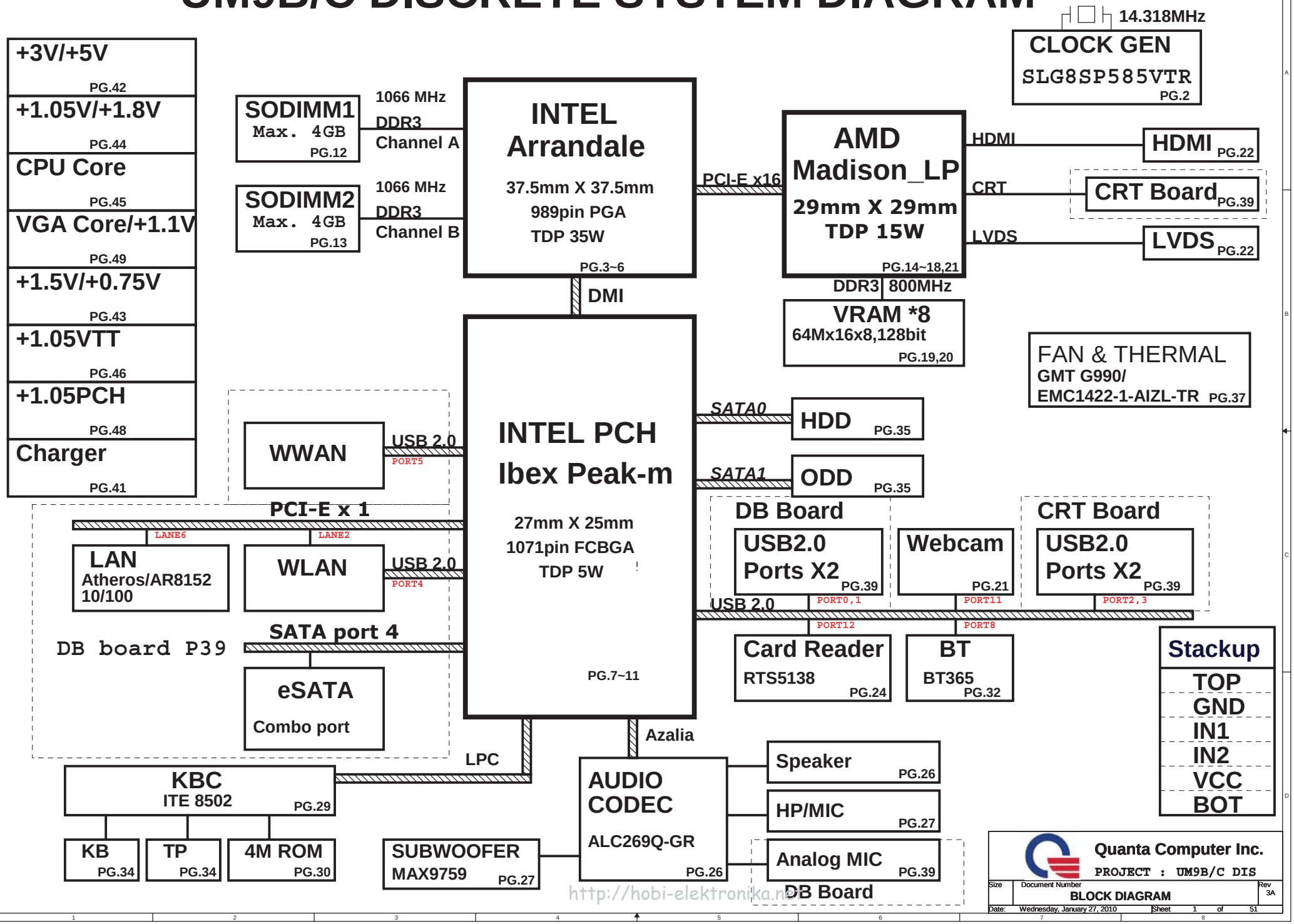
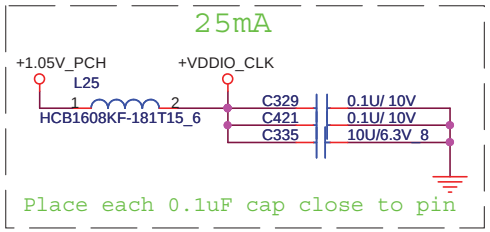
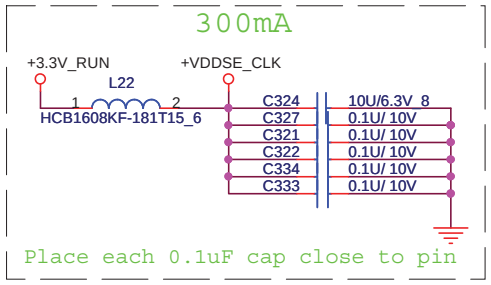
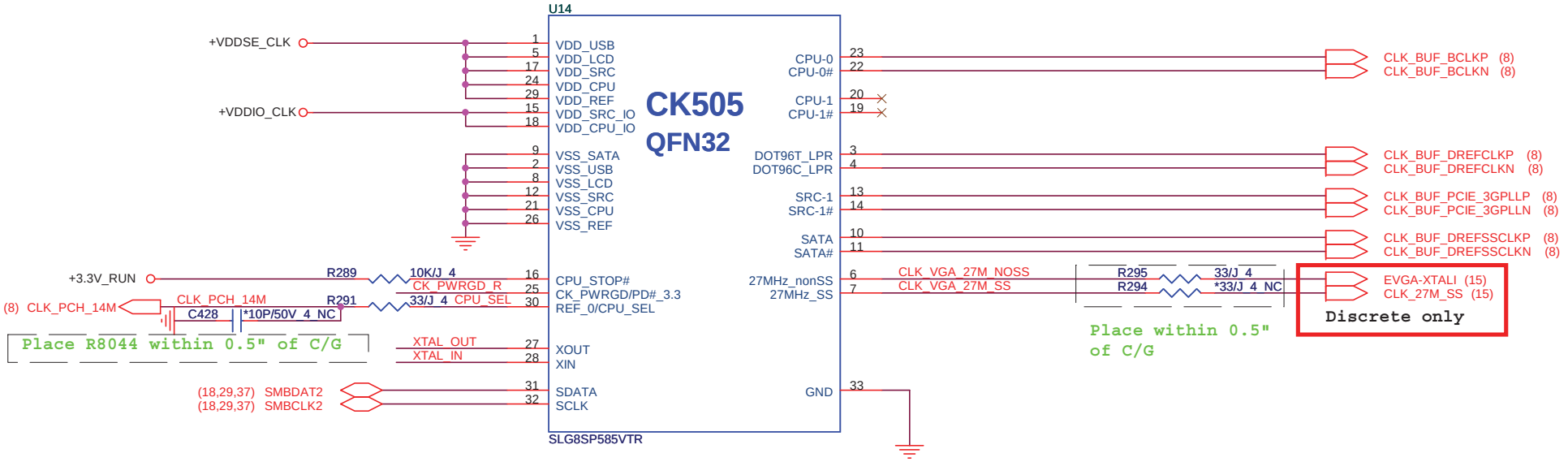
UM9B/C DISCRETE SYSTEM DIAGRAM

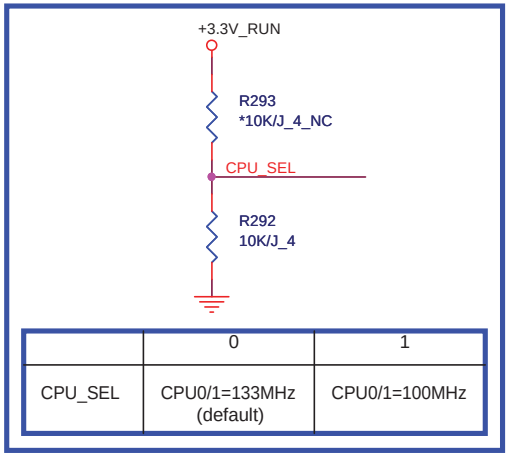


PDC (Power Cap quantities follow UM3)

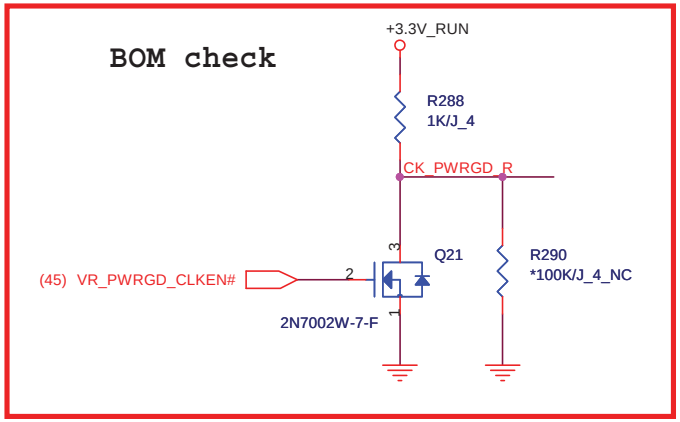


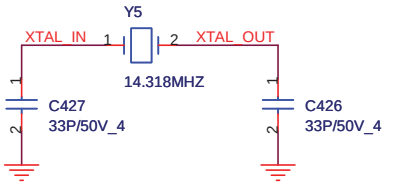






	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

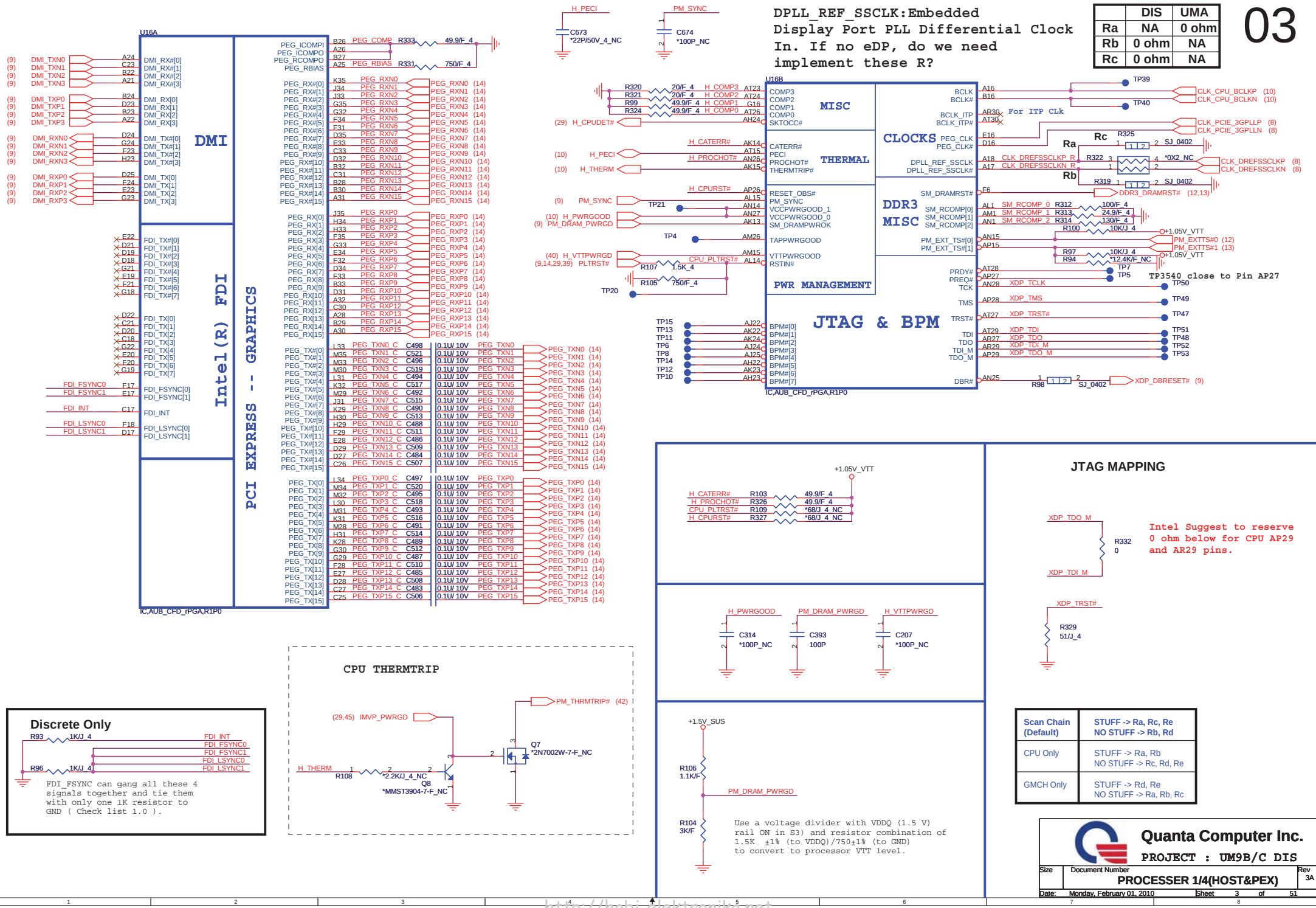




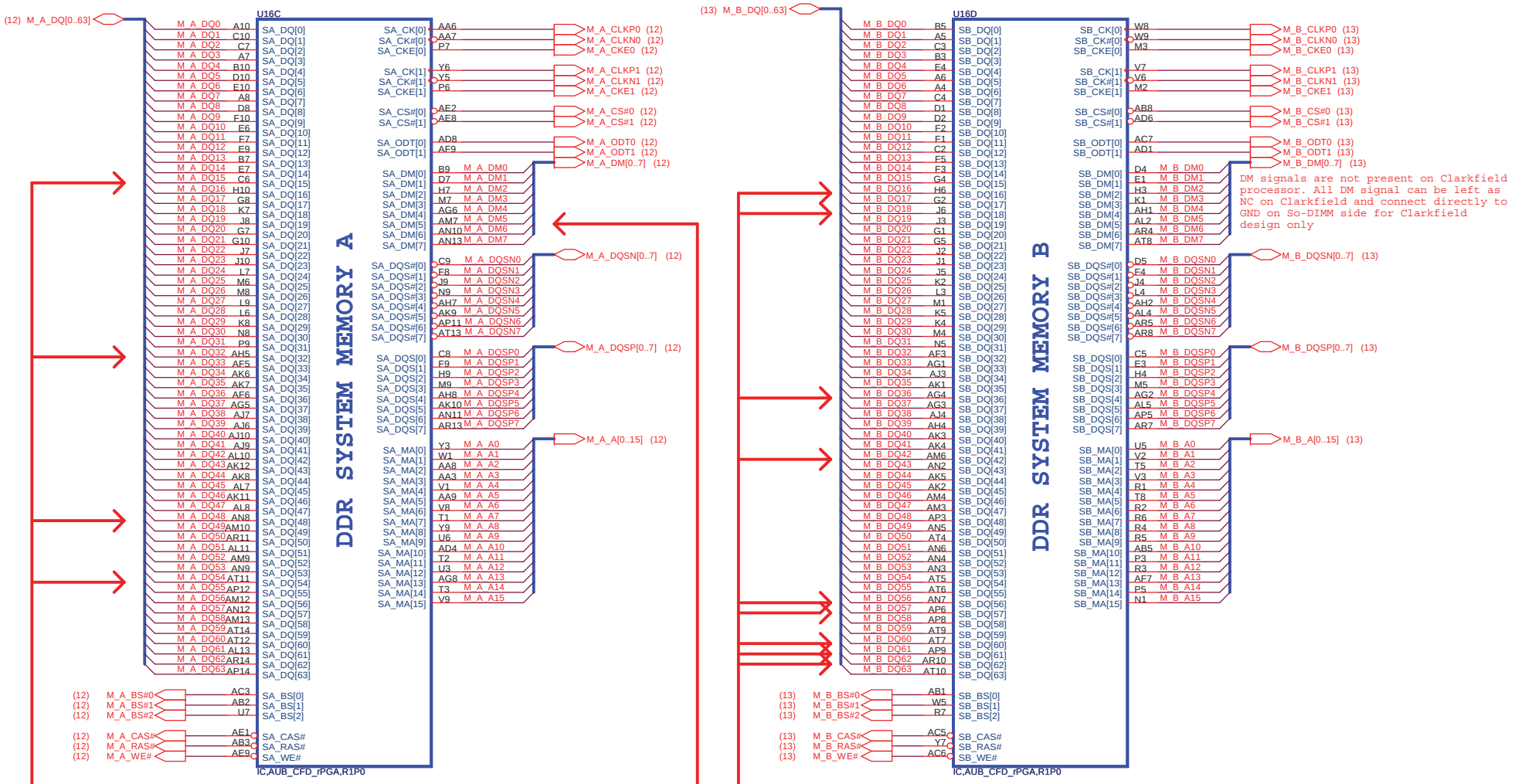
Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Clock Gen(9LRS3197)/HOLES	3A
Date: Monday, February 01, 2010	Sheet 2 of 51	



AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PROCESSER 2/4(DDR)	3A

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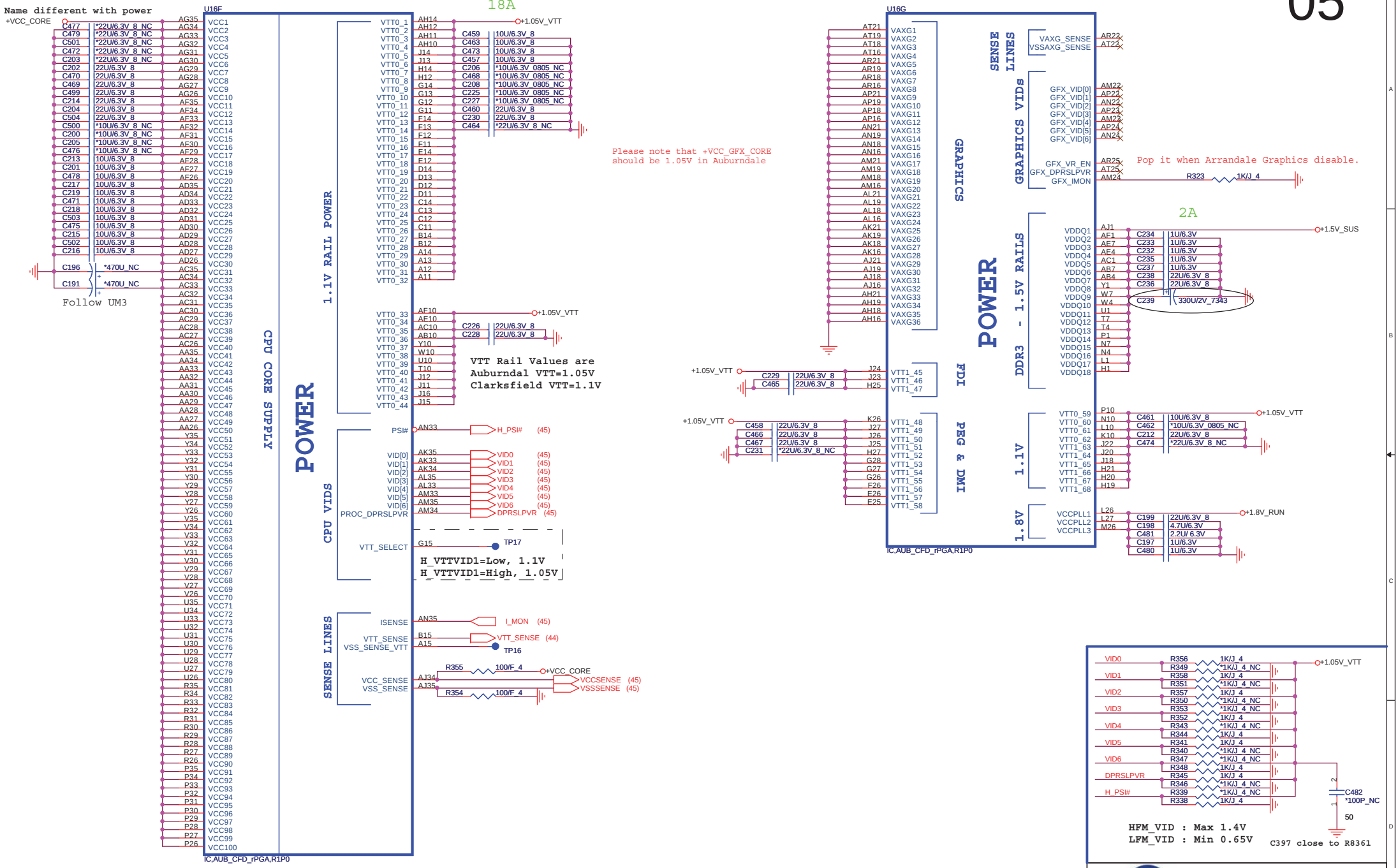

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PROCESSER 3/4(POWER)	3A
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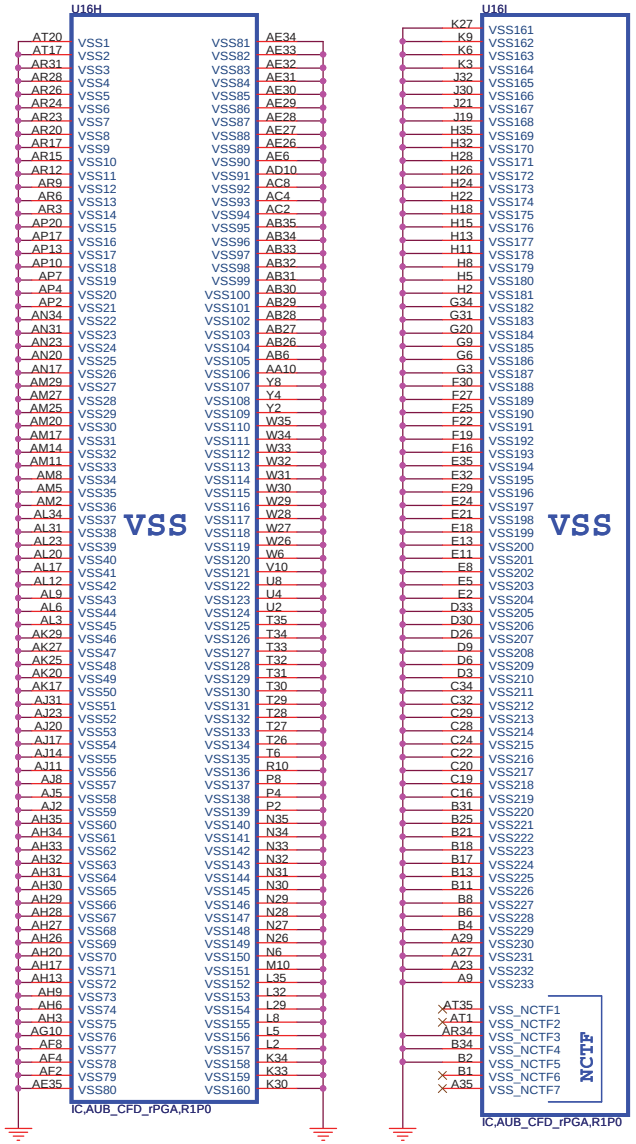
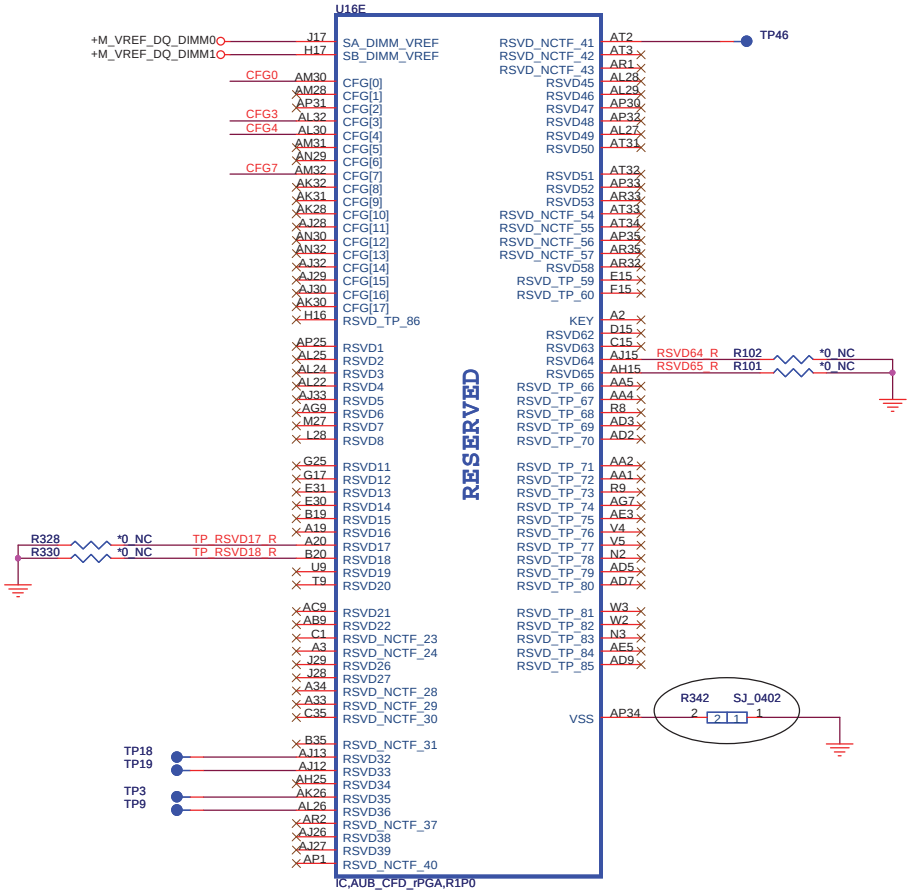
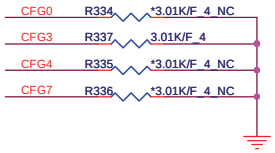
AUBURNDALE/CLARKSFIELD PROCESSOR (GND)



AUBURNDALE/CLARKSFIELD PROCESSOR(RESERVED, CFG)





The Clarkfield processor's PCI Express interface may not meet PCI Express 2.0 jitter specifications. Intel recommends placing a 3.01K +/- 5% pull down resistor to VSS on CFG[7] pin for both rPGA and BGA components. This pull down resistor should be removed when this issue is fixed.

	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed 15 -> 0 , 14 -> 1

For Discrete only

CFG[1:0] - PCI_Epress Configuration Select
* 11= 1 x 16 PEG
* 10= 2 x 8 PEG

Quanta Computer Inc.
PROJECT : UM9B/C DIS

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	PROCESSER 4/4 (GND)	3A

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INTVRMEN - Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs

DIS:Test pad T29 ~ T31 don't remove.

IBEX PEAK-M (HDA,JTAG,SATA)

U13A

Ibex-M 1 OF 10

RTC: RTCX1, RTCX2, RTCRST#, SRTCRST#, INTRUDER#, INTVRMEN

IHDA: HDA_BCLK, HDA_SYNC, HDA_RST#, HDA_SDIN0, HDA_SDIN1, HDA_SDIN2, HDA_SDIN3, HDA_SDO, HDA_DOCK_EN# / GPIO33 (+3V), HDA_DOCK_RST# / GPIO13 (+3V_S5)

JTAG: JTAG_TCK, JTAG_TMS, JTAG_TDI, JTAG_TDO, TRST#

SPI: SPI_CLK, SPI_CS0#, SPI_CS1#, SPI_MOSI, SPI_MISO

LPC: FWH0 / LAD0, FWH1 / LAD1, FWH2 / LAD2, FWH3 / LAD3, FWH4 / LFRAME#, LDRQ0#, (+3V) LDRQ1# / GPIO23, SERIRQ

SATA: SATA0RXN, SATA0RXP, SATA0TXN, SATA0TXP, SATA1RXN, SATA1RXP, SATA1TXN, SATA1TXP, SATA2RXN, SATA2RXP, SATA2TXN, SATA2TXP, SATA3RXN, SATA3RXP, SATA3TXN, SATA3TXP, SATA4RXN, SATA4RXP, SATA4TXN, SATA4TXP, SATA5RXN, SATA5RXP, SATA5TXN, SATA5TXP, SATAICOMPO, SATAICOMPI, SATALED#, (+3V) SATA0GP / GPIO21, (+3V_S5) SATA1GP / GPIO19

HDD: SATA_RXN0 (35), SATA_RXP0 (35), SATA_TXN0 (35), SATA_TXP0 (35)

ODD: SATA_RXN1 (35), SATA_RXP1 (35), SATA_TXN1 (35), SATA_TXP1 (35)

ESATA: SATA_RXN4 (39), SATA_RXP4 (39), SATA_TXN4 (39), SATA_TXP4 (39)

DG: Place TX cap close to connector

SATA port 2/3 are not support in HM55 .
They are only in PM 55

Distance between the PCH and cap on the "P" signal should be identical distace between the PCH and cap on the "N" signal for the same pair.

must add test point.

IbexPeak-M_Rev1_0

1205 The SATALED# signal is open-collector and requires a weak external pull-up (8.2 k to 10 k) to +V3.3.

iTPM ENABLE/DISABLE

From UM3

TPM Function	
Enable	Mount
Disable	NC (Default)

UMA CRT,LVDS&HDMI signals

IBEX PEAK-M (LVDS,DDI)

U13D

Ibex-M 4 OF 10

SDVO: SDVO_TVCLKINN, SDVO_TVCLKINP, SDVO_STALLN, SDVO_STALLP, SDVO_INTN, SDVO_INTP, SDVO_CTRLCLK, SDVO_CTRLDATA

Digital Display Interface

DISPLAY PORT B: DDPB_AUXN, DDPB_AUXP, DDPB_HPD, DDPB_0N, DDPB_0P, DDPB_1N, DDPB_1P, DDPB_2N, DDPB_2P, DDPB_3N, DDPB_3P

DISPLAY PORT C: DDPC_CTRLCLK, DDPC_CTRLDATA, DDPC_AUXN, DDPC_AUXP, DDPC_HPD, DDPC_0N, DDPC_0P, DDPC_1N, DDPC_1P, DDPC_2N, DDPC_2P, DDPC_3N, DDPC_3P

DISPLAY PORT D: DDPD_CTRLCLK, DDPD_CTRLDATA, DDPD_AUXN, DDPD_AUXP, DDPD_HPD, DDPD_0N, DDPD_0P, DDPD_1N, DDPD_1P, DDPD_2N, DDPD_2P, DDPD_3N, DDPD_3P

LVDS--A: L_BKLTEN, L_VDD_EN, L_BKLTCTL, L_DDC_CLK, L_DDC_DATA, L_CTRL_CLK, L_CTRL_DATA, LVD_IBG, LVD_VBG, LVD_VREFH, LVD_VREFL, LVDSA_CLK#, LVDSA_CLK, LVDSA_DATA#0, LVDSA_DATA#1, LVDSA_DATA#2, LVDSA_DATA#3, LVDSA_DATA0, LVDSA_DATA1, LVDSA_DATA2, LVDSA_DATA3

LVDS--B: LVDSB_CLK#, LVDSB_CLK, LVDSB_DATA#0, LVDSB_DATA#1, LVDSB_DATA#2, LVDSB_DATA#3, LVDSB_DATA0, LVDSB_DATA1, LVDSB_DATA2, LVDSB_DATA3

CRT: CRT_BLUE, CRT_GREEN, CRT_RED, CRT_DDC_CLK, CRT_DDC_DATA, CRT_HSYNC, CRT_VSYNC, DAC_IREF, CRT_IRTN

T30 PAD, T31 PAD, T29 PAD, LVDS_VBG

Sch check list 2.0 use 5% R

R198 1K/J_4 DAC_IREF

R8337 (IREF), UMA:0.5% , DIS:5%

IbexPeak-M_Rev1_0

JTAG_TDI, JTAG_TMS, TRST# Internal 20K PU. JTAG_TCK Internal 20K PD

+3.3V_SUS Res. of TDI near PCH

R269 *200_NC, R266 *200_NC, R263 *200_NC, R260 *20K_NC

PCH_JTAG_TMS, PCH_JTAG_TDI, PCH_JTAG_TDO, PCH_JTAG_RST#

R268 *100_NC, R265 *100_NC, R262 *100_NC, R259 *10K_NC

From UM3

Res. of TDO
PCH ES1 stage : NC
PCH ES2 stage : pop

NC all Res. when PCH is production stage.

Res. of RST#
PCH ES1 stage : pop
PCH ES2 stage : NC

From UM3

R271 51/J_4 PCH_JTAG_TCK_BUF

Note : Only pop when PCH is production stage & need "JTAG boundary Scan". Remember to depop XDP side Res.

For AUDIO

(26,29) ACZ_RST#_AUDIO
(26) ACZ_SDOUT_AUDIO
(26) ACZ_SYNC_AUDIO
(26) ACZ_BITCLK_AUDIO

R245 33/J_4 ACZ_RST#
R248 33/J_4 ACZ_SDOUT
C380 *10P/50V_4_NC
R247 33/J_4 ACZ_SYNC
C379 *10P/50V_4_NC
R246 33/J_4 ACZ_BITCLK
C378 10P/50V_4

+3.3V_RUN R200 *1K/J_4_NC ACZ_SPKR

No Reboot strap.	
SPKR	Low = Default. High = No Reboot.

RTC

1mA

+RTC_CELL

R231 20K/F_4 C372 1U/6.3V RTC_RST#

R237 20K/F_4 C394 1U/6.3V SRTC_RST#

R240 1M/J_4 SM_INTRUDER#

FM9, UM3 use 1%

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PCH 1/5 (SATA,HDA,LPC)	3A
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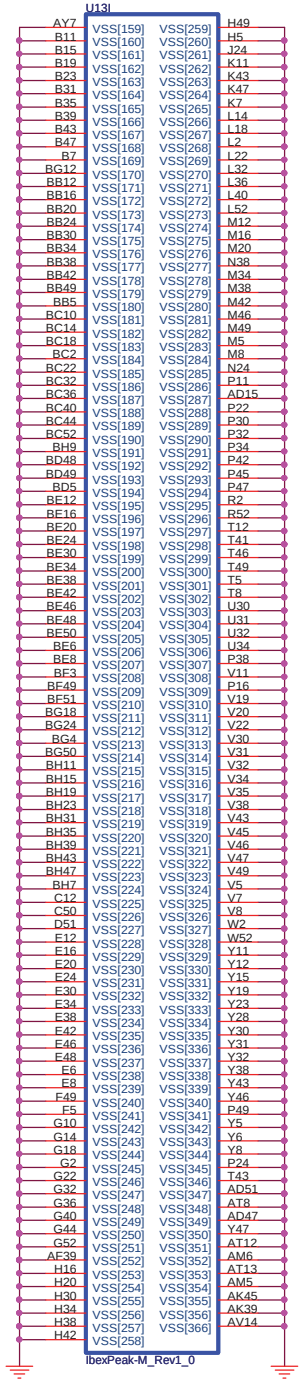
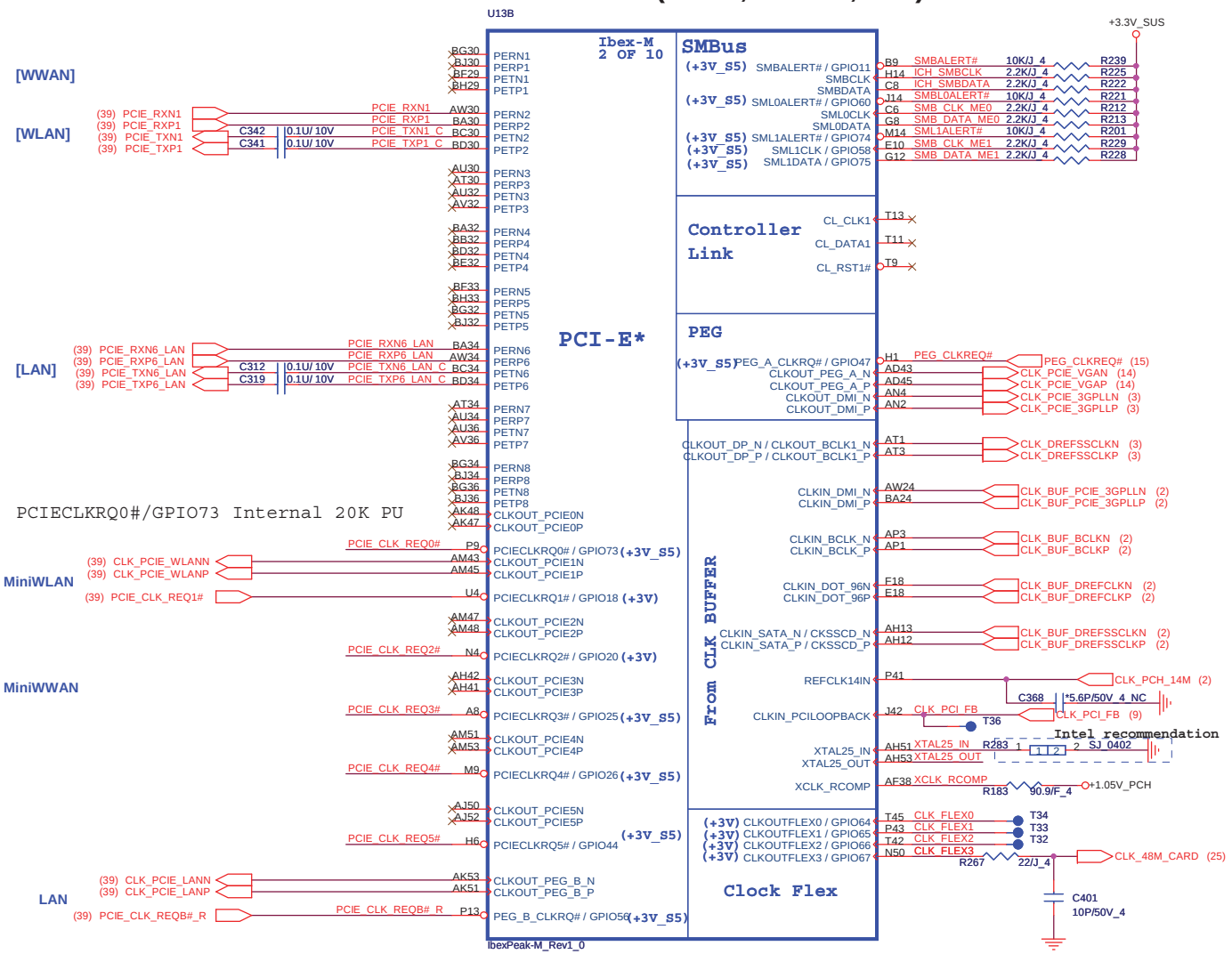
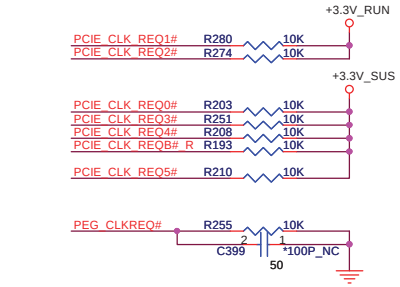
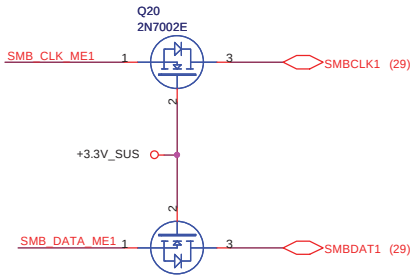
IBEX PEAK-M (GND)

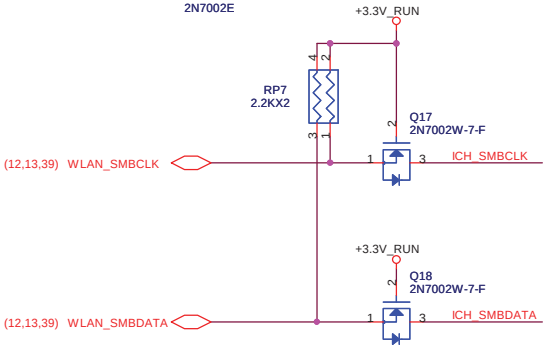


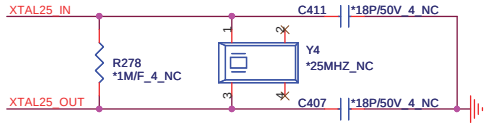
IBEX PEAK-M (PCI-E,SMBUS,CLK)











Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PCH 2/5 (PCIE, SMBUS, CK)	3A
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IBEX PEAK-M (PCI,USB,NVRAM)

IBEX PEAK-M (DMI,FDI,GPIO)

09

U13E — Ibex-M 5 OF 10

U13C — Ibex-M 3 OF 10

PCI

AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7 AD8 AD9 AD10 AD11 AD12 AD13 AD14 AD15 AD16 AD17 AD18 AD19 AD20 AD21 AD22 AD23 AD24 AD25 AD26 AD27 AD28 AD29 AD30 AD31

C/BE0# C/BE1# C/BE2# C/BE3#

PIRQA# PIRQB# PIRQC# PIRQD#

REQ0# REQ1# / GPIO50 (+5V) REQ2# / GPIO52 (+5V) REQ3# / GPIO54 (+5V)

GNT0# GNT1# / GPIO51 (+3V) GNT2# / GPIO53 (+3V) GNT3# / GPIO55 (+3V)

PIRQE# / GPIO2 (+5V) PIRQF# / GPIO3 (+5V) PIRQG# / GPIO4 (+5V) PIRQH# / GPIO5 (+5V)

PCIRST#

SERR# PERR#

IRDY# PAR DEVSEL# FRAME#

PLOCK#

STOP# TRDY#

PME#

PLTRST#

CLKOUT_PCI0 CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3 CLKOUT_PCI4

NVRAM

NV_CE#0 NV_CE#1 NV_CE#2 NV_CE#3

NV_DQS0 NV_DQS1

NV_DQ0 / NV_IO0 … NV_DQ15 / NV_IO15

NV_ALE NV_CLE

NV_RCOMP

NV_RB#

NV_WR#0_RE# NV_WR#1_RE#

NV_WE#_CK0 NV_WE#_CK1

USB

USBP0N/P … USBP13N/P

USBRBIAS# USBRBIAS

(+3V_S5) OC0# / GPIO59 … OC7# / GPIO14

USB #0 (eSATA) — USBP0- USBP0+ (39)

Right USB #1 — USBP1- USBP1+ (39)

Left USB #2 — USBP2- USBP2+ (39)

Left USB #3 — USBP3- USBP3+ (39)

WLAN — USBP4- USBP4+ (39)

WWAN — USBP5- USBP5+ (39)

BT — USBP8- USBP8+ (32)

Webcam — USBP11- USBP11+ (22)

Card Reader — USBP12- USBP12+ (25)

USB_BIAS R256 22.6/F_4

USB_OC0# … USB_OC7#

For Port0,1 For Port2,3

DMI

DMI0RXN DMI1RXN DMI2RXN DMI3RXN

DMI0RXP DMI1RXP DMI2RXP DMI3RXP

DMI0TXN DMI1TXN DMI2TXN DMI3TXN

DMI0TXP DMI1TXP DMI2TXP DMI3TXP

DMI_ZCOMP DMI_IRCOMP

FDI

FDI_RXN0 … FDI_RXN7

FDI_RXP0 … FDI_RXP7

FDI_INT FDI_FSYNC0 FDI_FSYNC1 FDI_LSYNC0 FDI_LSYNC1

System Power Management

SYS_RESET# SYS_PWROK PWROK MEPWROK

LAN_RST# DRAMPWROK RSMRST# PWRBTN# RI# WAKE# PMSYNCH

SLP_S3# SLP_S4# SLP_M# TP23

(+3V_S5) SUS_PWR_DN_ACK / GPIO30

(+3V_S5) ACPRESENT / GPIO31

(+3V) CLKRUN# / GPIO32

(+3V_S5) SUS_STAT# / GPIO61

(+3V_S5) SUSCLK / GPIO62

(+3V_S5) SLP_S5# / GPIO63

(+3V_S5) BATLOW# / GPIO72

(+3V_S5) SLP_LAN# / GPIO29

BATLOW#/GPIO72 Internal PU 20K

RP8 8.2KX8: PCI_IRDY# PCI_STOP# PCI_PIRQA# PCI_PIRQC# PCI_PIRQD# PCI_SERR# REQ1# PCI_FRAME# +3.3V_RUN

RP6 8.2KX8: USB_OC3# USB_OC6# USB_OC0# USB_OC7# USB_OC2# USB_OC5# USB_OC1# USB_OC4# +3.3V_SUS

RP9 8.2KX8: PCI_PLOCK# PCI_TRDY# INTH# PCI_DEVSEL# PCI_PERR# USB_MCARD1_DET# REQ0# PCI_PIRQB# +3.3V_RUN

REQ2# R217 8.2K/J_4 · PIRQE# R242 8.2K/J_4 · PIRQF# R264 8.2K/J_4 · BT_DET# R241 8.2K/J_4

(39) USB_MCARD1_DET# — USB_MCARD1_DET#

(32) BT_DET# — BT_DET# — INTH#

TP24 — BT_DET# — C664 *100P_NC

(39) CLK_33M_LPC — R270 22/J_4 — CLK_33M_LPC_R

(29) CLK_33M_KBC — R261 22/J_4 — CLK_33M_KBC_R

(8) CLK_PCI_FB — R273 22/J_4 — CLK_PCI_FB_R

TP22

PCH_PWROK — C392 100P

+1.05V_PCH — R178 49.9/F_4 — DMI_COMP

(3) XDP_DBRESET# — TP30 — R234 SJ_0402 — (29) ECPWROK — PCH_PWROK

TP31 — RSV_ICH_LAN_RST#

(3) PM_DRAM_PWRGD — RSMRST# — TP33

(29) PM_PWRBTN#_R

PM_RI# — (39) PCIE_WAKE# — (3) PM_SYNC

+3.3V_RUN

CLKRUN# R285 8.2K/J_4 — XDP_DBRESET# R194 10K/J_4

RSMRST# R236 10K/J_4 — RSV_ICH_LAN_RST# R250 10K/J_4 — PCH_PWROK R249 10K/J_4

+3.3V_SUS

PM_RI# R232 10K/J_4 — PM_BATLOW# R252 10K/J_4 — PCIE_WAKE# R220 1K/J_4

SUS_PWR_ACK R272 10K/J_4 — AC_PRESENT R204 10K/J_4

Sch check list R2.0 :WAKE# use 10K

DMI Termination Voltage

NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH

+1.8V_RUN

NV_ALE R182 *1K_NC

NV_CLE R181 *1K_NC

Danbury Technology Enabled

NV_ALE	High = Enable Low = Disable

CLKOUT_PCI[0..4]:
22 ohm series resistor is recommend
(single & double load) on PDG v1.1

Reserve capacitor pads for improving WWAN.

CLK_33M_KBC — C400 10P/50V_4

CLK_33M_LPC — C402 10P/50V_4

GNT0# R206 *1K/J_4_NC

GNT1# R211 *1K/J_4_NC

GNT3# R258 *1K/J_4_NC

Boot BIOS Strap

PCI_GNT0#	GNT#1	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

A16 swap override Strap/Top-Block Swap Override jumper

GNT3#	Low = A16 swap override/Top-Block Swap Override enabled High = Default

Check

+3.3V_SUS — U12 *MC74VHC1G08DFT2G_NC — C375 *0.1U/10V_NC

PLT_RST-R# — R214 100K_4 — R230 *100K_4_NC — PLTRST# (3,14,29,39)

R224 SJ_0402

Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PCH 3/5 (PCI,ONFI,USB,DMI)	3A

Date: Monday, February 01, 2010 Sheet 9 of 51

IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

IBEX PEAK-M (GND)

U13F — Ibex-M 6 OF 10

GPIO MISC

CPU

RSVD

NCTF

PCH_GPIO0 — Y3 — BMBUSY# / GPIO0 (+3V)
(29) SIO_EXT_SMI# — C38 — TACH1 / GPIO1 (+3V)
(29) SIO_EXT_SCI# — D37 — TACH2 / GPIO6 (+3V)
(29) SIO_EXT_WAKE# — J32 — TACH3 / GPIO7 (+3V)
TP27 — PCH_GPIO8 — F10 — GPIO8 (+3V_S5)
LAN_PHY_PWR_CTRL — K9 — LAN_PHY_PWR_CTRL / GPIO12 (+3V_S5)
(27) TEST_WOOFER_EN — TEST_WOOFER_EN — T7 — GPIO15 (+3V_S5)
SATA4GP — AA2 — SATA4GP / GPIO16 (+3V)
(39) PCIE_MCARD1_DET# — R215 — SJ_0402 — PCIE_MCARD1_DET# R — F38 — TACH0 / GPIO17 (+3V)
PCIE_MCARD2_DET#, If WWAN have issue check this
PCIE_MCARD2_DET# — Y7 — SCLOCK / GPIO22 (+3V)
R189 — *10K_4_NC — GPIO27 — AB12 — GPIO27 (+3V_S5)
GPIO27 reserve for internal VR.
TP_PCH_GPIO28 — V13 — GPIO28 (+3V_S5)
SATA2GP — AB7 — SATA2GP / GPIO36 (+3V)
SATA3GP — AB13 — SATA3GP / GPIO37 (+3V)
(32) BT_RADIO_DIS# — BT_RADIO_DIS# — P3 — SDATAOUT0 / GPIO39 (+3V)
GPIO46 — F1 — PCIECLKRQ7# / GPIO46 (+3V_S5)
(39) WWAN_RADIO_DIS# — WWAN_RADIO_DIS# — AB6 — SDATAOUT1 / GPIO48 (+3V)
(29) CRIT_TEMP_REP# — CRIT_TEMP_REP# — AA4 — SATA5GP / GPIO49 (+3V)
GPIO24 register not cleared by CF9h reset event.
GPIO45 — H10 — GPIO24 (+3V_S5)
VGA_TYPE — H3 — PCIECLKRQ6# / GPIO45 (+3V_S5)
(39) USB_MCARD2_DET# — F8 — GPIO57 (+3V_S5)
GPIO35 — M11 — STP_PCI# / GPIO34 (+3V)
(39) WLAN_RADIO_DIS# — V6 — SATACLKREQ# / GPIO35 (+3V)
WLAN_RADIO_DIS# — V3 — SLOAD / GPIO38 (+3V)

CLKOUT_PCIE6N — AH45
CLKOUT_PCIE6P — AH46
CLKOUT_PCIE7N — AF48
CLKOUT_PCIE7P — AF47
A20GATE — U2 — GATEA20 (29)
CLKOUT_BCLK0_N/CLKOUT_PCIE8N — AM3 — CLK_CPU_BCLKN (3)
CLKOUT_BCLK0_P/CLKOUT_PCIE8P — AM1 — CLK_CPU_BCLKP (3)
PECI — BG10 — H_PECI (3)
RCIN# — T1 — RCIN# (29)
PROCPWRGD — BE10 — H_PWRGOOD (3)
THRMTRIP# — BD10 — PCH_THRMTRIP# R — R179 56/J_4 — H_THERM (3)
+1.05V_VTT — R180 56/J_4

TP1 BA22, TP2 AW22, TP3 BB22, TP4 AY45, TP5 AY46, TP6 AV43, TP7 AV45, TP8 AF13, TP9 M18, TP10 N18, TP11 AJ24, TP12 AK41, TP13 AK42, TP14 M32, TP15 N32, TP16 M30, TP17 N30, TP18 H12, TP19 AA23, NC_1 AB45, NC_2 AB36, NC_3 AB42, NC_4 AB41, NC_5 T39, INIT3_3V# P6, TP24 C10

H_THERM — C663 *100P_NC

A4 VSS_NCTF_1, A49 VSS_NCTF_2, A5 VSS_NCTF_3, A50 VSS_NCTF_4, A52 VSS_NCTF_5, A53 VSS_NCTF_6, B2 VSS_NCTF_7, B4 VSS_NCTF_8, B52 VSS_NCTF_9, B53 VSS_NCTF_10, BE1 VSS_NCTF_11, BE53 VSS_NCTF_12, BF1 VSS_NCTF_13, BF53 VSS_NCTF_14, BH1 VSS_NCTF_15
VSS_NCTF_16 BH2, VSS_NCTF_17 BH52, VSS_NCTF_18 BH53, VSS_NCTF_19 BJ1, VSS_NCTF_20 BJ2, VSS_NCTF_21 BJ4, VSS_NCTF_22 BJ49, VSS_NCTF_23 BJ5, VSS_NCTF_24 BJ50, VSS_NCTF_25 BJ52, VSS_NCTF_26 BJ53, VSS_NCTF_27 D1, VSS_NCTF_28 D2, VSS_NCTF_29 D53, VSS_NCTF_30 E1, VSS_NCTF_31 E53

IbexPeak-M_Rev1_0

U13H

VSS[0] AB16, VSS[1] AA19, VSS[2] AA20, VSS[3] AA22, VSS[4] AM19, VSS[5] AA24, VSS[6] AA26, VSS[7] AA28, VSS[8] AA30, VSS[9] AA31, VSS[10] AA32, VSS[11] AB11, VSS[12] AB15, VSS[13] AB23, VSS[14] AB30, VSS[15] AB31, VSS[16] AB32, VSS[17] AB39, VSS[18] AB43, VSS[19] AB47, VSS[20] AB5, VSS[21] AB8, VSS[22] AC2, VSS[23] AC52, VSS[24] AD11, VSS[25] AD12, VSS[26] AD16, VSS[27] AD23, VSS[28] AD30, VSS[29] AD31, VSS[30] AD32, VSS[31] AD34, VSS[32] AU22, VSS[33] AD42, VSS[34] AD46, VSS[35] AD49, VSS[36] AD7, VSS[37] AE2, VSS[38] AE4, VSS[39] AE12, VSS[40] Y13, VSS[41] AH49, VSS[42] AU4, VSS[43] AE35, VSS[44] AP13, VSS[45] AN34, VSS[46] AF45, VSS[47] AF46, VSS[48] AF49, VSS[49] AF5, VSS[50] AF8, VSS[51] AG2, VSS[52] AG52, VSS[53] AH11, VSS[54] AH15, VSS[55] AH16, VSS[56] AH24, VSS[57] AH32, VSS[58] AV18, VSS[59] AH43, VSS[60] AH47, VSS[61] AH7, VSS[62] AJ19, VSS[63] AJ2, VSS[64] AJ20, VSS[65] AJ22, VSS[66] AJ23, VSS[67] AJ26, VSS[68] AJ28, VSS[69] AJ32, VSS[70] AJ34, VSS[71] AT5, VSS[72] AJ4, VSS[73] AK12, VSS[74] AM41, VSS[75] AN19, VSS[76] AK26, VSS[77] AK22, VSS[78] AK23, VSS[79] AK28
VSS[80] AK30, VSS[81] AK31, VSS[82] AK32, VSS[83] AK34, VSS[84] AK35, VSS[85] AK38, VSS[86] AK43, VSS[87] AK46, VSS[88] AK49, VSS[89] AK5, VSS[90] AK8, VSS[91] AL2, VSS[92] AL52, VSS[93] AM11, VSS[94] BB44, VSS[95] AD24, VSS[96] AM20, VSS[97] AM22, VSS[98] AM24, VSS[99] AM26, VSS[100] AM28, VSS[101] BA42, VSS[102] AM30, VSS[103] AM31, VSS[104] AM32, VSS[105] AM34, VSS[106] AM35, VSS[107] AM38, VSS[108] AM39, VSS[109] AM42, VSS[110] AU20, VSS[111] AM46, VSS[112] AV22, VSS[113] AM49, VSS[114] AM7, VSS[115] AA50, VSS[116] BB10, VSS[117] AN32, VSS[118] AN50, VSS[119] AN52, VSS[120] AP12, VSS[121] AP42, VSS[122] AP46, VSS[123] AP49, VSS[124] AP5, VSS[125] AP8, VSS[126] AR2, VSS[127] AR52, VSS[128] AT11, VSS[129] BA12, VSS[130] AH48, VSS[131] AT32, VSS[132] AT36, VSS[133] AT41, VSS[134] AT47, VSS[135] AT7, VSS[136] AV12, VSS[137] AV16, VSS[138] AV20, VSS[139] AV24, VSS[140] AV30, VSS[141] AV34, VSS[142] AV38, VSS[143] AV42, VSS[144] AV46, VSS[145] AV49, VSS[146] AV5, VSS[147] AV8, VSS[148] AW14, VSS[149] AW18, VSS[150] AW2, VSS[151] BF9, VSS[152] AW32, VSS[153] AW36, VSS[154] AW40, VSS[155] AW52, VSS[156] AY11, VSS[157] AY43, VSS[158] AY47

IbexPeak-M_Rev1_0

+3.3V_RUN

RCIN# R279 10K_4
GATEA20 R277 10K_4
BT_RADIO_DIS# R275 10K_4
SATA2GP R188 10K_4
SATA3GP R186 10K_4
SATA4GP R286 10K_4
PCIE_MCARD1_DET# R R216 10K_4
PCIE_MCARD2_DET# R195 10K_4
SIO_EXT_SMI# R243 10K_4
SIO_EXT_SCI# R244 10K_4
SIO_EXT_WAKE# R196 10K_4
WLAN_RADIO_DIS# R282 10K_4
CRIT_TEMP_REP# R287 10K_4
USB_MCARD2_DET# R207 10K_4

+3.3V_SUS

TEST_WOOFER_EN R202 10K_4
PCH_GPIO8 R219 *10K_4_NC
TP_PCH_GPIO28 R190 10K_4
GPIO46 R253 10K_4
GPIO45 R254 10K_4
LAN_PHY_PWR_CTRL R209 10K_4

VGA Strap

+3.3V_SUS
Madison — R223 *10K_4_NC — VGA_TYPE
Park — R218 10K_4
Check ....

R199 — 10K_4 — GPIO35

GPIO[7,6,1,17], PCIECLKRQ6#/GPIO45, GPIO28 Internal 20K PU

+3.3V_RUN
PCH_GPIO0 R284 10K_4
WWAN_RADIO_DIS# R192 10K_4

BMBUSY#:(Intel feedback)
Follow CRB checklist, 1K is for intel BIOS validation purpose.

BMBUSY#:
If not used, require a weak pull-up (8.2~KΩ to 10 kΩ) to Vcc3_3.
CRB(V1.0)P28: it has 1K PU and 100 ohm on this net for validation purpose.

WWAN_RADIO_DIS#	1-X High = Strong (Default)

Flash Descriptor Security Override

GPIO33	Low = Enabled High = Disabled

(7,29) PCH_MELOCK — R197 — *1K/J_4_NC

(Internal 20K/F pull high to +3.3V_RUN)

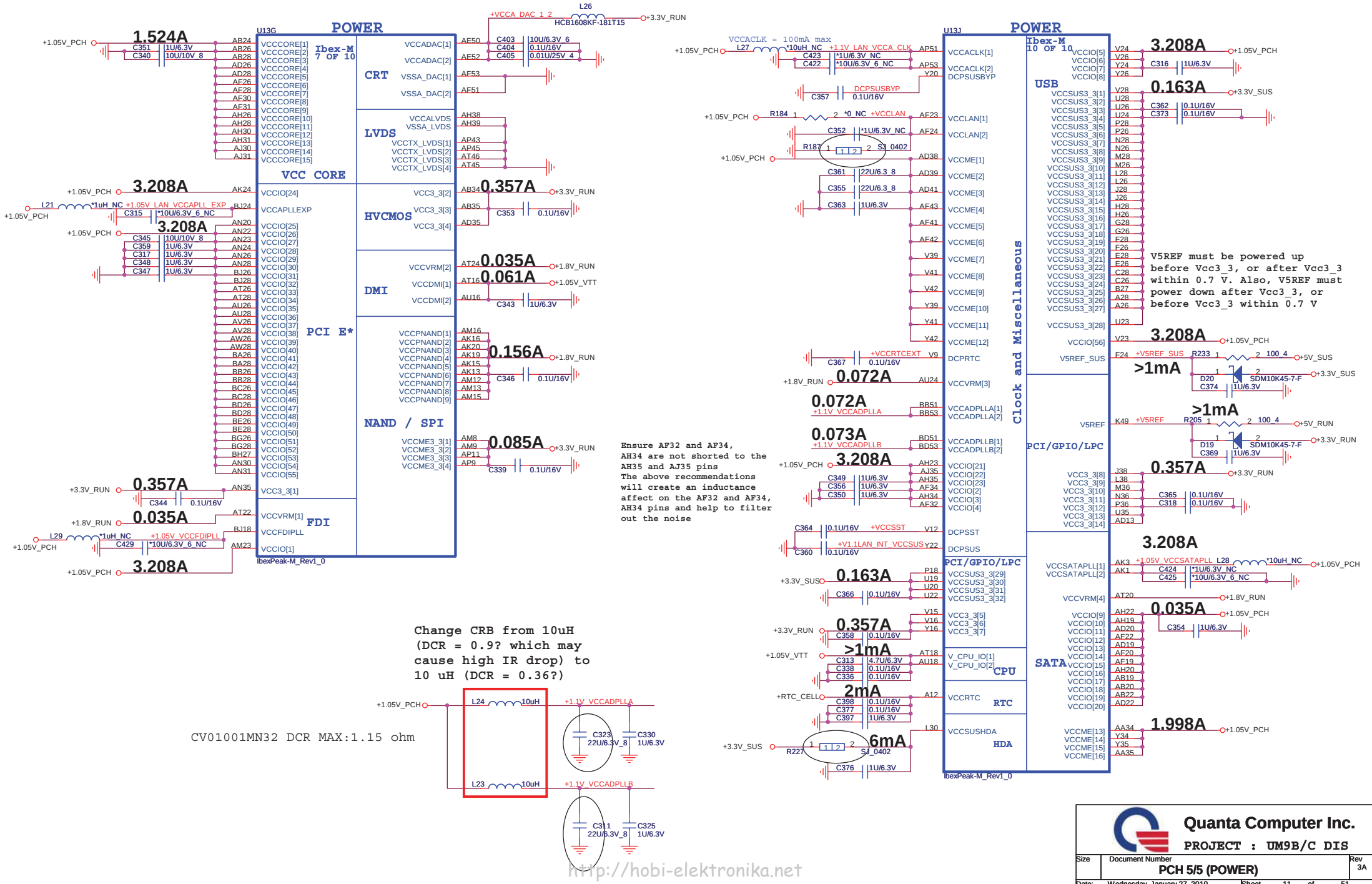
Note : GPIO33 is a signal used for Flash Descriptor Security Override/ME Debug Mode.This signal should be only asserted lowthrough an external pull-down in manufacturing or debug environments ONLY.

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PCH 4/5 (GPIO & Strap)	3A

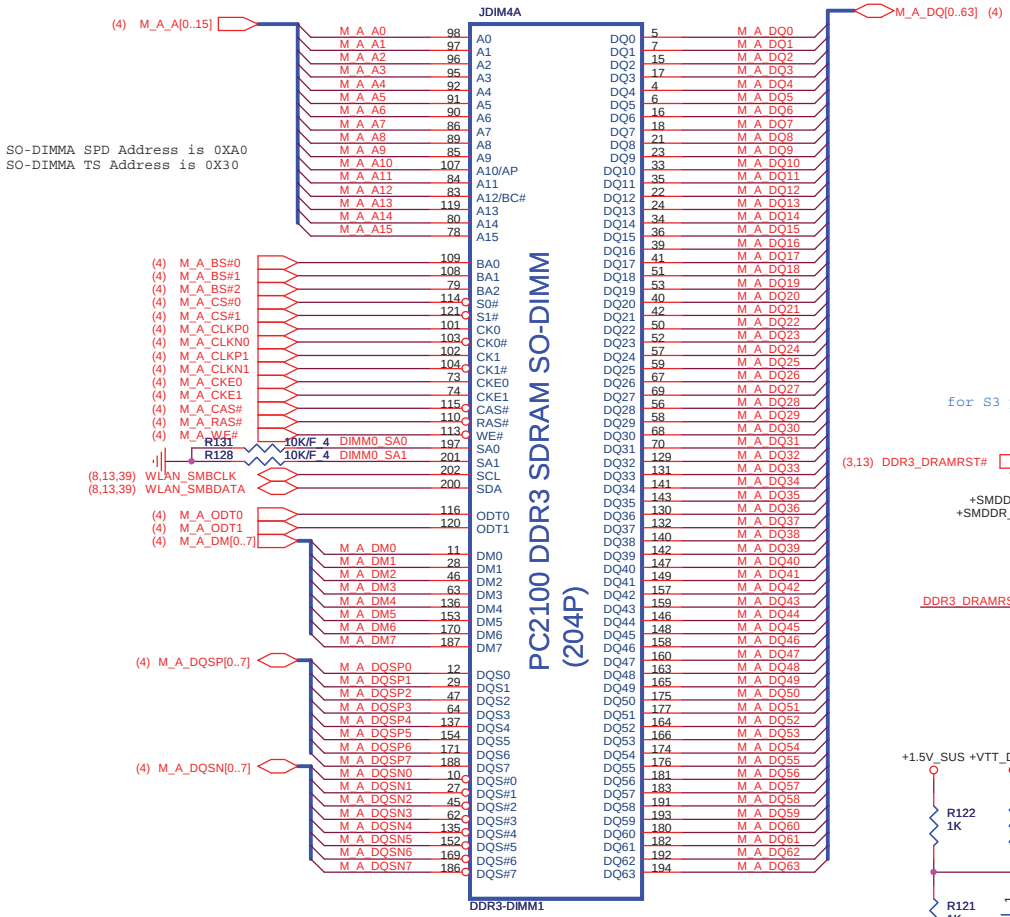
Date: Monday, February 01, 2010 Sheet 10 of 51

Cap quantities follow UM3

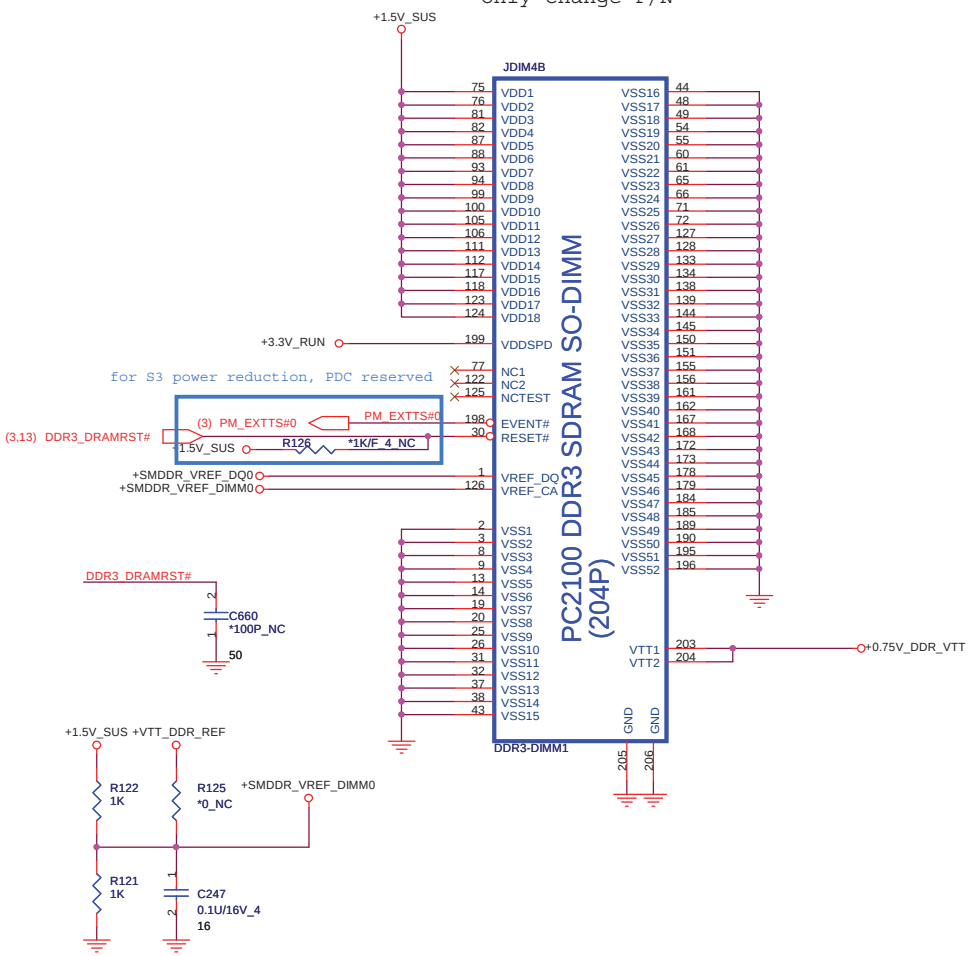


Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: PCH 5/5 (POWER)	Rev: 3A
Date: Wednesday, January 27, 2010	Sheet 11 of 51	

Only change P/N

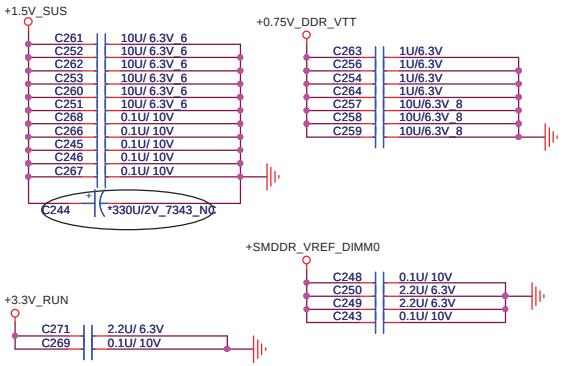


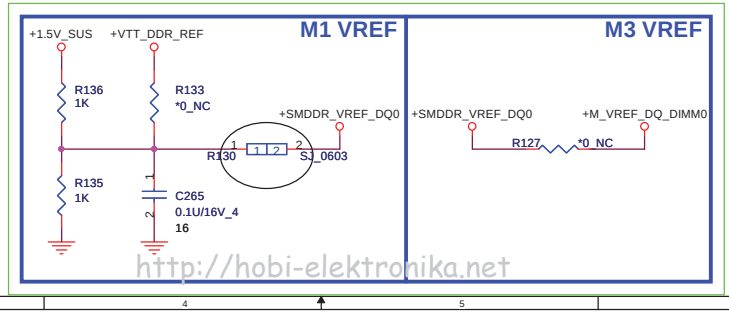
Only change P/N



Place these Caps near So-Dimm0.

Some Projects replace 10UF 0805 by 4.7UF 0603
It can cost down 30%



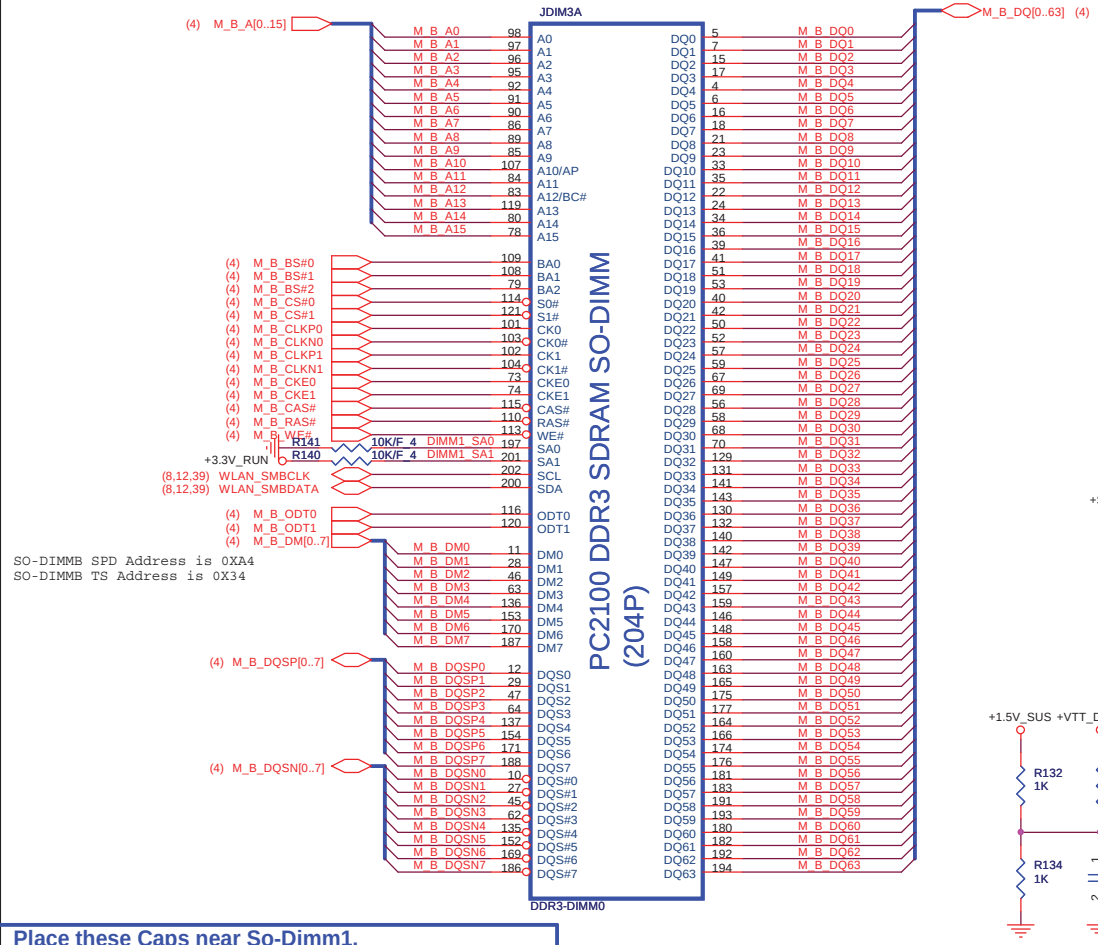


Quantities and M1/M3 follow UM3
Locations follow PDC

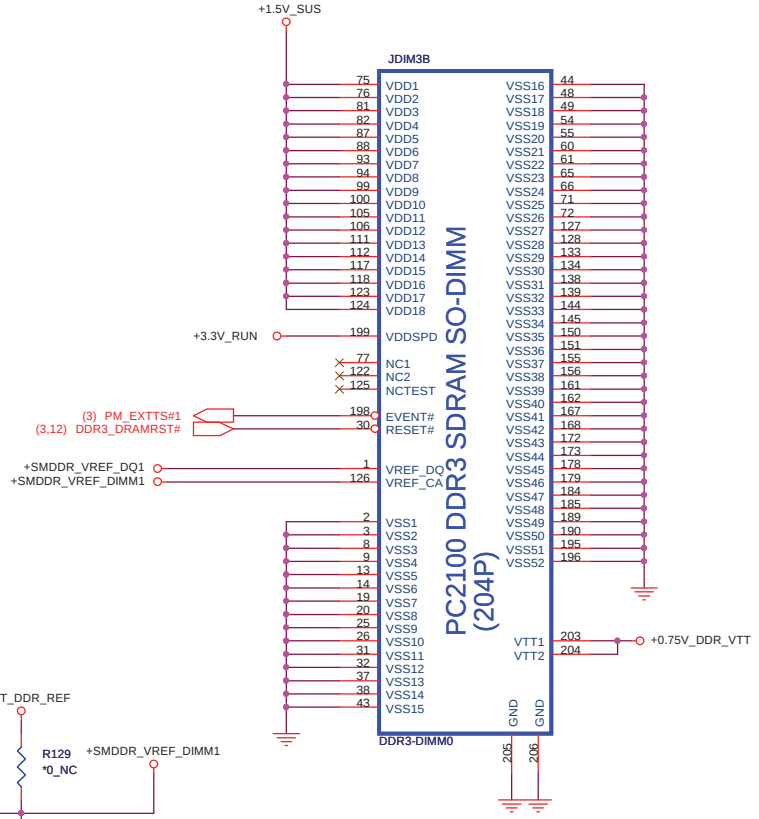
Quanta Computer Inc.
PROJECT : UM9B/C DIS

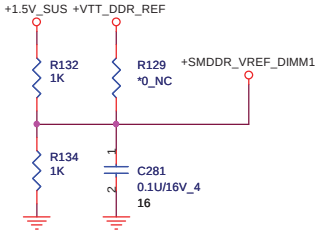
Size	Document Number	Rev
	DDR3 DIMM-0	3A
Date: Monday, February 01, 2010	Sheet 12 of 51	

Only change P/N



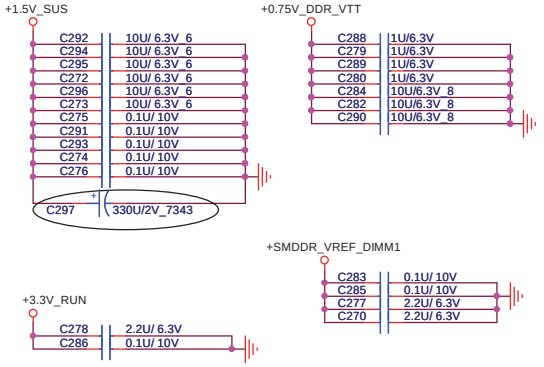
Only change P/N

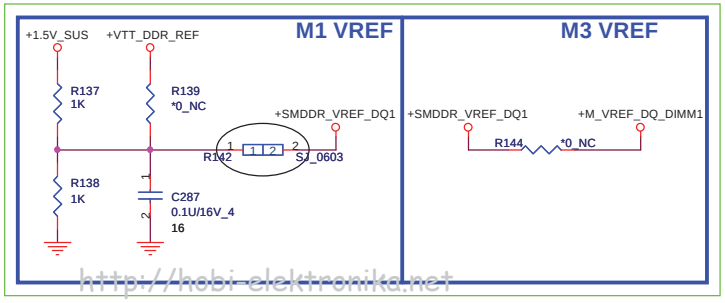




Place these Caps near So-Dimm1.

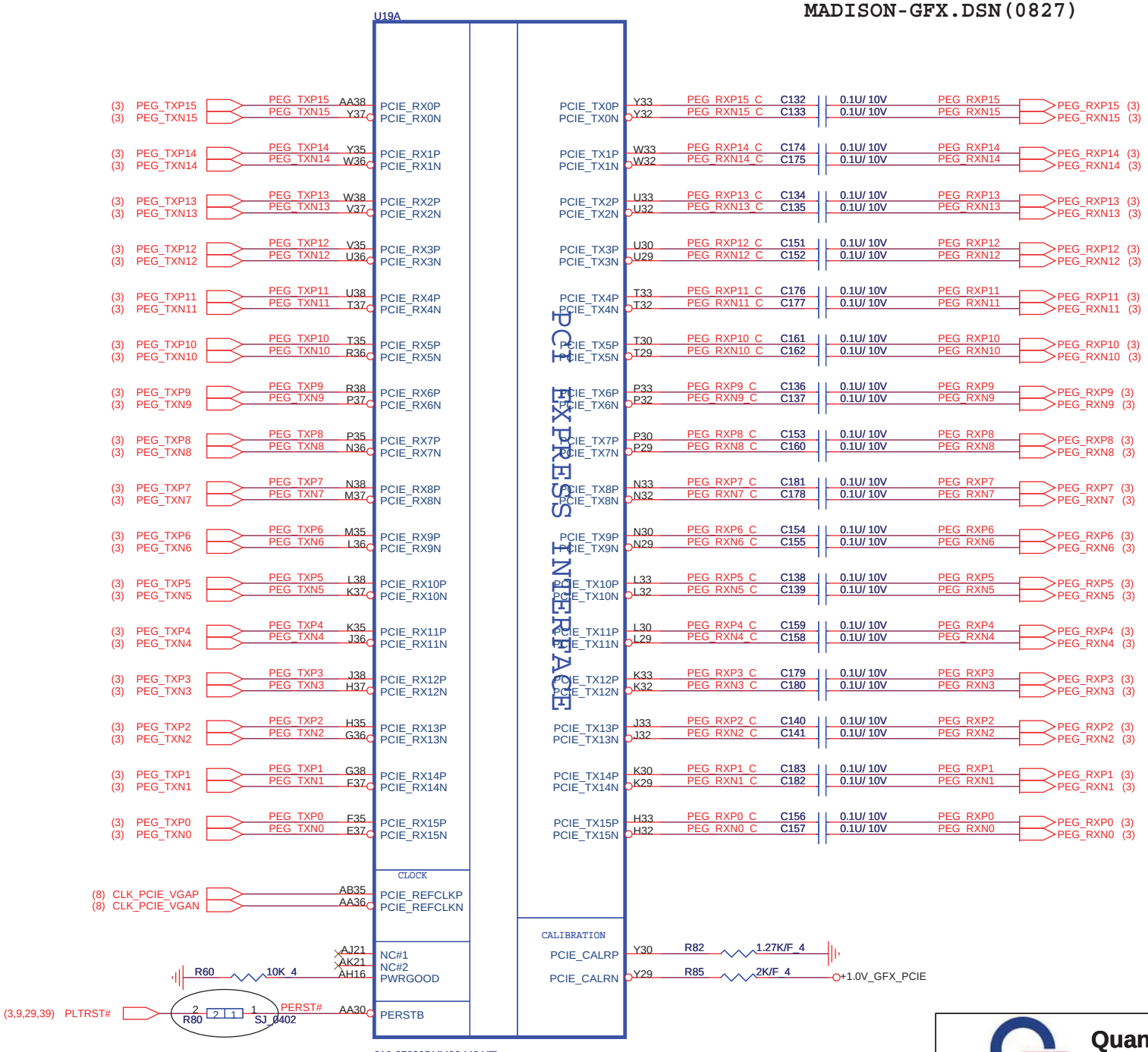
Some Projects replace 10UF 0805 by 4.7UF 0603
It can cost down 30%





Quantities and M1/M3 follow UM3
Locations follow PDC

Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: DDR3 DIMM-1	Rev: 3A
Date: Monday, February 01, 2010	Sheet 13 of 51	



Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison PCIE I/F	3A
Date: Monday, February 01, 2010	Sheet 14 of 51	

Memory Straps		RAM_TYPE_CFG3	RAM_TYPE_CFG2	RAM_TYPE_CFG1	RAM_TYPE_CFG0	
800 MHz 1GB(64M*16) Hynix_Orion die	H5TQ1G63BFR-12C	0	0	0	0	AKD5LZGTW03
800 MHz 1GB(64M*16) Samsung_E die	K4W1G1646E-HC12	0	0	0	1	AKD5LGGT505
800 MHz 2GB(128M*16) Hynix_Orion die	H5TQ2G63BFR-12C	0	0	1	0	AKD5MGGTW00
800 MHz 2GB(128M*16) Samsung_E die	K4W2G1646B-HC12	0	0	1	1	AKD5MGGT501
		0	1	0	0	
		0	1	0	1	

Note : Required Frequency = 800 MHz

MEMORY APERTURE SIZE SELECT

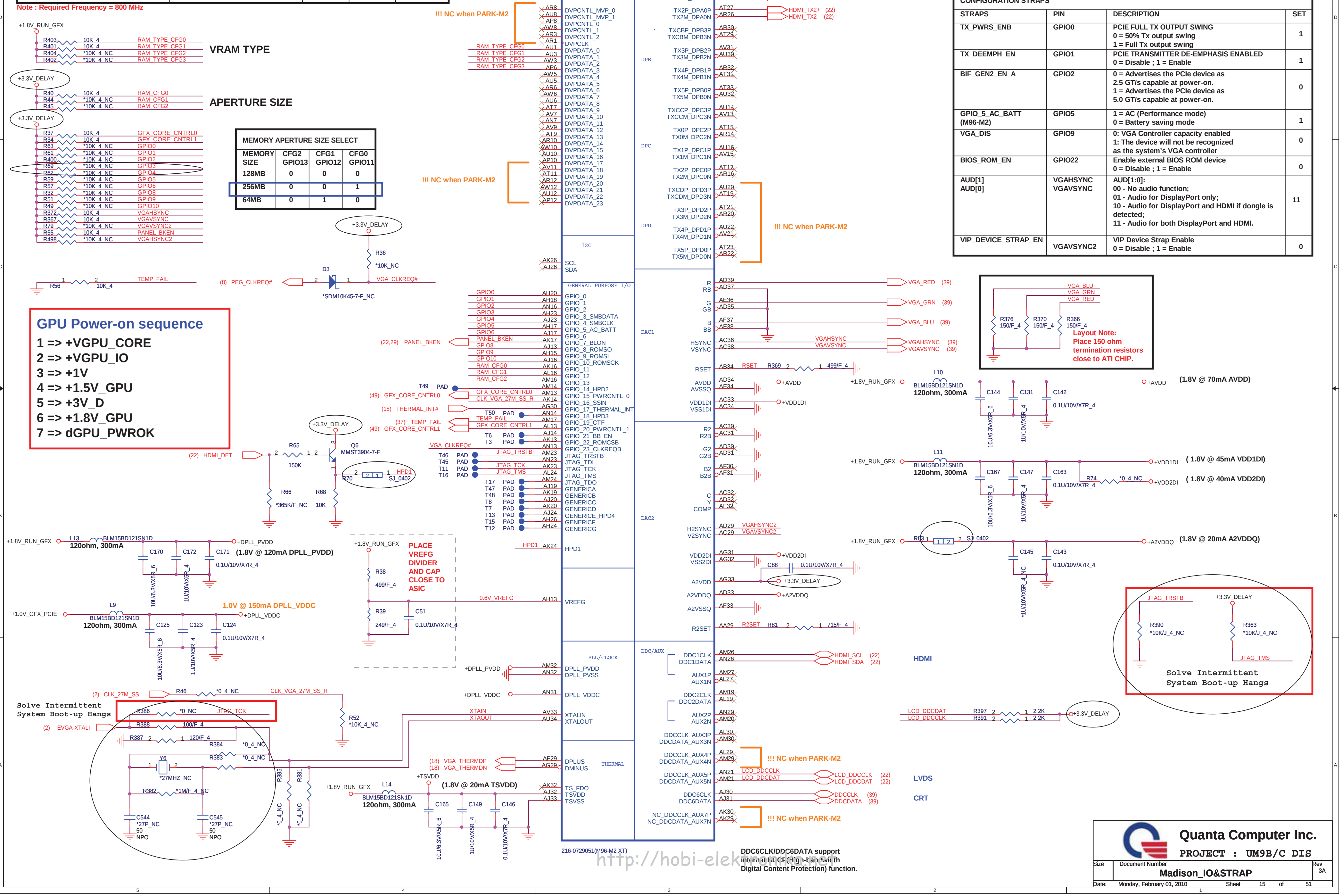
MEMORY SIZE	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB	0	0	0
256MB	0	0	1
64MB	0	1	0

CONFIGURATION STRAPS

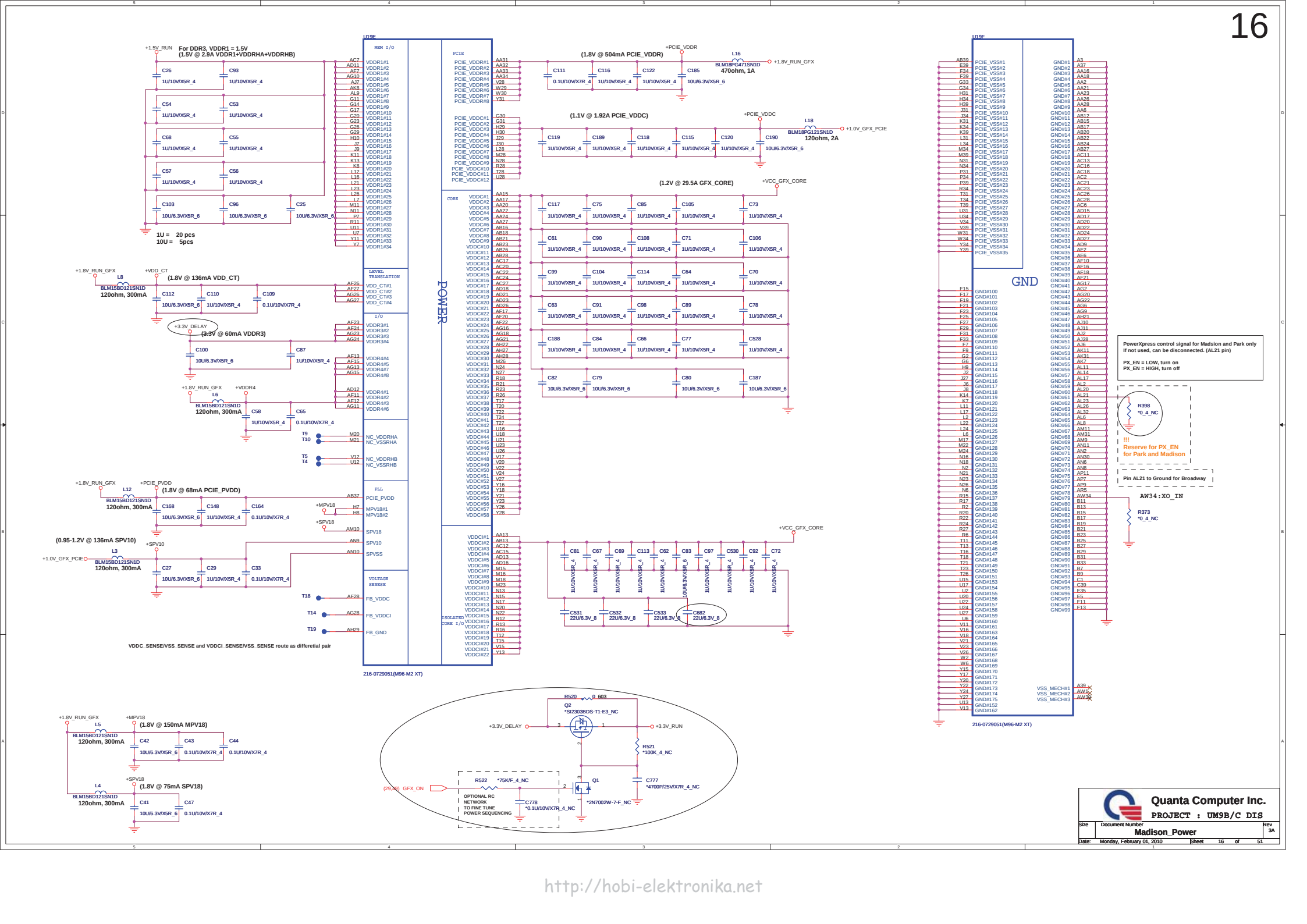
STRAPS	PIN	DESCRIPTION	SET
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING 0 = 50% Tx output swing 1 = Full Tx output swing	1
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED 0 = Disable ; 1 = Enable	1
BIF_GEN2_EN_A	GPIO2	0 = Advertises the PCIe device as 2.5 GT/s capable at power-on. 1 = Advertises the PCIe device as 5.0 GT/s capable at power-on.	0
GPIO_5_AC_BATT (M96-M2)	GPIO5	1 = AC (Performance mode) 0 = Battery saving mode	1
VGA_DIS	GPIO9	0: VGA Controller capacity enabled 1: The device will not be recognized as the system's VGA controller	0
BIOS_ROM_EN	GPIO22	Enable external BIOS ROM device 0 = Disable ; 1 = Enable	0
AUD[1] AUD[0]	VGAHSYNC VGAVSYNC	AUD[1:0]: 00 - No audio function; 01 - Audio for DisplayPort only; 10 - Audio for DisplayPort and HDMI if dongle is detected; 11 - Audio for both DisplayPort and HDMI.	11
VIP_DEVICE_STRAP_EN	VGAVSYNC2	VIP Device Strap Enable 0 = Disable ; 1 = Enable	0

GPU Power-on sequence

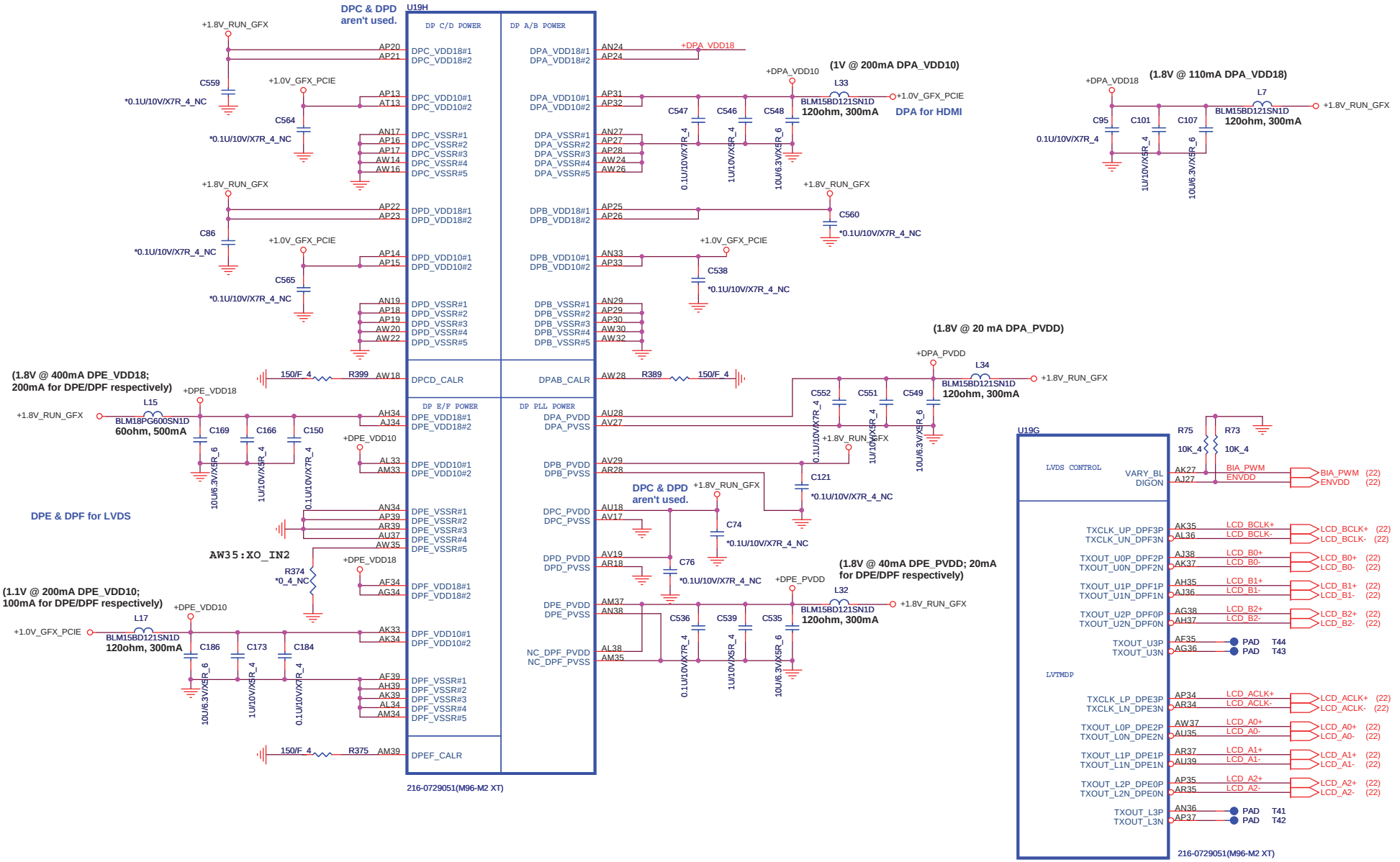
1 => +VGPU_CORE
2 => +VGPU_IO
3 => +1V
4 => +1.5V_GPU
5 => +3V_D
6 => +1.8V_GPU
7 => dGPU_PWROK



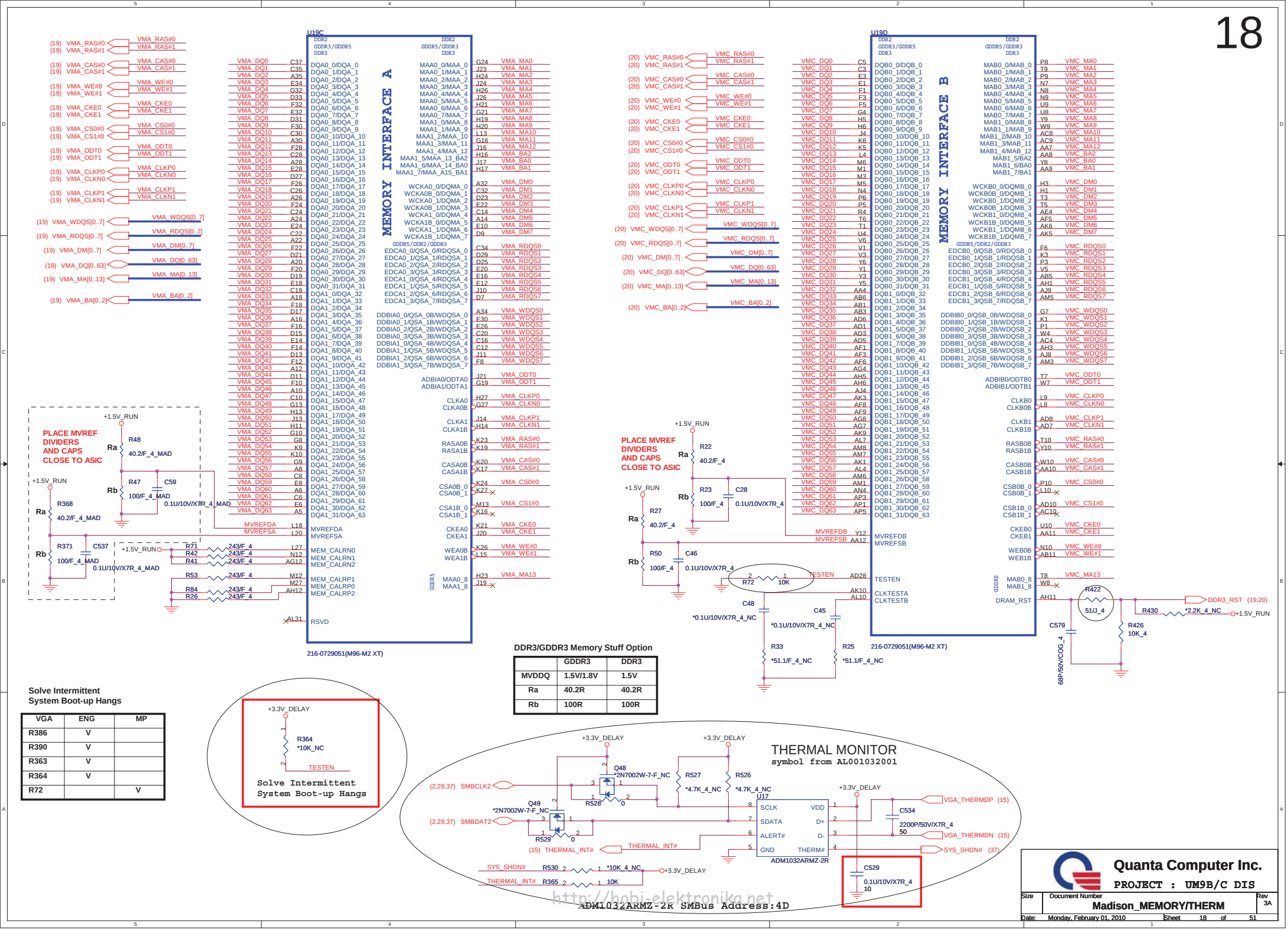
Quanta Computer Inc.
PROJECT : UM9B/C DIS
Document Number: Madison_IO&STRAP
Rev 3A
Date: Monday, February 01, 2010



!!!
For M96/92, DPx_VDD10 = 1.1V
For M97 DPx_VDD10 = 1.0V



Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: Madison_DP_POWER&LVDS	Rev: 3A
Date: Monday, February 01, 2010	Sheet 17 of 51	



DDR3/GDDR3 Memory Stuff Option

	GDDR3	DDR3
MVDDQ	1.5V/1.8V	1.5V
Ra	40.2R	40.2R
Rb	100R	100R

Solve Intermittent System Boot-up Hangs

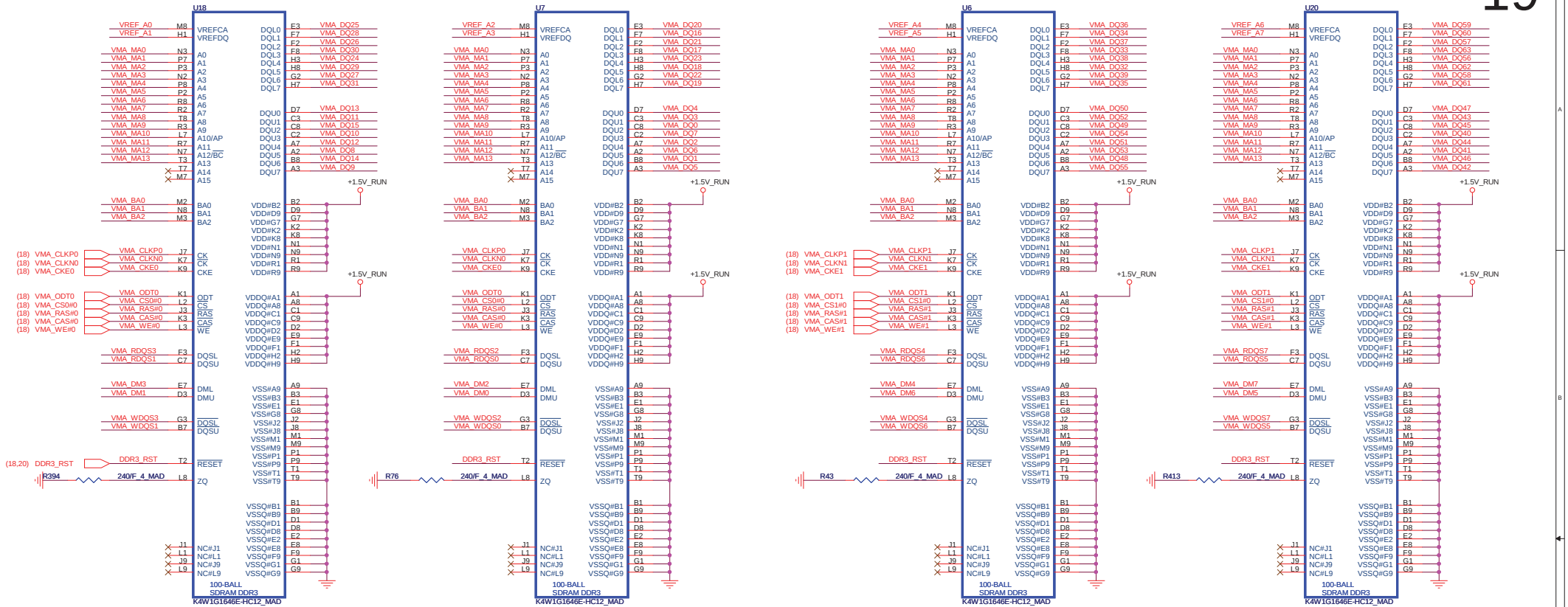
VGA	ENG	MP
R386	V	
R390	V	
R363	V	
R364	V	
R72		V

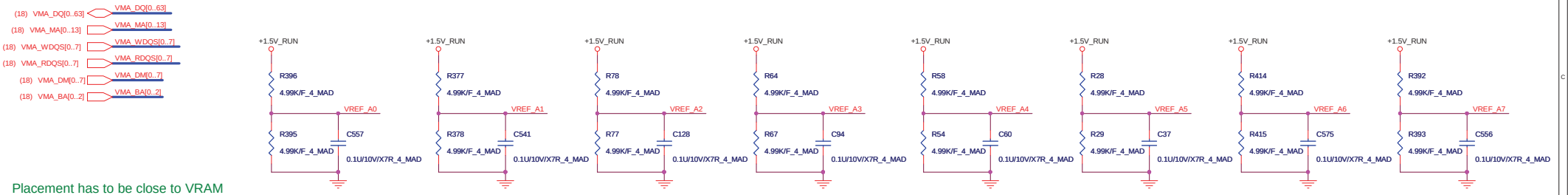
Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison_MEMORY/THERM	3A

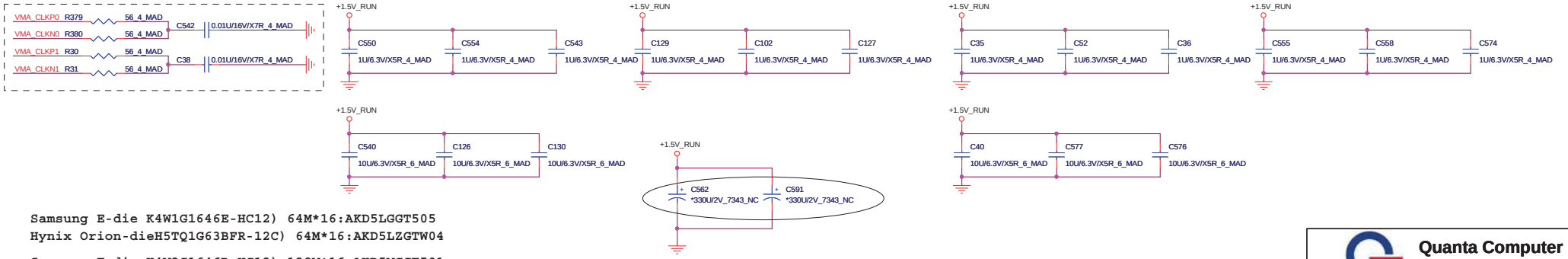
Date: Monday, February 01, 2010 Sheet 18 of 51

DDR3 64MX16, CH A : 512MB





Placement has to be close to VRAM



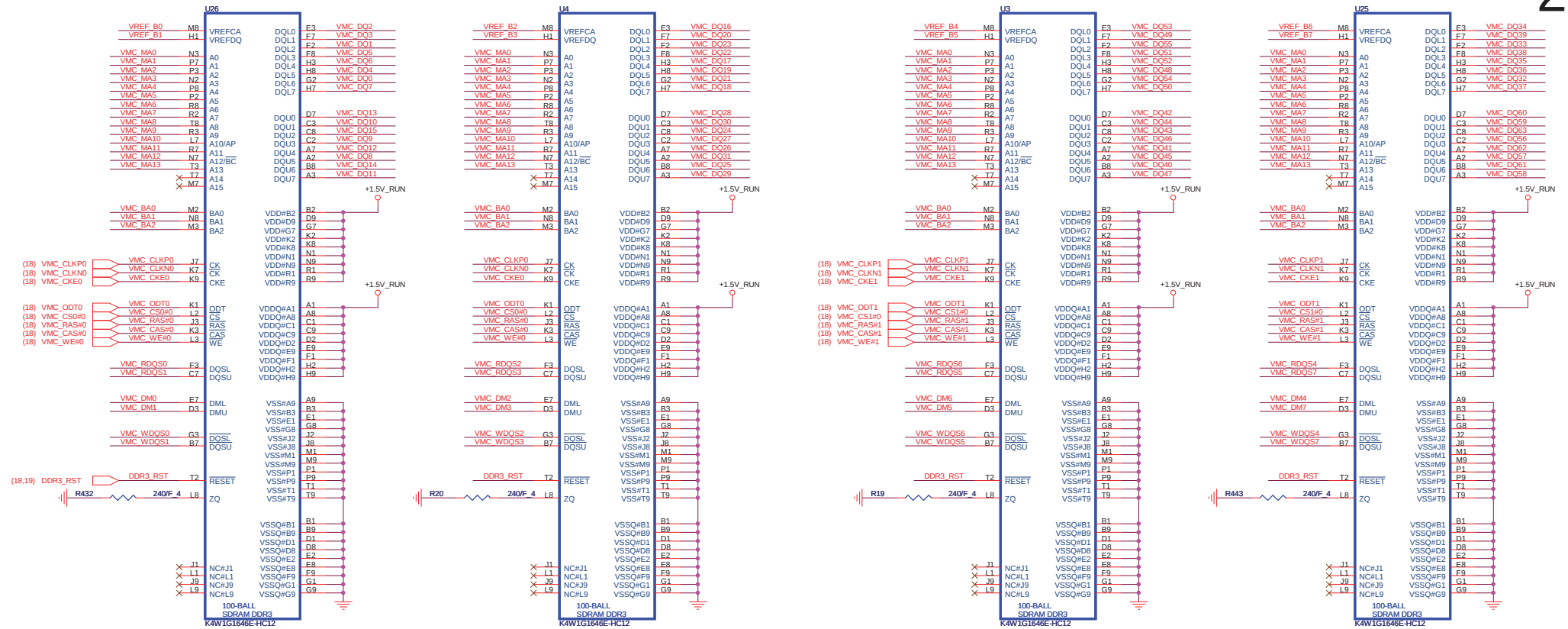
Samsung E-die K4W1G1646E-HC12) 64M*16:AKD5LGGT505
Hynix Orion-dieH5TQ1G63BFR-12C) 64M*16:AKD5LZGTW04

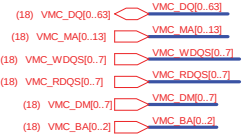
Samsung E-die K4W2G1646B-HC12) 128M*16:AKD5MGGT501
Hynix Orion-dieH5TQ2G63BFR-12C) 128M*16:AKD5MGGTW00

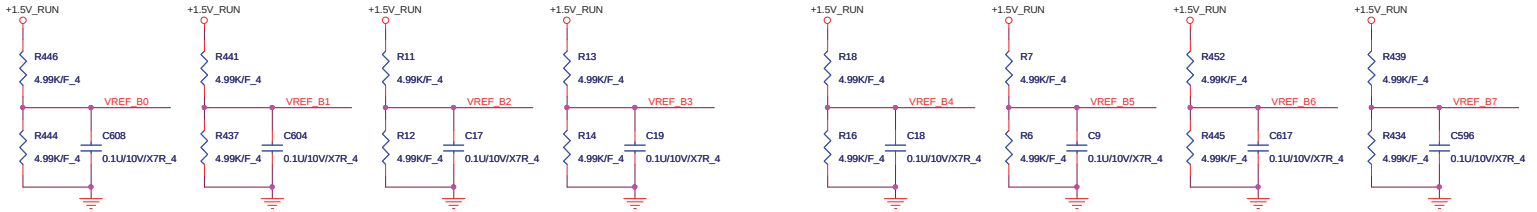
Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison_DDR3_A_512M	3A
Date: Monday, February 01, 2010	Sheet 19 of 51	

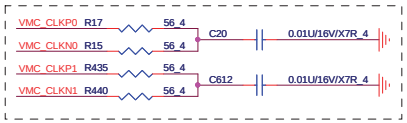
DDR3 64MX16, CH B : 512MB

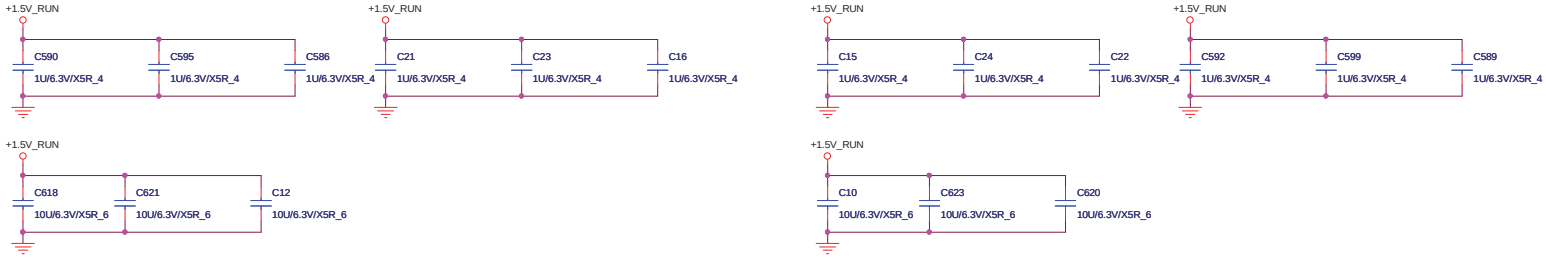






Placement has to be close to VRAM



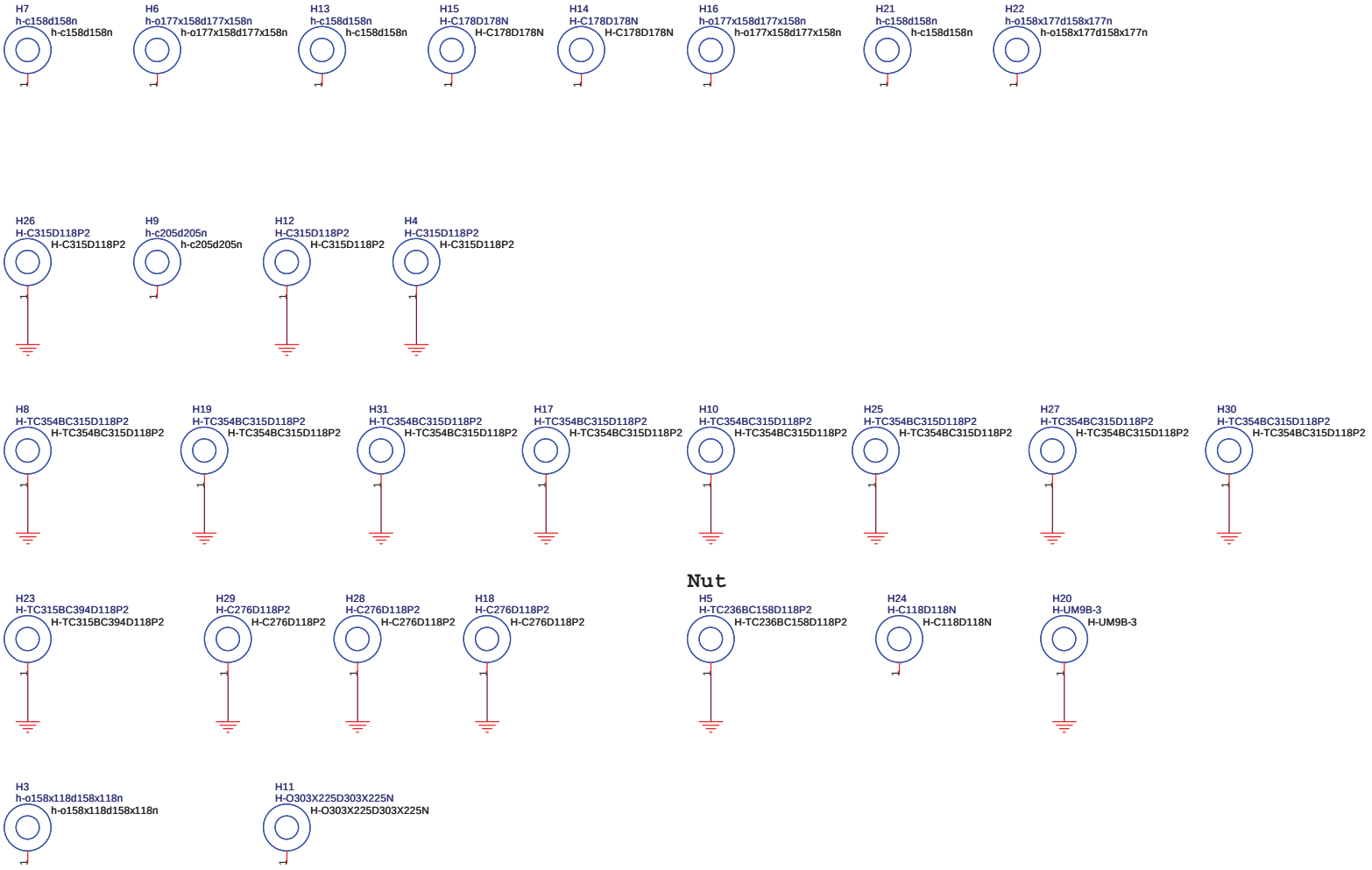


Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison_DDR3_B_512M	3A
Date: Monday, February 01, 2010	Sheet 20 of 51	

Follow 9/9 mail, check GND.



Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	SCREW PAD	3A
Date: Wednesday, January 27, 2010	Sheet 21 of 51	

UM3

Support the new imbeded diagnostics.

+15V_ALW +3.3V_RUN +LCDVCC

Q24 FDC655BN

40mil

R115 330K

LCDVCC_ON

R114 *100K_NC

C450 0.01U/25V_4

R309 47 805

C449 10U/10V_8

C447 0.1U/16V_4

+3.3V_SUS

R123 47K

Q9 2N7002W-7-F

Q11 2N7002W-7-F

(17) ENVDD

(29) LCDVCC_TST_EN

D9 BAT54C T/R

EN_LCDVCC

Q12 DDTC124EUA-7-F

+LCDVCC

C448 *0.01U/25V_4_NC

C446 *0.047U/10V_4_NC

C451 0.1U/16V_4

+3.3V_RUN

(17) BIA_PWM

(29) PWM_VADJ

D8 BAT54C T/R

BLT_PWM

R118 10K

(29) LCD_BAK

(15,29) PANEL_BKEN

D27 BAT54C T/R

LCD_BACKLIGHT

R500 10K

J8 50671-04041-001

LCD_BACKLIGHT
BLT_PWM
LCD_BCLK-
LCD_BCLK+
LCD_B2-
LCD_B2+
LCD_B1-
LCD_B1+
LCD_B0-
LCD_B0+
LCD_ACLK-
LCD_ACLK+
LCD_A2-
LCD_A2+
LCD_A1-
LCD_A1+
LCD_A0-
LCD_A0+
LCD_DDCCLK
LCD_DDCDAT

LCD_TST (29)

+LCDVCC

+3.3V_RUN

R117 *0_NC DMIC_CLK (26)

R116 *0_NC DMIC_DATA (26)

+GFX_PWR_SRC

USBP11_D-
USBP11_D+

R519 SJ_0402

R523 SJ_0402

USBP11- (9)
USBP11+ (9)

Check R size

+PWR_SRC

40mil

R119 0 1206

+GFX_PWR_SRC

40mil

R124 *100K_NC

C255 *0.1U_NC 603 25

Q10 *FDC658AP_NC

C241 *0.1U_NC 603 25

C242 *0.1U_NC 603 25

R120 *100K_NC

(40,43,44,46,48) RUN_ON

Q13 *2N7002W-7-F_NC

Shunt capacitors on LVDS for improving WWAN.

LCD_B0- C224 *3.3P_NC 50 LCD_B0+
LCD_B1- C223 *3.3P_NC 50 LCD_B1+
LCD_B2- C211 *3.3P_NC 50 LCD_B2+
LCD_A0- C220 *3.3P_NC 50 LCD_A0+
LCD_A1- C209 *3.3P_NC 50 LCD_A1+
LCD_A2- C221 *3.3P_NC 50 LCD_A2+

LCD_ACLK-

LCD_ACLK+

R91 *0_NC

C210 *3.3P_NC

50

LCD_ACLK- (17)

LCD_ACLK+ (17)

LCD_BCLK-

LCD_BCLK+

R95 *0_NC

C222 *3.3P_NC

50

LCD_BCLK- (17)

LCD_BCLK+ (17)

(15) HDMI_TX2+
(15) HDMI_TX2-
C633 C632 0.1U/10V_X7R_4
HDMI_TX2+_R HDMI_TX2-_R

(15) HDMI_TX1+
(15) HDMI_TX1-
C631 C630 0.1U/10V_X7R_4
HDMI_TX1+_R HDMI_TX1-_R

(15) HDMI_TX0+
(15) HDMI_TX0-
C628 C629 0.1U/10V_X7R_4
HDMI_TX0+_R HDMI_TX0-_R

(15) HDMI_CLK+
(15) HDMI_CLK-
C625 C624 0.1U/10V_X7R_4
HDMI_CLK+_R HDMI_CLK-_R

HDMI_TX2+_R HDMI_TX2-_R L48 HDMI_TX2+_C HDMI_TX2-_C EXC24CG900U

HDMI_TX0+_R HDMI_TX0-_R L45 HDMI_TX0+_C HDMI_TX0-_C EXC24CG900U

HDMI_TX1+_R HDMI_TX1-_R L47 HDMI_TX1+_C HDMI_TX1-_C EXC24CG900U

HDMI_CLK+_R HDMI_CLK-_R L46 HDMI_CLK+_C HDMI_CLK-_C EXC24CG900U

+3.3V_DELAY

R9 4.7K/J_4

R8 4.7K/J_4

Q4 FDV301N

(15) HDMI_SCL

HDMI_CLK

+3.3V_DELAY

(15) HDMI_SDA

HDMI_DAT

Q3 FDV301N

+5V_HDMI

C11 *100P_NC 50

C8 *100P_NC 50

R5 2.2K/J_4

R4 2.2K/J_4

+5V_HDMI

40mil

HDMI

CN5 ALL_C12812-119A5-L

HDMI_TX2+_C
HDMI_TX2-_C
HDMI_TX1+_C
HDMI_TX1-_C
HDMI_TX0+_C
HDMI_TX0-_C
HDMI_CLK+_C
HDMI_CLK-_C

SHELL1 SHELL2 GND D2+ D2 Shield D2- D1+ D1 Shield D1- D0+ D0 Shield D0- CK+ CK Shield CK- CE Remote NC DDC CLK DDC DATA GND +5V HP DET

(15) HDMI_DET

D25 *RLZ5.6B_NC

Zener, Check P/N

+5V_RUN

R310 SJ_0805

+5V_HDMI_R

D26 *SDM10K45-7-F_NC

HDMIF1 1206L110WR

For safty

C645 *0.1U_NC

R465 R464 R463 R462 R460 R461 R459 R458 499/F

HDMI_TX2+_R HDMI_TX2-_R HDMI_TX1+_R HDMI_TX1-_R HDMI_TX0+_R HDMI_TX0-_R HDMI_CLK+_R HDMI_CLK-_R

+5V_RUN

Q27 2N7002W-7-F

http://hobi-elektronika.net

Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size | Document Number: LCD CONN / HDMI CONN | Rev 3A

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UM3

This page to CRT board

Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
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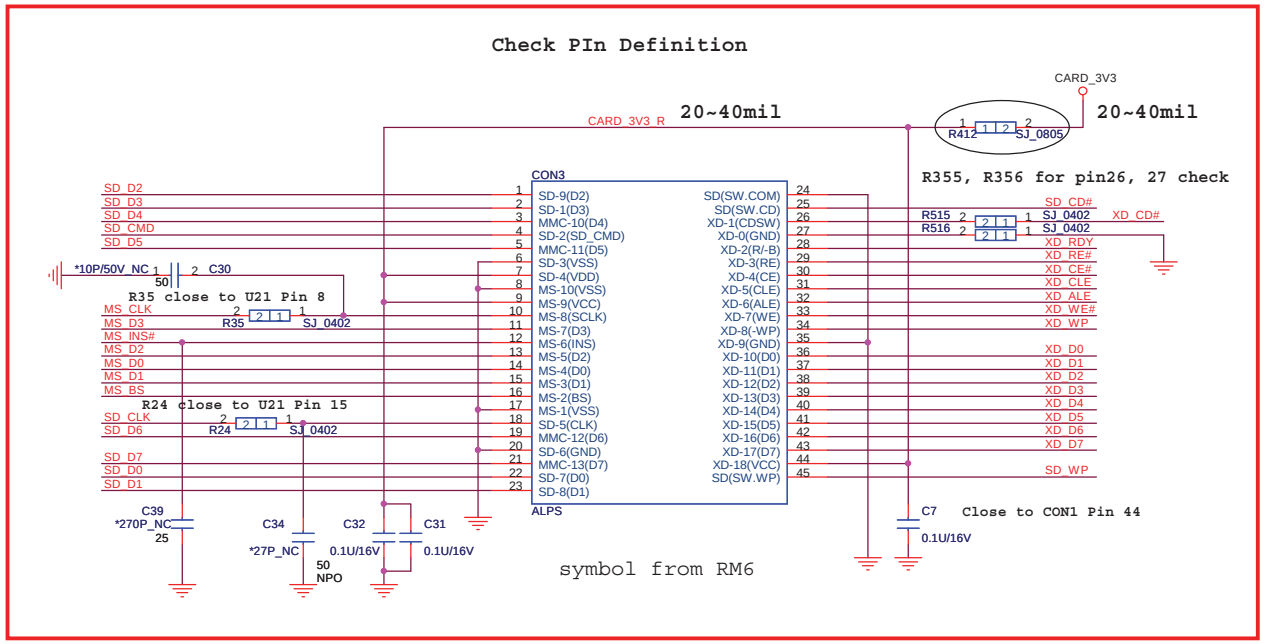
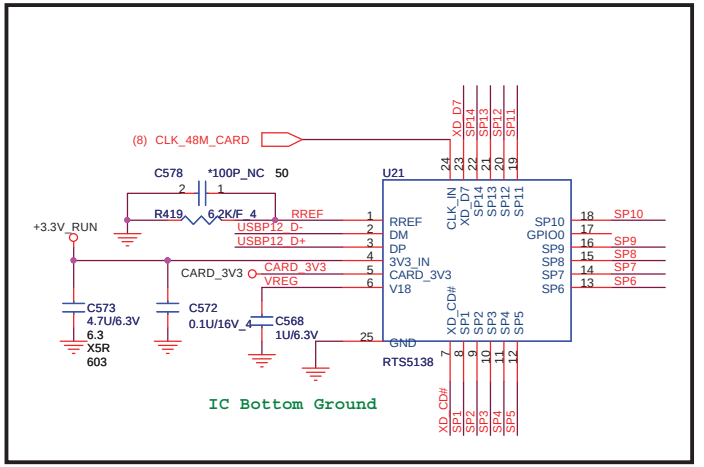
To CRT BOARD

Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: DB CONN/Left USB	Rev: 3A
Date: Wednesday, January 27, 2010	Sheet 24 of 51	

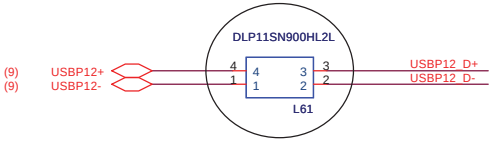




RTS5138-QFN24

SP1	XD_RDY	SD_WP	MS_CLK
SP2	XD_RE#		MS_INS#
SP3	XD_CE#	SD_D1	
SP4	XD_CLE	SD_D0	MS_D7
SP5	XD_ALE	SD_D7	MS_D3
SP6	XD_WE#	SD_CD#	
SP7	XD_WP	SD_D6	MS_D6
SP8	XD_D0	SD_CLK	MS_D2
SP9	XD_D1	SD_D5	MS_D0
SP10	XD_D2	SD_CMD	
SP11	XD_D3	SD_D4	MS_D4
SP12	XD_D4	SD_D3	MS_D1
SP13	XD_D5	SD_D2	MS_D5
SP14	XD_D6		MS_BS

Share Pin



Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Card Reader(RST5138)	3A
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UM3, symbol from PDC

*NOTE: ALC269_VB type add the LDO circuit in IC

PIN NAME	R457	R455	R456	C636	CODEC IC
28 MIC1_VREF0-L			POP	NC	ALC269
31 CPVREF	POP	NC			VA

VA type: PIN28 作爲MIC之偏壓
PIN31接A-GND

PIN NAME	R457	R455	R456	C636	CODEC IC
28 MIC1_VREF0-L			NC	POP	ALC269
31 CPVREF	NC	POP			VB

VB type: PIN31 作爲MIC之偏壓
PIN28接CAP作爲內部LDO output 輸出濾波用

ZM1_MB_FOR_8BIT_0212-3.DSN

AVDD1, AVDD2 TYP=48mA

AVDD1, AVDD2 TYP=48mA

DVDD & DVDD-IO TYP=50mA

Analog Plane

Digital Plane

Int. Stereo Speakers
5V / 4 Ohm / 2W

Check (29) NB_MUTE# NB_MUTE# D22 SDM10K45-7-F
(7,29) ACZ_RST#_AUDIO ACZ_RST#_AUDIO D24 *SDM10K45-7-F_NC

PD#=0V : Power down Class D SPK amplifer
PD#=3.3V : Power up Class D SPK amplifer
Internal pulled high.

Reserve RC for EMI

Digital GND Analog GND
Tied at one point only under the ALC269 or near the ALC269

UM3_DIS_20090824_1000_SSI_STEPHEN.DSN

Check the GND of MIC Conn. in the DB need add 0 ohm PD to A-GND

Quanta Computer Inc.
PROJECT : UM9B/C DIS
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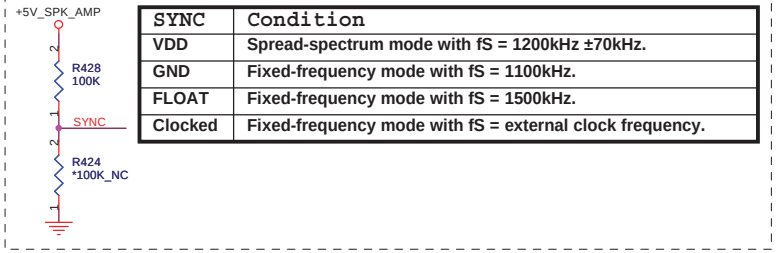
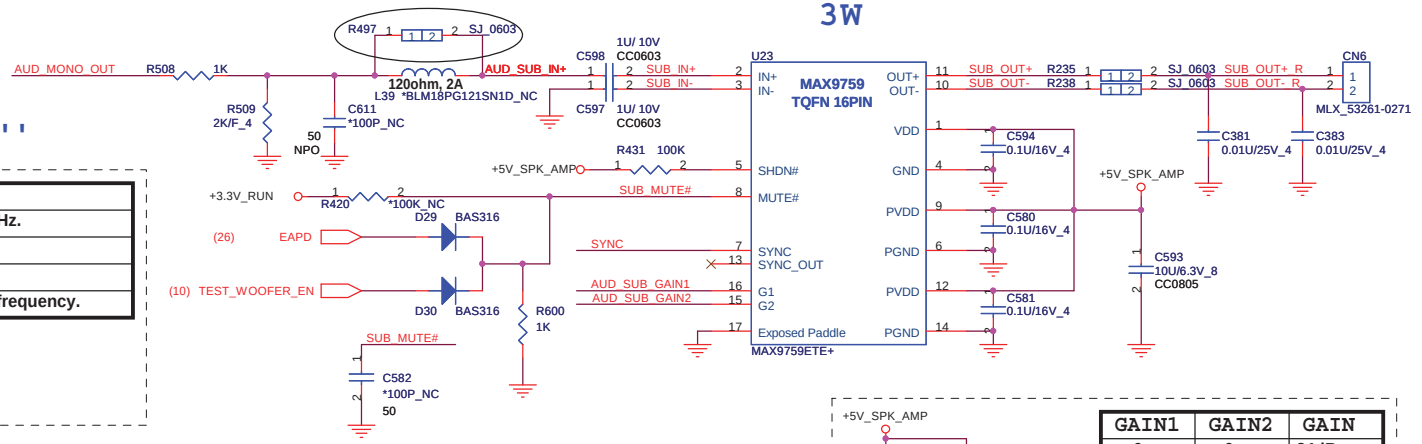
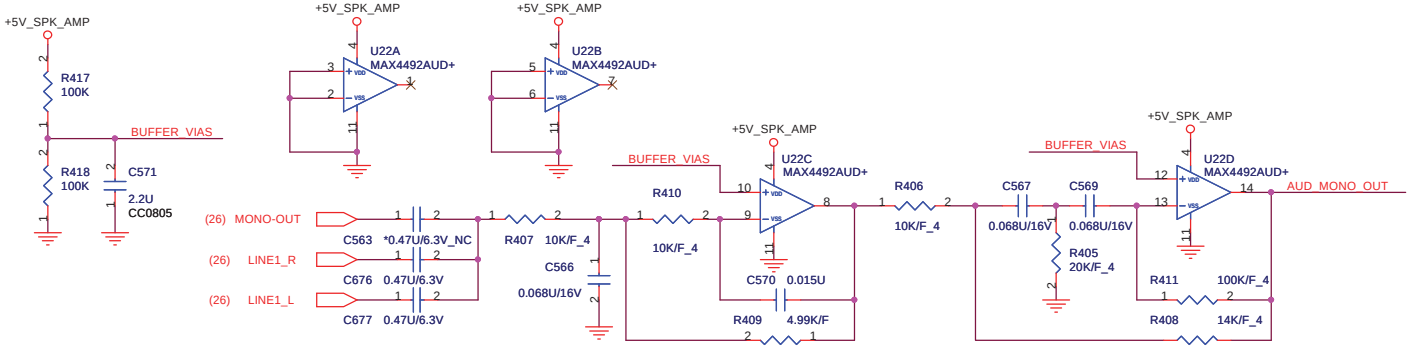
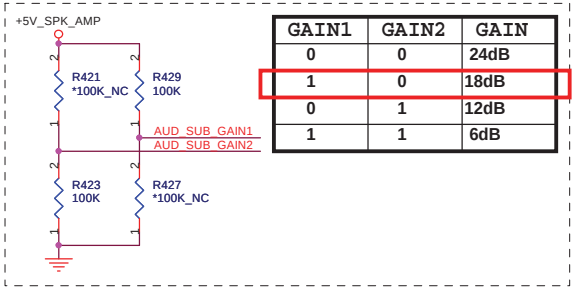
INTERNAL SUBWOOFER AMP Only for 17''

SYNC	Condition
VDD	Spread-spectrum mode with fS = 1200kHz ±70kHz.
GND	Fixed-frequency mode with fS = 1100kHz.
FLOAT	Fixed-frequency mode with fS = 1500kHz.
Clocked	Fixed-frequency mode with fS = external clock frequency.

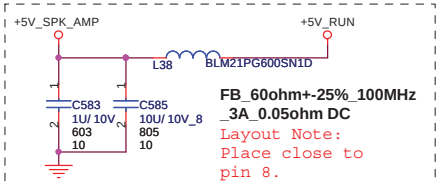




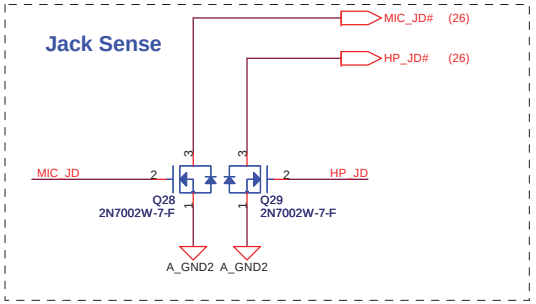


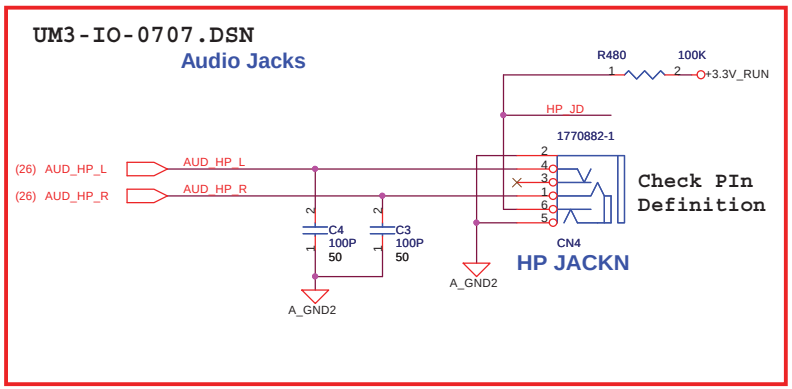


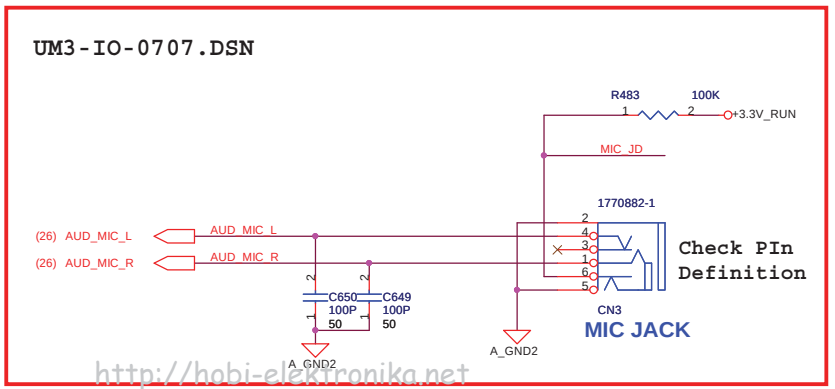
GAIN1	GAIN2	GAIN
0	0	24dB
1	0	18dB
0	1	12dB
1	1	6dB

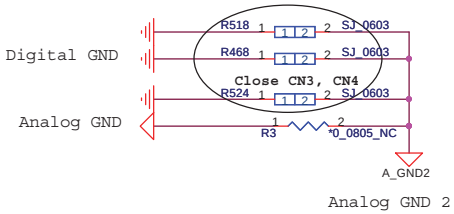


NB_MUTE#	TEST_WOOFER_EN	AUD_SPK PD#	SUB_MUTE#
0	0	L (Disable SPK)	L (Disable Woofer)
0	1	L (Disable SPK)	H (Test Woofer)
1	0	H (Test SPK)	L (Disable Woofer)
1	1	H (Test SPK)	H (Test Woofer)









Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	AUDIO CONN	3A

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Quanta Computer Inc.

PROJECT : UM9B/C DIS

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	Blank	3A

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UM3

ITE8502E LQFP-128L

U10

(34) KSO[0..17]
(34) KSI[0..7]

KSO17 57 KSO16 56 KSO15 55 KSO14 54 KSO13 53 KSO12 52 KSO11 51 KSO10 46 KSO9 45 KSO8 44 KSO7 43 KSO6 42 KSO5 41 KSO4 40 KSO3 39 KSO2 38 KSO1 37 KSO0 36

KSO17/GPC5
KSO16/GPC3
KSO15
KSO14
KSO13
KSO12/SLCT
KSO11/ERR
KSO10/PE
KSO9/BUSY
KSO8/ACK
KSO7/PD7
KSO6/PD6
KSO5/PD5
KSO4/PD4
KSO3/PD3
KSO2/PD2
KSO1/PD1
KSO0/PD0

KEYBOARD

KSI7 65 KSI6 64 KSI5 63 KSI4 62 KSI3 61 KSI2 60 KSI1 59 KSI0 58

KSI7
KSI6
KSI5
KSI4
KSI3/SLIN
KSI2/INIT
KSI1/AFD
KSI0/STB

+3.3V_ALW

C430 10U/ 6.3V_6 603 6.3
C307 1U/6.3V_4
C437 0.1U/16V_4 16
C433 0.1U/16V_4 16
C309 0.1U/16V_4 16

Place these caps close to ITE8502.

+RTC_CELL

VBAT1 3 +VBAT1_EC
VCC 11 +3.3V_RUN
VSTBY1 26 +3.3V_ALW
VSTBY2 50
VSTBY3 92
VSTBY4 114
VSTBY5 121
VSTBY6 127

R146 1 2 SJ_0402
C302 0.1U/16V_4 16

ADC/DAC

ADC0/GPI0 66 HWPG — HWPG (37,40,45)
ADC1/GPI1 67 — PAD T28
ADC2/GPI2 68 — SUS_PWR_ACK (9)
ADC3/GPI3 69 — PAD T51
ADC4/GPI4 70 V_ID1
ADC5/GPI5 71 — PBAT_PRES# (47)
ADC6/GPI6 72 — IINP (41)
ADC7/GPI7 73 SIO_SLP_S5# — SIO_SLP_S5# (9)

DAC0/GPJ0 76 — CRIT_TEMP_REP# (10)
DAC1/GPJ1 77 — SIO_EXT_WAKE# (10)
DAC2/GPJ2 78 USB_LEFT_EN# — USB_LEFT_EN# (39)
DAC3/GPJ3 79 — FAN1_DA (37)
DAC4/GPJ4 80 — RSMRST# (9)
DAC5/GPJ5 81 — D18 SDM10K45-7-F — PM_PWRBTN#_R (9)

PWM

PWM0/GPA0 24 — PAD T52 — BREATH_LED# (36)
PWM1/GPA1 25
PWM2/GPA2 28 — FAN1_PWM (37)
PWM3/GPA3 29 — PWM_VADJ (22)
PWM4/GPA4 30 — PAD T53
PWM5/GPA5 31 — PAD T54
PWM6/GPA6 32 — PAD T20 — EC_BEEP (26)
PWM7/GPA7 34

TACH0/GPD6 47 — FAN1_TACH (37)
TACH1/GPD7 48 — PANEL_BKEN (15,22)

TMRI0/WUI2/GPC4 120 — LID_SW# (34)
TMRI1/WUI3/GPC6 124 — SIO_SLP_S3# (9)

LPC

(3,9,14,39) PLTRST#
(9) CLK_33M_KBC
(7,39) LFRAME#
(7,39) LAD0
(7,39) LAD1
(7,39) LAD2
(7,39) LAD3

R147 1 2 SJ_0402

LPCRST/WUI4/GPD2 22
LPCCLK 13
LFRAME 6
LAD0 10
LAD1 9
LAD2 8
LAD3 7

(9) CLKRUN#
(7) SERIRQ

CLKRUN/GPH0/ID0 93
SERIRQ 5

SERIRQ
SC(V1.0)P38:
8.2-k pull-up to +V3.3S
CRB uses a 10-k pull-up to +V3.3S.

(10) SIO_EXT_SMI#
(10) SIO_EXT_SCI#
(10) GATEA20
(22) LCD_TST

D11 SDM10K45-7-F
D13 SDM10K45-7-F
D17 SDM10K45-7-F

ECSMI/GPD4 15
ECSCI/GPD3 23
GA20/GPB5 126
LPCPD/WUI6/GPE6 17

(10) RCIN#
T58 PAD
(22) LCD_BAK

D10 SDM10K45-7-F
WRST#
LCD_BAK

KBRST/GPB6 4
WRST 14
PWUREQ/GPC7 16

(26) NB_MUTE#
ICH_AZ_CODEC_RST0# 19 20

L80HLAT/GPE0
L80LLAT/WUI7/GPE7

IR/UART

RXD/GPB0 108 — PAD T55
TXD/GPB1 109 — PAD T40
GPC0 119 — H_CPUDET# (3)
CTX0/GPB2 123 — IMVP_PWRGD (3,45)
CRX1/GPH1/ID1 94 — RUN_ON_1 (40)
CTX1/GPH2/ID2 95 IMVP_VR_ON — BAT1_LED (36)
IMVP_VR_ON (45)
PAD T37

SMBUS

Charge and BAT
PCH
VGA, LAN, Clock Thermal IC

(41,47) SMBCLK0 — SMBCLK0 110
(41,47) SMBDAT0 — SMBDAT0 111
(8) SMBCLK1 — SMBCLK1 115
(8) SMBDAT1 — SMBDAT1 116
(2,18,37) SMBCLK2 — SMBCLK2 117
(2,18,37) SMBDAT2 — SMBDAT2 118

SMCLK0/GPB3
SMDAT0/GPB4
SMCLK1/GPC1
SMDAT1/GPC2
SMCLK2/GPF6
SMDAT2/GPF7

LPC/FWH FLASH

FLFRAME/GPG2/LF 100 — SUS_ON — PAD T35 — SUS_ON (42,46)
FLRST/GPG0/TM 106 — KB_DET# (34)
FLAD3/GPG6 104 — PAD T56
PAD T23

FLAD2/SO 103 — EC_FLASH_SPI_DO (30)
FLAD1/SI 102 — EC_FLASH_SPI_DIN (30)
FLAD0/SCE 101 — EC_FLASH_SPI_CS# (30)
FLCLK 105 — EC_FLASH_SPI_CLK (30)
PAD T22
PAD T25
PAD T24

EGPC

EGAD/GPE1 82 ECPWROK — ECPWROK (9)
EGCS/GPE2 83 — ALW_ON (36)
EGCLK/GPE3 84 — GFX_ON (16,49)
PAD T38
PAD T39

PS/2

(7,10) PCH_MELOCK
T26 PAD
R507 SJ_0402
(47) PS_ID
T27 PAD
(34) CLK_TP_SIO
(34) DAT_TP_SIO

PS2CLK0/GPF0 85
PS2DAT0/GPF1 86
PS2CLK1/GPF2 87
PS2DAT1/GPF3 88
PS2CLK2/GPF4 89
PS2DAT2/GPF5 90

GPIO

GPH3/ID3 96 BID2 — BID2 (30)
GPH4/ID4 97 USB_RIGHT_EN# — USB_RIGHT_EN# (30,39)
GPH5/ID5 98 BID1 — BID1 (30)
GPH6/ID6 99 LCD_SIZE_ID — LCD_SIZE_ID (30)
GPG1/ID7 107 LCD_SIZE_ID2

R145 *100K_NC +3.3V_ALW
RI1/WUI0/GPD0 18 — PAD T57
RI2/WUI1/GPD1 21 D12 SDM10K45-7-F — ACAV_IN (36,41)
WUI5/GPE5 35 — BAT2_LED (36)

RING/PWRFAIL/LPCRST/GPB7 112 — AC_PRESENT (9)
PWRSW/GPE4 125 — SYS_PWR_SW# (36)
GINT/GPD5 33 — PAD T21 — LCDVCC_TST_EN (22)

CK32K
CK32KE
VCORE
VSS1 VSS3 VSS4 VSS5 VSS6 VSS7
AVCC
AVSS

ITE8502E
lqfp128-16x16-4

+3.3V_ALW

SMBDAT0 SMBCLK0 RP5 2.2KX2
SMBDAT1 SMBCLK1 RP4 10KX2
USB_LEFT_EN# R177 10K
SUS_ON R163 100K
IMVP_VR_ON R176 *100K_NC

+3.3V_RUN

SERIRQ R306 10K
LCD_BAK R307 *10K_NC
SMBDAT2 SMBCLK2 RP3 10KX2

R303 0
+3.3V_RUN
R302 *100K_NC
ICH_AZ_CODEC_RST0#
Q23 *2N7002W-7-F_NC
R301 *390K_NC
(7,26) ACZ_RST#_AUDIO
C436 *0.1U/10V_NC 10
Q22 *MMST3904-7-F_NC

Board ID Straps

Madison
Discrete
+3.3V_ALW

R298 *10K_NC
R158 10K
R174 10K
R167 *10K_NC
R168 10K
R171 10K
R297 10K
R159 *10K_NC
R175 *10K_NC
R165 10K
R169 *10K_NC
R172 *10K_NC

USB_RIGHT_EN#
BID1
LCD_SIZE_ID
BID2
LCD_SIZE_ID2
V_ID1

Park
UMA

VGA_TYPE
VGA_IDENTIFY

BID1	BID0 USB_RIGHT_EN#	UM9(UMA)	UM9C (Dis)
0	0	SSI (X00)	SSI (X00)
0	1	PT (X01)	PT (X01)
1	0	ST (X02)	ST (X02)
1	1	QT (A00)	QT (A00)
0	0	(A01)	(A01)

	LCD_SIZE_ID (99)	LCD_SIZE_ID2 (107)
13.3"	0	0
14"	1	0
17"	0	1

+3.3V_ALW

R143 100K WRST#
C300 1U/ 10V 603 10

ITE8502_XTAL1 128
ITE8502_XTAL2 2
ITE8502IX_JX 12

VSS1 1
VSS3 27
VSS4 49
VSS5 91
VSS6 113
VSS7 122

+3.3V_ALW
L20 BLM11A05S 603
+AVCC_EC 74 75
C310 0.1U/16V_4 16
L19 BLM11A05S 603

32KHz Clock.(Layout close to EC)

C304 18P/50V_4 ITE8502_XTAL1
W3 32.768KHZ
R496 10M/J_4
C303 18P/50V_4 ITE8502_XTAL2

CLK_33M_KBC
R304 10
C432 2.2P 50

ITE8502IX_JX
C435 0.1U/16V_4 16

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	SIO ITE8502	3A
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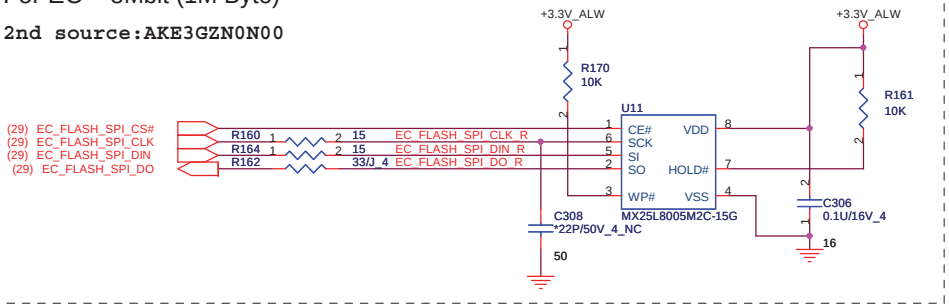
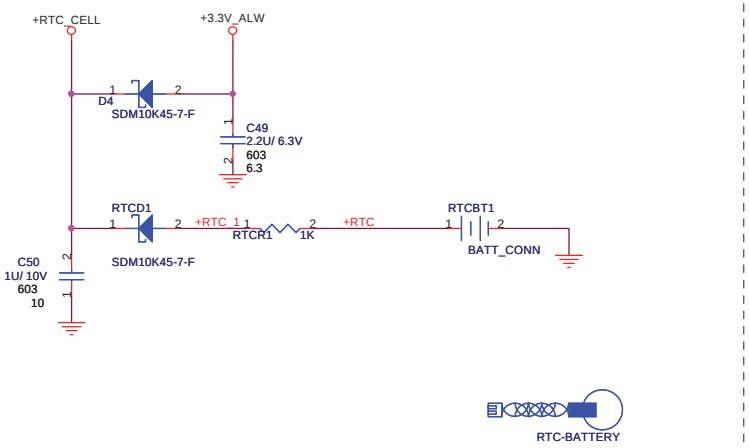
UM3

For EC 8Mbit (1M Byte)

2nd source:AKE3GZN0N00



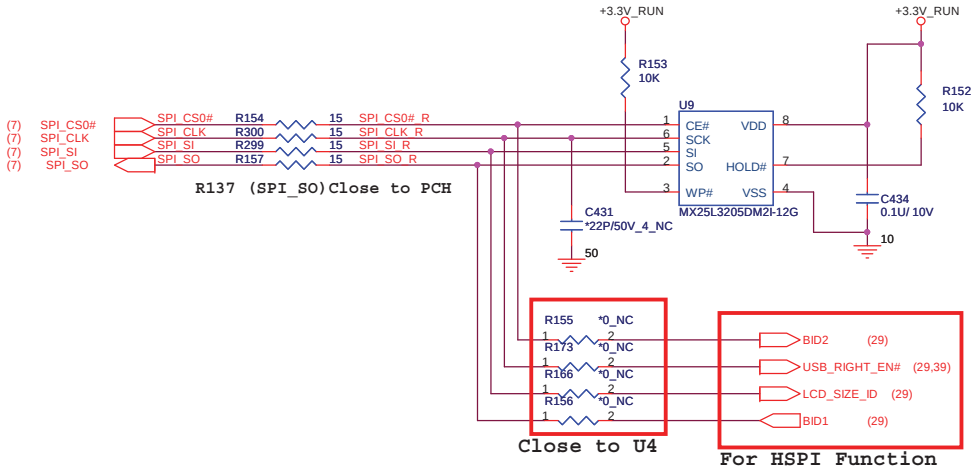
RTC BATTERY



For PCH

32Mbit (4M Byte)

2nd source:AKE39ZP0N00



Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: FLASH/RTC	Rev: 3A
Date: Monday, February 01, 2010	Sheet 30 of 51	

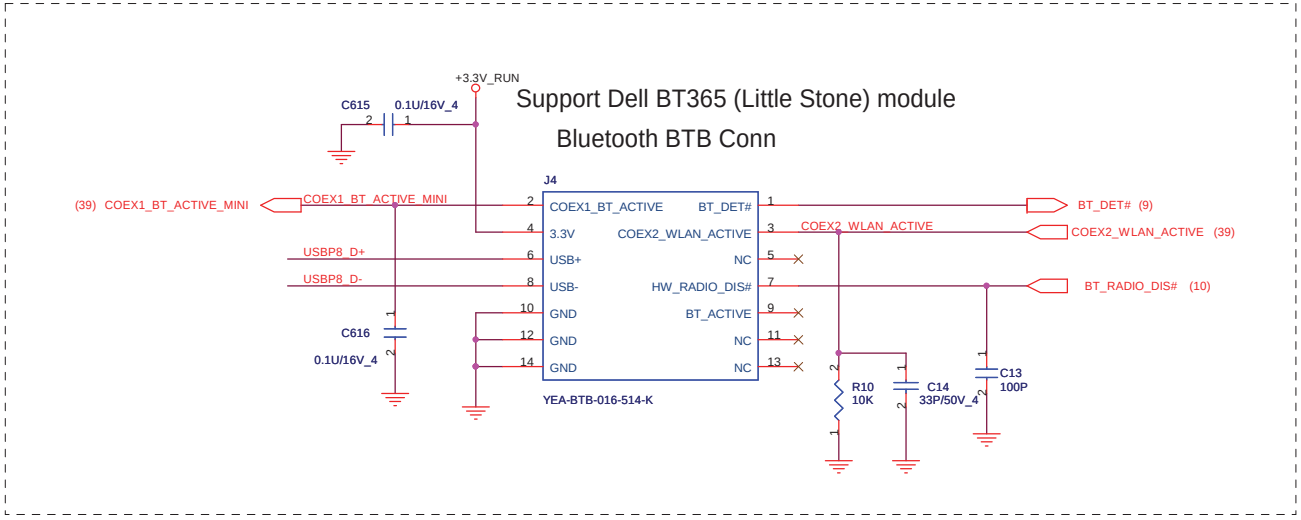
UM3

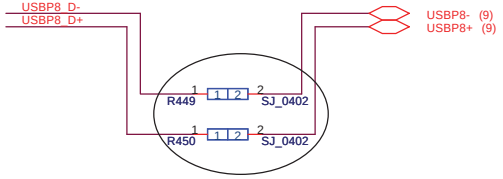
WWAN To DB

Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: MINI-Card WWAN	Rev: 3A
Date: Wednesday, January 27, 2010	Sheet 31 of 51	

UM3

WLAN To DB





Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	MINI-Card WLAN / BT	3A

Date: Monday, February 01, 2010 Sheet 32 of 51

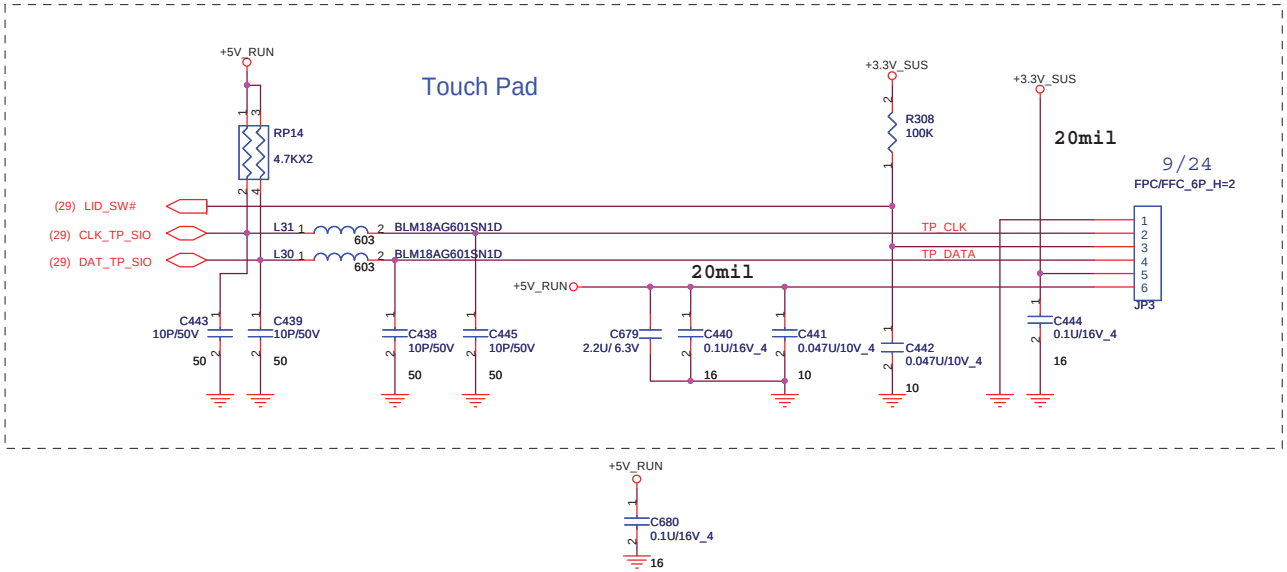
eSATA and USB To DB

Quanta Computer Inc.

PROJECT : UM9B/C DIS

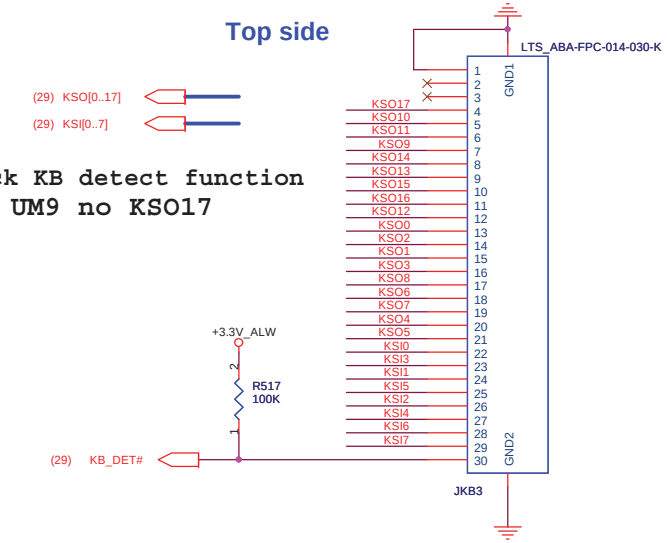
Size	Document Number	Rev
	eSATA & Right USB	3A

Date: Wednesday, January 27, 2010 Sheet 33 of 51

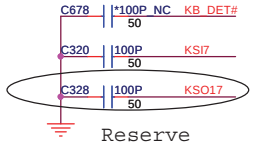


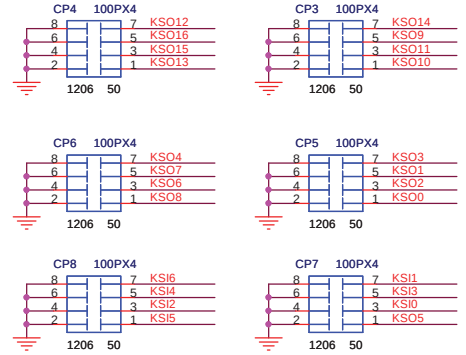
UM3 KEYBOARD CONNECTOR

Top side



Check KB detect function
UM9 no KSO17





100P CAPS CLOSE TO JKB3

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	TOUCH PAD, KB	3A

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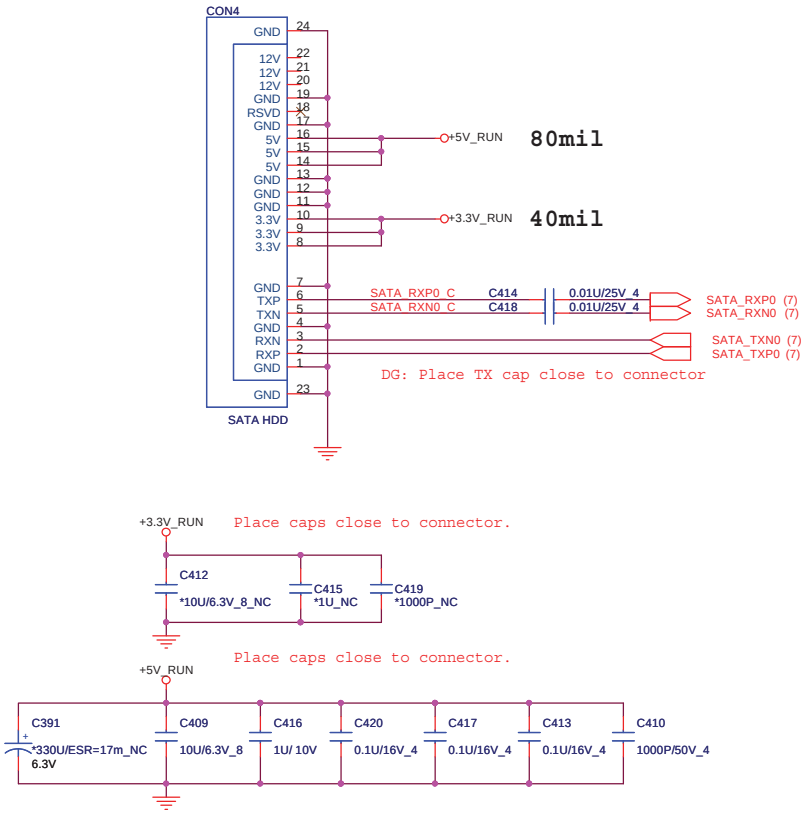
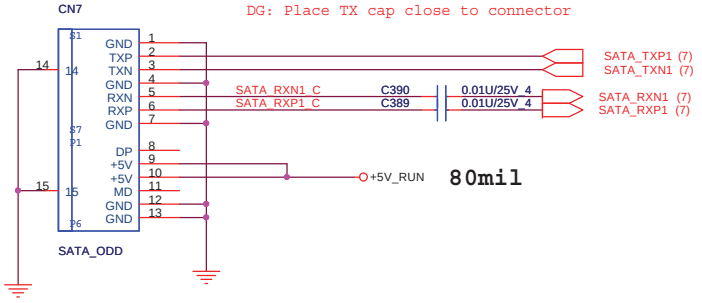
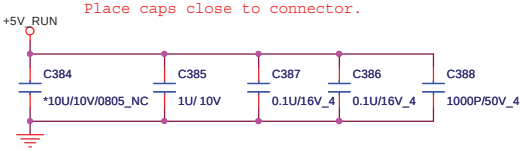
SATA Connector.



ODD Connector





Quanta Computer Inc.

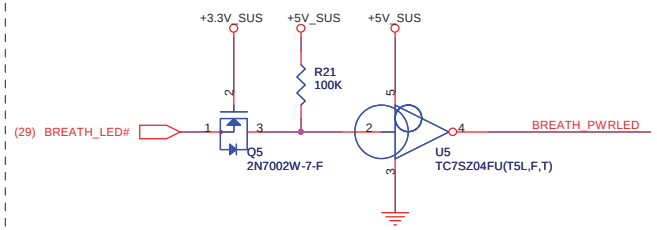
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	SATA (HDD&CD_ROM)	3A

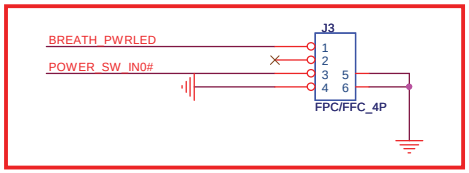
Date: Monday, February 01, 2010 Sheet 35 of 51

UM3

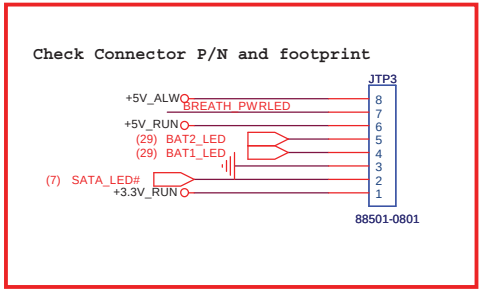
Power



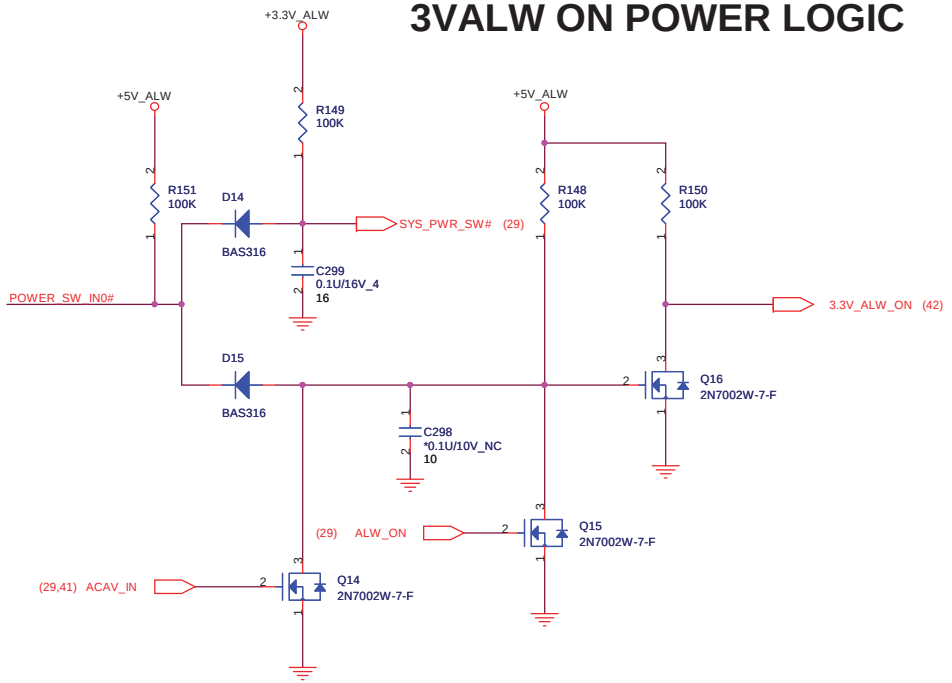
Power button Cable

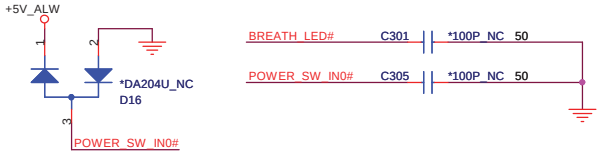


Check Connector P/N and footprint



3VALW ON POWER LOGIC





Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	SWITCH, LED	3A

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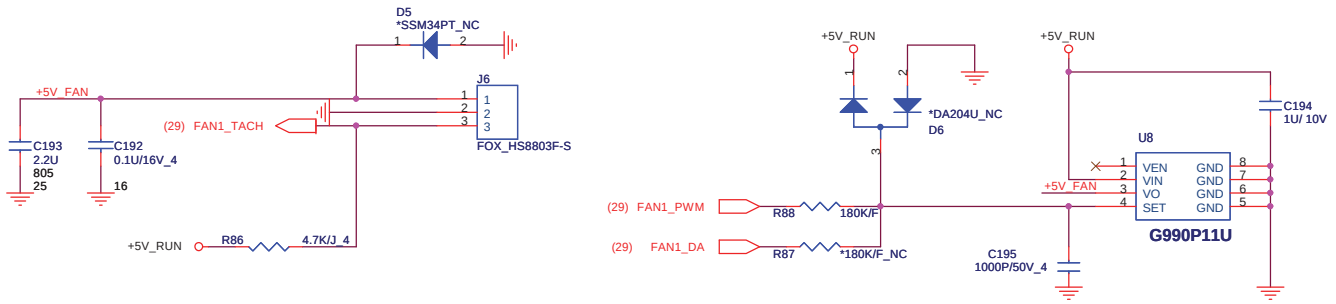
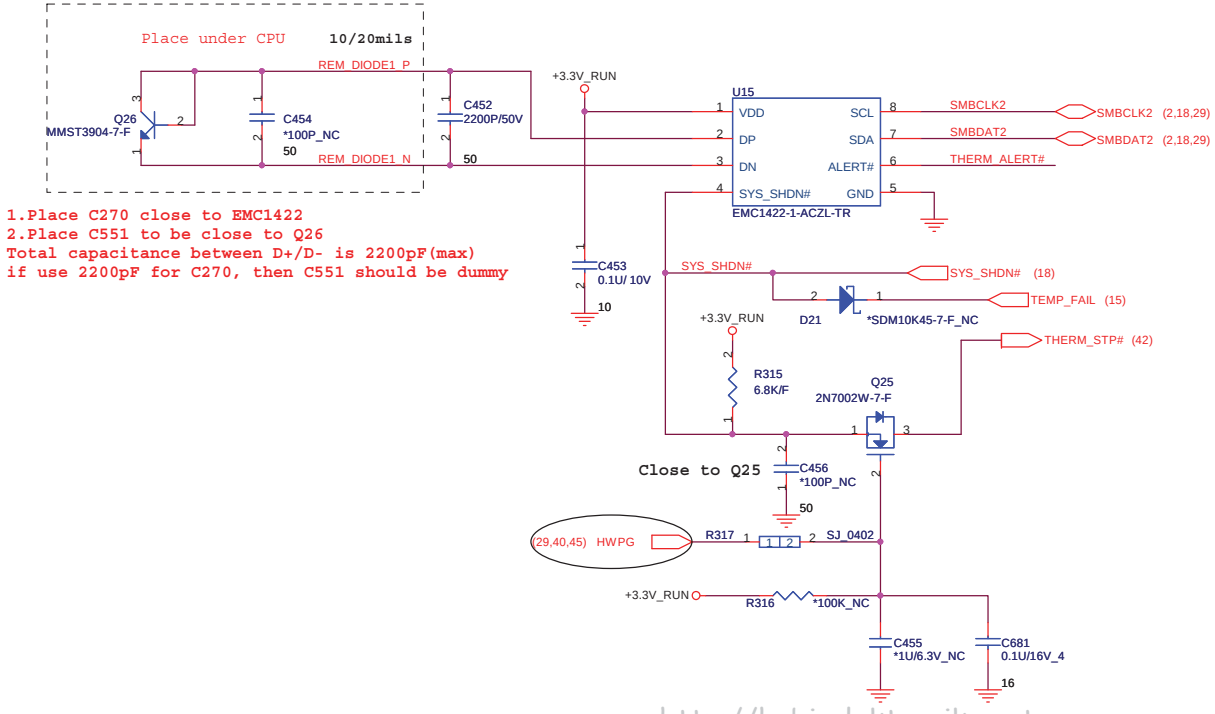
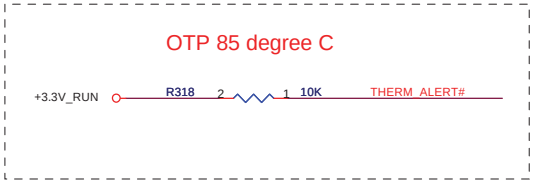
FAN CONTROL

6/23 COPY FROM RM6



UM3





Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	FAN & THERMAL	3A

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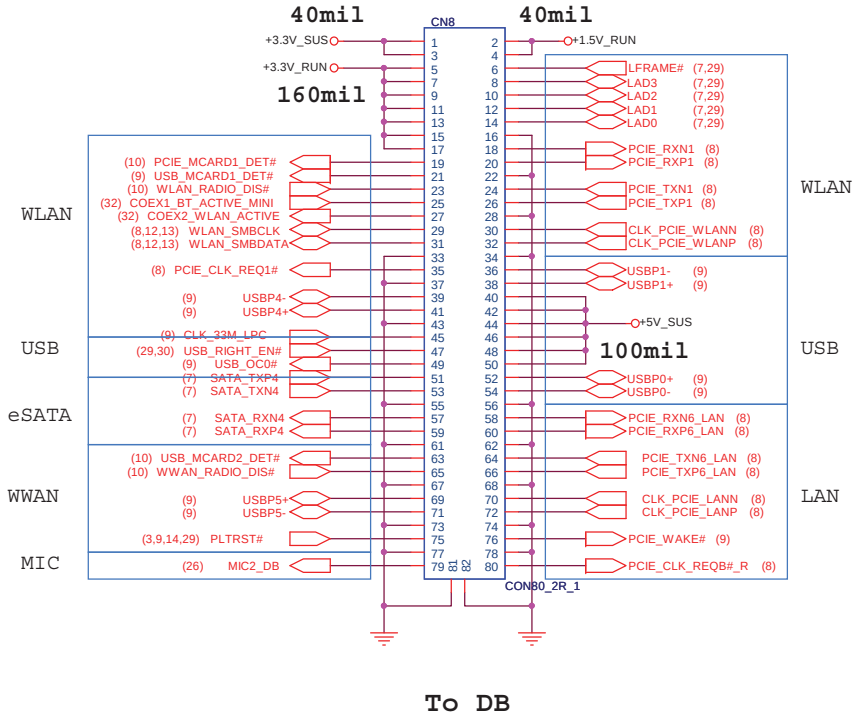
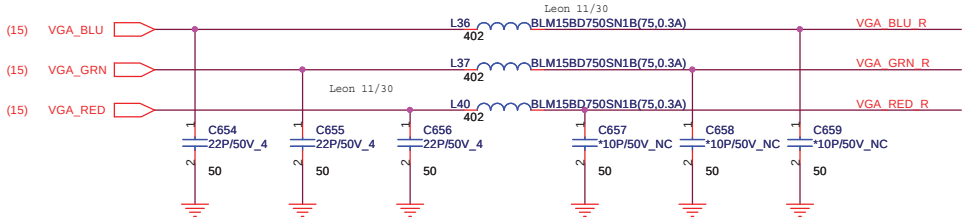
LAN To DB

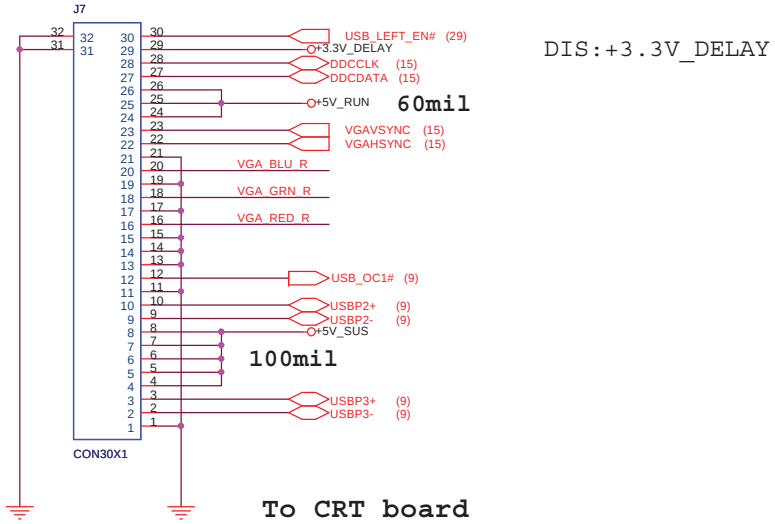
Quanta Computer Inc.

PROJECT : UM9B/C DIS

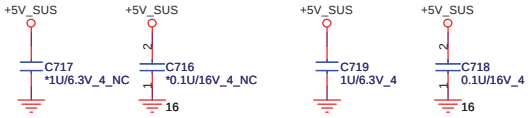
Size	Document Number	Rev
	LAN(AR8152/RJ-45)	3A
Date: Wednesday, January 27, 2010	Sheet 38 of 51	

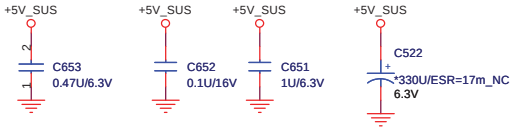






DIS:+3.3V_DELAY

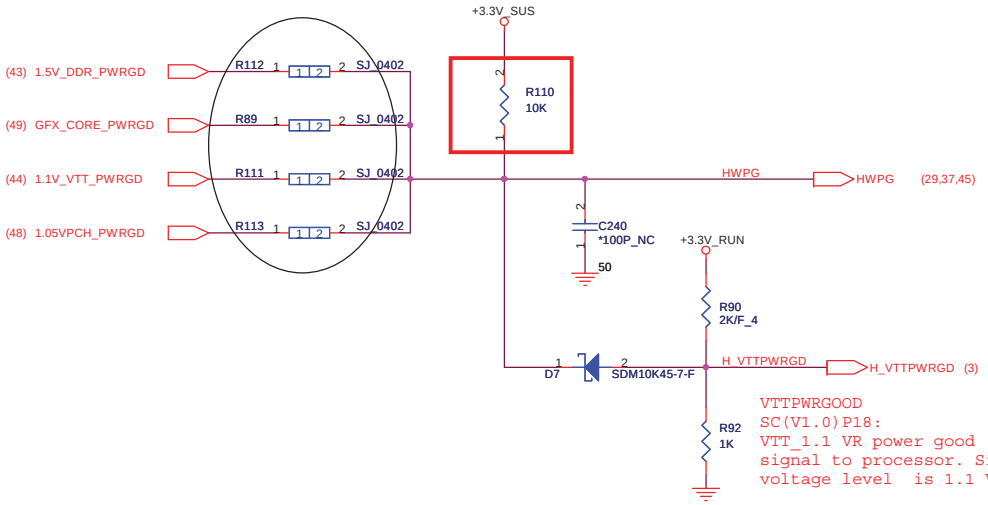


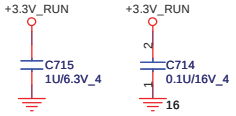


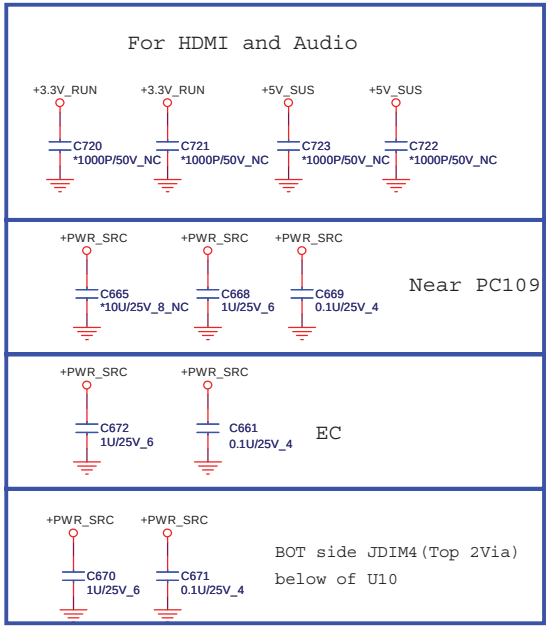
Quanta Computer Inc.
PROJECT : UM9B/C DIS

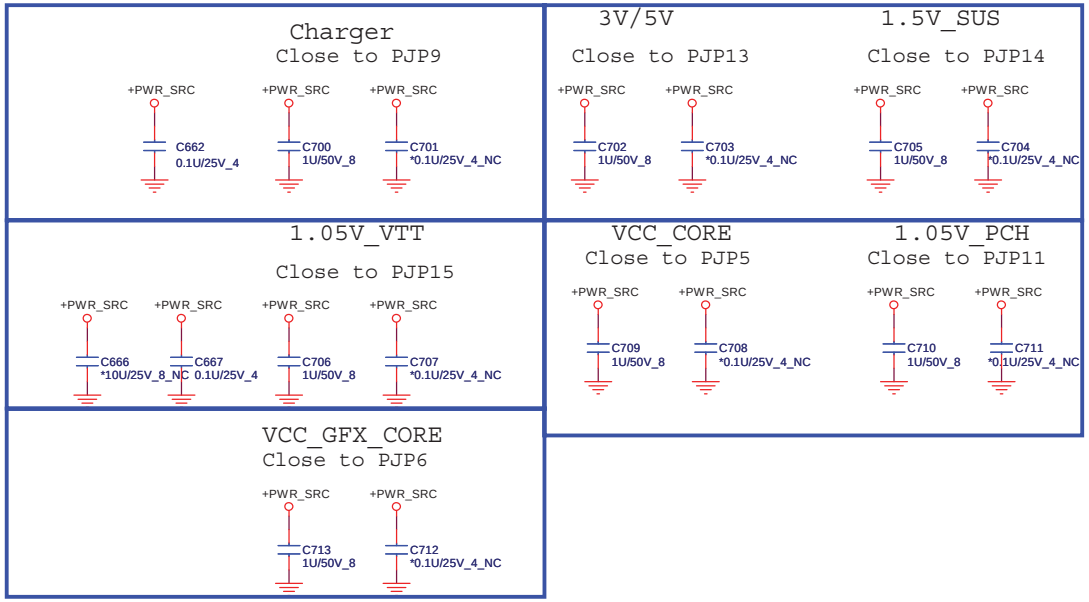
Size	Document Number	Rev
	BTB CONN	3A
Date: Monday, February 01, 2010	Sheet 39 of 51	

UM3









Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	System Reset Circuit	3A

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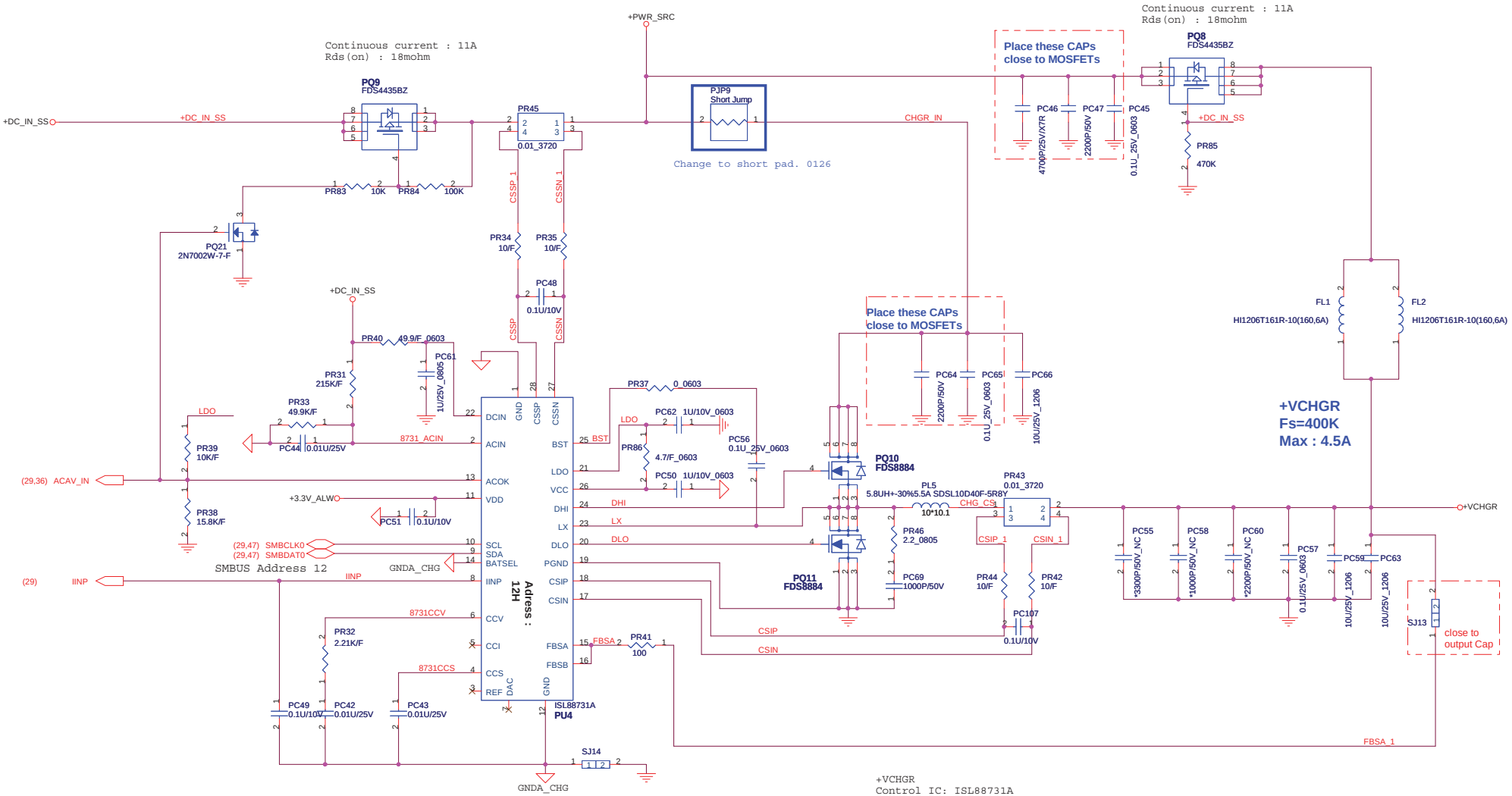
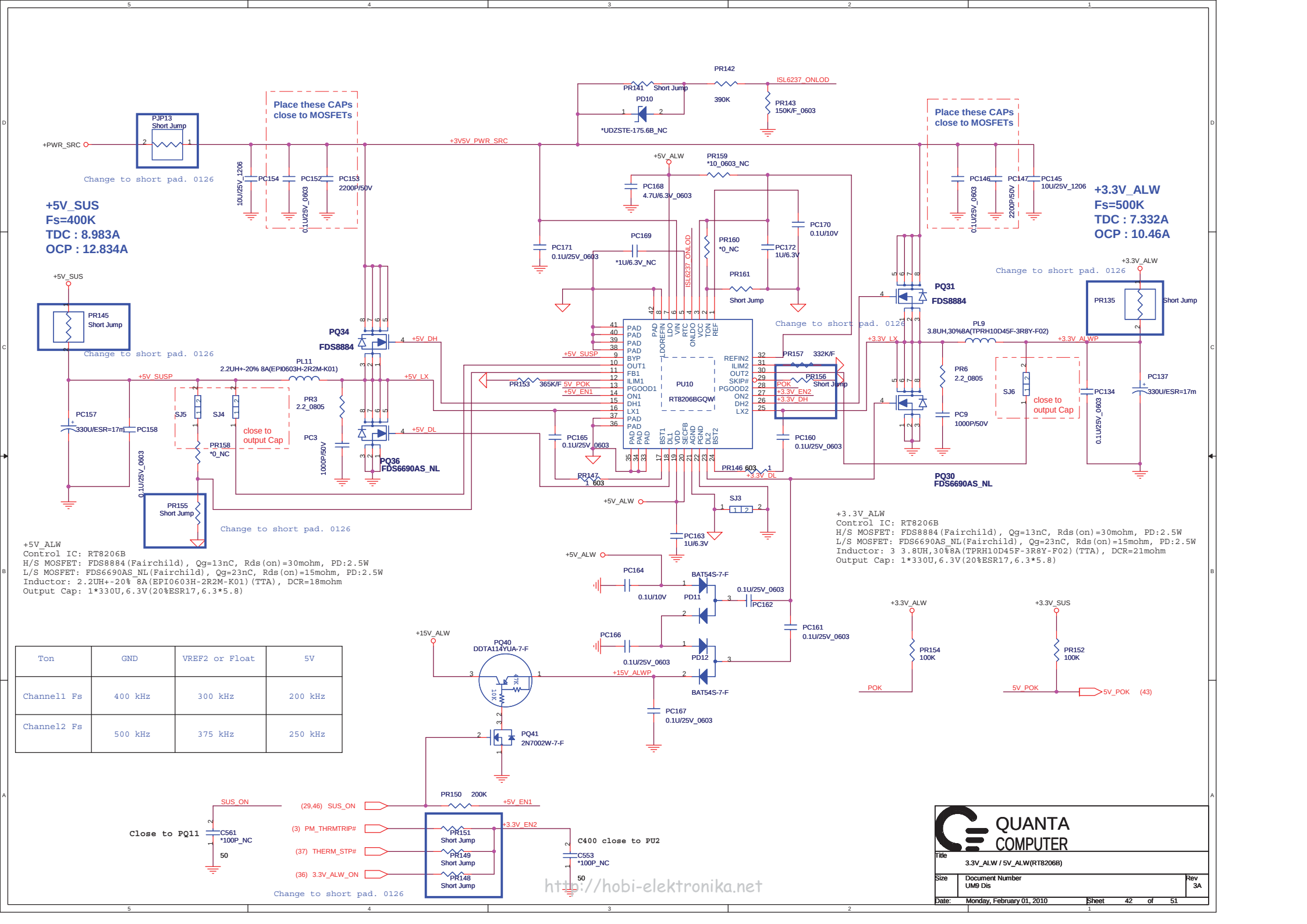
UM9-MADISON-0909 OF POWER.DSN



+VCHGR
Control IC: ISL88731A
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
Inductor: 5.8UH +-30% 5.5A SDSL10D40F-5R8Y(TTA), DCR=21mohm
Output Cap: 2*10U 25V(+-10%,X6S,1206)

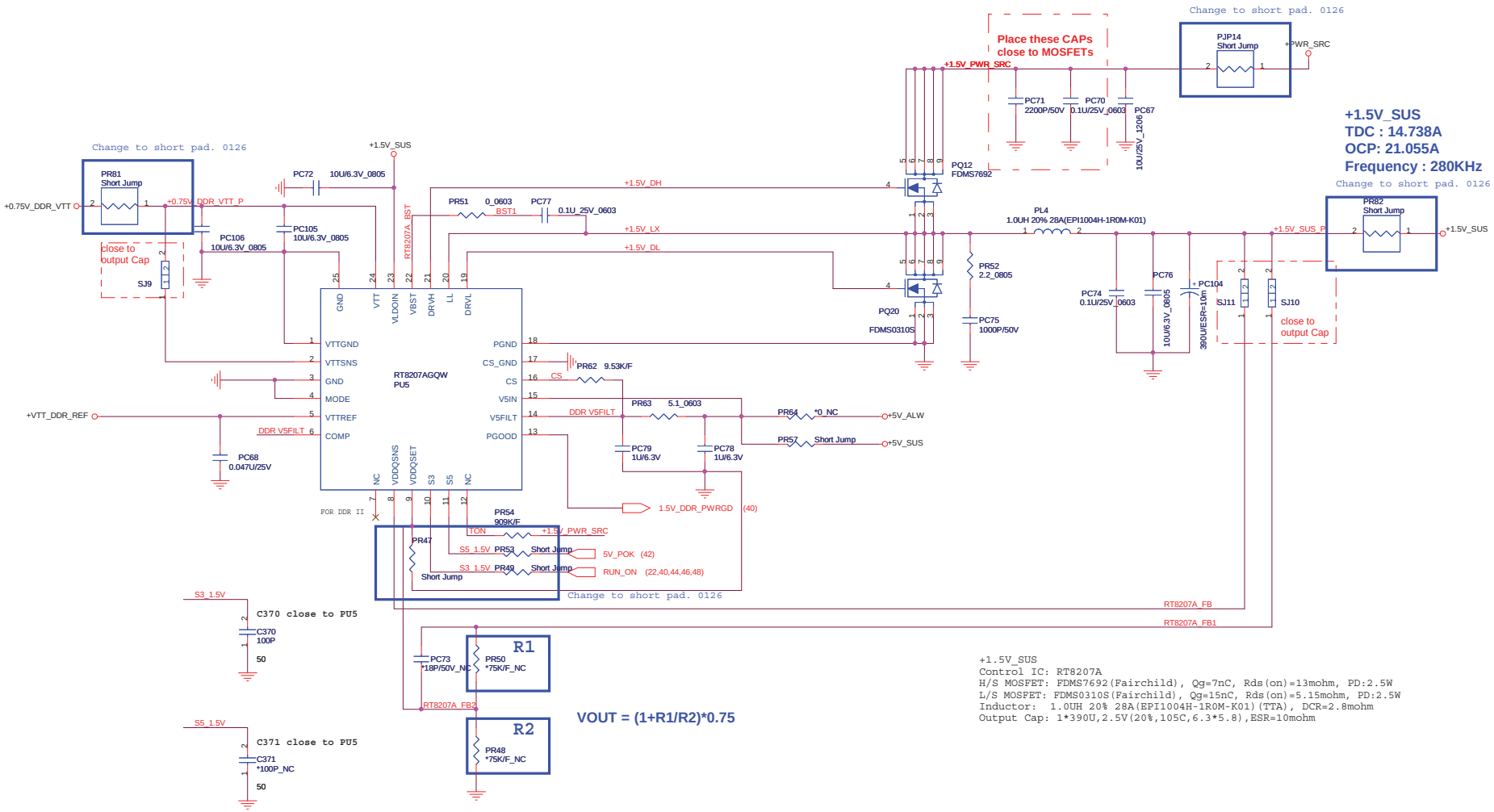
QUANTA COMPUTER

Title	Charger (ISL88731)	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 41 of 51	



Ton	GND	VREF2 or Float	5V
Channel1 Fs	400 kHz	300 kHz	200 kHz
Channel2 Fs	500 kHz	375 kHz	250 kHz

Title	3.3V_ALW / 5V_ALW(RT8206B)		
Size	Document Number UM9 Dis		Rev 3A
Date:	Monday, February 01, 2010	Sheet 42 of 51	



+1.5V_SUS
Control IC: RT8207A
H/S MOSFET: FDMS7692(Fairchild), Qg=7nC, Rds(on)=13mohm, PD:2.5W
L/S MOSFET: FDMS0310S(Fairchild), Qg=15nC, Rds(on)=5.15mohm, PD:2.5W
Inductor: 1.0UH 20% 28A(EPI1004H-1R0M-K01)(TTA), DCR=2.8mohm
Output Cap: 1*390U,2.5V(20%,105C,6.3*5.8),ESR=10mohm

VDDQ and VTT discharge control

MODE pin	Discharge mode
V5IN	No discharge
VDDQ	Tracking discharge
S4/GND	Non-tracking discharge

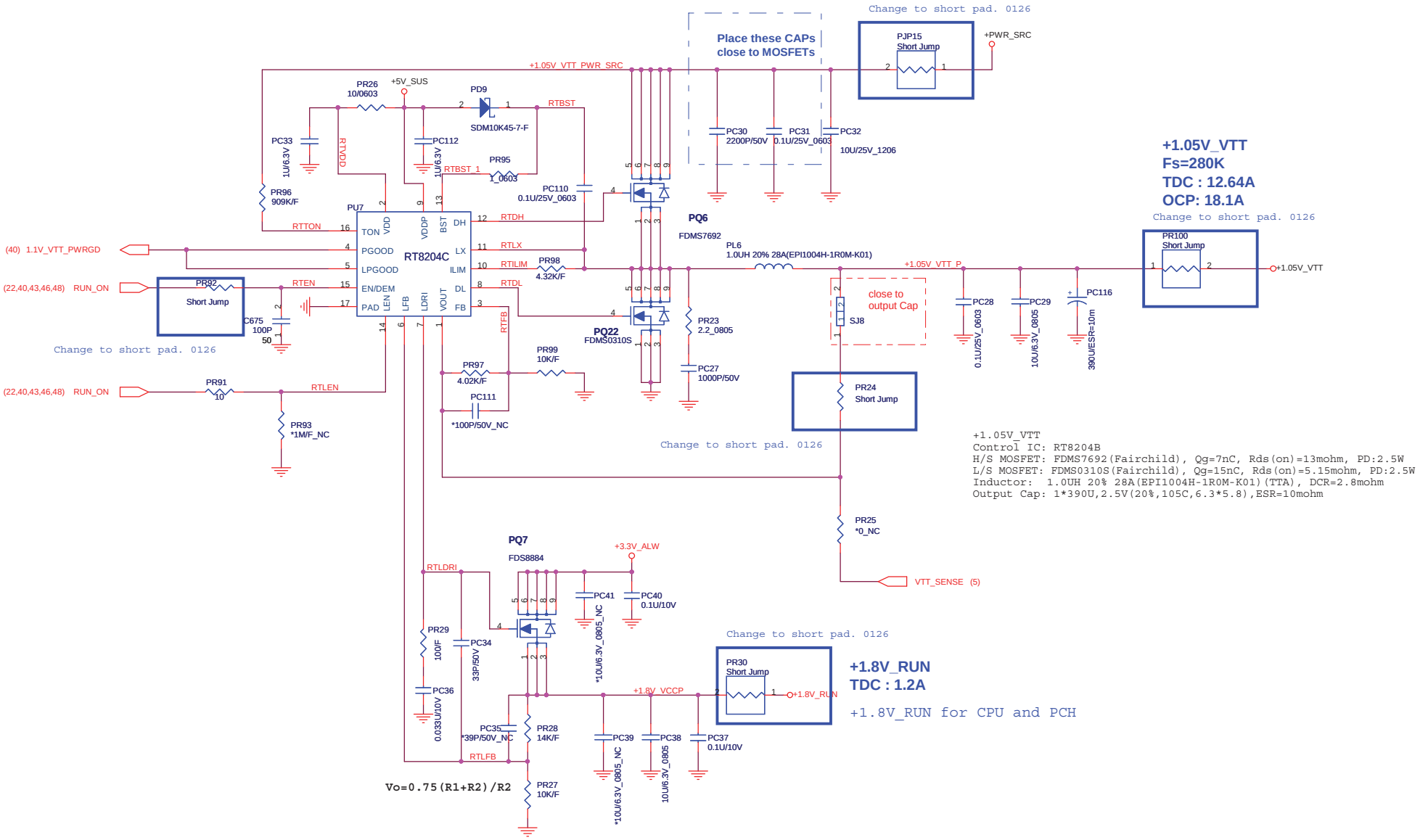
VDDQ output voltage selection

VDDQSET	VDDQ(V)	VTTREF and VTT	NOTE
GND	1.5V	VDDQSNS/2	DDR3
V5IN	1.8V	VDDQSNS/2	DDR2
FB Resistors	Adjusting	VDDQSNS/2	1.5V < VVDDQ < 3V

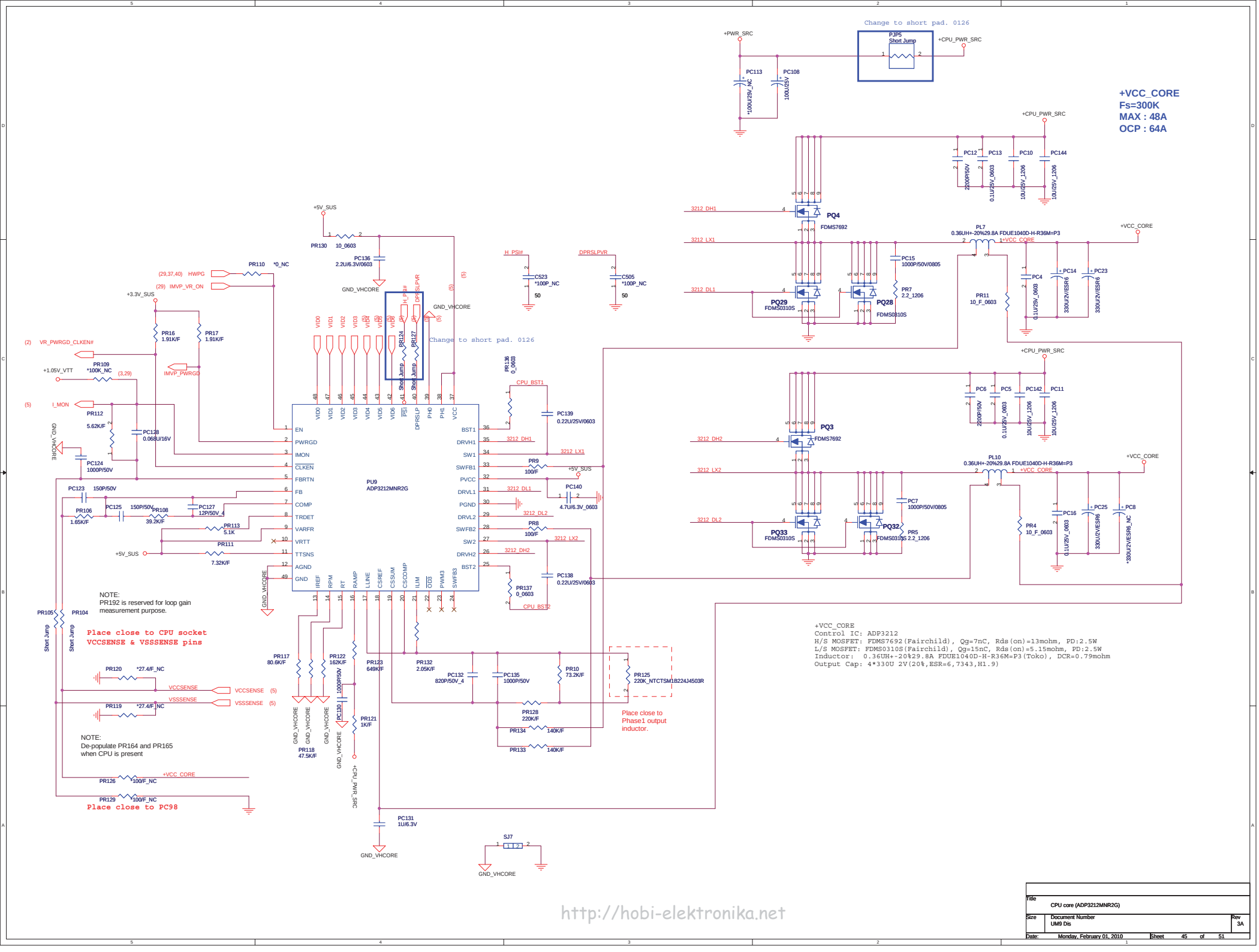
Outputs Management by S3, S5 control

State	S3	S5	VDDQ	VTTREF	VTT
S0	HI	HI	On	On	On
S3	LO	HI	On	On	Off (Hi-Z)
S4/S5	LO	LO	On (discharge)	Off (discharge)	Off (discharge)

Title	DDR3 +1.5V_SUS(RT8207AGQW)		
Size	Document Number UM9 Dis		Rev 3A
Date:	Monday, February 01, 2010	Sheet 43 of 51	



Title	+1.05V_VTT(RT8204C)	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 44 of 51	


Change to short pad. 0126
+PWR_SRC
PJP5
Short Jump
+CPU_PWR_SRC
PC113
PC108
+VCC_CORE
Fs=300K
MAX : 48A
OCP : 64A
PQ4
FDMS7692
PQ29
FDMS0310S
PQ28
FDMS0310S
PL7
0.36UH+-20%29.8A FDUE1040D-H-R36M=P3
PQ3
FDMS7692
PQ33
FDMS0310S
PQ32
FDMS0310S
PL10
0.36UH+-20%29.8A FDUE1040D-H-R36M=P3
PU9
ADP3212MNR2G
Change to short pad. 0126
NOTE:
PR192 is reserved for loop gain measurement purpose.
Place close to CPU socket
VCCSENSE & VSSSENSE pins
NOTE:
De-populate PR164 and PR165
when CPU is present
Place close to PC98
Place close to Phase1 output inductor.
+VCC_CORE
Control IC: ADP3212
H/S MOSFET: FDMS7692(Fairchild), Qg=7nC, Rds(on)=13mohm, PD:2.5W
L/S MOSFET: FDMS0310S(Fairchild), Qg=15nC, Rds(on)=5.15mohm, PD:2.5W
Inductor: 0.36UH+-20%29.8A FDUE1040D-H-R36M=P3(Toko), DCR=0.79mohm
Output Cap: 4*330U 2V(20%,ESR=6,7343,H1.9)
http://hobi-elektronika.net
Title
CPU core (ADP3212MNR2G)
Size
Document Number
UM9 Dis
Rev
3A
Date: Monday, February 01, 2010
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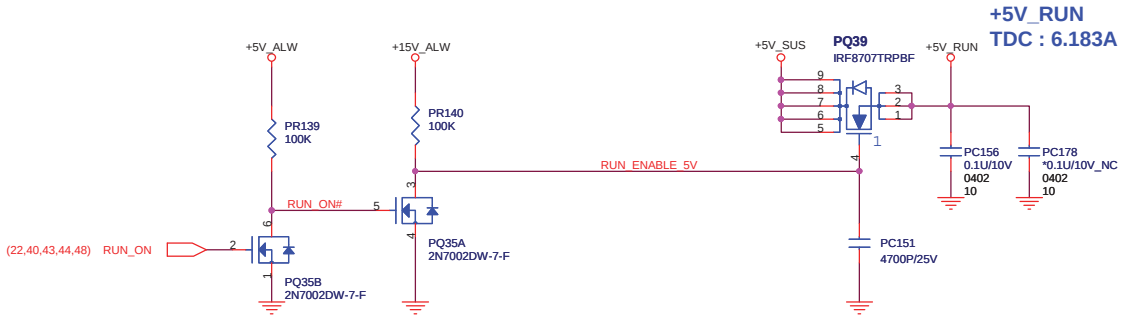
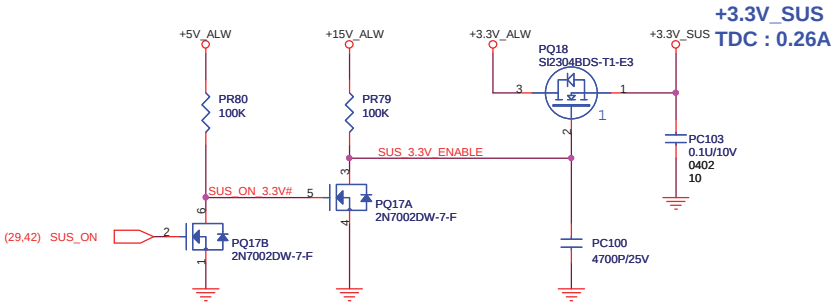
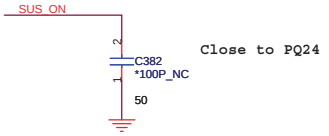
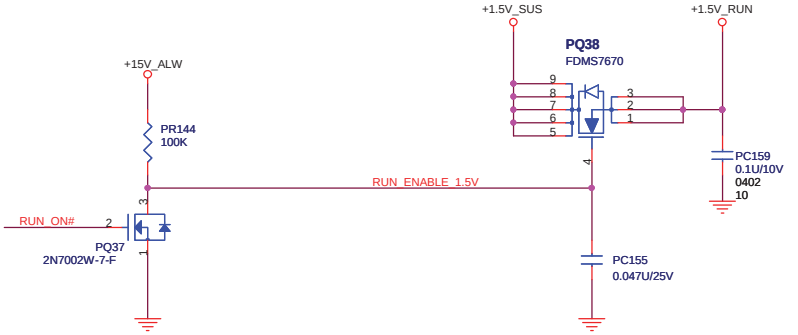
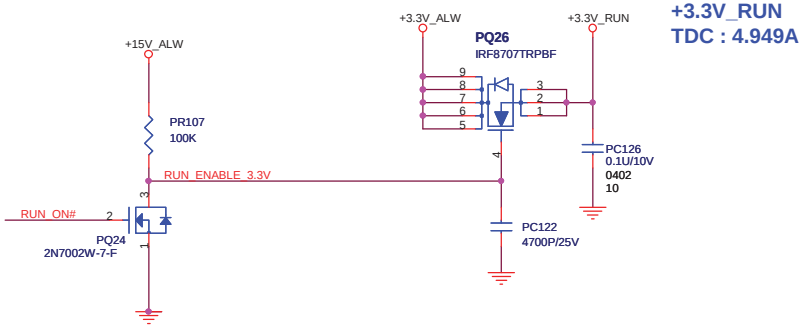


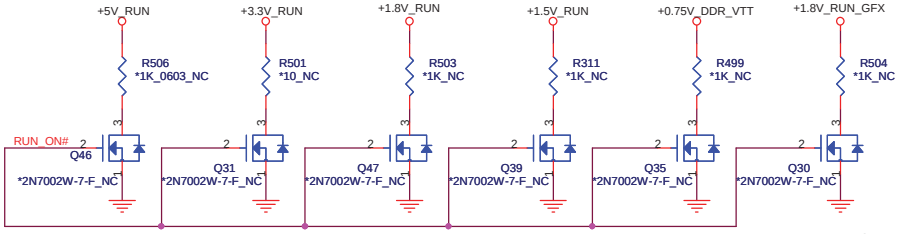


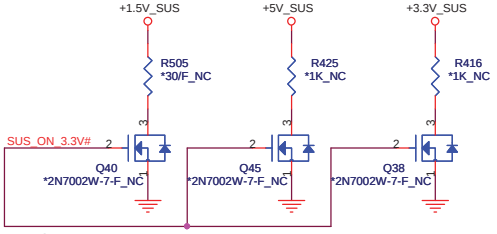






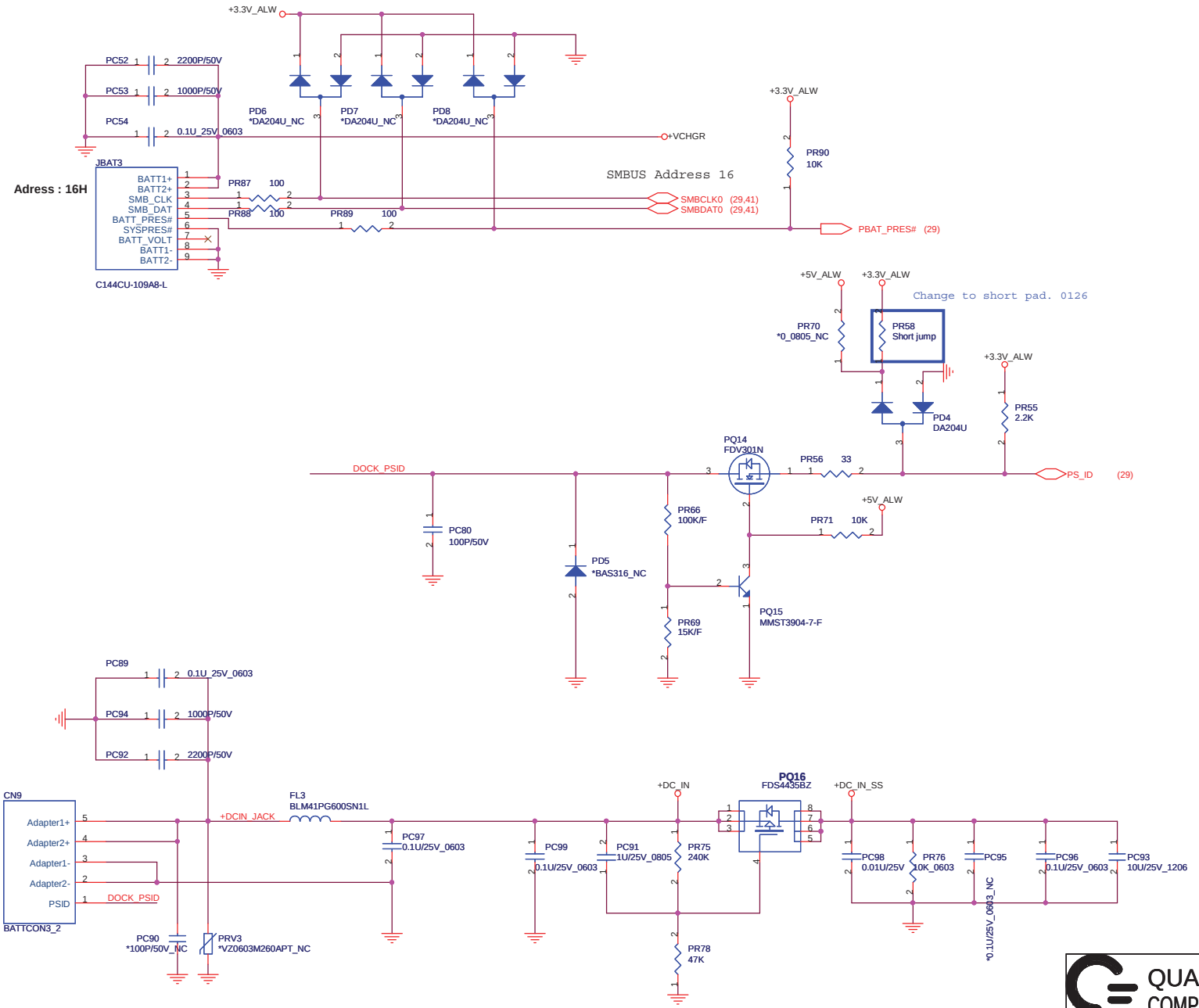
Reserve discharge path





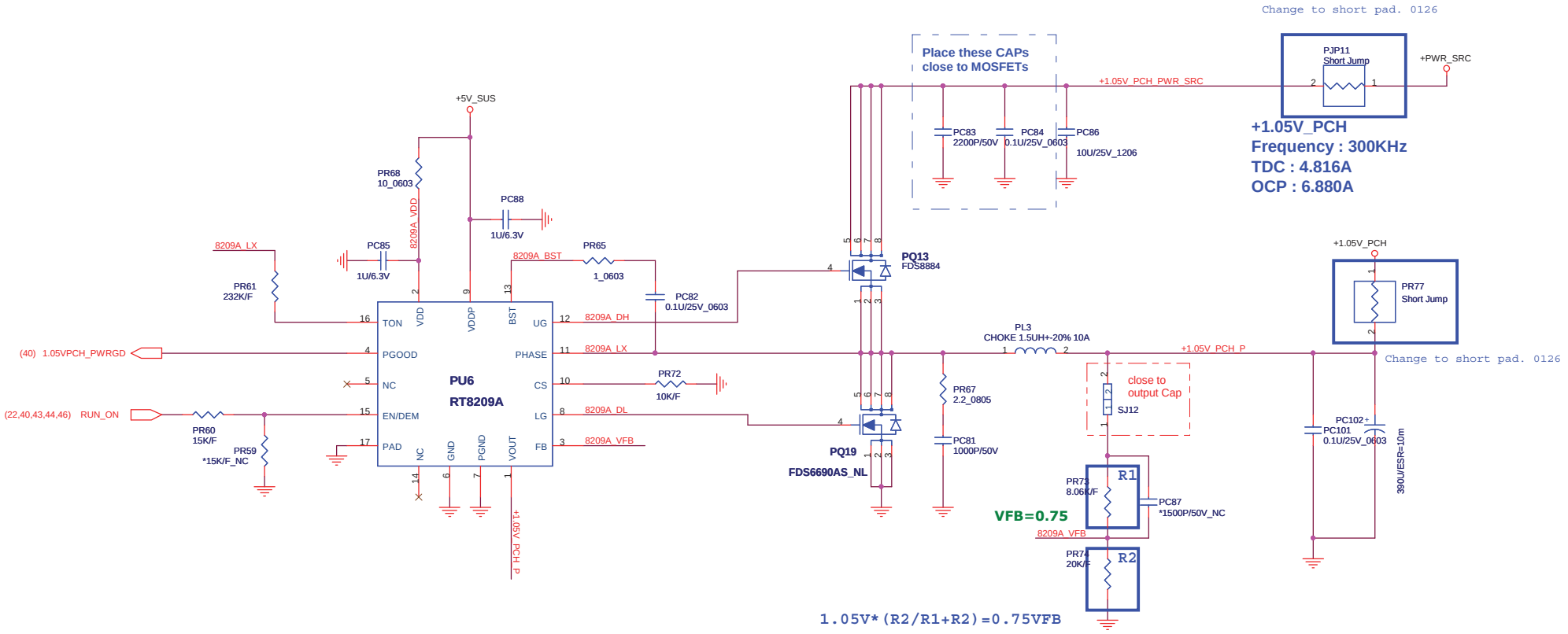
QUANTA COMPUTER

Title	RUN / SUS POWER SW	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 46 of 51	



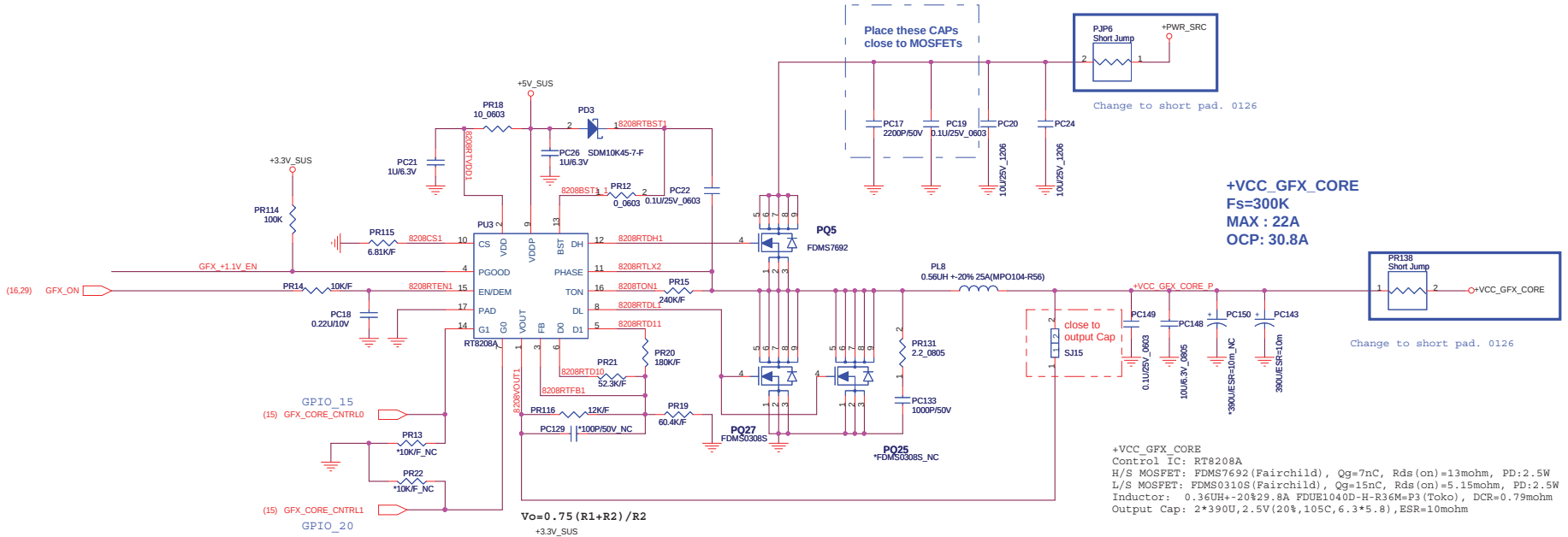
QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 47 of 51	



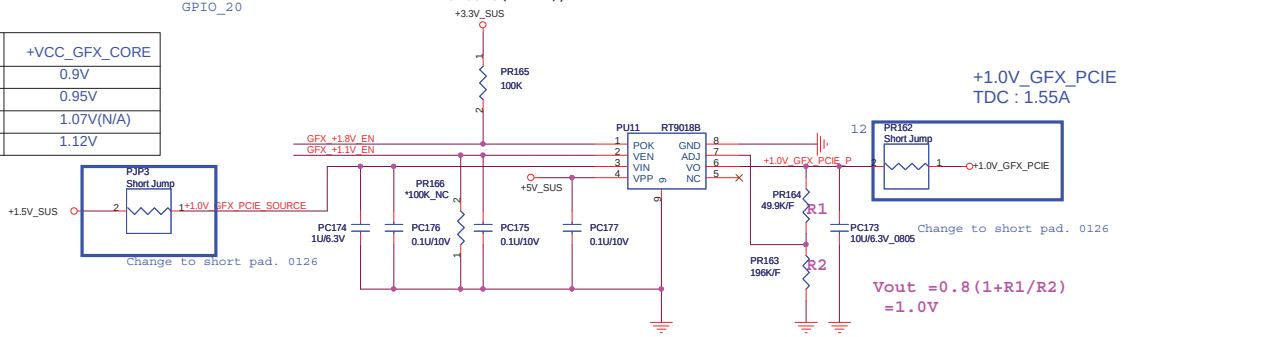
+1.05V_PCH
Control IC: RT8209A
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS6690AS_NL(Fairchild), Qg=23nC, Rds(on)=15mohm, PD:2.5W
Inductor: 1.5UH+-20% 9A (10D40F-1R5M)(TTA), DCR=10.5mohm
Output Cap: 1*390U,2.5V(20%,105C,6.3*5.8),ESR=10mohm

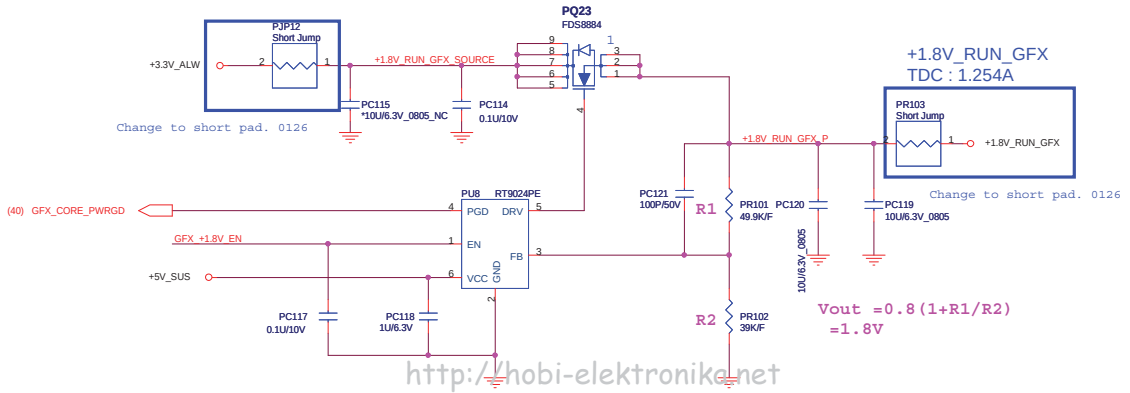
Title	+1.05V_PCH(RT8209A)	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 48 of 51	



For Park-XT:

GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	+VCC_GFX_CORE
LOW	LOW	0.9V
HIGH	LOW	0.95V
LOW	HIGH	1.07V(N/A)
HIGH	HIGH	1.12V





Title	VGA power (RT8208A)	
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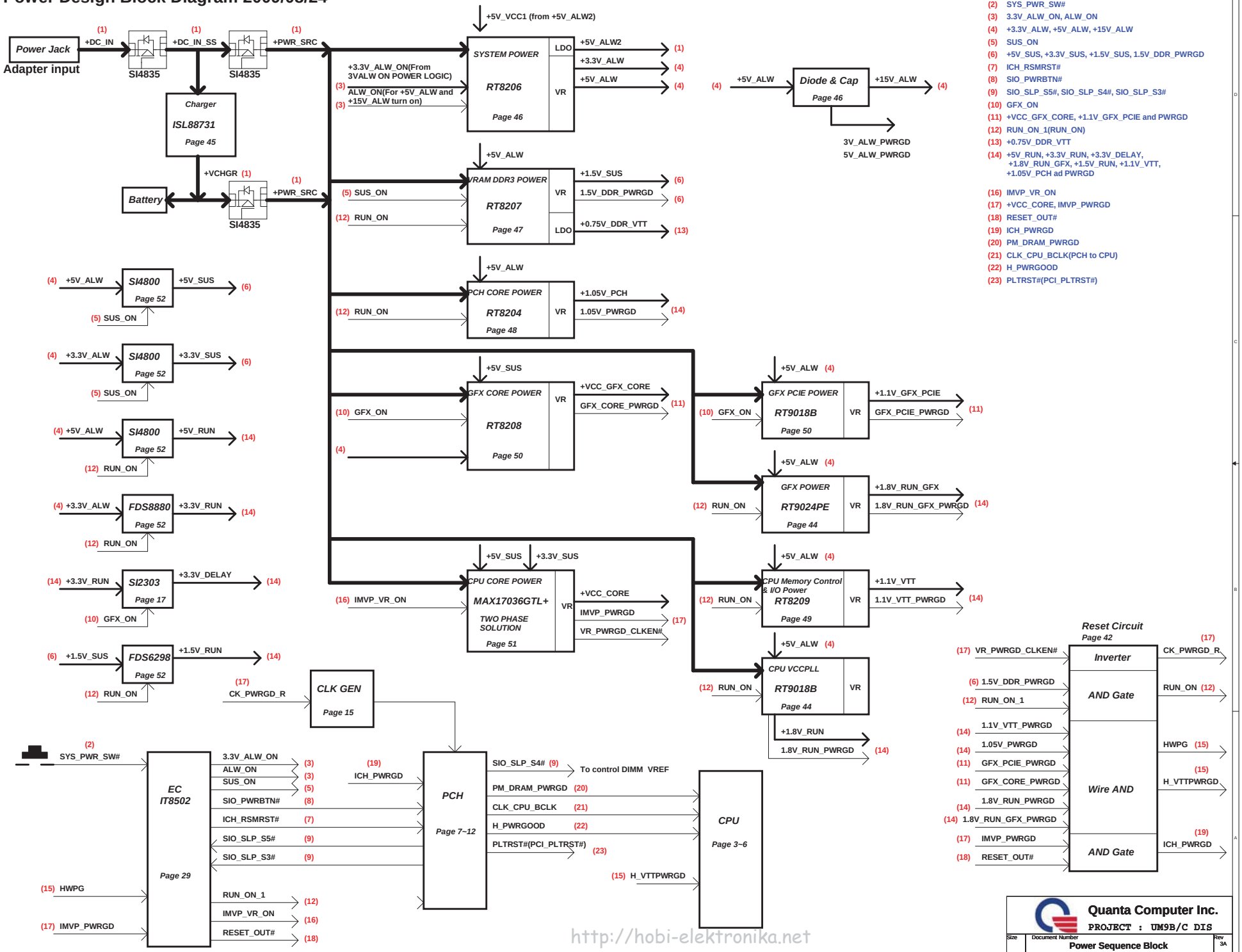
Power Design Block Diagram 2009/08/24



(1) AC : DC_IN -> DC_IN_SS -> +PWR_SRC
Bat : +VCHGR -> +PWR_SRC,+5V_ALW2,
(2) SYS_PWR_SW#
(3) 3.3V_ALW_ON, ALW_ON
(4) +3.3V_ALW, +5V_ALW, +15V_ALW
(5) SUS_ON
(6) +5V_SUS, +3.3V_SUS, +1.5V_SUS, 1.5V_DDR_PWRGD
(7) ICH_RSMRST#
(8) SIO_PWRBTN#
(9) SIO_SLP_S5#, SIO_SLP_S4#, SIO_SLP_S3#
(10) GFX_ON
(11) +VCC_GFX_CORE, +1.1V_GFX_PCIE and PWRGD
(12) RUN_ON_1(RUN_ON)
(13) +0.75V_DDR_VTT
(14) +5V_RUN, +3.3V_RUN, +3.3V_DELAY, +1.8V_RUN_GFX, +1.5V_RUN, +1.1V_VTT, +1.05V_PCH ad PWRGD
(16) IMVP_VR_ON
(17) +VCC_CORE, IMVP_PWRGD
(18) RESET_OUT#
(19) ICH_PWRGD
(20) PM_DRAM_PWRGD
(21) CLK_CPU_BCLK(PCH to CPU)
(22) H_PWRGOOD
(23) PLTRST#(PCI_PLTRST#)

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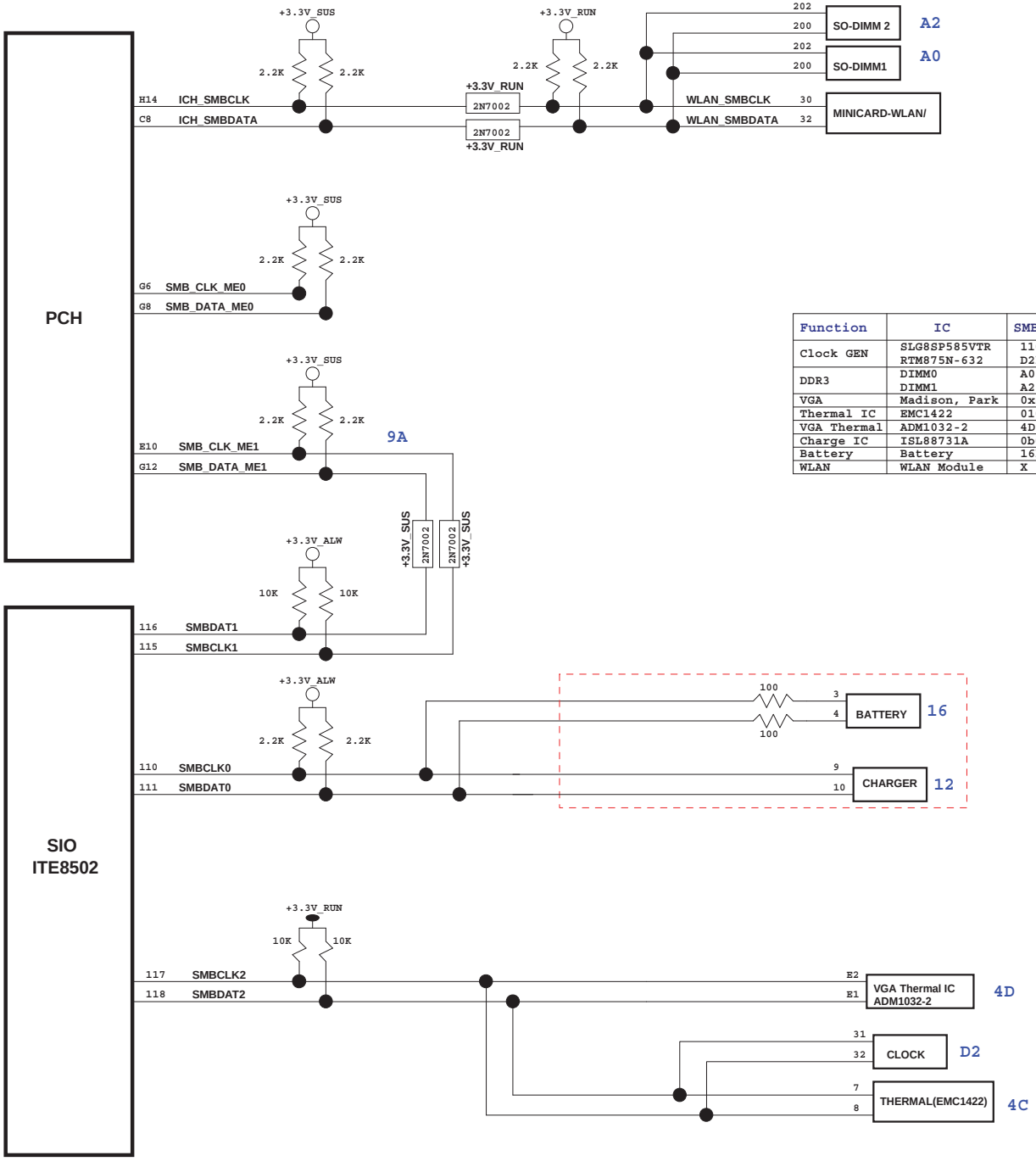

Function	IC	SMBus Address
Clock GEN	SLG8SP585VTR RTM875N-632	11010010 (D2h) D2h
DDR3	DIMM0 DIMM1	A0 A2
VGA	Madison, Park	0x41
Thermal IC	EMC1422	0100 1100b (4Ch)
VGA Thermal	ADM1032-2	4D
Charge IC	ISL88731A	0b0001001 (0x12)
Battery	Battery	16h
WLAN	WLAN Module	X

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