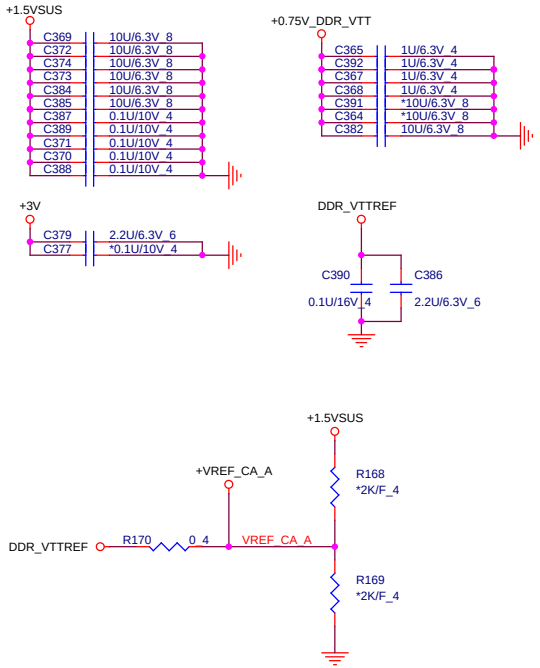


PROJECT : AX2/7 Quanta Computer Inc.		
Size: Custom	Document Number: PARK VRAM(DDR3 BGA96)	Rev: 3A
Date: Wednesday, March 24, 2010	Sheet 17 of 37	

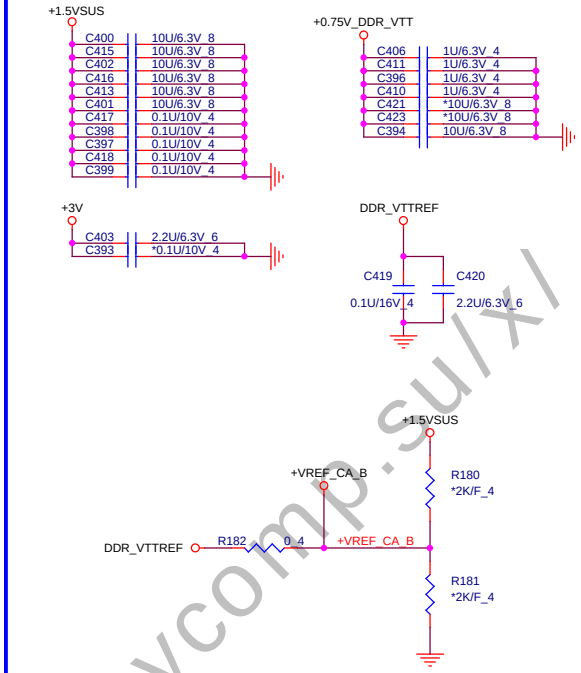


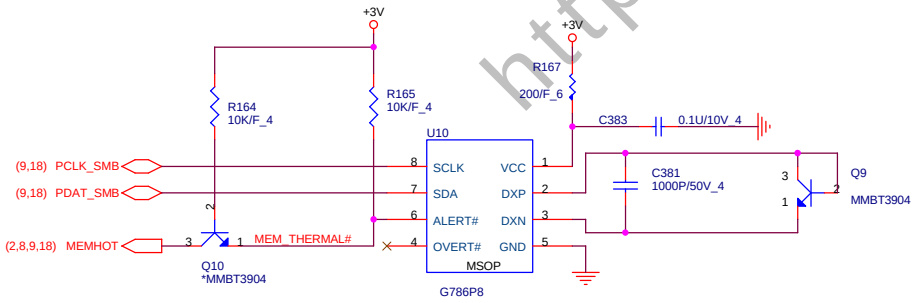
Quanta Computer Inc.			
PROJECT : AMD Danube			
Size	Document Number		Rev
	DDR2 SODIMMS: A/B CHANNEL		1A
Date: Tuesday, March 02, 2010	Sheet 18 of 37		

Place these Caps near So-Dimm0



Place these Caps near So-Dimm1

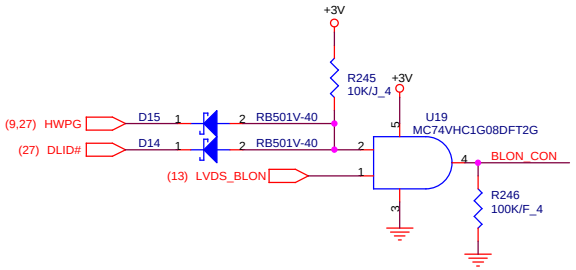




Quanta Computer Inc.
PROJECT :AMD Danube

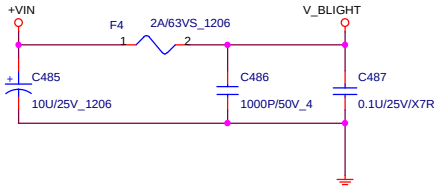
Size	Document Number	Rev
	DDR2 SODIMMS TERMINATIONS	1A
Date: Wednesday, February 24, 2010	Sheet 19 of 37	

Backlight Control(LVDS)

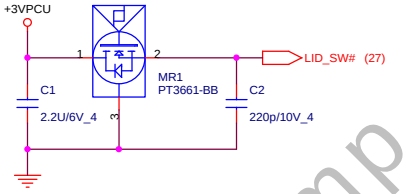


BACKLIGHT POWER

80mils

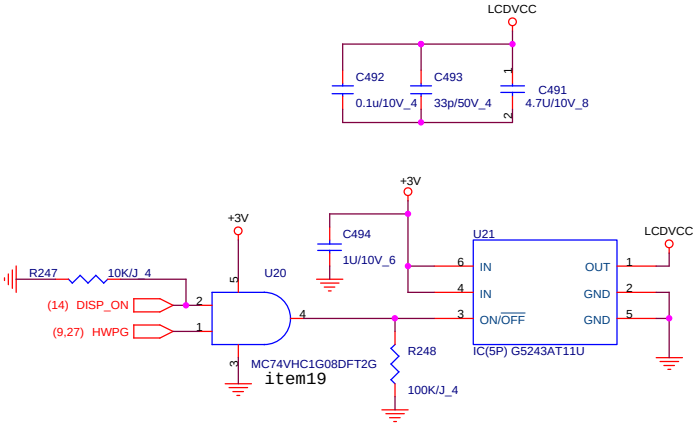


LID SW

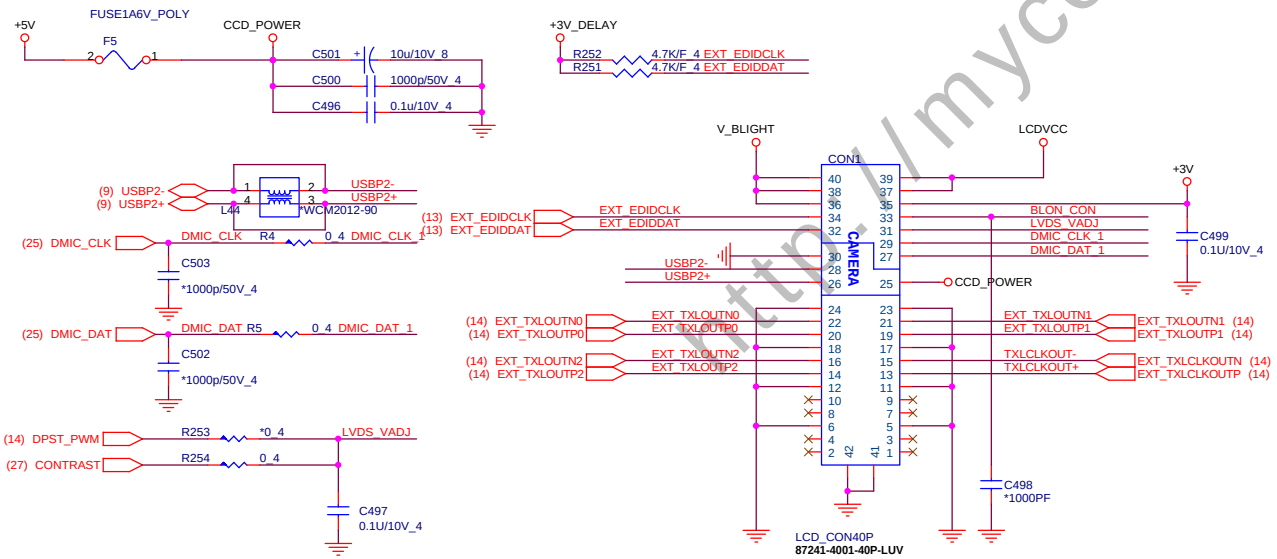


LED Panel POWER SWITCH(LVDS)

80mils



LVDS/CCD



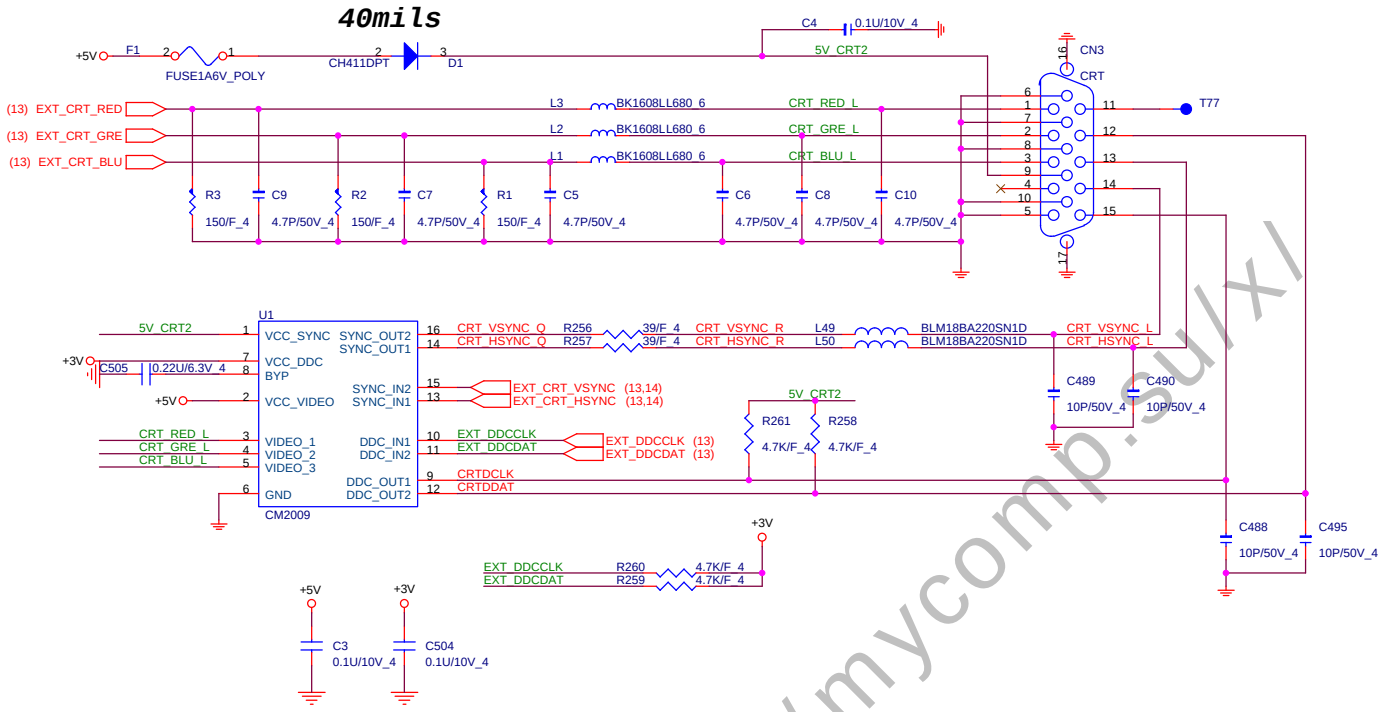
Quanta Computer Inc.

PROJECT :AMD Danube

Size	Document Number	Rev
	LCD CONN/LID function	1A

Date: Wednesday, April 14, 2010 Sheet 20 of 37

CRT PORT



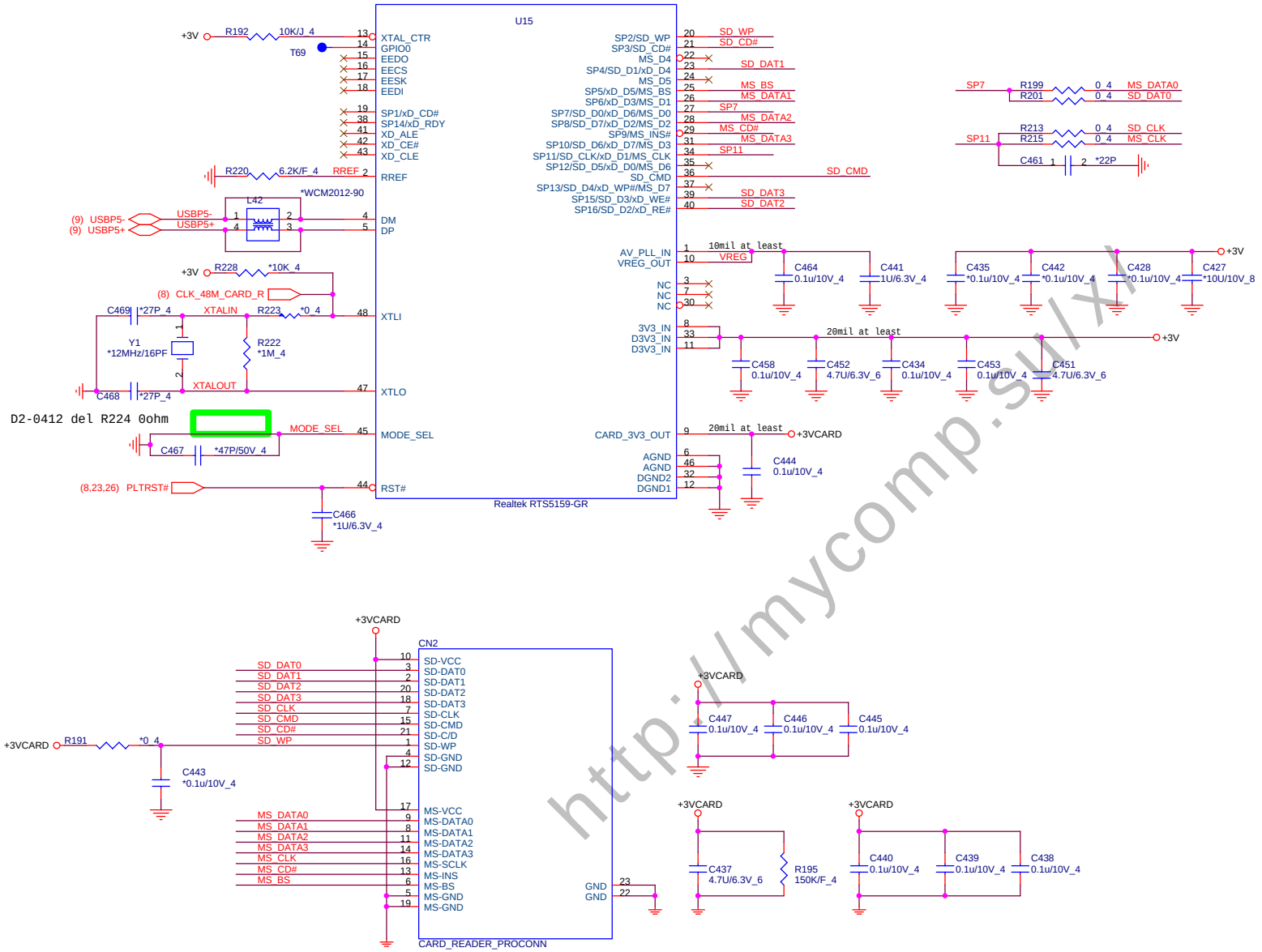
Quanta Computer Inc.

PROJECT :AMD Danube

Size	Document Number	Rev
	CRT Conn.	1A

Date: Tuesday, March 02, 2010 Sheet 21 of 37

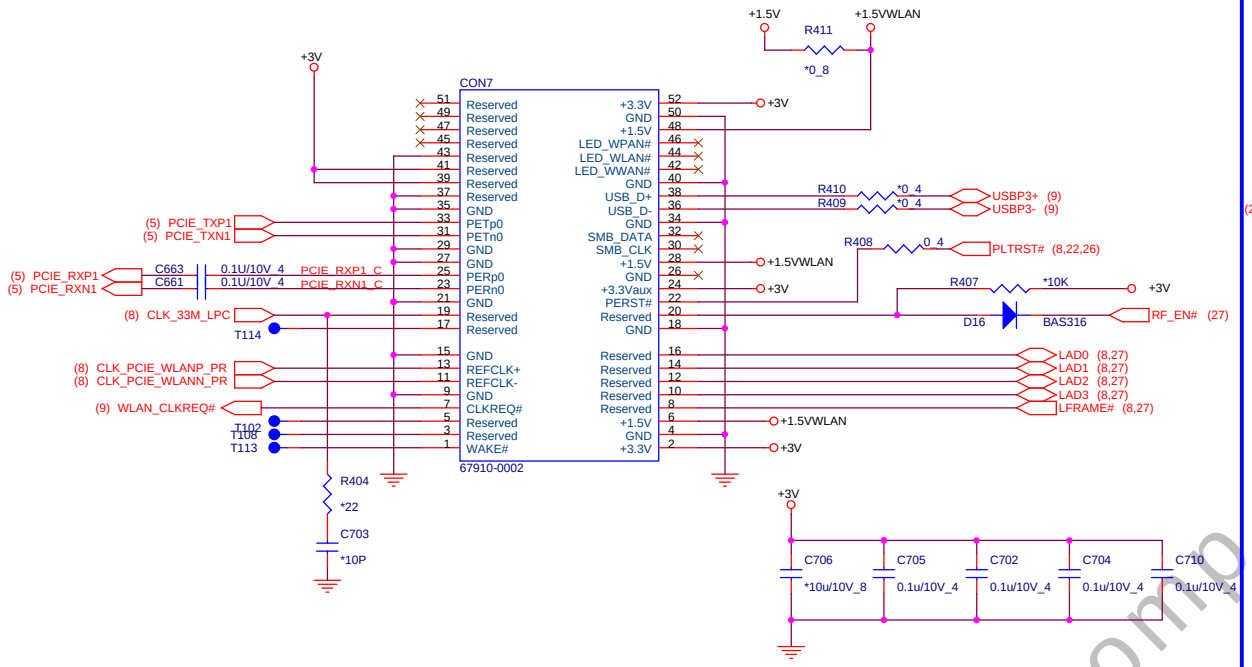
Card Reader



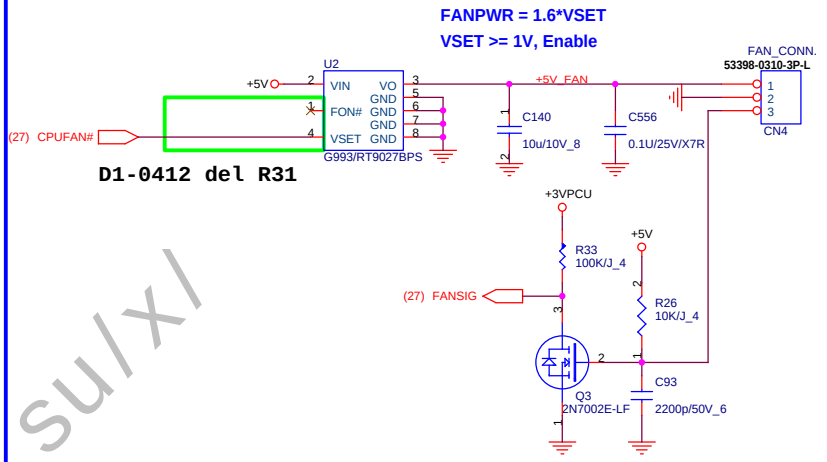
Quanta Computer Inc.
PROJECT : AMD Danube

Size	Document Number	Rev
	Card Reader RTS5159	1A
Date: Tuesday, April 20, 2010	Sheet 22 of 37	

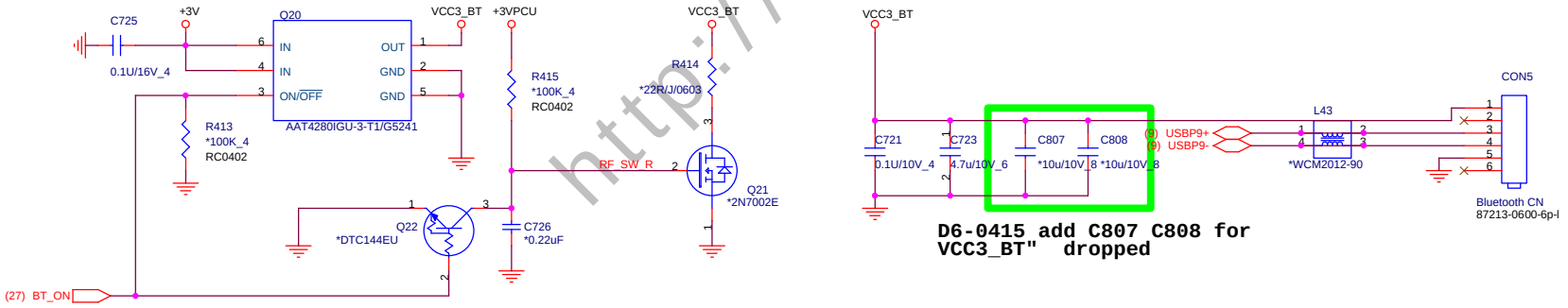
MINI CARD (WLAN)



CPU FAN CTRL



BuleTooth (BTM)



D6-0415 add C807 C808 for VCC3_BT" dropped

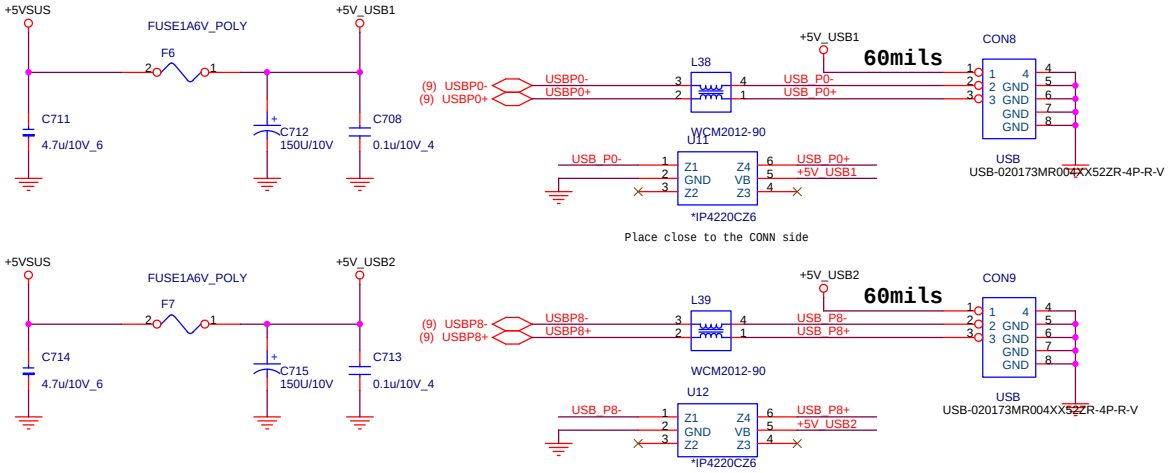
Quanta Computer Inc.

PROJECT :AMD Danube

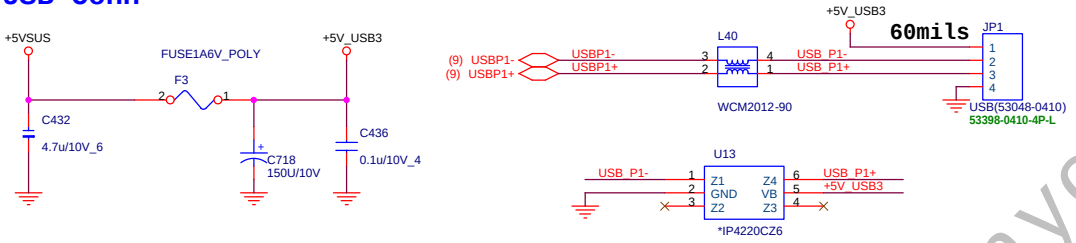
Size	Document Number	Rev
	WLAN/BT/FAN	1A
Date: Thursday, April 15, 2010	Sheet 23 of 37	

USB PORTX2

USB Connector

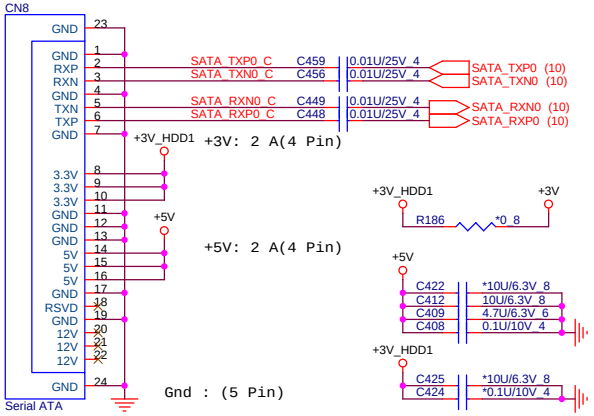


USB Conn



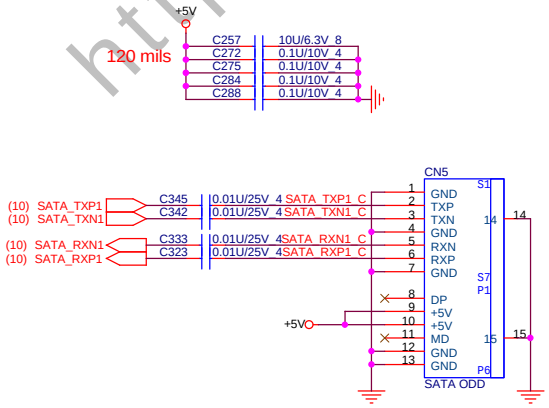
SATA HDD CONNECTOR

DC Current rating: 0.5 A



SATA CD-ROM

3V RUN Power.
Need Check
Net Name



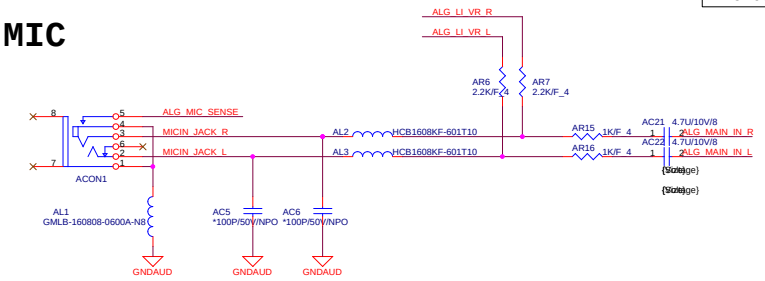
Quanta Computer Inc.
PROJECT : AMD Danube

Size	Document Number	Rev
	USB Port/HDD/ODD	1A
Date: Thursday, March 25, 2010	Sheet 24 of 37	

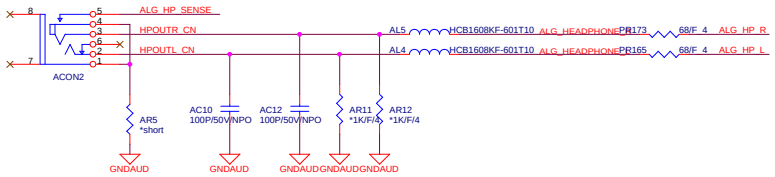
Codec ALC269

	Ra	Rb	Rc	Rd	Re	Ca	Cb	Cc	Cd	Da	La	Ua
ALC269Q-VA	O	O	X	O	O	O	O	O	X	O	X	O
ALC269Q-VB	X	X	O	X	X	X	X	X	O	X	O	X

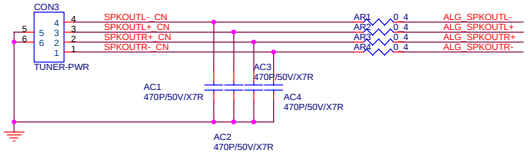
MIC



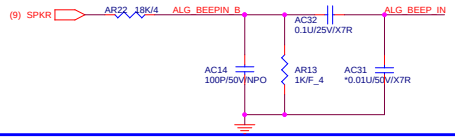
HP



SPKR

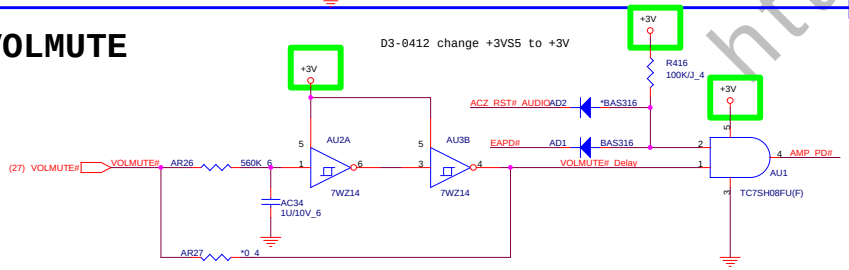


BEEP

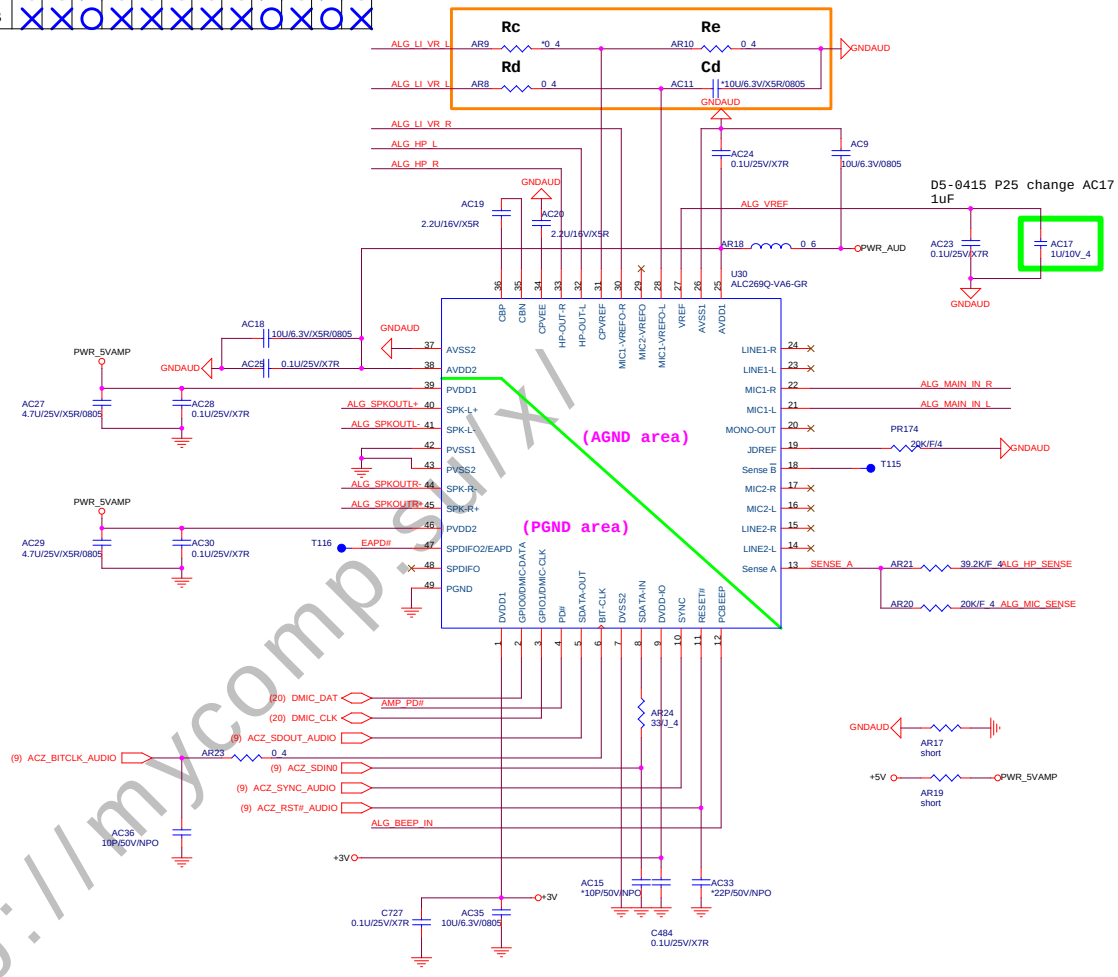


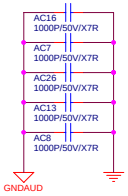
VOLMUTE

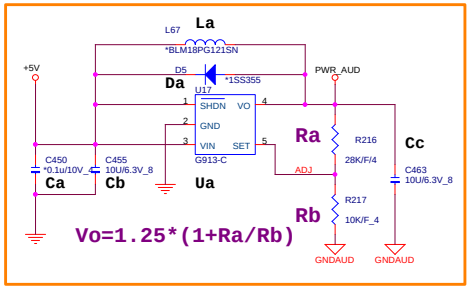
D3-0412 change +3VS5 to +3V



D5-0415 P25 change AC17 form 10uF to 1uF





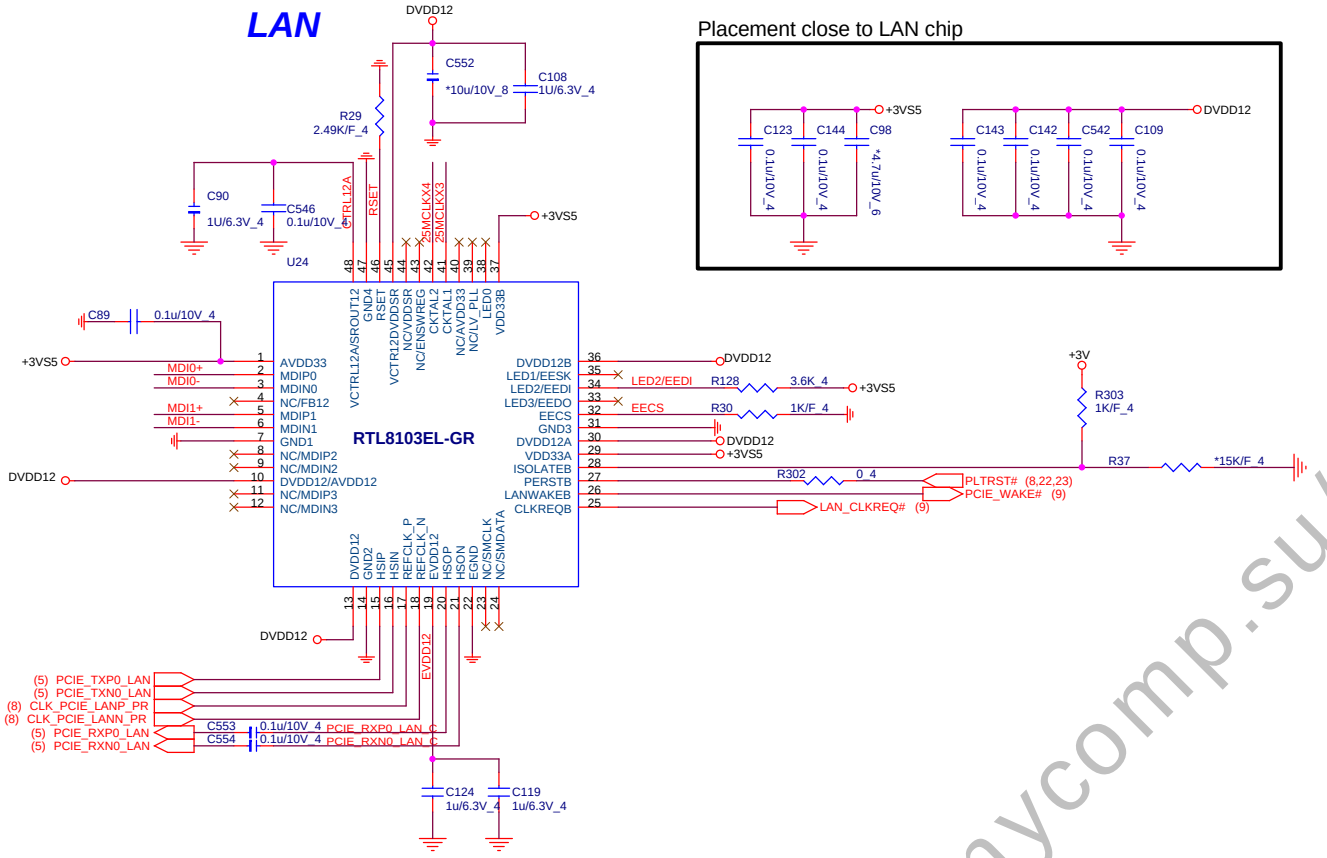


Quanta Computer Inc.
PROJECT : AMD Danube

Size	Document Number	Rev
	Azalia 92HD75	1A

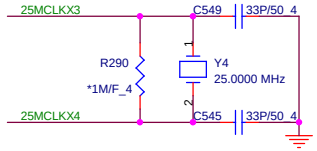
Date: Tuesday, April 20, 2010 Sheet 25 of 37

LAN

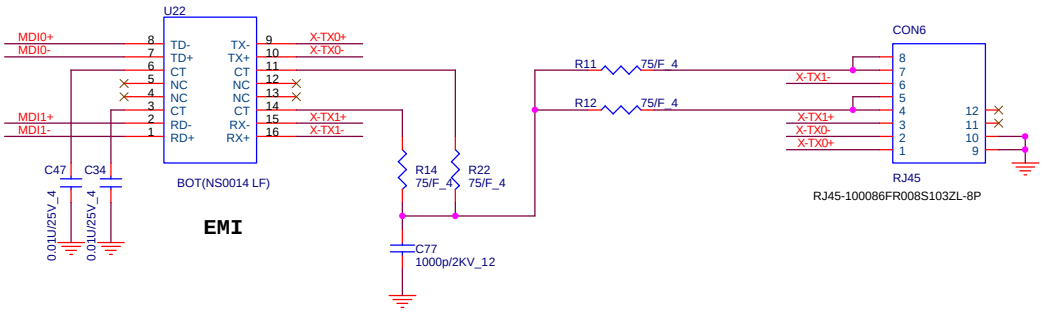


Placement close to LAN chip

X'tal 25MHz



10/100 Transformer

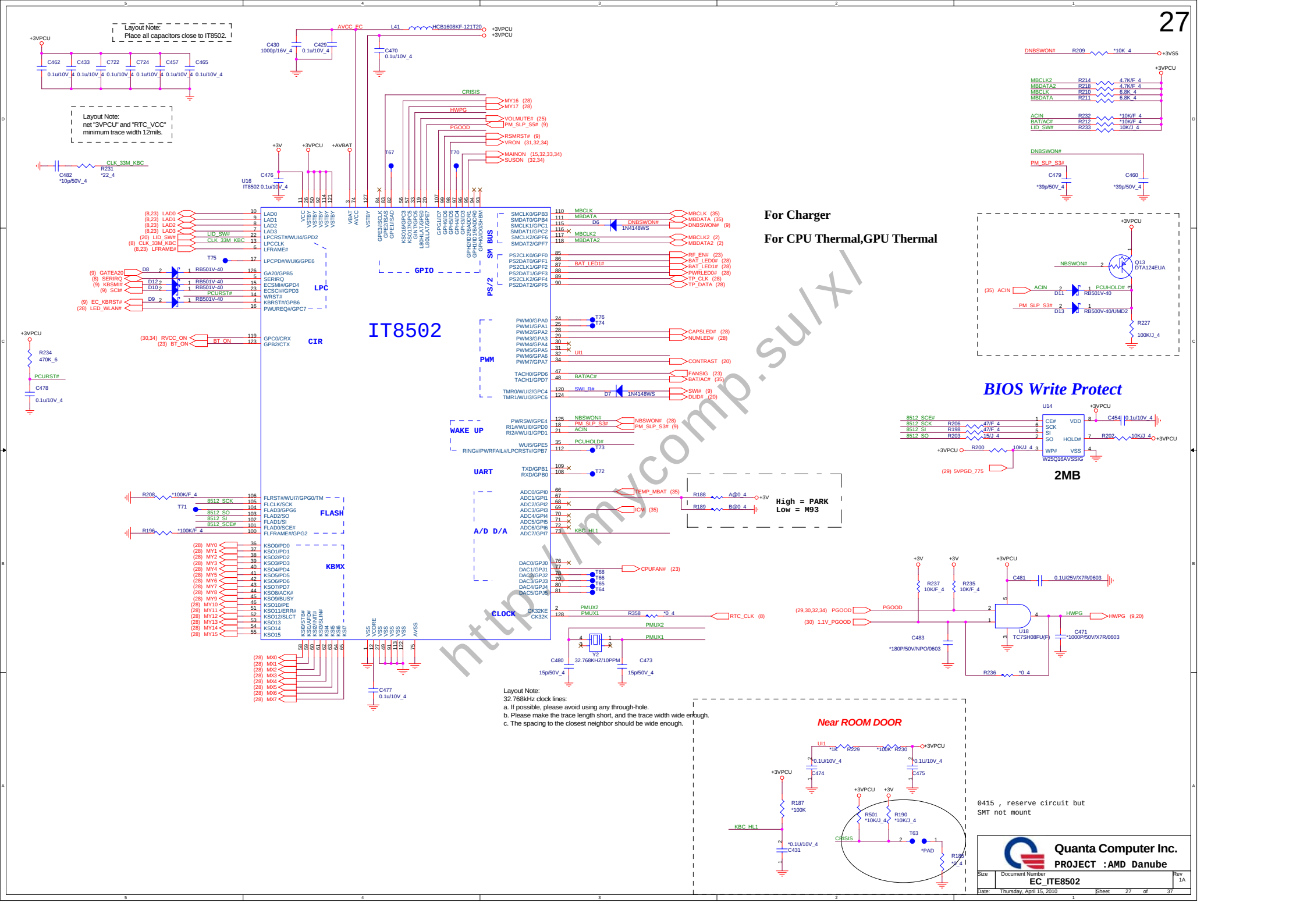


RJ45

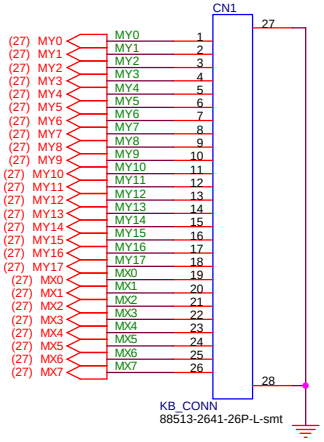
Quanta Computer Inc.

PROJECT : FH1

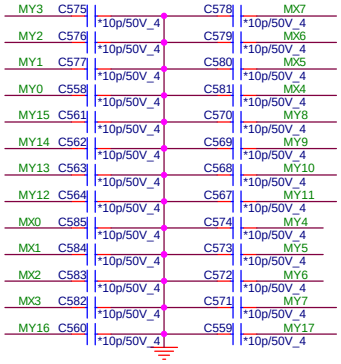
Size	Document Number	Rev
	LAN_RTL8103EL/RJ45	1A
Date: Wednesday, April 14, 2010	Sheet 26 of 37	



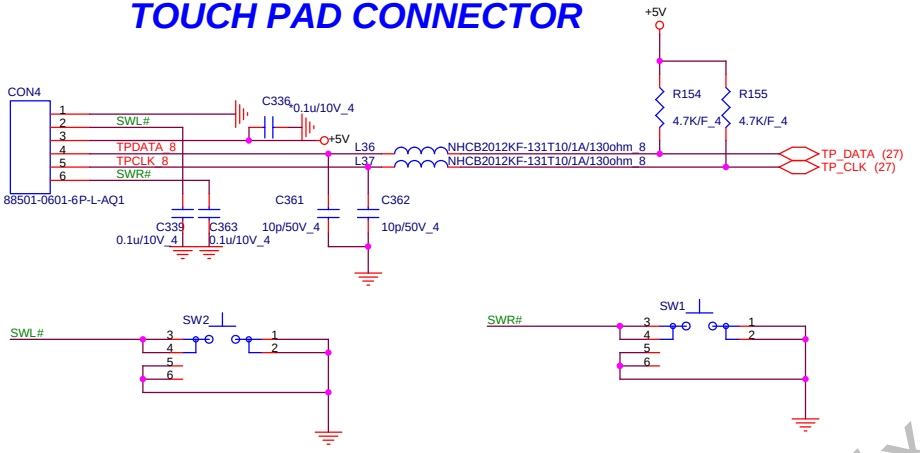
KEY BOARD



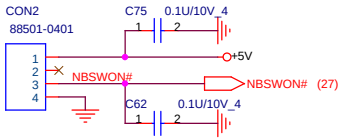
For EMI Reserve Caps for debug



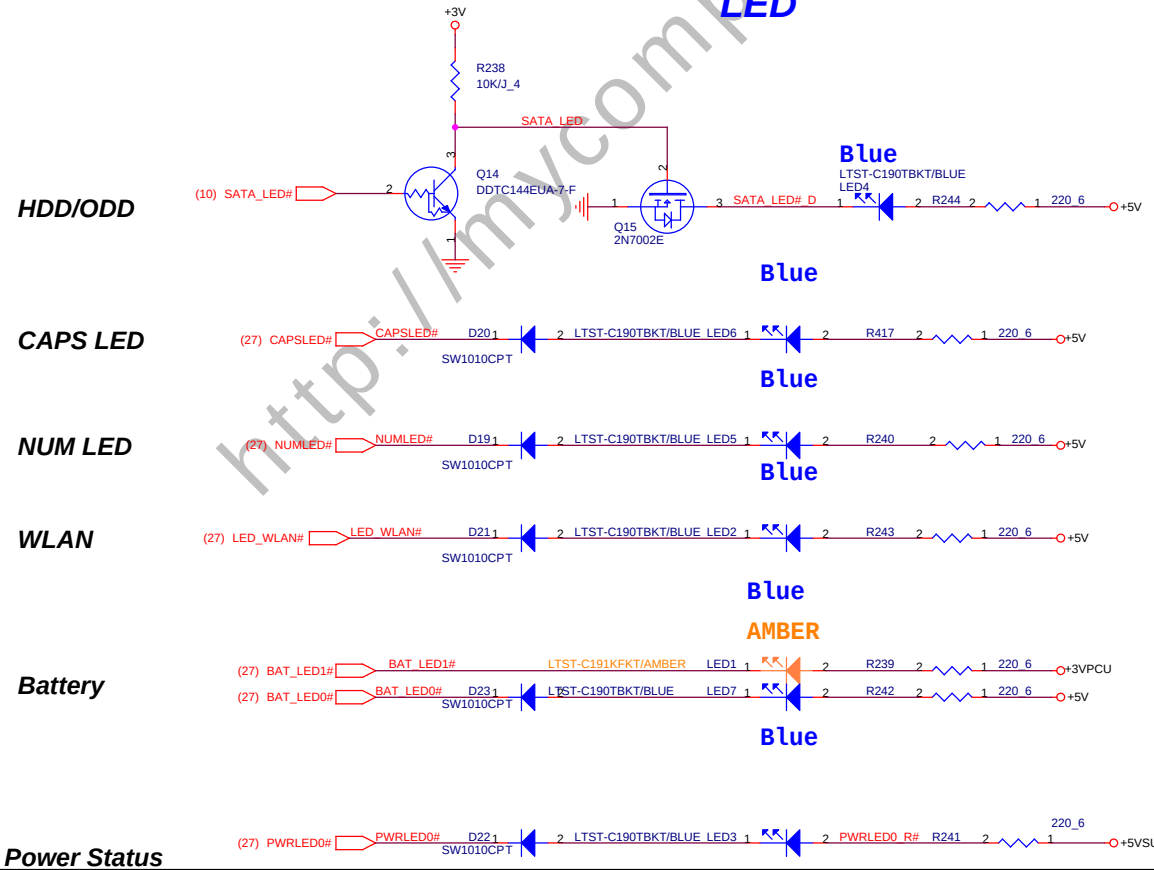
TOUCH PAD CONNECTOR



SW BOARD CON



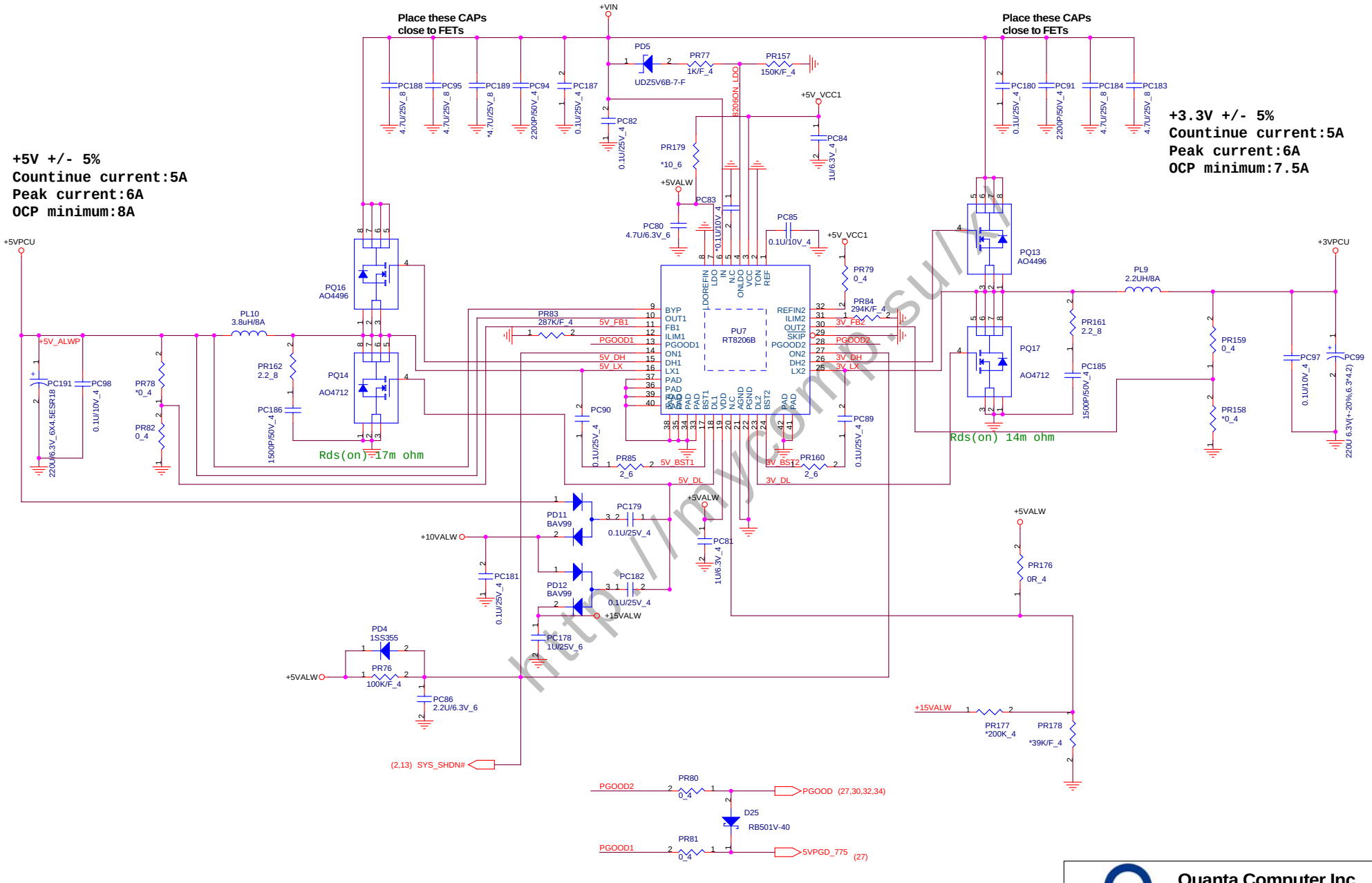
LED



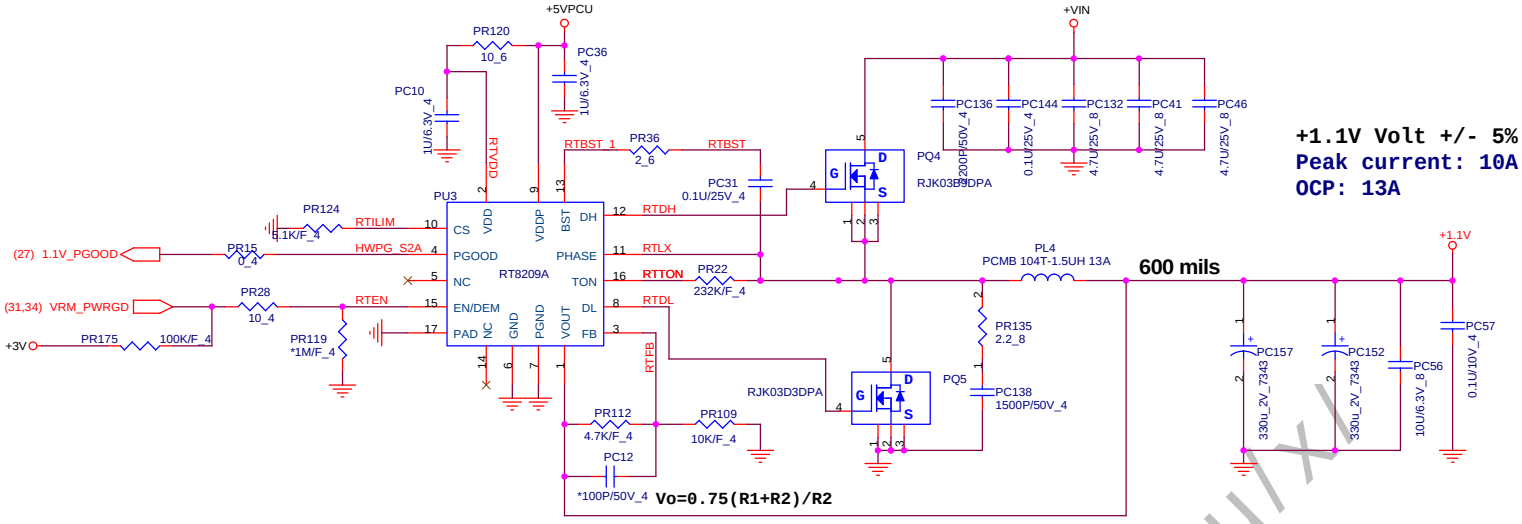
Quanta Computer Inc.
PROJECT : AMD Danube

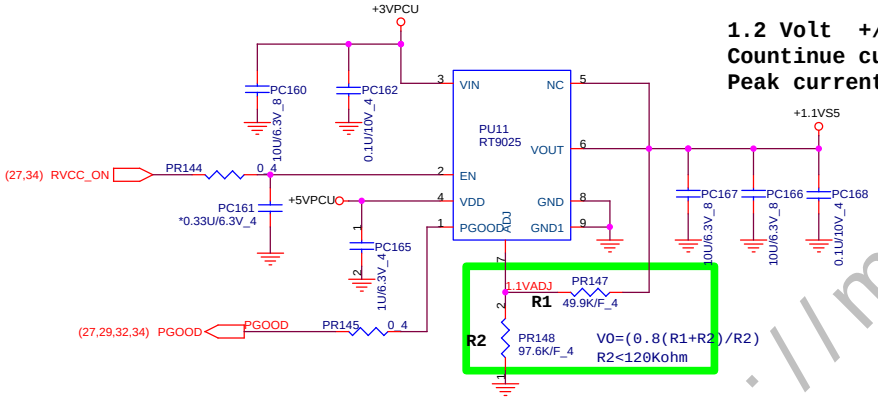
Size	Document Number	Rev
	BT/TP/KB Conn	1A
Date: Tuesday, March 23, 2010	Sheet 28 of 37	

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



Quanta Computer Inc.		
PROJECT : FK1		
Size	Document Number: +5V/+3V (RT8206B)	Rev 1A
Date: Wednesday, April 14, 2010	Sheet 29 of 37	





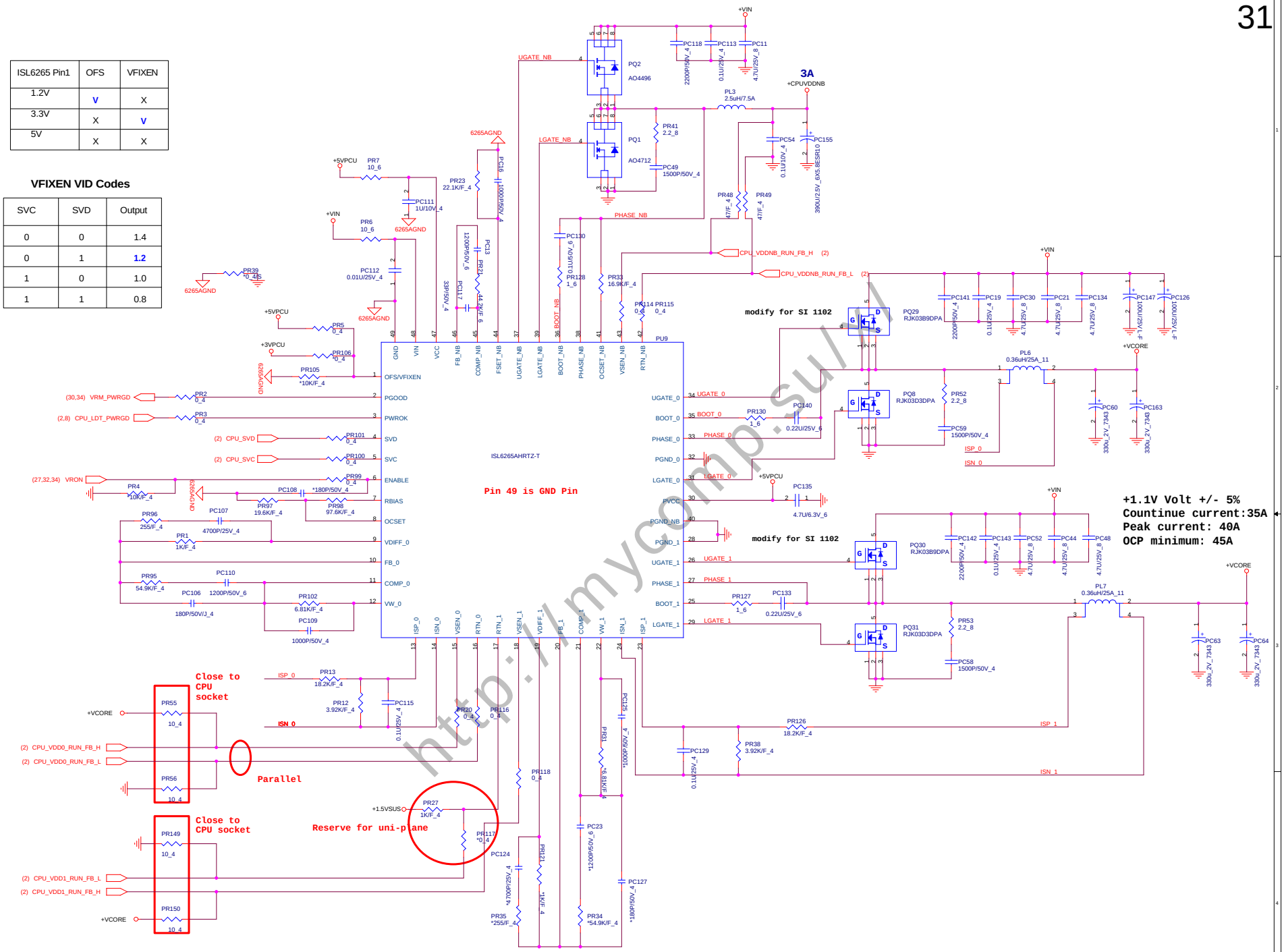
D4-0412 FOR AMD SB820M USB hold time issue on all
Danubechange PR147 38.7K to 49.9K ohm
change PR148 100K to 97.6K ohm

Quanta Computer Inc.		
PROJECT : FK1		
Size	Document Number: VGA Core/+1.8VGFX/1.0VGFX	Rev 1A
Date: Tuesday, April 20, 2010	Sheet 30 of 37	

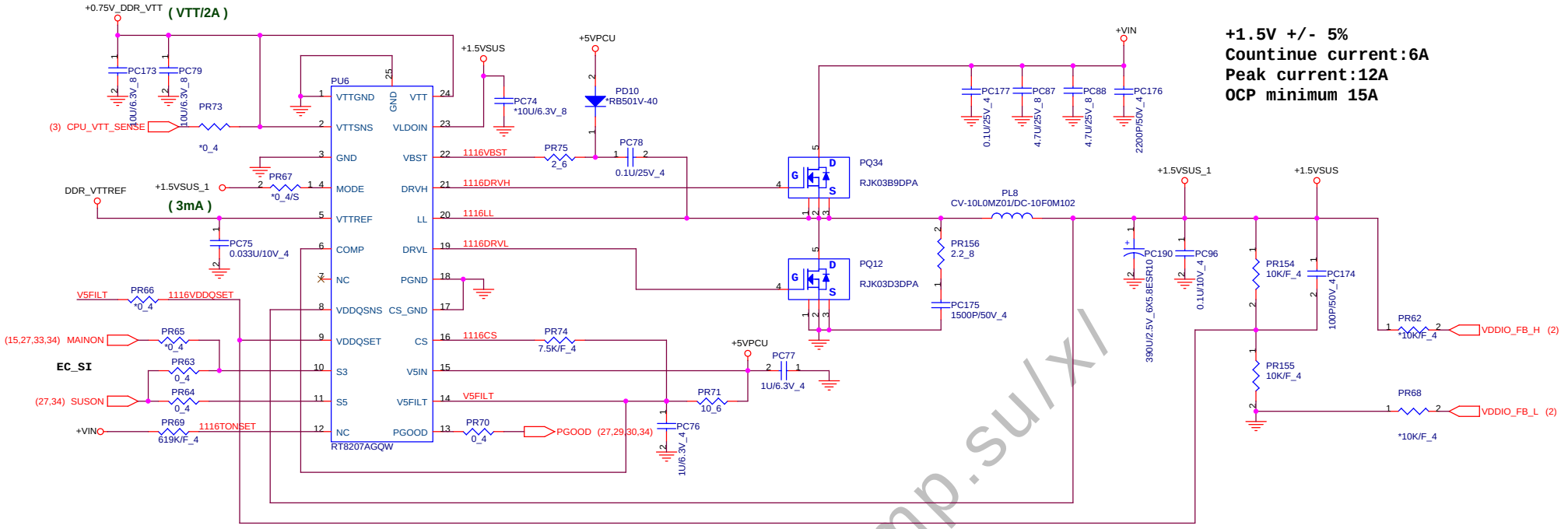
ISL6265 Pin1	OFS	VFIXEN
1.2V	V	X
3.3V	X	V
5V	X	X

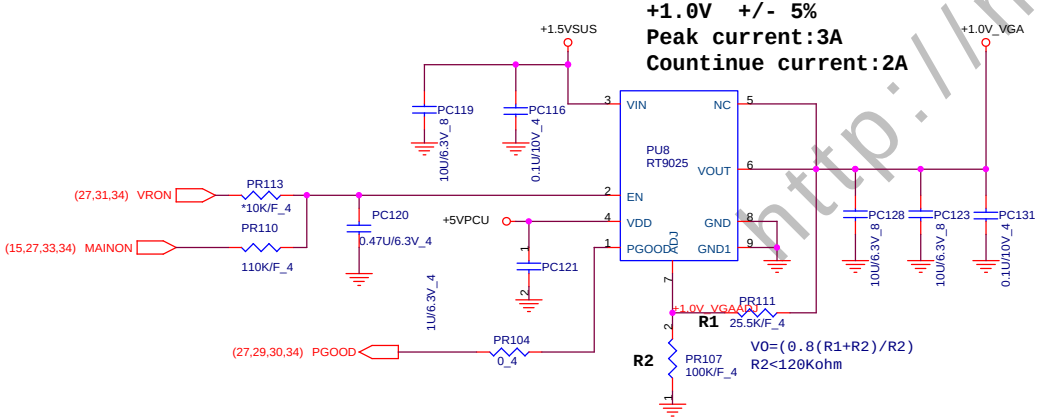
VFIXEN VID Codes

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



Quanta Computer Inc.		
PROJECT : FK1		
Size	Document Number: CPU_CORE(ISL6265)	Rev 1A
Date: Monday, April 12, 2010	Sheet 31 of 37	

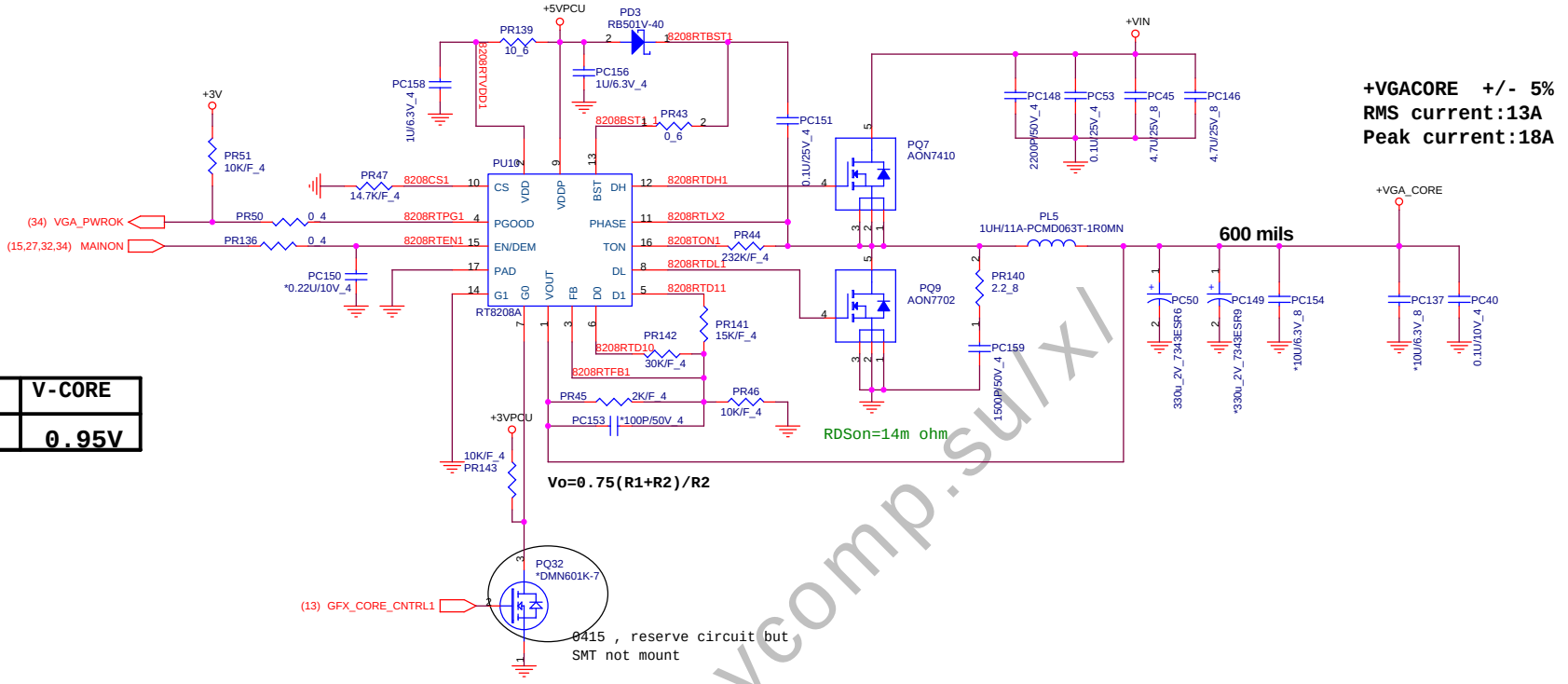




Quanta Computer Inc.
PROJECT : FK1

Size	Document Number	Rev
	DDR3 (RT8207)	1A
Date: Monday, April 12, 2010	Sheet 32 of 37	

VGA Core



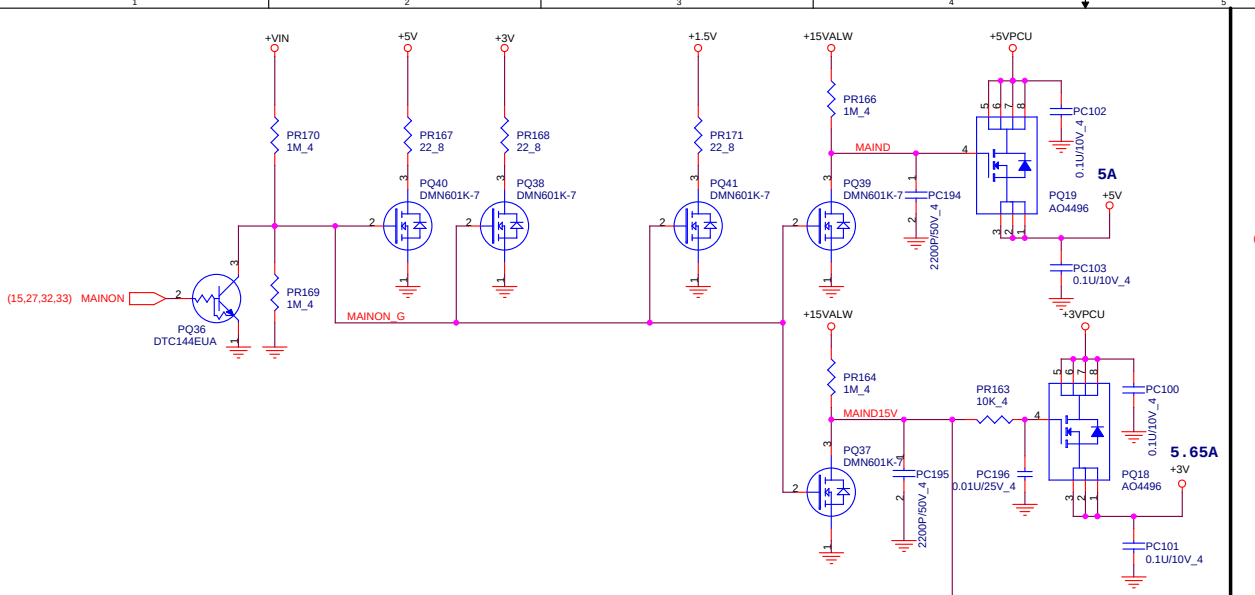
+VGACORE +/- 5%
RMS current:13A
Peak current:18A

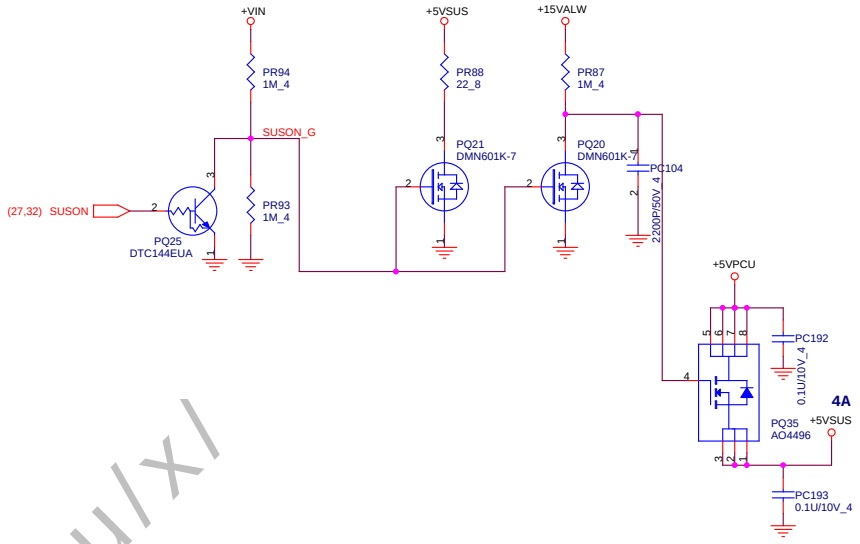
G0	V-CORE
1	0.95V

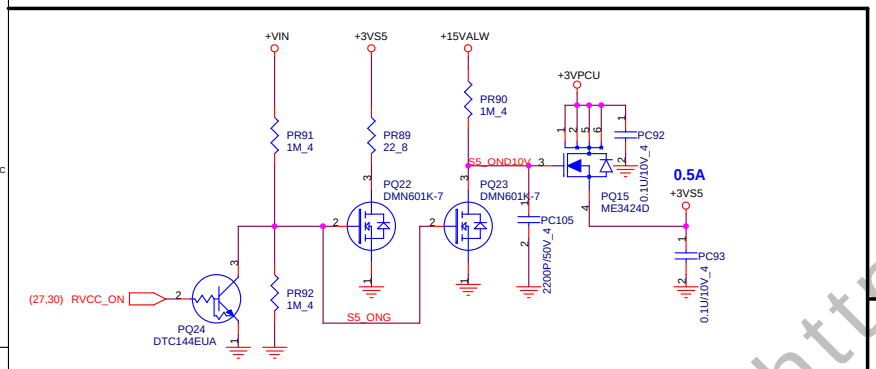
Quanta Computer Inc.
PROJECT : FK1

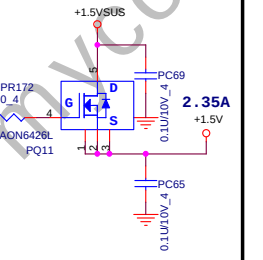
Size	Document Number	Rev
	+VGACORE (RT8208/1.8V)	1A

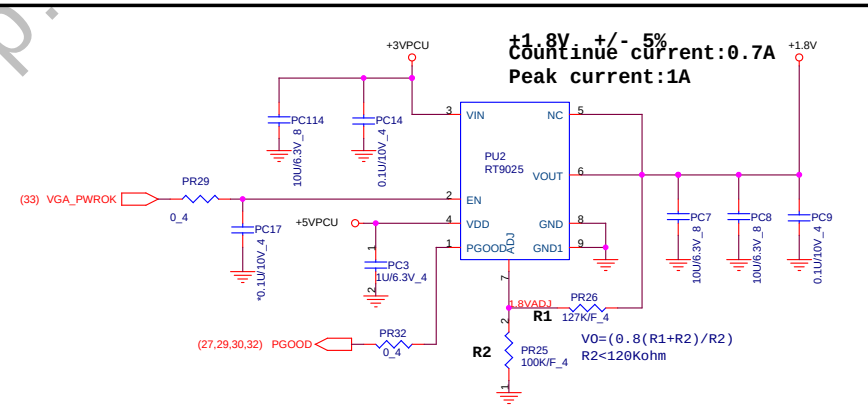
Date: Thursday, April 15, 2010 Sheet 33 of 37

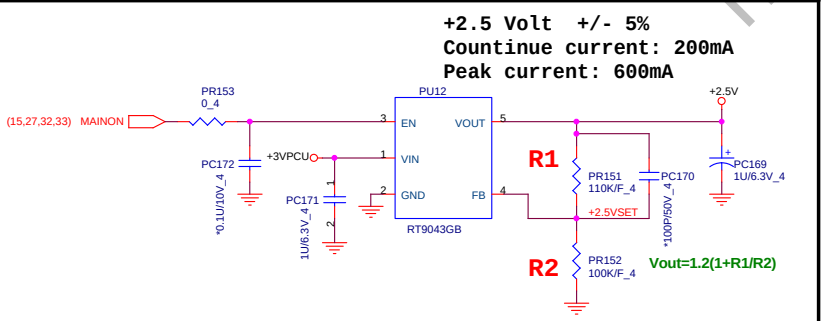


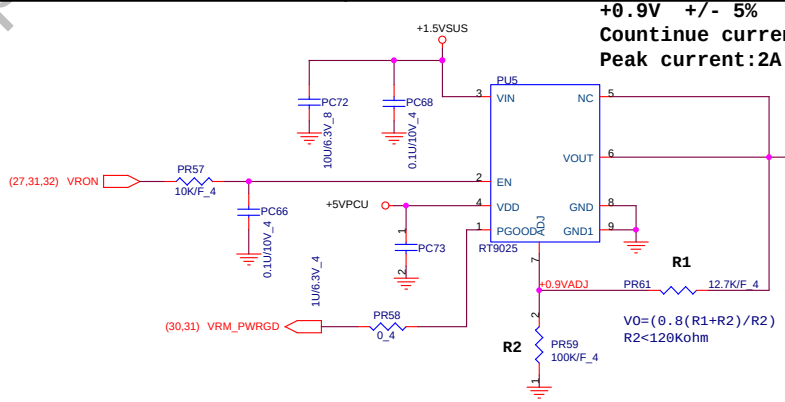










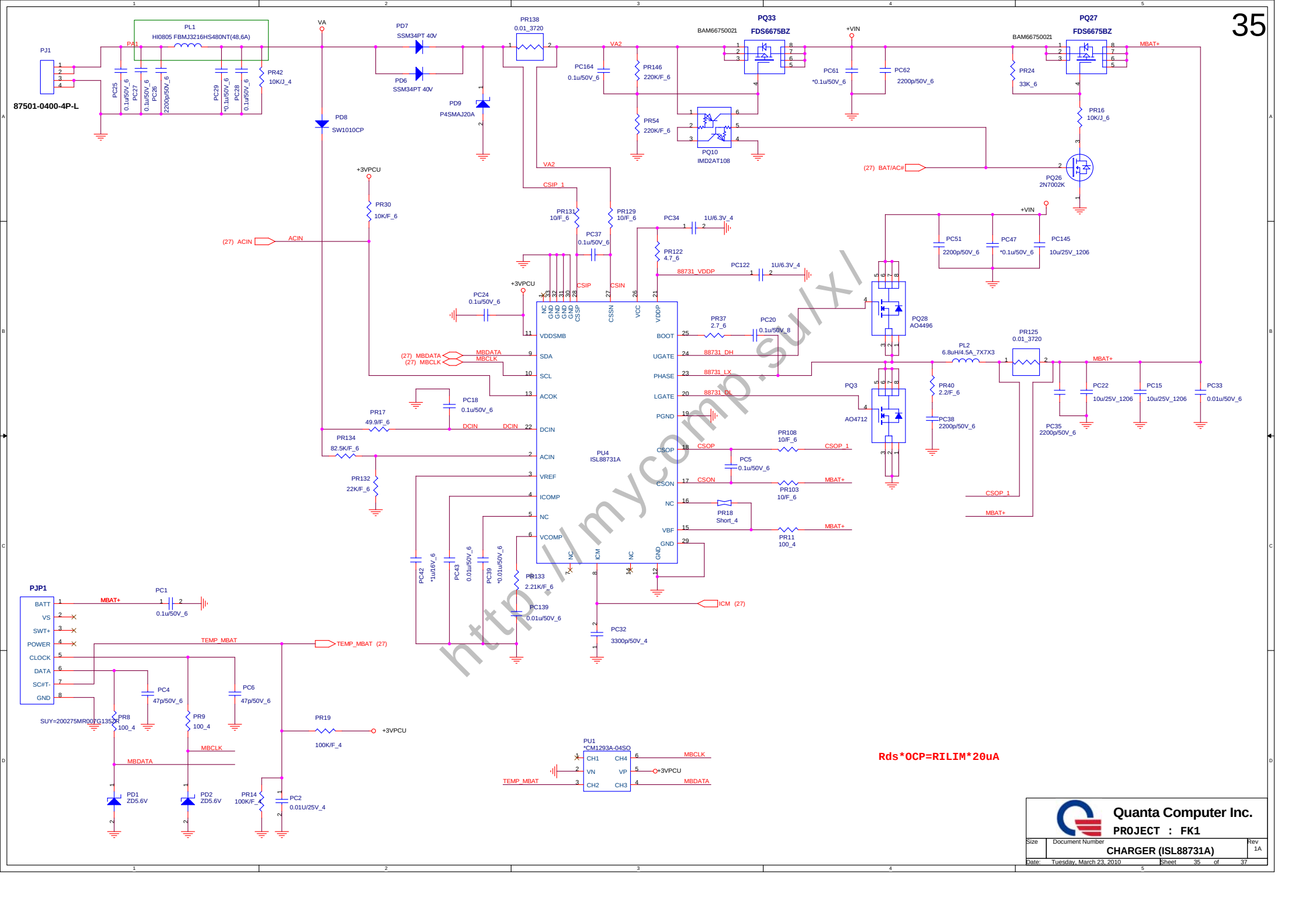


CPU 1.05V/0.9V	PR26120
0.9V	CS31272FB17
1.05V	CS33162FB14

Quanta Computer Inc.
PROJECT : FK1

Size	Document Number	Rev
	DISCHARGE/3VS5/5VS5/LAN	1A

Date: Monday, April 12, 2010 Sheet 34 of 37



Quanta Computer Inc.		
PROJECT : FK1		
Size	Document Number: CHARGER (ISL88731A)	Rev: 1A
Date: Tuesday, March 23, 2010	Sheet 35 of 37	

Hole

CPU Nut

H13 *h-c256d146pb
H12 *h-c256d146pb
H16 *h-c256d146pb
H17 *h-c256d146pb

Hole for ESD

H25 *H-C295D126P2-8
H7 *hg-c315d126p2
H15 *hg-c315d126p2
H21 *H-C354D126P2-8
H3 *FH1

MINI CARD

H18 *h-c256d59pb
H23 *h-c256d59pb

Antenna Hole

H10 *H-C236D236N

H24 *FH1
H29 *FH1
H22 *FH1
F2 *FH1
H6 *FH1

Thermal Module

H4 *h-bc217d63pb

VGA Nut

H5 *h-bc217d63pb

H26 *FH1
H20 *FH1
H1 *FH1
H30 *FH1
H9 *FH1
H2 *FH1

Fan Hole

H11 *O-FH1A-1

H19 *FH1
H27 *FH1
H28 *FH1

SB820

H14 *SB820
H8 *SB820

+1.5V	C196	1000P/50V/X7R	+1.1V
+1.5V	C657	1000P/50V/X7R	+VCORE
	C643	1000P/50V/X7R	
+Vga_Core	C565	1000P/50V/X7R	+1.5V
+1.5Vsus	C426	1000P/50V/X7R	+3V
+1.5Vsus	C719	1000P/50V/X7R	+3V
+Vin	C716	1000P/50V/X7R	+5V
+3V	C720	1000P/50V/X7R	+5V
	C472	1000P/50V/X7R	
	C707	1000P/50V/X7R	
+1.1V	C631	0.1U/10V_4	
+Vcore	C349	0.1U/10V_4	+VIN
+3V	C709	0.1U/10V_4	+VIN
+Vga_Core	C516	0.1U/10V_4	+VIN
+1.1V	C238	0.1U/10V_4	+3V
+5V	C237	0.1U/10V_4	+1.1V

+VIN	C527	1000P/50V/X7R	+1.1V
	C800	1000P/50V/X7R	
	C801	1000P/50V/X7R	
+Vga_Core	C802	1000P/50V/X7R	+1.1V
+Vga_Core	C803	1000P/50V/X7R	+1.5V
+1.5Vsus	C804	1000P/50V/X7R	+3V
+Vin	C805	1000P/50V/X7R	+5V
+Vcore	C806	1000P/50V/X7R	+VIN

Quanta Computer Inc.
PROJECT : AMD Danube

Size	Document Number	Rev
	Hole, Nuts	1A

Date: Friday, March 26, 2010 Sheet 36 of 37

Change list from A to B stage

-P25 PR173,PR165 change to 68 ohm.
-P29 Add PR176,PR177,PR178
-P34 PR163 change from 0 to 10K ohm.(For power on timing)
-P34 Add PC196 0.01UF.(For power on timing)
-P34 PR29 change value from 49.9K to 0 ohm.(For Power on timing)
-P34 PC17 change value from 0.1U to NC.(Power on Timing)
-P36 Add C800 , C801 , C802 , C803 , C804, C805, C806
-P2 Add C760 , R500
-P29 delete PR86
-P30 PR124 ,PL4, PC31 change to 5.1K ,1.5UH ,0.1u for OCP 13A
-P31 PR4 change to NC
-P32 PC174 Mount
-P32 modify circuit for VDDIO_FB_H and VDDIO_FB_L
-P32 PR62 change to NC , delete PR123
-P33 PC153 Mount
-P34 Mount PR171 ,PQ41 ,PR88 ,PQ21 ,PR89 , PQ22 for discharge
-P34 delete PR10 , PR60
-P35 Mount PR14 , PR19 change form 10K to 100K
-P27 Add R501
-P27 Add D25

Change list from B to C stage

-P2 delete 0ohm R367 , R360 , R342
-P5 delete 0ohm R70
-P6 delete 0ohm R313 , R312 , R315 , R54
-P9 delete 0ohm R343 , R393 , R394
-P8 delete 0ohm RP1 , RP2 , RP3 , RP4 , RP5 , RP6 , RP7
-P20 delete 0ohm R250 , R249
-P22 delete 0ohm R219 , R205 , R225
-P26 delete 0ohm R203 , R301
-P25 delete 0ohm AR25
-Page 29,PC99 from Polymer capacitor change to E/C
-Page31,PQ8 and PQ31 low side Mosfet part number correct is RJK03D3DPA
-Page35 PL1 from 0805/5A change to 1206/6A

-P7 delete 0ohm L21 , L61 , L22 , R55 , R318 , R68 , R67
-P11 delete 0ohm R105 , R143 , L35 , R146 , L35 , R146 , R152

-P13 delete 0ohm R270 , R272 , R274
-P14 delete 0ohm R278 , R262

-P22 delete 0ohm R221 , R226 , R204 , R193 , R194 , R197 , R207
-P32 delete 0ohm PR72
-P20 C1 change form 0.1u to 2.2u
-P24 ADD L38,L39,L40 for EMI issue

Change list from C to MP stage

D1-P23 Delete R31 10Kohm , Delete U2 PIN1 trace
D2-P22 Delete R224 0ohm
D3-P25 change AU2 pin5 , AU3 pin5 , R416 pin1 , AU1 pin5 form +3VS5 to +3V

D4-P30 FOR AMD SB820M USB hold time issue on all Danube change PR147 38.7K to 49.9K ohm
change PR148 100K to 97.6K ohm

D5-P25 change AC17 form 10uF to 1uF

D6-P23 add C807 C808 10uF for VCC3_BT" dropped