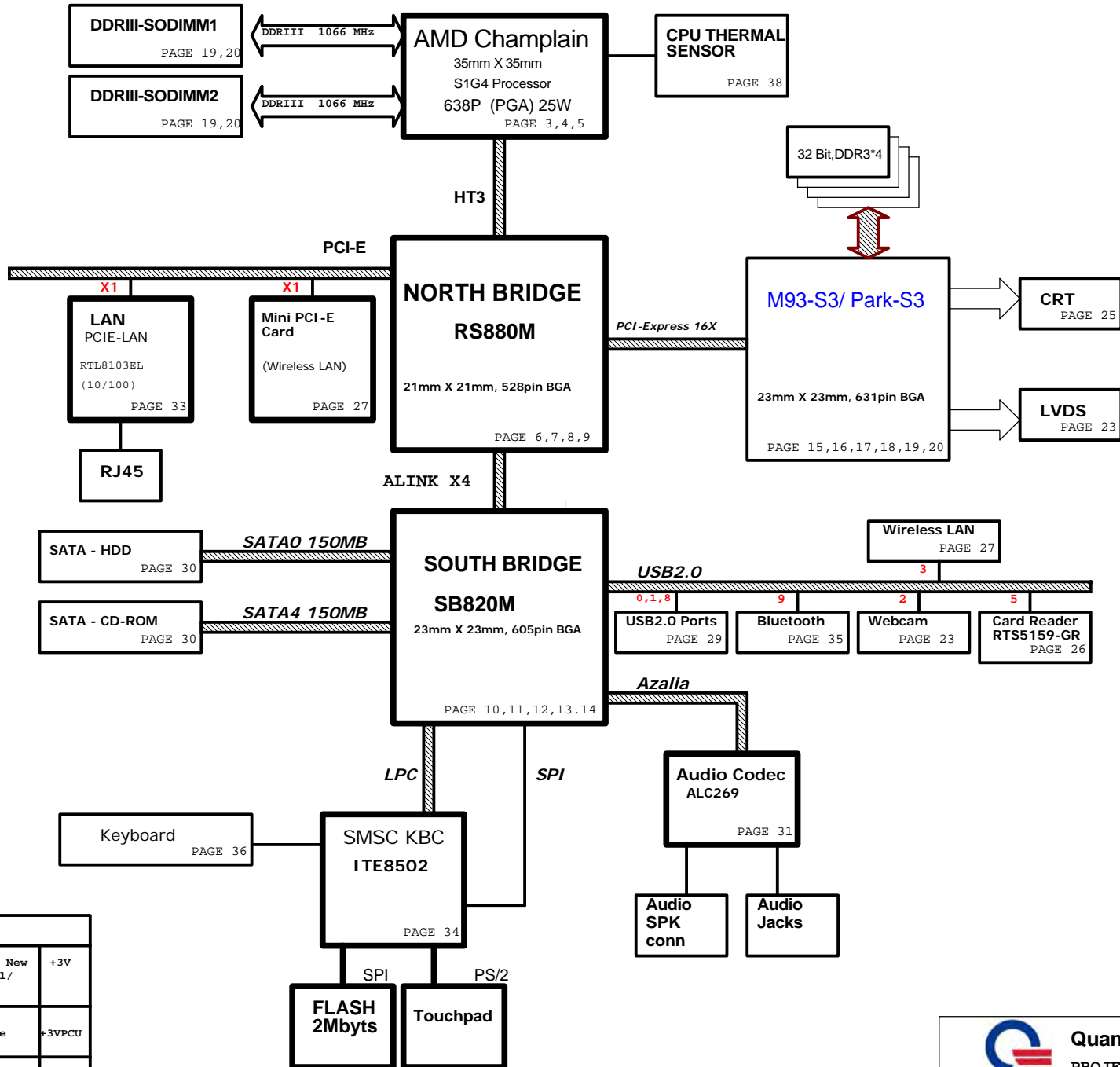


# FK1 SYSTEM DIAGRAM

01

## PCB STACK UP

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



SYSTEM CHARGER(bq24740)  
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3/5VS5 RT8206B  
PAGE 43

+1.1V(RT8029)/+1.1VS5/+1.8V  
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DDR3 (RT8207)/+1.0V\_VGA  
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VGACORE(1.1V~0.9V)RT8028A  
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CPU\_CORE ISL6265  
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2Mbytes

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Audio SPK  
conn

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35mm X 35mm  
S1G4 Processor  
638P (PGA) 25W  
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32 Bit,DDR3\*4

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Card  
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SATA - CD-ROM  
PAGE 30

SATA0 150MB

SATA4 150MB

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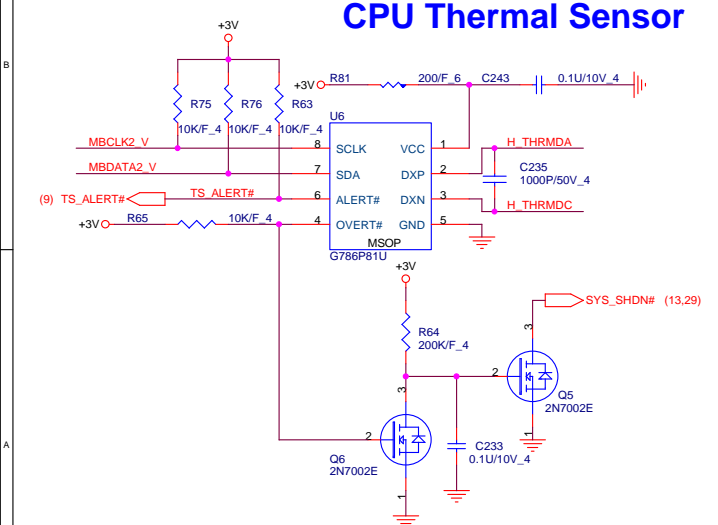
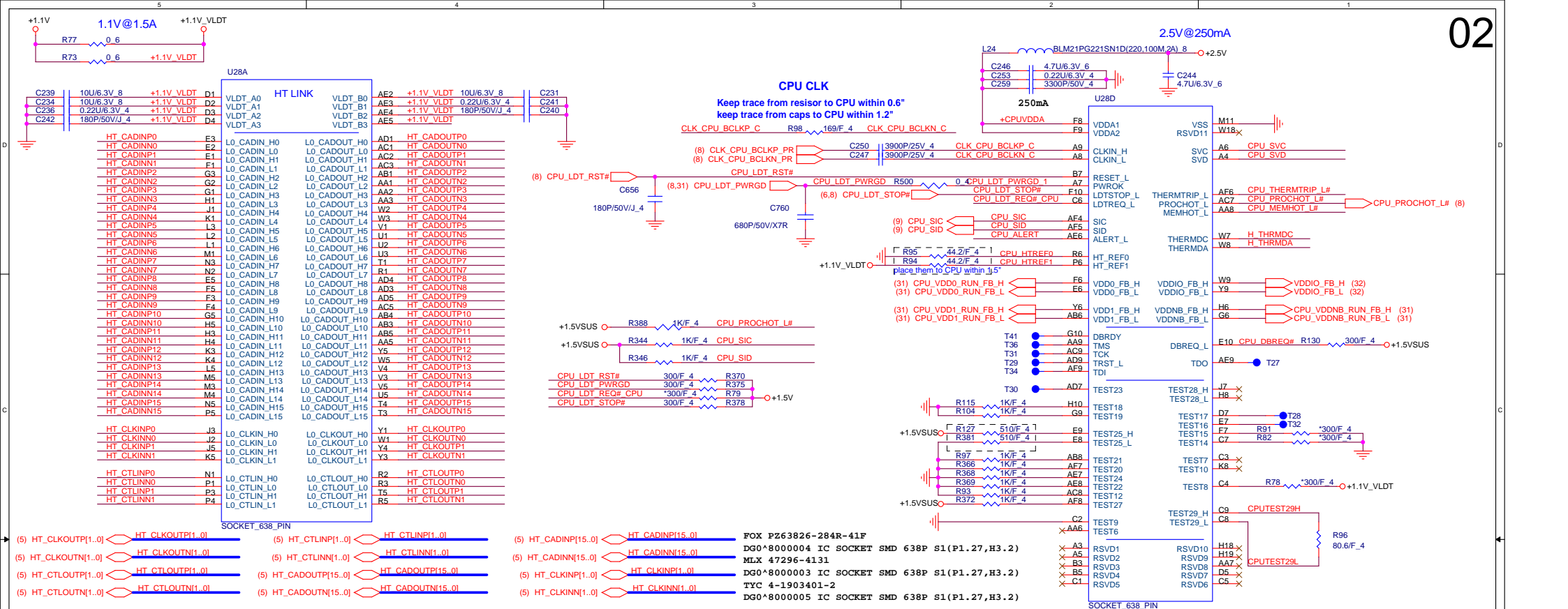
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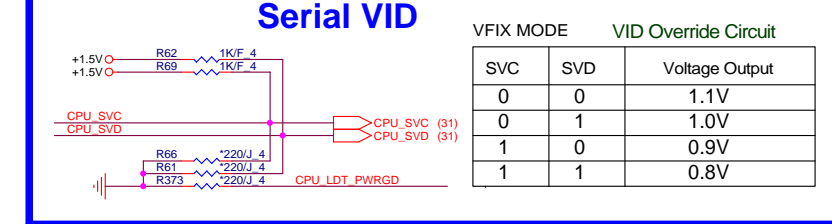
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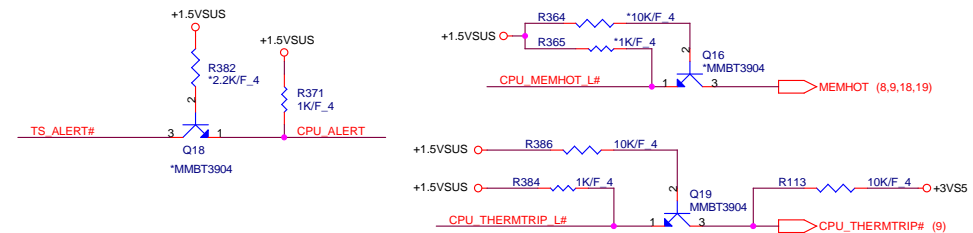
North Bridge  
RS880M  
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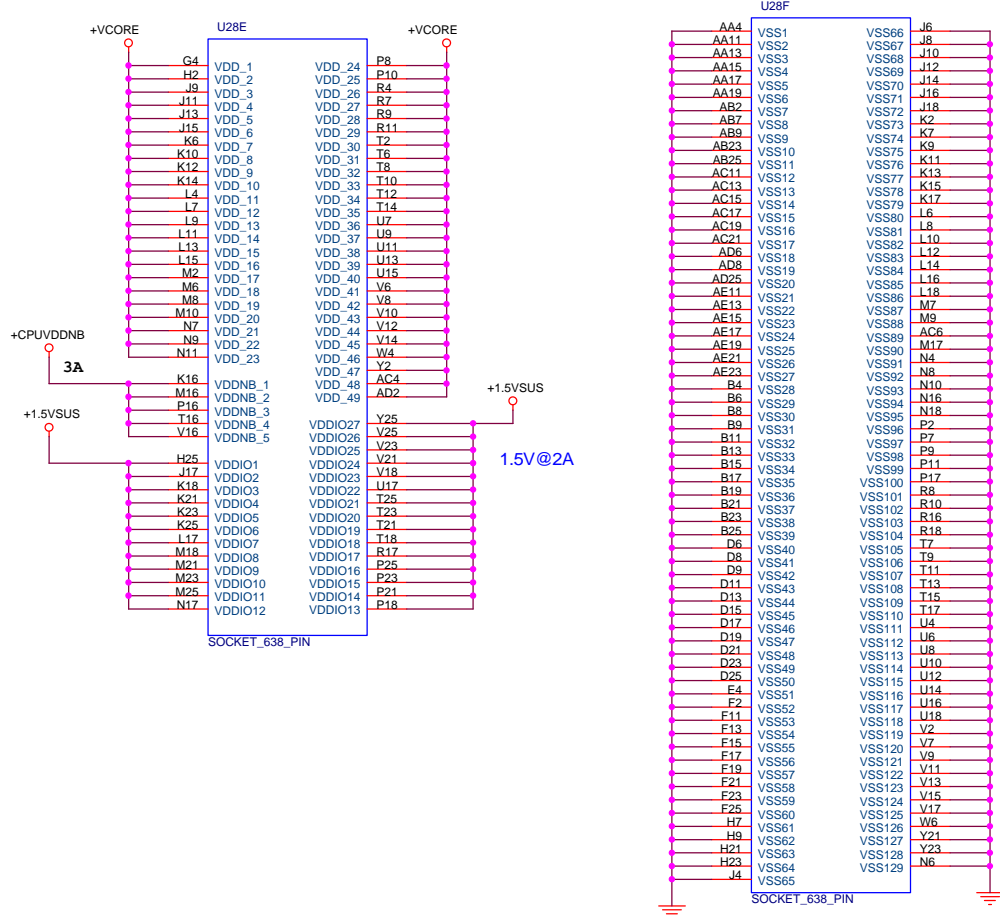
MBCLK2/MBDATA2	
G786P81U	1001 100X
G781-1P8	1001 101X

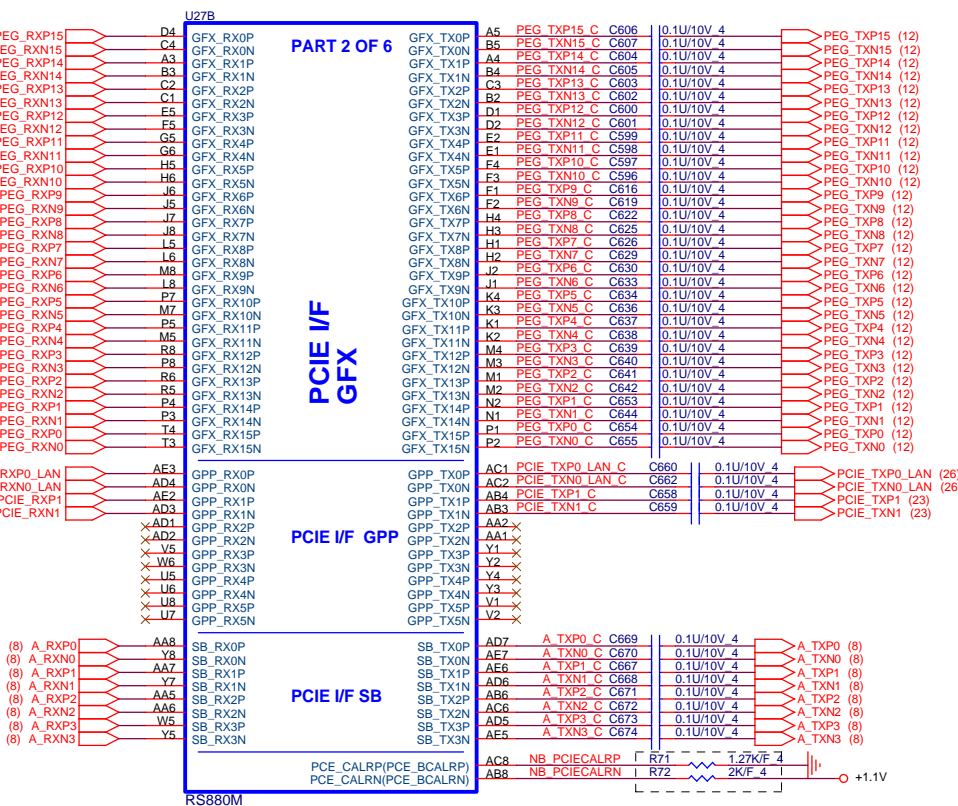
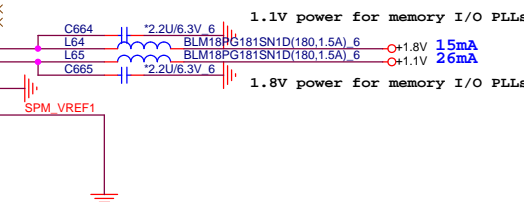


SVC	SVD	Voltage Output
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V



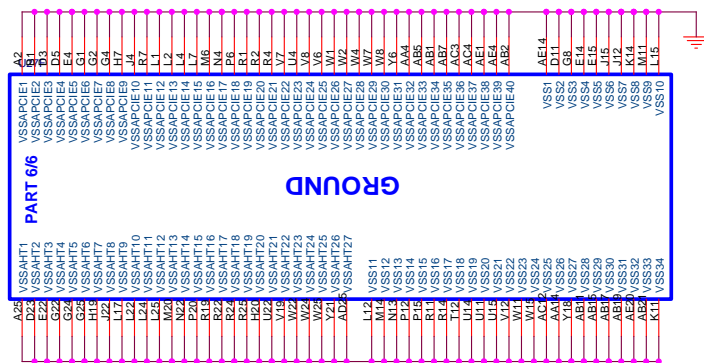






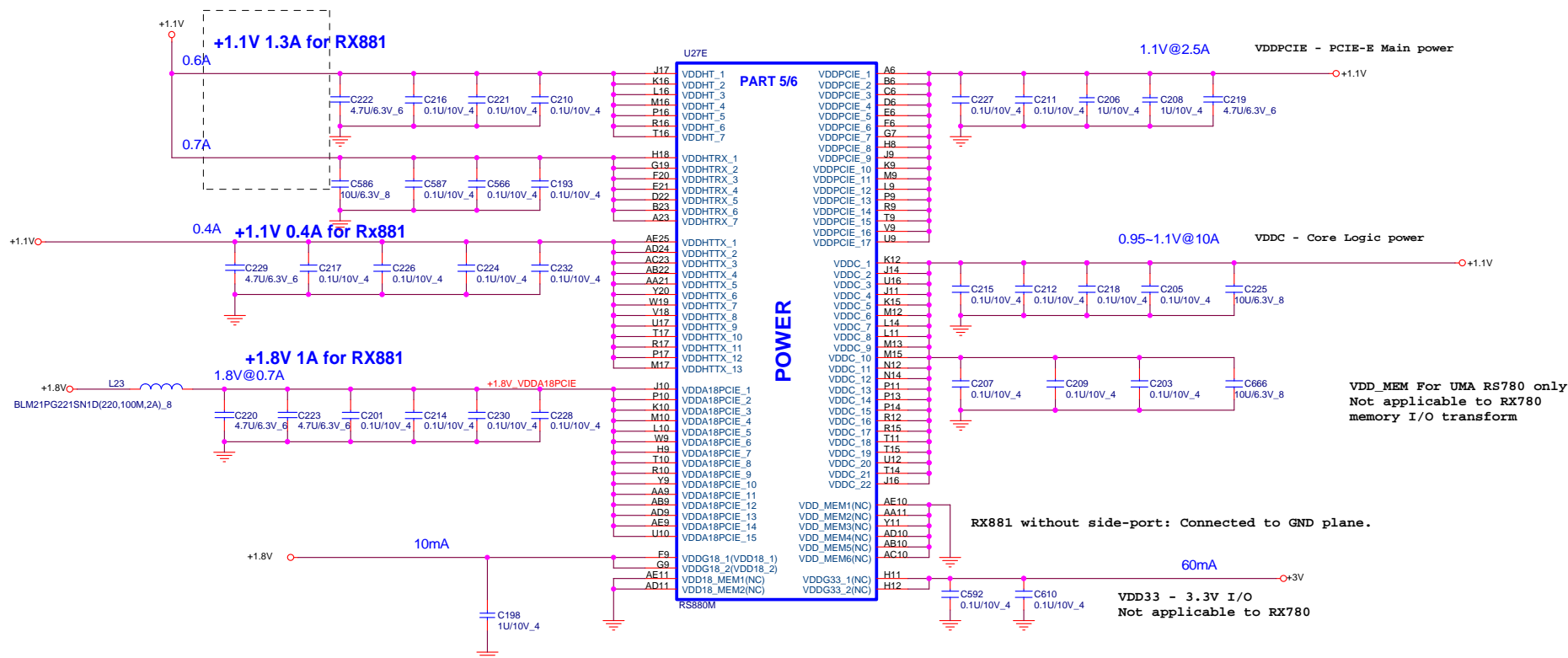






RX881/RS880 POWER DIFFERENCE TABLE

PIN NAME	RX881	RS880	PIN NAME	RX881	RS880
VDDHT	+1.1V	+1.1V	IOPLLVD	+1.1V	+1.1V
VDDHTRX	+1.1V	+1.1V	AVDD	GND	+3.3V
VDDHTTX	+1.2V	+1.2V	AVDDI	GND	+1.8V
VDDA18PCIE	+1.8V	+1.8V	AVDDQ	GND	+1.8V
VDDG18	+1.8V	+1.8V	PLLVD	GND	+1.1V
VDD18_MEM	GND	+1.8V	PLLVD18	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	VDDL18	GND	+1.8V
IOPLLVD18	+1.8V	+1.8V	VDDL33	NC	NC



VDD18\_MEM1/2

GND : W/O side Port

+1.8V : W side Port



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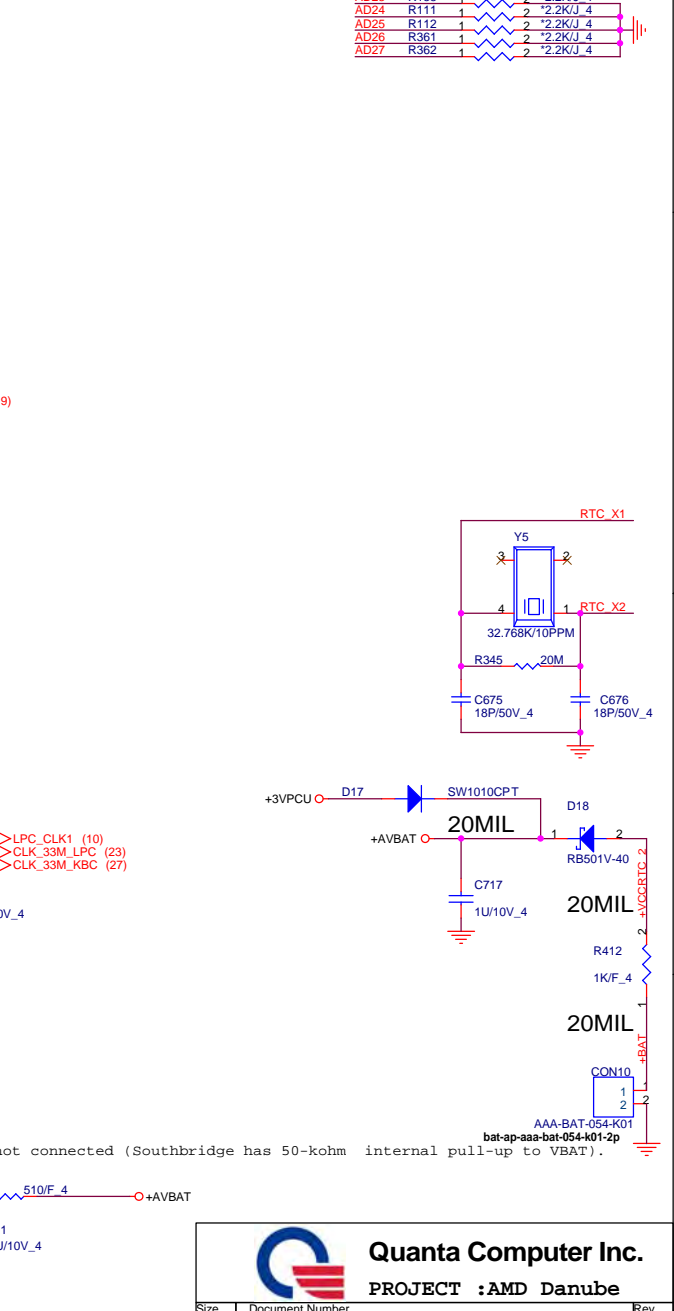
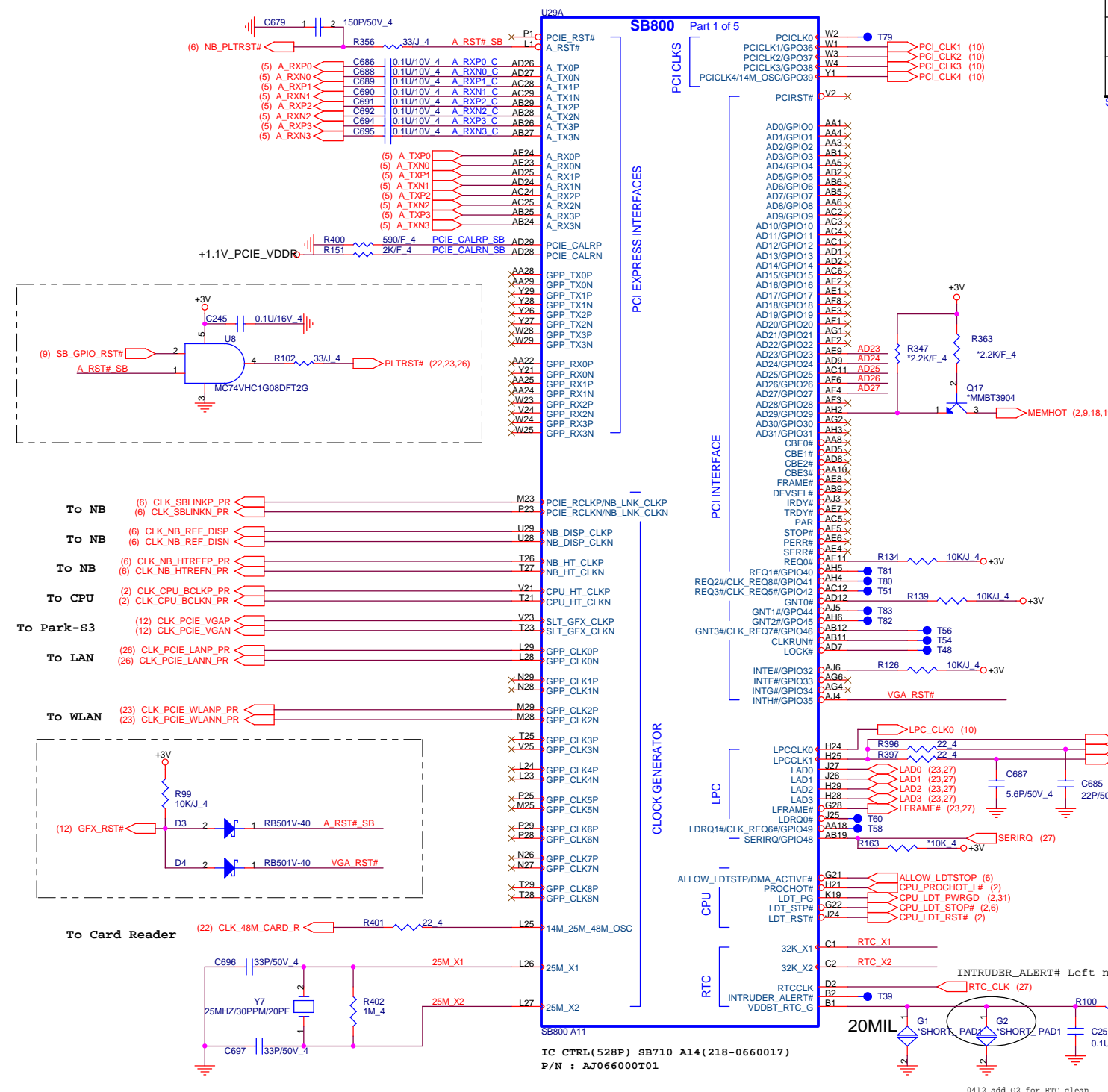
PROJECT :AMD Danube


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

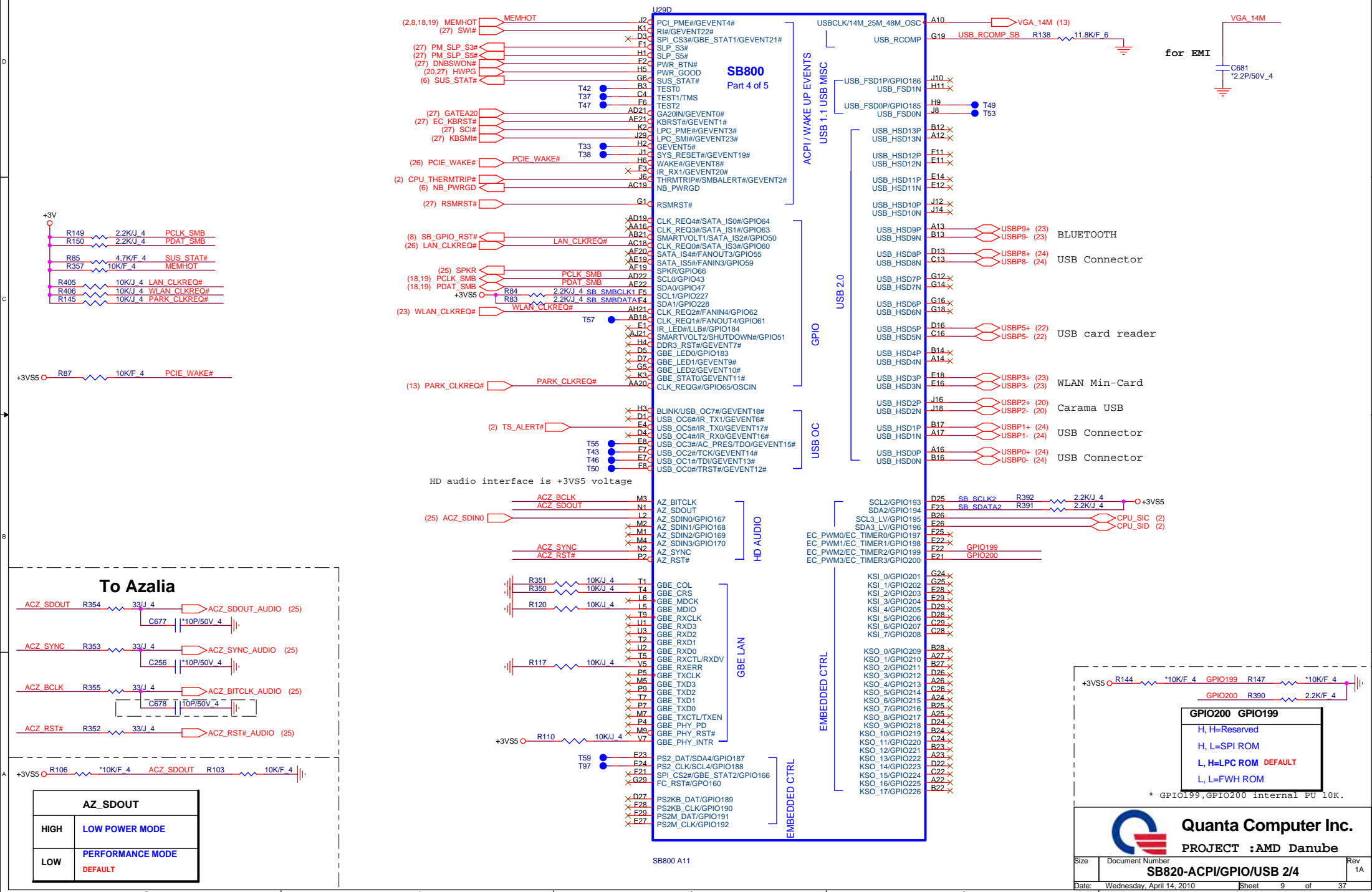


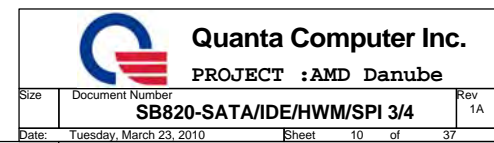


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PROJECT :AMD Danube

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







(28) SATA\_LED#

U9 \*TC7SH08FU

+3V

C255 \*0.1u/10V\_4

SB\_SATA\_LED#

R101 0.4



Size	Document Number	Rev
	<b>SB820-PWR/DECOUPLING 4/4</b>	1A
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MEM_ID[3:0]	Vendor	Type	Vendor P/N
0000	Samung- E die	64*16-800MHZ	K4W1G1646E-NC12
0001	Rynix - Orion	64*16-800MHZ	H5TQ1G63BFR-12C
0010	Reserved	Reserved	Reserved
0011	Reserved	Reserved	Reserved
0100	Reserved	Reserved	Reserved
0101	Reserved	Reserved	Reserved
0110	Reserved	Reserved	Reserved
0111	Reserved	Reserved	Reserved
1000	Reserved	Reserved	Reserved
1001	Reserved	Reserved	Reserved
1010	Reserved	Reserved	Reserved
1011	Reserved	Reserved	Reserved
1100	Reserved	Reserved	Reserved
1101	Reserved	Reserved	Reserved
1110	Reserved	Reserved	Reserved
1111	Reserved	Reserved	Reserved

PWRCTRL1	V-CORE
1	0.9V
0	0.95V *

R32 10K 4 VGA\_14M  
SI, provide 14M CLK source to solve Park JTAG test block intermittently fails to initialize correctly issue  
SI, AMD Document Update change PU to PD

R298 10K 4 GPO22  
GPO22(ROMCS#)  
PD without external VBIOS ROM

R25 10K 4 GPO24 TRSTB  
R297 10K 4 VGA\_14M  
R298 10K 4 GPO22 TRSTB  
R299 10K 4 GPO22 TRSTB

R23 10K 4 LVDS\_BLCN

R10 10K 4

R31 10K 4 B@NC

R13 10K 4 B@NC

R16 10K 4 B@NC

R17 10K 4 B@NC

R18 10K 4 B@NC

R19 10K 4 B@NC

R20 10K 4 B@NC

R21 10K 4 B@NC

R22 10K 4 B@NC

R23 10K 4 B@NC

R24 10K 4 B@NC

R25 10K 4 B@NC

R26 10K 4 B@NC

R27 10K 4 B@NC

R28 10K 4 B@NC

R29 10K 4 B@NC

R30 10K 4 B@NC

R31 10K 4 B@NC

R32 10K 4 B@NC

R33 10K 4 B@NC

R34 10K 4 B@NC

R35 10K 4 B@NC

R36 10K 4 B@NC

R37 10K 4 B@NC

R38 10K 4 B@NC

R39 10K 4 B@NC

R40 10K 4 B@NC

R41 10K 4 B@NC

R42 10K 4 B@NC

R43 10K 4 B@NC

R44 10K 4 B@NC

R45 10K 4 B@NC

R46 10K 4 B@NC

R47 10K 4 B@NC

R48 10K 4 B@NC

R49 10K 4 B@NC

R50 10K 4 B@NC

R51 10K 4 B@NC

R52 10K 4 B@NC

R53 10K 4 B@NC

R54 10K 4 B@NC

R55 10K 4 B@NC

R56 10K 4 B@NC

R57 10K 4 B@NC

R58 10K 4 B@NC

R59 10K 4 B@NC

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R61 10K 4 B@NC

R62 10K 4 B@NC

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R67 10K 4 B@NC

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R159 10K 4 B@NC

R160 10K 4 B@NC

R161 10K 4 B@NC

R162 10K 4 B@NC

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R165 10K 4 B@NC

R166 10K 4 B@NC

R167 10K 4 B@NC

R168 10K 4 B@NC

R169 10K 4 B@NC

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R171 10K 4 B@NC

R172 10K 4 B@NC

R173 10K 4 B@NC

R174 10K 4 B@NC

R175 10K 4 B@NC

R176 10K 4 B@NC

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R186 10K 4 B@NC

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R188 10K 4 B@NC

R189 10K 4 B@NC

R190 10K 4 B@NC

R191 10K 4 B@NC

R192 10K 4 B@NC

R193 10K 4 B@NC

R194 10K 4 B@NC

R195 10K 4 B@NC

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R205 10K 4 B@NC

R206 10K 4 B@NC

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R208 10K 4 B@NC

R209 10K 4 B@NC

R210 10K 4 B@NC

R211 10K 4 B@NC

R212 10K 4 B@NC

R213 10K 4 B@NC

R214 10K 4 B@NC

R215 10K 4 B@NC

R216 10K 4 B@NC

R217 10K 4 B@NC

R218 10K 4 B@NC

R219 10K 4 B@NC

R220 10K 4 B@NC

R221 10K 4 B@NC

R222 10K 4 B@NC

R223 10K 4 B@NC

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R225 10K 4 B@NC

R226 10K 4 B@NC

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R233 10K 4 B@NC

R234 10K 4 B@NC

R235 10K 4 B@NC

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R238 10K 4 B@NC

R239 10K 4 B@NC

R240 10K 4 B@NC



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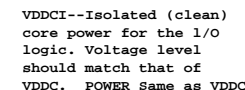


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11

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

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

A@ FOR PARK-S3  
B@ FOR M93

VDDRH\_1 & VDDRH\_2 --Dedicated power pins for memory clock pads for each channel. Should have the same voltage level as VDDR1.

(17) VMA\_WDQS[7..0]  $\Rightarrow$  VMA\_WDQS[7..0]  
 (17) VMA\_RDQS[7..0]  $\Rightarrow$  VMA\_RDQS[7..0]  
 (17) VMA\_DM[7..0]  $\Rightarrow$  VMA\_DM[7..0]  
 (17) VMA\_DQ[63..0]  $\Rightarrow$  VMA\_DQ[63..0]  
 (17) VMA\_MA[13..0]  $\Rightarrow$  VMA\_MA[13..0]

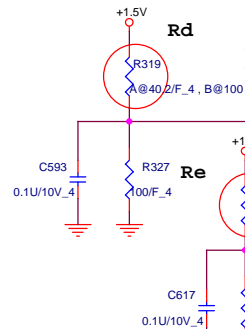
VMA\_DQ0 K27  
 VMA\_DQ1 J29  
 VMA\_DQ2 H30  
 VMA\_DQ3 H32  
 VMA\_DQ4 G29  
 VMA\_DQ5 F28  
 VMA\_DQ6 F32  
 VMA\_DQ7 F30  
 VMA\_DQ8 C30  
 VMA\_DQ9 F27  
 VMA\_DQ10 A28  
 VMA\_DQ11 C28  
 VMA\_DQ12 E27  
 VMA\_DQ13 G26  
 VMA\_DQ14 D26  
 VMA\_DQ15 F25  
 VMA\_DQ16 A25  
 VMA\_DQ17 C25  
 VMA\_DQ18 E25  
 VMA\_DQ19 D24  
 VMA\_DQ20 E23  
 VMA\_DQ21 F23  
 VMA\_DQ22 D22  
 VMA\_DQ23 F21  
 VMA\_DQ24 E21  
 VMA\_DQ25 D20  
 VMA\_DQ26 F19  
 VMA\_DQ27 A19  
 VMA\_DQ28 D18  
 VMA\_DQ29 F17  
 VMA\_DQ30 A17  
 VMA\_DQ31 C17  
 VMA\_DQ32 E17  
 VMA\_DQ33 D16  
 VMA\_DQ34 F15  
 VMA\_DQ35 A15  
 VMA\_DQ36 D14  
 VMA\_DQ37 F13  
 VMA\_DQ38 A13  
 VMA\_DQ39 C13  
 VMA\_DQ40 E11  
 VMA\_DQ41 A11  
 VMA\_DQ42 C11  
 VMA\_DQ43 F11  
 VMA\_DQ44 A9  
 VMA\_DQ45 C8  
 VMA\_DQ46 F9  
 VMA\_DQ47 D8  
 VMA\_DQ48 E7  
 VMA\_DQ49 A7  
 VMA\_DQ50 G7  
 VMA\_DQ51 F7  
 VMA\_DQ52 A5  
 VMA\_DQ53 E5  
 VMA\_DQ54 C3  
 VMA\_DQ55 E1  
 VMA\_DQ56 G7  
 VMA\_DQ57 G6  
 VMA\_DQ58 G1  
 VMA\_DQ59 G3  
 VMA\_DQ60 J6  
 VMA\_DQ61 J1  
 VMA\_DQ62 J3  
 VMA\_DQ63 J5

# MEMORY INTERFACE

MAA\_0 K17  
 MAA\_1 J20  
 MAA\_2 H23  
 MAA\_3 G23  
 MAA\_4 G24  
 MAA\_5 H24  
 MAA\_6 J19  
 MAA\_7 K19  
 MAA\_8 J14  
 MAA\_9 K14  
 MAA\_10 J11  
 MAA\_11 J13  
 MAA\_12 H11  
 MAA\_13/BA2 G11  
 MAA\_14/BA0 J16  
 MAA\_15/BA1 L15  
 DQMA\_0 E32  
 DQMA\_1 E30  
 DQMA\_2 A21  
 DQMA\_3 C21  
 DQMA\_4 E13  
 DQMA\_5 D12  
 DQMA\_6 E3  
 DQMA\_7 F4  
 RDQSA\_0 H28  
 RDQSA\_1 C27  
 RDQSA\_2 A23  
 RDQSA\_3 E19  
 RDQSA\_4 E15  
 RDQSA\_5 D10  
 RDQSA\_6 D6  
 RDQSA\_7 G5  
 WDQSA\_0 H27  
 WDQSA\_1 A27  
 WDQSA\_2 C23  
 WDQSA\_3 C19  
 WDQSA\_4 C15  
 WDQSA\_5 E9  
 WDQSA\_6 C5  
 WDQSA\_7 H4  
 ODTA0 L18  
 ODTA1 K16  
 CLKA0 H26  
 CLKA0B H25  
 CLKA1 G9  
 CLKA1B H9  
 RAS0A G22  
 RAS1A G17  
 CAS0A G19  
 CAS1A G16  
 CS0A H22  
 CS1A J22  
 CKE0 G13  
 CKE1 K13  
 WE0A K20  
 WE1A J17  
 WEA0B G25  
 WEA1B H10  
 PX\_EN AB16  
 RSV#2 G14  
 RSV#3 G20

support 1Gbit VRAM ( 64M X 16 )

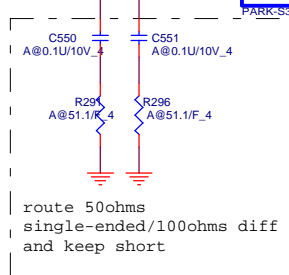
A@ FOR PARK-S3  
 B@ FOR M93



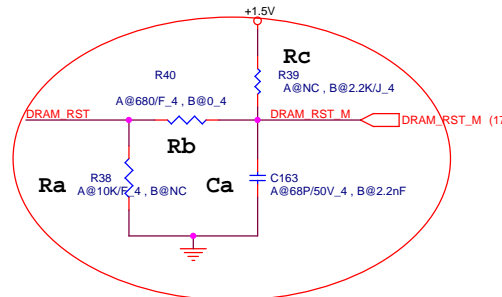
PLACE MVREFD DIVIDERS  
 AND CAPS CLOSE TO  
 ASIC

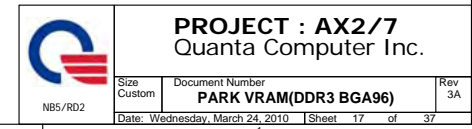
Do not Install for  
 M9X-S2/S3  
 Install 240 Ohms  
 0.5% Resistor  
 for PARK-S3

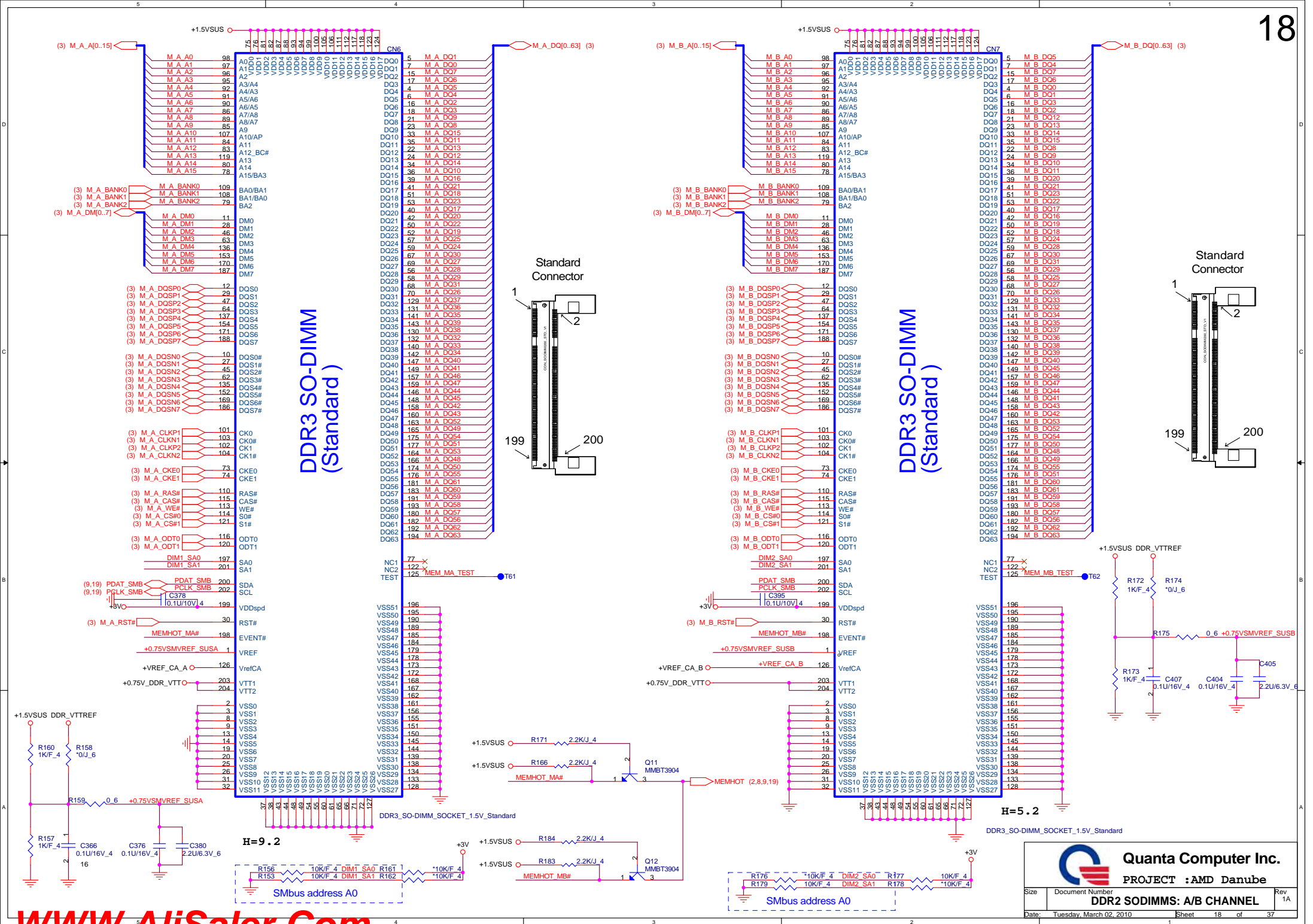
DIVIDER RESISTORS	M93	PARK
MVREF TO 1.8V (Rd)	100R	40.2R
MVREF TO GND (Re)	100R	100R



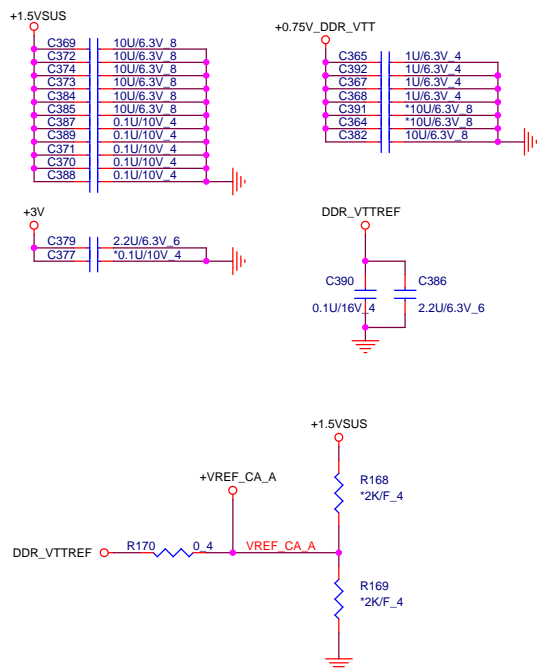
route 50ohms  
 single-ended/100ohms diff  
 and keep short



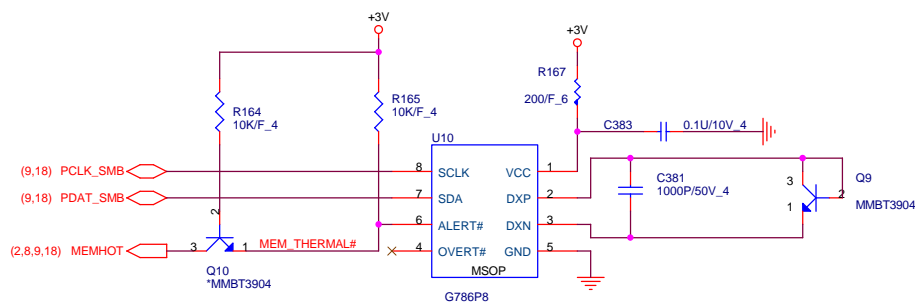
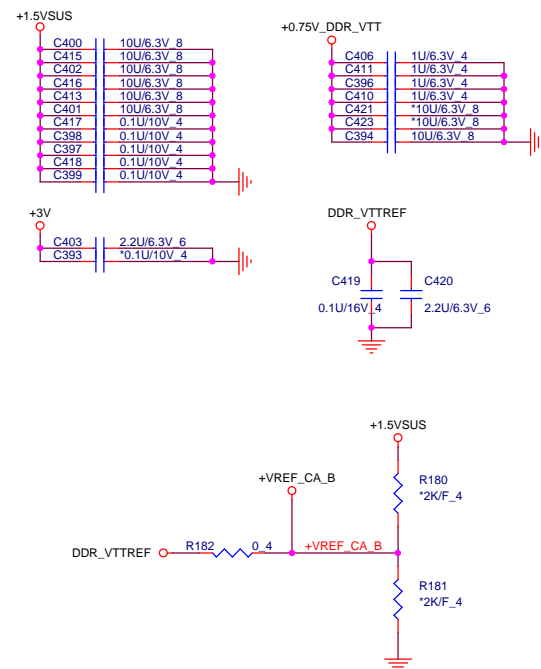




### Place these Caps near So-Dimm0

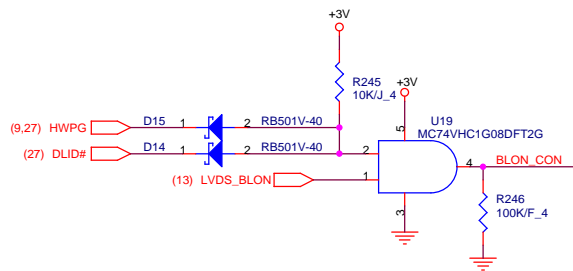


### Place these Caps near So-Dimm1



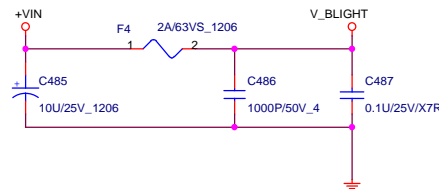
**Quanta Computer Inc.**  
PROJECT :AMD Danube

## Backlight Control(LVDS)

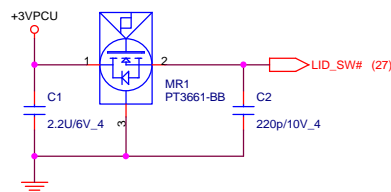


## BACKLIGHT POWER

80mils

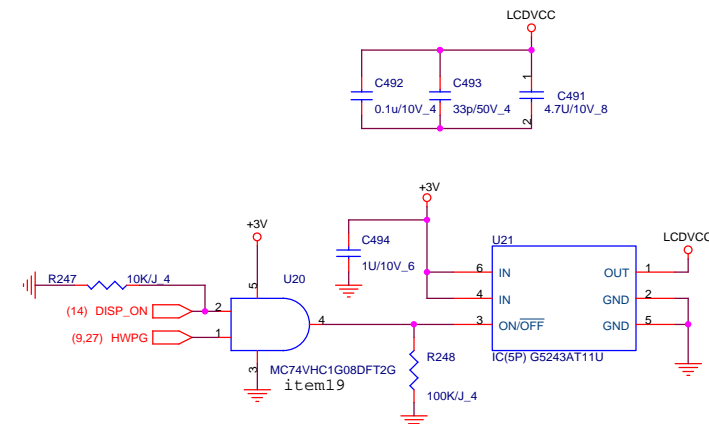


## LID SW

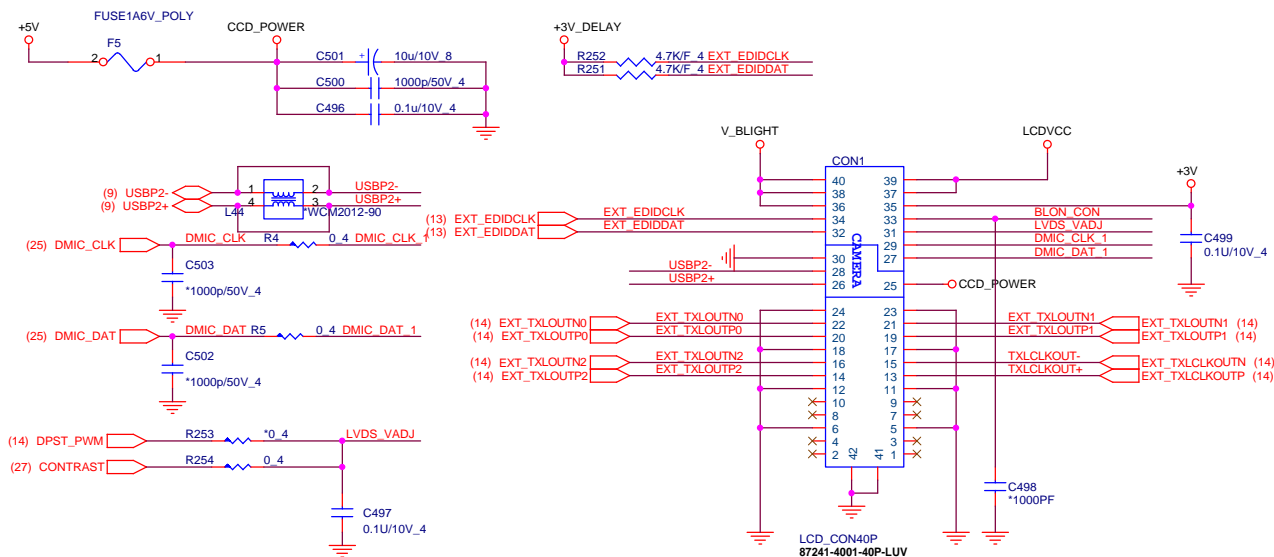


## LED Panel POWER SWITCH(LVDS)

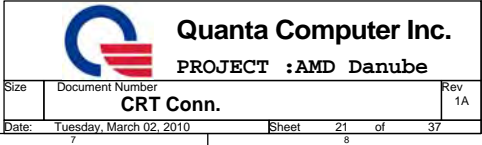
80mils



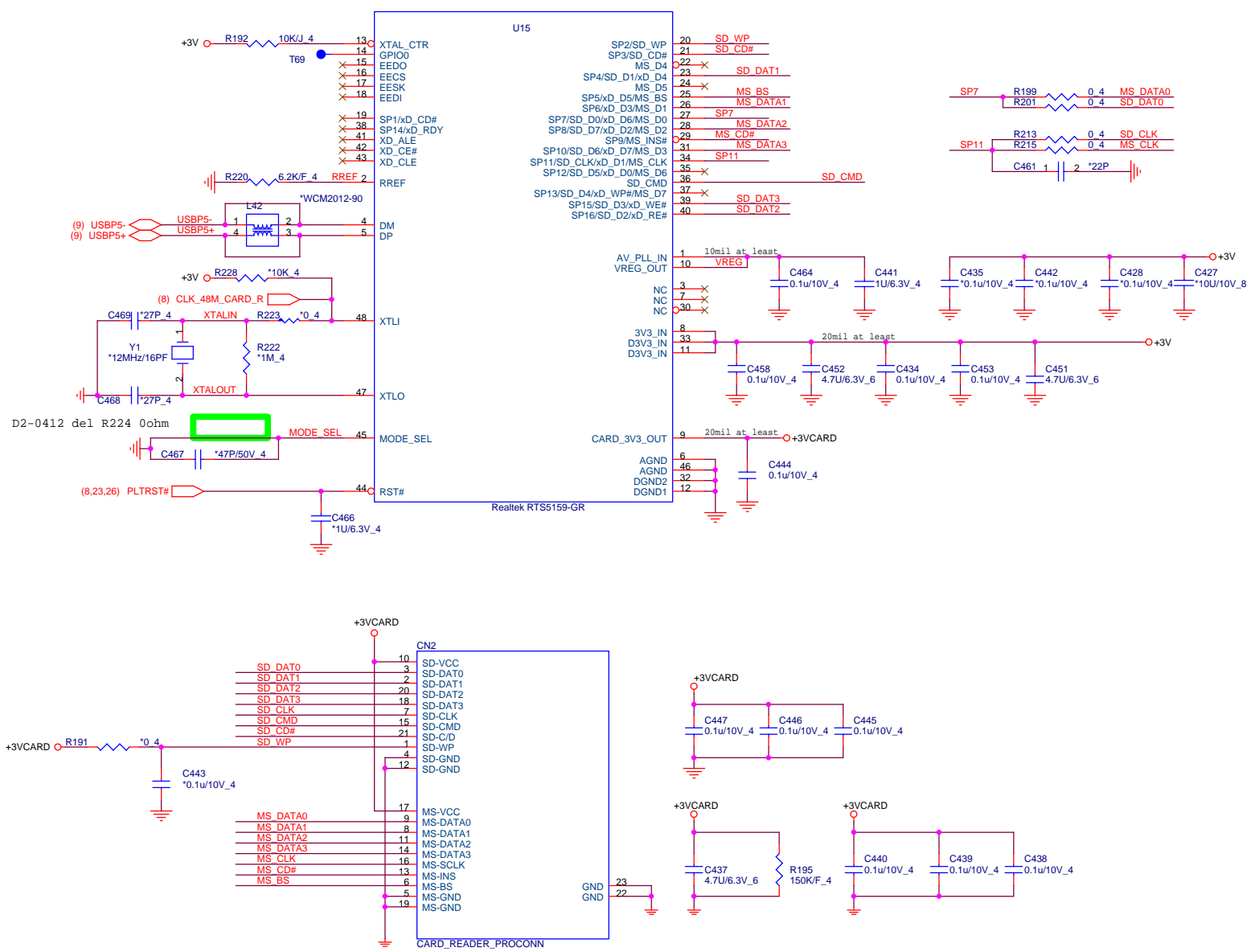
## LVDS/CCD



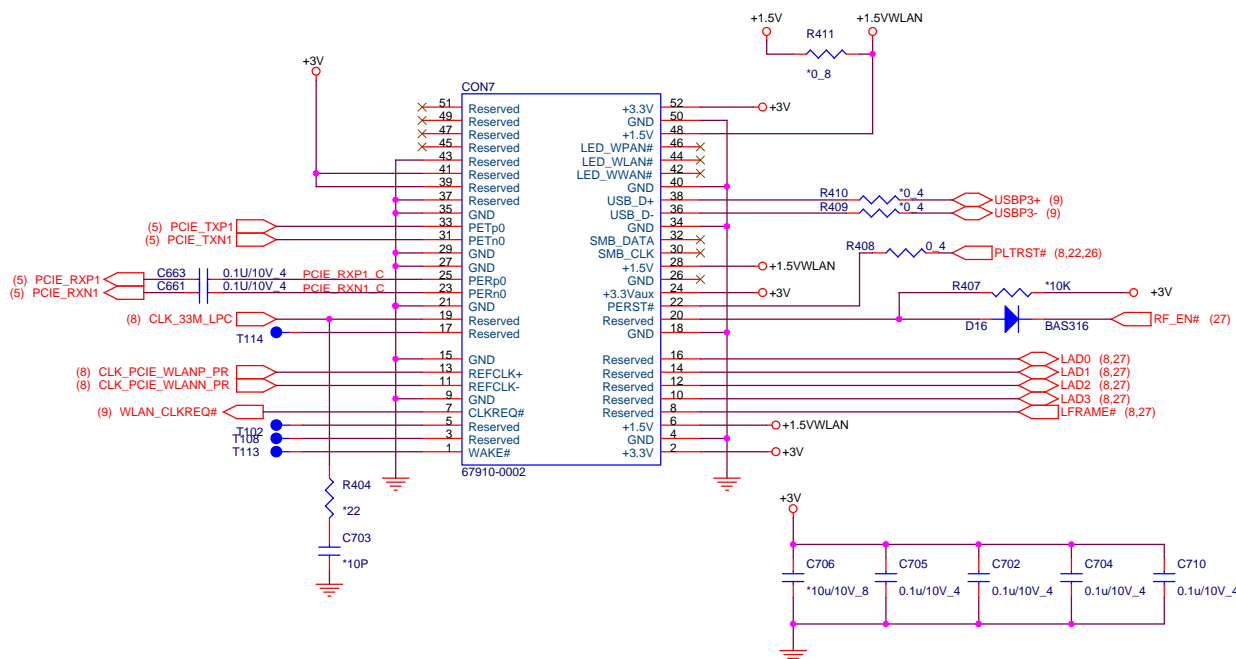




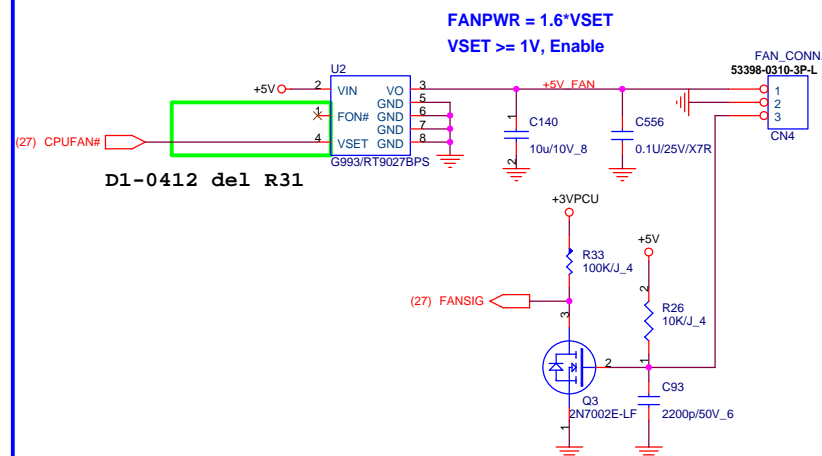
# Card Reader



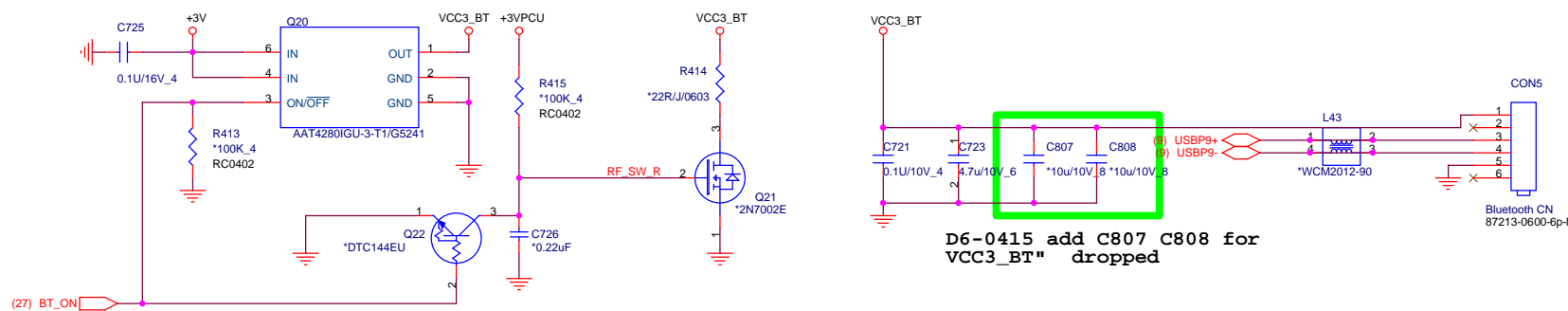
## MINI CARD (WLAN)



## CPU FAN CTRL

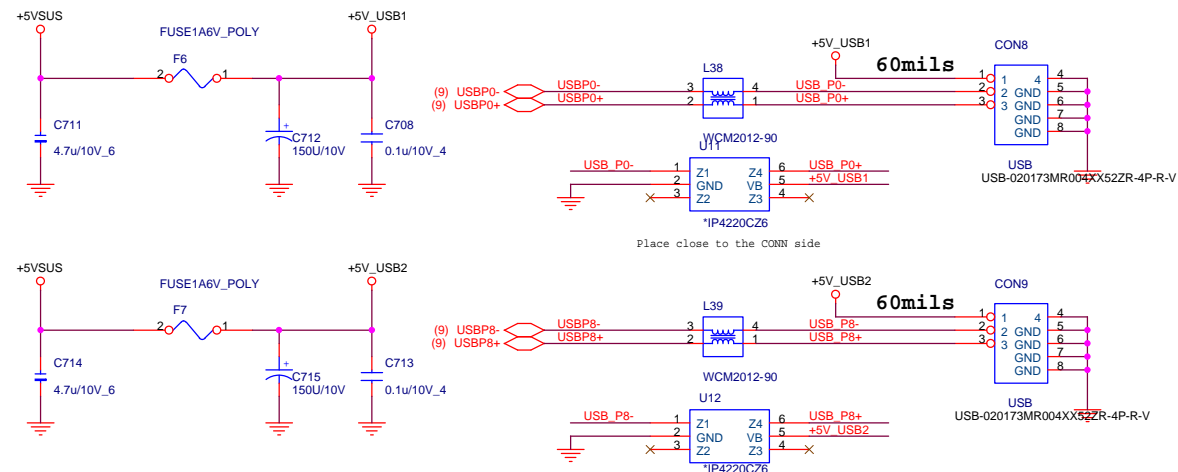


## ***BuleTooth (BTM)***

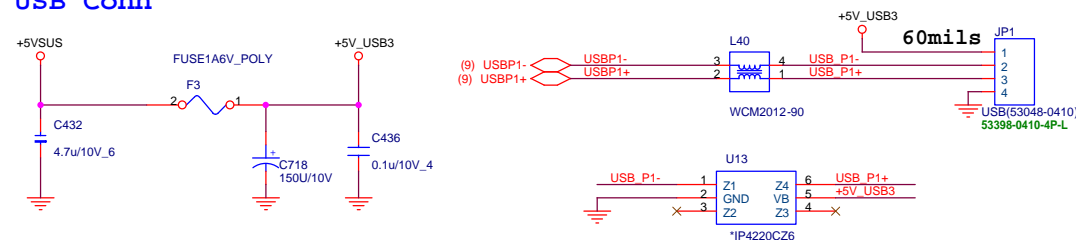


# USB PORTX2

# USB Connector

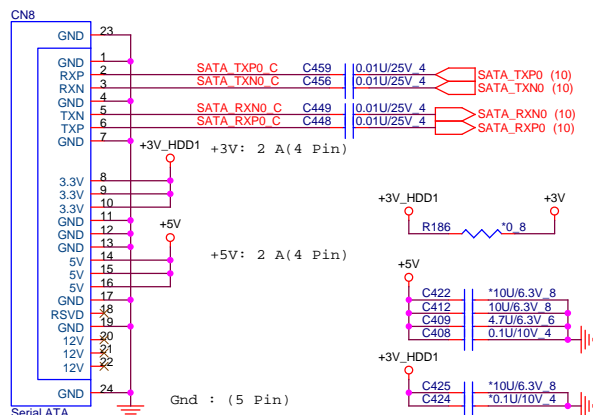


# USB Conn



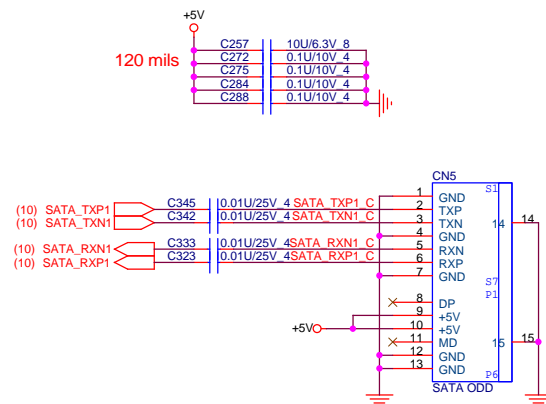
# SATA HDD CONNECTOR

DC Current rating: 0.5 A



# SATA CD-ROM

3V RUN Power.  
Need Check  
Net Name



Quanta Computer Inc.

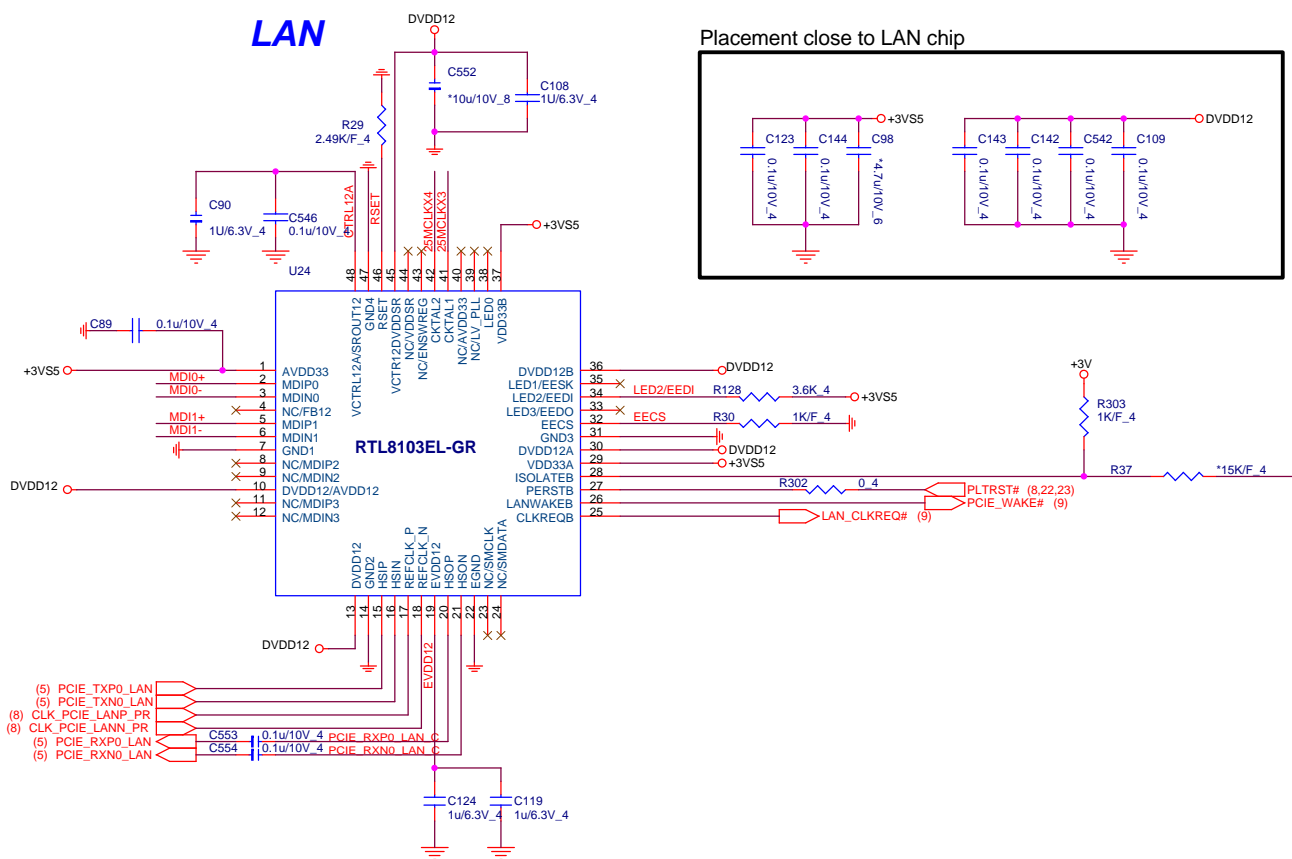
PROJECT : AMD Danube

USB Port/HDD/ODD

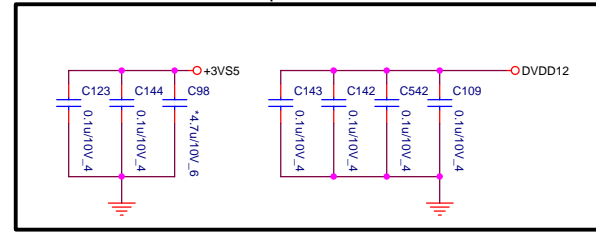
Size Document Number Rev 1A  
Date: Thursday, March 25, 2010 Sheet 24 of 37



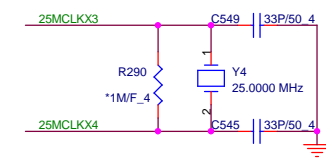
# LAN



Placement close to LAN chip

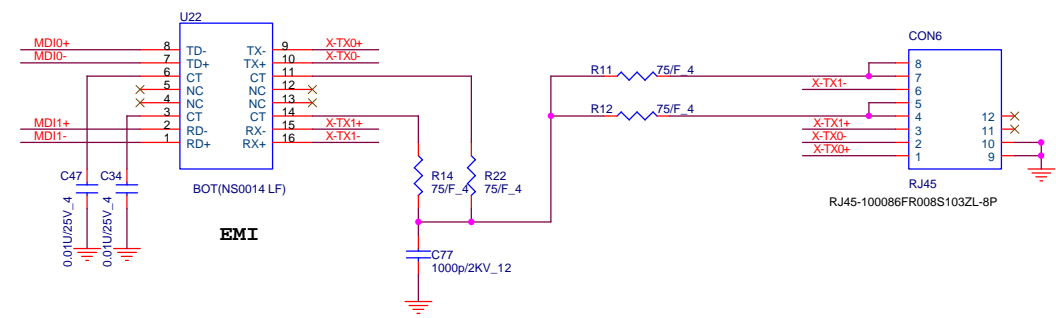


# X'tal 25MHz

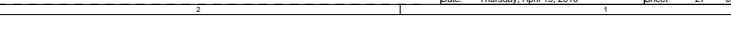
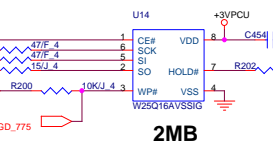


# 10/100 Transformer

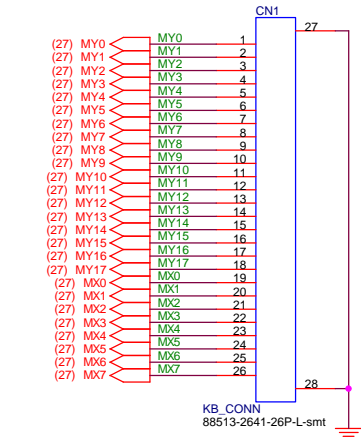
# RJ45







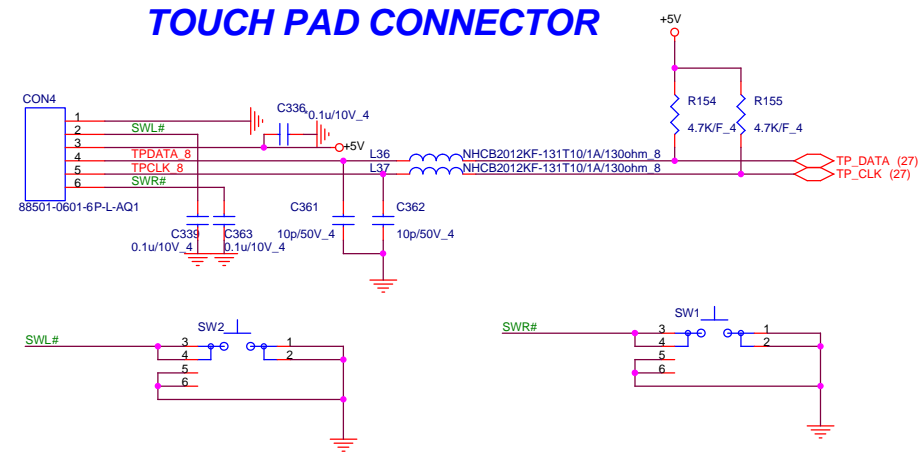
# KEY BOARD



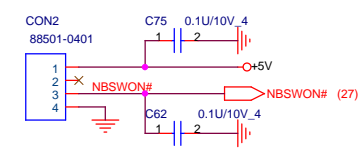
For EMI Reserve Caps for debug

MY3 C575	*10p/50V_4	C578	MX7
MY2 C576	*10p/50V_4	C579	MX6
MY1 C577	*10p/50V_4	C580	MX5
MY0 C558	*10p/50V_4	C581	MX4
MY15 C561	*10p/50V_4	C570	MY8
MY14 C562	*10p/50V_4	C569	MY9
MY13 C563	*10p/50V_4	C568	MY10
MY12 C564	*10p/50V_4	C567	MY11
MX0 C585	*10p/50V_4	C574	MY4
MX1 C584	*10p/50V_4	C573	MY5
MX2 C583	*10p/50V_4	C572	MY6
MX3 C582	*10p/50V_4	C571	MY7
MY16 C560	*10p/50V_4	C559	MY17

# TOUCH PAD CONNECTOR

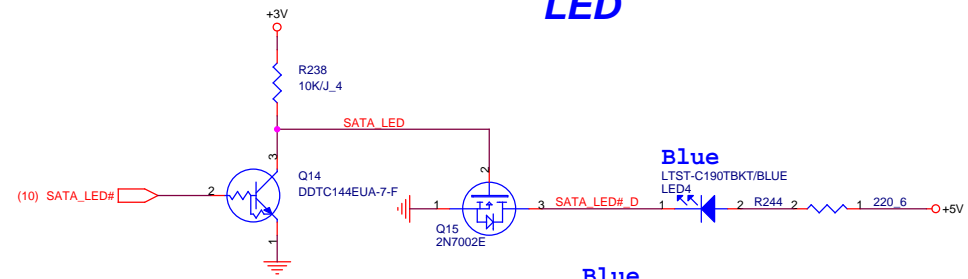


# SW BOARD CON



# LED

## HDD/ODD



## CAPS LED



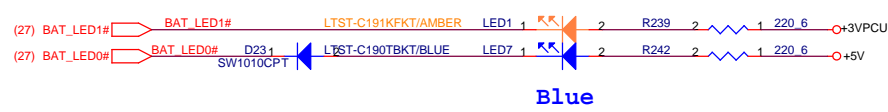
## NUM LED



## WLAN



## Battery

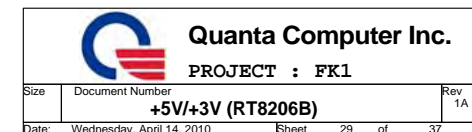


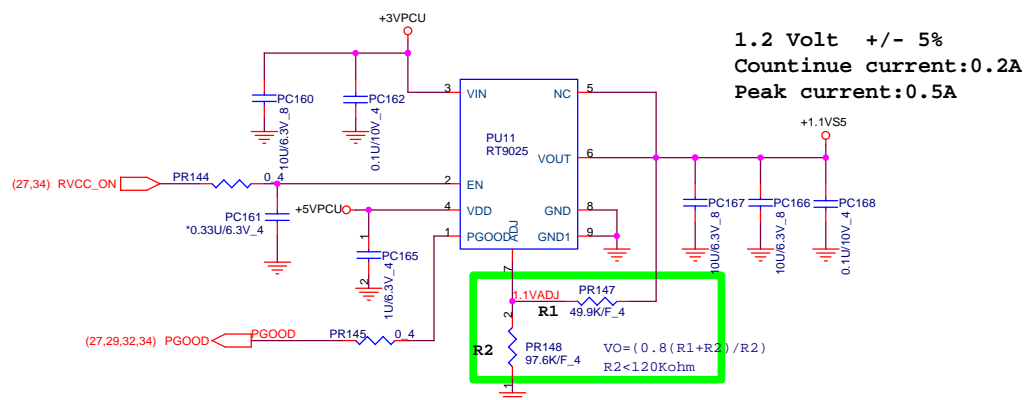
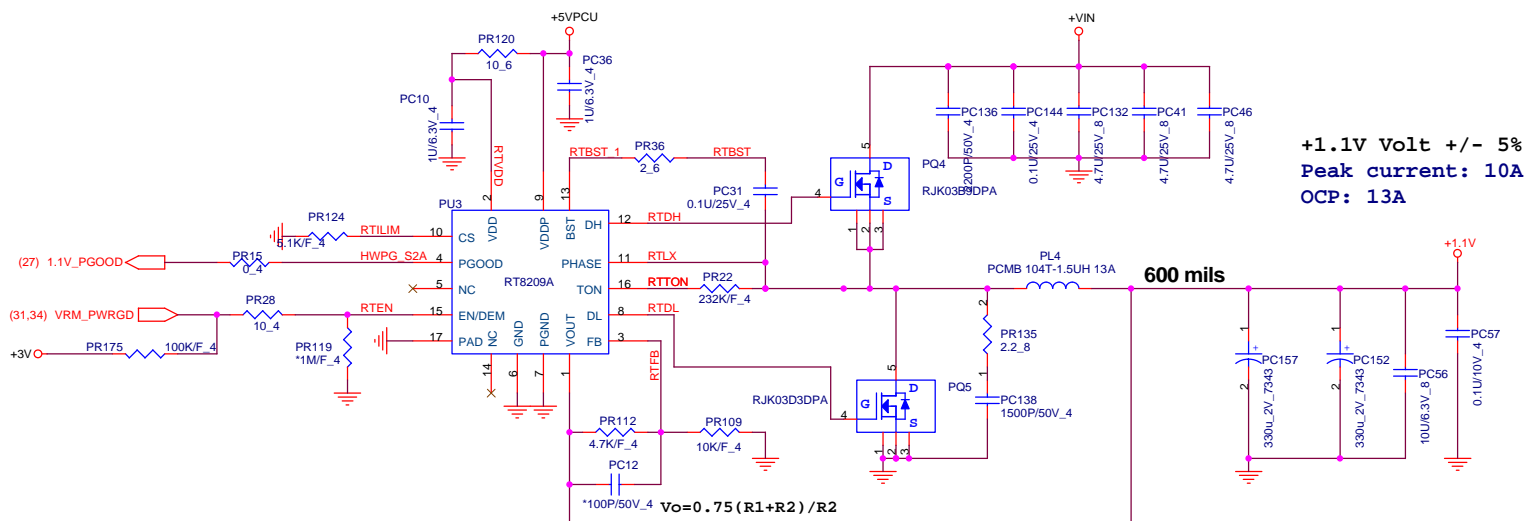
## Power Status



Quanta Computer Inc.  
PROJECT : AMD Danube

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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



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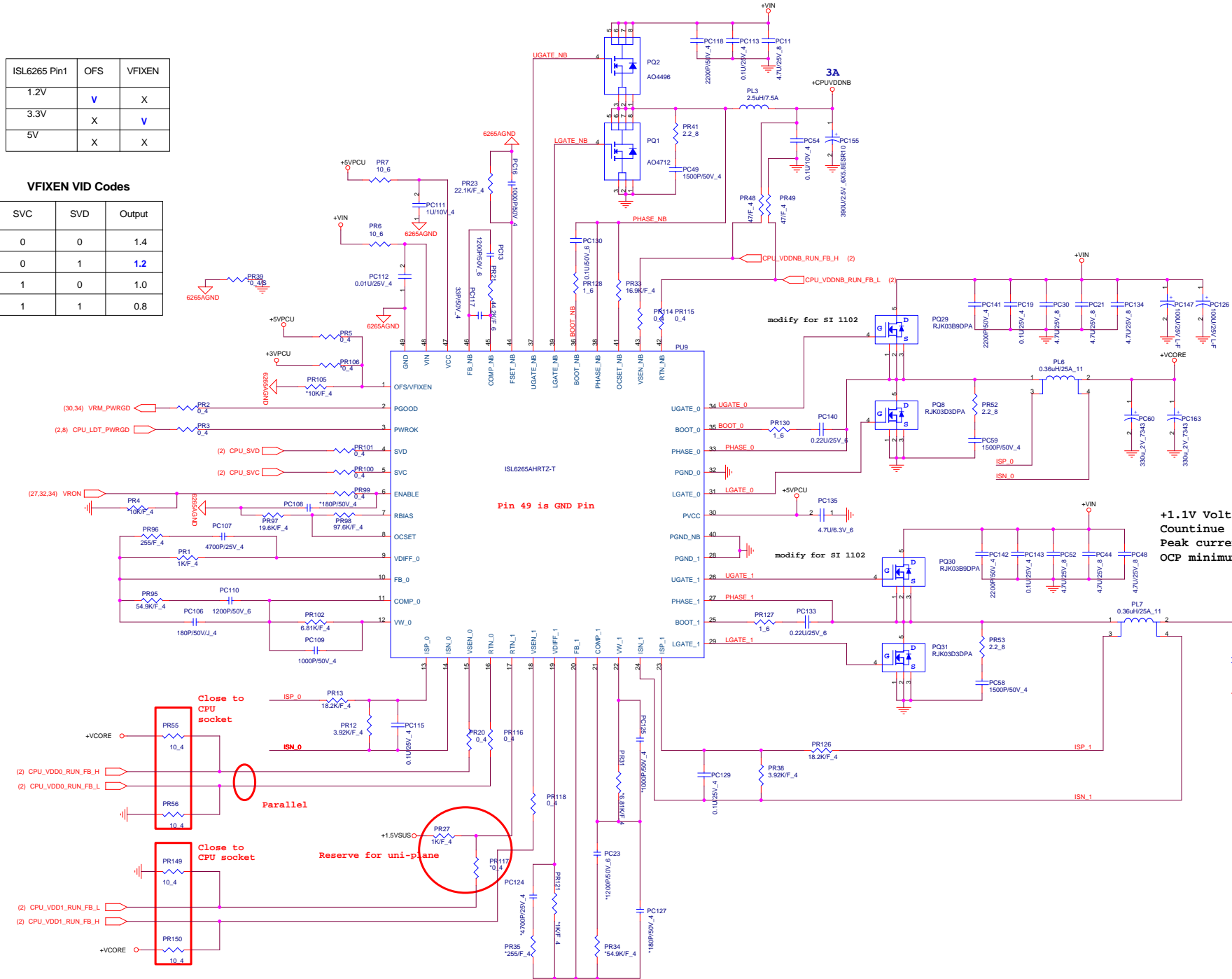
**PROJECT : FK1**

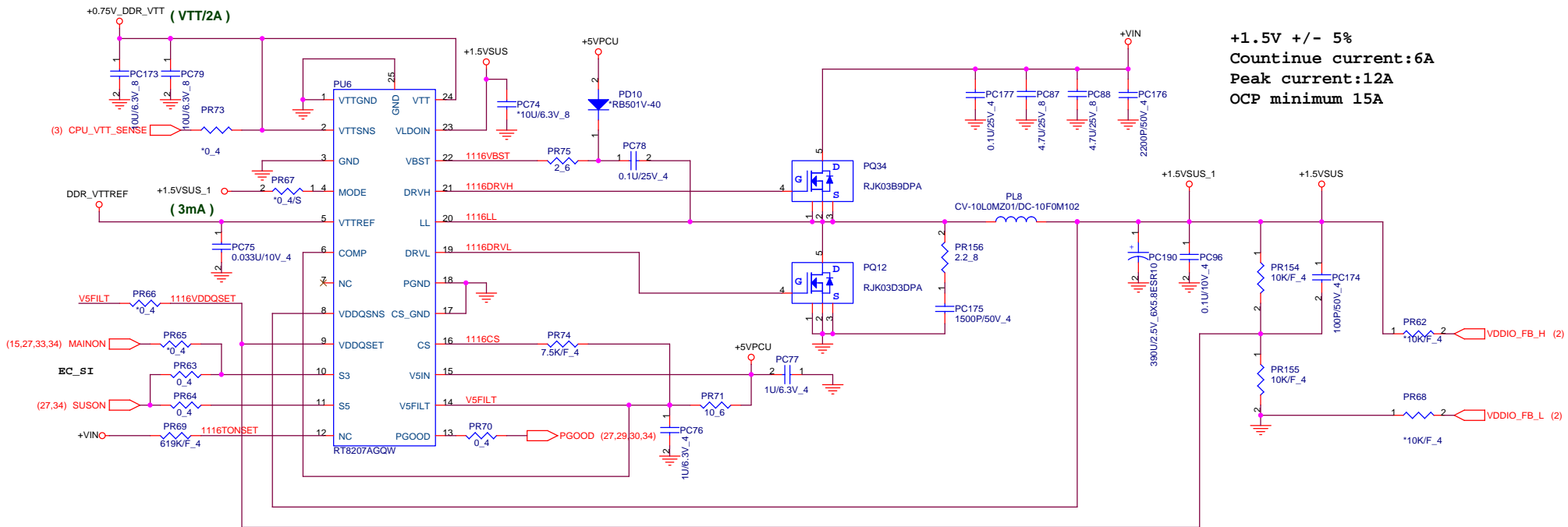
Size	Document Number	Rev
		1A
Date:	Tuesday, April 20, 2010	Sheet 30 of 37

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

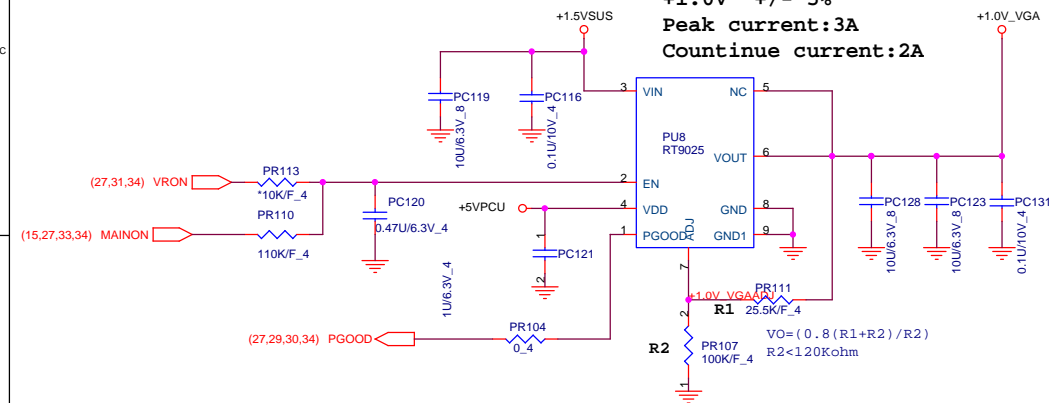
VFIXEN VID Codes

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



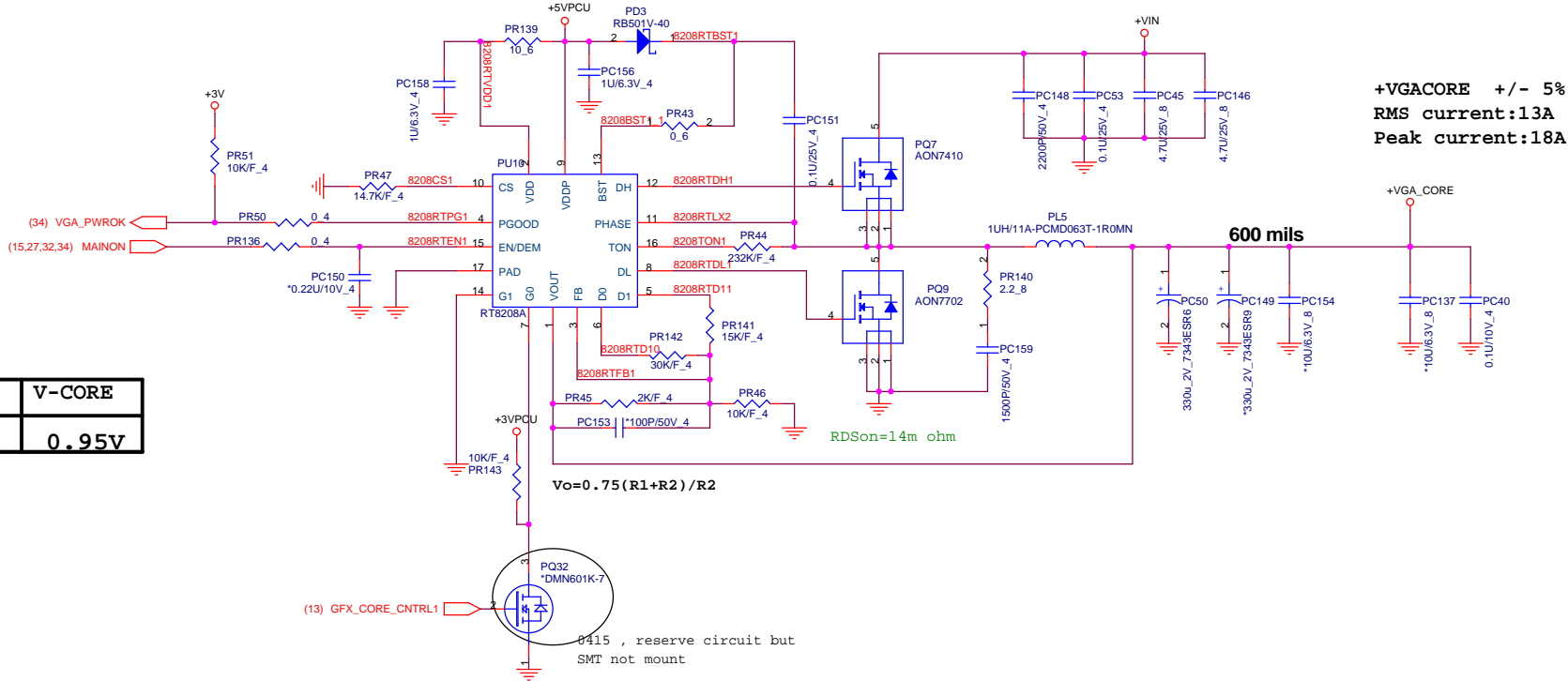


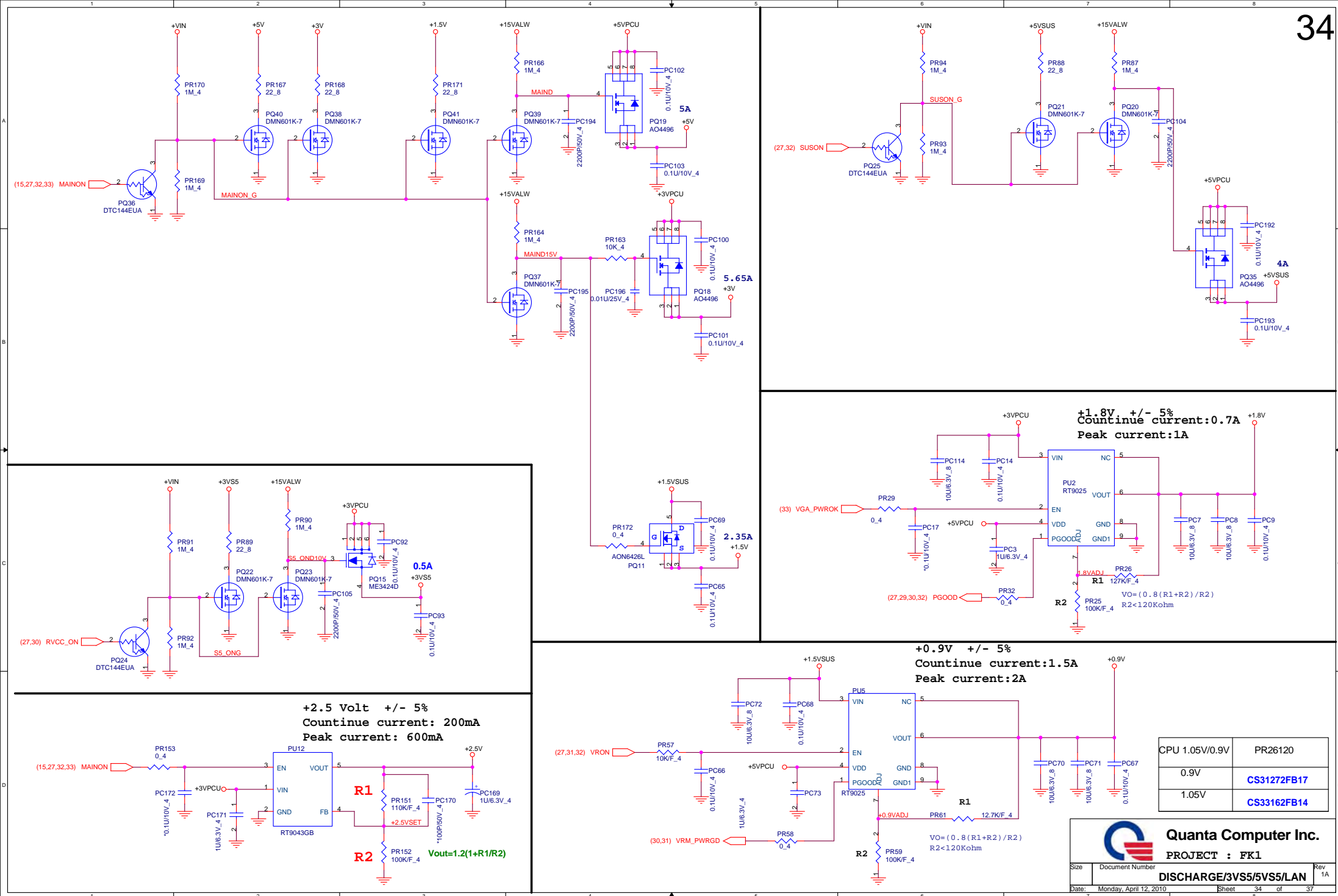
**+1.0V +/- 5%**  
**Peak current:3A**  
**Countinue current:2A**

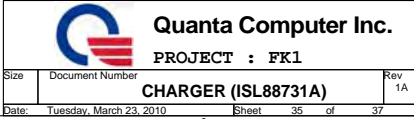




G0	V-CORE
1	0.95V

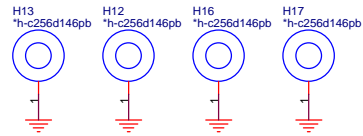




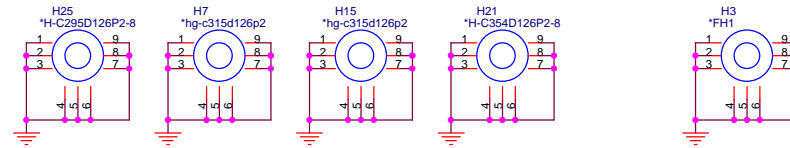


## Hole

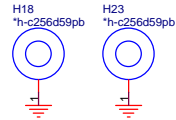
## CPU Nut



## Hole for ESD



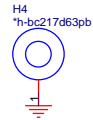
## MINI CARD



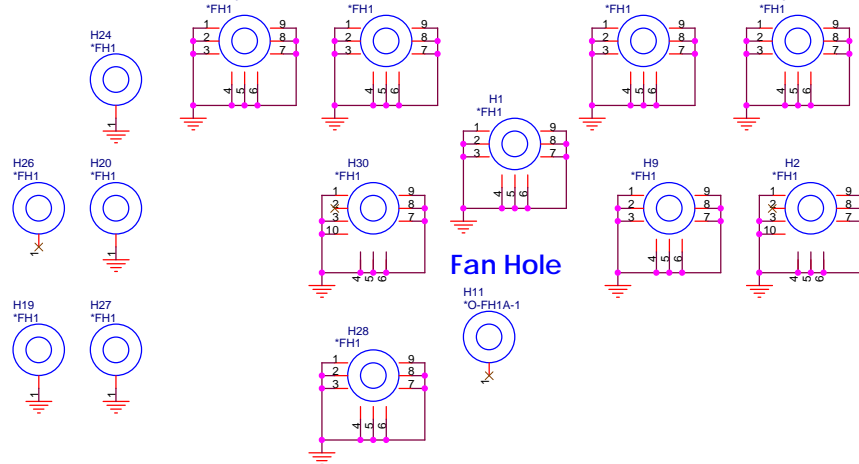
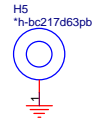
## Antenna Hole



## Thermal Module



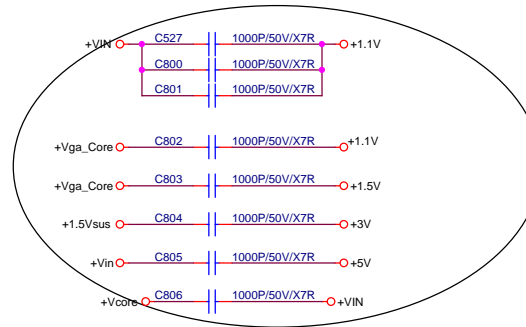
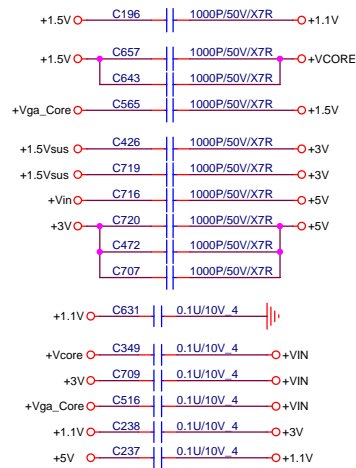
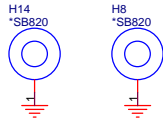
## VGA Nut



## Fan Hole



## SB820



Quanta Computer Inc.

PROJECT :AMD Danube

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	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



Quanta Computer Inc.

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Size	Document Number	Rev
Change List		1A
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