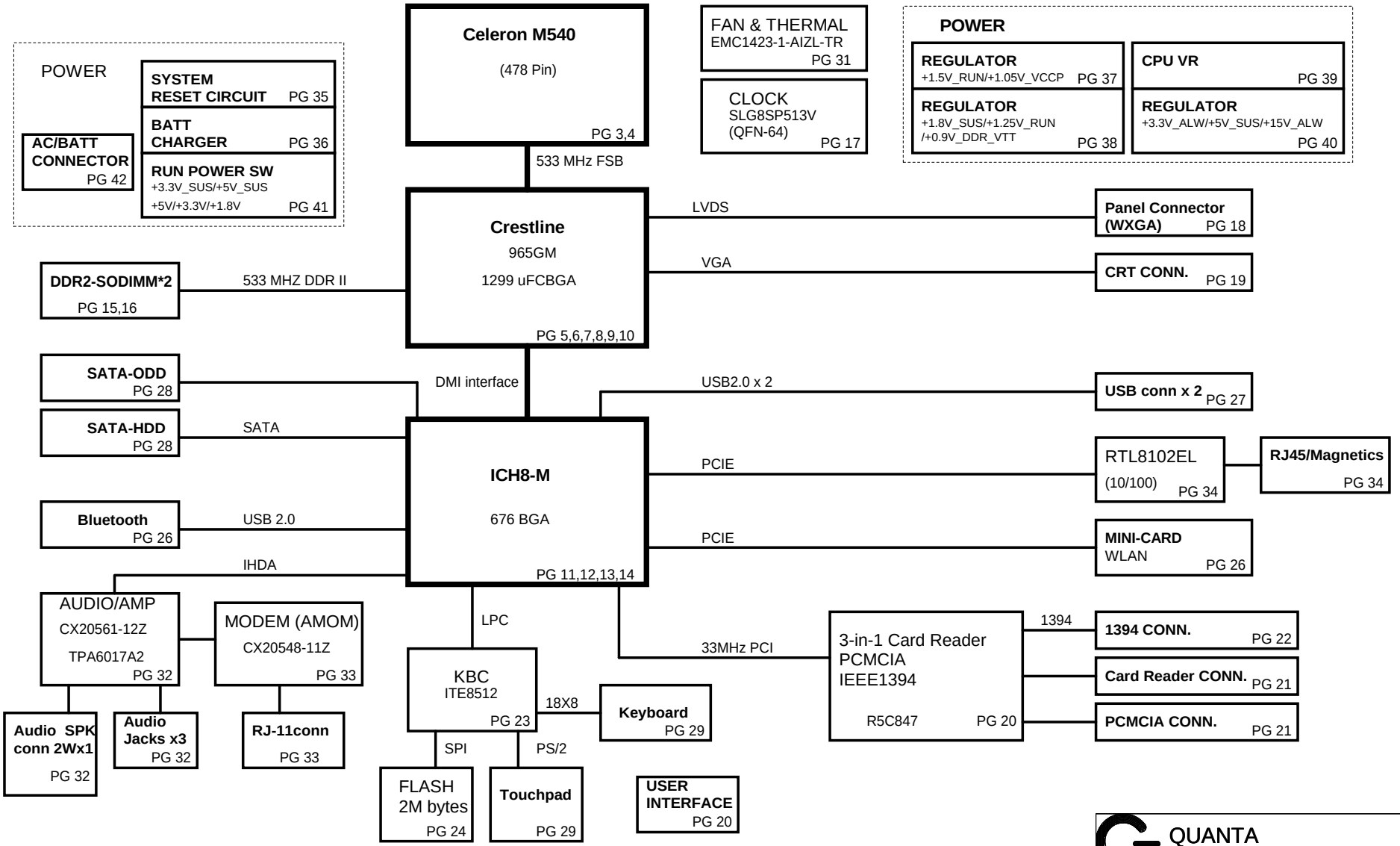
# VM9/VM8 Block Diagram

VER : 1A




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | Schematic Block Diagram | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 1 of 53 | |

## Table of Contents



## Power States

| POWER PLANE | VOLTAGE | PAGE | DESCRIPTION | CONTROL SIGNAL | ACTIVE IN |
|---|---|---|---|---|---|
| +PWR_SRC | 10V~+19V | 4,26,32,34,46,48,49,51,52,56 | 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_ALW | +5V | 35,36,46,48,49,52,53,54,56 | 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 | 14,38,51,53 | 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 | 14,18,27,36,37,38,39,40,41,53 | SLP_S3# CTRLD POWER | RUN_ON | |
| +3.3V_RUN | +3.3V | 14,18,27,36,37,38,39,40,41,53 | SLP_S3# CTRLD POWER | 3.3V_RUN_ON | |
| +1.8V_RUN | +1.8V | | SDVO POWER | RUN_ON | |
| +1.5V_RUN | +1.5V | 4,9,14,30,33,34,48,53,56 | CALISTOGA/ICH8 POWER | 1.5V_RUN_ON | |
| +1.25V_RUN | +1.25V | 6,9,14,49,53 | CALISTOGA/ICH8 POWER | 1.25V_RUN_ON | |
| +1.05V_VCCP | +1.05V | 3,4,5,6,8,9,11,14,48,56 | CPU/CALISTOGA/ICH8 POWER | 1.05V_RUN_ON | |
| +VCC_CORE | +0.7V~+1.77V | 4,51,56 | 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 | | 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 VM9/VM8 | Rev 1A |
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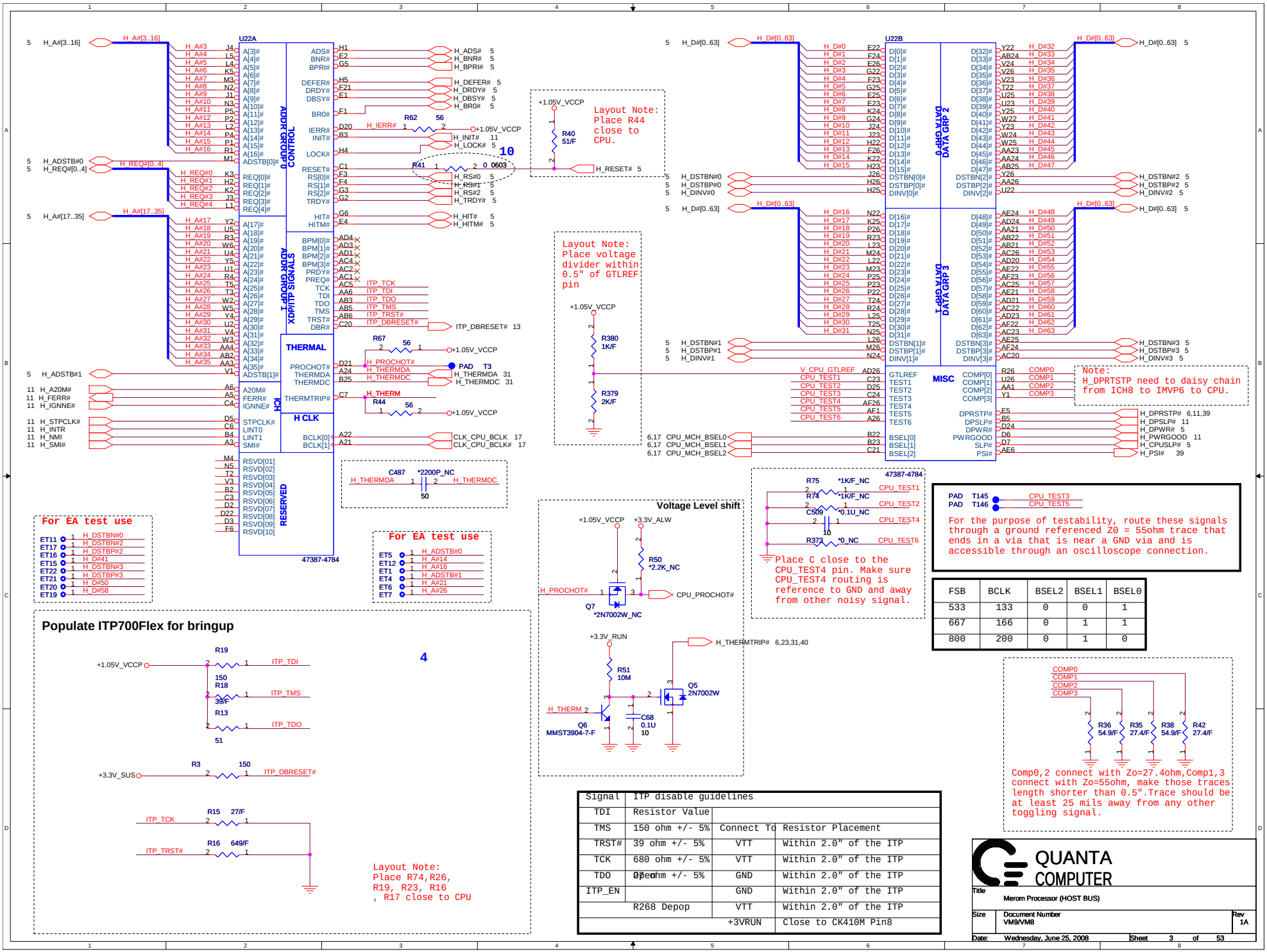
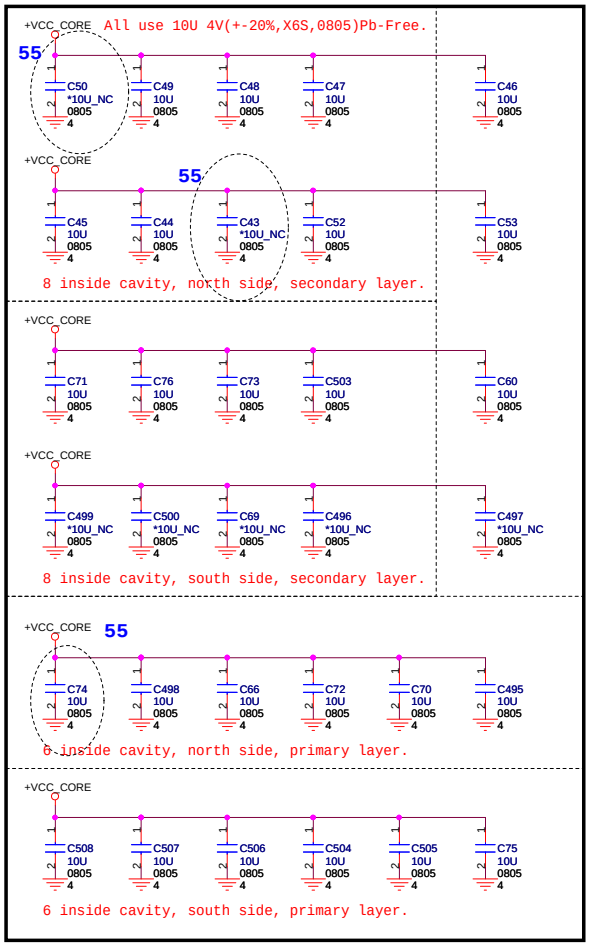


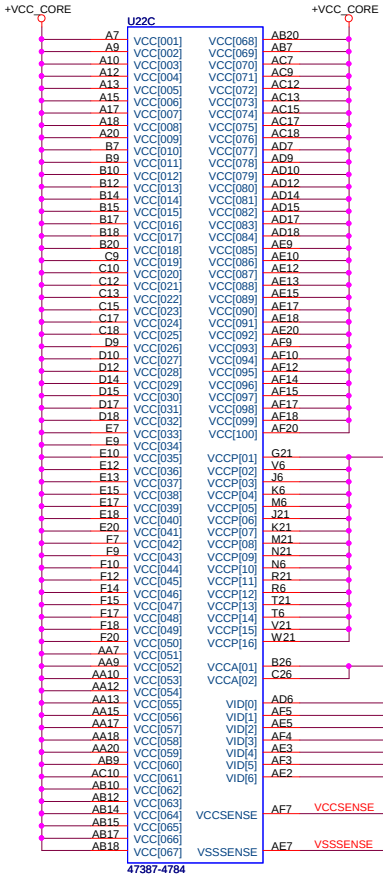

| FSB | BCLK | BSEL2 | BSEL1 | BSEL0 |
|---|---|---|---|---|
| 533 | 133 | 0 | 0 | 1 |
| 667 | 166 | 0 | 1 | 1 |
| 800 | 200 | 0 | 1 | 0 |

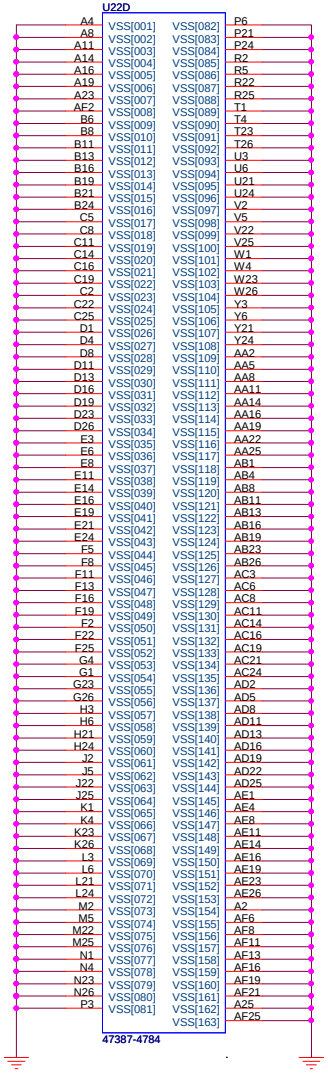
| Signal | ITP disable guidelines | | |
|---|---|---|---|
| TDI | Resistor Value | | |
| TMS | 150 ohm +/- 5% | Connect To | Resistor Placement |
| TRST# | 39 ohm +/- 5% | VTT | Within 2.0" of the ITP |
| TCK | 680 ohm +/- 5% | VTT | Within 2.0" of the ITP |
| TDO | 27 ohm +/- 5% | GND | Within 2.0"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

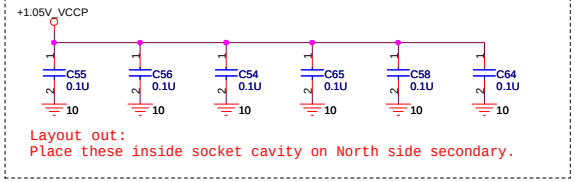
QUANTA COMPUTER

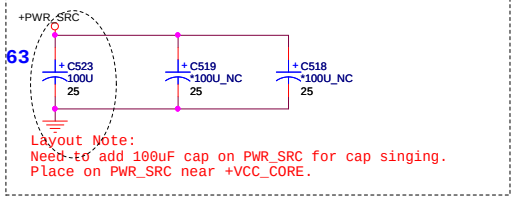
| | | |
|---|---|---|
| Title | Merom Processor (HOST BUS) | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 3 of 53 | |

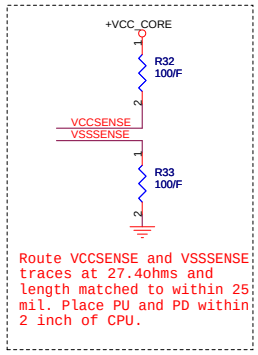



QUANTA COMPUTER

| | | |
|---|---|---|
| Title | Merom Processor (POWER) | |
| Size | Document Number VM9/VM8 | Rev 1A |
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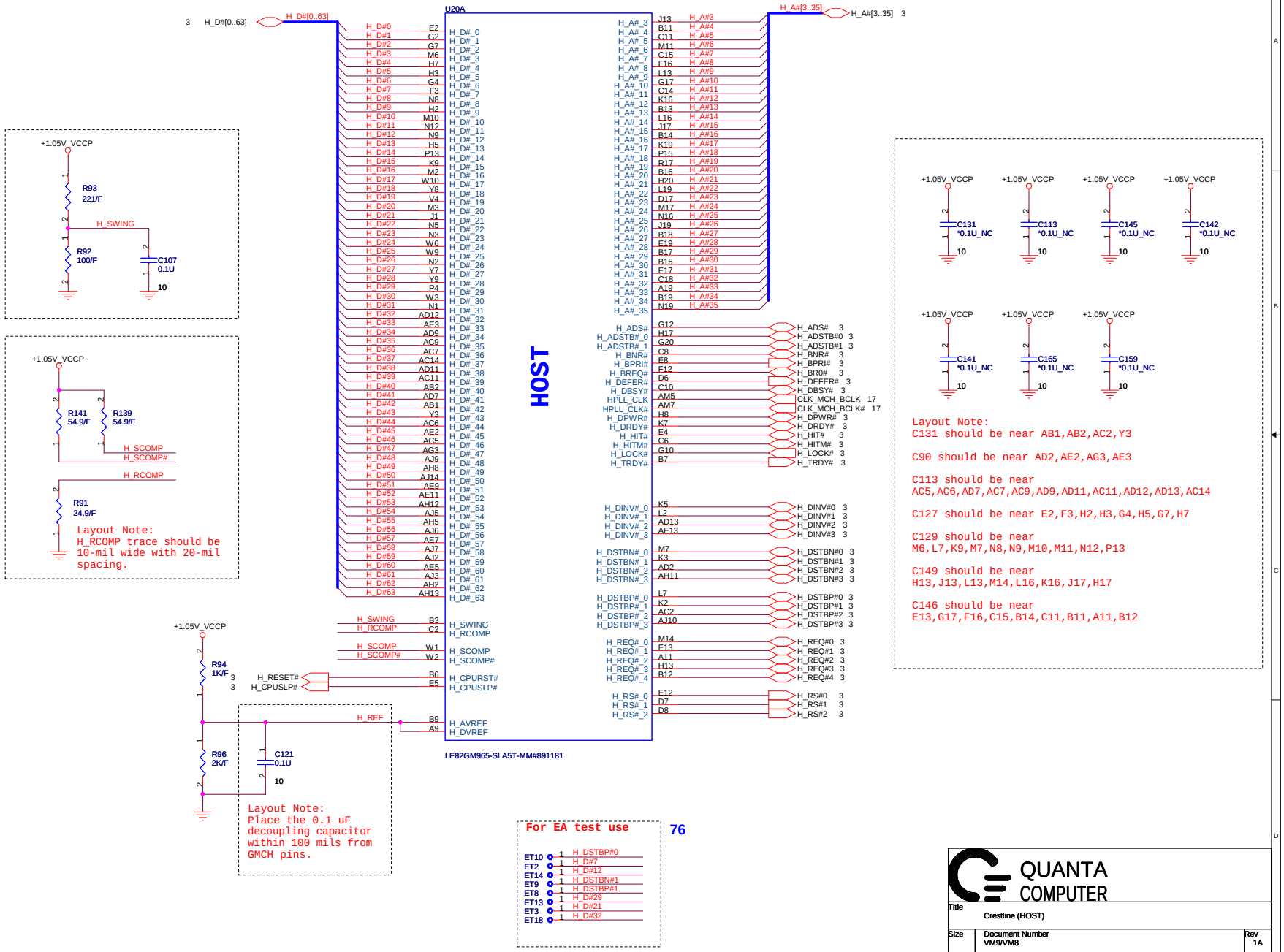
U20A
HOST
LE82GM965-SLA5T-MM#891181
H_D#[0..63]
H_A#[3..35]
+1.05V_VCCP
R93 221/F
R92 100/F
C107 0.1U
H_SWING
R141 54.9/F
R139 54.9/F
H_SCOMP
H_SCOMP#
H_RCOMP
R91 24.9/F
Layout Note:
H_RCOMP trace should be 10-mil wide with 20-mil spacing.
R94 1K/F
H_RESET#
H_CPUSLP#
H_REF
R96 2K/F
C121 0.1U
Layout Note:
Place the 0.1 uF decoupling capacitor within 100 mils from GMCH pins.
C131 *0.1U_NC
C113 *0.1U_NC
C145 *0.1U_NC
C142 *0.1U_NC
C141 *0.1U_NC
C165 *0.1U_NC
C159 *0.1U_NC
Layout Note:
C131 should be near AB1,AB2,AC2,Y3
C90 should be near AD2,AE2,AG3,AE3
C113 should be near AC5,AC6,AD7,AC7,AC9,AD9,AD11,AC11,AD12,AD13,AC14
C127 should be near E2,F3,H2,H3,G4,H5,G7,H7
C129 should be near M6,L7,K9,M7,N8,N9,M10,M11,N12,P13
C149 should be near H13,J13,L13,M14,L16,K16,J17,H17
C146 should be near E13,G17,F16,C15,B14,C11,B11,A11,B12
For EA test use
ET10 H_DSTBP#0
ET2 H_D#7
ET14 H_D#12
ET9 H_DSTBN#1
ET8 H_DSTBP#1
ET13 H_D#29
ET3 H_D#21
ET18 H_D#32
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QUANTA COMPUTER
Title: Crestline (HOST)
Size: Document Number VM9/VM8
Rev: 1A
Date: Wednesday, June 25, 2008
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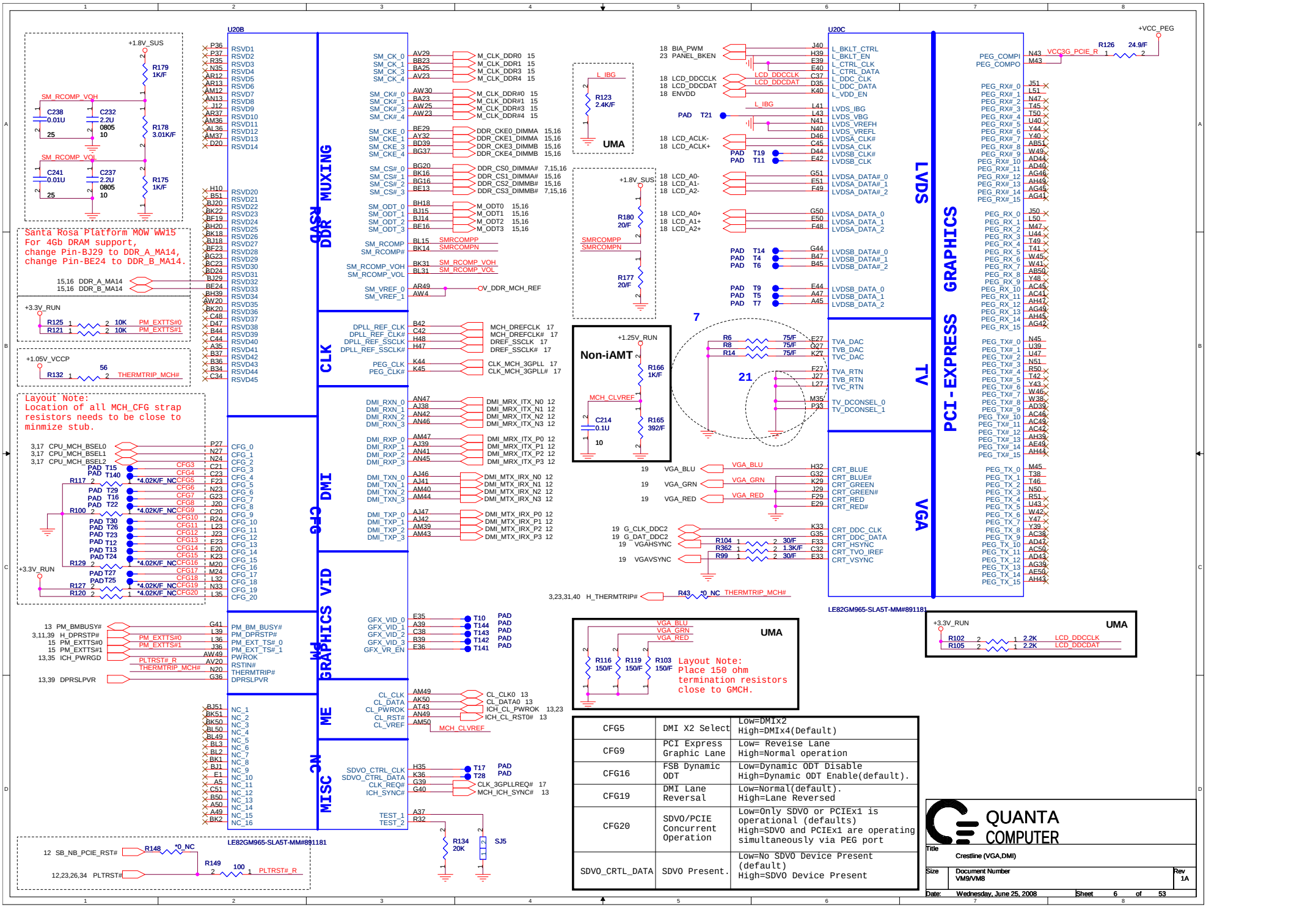



| | | |
|---|---|---|
| CFG5 | DMI X2 Select | Low=DMIx2<br>High=DMIx4(Default) |
| CFG9 | PCI Express Graphic Lane | Low= Reveise Lane<br>High=Normal operation |
| CFG16 | FSB Dynamic ODT | Low=Dynamic ODT Disable<br>High=Dynamic ODT Enable(default). |
| CFG19 | DMI Lane Reversal | Low=Normal(default).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

15 DDR_A_D[0..63]

U20D

DDR SYSTEM MEMORY A

| | | | | | |
|---|---|---|---|---|---|
| DDR_A_D0 | AR43 | SA_DQ_0 | SA_BS_0 | BB19 | DDR_A_BS0 |
| DDR_A_D1 | AW44 | SA_DQ_1 | SA_BS_1 | BK19 | DDR_A_BS1 |
| DDR_A_D2 | BA45 | SA_DQ_2 | SA_BS_2 | BF29 | DDR_A_BS2 |
| DDR_A_D3 | AY46 | SA_DQ_3 | | | |
| DDR_A_D4 | AR41 | SA_DQ_4 | SA_CAS# | BL17 | DDR_A_CAS# |
| DDR_A_D5 | AR45 | SA_DQ_5 | | | |
| DDR_A_D6 | AT42 | SA_DQ_6 | SA_DM_0 | AT45 | DDR_A_DM0 |
| DDR_A_D7 | AW47 | SA_DQ_7 | SA_DM_1 | BD44 | DDR_A_DM1 |
| DDR_A_D8 | BB45 | SA_DQ_8 | SA_DM_2 | BD42 | DDR_A_DM2 |
| DDR_A_D9 | BF48 | SA_DQ_9 | SA_DM_3 | AW38 | DDR_A_DM3 |
| DDR_A_D10 | BG47 | SA_DQ_10 | SA_DM_4 | AW13 | DDR_A_DM4 |
| DDR_A_D11 | BJ45 | SA_DQ_11 | SA_DM_5 | BG8 | DDR_A_DM5 |
| DDR_A_D12 | BB47 | SA_DQ_12 | SA_DM_6 | AY5 | DDR_A_DM6 |
| DDR_A_D13 | BG50 | SA_DQ_13 | SA_DM_7 | AN6 | DDR_A_DM7 |
| DDR_A_D14 | BH49 | SA_DQ_14 | | | |
| DDR_A_D15 | BE45 | SA_DQ_15 | SA_DQS_0 | AT46 | DDR_A_DQS0 |
| DDR_A_D16 | AW43 | SA_DQ_16 | SA_DQS_1 | BE48 | DDR_A_DQS1 |
| DDR_A_D17 | BE44 | SA_DQ_17 | SA_DQS_2 | BB43 | DDR_A_DQS2 |
| DDR_A_D18 | BG42 | SA_DQ_18 | SA_DQS_3 | BC37 | DDR_A_DQS3 |
| DDR_A_D19 | BE40 | SA_DQ_19 | SA_DQS_4 | BB16 | DDR_A_DQS4 |
| DDR_A_D20 | BF44 | SA_DQ_20 | SA_DQS_5 | BH6 | DDR_A_DQS5 |
| DDR_A_D21 | BH45 | SA_DQ_21 | SA_DQS_6 | BB2 | DDR_A_DQS6 |
| DDR_A_D22 | BG40 | SA_DQ_22 | SA_DQS_7 | AP3 | DDR_A_DQS7 |
| DDR_A_D23 | BF40 | SA_DQ_23 | SA_DQS#_0 | AT47 | DDR_A_DQS#0 |
| DDR_A_D24 | AR40 | SA_DQ_24 | SA_DQS#_1 | BD47 | DDR_A_DQS#1 |
| DDR_A_D25 | AW40 | SA_DQ_25 | SA_DQS#_2 | BC41 | DDR_A_DQS#2 |
| DDR_A_D26 | AT39 | SA_DQ_26 | SA_DQS#_3 | BA37 | DDR_A_DQS#3 |
| DDR_A_D27 | AW36 | SA_DQ_27 | SA_DQS#_4 | BA16 | DDR_A_DQS#4 |
| DDR_A_D28 | AW41 | SA_DQ_28 | SA_DQS#_5 | BH7 | DDR_A_DQS#5 |
| DDR_A_D29 | AY41 | SA_DQ_29 | SA_DQS#_6 | BC1 | DDR_A_DQS#6 |
| DDR_A_D30 | AV38 | SA_DQ_30 | SA_DQS#_7 | AP2 | DDR_A_DQS#7 |
| DDR_A_D31 | AT38 | SA_DQ_31 | | | |
| DDR_A_D32 | AV13 | SA_DQ_32 | SA_MA_0 | BJ19 | DDR_A_MA0 |
| DDR_A_D33 | AT13 | SA_DQ_33 | SA_MA_1 | BD20 | DDR_A_MA1 |
| DDR_A_D34 | AW11 | SA_DQ_34 | SA_MA_2 | BK27 | DDR_A_MA2 |
| DDR_A_D35 | AV11 | SA_DQ_35 | SA_MA_3 | BH28 | DDR_A_MA3 |
| DDR_A_D36 | AU15 | SA_DQ_36 | SA_MA_4 | BL24 | DDR_A_MA4 |
| DDR_A_D37 | AT11 | SA_DQ_37 | SA_MA_5 | BK28 | DDR_A_MA5 |
| DDR_A_D38 | BA13 | SA_DQ_38 | SA_MA_6 | BJ27 | DDR_A_MA6 |
| DDR_A_D39 | BA11 | SA_DQ_39 | SA_MA_7 | BJ25 | DDR_A_MA7 |
| DDR_A_D40 | BE10 | SA_DQ_40 | SA_MA_8 | BL28 | DDR_A_MA8 |
| DDR_A_D41 | BD10 | SA_DQ_41 | SA_MA_9 | BA28 | DDR_A_MA9 |
| DDR_A_D42 | BD8 | SA_DQ_42 | SA_MA_10 | BC19 | DDR_A_MA10 |
| DDR_A_D43 | AY9 | SA_DQ_43 | SA_MA_11 | BE28 | DDR_A_MA11 |
| DDR_A_D44 | BG10 | SA_DQ_44 | SA_MA_12 | BG30 | DDR_A_MA12 |
| DDR_A_D45 | AW9 | SA_DQ_45 | SA_MA_13 | BJ16 | DDR_A_MA13 |
| DDR_A_D46 | BD7 | SA_DQ_46 | | | |
| DDR_A_D47 | BB9 | SA_DQ_47 | | | |
| DDR_A_D48 | BB5 | SA_DQ_48 | SA_RAS# | BE18 | DDR_A_RAS# |
| DDR_A_D49 | AY7 | SA_DQ_49 | SA_RCVEN# | AY20 | T38 PAD |
| DDR_A_D50 | AT5 | SA_DQ_50 | | | |
| DDR_A_D51 | AT7 | SA_DQ_51 | SA_WE# | BA19 | DDR_A_WE# |
| DDR_A_D52 | AY6 | SA_DQ_52 | | | |
| DDR_A_D53 | BB7 | SA_DQ_53 | | | |
| DDR_A_D54 | AR5 | SA_DQ_54 | | | |
| DDR_A_D55 | AR8 | SA_DQ_55 | | | |
| DDR_A_D56 | AR9 | SA_DQ_56 | | | |
| DDR_A_D57 | AN3 | SA_DQ_57 | | | |
| DDR_A_D58 | AM8 | SA_DQ_58 | | | |
| DDR_A_D59 | AN10 | SA_DQ_59 | | | |
| DDR_A_D60 | AT9 | SA_DQ_60 | | | |
| DDR_A_D61 | AN9 | SA_DQ_61 | | | |
| DDR_A_D62 | AM9 | SA_DQ_62 | | | |
| DDR_A_D63 | AN11 | SA_DQ_63 | | | |

LE82GM965-SLA5T-MM#891181

DDR_A_BS0 15,16
DDR_A_BS1 15,16
DDR_A_BS2 15,16
DDR_A_CAS# 15,16
DDR_A_DM[0..7] 15
DDR_A_DQS[0..7] 15
DDR_A_DQS#[0..7] 15
DDR_A_MA[0..13] 15,16
DDR_A_RAS# 15,16
DDR_A_WE# 15,16

76 For EA test use

| | | | |
|---|---|---|---|
| ET42 | 1 | DDR_A_CAS# | |
| ET37 | 1 | DDR_A_RAS# | |
| ET31 | 1 | DDR_A_WE# | |
| ET39 | 1 | DDR_CS0_DIMMA# | DDR_CS0_DIMMA# 6,15,16 |
| ET32 | 1 | DDR_A_MA9 | |
| ET44 | | DDR_A_MA13 | |
| ET28 | 1 | DDR_A_DQS0 | |
| ET27 | 1 | DDR_A_DQS#0 | |
| ET23 | 1 | DDR_A_D63 | |
| ET26 | 1 | DDR_A_D55 | |
| ET40 | 1 | DDR_A_D22 | |

15 DDR_B_D[0..63]

U20E

DDR SYSTEM MEMORY B

| | | | | | |
|---|---|---|---|---|---|
| DDR_B_D0 | AP49 | SB_DQ_0 | SB_BS_0 | AY17 | DDR_B_BS0 |
| DDR_B_D1 | AR51 | SB_DQ_1 | SB_BS_1 | BG18 | DDR_B_BS1 |
| DDR_B_D2 | AW50 | SB_DQ_2 | SB_BS_2 | BG36 | DDR_B_BS2 |
| DDR_B_D3 | AW51 | SB_DQ_3 | | | |
| DDR_B_D4 | AN51 | SB_DQ_4 | SB_CAS# | BE17 | DDR_B_CAS# |
| DDR_B_D5 | AN50 | SB_DQ_5 | | | |
| DDR_B_D6 | AV50 | SB_DQ_6 | SB_DM_0 | AR50 | DDR_B_DM0 |
| DDR_B_D7 | AY49 | SB_DQ_7 | SB_DM_1 | BD49 | DDR_B_DM1 |
| DDR_B_D8 | BA50 | SB_DQ_8 | SB_DM_2 | BK45 | DDR_B_DM2 |
| DDR_B_D9 | BB50 | SB_DQ_9 | SB_DM_3 | BL39 | DDR_B_DM3 |
| DDR_B_D10 | BA49 | SB_DQ_10 | SB_DM_4 | BH12 | DDR_B_DM4 |
| DDR_B_D11 | BE50 | SB_DQ_11 | SB_DM_5 | BJ7 | DDR_B_DM5 |
| DDR_B_D12 | BA51 | SB_DQ_12 | SB_DM_6 | BF3 | DDR_B_DM6 |
| DDR_B_D13 | AY49 | SB_DQ_13 | SB_DM_7 | AW2 | DDR_B_DM7 |
| DDR_B_D14 | BF50 | SB_DQ_14 | | | |
| DDR_B_D15 | BF49 | SB_DQ_15 | SB_DQS_0 | AT50 | DDR_B_DQS0 |
| DDR_B_D16 | BJ50 | SB_DQ_16 | SB_DQS_1 | BD50 | DDR_B_DQS1 |
| DDR_B_D17 | BJ44 | SB_DQ_17 | SB_DQS_2 | BK46 | DDR_B_DQS2 |
| DDR_B_D18 | BJ43 | SB_DQ_18 | SB_DQS_3 | BK39 | DDR_B_DQS3 |
| DDR_B_D19 | BL43 | SB_DQ_19 | SB_DQS_4 | BJ12 | DDR_B_DQS4 |
| DDR_B_D20 | BK47 | SB_DQ_20 | SB_DQS_5 | BL7 | DDR_B_DQS5 |
| DDR_B_D21 | BK49 | SB_DQ_21 | SB_DQS_6 | BE2 | DDR_B_DQS6 |
| DDR_B_D22 | BK43 | SB_DQ_22 | SB_DQS_7 | AV2 | DDR_B_DQS7 |
| DDR_B_D23 | BK42 | SB_DQ_23 | SB_DQS#_0 | AU50 | DDR_B_DQS#0 |
| DDR_B_D24 | BJ41 | SB_DQ_24 | SB_DQS#_1 | BC50 | DDR_B_DQS#1 |
| DDR_B_D25 | BL41 | SB_DQ_25 | SB_DQS#_2 | BL45 | DDR_B_DQS#2 |
| DDR_B_D26 | BJ37 | SB_DQ_26 | SB_DQS#_3 | BK38 | DDR_B_DQS#3 |
| DDR_B_D27 | BJ36 | SB_DQ_27 | SB_DQS#_4 | BK12 | DDR_B_DQS#4 |
| DDR_B_D28 | BK41 | SB_DQ_28 | SB_DQS#_5 | BK7 | DDR_B_DQS#5 |
| DDR_B_D29 | BJ40 | SB_DQ_29 | SB_DQS#_6 | BF2 | DDR_B_DQS#6 |
| DDR_B_D30 | BL35 | SB_DQ_30 | SB_DQS#_7 | AV3 | DDR_B_DQS#7 |
| DDR_B_D31 | BK37 | SB_DQ_31 | | | |
| DDR_B_D32 | BK13 | SB_DQ_32 | SB_MA_0 | BC18 | DDR_B_MA0 |
| DDR_B_D33 | BE11 | SB_DQ_33 | SB_MA_1 | BG28 | DDR_B_MA1 |
| DDR_B_D34 | BK11 | SB_DQ_34 | SB_MA_2 | BG25 | DDR_B_MA2 |
| DDR_B_D35 | BC11 | SB_DQ_35 | SB_MA_3 | AW17 | DDR_B_MA3 |
| DDR_B_D36 | BC13 | SB_DQ_36 | SB_MA_4 | BF25 | DDR_B_MA4 |
| DDR_B_D37 | BE12 | SB_DQ_37 | SB_MA_5 | BE25 | DDR_B_MA5 |
| DDR_B_D38 | BC12 | SB_DQ_38 | SB_MA_6 | BA29 | DDR_B_MA6 |
| DDR_B_D39 | BG12 | SB_DQ_39 | SB_MA_7 | BC28 | DDR_B_MA7 |
| DDR_B_D40 | BJ10 | SB_DQ_40 | SB_MA_8 | AY28 | DDR_B_MA8 |
| DDR_B_D41 | BL9 | SB_DQ_41 | SB_MA_9 | BD37 | DDR_B_MA9 |
| DDR_B_D42 | BK5 | SB_DQ_42 | SB_MA_10 | BG17 | DDR_B_MA10 |
| DDR_B_D43 | BL5 | SB_DQ_43 | SB_MA_11 | BE37 | DDR_B_MA11 |
| DDR_B_D44 | BK9 | SB_DQ_44 | SB_MA_12 | BA39 | DDR_B_MA12 |
| DDR_B_D45 | BK10 | SB_DQ_45 | SB_MA_13 | BG13 | DDR_B_MA13 |
| DDR_B_D46 | BJ8 | SB_DQ_46 | | | |
| DDR_B_D47 | BJ6 | SB_DQ_47 | | | |
| DDR_B_D48 | BF4 | SB_DQ_48 | SB_RAS# | AV16 | DDR_B_RAS# |
| DDR_B_D49 | BH5 | SB_DQ_49 | SB_RCVEN# | AY18 | T39 PAD |
| DDR_B_D50 | BG1 | SB_DQ_50 | | | |
| DDR_B_D51 | BC2 | SB_DQ_51 | SB_WE# | BC17 | DDR_B_WE# |
| DDR_B_D52 | BK3 | SB_DQ_52 | | | |
| DDR_B_D53 | BE4 | SB_DQ_53 | | | |
| DDR_B_D54 | BD3 | SB_DQ_54 | | | |
| DDR_B_D55 | BJ2 | SB_DQ_55 | | | |
| DDR_B_D56 | BA3 | SB_DQ_56 | | | |
| DDR_B_D57 | BB3 | SB_DQ_57 | | | |
| DDR_B_D58 | AR1 | SB_DQ_58 | | | |
| DDR_B_D59 | AT3 | SB_DQ_59 | | | |
| DDR_B_D60 | AY2 | SB_DQ_60 | | | |
| DDR_B_D61 | AY3 | SB_DQ_61 | | | |
| DDR_B_D62 | AU2 | SB_DQ_62 | | | |
| DDR_B_D63 | AT2 | SB_DQ_63 | | | |

LE82GM965-SLA5T-MM#891181

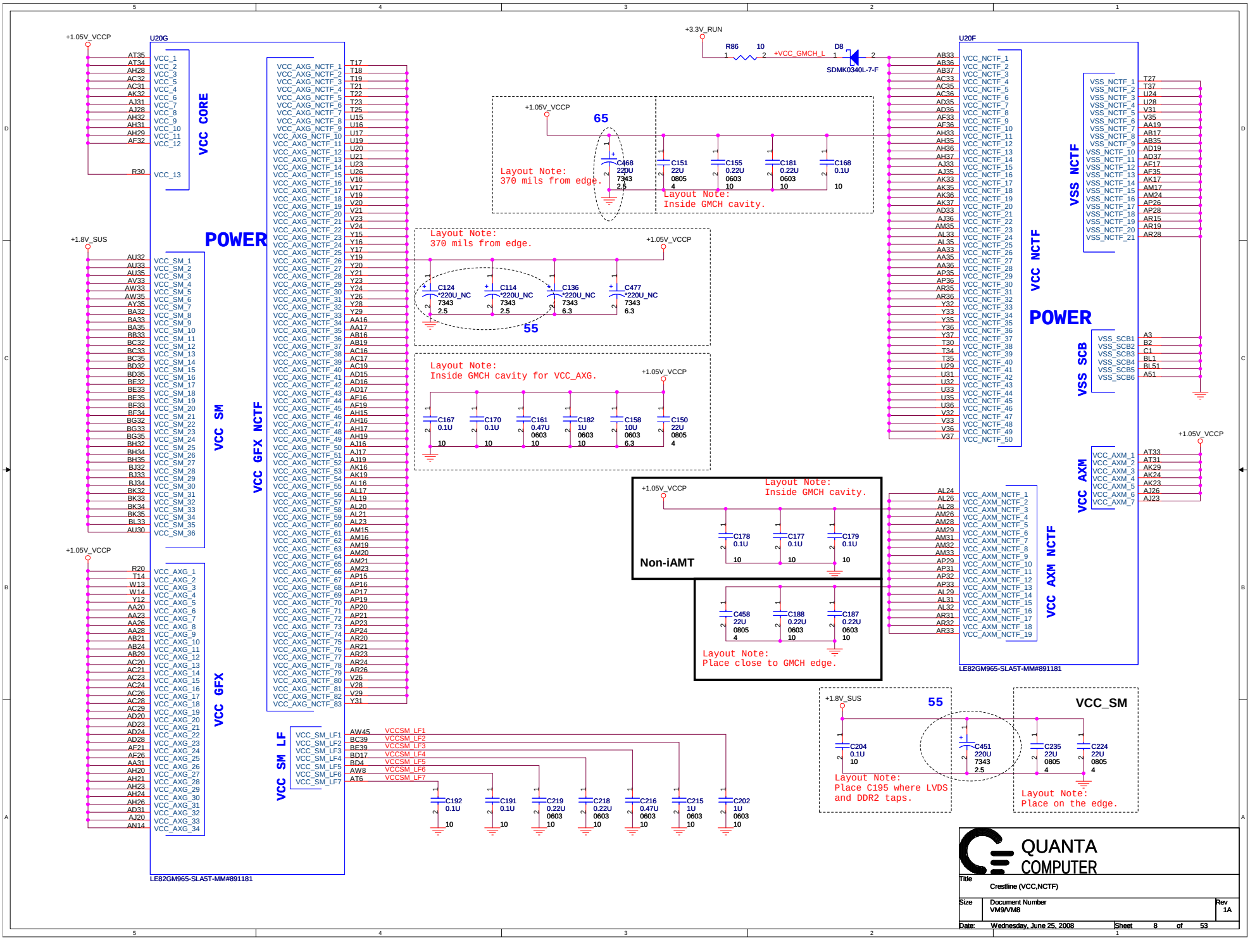
DDR_B_BS0 15,16
DDR_B_BS1 15,16
DDR_B_BS2 15,16
DDR_B_CAS# 15,16
DDR_B_DM[0..7] 15
DDR_B_DQS[0..7] 15
DDR_B_DQS#[0..7] 15
DDR_B_MA[0..13] 15,16
DDR_B_RAS# 15,16
DDR_B_WE# 15,16

76 For EA test use

| | | | |
|---|---|---|---|
| ET36 | 1 | DDR_B_CAS# | |
| ET29 | 1 | DDR_B_RAS# | |
| ET33 | 1 | DDR_B_WE# | |
| ET38 | 1 | DDR_CS3_DIMMB# | DDR_CS3_DIMMB# 6,15,16 |
| ET35 | 1 | DDR_B_MA11 | |
| ET41 | 1 | DDR_B_MA1 | |
| ET24 | 1 | DDR_B_DQS0 | |
| ET25 | 1 | DDR_B_DQS#0 | |
| ET30 | 1 | DDR_B_D6 | |
| ET34 | 1 | DDR_B_D8 | |
| ET43 | 1 | DDR_B_D41 | |

QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | Crestline (DDR2) | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 7 of 53 | |


+1.05V_VCCP
U20G
VCC CORE
VCC SM
VCC GFX NCTF
VCC GFX
VCC SM LF
POWER
+1.8V_SUS
LE82GM965-SLA5T-MM#891181
+3.3V_RUN
R86
10
+VCC_GMCH_L
D8
SDMK0340L-7-F
U20F
VCC NCTF
VSS NCTF
VSS SCB
VCC AXM
VCC AXM NCTF
Layout Note:
370 mils from edge.
Layout Note:
Inside GMCH cavity.
Layout Note:
Inside GMCH cavity for VCC_AXG.
Non-iAMT
Layout Note:
Place close to GMCH edge.
Layout Note:
Place C195 where LVDS
and DDR2 taps.
Layout Note:
Place on the edge.
VCC_SM
65
55
QUANTA
COMPUTER
Title
Crestline (VCC,NCTF)
Size
Document Number
VM9/VM8
Rev
1A
Date:
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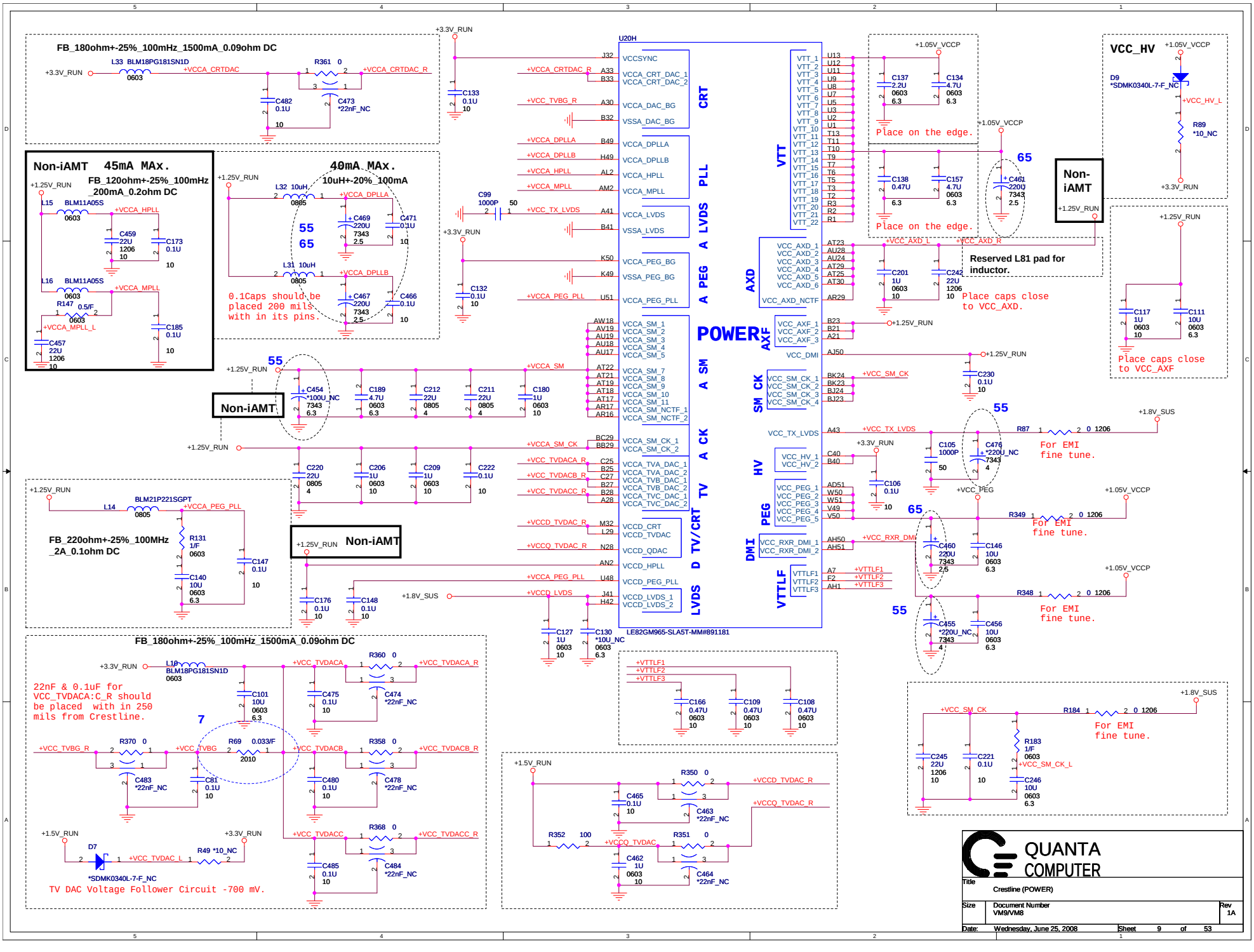
FB_180ohm+-25%_100mHz_1500mA_0.09ohm DC
Non-iAMT 45mA MAx.
FB_120ohm+-25%_100mHz_200mA_0.2ohm DC
40mA MAx.
10uH+-20%_100mA
0.1Caps should be placed 200 mils with in its pins.
Non-iAMT
FB_220ohm+-25%_100MHz_2A_0.1ohm DC
Non-iAMT
FB_180ohm+-25%_100mHz_1500mA_0.09ohm DC
22nF & 0.1uF for VCC_TVDACA:C_R should be placed with in 250 mils from Crestline.
TV DAC Voltage Follower Circuit -700 mV.
U20H
POWER
LE82GM965-SLA5T-MM#891181
CRT
PLL
LVDS
PEG
SM CK
HV
AXD
AXF
VTT
DMI
VTTLF
Place on the edge.
Reserved L81 pad for inductor.
Place caps close to VCC_AXD.
Place caps close to VCC_AXF
VCC_HV
Non-iAMT
For EMI fine tune.
For EMI fine tune.
For EMI fine tune.
For EMI fine tune.
QUANTA COMPUTER
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Crestline (POWER)
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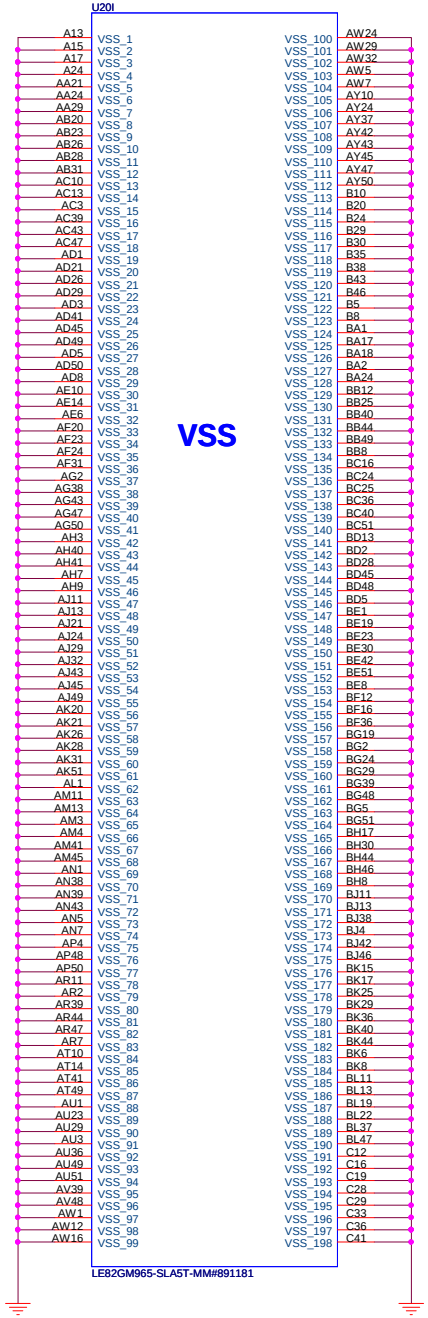
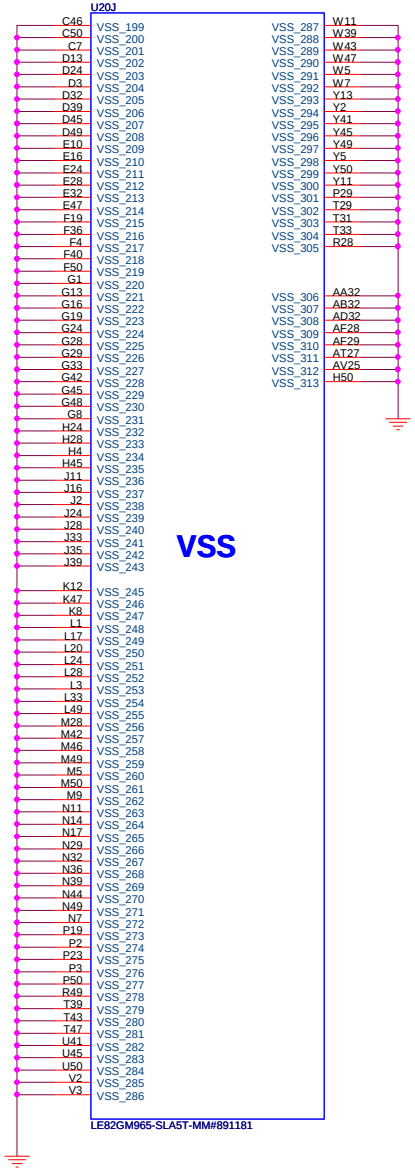
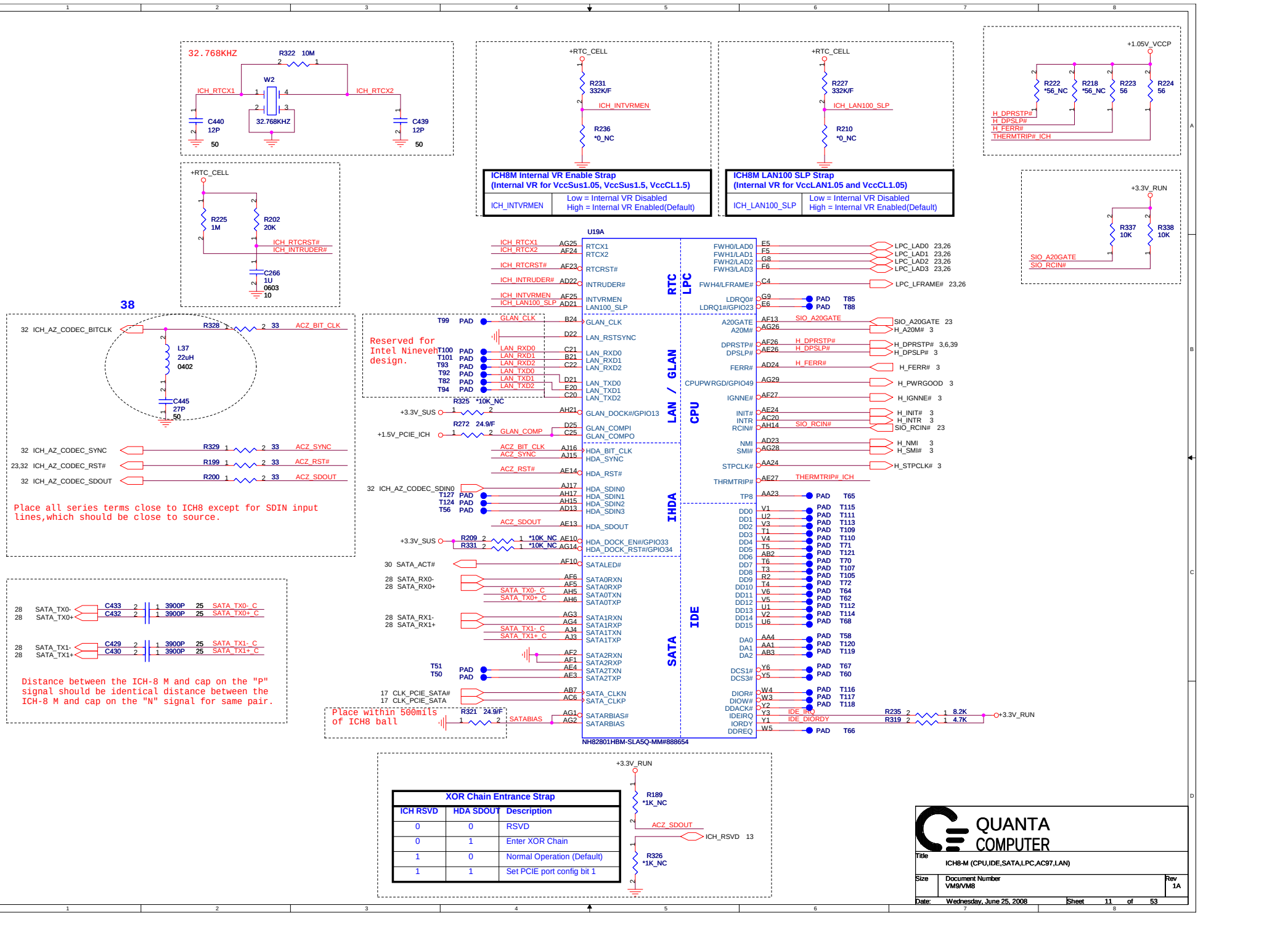



| | |
|---|---|
| Title | Crestline (VSS) |
| Size | Document Number: VM9/VM8 — Rev: 1A |
| Date: | Wednesday, June 25, 2008 — Sheet 10 of 53 |


32.768KHZ
R322 10M
W2
ICH_RTCX1
ICH_RTCX2
C440 12P 50
32.768KHZ
C439 12P 50
+RTC_CELL
R231 332K/F
ICH_INTVRMEN
R236 *0_NC
ICH8M 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
R227 332K/F
ICH_LAN100_SLP
R210 *0_NC
ICH8M LAN100 SLP Strap
(Internal VR for VccLAN1.05 and VccCL1.05)
ICH_LAN100_SLP
Low = Internal VR Disabled
High = Internal VR Enabled(Default)
+1.05V_VCCP
R222 *56_NC
R218 *56_NC
R223 56
R224 56
H_DPRSTP#
H_DPSLP#
H_FERR#
THERMTRIP#_ICH
+3.3V_RUN
R337 10K
R338 10K
SIO_A20GATE
SIO_RCIN#
+RTC_CELL
R225 1M
R202 20K
ICH_RTCRST#
ICH_INTRUDER#
C266 1U 0603 10
38
32 ICH_AZ_CODEC_BITCLK
R328 33
ACZ_BIT_CLK
L37 22uH 0402
C445 27P 50
32 ICH_AZ_CODEC_SYNC
R329 33
ACZ_SYNC
23,32 ICH_AZ_CODEC_RST#
R199 33
ACZ_RST#
32 ICH_AZ_CODEC_SDOUT
R200 33
ACZ_SDOUT
Place all series terms close to ICH8 except for SDIN input lines,which should be close to source.
Reserved for Intel Nineveh design.
T99 PAD
T100 PAD
T101 PAD
T93 PAD
T92 PAD
T82 PAD
T94 PAD
R325 *10K_NC
+3.3V_SUS
R272 24.9/F
+1.5V_PCIE_ICH
GLAN_COMP
U19A
ICH_RTCX1
ICH_RTCX2
ICH_RTCRST#
ICH_INTRUDER#
ICH_INTVRMEN
ICH_LAN100_SLP
RTC
LPC
GLAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
GLAN_DOCK#/GPIO13
GLAN_COMPI
GLAN_COMPO
LAN / GLAN
CPU
ACZ_BIT_CLK
ACZ_SYNC
ACZ_RST#
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
SATA2RXN
SATA2RXP
SATA2TXN
SATA2TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
SATA
IDE
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
FWH4/LFRAME#
LDRQ0#
LDRQ1#/GPIO23
A20GATE
A20M#
DPRSTP#
DPSLP#
FERR#
CPUPWRGD/GPIO49
IGNNE#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THRMTRIP#
TP8
DD0
DD1
DD2
DD3
DD4
DD5
DD6
DD7
DD8
DD9
DD10
DD11
DD12
DD13
DD14
DD15
DA0
DA1
DA2
DCS1#
DCS3#
DIOR#
DIOW#
DDACK#
IDEIRQ
IORDY
DDREQ
NH82801HBM-SLA5Q-MM#888654
LPC_LAD0 23,26
LPC_LAD1 23,26
LPC_LAD2 23,26
LPC_LAD3 23,26
LPC_LFRAME# 23,26
H_PWRGOOD 3
H_IGNNE# 3
H_INIT# 3
H_INTR 3
H_NMI 3
H_SMI# 3
H_STPCLK# 3
IDE_IRQ
IDE_DIORDY
R235 8.2K
R319 4.7K
+3.3V_RUN
30 SATA_ACT#
28 SATA_RX0-
28 SATA_RX0+
28 SATA_RX1-
28 SATA_RX1+
17 CLK_PCIE_SATA#
17 CLK_PCIE_SATA
SATABIAS
R321 24.9/F
Place within 500mils of ICH8 ball
28 SATA_TX0-
28 SATA_TX0+
C433 3900P
C432 3900P
SATA_TX0- C
SATA_TX0+ C
28 SATA_TX1-
28 SATA_TX1+
C429 3900P
C430 3900P
SATA_TX1- C
SATA_TX1+ C
Distance between the ICH-8 M and cap on the "P" signal should be identical distance between the ICH-8 M and cap on the "N" signal for same pair.
+3.3V_RUN
R189 *1K_NC
ACZ_SDOUT
ICH_RSVD 13
R326 *1K_NC
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
QUANTA COMPUTER
Title
ICH8-M (CPU,IDE,SATA,LPC,AC97,LAN)
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Place TX DC blocking caps close ICH8.

26 PCIE_TX2-
26 PCIE_TX2+
C323 0.1U 10 PCIE_TXN2_C
C324 0.1U 10 PCIE_TXP2_C

34 PCIE_TX6-/GLAN_TX-
34 PCIE_TX6+/GLAN_TX+
C333 0.1U 10 GLAN_TXN_C
C326 0.1U 10 GLAN_TXP_C

For EA test use

76

ET45 PCIE_RX2+
ET51 PCIE_RX6-/GLAN_RX-
ET50 PCIE_RX6+/GLAN_RX+

ICH_SPI_CS1# R
PCI_GNT0#
R264 *1K_NC
R259 *1K_NC

Boot BIOS Strap

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

MiniWWAN
26 PCIE_RX2-
26 PCIE_RX2+
PCIE_TXN2_C
PCIE_TXP2_C

MiniWLAN

MiniWPAN

Express Card

34 PCIE_RX6-/GLAN_RX-
34 PCIE_RX6+/GLAN_RX+
GLAN_TXN_C
GLAN_TXP_C

10/100 LOM

T91 PAD
T98 PAD
ICH_SPI_CS1# R
T87 PAD
T95 PAD

27 USB_OC0_1#

U19D

PCI-Express Direct Media Interface

P27 PERN1
P26 PERP1
N29 PETN1
N28 PETP1
M27 PERN2
M26 PERP2
L29 PETN2
L28 PETP2
K27 PERN3
K26 PERP3
J29 PETN3
J28 PETP3
H27 PERN4
H26 PERP4
G29 PETN4
G28 PETP4
F27 PERN5
F26 PERP5
E29 PETN5
E28 PETP5
D27 PERN6/GLAN_RXN
D26 PERP6/GLAN_RXP
C29 PETN6/GLAN_TXN
C28 PETP6/GLAN_TXP

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 AB26 DMI_MTX_IRX_N2 6
DMI2RXP AB25 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
DMI_IRCOMP
Y23
Y24 DMI_COMP
R242 24.9/F
+1.5V_PCIE_ICH
Place within 500mils of ICH8

SPI

SPI_CLK
SPI_CS0#
SPI_CS1#
SPI_MOSI
SPI_MISO

USB

OC0#
OC1#/GPIO40
OC2#/GPIO41
OC3#/GPIO42
OC4#/GPIO43
OC5#/GPIO29
OC6#/GPIO30
OC7#/GPIO31
OC8#
OC9#

USBP0N G3 ICH_USBP0- 27
USBP0P G2 ICH_USBP0+ 27
USBP1N H5 ICH_USBP1- 27
USBP1P H4 ICH_USBP1+ 27
USBP2N H2 PAD T78
USBP2P H1 PAD T102
USBP3N J3 PAD T76
USBP3P J2 PAD T77
USBP4N K5 ICH_USBP4- 18
USBP4P K4 ICH_USBP4+ 18
USBP5N K2 PAD T104
USBP5P K1 PAD T103
USBP6N L3 ICH_USBP6- 26
USBP6P L2 ICH_USBP6+ 26
USBP7N M5 PAD T74
USBP7P M4 PAD T73
USBP8N M2 ICH_USBP8- 26
USBP8P M1 ICH_USBP8+ 26
USBP9N N3 PAD T106
USBP9P N2 PAD T108

USBRBIAS# F2
USBRBIAS F3 USBRBIAS
R260 22.6/F

NH82801HBM-SLA5Q-MM#888654

Short F2 and F3 at the package and keep length to less than 500mils. Trace Impedance should be 60ohms +/- 15%.

Side pair Top / left
Side pair bottom / right
Pair 1 top / left
Pair 1 bottom / right
Camera
Mini Card (WWAN)
Bluetooth
Express Card
Mini Card (WLAN)
Biometric

PCI Pullups

8

RP40 8.2KX8
PCI_STOP# PCI_FRAME#
PCI_DEVSEL# ICH_IRQH_GPIO5
PCI_REQ1# PCI_TRDY#
PCI_PIRQD# PCI_SERR#
+3.3V_RUN

RP39 8.2KX8
PCI_PIRQE# PCI_PIRQC#
PCI_REQ0# PCI_PIRQB#
PCI_PLOCK# PCI_PIRQA#
PCI_PERR# PCI_IRDY#
+3.3V_RUN

PCI_REQ2# R279 8.2K +3.3V_RUN
PCI_REQ3# R310 8.2K

WWAN Noise - ICH improvements

OC3# C249 *0.1U_NC
OC6# C253 *0.1U_NC
OC4# C251 *0.1U_NC
OC5# C436 *0.1U_NC
OC7# C435 *0.1U_NC
OC8# C252 *0.1U_NC
OC2# C441 *0.1U_NC
USB_OC0_1# C431 *0.1U_NC
OC9# C434 *0.1U_NC

Non-iAMT

RP41 10KX8
OC6# OC5#
OC2# OC7#
OC8# OC9#
OC4# USB_OC0_1#
+3.3V_SUS
+3.3V_SUS
OC3# R188 10K +3.3V_SUS

SB_WLAN_PCIE_RST# R257 20K
SB_NB_PCIE_RST# R263 20K

BIOS should not enable the internal GPIO pull up resistor.

20,25 PCI_AD[0..31]

U19B

PCI

PCI_AD0 D20 AD0
PCI_AD1 E19 AD1
PCI_AD2 D19 AD2
PCI_AD3 A20 AD3
PCI_AD4 D17 AD4
PCI_AD5 A21 AD5
PCI_AD6 A19 AD6
PCI_AD7 C19 AD7
PCI_AD8 A18 AD8
PCI_AD9 B16 AD9
PCI_AD10 A12 AD10
PCI_AD11 E16 AD11
PCI_AD12 A14 AD12
PCI_AD13 G16 AD13
PCI_AD14 A15 AD14
PCI_AD15 B6 AD15
PCI_AD16 C11 AD16
PCI_AD17 A9 AD17
PCI_AD18 D11 AD18
PCI_AD19 B12 AD19
PCI_AD20 C12 AD20
PCI_AD21 D10 AD21
PCI_AD22 C7 AD22
PCI_AD23 F13 AD23
PCI_AD24 E11 AD24
PCI_AD25 E13 AD25
PCI_AD26 E12 AD26
PCI_AD27 D8 AD27
PCI_AD28 A6 AD28
PCI_AD29 E8 AD29
PCI_AD30 D6 AD30
PCI_AD31 A3 AD31

REQ0# A4 PCI_REQ0# PCI_REQ0# 20
GNT0# D7 PCI_GNT0# PCI_GNT0# 20
REQ1#/GPIO50 E18 PCI_REQ1# PCI_REQ1# 25
GNT1#/GPIO51 C18 PCI_GNT1# PCI_GNT1# 25
REQ2#/GPIO52 B19 PCI_REQ2#
GNT2#/GPIO53 F18 PCI_GNT2# PAD T86
REQ3#/GPIO54 A11 PCI_REQ3#
GNT3#/GPIO55 C10 PCI_GNT3# PAD T89

C/BE0# C17 PCI_C_BE0# 20,25
C/BE1# E15 PCI_C_BE1# 20,25
C/BE2# F16 PCI_C_BE2# 20,25
C/BE3# E17 PCI_C_BE3# 20,25

IRDY# C8 PCI_IRDY# PCI_IRDY# 20,25
PAR D9 PCI_PAR 20,25
PCIRST# G6 PCI_RST# G
DEVSEL# D16 PCI_DEVSEL# PCI_DEVSEL# 20,25
PERR# A7 PCI_PERR# PCI_PERR# 20,25
PLOCK# B7 PCI_PLOCK# PCI_PLOCK#
SERR# F10 PCI_SERR# PCI_SERR# 20,25
STOP# C16 PCI_STOP# PCI_STOP# 20,25
TRDY# C9 PCI_TRDY# PCI_TRDY# 20,25
FRAME# A17 PCI_FRAME# PCI_FRAME# 20,25

PLTRST# AG24 PCI_PLTRST#
PCICLK B10 CLK_PCI_ICH CLK_PCI_ICH 17
PME# G7 ICH_PME# ICH_PME# 20,23,25

Interrupt I/F

20 PCI_PIRQA# F9 PIRQA#
20 PCI_PIRQB# B5 PIRQB#
20 PCI_PIRQC# C5 PIRQC#
25 PCI_PIRQD# A10 PIRQD#

PIRQE#/GPIO2 F8 PCI_PIRQE# PCI_PIRQE# 25
PIRQF#/GPIO3 G11 SB_WLAN_PCIE_RST# SB_WLAN_PCIE_RST# 26
PIRQG#/GPIO4 F12 SB_NB_PCIE_RST# SB_NB_PCIE_RST# 6
PIRQH#/GPIO5 B3 ICH_IRQH_GPIO5 PAD T96

NH82801HBM-SLA5Q-MM#888654

PCI_GNT3#
R271 *1K_NC

A16 away override strap.

| | |
|---|---|
| SB_NB_PCIE_RST# | Low = A16 swap override enabled.<br>High = Default. |

For EA test use

ET47 PCI_AD1
ET60 PCI_AD3
ET55 PCI_AD7
ET59 PCI_AD14
ET48 PCI_AD29
ET46 PCI_AD13
ET57 PCI_AD19
ET53 PCI_IRDY#
ET56 PCI_TRDY#
ET58 PCI_FRAME#
ET54 PCI_STOP#
ET52 PCI_DEVSEL#
ET49 PCI_GNT0#
ET61 PCI_REQ0#

CLK_PCI_ICH
R275 *10_NC
C344 *8.2P_NC

Reserved for EMI.Place resister and cap close to ICH.

Non-iAMT

Add Buffers as needed for Loading and fanout concerns.

+3.3V_SUS
C335 0.047U 10
U14 TC7SZ32FU(T5L,F,T)
PCI_RST# G
PCI_RST# 20,25

+3.3V_SUS
C247 0.047U 10
U13 TC7SZ32FU(T5L,F,T)
PCI_PLTRST#
PLTRST# 6,23,26,34

QUANTA COMPUTER

| | | |
|---|---|---|
| Title | ICH8-M (USB,DMI,PCIE,PCI) | |
| Size | Document Number VM9/VM8 | Rev 1A |
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Non-iAMT

+3.3V_SUS
RP23
ICH_SMBDATA
ICH_SMBCLK
2.2KX2

Non-iAMT ASF 2.0

+3.3V_SUS
RP22
ICH_SMLINK0
ICH_SMLINK1
*10KX2_NC
ICH_SMBCLK ICH_SMLINK0
ICH_SMBDATA ICH_SMLINK1

+3.3V_RUN
R340 8.2K
CLKRUN#
R333 *10_NC
Option to " Disable " clkrun. Pulling it down will keep the clks running.

Non-iAMT

+3.3V_SUS
R193 *10K_NC RSV_ICH_CL_RST1#
R195 10K ICH_RI#
R238 10K SIO_EXT_SCI#
R190 1K PCIE_WAKE#

+3.3V_RUN
R206 8.2K

U19C

26 ICH_SMBCLK — ICH_SMBCLK — AJ26 SMBCLK
26 ICH_SMBDATA — ICH_SMBDATA — AD19 SMBDATA
T43 PAD — RSV_ICH_CL_RST1# — AG21 LINKALERT#
T61 PAD — ICH_SMLINK0 — AC17 SMLINK0
T69 PAD — ICH_SMLINK1 — AE19 SMLINK1
SMB

ICH_RI# — AF17 RI#

T84 PAD — RSV_LPCPD# — F4 SUS_STAT#/LPCPD#
3 ITP_DBRESET# — AD15 SYS_RESET#
6 PM_BMBUSY# — AG12 BMBUSY#/GPIO0
26 USB_MCARD1_DET# — USB_MCARD1_DET# — AG22 SMBALERT#/GPIO11
17 H_STP_PCI# — AE20 STP_PCI#/GPIO15
17 H_STP_CPU# — AG18 STP_CPU#/GPIO25
SYS GPIO

20,23,25 CLKRUN# — CLKRUN# — AH11 CLKRUN#/GPIO32

26,34 PCIE_WAKE# — PCIE_WAKE# — AE17 WAKE#
20,23,25 IRQ_SERIRQ — IRQ_SERIRQ — AE12 SERIRQ
31 THERM_ALERT# — THERM_ALERT# — AC13 THRM#
Power MGT

23,35,39 IMVP_PWRGD — IMVP_PWRGD — AJ20 VRMPWRGD

T125 PAD — AJ22 TP7

T41 PAD — AJ8 TACH1/GPIO1
T128 PAD — AJ9 TACH2/GPIO6
AH9 TACH3/GPIO7
23 SIO_EXT_WAKE# — GPIO8
23 SIO_EXT_SMI# — SIO_EXT_SMI# — AE16 GPIO12
23 SIO_EXT_SCI# — SIO_EXT_SCI# — AC19 TACH0/GPIO17
T46 PAD — AG8 GPIO18
26 PCIE_MCARD1_DET# — PCIE_MCARD1_DET# — AH12 GPIO20
T53 PAD — AE11 SCLOCK/GPIO22
T44 PAD — AG10 QRT_STATE0/GPIO27
26 WLAN_RADIO_DIS# — AH25 QRT_STATE1/GPIO28
T54 PAD — AD16 SATACLKREQ#/GPIO35
17 SATA_CLKREQ# — AG13 SLOAD/GPIO38
T49 PAD — PLTRST_DELAY# — AF9 SDATAOUT0/GPIO39
T126 PAD — AJ11 SDATAOUT1/GPIO48
T57 PAD — AD10
GPIO

32 SPKR — SPKR — AD9 SPKR

6 MCH_ICH_SYNC# — MCH_ICH_SYNC#_R — AJ13 MCH_SYNC#

11 ICH_RSVD — AJ21 TP3
MISC Controller Link

NH82801HBM-SLA5Q-MM#888654

SATA GPIO
SATA0GP/GPIO21 — AJ12
SATA1GP/GPIO19 — AJ10
SATA2GP/GPIO36 — AF11
SATA3GP/GPIO37 — AG11

Clocks
CLK14 — AG9 — CLK_ICH_14M — CLK_ICH_14M 17
CLK48 — G5 — CLK_ICH_48M — CLK_ICH_48M 17
SUSCLK — D3 — ICH_SUSCLK — PAD T90

SLP_S3# — AG23 — SIO_SLP_S3# 23
SLP_S4# — AF21 — PAD T52
SLP_S5# — AD18 — SIO_SLP_S5# 23
S4_STATE#/GPIO26 — AH27

PWROK — AE23 — ICH_PWRGD — ICH_PWRGD 6,35
DPRSLPVR — DPRSLPVR 6,39
DPRSLPVR/GPIO16 — AJ14
R219 8.2K
BATLOW# — AE21 — ICH_BATLOW# — +3.3V_SUS
PWRBTN# — C2 — SIO_PWRBTN# 23
LAN_RST# — AH20 — RSV_ICH_LAN_RST# — PAD T40
RSMRST# — AG27 — ICH_RSMRST# — ICH_RSMRST# 23
CK_PWRGD — E1 — CK_PWRGD 17
CLPWROK — E3 — ICH_CL_PWROK — ICH_CL_PWROK 6,23
SLP_M# — AJ25 — PAD T130

CL_CLK0 — F23 — CL_CLK0 6
CL_CLK1 — AE18 — RSV_ICH_CL_CLK1 — PAD T55
CL_DATA0 — F22 — CL_DATA0 6
CL_DATA1 — AF19 — RSV_ICH_CL_DATA1 — PAD T48
CL_VREF0 — D24 — CL_VREF0
CL_VREF1 — AH23 — CL_VREF1 — PAD T42
CL_RST# — AJ23 — ICH_CL_RST0# 6

MEM_LED/GPIO24 — AJ27
ME_EC_ALERT/GPIO10 — AJ24 — RSV_GPIO10 — PAD T131
EC_ME_ALERT/GPIO14 — AF22 — RSV_GPIO14 — PAD T63
WOL_EN/GPIO9 — AG19 — RSV_WOL_EN — PAD T45
R228 8.2K — +3.3V_SUS

Non-iAMT

Place these close to ICH8.
CLK_ICH_48M — R256 *10_NC — C321 *4.7P_NC — 50
CLK_ICH_14M — R201 *10_NC — C250 *4.7P_NC — 50

6
ICH_PWRGD — R211 10K
DPRSLPVR — R330 100K
ICH_RSMRST# — R323 10K
RSV_ICH_LAN_RST# — R192 10K
ICH_CL_PWROK — R265 1M

+3.3V_SUS
RSV_GPIO10 — R187 10K

R208 *10K_NC PLTRST_DELAY#

+3.3V_RUN
R324 *2.2K_NC IMVP_PWRGD
R339 10K PCIE_MCARD1_DET#

+3.3V_RUN
R327 *10K_NC MCH_ICH_SYNC#_R
R198 10K IRQ_SERIRQ
R197 10K THERM_ALERT#

+3.3V_SUS
R196 10K SIO_EXT_SMI#
R191 10K USB_MCARD1_DET#
R194 10K RSV_WOL_EN

+3.3V_RUN
R220 *1K_NC
SPKR

No Reboot strap.

| SPKR | Low = Default. High = No Reboot. |
|---|---|

SMbus address D2

These are for backdrive issue.

+3.3V_RUN
RP15 2.2KX2
26 ICH_SMBDATA — Q10 2N7002W — MEM_SDATA 15
+3.3V_RUN
26 ICH_SMBCLK — Q13 2N7002W — MEM_SCLK 15

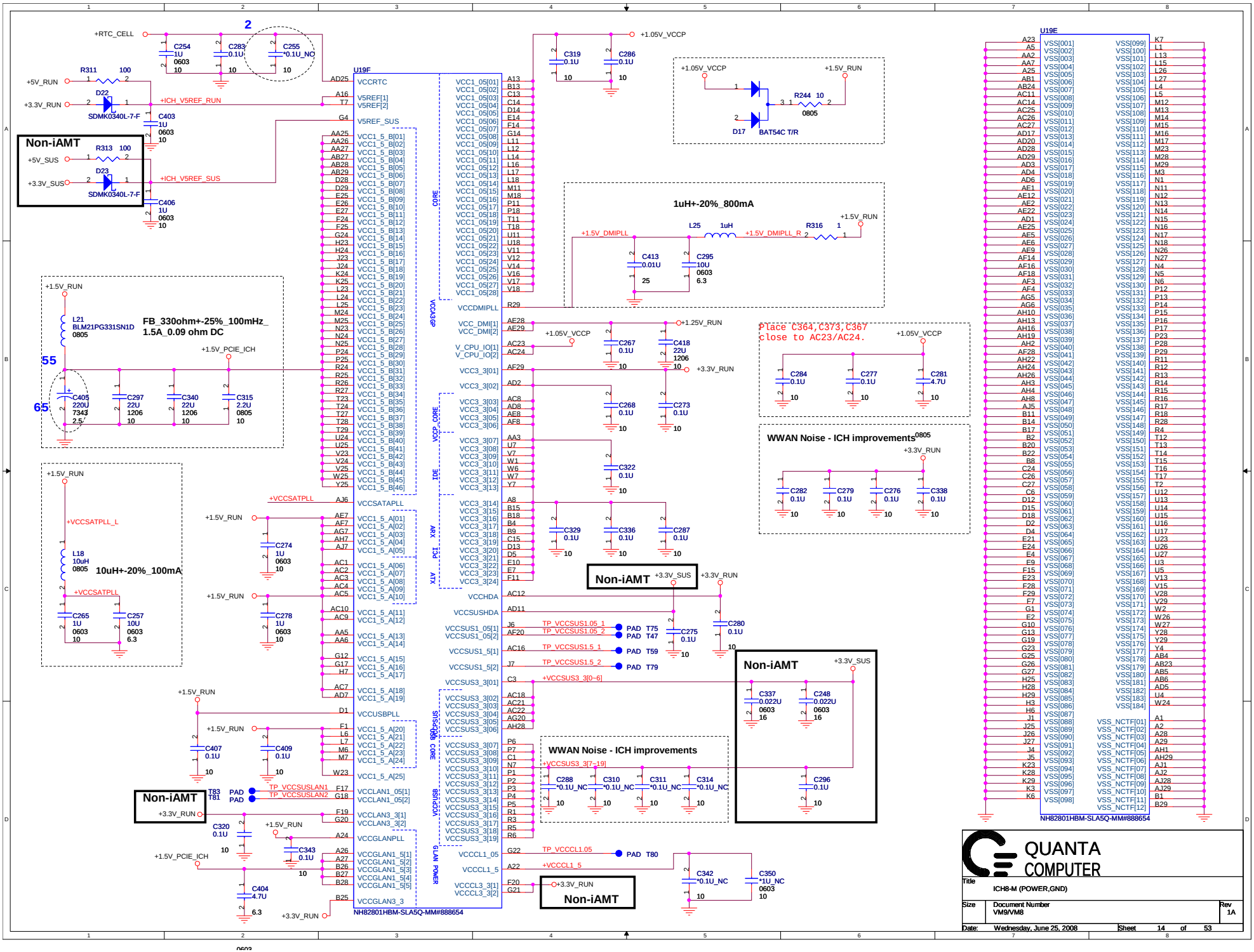
Non-iAMT

+3.3V_RUN
R258 3.24K/F
CL_VREF0
C325 0.1U
10

+3.3V_SUS
R205 *3.24K/F_NC
CL_VREF1
R262 453/F
C256 *0.1U_NC
10
R203 *453/F_NC

QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | ICH8-M (PM,GPIO,SMB,CL) | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 13 of 53 | |


U19F
U19E
NH82801HBM-SLA5Q-MM#888654
Non-iAMT
FB_330ohm+-25%_100mHz_ 1.5A_0.09 ohm DC
10uH+-20%_100mA
1uH+-20%_800mA
WWAN Noise - ICH improvements
Place C364,C373,C367 close to AC23/AC24.
+RTC_CELL
+5V_RUN
+3.3V_RUN
+ICH_V5REF_RUN
+ICH_V5REF_SUS
+5V_SUS
+3.3V_SUS
+1.5V_RUN
+1.05V_VCCP
+1.25V_RUN
+1.5V_PCIE_ICH
+VCCSATPLL
+VCCSATPLL_L
+1.5V_DMIPLL
+1.5V_DMIPLL_R
+VCCSUS3_3[0~6]
+VCCSUS3_3[7~19]
+VCCCL1_5
TP_VCCSUS1.05_1
TP_VCCSUS1.05_2
TP_VCCSUS1.5_1
TP_VCCSUS1.5_2
TP_VCCSUSLAN1
TP_VCCSUSLAN2
TP_VCCCL1.05
PAD T75
PAD T47
PAD T59
PAD T79
PAD T80
PAD T83
PAD T81
SDMK0340L-7-F
BAT54C T/R
BLM21PG331SN1D
ICH8-M (POWER,GND)
QUANTA COMPUTER
Document Number VM9/VM8
Wednesday, June 25, 2008
Sheet 14 of 53

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

PC4800 DDR2 SDRAM SO-DIMM (200P)

CN6

DDR2_SODIMM

CN4

2-1734073-2

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.

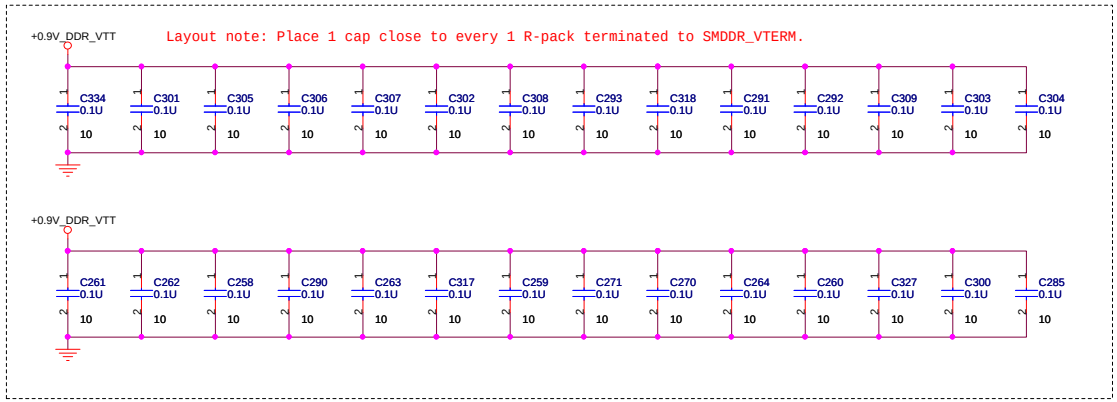
Place these Caps near So-Dimm2.

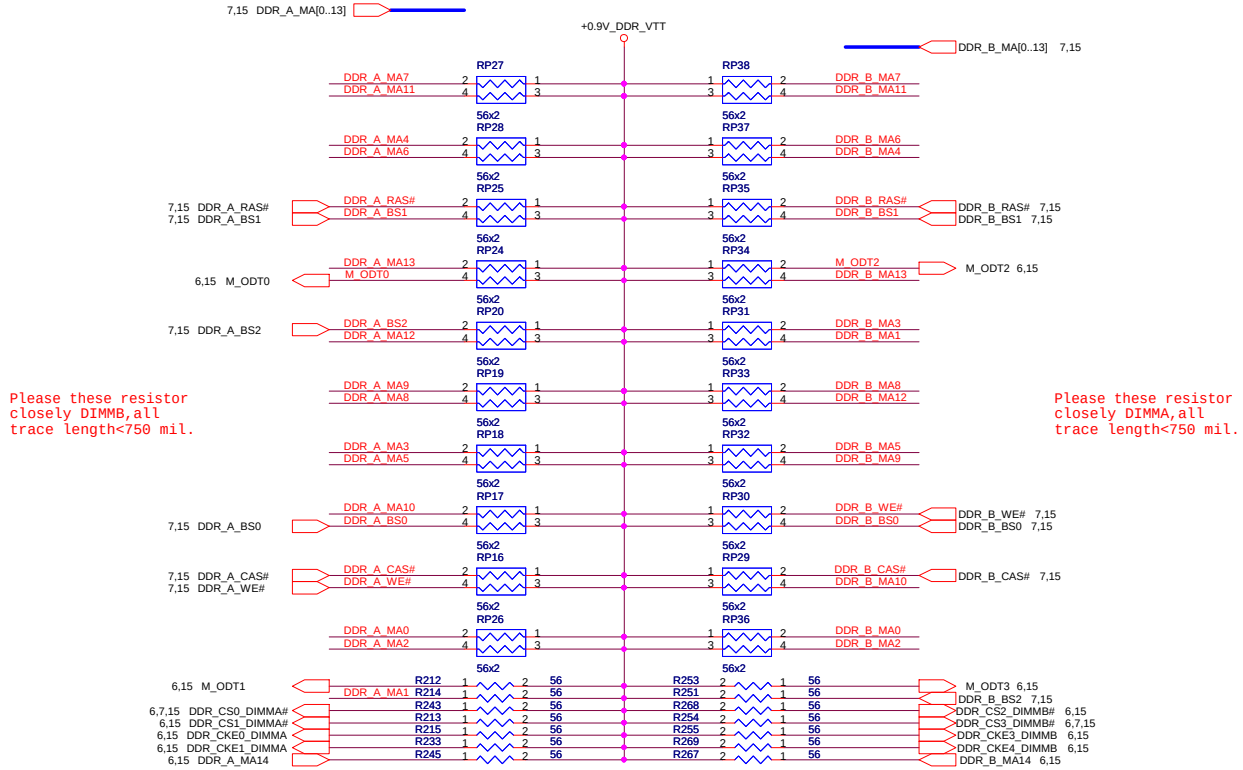
Place these Caps near So-Dimm1.

Place these Caps near So-Dimm2.

QUANTA COMPUTER

| | |
|---|---|
| Title | DDR2 SO-DIMM (200P) X 2 |
| Size | Document Number VM9/VM8 |
| Rev | 1A |
| Date: | Wednesday, June 25, 2008 |
| Sheet | 15 of 53 |




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | DDR2 RES ARRAY | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 16 of 53 | |

Add capacitor pads for improving WWAN.

C82 20P 50 CLK_ICH_48M
C59 *27P_NC 50 CLK_ICH_14M
C62 *27P_NC 50 CLK_PCI_8512
C61 *27P_NC 50 CLK_PCI_PCCARD
C63 *27P_NC 50 CLK_PCI_ICH

CLK_XTAL_IN — Y2 14.318MHZ — CLK_XTAL_OUT
C67 33P 50
C77 33P 50
14.318MHz

U5
CK505
QFN64
SLG8SP513V

+CK_VDD_PCI 9 VDD_PCI
+CK_VDD_PLL3 4 VDD_REF
+CK_VDD_48 23 VDD_PLL3
+CK_VDD_SRC 16 VDD_48
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# R60 475/F — SATA_CLKREQ#_C 8 CR#_A/PCI-0
6 CLK_3GPLLREQ# — CLK_3GPLLREQ# R63 475/F — CLK_3GPLLREQ#_C 10 CR_B/PCI-1
25,26 CLK_LPC_DEBUG — CLK_LPC_DEBUG R46 *22_NC
20 CLK_PCI_PCCARD — CLK_PCI_PCCARD R56 33 — PCI_PCCARD 11 TME/PCI-2
23 CLK_PCI_8512 — CLK_PCI_8512 R64 33 — PCI_SIO 12 SRC5_EN/PCI-3
12 CLK_PCI_ICH — CLK_PCI_ICH R54 33 — 27M_SEL 13 27M_SEL/PCI-4
13 CLK_ICH_48M — CLK_ICH_48M R72 33 — PCI_ICH 14 ITP_EN/PCIF-5#
3,6 CPU_MCH_BSEL0 — L6 BLM18AG601SN1D — R68 8.2K — FSA 17 FSA/USB48
3,6 CPU_MCH_BSEL1 — R73 8.2K — FSB 64 FSB/TEST_MODE
3,6 CPU_MCH_BSEL2 — L5 BLM18AG601SN1D — R61 8.2K — FSC 5 FSC/TEST_SEL/REF
13 CLK_ICH_14M — CLK_ICH_14M R52 33 — 55 RESET#
13 CLK_PWRGD — 63 CK_PWRGD/PD#

CLK_XTAL_OUT 2 XOUT
CLK_XTAL_IN 3 XIN
CLK_SDATA 6 SDATA
CLK_SCLK 7 SCLK
GND 65

CPU-0 61 CPU_BCLK — CPU_BCLK R RP5 0x2 — CLK_CPU_BCLK 3
CPU-0# 60 CPU_BCLK# — CPU_BCLK# R — CLK_CPU_BCLK# 3
CPU-1 58 MCH_BCLK — MCH_BCLK R RP6 0x2 — CLK_MCH_BCLK 5
CPU-1# 57 MCH_BCLK# — MCH_BCLK# R — CLK_MCH_BCLK# 5
SRC-8/CPU_ITP 54 PCIE_MINI1 — PCIE_MINI1 R RP8 0x2 — CLK_PCIE_MINI1 26
SRC-8#/CPU_ITP# 53 PCIE_MINI1# — PCIE_MINI1# R — CLK_PCIE_MINI1# 26
SRC-0/DOT96 20 DOT96_SSC — DOT96_SSC R RP4 0x2 — MCH_DREFCLK 6
SRC-0#/DOT96# 21 DOT96_SSC# — DOT96_SSC# R — MCH_DREFCLK# 6
SRC-1/SE1 24 27M_SS — 27M_SS R RP7 0x2 — DREF_SSCLK 6
SRC-1#/SE2 25 27M_NSS — 27M_NSS R — DREF_SSCLK# 6
SRC-2/SATA 28 PCIE_SATA — PCIE_SATA R RP9 0x2 — CLK_PCIE_SATA 11
SRC-2#/SATA# 29 PCIE_SATA# — PCIE_SATA# R — CLK_PCIE_SATA# 11
CR#_C/SRC-3 31
CR#_D/SRC-3# 32
SRC-4 34 MCH_3GPLL — MCH_3GPLL R RP12 0x2 — CLK_MCH_3GPLL 6
SRC-4# 35 MCH_3GPLL# — MCH_3GPLL# R — CLK_MCH_3GPLL# 6
PCI_STOP#/SRC-5 45 — H_STP_PCI# 13
CPU_STOP#/SRC5-5# 44 — H_STP_CPU# 13
SRC-6 48
SRC-6# 47
CR#_F/SRC-7 51 MINI1CLK_REQ#_C — R76 475/F — MINI1CLK_REQ# — MINI1CLK_REQ# 26
CR#_E/SRC-7# 50 SRC-7#
SRC-9 37
SRC-9# 38
SRC-10 41 PCIE_ICH — PCIE_ICH R RP10 0x2 — CLK_PCIE_ICH 12
SRC-10# 42 PCIE_ICH# — PCIE_ICH# R — CLK_PCIE_ICH# 12
CR#_H/SRC-11 40 PCIE_LOM — PCIE_LOM R RP11 0x2 — CLK_PCIE_LOM 34
CR#_G/SRC-11# 39 PCIE_LOM# — PCIE_LOM# R — CLK_PCIE_LOM# 34

+3.3V_RUN
H_STP_PCI# R80 *10K_NC
H_STP_CPU# R81 *10K_NC

Silego need pull up but other?

+3.3V_RUN
CLK_3GPLLREQ# R55 10K
SATA_CLKREQ# R47 10K
SRC-7# R79 10K
MINI1CLK_REQ# R77 10K
PCI_PCCARD R45 *10K_NC

PCI_SIO R57 *10K_NC

+3.3V_RUN
R59 *10K_NC
PCI_ICH
R53 *10K_NC

R185 POP: For Internal pull-low.
R439 POP: For internal pull-high.

+3.3V_RUN
R48 *10K_NC
27M_SEL
R58 10K

| 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 |

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 |

UMA without iAMT

+3.3V_RUN
L8 BLM21PG600SN1D 0805 120 ohms@100Mhz
+CK_VDD_MAIN
C87 0.1U 10
C83 0.1U 10
C90 0.1U 10
C89 0.1U 10
C86 0.1U 10
C88 0.1U 10
C91 *10U_NC 0603 6.3
L9 BLM21PG600SN1D 0805 120 ohms@100Mhz
R65 2.2 +CK_VDD_PCI
C78 0.1U 10
R83 2.2 +CK_VDD_PLL3
C85 0.1U 10
R66 2.2 +CK_VDD_48
C80 0.1U 10
C79 4.7U 0603 6.3
R376 2.2 +CK_VDD_SRC
C84 0.1U 10

Non-iAMT

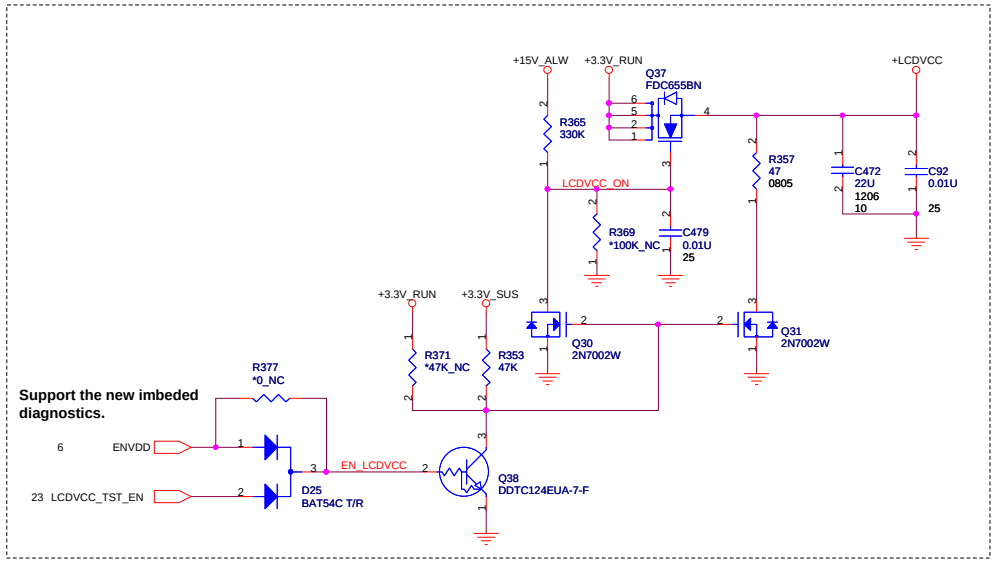
SMbus address D2

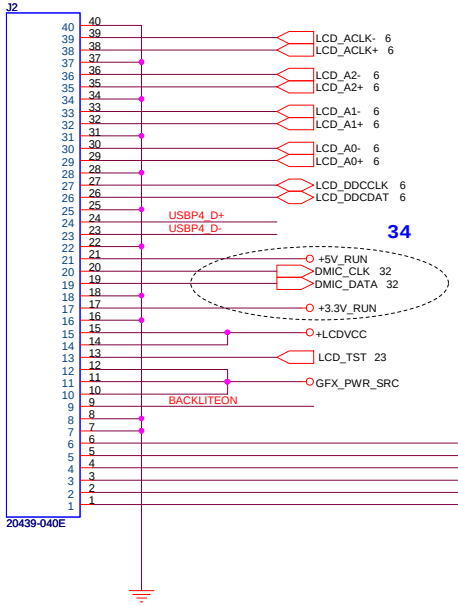
These are for backdrive issue.

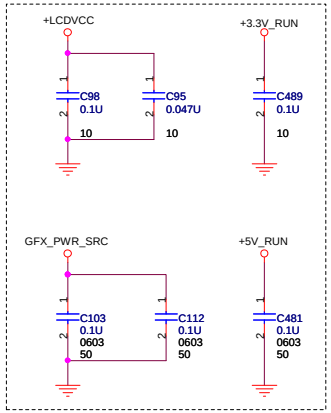
+3.3V_RUN
RP3 2.2KX2
18,23,31 SMBDAT1 — Q4 2N7002W — CLK_SDATA
+3.3V_RUN
18,23,31 SMBCLK1 — Q3 2N7002W — CLK_SCLK

QUANTA COMPUTER

| | | |
|---|---|---|
| Title | CLOCK GENERATOR | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 17 of 53 | |




Adress : A9H --Contrast
AAH --Backlight

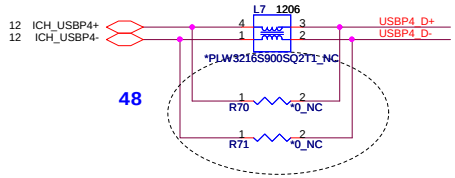
SMBCLK1 17,23,31
SMBDAT1 17,23,31
INVERTER_CBL_DET# 23
LCD_BAK# 23
PWM_VADJ 23
LCD_CBL_DET# 23

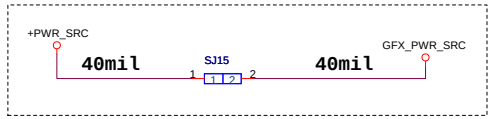
C122 *47P_NC 50
C123 *47P_NC 50

**UMA**

Populate R351 for DPST implementation only.

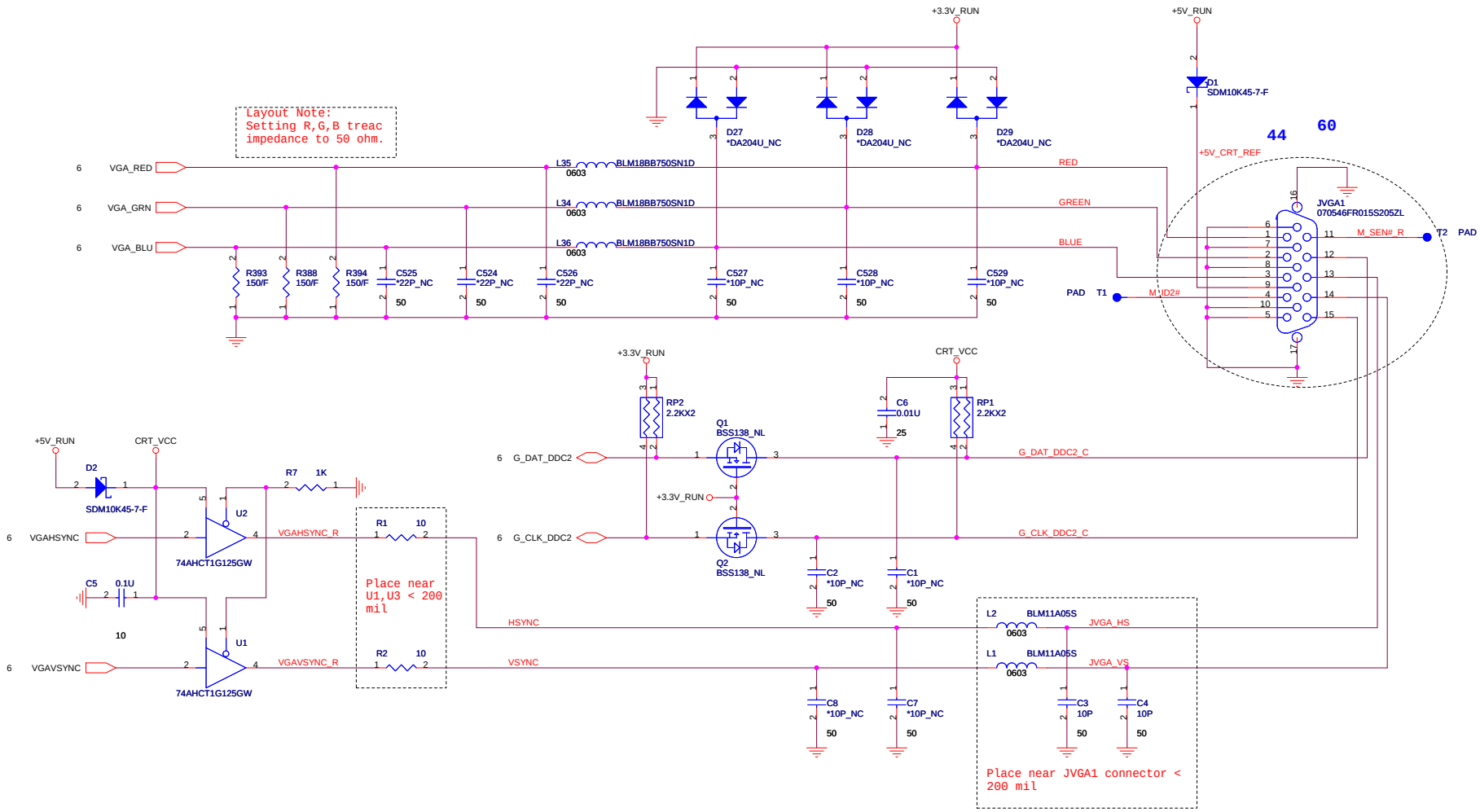
Populate R346 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.

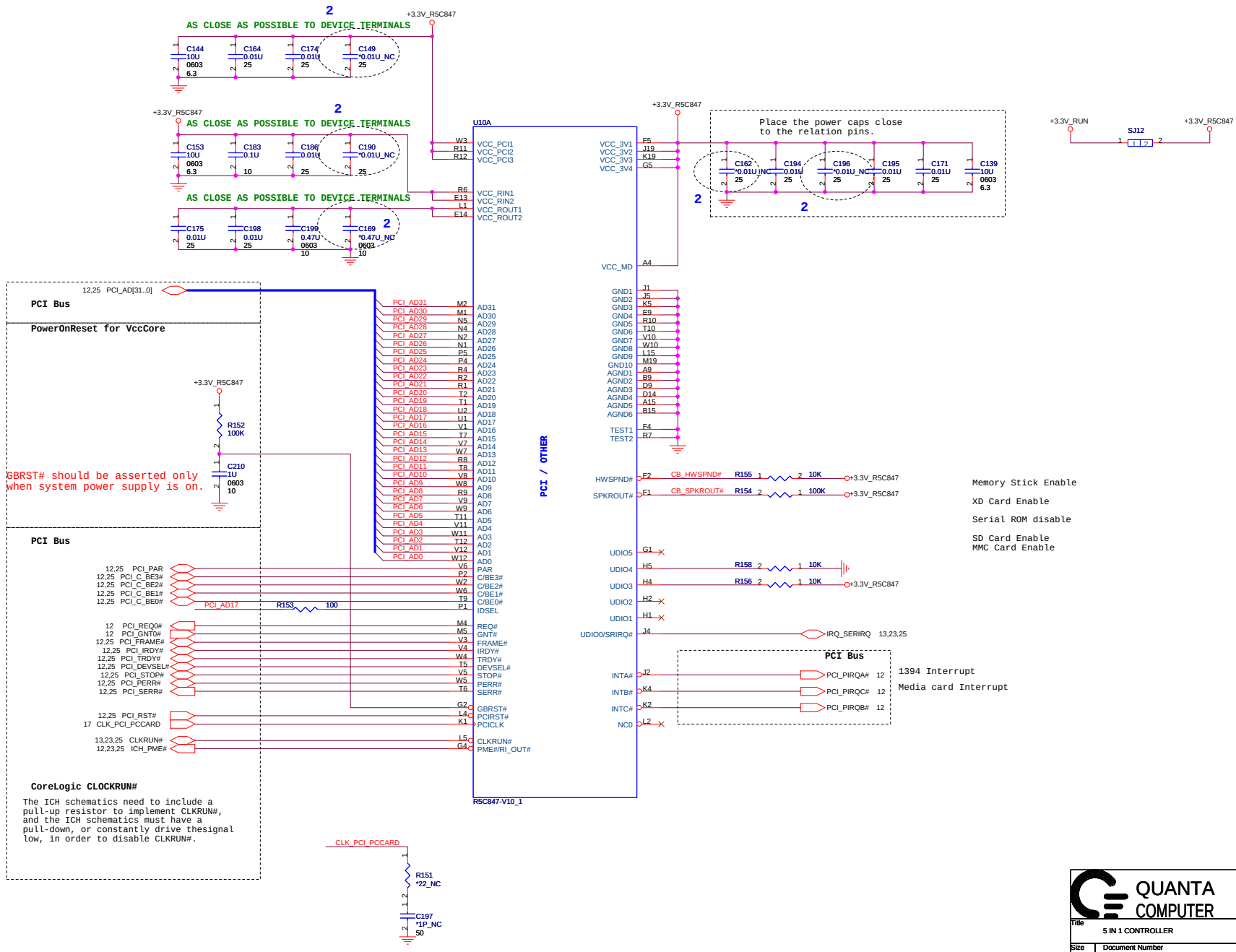



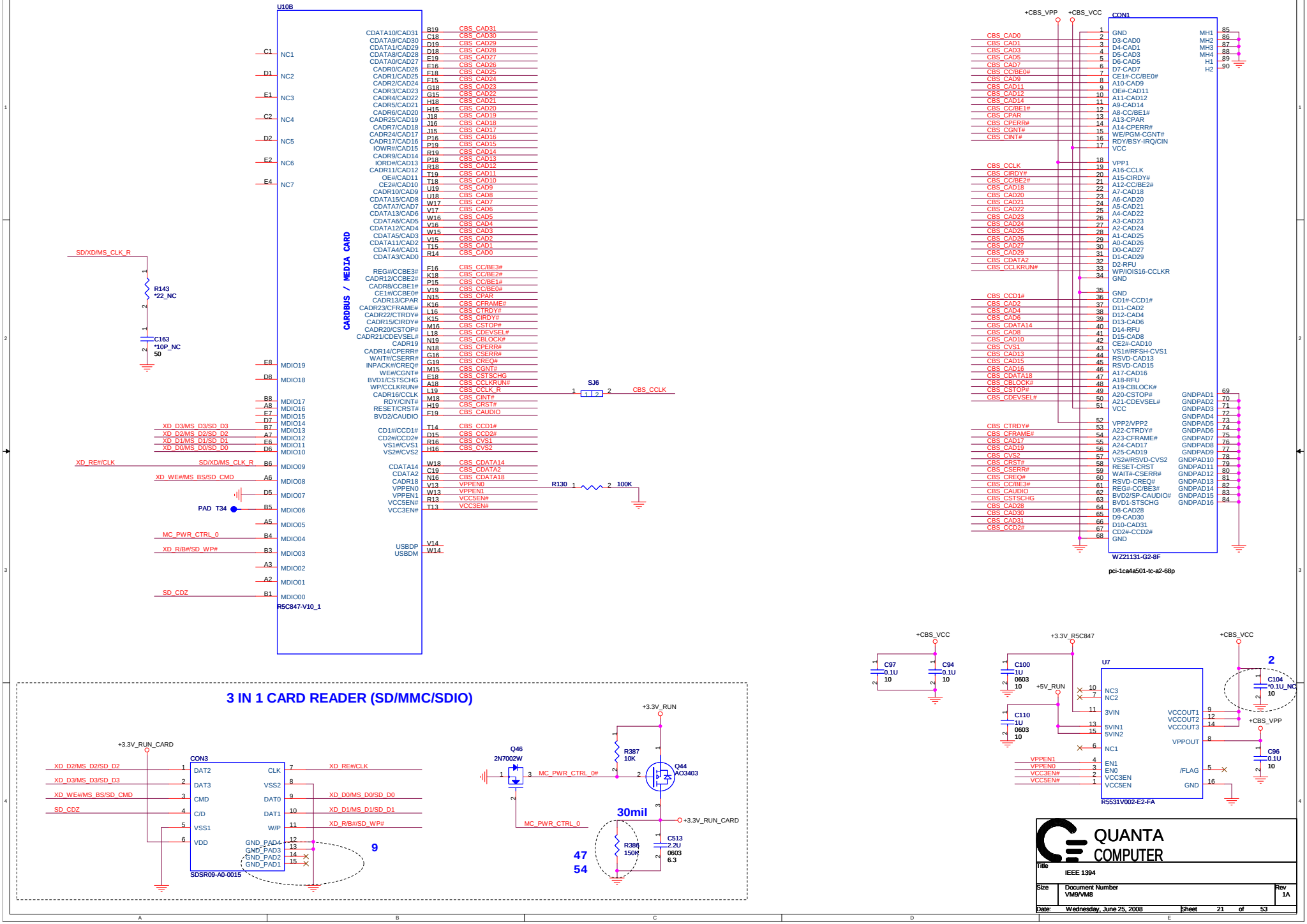

QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | LCD CONN & CK-SSCD | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 18 of 53 | |




| | | |
|---|---|---|
| QUANTA COMPUTER | | |
| Title | CRT&TV CONN | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 19 of 53 | |


AS CLOSE AS POSSIBLE TO DEVICE TERMINALS
+3.3V_R5C847
C144 10U 0603 6.3
C164 0.01U 25
C174 0.01U 25
C149 *0.01U_NC 25
C153 10U 0603 6.3
C183 0.1U 10
C186 0.01U 25
C190 *0.01U_NC 25
C175 0.01U 25
C198 0.01U 25
C199 0.47U 0603 10
C169 *0.47U_NC 0603 10
U10A
VCC_PCI1
VCC_PCI2
VCC_PCI3
VCC_RIN1
VCC_RIN2
VCC_ROUT1
VCC_ROUT2
VCC_3V1
VCC_3V2
VCC_3V3
VCC_3V4
VCC_MD
Place the power caps close to the relation pins.
C162 *0.01U_NC 25
C194 0.01U 25
C196 *0.01U_NC 25
C195 0.01U 25
C171 0.01U 25
C139 10U 0603 6.3
+3.3V_RUN
SJ12
PCI Bus
12,25 PCI_AD[31..0]
PowerOnReset for VccCore
R152 100K
C210 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
PCI / OTHER
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
AGND1
AGND2
AGND3
AGND4
AGND5
AGND6
TEST1
TEST2
HWSPND#
SPKROUT#
CB_HWSPND#
CB_SPKROUT#
R155 10K
R154 100K
Memory Stick Enable
XD Card Enable
Serial ROM disable
SD Card Enable
MMC Card Enable
UDIO5
UDIO4
UDIO3
UDIO2
UDIO1
UDIO0/SRIRQ#
R158 10K
R156 10K
IRQ_SERIRQ 13,23,25
PCI Bus
INTA#
INTB#
INTC#
NC0
PCI_PIRQA# 12
PCI_PIRQC# 12
PCI_PIRQB# 12
1394 Interrupt
Media card Interrupt
PCI Bus
12,25 PCI_PAR
12,25 PCI_C_BE3#
12,25 PCI_C_BE2#
12,25 PCI_C_BE1#
12,25 PCI_C_BE0#
PCI_AD17
R153 100
12 PCI_REQ0#
12 PCI_GNT0#
12,25 PCI_FRAME#
12,25 PCI_IRDY#
12,25 PCI_TRDY#
12,25 PCI_DEVSEL#
12,25 PCI_STOP#
12,25 PCI_PERR#
12,25 PCI_SERR#
12,25 PCI_RST#
17 CLK_PCI_PCCARD
13,23,25 CLKRUN#
12,23,25 ICH_PME#
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#.
CLK_PCI_PCCARD
R151 *22_NC
C197 *1P_NC 50
R5C847-V10_1
QUANTA COMPUTER
Title
5 IN 1 CONTROLLER
Size
Document Number
VM9/VM8
Rev
1A
Date: Wednesday, June 25, 2008
Sheet 20 of 53


U10B
CARDBUS / MEDIA CARD
R5C847-V10_1
SD/XD/MS_CLK_R
R143
*22_NC
C163
*10P_NC
50
XD_D3/MS_D3/SD_D3
XD_D2/MS_D2/SD_D2
XD_D1/MS_D1/SD_D1
XD_D0/MS_D0/SD_D0
XD_RE#/CLK
SD/XD/MS_CLK_R
XD_WE#/MS_BS/SD_CMD
PAD T34
MC_PWR_CTRL_0
XD_R/B#/SD_WP#
SD_CDZ
SJ6
CBS_CCLK
R130
100K
CON1
WZ21131-G2-8F
pci-1ca4a501-tc-a2-68p
+CBS_VPP
+CBS_VCC
C97
0.1U
10
C94
0.1U
10
+3.3V_R5C847
C100
1U
0603
10
C110
1U
0603
10
+5V_RUN
U7
R5531V002-E2-FA
C104
*0.1U_NC
10
C96
0.1U
10
2
3 IN 1 CARD READER (SDS/MMC/SDIO)
+3.3V_RUN_CARD
CON3
SDSR09-A0-0015
Q46
2N7002W
R387
10K
Q44
AO3403
MC_PWR_CTRL_0#
MC_PWR_CTRL_0
+3.3V_RUN
+3.3V_RUN_CARD
30mil
R386
150K
C513
2.2U
0603
6.3
47
54
9
QUANTA COMPUTER
Title
IEEE 1394
Size
Document Number
VM9/VM8
Rev
1A
Date: Wednesday, June 25, 2008
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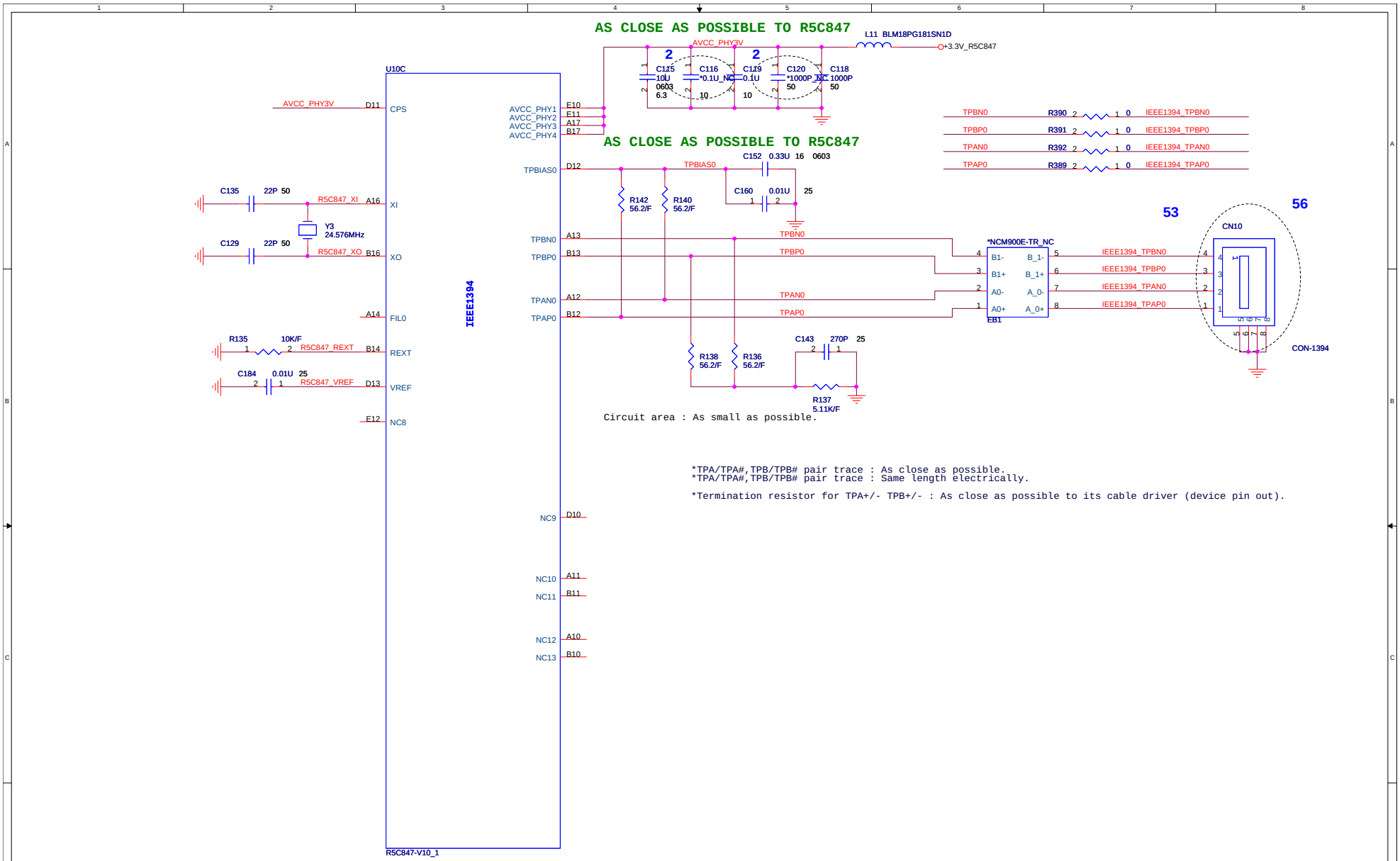
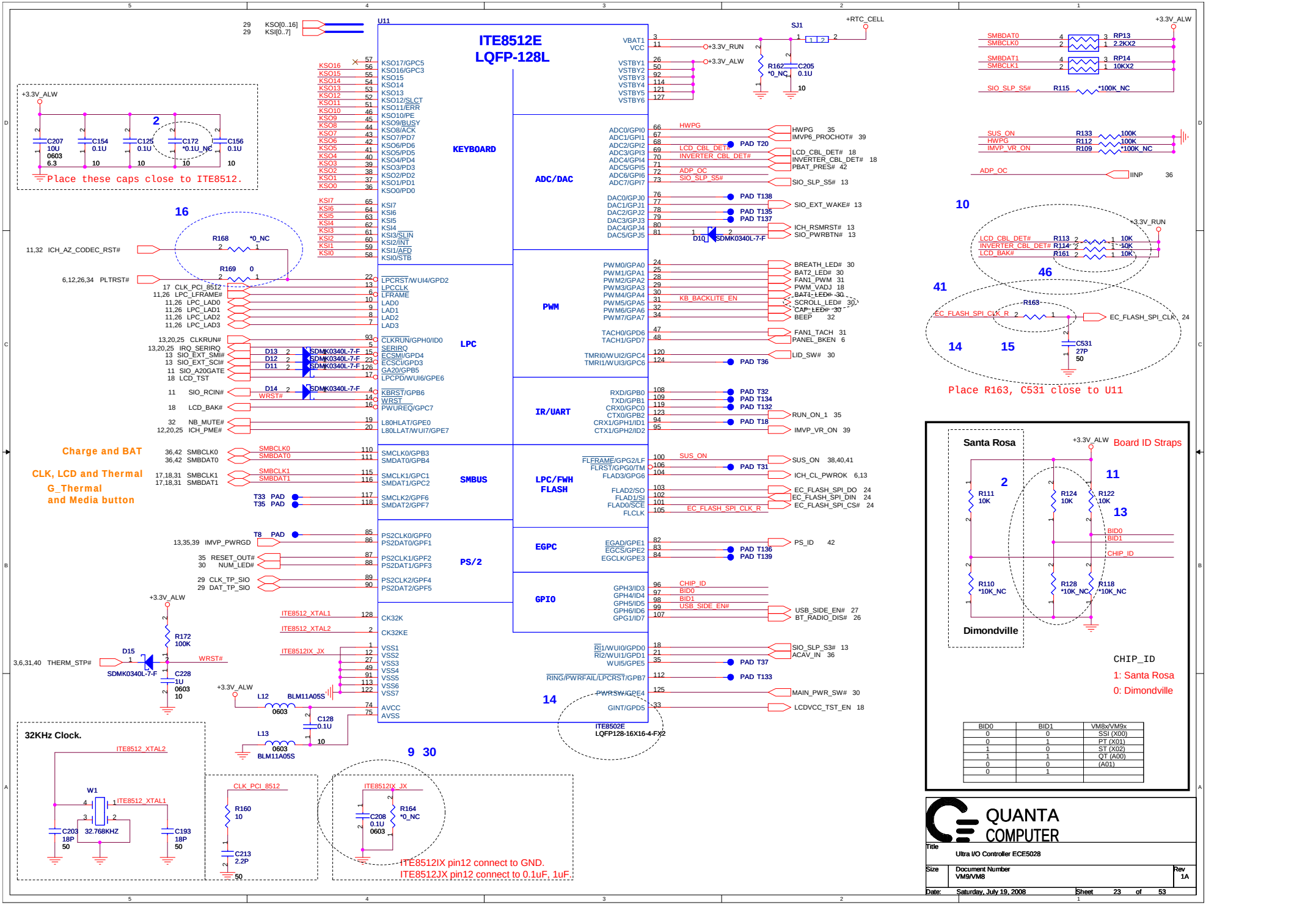
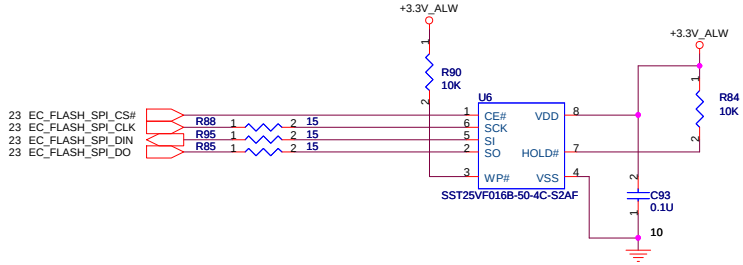


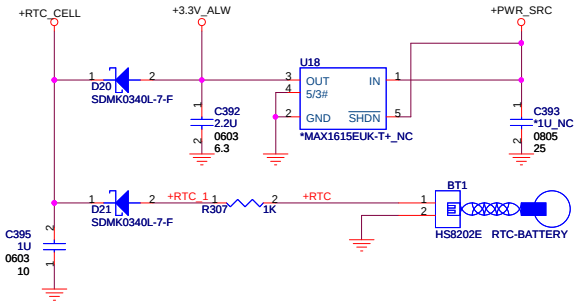

| | | |
|---|---|---|
| QUANTA COMPUTER | | |
| Title | ExpressCard/SmartCard | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 22 of 53 | |


ITE8512E
LQFP-128L
U11
KEYBOARD
ADC/DAC
PWM
LPC
IR/UART
SMBUS
LPC/FWH
FLASH
EGPC
PS/2
GPIO
Place these caps close to ITE8512.
Charge and BAT
CLK, LCD and Thermal
G_Thermal
and Media button
32KHz Clock.
W1
32.768KHZ
ITE8512IX pin12 connect to GND.
ITE8512JX pin12 connect to 0.1uF, 1uF.
Place R163, C531 close to U11
Board ID Straps
Santa Rosa
Dimondville
CHIP_ID
1: Santa Rosa
0: Dimondville
BID0 BID1 VM8x/VM9x
0 0 SSI (X00)
0 1 PT (X01)
1 0 ST (X02)
1 1 QT (A00)
0 0 (A01)
0 1
ITE8502E
LQFP128-16X16-4-FX2
QUANTA COMPUTER
Title: Ultra I/O Controller ECE5028
Size: Document Number VM9/VM8
Rev: 1A
Date: Saturday, July 19, 2008
Sheet 23 of 53

## 16Mbit (2M Byte), SPI

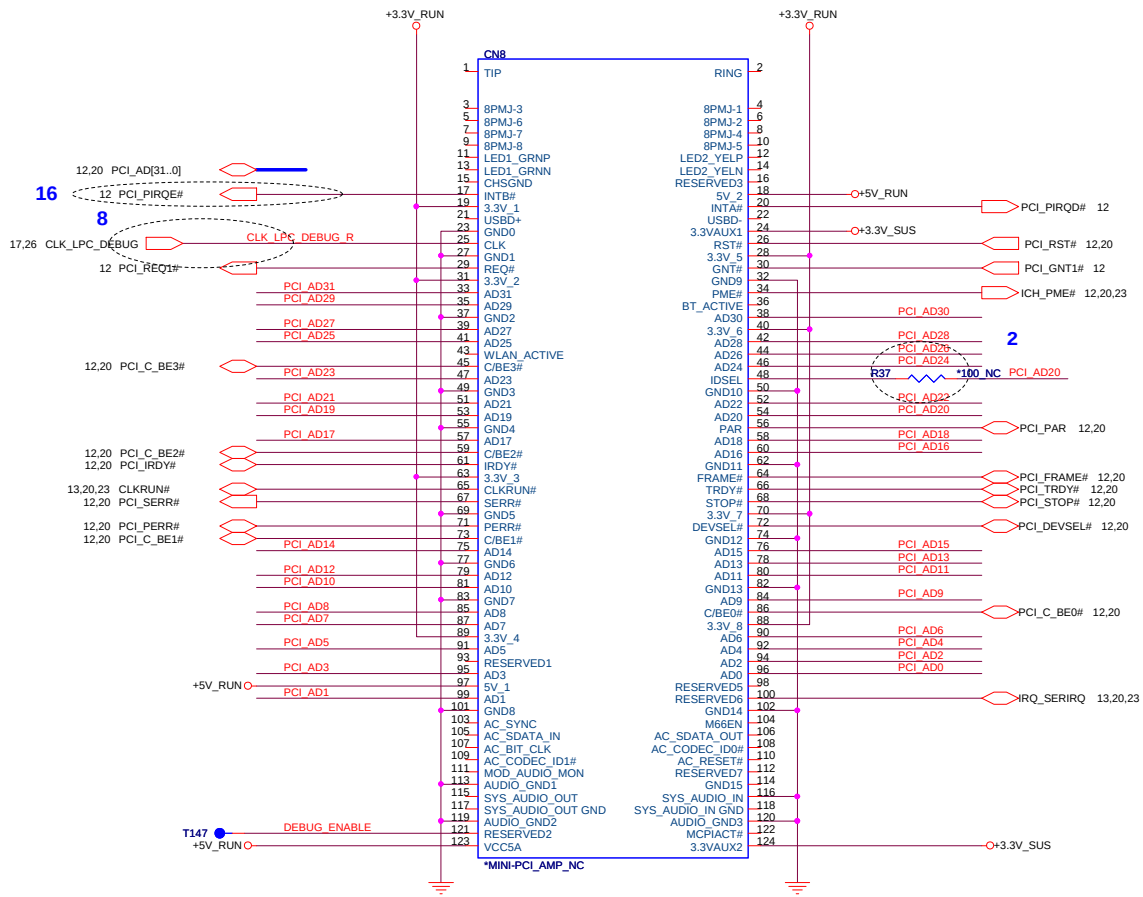



## RTC BATTERY

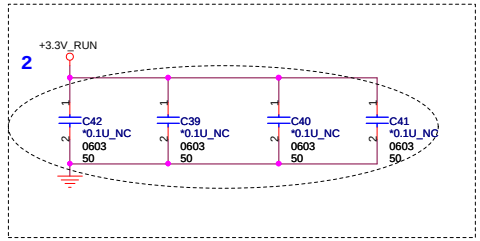


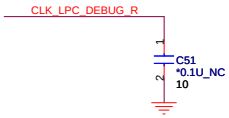

QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | Ultra I/O Controller ECE5028 | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 24 of 53 | |




**Place the debug connector on HDD area**

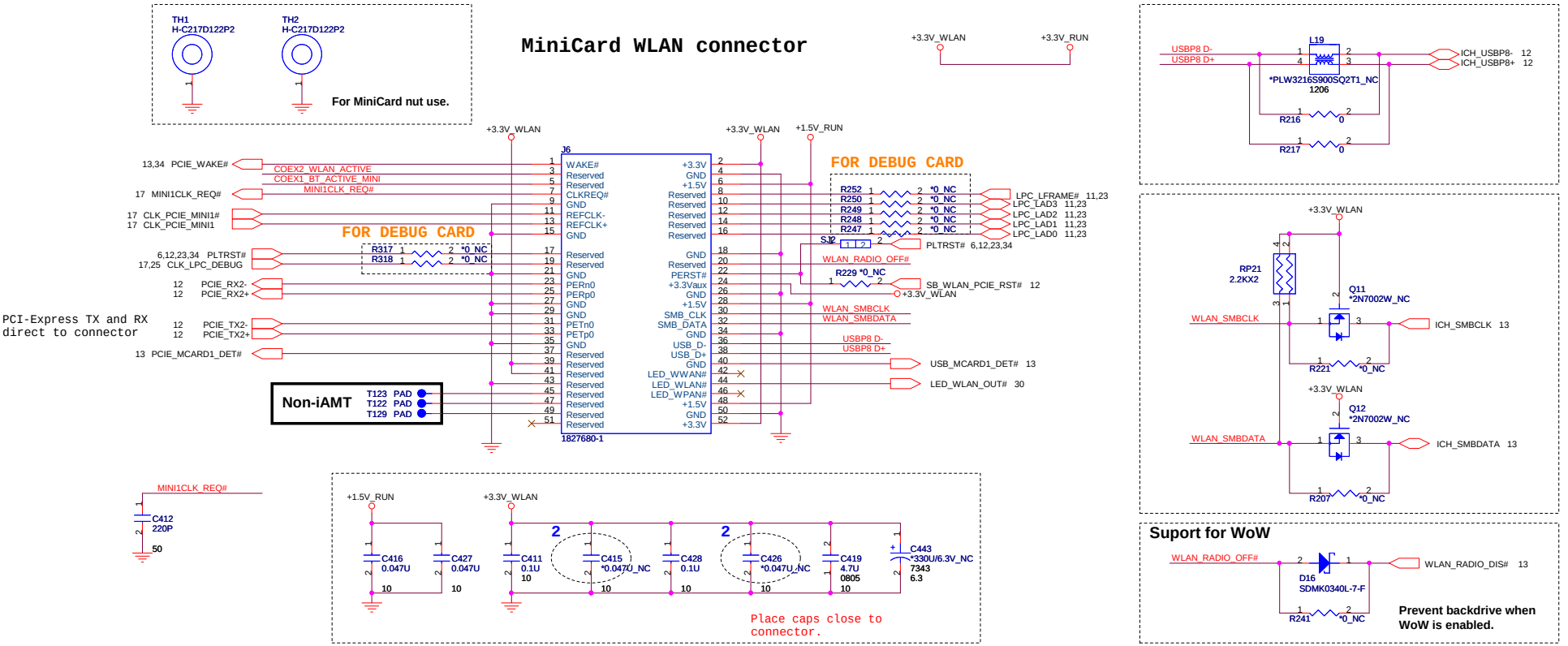



QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | Debug Port (Mini PCI) | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 25 of 53 | |

# MiniCard WLAN connector







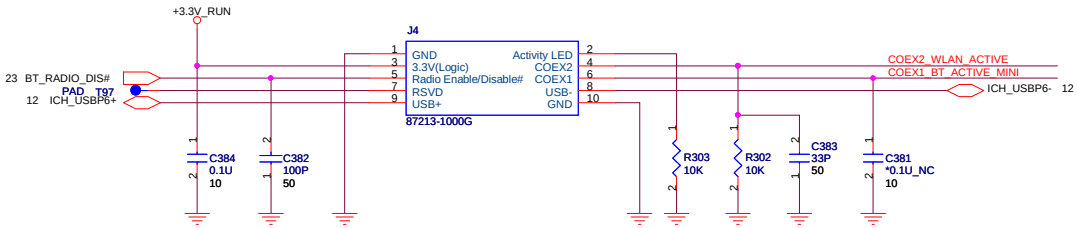








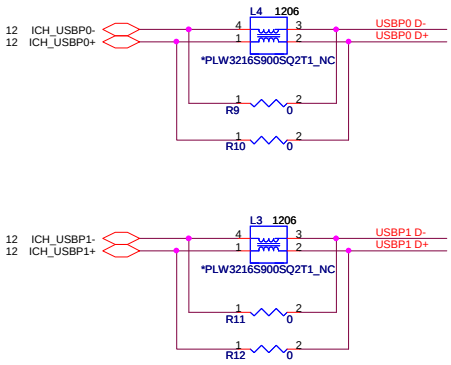

## Bluetooth



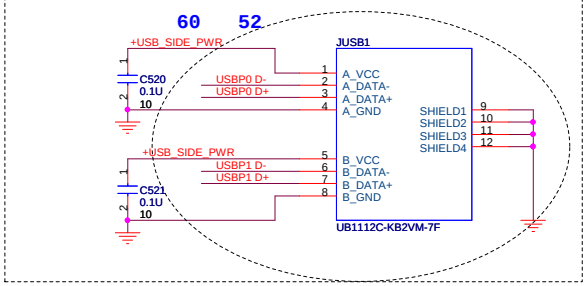

| | | | |
|---|---|---|---|
| Title | MDC CONN. | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 26 of 53 | |

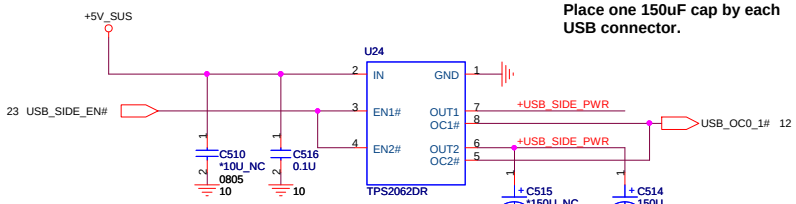
QUANTA COMPUTER

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.

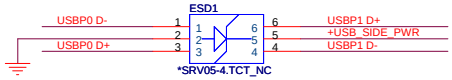



Place one 150uF cap by each USB connector.

Each channel is 1A

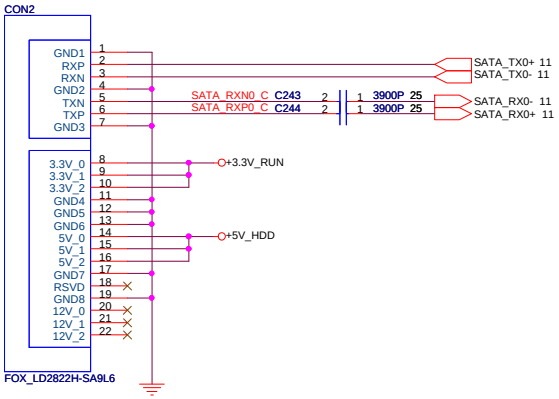
Place ESD diodes as close as USB connector.

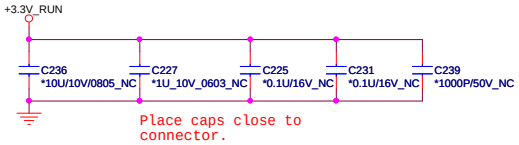


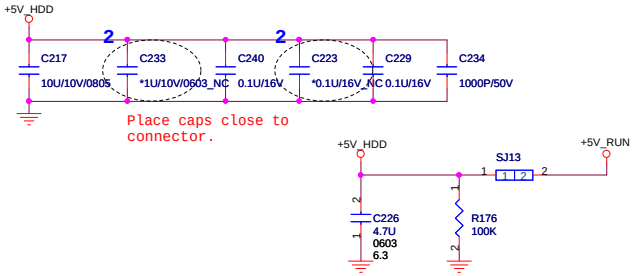

QUANTA COMPUTER

| | | |
|---|---|---|
| Title | SERIAL PORT & USB | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 27 of 53 | |

## SATA HDD Connector.

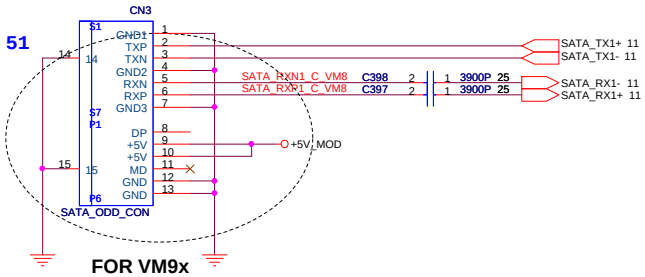


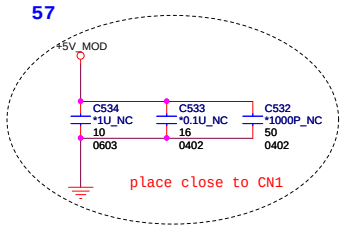



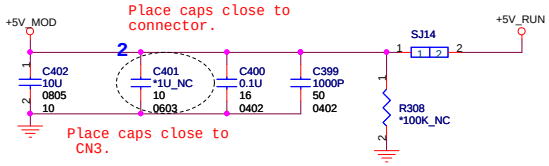

## SATA ODD Connector.

### FOR VM8x

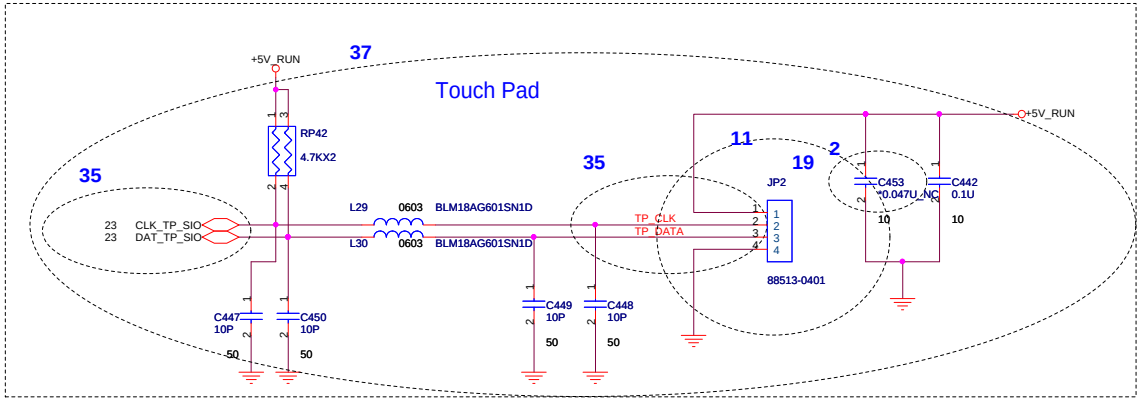



### FOR VM9x

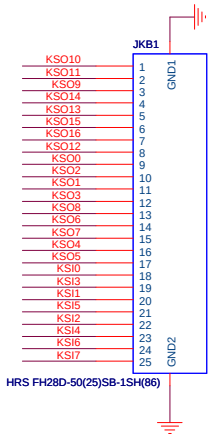


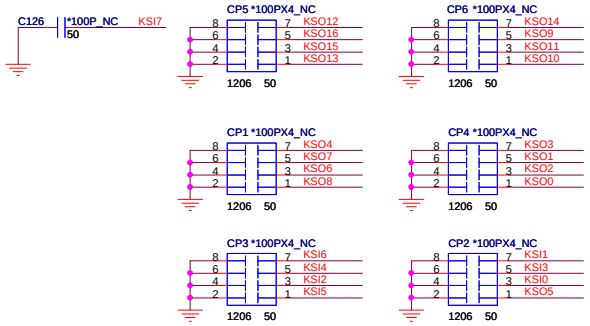




| | | |
|---|---|---|
| QUANTA COMPUTER | | |
| Title | SATA (HDD&CD_ROM) | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 28 of 53 | |




## KEYBOARD CONNECTOR


100P CAPS CLOSE TO JKB1

QUANTA COMPUTER

| | | |
|---|---|---|
| Title | TOUCH PAD, BULE TOOTH & FIR | |
| Size | Document Number VM9/VM8 | Rev 1A |
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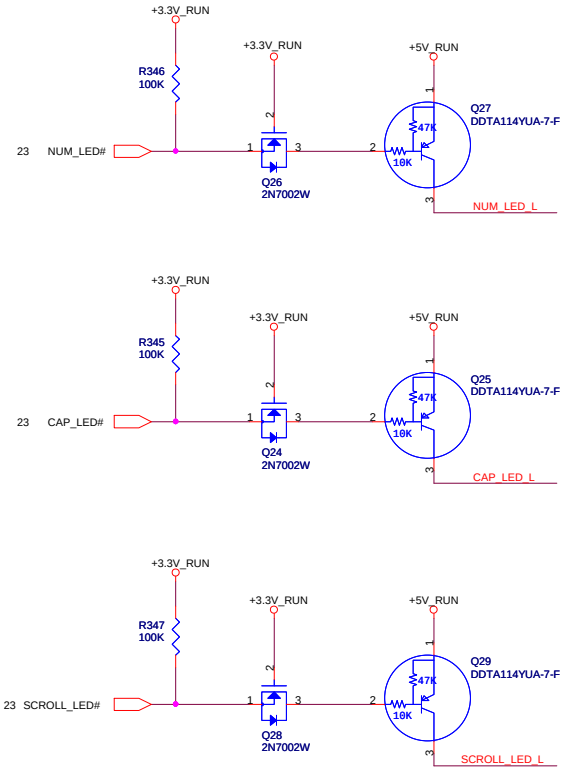
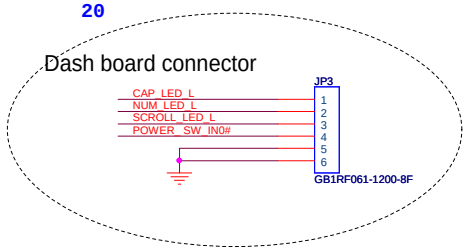
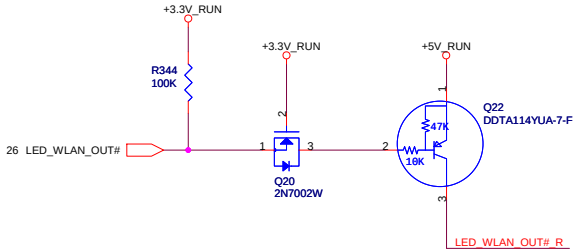
## Keyboard LED



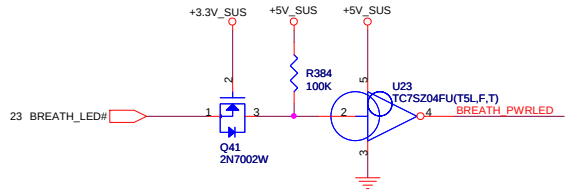

## Dash board connector



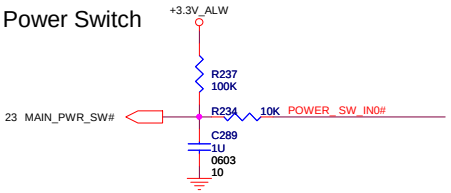

## WLAN



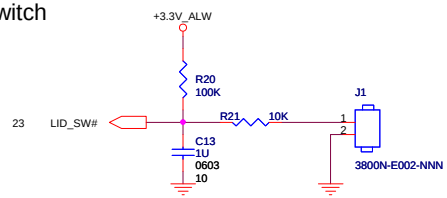

## Power & Suspend.



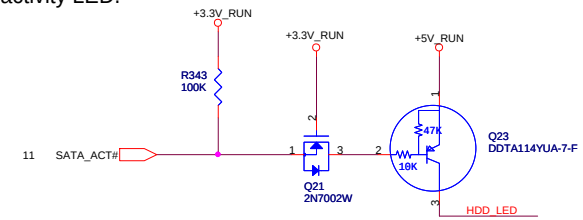

## Power Switch



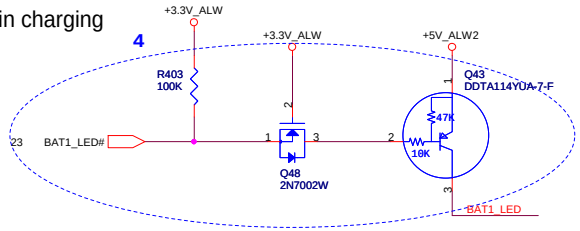

## LID Switch

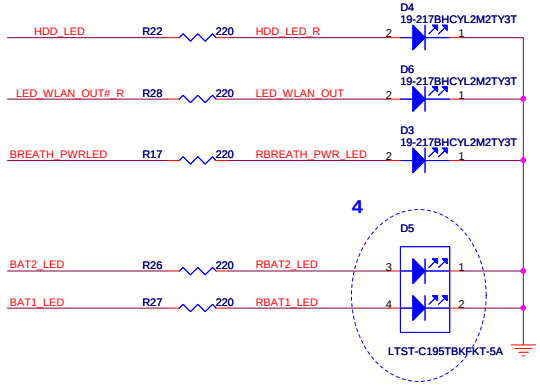



## HDD activity LED.

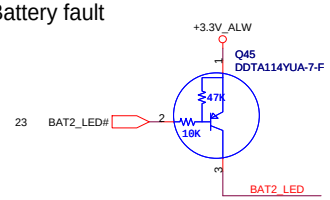



## Battery in charging



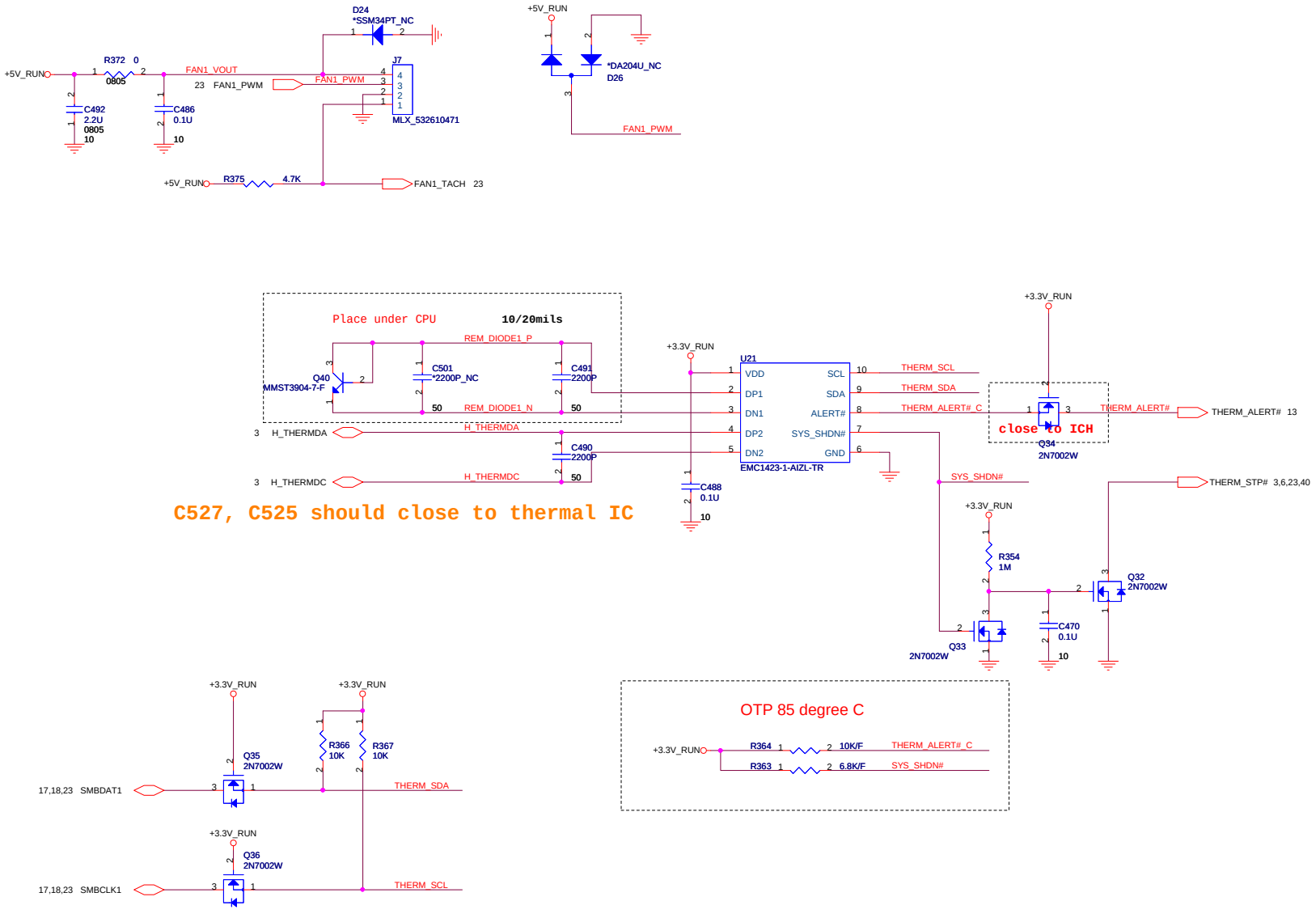




## Battery fault




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | SWITCH, KEYBOARD & LED | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 30 of 53 | |




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | FAN & THERMAL | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 31 of 53 | |

# AUDIO AMPLIFIER TPA6017A2

+5V_RUN L23 BLM21PG600SN1D +5V_SPK_AMP

C391 10U 0805 10
C389 0.47U 0603 10
C375 0.1U 10
C386 *0.1U_NC 10

13

C446 1U 10 0603
C530 1U 10 0603
C394 1U 10 0603
C390 1U 10 0603
C371 1U 10 0603

AUD_LINE_OUT_L
AUD_LINE_OUT_R

+5V_SPK_AMP

U17

PVDD1 PVDD2 VDD
BYPASS
GAIN0 GAIN1
LIN+ RIN+
LIN- RIN-
ROUT+ ROUT-
LOUT+ LOUT-
SHUTDOWN
NC EPAD GND1 GND2 GND3 GND4

LIN+ RIN+ LIN- RIN- AMP_BYPASS AUD_AMP_GAIN0 AUD_AMP_GAIN1

C374 100P 50
C385 100P 50

TPA6017A2/FAN7031/LM4874

28

AUD_SPK_R1 AUD_SPK_R2 SPK_SHUTDOWN#

## Speakers conn

J5 85204-0200L

C388 100P 50
C387 100P 50

+3.3V_RUN

R301 100K

D19 SDMK0340L-7-F NB_MUTE# 23
D18 SDMK0340L-7-F EAPD#

Q17 2N7002W HP_JD

+5V_SPK_AMP

R294 *100K_NC
R293 100K
R306 100K
R305 *100K_NC

AUD_AMP_GAIN0
AUD_AMP_GAIN1

| GAIN0 | GAIN1 | GAIN |
|---|---|---|
| 0 | 0 | 6dB |
| 0 | 1 | 10dB |
| 1 | 0 | 15.6dB |
| 1 | 1 | 21.6dB |

## JACK SENSE

+AVDDA R300 5.1K/F SENSEA

R298 20K/F
R299 5.1K/F
C379 *1000P_NC 50

2

MIC_JD 2 HP_JD 2

Q15 2N7002W
Q16 2N7002W

45

AZ_CODEC_BITCLK

R336 *22_NC
C369 *1P_NC 50

Put R336, C269 close to U15 pin 6, reserve for EMI

Close to U1

2

+AVDDA C380 0.1U 16

C378 1U 0603 10
AUD_PC_BEEP BEEP2
R297 10K
BEEP1
R296 *2.2K_NC

BEEP 23
SPKR 13

U16 74LVC1G86GW

# AUDIO CODEC

+3.3V_RUN L20 BLM21PG600SN1D +3V_DVDD

C328 10U 0805 10
C330 1U 0603 10
C354 0.1U 10
C408 10U 0805 10
C331 0.1U 10
DVDD_1.8V

+3V_DVDD
C332 0.1U 10

+AVDDA L22 BLM21PG600SN1D +3.3V_RUN

C396 0.1U 10
C365 0.1U 10
C373 1U 0603 10
C376 *10U_NC 0805 10

AVEE
C377 10U 0805 10
C372 0.1U 10

U15

VDD_IO DVDD_18 DVDD_33 DVDD_44
AVDD_26 AVDD_40 AVEE

11,23 ICH_AZ_CODEC_RST# RESET#
11 ICH_AZ_CODEC_BITCLK AZ_CODEC_BITCLK BIT_CLK
11 ICH_AZ_CODEC_SYNC SYNC
11 ICH_AZ_CODEC_SDIN0 R266 33 AZ_CODEC_SDIN0 SDATA_IN
11 ICH_AZ_CODEC_SDOUT SDATA_OUT

33 DIBP_HS R281 0 DIBP_SYS DIB_P
33 DIBN_HS R286 0 DIBN_SYS DIB_N

AUD_PC_BEEP PC_BEEP
S/PDIF

2

R278 10K
R274 *10K_NC
GPIO2 GPIO1 EAPD#/GPIO0

34

CX20561-12Z Not support digital MIC
CX20561-13Z support digital MIC

18 DMIC_CLK
19 DMIC_DATA
R399 *0_NC DMIC_CLK_R DMIC_CLOCK
R400 *0_NC DMIC_DATA_R DMIC_1/2

PORTA_L PORTA_R AUD_HP_L AUD_HP_R
MICBIASB PORTB_L PORTB_R
MICBIASC PORTC_L PORTC_R AUD_MIC1_VREFO AUD_MIC_L AUD_MIC_R
PORTD_L PORTD_R
MIC_L MIC_R
MONO STEREO_L STEREO_R AUD_LINE_OUT_L AUD_LINE_OUT_R
SENSEA
VREF
FLY_P FLY_N
VREF_LO VREF_HI RESERVED_32 RESERVED_33

C368 1U 0603 10

C366 10U 0805 10
C367 0.1U 10

34 48

DVSS_7 DVSS_41 AVSS_25 AVSS_38

CX20561-12Z

C364 1U 0603 10
C362 1U 0603 10

DIGITAL ANALOG

L27 BLM18BD601SN1D 0603
L28 BLM18BD601SN1D 0603

AUD_HP_L1 AUD_HP_R1

C417 100P 50
C444 100P 50

29

R186 100K +3.3V_RUN
HP_JD

CN7 JAS233L-B10H9-7F

## HP JACK

AUD_MIC1_VREFO_L

R284 4.7K

C339 2.2U 0805 10
C358 2.2U 0805 10

AUD_MIC_L1 AUD_MIC_L2
AUD_MIC_R1 AUD_MIC_R2

R273 100
R280 100

L24 BLM18BD601SN1D 0603
L26 BLM18BD601SN1D 0603

AUD_MIC_L3 AUD_MIC_R3

C410 100P 50
C414 100P 50

L24.L25,L30,L31,
FB_600ohm+-25%_100MHz
_200mA_0.6ohm DC

29

R230 100K +3.3V_RUN
MIC_JD

CN5 *JAS233L-B10H9-7F_NC

## MIC JACK

11 12 18 29

MIC_JD
CN11 JAS233L-B10H9-7F

## MIC JACK

AUD_MIC_L3
AUD_MIC_R3

## PC Beep GAIN CONTROL

34 36 48

| GAIN | GPIO1 | GPIO2 |
|---|---|---|
| 0dB | 10K | 10K |
| -6dB | omit | omit |
| -12dB | 10K | omit |
| -18dB | omit | 10K |

49

## EMI Request

R402 R401 R304 R261 R295 R334 R185 0 0603

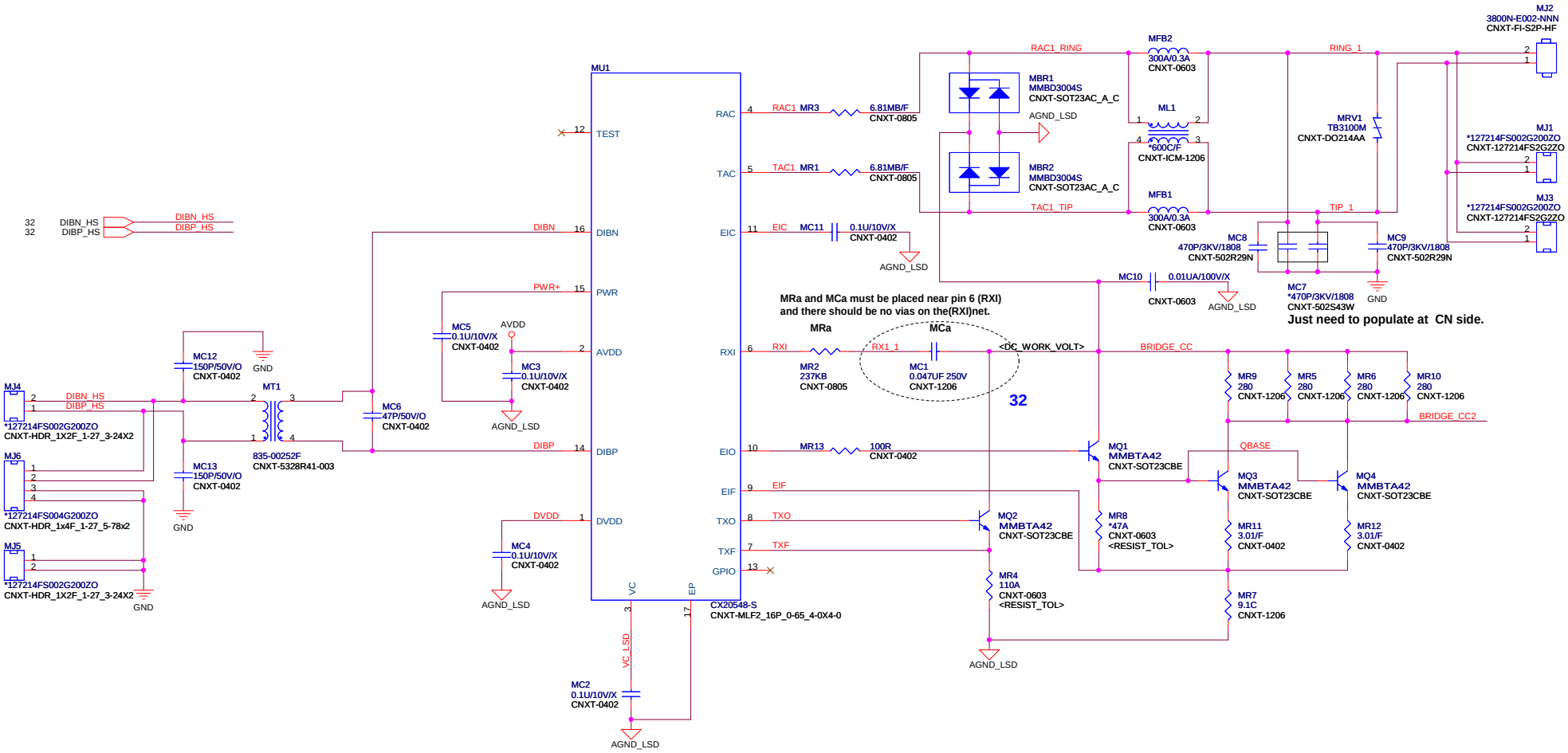
QUANTA COMPUTER

Title

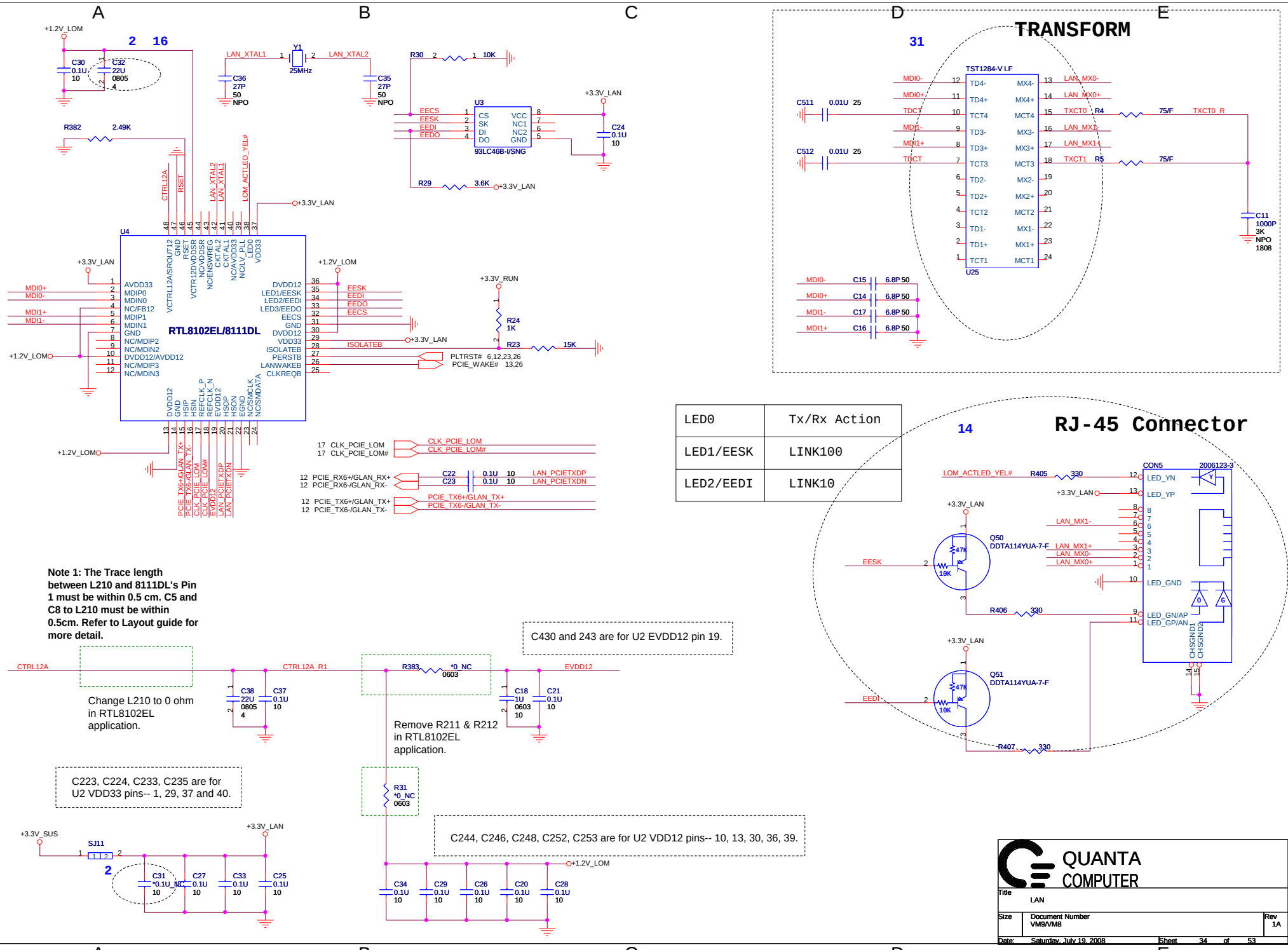
Size: Document Number VM9/VM8 Rev 1A

Date: Wednesday, June 25, 2008 Sheet 32 of 53

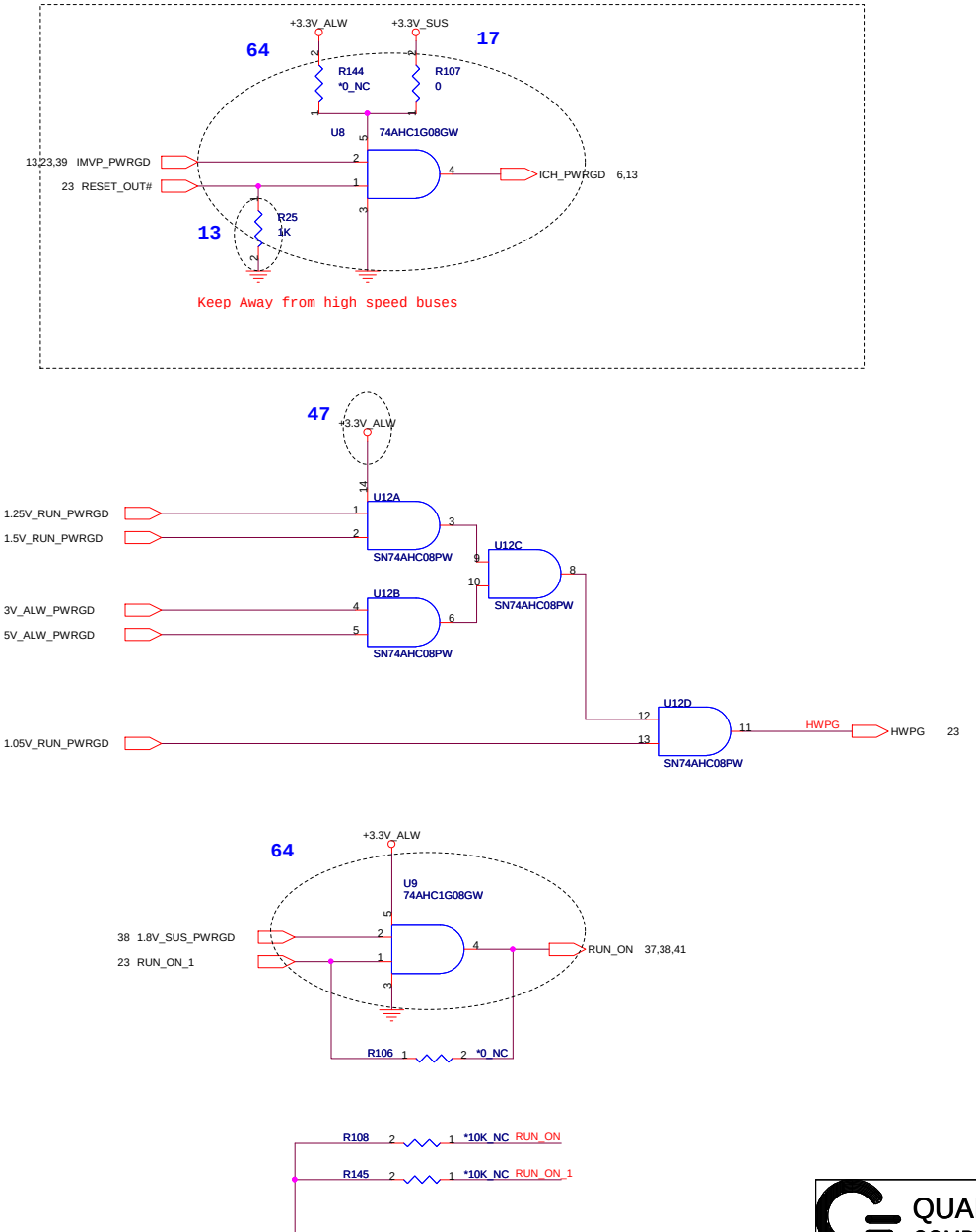
| Revision History | | |
|---|---|---|
| REV | Description | Date |
| 0 | Initial Release | April 26, 2005 |
| 4 | | |
| | | |
| | | |




| | | | |
|---|---|---|---|
| Title | | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: Wednesday, June 25, 2008 | | Sheet 33 of 53 | |

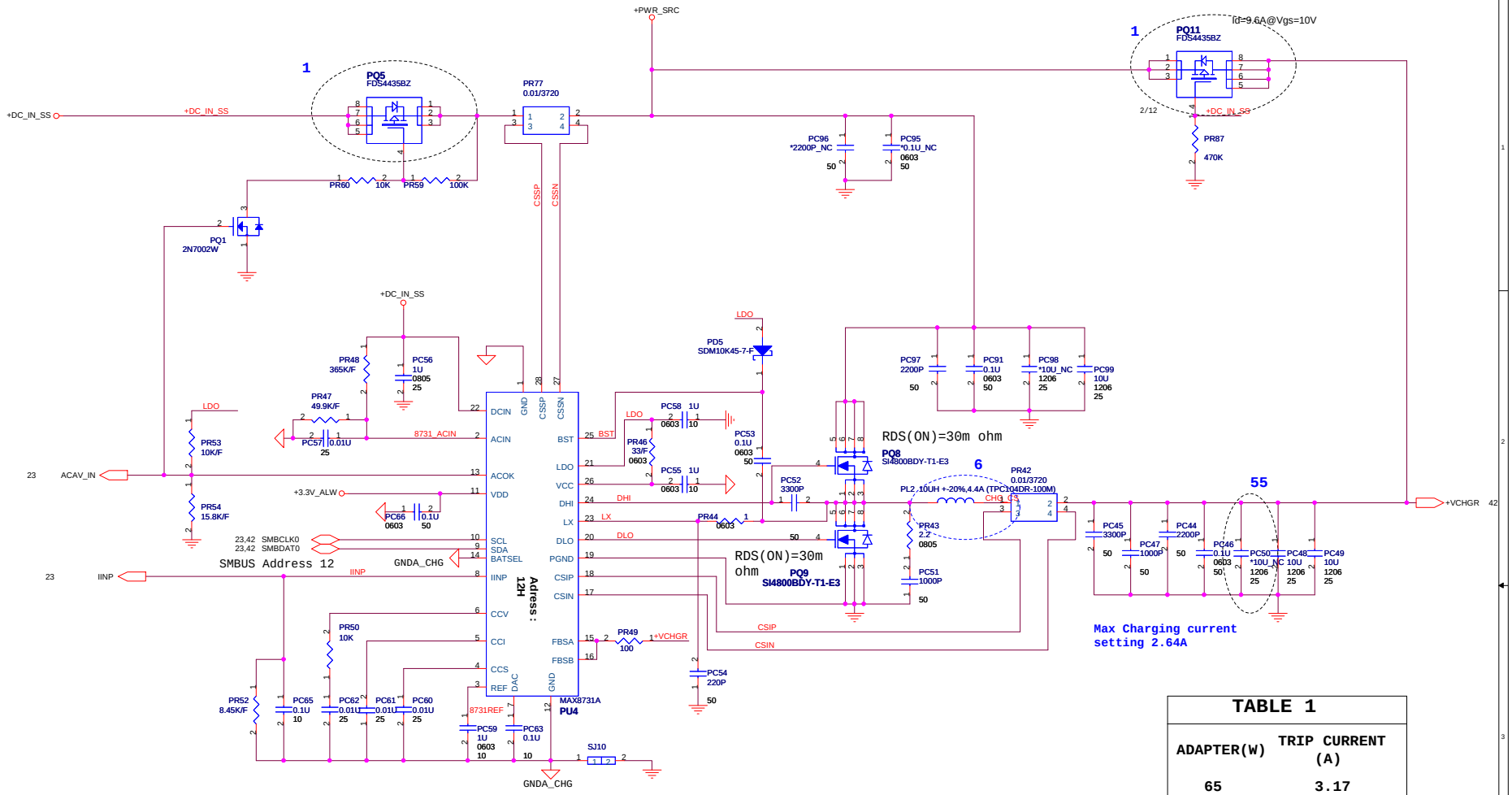



| LED0 | Tx/Rx Action |
|---|---|
| LED1/EESK | LINK100 |
| LED2/EEDI | LINK10 |




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | System Reset Circuit | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Friday, July 25, 2008 | Sheet 35 of 53 | |

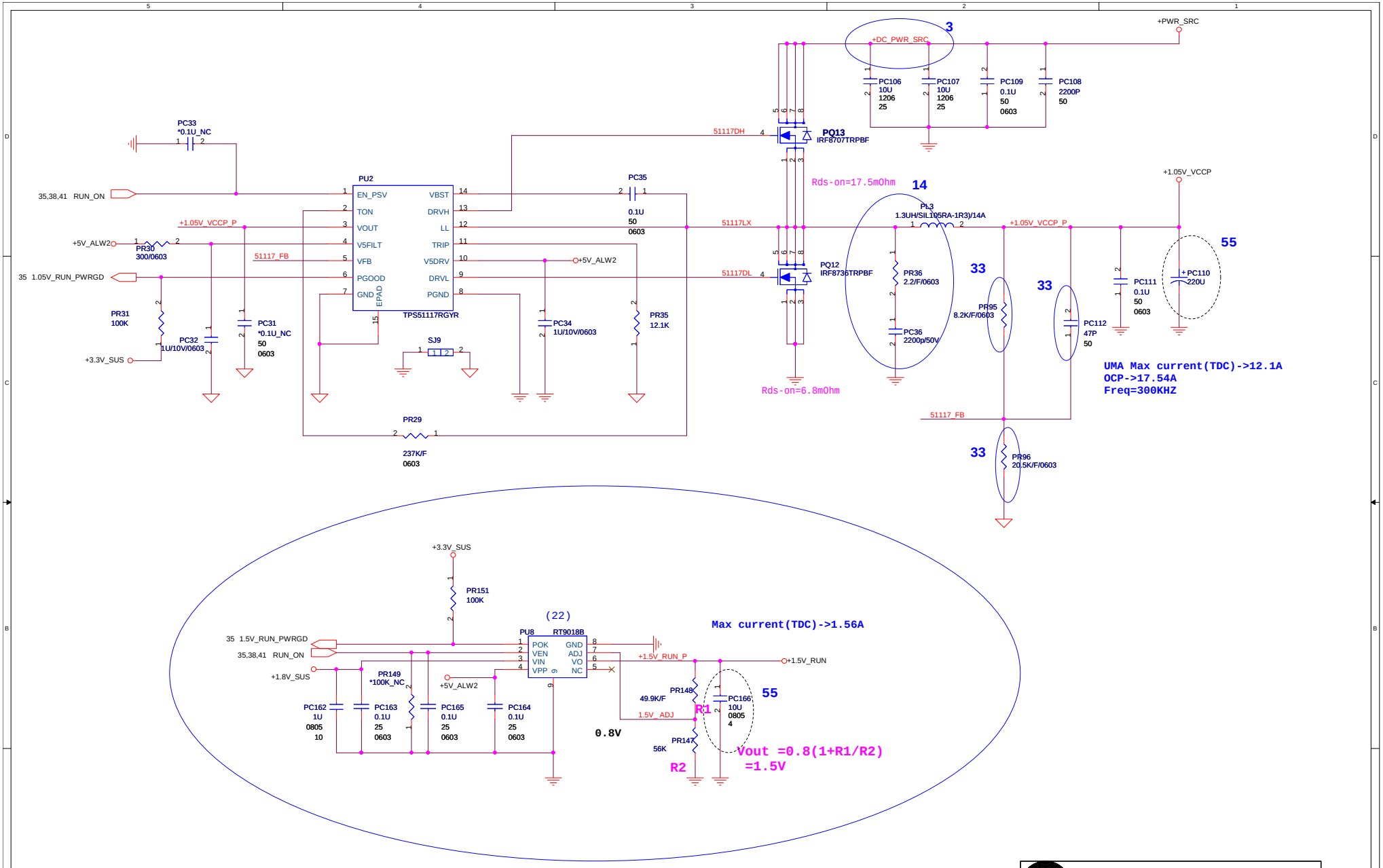



## TABLE 1

| ADAPTER(W) | TRIP CURRENT (A) |
|---|---|
| 65 | 3.17 |
| 90 | 4.43 |
| 130 | 6.43 |
| 150 | 7.43 |
| 200 | 9.75 |
| 230 | 11.28 (see note3) |

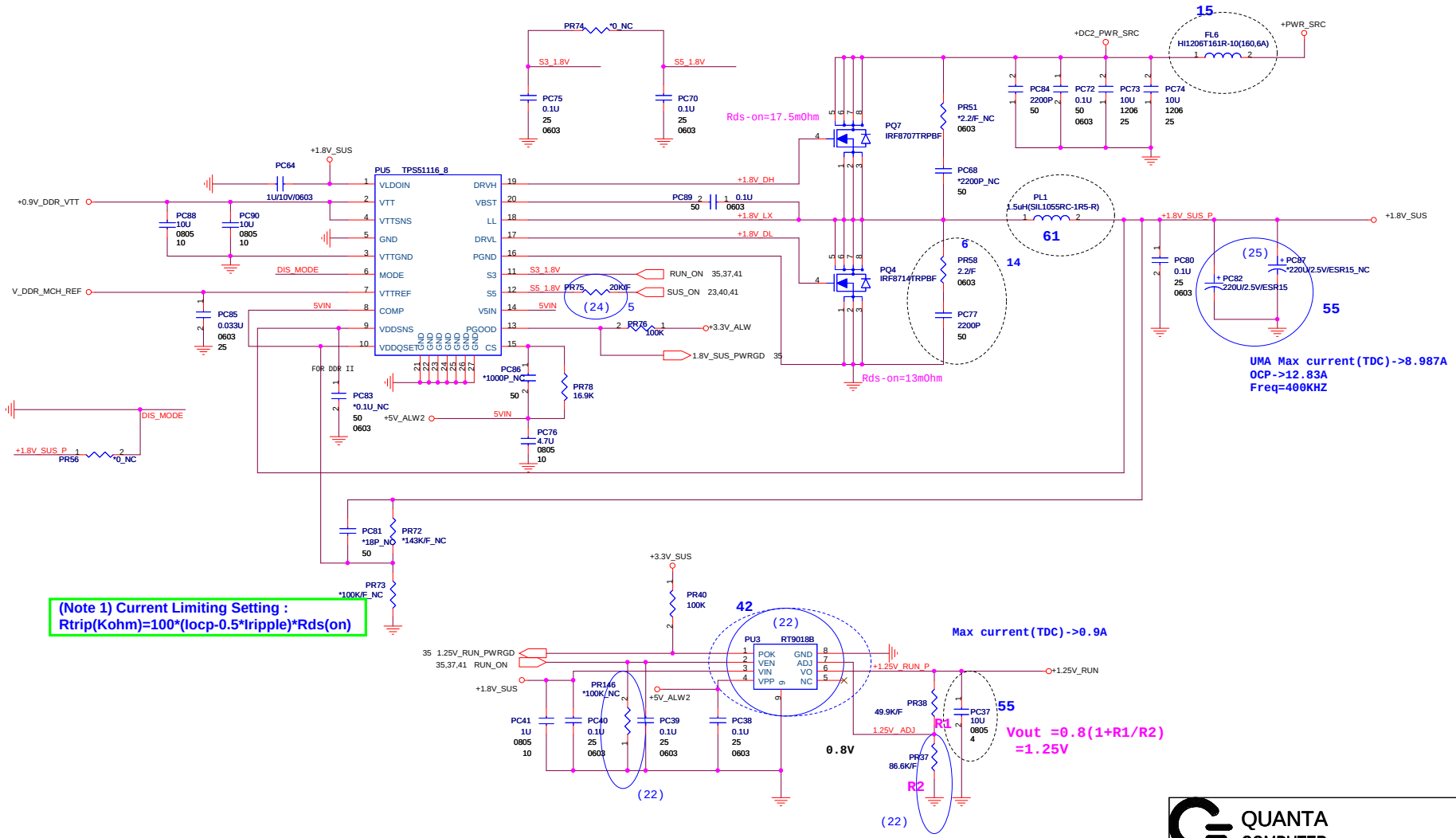
QUANTA COMPUTER

| | | |
|---|---|---|
| Title | Charger (ISL88731) | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 36 of 53 | |




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | 1.05_VCCP & 1.5V_RUN | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 37 of 53 | |


PU5 TPS51116_8
VLDOIN
VTT
VTTSNS
GND
VTTGND
MODE
VTTREF
COMP
VDDSNS
VDDQSET
DRVH
VBST
LL
DRVL
PGND
S3
S5
V5IN
PGOOD
CS
+0.9V_DDR_VTT
V_DDR_MCH_REF
+1.8V_SUS
DIS_MODE
5VIN
S3_1.8V
S5_1.8V
+1.8V_DH
+1.8V_LX
+1.8V_DL
RUN_ON 35,37,41
SUS_ON 23,40,41
1.8V_SUS_PWRGD 35
+3.3V_ALW
+5V_ALW2
FOR DDR II
PR74 *0_NC
PC75 0.1U 25 0603
PC70 0.1U 25 0603
Rds-on=17.5mOhm
PQ7 IRF8707TRPBF
PQ4 IRF8714TRPBF
Rds-on=13mOhm
+DC2_PWR_SRC
+PWR_SRC
FL6 HI1206T161R-10(160,6A)
PC84 2200P 50
PC72 0.1U 50 0603
PC73 10U 1206 25
PC74 10U 1206 25
PR51 *2.2/F_NC 0603
PC68 *2200P_NC 50
PL1 1.5uH(SIL1055RC-1R5-R)
PR58 2.2/F 0603
PC77 2200P 50
PC80 0.1U 25 0603
PC82 220U/2.5V/ESR15
PC87 *220U/2.5V/ESR15_NC
+1.8V_SUS_P
+1.8V_SUS
PC64 1U/10V/0603
PC88 10U 0805 10
PC90 10U 0805 10
PC85 0.033U 0603 25
PR75 20K/F
PR76 100K
PC83 *0.1U_NC 50 0603
PC86 *1000P_NC 50
PR78 16.9K
PC76 4.7U 0805 10
PR56 *0_NC
PC81 *18P_NC 50
PR72 *143K/F_NC
PR73 *100K/F_NC
UMA Max current(TDC)->8.987A
OCP->12.83A
Freq=400KHZ
(Note 1) Current Limiting Setting :
Rtrip(Kohm)=100*(Iocp-0.5*Iripple)*Rds(on)
+3.3V_SUS
PR40 100K
PU3 RT9018B
POK
VEN
VIN
VPP
GND
ADJ
VO
NC
1.25V_RUN_PWRGD 35
RUN_ON 35,37,41
+1.25V_RUN_P
+1.25V_RUN
PR146 *100K/_NC
PC41 1U 0805 10
PC40 0.1U 25 0603
PC39 0.1U 25 0603
PC38 0.1U 25 0603
PR38 49.9K/F
PR37 86.6K/F
PC37 10U 0805 4
1.25V_ADJ
0.8V
R1
R2
Max current(TDC)->0.9A
Vout =0.8(1+R1/R2)
=1.25V
QUANTA COMPUTER
Title
1.8VSUS & 0.9VTT (TPS51116)
Size
Document Number
VM9/VM8
Rev
1A
Date: Wednesday, June 25, 2008
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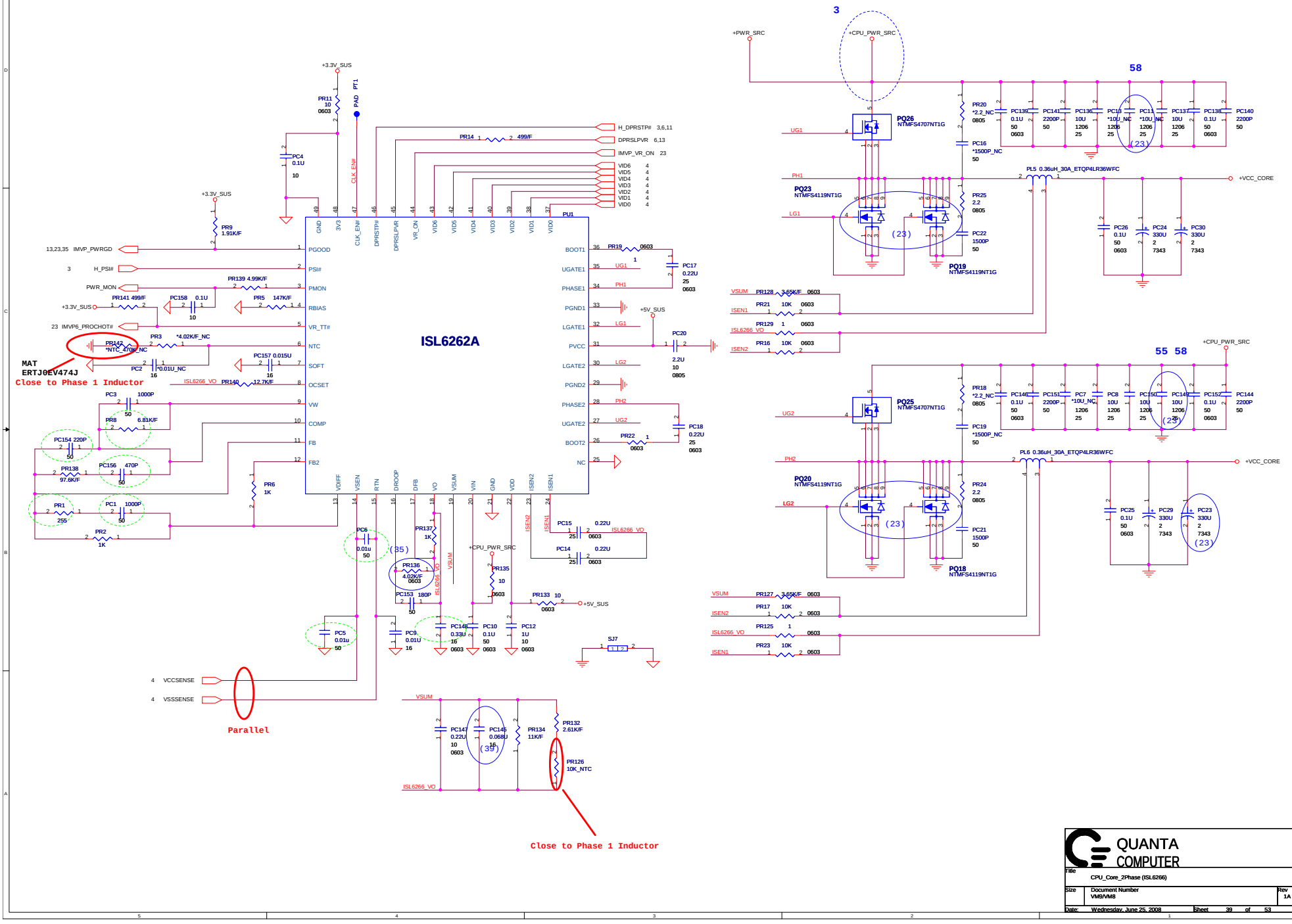
ISL6262A
PU1
MAT
ERTJ0EV474J
Close to Phase 1 Inductor
Parallel
Close to Phase 1 Inductor
+3.3V_SUS
+5V_SUS
+CPU_PWR_SRC
+PWR_SRC
+VCC_CORE
PQ26 NTMFS4707NT1G
PQ23 NTMFS4119NT1G
PQ19 NTMFS4119NT1G
PQ25 NTMFS4707NT1G
PQ20 NTMFS4119NT1G
PQ18 NTMFS4119NT1G
PL5 0.36uH_30A_ETQP4LR36WFC
PL6 0.36uH_30A_ETQP4LR36WFC
QUANTA COMPUTER
CPU_Core_2Phase (ISL6266)
VM8/VM8
Wednesday, June 25, 2008
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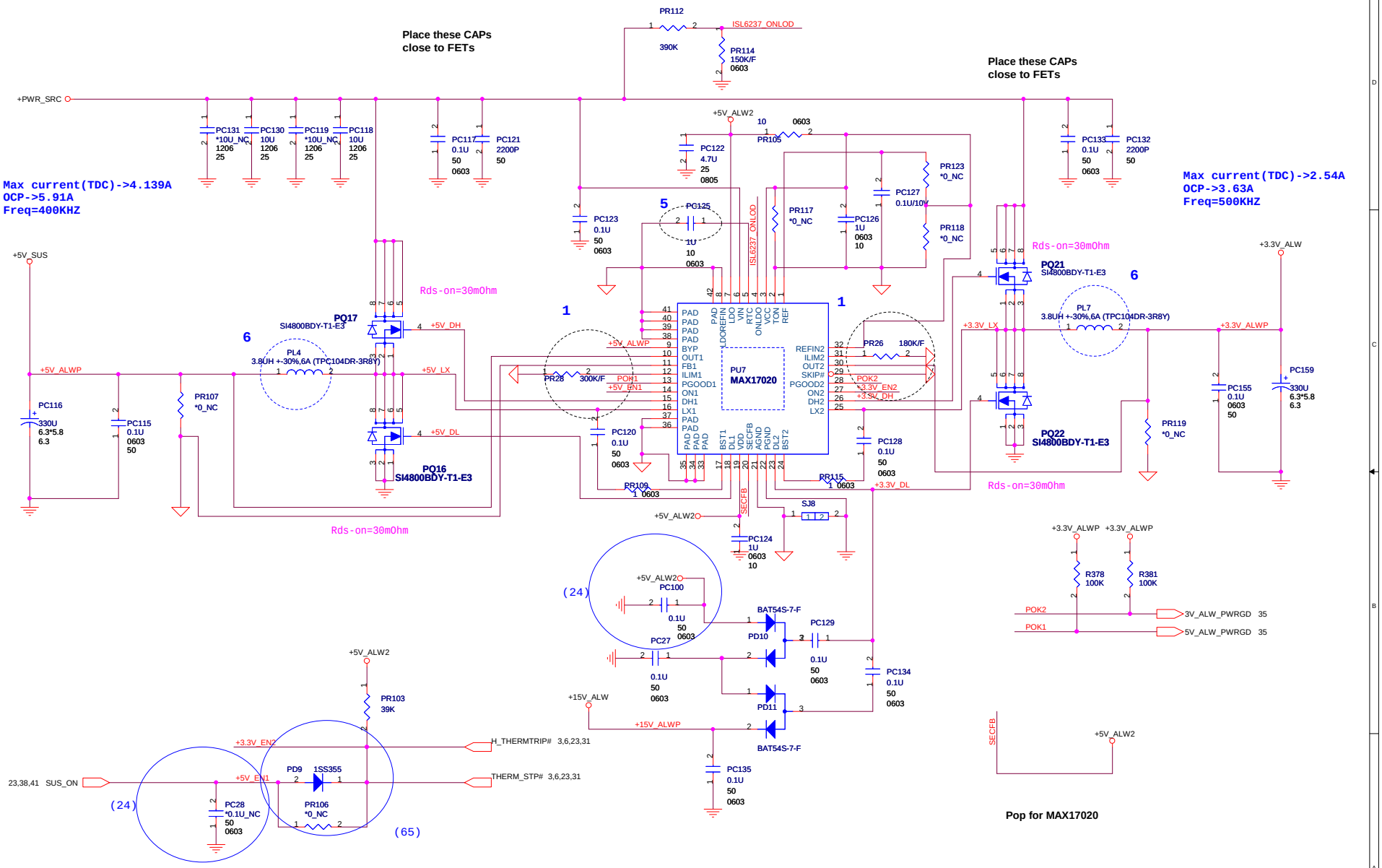
# DC/DC +3V_ALW/+5V_SUS/+5V_ALW /+15V_ALW




| | |
|---|---|
| Title | 3VALW,5V,3V, Power On |
| Size | Document Number VM9/VM8 — Rev 1A |
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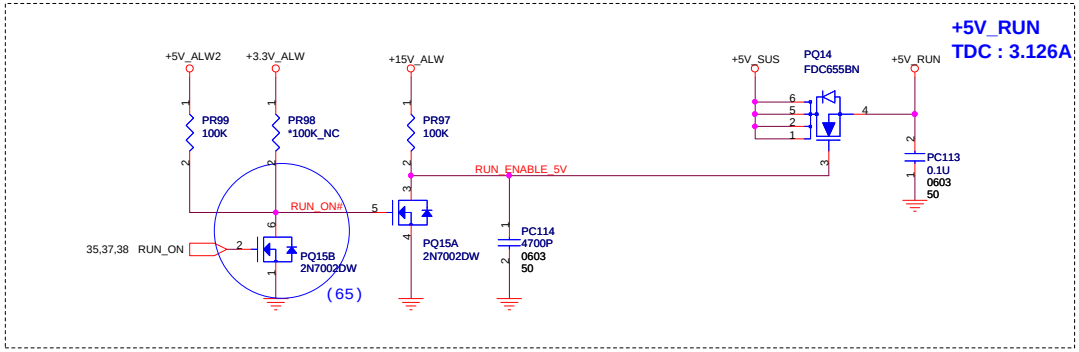
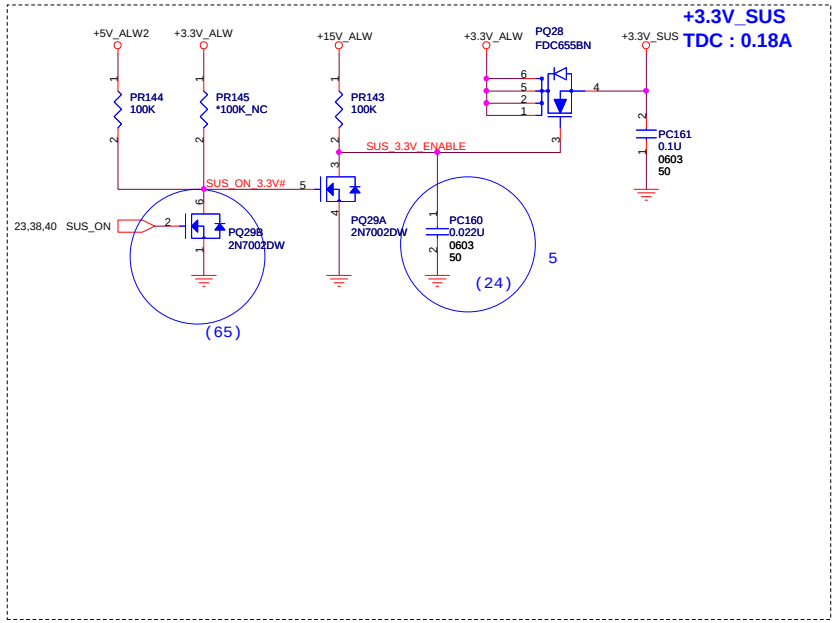
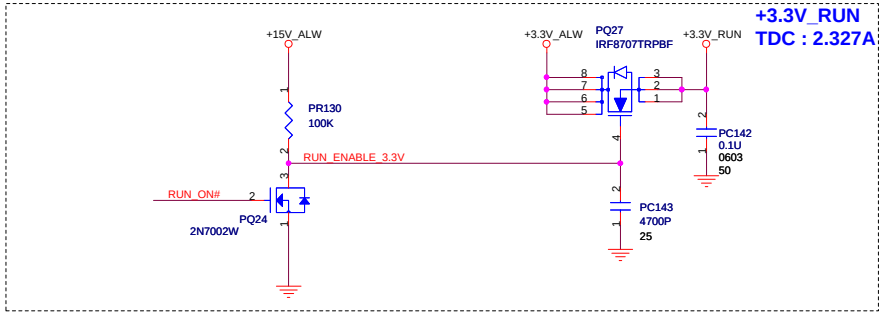
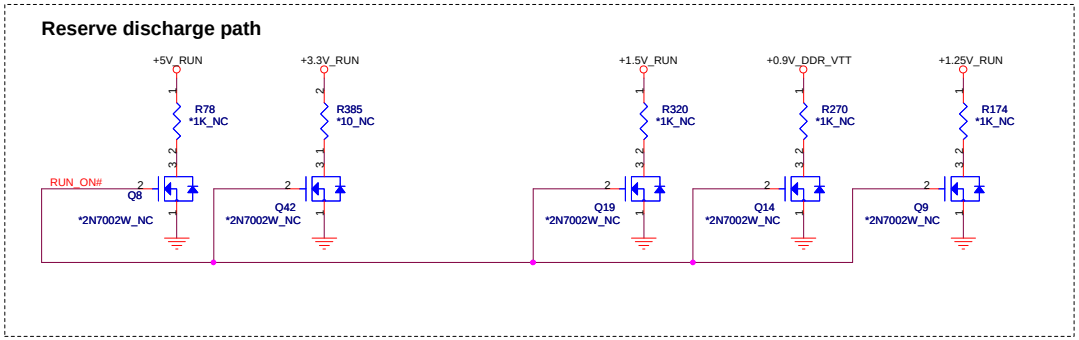
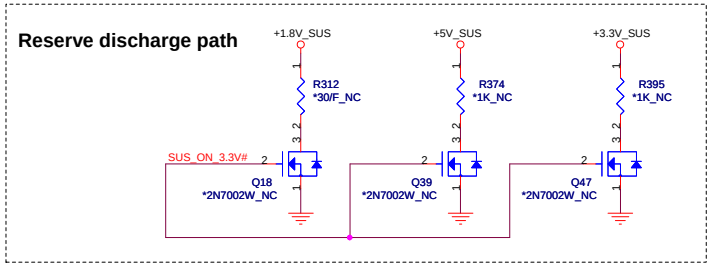
QUANTA COMPUTER




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | RUN POWER SW | |
| Size | Document Number VM9/VM8 | Rev 1A |
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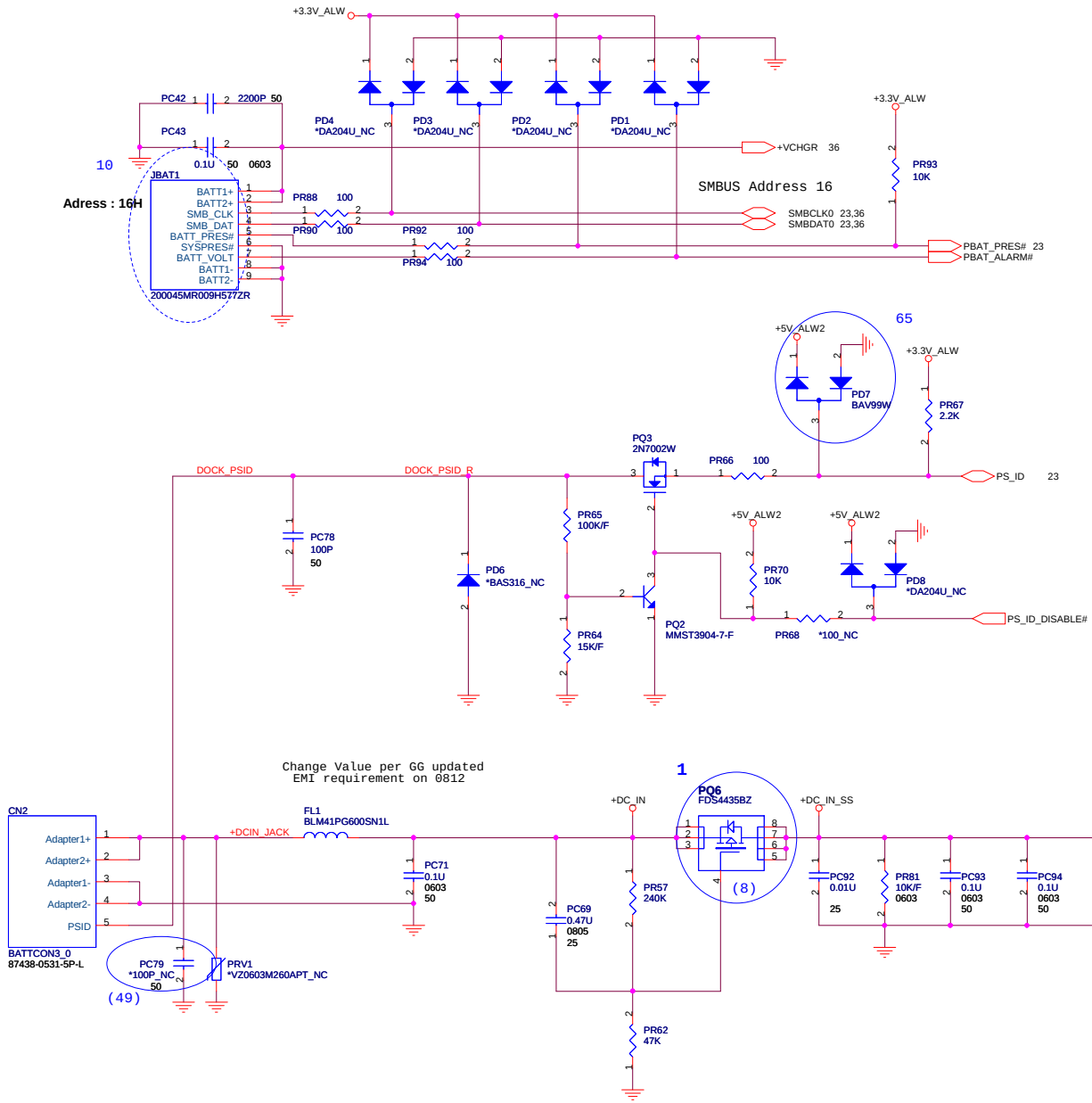
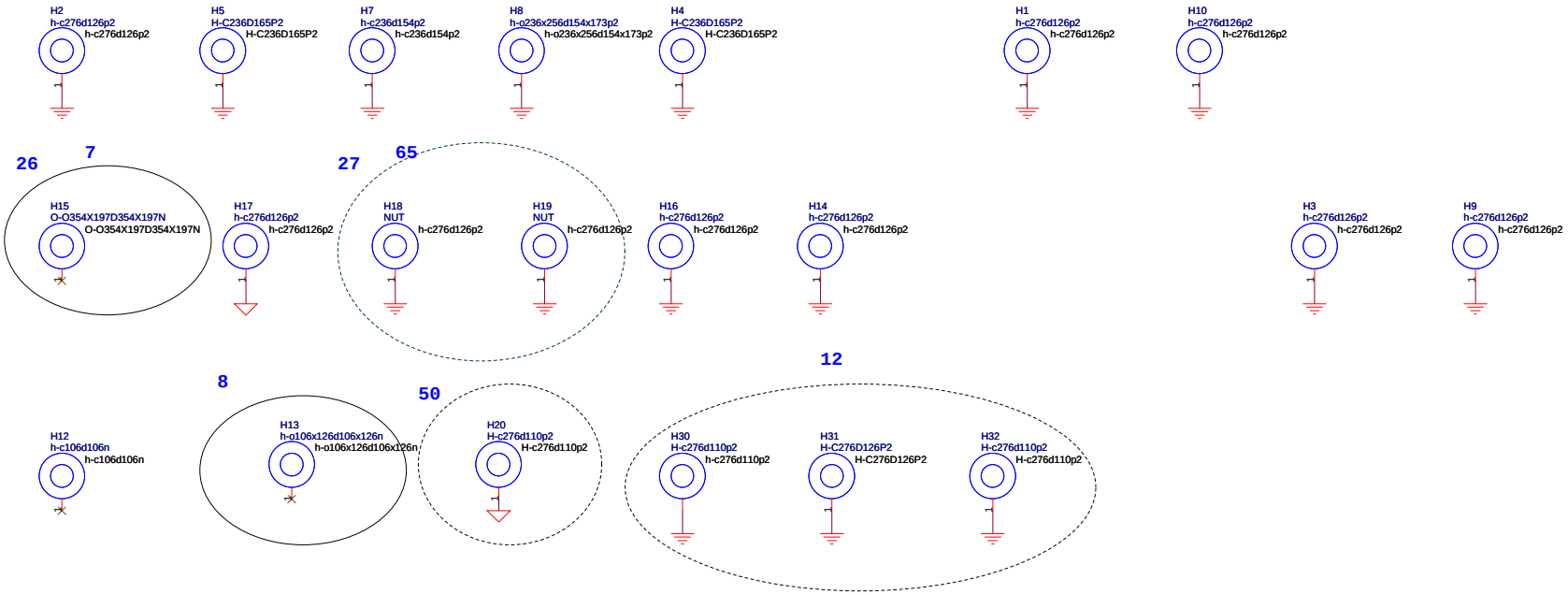



QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | DCIN,BATT CONNECTOR | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 42 of 53 | |




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | SCREW PAD | |
| Size | Document Number VM9/VM8 | Rev 1A |
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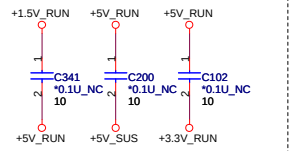
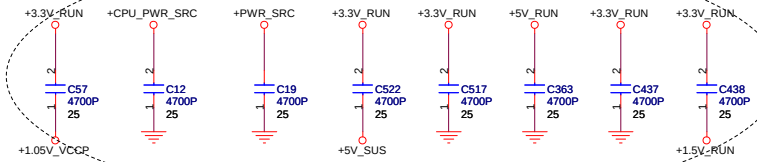
## Reserved for EMI.

### Stitching caps for PCI bus.



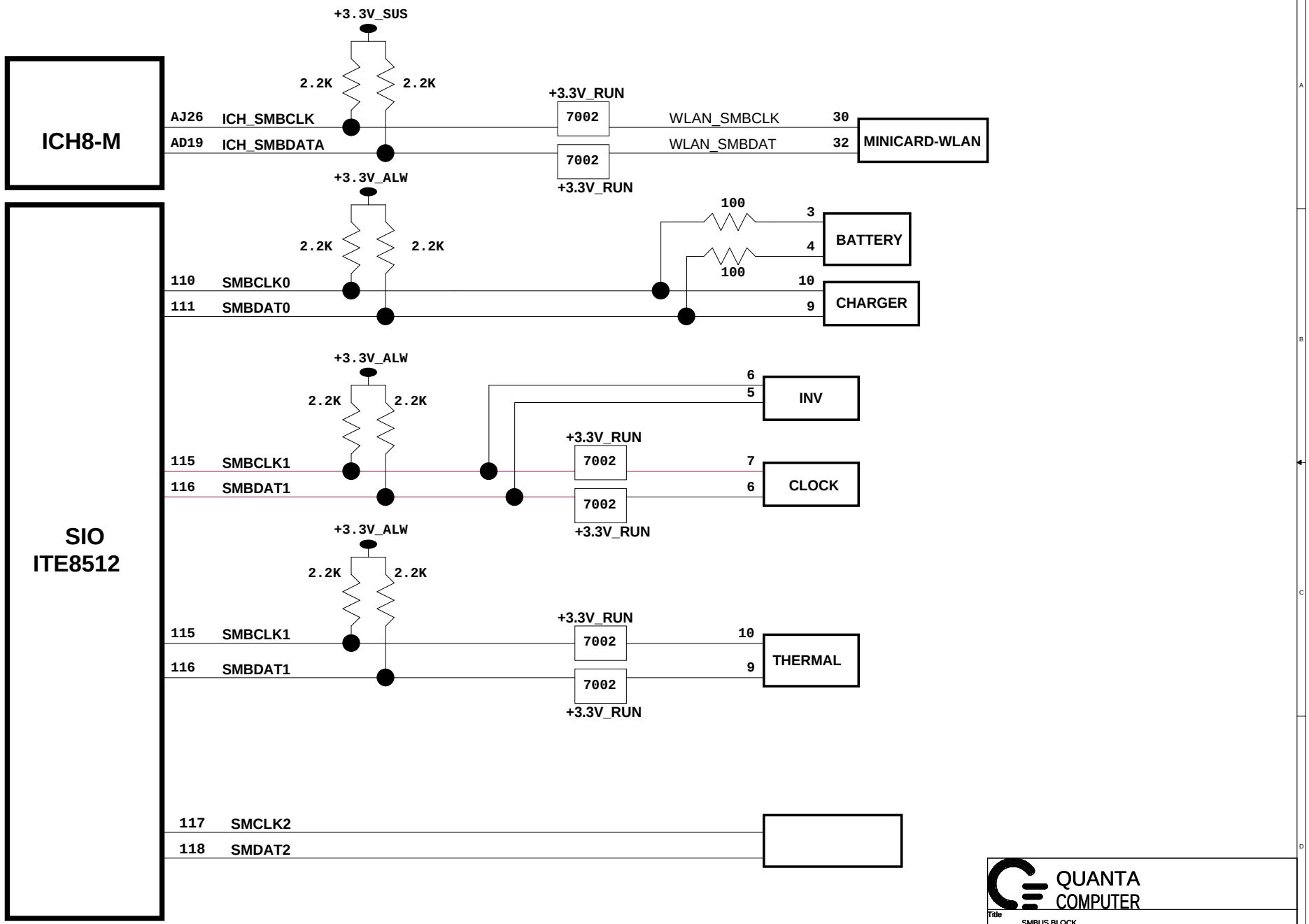

40

### Stitching caps for PCI EMC.




QUANTA COMPUTER

| | | |
|---|---|---|
| Title | EMI CAP | |
| Size | Document Number VM9/VM8 | Rev 1A |
| Date: Wednesday, June 25, 2008 | Sheet 44 of 53 | |




QUANTA COMPUTER

| | | | |
|---|---|---|---|
| Title | SMBUS BLOCK | | |
| Size | Document Number VM9/VM8 | | Rev 1A |
| Date: | Wednesday, June 25, 2008 | Sheet 45 of 53 | |

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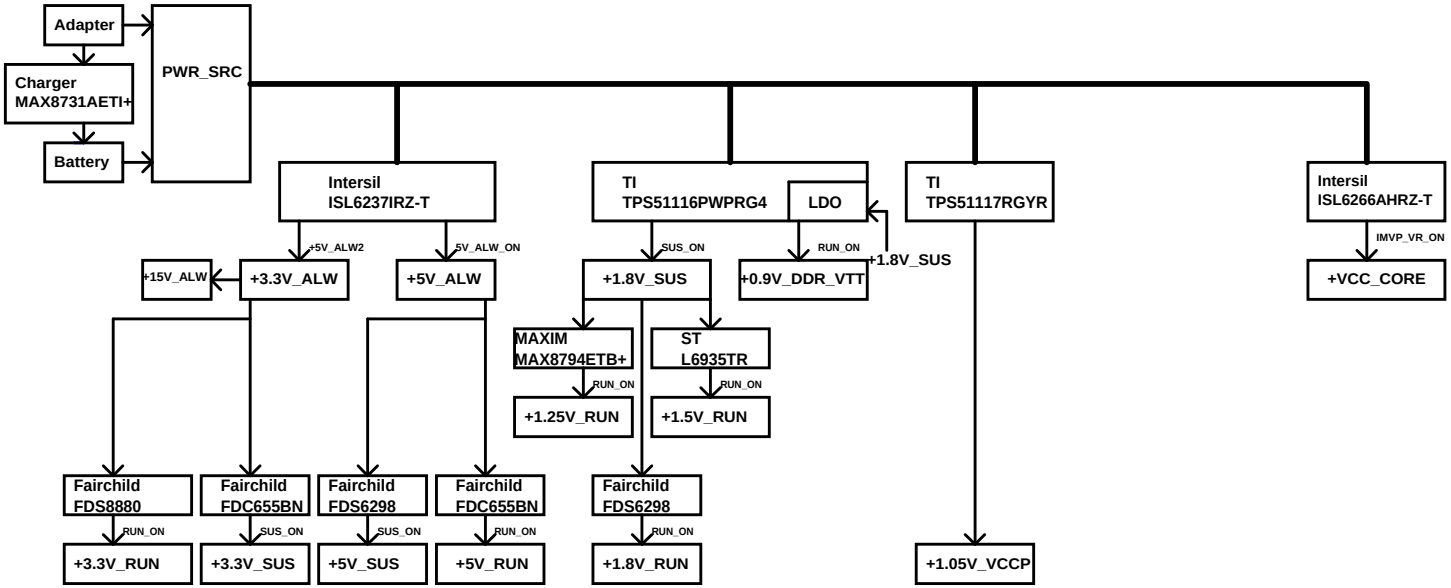


QUANTA COMPUTER

| | | |
|---|---|---|
| Title | Schematic Block Diagram1 | |
| Size | Document Number VM9/VM8 | Rev 1A |
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