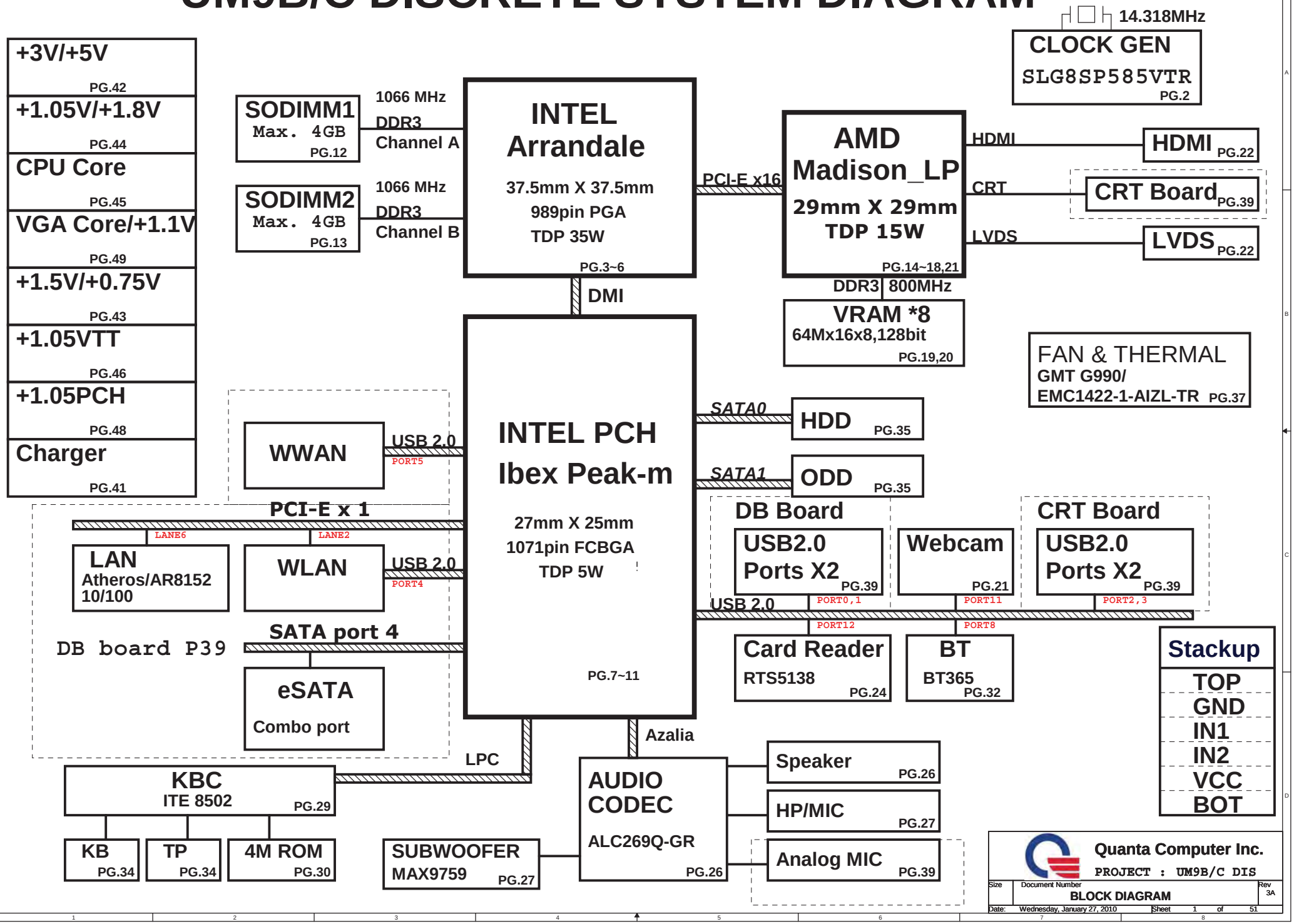
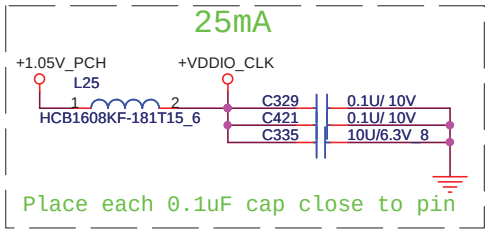
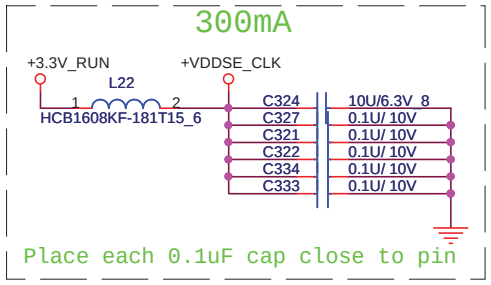
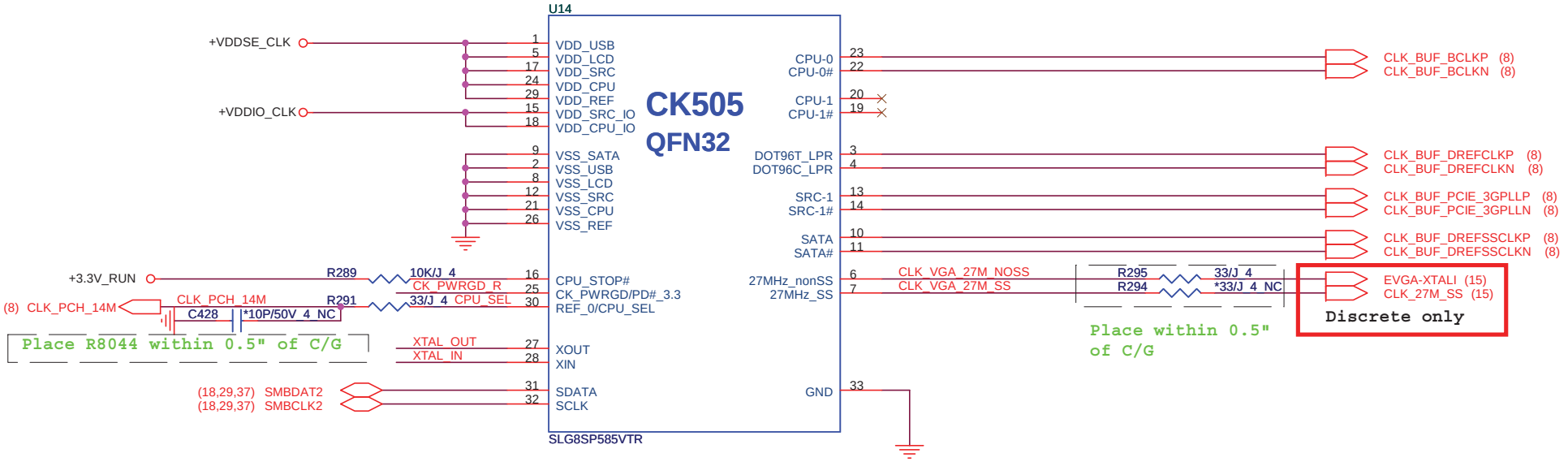
UM9B/C DISCRETE SYSTEM DIAGRAM

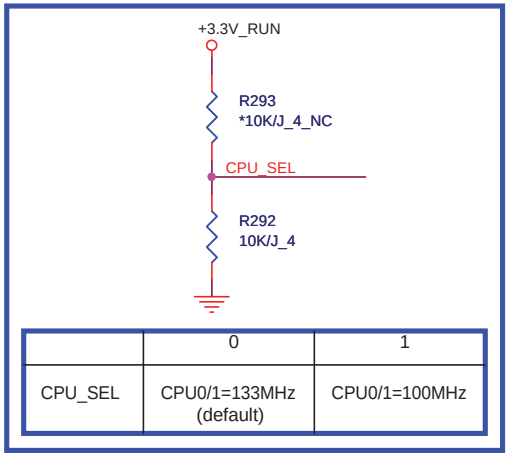


PDC (Power Cap quantities follow UM3)

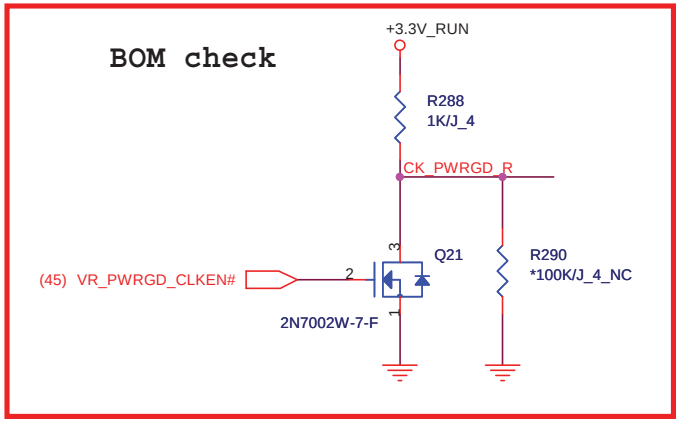


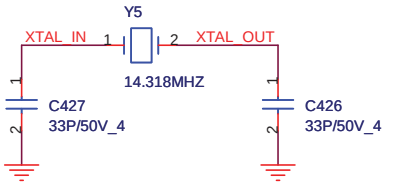






	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

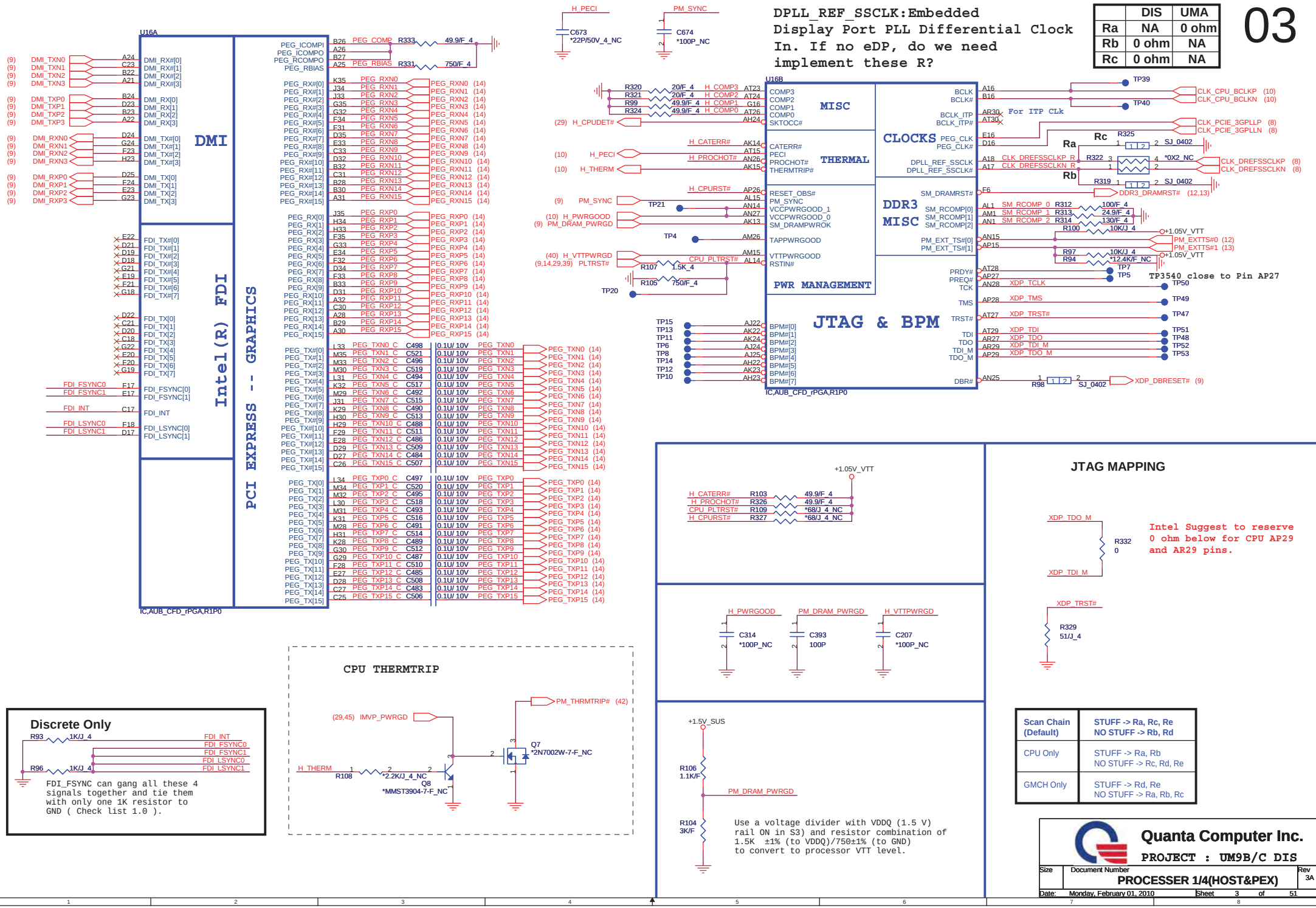




Quanta Computer Inc.

PROJECT : UM9B/C DIS

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


U16A
DMI
Intel(R) FDI
PCI EXPRESS -- GRAPHICS
IC,AUB_CFD_rPGA,R1P0
DMI_TXN0
DMI_TXN1
DMI_TXN2
DMI_TXN3
DMI_TXP0
DMI_TXP1
DMI_TXP2
DMI_TXP3
DMI_RXN0
DMI_RXN1
DMI_RXN2
DMI_RXN3
DMI_RXP0
DMI_RXP1
DMI_RXP2
DMI_RXP3
FDI_FSYNC0
FDI_FSYNC1
FDI_INT
FDI_LSYNC0
FDI_LSYNC1
PEG_ICOMPI
PEG_ICOMPO
PEG_RCOMPO
PEG_RBIAS
PEG_COMP
R333 49.9/F_4
R331 750/F_4
PEG_RXN0 (14)
PEG_RXP0 (14)
PEG_TXN0 (14)
PEG_TXP0 (14)
H_PECI
PM_SYNC
C673 *22P/50V_4_NC
C674 *100P_NC
U16B
MISC
THERMAL
CLOCKS
DDR3 MISC
PWR MANAGEMENT
JTAG & BPM
IC,AUB_CFD_rPGA,R1P0
R320 20/F_4 H_COMP3
R321 20/F_4 H_COMP2
R99 49.9/F_4 H_COMP1
R324 49.9/F_4 H_COMP0
H_CPUDET#
H_CATERR#
H_PECI
H_PROCHOT#
H_THERM
H_CPURST#
PM_SYNC
TP21
H_PWRGOOD
PM_DRAM_PWRGD
TP4
H_VTTPWRGD
PLTRST#
R107 1.5K_4
R105 750/F_4
TP20
TP15
TP13
TP11
TP6
TP8
TP14
TP12
TP10
BPM#[0]
BPM#[1]
BPM#[2]
BPM#[3]
BPM#[4]
BPM#[5]
BPM#[6]
BPM#[7]
TP39
TP40
CLK_CPU_BCLKP (10)
CLK_CPU_BCLKN (10)
For ITP CLk
CLK_PCIE_3GPLLP (8)
CLK_PCIE_3GPLLN (8)
Rc
Ra
Rb
R325 SJ_0402
R322 *0X2_NC
CLK_DREFSSCLKP_R
CLK_DREFSSCLKN_R
CLK_DREFSSCLKP (8)
CLK_DREFSSCLKN (8)
R319 SJ_0402
DDR3_DRAMRST# (12,13)
SM_RCOMP_0 R312 100/F_4
SM_RCOMP_1 R313 24.9/F_4
SM_RCOMP_2 R314 130/F_4
R100 10K/J_4 +1.05V_VTT
PM_EXTTS#0 (12)
PM_EXTTS#1 (13)
R97 10K/J_4
R94 *12.4K/F_NC
+1.05V_VTT
TP7
TP5
TP3540 close to Pin AP27
XDP_TCLK TP50
XDP_TMS TP49
XDP_TRST# TP47
XDP_TDI TP51
XDP_TDO TP48
XDP_TDI_M TP52
XDP_TDO_M TP53
R98 SJ_0402
XDP_DBRESET# (9)
DPLL_REF_SSCLK:Embedded Display Port PLL Differential Clock In. If no eDP, do we need implement these R?
DIS UMA
Ra NA 0 ohm
Rb 0 ohm NA
Rc 0 ohm NA
03
+1.05V_VTT
H_CATERR# R103 49.9/F_4
H_PROCHOT# R326 49.9/F_4
CPU_PLTRST# R109 *68/J_4_NC
H_CPURST# R327 *68/J_4_NC
H_PWRGOOD C314 *100P_NC
PM_DRAM_PWRGD C393 100P
H_VTTPWRGD C207 *100P_NC
+1.5V_SUS
R106 1.1K/F
PM_DRAM_PWRGD
R104 3K/F
Use a voltage divider with VDDQ (1.5 V) rail ON in S3) and resistor combination of 1.5K ±1% (to VDDQ)/750±1% (to GND) to convert to processor VTT level.
JTAG MAPPING
XDP_TDO_M
R332 0
XDP_TDI_M
XDP_TRST#
R329 51/J_4
Intel Suggest to reserve 0 ohm below for CPU AP29 and AR29 pins.
Discrete Only
R93 1K/J_4 FDI_INT
FDI_FSYNC0
FDI_FSYNC1
R96 1K/J_4 FDI_LSYNC0
FDI_LSYNC1
FDI_FSYNC can gang all these 4 signals together and tie them with only one 1K resistor to GND (Check list 1.0).
CPU THERMTRIP
(29,45) IMVP_PWRGD
PM_THRMTRIP# (42)
H_THERM
R108 *2.2K/J_4_NC
Q8 *MMST3904-7-F_NC
Q7 *2N7002W-7-F_NC
Scan Chain (Default) | STUFF -> Ra, Rc, Re NO STUFF -> Rb, Rd
CPU Only | STUFF -> Ra, Rb NO STUFF -> Rc, Rd, Re
GMCH Only | STUFF -> Rd, Re NO STUFF -> Ra, Rb, Rc
Quanta Computer Inc.
PROJECT : UM9B/C DIS
Size
Document Number
PROCESSER 1/4(HOST&PEX)
Rev 3A
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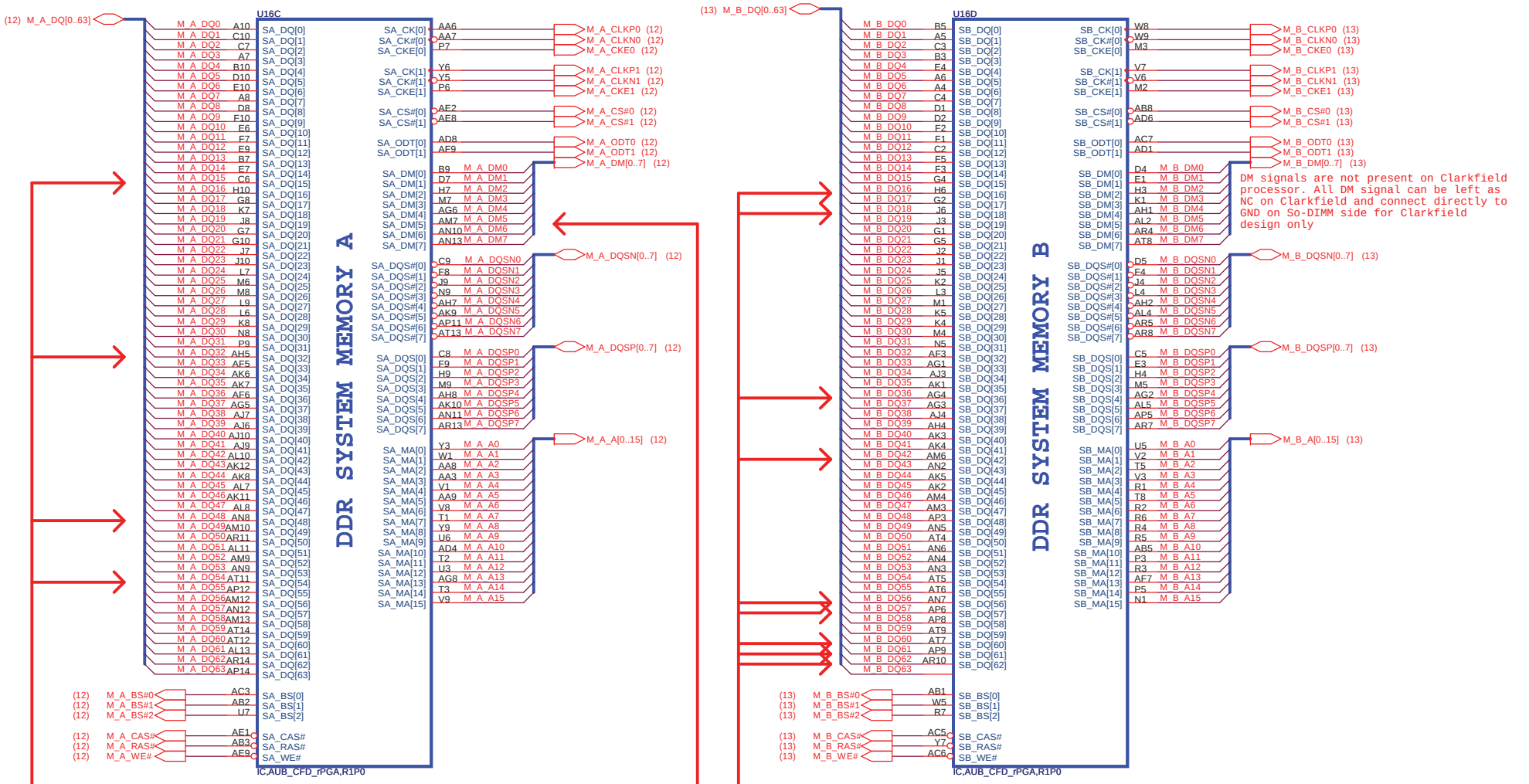
AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



Quanta Computer Inc.

PROJECT : UM9B/C DIS

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

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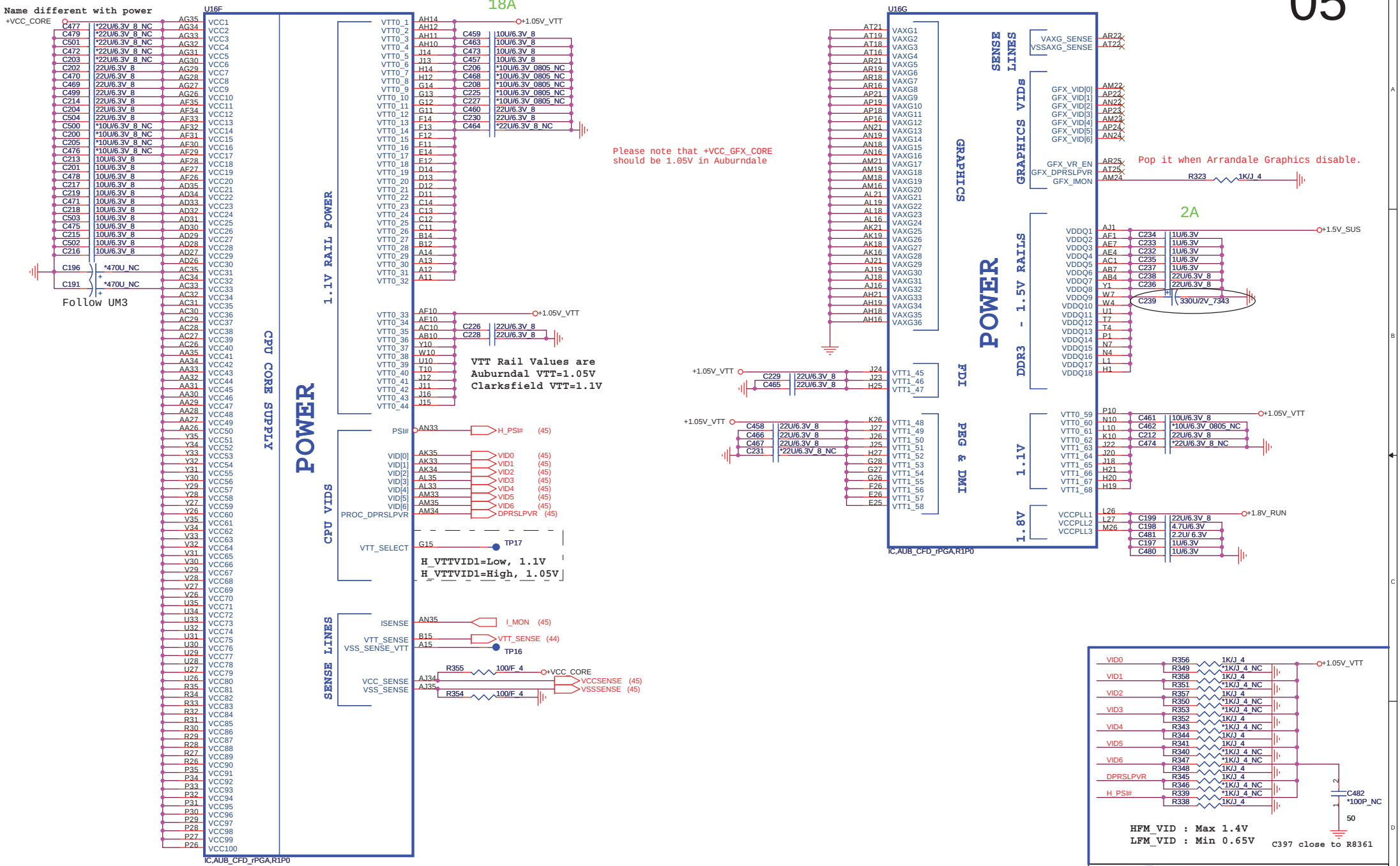
Name different with power
+VCC_CORE
Follow UM3
U16F
CPU CORE SUPPLY
POWER
1.1V RAIL POWER
CPU VIDS
SENSE LINES
IC,AUB_CFD_rPGA,R1P0
18A
VTT Rail Values are
Auburndal VTT=1.05V
Clarksfield VTT=1.1V
H_VTTVID1=Low, 1.1V
H_VTTVID1=High, 1.05V
Please note that +VCC_GFX_CORE
should be 1.05V in Auburndale
U16G
GRAPHICS
POWER
SENSE LINES
GRAPHICS VIDs
DDR3 - 1.5V RAILS
FDI
PEG & DMI
1.1V
1.8V
Pop it when Arrandale Graphics disable.
2A
HFM_VID : Max 1.4V
LFM_VID : Min 0.65V
C397 close to R8361
Quanta Computer Inc.
PROJECT : UM9B/C DIS
PROCESSER 3/4(POWER)
Size
Document Number
Rev
3A
Date: Monday, February 01, 2010
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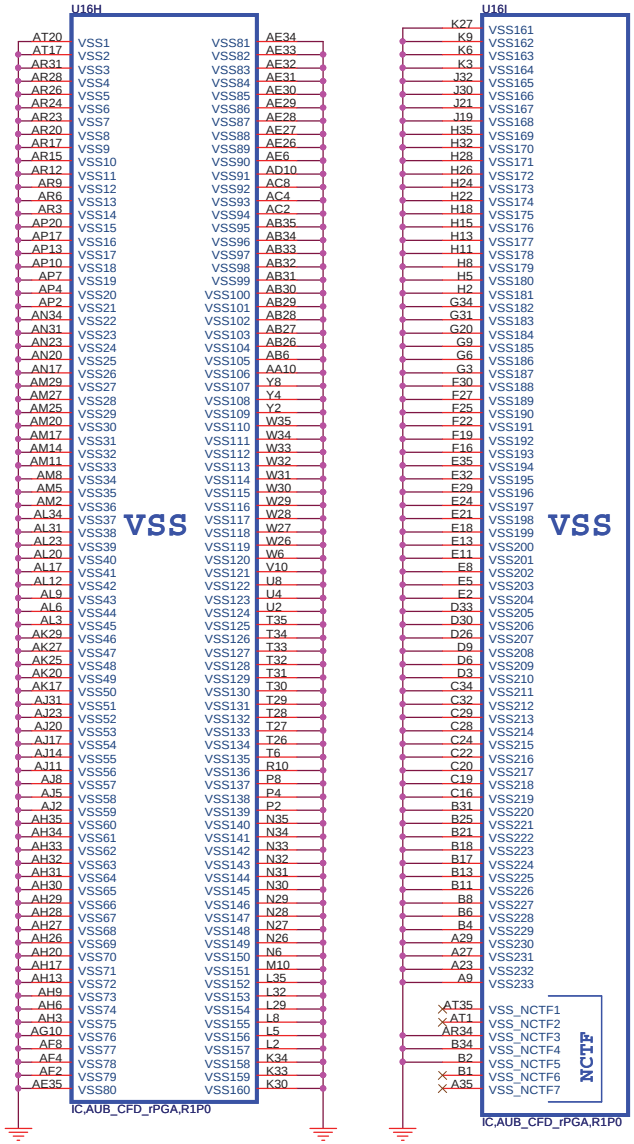
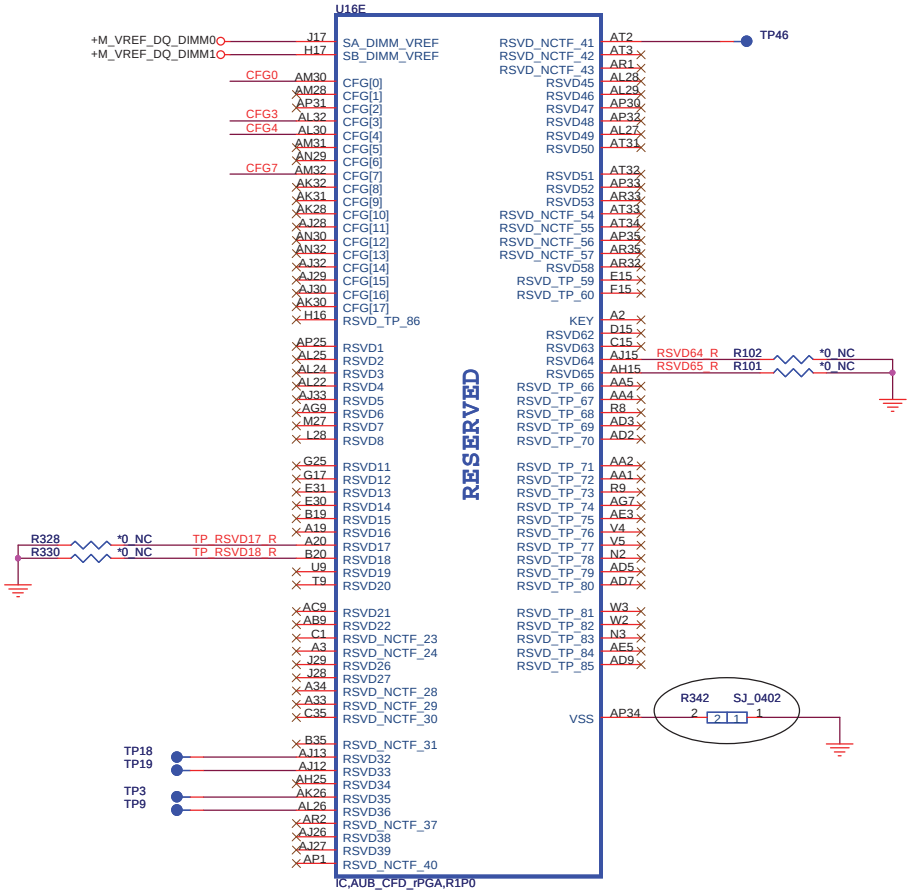
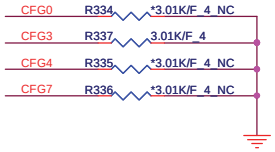
AUBURNDALE/CLARKSFIELD PROCESSOR (GND)



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

Size	Document Number	Rev
	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 B13
RTCX2 D13
RTCRST# C14
SRTCRST# D17
INTRUDER# A16
INTVRMEN A14

LPC
FWH0 / LAD0 D33
FWH1 / LAD1 B33
FWH2 / LAD2 C32
FWH3 / LAD3 A32
FWH4 / LFRAME# C34
LDRQ0# A34
(+3V) LDRQ1# / GPIO23 F34
SERIRQ AB9

IHDA
HDA_BCLK A30
HDA_SYNC D29
HDA_RST# C30
HDA_SDIN0 G30
HDA_SDIN1 F30
HDA_SDIN2 E32
HDA_SDIN3 F32
HDA_SDO B29
HDA_DOCK_EN# / GPIO33 (+3V)
HDA_DOCK_RST# / GPIO13 (+3V_S5)

SATA
SATA0RXN AK7
SATA0RXP AK6
SATA0TXN AK11
SATA0TXP AK9
SATA1RXN AH6
SATA1RXP AH5
SATA1TXN AH9
SATA1TXP AH8
SATA2RXN AF11
SATA2RXP AF9
SATA2TXN AE7
SATA2TXP AF6
SATA3RXN AH3
SATA3RXP AH1
SATA3TXN AF3
SATA3TXP AF1
SATA4RXN AD9
SATA4RXP AD8
SATA4TXN AD6
SATA4TXP AD5
SATA5RXN AD3
SATA5RXP AD1
SATA5TXN AB3
SATA5TXP AB1
SATAICOMPO AF16
SATAICOMPI AF15
SATALED# T3
(+3V) SATA0GP / GPIO21 Y9
(+3V_S5) SATA1GP / GPIO19 V1

JTAG
JTAG_TCK M3
JTAG_TMS K3
JTAG_TDI K1
JTAG_TDO J2
TRST# J4

SPI
SPI_CLK BA2
SPI_CS0# AV3
SPI_CS1# AY3
SPI_MOSI AY1
SPI_MISO AV1

IbexPeak-M_Rev1_0

HDD: SATA_TXN0_C C326 0.01U/25V_4 SATA_RXN0 (35), SATA_RXP0 (35), SATA_TXN0 (35), SATA_TXP0 (35); SATA_TXP0_C C331 0.01U/25V_4
ODD: SATA_TXN1_C C332 0.01U/25V_4 SATA_RXN1 (35), SATA_RXP1 (35), SATA_TXN1 (35), SATA_TXP1 (35); SATA_TXP1_C C337 0.01U/25V_4

DG: Place TX cap close to connector

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

ESATA: SATA_TXN4_C C408 0.01U/25V_4 SATA_RXN4 (39), SATA_RXP4 (39), SATA_TXN4 (39), SATA_TXP4 (39); SATA_TXP4_C C406 0.01U/25V_4

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.

SATA_COMP R185 37.4/F_4 +1.05V_PCH
SATA_LED# (36)
SATA_DET0# SATA_DET1#

must add test point.

TP38 PCH_JTAG_TCK_BUF
TP37 PCH_JTAG_TMS
TP36 PCH_JTAG_TDI
TP35 PCH_JTAG_TDO
TP34 PCH_JTAG_RST#

C395 18P/50V_4
C396 18P/50_4
Y3 32.768KHZ
R257 10M/J_4
RTC_X1
RTC_X2
TP26 RTC_RST#
TP29 SRTC_RST#
SM_INTRUDER#
+RTC_CELL R226 330K/J_6 PCH_INVRMEN
TP28
ACZ_BITCLK
ACZ_SYNC
(26) ACZ_SPKR ACZ_RST#
(26) ACZ_SDIN0
ACZ_SDOUT
(10,29) PCH_MELOCK

(30) SPI_CLK TP43 SPI_CLK
(30) SPI_CS0# TP44 SPI_CS0#
SPI_CS1# TP41
(30) SPI_SI TP42 SPI_SI
(30) SPI_SO TP45 SPI_SO

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

+3.3V_RUN R276 10K/J_4 SATA_LED#
R191 10K/J_4 SATA_DET0#
R281 10K/J_4 SATA_DET1#

iTPM ENABLE/DISABLE From UM3

+3.3V_RUN R296 *1K_NC SPI_SI

TPM Function	
Enable	Mount
Disable	NC (Default)

UMA CRT,LVDS&HDMI signals

IBEX PEAK-M (LVDS,DDI)

U13D

Ibex-M 4 OF 10

LVDS--A
L_BKLTEN T48
L_VDD_EN T47
L_BKLTCTL Y48
L_DDC_CLK AB48
L_DDC_DATA Y45
L_CTRL_CLK AB46
L_CTRL_DATA V48
LVD_IBG AP39
LVD_VBG AP41
LVD_VREFH AT43
LVD_VREFL AT42
LVDSA_CLK# AV53
LVDSA_CLK AV51
LVDSA_DATA#0 BB47
LVDSA_DATA#1 BA52
LVDSA_DATA#2 AY48
LVDSA_DATA#3 AV47
LVDSA_DATA0 BB48
LVDSA_DATA1 BA50
LVDSA_DATA2 AY49
LVDSA_DATA3 AV48

LVDS--B
LVDSB_CLK# AP48
LVDSB_CLK AP47
LVDSB_DATA#0 AY53
LVDSB_DATA#1 AT49
LVDSB_DATA#2 AU52
LVDSB_DATA#3 AT53
LVDSB_DATA0 AY51
LVDSB_DATA1 AT48
LVDSB_DATA2 AU50
LVDSB_DATA3 AT51

CRT
CRT_BLUE AA52
CRT_GREEN AB53
CRT_RED AD53
CRT_DDC_CLK V51
CRT_DDC_DATA V53
CRT_HSYNC Y53
CRT_VSYNC Y51
DAC_IREF AD48
CRT_IRTN AB51

SDVO
SDVO_TVCLKINN BJ46
SDVO_TVCLKINP BG46
SDVO_STALLN BJ48
SDVO_STALLP BG48
SDVO_INTN BF45
SDVO_INTP BH45
SDVO_CTRLCLK T51
SDVO_CTRLDATA T53

DISPLAY PORT B
DDPB_AUXN BG44
DDPB_AUXP BJ44
DDPB_HPD AU38
DDPB_0N BD42
DDPB_0P BC42
DDPB_1N BJ42
DDPB_1P BG42
DDPB_2N BB40
DDPB_2P BA40
DDPB_3N AW38
DDPB_3P BA38

DISPLAY PORT C
DDPC_CTRLCLK Y49
DDPC_CTRLDATA AB49
DDPC_AUXN BE44
DDPC_AUXP BD44
DDPC_HPD AV40
DDPC_0N BE40
DDPC_0P BD40
DDPC_1N BF41
DDPC_1P BH41
DDPC_2N BD38
DDPC_2P BC38
DDPC_3N BB36
DDPC_3P BA36

DISPLAY PORT D
DDPD_CTRLCLK U50
DDPD_CTRLDATA U52
DDPD_AUXN BC46
DDPD_AUXP BD46
DDPD_HPD AT38
DDPD_0N BJ40
DDPD_0P BG40
DDPD_1N BJ38
DDPD_1P BG38
DDPD_2N BF37
DDPD_2P BH37
DDPD_3N BE36
DDPD_3P BD36

Digital Display Interface

T30 PAD
T31 PAD LVDS_VBG
T29 PAD

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 R245 33/J_4 ACZ_RST#
(26) ACZ_SDOUT_AUDIO R248 33/J_4 ACZ_SDOUT
C380 *10P/50V_4_NC
(26) ACZ_SYNC_AUDIO R247 33/J_4 ACZ_SYNC
C379 *10P/50V_4_NC
(26) ACZ_BITCLK_AUDIO 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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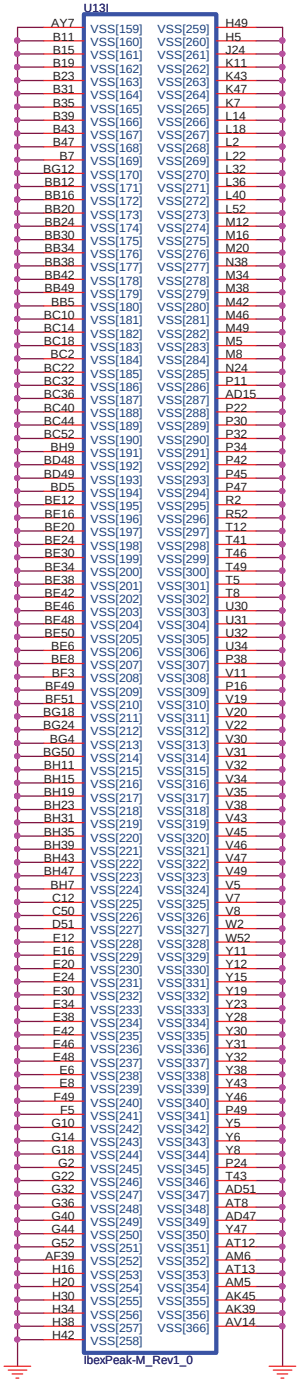
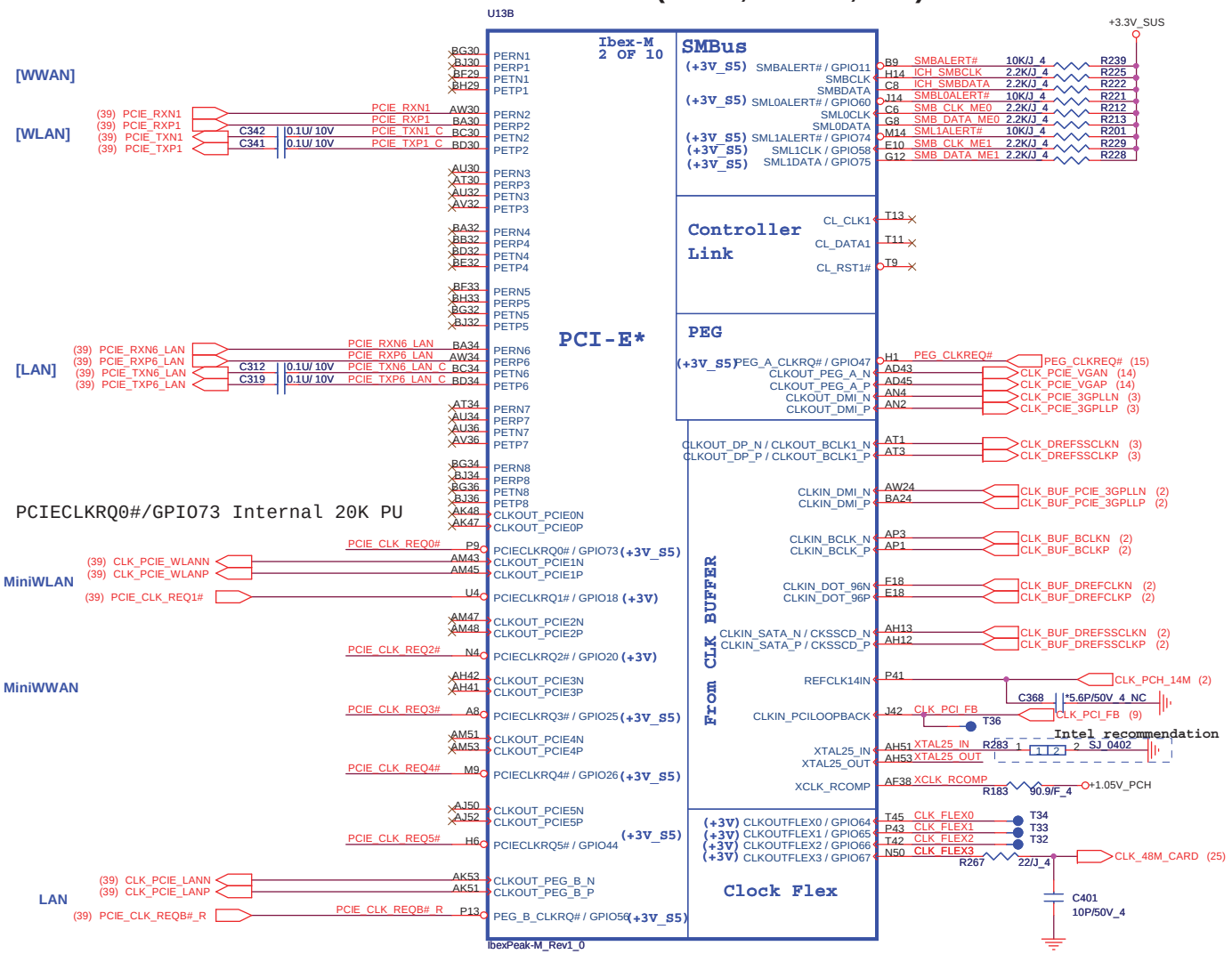
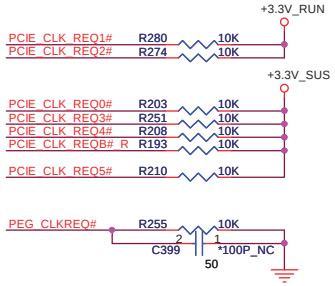
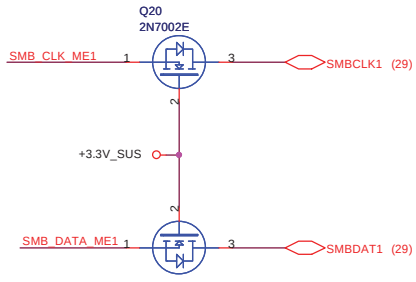
IBEX PEAK-M (GND)

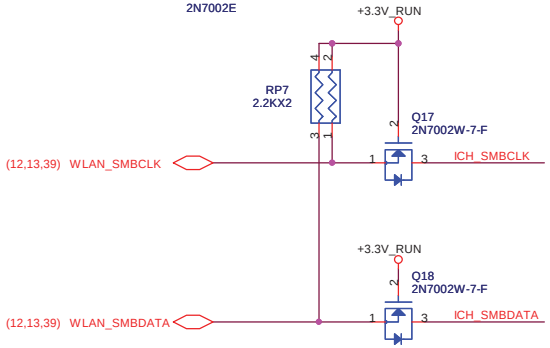


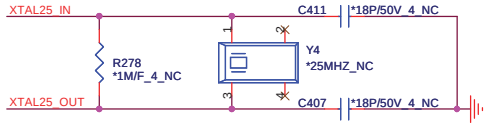
IBEX PEAK-M (PCI-E,SMBUS,CLK)











Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	PCH 2/5 (PCIE, SMBUS, CK)	3A

Date: Monday, February 01, 2010 Sheet 8 of 51

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- (39) USBP0+ (39)

Right USB #1 — USBP1- (39) USBP1+ (39)

Left USB #2 — USBP2- (39) USBP2+ (39)

Left USB #3 — USBP3- (39) USBP3+ (39)

WLAN — USBP4- (39) USBP4+ (39)

WWAN — USBP5- (39) USBP5+ (39)

BT — USBP8- (32) USBP8+ (32)

Webcam — USBP11- (22) USBP11+ (22)

Card Reader — USBP12- (25) USBP12+ (25)

USB_BIAS R256 22.6/F_4

USB_OC0# … USB_OC7#

For Port0,1 For Port2,3

DMI

DMI0RXN DMI1RXN DMI2RXN DMI3RXN

DMI_RXN0 … DMI_RXN3

DMI0RXP DMI1RXP DMI2RXP DMI3RXP

DMI_RXP0 … DMI_RXP3

DMI0TXN DMI1TXN DMI2TXN DMI3TXN

DMI_TXN0 … DMI_TXN3

DMI0TXP DMI1TXP DMI2TXP DMI3TXP

DMI_TXP0 … DMI_TXP3

DMI_ZCOMP DMI_IRCOMP

DMI_COMP R178 49.9/F_4

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 — SUS_PWR_ACK (29)

(+3V_S5) ACPRESENT / GPIO31 — AC_PRESENT (29)

(+3V) CLKRUN# / GPIO32 — CLKRUN# (29)

(+3V_S5) SUS_STAT# / GPIO61

(+3V_S5) SUSCLK / GPIO62 — TP32

(+3V_S5) SLP_S5# / GPIO63 — SIO_SLP_S5# (29)

(+3V_S5) BATLOW# / GPIO72 — PM_BATLOW#

(+3V_S5) SLP_LAN# / GPIO29

ibexPeak-M_Rev1_0

BATLOW#/GPIO72 Internal PU 20K

PCH_PWROK — C392 100P

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

TP31 — RSV_ICH_LAN_RST# A10 — (3) PM_DRAM_PWRGD D9 — (29) RSMRST# C16 — TP33

(29) PM_PWRBTN#_R P5

PM_RI# F14 — (39) PCIE_WAKE# J12 — (3) PM_SYNC BJ10

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

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

PCI_IRDY# PCI_STOP# PCI_PIRQA# PCI_PIRQC# — RP8 8.2KX8 — PCI_PIRQD# PCI_SERR# REQ1# PCI_FRAME#

USB_OC3# USB_OC6# USB_OC0# USB_OC7# — RP6 8.2KX8 — USB_OC2# USB_OC5# USB_OC1# USB_OC4#

PCI_PLOCK# PCI_TRDY# INTH# PCI_DEVSEL# — RP9 8.2KX8 — PCI_PERR# USB_MCARD1_DET# REQ0# PCI_PIRQB#

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# M53

(32) BT_DET# — BT_DET# A36 — INTH# A48

TP24 — BT_DET# — C664 *100P_NC

TP22 — PLT_RST-R# D5

(39) CLK_33M_LPC — R270 22/J_4 — CLK_33M_LPC_R N52

(29) CLK_33M_KBC — R261 22/J_4 — CLK_33M_KBC_R P46

(8) CLK_PCI_FB — R273 22/J_4 — CLK_PCI_FB_R P51

GNT0# R206 *1K/J_4_NC — GNT1# R211 *1K/J_4_NC — GNT3# R258 *1K/J_4_NC

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

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

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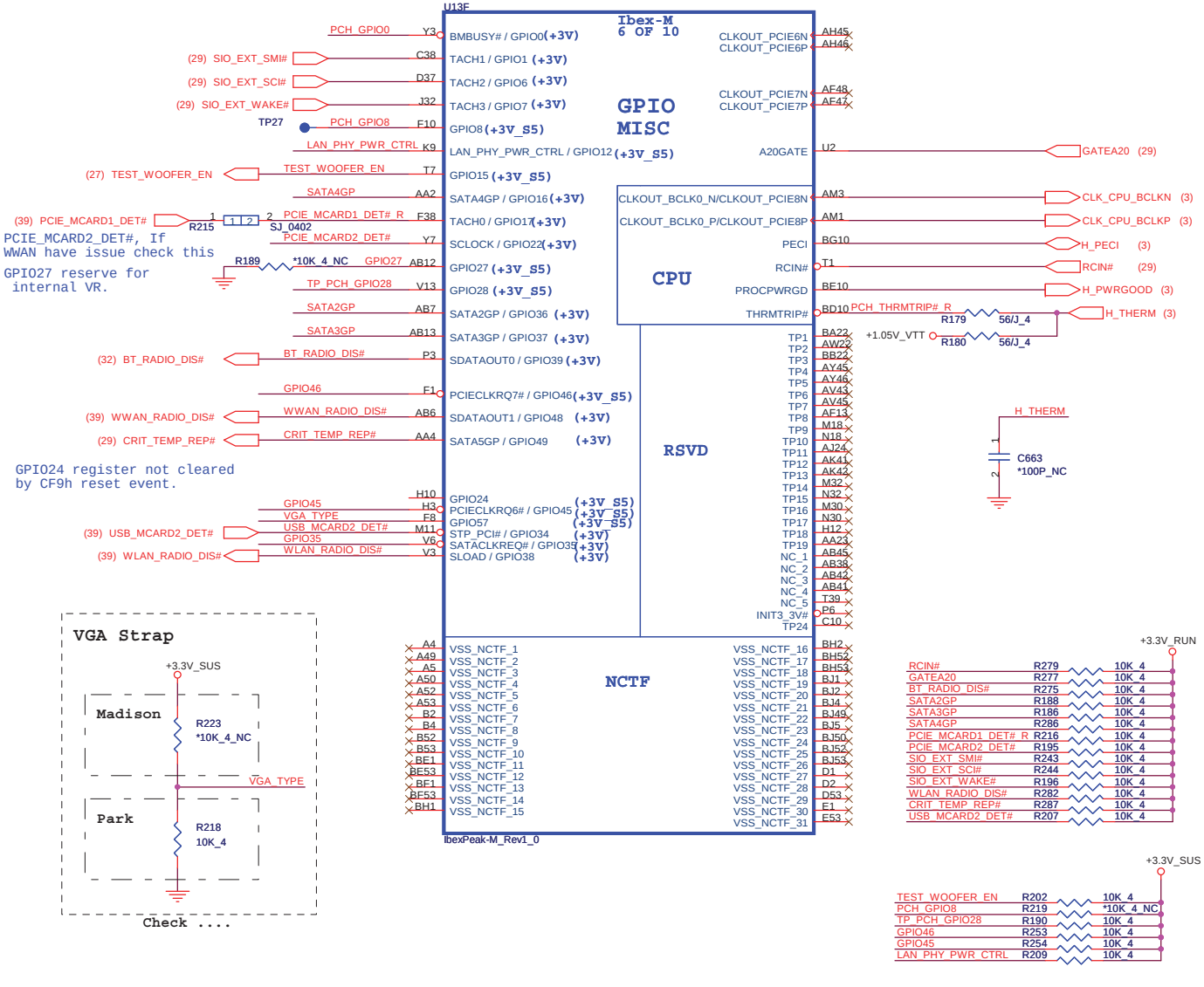
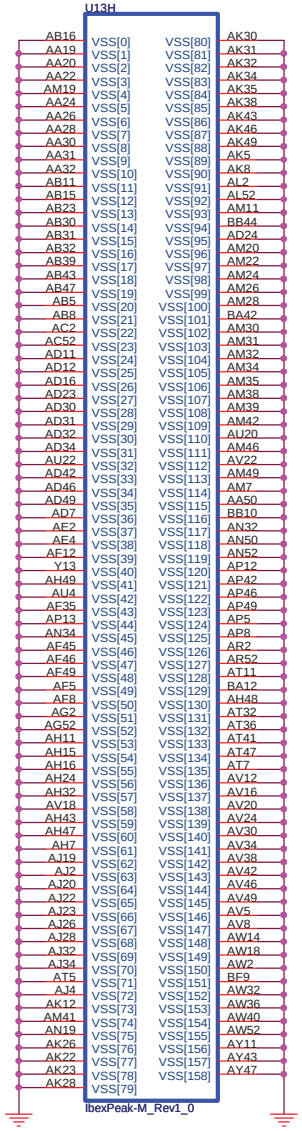
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)



IBEX PEAK-M (GND)



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.

R199 10K_4 GPIO35

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

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)

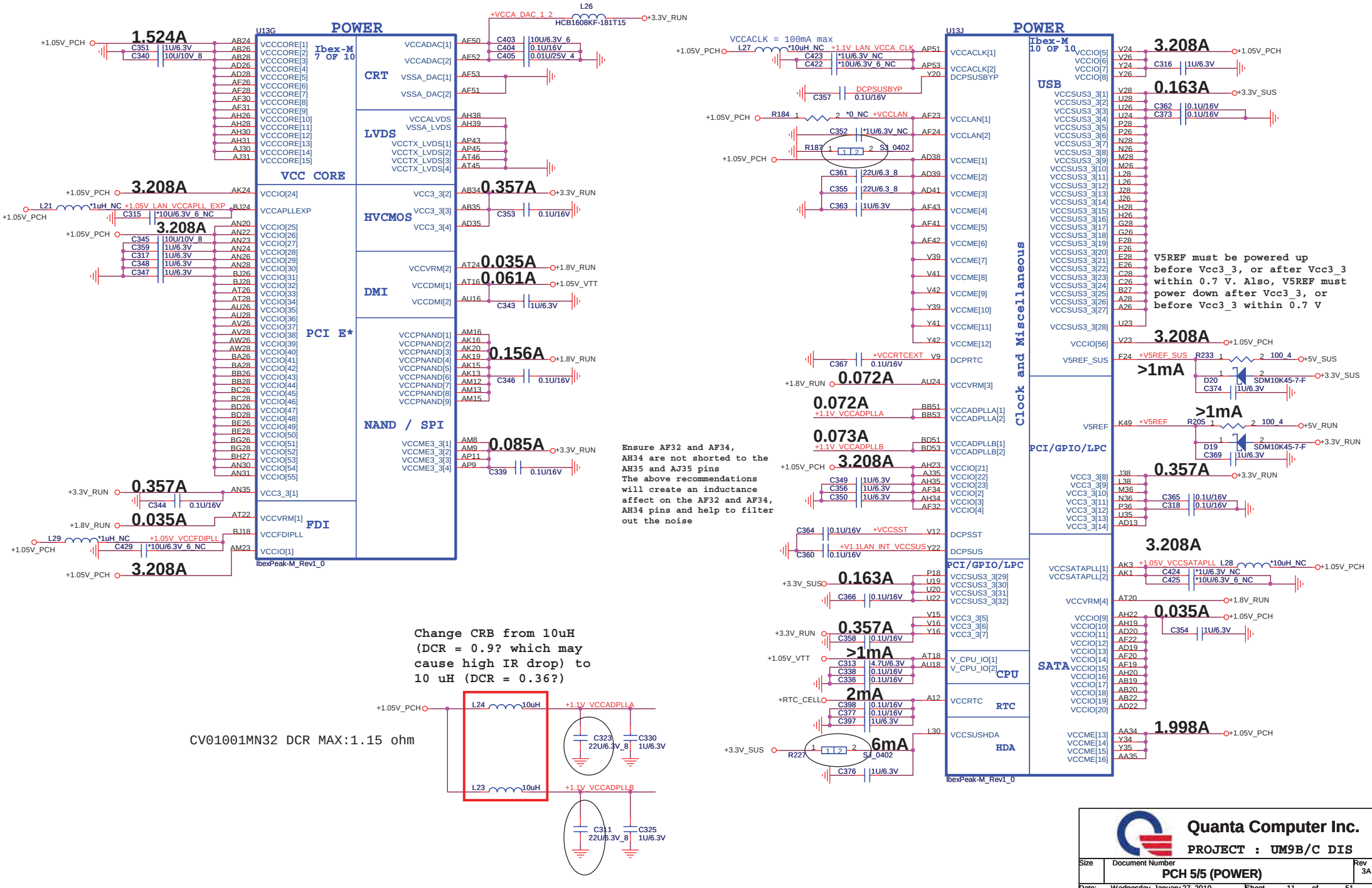
Quanta Computer Inc.

PROJECT : UM9B/C DIS

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

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

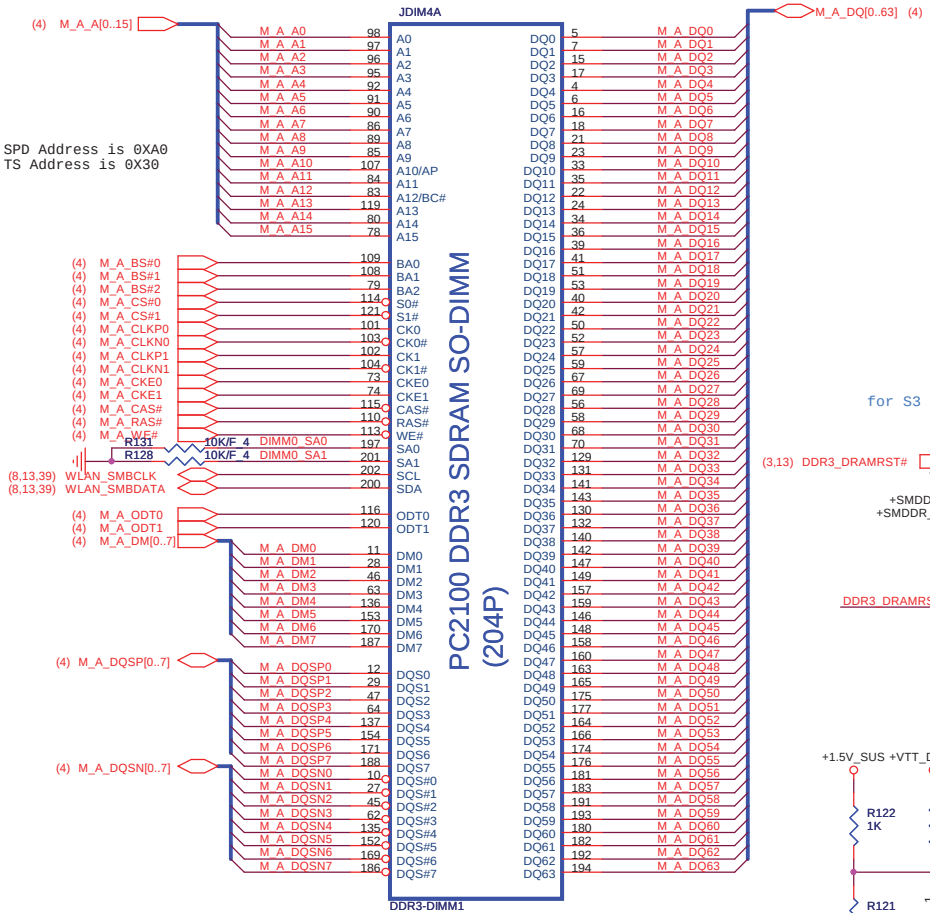
Cap quantities follow UM3



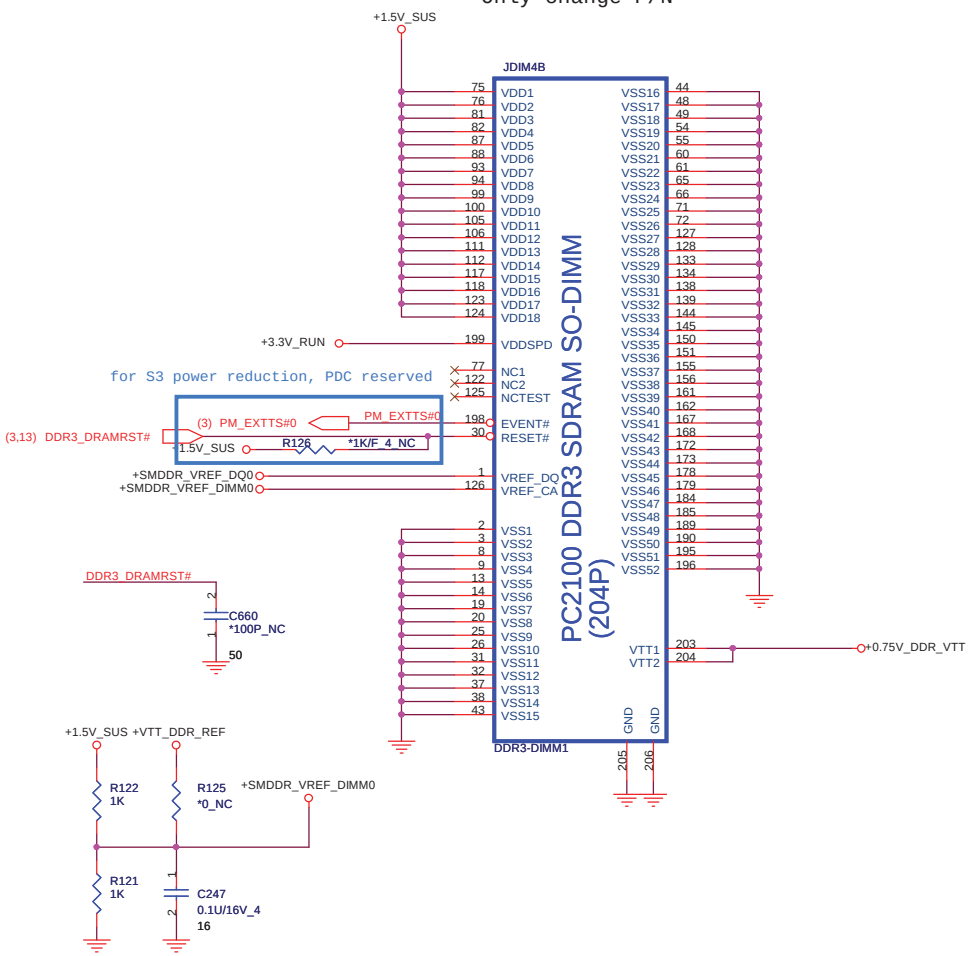
Quanta Computer Inc.			
PROJECT : UM9B/C DIS			
Size	Document Number		Rev
	PCH 5/5 (POWER)		3A
Date:	Wednesday, January 27, 2010	Sheet 11 of 51	

Only change P/N

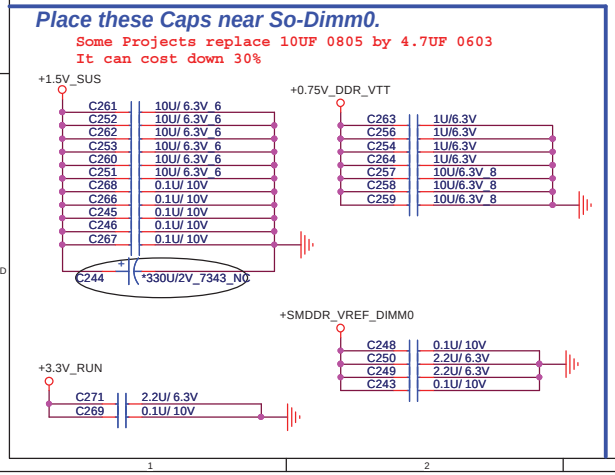
SO-DIMMA SPD Address is 0XA0
SO-DIMMA TS Address is 0X30

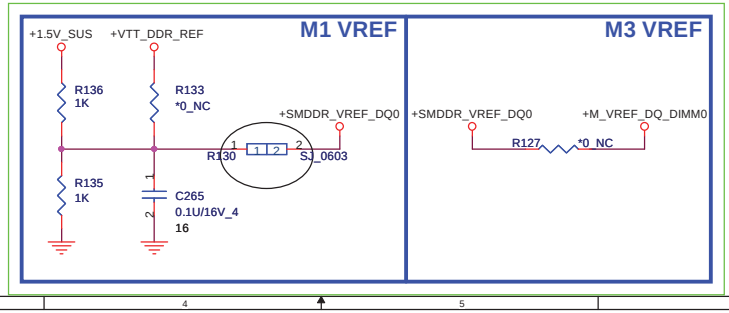


Only change P/N



Quantities and M1/M3 follow UM3
Locations follow PDC





Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: DDR3 DIMM-0	Rev: 3A
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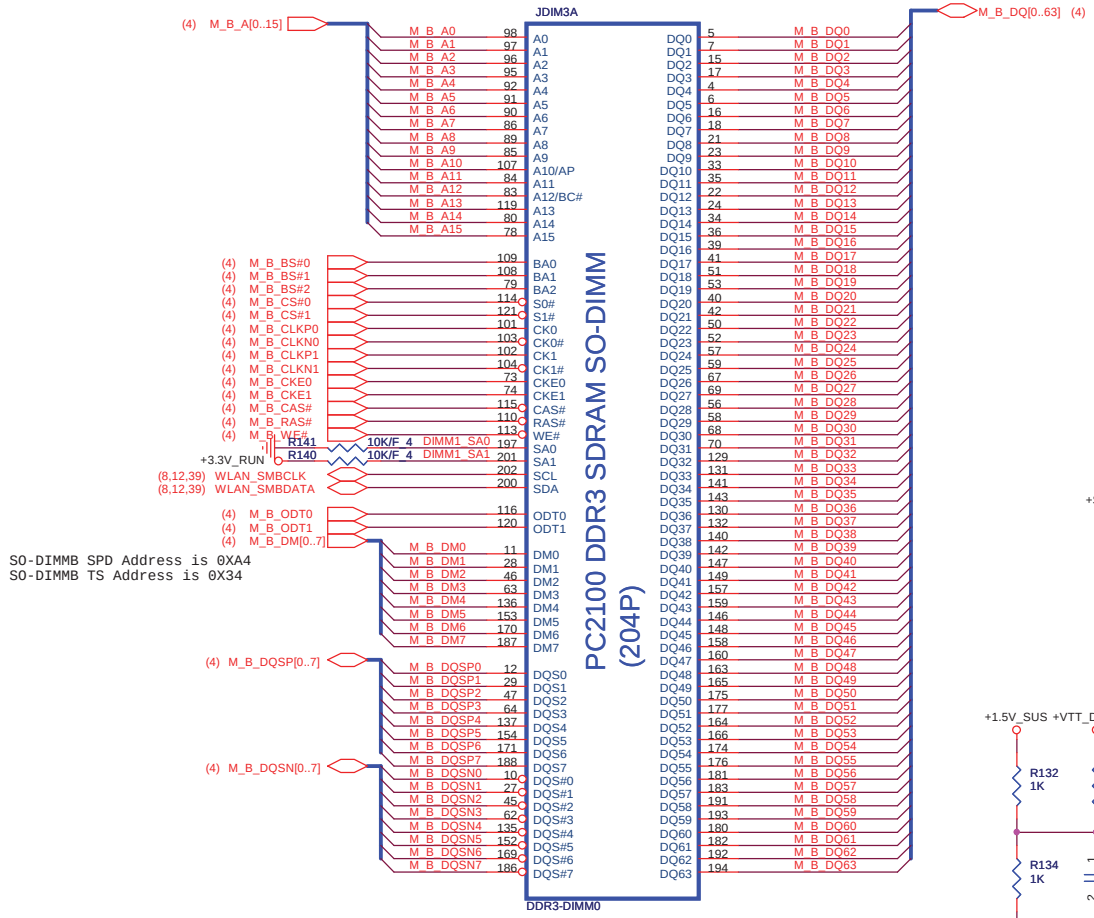
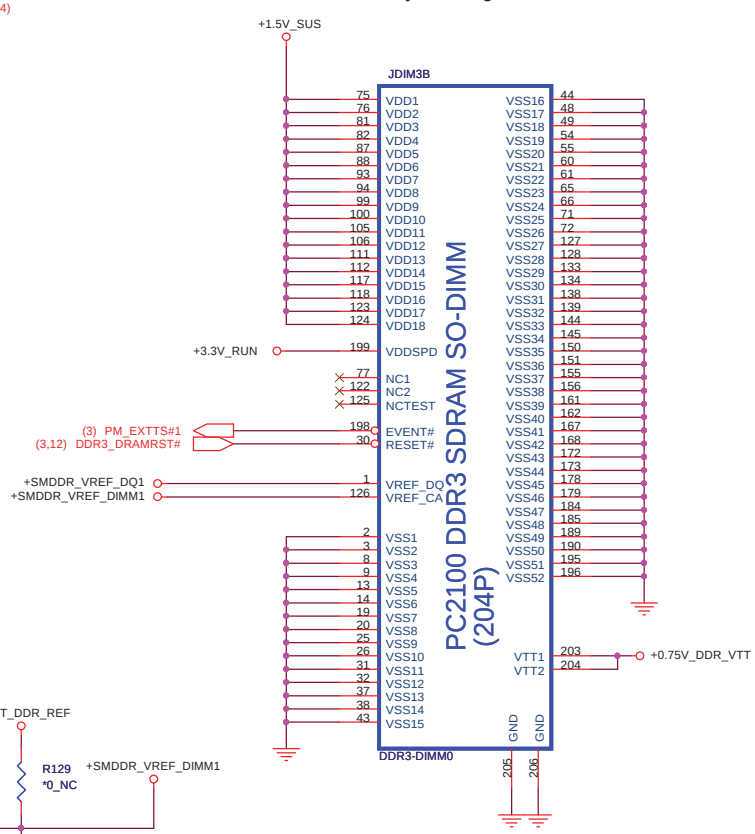
Only change P/N



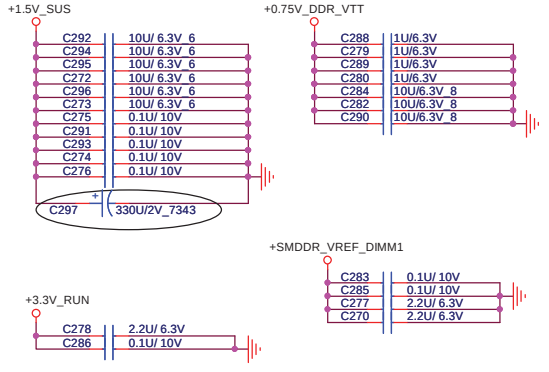
SO-DIMMB SPD Address is 0XA4
SO-DIMMB TS Address is 0X34

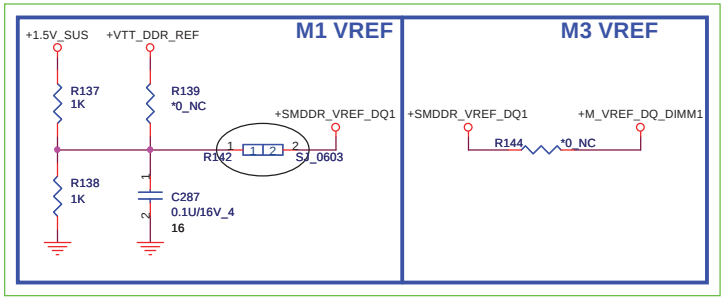
Only change P/N



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	Rev
	DDR3 DIMM-1	3A
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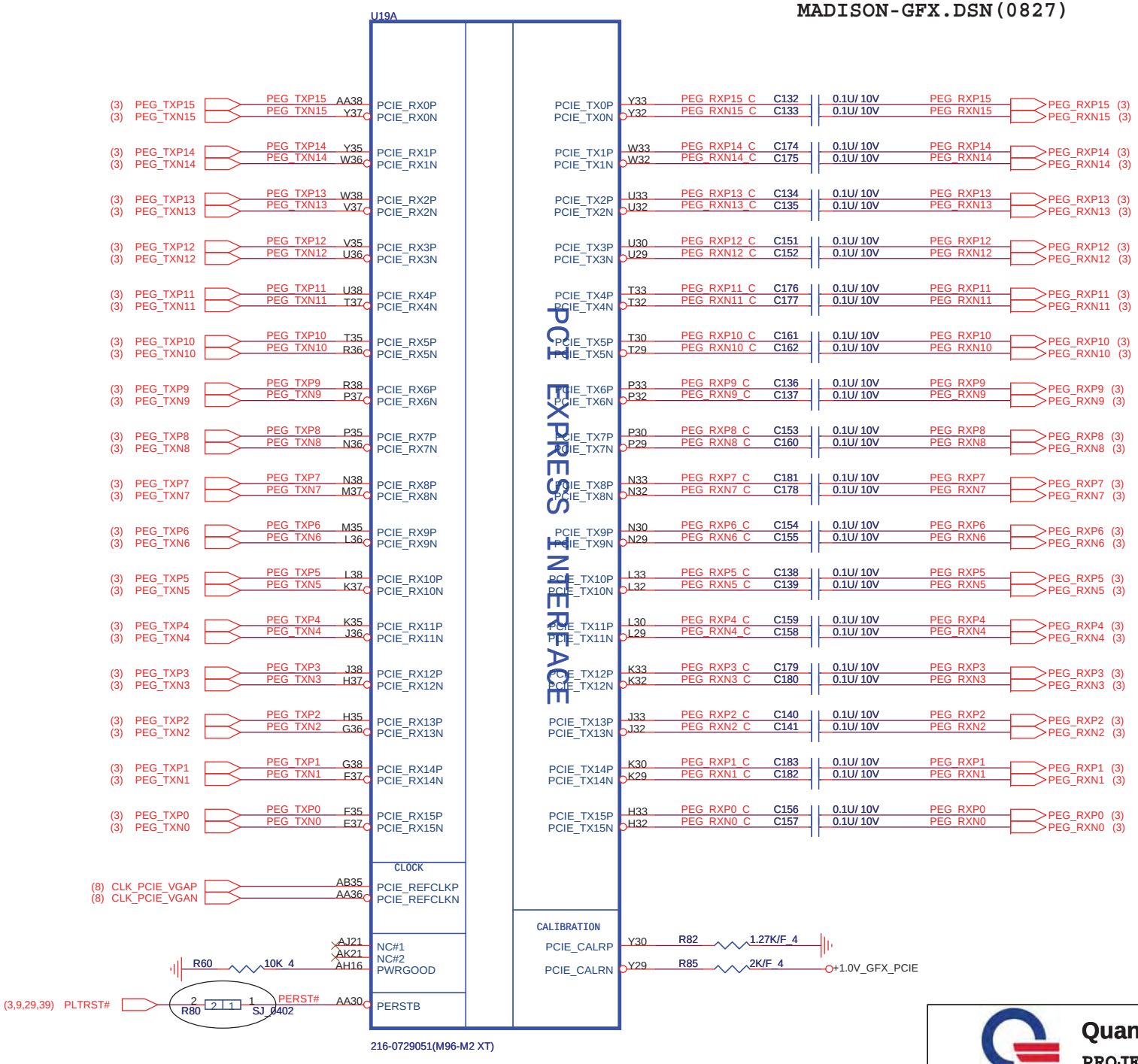

Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison PCIE I/F	3A
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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

VRAM TYPE

APERTURE SIZE

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

!!! NC when PARK-M2

!!! NC when PARK-M2

!!! NC when PARK-M2

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

Layout Note: Place 150 ohm termination resistors close to ATI CHIP.

PLACE VREFG DIVIDER AND CAP CLOSE TO ASIC

1.0V @ 150mA DPLL_VDDC

Solve Intermittent System Boot-up Hangs

Solve Intermittent System Boot-up Hangs

DDC6CLK/DDC6DATA support internal HDCP(High-bandwidth Digital Content Protection) function.

216-0729051(M96-M2 XT)

Quanta Computer Inc.
PROJECT : UM9B/C DIS
Size | Document Number: Madison_IO&STRAP | Rev 3A
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U19E

MEM I/O

PCIE

POWER

LEVEL TRANSLATION

I/O

PLL

VOLTAGE SENSE

CORE

ISOLATED CORE I/O

+1.5V_RUN

For DDR3, VDDR1 = 1.5V
(1.5V @ 2.9A VDDR1+VDDRHA+VDDRHB)

1U = 20 pcs
10U = 5pcs

+1.8V_RUN_GFX +VDD_CT

(1.8V @ 136mA VDD_CT)

BLM15BD121SN1D
120ohm, 300mA

+3.3V_DELAY

(3.3V @ 60mA VDDR3)

+1.8V_RUN_GFX +VDDR4

BLM15BD121SN1D
120ohm, 300mA

+1.8V_RUN_GFX +PCIE_PVDD

(1.8V @ 68mA PCIE_PVDD)

BLM15BD121SN1D
120ohm, 300mA

(0.95-1.2V @ 136mA SPV10)

+1.0V_GFX_PCIE +SPV10

BLM15BD121SN1D
120ohm, 300mA

VDDC_SENSE/VSS_SENSE and VDDCI_SENSE/VSS_SENSE route as differetial pair

+PCIE_VDDR

(1.8V @ 504mA PCIE_VDDR)

BLM18PG471SN1D
470ohm, 1A

+1.8V_RUN_GFX

+PCIE_VDDC

(1.1V @ 1.92A PCIE_VDDC)

BLM18PG121SN1D
120ohm, 2A

+1.0V_GFX_PCIE

+VCC_GFX_CORE

(1.2V @ 29.5A GFX_CORE)

+VCC_GFX_CORE

216-0729051(M96-M2 XT)

+1.8V_RUN_GFX +MPV18

(1.8V @ 150mA MPV18)

BLM15BD121SN1D
120ohm, 300mA

+SPV18

(1.8V @ 75mA SPV18)

BLM15BD121SN1D
120ohm, 300mA

+3.3V_DELAY

R520 0_603

Q2
*SI2303BDS-T1-E3_NC

+3.3V_RUN

R521
*100K_4_NC

(29,48) GFX_ON

R522 *75K/F_4_NC

OPTIONAL RC NETWORK TO FINE TUNE POWER SEQUENCING

C778 *0.1U/10V/X7R_4_NC

Q1
*2N7002W-7-F_NC

C777
*4700P/25V/X7R_4_NC

U19E

GND

VSS_MECH#1
VSS_MECH#2
VSS_MECH#3

216-0729051(M96-M2 XT)

PowerXpress control signal for Madsion and Park only
If not used, can be disconnected. (AL21 pin)

PX_EN = LOW, turn on
PX_EN = HIGH, turn off

R398
*0_4_NC

!!!
Reserve for PX_EN
for Park and Madison

Pin AL21 to Ground for Broadway

AW34:XO_IN

R373
*0_4_NC

Quanta Computer Inc.
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	Madison_Power	3A
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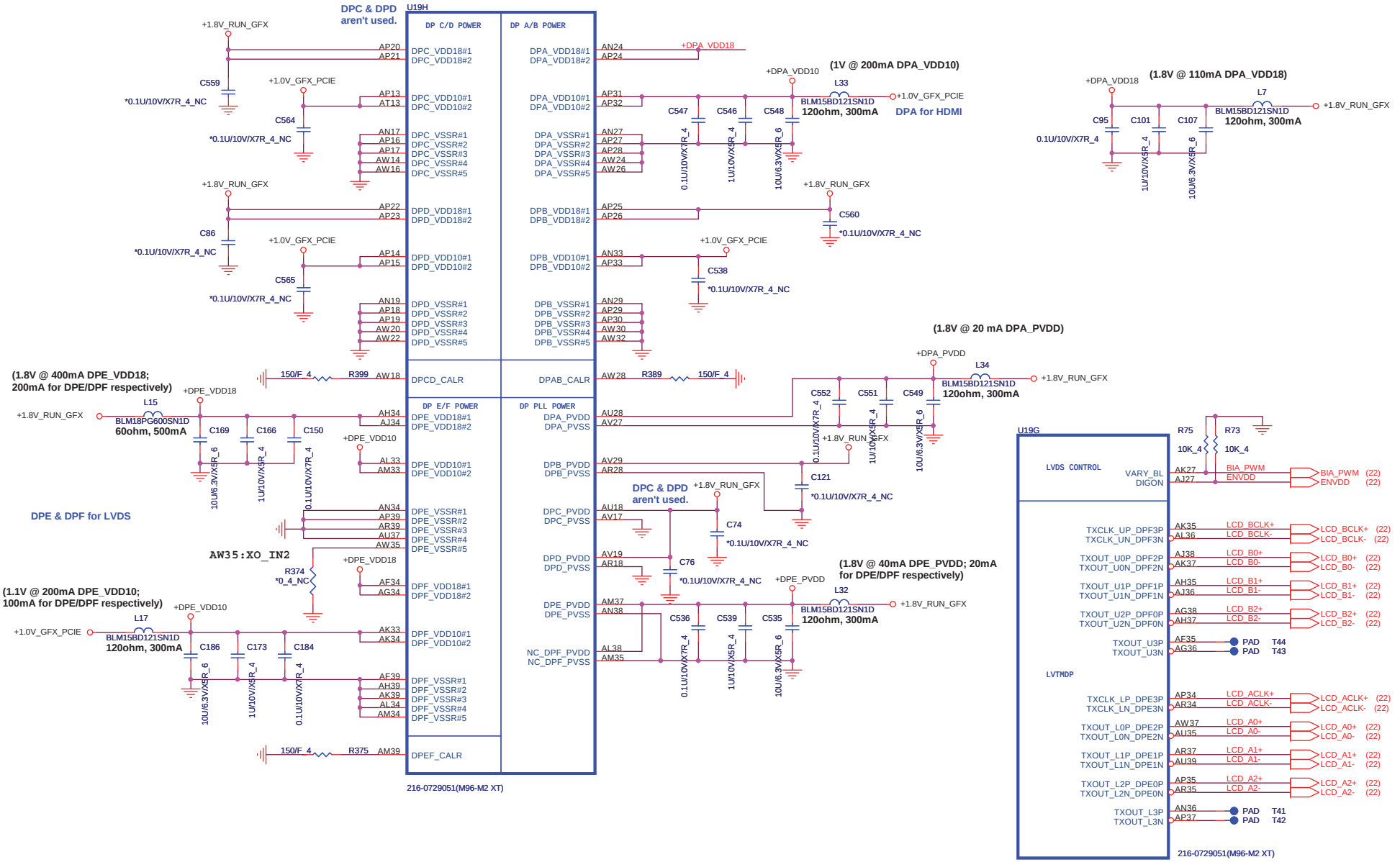
!!!
For M96/92, DPx_VDD10 = 1.1V
For M97 DPx_VDD10 = 1.0V



Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison_DP_POWER&LVDS	3A
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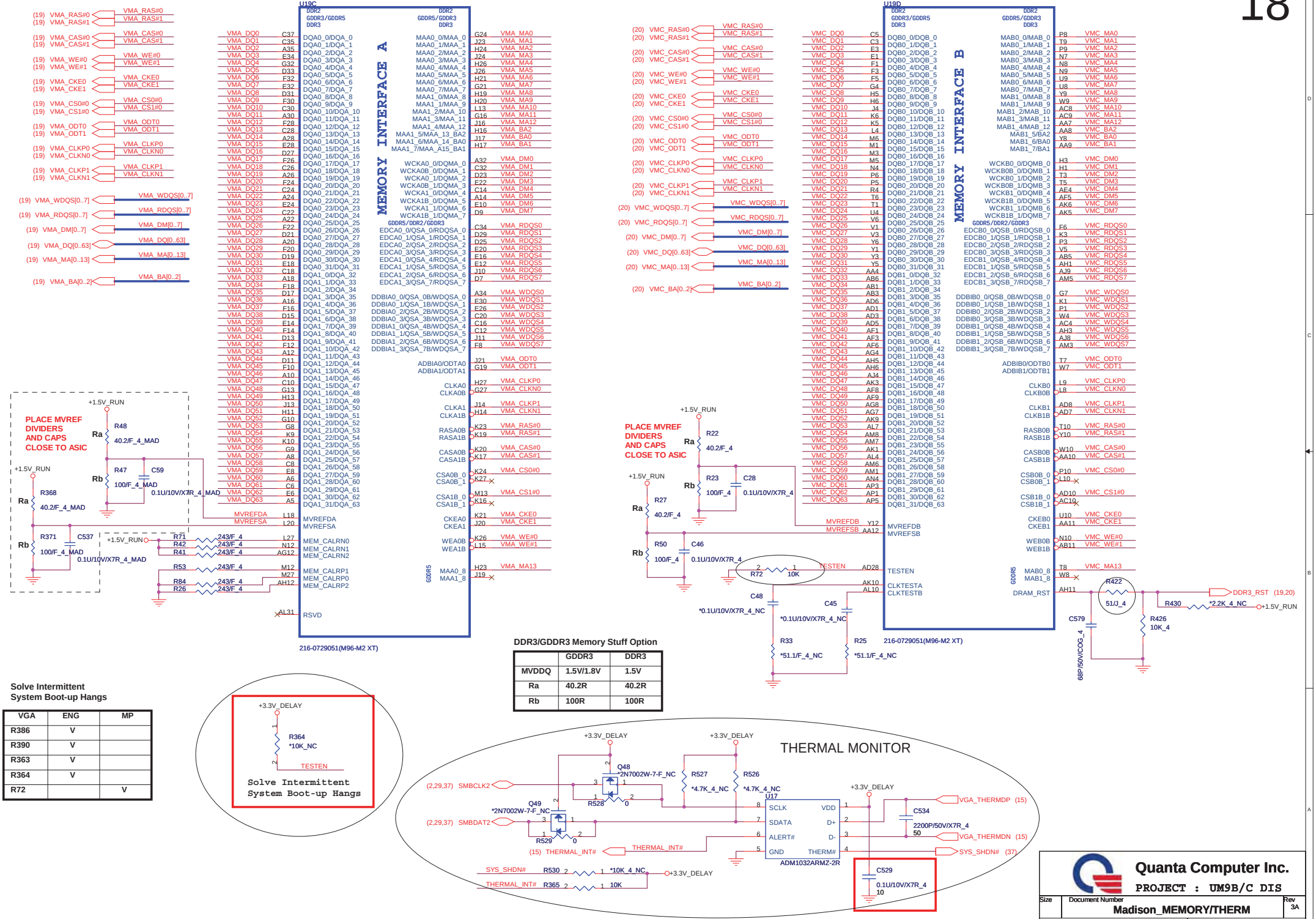
U19C
MEMORY INTERFACE A
DDR2
GDDR3/GDDR5
DDR3
DDR2
GDDR5/GDDR3
DDR3
GDDR5/DDR2/GDDR3
216-0729051(M96-M2 XT)
U19D
MEMORY INTERFACE B
216-0729051(M96-M2 XT)
PLACE MVREF DIVIDERS AND CAPS CLOSE TO ASIC
+1.5V_RUN
R48
40.2/F_4_MAD
R47
100/F_4_MAD
C59
0.1U/10V/X7R_4_MAD
R368
R371
C537
R71
R42
R41
R53
R84
R26
243/F_4
R22
40.2/F_4
R23
100/F_4
C28
0.1U/10V/X7R_4
R27
R50
C46
R72
10K
TESTEN
C48
*0.1U/10V/X7R_4_NC
C45
*0.1U/10V/X7R_4_NC
R33
*51.1/F_4_NC
R25
*51.1/F_4_NC
R422
51/J_4
R430
*2.2K_4_NC
R426
10K_4
C579
68P/50V/COG_4
DDR3_RST (19,20)
+1.5V_RUN
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
+3.3V_DELAY
R364
*10K_NC
TESTEN
Solve Intermittent System Boot-up Hangs
THERMAL MONITOR
Q48
*2N7002W-7-F_NC
Q49
*2N7002W-7-F_NC
R527
*4.7K_4_NC
R526
*4.7K_4_NC
R528
R529
U17
SCLK
SDATA
ALERT#
GND
VDD
D+
D-
THERM#
ADM1032ARMZ-2R
C534
2200P/50V/X7R_4
50
C529
0.1U/10V/X7R_4
10
R530
*10K_4_NC
R365
10K
SMBCLK2
SMBDAT2
THERMAL_INT#
SYS_SHDN#
VGA_THERMDP (15)
VGA_THERMDN (15)
SYS_SHDN# (37)
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PROJECT : UM9B/C DIS
Size
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Madison_MEMORY/THERM
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3A
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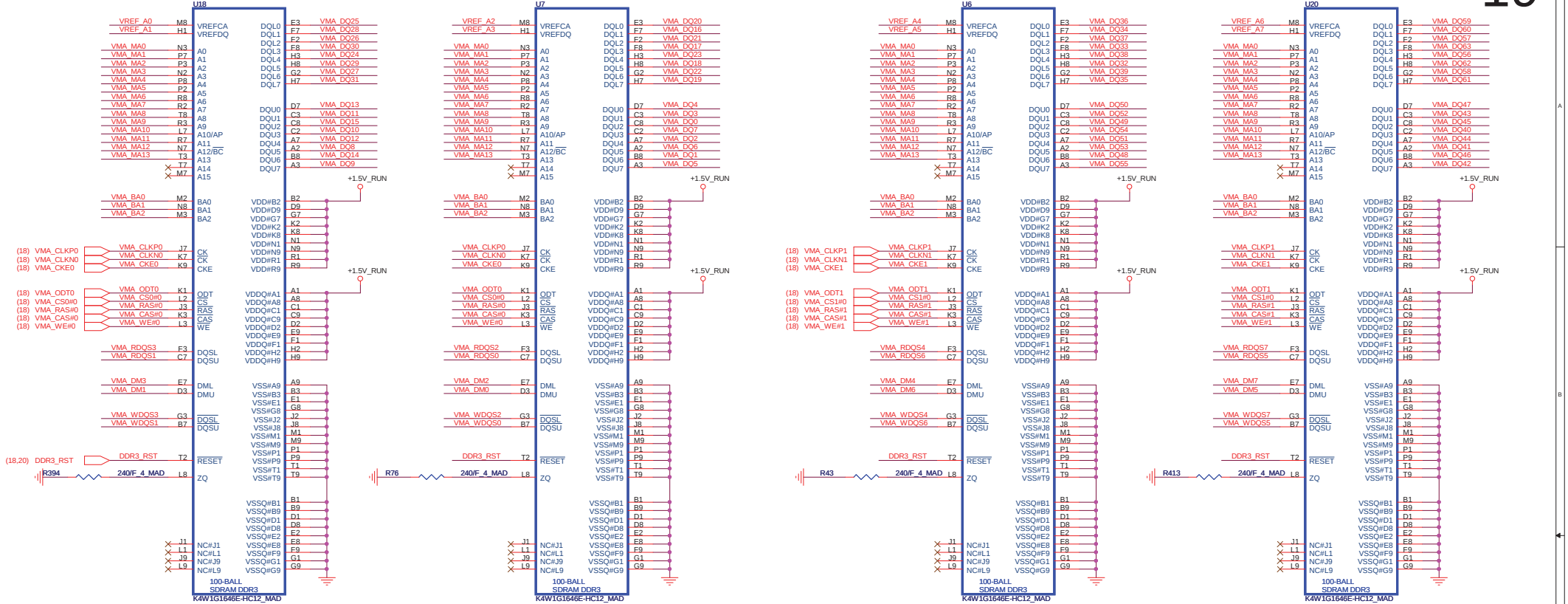
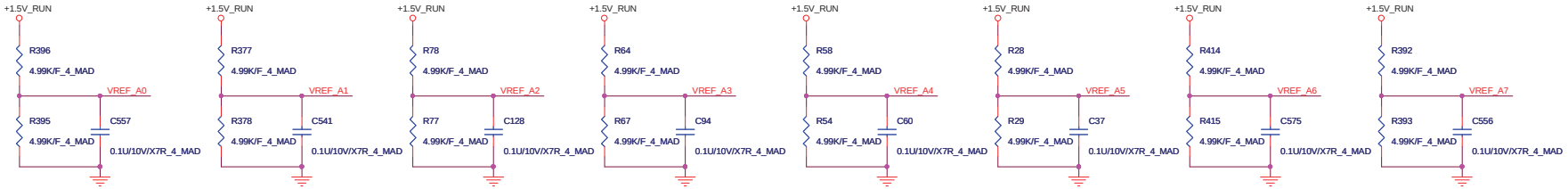
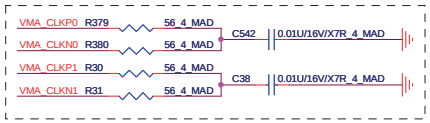
DDR3 64MX16, CH A : 512MB

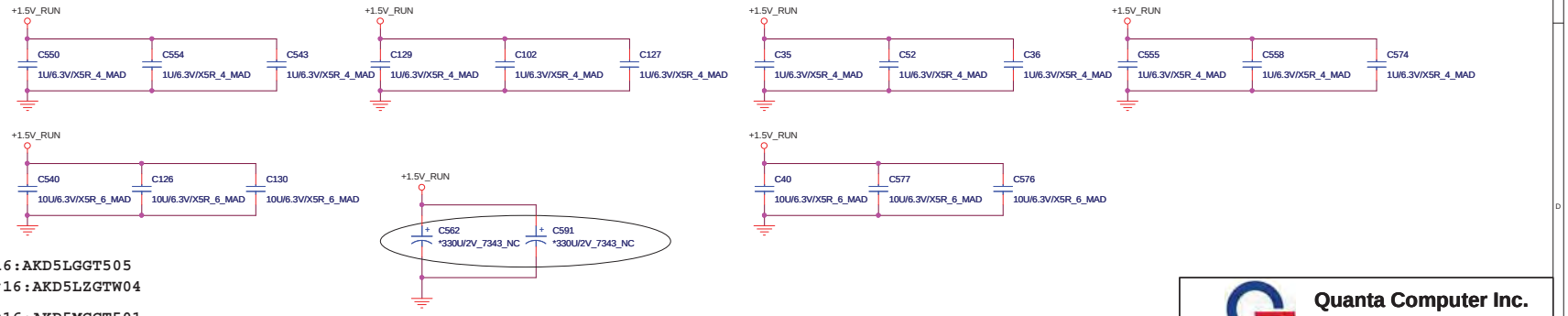


(18) VMA_DQ[0..63]
(18) VMA_MA[0..13]
(18) VMA_WDQS[0..7]
(18) VMA_RDQS[0..7]
(18) VMA_DM[0..7]
(18) VMA_BA[0..2]



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
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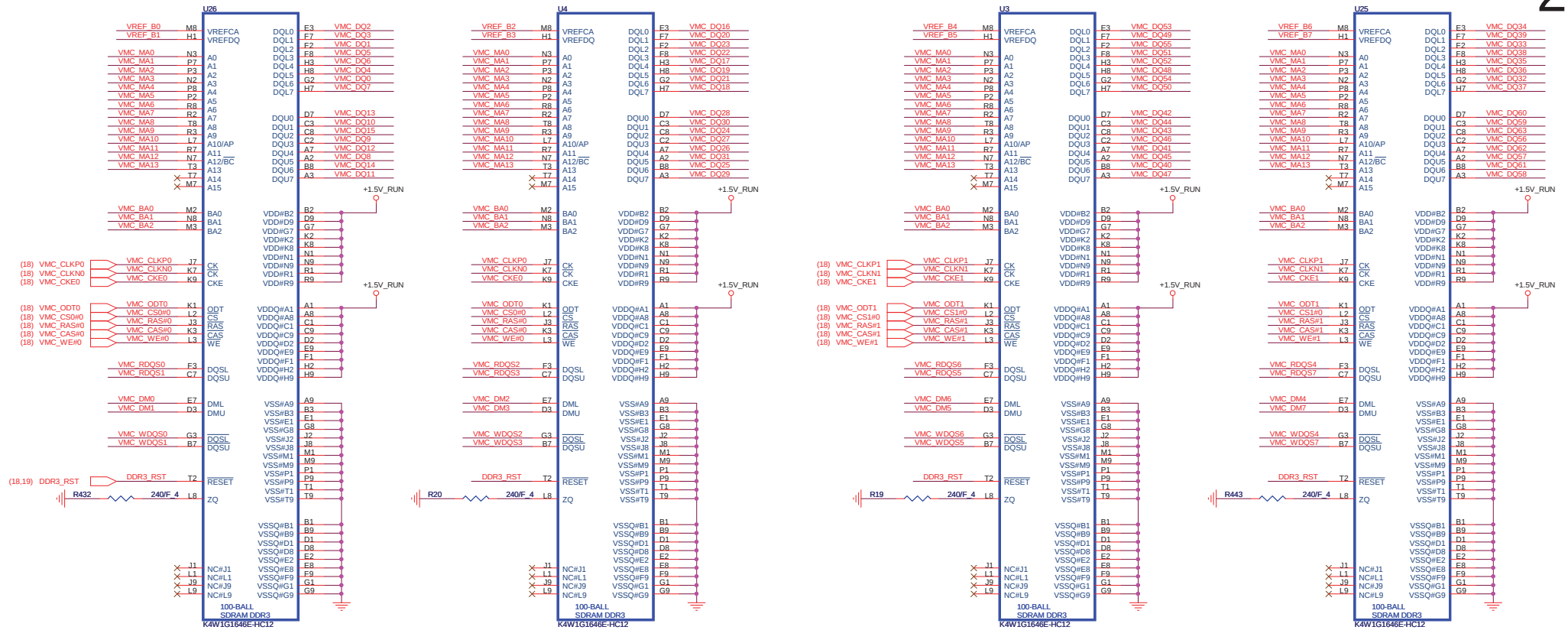
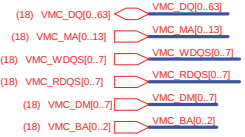
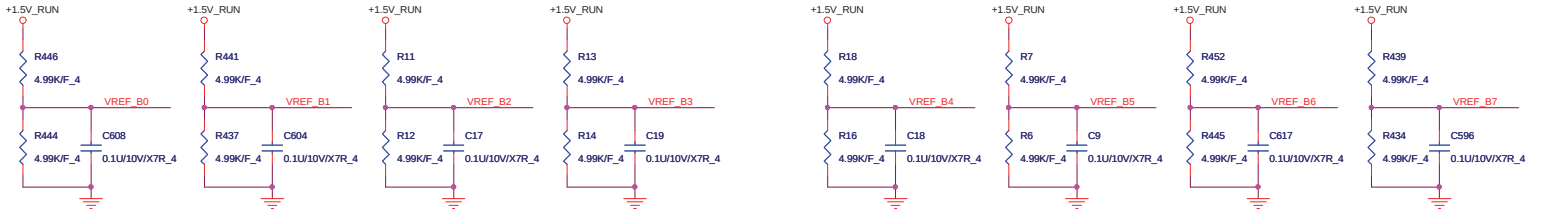
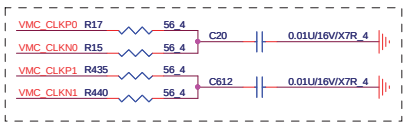
DDR3 64MX16, CH B : 512MB

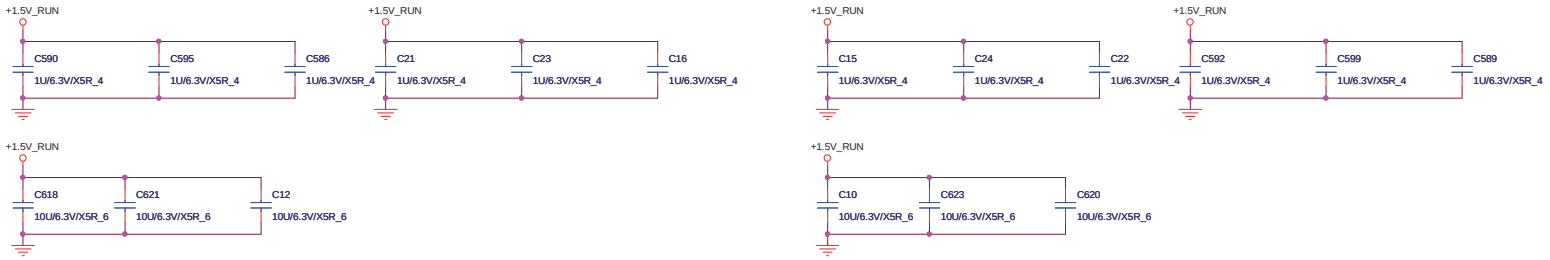






Placement has to be close to VRAM





Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Madison_DDR3_B_512M	3A
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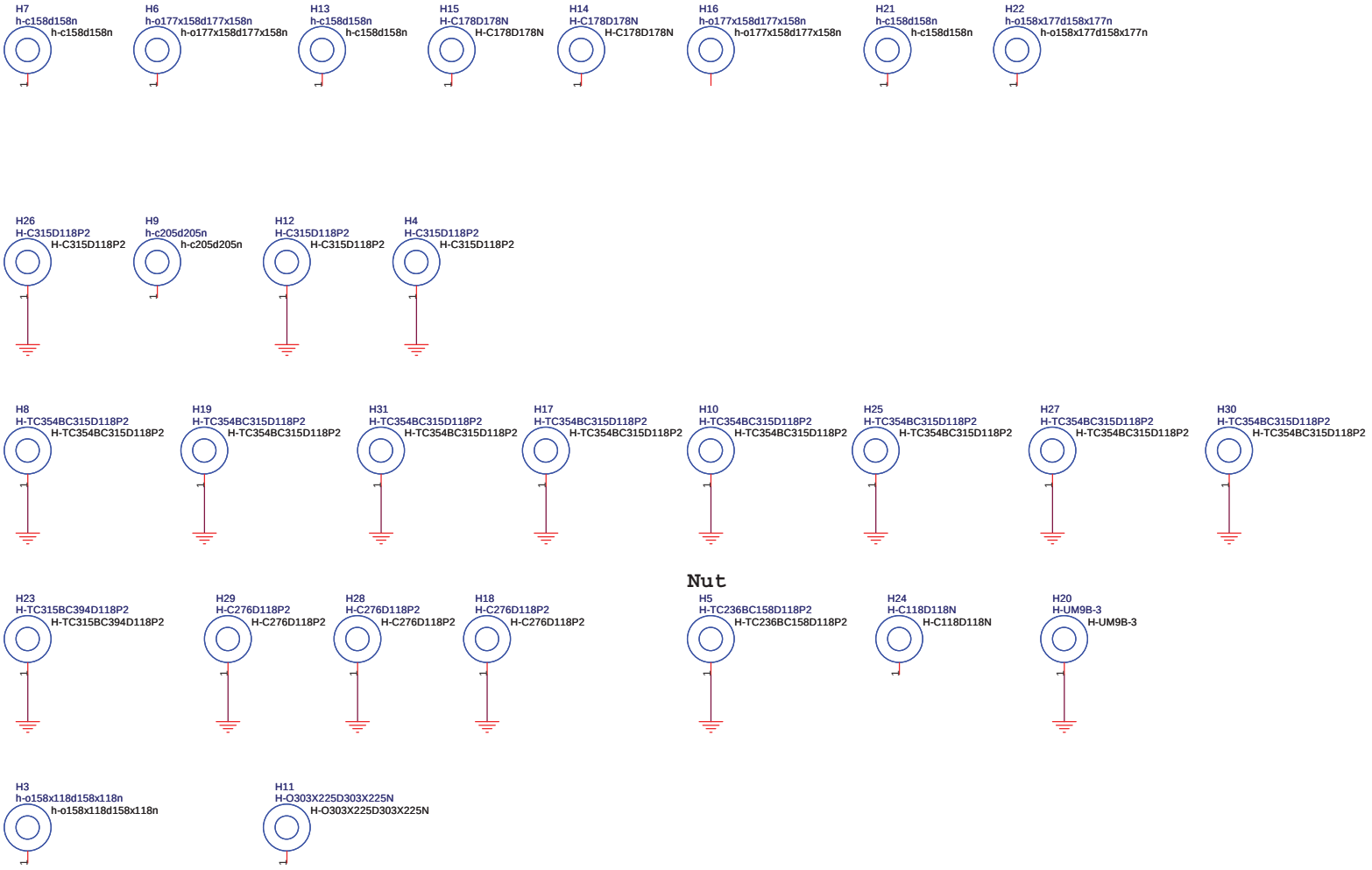
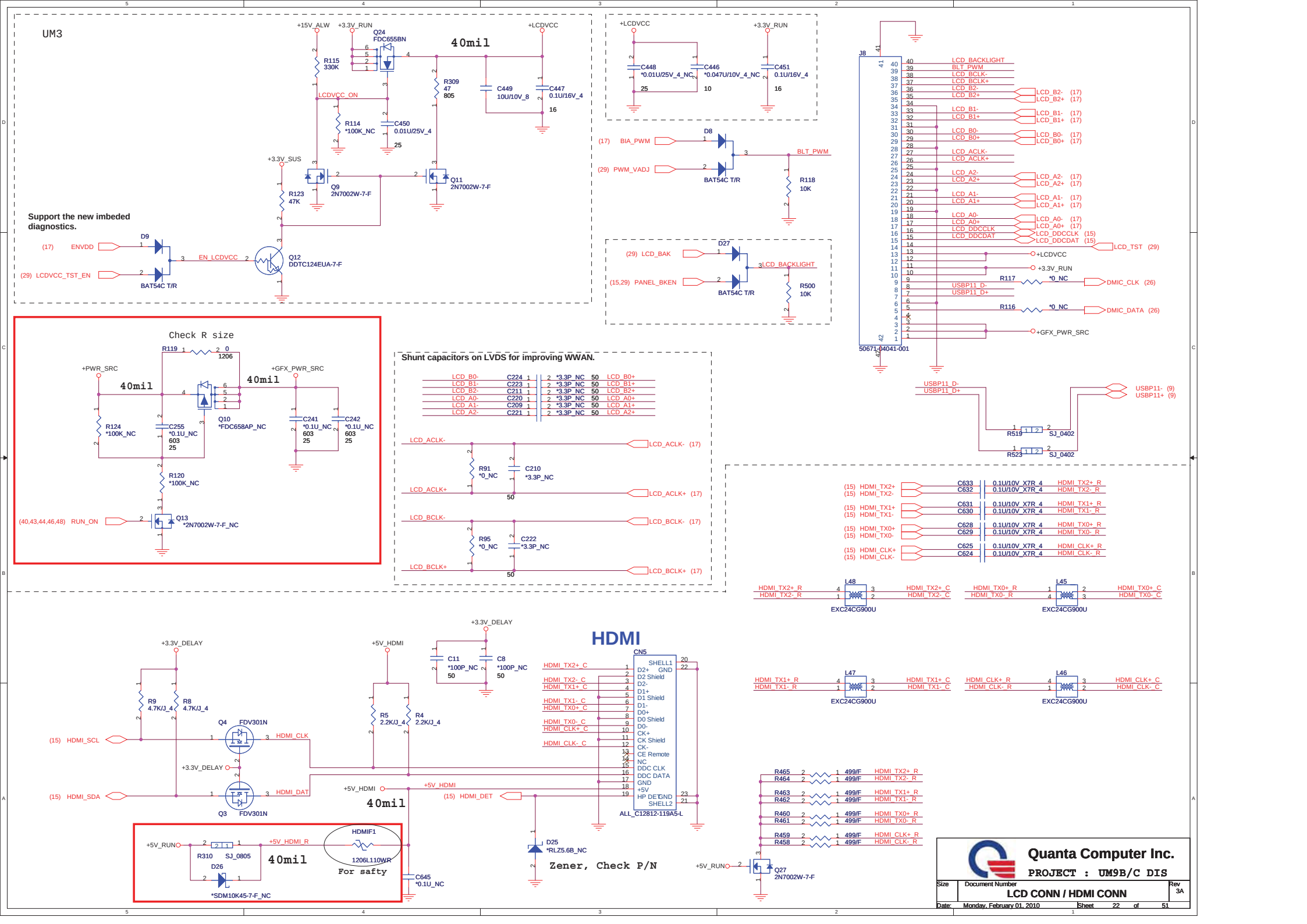
Follow 9/9 mail, check GND.



Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: SCREW PAD	Rev: 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
D9
(17) ENVDD
(29) LCDVCC_TST_EN
EN_LCDVCC
Q12 DDTC124EUA-7-F
BAT54C T/R
C448 *0.01U/25V_4_NC
C446 *0.047U/10V_4_NC
C451 0.1U/16V_4
D8
(17) BIA_PWM
(29) PWM_VADJ
BLT_PWM
R118 10K
D27
(29) LCD_BAK
(15,29) PANEL_BKEN
LCD_BACKLIGHT
R500 10K
J8
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
50671-04041-001
USBP11_D-
USBP11_D+
USBP11- (9)
USBP11+ (9)
R519 SJ_0402
R523 SJ_0402
Check R size
R119 0 1206
+PWR_SRC
+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.
C224 *3.3P_NC
C223 *3.3P_NC
C211 *3.3P_NC
C220 *3.3P_NC
C209 *3.3P_NC
C221 *3.3P_NC
R91 *0_NC
C210 *3.3P_NC
R95 *0_NC
C222 *3.3P_NC
(15) HDMI_TX2+
(15) HDMI_TX2-
(15) HDMI_TX1+
(15) HDMI_TX1-
(15) HDMI_TX0+
(15) HDMI_TX0-
(15) HDMI_CLK+
(15) HDMI_CLK-
C633 C632 C631 C630 C628 C629 C625 C624
0.1U/10V_X7R_4
L48 L45 L47 L46
EXC24CG900U
HDMI
CN5
ALL_C12812-119A5-L
+3.3V_DELAY
+5V_HDMI
C11 *100P_NC 50
C8 *100P_NC 50
R9 4.7K/J_4
R8 4.7K/J_4
R5 2.2K/J_4
R4 2.2K/J_4
Q4 FDV301N
Q3 FDV301N
(15) HDMI_SCL
(15) HDMI_SDA
HDMI_CLK
HDMI_DAT
(15) HDMI_DET
R465 R464 R463 R462 R460 R461 R459 R458
499/F
+5V_RUN
R310 SJ_0805
D26
*SDM10K45-7-F_NC
+5V_HDMI_R
HDMIF1
1206L110WR
For safty
C645 *0.1U_NC
D25 *RLZ5.6B_NC
Zener, Check P/N
Q27 2N7002W-7-F
Quanta Computer Inc.
PROJECT : UM9B/C DIS
Size
Document Number
LCD CONN / HDMI CONN
Rev 3A
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Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	CRT CONN	3A
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Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	DB CONN/Left USB	3A

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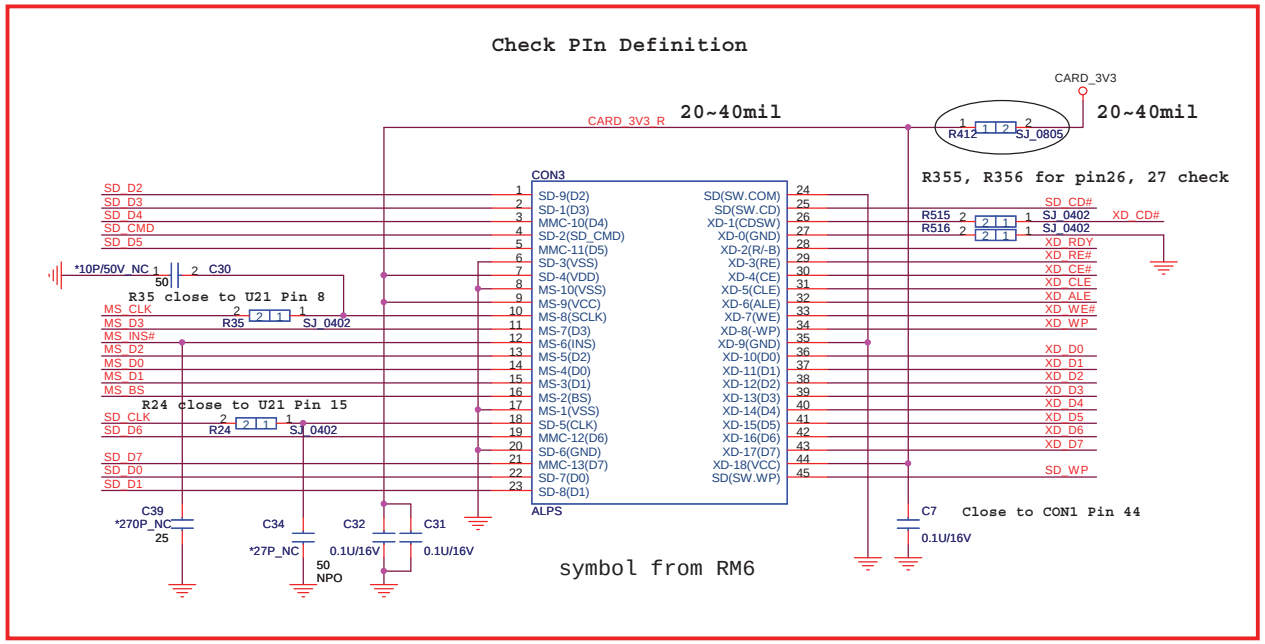
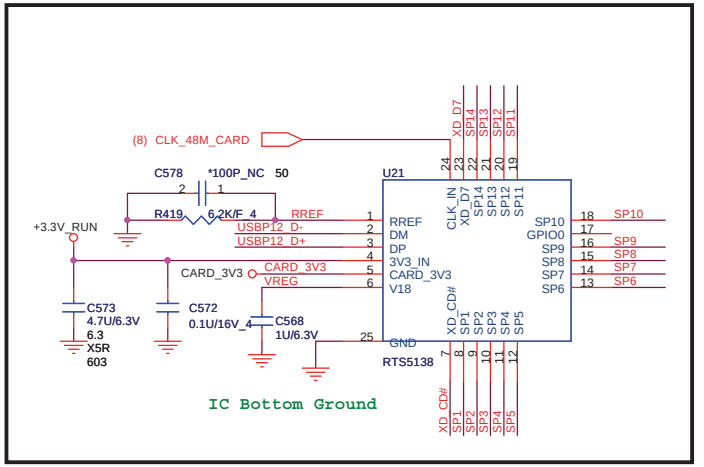
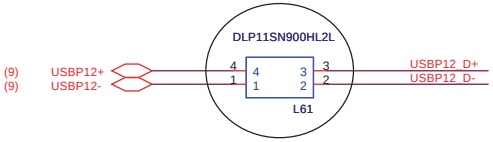




RTS5138-QFN24

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

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
Size | Document Number: Azelia CODEC(ALC269) | Rev 3A
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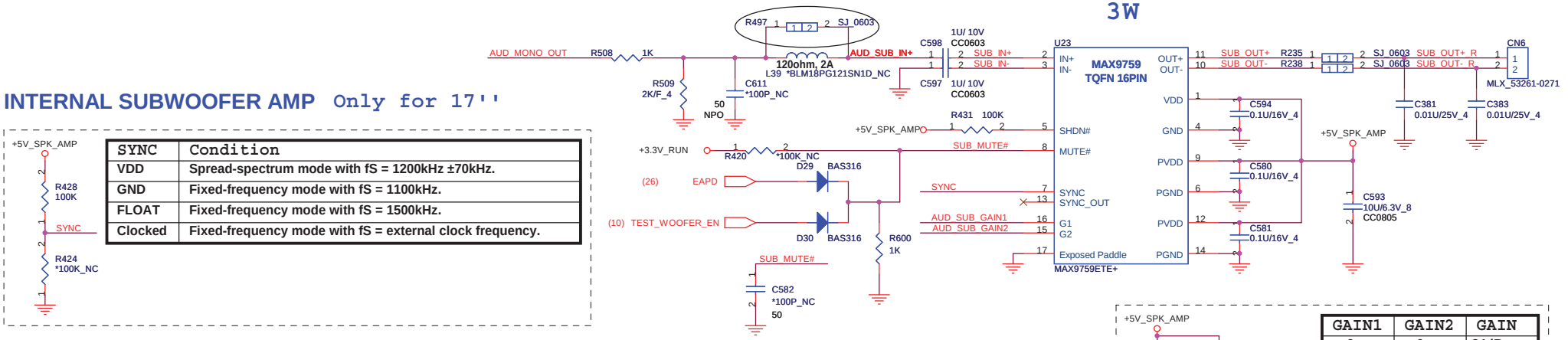
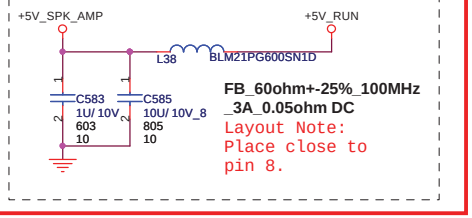
INTERNAL SUBWOOFER AMP Only for 17''

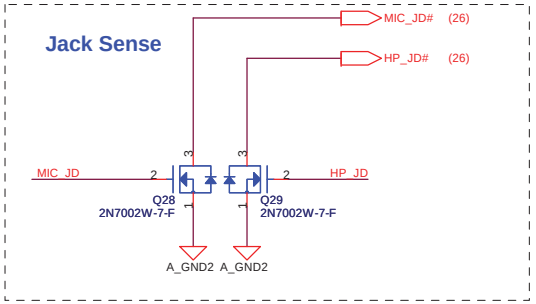
SYNC	Condition
VDD	Spread-spectrum mode with fS = 1200kHz ±70kHz.
GND	Fixed-frequency mode with fS = 1100kHz.
FLOAT	Fixed-frequency mode with fS = 1500kHz.
Clocked	Fixed-frequency mode with fS = external clock frequency.

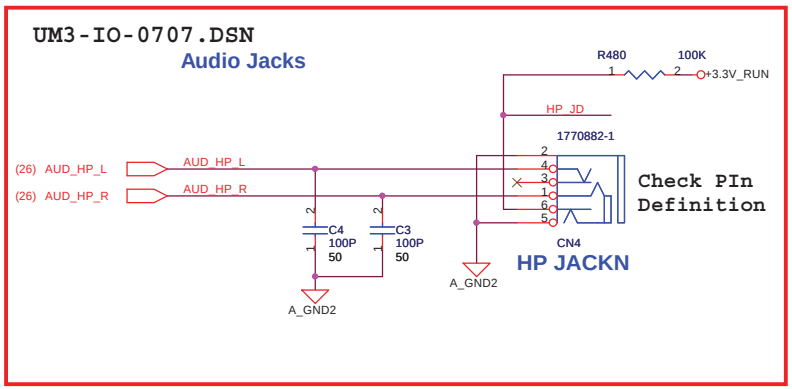


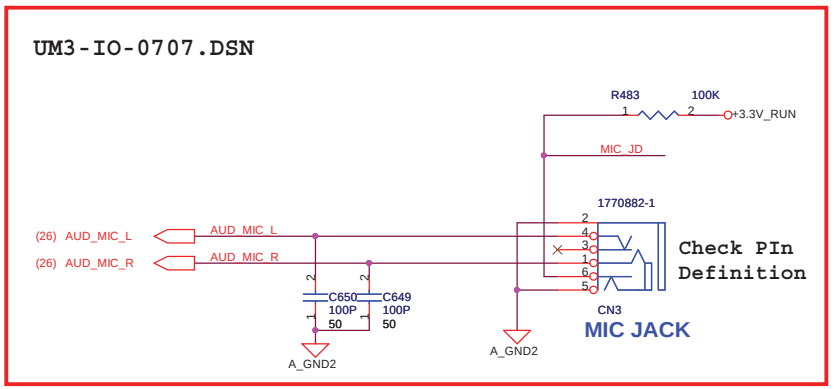
GAIN1	GAIN2	GAIN
0	0	24dB
1	0	18dB
0	1	12dB
1	1	6dB

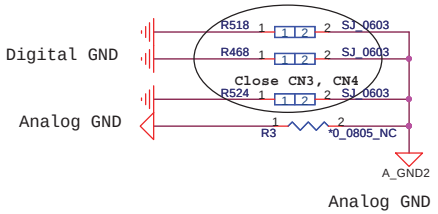
NB_MUTE#	TEST_WOOFER_EN	AUD_SPK PD#	SUB_MUTE#
0	0	L (Disable SPK)	L (Disable Woofer)
0	1	L (Disable SPK)	H (Test Woofer)
1	0	H (Test SPK)	L (Disable Woofer)
1	1	H (Test SPK)	H (Test Woofer)











Quanta Computer Inc.

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Size	Document Number	Rev
	AUDIO CONN	3A

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Quanta Computer Inc.

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UM3

U10

ITE8502E
LQFP-128L

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

KSO17 KSO16 KSO15 KSO14 KSO13 KSO12 KSO11 KSO10 KSO9 KSO8 KSO7 KSO6 KSO5 KSO4 KSO3 KSO2 KSO1 KSO0

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

KEYBOARD

ADC/DAC

PWM

LPC

IR/UART

SMBUS

LPC/FWH FLASH

EGPC

PS/2

GPIO

ITE8502E
lqfp128-16x16-4

+3.3V_ALW

C430 10U/ 6.3V_6 603 6.3
C307 1U/6.3V_4 16
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 +VBAT1_EC
VCC +3.V_RUN
VSTBY1 VSTBY2 VSTBY3 VSTBY4 VSTBY5 VSTBY6 +3.V_ALW
R146 SJ_0402
C302 0.1U/16V_4 16

HWPG (37,40,45)
PAD T28 SUS_PWR_ACK (9)
PAD T51 V_ID1
PBAT_PRES# (47)
IINP (41)
SIO_SLP_S5# (9)
CRIT_TEMP_REP# (10)
SIO_EXT_WAKE# (10)
USB_LEFT_EN# (39)
FAN1_DA (37)
RSMRST# (9)
PM_PWRBTN#_R (9)
D18 SDM10K45-7-F

BREATH_LED# (36)
PAD T52 FAN1_PWM (37)
PWM_VADJ (22)
PAD T53
PAD T54
PAD T20 EC_BEEP (26)
FAN1_TACH (37)
PANEL_BKEN (15,22)
LID_SW# (34)
SIO_SLP_S3# (9)

PAD T55
PAD T40 H_CPUDET# (3)
IMVP_PWRGD (3,45)
RUN_ON_1 (40)
BAT1_LED (36)
IMVP_VR_ON (45)
PAD T37

SUS_ON
PAD T35 SUS_ON (42,46)
KB_DET# (34)
PAD T56
PAD T23 EC_FLASH_SPI_DO (30)
EC_FLASH_SPI_DIN (30)
EC_FLASH_SPI_CS# (30)
EC_FLASH_SPI_CLK (30)
PAD T22
PAD T25
PAD T24 ECPWROK (9)
ALW_ON (36)
GFX_ON (16,49)
PAD T38
PAD T39

BID2 (30)
USB_RIGHT_EN# (30,39)
BID1 (30)
LCD_SIZE_ID (30)
LCD_SIZE_ID2 (30)

R145 *100K_NC +3.V_ALW
PAD T57 ACAV_IN (36,41)
BAT2_LED (36)
AC_PRESENT (9)
SYS_PWR_SW# (36)
LCDVCC_TST_EN (22)
PAD T21

SMBDAT0 SMBCLK0 RP5 2.2KX2
SMBDAT1 SMBCLK1 RP4 10KX2
USB_LEFT_EN# R177 10K
SUS_ON R163 100K
IMVP_VR_ON R176 *100K_NC
SERIRQ R306 10K
LCD_BAK R307 *10K_NC
SMBDAT2 SMBCLK2 RP3 10KX2

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

(3,9,14,39) PLTRST#
(9) CLK_33M_KBC
(7,39) LFRAME# LAD0 LAD1 LAD2 LAD3
R147 SJ_0402
CLKRUN# SERIRQ
SERIRQ
(10) SIO_EXT_SMI# SIO_EXT_SCI#
(10) GATEA20
(22) LCD_TST
(10) RCIN#
T58 PAD
(22) LCD_BAK
(26) NB_MUTE#
ICH_AZ_CODEC_RST0#
D11 D13 D17 D10 SDM10K45-7-F

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

Charge and BAT
PCH
VGA, LAN, Clock Thermal IC

(41,47) SMBCLK0 SMBDAT0
(8) SMBCLK1 SMBDAT1
(2,18,37) SMBCLK2 SMBDAT2

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

+3.3V_ALW
R143 100K WRST#
C300 1U/ 10V 603 10

ITE8502_XTAL1
ITE8502_XTAL2
ITE8502IX_JX
CK32K
CK32KE
VCORE VSS1 VSS3 VSS4 VSS5 VSS6 VSS7
AVCC AVSS

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

32KHz Clock.(Layout close to EC)
C304 18P/50V_4
W3 32.768KHZ
R496 10M/J_4
C303 18P/50V_4
ITE8502_XTAL1
ITE8502_XTAL2

CLK_33M_KBC
R304 10
C432 2.2P 50

ITE8502IX_JX
C435 0.1U/16V_4 16

Board ID Straps

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

Park
UMA

USB_RIGHT_EN#
BID1
LCD_SIZE_ID
BID2
LCD_SIZE_ID2
V_ID1

VGA_TYPE
VGA_IDENTIFY

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

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)

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	SIO ITE8502	3A
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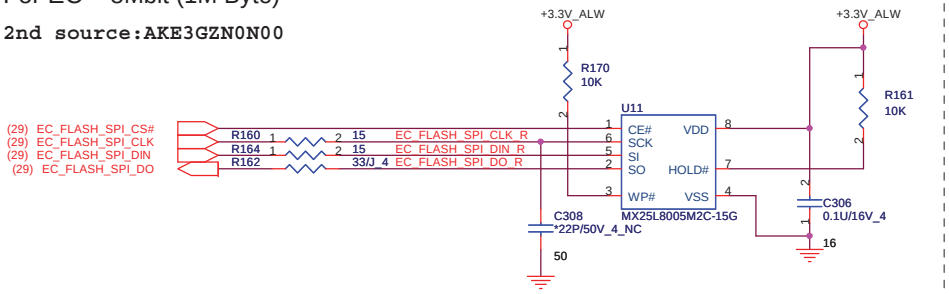
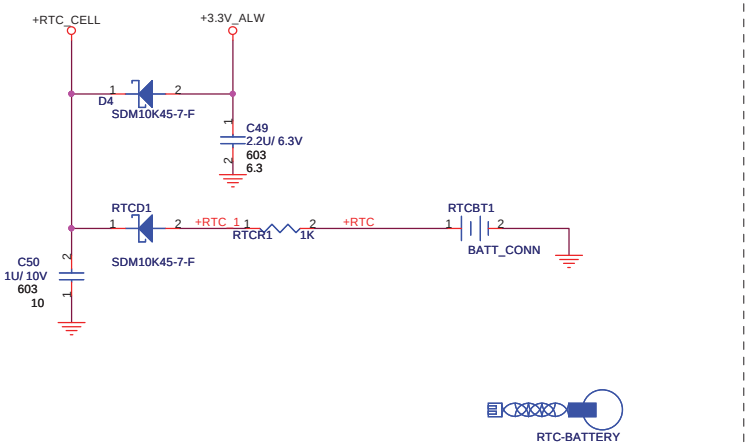
UM3

For EC 8Mbit (1M Byte)

2nd source:AKE3GZN0N00



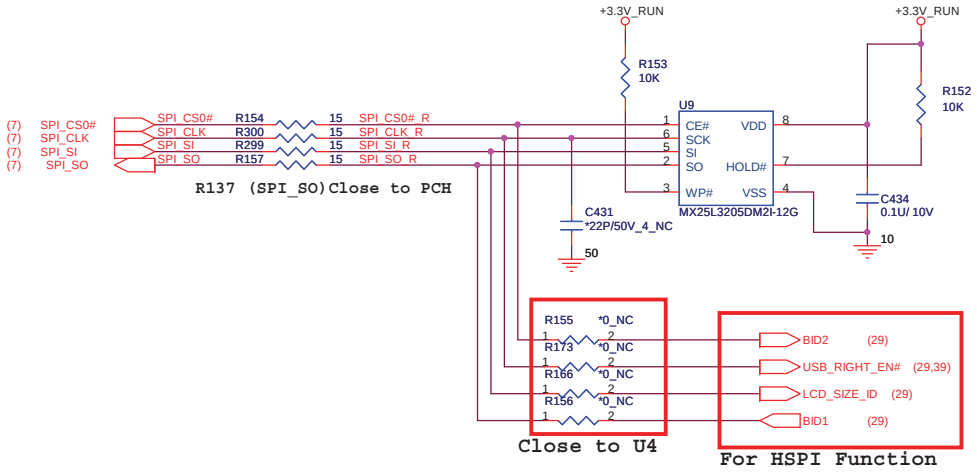
RTC BATTERY



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	

Quanta Computer Inc.

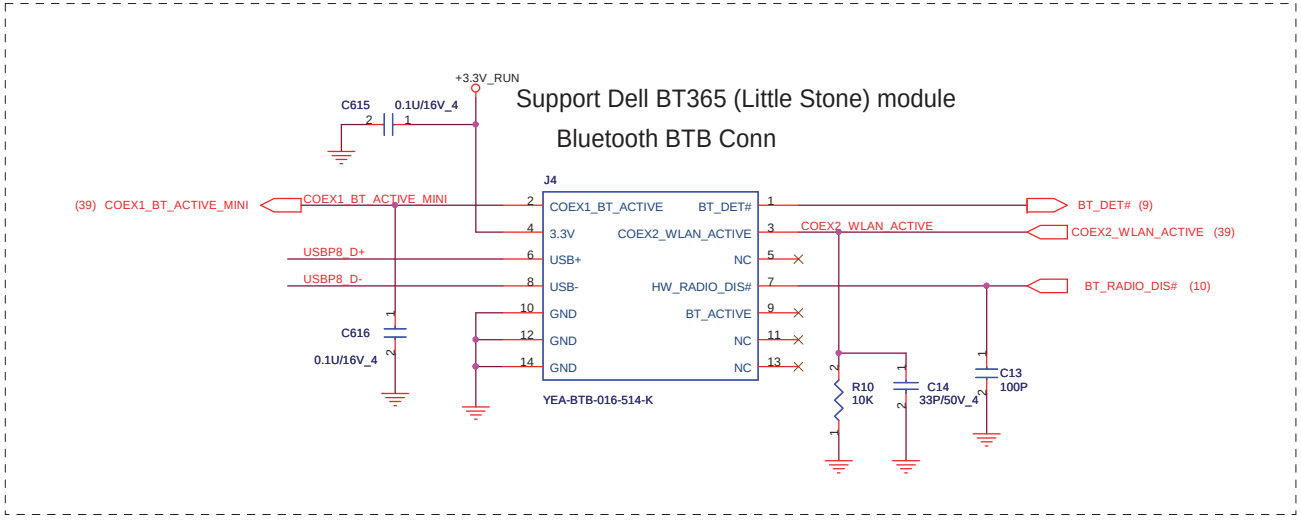
PROJECT : UM9B/C DIS

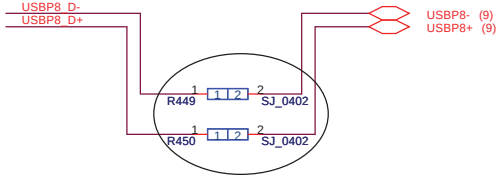
Size	Document Number	Rev
	MINI-Card WWAN	3A

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

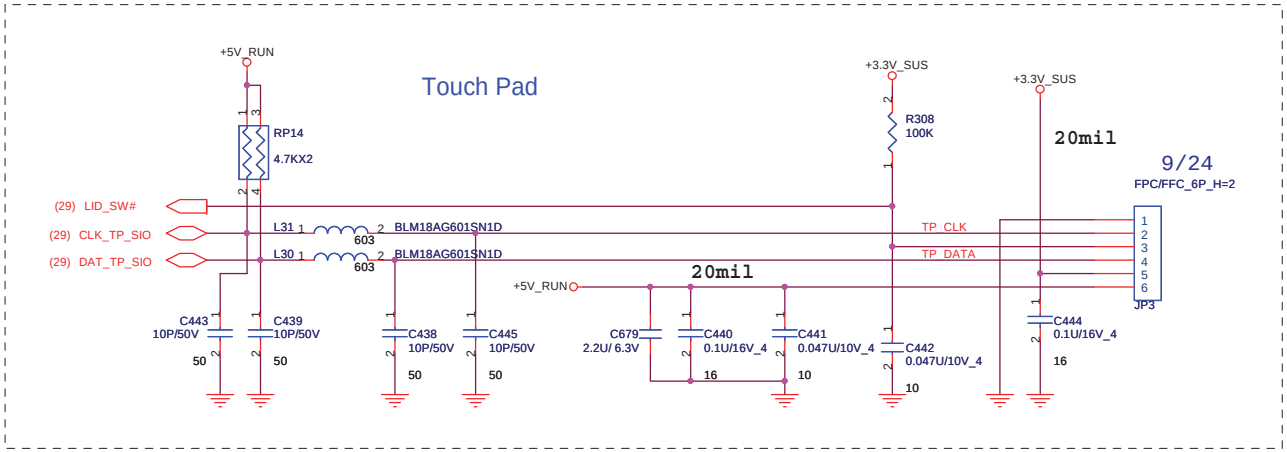
Date: Monday, February 01, 2010 Sheet 32 of 51

Quanta Computer Inc.

PROJECT : UM9B/C DIS

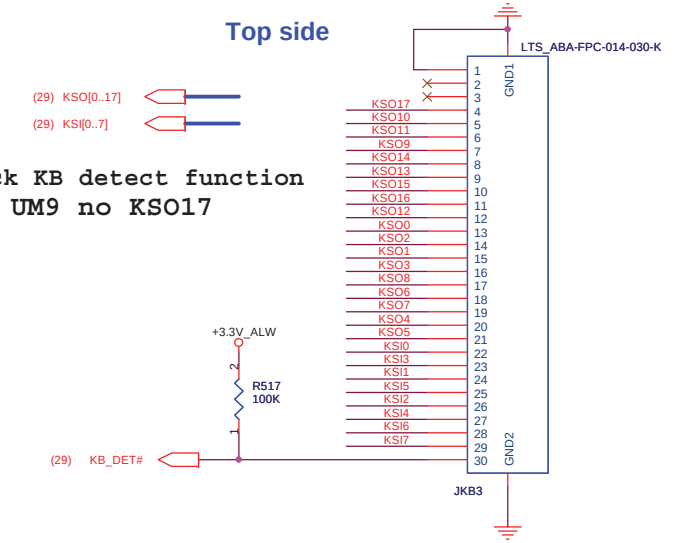
Size	Document Number	Rev
	eSATA & Right USB	3A

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

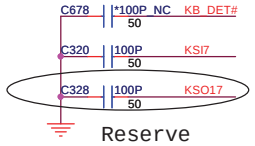


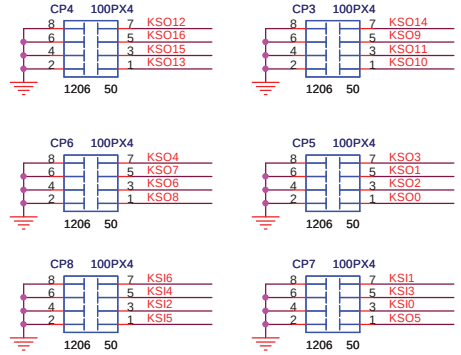
UM3 KEYBOARD CONNECTOR

Top side



Check KB detect function
UM9 no KSO17

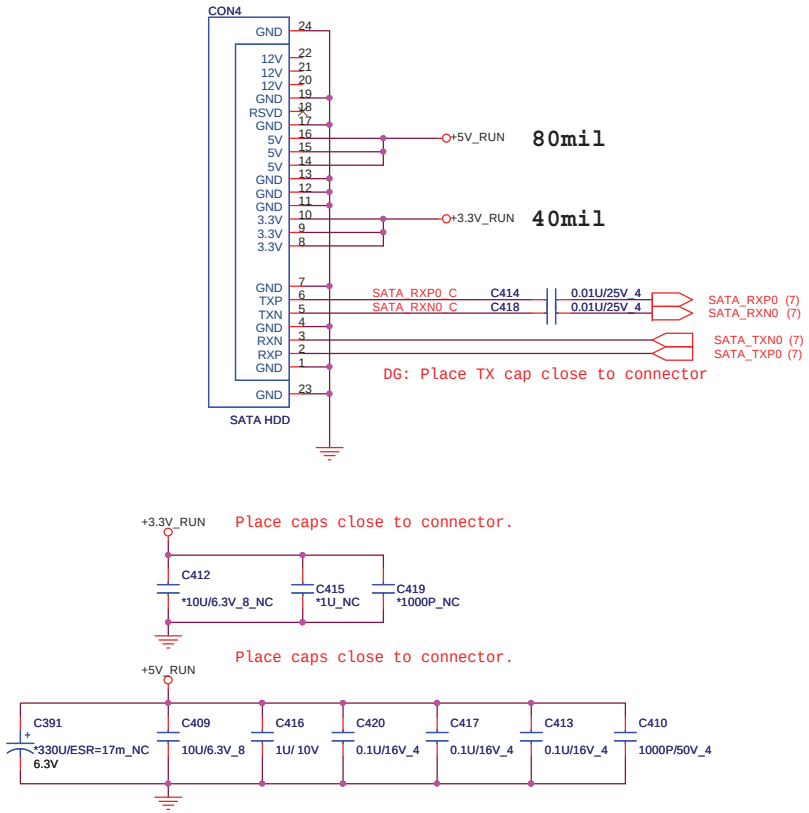




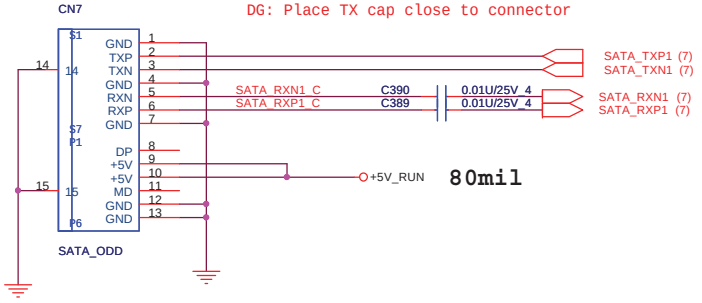
100P CAPS CLOSE TO JKB3

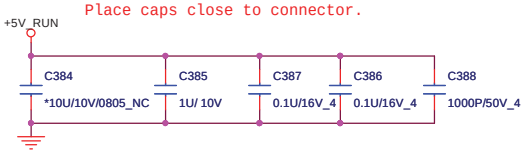
Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: TOUCH PAD, KB	Rev 3A
Date: Monday, February 01, 2010	Sheet 34 of 51	

SATA Connector.



ODD Connector





Quanta Computer Inc.

PROJECT : UM9B/C DIS

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

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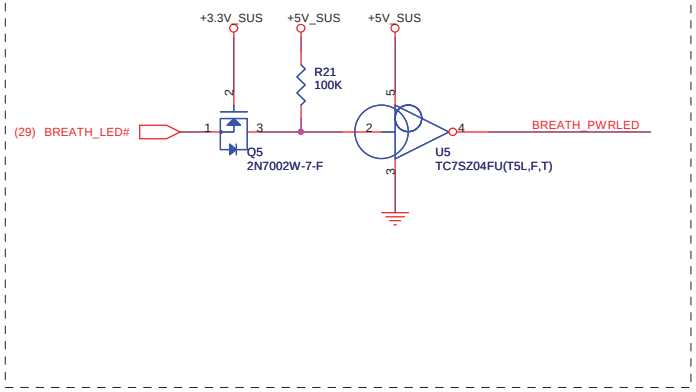
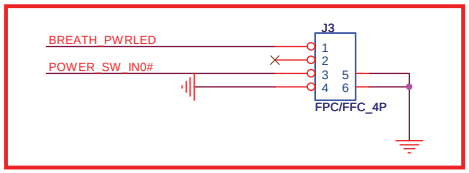
UM3

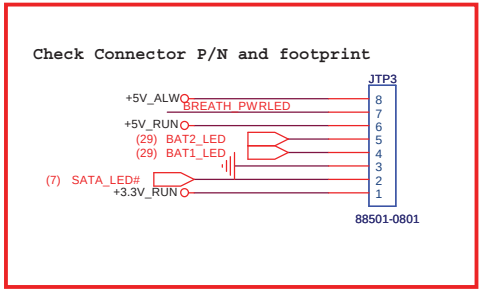
Power



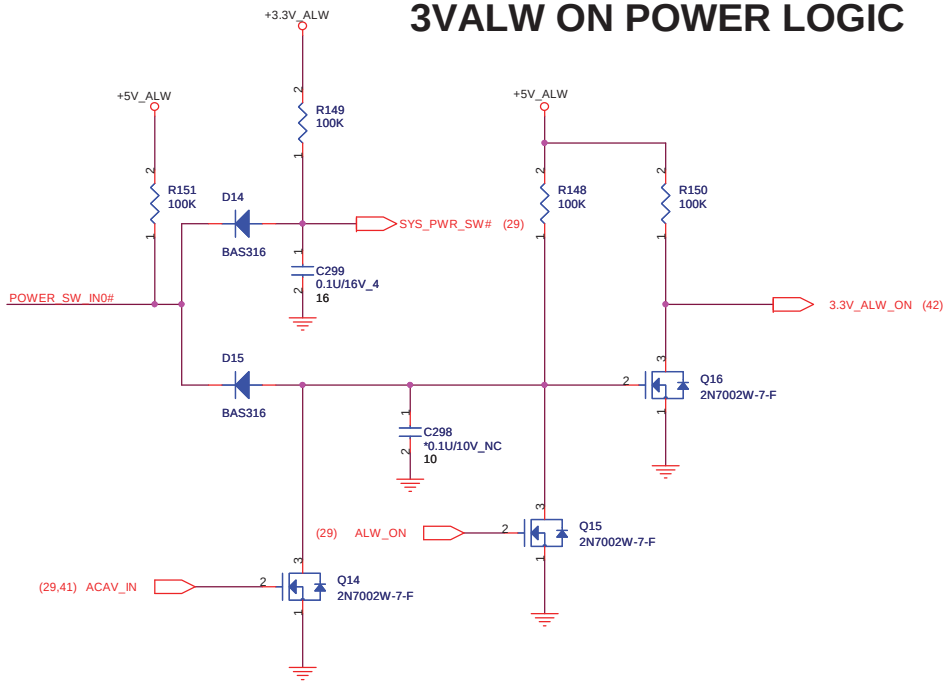
Power button Cable

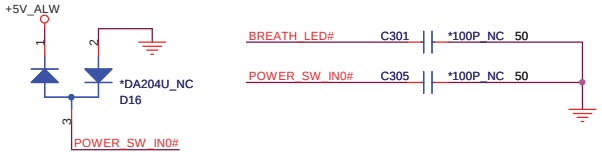


Check Connector P/N and footprint



3VALW ON POWER LOGIC

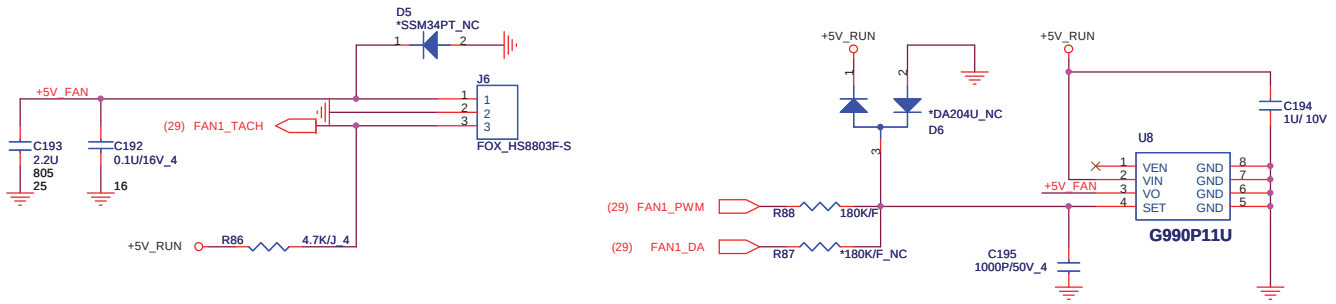




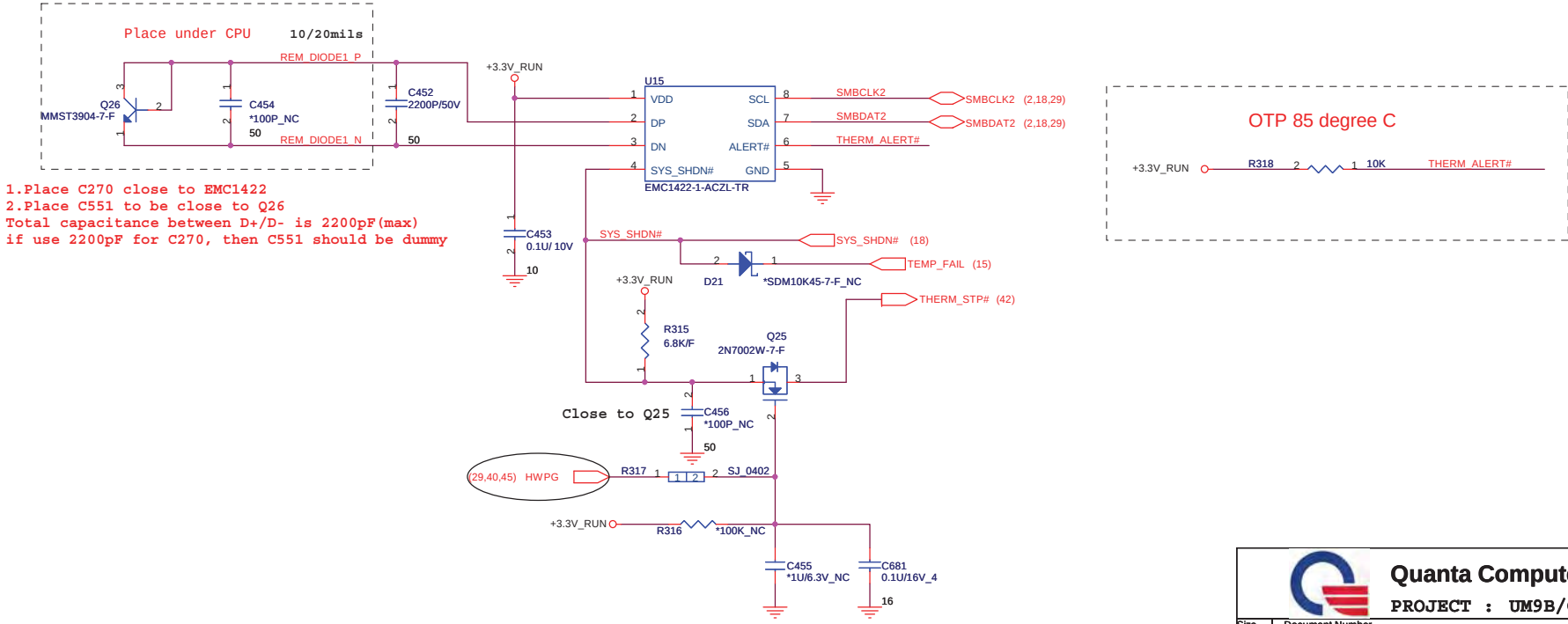
Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: SWITCH, LED	Rev 3A
Date: Monday, February 01, 2010	Sheet 36 of 51	

FAN CONTROL

6/23 COPY FROM RM6



UM3



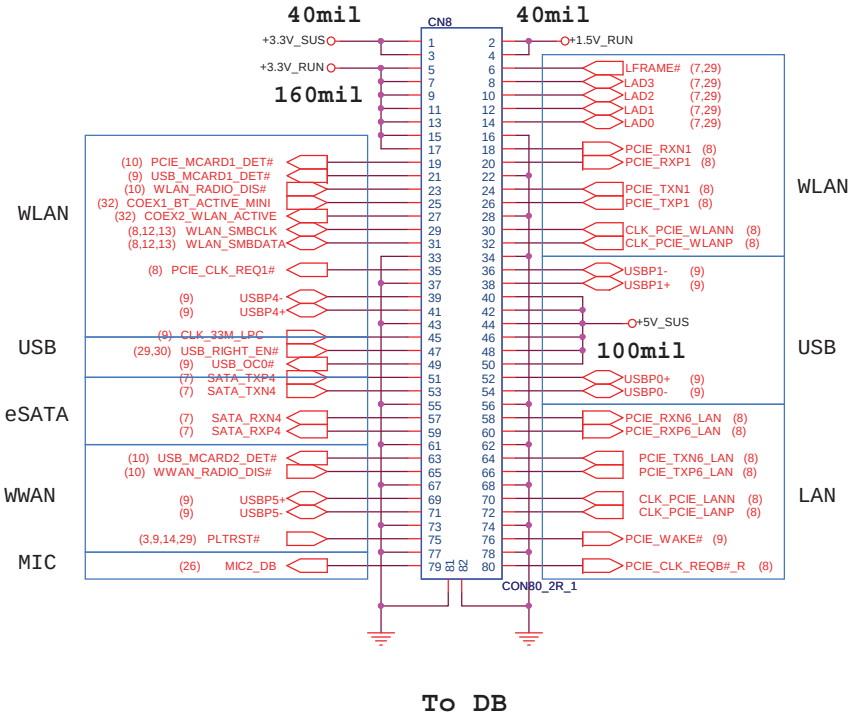
Quanta Computer Inc.		
PROJECT : UM9B/C DIS		
Size	Document Number: FAN & THERMAL	Rev: 3A
Date: Monday, February 01, 2010	Sheet 37 of 51	

Quanta Computer Inc.

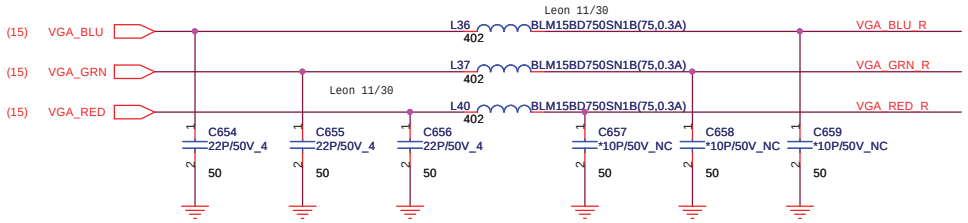
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	LAN(AR8152/RJ-45)	3A

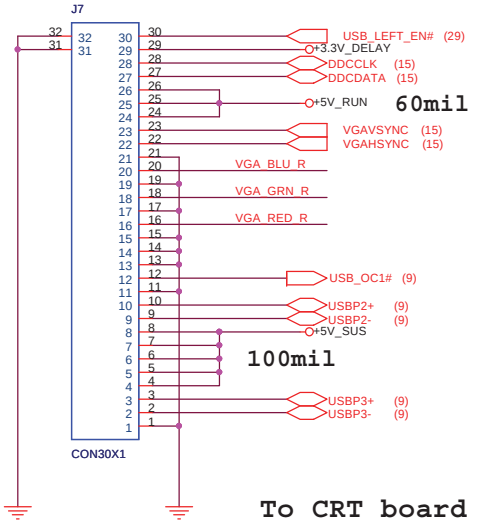
Date: Wednesday, January 27, 2010 Sheet 38 of 51



To DB

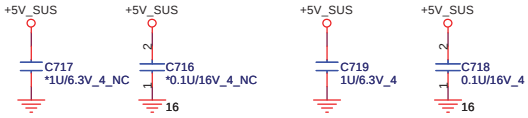


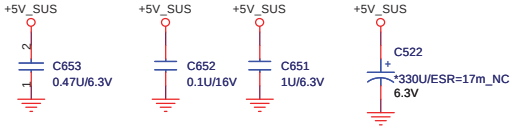
Close to VGA



DIS:+3.3V_DELAY

To CRT board





Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	BTB CONN	3A

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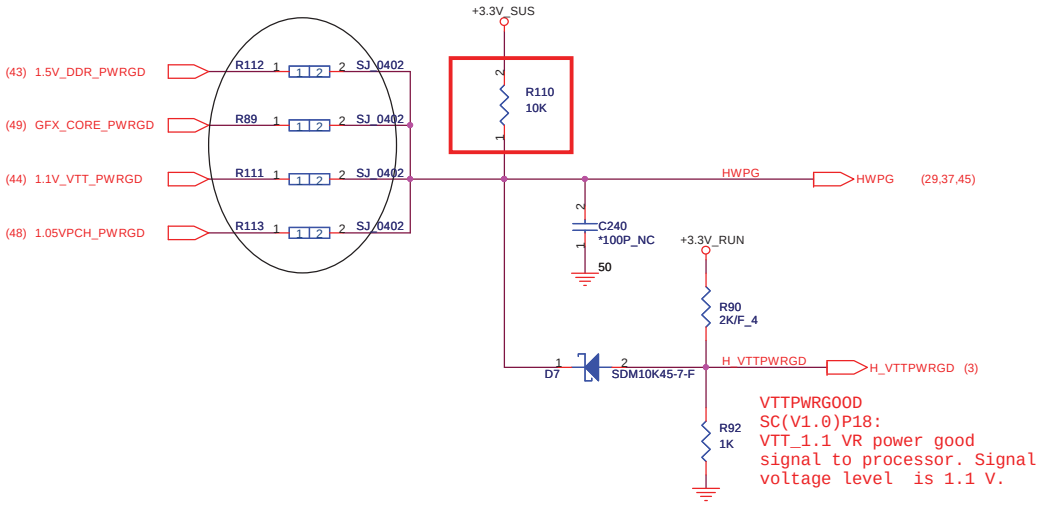
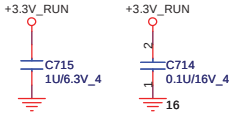
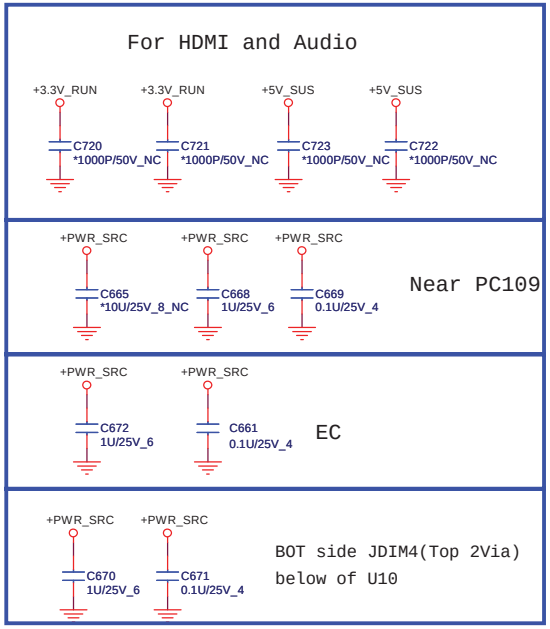
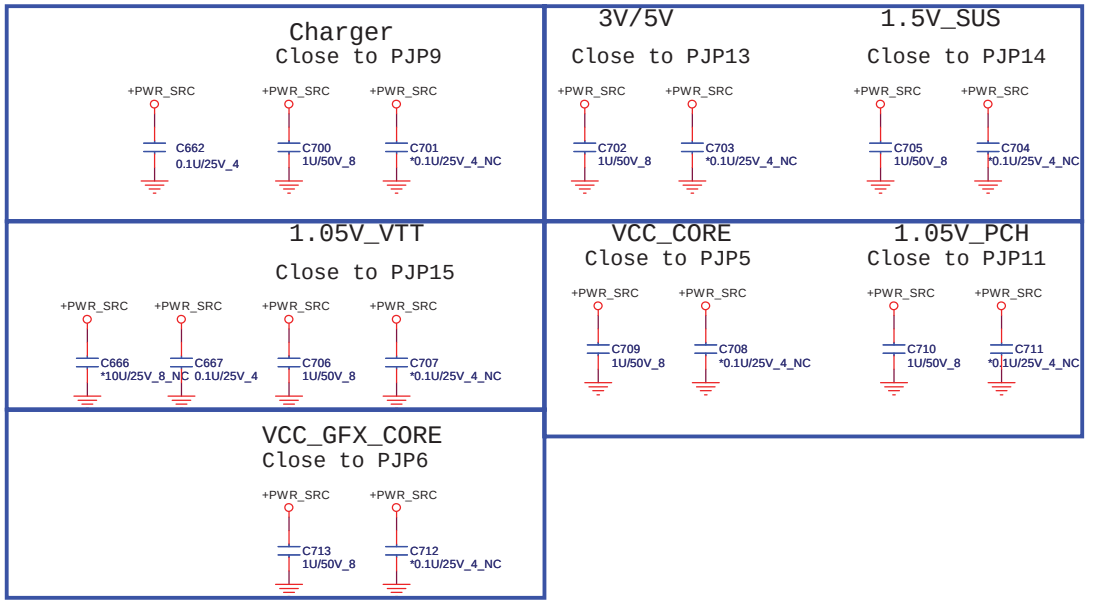
UM3









Quanta Computer Inc.

PROJECT : UM9B/C DIS

Size	Document Number	Rev
	System Reset Circuit	3A

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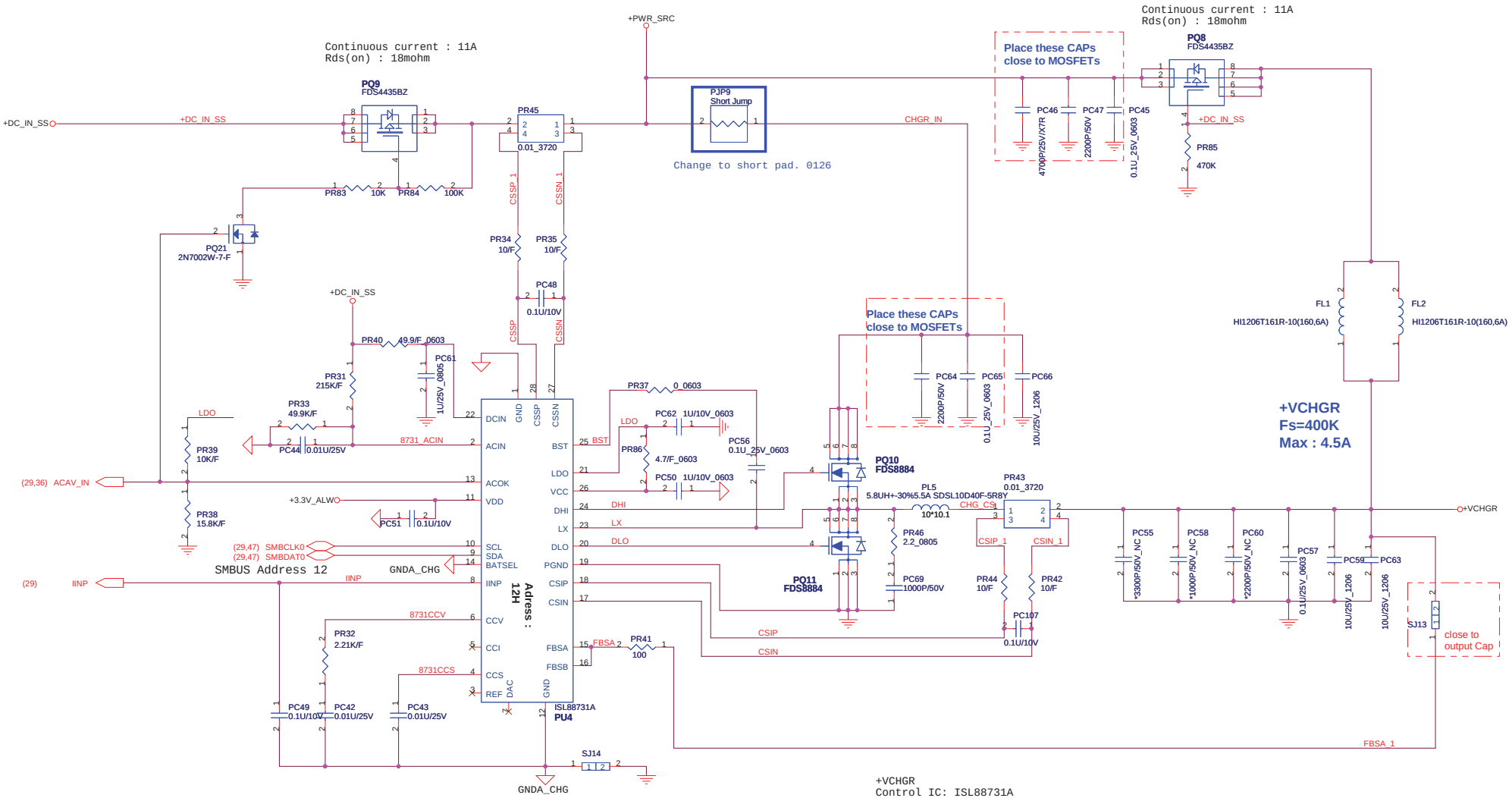
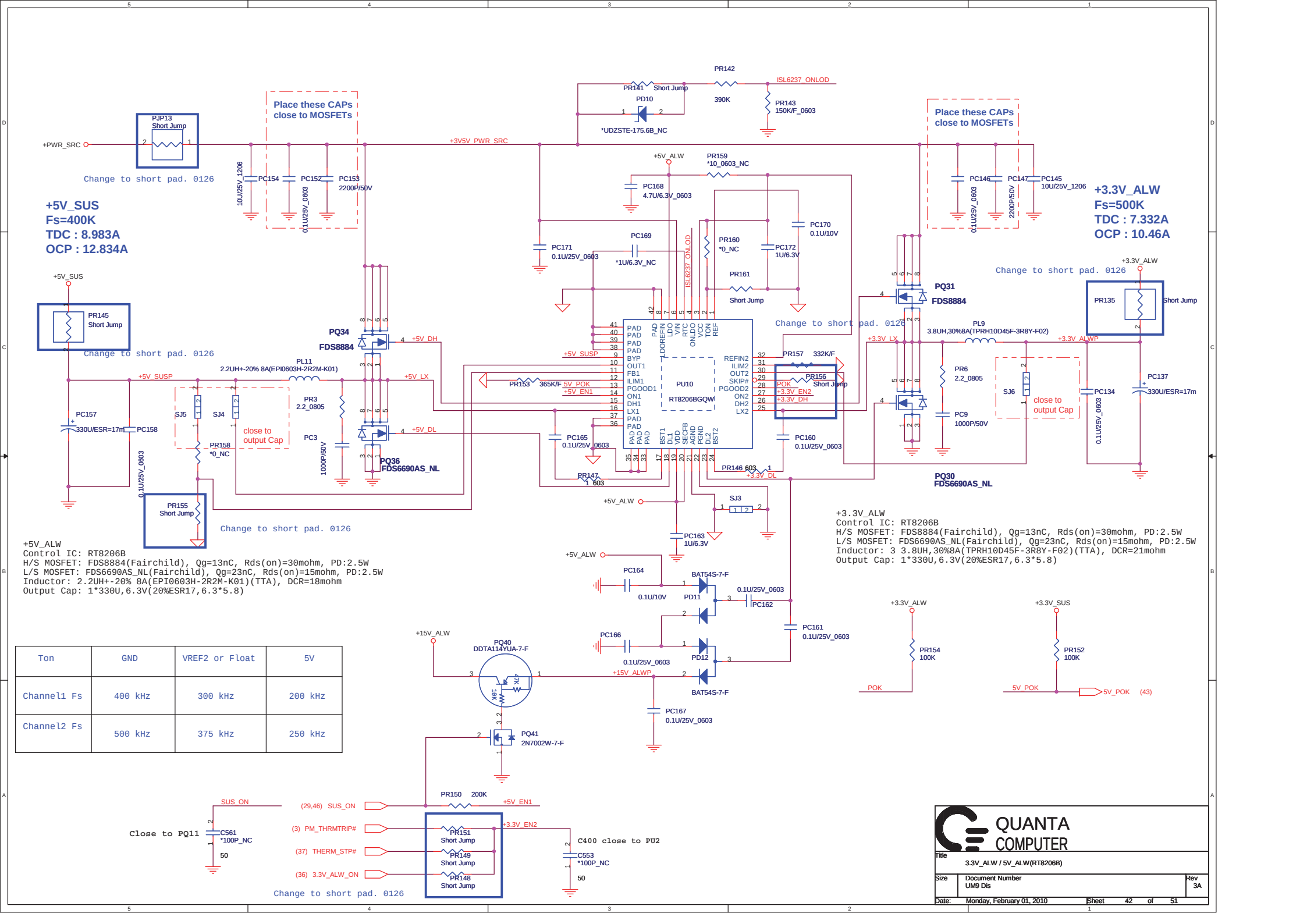
UM9-MADISON-0909 OF POWER.DSN



+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

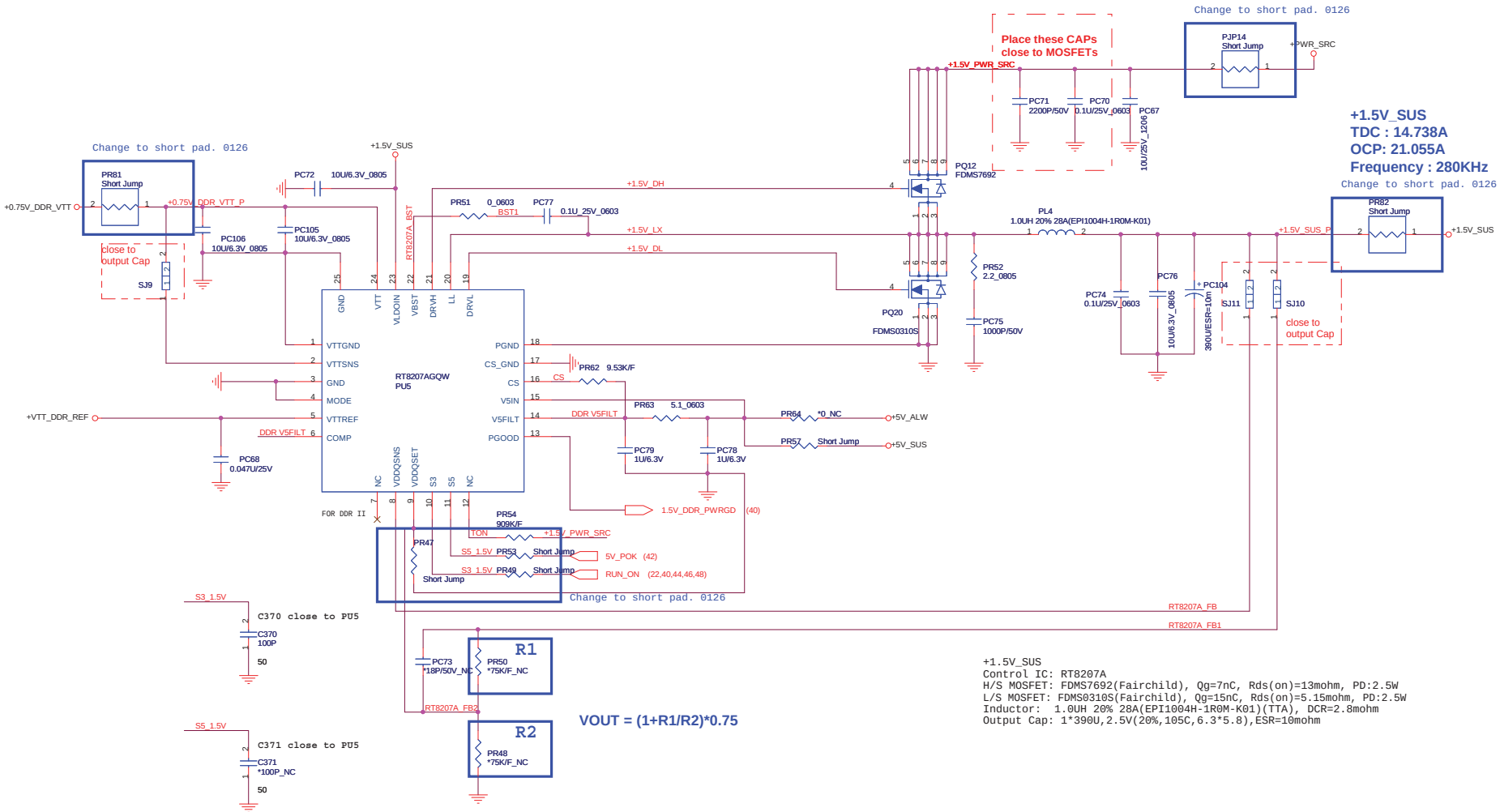
Title	Charger (ISL88731)	
Size	Document Number UM9 Dis	Rev 3A
Date: Monday, February 01, 2010	Sheet 41 of 51	



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

QUANTA COMPUTER

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

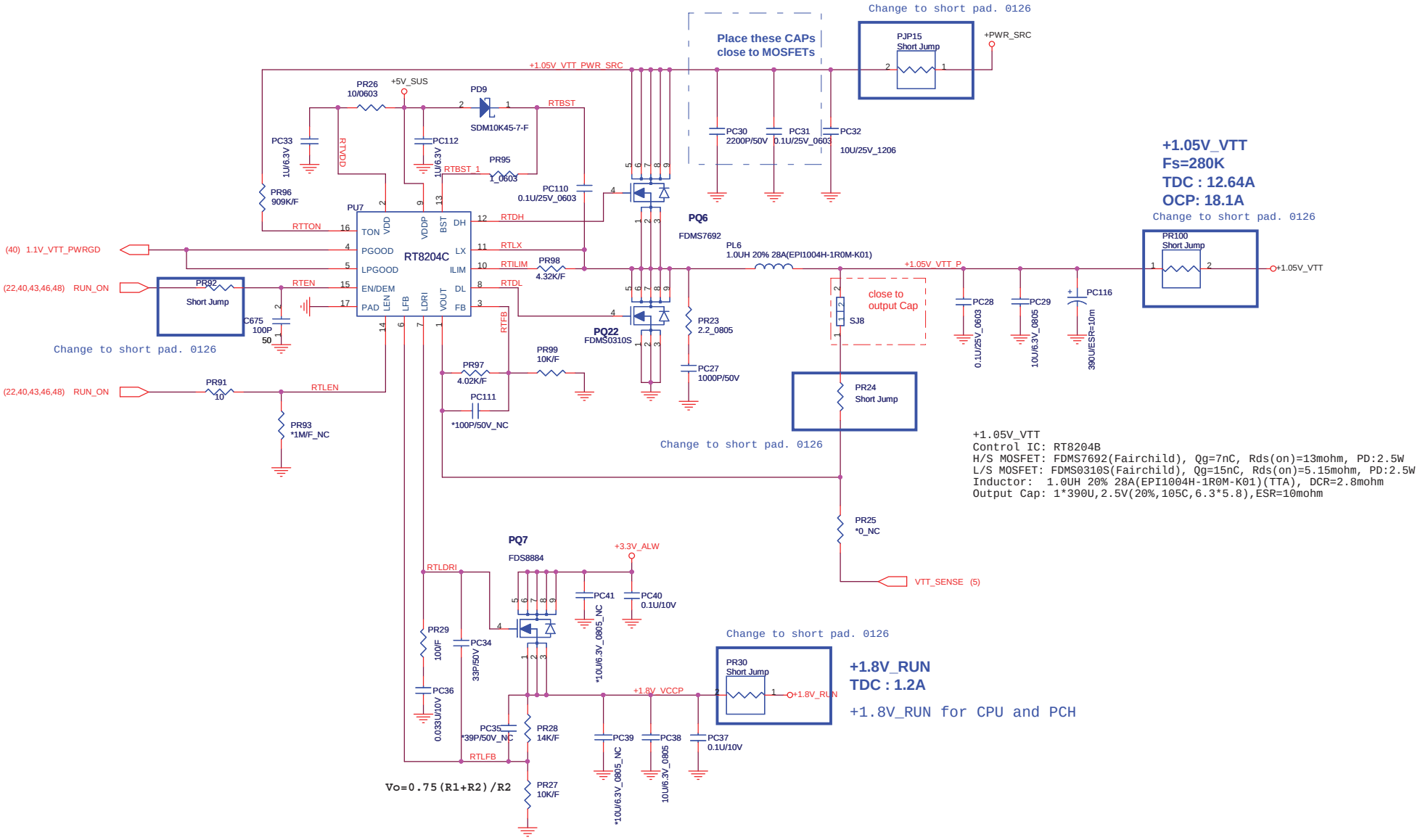
VDDQ output voltage selection

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

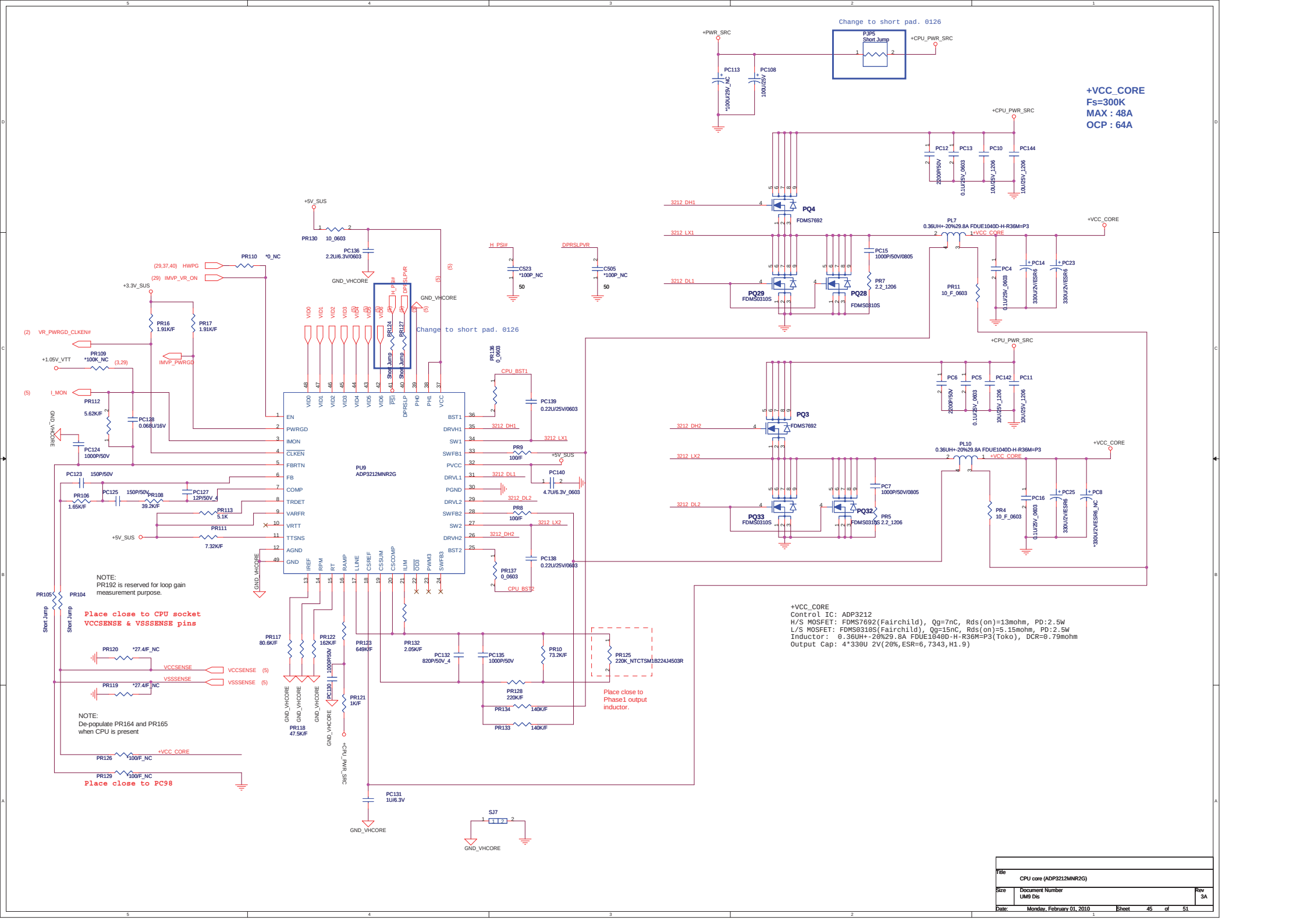
Outputs Management by S3, S5 control

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
+CPU_PWR_SRC
PC12
PC13
PC10
PC144
2200P/50V
0.1U/25V_0603
10U/25V_1206
10U/25V_1206
3212_DH1
PQ4
FDMS7692
3212_LX1
3212_DL1
PQ29
FDMS0310S
PQ28
FDMS0310S
PC15
1000P/50V/0805
PR7
2.2_1206
PL7
0.36UH+-20%29.8A FDUE1040D-H-R36M=P3
+VCC_CORE
PR11
10_F_0603
PC4
PC14
PC23
0.1U/25V_0603
330U/2V/ESR6
330U/2V/ESR6
+5V_SUS
PR130
10_0603
PC136
2.2U/6.3V/0603
GND_VHCORE
PR110
*0_NC
(29,37,40) HWPG
(29) IMVP_VR_ON
+3.3V_SUS
PR16
1.91K/F
PR17
1.91K/F
(2) VR_PWRGD_CLKEN#
PR109
*100K_NC
(3,29)
IMVP_PWRGD
+1.05V_VTT
(5) I_MON
PR112
5.62K/F
PC128
0.068U/16V
GND_VHCORE
PC124
1000P/50V
H_PSI#
C523
*100P_NC
50
DPRSLPVR
C505
*100P_NC
50
VID0
VID1
VID2
VID3
VID4
VID5
VID6
PSI
DPRSLP
PH0
PH1
VCC
PR124
PR127
Short Jump
Short Jump
Change to short pad. 0126
PR136
0_0603
CPU_BST1
PC139
0.22U/25V/0603
3212_DH1
3212_LX1
PR9
100/F
+5V_SUS
PC140
4.7U/6.3V_0603
3212_DL1
3212_DL2
PR8
100/F
3212_LX2
3212_DH2
PC138
0.22U/25V/0603
PR137
0_0603
CPU_BST2
PU9
ADP3212MNR2G
EN
PWRGD
IMON
CLKEN
FBRTN
FB
COMP
TRDET
VARFR
VRTT
TTSNS
AGND
GND
BST1
DRVH1
SW1
SWFB1
PVCC
DRVL1
PGND
DRVL2
SWFB2
SW2
DRVH2
BST2
IREF
RPM
RT
RAMP
LLINE
CSREF
CSSUM
CSCOMP
ILIM
OD3
PWM3
SWFB3
PC123
150P/50V
PC125
150P/50V
PR106
1.65K/F
PR108
39.2K/F
PC127
12P/50V_4
PR113
5.1K
PR111
7.32K/F
+5V_SUS
GND_VHCORE
PR105
PR104
Short Jump
Short Jump
NOTE:
PR192 is reserved for loop gain measurement purpose.
Place close to CPU socket
VCCSENSE & VSSSENSE pins
PR120
*27.4/F_NC
VCCSENSE
VCCSENSE (5)
VSSSENSE
VSSSENSE (5)
PR119
*27.4/F_NC
NOTE:
De-populate PR164 and PR165
when CPU is present
PR126
*100/F_NC
+VCC_CORE
PR129
*100/F_NC
Place close to PC98
PR117
80.6K/F
PR122
162K/F
PC130
1000P/50V
PR121
1K/F
PR118
47.5K/F
PR123
649K/F
PR132
2.05K/F
PC132
820P/50V_4
PC135
1000P/50V
PR10
73.2K/F
PR128
220K/F
PR134
140K/F
PR133
140K/F
PR125
220K_NTCTSM1B224J4503R
Place close to
Phase1 output
inductor.
+CPU_PWR_SRC
PC131
1U/6.3V
GND_VHCORE
SJ7
GND_VHCORE
+CPU_PWR_SRC
PC6
PC5
PC142
PC11
2200P/50V
0.1U/25V_0603
10U/25V_1206
10U/25V_1206
PQ3
FDMS7692
3212_DH2
3212_LX2
3212_DL2
PQ33
FDMS0310S
PQ32
FDMS0310S
PC7
1000P/50V/0805
PR5
2.2_1206
PL10
0.36UH+-20%29.8A FDUE1040D-H-R36M=P3
+VCC_CORE
PR4
10_F_0603
PC16
PC25
PC8
0.1U/25V_0603
330U/2V/ESR6
+330U/2V/ESR6_NC
+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)
Title
CPU core (ADP3212MNR2G)
Size
Document Number
UM9 Dis
Rev
3A
Date:
Monday, February 01, 2010
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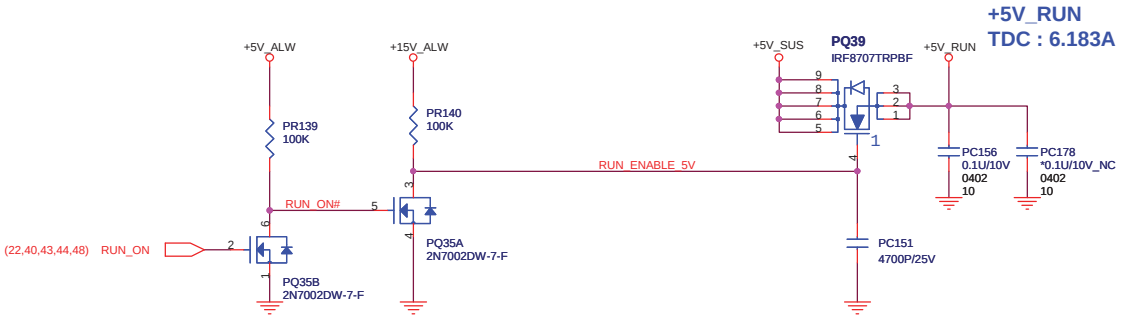
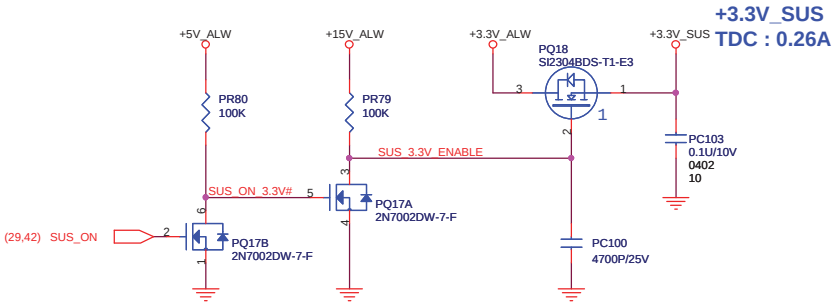
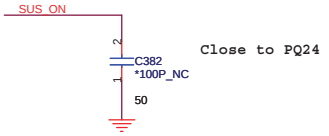
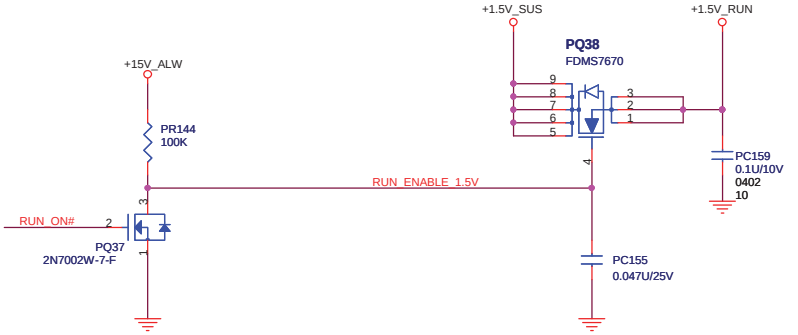
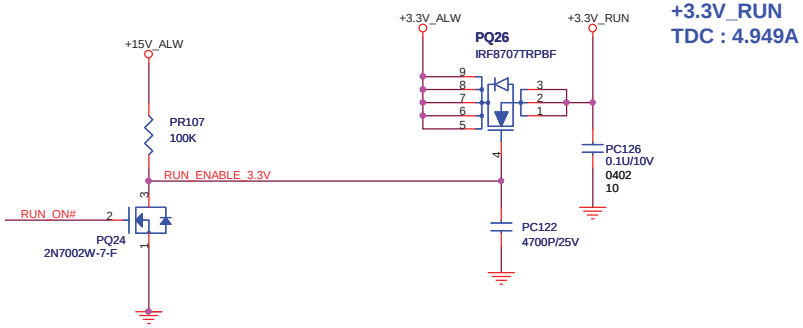
51



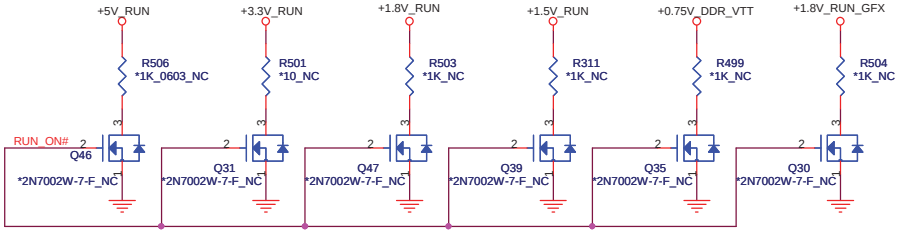


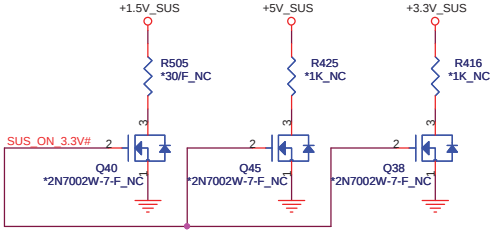






Reserve discharge path





QUANTA COMPUTER

Title	RUN / SUS POWER SW	
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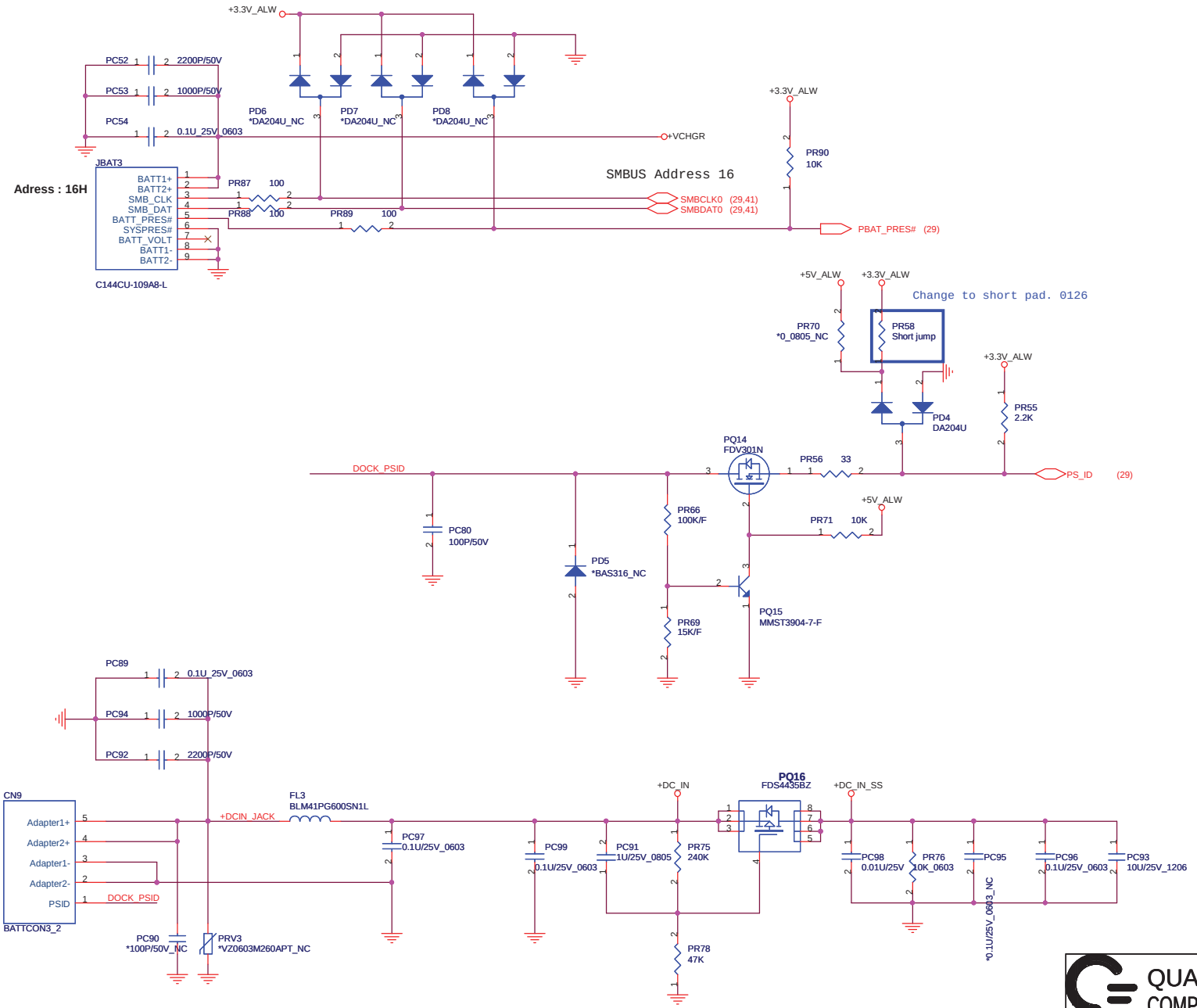

QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number UM9 Dis	Rev 3A
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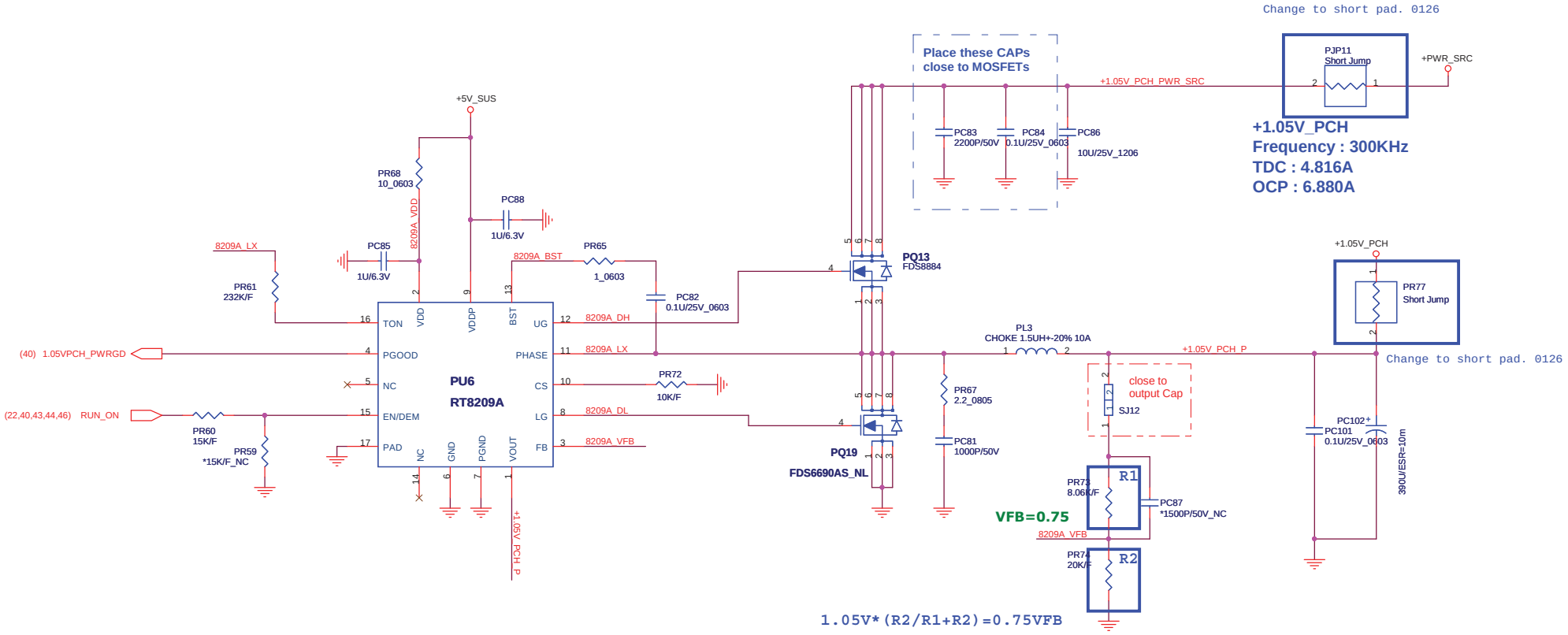

+1.05V_PCH
Control IC: RT8209A
H/S MOSFET: FDS8884(Fairchild), Qg=13nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS6690AS_NL(Fairchild), Qg=23nC, Rds(on)=15mohm, PD:2.5W
Inductor: 1.5UH+-20% 9A (10D40F-1R5M)(TTA), DCR=10.5mohm
Output Cap: 1*390U,2.5V(20%,105C,6.3*5.8),ESR=10mohm

Title	+1.05V_PCH(RT8209A)	
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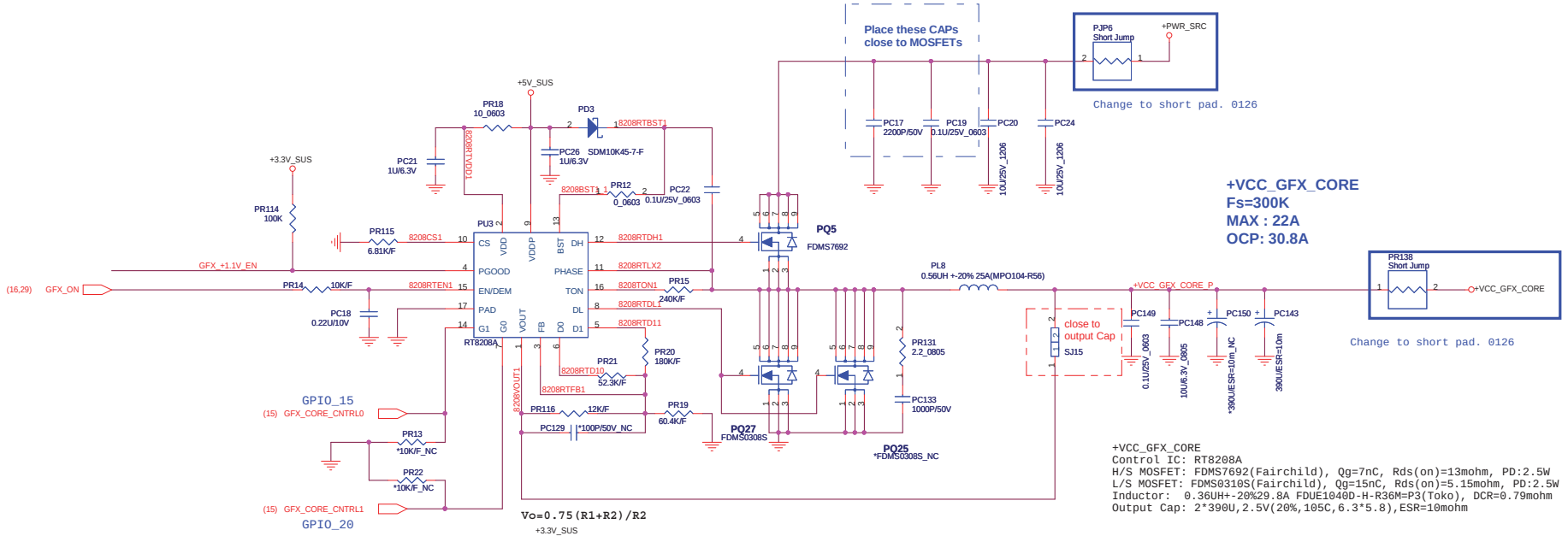
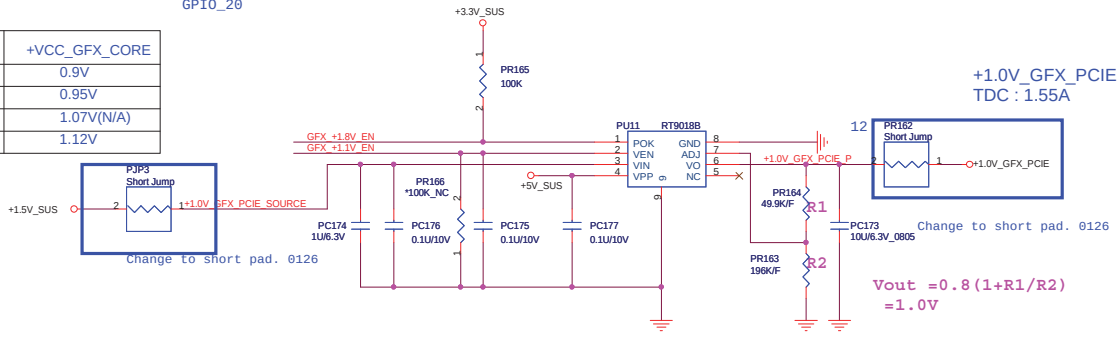
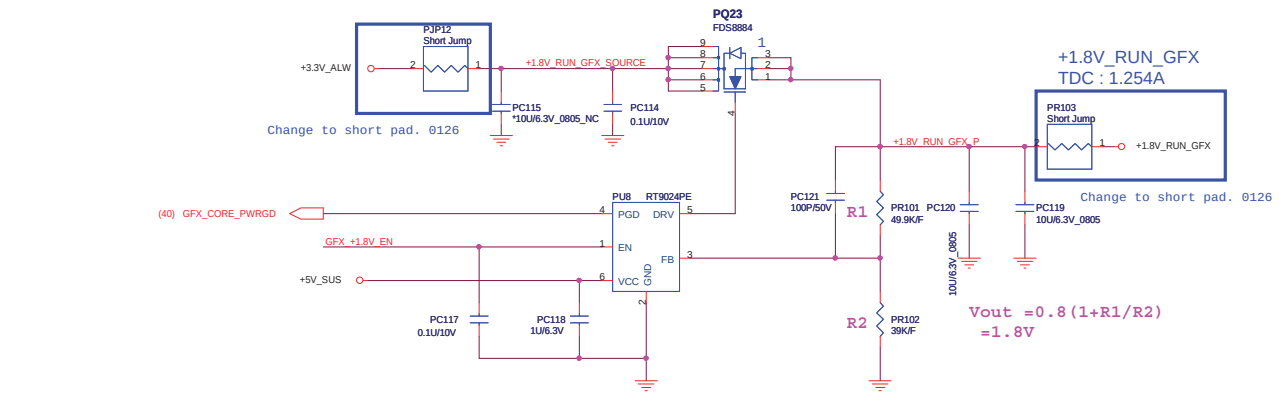


+VCC_GFX_CORE
Control IC: RT8208A
H/S MOSFET: FDMS7692(Fairchild), Qg=7nC, Rds(on)=13mohm, PD:2.5W
L/S MOSFET: FDMS0310S(Fairchild), Qg=15nC, Rds(on)=5.15mohm, PD:2.5W
Inductor: 0.36UH+-20%29.8A FDUE1040D-H-R36M=P3(Toko), DCR=0.79mohm
Output Cap: 2*390U,2.5V(20%,105C,6.3*5.8),ESR=10mohm

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)	
Size	Document Number UM9 Dis	Rev 3A
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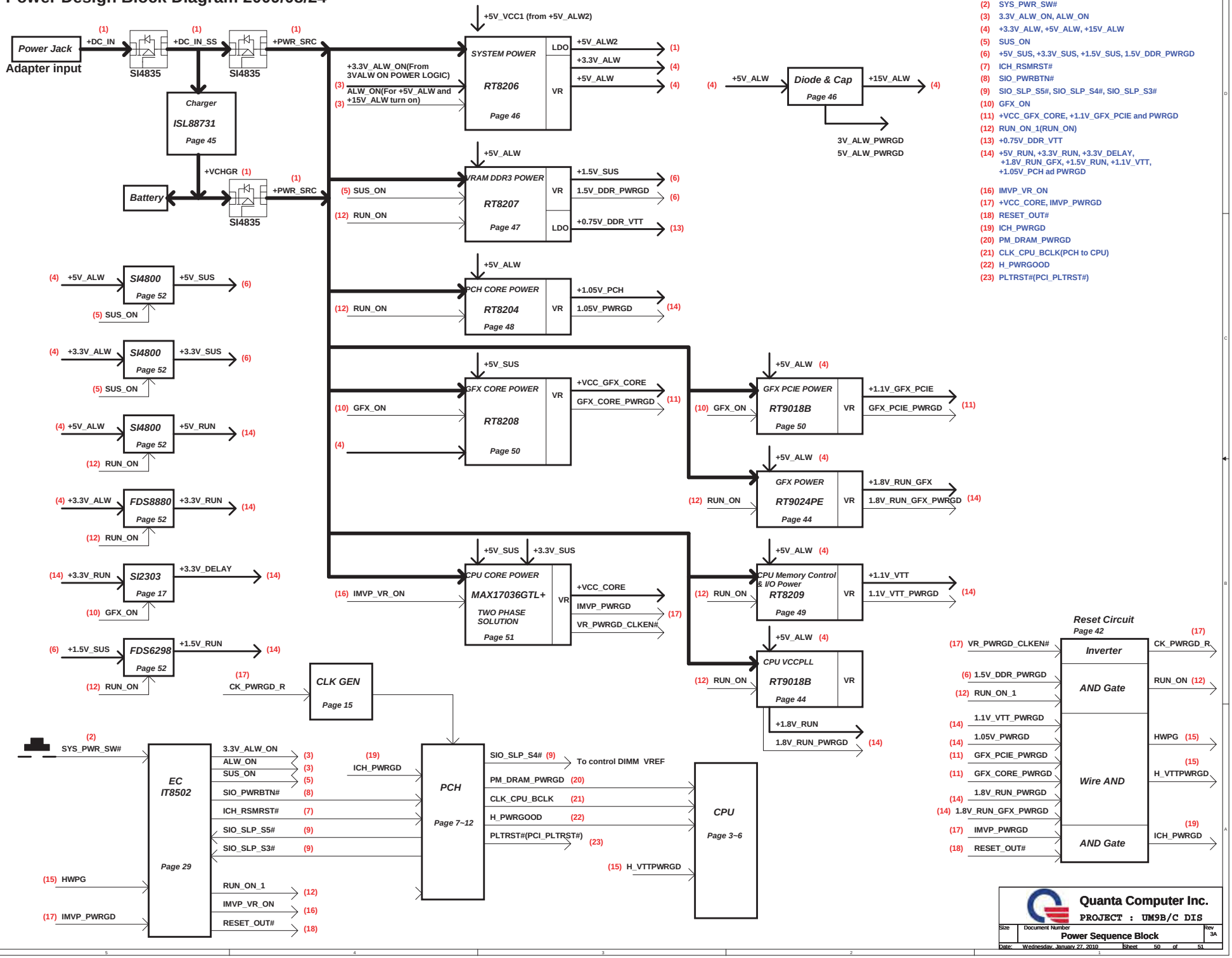
Power Design Block Diagram 2009/08/24



(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#)

Quanta Computer Inc.
PROJECT : UM9B/C DIS

Size	Document Number	Rev
	Power Sequence Block	3A

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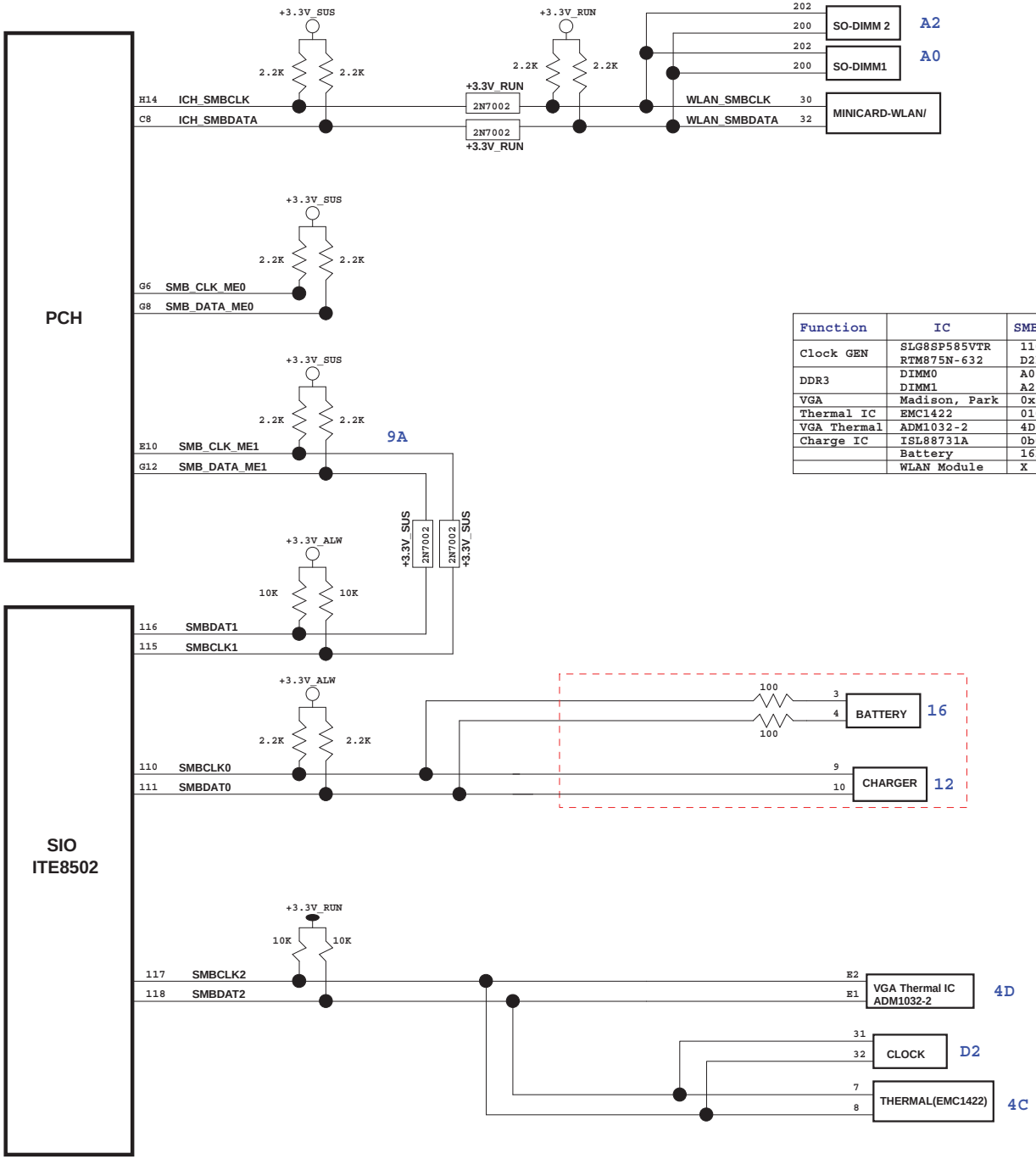

Function	IC	SMBus Address
Clock GEN	SLG8SP585VTR RTM875N-632	11010010 (D2h) D2h
DDR3	DIMM0 DIMM1	A0 A2
VGA	Madison, Park	0x41
Thermal IC	EMC1422	0100 1100b (4Ch)
VGA Thermal	ADM1032-2	4D
Charge IC	ISL88731A	0b0001001 (0x12)
	Battery	16h
	WLAN Module	X

Quanta Computer Inc.
PROJECT : UM9B/C DIS
Size | Document Number: SMBus | Rev 3A
Date: Wednesday, January 27, 2010 | Sheet 51 of 53