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14	DDR3 SODIMM* 2 (5.2mm+9.2mm)	2A	12/24
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16	ATI-Madison LP MAIN I/O (2/5)	2A	12/24
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19	ATI-Madison LP MEM I/F (5/5)	2A	12/24
20	ATI-Madison LP (DDR3 V-ram a)	2A	12/24
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22	CRT/LVDS	2A	12/24

Page	Title of schematic page	Rev.	Date
23	HDMI	1B	12/09
24	WLAN/HDD/ODD	1B	12/08
25	Card Reader RTS5186	1B	12/08
26	Express Card/BT/LED	1B	12/08
27	Codec-ALC269Q VB5 GR	1B	12/08
28	LAN RTL8111E	1B	12/08
29	NPCE781	1B	12/08
30	KB/USB/FAN/PS	1B	12/09
31	VCORE(ISL6265A)	1A	09/24
32	3VPCU&5VPCU(PM6686)	1A	09/24
33	1.5VSUS/VTT_MEM	1A	09/24
34	DYN_VCC1.1(OZ8116LN)	1A	09/24
35	VCC1.1(OZ8116LN)-7A	1A	09/24
36	VGA_CORE(OZ8116)-16A	1A	09/24
37	VCC1.8/0.9/2.5/1.0	1A	09/24
38	POWER(BAT IN / ADA IN/ UL)	1A	09/24
39	CHARGER (ISL6252A)	1A	09/24
40	Small board connector	1A	09/24
41	Power Sequence		
42	CHANGE LIST		

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PROJECT : NE8

Size	Document Number	Rev
	AMD Danube	2A
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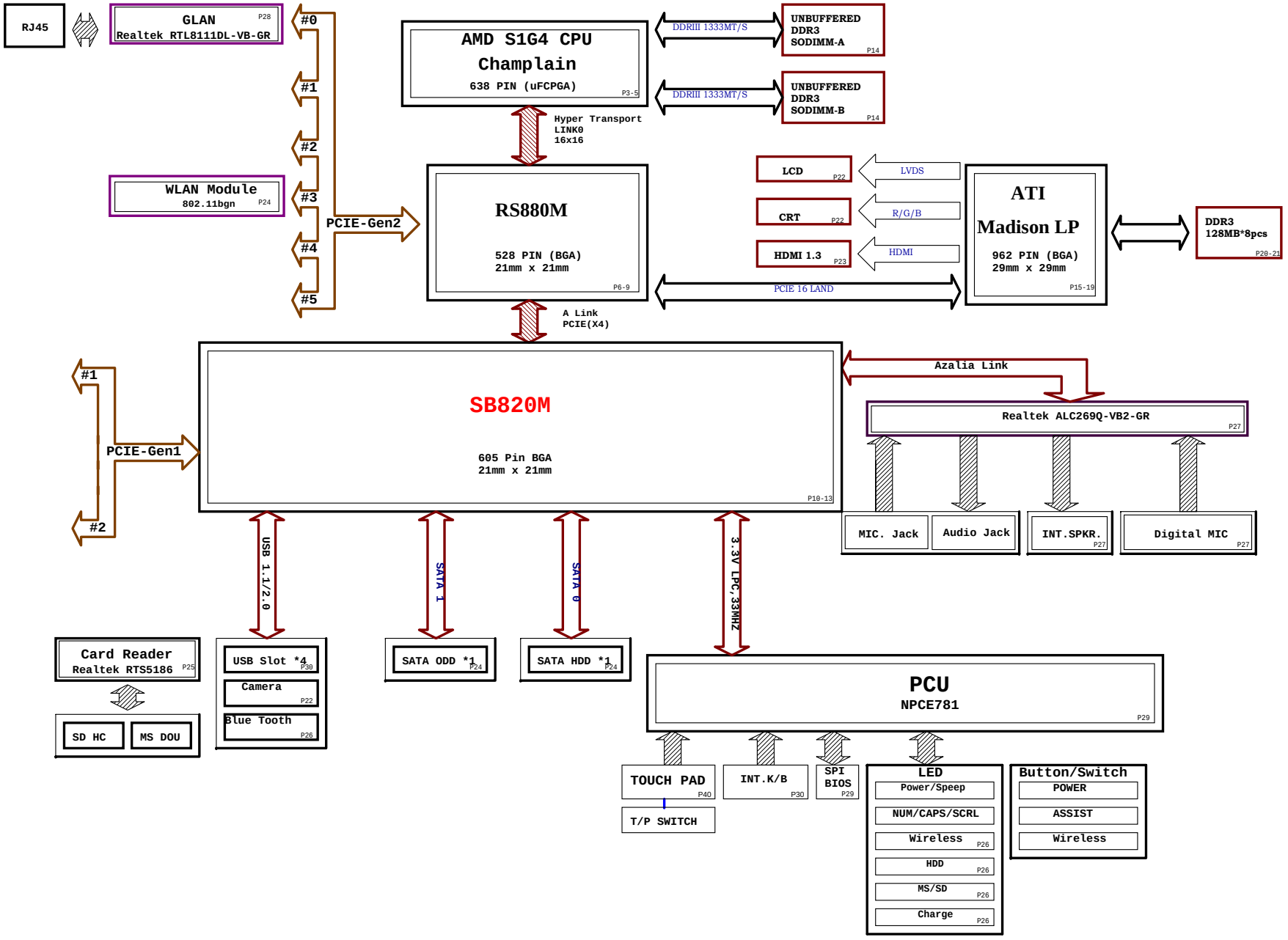
Danube Block Diagram

02



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Size	Document Number	Rev
	Danube - Block Diagram	2A
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VCC1.1 — 1.5A(1.8W)

C328 4.7U/6.3V_6 | C324 4.7U/6.3V_6 | C335 4.7U/6.3V_6 | C323 0.22U/6.3V_4 | C336 0.22U/6.3V_4 | C341 180p_4 | C333 180p_4

U37A — HT LINK — SOCKET_638_PIN

VLDT_A0 D1, VLDT_A1 D2, VLDT_A2 D3, VLDT_A3 D4 — VLDT_B0 AE2, VLDT_B1 AE3, VLDT_B2 AE4, VLDT_B3 AE5 — VCC1.1

L0_CADIN		L0_CADOUT	
HT_CADIN_H0	E3	AD1	HT_CADOUT_H0
HT_CADIN_L0	E2	AC1	HT_CADOUT_L0
HT_CADIN_H1	E1	AC2	HT_CADOUT_H1
HT_CADIN_L1	F1	AC3	HT_CADOUT_L1
HT_CADIN_H2	G3	AB1	HT_CADOUT_H2
HT_CADIN_L2	G2	AA1	HT_CADOUT_L2
HT_CADIN_H3	G1	AA2	HT_CADOUT_H3
HT_CADIN_L3	H1	AA3	HT_CADOUT_L3
HT_CADIN_H4	J1	W2	HT_CADOUT_H4
HT_CADIN_L4	K1	W3	HT_CADOUT_L4
HT_CADIN_H5	L3	V1	HT_CADOUT_H5
HT_CADIN_L5	L2	U1	HT_CADOUT_L5
HT_CADIN_H6	L1	U2	HT_CADOUT_H6
HT_CADIN_L6	M1	U3	HT_CADOUT_L6
HT_CADIN_H7	N3	T1	HT_CADOUT_H7
HT_CADIN_L7	N2	R1	HT_CADOUT_L7
HT_CADIN_H8	E5	AD4	HT_CADOUT_H8
HT_CADIN_L8	F5	AD3	HT_CADOUT_L8
HT_CADIN_H9	F3	AD5	HT_CADOUT_H9
HT_CADIN_L9	F4	AC5	HT_CADOUT_L9
HT_CADIN_H10	G5	AB4	HT_CADOUT_H10
HT_CADIN_L10	H5	AB3	HT_CADOUT_L10
HT_CADIN_H11	H3	AB5	HT_CADOUT_H11
HT_CADIN_L11	H4	AA5	HT_CADOUT_L11
HT_CADIN_H12	K3	Y5	HT_CADOUT_H12
HT_CADIN_L12	K4	W5	HT_CADOUT_L12
HT_CADIN_H13	L5	V4	HT_CADOUT_H13
HT_CADIN_L13	M5	V3	HT_CADOUT_L13
HT_CADIN_H14	M3	V5	HT_CADOUT_H14
HT_CADIN_L14	M4	U5	HT_CADOUT_L14
HT_CADIN_H15	N5	T4	HT_CADOUT_H15
HT_CADIN_L15	P5	T3	HT_CADOUT_L15
HT_CLKIN_H0	J3	Y1	HT_CLKOUT_H0
HT_CLKIN_L0	J2	W1	HT_CLKOUT_L0
HT_CLKIN_H1	J5	Y4	HT_CLKOUT_H1
HT_CLKIN_L1	K5	Y3	HT_CLKOUT_L1
HT_CTLIN_H0	N1	R2	HT_CTLOUT_H0
HT_CTLIN_L0	P1	R3	HT_CTLOUT_L0
HT_CTLIN_H1	P3	T5	HT_CTLOUT_H1
HT_CTLIN_L1	P4	R5	HT_CTLOUT_L1

HT_CADIN_H[0..15] (6) — HT_CADOUT_H[0..15] (6)
HT_CADIN_L[0..15] (6) — HT_CADOUT_L[0..15] (6)
HT_CLKIN_H[0..1] (6) — HT_CLKOUT_H[0..1] (6)
HT_CLKIN_L[0..1] (6) — HT_CLKOUT_L[0..1] (6)
HT_CTLIN_H[0..1] (6) — HT_CTLOUT_H[0..1] (6)
HT_CTLIN_L[0..1] (6) — HT_CTLOUT_L[0..1] (6)

VCC3 — C378 0.1u/10V_4 — U25 G780P81U

(11) TS_ALERT# — ALERT
(32) SHDN# — T_CRIT_A
VCC — SMBCLK — SMB_CLK — SMB_CLK (16)
ALERT — SMDATA — SMB_DAT — SMB_DAT (16)
D+ — THERMDA
GND — D- — C368 220P_4 — THERMDC

VCC2.5 — C326 4.7U/6.3V_6 | C339 1u/6.3V_4 | C330 0.1u/10V_4

T61 — HCLK_CPU_C — R224 169/F_4 — HCLK_CPU# — T57

(10) CLK_CPU_HTP — C372 3900p_4 — HCLK_CPU_C
(10) CLK_CPU_HTN — C369 3900p_4 — HCLK_CPU# C

(10) CPU_LDT_RST# — R470 0_4 — R_CPU_LDT_RST#
(10,31) CPU_LDT_PWRGD — CPU_LDT_PWRGD
(8,10) CPU_LDT_STOP# — CPU_LDT_STOP#
CPU_LDT_REQ# CPU

2A Guam for debug

(11) CPU_SIC — SIC
(11) CPU_SID — SID
CPU_ALERT — ALERT_L

VCC1.1 — R218 44.2/F_4 — HT_REF0 — R6
R219 44.2/F_4 — HT_REF1 — P6

1.5VSUS — R350 1K/F_4 — CPU_SIC
R349 1K/F_4 — CPU_SID
R348 1K/F_4 — CPU_ALERT

(31) CPU_VDD0_FB_H — F6
(31) CPU_VDD0_FB_L — E6
(31) CPU_VDD1_FB_H — Y6
(31) CPU_VDD1_FB_L — AB6

TDI、TDO、TCK、TMS、TRST_L：for ICT

T62 CPU_DBRDY — G10
T58 CPU_TMS — AA9
T55 CPU_TCK — AC9
T83 CPU_TRST# — AD9
T82 CPU_TDI — AF9
T42 CPUTEST23 — AD7

R228 1K/F_4 — CPUTEST18 — H10
R186 1K/F_4 — CPUTEST19 — G9

1.5VSUS — R241 510/F_4 — CPUTEST25H — E9
R189 510/F_4 — CPUTEST25L — E8

T44
R199 1K/F_4 — CPUTEST21 — AB8
R201 1K/F_4 — CPUTEST20 — AF7
R200 1K/F_4 — CPUTEST24 — AE7
R202 1K/F_4 — CPUTEST22 — AE8
R197 1K/F_4 — CPUTEST12 — AC8
R206 1K/F_4 — CPUTEST27 — AF8

1.5VSUS

R351 0_4 — C2
AA6
A3, A5, B3, B5, C1

U37D — SOCKET_638_PIN

VDDA1	F8	VSS	M11
VDDA2	F9	RSVD11	W18
CLKIN_H	A9	SVC	A6 — CPU_SVC_R
CLKIN_L	A8	SVD	A4 — CPU_SVD_R
RESET_L	B7		
PWROK	A7		
LDTSTOP_L	F10	THERMTRIP_L	AF6 — CPU_THERMTRIP# L
LDTREQ_L	C6	PROCHOT_L	AC7 — CPU_PROCHOT# L
		MEMHOT_L	AA8 — CPU_MEMHOT# L
SIC	AF4		
SID	AF5		
ALERT_L	AE6	THERMDC	W7 — THERMDC
		THERMDA	W8 — THERMDA
HT_REF0	R6		
HT_REF1	P6		
VDD0_FB_H	F6	VDDIO_FB_H	W9
VDD0_FB_L	E6	VDDIO_FB_L	Y9
VDD1_FB_H	Y6	VDDNB_FB_H	H6 — CPU_VDDNB_FB_H (31)
VDD1_FB_L	AB6	VDDNB_FB_L	G6 — CPU_VDDNB_FB_L (31)
DBRDY	G10		
TMS	AA9	DBREQ_L	E10 — CPU_DBREQ#
TCK	AC9		301/F_4 — R240 — 1.5VSUS
TRST_L	AD9	TDO	AE9 — CPU_TDO — T45
TDI	AF9		
TEST23	AD7	TEST28_H	J7 — T54
		TEST28_L	H8 — T63
TEST18	H10	TEST17	D7 — T40
TEST19	G9	TEST16	E7 — T59
TEST25_H	E9	TEST15	E7 — R188 *301/F_4
TEST25_L	E8	TEST14	C7 — R194 *301/F_4
TEST21	AB8	TEST7	C3
TEST20	AF7	TEST10	K8
TEST24	AE7		
TEST22	AE8	TEST8	C4 — CPUTEST29H
TEST12	AC8		
TEST27	AF8		R195 80.6/F_4
		TEST29_H	C9
TEST9	C2	TEST29_L	C8 — CPUTEST29L
TEST6	AA6		
RSVD1	A3	RSVD10	H18
RSVD2	A5	RSVD9	H19
RSVD3	B3	RSVD8	AA7
RSVD4	B5	RSVD7	D5
RSVD5	C1	RSVD6	C5

Q14 — 2N7002DW

SMB_CLK — 1 — 6 — BATT_SCK (29,38)
VCC3 — R237 10K_4 — 2 — VCC3
SMB_DAT — 4 — 3 — BATT_SDA (29,38)
VCC3 — R238 10K_4 — 5 — VCC3

For AMD Debug only

CON26 — *HDT_CONN — KEY

CPU_DBREQ# 1
CPU_DBRDY 2
CPU_TCK 3
CPU_TMS 4
CPU_TDI 5
CPU_TRST# 6
CPU_TDO 7
1.5VSUS 8
CPU_LDT_RST# 9
C289 0.1u_4
C452 *33p
2A Guam for debug

T50 CPU_LDT_RST# — 301/F_4 — R464 — VCC1.5
T41 CPU_LDT_REQ# CPU — *301/F_4 — R192
CPU_LDT_PWRGD — 301/F_4 — R193
C338 *0.1u/10V_4
CPU_LDT_STOP# — 301/F_4 — R227 — VCC1.5

2A shut down issue

1.5VSUS — R157 10K_4 — RVCC3
1.5VSUS — R183 1K/F_4 — Q12 MMBT3904 — R158 10K_4
CPU_THERMTRIP# L — CPU_THERMTRIP# (11)
C305 *0.1u/10V_4

to external thermal sensor

1.5VSUS — R173 1K/F_4
CPU_PROCHOT# L — R468 0_4 — CPU_PROCHOT# (10)

1.5VSUS — R160 *10K_4
1.5VSUS — R159 *1K/F_4 — Q10 *MMBT3904
CPU_MEMHOT# — MEMHOT# (10,14)
C288 *0.1u/10V_4

S1g4 does not support MEMHOT#

VFIX MODE — VID Override Circuit

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

VCC1.5 — R176 1K/F_4 — R182 1K/F_4
CPU_SVC_R — R191 0_4 — CPU_SVC (31)
CPU_SVD_R — R190 0_4 — CPU_SVD (31)
R177 *301/F_4 — R175 *301/F_4

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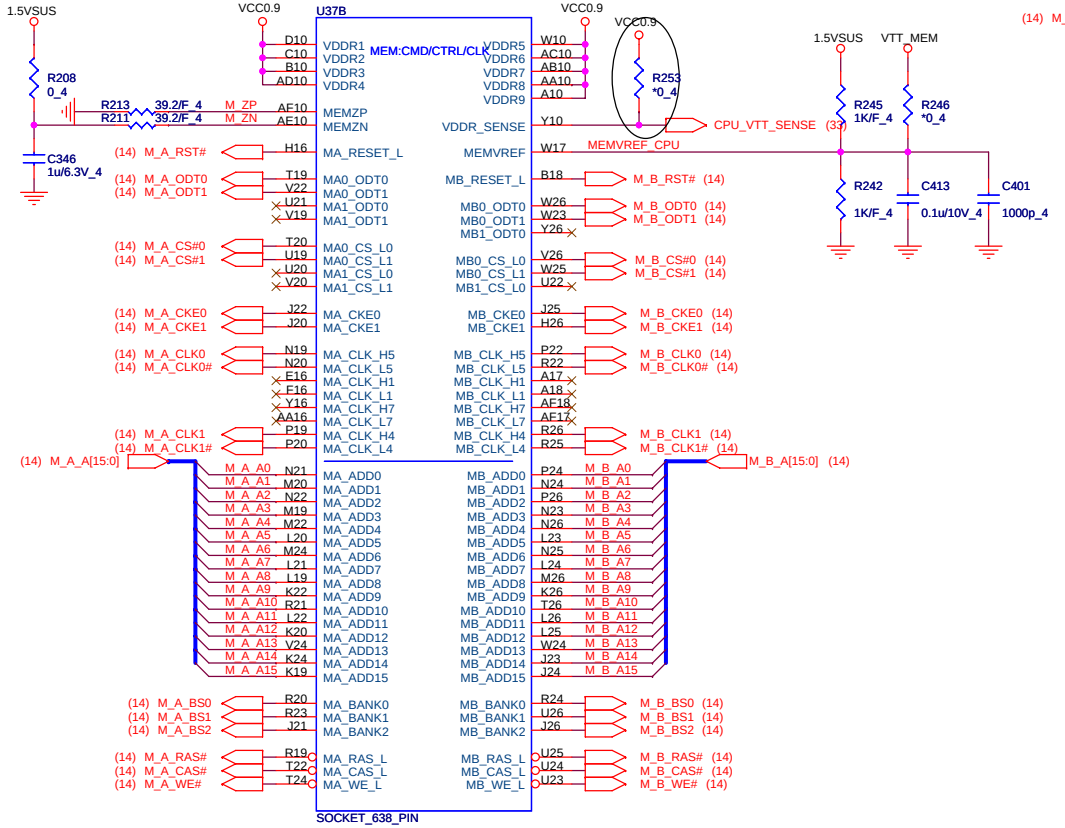
PROJECT : NE8

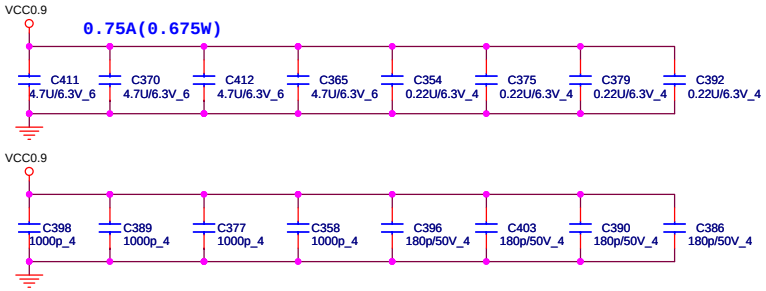
Size	Document Number	Rev
	CPU HT/CONTROL(1/3)	2A
Date: Wednesday, January 27, 2010	Sheet 3 of 42	

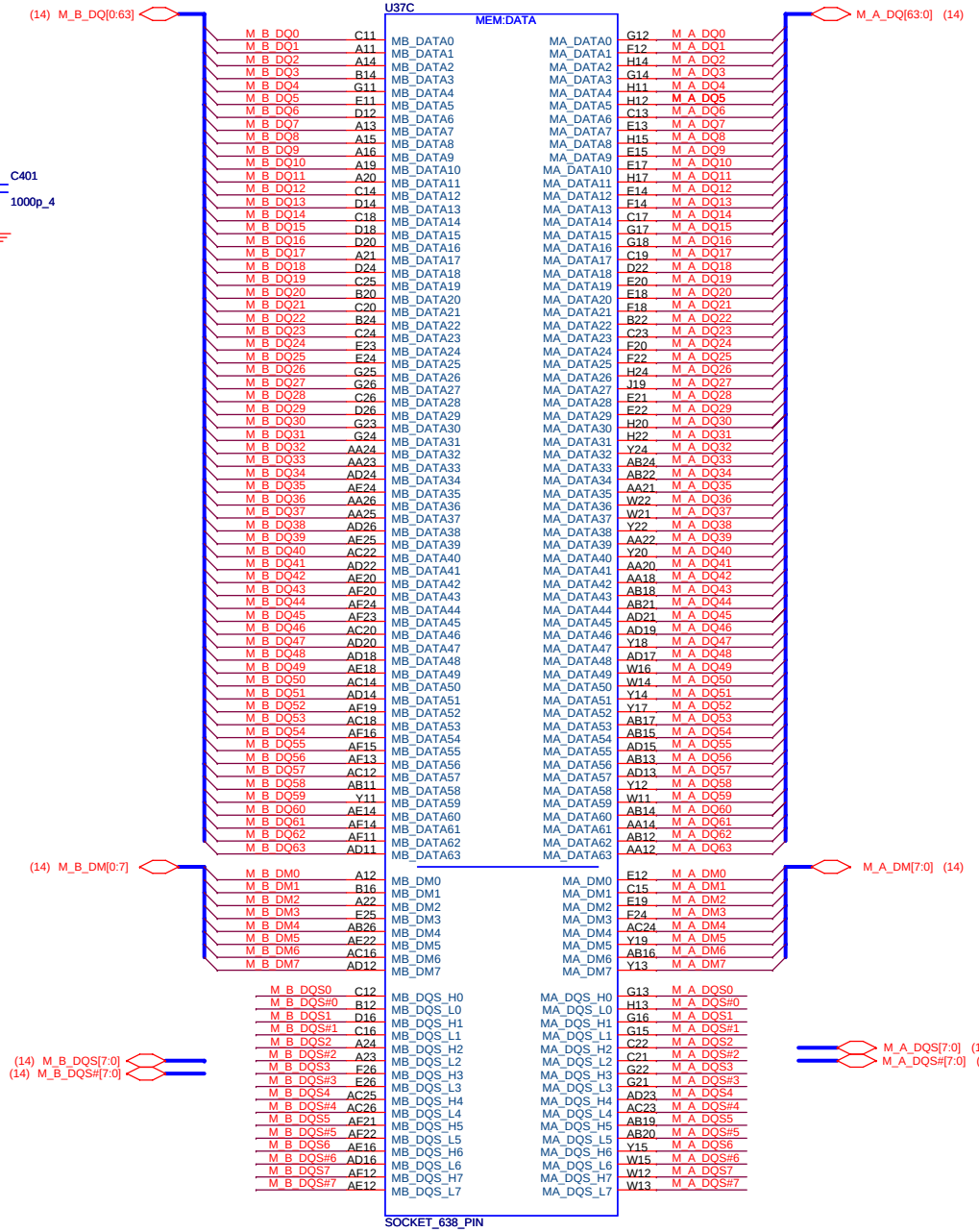
Processor Memory Interface

04

CPU_VDDR : 35W->0.9V
45W->1.05V







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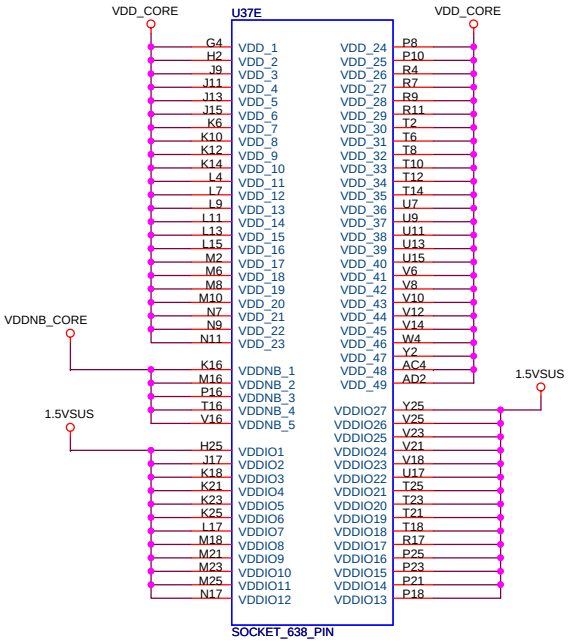
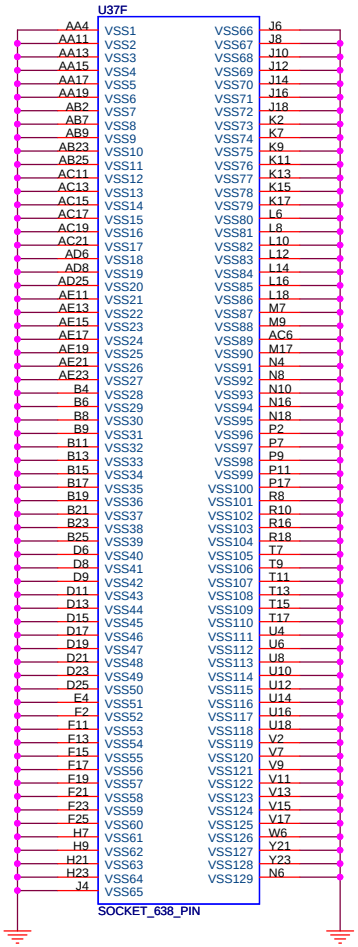
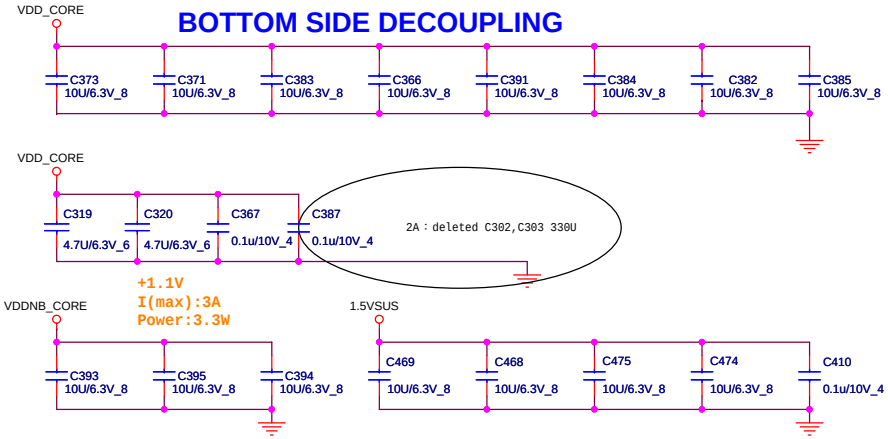
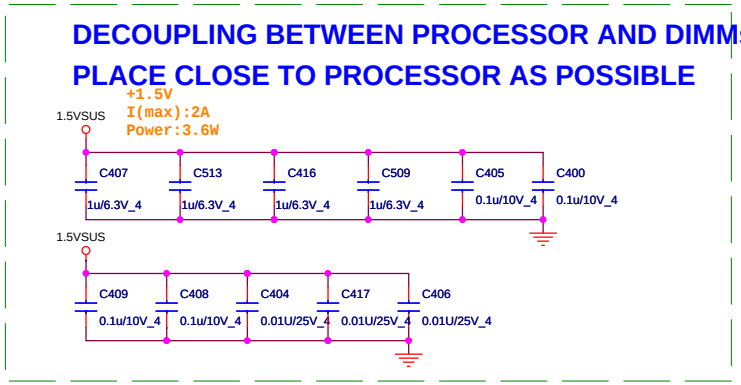
Size	Document Number	Rev
	CPU MEMORY(2/3)	2A
Date: Wednesday, January 27, 2010	Sheet 4 of 42	

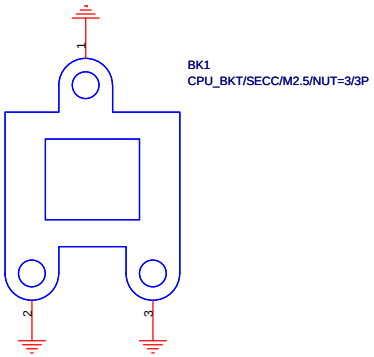
Socket Type	QCI P/N
Normal	DG0^8000018
90 degree	DG0^8000023











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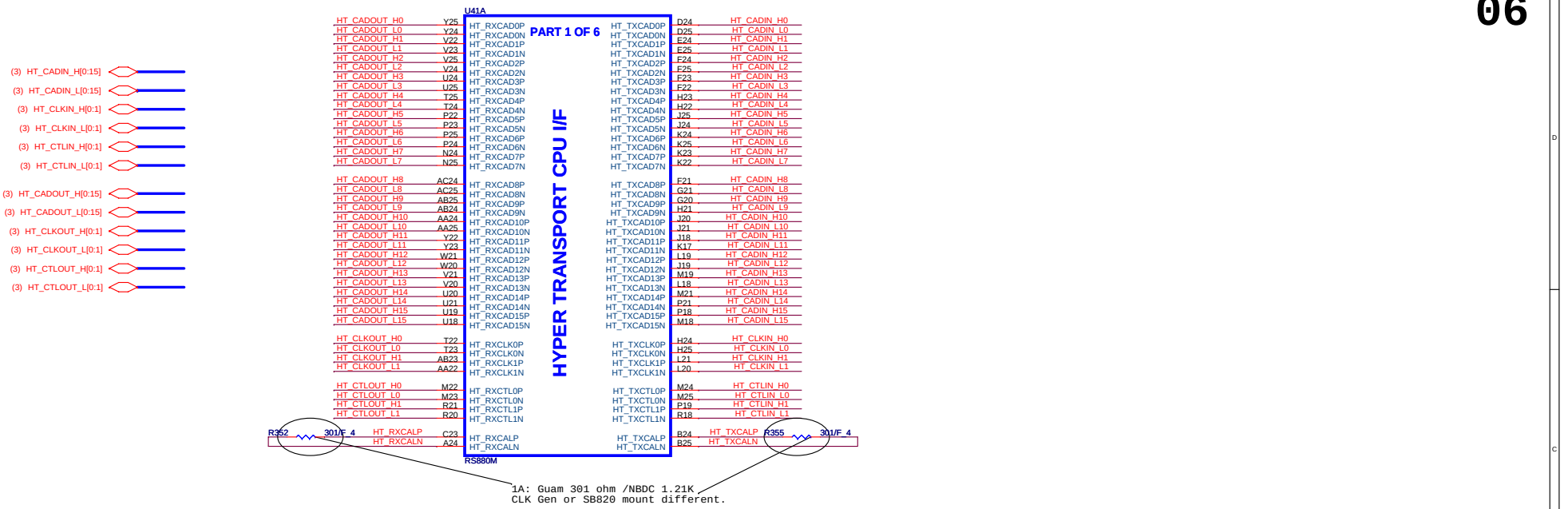
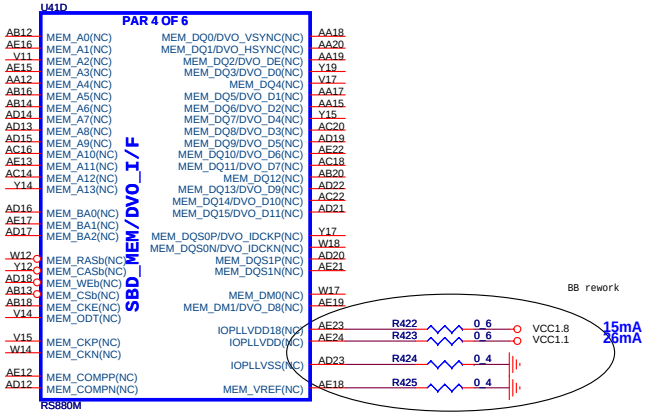
Size	Document Number	Rev
	CPU POWER/GND(3/3)	2A
Date: Wednesday, January 27, 2010	Sheet 5 of 42	



This block is for Side Port only , others can remove some components



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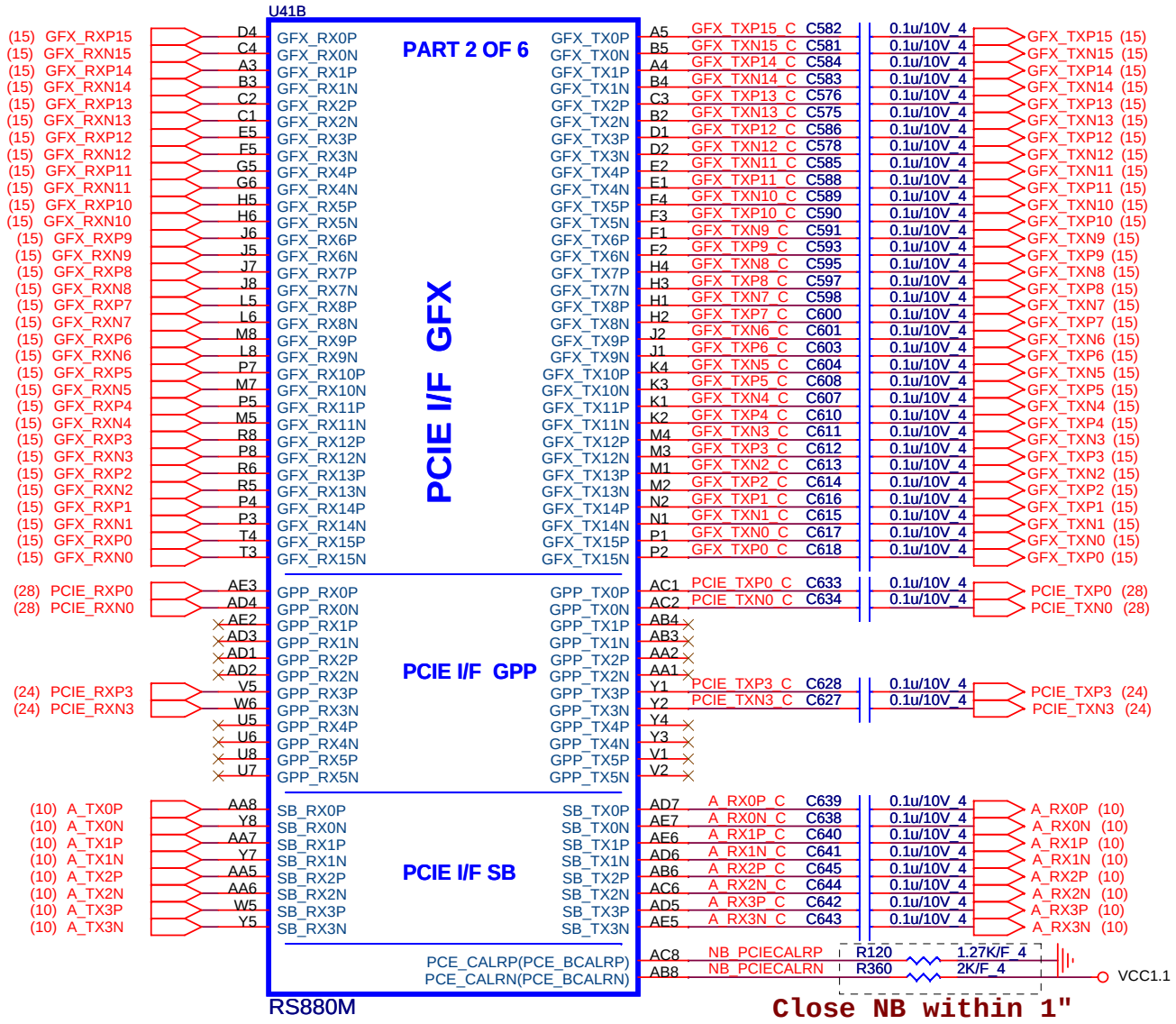
PROJECT : NE8

Size	Document Number	Rev
	RS880M HT/SPMEM(1/4)	2A
Date: Wednesday, January 27, 2010	Sheet 6 of 42	



GLAN

WLAN

Close NB within 1"

Layout Swap
TX11, TX10, TX9,
TX8,TX7,TX6, TX5,
TX4, TX3, TX2, TX0

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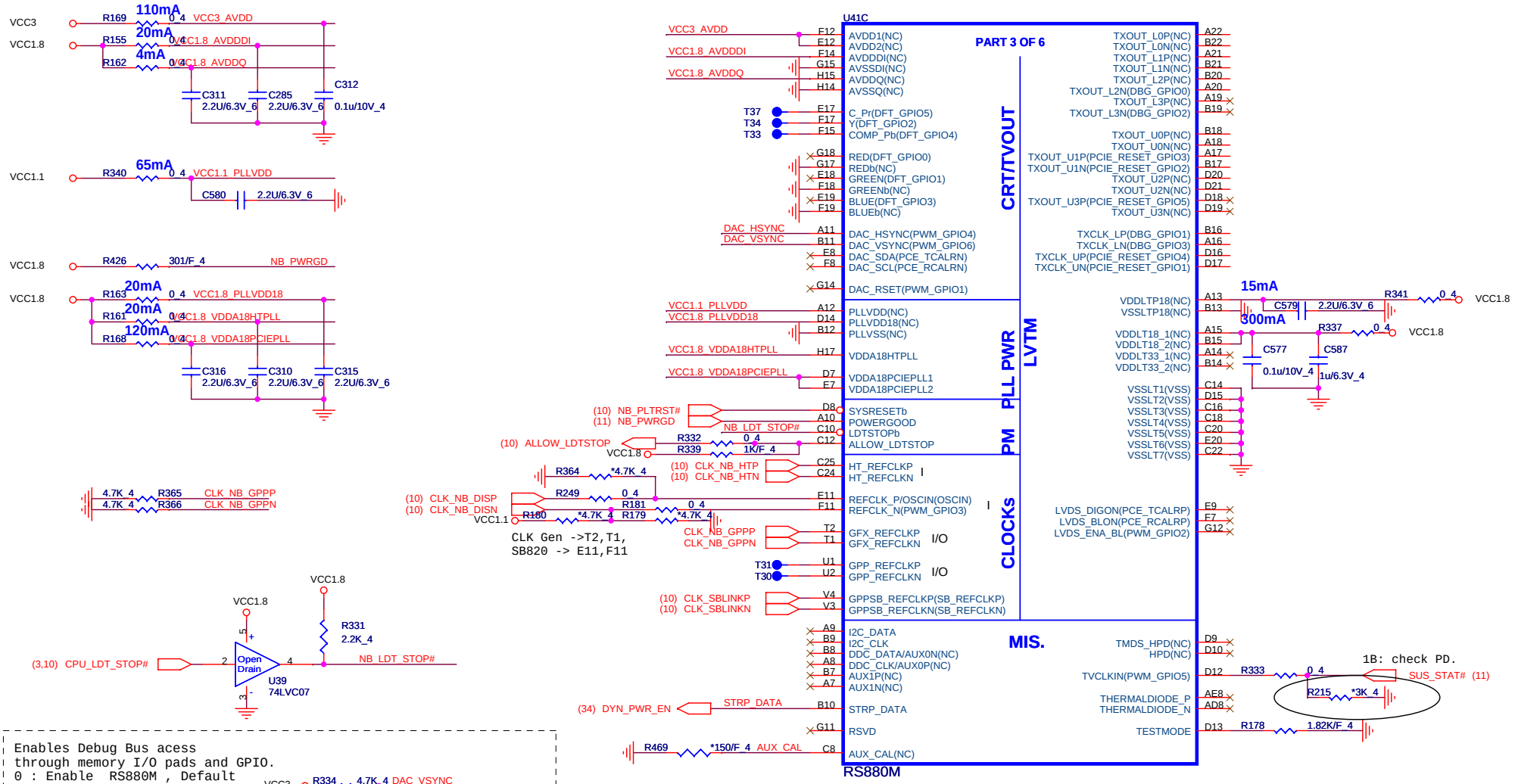
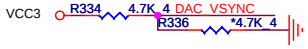
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	RS880M GFX/PCIE(2/4)	2A
Date: Wednesday, January 27, 2010	Sheet 7 of 42	



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



Discrete：Connect
A11, B11

Indicates if memory Side port
is available or not
1: Disable side port memory
0: Enable side port memory

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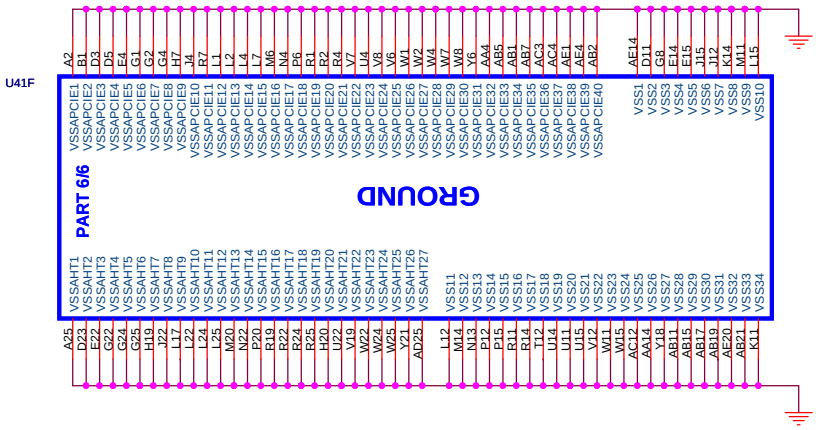
Quanta Computer Inc.
PROJECT : NE8

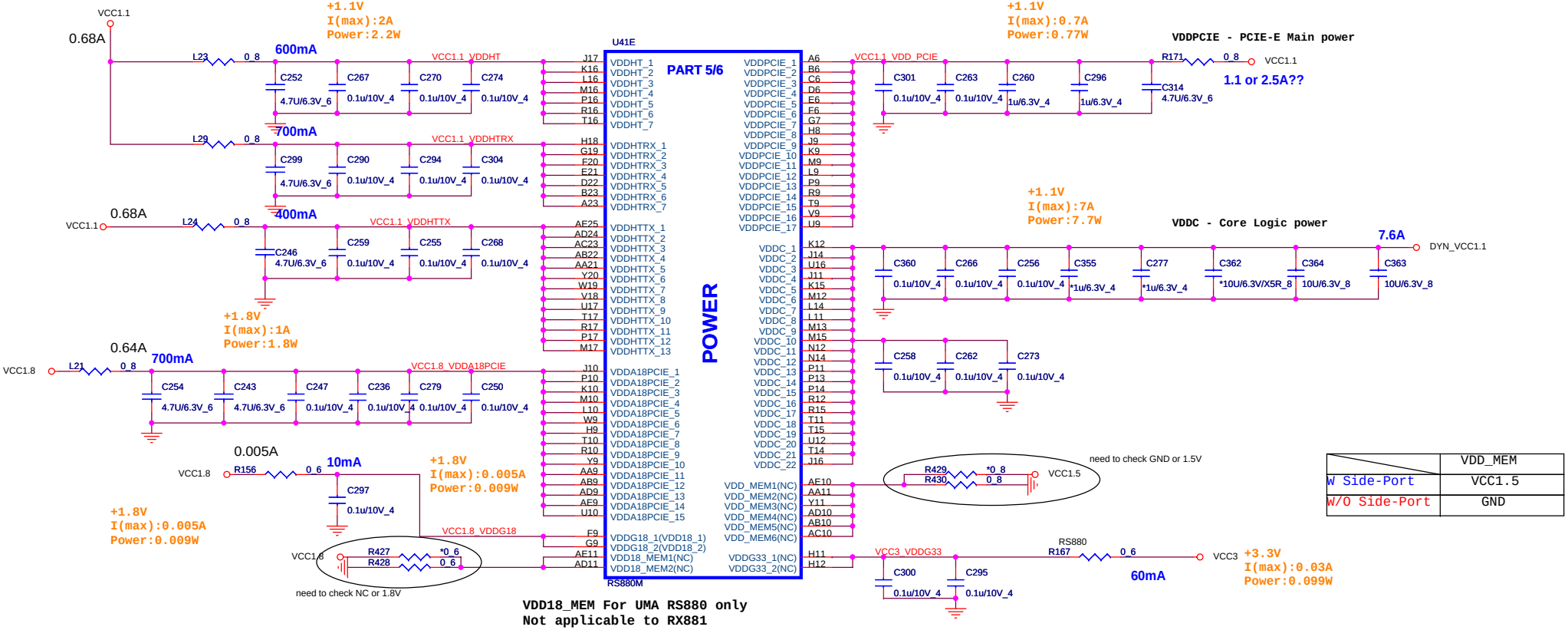
Size	Document Number	Rev
	RS880M SYSTEM(3/4)	2A

Date: Wednesday, January 27, 2010 Sheet 8 of 42



RS880M/RX881 POWER DIFFERENCE TABLE

PIN NAME	RX881	RS880M	PIN NAME	RX881	RS880M
VDDHT	+1.1V	+1.1V	IOPLLVDD	NC	+1.1V
VDDHTRX	+1.1V	+1.1V	AVDD	NC	+3.3V
VDDHTTX	+1.1V	+1.1V	AVDDDI	NC	+1.8V
VDDA18PCIE	+1.8V	+1.8V	AVDDQ	NC	+1.8V
VDDG18	+1.8V	+1.8V	PLLVDD	NC	+1.1V
VDD18_MEM	NC	+1.8V	PLLVDD18	NC	+1.8V
VDDPCIE	+1.1V	+1.1V	VDDA18PCIEPLL	+1.8V	+1.8V
VDDC	+1.1V	+1.1V	VDDA18HTPLL	+1.8V	+1.8V
VDD_MEM	NC	+1.5V	VDDLTP18	NC	+1.8V
VDDG33	NC	+3.3V	VDDLT18	NC	+1.8V
IOPLLVDD18	NC	+1.8V	VDDLT33	NC	NC



VDD18_MEM For UMA RS880 only
Not applicable to RX881
memory I/O transform

	VDD_MEM
W Side-Port	VCC1.5
W/O Side-Port	GND

	VDD18_MEM
W Side-Port	VCC1.8
W/O Side-Port	GND

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Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	RS880M POWER(4/4)	2A
Date: Wednesday, January 27, 2010	Sheet 9 of 42	

Strap Table

PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4
ALLOW PCIE Gen2	Watchdog Timer Enable	USE DEBUG STRAPS	non_Fusion CLOCK MODE DEFAULT
FORCE PCIE Gen1 DEFAULT	Watchdog Timer Disable DEFAULT	IGNORE DEBUG STRAPS DEFAULT	Fusion CLOCK MODE

RTC

PCI Strap

SB820M PD

12/17 Eric R145/R143/R139/R148 DNI

SB8xx only supports 2 GPP port 2 &3 is not supported.

GPP4、5 used for NB PCIE

BB Rework

2A：check R247 mount or not?

Low=0.9V, High=1.05V

add for AMD test

add for AMD test

1B Adding

1B adding for EC 781

INTRUDER_ALERT# Southbridge has 50-k ohm internal pull-up to VBAT

LPCLK0	LPCLK1
H=Enable embedded EC	H=Enable Internal CLK Gen.
L=Disable embedded EC	L=Disable Internal CLK Gen.

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Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	SB820 PCI/CLK/LPC(1/4)	2A
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U40D

SB820
Part 4 of 5

PCI_PME#/GEVENT4#
R#/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#

ACPI / WAKE UP EVENTS

USBCLK/14M_25M_48M_OSC
USB_RCOMP
USB_FSD1P/GPIO186
USB_FSD1N
USB_FSD0P/GPIO185
USB_FSD0N

USB 1.1 USB MISC

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

USB 2.0

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

GPIO

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#

USB OC

AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO167
AZ_SDIN1/GPIO168
AZ_SDIN2/GPIO169
AZ_SDIN3/GPIO170
AZ_SYNC
AZ_RST#

HD AUDIO

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

GBE LAN

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

EMBEDDED CTRL

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

EMBEDDED CTRL

SB820M A12

Blue Tooth
Card Reader
WiMAX
Camera
USB_PORT #3(Small board)
USB_PORT #2(Samll Board)
USB_PORT #1(Samll Board)
USB_PORT #0(M/B)

add for AMD tes
1B : Bear adding
UMA : SP only
add for AMD test
For EMI
2A : Remove Express
2A change value
1B: 12/2 AMD commend
add for AMD test

AZ_SDOUT
H=Low performance mode
L=High performance mode

	GPIO200, GPIO199
PULL HIGH	H, H=Reserved H, L=SPI ROM
PULL LOW	L, H=LPC ROM(Default) L, L=FWH ROM

Reserved for RSMRST#
20ms Dealy?

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Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	SB820 AUDIO/USB(3/4)	2A
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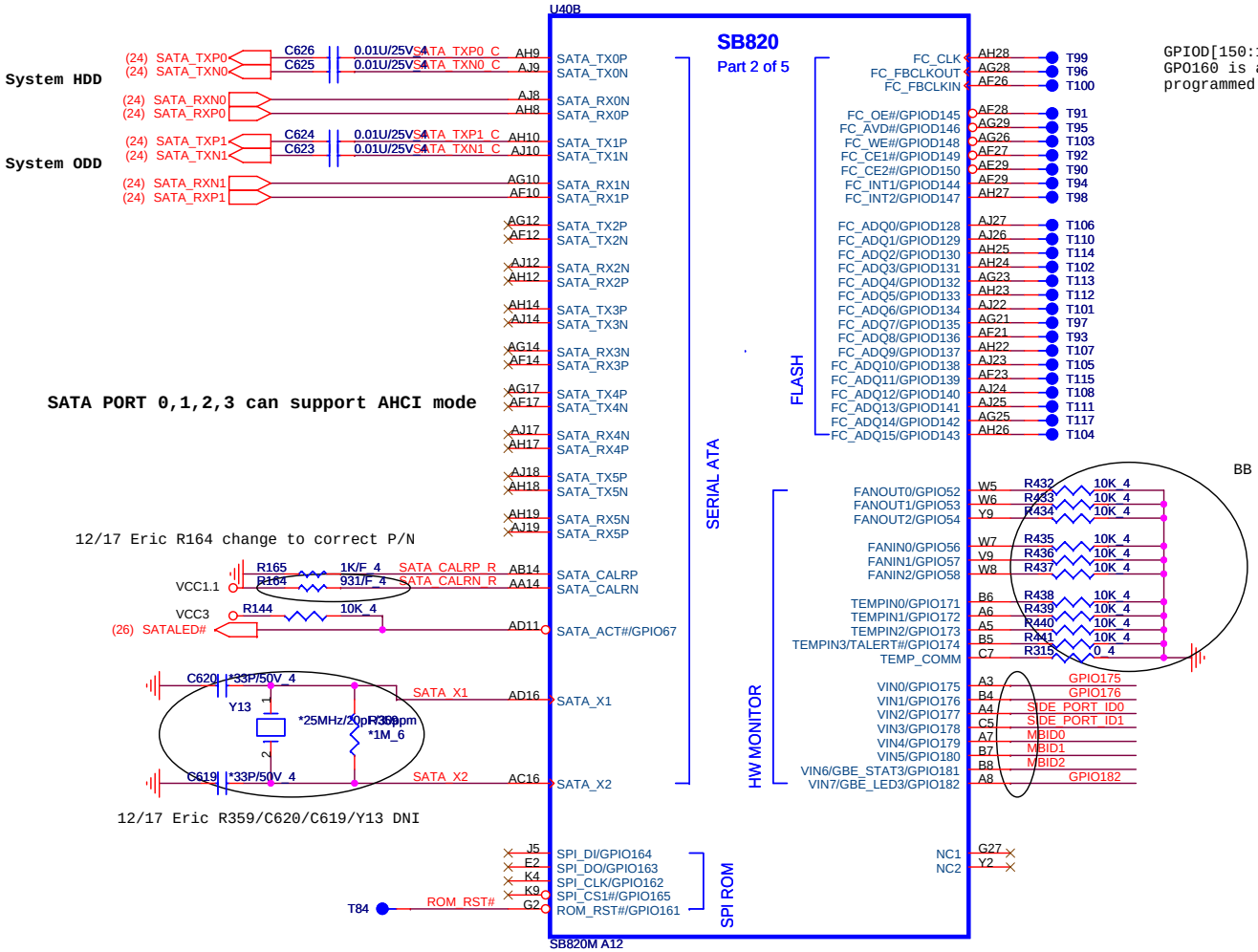
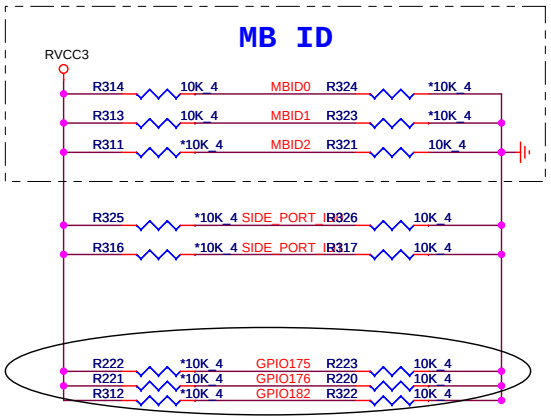


GPIOD[150:128] are open drain GPIO pins where as GPO160 is an open drain GPO pin. These pins are not programmed to GPIO mode by default.

ID2	ID1	ID0	
0	0	0	Danube UMA
0	0	1	Danube UMA+Side port
0	1	0	Danube+Park XT
0	1	1	Danube+Madison LP
1	0	0	Danube+M92 XTX
1	0	1	
1	1	0	
1	1	1	

	NON	SAMSUNG	HYNIX	
SP ID0	0	1	0	1
SP ID1	0	0	1	1



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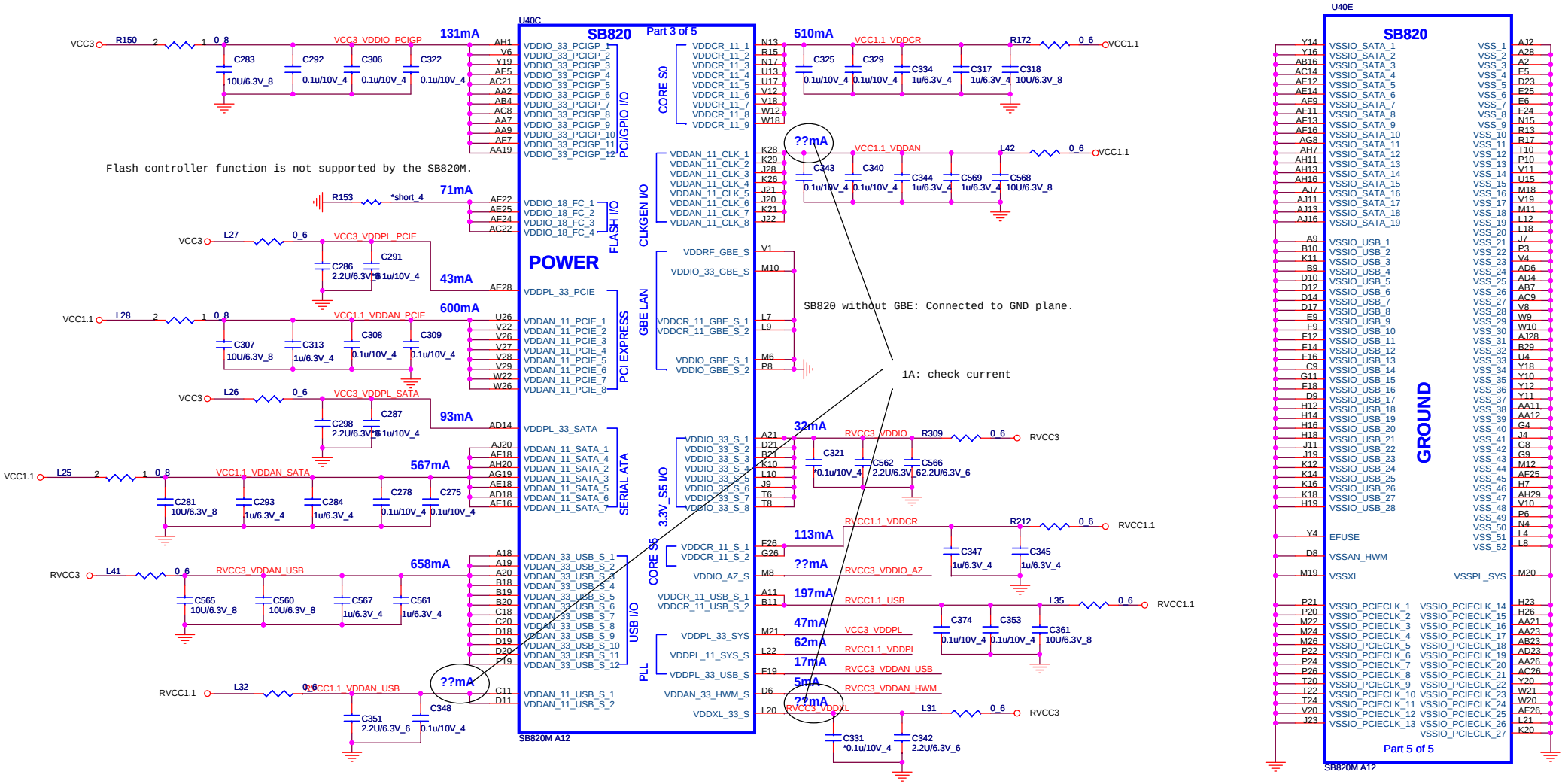
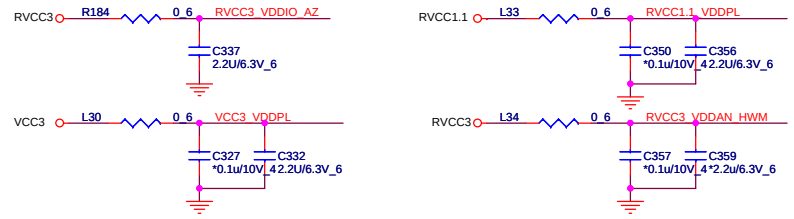
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	SB820 SATA(2/4)	2A

Date: Wednesday, January 27, 2010 Sheet 12 of 42





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PROJECT : NE8

Size	Document Number	Rev
	SB820 POWER(4/4)	2A
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(H=9.2mm)

CN7

PC3-XXXX DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM1

LTK DDRRK-20401-TP8D

(H=5.2mm)

CN8

PC3-XXXX DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM0

LTK DDRRK-20401-TP4B

BB Rework

12/17 Eric Cost down cap

Place these Caps near So-Dimm1.

Place these Caps near So-Dimm0.

12/17 Eric Cost down cap

1A: Eric 1006 add MEMHOT event

8mm : DGMK4000087
9.2mm : DGMK4000029

4mm : DGMK4000005
5.2mm : DGMK4000028

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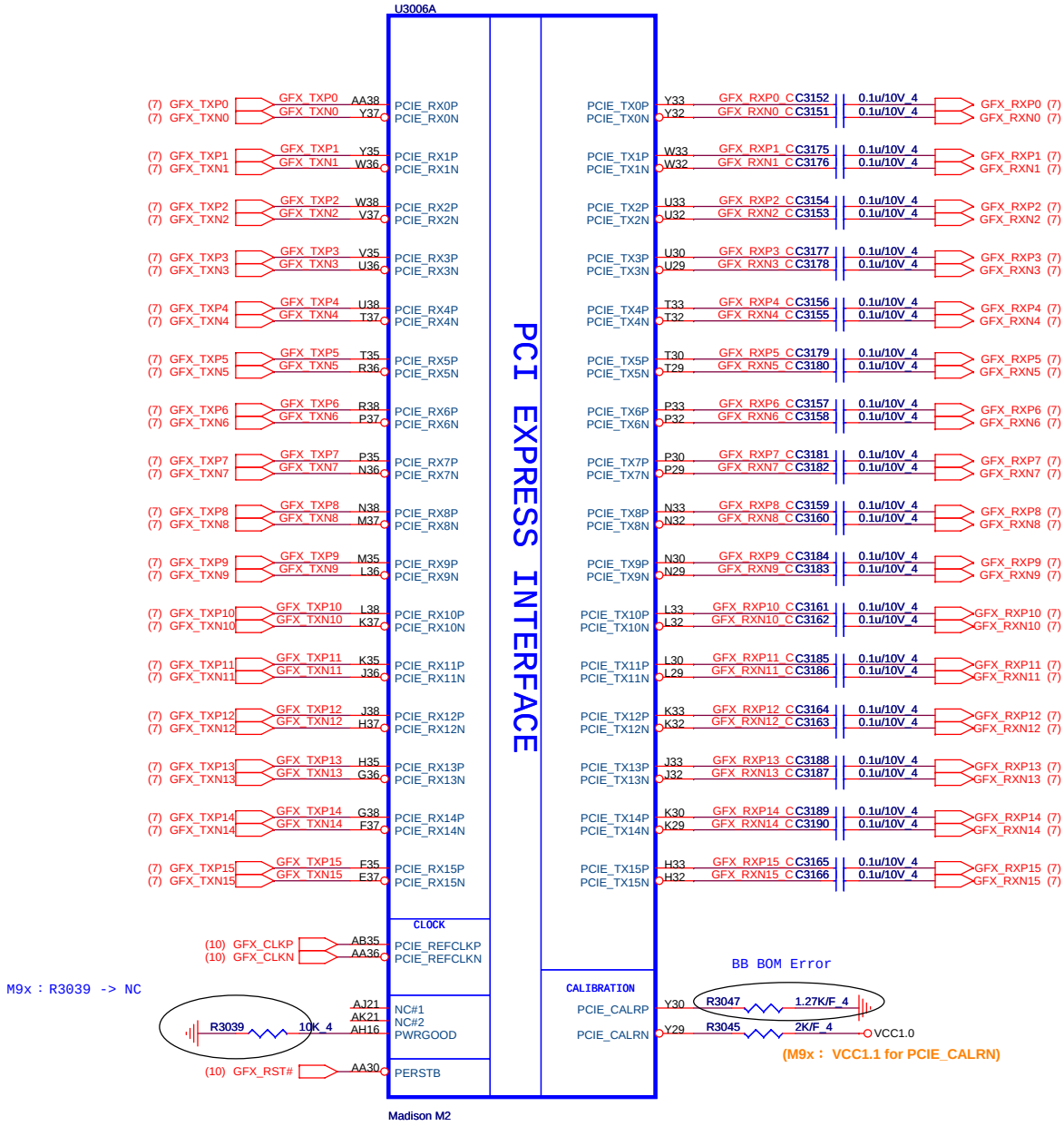
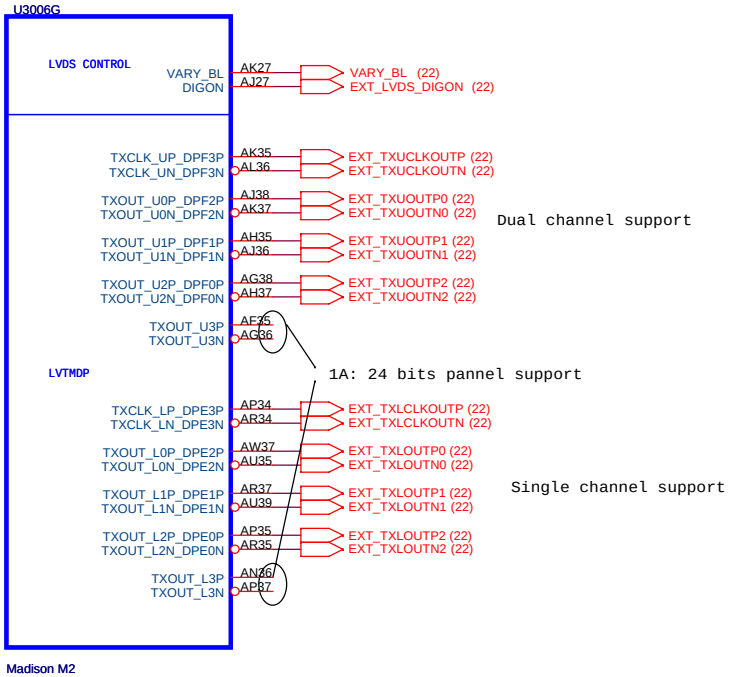
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	DDR3 SODIMMX2	2A
Date: Wednesday, January 27, 2010	Sheet 14 of 42	





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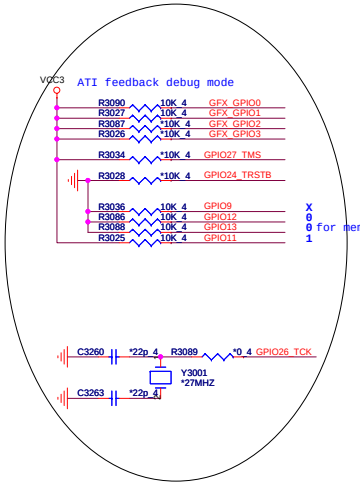
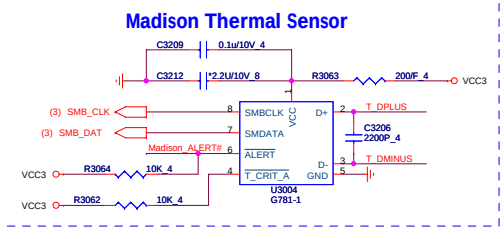
Quanta Computer Inc.
PROJECT : NE8

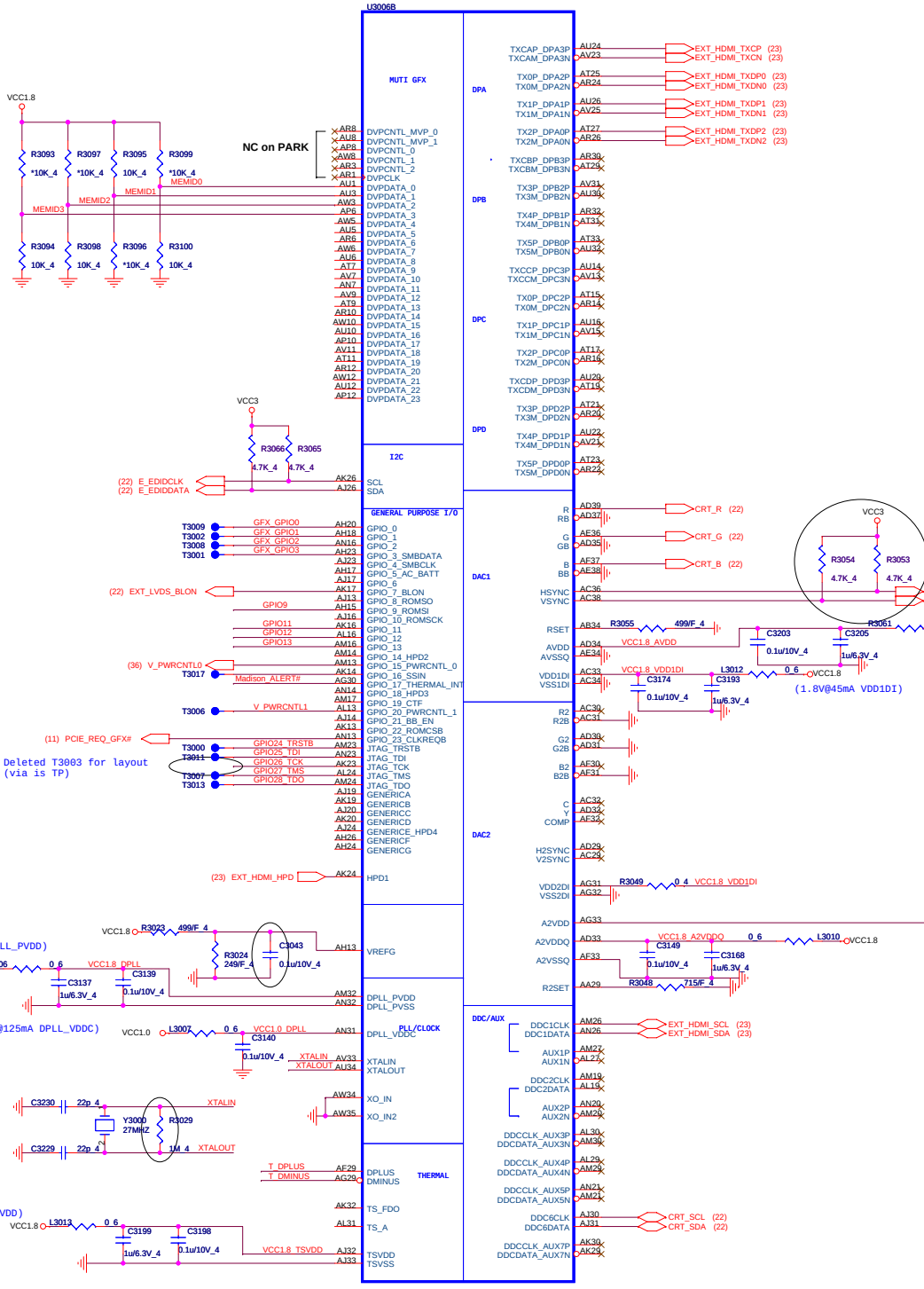
Size	Document Number	Rev
	ATI PCIE/LVDS	2A
Date: Wednesday, January 27, 2010	Sheet 15 of 42	

MEMID[3:0]	Vendor	Type	Vendor P/N	
0000				
0001	Hinyx	64*16-800MHZ	H5TQ1G63BFR-12C	AKD5LZGTW00
0010	Samsung	64*16-800MHZ	K4W1G1646E-HC12	AKD5LGGT502
0011	Ati	64*16-800MHZ	23EY2387MA-12	AKD5LGGT701
0100			Reserved	
0101			Reserved	
0110			Reserved	
0111			Reserved	
1000			Reserved	
1001			Reserved	
1010			Reserved	
1011			Reserved	
1100			Reserved	
1101			Reserved	
1110			Reserved	
1111			Reserved	
	Samsung	64*16-900MHZ	K4W1G1646E-HC11	

GPIO0 : PCIE FULL TX OUTPUT SWING
GPIO1 : PCIE TRANSMITTER DE-EMPHASIS ENABLED
GPIO2 : BIF_GEN2_EN_A
GPIO8 : RESERVED
GPIO9 : VGA ENABLED
GPIO[13:11] : SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT
V2SYNC : IGNORE VIP DEVICE STRAPS
H2SYNC : 0
GENERICC : 0
HSYNC : 1 （AUDIO FOR BOTH DP AND HDMI）
VSYNC : 1 （AUDIO FOR BOTH DP AND HDMI）







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Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	ATI Park MAIN IO	2A
Date: Wednesday, January 27, 2010	Sheet 16 of 42	

M@ for Madison level

(For Park&DDR3, VDDR = 1.5V@2.0A)

layout issue remove R387

U3006E

MEM I/O

POWER

CORE

PCIE

LEVEL TRANSLATION

I/O

PLL

VOLTAGE SENESE

Madison M2

(1.8V@110mA VDD_CT)

(1.8V@40mA PCIE_PVDD)

(MPV18 = 1.8V@75mA)

(Madison = 1.8V@150mA)

(1.8V@75mA SPV18)

(1.0V@120mA SPV10)

M9x : L3001、L3002 -> NC

(For M9x : VGA_CORE for SPV10)

M9x : R3084 Mount

VCORE_SEN/RTN and VDDCI_SEN/RTN route as differetial pair

	M92	M96	Manhattan
R3060	X	0	X
R3075	X	0	X
R3081	0	0	X
R3083	0	0	X

(1.8V@504mA PCIE_VDDR)

(1.0V@2A PCIE_VDDC)

(M9x : 1.1V@2A PCIE_VDDC)

(0.95V-1.1V@11 A (RMS) / 16 A (Peak) VDDC)

(0.95V-1.1V@2A VDDCI)

(0.95V-1.1V@2A Madison)

GND

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Quanta Computer Inc.

PROJECT : NE8

Size	Document Number	Rev
	ATI POWER/GND	2A

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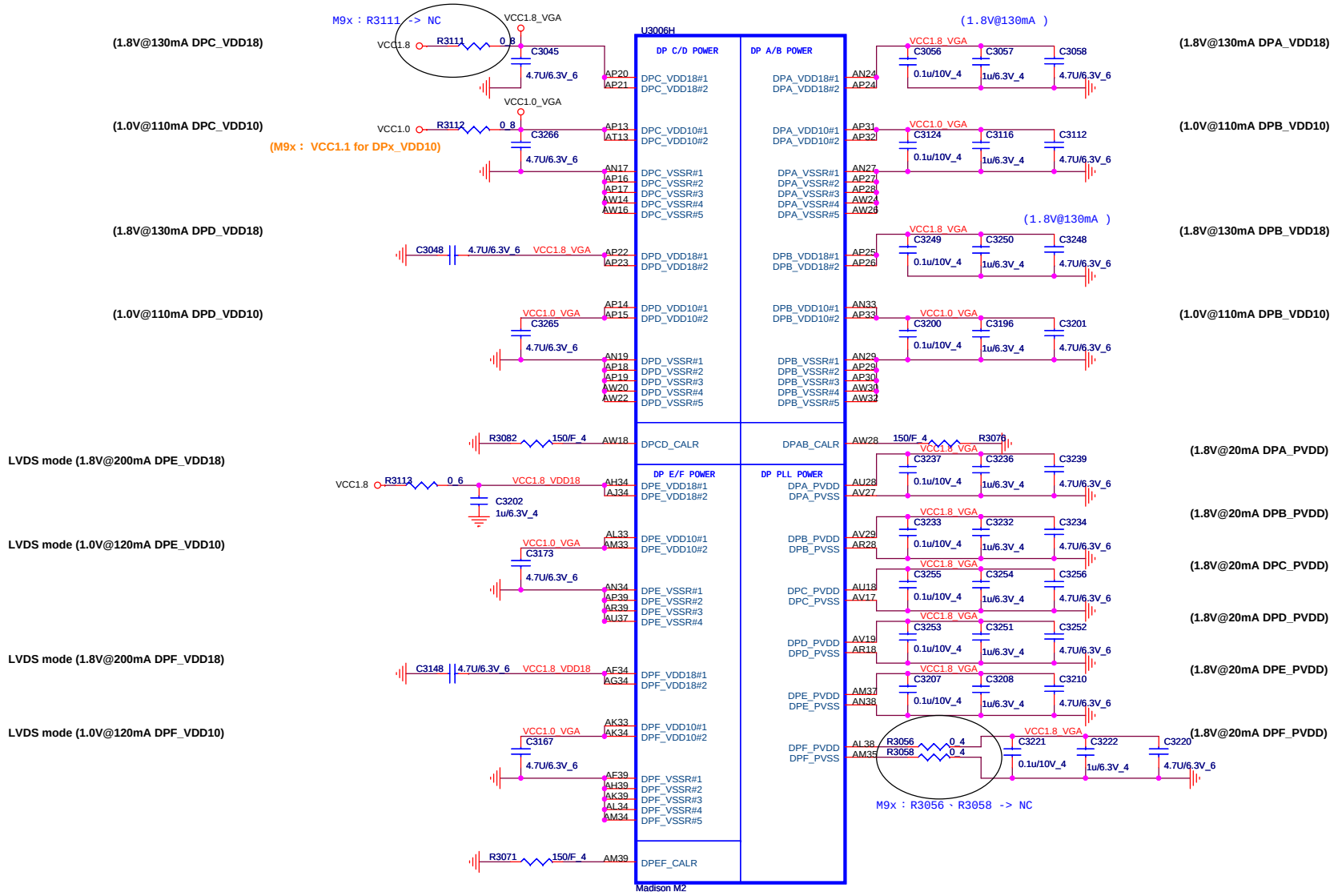

(1.8V@130mA DPC_VDD18)

(1.0V@110mA DPC_VDD10)

(M9x : VCC1.1 for DPx_VDD10)

(1.8V@130mA DPD_VDD18)

(1.0V@110mA DPD_VDD10)

LVDS mode (1.8V@200mA DPE_VDD18)

LVDS mode (1.0V@120mA DPE_VDD10)

LVDS mode (1.8V@200mA DPF_VDD18)

LVDS mode (1.0V@120mA DPF_VDD10)

(1.8V@130mA DPA_VDD18)

(1.0V@110mA DPB_VDD10)

(1.8V@130mA DPB_VDD18)

(1.0V@110mA DPB_VDD10)

(1.8V@20mA DPA_PVDD)

(1.8V@20mA DPB_PVDD)

(1.8V@20mA DPC_PVDD)

(1.8V@20mA DPD_PVDD)

(1.8V@20mA DPE_PVDD)

(1.8V@20mA DPF_PVDD)

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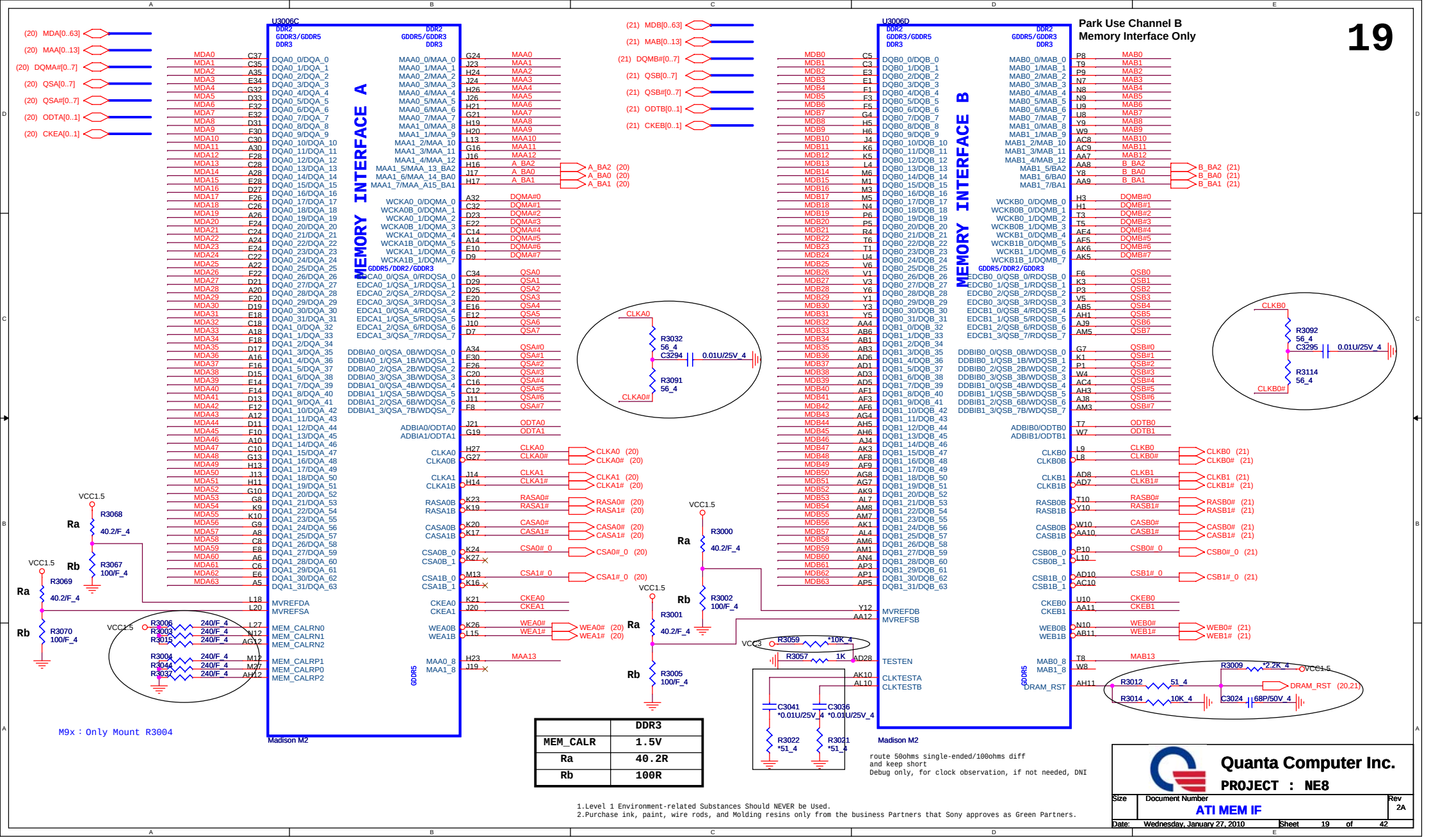
Quanta Computer Inc.

PROJECT : NE8

Size	Document Number	Rev
	ATI MEM/IF/DP	2A
Date: Wednesday, January 27, 2010	Sheet 18 of 42	

Use this option ONLY
for Park-S3


Park Use Channel B
Memory Interface Only
19
U3006C
U3006D
MEMORY INTERFACE A
MEMORY INTERFACE B
DDR2
GDDR3/GDDR5
DDR3
GDDR5/DDR2/GDDR3
(20) MDA[0..63]
(20) MAA[0..13]
(20) DQMA#[0..7]
(20) QSA[0..7]
(20) QSA#[0..7]
(20) ODTA[0..1]
(20) CKEA[0..1]
(21) MDB[0..63]
(21) MAB[0..13]
(21) DQMB#[0..7]
(21) QSB[0..7]
(21) QSB#[0..7]
(21) ODTB[0..1]
(21) CKEB[0..1]
MVREFDA
MVREFSA
MVREFDB
MVREFSB
MEM_CALRN0
MEM_CALRN1
MEM_CALRN2
MEM_CALRP1
MEM_CALRP0
MEM_CALRP2
TESTEN
CLKTESTA
CLKTESTB
DRAM_RST
Madison M2
Madison M2
VCC1.5
VCC3
Ra
Rb
R3068 40.2/F_4
R3067 100/F_4
R3069 40.2/F_4
R3070 100/F_4
R3000 40.2/F_4
R3002 100/F_4
R3001 40.2/F_4
R3005 100/F_4
R3006 240/F_4
R3003 240/F_4
R3015 240/F_4
R3004 240/F_4
R3044 240/F_4
R3037 240/F_4
R3059 *10K_4
R3057 1K
C3041 *0.01U/25V_4
C3036 *0.01U/25V_4
R3022 *51_4
R3021 *51_4
CLKA0
CLKA0#
R3032 56_4
C3294 0.01U/25V_4
R3091 56_4
CLKB0
CLKB0#
R3092 56_4
C3295 0.01U/25V_4
R3114 56_4
R3009 *2.2K_4
R3012 51_4
R3014 10K_4
C3024 68P/50V_4
M9x : Only Mount R3004
route 50ohms single-ended/100ohms diff
and keep short
Debug only, for clock observation, if not needed, DNI
DDR3
MEM_CALR 1.5V
Ra 40.2R
Rb 100R
1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.
Quanta Computer Inc.
PROJECT : NE8
Size
Document Number
ATI MEM IF
Rev 2A
Date: Wednesday, January 27, 2010
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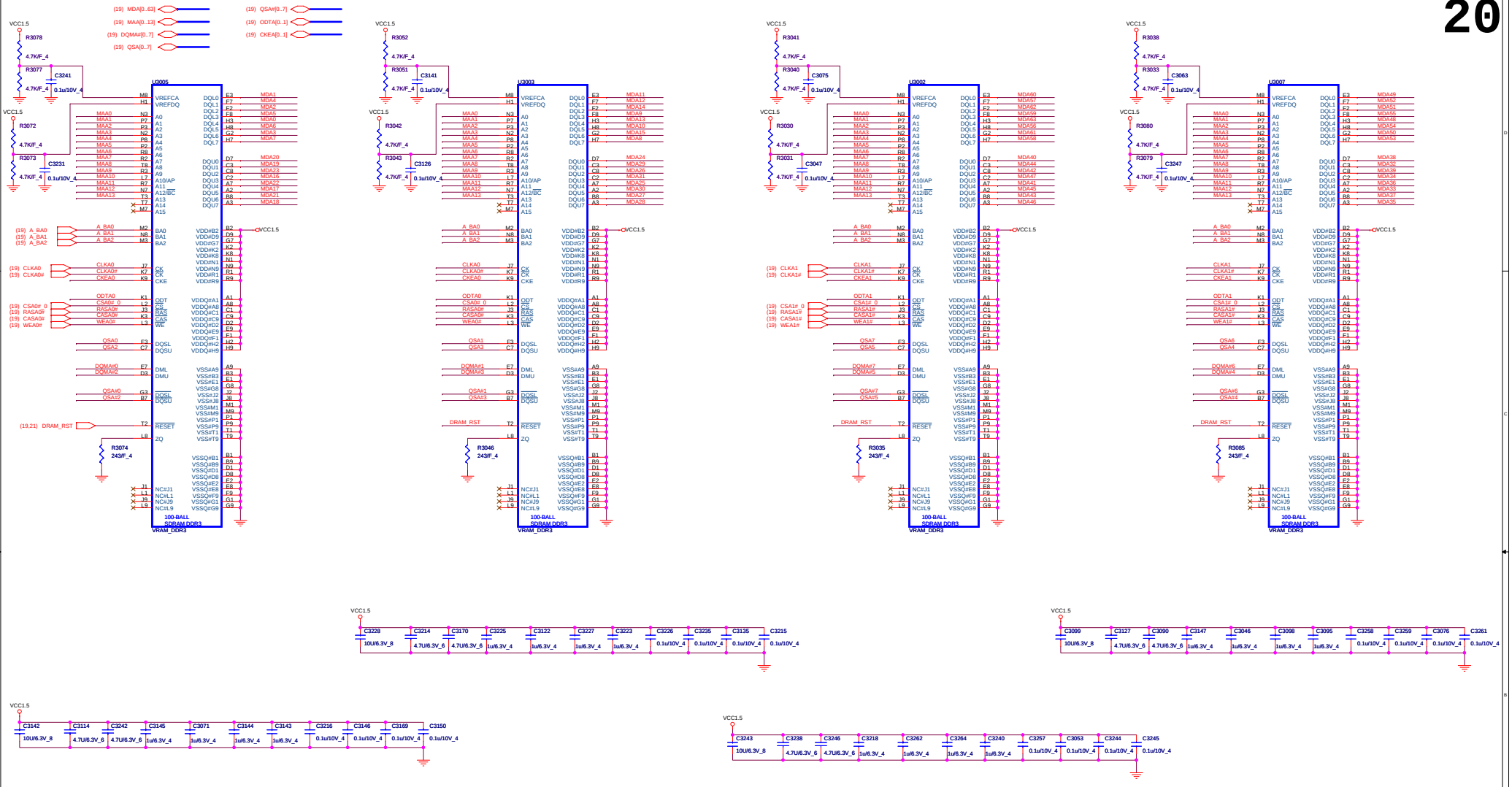
Use this option ONLY
for Park-S3



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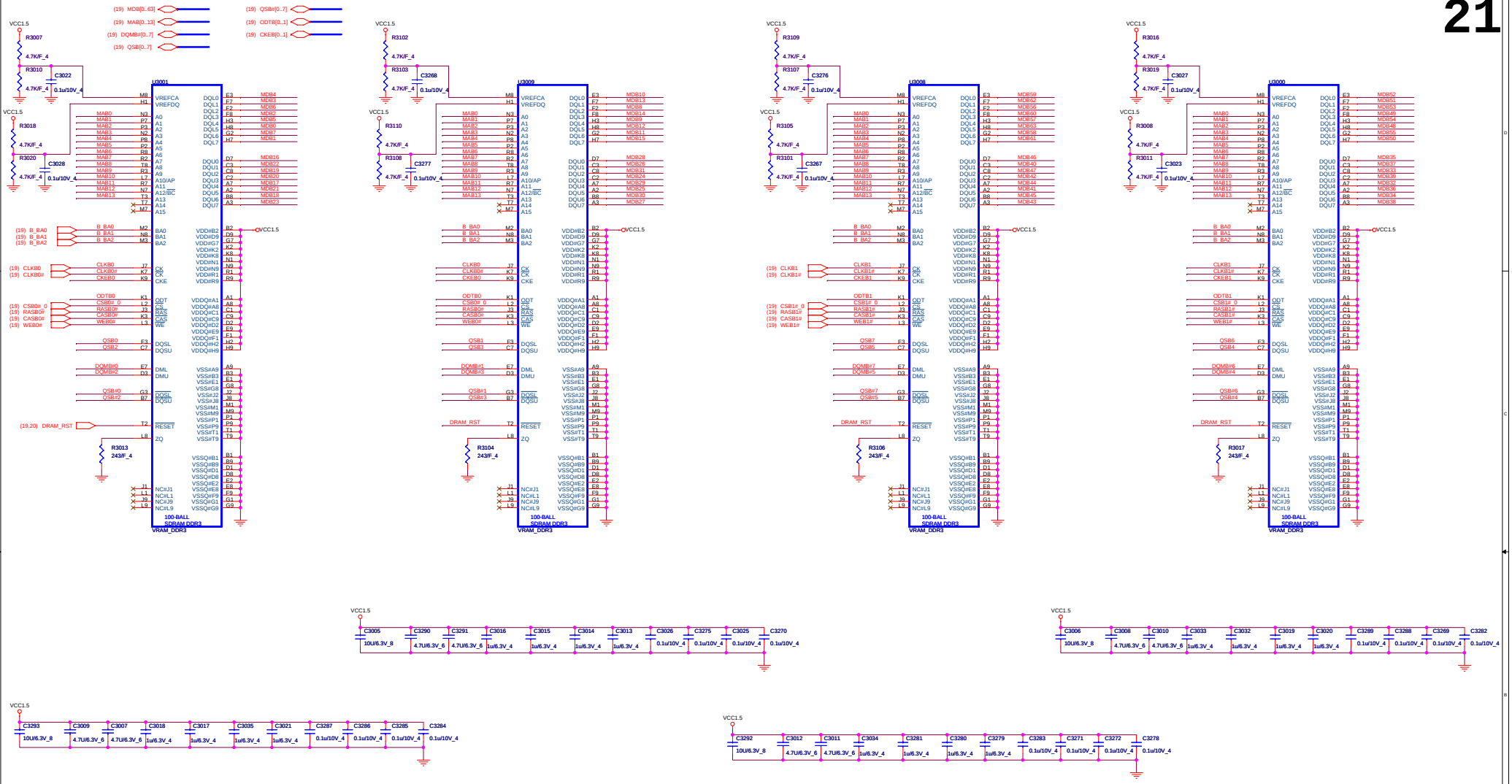
Quanta Computer Inc.
PROJECT : NE8
Size: Document Number: ATI VRAM DDR3 Rev: 2A
Date: Wednesday, January 27, 2010 Sheet 20 of 42



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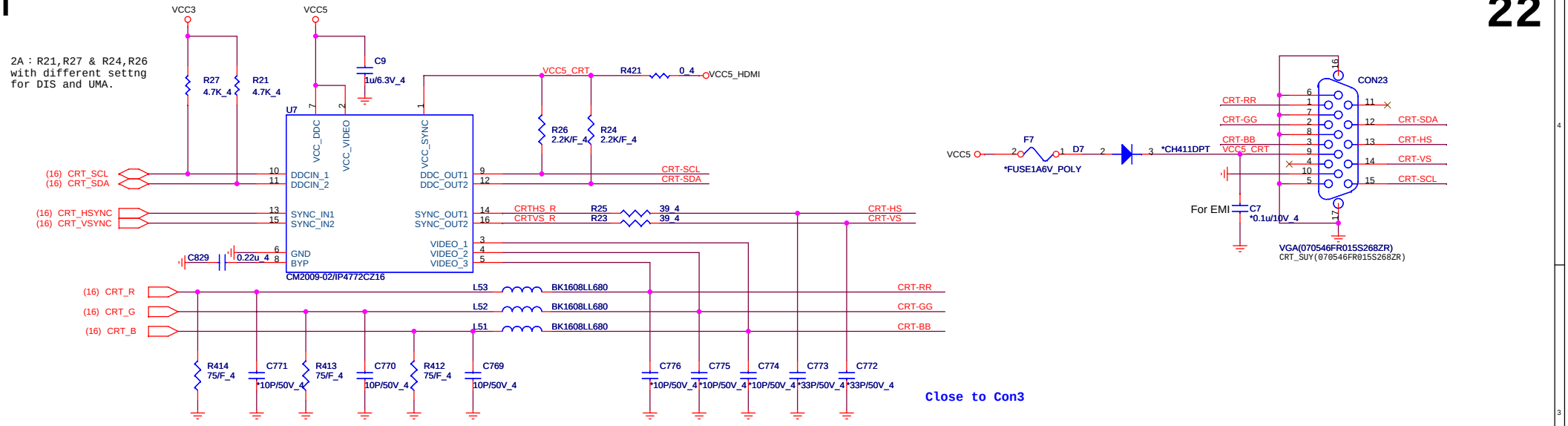
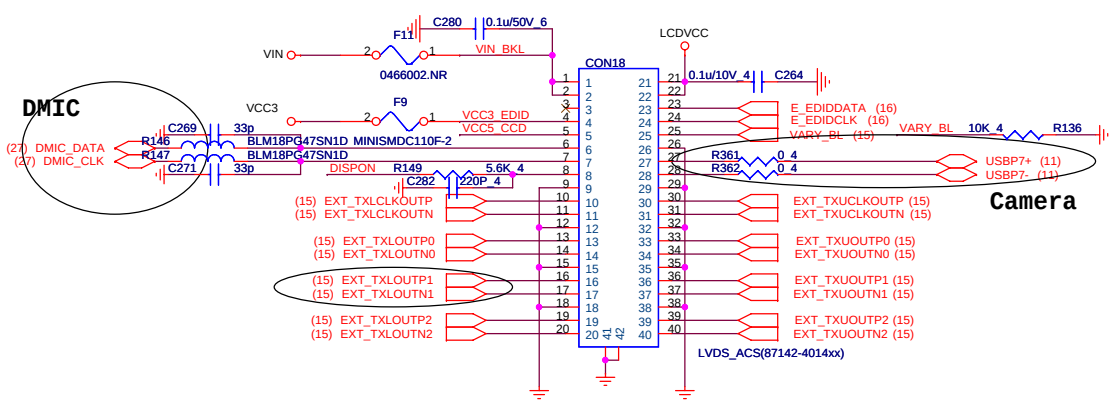
PROJECT : NE8
Size | Document Number: ATI VRAM DDR3 | Rev: 2A
Date: Wednesday, January 27, 2010 | Sheet 21 of 42

CRT

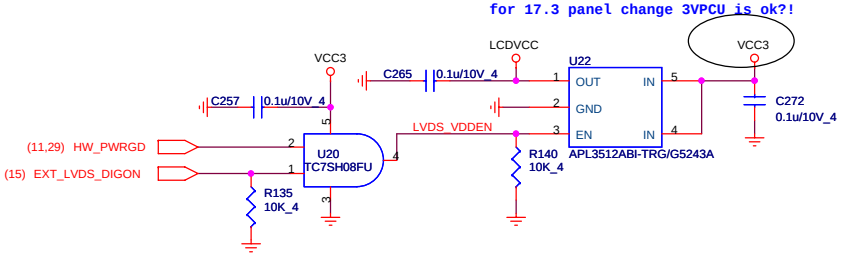


LVDS

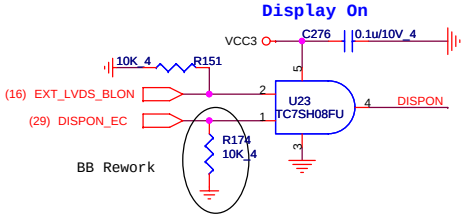


2A: Change to 87142-4014 (vertical)

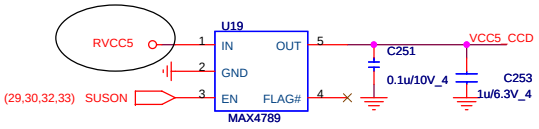
for 17.3 panel change 3VPCU is ok?!



Display On



1C: 12/17 add RVCC5 for optional power source



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Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	CRT/LVDS	2A
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1B: share power with CRT port

VCC5_HDMI

VCC5 — F8 1206L025YR — D8 CH411DPT — VCC5_HDMI — C8 0.1u/10V_4

For EMI

EXT_HDMI_TXDP0 R420 *100/F_4 EXT_HDMI_TXDN0
EXT_HDMI_TXDP1 R418 *100/F_4 EXT_HDMI_TXDN1
EXT_HDMI_TXDP2 R419 *100/F_4 EXT_HDMI_TXDN2
HDMI_TXCP R417 *100/F_4 HDMI_TXCN

(16) EXT_HDMI_TXCP — RP46 0X2 — HDMI_TXCP
(16) EXT_HDMI_TXCN — HDMI_TXCN

ATI Suggestion close to Con24

Q33 2N7002DW

VCC5 R368 4.7K_4 — (16) EXT_HDMI_SCL — HDMI_SCL
VCC5 R369 4.7K_4 — (16) EXT_HDMI_SDA — HDMI_SDA

1B: add diode for HDMI test

VCC5 — D30 *RB501V-40
VCC5 — D29 *RB501V-40

R416 *1.5K/F_4
R415 *1.5K/F_4

HDMI_SCL
HDMI_SDA

12/17 Eric D29/D30/R416/R415 DNI

(16) EXT_HDMI_TXDP2 — C675 0.1u/10V_4 — EXT_HDMI_TXDP2_C
(16) EXT_HDMI_TXDN2 — C676 0.1u/10V_4 — EXT_HDMI_TXDN2_C
(16) EXT_HDMI_TXDP1 — C677 0.1u/10V_4 — EXT_HDMI_TXDP1_C
(16) EXT_HDMI_TXDN1 — C678 0.1u/10V_4 — EXT_HDMI_TXDN1_C
(16) EXT_HDMI_TXDP0 — C679 0.1u/10V_4 — EXT_HDMI_TXDP0_C
(16) EXT_HDMI_TXDN0 — C680 0.1u/10V_4 — EXT_HDMI_TXDN0_C
HDMI_TXCP — C681 0.1u/10V_4 — EXT_HDMI_TXCP_C
HDMI_TXCN — C688 0.1u/10V_4 — EXT_HDMI_TXCN_C

VCC5_HDMI (55mA)
HPD_HDMI
R7 100K/F_4

CON24 HDMI_AOP(C12815-119A5-L)

1	D2+	SHELL1	20
2	D2 Shield		
3	D2-		
4	D1+		
5	D1 Shield		
6	D1-	SHELL2	21
7	D0+		
8	D0 Shield		
9	D0-		
10	CK+		
11	CK Shield		
12	CK-		
13	CE Remote	SHELL3	23
14	NC		
15	DDC CLK		
16	DDC DATA		
17	GND		
18	+5V		
19	HP DET		
		SHELL4	22

0115 change connector, need update P/N

VCC3
Q32 MMBT3904
R8 150K/F_4 HPD_HDMI
(16) EXT_HDMI_HPD — R411 0_4
R410 10K_4

ATI Suggestion close to Con24 For ESD

VCC5
Q7 2N7002E
R22 *100K/J_4

R13	499/F_4	EXT_HDMI_TXDP2	C765	*10P/50V_4	
R14	499/F_4	EXT_HDMI_TXDN2	C766	*10P/50V_4	
R12	499/F_4	EXT_HDMI_TXDP1	C764	*10P/50V_4	
R11	499/F_4	EXT_HDMI_TXDN1	C763	*10P/50V_4	
R15	499/F_4	EXT_HDMI_TXDP0	C767	*10P/50V_4	
R16	499/F_4	EXT_HDMI_TXDN0	C768	*10P/50V_4	
R10	499/F_4	HDMI_TXCP	C762	*10P/50V_4	
R9	499/F_4	HDMI_TXCN	C761	*10P/50V_4	

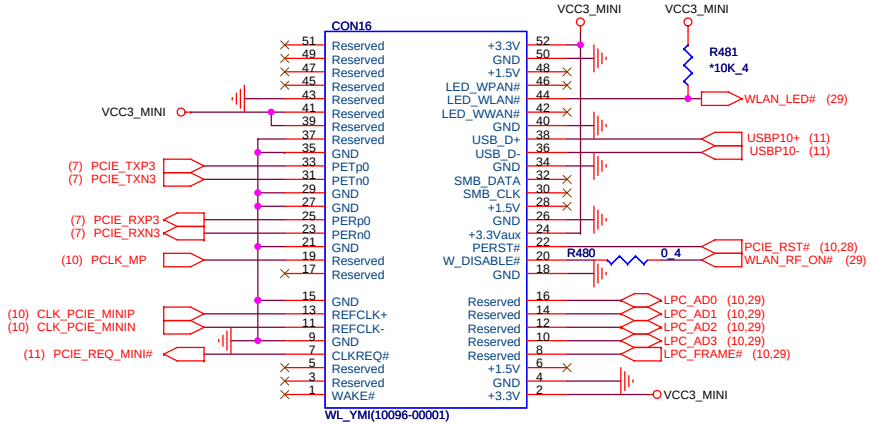
BB BOM Error
100K ohm
12/17 Eric R22 DNI

1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.

Quanta Computer Inc.
PROJECT : NE8

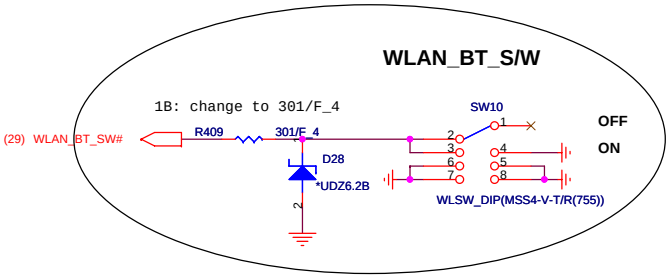
Size	Document Number	Rev
	HDMI	2A

Date: Wednesday, January 27, 2010 Sheet 23 of 42

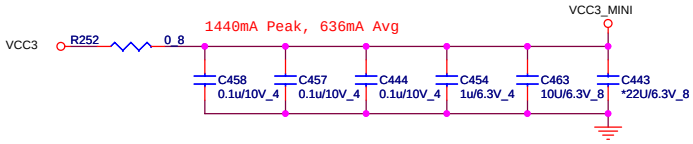


Win7 didn't support wake WLAN

2A need check TOP or BOT again

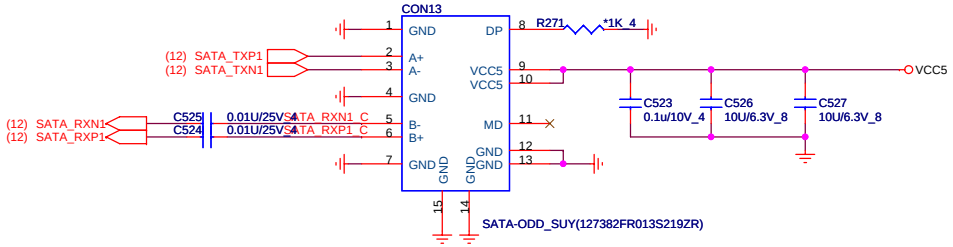


BTM Side , Right==>ON



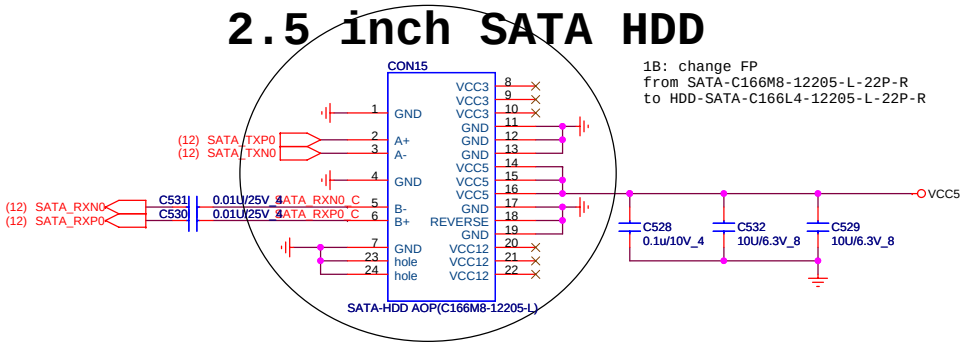
2A：deleted VCC1.5_MINI

SATA ODD



2.5 inch SATA HDD

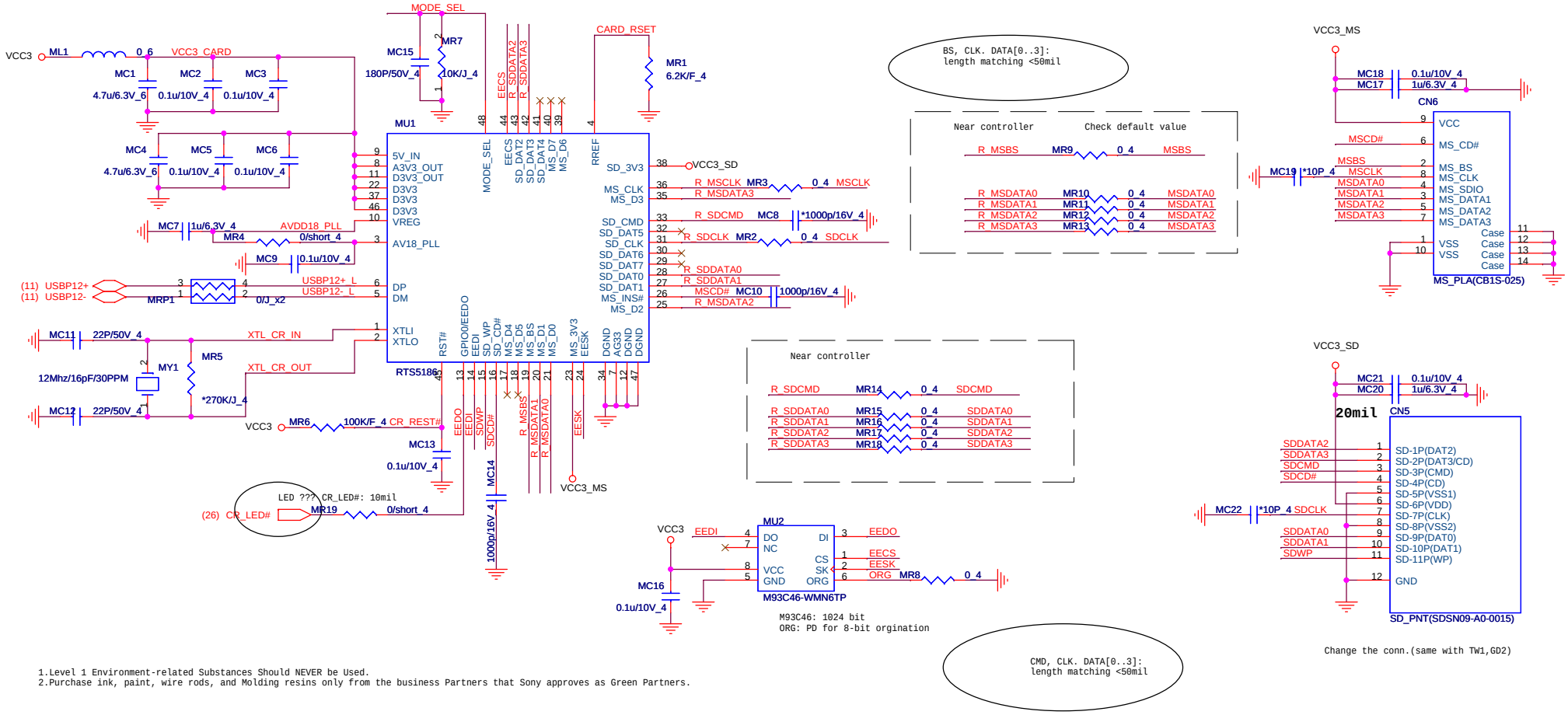
1B: change FP
from SATA-C166M8-12205-L-22P-R
to HDD-SATA-C166L4-12205-L-22P-R



Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	WLAN/HDD/ODD	2A

Date: Wednesday, January 27, 2010 Sheet 24 of 42



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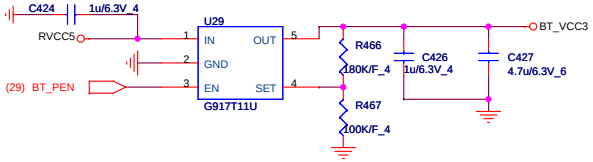
Quanta Computer Inc.		
PROJECT : NE8		
Size	Document Number: CARD Reader	Rev: 2A
Date: Wednesday, January 27, 2010	Sheet 25 of 42	

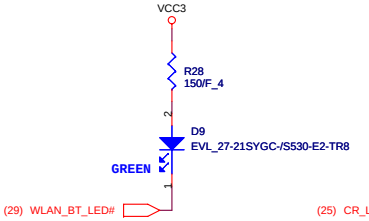
EXPRESS CARD

2A : Remove Express card

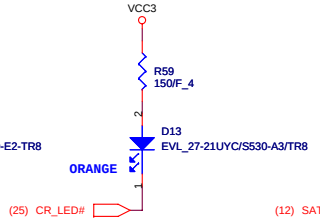
Bluetooth



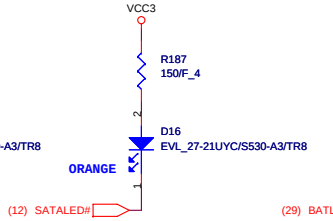
RF LED



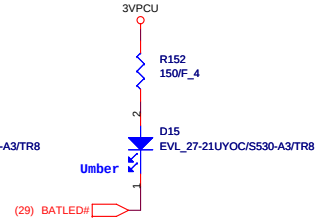
Card LED

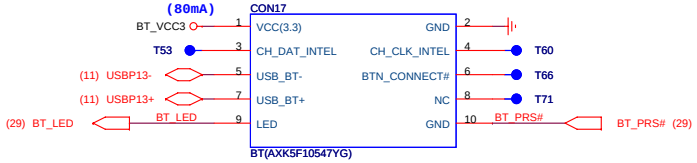


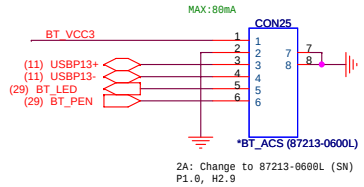
HDD LED



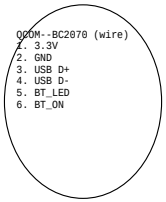
Battery LED







2A: Change to 87213-0600L (SN)
P1.0, H2.9



1.Level 1 Environment-related Substances Should NEVER be Used.
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PROJECT : NE8

Size	Document Number	Rev
	Express Card/LED/TP	2A

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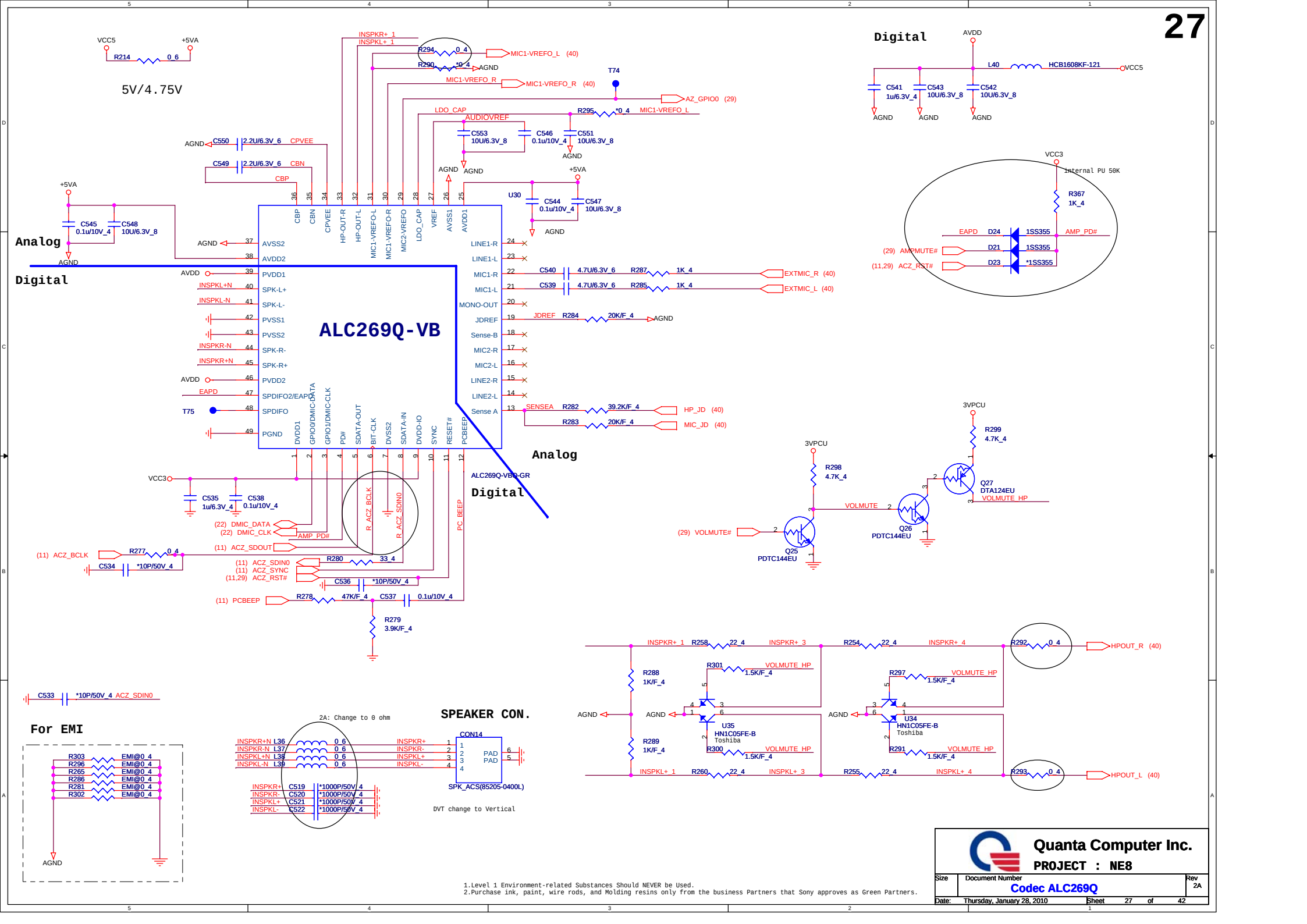
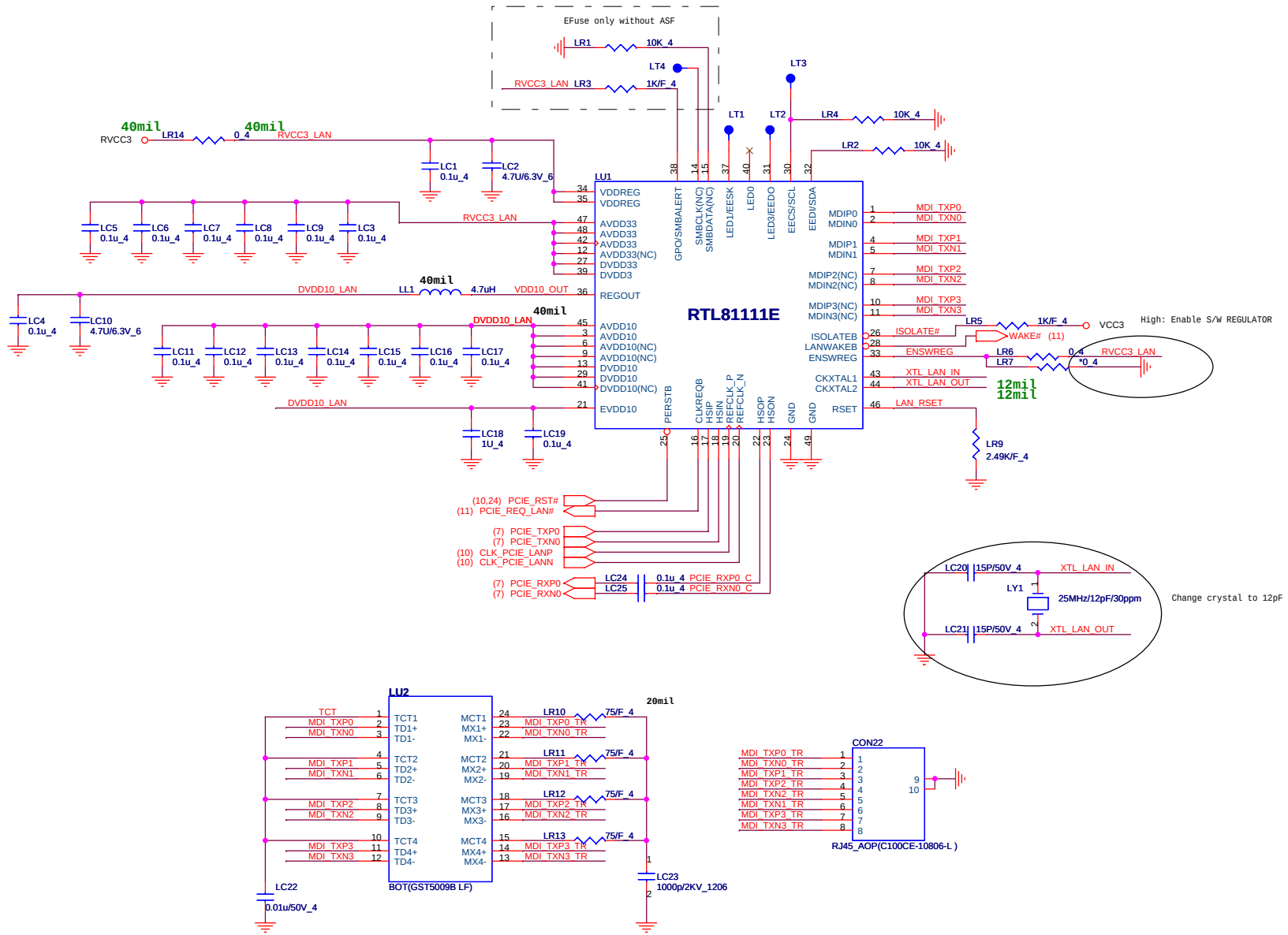

ALC269Q-VB
ALC269Q-VB-GR
Analog
Digital
5V/4.75V
SPEAKER CON.
For EMI
2A: Change to 0 ohm
DVT change to Vertical
SPK_ACS(85205-0400L)
Quanta Computer Inc.
PROJECT : NE8
Codec ALC269Q
Rev 2A
Thursday, January 28, 2010
Sheet 27 of 42
1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.



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PROJECT : NE8

Size	Document Number	Rev
	LAN RTL8111E	2A
Date: Wednesday, January 27, 2010	Sheet 28 of 42	

I/O Address		
BADDR1-0	Index	Data
* 1 0	2E	2F
1 1	4E	4F
0 0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1
0 1	XOR-TREE TEST	

SHMB: SHBM(If = 0 Enable share host BIOS memory)

DOCK_RST# : BADDR0
T?: BADDR1

1A: issue after RVCCON 20-25ms
Power step3
Power step1

Reserved for more EC wake up function
BB Rework
12/17 Eric R306 mount

1B: Delete diode but need to check EC driving timing
Not connect

KBSIN[0...7] SET internal PU

Power step2
Power step4
Power step5
Adding for ICT

EC must implement Wake function for ACIN & HOLD#
1B: Reserved for NPC781

High-active
35001 Not-I2C

EC SDI-> EEprom DO
EC SDO-> EEprom DI

NPCE781

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Quanta Computer Inc.
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Size	Document Number	Rev
	NPCE781 & FLASH	2A
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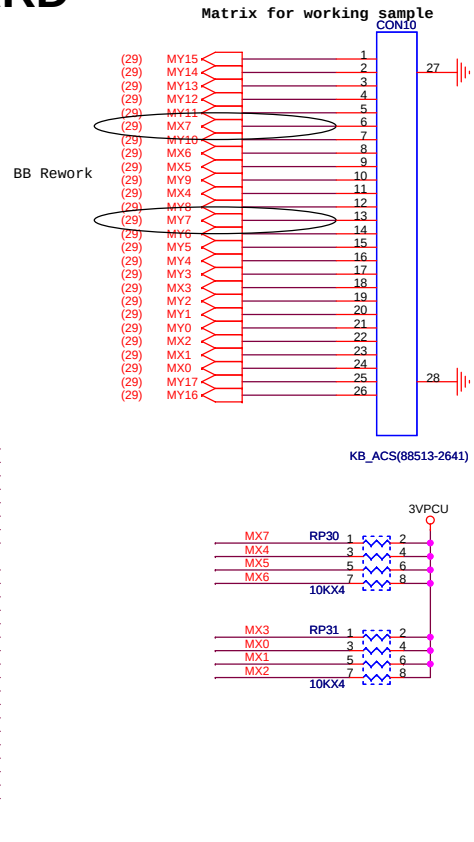
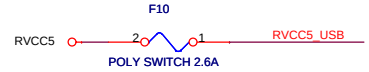
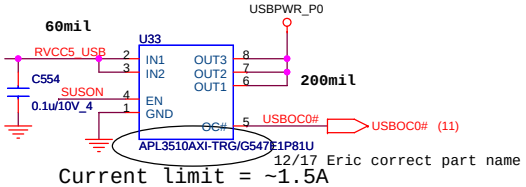
KEYBOARD



USB Port + e-SATA(USB)

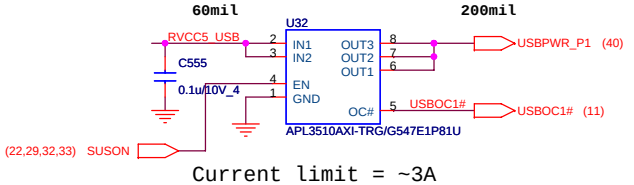


Current limit need to check

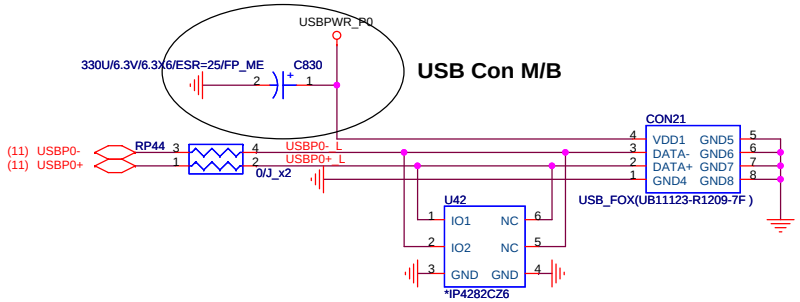


12/17 Eric correct part name

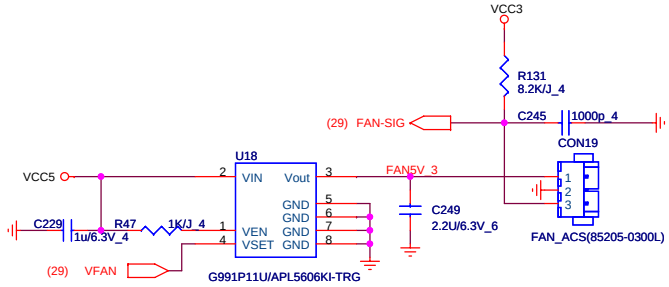
Current limit = ~1.5A
(For port0 and Camera)



Current limit = ~3A



FAN



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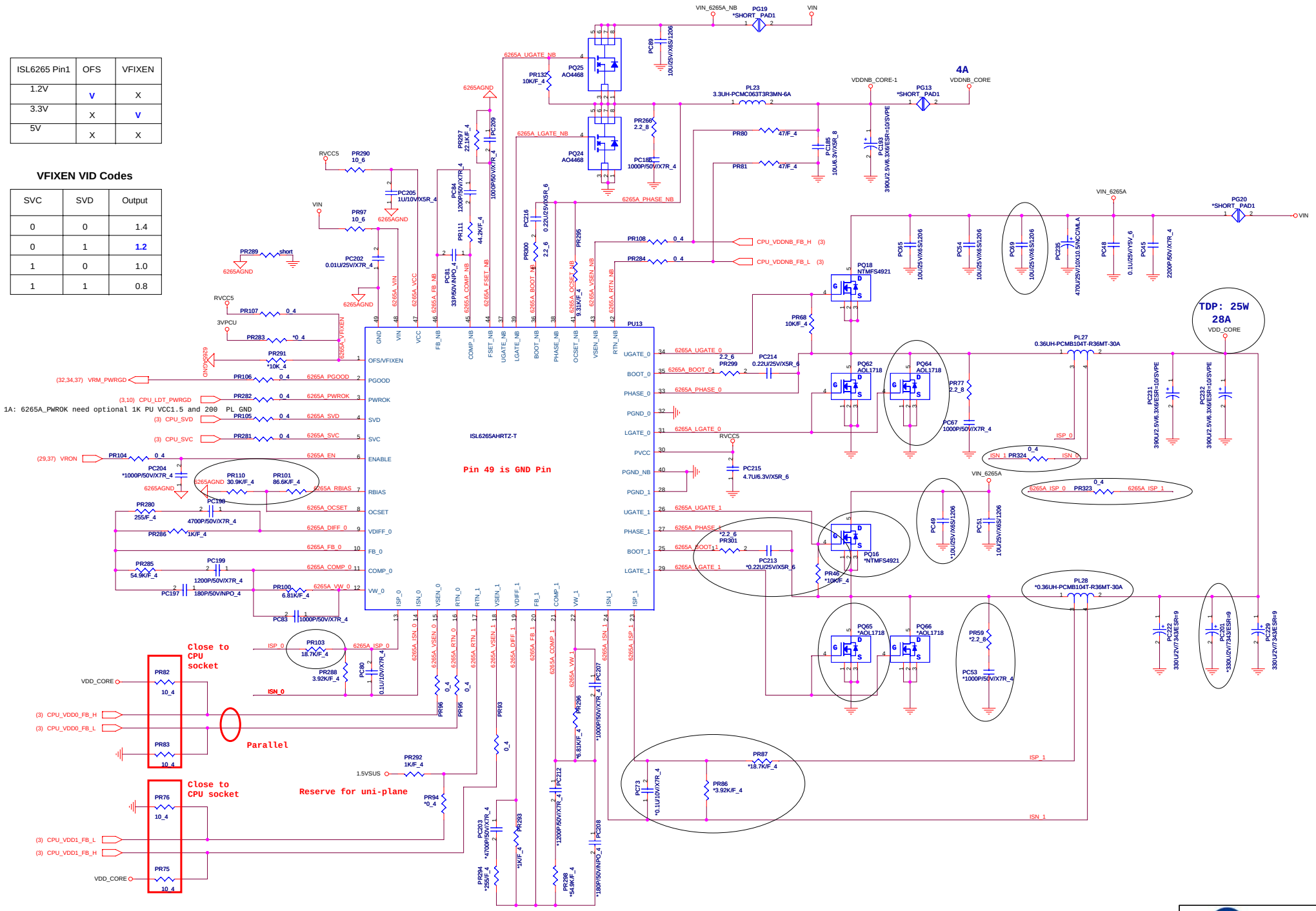
PROJECT : NE8

Size	Document Number	Rev
	KB/USB/FAN/PS	2A
Date: Wednesday, January 27, 2010	Sheet 30 of 42	

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



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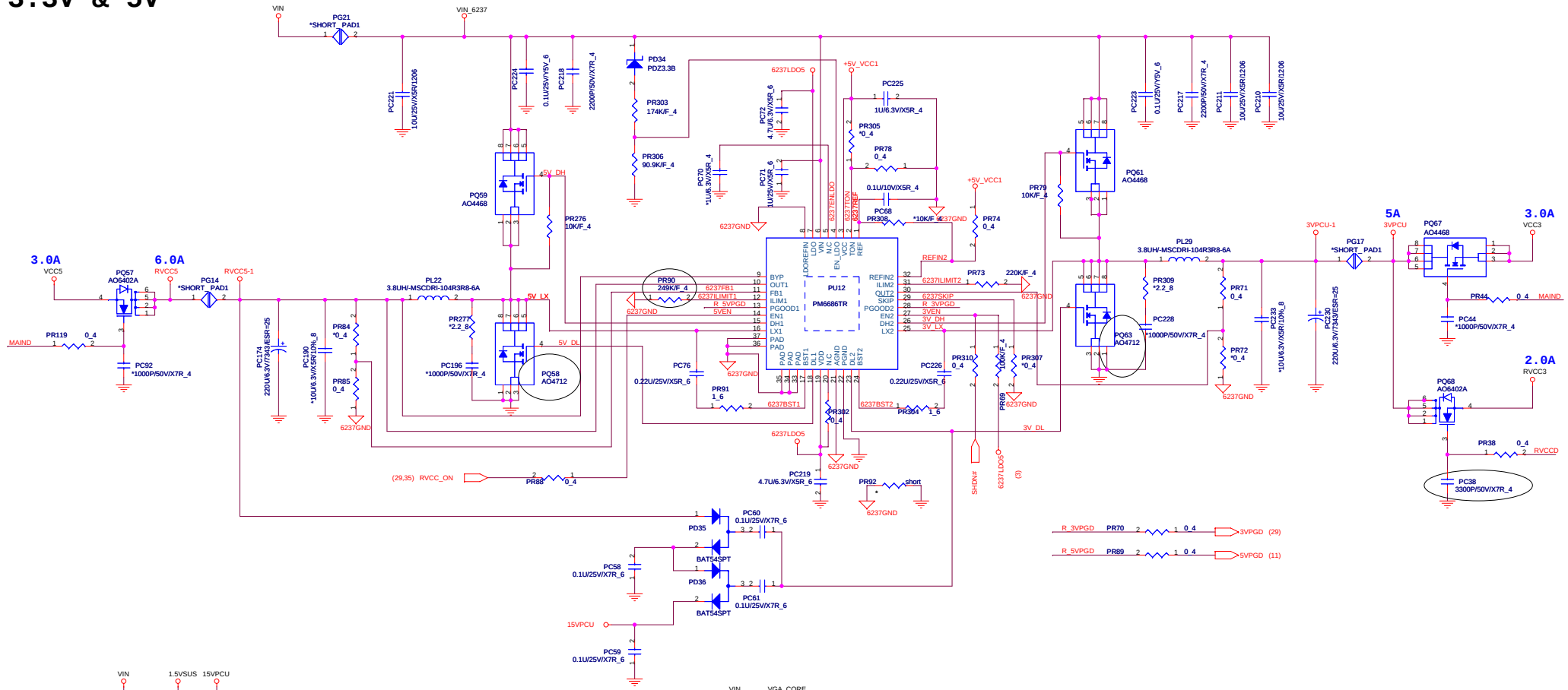
Size	Document Number	Rev
	VCORE(ISL6265A)	2A
Date: Wednesday, January 27, 2010	Sheet 31 of 42	

3.3V & 5V



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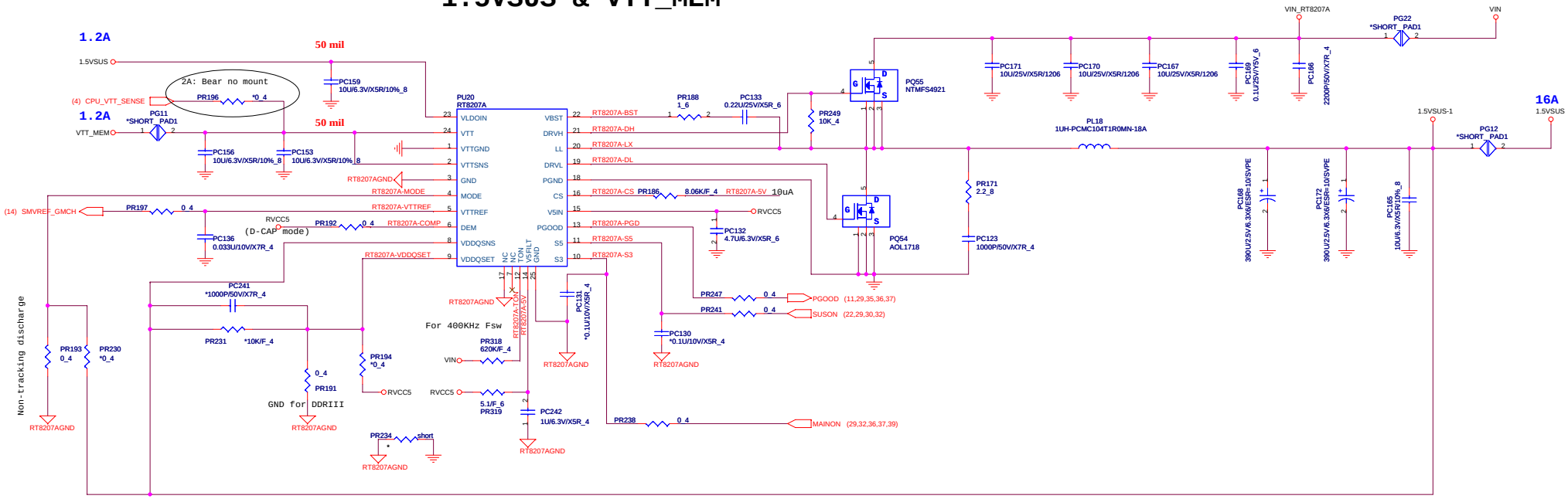
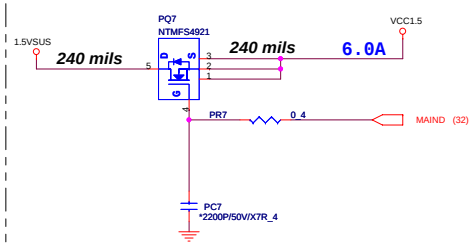
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	3VPCU&5VPCU(PM6686)	2A
Date: Wednesday, January 27, 2010	Sheet 32 of 42	

1.5VSUS & VTT_MEM



VCC1.5



MODE	DISCHARGE MODE
+5V	No discharge
+1.8V	Tracking discharge
GND	Non-tracking discharge

VDDQSET	VDDQ(V)	VTTREF & VTT	NOTE
GND	1.5 fixed	VDDQSNS/2	DDR3
5V	1.8 fixed	VDDQSNS/2	DDR2
FB-Resistor	Adjustable	VDDQSNS/2	1.5V<VDDQ<3V

VTT = VTTREF = VDDQSNS/2 = 0.75V

STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	on	on	on
S3	0	1	on	on	off
S4/S5	0	0	off	off	off

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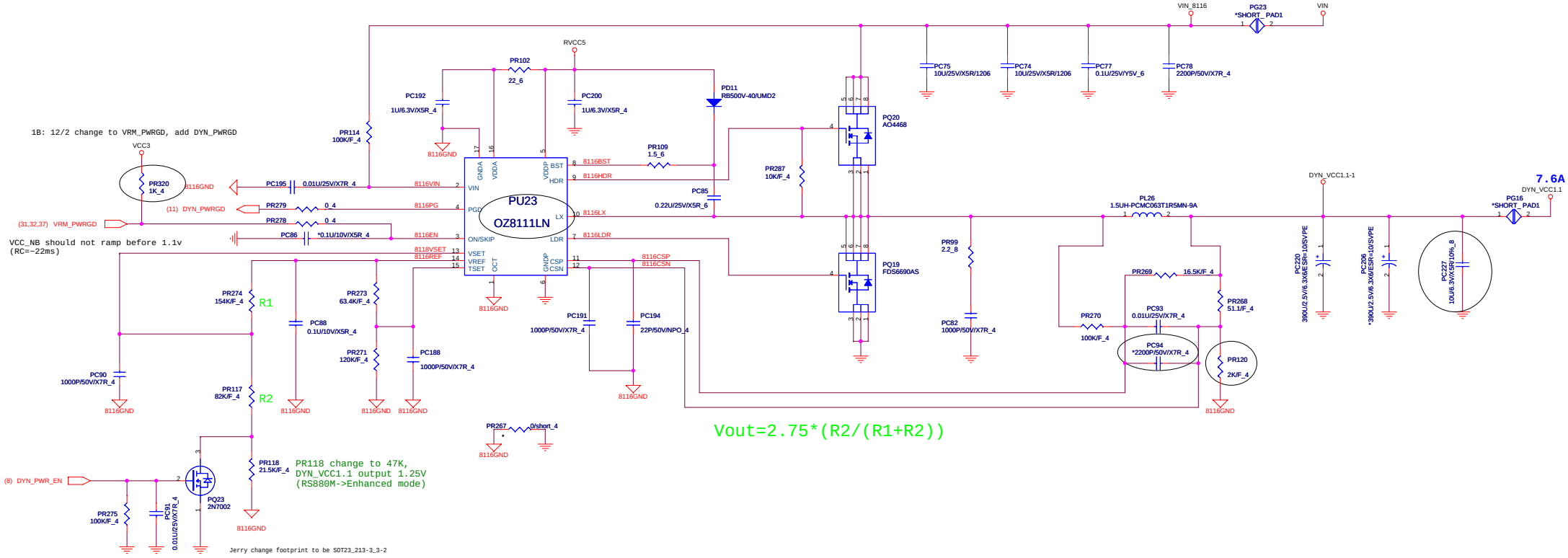
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	1.5VSUS/VTT_MEM	2A

Date: Wednesday, January 27, 2010 Sheet 33 of 42

DYN_VCC1.1 /7.6A



DYN_PWR_EN	High	Low
DYN_VCC1.1	0.95V	1.1V

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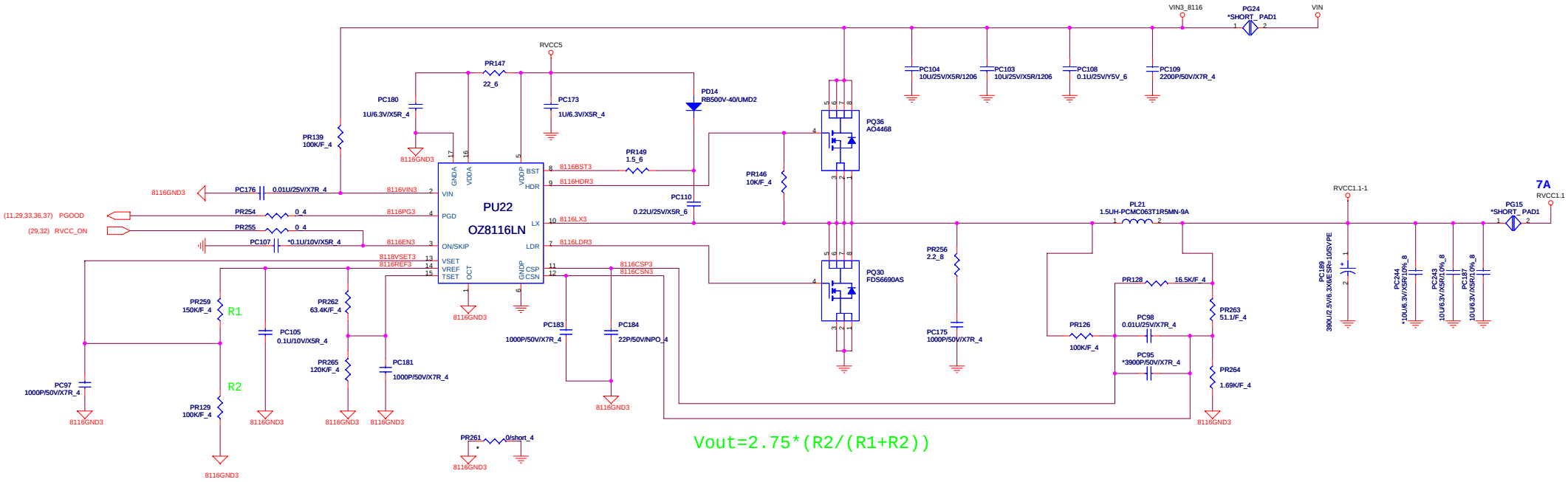
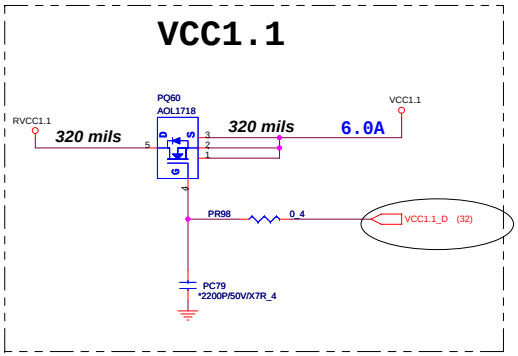
PROJECT : NE8

Size	Document Number	Rev
	DYN_VCC1.1(OZ8116LN)	2A

Date: Wednesday, January 27, 2010 Sheet 34 of 42





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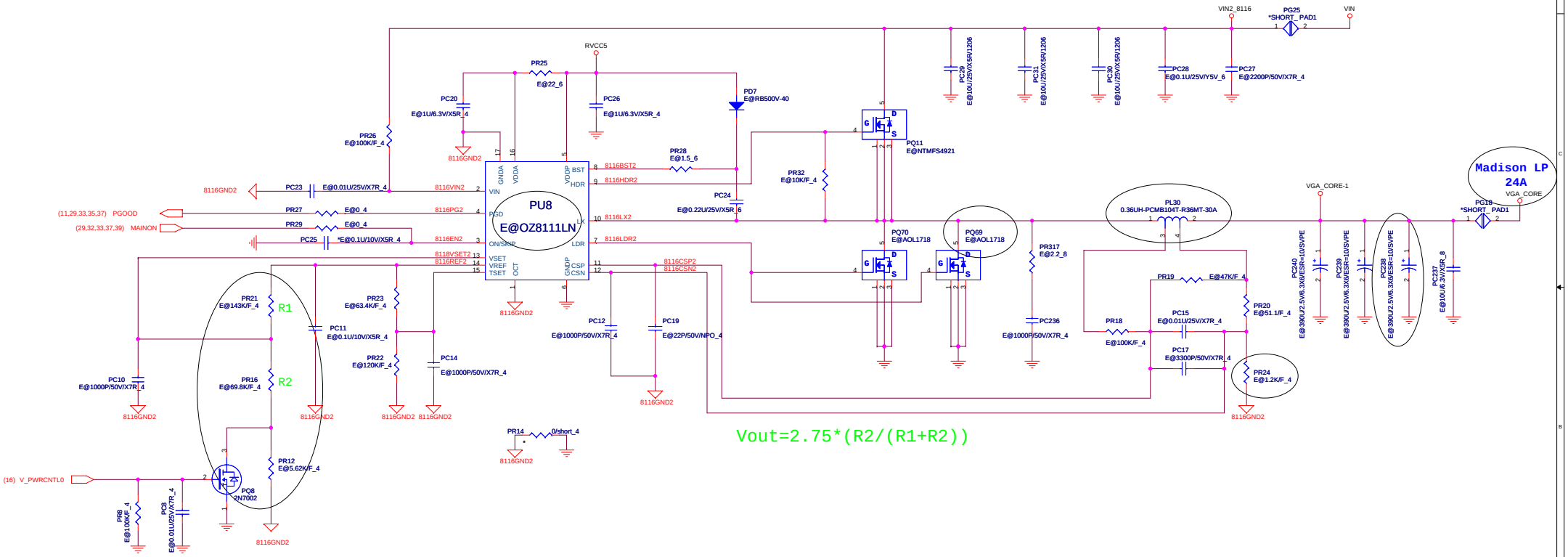
Quanta Computer Inc.
PROJECT : NE8

Size	Document Number	Rev
	VCC1.1(OZ8116LN)-7A	2A

Date: Wednesday, January 27, 2010 Sheet 35 of 42



Madison LP

External VGA_CORE Voltage Setting:

V_PWRCNTL0	VGA_CORE
0	0.95V
1	0.90V

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PROJECT : NE8

Size	Document Number	Rev
	VGA_CORE(OZ8116)-16A	2A

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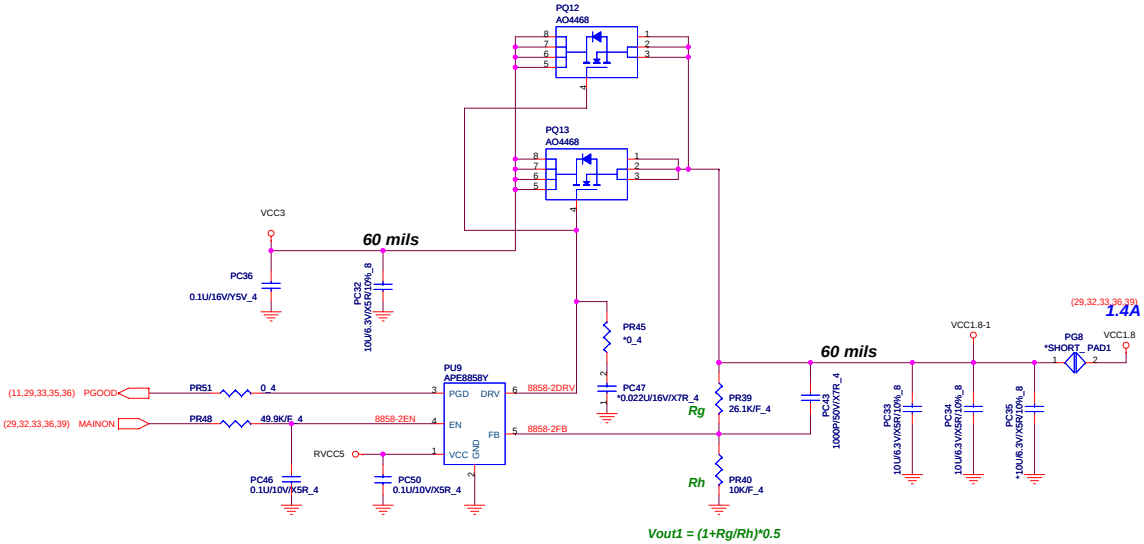
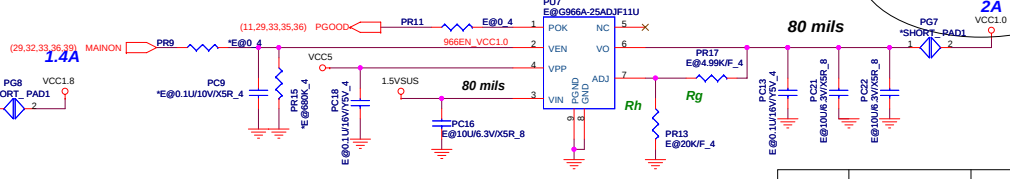
VCC1.8



Vout1 = (1+Rg/Rh)*0.5

VCC1.0



Vout1 = (1+Rg/Rh)*0.8

NO change Vcc1.0 NET name
M9x：Vcc1.1
Manhatten：Vcc1.0
BOM control PR13、PR17

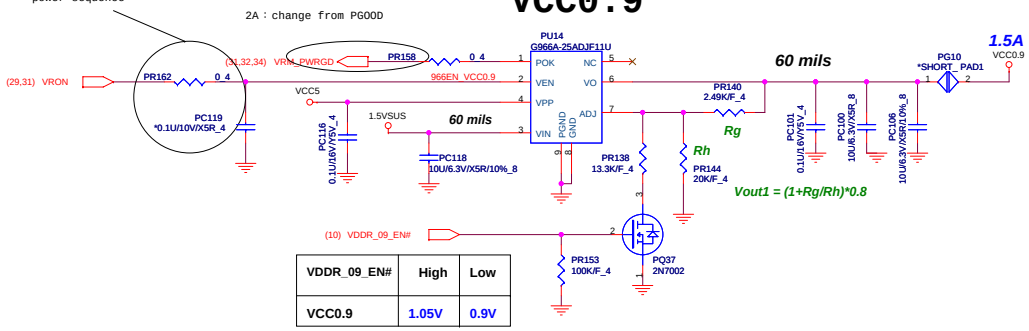
2A

M92	PR17=7.5K Ohm	VCC1.0=1.1V
Park Madison	PR17=4.99K Ohm	VCC1.0=1.0V

VCC0.9

1B：Bear mount for power sequence

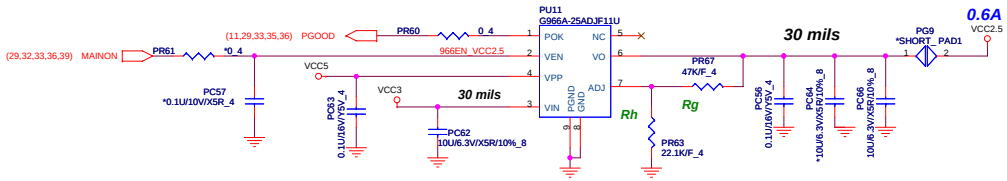
2A：change from PGOOD



Vout1 = (1+Rg/Rh)*0.8

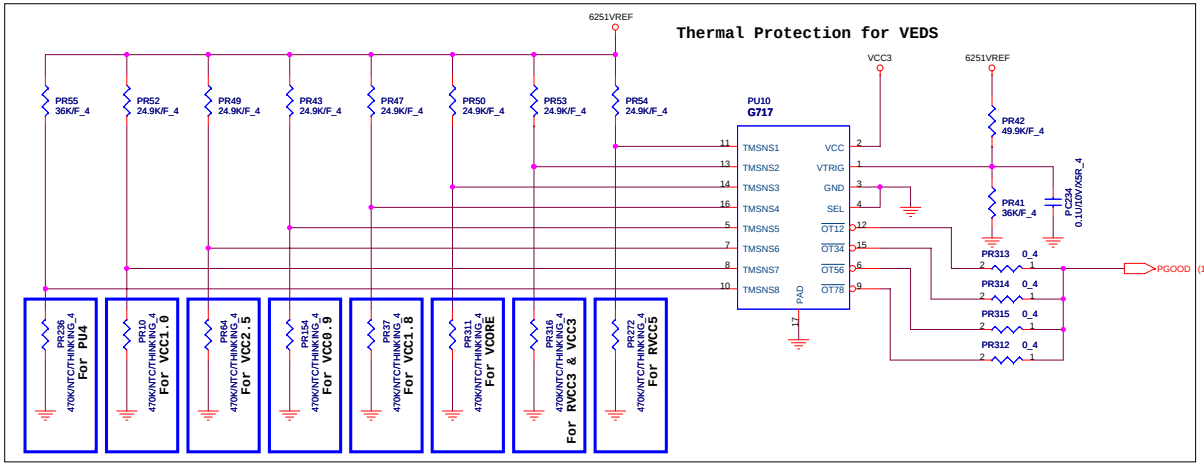
VDDR_09_EN#	High	Low
VCC0.9	1.05V	0.9V

VCC2.5



Vout1 = (1+Rg/Rh)*0.8

Thermal Protection for VEDS



1.Level 1 Environment-related Substances Should NEVER be Used.
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Size	Document Number	Rev
	VCC1.8/0.9/2.5/1.0	2A

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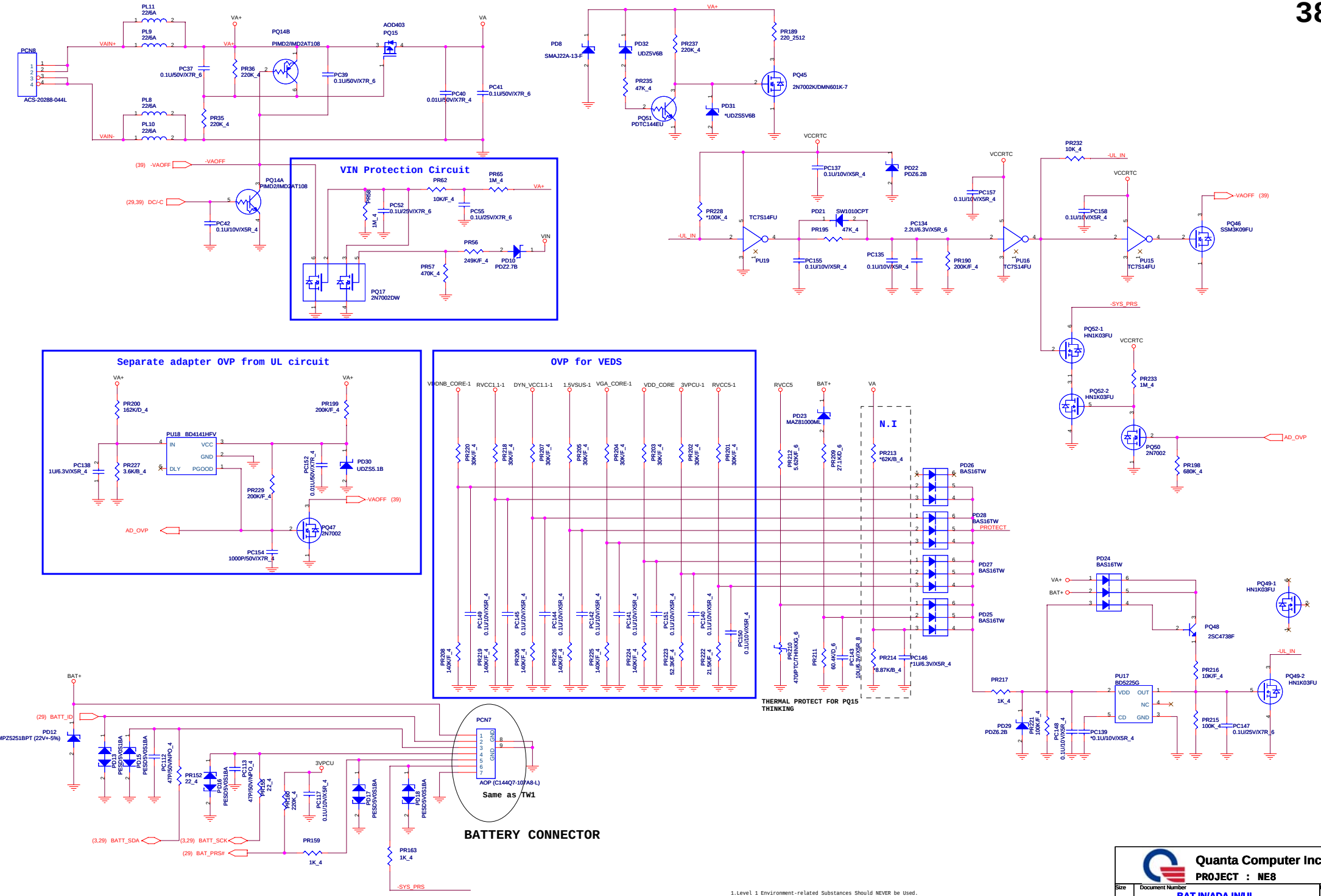

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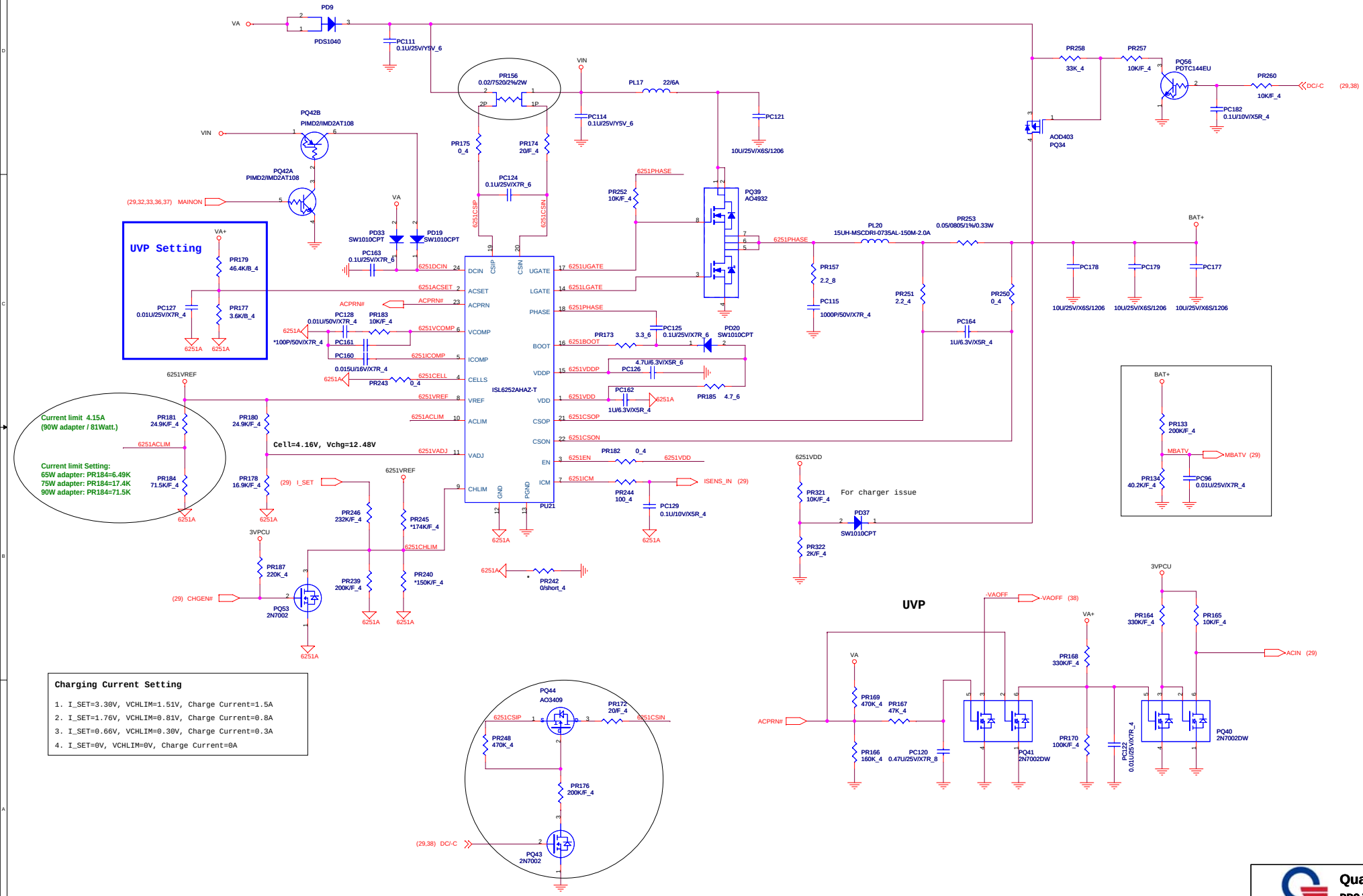
Size	Document Number	Rev
	BAT IN/ADA IN/UL	2A
Date: Wednesday, January 27, 2010	Sheet 38 of 42	



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Size	Document Number	Rev
	CHARGER(ISL6252A)	2A

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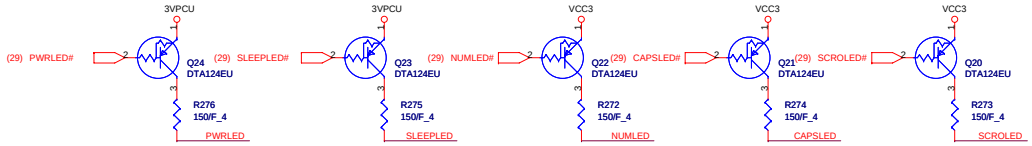
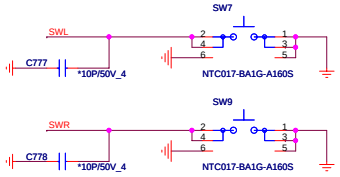
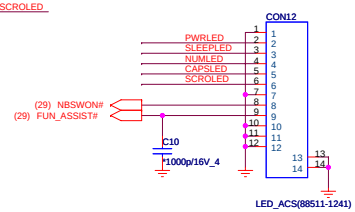
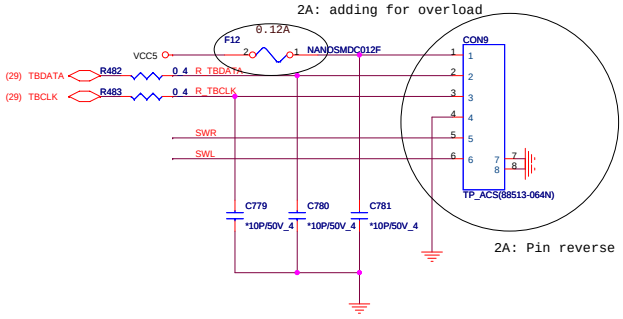
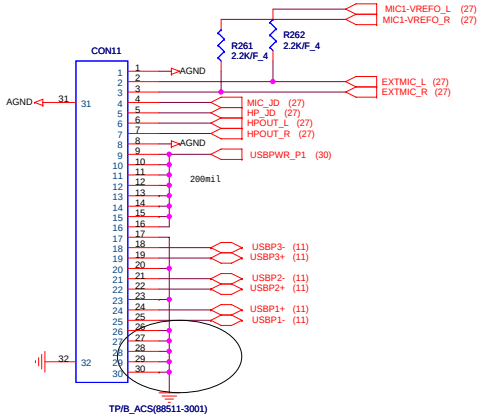
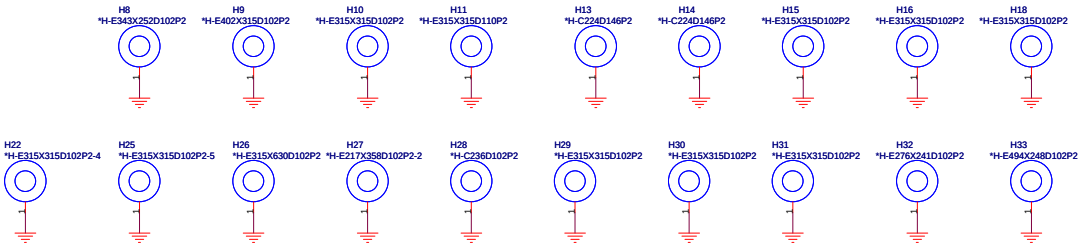






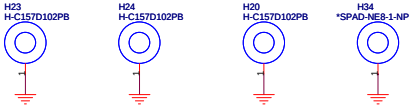






WLAN

BT



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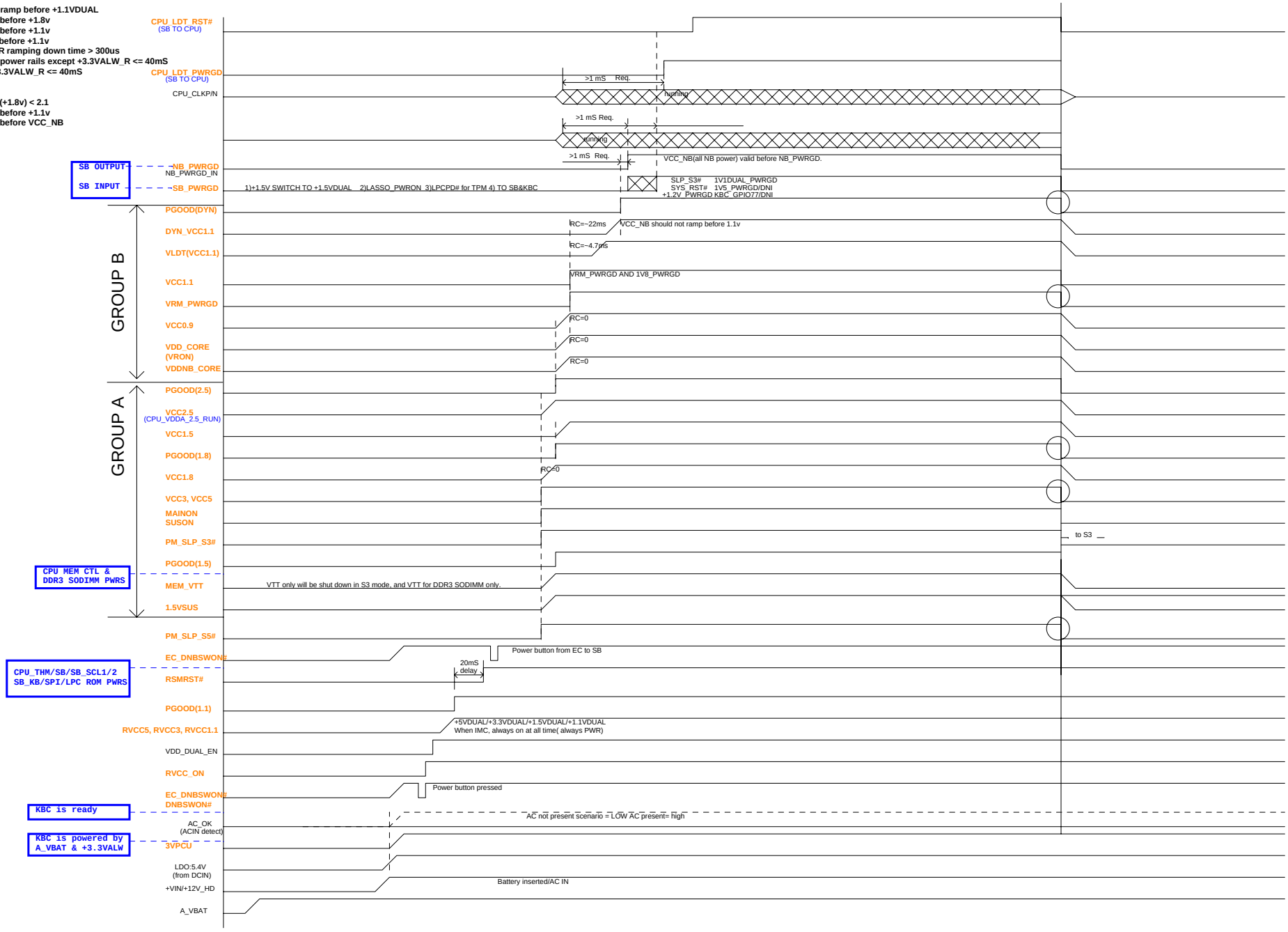
Power on Sequence required:

SB800:
1, +3.3VDUAL ramp before +1.1VDUAL
2, +3.3V ramp before +1.8v
3, +1.8V ramp before +1.1v
4, +3.3v ramp before +1.1v
5, +3.3VALW_R ramping down time > 300us
6, 50uS <= All power rails except +3.3VALW_R <= 40mS
7, 100uS <= +3.3VALW_R <= 40mS

RS880:
1, 0 <(+3.3V) - (+1.8v) < 2.1
2, +1.8V ramp before +1.1v
3. +1.1V ramp before VCC_NB



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2A Adding R159 (10K) for shut down issue.

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	Change History	2A
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