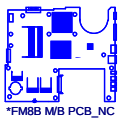


FM8B Hanks Intel UMA

VER : 3A
PWA: W028J
PWA: D178M
PWB: W026J

POWER

- **SYSTEM RESET CIRCUIT** PG 44
- **BATT CHARGER** PG 46
- **RUN POWER SW** +3.3V_SUS/+5V_SUS +5V/+3.3V/+1.8V PG 53
- **AC/BATT CONNECTOR** PG 54

Penryn
(478 Micro-FCPGA)
PG 3,4

1066 MHz FSB

FAN & THERMAL
SMSC1423
PG 39

CLOCK
SLG8SP513V
(QFN-64)
PG 17

POWER

- **REGULATOR** +1.5V_RUN/+1.05V_VCCP PG 48
- **REGULATOR** +1.8V_SUS/+1.25V_RUN /+0.9V_DDR_VTT PG 49
- **CPU VR** PG 51
- **DC/DC** +3.3V_ALW/+5V_ALW/+15V_ALW PG 52

Cantiga
1329 uFCBGA
PG 5,6,7,8,9,10

- **DDR2-SODIMM1** PG 15,16 — 667/800 MHZ DDR II
- **DDR2-SODIMM2** PG 15,16 — 667/800 MHZ DDR II
- LVDS → **Panel Connector** PG 26
- DP Port → **PI3VDP411LSZDE** PG 18 → HDMI → **HDMI CONN.** PG 18
- VGA → **CRT CONN.** PG 27

ICH9-M
676 BGA
PG 11,12,13,14

- **SATA-ODD** PG 36 — SATA
- **SATA-HDD** PG 36 — SATA
- **PI2EQX3211BHE** PG 35 — SATA — **E-SATA Combo with USB CONN** PG 35
- DMI interface
- USB2.0 x 3 → **USB conn x 3** PG 35
- PCIEx1 → **LAN BCM5784M** PG 42 → **RJ45/Magnetics** PG 43
- PCIEx1 / USB2.0 → **EXPRESS-CARD** R5538 PG 30
- PCIEx2 / USB2.0 → **MINI-CARD** WLAN PG 34
- PCIEx1 / USB2.0 → **MINI-CARD** WWAN PG 33
- **MINI-CARD** WPAN PG 33
- **Cantiga** ← IHDA / USB2.0
- **AUDIO/AMP** 92HD73C PG 40 — **Audio SPK conn** PG 40; **Audio Jacks x3** PG 41
- **Camera + D-MIC** PG 41
- LPC → **KBC** ITE8512 PG 31
  - 18X8 → **Keyboard** PG 37
  - SPI → **FLASH 2Mbyts** PG 32
  - PS/2 → **Touchpad** PG 37
- **USER INTERFACE** PG 38
- 33MHz PCI → **8-in-1 Card Reader** R5C833 PG 28
  - 1394 → **1394 CONN.** PG 29
  - **Card Reader CONN.** PG 30

QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 1 of 58	

Table of Contents

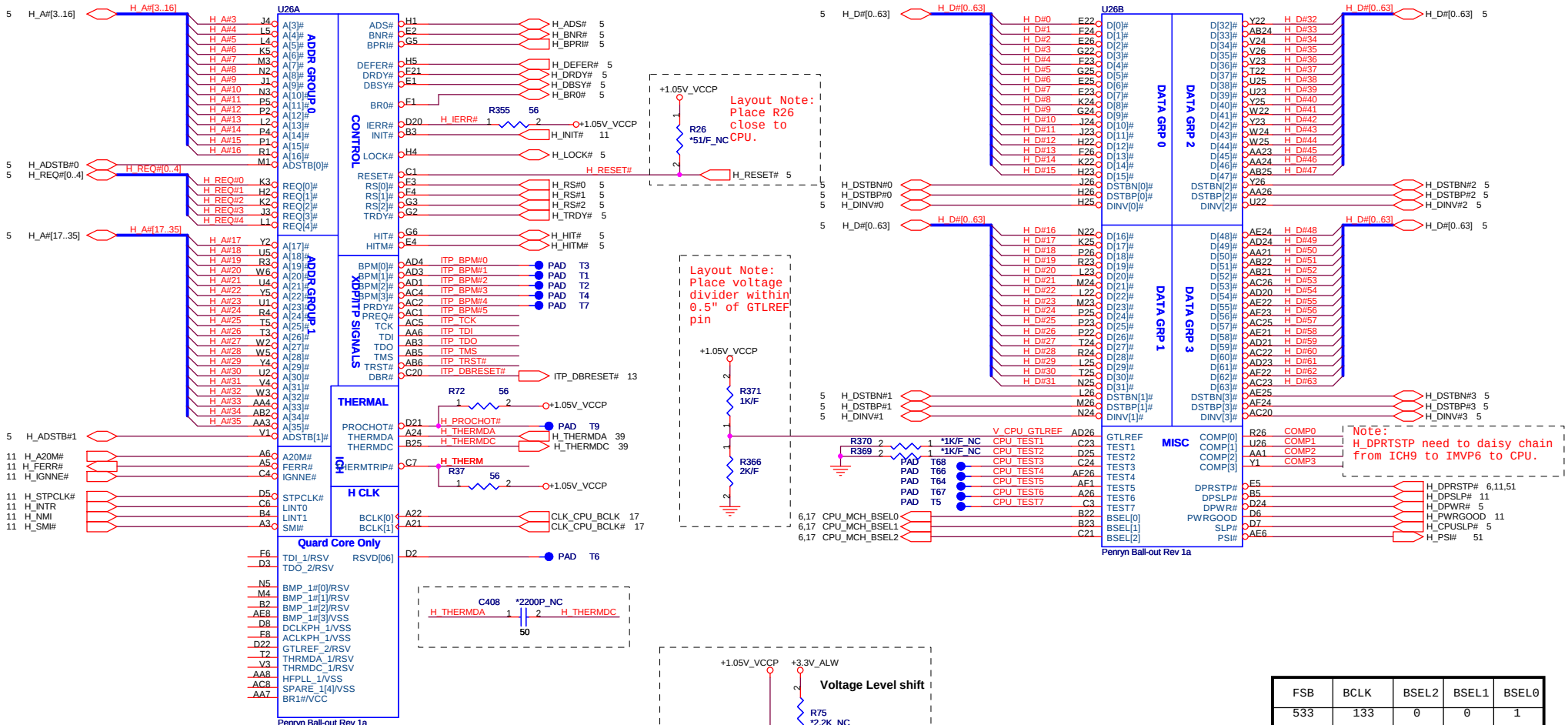
Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,26,32,34,46,48,49,51,52	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,31,32	RTC		S0~S5
+3.3V_ALW	+3.3V	3,31,32,34,36,37,38,44,46,49,52,53,54	8051 POWER	ALWON	S0~S5
+5V_ALW2	+5V	38,48,49,52,53,54	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	26,36,37,52,53	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	42,43	LAN POWER	AUX_ON	
+5V_SUS	+5V	14,36,38,51,53	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,26,30,37,38,43,48,49,51,53	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,48,49,53	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,49,53	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,18,27,36,37,39,40,41,53	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,6,8,9,11,13,14,15,16,17,18 26,27,36,37,38,39,40,41,53	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.8V_RUN	+1.8V	35,53	SDVO POWER	RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,30,33,34,40,48,53	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.05V_VCCP	+1.05V	3,4,5,6,8,9,11,14,48	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,51	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	26	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	36	Module Power	MODC_EN#	
+5V_HDD	+5V	36	HDD Power	HDDC_EN#	
+PBATT	+10V~+17V		MAIN BATTERY	CHG_PBATT	
+SBATT	+10V~+17V		SECOND BATTERY	CHG_SBATT	

GND PLANE	PAGE	DESCRIPTION
8731AGND	46	
AGND_0.9V	49	
AGND_DC/DC	52	
AGND_DC2	48	
AGND_DDR	49	
AGND_ISL6260	51	
GND	ALL	

QUANTA COMPUTER

Title	Index & Power Status	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 2 of 58	



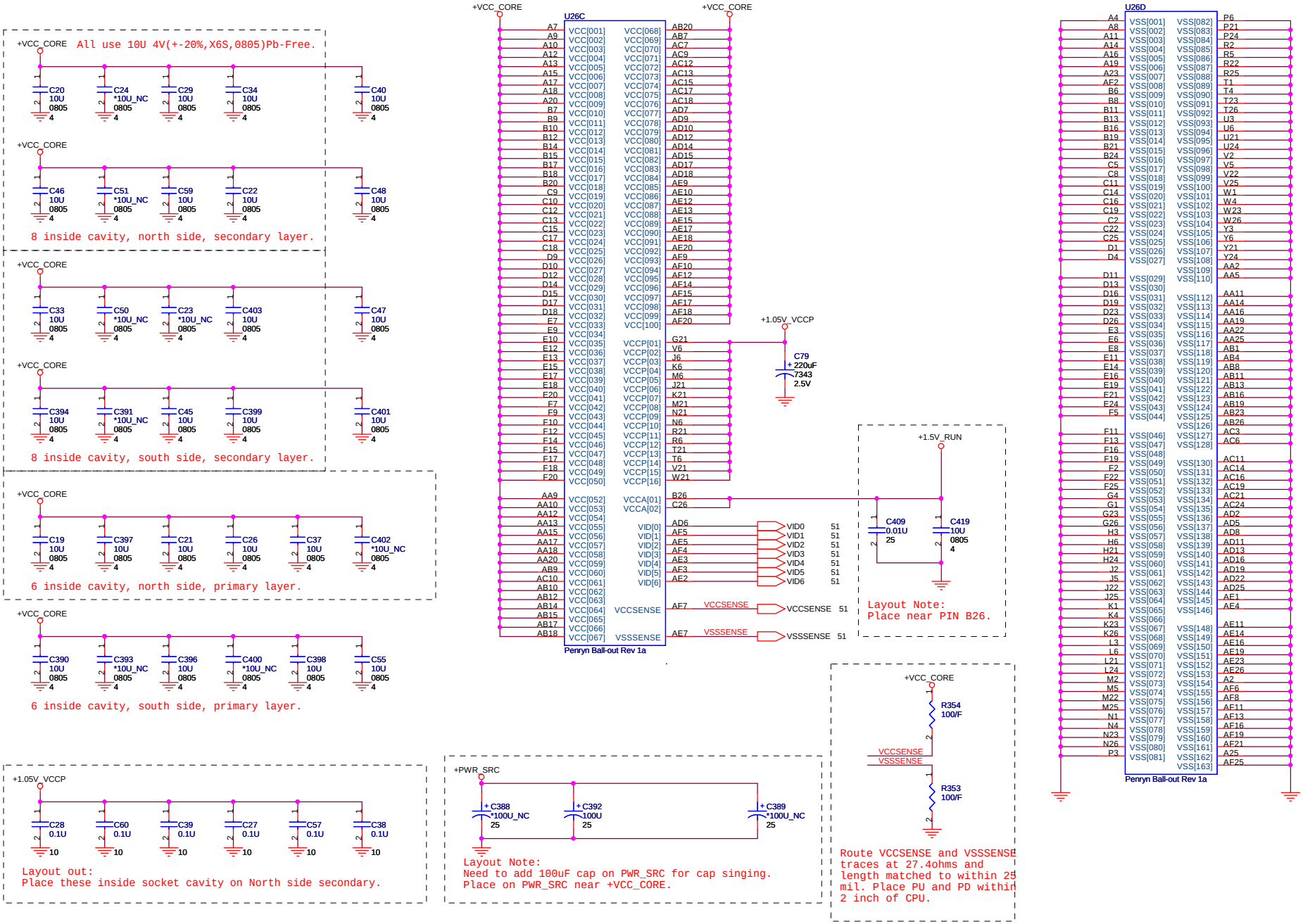
FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

ITP disable guidelines

Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the ITP
TMS	39 ohm +/- 5%	VTT	Within 2.0" of the ITP
TRST#	680 ohm +/- 5%	GND	Within 2.0" of the ITP
TCK	27 ohm +/- 5%	GND	Within 2.0" of the ITP
TDO	Open	VTT	Within 2.0" of the ITP
ITP_EN	R268 Depop	+3VRUN	Close to CK410M Pin8

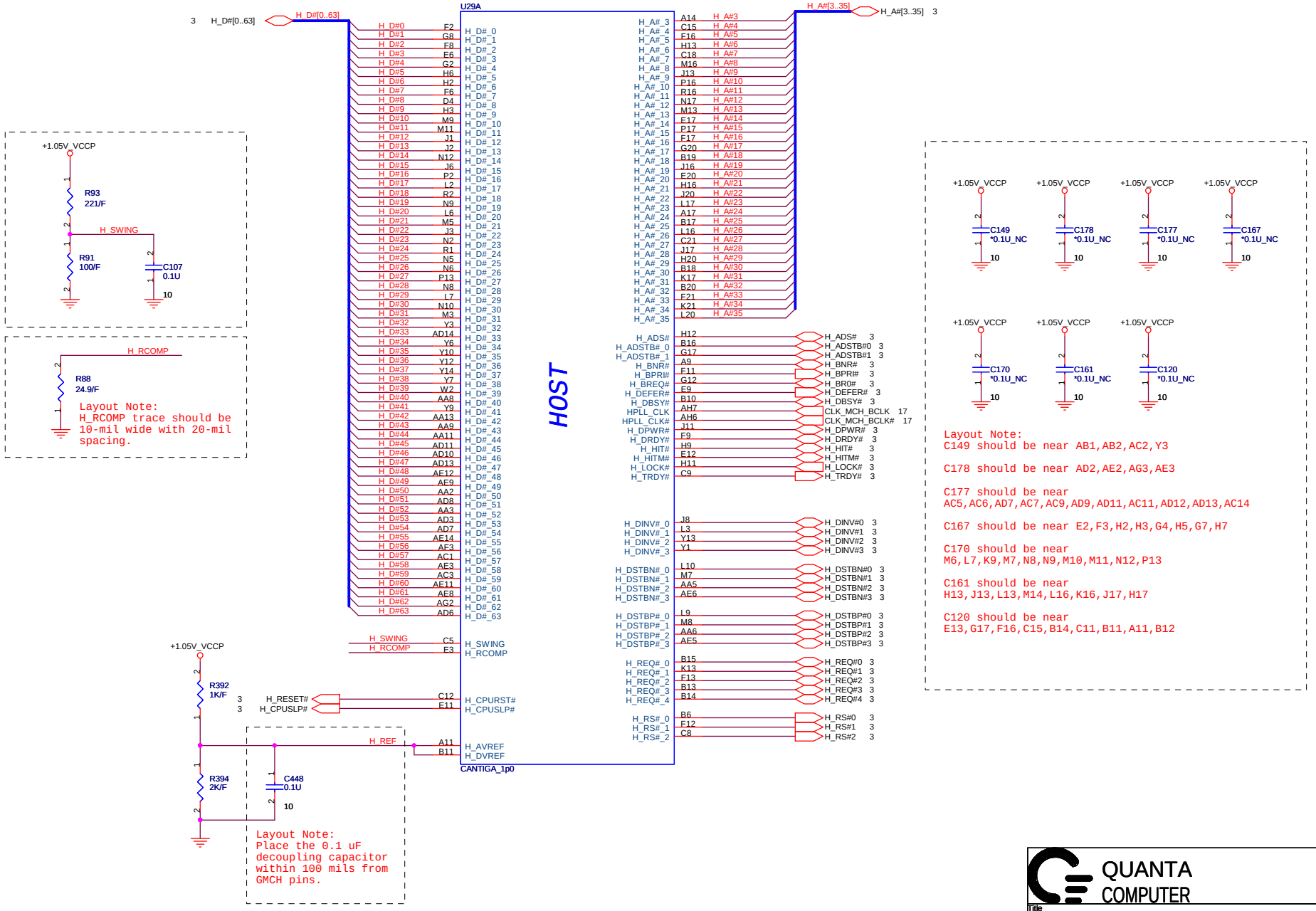
QUANTA COMPUTER

Title	Merom Processor (HOST BUS)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 3 of 58	

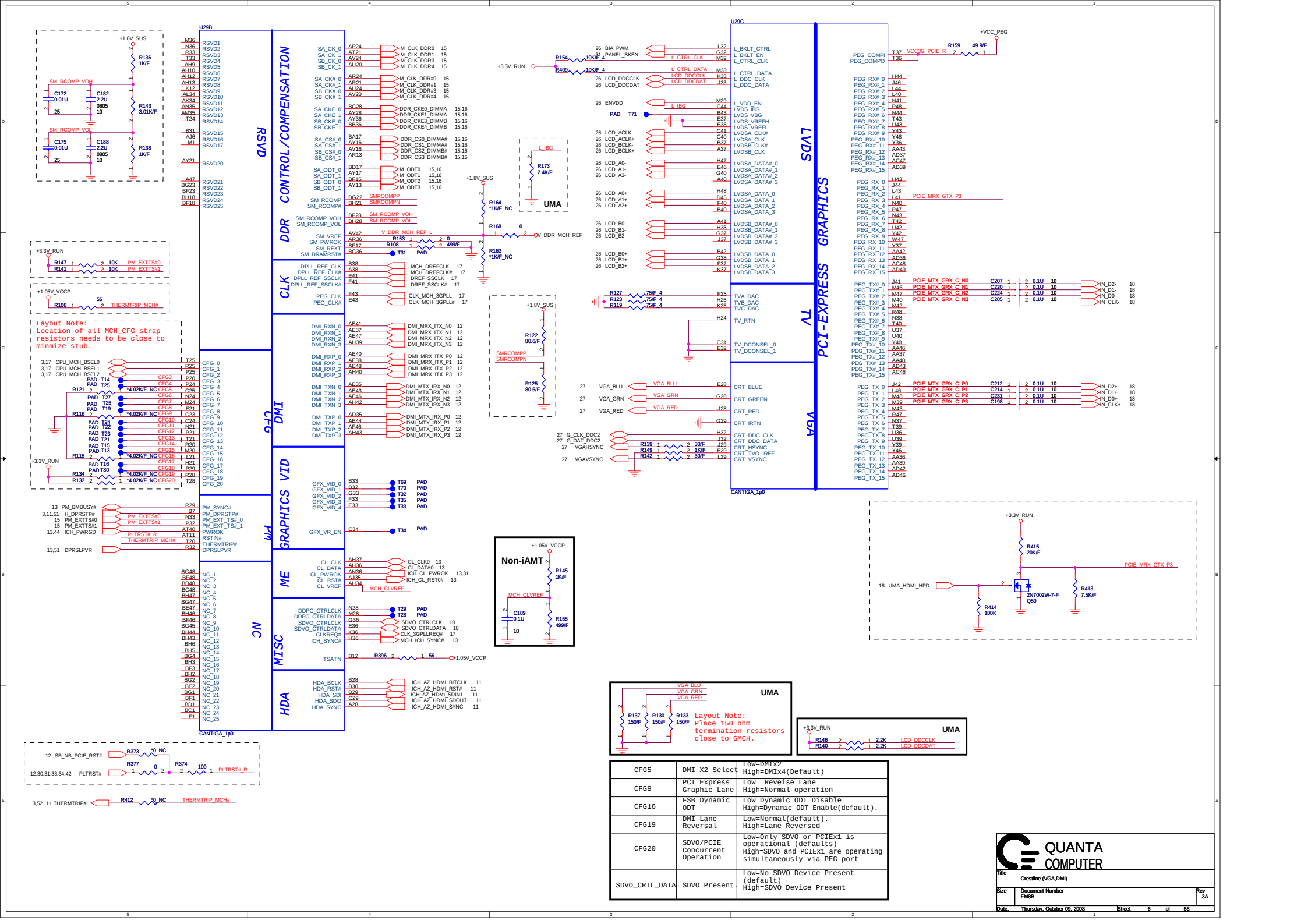


QUANTA COMPUTER

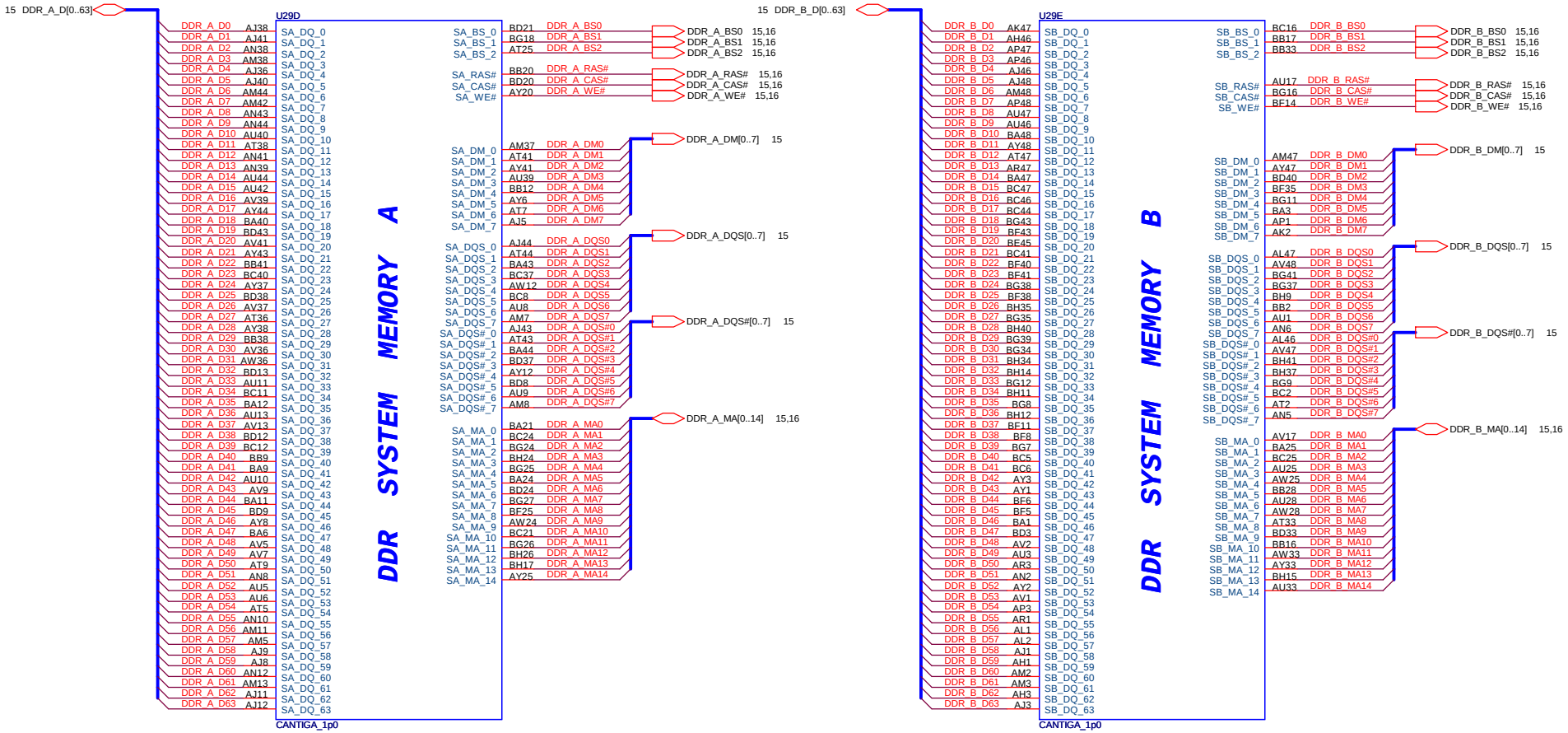
Title	Merom Processor (POWER)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 4 of 58	



QUANTA COMPUTER		
Title	Crestline (HOST)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 5 of 58	

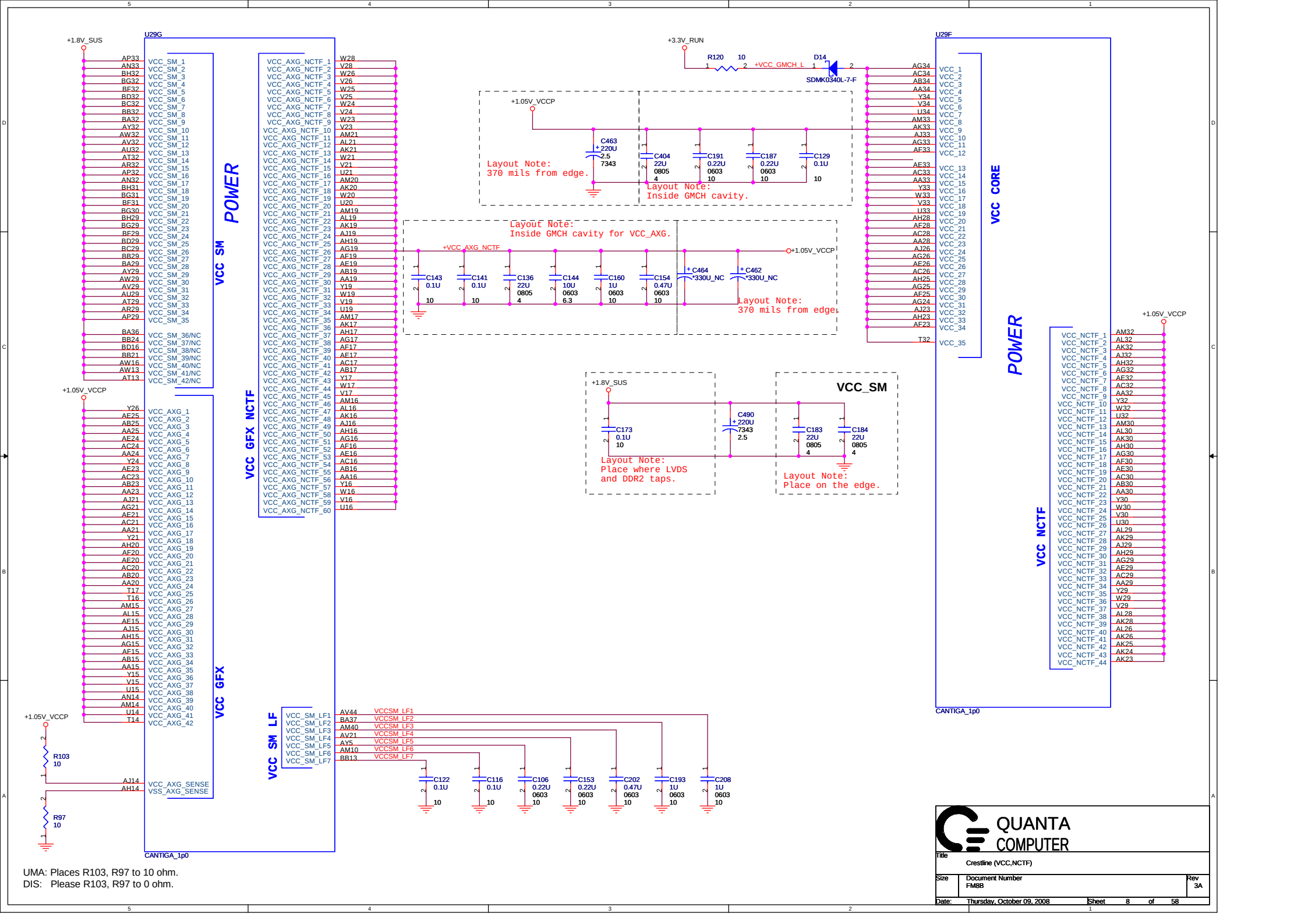


CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
CFG9	PCI Express Graphic Lane	Low= Reveise Lane High=Normal operation
CFG16	FSB Dynamic ODT	Low=Dynamic ODT Disable High=Dynamic ODT Enable(default).
CFG19	DMI Lane Reversal	Low=Normal(default). High=Lane Reversed
CFG20	SDVO/PCIE Concurrent Operation	Low=Only SDVO or PCIEx1 is operational (defaults) High=SDVO and PCIEx1 are operating simultaneously via PEG port
SDVO_CRTL_DATA	SDVO Present.	Low=No SDVO Device Present (default) High=SDVO Device Present

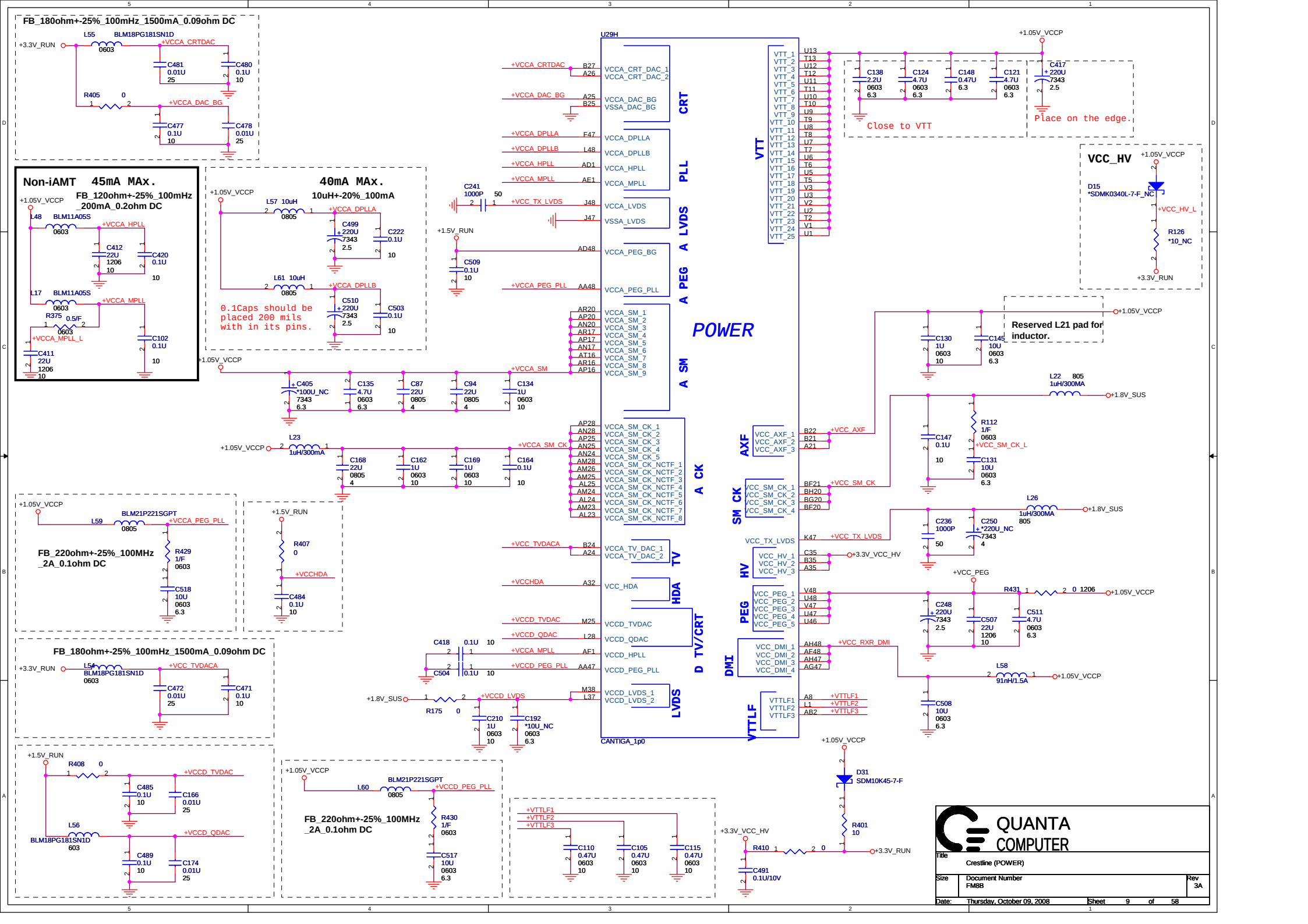


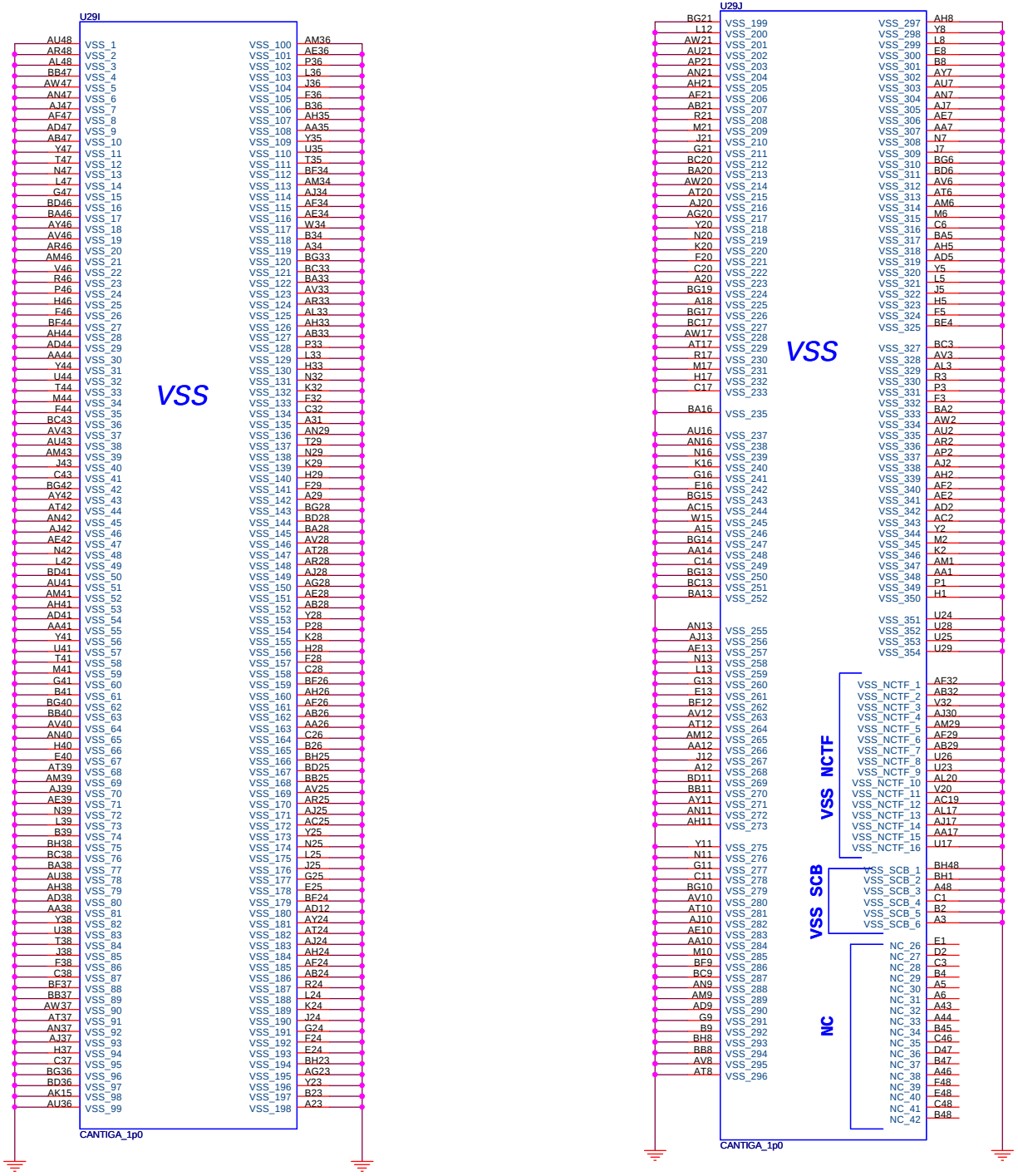
QUANTA COMPUTER

Title	Crestline (DDR2)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 7 of 58	



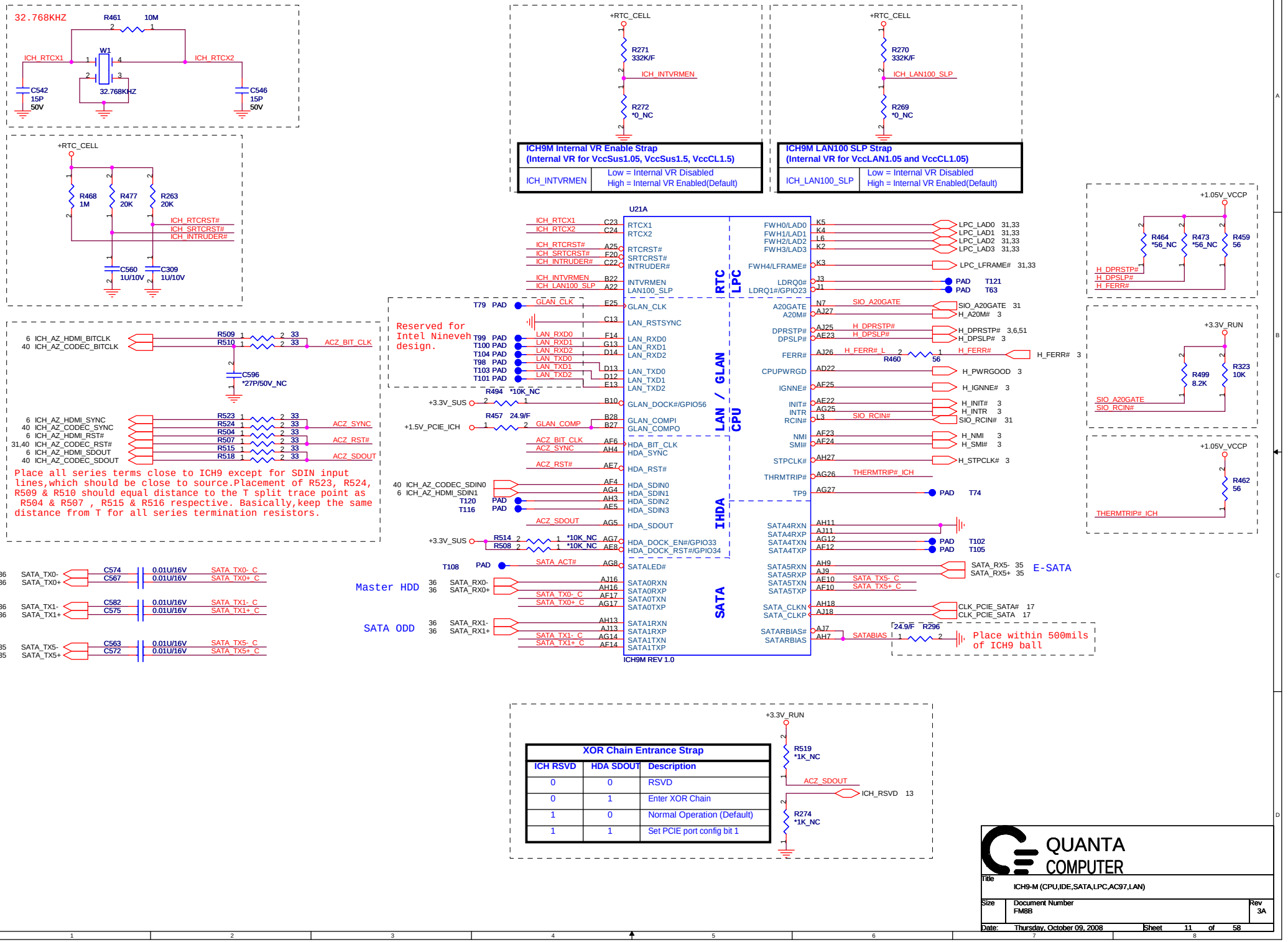
UMA: Places R103, R97 to 10 ohm.
DIS: Please R103, R97 to 0 ohm.


FB_180ohm+-25%_100mHz_1500mA_0.09ohm DC
Non-iAMT 45mA MAx.
FB_120ohm+-25%_100mHz_200mA_0.2ohm DC
40mA MAx.
10uH+-20%_100mA
0.1Caps should be placed 200 mils with in its pins.
POWER
U29H
CANTIGA_1p0
CRT
PLL
LVDS
PEG
SM
CK
AXF
SM CK
HV
PEG
DMI
TV/CRT
HDA
TV
VTT
VTTLF
Close to VTT
Place on the edge.
VCC_HV
Reserved L21 pad for inductor.
FB_220ohm+-25%_100MHz_2A_0.1ohm DC
FB_180ohm+-25%_100mHz_1500mA_0.09ohm DC
FB_220ohm+-25%_100MHz_2A_0.1ohm DC
QUANTA COMPUTER
Title
Crestline (POWER)
Size
Document Number
FM8B
Rev
3A
Date:
Thursday, October 09, 2008
Sheet
9
of
58



Title	Crestline (VSS)
Size	Document Number: FM8B — Rev: 3A
Date:	Thursday, October 09, 2008 — Sheet 10 of 58

QUANTA COMPUTER


32.768KHZ
R461 10M
W1
ICH_RTCX1
ICH_RTCX2
C542 15P 50V
32.768KHZ
C546 15P 50V
+RTC_CELL
R468 1M
R477 20K
R263 20K
ICH_RTCRST#
ICH_SRTCRST#
ICH_INTRUDER#
C560 1U/10V
C309 1U/10V
+RTC_CELL
R271 332K/F
ICH_INTVRMEN
R272 *0_NC
ICH9M Internal VR Enable Strap
(Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)
ICH_INTVRMEN
Low = Internal VR Disabled
High = Internal VR Enabled(Default)
+RTC_CELL
R270 332K/F
ICH_LAN100_SLP
R269 *0_NC
ICH9M LAN100 SLP Strap
(Internal VR for VccLAN1.05 and VccCL1.05)
ICH_LAN100_SLP
Low = Internal VR Disabled
High = Internal VR Enabled(Default)
U21A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
LAN100_SLP
RTC
LPC
GLAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
GLAN_DOCK#/GPIO56
GLAN_COMPI
GLAN_COMPO
LAN / GLAN
CPU
HDA_BIT_CLK
HDA_SYNC
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDOUT
HDA_DOCK_EN#/GPIO33
HDA_DOCK_RST#/GPIO34
IHDA
SATALED#
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
SATA
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
FWH4/LFRAME#
LDRQ0#
LDRQ1#/GPIO23
A20GATE
A20M#
DPRSTP#
DPSLP#
FERR#
CPUPWRGD
IGNNE#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THRMTRIP#
TP9
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
ICH9M REV 1.0
Reserved for Intel Nineveh design.
T79 PAD
T99 PAD
T100 PAD
T104 PAD
T98 PAD
T103 PAD
T101 PAD
R494 *10K_NC
+3.3V_SUS
R457 24.9/F
+1.5V_PCIE_ICH
GLAN_COMP
ACZ_BIT_CLK
ACZ_SYNC
ACZ_RST#
ACZ_SDOUT
T120 PAD
T116 PAD
R514 *10K_NC
R508 *10K_NC
T108 PAD
SATA_ACT#
Master HDD
SATA ODD
SATA_RX0-
SATA_RX0+
SATA_RX1-
SATA_RX1+
SATA_TX0- C
SATA_TX0+ C
SATA_TX1- C
SATA_TX1+ C
LPC_LAD0 31,33
LPC_LAD1 31,33
LPC_LAD2 31,33
LPC_LAD3 31,33
LPC_LFRAME# 31,33
PAD T121
PAD T63
SIO_A20GATE 31
H_A20M# 3
H_DPRSTP# 3,6,51
H_DPSLP# 3
H_FERR# 3
R460 56
H_PWRGOOD 3
H_IGNNE# 3
H_INIT# 3
H_INTR 3
SIO_RCIN# 31
H_NMI 3
H_SMI# 3
H_STPCLK# 3
THERMTRIP# ICH
PAD T74
PAD T102
PAD T105
E-SATA
SATA_RX5- 35
SATA_RX5+ 35
SATA_TX5- C
SATA_TX5+ C
CLK_PCIE_SATA# 17
CLK_PCIE_SATA 17
24.9/F R296
SATABIAS
Place within 500mils of ICH9 ball
+1.05V_VCCP
R464 *56_NC
R473 *56_NC
R459 56
H_DPRSTP#
H_DPSLP#
H_FERR#
+3.3V_RUN
R499 8.2K
R323 10K
SIO_A20GATE
SIO_RCIN#
+1.05V_VCCP
R462 56
THERMTRIP# ICH
ICH_AZ_HDMI_BITCLK
ICH_AZ_CODEC_BITCLK
R509 33
R510 33
ACZ_BIT_CLK
C596 *27P/50V_NC
ICH_AZ_HDMI_SYNC
ICH_AZ_CODEC_SYNC
ICH_AZ_HDMI_RST#
ICH_AZ_CODEC_RST#
ICH_AZ_HDMI_SDOUT
ICH_AZ_CODEC_SDOUT
R523 33
R524 33
R504 33
R507 33
R515 33
R518 33
ACZ_SYNC
ACZ_RST#
ACZ_SDOUT
Place all series terms close to ICH9 except for SDIN input lines,which should be close to source.Placement of R523, R524, R509 & R510 should equal distance to the T split trace point as R504 & R507 , R515 & R516 respective. Basically,keep the same distance from T for all series termination resistors.
ICH_AZ_CODEC_SDIN0
ICH_AZ_HDMI_SDIN1
SATA_TX0- C574 0.01U/16V
SATA_TX0+ C567 0.01U/16V
SATA_TX1- C582 0.01U/16V
SATA_TX1+ C575 0.01U/16V
SATA_TX5- C563 0.01U/16V
SATA_TX5+ C572 0.01U/16V
XOR Chain Entrance Strap
ICH RSVD
HDA SDOUT
Description
0 0 RSVD
0 1 Enter XOR Chain
1 0 Normal Operation (Default)
1 1 Set PCIE port config bit 1
+3.3V_RUN
R519 *1K_NC
ACZ_SDOUT
ICH_RSVD 13
R274 *1K_NC
QUANTA COMPUTER
Title
ICH9-M (CPU,IDE,SATA,LPC,AC97,LAN)
Size
Document Number
FM8B
Rev
3A
Date: Thursday, October 09, 2008
Sheet 11 of 58

Place TX DC blocking caps close ICH8.

33 PCIE_TX1- C540 0.1U 10 PCIE_TXN1_C
33 PCIE_TX1+ C531 0.1U 10 PCIE_TXP1_C

34 PCIE_TX2- C532 0.1U 10 PCIE_TXN2_C
34 PCIE_TX2+ C533 0.1U 10 PCIE_TXP2_C

33 PCIE_TX3- C534 0.1U 10 PCIE_TXN3_C
33 PCIE_TX3+ C535 0.1U 10 PCIE_TXP3_C

30 PCIE_TX4- C536 0.1U 10 PCIE_TXN4_C
30 PCIE_TX4+ C537 0.1U 10 PCIE_TXP4_C

42 PCIE_TX6-/GLAN_TX- C538 0.1U 10 GLAN_TXN_C
42 PCIE_TX6+/GLAN_TX+ C539 0.1U 10 GLAN_TXP_C

ICH_SPI_CS1#_R
PCI_GNT0#
R513 *1K_NC
R469 *1K_NC

Boot BIOS Strap

		GNT0#	SPI_CS1#
LPC	11	No stuff	No stuff
PCI	10	No stuff	Stuff
SPI	01	Stuff	No stuff

U21D

33 PCIE_RX1- N29 PERN1
33 PCIE_RX1+ N28 PERP1
MiniWWAN
PCIE_TXN1_C P27 PETN1
PCIE_TXP1_C P26 PETP1

34 PCIE_RX2- L29 PERN2
34 PCIE_RX2+ L28 PERP2
MiniWLAN
PCIE_TXN2_C M27 PETN2
PCIE_TXP2_C M26 PETP2

33 PCIE_RX3- J29 PERN3
33 PCIE_RX3+ J28 PERP3
MiniWPAN
PCIE_TXN3_C K27 PETN3
PCIE_TXP3_C K26 PETP3

30 PCIE_RX4- G29 PERN4
30 PCIE_RX4+ G28 PERP4
Express Card
PCIE_TXN4_C H27 PETN4
PCIE_TXP4_C H26 PETP4

T47 PAD E29 PERN5
T46 PAD E28 PERP5
T76 PAD E27 PETN5
T77 PAD F26 PETP5

PCI-Express

42 PCIE_RX6-/GLAN_RX- C29 PERN6/GLAN_RXN
42 PCIE_RX6+/GLAN_RX+ C28 PERP6/GLAN_RXP
Giga Bit LOM
GLAN_TXN_C D27 PETN6/GLAN_TXN
GLAN_TXP_C D26 PETP6/GLAN_TXP

Direct Media Interface

DMI0RXN V27 DMI_MTX_IRX_N0 6
DMI0RXP V26 DMI_MTX_IRX_P0 6
DMI0TXN U29 DMI_MRX_ITX_N0 6
DMI0TXP U28 DMI_MRX_ITX_P0 6

DMI1RXN Y27 DMI_MTX_IRX_N1 6
DMI1RXP Y26 DMI_MTX_IRX_P1 6
DMI1TXN W29 DMI_MRX_ITX_N1 6
DMI1TXP W28 DMI_MRX_ITX_P1 6

DMI2RXN AB27 DMI_MTX_IRX_N2 6
DMI2RXP AB26 DMI_MTX_IRX_P2 6
DMI2TXN AA29 DMI_MRX_ITX_N2 6
DMI2TXP AA28 DMI_MRX_ITX_P2 6

DMI3RXN AD27 DMI_MTX_IRX_N3 6
DMI3RXP AD26 DMI_MTX_IRX_P3 6
DMI3TXN AC29 DMI_MRX_ITX_N3 6
DMI3TXP AC28 DMI_MRX_ITX_P3 6

DMI_CLKN T26 CLK_PCIE_ICH# 17
DMI_CLKP T25 CLK_PCIE_ICH 17

DMI_ZCOMP AE29
DMI_IRCOMP AF28 DMI_COMP R458 24.9/F +1.5V_PCIE_ICH

Place within 500mils of ICH8

Side pair Top / left
Side pair bottom / left
Side pair top/right(DB)
Side pair Bot right(DB)
Mini Card (WLAN)
Mini Card (WWAN)
Mini Card (WPAN)
Express Card

SPI_CLK R23 SPI_CLK
SPI_CS0# D24 SPI_CS0#
ICH_SPI_CS1#_R F23 SPI_CS1#/GPIO58/CLGPIO6
SPI_MOSI D25 SPI_MOSI
SPI_MISO E23 SPI_MISO

SPI

T75 PAD SPI_CLK_R
T72 PAD SPI_CS#0_R
ICH_SPI_CS1#_R
T73 PAD SPI_MOSI
T78 PAD SPI_MISO

35 USB_OC0_1# N4 OC0#/GPIO59
N5 OC1#/GPIO40
35 USB_OC2# N6 OC2#/GPIO41
P6 OC3#/GPIO42
M1 OC4#/GPIO43
N2 OC5#/GPIO29
M4 OC6#/GPIO30
M3 OC7#/GPIO31
N3 OC8#/GPIO44
N1 OC9#/GPIO45
P5 OC10#/GPIO46
P3 OC11#/GPIO47

USB

USB_OC0_1#
USB_OC2#

USBP0N AC5 ICH_USBP0- 35
USBP0P AC4 ICH_USBP0+ 35
USBP1N AD3 ICH_USBP1- 35
USBP1P AD2 ICH_USBP1+ 35
USBP2N AC1 ICH_USBP2- 35
USBP2P AC2 ICH_USBP2+ 35
USBP3N AA5 PAD T60
USBP3P AA4 PAD T57
USBP4N AB2 ICH_USBP4- 34
USBP4P AB3 ICH_USBP4+ 34
USBP5N AA1 ICH_USBP5- 33
USBP5P AA2 ICH_USBP5+ 33
USBP6N W5 ICH_USBP6- 33
USBP6P W4 ICH_USBP6+ 33
USBP7N Y3 ICH_USBP7- 30
USBP7P Y2 ICH_USBP7+ 30
USBP8N W1 PAD T123
USBP8P W2 PAD T124
USBP9N V2 PAD T119
USBP9P V3 PAD T118
USBP10N U5 PAD T115
USBP10P U4 PAD T113
USBP11N U1 ICH_USBP11- 41
USBP11P U2 ICH_USBP11+ 41

Biometric
Camera

USBRBIAS AG2
USBRBIAS# AG1
ICH9M REV 1.0

+3.3V_RUN
C522 *0.1U_NC 10
R438 *10K/F_NC
SPI_CLK_R
C523 *0.1U_NC 10
R446 *10K/F_NC
U33
VDD CE# SPI_CS#0_R
SCK SPI_CLK_R
SI SPI_MOSI
HOLD# SO SPI_MISO
VSS WP# SPI_WP#
SPI_HOLD#
R439 *22_NC
R441 *22_NC
R445 *22_NC
R443 *22_NC
*W25X40VSSIG_NC

R319 22.6/F
USBRBIAS
Places within 500 mils of the ICH9

PCI Pullups

RP44
PCI_FRAME# PCI_PLOCK#
PCI_TRDY# PCI_STOP#
PCI_DEVSEL# PCI_PIRQD#
PCI_REQ1# PCI_IRDY#
+3.3V_RUN

RP45
PCI_PIRQA# PCI_PIRQB#
PCI_REQ0# PCI_PIRQC#
ICH_IRQH_GPIO5 PCI_PERR#
PCI_SERR#
+3.3V_RUN

WWAN Noise - ICH improvements

OC6# C614 *0.1U_NC 10
OC4# C360 *0.1U_NC 10
OC5# C362 *0.1U_NC 10
OC7# C359 *0.1U_NC 10
OC8# C361 *0.1U_NC 10
USB_OC2# C603 *0.1U_NC 10
USB_OC0_1# C613 *0.1U_NC 10
OC9# C616 *0.1U_NC 10

RP41
+3.3V_SUS
OC7# OC8#
OC6# USB_OC2#
OC5# USB_OC0_1#
OC4# OC9#
10KX8
OC10# R498 10K
OC11# R522 10K
OC3# R511 10K

SB_WPAN_PCIE_RST# R512 20K
SB_WWAN_PCIE_RST# R492 20K
SB_WLAN_PCIE_RST# R502 20K
SB_LOM_PCIE_RST# R506 20K
SB_NB_PCIE_RST# R336 20K
BIOS should not enable the internal GPIO pull up resistor.

U21B

28 PCI_AD[0..31]

PCI

PCI_AD0 D11 AD0
PCI_AD1 C8 AD1
PCI_AD2 D9 AD2
PCI_AD3 E12 AD3
PCI_AD4 E9 AD4
PCI_AD5 C9 AD5
PCI_AD6 E10 AD6
PCI_AD7 B7 AD7
PCI_AD8 C7 AD8
PCI_AD9 C5 AD9
PCI_AD10 G11 AD10
PCI_AD11 F8 AD11
PCI_AD12 F11 AD12
PCI_AD13 E7 AD13
PCI_AD14 A3 AD14
PCI_AD15 D2 AD15
PCI_AD16 F10 AD16
PCI_AD17 D5 AD17
PCI_AD18 D10 AD18
PCI_AD19 B3 AD19
PCI_AD20 F7 AD20
PCI_AD21 C3 AD21
PCI_AD22 F3 AD22
PCI_AD23 F4 AD23
PCI_AD24 C1 AD24
PCI_AD25 G7 AD25
PCI_AD26 H7 AD26
PCI_AD27 D1 AD27
PCI_AD28 G5 AD28
PCI_AD29 H6 AD29
PCI_AD30 G1 AD30
PCI_AD31 H3 AD31

REQ0# F1 PCI_REQ0# PCI_REQ0# 28
GNT0# G4 PCI_GNT0# PCI_GNT0# 28
REQ1#/GPIO50 B6 PCI_REQ1# PAD T114
GNT1#/GPIO51 A7 PCI_GNT1# PAD T56
REQ2#/GPIO52 E13 SB_WWAN_PCIE_RST# SB_WWAN_PCIE_RST# 33
GNT2#/GPIO53 E12 PCI_GNT2# PAD T106
REQ3#/GPIO54 E6 SB_LOM_PCIE_RST# SB_LOM_PCIE_RST# 42
GNT3#/GPIO55 F6 PCI_GNT3# PAD T111

C/BE0# D8 PCI_C_BE0# PCI_C_BE0# 28
C/BE1# B4 PCI_C_BE1# PCI_C_BE1# 28
C/BE2# D6 PCI_C_BE2# PCI_C_BE2# 28
C/BE3# A5 PCI_C_BE3# PCI_C_BE3# 28

IRDY# D3 PCI_IRDY# PCI_IRDY# 28
PAR E3 PCI_PAR PCI_PAR 28
PCIRST# R1 PCI_RST# G
DEVSEL# C6 PCI_DEVSEL# PCI_DEVSEL# 28
PERR# E4 PCI_PERR# PCI_PERR# 28
PLOCK# C2 PCI_PLOCK# PCI_PLOCK#
SERR# J4 PCI_SERR# PCI_SERR# 28
STOP# A4 PCI_STOP# PCI_STOP# 28
TRDY# F5 PCI_TRDY# PCI_TRDY# 28
FRAME# D7 PCI_FRAME# PCI_FRAME# 28

PLTRST# C14 PCI_PLTRST#
PCICLK D4 CLK_PCI_ICH CLK_PCI_ICH 17
PME# R2 ICH_PME# 28,31

Interrupt I/F

T128 PAD PCI_PIRQA# J5 PIRQA# PIRQE#/GPIO2 H4 SB_WPAN_PCIE_RST# SB_WPAN_PCIE_RST# 33
28 PCI_PIRQB# PCI_PIRQB# E1 PIRQB# PIRQF#/GPIO3 K6 SB_WLAN_PCIE_RST# SB_WLAN_PCIE_RST# 34
28 PCI_PIRQC# PCI_PIRQC# J6 PIRQC# PIRQG#/GPIO4 F2 SB_NB_PCIE_RST# SB_NB_PCIE_RST# 6
T117 PAD PCI_PIRQD# C4 PIRQD# PIRQH#/GPIO5 G2 ICH_IRQH_GPIO5 PAD T126

ICH9M REV 1.0

CLK_PCI_ICH
R520 *10_NC
C609 *8.2P_NC
Reserved for EMI.Place resister and cap close to ICH.

PCI_GNT3#
R505 *1K_NC

A16 away override strap.

SB_NB_PCIE_RST#	Low = A16 swap override enabled. High = Default.

Non-iAMT

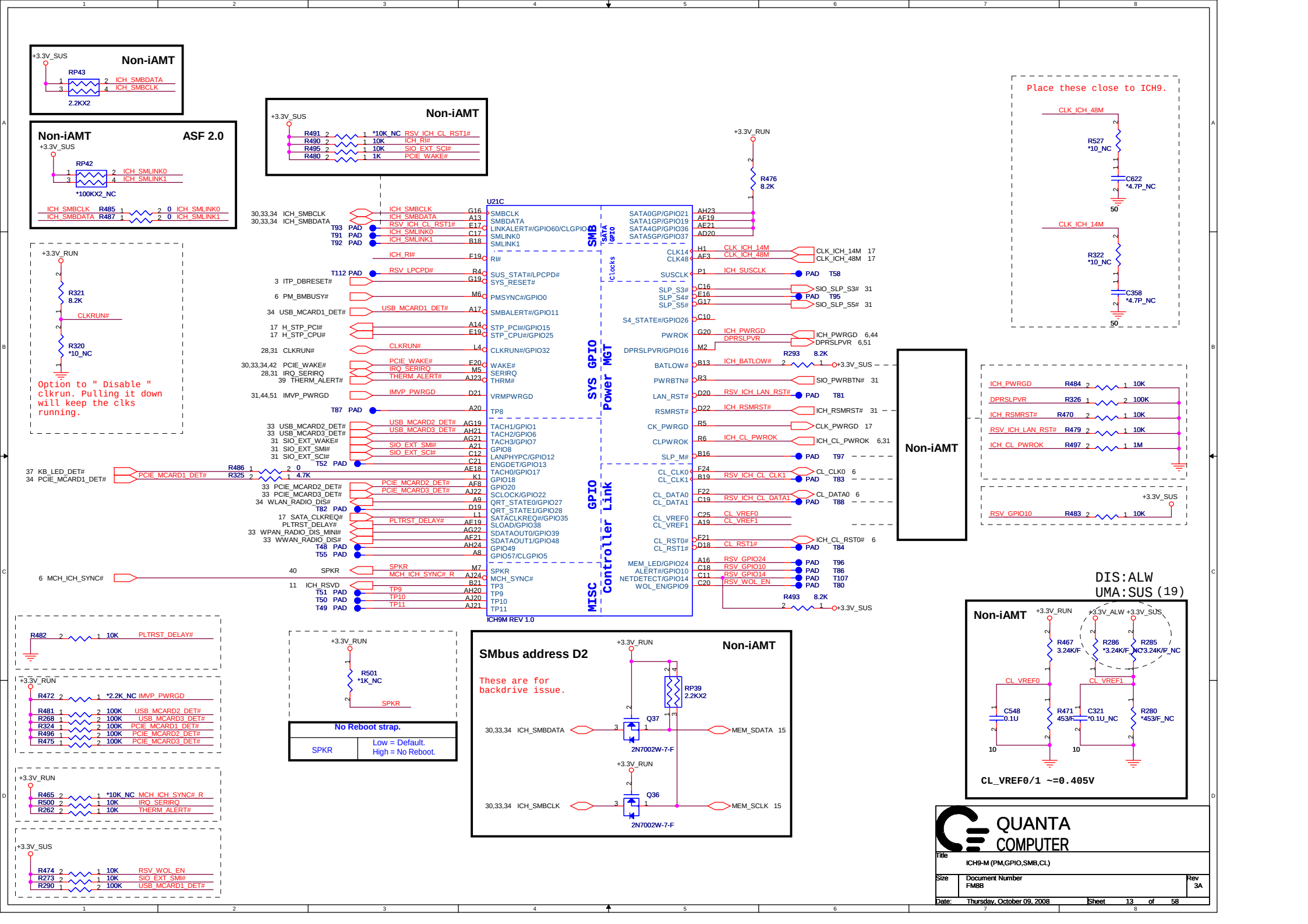
+3.3V_SUS
C356 0.047U
U25
PCI_RST# G
PCI_RST# 28
TC7SZ32FU(T5L,F,T)

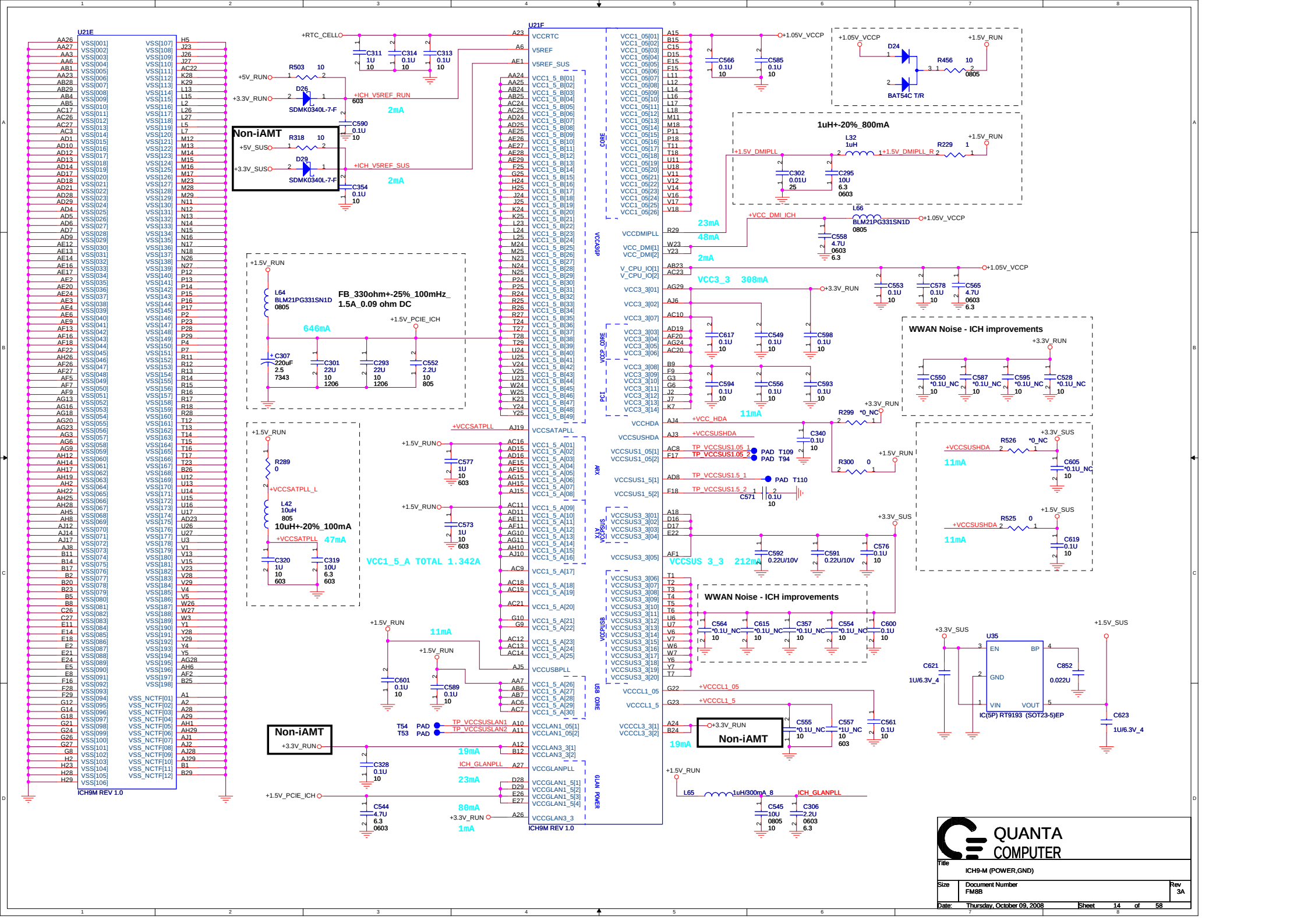
Add Buffers as needed for Loading and fanout concerns.

C581 0.047U
U22
PCI_PLTRST#
PLTRST# 6,30,31,33,34,42
TC7SZ32FU(T5L,F,T)

QUANTA COMPUTER

Title	ICH9-M (USB,DMI,PCIE,PCI)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 12 of 58	


Non-iAMT
+3.3V_SUS
RP43
ICH_SMBDATA
ICH_SMBCLK
2.2KX2
Non-iAMT
ASF 2.0
RP42
ICH_SMLINK0
ICH_SMLINK1
*100KX2_NC
ICH_SMBCLK R485 0 ICH_SMLINK0
ICH_SMBDATA R487 0 ICH_SMLINK1
Non-iAMT
R491 *10K_NC RSV_ICH_CL_RST1#
R490 10K ICH_RI#
R495 10K SIO_EXT_SCI#
R480 1K PCIE_WAKE#
+3.3V_RUN
R321 8.2K
CLKRUN#
R320 *10_NC
Option to " Disable " clkrun. Pulling it down will keep the clks running.
U21C
SMBCLK
SMBDATA
LINKALERT#/GPIO60/CLGPIO
SMLINK0
SMLINK1
RI#
SUS_STAT#/LPCPD#
SYS_RESET#
PMSYNC#/GPIO0
SMBALERT#/GPIO11
STP_PCI#/GPIO15
STP_CPU#/GPIO25
CLKRUN#/GPIO32
WAKE#
SERIRQ
THRM#
VRMPWRGD
TP8
TACH1/GPIO1
TACH2/GPIO6
TACH3/GPIO7
GPIO8
LANPHYPC/GPIO12
ENGDET/GPIO13
TACH0/GPIO17
GPIO18
GPIO20
SCLOCK/GPIO22
QRT_STATE0/GPIO27
QRT_STATE1/GPIO28
SATACLKREQ#/GPIO35
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
GPIO49
GPIO57/CLGPIO5
SPKR
MCH_SYNC#
TP3
TP9
TP10
TP11
SMB
SATA GPIO
Clocks
SYS_GPIO
Power MGT
GPIO
Controller Link
MISC
ICH9M REV 1.0
SATA0GP/GPIO21
SATA1GP/GPIO19
SATA4GP/GPIO36
SATA5GP/GPIO37
CLK14
CLK48
SUSCLK
SLP_S3#
SLP_S4#
SLP_S5#
S4_STATE#/GPIO26
PWROK
DPRSLPVR/GPIO16
BATLOW#
PWRBTN#
LAN_RST#
RSMRST#
CK_PWRGD
CLPWROK
SLP_M#
CL_CLK0
CL_CLK1
CL_DATA0
CL_DATA1
CL_VREF0
CL_VREF1
CL_RST0#
CL_RST1#
MEM_LED/GPIO24
ALERT#/GPIO10
NETDETECT/GPIO14
WOL_EN/GPIO9
R476 8.2K
R293 8.2K
R493 8.2K
Non-iAMT
Place these close to ICH9.
CLK_ICH_48M
R527 *10_NC
C622 *4.7P_NC
CLK_ICH_14M
R322 *10_NC
C358 *4.7P_NC
ICH_PWRGD R484 10K
DPRSLPVR R326 100K
ICH_RSMRST# R470 10K
RSV_ICH_LAN_RST# R479 10K
ICH_CL_PWROK R497 1M
RSV_GPIO10 R483 10K
R486 0
R325 4.7K
PCIE_MCARD1_DET#
R482 10K PLTRST_DELAY#
R501 *1K_NC
No Reboot strap.
SPKR
Low = Default.
High = No Reboot.
SMbus address D2
These are for backdrive issue.
RP39 2.2KX2
Q37
Q36
2N7002W-7-F
MEM_SDATA
MEM_SCLK
DIS:ALW
UMA:SUS (19)
R467 3.24K/F
R286 *3.24K/F_NC
R285 *3.24K/F_NC
C548 0.1U
R471 453/F
C321 *0.1U_NC
R280 *453/F_NC
CL_VREF0/1 ~=0.405V
R472 *2.2K_NC IMVP_PWRGD
R481 100K USB_MCARD2_DET#
R268 100K USB_MCARD3_DET#
R324 100K PCIE_MCARD1_DET#
R496 100K PCIE_MCARD2_DET#
R475 100K PCIE_MCARD3_DET#
R465 *10K_NC MCH_ICH_SYNC#_R
R500 10K IRQ_SERIRQ
R262 10K THERM_ALERT#
R474 10K RSV_WOL_EN
R273 10K SIO_EXT_SMI#
R290 100K USB_MCARD1_DET#
QUANTA COMPUTER
Title
ICH9-M (PM,GPIO,SMB,CL)
Size
Document Number
FM8B
Rev
3A
Date: Thursday, October 09, 2008
Sheet 13 of 58


U21E
ICH9M REV 1.0
U21F
ICH9M REV 1.0
Non-iAMT
FB_330ohm+-25%_100mHz_
1.5A_0.09 ohm DC
1uH+-20%_800mA
WWAN Noise - ICH improvements
WWAN Noise - ICH improvements
Non-iAMT
Non-iAMT
VCC1_5_A TOTAL 1.342A
VCCSUS 3_3 212mA
IC(5P) RT9193 (SOT23-5)EP
QUANTA COMPUTER
ICH9-M (POWER,GND)
FM8B
Thursday, October 09, 2008
14 of 58

A is required to route to Top SoDIMM for AMTto function.
Ch.A SODIMM needs to be populated for Intel AMT support.

TOP

JDIM2

PC4800 DDR2 SDRAM SO-DIMM (200P)

TYC_2-1734073-1

BOT

JDIM1

PC4800 DDR2 SDRAM SO-DIMM (200P)

TYC_1-1734075-1

CLOCK 0,1
CKE 0,1

CLOCK 2,3
CKE 2,3

SMbus address A0

SMbus address A4

Non-iAMT

Place these Caps near So-Dimm1.

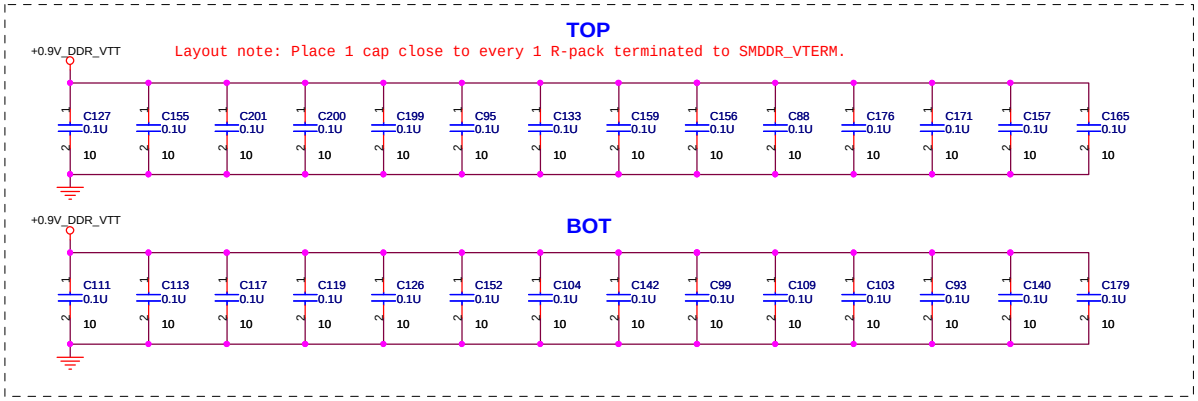
Place these Caps near So-Dimm2.

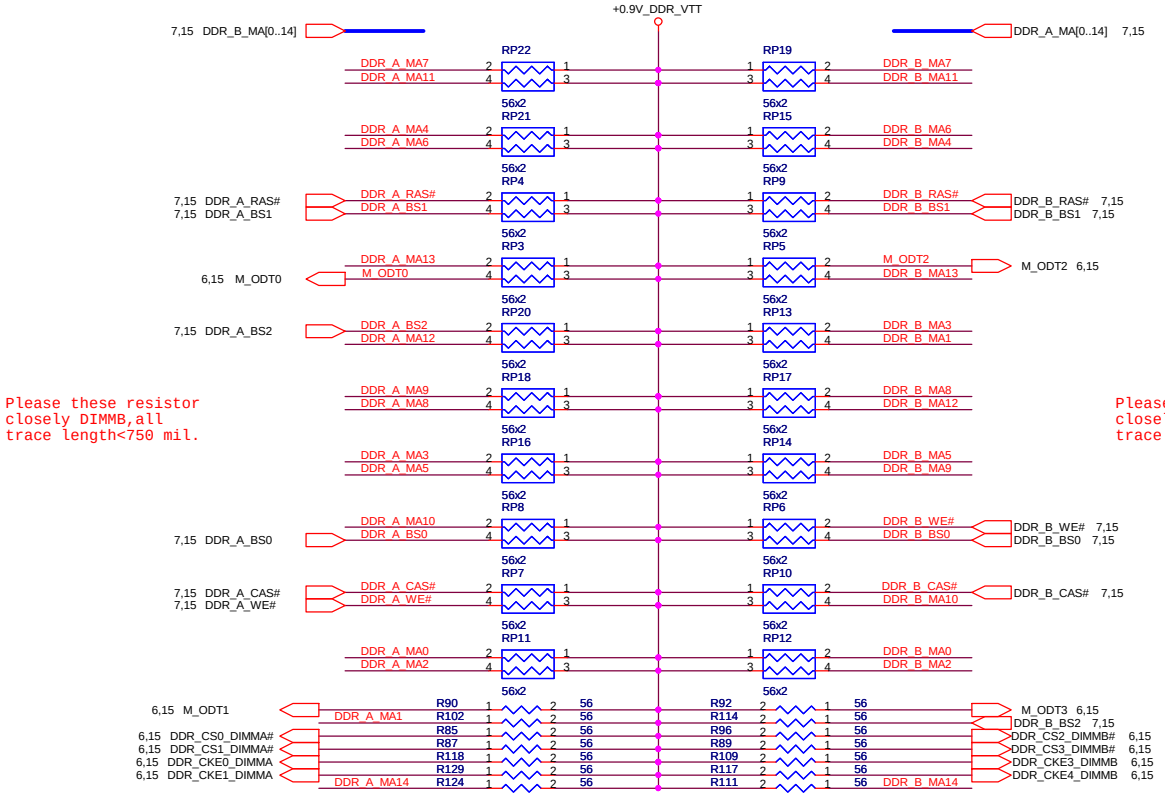
Place these Caps near So-Dimm1.

Place these Caps near So-Dimm2.

QUANTA COMPUTER

Title	DDR2 SO-DIMM (200P) X 2	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 15 of 58	





Please these resistor closely DIMMB,all trace length<750 mil.

Please these resistor closely DIMMA,all trace length<750 mil.

QUANTA COMPUTER

Title	DDR2 RES ARRAY	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 16 of 58	

Add capacitor pads for improving WWAN.

C299 20P 50 CLK_ICH_48M
C292 *27P_NC 50 CLK_ICH_14M
C289 *27P_NC 50 CLK_PCI_8512
C290 *27P_NC 50 CLK_PCI_PCCARD
C288 *27P_NC 50 CLK_PCI_ICH

Y2
CLK_XTAL_IN — 14.318MHZ — CLK_XTAL_OUT
C291 33P 50
C294 33P 50
14.318MHz

U20
CK505
QFN64
SLG8SP513V

+CK_VDD_PCI 9 VDD_PCI
4 VDD_REF
+CK_VDD_PLL3 23 VDD_PLL3
+CK_VDD_48 16 VDD_48
+CK_VDD_SRC 46 VDD_SRC
62 VDD_CPU
+CK_VDD_MAIN 19 VDD_IO
27 VDD_IO
33 VDD_IO
43 VDD_IO
52 VDD_IO
56 VDD_IO
15 GND
18 GND
22 GND
26 GND
30 GND
36 GND
49 GND
59 GND
1 GND

13 SATA_CLKREQ# — SATA_CLKREQ# R250 475/F — SATA_CLKREQ#_C 8 CR#_A/PCI-0
6 CLK_3GPLLREQ# — CLK_3GPLLREQ# R452 475/F — CLK_3GPLLREQ#_C 10 CR_B/PCI-1
PCI_PCCARD 11 TME/PCI-2
33 CLK_LPC_DEBUG — CLK_LPC_DEBUG R236 22 — PCI_SIO 12 SRC5_EN/PCI-3
28 CLK_PCI_PCCARD — CLK_PCI_PCCARD R240 33 — 27M_SEL 13 27M_SEL/PCI-4
31 CLK_PCI_8512 — CLK_PCI_8512 R239 33 — PCI_ICH 14 ITP_EN/PCIF-5#
12 CLK_PCI_ICH — CLK_PCI_ICH R237 33
13 CLK_ICH_48M — CLK_ICH_48M R243 33
3,6 CPU_MCH_BSEL0 — L35 BLM18AG601SN1D — R253 2.2K — FSA 17 FSA/USB48
3,6 CPU_MCH_BSEL1 — R454 0 — FSB 64 FSB/TEST_MODE
3,6 CPU_MCH_BSEL2 — L36 BLM18AG601SN1D — R251 10K — FSC 5 FSC/TEST_SEL/REF
13 CLK_ICH_14M — CLK_ICH_14M R245 33
13 CLK_PWRGD — 55 RESET#
63 CK_PWRGD/PD#
CLK_XTAL_OUT 2 XOUT
CLK_XTAL_IN 3 XIN
CLK_SDATA 6 SDATA
CLK_SCLK 7 SCLK
65 GND

CPU_BCLK 61 CPU-0 — CLK_CPU_BCLK 3
CPU_BCLK# 60 CPU-0# — CLK_CPU_BCLK# 3
MCH_BCLK 58 CPU-1 — CLK_MCH_BCLK 5
MCH_BCLK# 57 CPU-1# — CLK_MCH_BCLK# 5
PCIE_MINI1 54 SRC-8/CPU_ITP — CLK_PCIE_MINI1 34
PCIE_MINI1# 53 SRC-8#/CPU_ITP# — CLK_PCIE_MINI1# 34
DOT96_SSC 20 SRC-0/DOT96 — MCH_DREFCLK 6
DOT96_SSC# 21 SRC-0#/DOT96# — MCH_DREFCLK# 6
27M_SS 24 SRC-1/SE1 — DREF_SSCLK 6
27M_NSS 25 SRC-1#/SE2 — DREF_SSCLK# 6
PCIE_SATA 28 SRC-2/SATA — CLK_PCIE_SATA 11
PCIE_SATA# 29 SRC-2#/SATA# — CLK_PCIE_SATA# 11
PCIE_MINI3 31 CR#_C/SRC-3 — CLK_PCIE_MINI3 33
PCIE_MINI3# 32 CR#_D/SRC-3# — CLK_PCIE_MINI3# 33
MCH_3GPLL 34 SRC-4 — CLK_MCH_3GPLL 6
MCH_3GPLL# 35 SRC-4# — CLK_MCH_3GPLL# 6
45 PCI_STOP#/SRC-5 — H_STP_PCI# 13
44 CPU_STOP#/SRC5-5# — H_STP_CPU# 13
PCIE_EXPCARD 48 SRC-6 — CLK_PCIE_EXPCARD 30
PCIE_EXPCARD# 47 SRC-6# — CLK_PCIE_EXPCARD# 30
MINI1CLK_REQ#_C 51 CR#_F/SRC-7 — R264 475/F — MINI1CLK_REQ# — MINI1CLK_REQ# 34
CARD_CLK_REQ#_C 50 CR#_E/SRC-7# — R266 475/F — CARD_CLK_REQ# — CARD_CLK_REQ# 30
PCIE_MINI2 37 SRC-9 — CLK_PCIE_MINI2 33
PCIE_MINI2# 38 SRC-9# — CLK_PCIE_MINI2# 33
PCIE_ICH 41 SRC-10 — CLK_PCIE_ICH 12
PCIE_ICH# 42 SRC-10# — CLK_PCIE_ICH# 12
PCIE_LOM 40 CR#_H/SRC-11 — CLK_PCIE_LOM 42
PCIE_LOM# 39 CR#_G/SRC-11# — CLK_PCIE_LOM# 42

+3.3V_RUN
H_STP_PCI# R276 10K
H_STP_CPU# R275 10K

+3.3V_RUN
CLK_3GPLLREQ# R453 10K
SATA_CLKREQ# R241 10K
CARD_CLK_REQ# R267 10K
MINI1CLK_REQ# R265 10K
PCI_PCCARD R249 *10K_NC

PCI_SIO R248 *10K_NC

UMA without iAMT

+3.3V_RUN
L40 BLM21PG600SN1D 0805 120 ohms@100Mhz
+CK_VDD_MAIN
C304 0.1U 10
C308 0.1U 10
C318 0.1U 10
C541 0.1U 10
C310 0.1U 10
C543 0.1U 10
C547 *10U_NC 0603 6.3
L39 BLM21PG600SN1D 0805 120 ohms@100Mhz
R455 2.2 +CK_VDD_PCI
C530 0.1U 10
C529 0.1U 10
R242 2.2 +CK_VDD_PLL3
C305 0.1U 10
R244 2.2 +CK_VDD_48
C300 0.1U 10
C296 4.7U 0603 6.3
R478 2.2 +CK_VDD_SRC
C551 0.1U 10
C303 0.1U 10

Non-iAMT
SMbus address D2
These are for backdrive issue.

+3.3V_RUN
RP26 2.2KX2
26,31,39 SMBDAT1 — Q35 2N7002W-7-F — CLK_SDATA
+3.3V_RUN
26,31,39 SMBCLK1 — Q34 2N7002W-7-F — CLK_SCLK

+3.3V_RUN
R247 *10K_NC
PCI_ICH
R246 *10K_NC

R246 POP: For Internal pull-low.
R235 POP: For internal pull-high.

FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

+3.3V_RUN
R238 *10K_NC
27M_SEL
R235 10K

27M_SEL

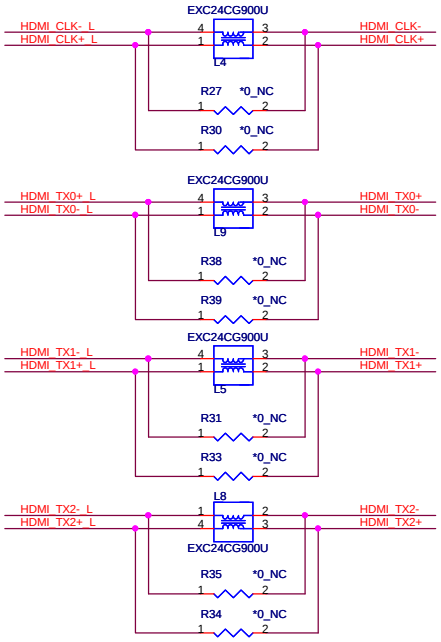
27M_SEL (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	96/ 100M_T	96/ 100M_C
1 = Disc. GRFX down	SRCT0	SRCC0	27Mout	27MSSout

QUANTA COMPUTER

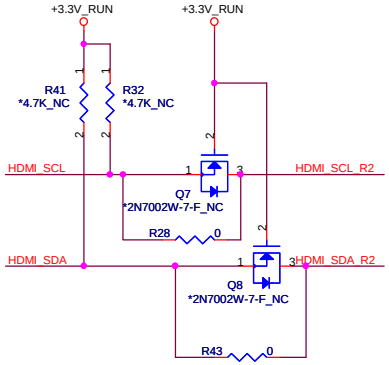
Title	CLOCK GENERATOR	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 17 of 58	

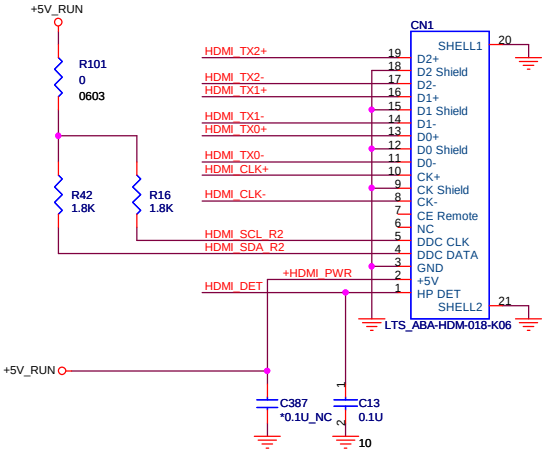
HDMI Connector

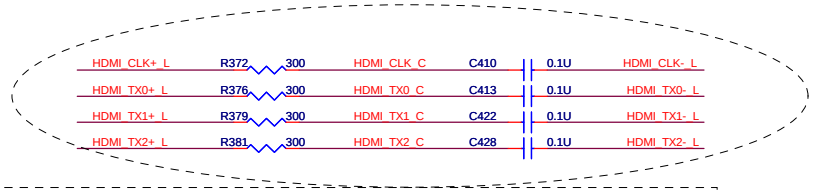
07-24 - 23
FOR EA TEST HDMI CHANGE

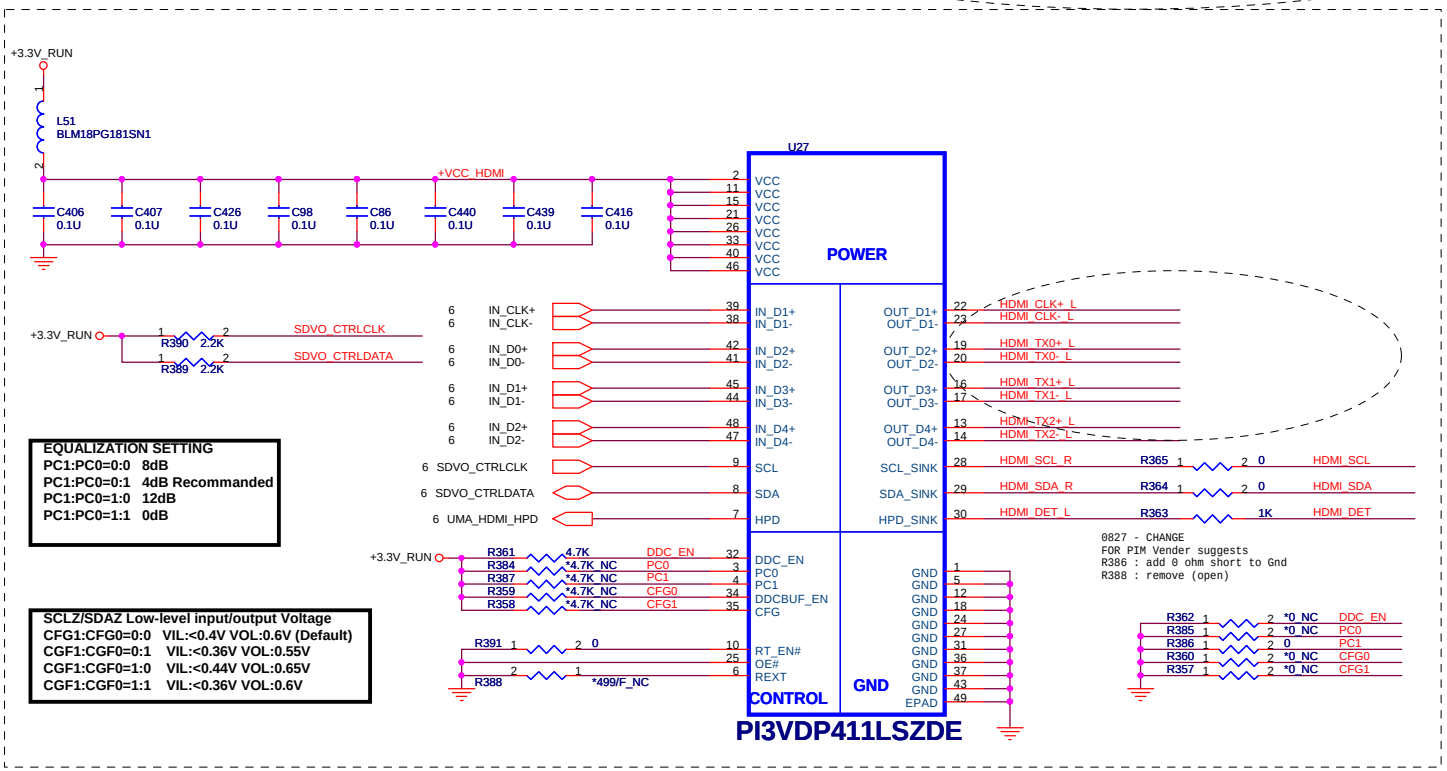


Reserve for EMI and close to HDMI CONN









Title	Sil 1362		
Size	Document Number FM8B		Rev 3A
Date:	Thursday, October 09, 2008	Sheet 18 of 58	

QUANTA COMPUTER

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 19 of 58	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 20 of 58	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 21 of 58	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 22 of 58	

QUANTA COMPUTER

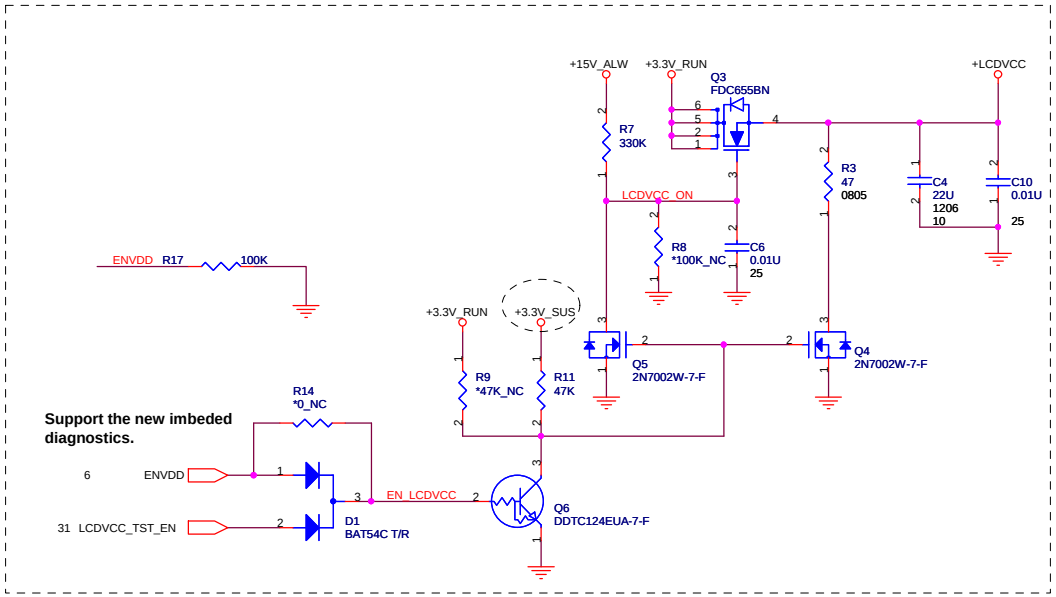
Title	FLASH, RTC & KC	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 23 of 58	

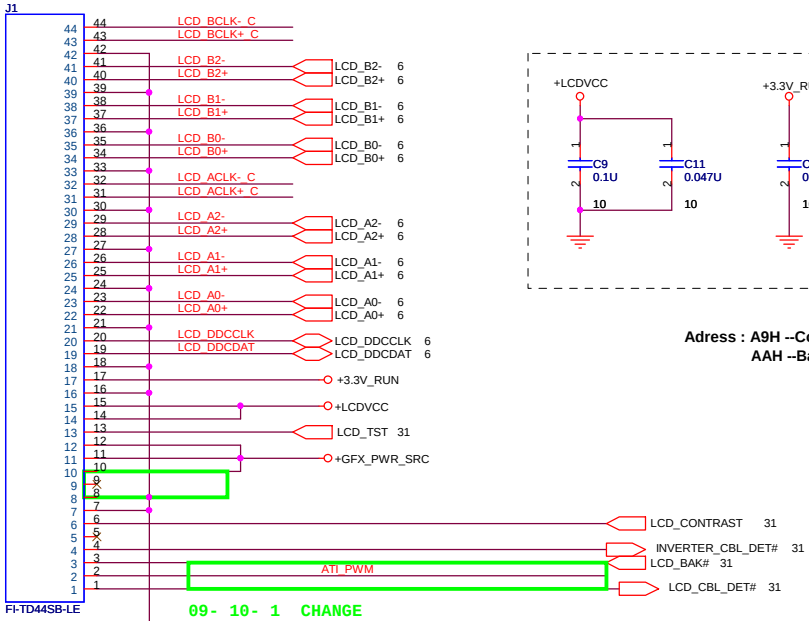
QUANTA COMPUTER

Title	Battery Selector	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 24 of 58	

QUANTA COMPUTER

Title	Docking Station CONN.	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 25 of 58	





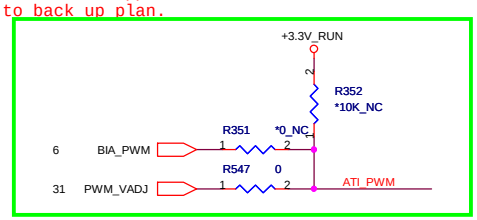
Adress : A9H --Contrast
AAH --Backlight

09- 10- 1 CHANGE
modify LCD panel side schematic for DPST .

UMA

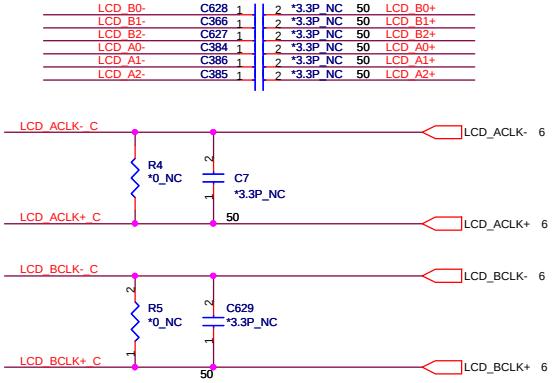
Populate R351 for DPST implementation only.

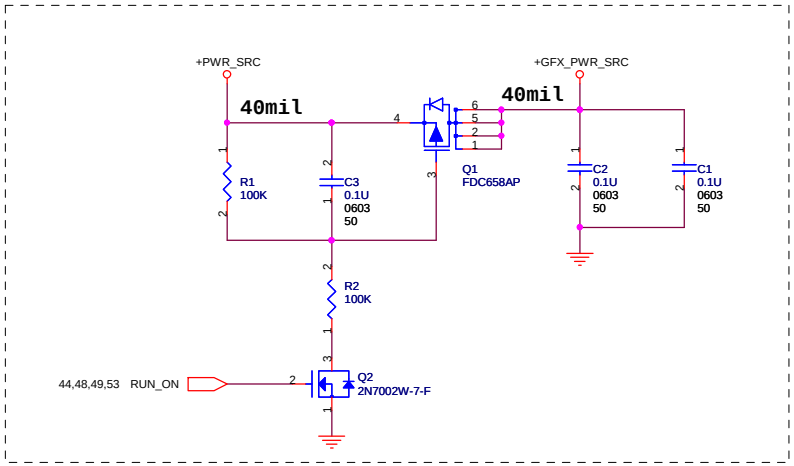
Populate R352 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.



09- 10- 1 CHANGE
modify LCD panel side schematic for DPST .

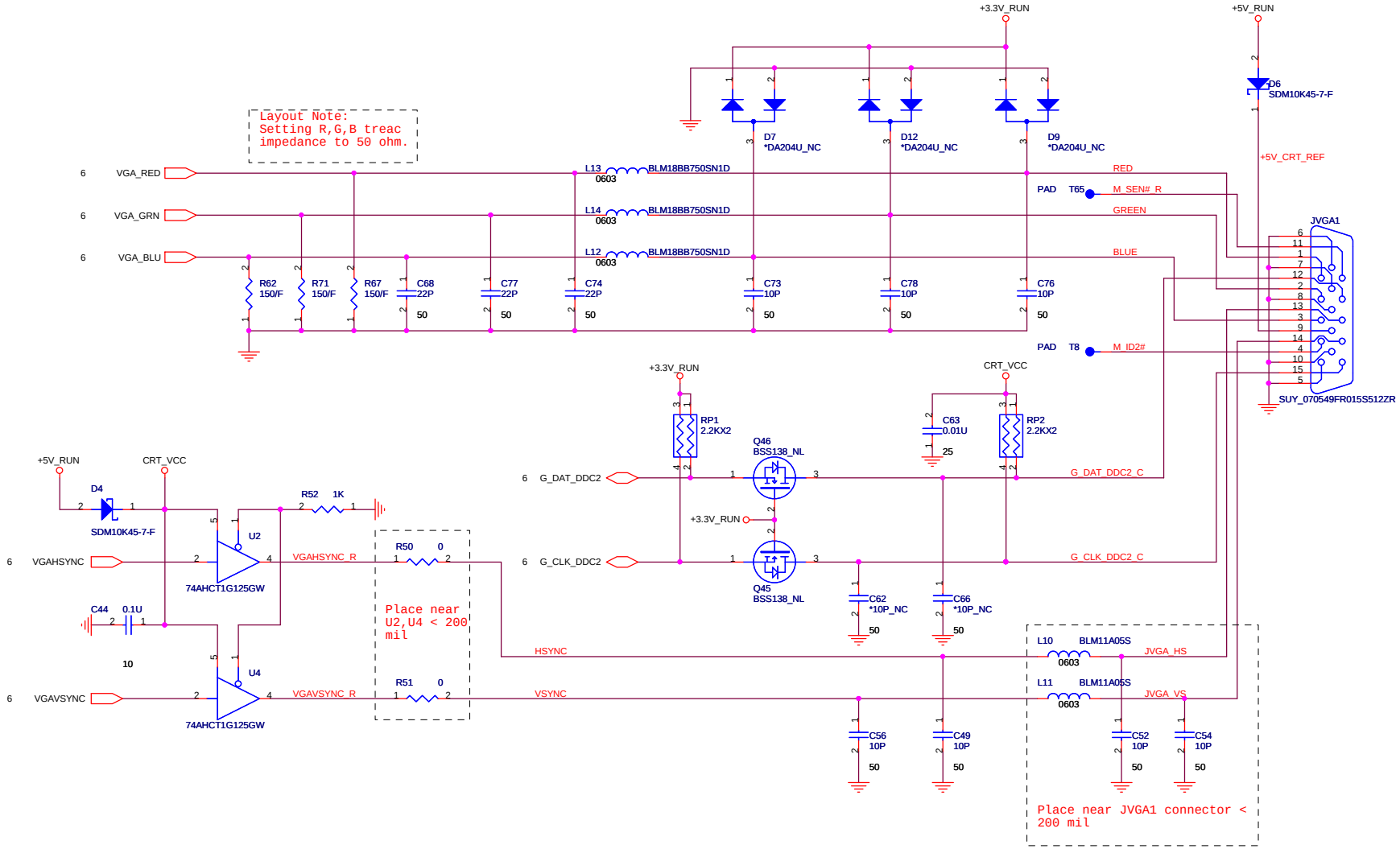
Shunt capacitors on LVDS for improving WWAN.





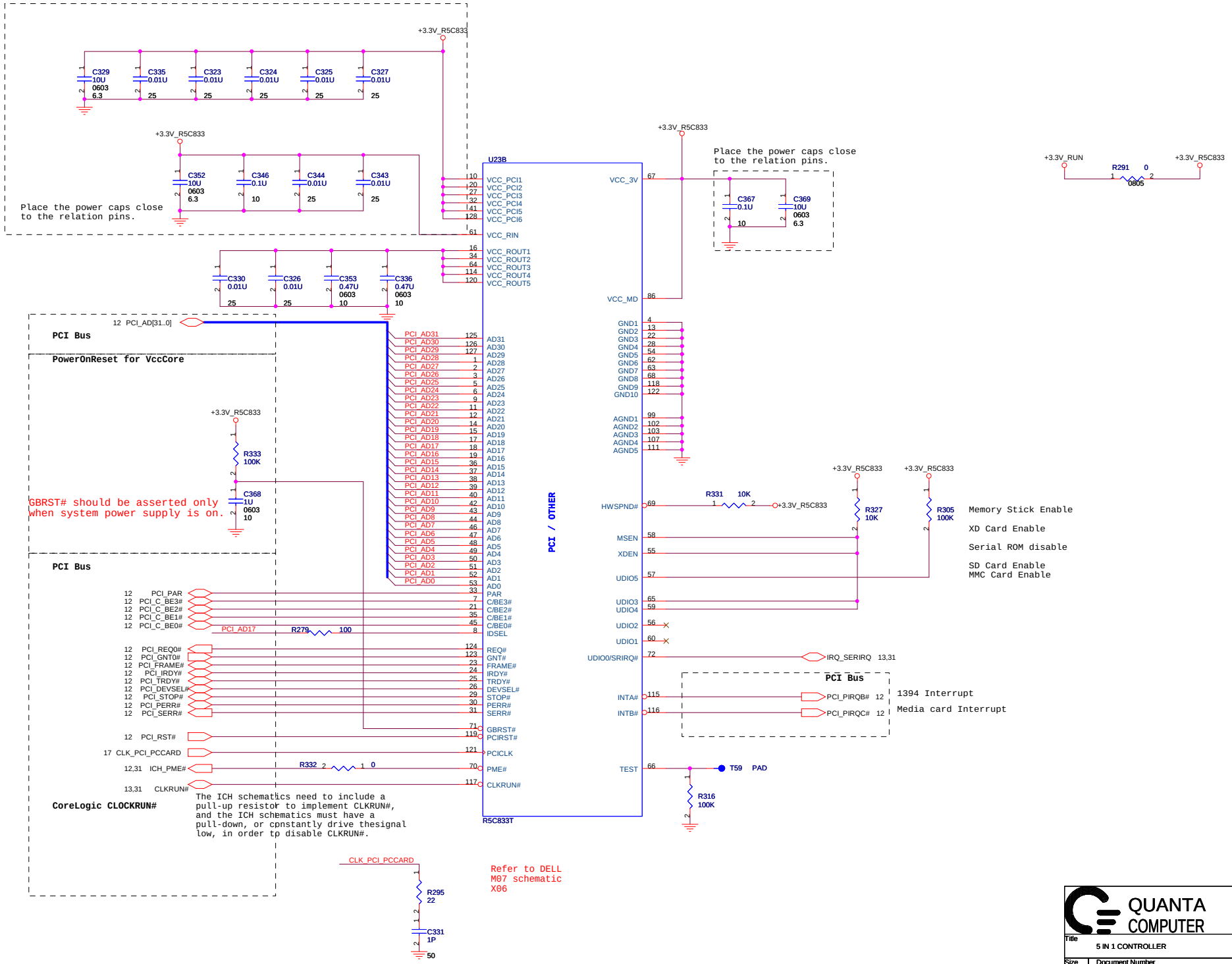
QUANTA COMPUTER

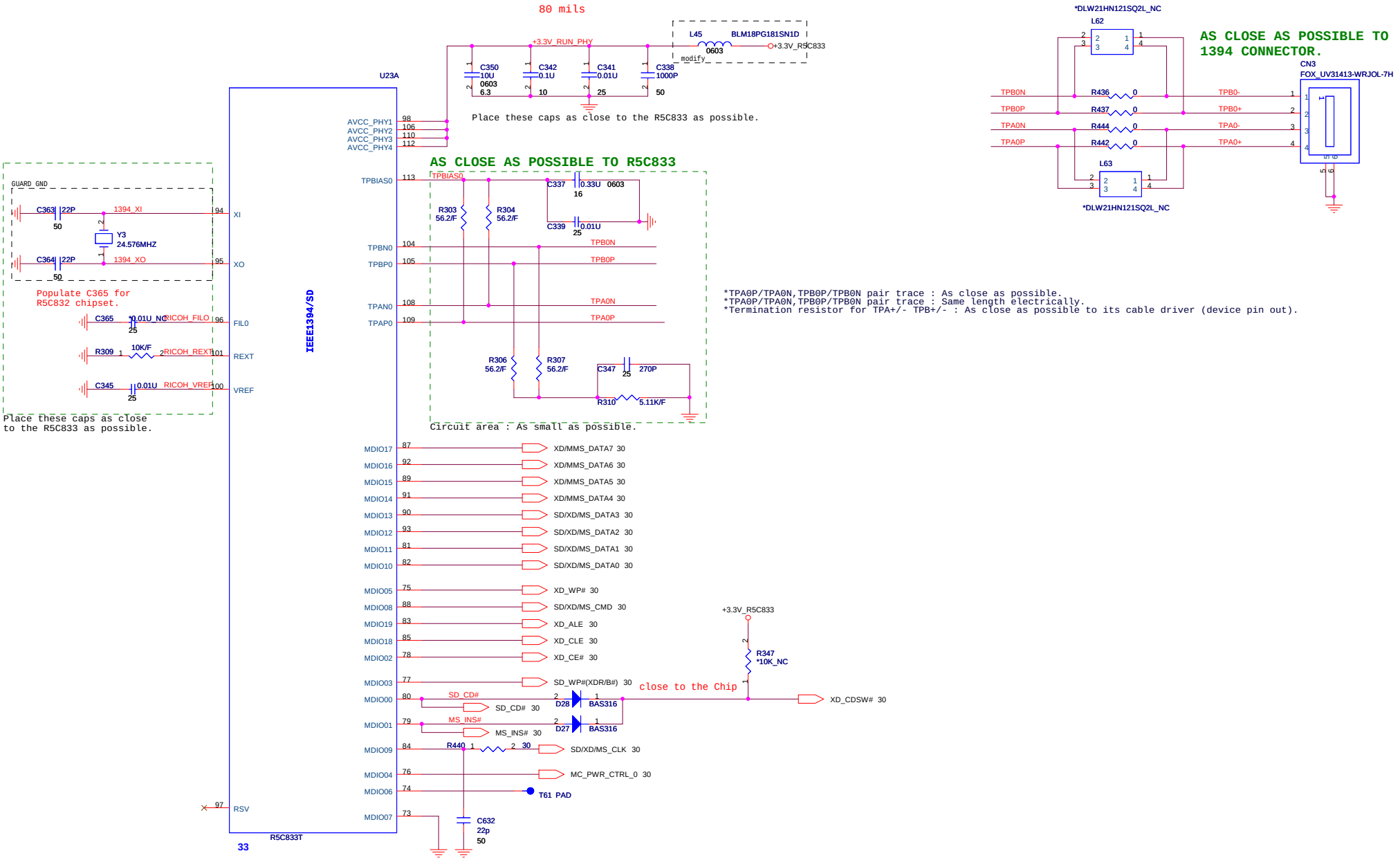
Title	LCD CONN & CK-SSCD	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 26 of 58	



QUANTA COMPUTER

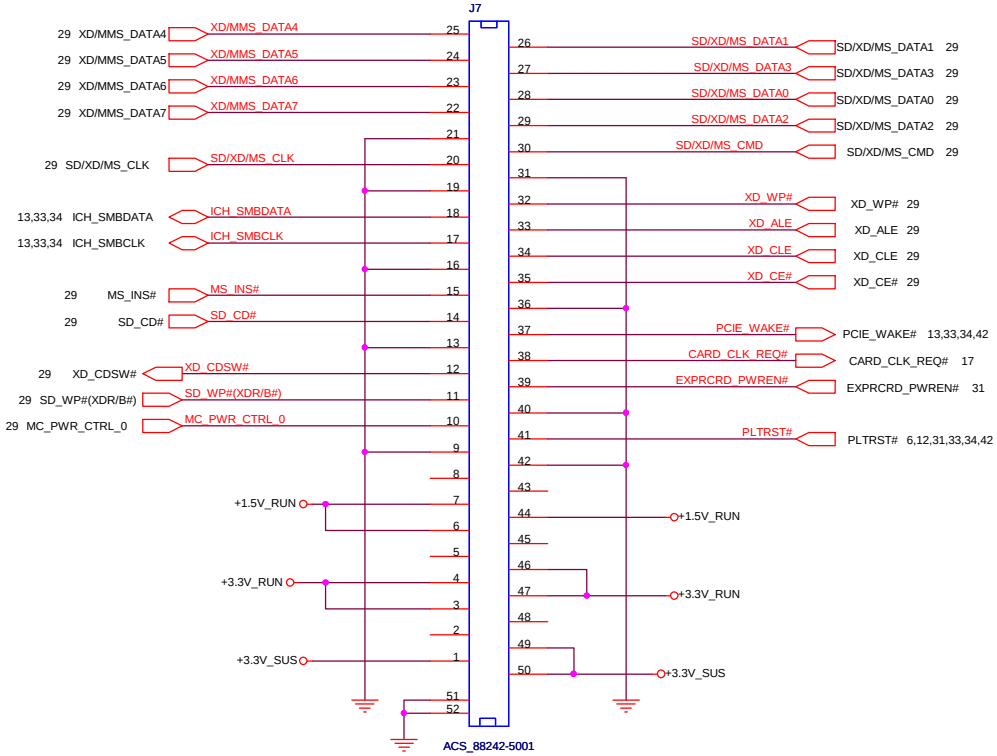
Title	CRT&TV CONN	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 27 of 58	

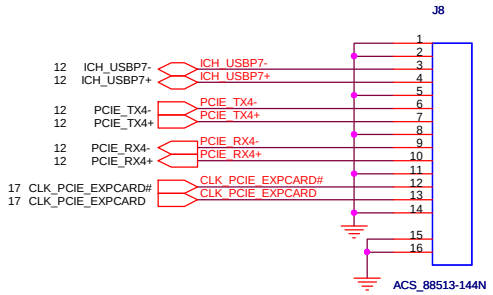

+3.3V_R5C833
C329 10U 0603 6.3
C335 0.01U 25
C323 0.01U 25
C324 0.01U 25
C325 0.01U 25
C327 0.01U 25
C352 10U 0603 6.3
C346 0.1U 10
C344 0.01U 25
C343 0.01U 25
Place the power caps close to the relation pins.
U23B
VCC_PCI1
VCC_PCI2
VCC_PCI3
VCC_PCI4
VCC_PCI5
VCC_PCI6
VCC_RIN
VCC_ROUT1
VCC_ROUT2
VCC_ROUT3
VCC_ROUT4
VCC_ROUT5
C330 0.01U 25
C326 0.01U 25
C353 0.47U 0603 10
C336 0.47U 0603 10
VCC_3V
VCC_MD
C367 0.1U 10
C369 10U 0603 6.3
Place the power caps close to the relation pins.
+3.3V_RUN
R291 0 0805
+3.3V_R5C833
12 PCI_AD[31..0]
PCI Bus
PowerOnReset for VccCore
R333 100K
C368 1U 0603 10
GBRST# should be asserted only when system power supply is on.
PCI_AD31
PCI_AD30
PCI_AD29
PCI_AD28
PCI_AD27
PCI_AD26
PCI_AD25
PCI_AD24
PCI_AD23
PCI_AD22
PCI_AD21
PCI_AD20
PCI_AD19
PCI_AD18
PCI_AD17
PCI_AD16
PCI_AD15
PCI_AD14
PCI_AD13
PCI_AD12
PCI_AD11
PCI_AD10
PCI_AD9
PCI_AD8
PCI_AD7
PCI_AD6
PCI_AD5
PCI_AD4
PCI_AD3
PCI_AD2
PCI_AD1
PCI_AD0
AD31
AD30
AD29
AD28
AD27
AD26
AD25
AD24
AD23
AD22
AD21
AD20
AD19
AD18
AD17
AD16
AD15
AD14
AD13
AD12
AD11
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
PAR
C/BE3#
C/BE2#
C/BE1#
C/BE0#
IDSEL
PCI / OTHER
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
AGND1
AGND2
AGND3
AGND4
AGND5
HWSPND#
MSEN
XDEN
UDIO5
UDIO3
UDIO4
UDIO2
UDIO1
UDIO0/SRIRQ#
R331 10K
R327 10K
R305 100K
Memory Stick Enable
XD Card Enable
Serial ROM disable
SD Card Enable
MMC Card Enable
IRQ_SERIRQ 13,31
PCI Bus
INTA#
INTB#
PCI_PIRQB# 12
PCI_PIRQC# 12
1394 Interrupt
Media card Interrupt
12 PCI_PAR
12 PCI_C_BE3#
12 PCI_C_BE2#
12 PCI_C_BE1#
12 PCI_C_BE0#
PCI_AD17
R279 100
12 PCI_REQ0#
12 PCI_GNT0#
12 PCI_FRAME#
12 PCI_IRDY#
12 PCI_TRDY#
12 PCI_DEVSEL#
12 PCI_STOP#
12 PCI_PERR#
12 PCI_SERR#
REQ#
GNT#
FRAME#
IRDY#
TRDY#
DEVSEL#
STOP#
PERR#
SERR#
12 PCI_RST#
GBRST#
PCIRST#
17 CLK_PCI_PCCARD
PCICLK
12,31 ICH_PME#
R332 2 1 0
PME#
13,31 CLKRUN#
CLKRUN#
TEST
T59 PAD
R316 100K
CoreLogic CLOCKRUN#
The ICH schematics need to include a pull-up resistor to implement CLKRUN#, and the ICH schematics must have a pull-down, or constantly drive thesignal low, in order to disable CLKRUN#.
R5C833T
CLK_PCI_PCCARD
R295 22
C331 1P
Refer to DELL M07 schematic X06
QUANTA COMPUTER
Title
5 IN 1 CONTROLLER
Size
Document Number FM8B
Rev 3A
Date: Thursday, October 09, 2008
Sheet 28 of 58



QUANTA COMPUTER		
Title	IEEE 1394	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 29 of 58	

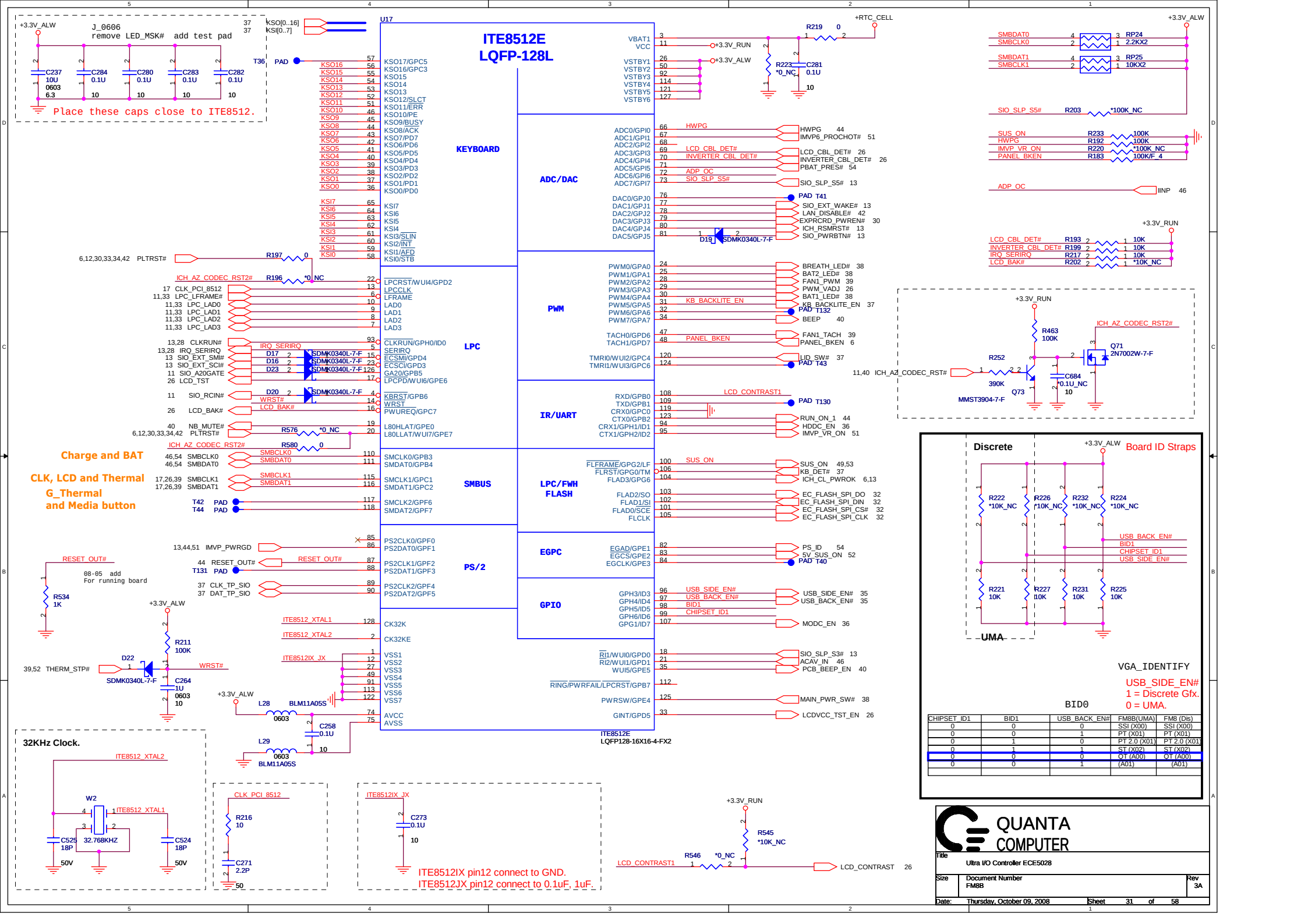
Express Card/CARD READER



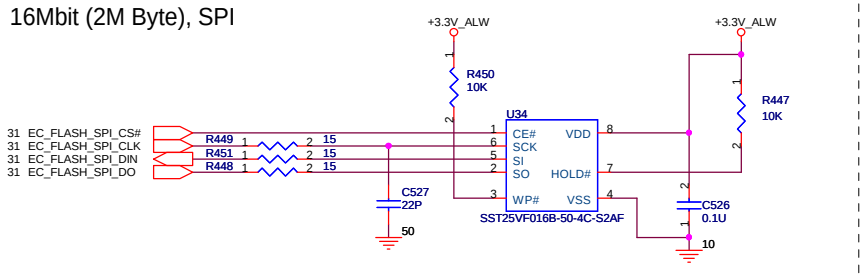


QUANTA COMPUTER

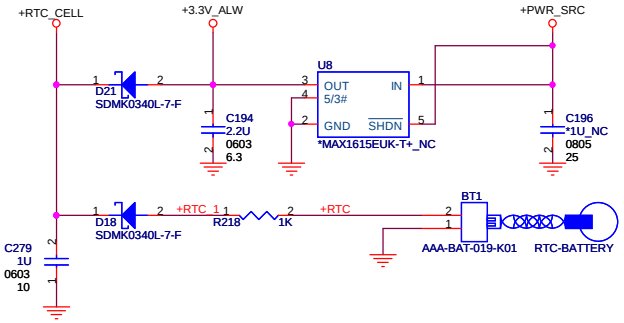
Title	ExpressCard/SmartCard	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 30 of 58	


ITE8512E
LQFP-128L
U17
J_0606
remove LED_MSK# add test pad
Place these caps close to ITE8512.
KEYBOARD
ADC/DAC
PWM
LPC
IR/UART
SMBUS
LPC/FWH
FLASH
EGPC
PS/2
GPIO
Charge and BAT
CLK, LCD and Thermal
G_Thermal
and Media button
32KHz Clock.
ITE8512IX pin12 connect to GND.
ITE8512JX pin12 connect to 0.1uF, 1uF.
Discrete
Board ID Straps
UMA
VGA_IDENTIFY
USB_SIDE_EN#
1 = Discrete Gfx.
0 = UMA.
BID0
QUANTA
COMPUTER
Ultra I/O Controller ECE5028
FM8B
Thursday, October 09, 2008

16Mbit (2M Byte), SPI



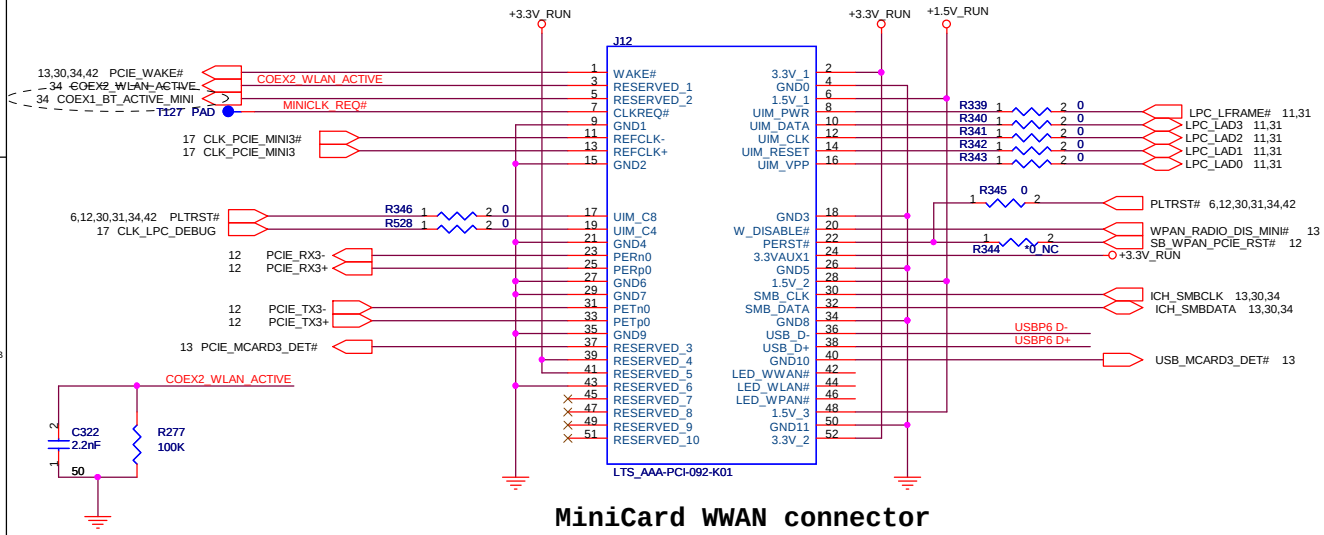
RTC BATTERY

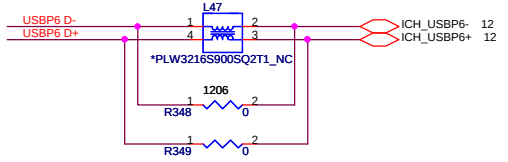


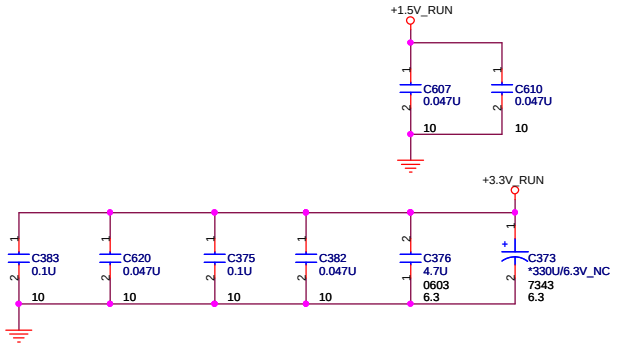
QUANTA COMPUTER

Title	Ultra I/O Controller ECE5028	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 32 of 58	

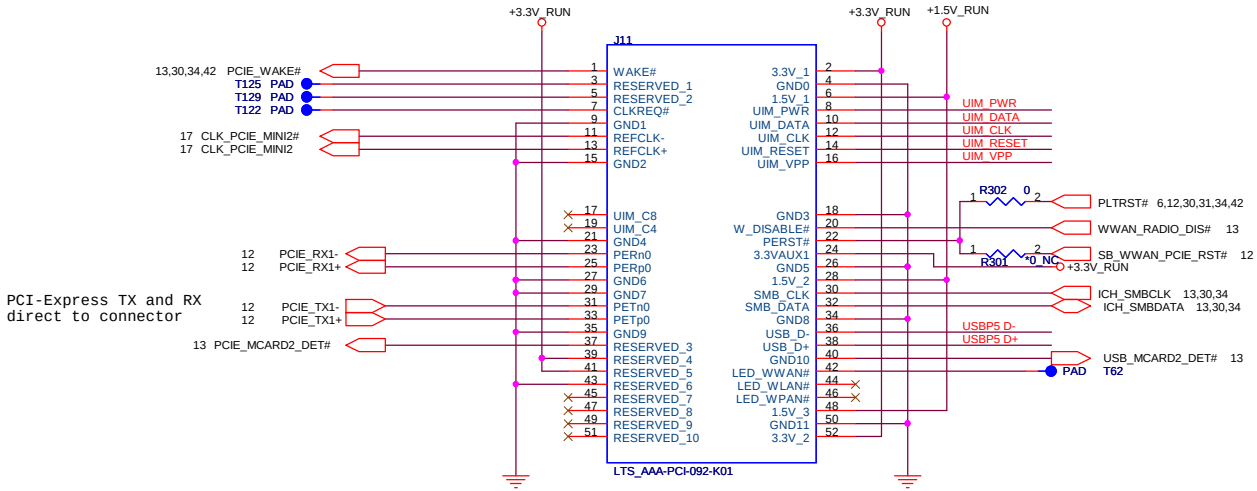
MiniCard Robson, BT. UWB connector

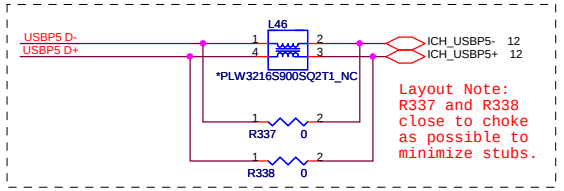


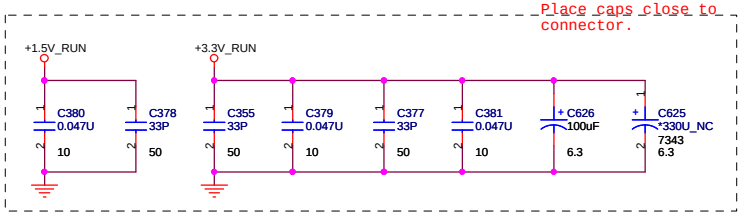


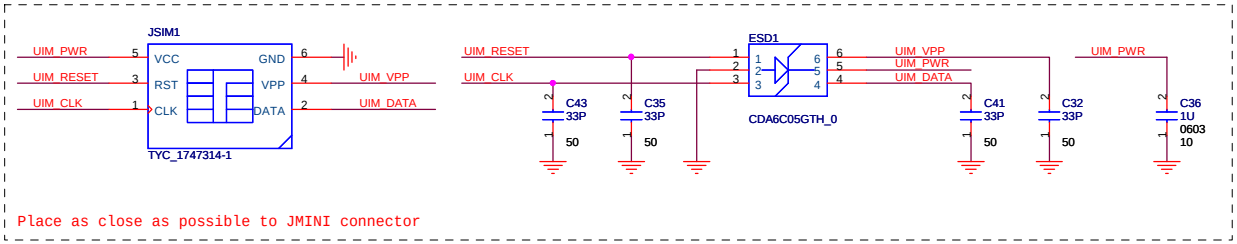


MiniCard WWAN connector





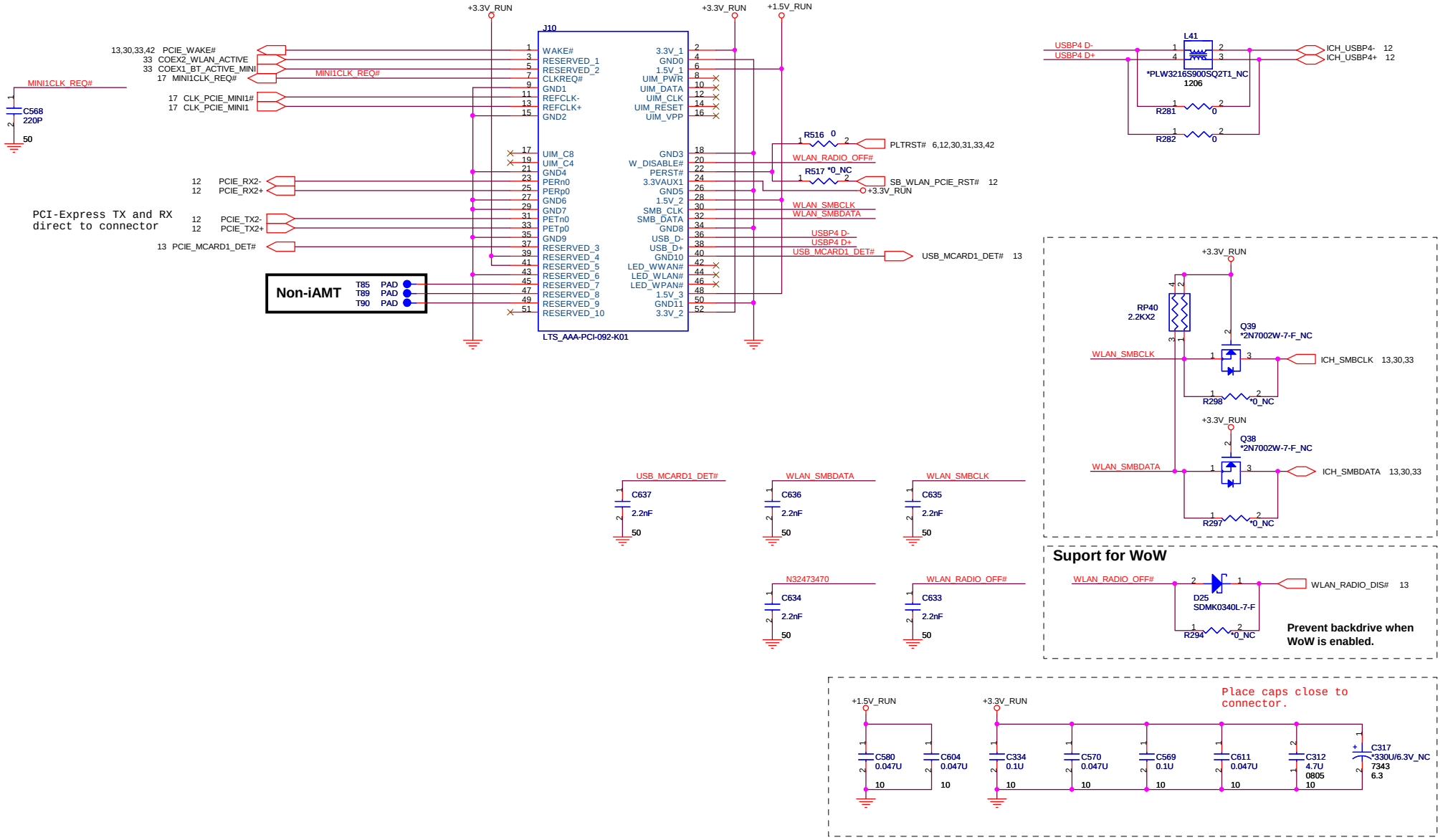




QUANTA COMPUTER

Title	MINI-PCI	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 33 of 58	

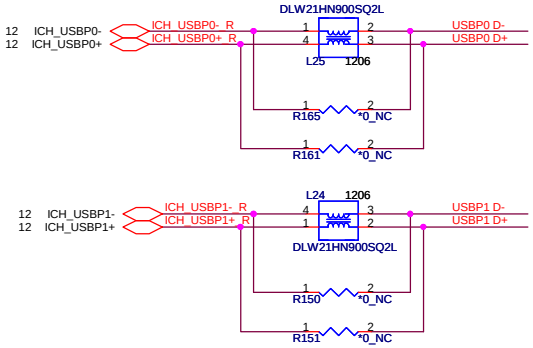
MiniCard WLAN connector



QUANTA COMPUTER

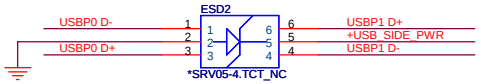
Title	MDC CONN.	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 34 of 58	

External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently

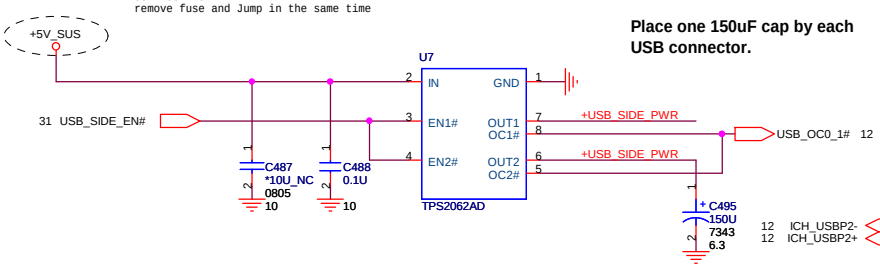


Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

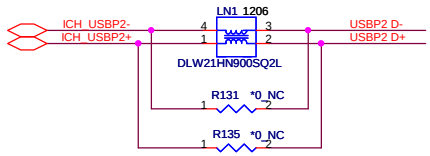
Place ESD diodes as close as USB connector.

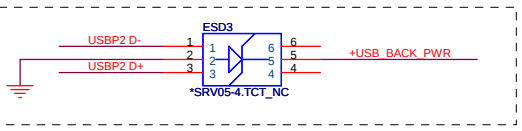


08 - 06 Del
remove fuse and Jump in the same time

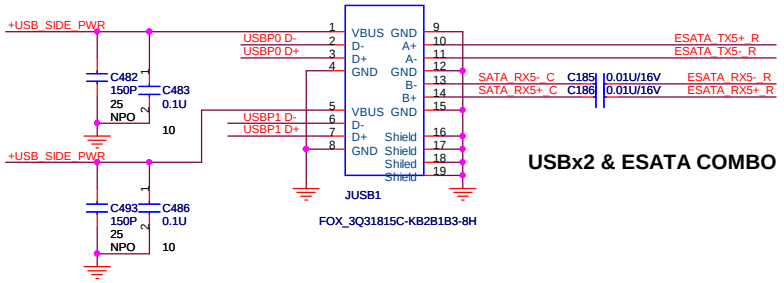


Place one 150uF cap by each USB connector.



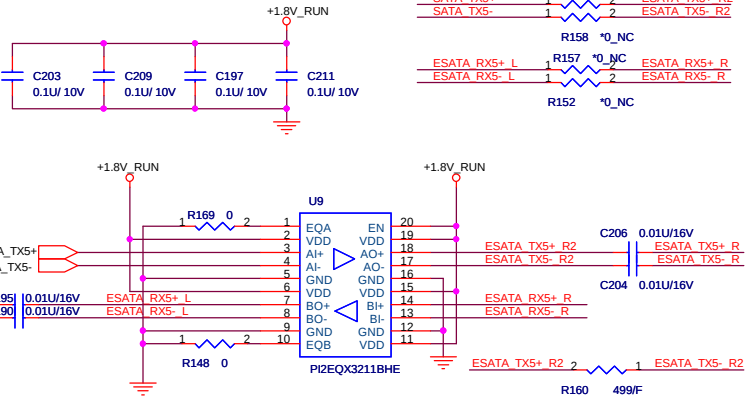


Side External USBX2



USBx2 & ESATA COMBO

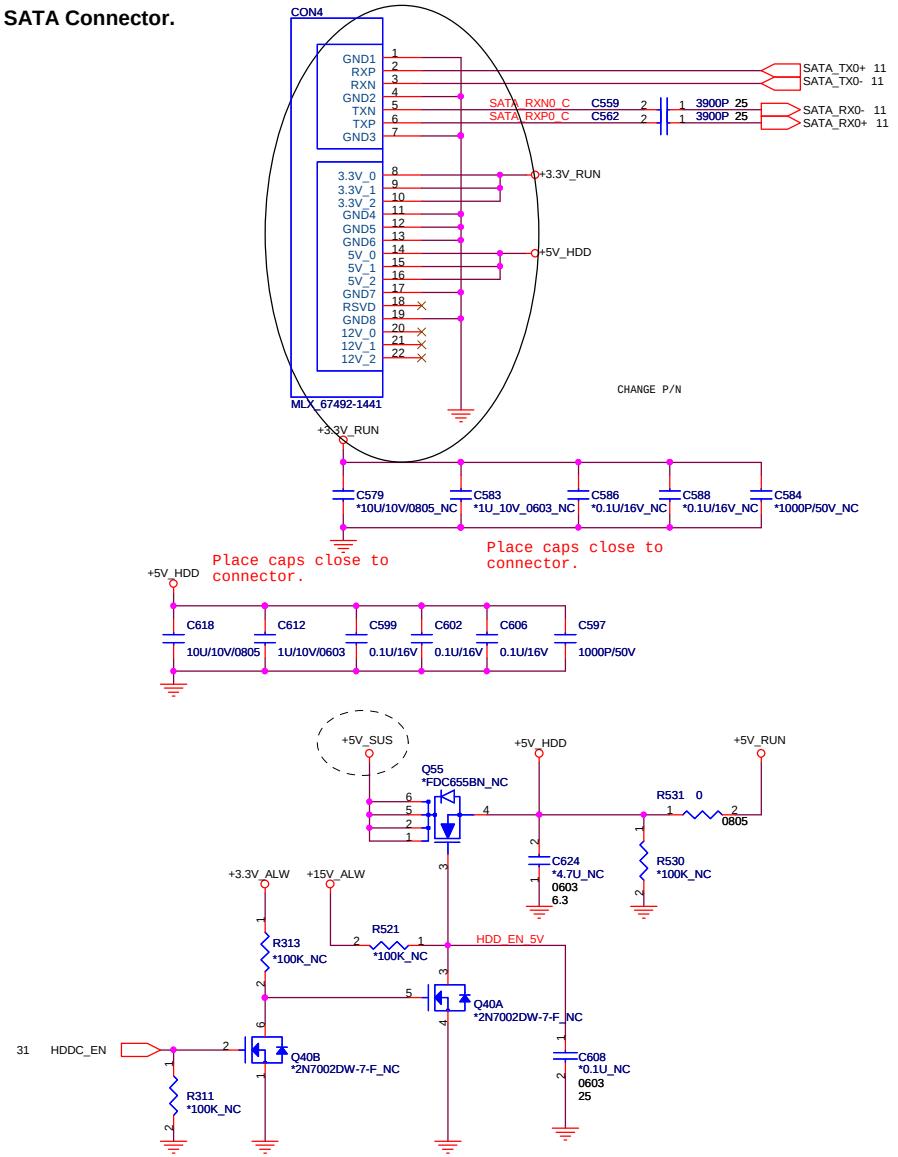
E-SATA Re-driver



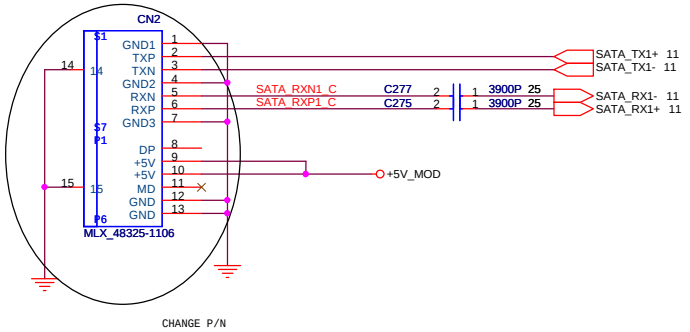
Title	SERIAL PORT & USB	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 35 of 58	

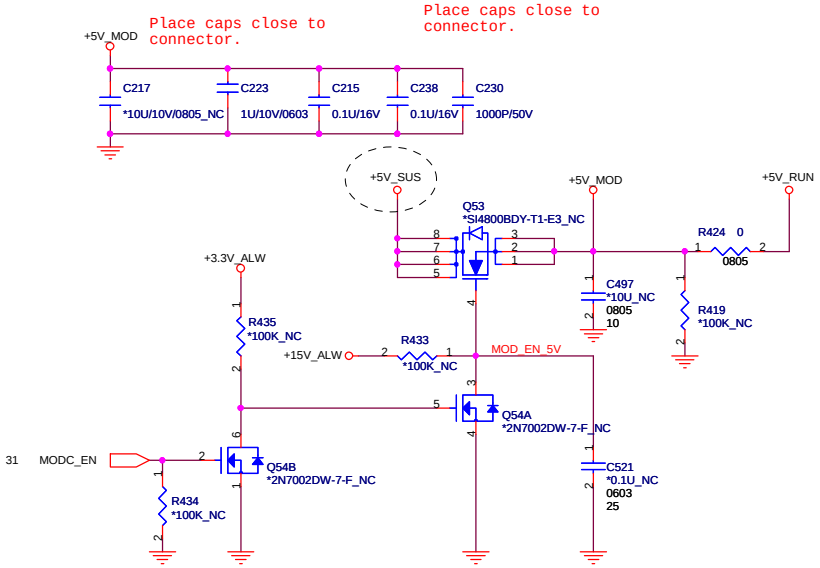
QUANTA COMPUTER

SATA Connector.



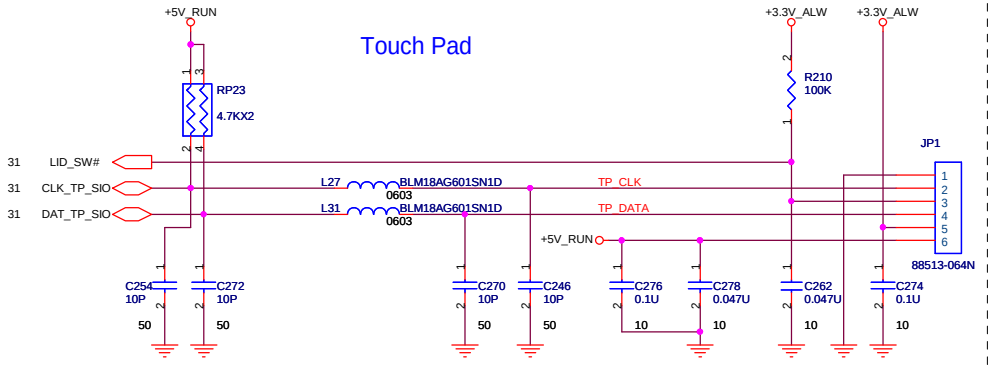
ODD Connector



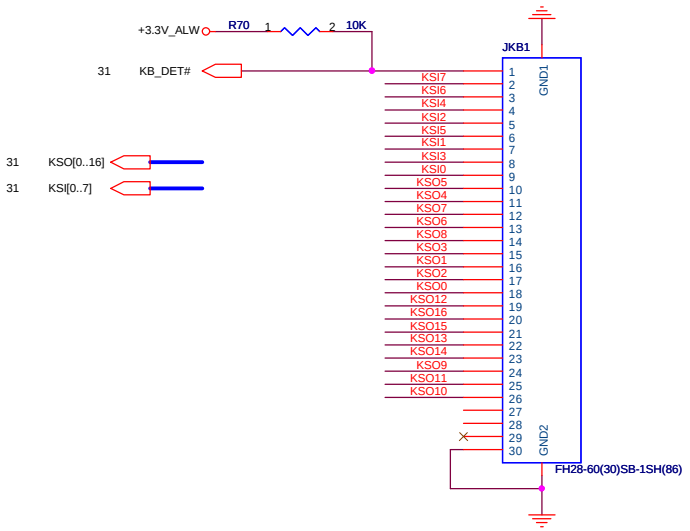


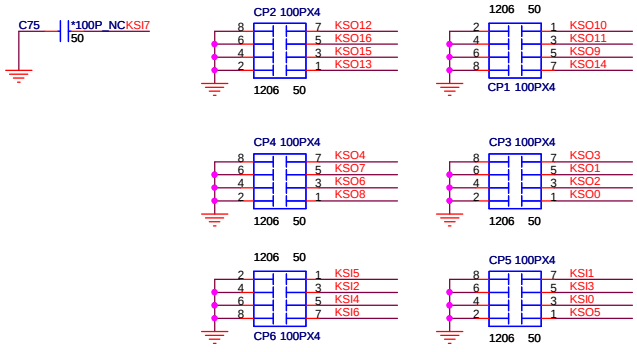
QUANTA COMPUTER		
Title: SATA (HDD&CD_ROM)		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 36 of 58	

Touch Pad



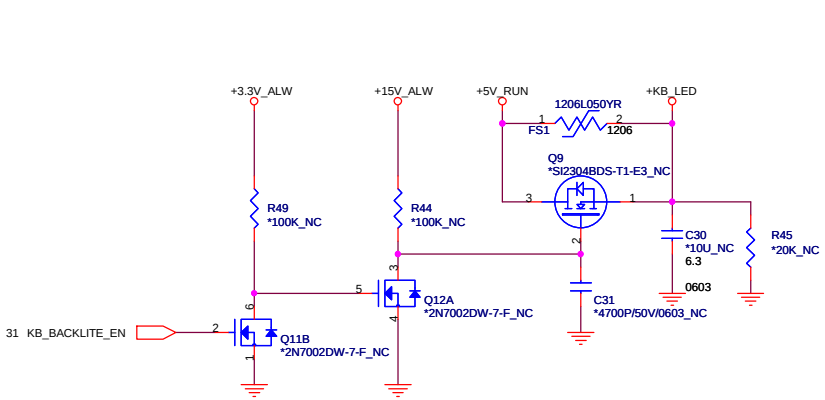
KEYBOARD CONNECTOR

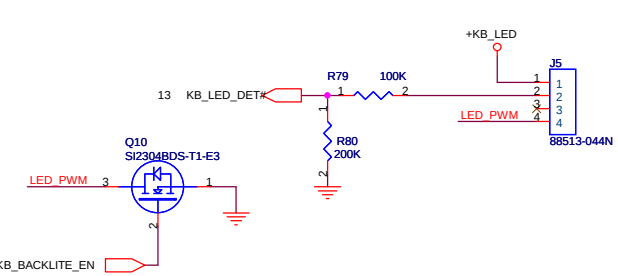




100P CAPS CLOSE TO JKB1

Key board Illumination

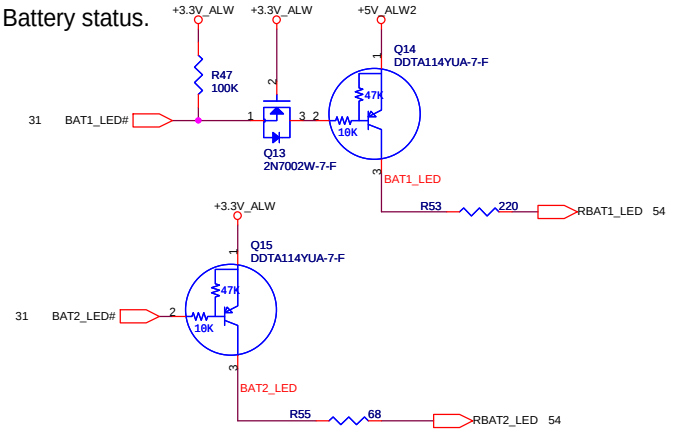




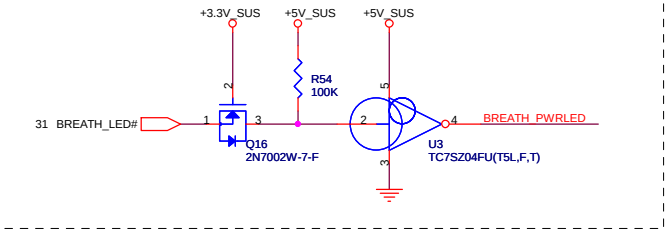
QUANTA COMPUTER

Title	TOUCH PAD, BULE TOOTH & FIR	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 37 of 58	

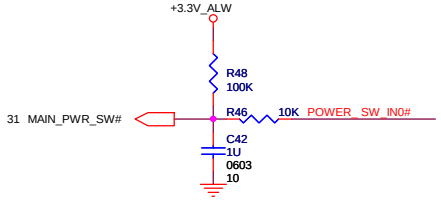
Battery status.

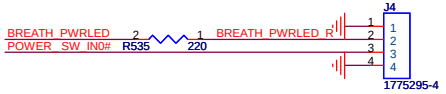


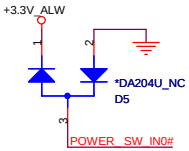
Power & Suspend.

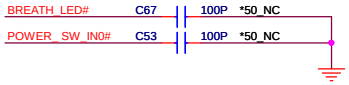


Power Switch



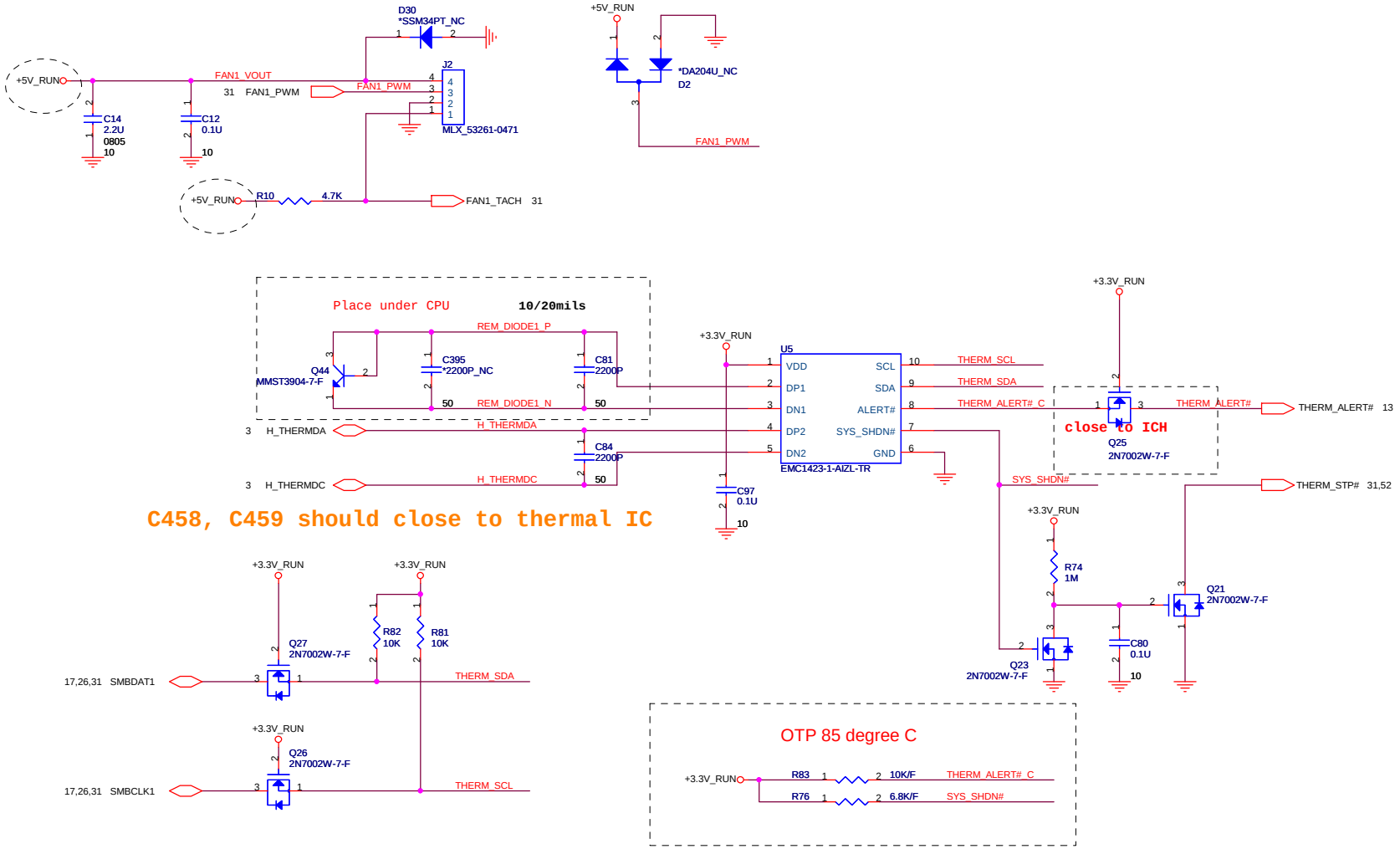






QUANTA COMPUTER

Title	SWITCH, KEYBOARD & LED	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 38 of 58	



QUANTA COMPUTER

Title	FAN & THERMAL	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 39 of 58	

GAIN1	GAIN2	GAIN
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

INTERNAL SPEAKER AMP

TPA6040A4
QFN 32PIN

Layout Note: Close to 92HD73C Pin 34

Layout Note: Close to 92HD73C Pin 13

Layout Note: Place close to pin 18.

Layout Note: Place close TPA6040A4.

AZALIA (HD) CODEC

0821: 0 ohm removal, delete R212

Depop R213,C266 for using 92HD73C

Depop R205, R201, R215,R200 Pop 208, R214, R194 ,R209 for using 92HD73C R208,R214 close to U13, Let DVDD width be 10-mils

Close to U1

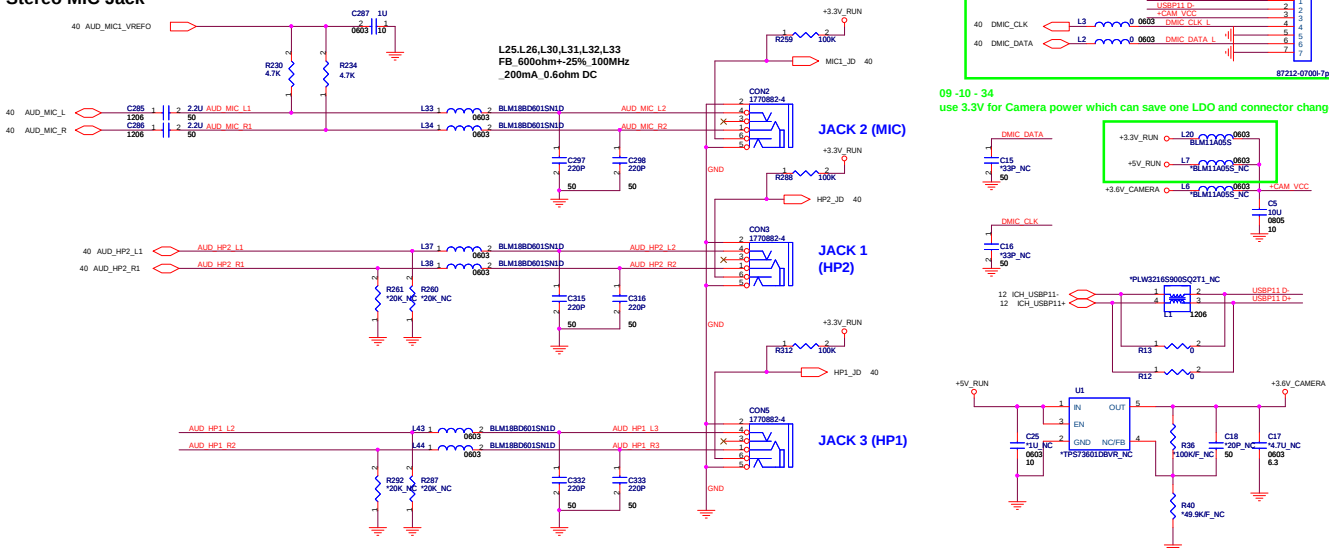
FB_60ohm+-25%_100MHz _3A_0.05ohm DC

Layout Note: Place close to pin 8.

Title	Azelia CODEC
Size	Document Number FM8B
Rev	3A
Date:	Thursday, October 09, 2008
Sheet	40 of 58

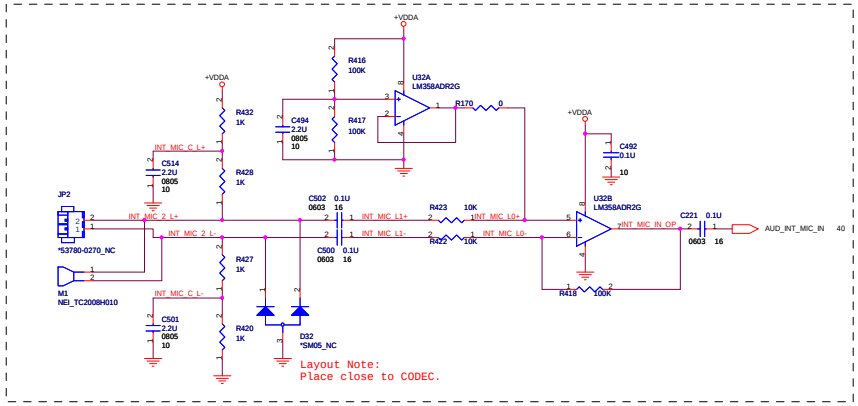
QUANTA COMPUTER

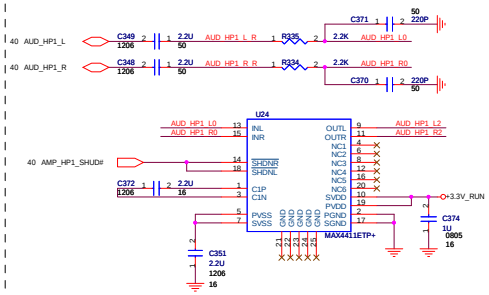
Headphone Jack
Stereo MIC JACK



Array Microphone & Camera

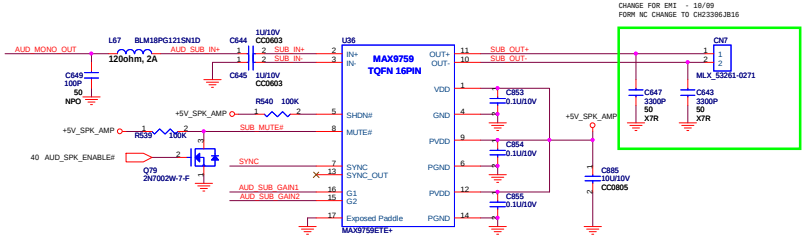
09 -10 - 34
use 3.3V for Camera power which can save one LDO and connector change from 6pin to7pin

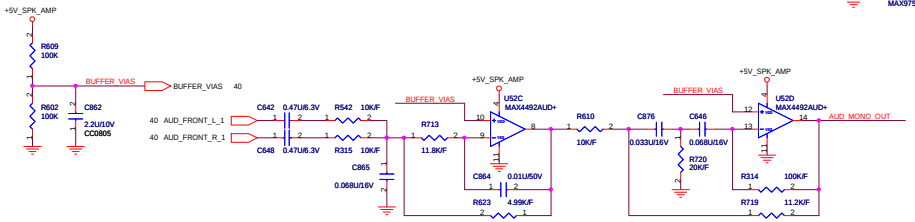


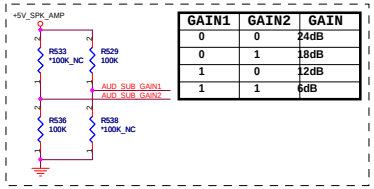


INTERNAL SUBWOOFER AMP

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.



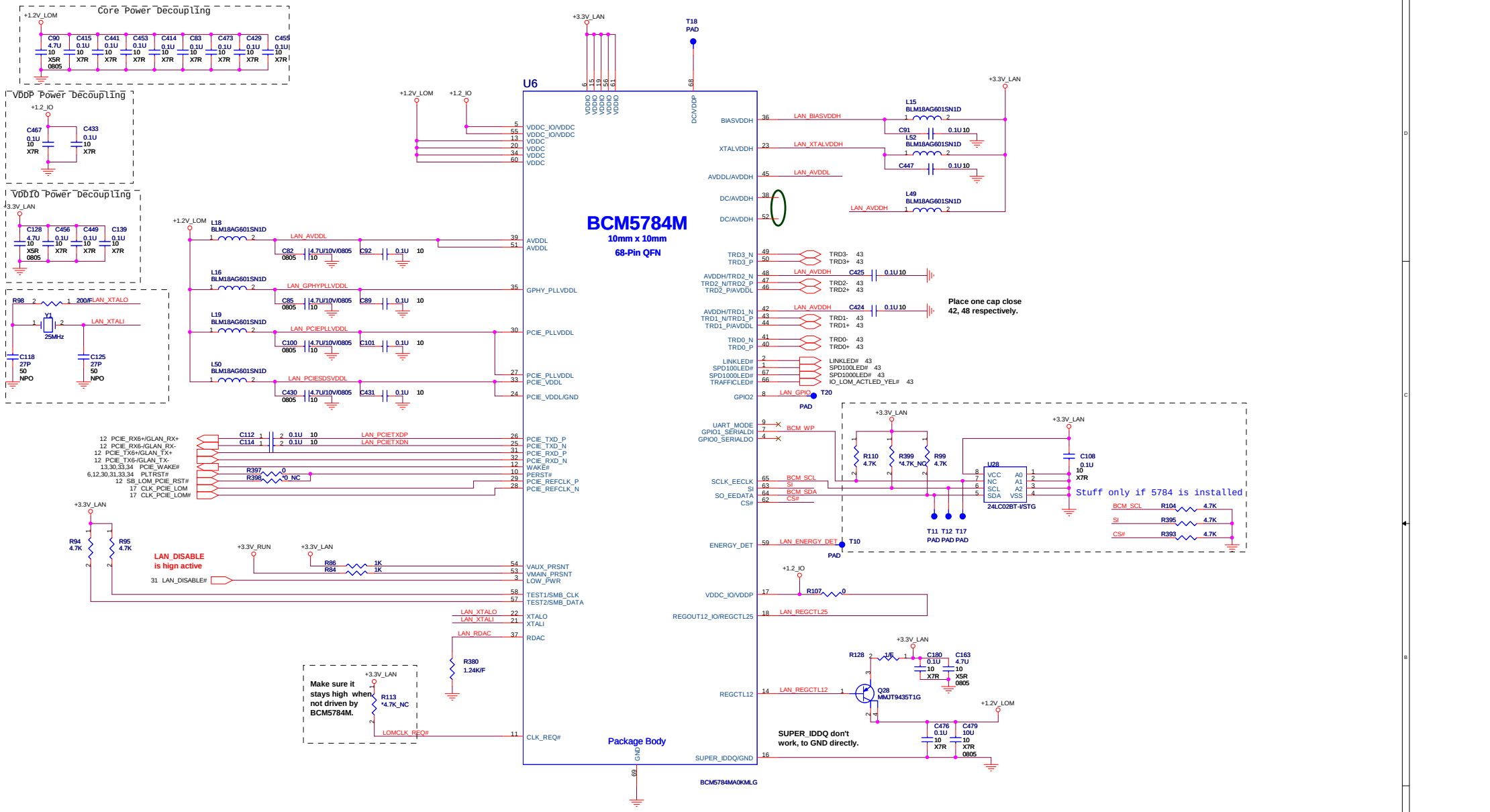




GAIN1	GAIN2	GAIN
0	0	24dB
0	1	18dB
1	0	12dB
1	1	6dB

QUANTA COMPUTER

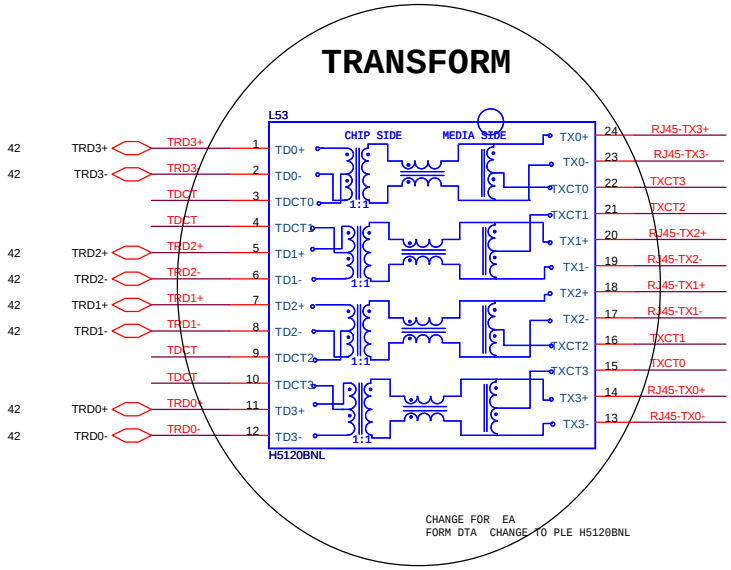
Title	AUDIO CONN	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 41 of 58	

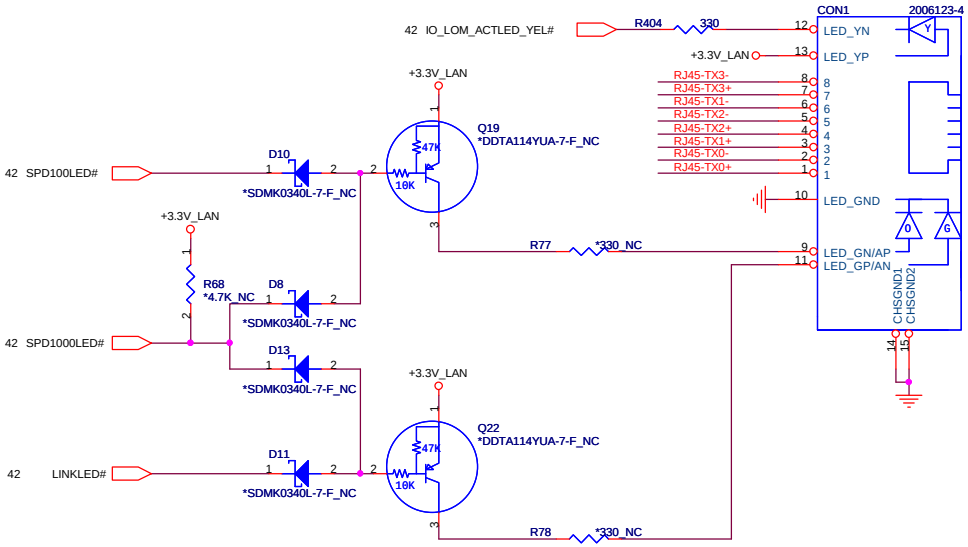


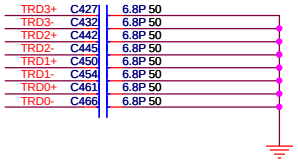
QUANTA COMPUTER

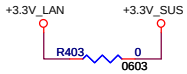
Title	LAN	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 42 of 58	

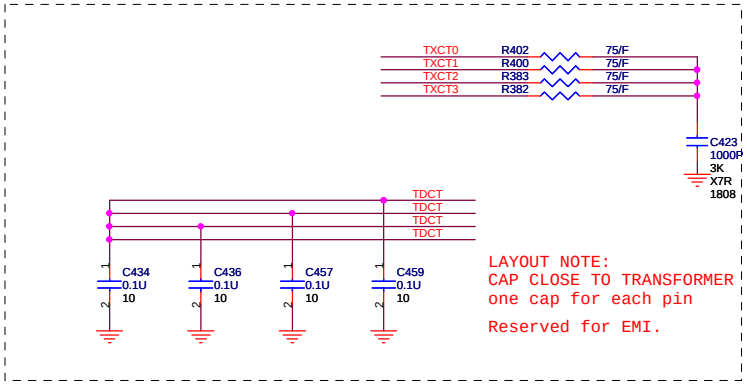
RJ-45 Connector



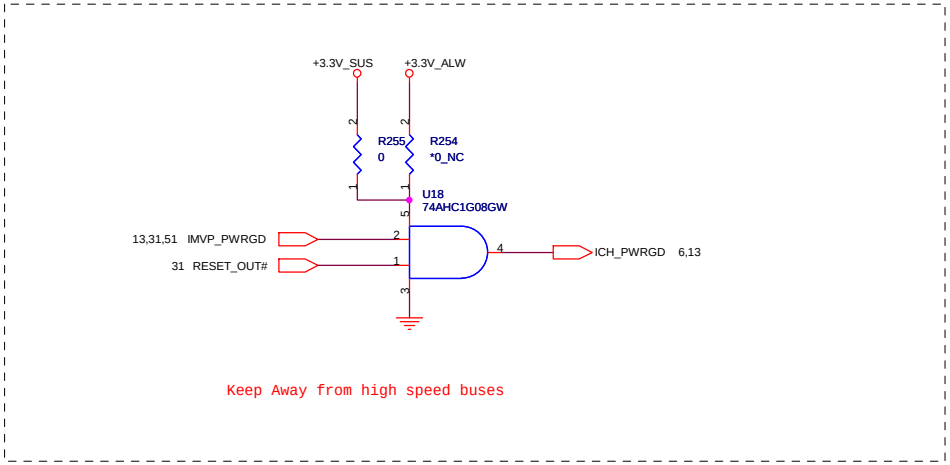


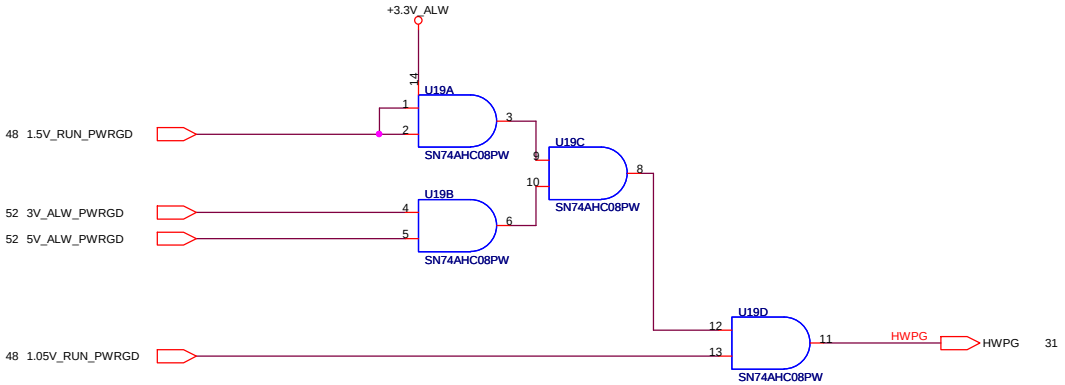


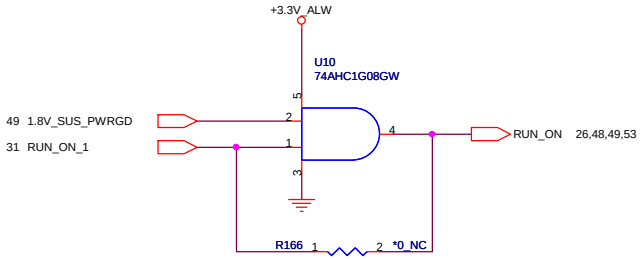


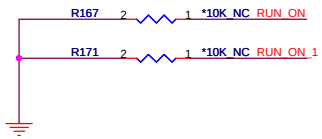


QUANTA COMPUTER			
Title: LAN SWITCH			
Size	Document Number FM8B		Rev 3A
Date: Thursday, October 09, 2008		Sheet 43 of 58	









QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 44 of 58	

QUANTA COMPUTER

Title	Docking Q-SWITCH	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 45 of 58	

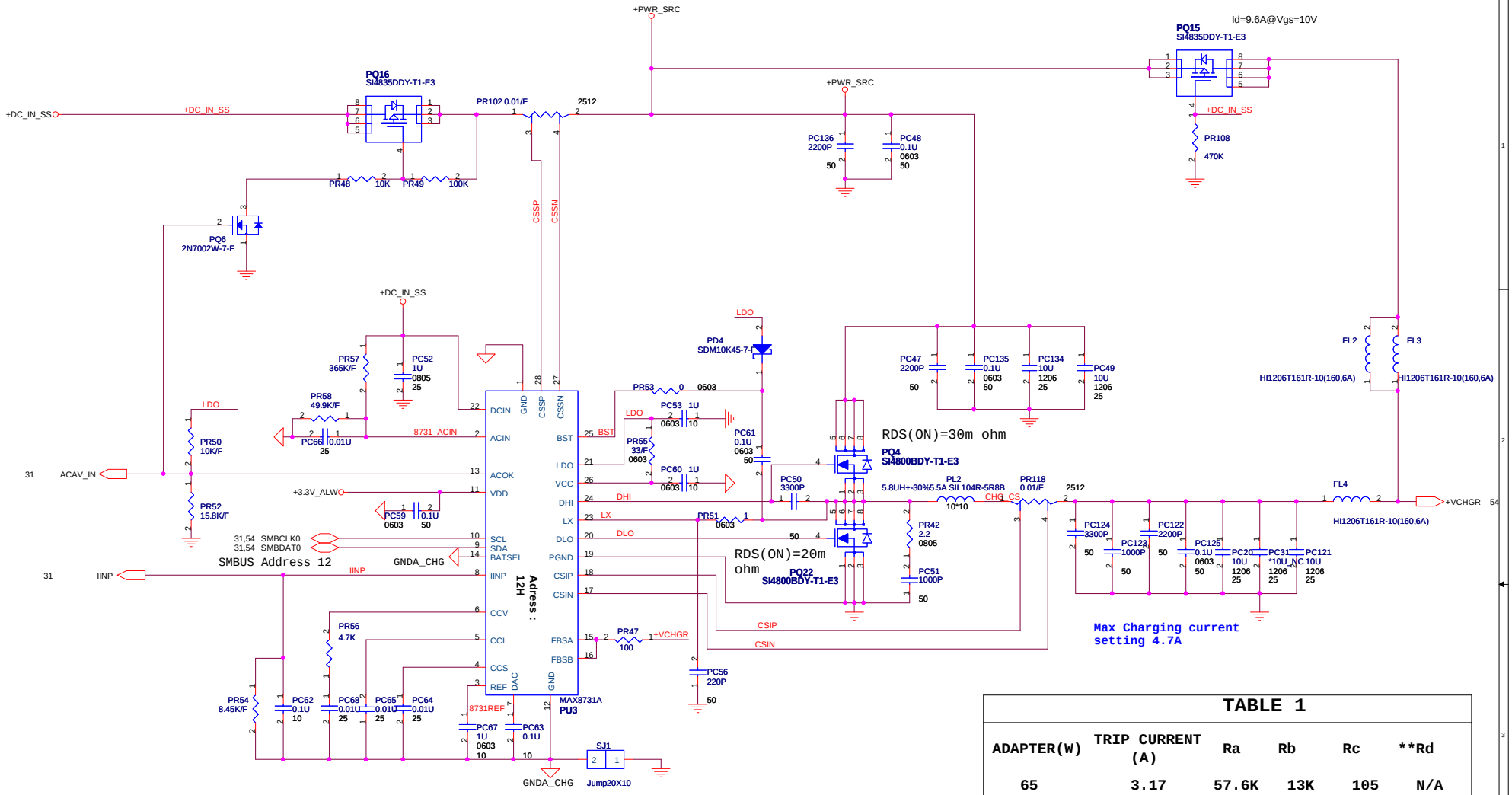


TABLE 1					
ADAPTER(W)	TRIP CURRENT (A)	Ra	Rb	Rc	**Rd
65	3.17	57.6K	13K	105	N/A
90	4.43	51.1K	17.8K	348	33.2K
130	6.43	32.4K	20.5K	100	27.4K
150	7.43	30.9K	24.9K	432	88.7K
200	9.75	19.1K	28K	301	36.5K
230	11.28 (see note3)	32.4K	6.49K	115	N/A

Note 1: PR96 is popluated if ADAPT_TRIP_SEL is used to program for the next lower adapter.
ADAPT_TRIP_SET is floating for the higher adaptor, grounded for the lower adaptor.

Note 2: 24.9K at PR96 allows the 65W adaptor seetting to switch down to 45W.

Note 3: PR35 must be 5mOhms instead of 10mOhms for the 230W adaptor.

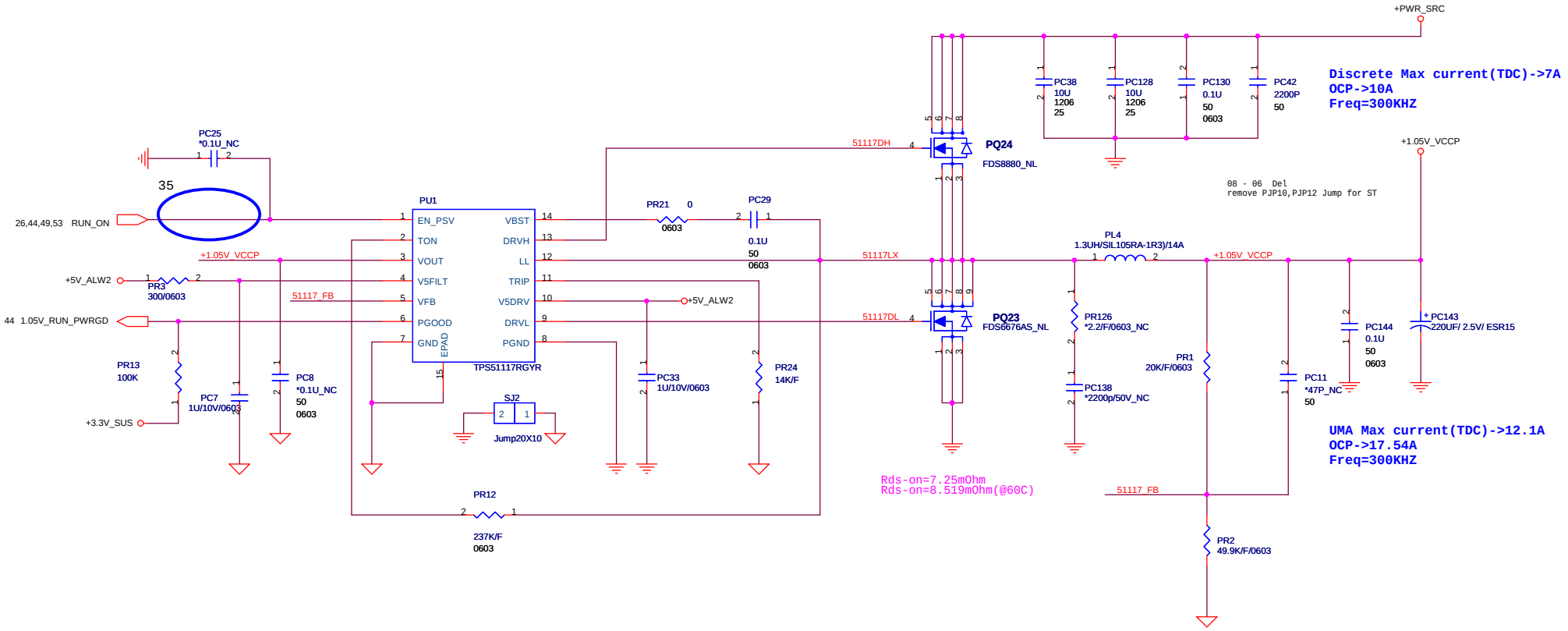
QUANTA COMPUTER

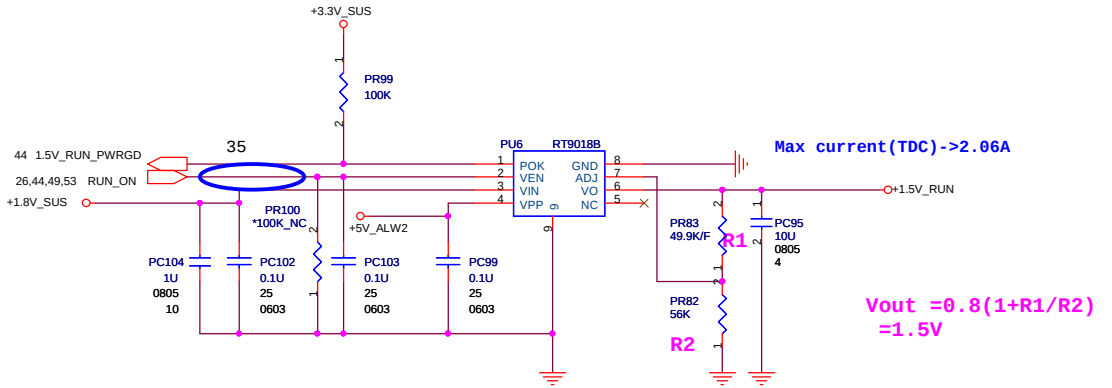
Title	Charger (ISL88731)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 46 of 58	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

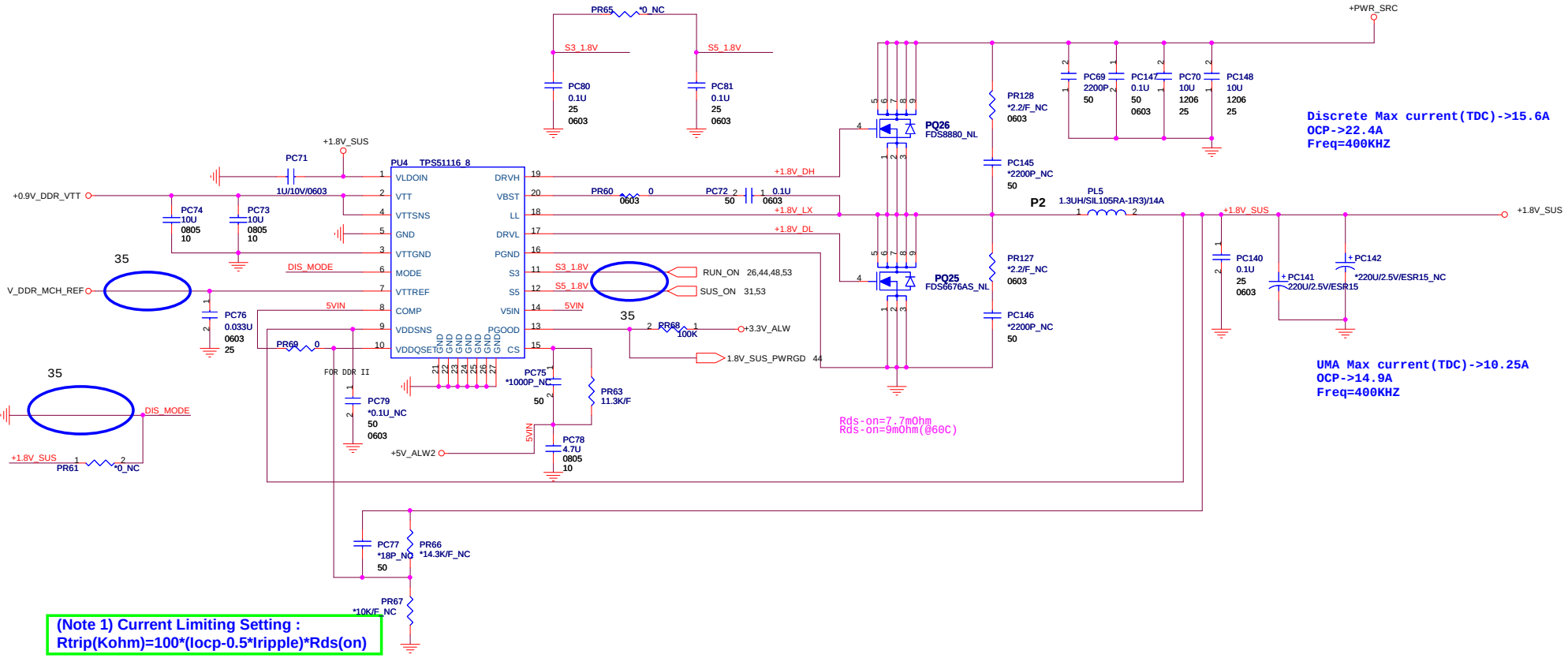
Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 47 of 58	





QUANTA COMPUTER

Title	1.05_VCCP & 1.5V_RUN	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 48 of 58	



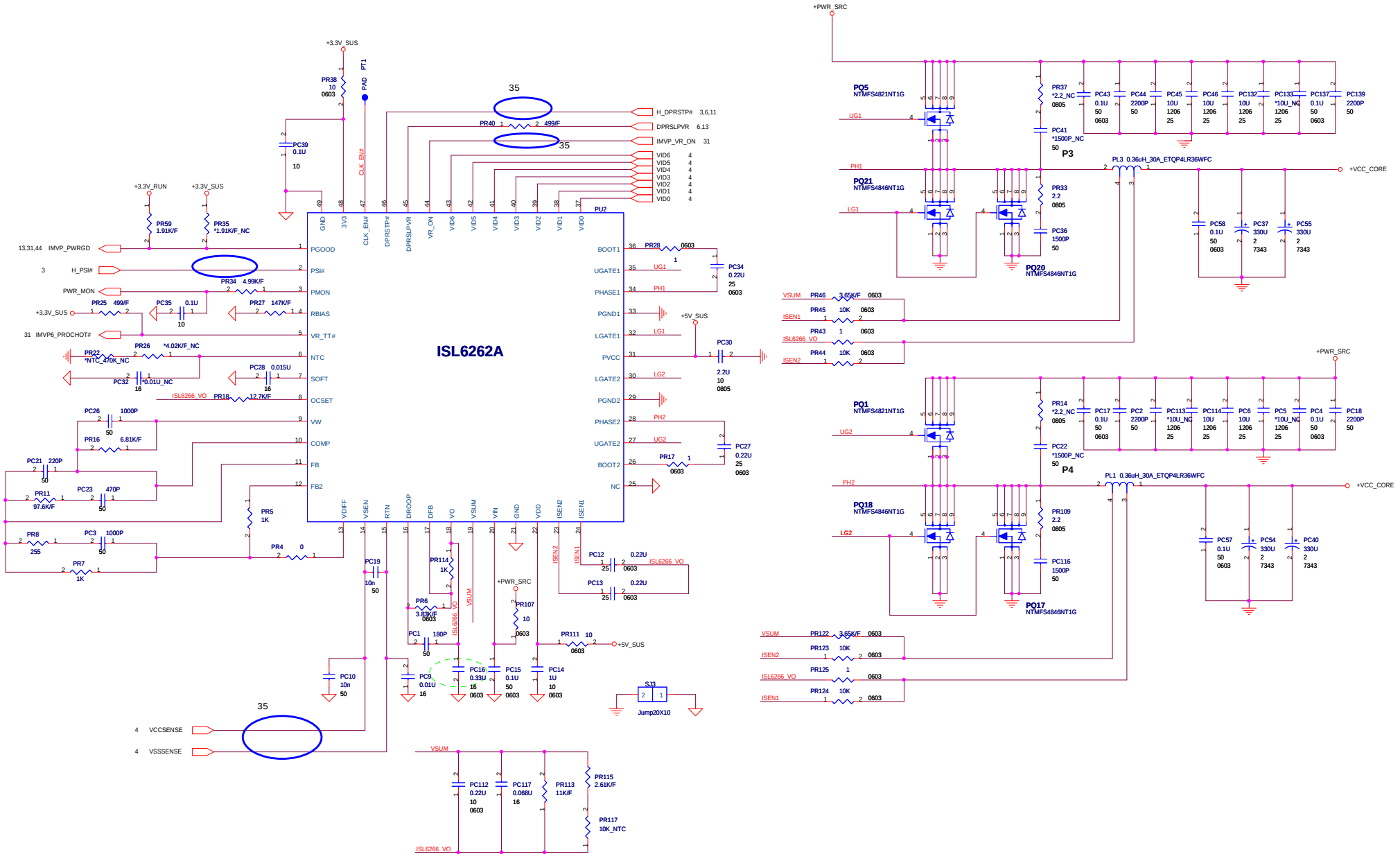
QUANTA COMPUTER

Title	1.8VSUS & 0.9VTT (TPS51116)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 49 of 58	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 50 of 58	



QUANTA COMPUTER		
Title	CPU_Core_2Phase (ISL6266)	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 51 of 58	

DC/DC +3V_ALW/+5V_SUS/+5V_ALW /+15V_ALW

Max current(TDC)->6A
OCP->8.3A
Freq=400KHZ

Max current(TDC)->6.2A
OCP->8.63A
Freq=300KHZ

Place these CAPs close to FETs

Place these CAPs close to FETs

PR133 390K
PR143 0
PD12 *UDZSTE-175.6B_NC
PR132 150K/F 0603
ISL6237_ONLOD

+PWR_SRC
PC159 10U 1206 25
PC105 10U 1206 25
PC101 10U 1206 25
PC160 10U 1206 25
PC158 0.1U 50 0603
PC100 2200P 50

+5V_ALW2
PR131 10/0603
PC89 4.7U 10 1206
PC86 0.1U 50 0603
PC87 0.1U/50V/0603
PR78 *0_NC
PC88 1U 0603 10
PR134 *0_NC
PR135 *0_NC
PC91 0.1U/10V
PR130 *0_NC

PC161 0.1U 50 0603
PC106 2200P 50

+5V_SUS
PC149 220U 7343 6.3
PC150 0.1U 0603 50
PR85 *0_NC
PL6 3.3UH +-30% 8A(SIL1045R-3R3)
PQ30 SI4800BDY-T1-E3
PQ31 NTMS4816NR2G
+5V_DH
+5V_DL
+5V_LX

P6
PU5 MAX17020ETJ+
PAD PAD LDOREFIN LDO VIN NC ONLDO VCC TON REF
PAD PAD PAD PAD BYP OUT1 FB1 ILIM1 PGOOD1 EN1 DH1 LX1 PAD PAD PAD
REFIN2 ILIM2 OUT2 SKIP# PGOOD2 EN2 DH2 LX2
BST1 DL1 VDD NC GND PGND DL2 BST2

PR89 249K/F
POK1
+5V_EN1
PC96 0.1U 50 0603
PR94 0603
PR80 249K/F
PC92
+3.3V_EN2
+3.3V_DH
PC97 0.1U 50 0603
PR97 0603
+3.3V_DL
SECFB
SJ4 Jump20X10
PC98 1U 0603 10

PQ32 SI4800BDY-T1-E3
PQ29 NTMS4816NR2G
+3.3V_LX
PL7 3.3UH +-30% 8A(SIL1045R-3R3)
+3.3V_ALW
PR86 *0_NC
PC152 0.1U 0603 50
PC154 220U 6.3 7343

Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

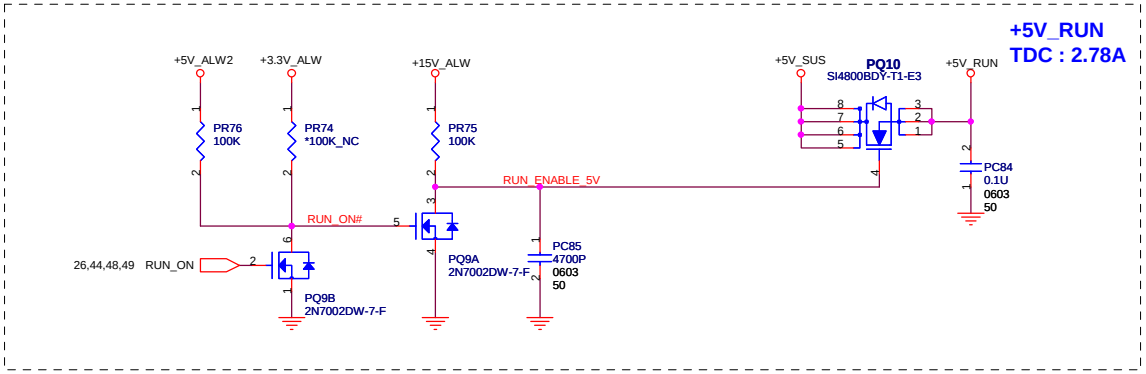
+3.3V_ALW
PR92 100K
PR93 100K
POK2
POK1
3V_ALW_PWRGD 44
5V_ALW_PWRGD 44

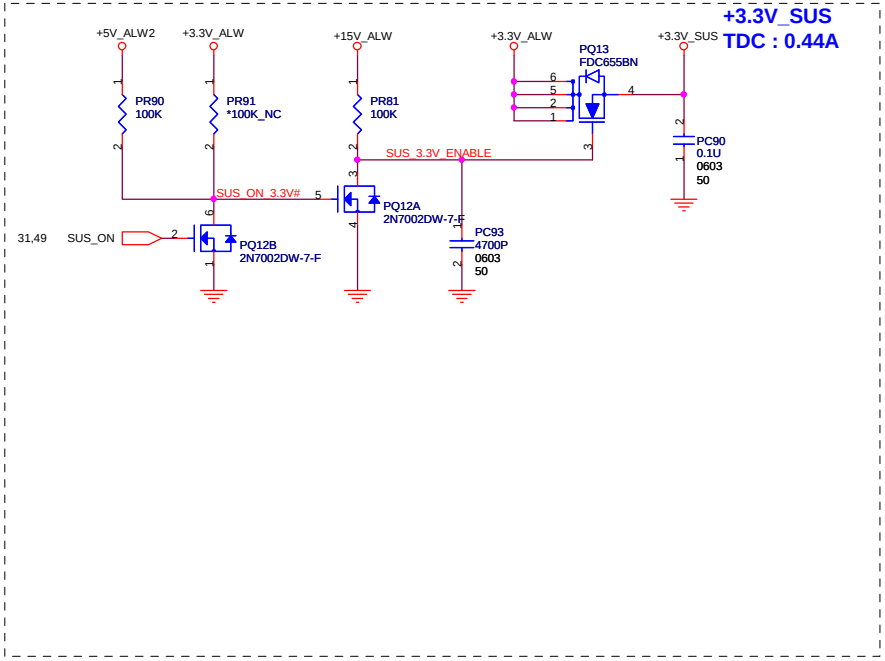
+5V_ALW2
PC151 0.1U 0603 50
PC153 0.1U 0603 50
BAT54S-7-F
PD10
PD11
PC155 0.1U 50 0603
PC157 0.1U 50 0603
+15V_ALW
PQ27 DDTA114YUA-7-F
+15V_ALWP
BAT54S-7-F
PC156 0.1U 50 0603
PQ28 2N7002W-7-F

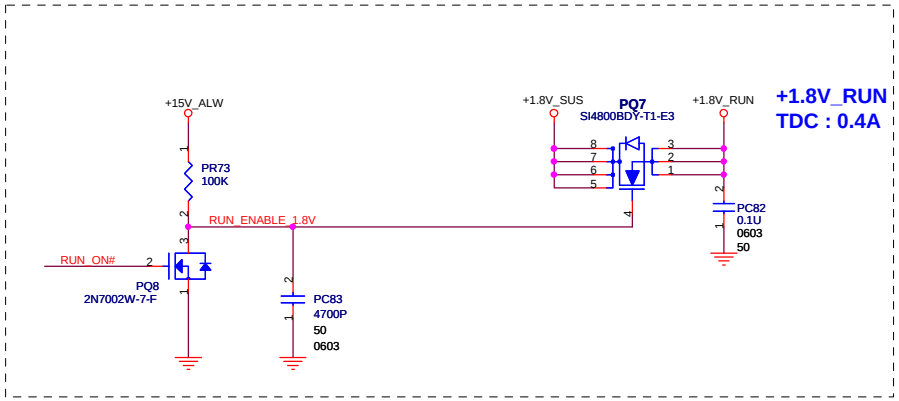
PR141 39K
+3.3V_EN2
H_THERMTRIP# 3,6
THERM_STP# 31,39
PR138 200K
PD9 BAS316
31 5V_SUS_ON
PR137 *0_NC

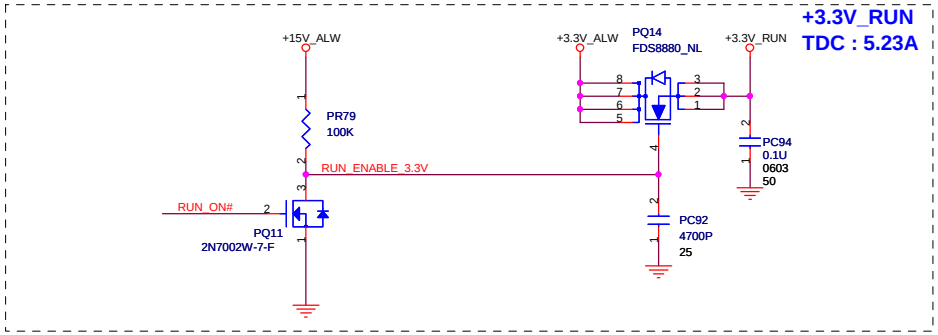
SECFB
P10
+5V_ALW2

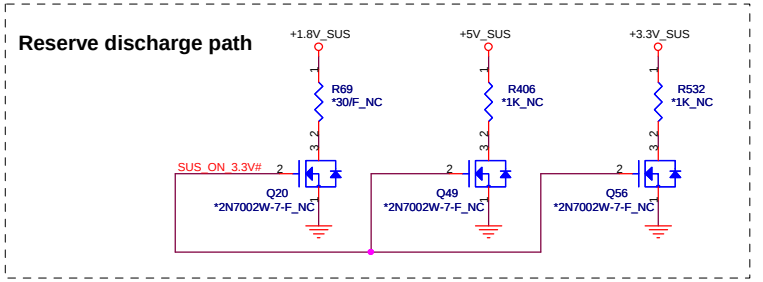
QUANTA COMPUTER			
Title	3VALW,5V,3V, Power On		
Size	Document Number FM8B		Rev 3A
Date:	Thursday, October 09, 2008	Sheet 52 of 58	

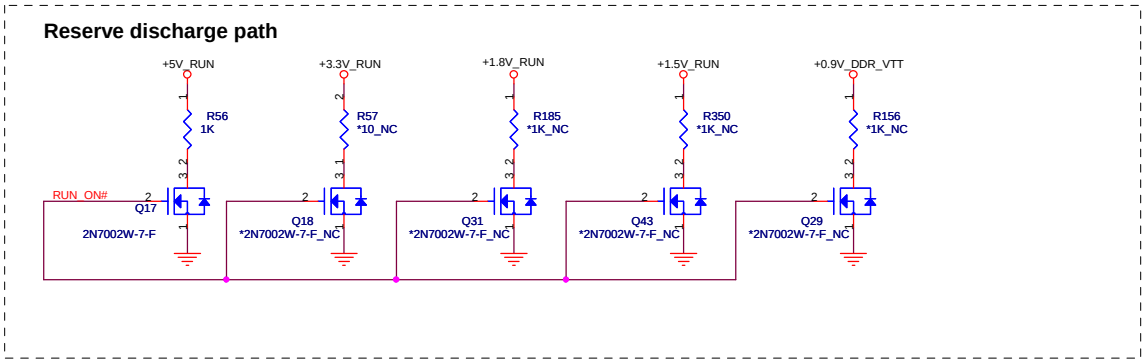






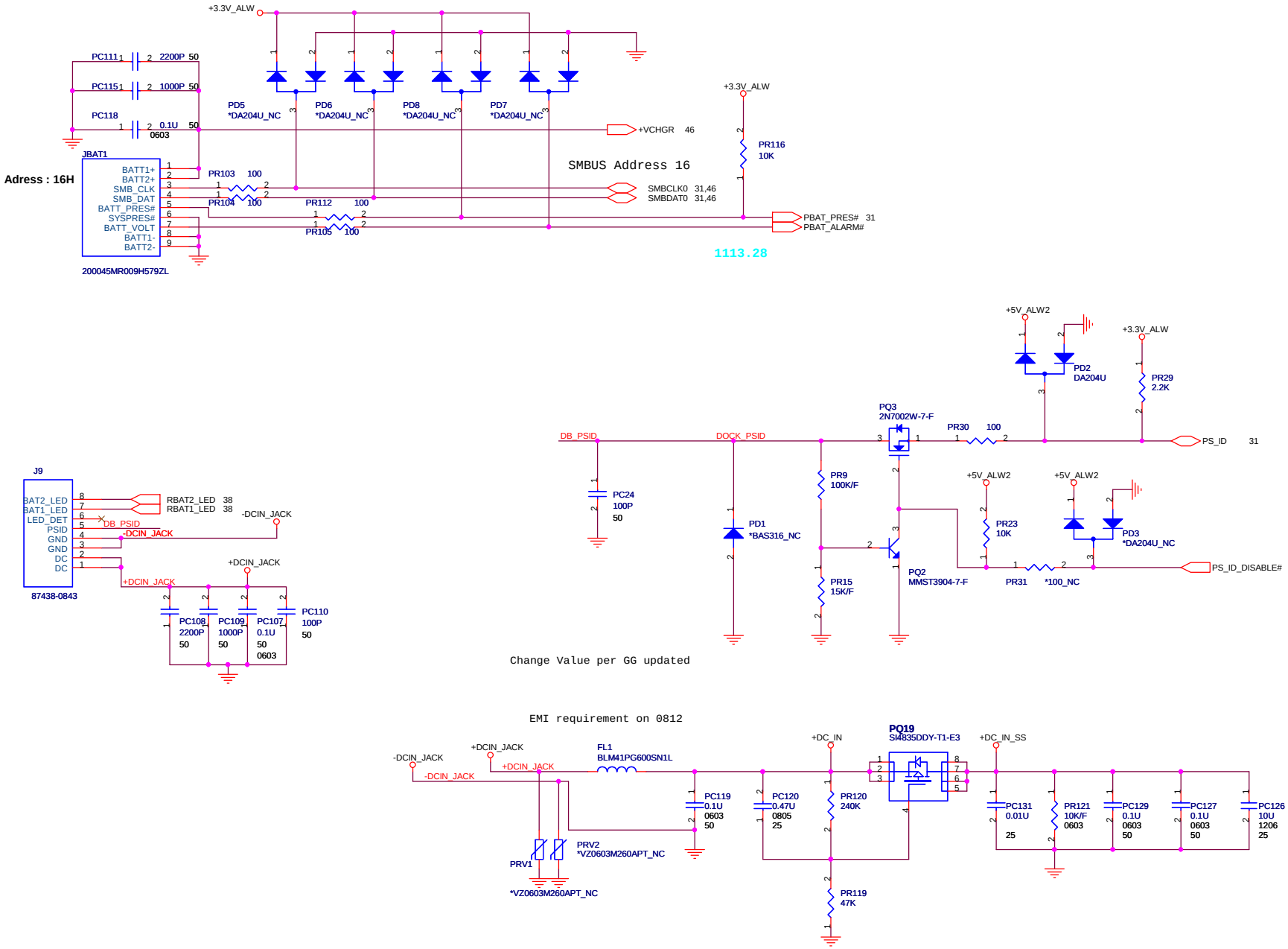






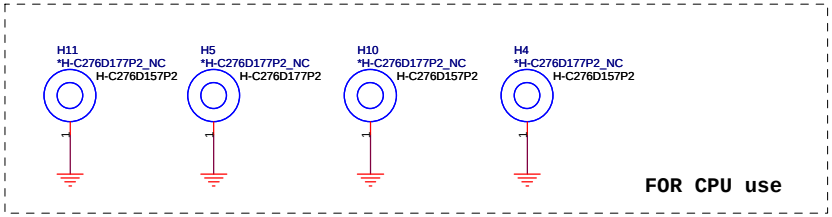
QUANTA COMPUTER

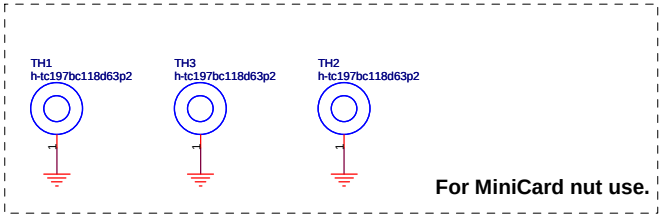
Title	RUN POWER SW	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 53 of 58	

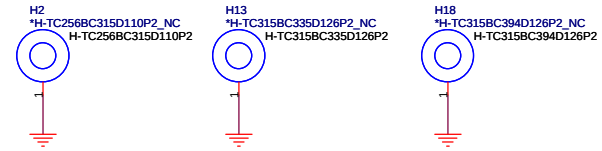


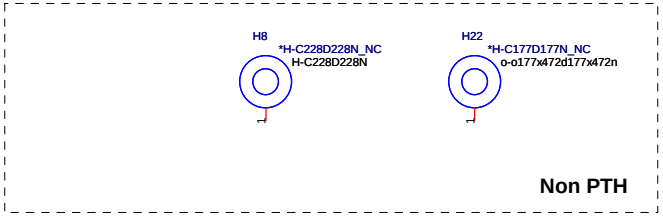
QUANTA COMPUTER

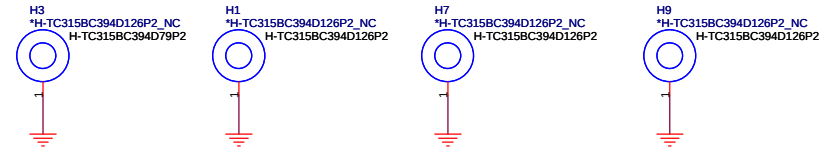
Title	DCIN,BATT CONNECTOR	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 54 of 58	

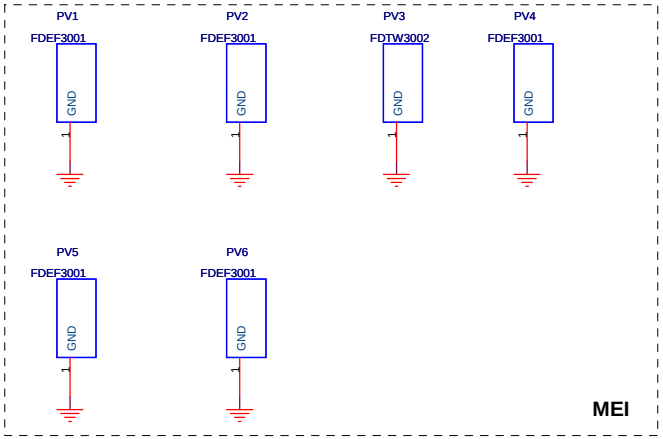


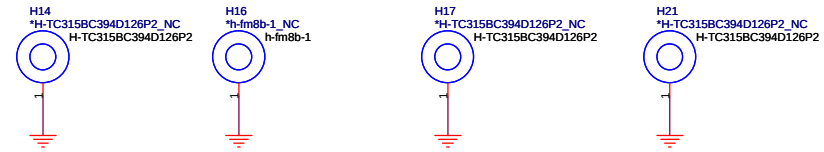


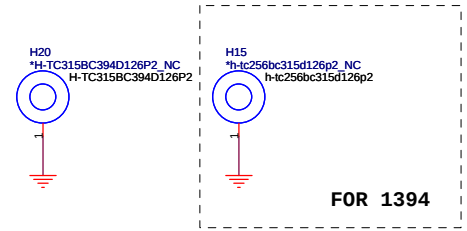


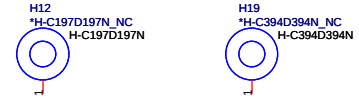












QUANTA COMPUTER

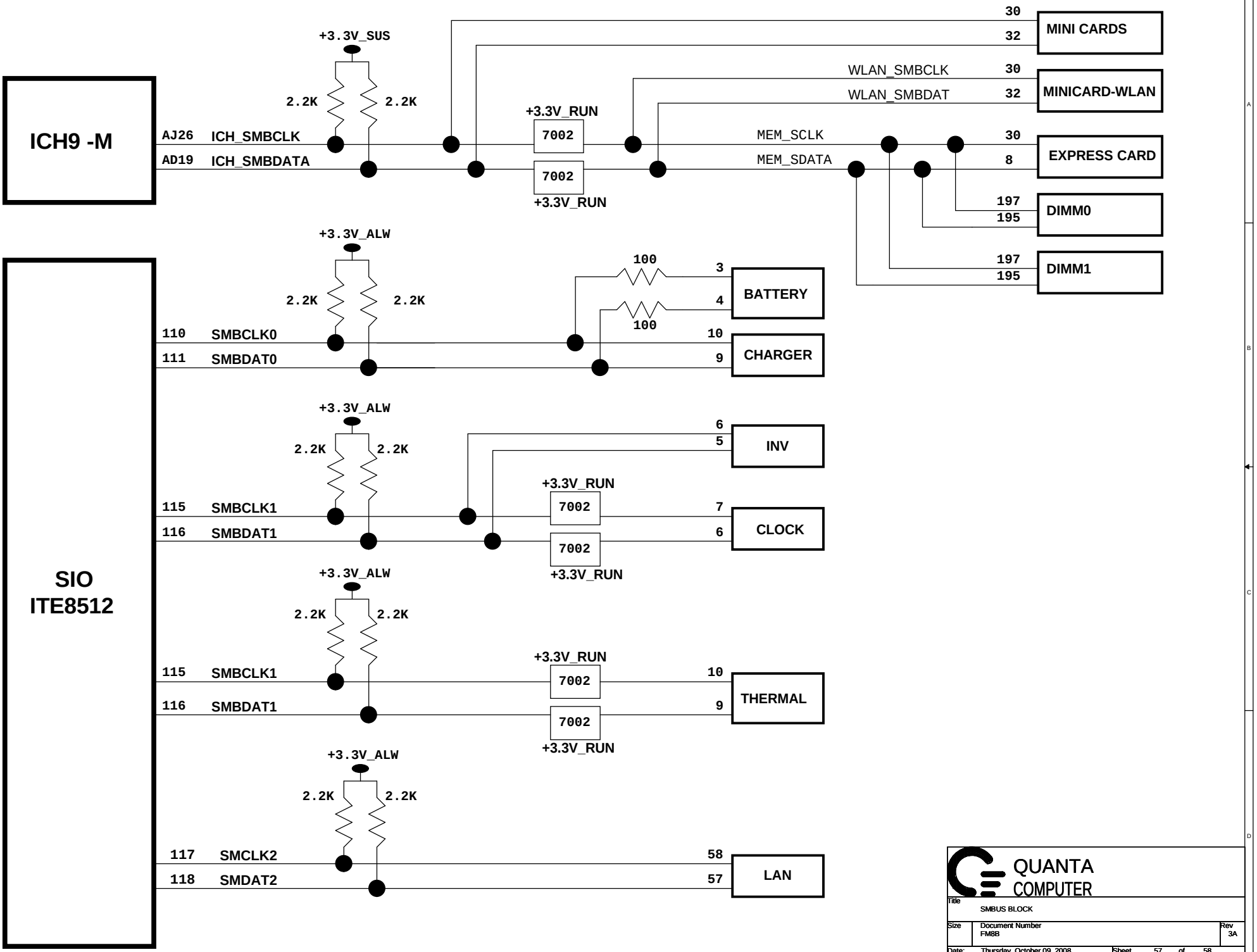
Title	SCREW PAD	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 55 of 58	

Reserved for EMI.

Stitching caps.

QUANTA COMPUTER

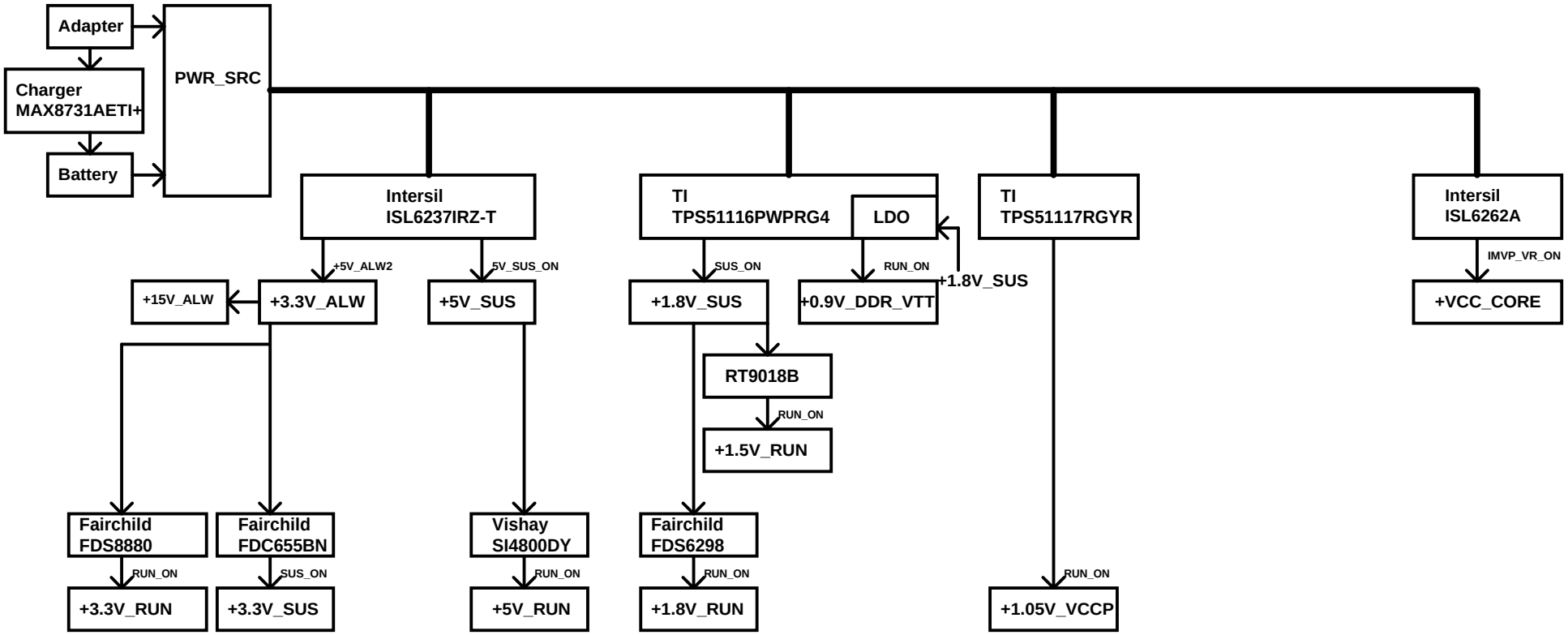
Title	EMI CAP	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 56 of 58	



QUANTA COMPUTER

Title	SMBUS BLOCK	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 57 of 58	

VER : 1A



QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number FM8B	Rev 3A
Date: Thursday, October 09, 2008	Sheet 58 of 58	