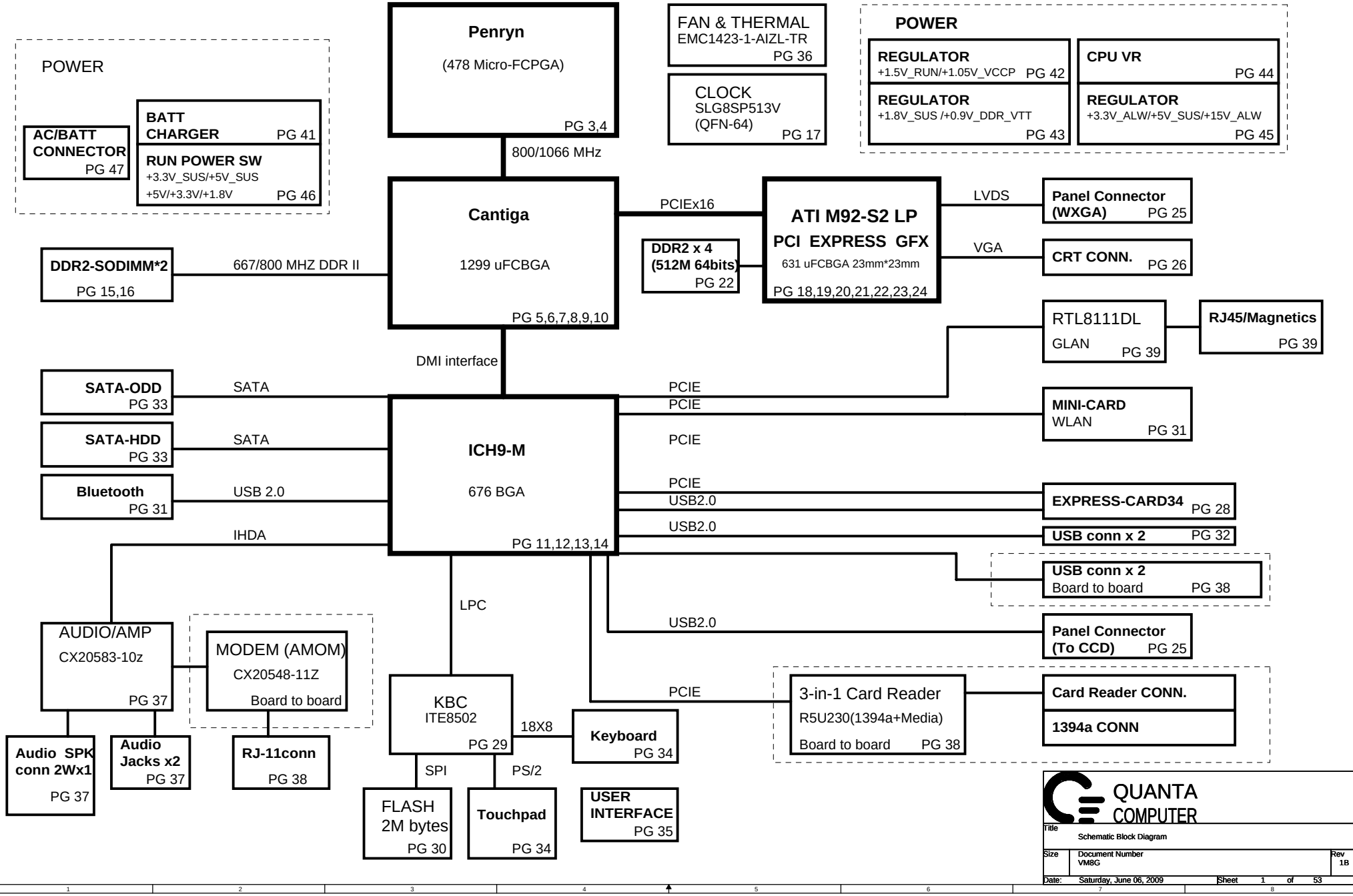
VM8G Block Diagram Intel Discrete GFX

VER : F3B



QUANTA COMPUTER

Title	Schematic Block Diagram	
Size	Document Number VM8G	Rev 1B
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Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,25,30,39,41,42,43,44,45,49,50	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,29,30	RTC		S0~S5
+3.3V_ALW	+3.3V	3,13,29,30,35,39,40,41,43,45,46,47	8051 POWER	ALWON	S0~S5
+5V_ALW2	+5V	42,43,45,46,47,49	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	25,45,46	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	39	LAN POWER	AUX_ON	
+5V_SUS	+5V	14,32,35,44,45,46,49,50	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,19,25,28,35,42,44,46,49	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,42,43,46,49	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,43,46	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,20,25,26,33,34,35,36,37,46,50	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,6,8,9,11,12,13,14,15,17,19,25,26,27,28,29, 31,33,35,36,37,39,46,50	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,28,31,42,46,50	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.05V_VCCP	+1.05V	3,4,5,6,8,9,11,14,42,50	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,44	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	25	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	33	Module Power	MODC_EN#	
+5V_HDD	+5V	33	HDD Power	HDDC_EN#	
+PBATT	+10V~+17V		MAIN BATTERY	CHG_PBATT	
+SBATT	+10V~+17V		SECOND BATTERY	CHG_SBATT	
+1.1V_GFX_PCIE	+1.1V	20	GFX PCIE POWER	GFX_RUN_ON	
+VCC_GFX_CORE	+0.9~+1.1	20,23,49	GFX CORE POWER	GFX_RUN_ON	

GND PLANE	PAGE	DESCRIPTION
GND	ALL	

QUANTA COMPUTER

Title	Index & Power Status	
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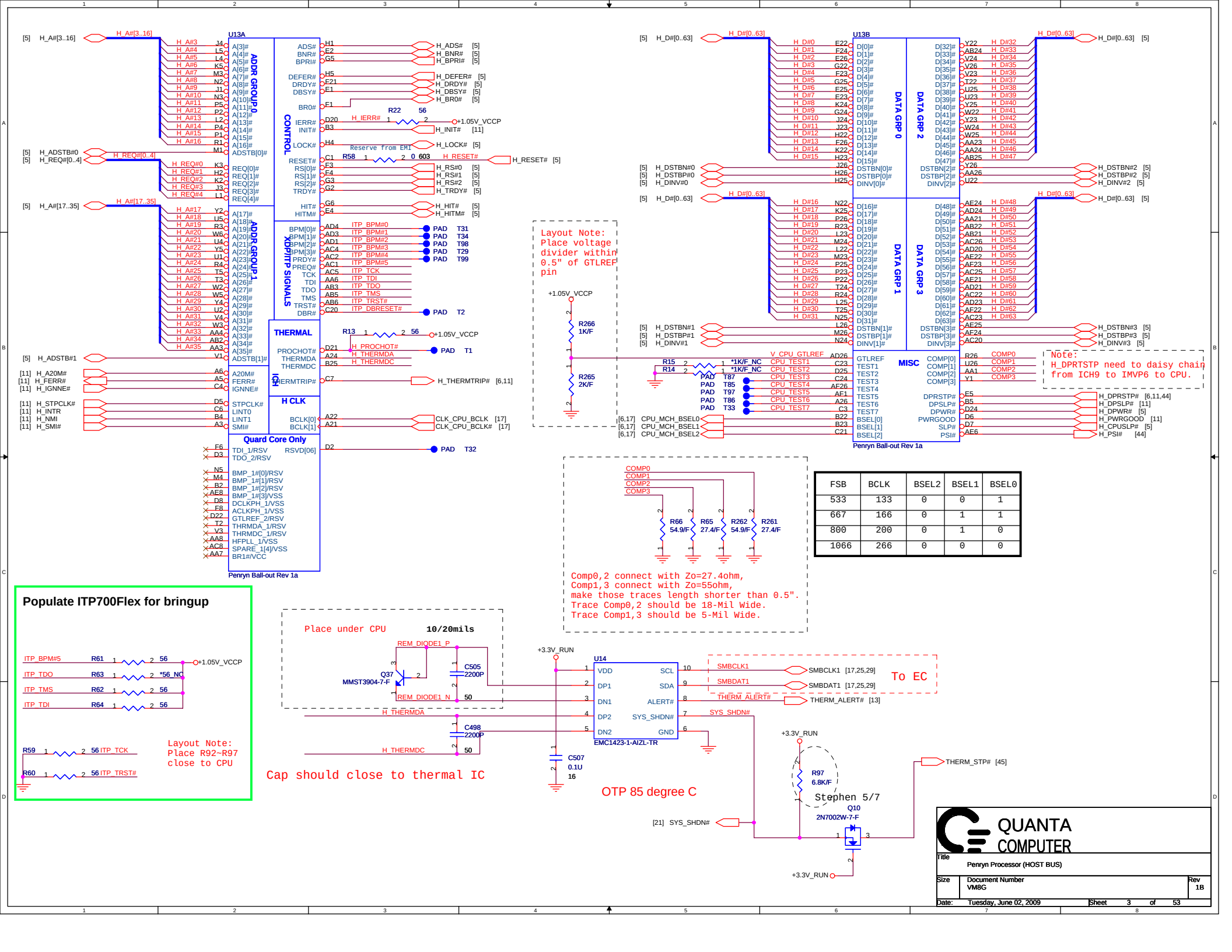

FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

Title	Penryn Processor (HOST BUS)
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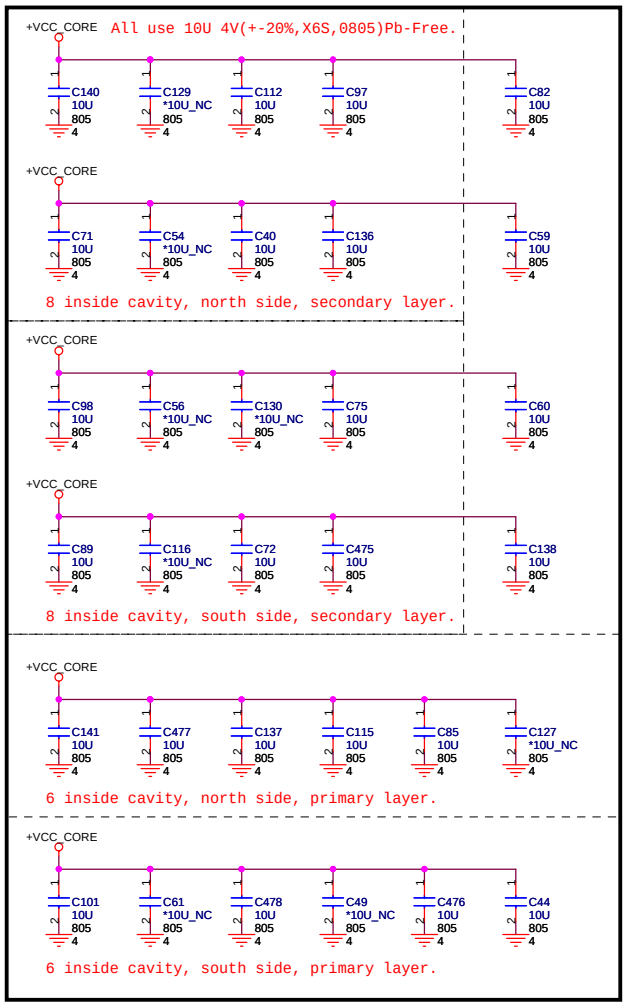
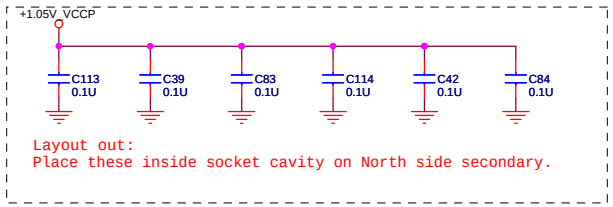
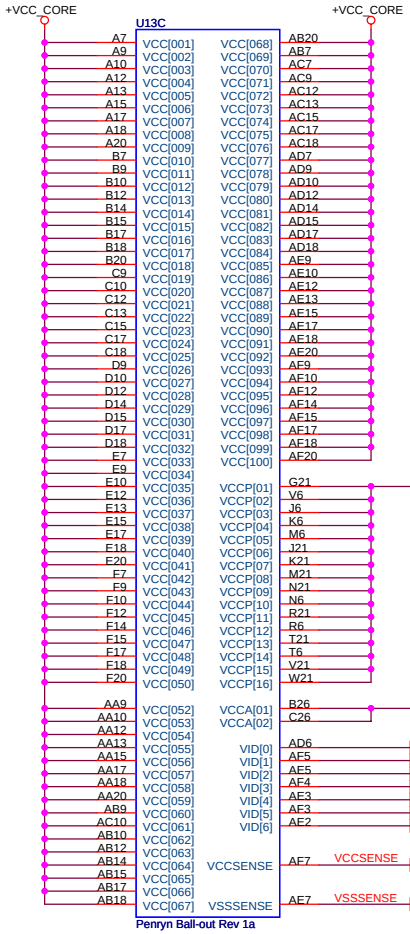
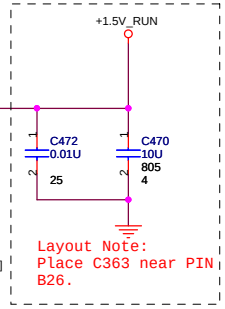
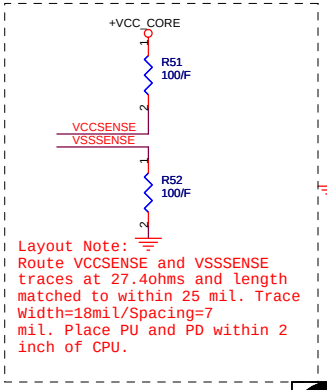
QUANTA COMPUTER

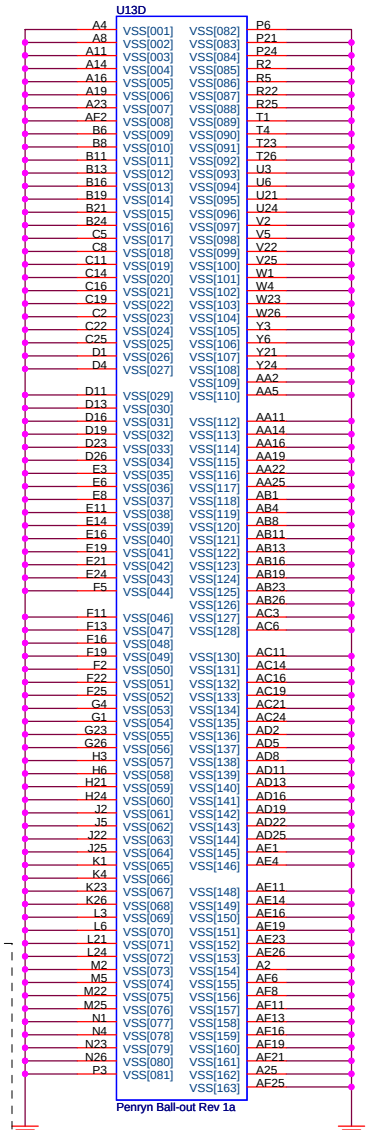












Title	Penryn Processor (POWER)		
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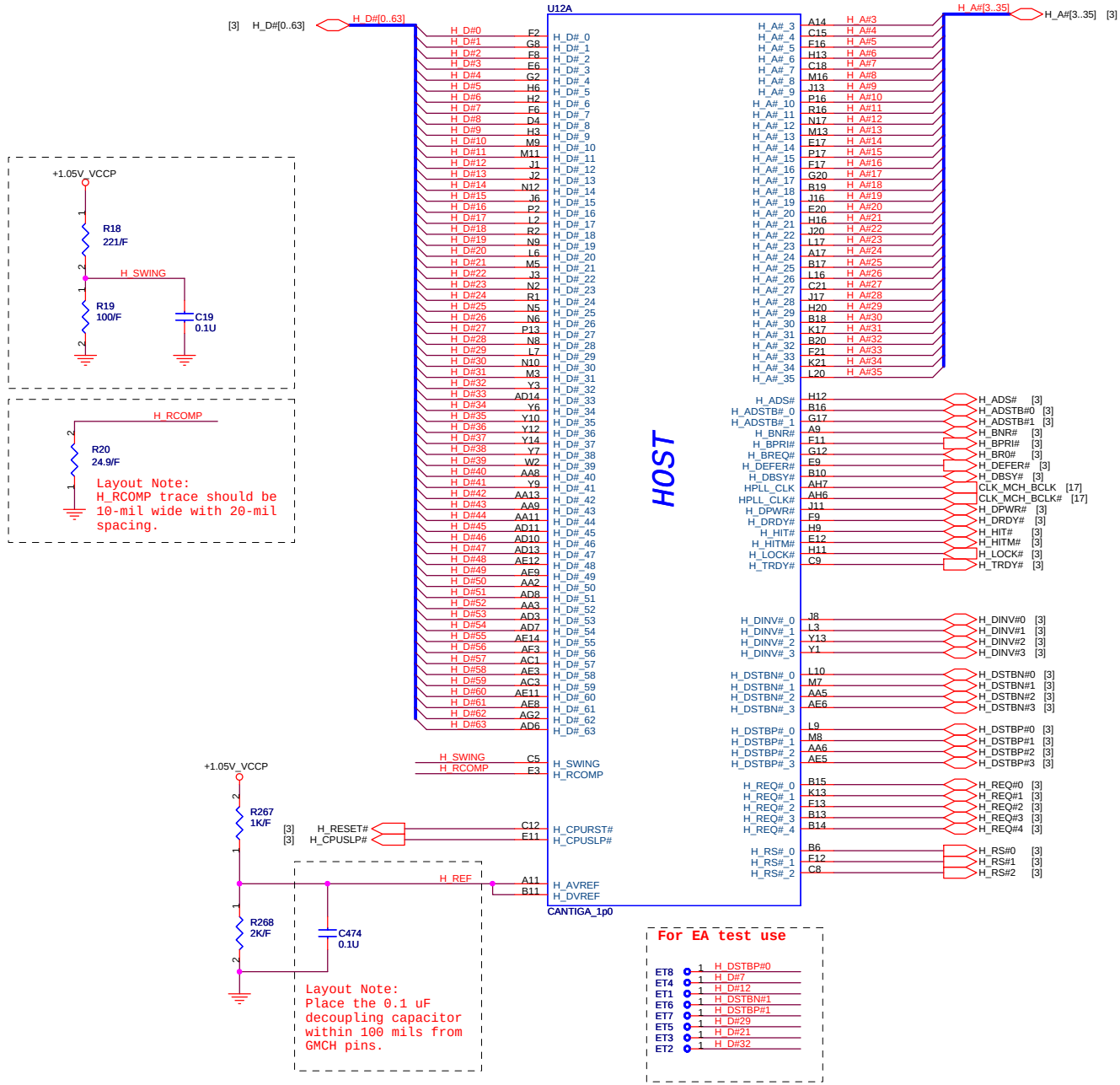

QUANTA COMPUTER		
Title: Cantiga (HOST)		
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Change P/N Leon 3/10

Layout Note:
place R189 close to MCH, 500mil

Layout Note:
Location of all MCH_CFG strap resistors needs to be close to minmize stub.

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	Cantiga (VGA,DMI)	
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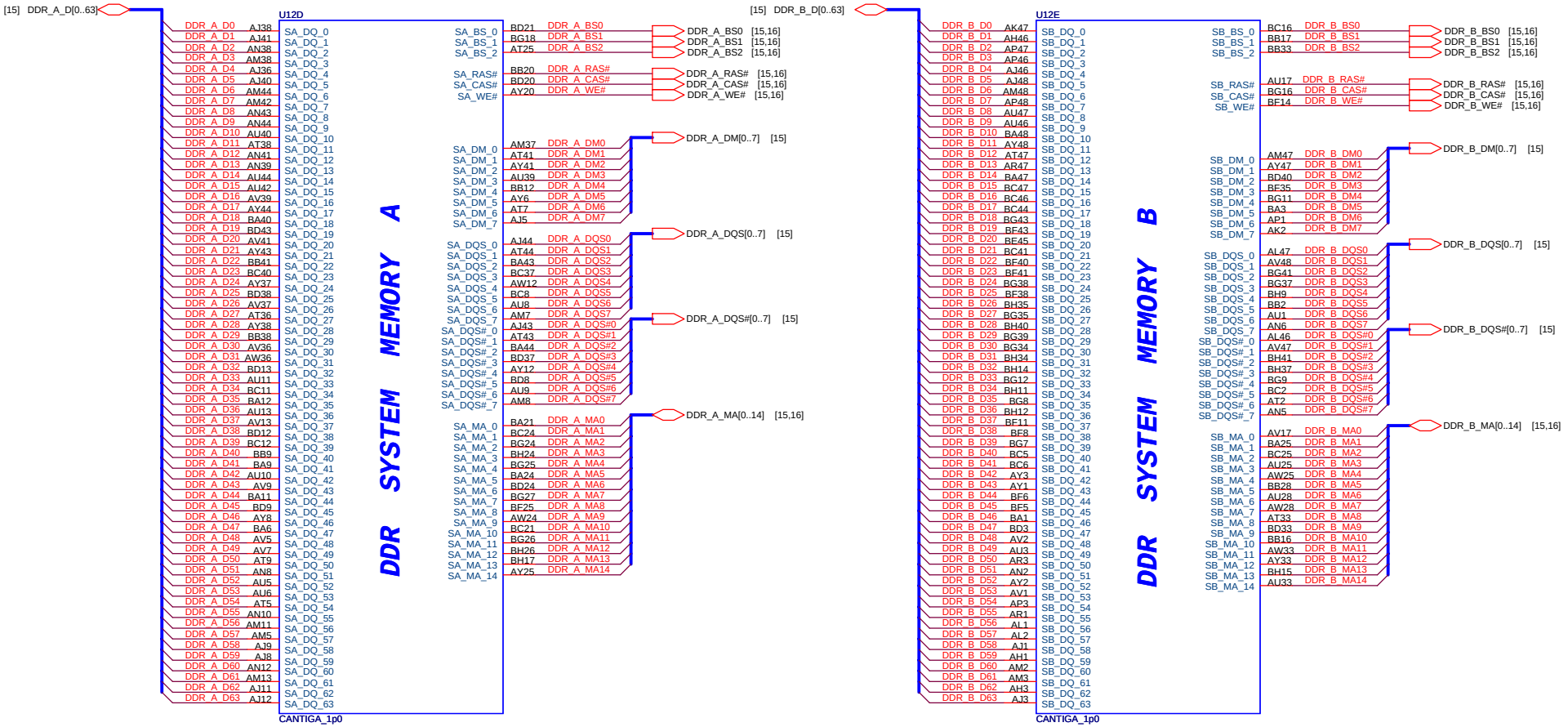

QUANTA COMPUTER

Title	Cantiga (DDR2)	
Size	Document Number VM8G	Rev 1B
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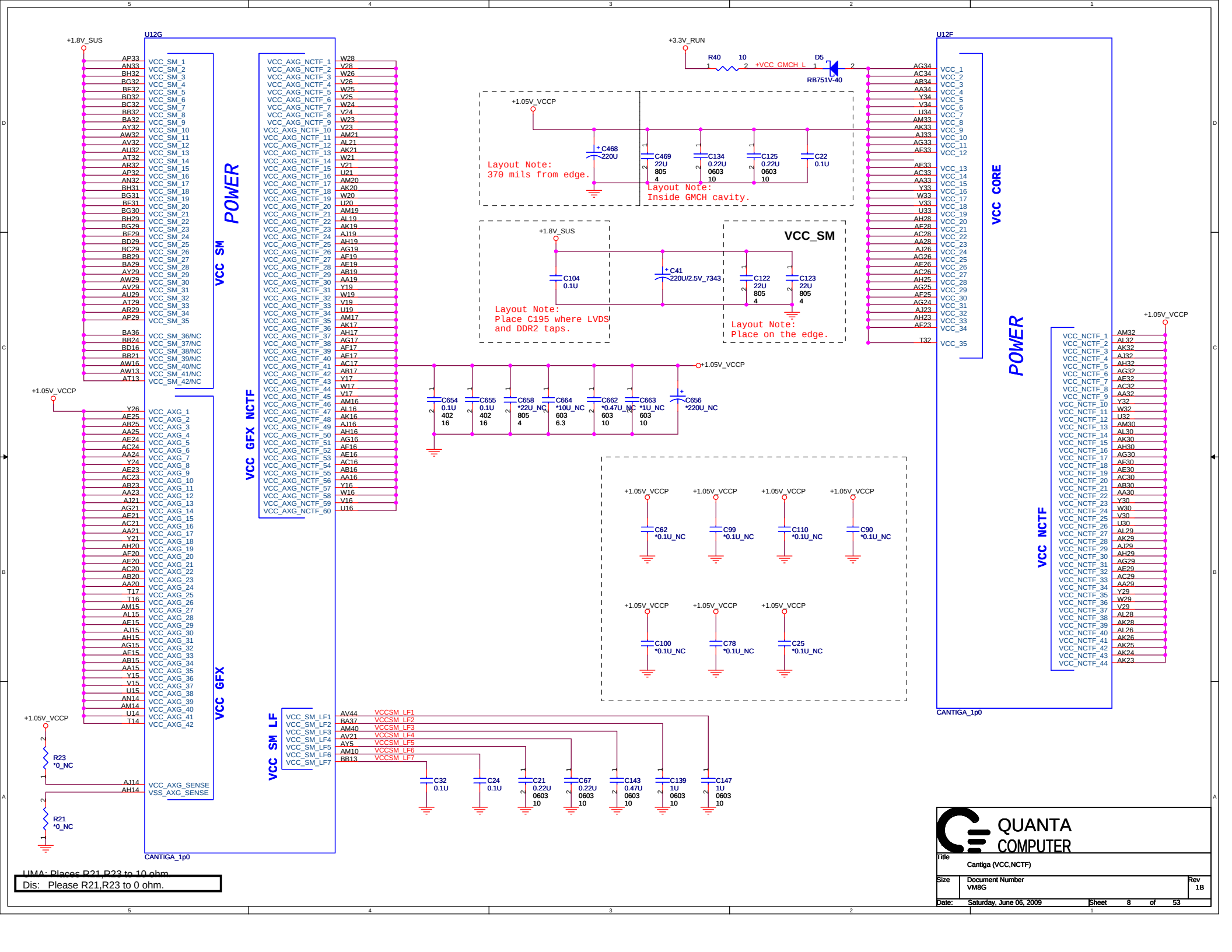
U12G
+1.8V_SUS
VCC_SM_1
VCC_SM_2
VCC_SM_3
VCC_SM_4
VCC_SM_5
VCC_SM_6
VCC_SM_7
VCC_SM_8
VCC_SM_9
VCC_SM_10
VCC_SM_11
VCC_SM_12
VCC_SM_13
VCC_SM_14
VCC_SM_15
VCC_SM_16
VCC_SM_17
VCC_SM_18
VCC_SM_19
VCC_SM_20
VCC_SM_21
VCC_SM_22
VCC_SM_23
VCC_SM_24
VCC_SM_25
VCC_SM_26
VCC_SM_27
VCC_SM_28
VCC_SM_29
VCC_SM_30
VCC_SM_31
VCC_SM_32
VCC_SM_33
VCC_SM_34
VCC_SM_35
VCC_SM_36/NC
VCC_SM_37/NC
VCC_SM_38/NC
VCC_SM_39/NC
VCC_SM_40/NC
VCC_SM_41/NC
VCC_SM_42/NC
VCC SM
POWER
VCC_AXG_NCTF_1
VCC_AXG_NCTF_2
VCC_AXG_NCTF_3
VCC_AXG_NCTF_4
VCC_AXG_NCTF_5
VCC_AXG_NCTF_6
VCC_AXG_NCTF_7
VCC_AXG_NCTF_8
VCC_AXG_NCTF_9
VCC_AXG_NCTF_10
VCC_AXG_NCTF_11
VCC_AXG_NCTF_12
VCC_AXG_NCTF_13
VCC_AXG_NCTF_14
VCC_AXG_NCTF_15
VCC_AXG_NCTF_16
VCC_AXG_NCTF_17
VCC_AXG_NCTF_18
VCC_AXG_NCTF_19
VCC_AXG_NCTF_20
VCC_AXG_NCTF_21
VCC_AXG_NCTF_22
VCC_AXG_NCTF_23
VCC_AXG_NCTF_24
VCC_AXG_NCTF_25
VCC_AXG_NCTF_26
VCC_AXG_NCTF_27
VCC_AXG_NCTF_28
VCC_AXG_NCTF_29
VCC_AXG_NCTF_30
VCC_AXG_NCTF_31
VCC_AXG_NCTF_32
VCC_AXG_NCTF_33
VCC_AXG_NCTF_34
VCC_AXG_NCTF_35
VCC_AXG_NCTF_36
VCC_AXG_NCTF_37
VCC_AXG_NCTF_38
VCC_AXG_NCTF_39
VCC_AXG_NCTF_40
VCC_AXG_NCTF_41
VCC_AXG_NCTF_42
VCC_AXG_NCTF_43
VCC_AXG_NCTF_44
VCC_AXG_NCTF_45
VCC_AXG_NCTF_46
VCC_AXG_NCTF_47
VCC_AXG_NCTF_48
VCC_AXG_NCTF_49
VCC_AXG_NCTF_50
VCC_AXG_NCTF_51
VCC_AXG_NCTF_52
VCC_AXG_NCTF_53
VCC_AXG_NCTF_54
VCC_AXG_NCTF_55
VCC_AXG_NCTF_56
VCC_AXG_NCTF_57
VCC_AXG_NCTF_58
VCC_AXG_NCTF_59
VCC_AXG_NCTF_60
VCC GFX NCTF
+1.05V_VCCP
VCC_AXG_1
VCC_AXG_2
VCC_AXG_3
VCC_AXG_4
VCC_AXG_5
VCC_AXG_6
VCC_AXG_7
VCC_AXG_8
VCC_AXG_9
VCC_AXG_10
VCC_AXG_11
VCC_AXG_12
VCC_AXG_13
VCC_AXG_14
VCC_AXG_15
VCC_AXG_16
VCC_AXG_17
VCC_AXG_18
VCC_AXG_19
VCC_AXG_20
VCC_AXG_21
VCC_AXG_22
VCC_AXG_23
VCC_AXG_24
VCC_AXG_25
VCC_AXG_26
VCC_AXG_27
VCC_AXG_28
VCC_AXG_29
VCC_AXG_30
VCC_AXG_31
VCC_AXG_32
VCC_AXG_33
VCC_AXG_34
VCC_AXG_35
VCC_AXG_36
VCC_AXG_37
VCC_AXG_38
VCC_AXG_39
VCC_AXG_40
VCC_AXG_41
VCC_AXG_42
VCC GFX
R23 *0_NC
R21 *0_NC
AJ14 VCC_AXG_SENSE
AH14 VSS_AXG_SENSE
VCC_SM_LF1
VCC_SM_LF2
VCC_SM_LF3
VCC_SM_LF4
VCC_SM_LF5
VCC_SM_LF6
VCC_SM_LF7
VCCSM_LF1
VCCSM_LF2
VCCSM_LF3
VCCSM_LF4
VCCSM_LF5
VCCSM_LF6
VCCSM_LF7
VCC SM LF
C32 0.1U
C24 0.1U
C21 0.22U 0603 10
C67 0.22U 0603 10
C143 0.47U 0603 10
C139 1U 0603 10
C147 1U 0603 10
CANTIGA_1p0
+3.3V_RUN
R40 10
+VCC_GMCH_L
D5
RB751V-40
+1.05V_VCCP
Layout Note:
370 mils from edge.
C468 220U
C469 22U 805 4
C134 0.22U 0603 10
C125 0.22U 0603 10
C22 0.1U
Layout Note:
Inside GMCH cavity.
+1.8V_SUS
C104 0.1U
C41 220U/2.5V_7343
Layout Note:
Place C195 where LVDS
and DDR2 taps.
VCC_SM
C122 22U 805 4
C123 22U 805 4
Layout Note:
Place on the edge.
C654 0.1U 402 16
C655 0.1U 402 16
C658 *22U_NC 805 4
C664 *10U_NC 603 6.3
C662 *0.47U_NC 603 10
C663 *1U_NC 603 10
C656 *220U_NC
C62 *0.1U_NC
C99 *0.1U_NC
C110 *0.1U_NC
C90 *0.1U_NC
C100 *0.1U_NC
C78 *0.1U_NC
C25 *0.1U_NC
U12F
AG34 AC34 AB34 AA34 Y34 V34 U34 AM33 AK33 AJ33 AG33 AF33
AE33 AC33 AA33 Y33 W33 V33 U33 AH28 AF28 AC28 AA28 AJ26 AG26 AE26 AC26 AH25 AG25 AE25 AG24 AJ23 AH23 AF23 T32
VCC_1 VCC_2 VCC_3 VCC_4 VCC_5 VCC_6 VCC_7 VCC_8 VCC_9 VCC_10 VCC_11 VCC_12
VCC_13 VCC_14 VCC_15 VCC_16 VCC_17 VCC_18 VCC_19 VCC_20 VCC_21 VCC_22 VCC_23 VCC_24 VCC_25 VCC_26 VCC_27 VCC_28 VCC_29 VCC_30 VCC_31 VCC_32 VCC_33 VCC_34
VCC_35
VCC CORE
POWER
VCC_NCTF_1
VCC_NCTF_2
VCC_NCTF_3
VCC_NCTF_4
VCC_NCTF_5
VCC_NCTF_6
VCC_NCTF_7
VCC_NCTF_8
VCC_NCTF_9
VCC_NCTF_10
VCC_NCTF_11
VCC_NCTF_12
VCC_NCTF_13
VCC_NCTF_14
VCC_NCTF_15
VCC_NCTF_16
VCC_NCTF_17
VCC_NCTF_18
VCC_NCTF_19
VCC_NCTF_20
VCC_NCTF_21
VCC_NCTF_22
VCC_NCTF_23
VCC_NCTF_24
VCC_NCTF_25
VCC_NCTF_26
VCC_NCTF_27
VCC_NCTF_28
VCC_NCTF_29
VCC_NCTF_30
VCC_NCTF_31
VCC_NCTF_32
VCC_NCTF_33
VCC_NCTF_34
VCC_NCTF_35
VCC_NCTF_36
VCC_NCTF_37
VCC_NCTF_38
VCC_NCTF_39
VCC_NCTF_40
VCC_NCTF_41
VCC_NCTF_42
VCC_NCTF_43
VCC_NCTF_44
AM32 AL32 AK32 AJ32 AH32 AG32 AE32 AC32 AA32 Y32 W32 U32 AM30 AL30 AK30 AH30 AG30 AF30 AE30 AC30 AB30 AA30 Y30 W30 V30 U30 AL29 AK29 AJ29 AH29 AG29 AE29 AC29 AA29 Y29 W29 V29 AL28 AK28 AL26 AK26 AK25 AK24 AK23
VCC NCTF
CANTIGA_1p0
UMA: Places R21,R23 to 10 ohm.
Dis: Please R21,R23 to 0 ohm.
QUANTA COMPUTER
Title
Cantiga (VCC,NCTF)
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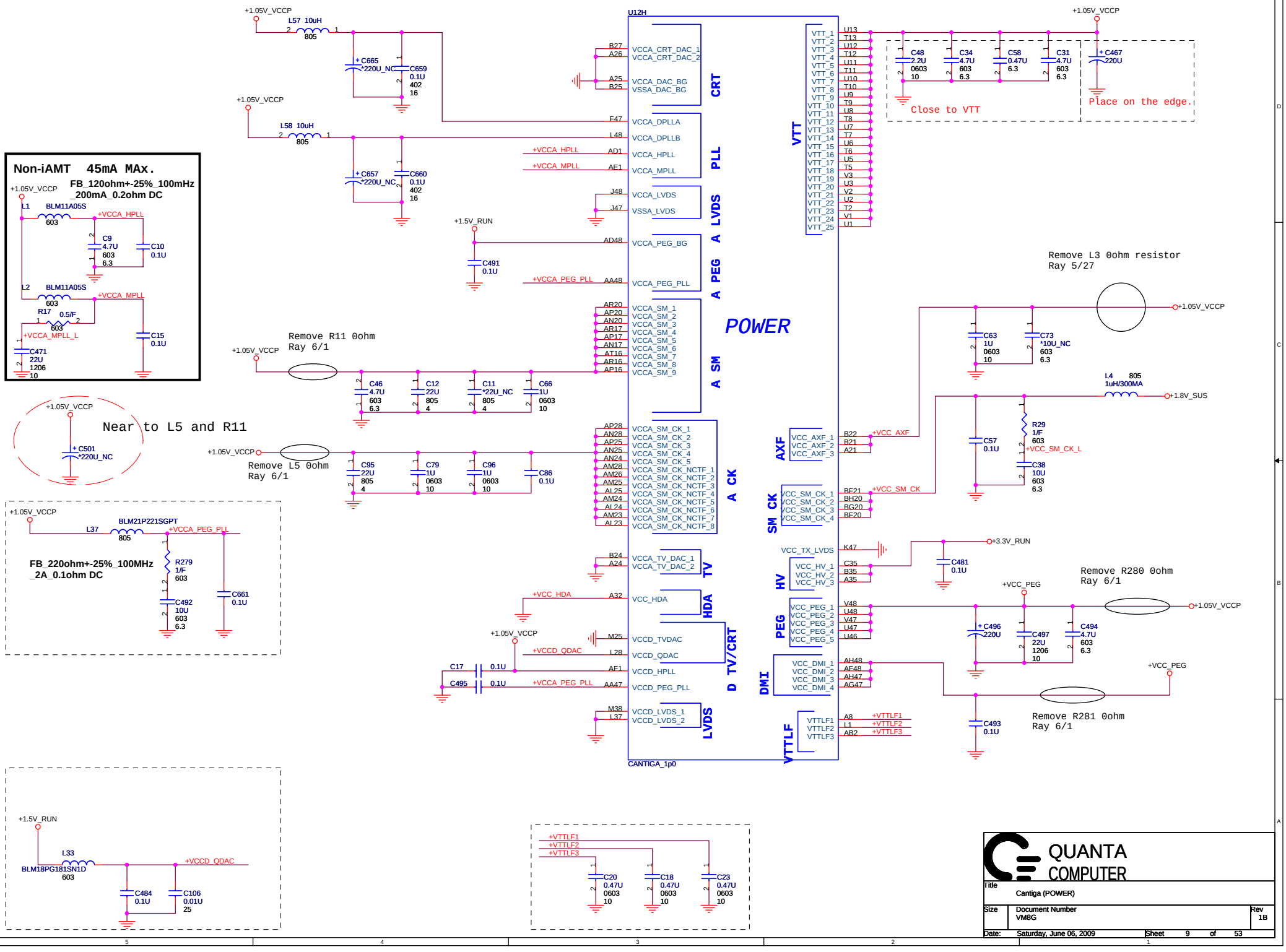
Non-iAMT 45mA MAx.
FB_120ohm+-25%_100mHz
_200mA_0.2ohm DC
Near to L5 and R11
FB_220ohm+-25%_100MHz
_2A_0.1ohm DC
Remove R11 0ohm
Ray 6/1
Remove L5 0ohm
Ray 6/1
Remove L3 0ohm resistor
Ray 5/27
Remove R280 0ohm
Ray 6/1
Remove R281 0ohm
Ray 6/1
Close to VTT
Place on the edge.
POWER
CRT
PLL
LVDS
PEG
SM
CK
TV
HDA
TV/CRT
LVDS
AXF
SM CK
HV
PEG
DMI
VTTLF
VTT
CANTIGA_1p0
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Cantiga (POWER)
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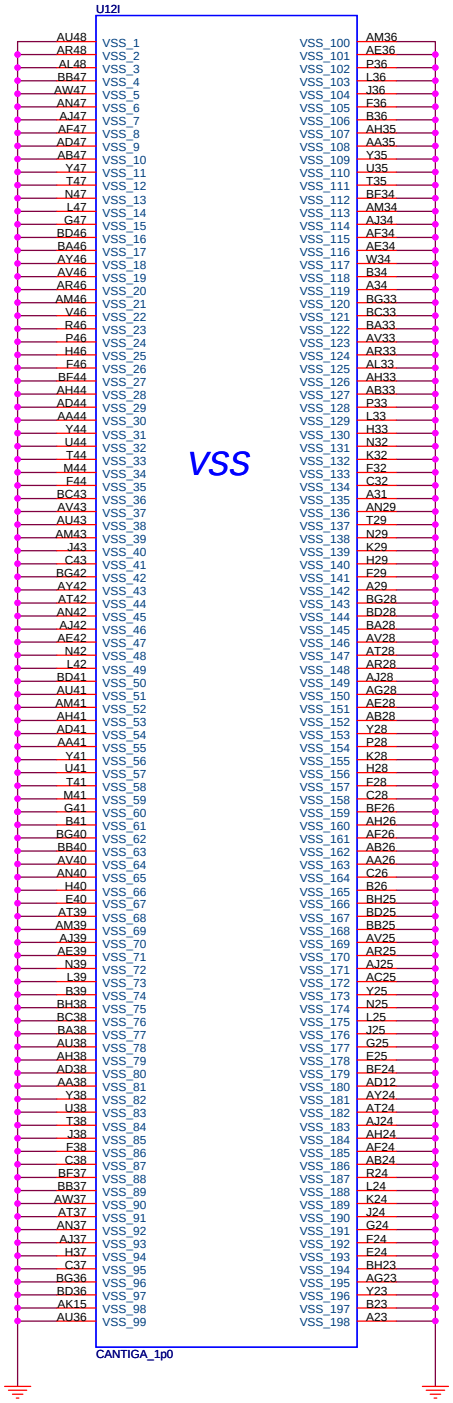

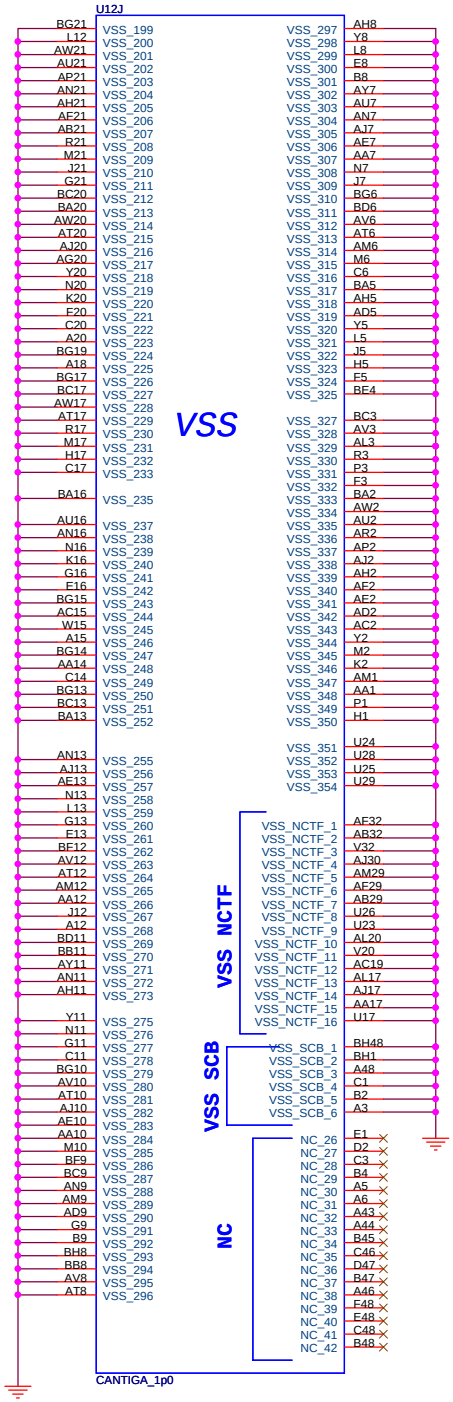

QUANTA COMPUTER			
Title: Cantiga (VSS)			
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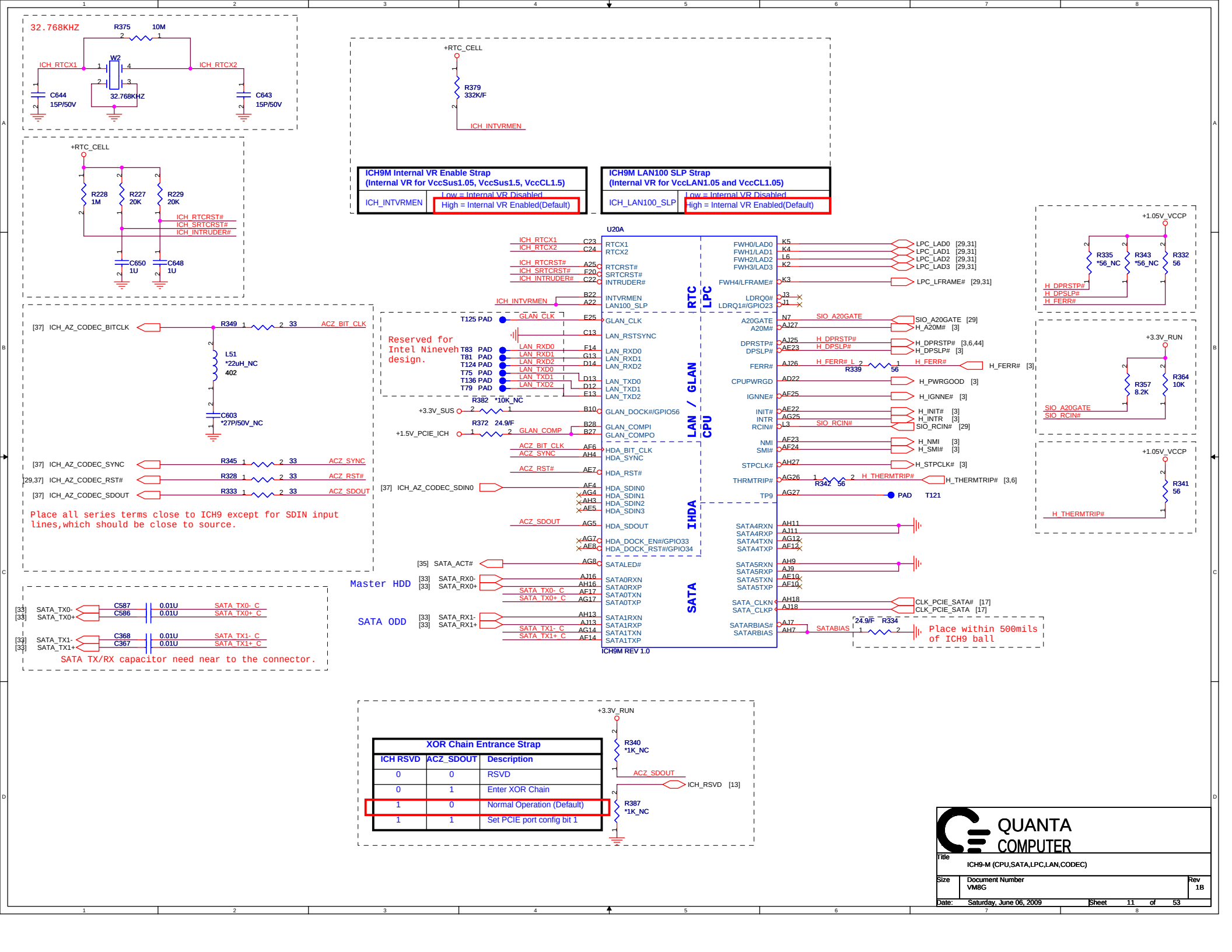

XOR Chain Entrance Strap		
ICH RSVD	ACZ_SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal Operation (Default)
1	1	Set PCIE port config bit 1

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Title	ICH9-M (CPU,SATA,LPC,LAN,CODEC)	
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Place TX DC blocking caps close ICH9.

[31] PCIE_TX2-
[31] PCIE_TX2+
C622 0.1U PCIE_TXN2_C
C623 0.1U PCIE_TXP2_C

[28] PCIE_TX4-
[28] PCIE_TX4+
C629 0.1U PCIE_TXN4_C
C631 0.1U PCIE_TXP4_C

[38] PCIE_TX5-
[38] PCIE_TX5+
C445 0.1U PCIE_TXN5_C
C448 0.1U PCIE_TXP5_C

[39] PCIE_TX6-/GLAN_TX-
[39] PCIE_TX6+/GLAN_TX+
C637 0.1U GLAN_TXN_C
C645 0.1U GLAN_TXP_C

Boot BIOS Strap

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

U20D

MiniWWAN
[31] PCIE_RX2-
[31] PCIE_RX2+
PCIE_TXN2_C
PCIE_TXP2_C

MiniWLAN

MiniWPAN
[28] PCIE_RX4-
[28] PCIE_RX4+
PCIE_TXN4_C
PCIE_TXP4_C

Express Card
[38] PCIE_RX5-
[38] PCIE_RX5+
PCIE_TXN5_C
PCIE_TXP5_C

1394+Cardreader
[39] PCIE_RX6-/GLAN_RX-
[39] PCIE_RX6+/GLAN_RX+
GLAN_TXN_C
GLAN_TXP_C

Giga Bit LOM

PCI-Express / Direct Media Interface

PERN1 PERP1 PETN1 PETP1
PERN2 PERP2 PETN2 PETP2
PERN3 PERP3 PETN3 PETP3
PERN4 PERP4 PETN4 PETP4
PERN5 PERP5 PETN5 PETP5
PERN6/GLAN_RXN PERP6/GLAN_RXP PETN6/GLAN_TXN PETP6/GLAN_TXP

DMI0RXN DMI0RXP DMI0TXN DMI0TXP
DMI_MTX_IRX_N0 [6]
DMI_MTX_IRX_P0 [6]
DMI_MRX_ITX_N0 [6]
DMI_MRX_ITX_P0 [6]

DMI1RXN DMI1RXP DMI1TXN DMI1TXP
DMI_MTX_IRX_N1 [6]
DMI_MTX_IRX_P1 [6]
DMI_MRX_ITX_N1 [6]
DMI_MRX_ITX_P1 [6]

DMI2RXN DMI2RXP DMI2TXN DMI2TXP
DMI_MTX_IRX_N2 [6]
DMI_MTX_IRX_P2 [6]
DMI_MRX_ITX_N2 [6]
DMI_MRX_ITX_P2 [6]

DMI3RXN DMI3RXP DMI3TXN DMI3TXP
DMI_MTX_IRX_N3 [6]
DMI_MTX_IRX_P3 [6]
DMI_MRX_ITX_N3 [6]
DMI_MRX_ITX_P3 [6]

DMI_CLKN DMI_CLKP
CLK_PCIE_ICH# [17]
CLK_PCIE_ICH [17]

DMI_ZCOMP DMI_IRCOMP
DMI_COMP
R392 24.9/F
+1.5V_PCIE_ICH
Place within 500mils of ICH9

SPI
T127 PAD SPI_CLK_R
T128 PAD SPI_CS#0_R
T139 PAD ICH_SPI_CS1#_R
SPI_CLK SPI_CS0# SPI_CS1#/GPIO58/CLGPIO6
T129 PAD SPI_MOSI
T70 PAD SPI_MISO
SPI_MOSI SPI_MISO

USB
[32] USB_OC0_1#
[38] USB_OC_3#
OC0#/GPIO59 OC1#/GPIO40 OC2#/GPIO41 OC3#/GPIO42 OC4#/GPIO43 OC5#/GPIO29 OC6#/GPIO30 OC7#/GPIO31 OC8#/GPIO44 OC9#/GPIO45 OC10#/GPIO46 OC11#/GPIO47

USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P USBP8N USBP8P USBP9N USBP9P USBP10N USBP10P USBP11N USBP11P

ICH_USBP0- [32]
ICH_USBP0+ [32]
ICH_USBP1- [32]
ICH_USBP1+ [32]
ICH_USBP2- [38]
ICH_USBP2+ [38]
ICH_USBP3- [38]
ICH_USBP3+ [38]
ICH_USBP4- [25]
ICH_USBP4+ [25]
ICH_USBP6- [31]
ICH_USBP6+ [31]
ICH_USBP7- [28]
ICH_USBP7+ [28]
ICH_USBP8- [31]
ICH_USBP8+ [31]

Side Pair Left
Side Pair Left
Side Pair Right
Side Pair Right
Camera
Mini Card (WWAN)
Bluetooth
Express Card
Mini Card (WLAN)

R348 22.6/F
USBRBIAS
USBRBIAS
USBRBIAS#
Places within 500 mils of the ICH9

ICH9M REV 1.0

RP38 10KX8
+3.3V_SUS
OC7# OC6# OC5# OC4#
OC9# USB_OC_3# USB_OC0_1# OC8#
OC10# R363 10K
OC11# R354 10K
+3.3V_SUS

PCI Pullups
RP40
+3.3V_RUN
PCI_FRAME# PCI_TRDY# PCI_DEVSEL# PCI_REQ1#
PCI_PLOCK# PCI_STOP# PCI_PIRQD# PCI_PERR#
RP39
PCI_IRDY# PCI_PIRQC# PCIRQE# PCI_PIRQB#
PCI_PIRQA# PCI_REQ0# ICH_IRQH_GPIO5 PCI_SERR#
PCI_REQ2# R383 8.2K +3.3V_RUN

Stephen 5/8
PCI_GPIO3 R368 8.2K
PCI_GPIO4 R369 8.2K
PCI_GPIO54 R223 8.2K
BIOS should not enable the internal GPIO pull up resistor.

U20B

PCI
REQ0# GNT0# REQ1#/GPIO50 GNT1#/GPIO51 REQ2#/GPIO52 GNT2#/GPIO53 REQ3#/GPIO54 GNT3#/GPIO55
PCI_REQ0# PCI_GNT0# PCI_REQ1# PCI_GNT1# PCI_REQ2# PCI_GNT2# PCI_GPIO54 PCI_GNT3#
PAD T126
PAD T135
PAD T82
PAD T74

C/BE0# C/BE1# C/BE2# C/BE3#
IRDY# PAR PCIRST# DEVSEL# PERR# PLOCK# SERR# STOP# TRDY# FRAME#
PCI_IRDY# PCI_DEVSEL# PCI_PERR# PCI_PLOCK# PCI_SERR# PCI_STOP# PCI_TRDY# PCI_FRAME#

PLTRST# PCICLK PME#
PLTRST# [6,18,28,29,31,38,39]
CLK_PCI_ICH [17]

Interrupt I/F
PIRQA# PIRQB# PIRQC# PIRQD#
PIRQE#/GPIO2 PIRQF#/GPIO3 PIRQG#/GPIO4 PIRQH#/GPIO5
PCI_PIRQE# PCI_GPIO3 PCI_GPIO4 ICH_IRQH_GPIO5
PAD T72
Stephen 5/8

ICH9M REV 1.0

CLK_PCI_ICH
R370 *10_NC
C634 *8.2P_NC
Reserved for EMI.Place resister and cap close to ICH.

QUANTA COMPUTER

Title	ICH9-M (USB,DMI,PCIE,PCI)		
Size	Document Number VM8G		Rev 1B
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Non-iAMT

+3.3V_SUS

RP43 2.2KX2

ICH_SMBDATA

ICH_SMBCLK

Non-iAMT ASF 2.0

+3.3V_SUS

RP41 *10KX2_NC

ICH_SMLINK0

ICH_SMLINK1

ICH_SMBCLK R230 0 ICH_SMLINK0

ICH_SMBDATA R380 0 ICH_SMLINK1

Non-iAMT

+3.3V_SUS

R386 10K RSV_ICH_CL_RST1#

R242 10K ICH_RI#

R381 10K SIO_EXT_SCI#

R384 1K PCIE_WAKE#

+3.3V_RUN

R331 8.2K

U20C

ICH9M REV 1.0

SMB

SATA GP10

Clocks

SYS GPIO

Power MGT

GPIO

Controller Link

MISC

SMBCLK G16 ICH_SMBCLK [28] ICH_SMBCLK

SMBDATA A13 ICH_SMBDATA [28] ICH_SMBDATA

LINKALERT#/GPIO60/CLGPIO6 F17 RSV_ICH_CL_RST1# T146 PAD

SMLINK0 C17 ICH_SMLINK0 T140 PAD

SMLINK1 B18 ICH_SMLINK1 T145 PAD

RI# F19 ICH_RI#

SUS_STAT#/LPCPD# R4 RSV_LPCPD# T122 PAD

SYS_RESET# G19 +3.3V_SUS R232 1K

PMSYNC#/GPIO0 M6 [6] PM_BMBUSY#

SMBALERT#/GPIO11 A17 USB_MCARD1_DET# [31] USB_MCARD1_DET#

STP_PCI#/GPIO15 A14 [17] H_STP_PCI#

STP_CPU#/GPIO25 E19 [17] H_STP_CPU#

CLKRUN#/GPIO32 L4 CLKRUN# [29] CLKRUN#

WAKE# E20 PCIE_WAKE# [28,31,39] PCIE_WAKE#

SERIRQ M5 IRQ_SERIRQ [29] IRQ_SERIRQ

THRM# AJ23 THERM_ALERT# [3] THERM_ALERT#

VRMPWRGD D21 IMVP_PWRGD [29,44] IMVP_PWRGD

TP8 A20 T134 PAD

TACH1/GPIO1 AG19 T118 PAD

TACH2/GPIO6 AH21 T111 PAD

TACH3/GPIO7 AG21 SIO_EXT_WAKE# [29]

GPIO8 A21 SIO_EXT_SMI# [29] SIO_EXT_SMI#

LANPHYPC/GPIO12 C12 SIO_EXT_SCI# [29] SIO_EXT_SCI#

ENGDET/GPIO13 C21 T141 PAD

TACH0/GPIO17 AE18 T117 PAD PCIE_MCARD1_DET# R361 4.7K [31] PCIE_MCARD1_DET#

GPIO18 K1

GPIO20 AF8 T108 PAD

SCLOCK/GPIO22 AJ22 T116 PAD

QRT_STATE0/GPIO27 A9 T143 PAD

QRT_STATE1/GPIO28 D19

SATACLKREQ#/GPIO35 L1 [17] SATA_CLKREQ#

SLOAD/GPIO38 AE19 PLTRST_DELAY# [18] PLTRST_DELAY#

SDATAOUT0/GPIO39 AG22 T112 PAD

SDATAOUT1/GPIO48 AF21 T119 PAD

GPIO49 AH24 T115 PAD

GPIO57/CLGPIO5 A8 T144 PAD

SPKR M7 SPKR [37] SPKR

MCH_SYNC# AJ24 MCH_ICH_SYNC# R [6] MCH_ICH_SYNC#

TP3 B21

TP9 AH20 TP9 T114 PAD

TP10 AJ20 TP10 T113 PAD

TP11 AJ21 TP11 T110 PAD

SATA0GP/GPIO21 AH23

SATA1GP/GPIO19 AE19

SATA4GP/GPIO36 AE21

SATA5GP/GPIO37 AD20

CLK14 H1 CLK_ICH_14M CLK_ICH_14M [17]

CLK48 AF3 CLK_ICH_48M CLK_ICH_48M [17]

SUSCLK P1 ICH_SUSCLK PAD T123

SLP_S3# C16 SIO_SLP_S3# [29]

SLP_S4# E16 PAD T78

SLP_S5# G17 SIO_SLP_S5# [29]

S4_STATE#/GPIO26 C10

PWROK G20 PWROK [6,29]

DPRSLPVR M2 DPRSLPVR [6,44]

DPRSLPVR/GPIO16 R377 8.2K

BATLOW# B13 ICH_BATLOW# +3.3V_SUS

PWRBTN# R3 SIO_PWRBTN# [29]

LAN_RST# D20 RSV_ICH_LAN_RST# PAD T84

RSMRST# D22 ICH_RSMRST# ICH_RSMRST# [29]

CK_PWRGD R5 CLK_PWRGD [17]

CLPWROK R6 ICH_CL_PWROK ICH_CL_PWROK [6,29]

SLP_M# B16 PAD T131

CL_CLK0 F24 CL_CLK0 [6]

CL_CLK1 B19 RSV_ICH_CL_CLK1 PAD T133

CL_DATA0 F22 CL_DATA0 [6]

CL_DATA1 C19 RSV_ICH_CL_DATA1 PAD T132

CL_VREF0 C25 CL_VREF0

CL_VREF1 A19

CL_RST0# F21 ICH_CL_RST0# [6]

CL_RST1# D18 CL_RST1# PAD T77

MEM_LED/GPIO24 A16 RSV_GPIO24 PAD T137

ALERT#/GPIO10 C18 RSV_GPIO10 PAD T73

NETDETECT/GPIO14 C11 RSV_GPIO14 PAD T142

WOL_EN/GPIO9 C20 RSV_WOL_EN PAD T76

R243 8.2K +3.3V_SUS

Non-iAMT

Place these close to ICH9.

CLK_ICH_48M R347 *10_NC C600 *4.7P_NC 50

CLK_ICH_14M R371 *10_NC C635 *4.7P_NC 50

PWROK R245 10K

DPRSLPVR R358 100K

ICH_RSMRST# R226 10K

RSV_ICH_LAN_RST# R246 10K

ICH_CL_PWROK R360 1M

+3.3V_SUS

RSV_GPIO10 R244 10K

+3.3V_RUN

R366 8.2K CLKRUN#

R367 *10_NC

Option to " Disable " clkrun. Pulling it down will keep the clks running.

R330 10K PLTRST_DELAY#

+3.3V_RUN

R365 100K PCIE_MCARD1_DET#

+3.3V_RUN

R337 *10K_NC MCH_ICH_SYNC# R

R355 10K IRQ_SERIRQ

R338 10K THERM_ALERT#

+3.3V_SUS

R385 10K RSV_WOL_EN

R231 10K SIO_EXT_SMI#

R376 100K USB_MCARD1_DET#

+3.3V_RUN

R356 *1K_NC SPKR

No Reboot strap.

SPKR Low = Default. High = No Reboot.

SMbus address D2

These are for backdrive issue.

Non-iAMT

+3.3V_RUN

RP42 2.2KX2

Q42 2N7002W-7-F

[28] ICH_SMBDATA SDATA [15,31]

+3.3V_RUN

Q41 2N7002W-7-F

[28] ICH_SMBCLK SCLK [15,31]

Non-iAMT

+3.3V_RUN

R389 3.24K/F

CL_VREF0

C456 0.1U

R388 453/F

CL_VREF0/1 ~=0.405V

QUANTA COMPUTER

Title	ICH9-M (PM,GPIO,SMB,CL)	
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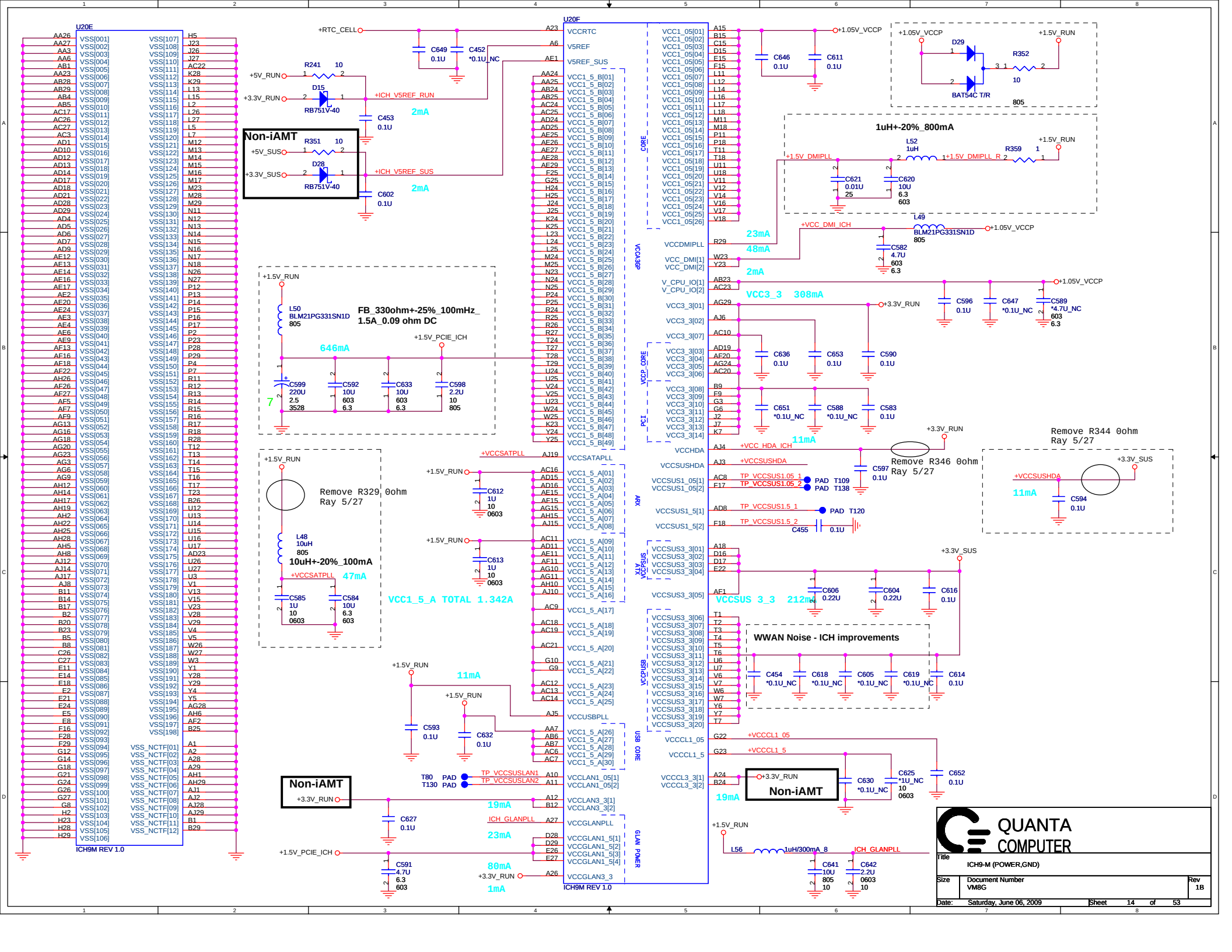
U20E
ICH9M REV 1.0
U20F
ICH9M REV 1.0
Non-iAMT
Non-iAMT
Non-iAMT
1uH+-20%_800mA
FB_330ohm+-25%_100mHz_
1.5A_0.09 ohm DC
10uH+-20%_100mA
Remove R329 0ohm
Ray 5/27
Remove R346 0ohm
Ray 5/27
Remove R344 0ohm
Ray 5/27
WWAN Noise - ICH improvements
VCC1_5_A TOTAL 1.342A
VCC3_3 308mA
VCCSUS 3_3 212mA
QUANTA COMPUTER
ICH9-M (POWER,GND)
VM8G
Saturday, June 06, 2009

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

CN4

PC4800 DDR2 SDRAM SO-DIMM (200P)

DDR2_SODIMM

CLOCK 0,1
CKE 0,1

SMbus address A0

CN3

PC4800 DDR2 SDRAM SO-DIMM (200P)

2-1734073-2

CLOCK 2,3
CKE 2,3

SMbus address A4

Non-iAMT

Place these Caps near So-Dimm1.

Place these Caps near So-Dimm2.

Title	DDR2 SO-DIMM (200P) X 2
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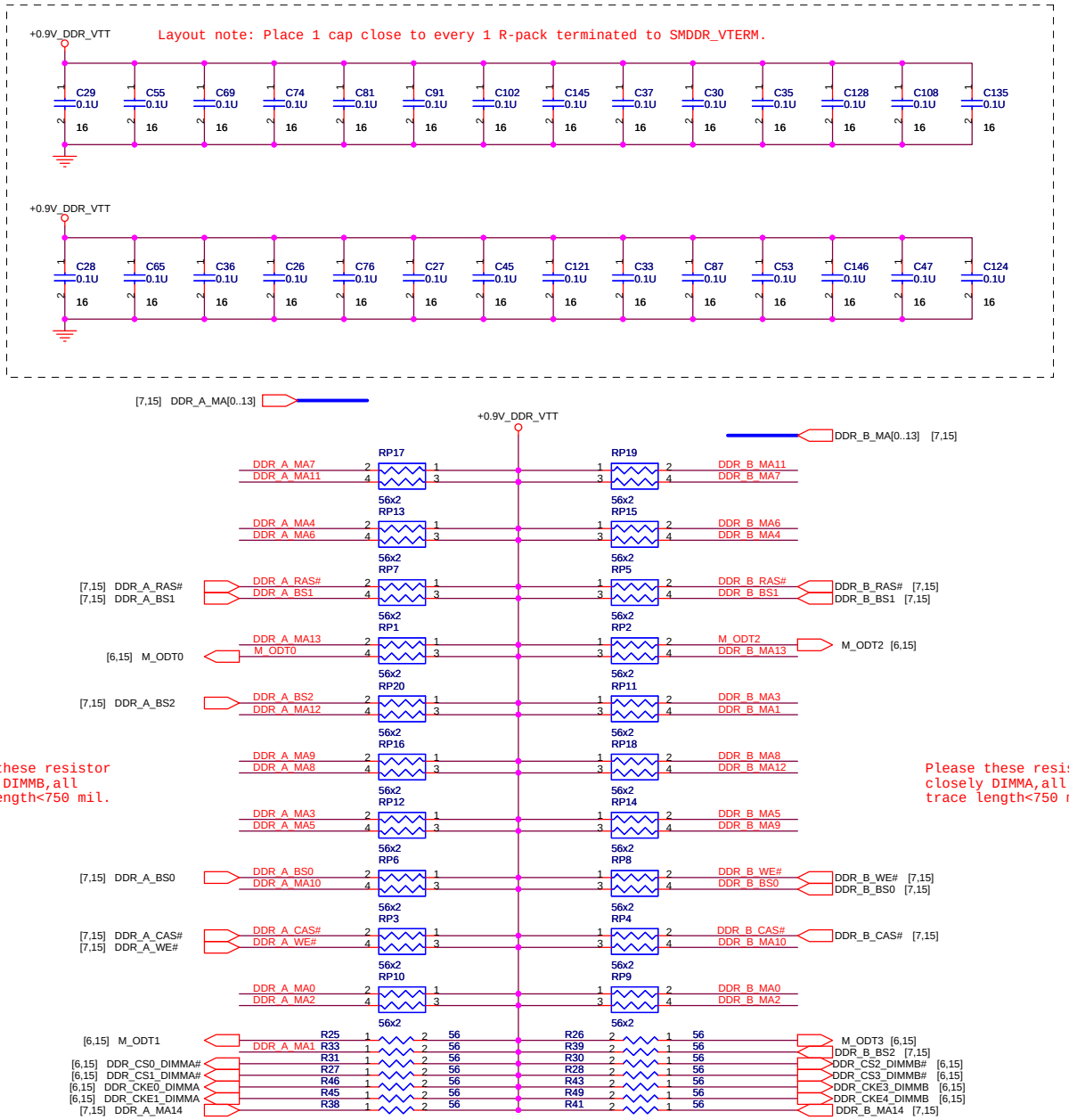
QUANTA COMPUTER



QUANTA COMPUTER

Title	DDR2 RES ARRAY	
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Add capacitor pads for improving WWAN.

C391 20P 50 FSA
C361 1 2 *27P_NC 50 FSC
C380 1 2 *27P_NC 50 PCI_SIO
C386 1 2 *27P_NC 50 PCI_ICH

Y2
CLK_XTAL_IN 1 2 CLK_XTAL_OUT
14.318MHZ
C359 33P 50
C360 33P 50
14.318MHz

U8
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

CPU-0 61
CPU-0# 60
CPU-1 58
CPU-1# 57
SRC-8/CPU_ITP 54
SRC-8#/CPU_ITP# 53
SRC-0/DOT96 20
SRC-0#/DOT96# 21
SRC-1/SE1 24
SRC-1#/SE2 25
SRC-2/SATA 28
SRC-2#/SATA# 29
CR#_C/SRC-3 31
CR#_D/SRC-3# 32
SRC-4 34
SRC-4# 35
PCI_STOP#/SRC-5 45
CPU_STOP#/SRC5-5# 44
SRC-6 48
SRC-6# 47
CR#_F/SRC-7 51
CR#_E/SRC-7# 50
SRC-9 37
SRC-9# 38
SRC-10 41
SRC-10# 42
CR#_H/SRC-11 40
CR#_G/SRC-11# 39
GND 65

RP26 0x2 CLK_CPU_BCLK [3] CLK_CPU_BCLK# [3]
RP27 0x2 CLK_MCH_BCLK [5] CLK_MCH_BCLK# [5]
RP28 0x2 CLK_PCIE_MINI1 [31] CLK_PCIE_MINI1# [31]
RP34 0x2 MCH_DREFCLK [6] MCH_DREFCLK# [6]
RP35 0x2 DREF_SSCLK [6] DREF_SSCLK# [6]
RP36 0x2 CLK_PCIE_SATA [11] CLK_PCIE_SATA# [11]
RP33 0x2 CLK_PCIE_CARD [38] CLK_PCIE_CARD# [38]
RP32 0x2 CLK_MCH_3GPLL [6] CLK_MCH_3GPLL# [6]
H_STP_PCI# [13] H_STP_CPU# [13]
RP29 0x2 CLK_PCIE_EXPCARD [28] CLK_PCIE_EXPCARD# [28]
Express Card
R145 475/F MINI1CLK_REQ# MINI1CLK_REQ# [31] CARD_CLK_REQ# [28]
R146 475/F
RP44 0x2 CLK_PCIE_VGA [18] CLK_PCIE_VGA# [18]
RP30 0x2 CLK_PCIE_ICH [12] CLK_PCIE_ICH# [12]
RP31 0x2 CLK_PCIE_LOM [39] CLK_PCIE_LOM# [39]

[13] SATA_CLKREQ# SATA_CLKREQ# R164 475/F
[6] CLK_3GPLLREQ# CLK_3GPLLREQ# R166 475/F
[31] CLK_LPC_DEBUG CLK_LPC_DEBUG R168 33
[29] CLK_PCI_8512 CLK_PCI_8512 R169 33
[12] CLK_PCI_ICH CLK_PCI_ICH R171 33
[13] CLK_ICH_48M CLK_ICH_48M R178 33
[3,6] CPU_MCH_BSEL0
[3,6] CPU_MCH_BSEL1
[3,6] CPU_MCH_BSEL2
R181 2.2K FSA 17 FSA/USB48
R161 10K FSB 64 FSB/TEST_MODE
FSC 5 FSC/TEST_SEL/REF
[13] CLK_ICH_14M CLK_ICH_14M R162 33
[13] CLK_PWRGD 55 RESET#
63 CK_PWRGD/PD#
Remove R143 0ohm
Ray 5/27
CLK_XTAL_OUT 2 XOUT
CLK_XTAL_IN 3 XIN
[3,25,29] SMBDAT1 6 SDATA
[3,25,29] SMBCLK1 7 SCLK
PCI_SIO 12 CR#_A/PCI-0
27M_SEL 13 CR_B/PCI-1
PCI_ICH 14 TME/PCI-2
SRC5_EN/PCI-3
27M_SEL/PCI-4
ITP_EN/PCIF-5#

CLK_LPC_DEBUG
C674 33P 50

+3.3V_RUN
H_STP_PCI# R156 10K
H_STP_CPU# R160 10K

+3.3V_RUN
CLK_3GPLLREQ# R165 10K
SATA_CLKREQ# R163 10K
MINI1CLK_REQ# R144 10K

PCI_SIO R167 *10K_NC

ITP_EN

PCI_ICH	10K-pull
0	Disable
1	Enable

+3.3V_RUN
R172 *10K_NC
PCI_ICH
R173 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

27M_SEL
R391 10K

UMA without iAMT

+3.3V_RUN
L25 BLM21PG600SN1D 805 120 ohms@100Mhz
+CK_VDD_MAIN
C329 0.1U 16
C328 0.1U 16
C366 0.1U 16
C382 0.1U 16
C395 0.1U 16
C394 0.1U 16
C387 *10U_NC 603 6.3
L24 BLM21PG600SN1D 805 120 ohms@100Mhz
R134 2.2
+CK_VDD_PCI
C331 0.1U 16
R179 2.2
+CK_VDD_PLL3
C393 0.1U 16
R175 2.2
+CK_VDD_48
C390 0.1U 16
C398 4.7U 603 6.3
R140 2.2
+CK_VDD_SRC
C327 0.1U 16

QUANTA COMPUTER

Title	CLOCK GENERATOR	
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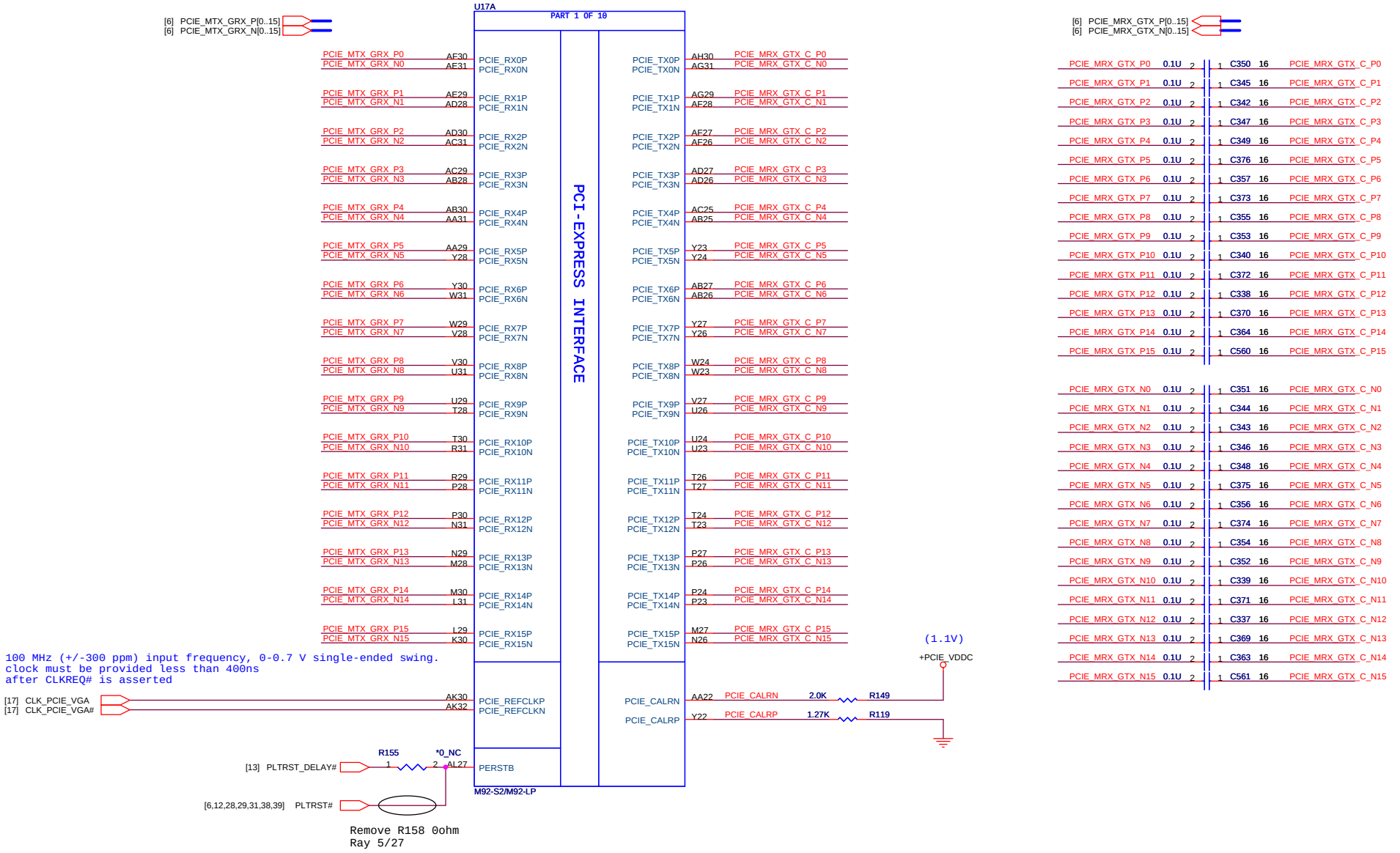
U17A
PART 1 OF 10
PCI-EXPRESS INTERFACE
M92-S2/M92-LP
[6] PCIE_MTX_GRX_P[0..15]
[6] PCIE_MTX_GRX_N[0..15]
PCIE_MTX_GRX_P0 AE30 PCIE_RX0P
PCIE_MTX_GRX_N0 AE31 PCIE_RX0N
PCIE_MTX_GRX_P1 AF29 PCIE_RX1P
PCIE_MTX_GRX_N1 AD28 PCIE_RX1N
PCIE_MTX_GRX_P2 AD30 PCIE_RX2P
PCIE_MTX_GRX_N2 AC31 PCIE_RX2N
PCIE_MTX_GRX_P3 AC29 PCIE_RX3P
PCIE_MTX_GRX_N3 AB28 PCIE_RX3N
PCIE_MTX_GRX_P4 AB30 PCIE_RX4P
PCIE_MTX_GRX_N4 AA31 PCIE_RX4N
PCIE_MTX_GRX_P5 AA29 PCIE_RX5P
PCIE_MTX_GRX_N5 Y28 PCIE_RX5N
PCIE_MTX_GRX_P6 Y30 PCIE_RX6P
PCIE_MTX_GRX_N6 W31 PCIE_RX6N
PCIE_MTX_GRX_P7 W29 PCIE_RX7P
PCIE_MTX_GRX_N7 V28 PCIE_RX7N
PCIE_MTX_GRX_P8 V30 PCIE_RX8P
PCIE_MTX_GRX_N8 U31 PCIE_RX8N
PCIE_MTX_GRX_P9 U29 PCIE_RX9P
PCIE_MTX_GRX_N9 T28 PCIE_RX9N
PCIE_MTX_GRX_P10 T30 PCIE_RX10P
PCIE_MTX_GRX_N10 R31 PCIE_RX10N
PCIE_MTX_GRX_P11 R29 PCIE_RX11P
PCIE_MTX_GRX_N11 P28 PCIE_RX11N
PCIE_MTX_GRX_P12 P30 PCIE_RX12P
PCIE_MTX_GRX_N12 N31 PCIE_RX12N
PCIE_MTX_GRX_P13 N29 PCIE_RX13P
PCIE_MTX_GRX_N13 M28 PCIE_RX13N
PCIE_MTX_GRX_P14 M30 PCIE_RX14P
PCIE_MTX_GRX_N14 L31 PCIE_RX14N
PCIE_MTX_GRX_P15 L29 PCIE_RX15P
PCIE_MTX_GRX_N15 K30 PCIE_RX15N
PCIE_TX0P AH30 PCIE_MRX_GTX_C_P0
PCIE_TX0N AG31 PCIE_MRX_GTX_C_N0
PCIE_TX1P AG29 PCIE_MRX_GTX_C_P1
PCIE_TX1N AF28 PCIE_MRX_GTX_C_N1
PCIE_TX2P AF27 PCIE_MRX_GTX_C_P2
PCIE_TX2N AF26 PCIE_MRX_GTX_C_N2
PCIE_TX3P AD27 PCIE_MRX_GTX_C_P3
PCIE_TX3N AD26 PCIE_MRX_GTX_C_N3
PCIE_TX4P AC25 PCIE_MRX_GTX_C_P4
PCIE_TX4N AB25 PCIE_MRX_GTX_C_N4
PCIE_TX5P Y23 PCIE_MRX_GTX_C_P5
PCIE_TX5N Y24 PCIE_MRX_GTX_C_N5
PCIE_TX6P AB27 PCIE_MRX_GTX_C_P6
PCIE_TX6N AB26 PCIE_MRX_GTX_C_N6
PCIE_TX7P Y27 PCIE_MRX_GTX_C_P7
PCIE_TX7N Y26 PCIE_MRX_GTX_C_N7
PCIE_TX8P W24 PCIE_MRX_GTX_C_P8
PCIE_TX8N W23 PCIE_MRX_GTX_C_N8
PCIE_TX9P V27 PCIE_MRX_GTX_C_P9
PCIE_TX9N U26 PCIE_MRX_GTX_C_N9
PCIE_TX10P U24 PCIE_MRX_GTX_C_P10
PCIE_TX10N U23 PCIE_MRX_GTX_C_N10
PCIE_TX11P T26 PCIE_MRX_GTX_C_P11
PCIE_TX11N T27 PCIE_MRX_GTX_C_N11
PCIE_TX12P T24 PCIE_MRX_GTX_C_P12
PCIE_TX12N T23 PCIE_MRX_GTX_C_N12
PCIE_TX13P P27 PCIE_MRX_GTX_C_P13
PCIE_TX13N P26 PCIE_MRX_GTX_C_N13
PCIE_TX14P P24 PCIE_MRX_GTX_C_P14
PCIE_TX14N P23 PCIE_MRX_GTX_C_N14
PCIE_TX15P M27 PCIE_MRX_GTX_C_P15
PCIE_TX15N N26 PCIE_MRX_GTX_C_N15
100 MHz (+/-300 ppm) input frequency, 0-0.7 V single-ended swing.
clock must be provided less than 400ns
after CLKREQ# is asserted
[17] CLK_PCIE_VGA
[17] CLK_PCIE_VGA#
AK30 PCIE_REFCLKP
AK32 PCIE_REFCLKN
PCIE_CALRN AA22 2.0K R149
PCIE_CALRP Y22 1.27K R119
(1.1V)
+PCIE_VDDC
R155 *0_NC
[13] PLTRST_DELAY#
AL27 PERSTB
[6,12,28,29,31,38,39] PLTRST#
Remove R158 0ohm
Ray 5/27
[6] PCIE_MRX_GTX_P[0..15]
[6] PCIE_MRX_GTX_N[0..15]
PCIE_MRX_GTX_P0 0.1U C350 PCIE_MRX_GTX_C_P0
PCIE_MRX_GTX_P1 0.1U C345 PCIE_MRX_GTX_C_P1
PCIE_MRX_GTX_P2 0.1U C342 PCIE_MRX_GTX_C_P2
PCIE_MRX_GTX_P3 0.1U C347 PCIE_MRX_GTX_C_P3
PCIE_MRX_GTX_P4 0.1U C349 PCIE_MRX_GTX_C_P4
PCIE_MRX_GTX_P5 0.1U C376 PCIE_MRX_GTX_C_P5
PCIE_MRX_GTX_P6 0.1U C357 PCIE_MRX_GTX_C_P6
PCIE_MRX_GTX_P7 0.1U C373 PCIE_MRX_GTX_C_P7
PCIE_MRX_GTX_P8 0.1U C355 PCIE_MRX_GTX_C_P8
PCIE_MRX_GTX_P9 0.1U C353 PCIE_MRX_GTX_C_P9
PCIE_MRX_GTX_P10 0.1U C340 PCIE_MRX_GTX_C_P10
PCIE_MRX_GTX_P11 0.1U C372 PCIE_MRX_GTX_C_P11
PCIE_MRX_GTX_P12 0.1U C338 PCIE_MRX_GTX_C_P12
PCIE_MRX_GTX_P13 0.1U C370 PCIE_MRX_GTX_C_P13
PCIE_MRX_GTX_P14 0.1U C364 PCIE_MRX_GTX_C_P14
PCIE_MRX_GTX_P15 0.1U C560 PCIE_MRX_GTX_C_P15
PCIE_MRX_GTX_N0 0.1U C351 PCIE_MRX_GTX_C_N0
PCIE_MRX_GTX_N1 0.1U C344 PCIE_MRX_GTX_C_N1
PCIE_MRX_GTX_N2 0.1U C343 PCIE_MRX_GTX_C_N2
PCIE_MRX_GTX_N3 0.1U C346 PCIE_MRX_GTX_C_N3
PCIE_MRX_GTX_N4 0.1U C348 PCIE_MRX_GTX_C_N4
PCIE_MRX_GTX_N5 0.1U C375 PCIE_MRX_GTX_C_N5
PCIE_MRX_GTX_N6 0.1U C356 PCIE_MRX_GTX_C_N6
PCIE_MRX_GTX_N7 0.1U C374 PCIE_MRX_GTX_C_N7
PCIE_MRX_GTX_N8 0.1U C354 PCIE_MRX_GTX_C_N8
PCIE_MRX_GTX_N9 0.1U C352 PCIE_MRX_GTX_C_N9
PCIE_MRX_GTX_N10 0.1U C339 PCIE_MRX_GTX_C_N10
PCIE_MRX_GTX_N11 0.1U C371 PCIE_MRX_GTX_C_N11
PCIE_MRX_GTX_N12 0.1U C337 PCIE_MRX_GTX_C_N12
PCIE_MRX_GTX_N13 0.1U C369 PCIE_MRX_GTX_C_N13
PCIE_MRX_GTX_N14 0.1U C363 PCIE_MRX_GTX_C_N14
PCIE_MRX_GTX_N15 0.1U C561 PCIE_MRX_GTX_C_N15
QUANTA COMPUTER
Title
M92-S2_PCIE
Size
Document Number
VM8G
Rev
1B
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MEMORY APERTURE SIZE SELECT				
MEMORY SIZE	CFG3 GPIO9	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB		0	0	0
256MB		0	0	1
64MB		0	1	0
512MB		1	0	0

2

+3.3V_DELAY

R296 10K RAM_CFG0
R288 *10K_NC RAM_CFG1
R287 *10K_NC RAM_CFG2

2

GPIO Straps table	DESCRIPTION OF DEFAULT SETTINGS	FM8 setting
GPIO0	GPIO(0) - TX_PWRS_ENB (Transmitter Power Savings Enable) 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	0
GPIO1	GPIO(1) - TX_DEEMPH_EN (Transmitter De-emphasis Enable) 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	0
GPIO2	GPIO(2) - BIF_GEN2_EN (5.0 GT/s Enable) 0 : Default. (Driver Controlled Gen2) 1 : Strap Controlled Gen2	0
GPIO3	ATI reserved configuration straps.	0
GPIO4	ATI reserved configuration straps.	0
GPIO5	GPIO_5_AC_BATT 0 : Battery saving mode = 0.0 V 1 : AC (Performance mode) = 3.3 V	0
GPIO6	ATI Internal use only	0

+3.3V_DELAY

R288 *10K_NC GPIO0
R293 *10K_NC GPIO1
R93 *10K_NC GPIO2
R294 *10K_NC GPIO3
R291 *10K_NC GPIO4
R91 *10K_NC GPIO5
R90 *10K_NC GPIO6

R298 *10K_NC TEMP_FAIL#
R290 10K GFX_CLKREQ#
R128 *10K_NC VGASYNC
R124 *10K_NC VGAHSYNC

R131 *10K_NC VGASYNC
R117 *10K_NC VGAHSYNC
R299 10K TEMP_FAIL#

+1.8V_RUN

52

R95 *10K_NC RAM_TYPE_CFG0
R300 10K RAM_TYPE_CFG1
R292 *10K_NC RAM_TYPE_CFG2
R301 *10K_NC RAM_TYPE_CFG3

Memory Straps	RAM_TYPE _CFG3	RAM_TYPE _CFG2	RAM_TYPE _CFG1	RAM_TYPE _CFG0	Quanta PN (QuantaBuy)	Vendor PN
500MHz 512MB(64M*16) Hynix	0	0	1	0	AKD5LG-TW01(FR)	H5PS1G63EFR-20L
Remove Qimonda Source						
500MHz 512MB(64M*16) Samsung	0	0	0	1	AKD5LG-T507(IE)	K4N1G164QE-HC20
Remove						

52

Q9
SI2303BDS-T1-E3

+3.3V_DELAY → +3.3V_RUN

R94 100K

Remove R85 0ohm
Ray 5/27

Q8
2N7002W-7-F

C212 *0.1U_NC

OPTIONAL RC NETWORK TO FINE TUNE POWER SEQUENCING

Remove R78 0ohm
Ray 5/27

[29] GFX_ON → GFX_RUN_ON [49]

C201 *0.1U_NC

CLK_VGA_27M_SSIN → R177 *0_NC → CLK_VGA_27M_SSIN_R

R106 *10K_NC

XTALIN → XTALIN [23]

Y3 27MHZ

XTALOUT → XTALOUT [23]

R317 1M

Remove R316 0ohm
Ray 6/1

C557 12P
C556 12P

Spread Spectrum
If U9, the discrete spread spectrum chip

+3.3V_RUN

R180 *10K_NC

R174 *10K_NC

U9
XIN/CLKIN XOUT
VSS VDD
SO PDB#
SSCLK REFCLK

R176 *0_NC

CLK_VGA_27M_SSIN

*P1819GF-08SR_NC

+3VL

L26 *BLM11A05S_NC → +3.3V_RUN

C388 *10U_NC 805
C389 *0.1U_NC
16

	S0
-1.75% (DOWN)	0

As M82 design, for GPIO use

U17B
PART 2 OF 18

DVP PORT

DVPCLK
DVPCNTL_0
DVPCNTL_1
DVPCNTL_2
DVPCNTL_MVP_0
DVPCNTL_MVP_1
DVPDATA_0
DVPDATA_1
DVPDATA_2
DVPDATA_3
DVPDATA_4
DVPDATA_5
DVPDATA_6
DVPDATA_7
DVPDATA_8
DVPDATA_9
DVPDATA_10
DVPDATA_11
DVPDATA_12
DVPDATA_13
DVPDATA_14
DVPDATA_15
DVPDATA_16
DVPDATA_17
DVPDATA_18
DVPDATA_19
DVPDATA_20
DVPDATA_21
DVPDATA_22
DVPDATA_23

RAM_TYPE_CFG0
RAM_TYPE_CFG1
RAM_TYPE_CFG2
RAM_TYPE_CFG3

I/O

GPIO_0
GPIO_1
GPIO_2
GPIO_3_SMBDATA
GPIO_4_SMBCLK
GPIO_5_AC_BATT
GPIO_6_TACH
GPIO_7_BLON
GPIO_8_ROMSO
GPIO_9_ROMSI
GPIO_10_ROMSCK
GPIO_11
GPIO_12
GPIO_13
GPIO_14_HPD2
GPIO_15_PWRCNTL_0
GPIO_16_SSIN
GPIO_17_THERMAL_INT
GPIO_18_HPD3
GPIO_19_CTF
GPIO_20_PWRCNTL_1
GPIO_21_BB_EN
GPIO_22_ROMCSB
GPIO_23_CLKREQB
JTAG_TRSTB
JTAG_TDI
JTAG_TCK
JTAG_TMS
JTAG_TDO

GENERICA
GENERICB
GENERICC
GENERICD
GENERICE_HPD4

HPD1

VREFG

RESERVED

NC_PWRGOOD
RSVD#8
RSVD#9
NC#1
NC#2
RSVD#3
RSVD#2
RSVD#1

TESTEN

M92-S2/M92-LP

DAC1

R RB G GB B BB HSYNC VSYNC
AVDD AVSSQ VDD1DI VSS1DI RSET

DAC2

R2 R2B G2 G2B B2 B2B H2SYNC V2SYNC C Y COMP
A2VDD A2VDDQ A2VSSQ VDD2DI VSS2DI R2SET

[29] PANEL_BKEN
[49] GFX_CORE_CNTRL0
[21] THERMAL_INT#
[49] GFX_CORE_CNTRL1
[20] BB_ENA
[25] ENVDD
[25] BIA_PWM

R295 *0_NC
R286 1K
R310 499/F
R311 249/F
C533 0.1U
R157 10K
R154 1K

VGA_BLU
VGA_GRN
VGA_RED

R120 150/F
R127 150/F
R130 150/F

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

VGA_RED → VGA_RED [26]
VGA_GRN → VGA_GRN [26]
VGA_BLU → VGA_BLU [26]
VGAHSYNC → VGAHSYNC [26]
VGAVSYNC → VGAVSYNC [26]

+1.8V_RUN

+AVDD L45 BLM15BD121SN1D
C545 0.01U C546 0.1U C547 1U C544 4.7uF

+VDD1DI L43 BLM15BD121SN1D
C537 0.01U C536 0.1U C535 1U

Place very close to ASIC balls

RSET R116 499R

+3.3V_DELAY

C224 *0.1U_NC

+A2VDDQ L42 BLM15BD121SN1D
C532 0.1U C531 1U

+1.8V_RUN

C516 *0.1U_NC

R307 715

QUANTA COMPUTER

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layout note: close to VDDR1#[1:17]

+1.8V_RUN
C227 10U
C228 *10U_NC
C239 1U
C231 1U
C253 0.1U
PLACE NEAR GPU
PLACE NEAR BALLS

U17D
PART 4 OF 10
POWER
M92-S2/M92-LP

+1.8V_RUN
H13 VDDR1#1
H16 VDDR1#2
H19 VDDR1#3
J10 VDDR1#4
J23 VDDR1#5
J24 VDDR1#6
J9 VDDR1#7
K10 VDDR1#8
K23 VDDR1#9
K24 VDDR1#10
K9 VDDR1#11
L11 VDDR1#12
L12 VDDR1#13
L13 VDDR1#14
L20 VDDR1#15
L21 VDDR1#16
L22 VDDR1#17

+1.8V_RUN
L20 BLM15BD121SN1D
+VDD_CT
C306 *10U_NC
C305 0.1U
C304 1U
C303 1U
C302 0.1U
AA20 VDD_CT#1
AA21 VDD_CT#2
AB20 VDD_CT#3
AB21 VDD_CT#4

+3.3V_DELAY
C200 1U
C515 1U
C195 0.1U
C204 0.1U
AA17 VDDR3#1
AA18 VDDR3#2
AB17 VDDR3#3
AB18 VDDR3#4

+1.8V_RUN
C522 1U
C523 0.1U
C520 1U
C521 *0.1U_NC
AA11 VDDR4#1
AA12 VDDR4#2
Y11 VDDR4#3
Y12 VDDR4#4
U11 VDDR5#1
U12 VDDR5#2
V11 VDDR5#3
V12 VDDR5#4

+1.8V_RUN
L41 BLM15BD121SN1D
+VDDRH1
C525 1U
C524 1U
L17 VDDRHA
L16 VSSRHA

PCIE_VDDR#1 AB23
PCIE_VDDR#2 AC23
PCIE_VDDR#3 AD24
PCIE_VDDR#4 AE24
PCIE_VDDR#5 AE25
PCIE_VDDR#6 AE26
PCIE_VDDR#7 AF25
PCIE_VDDR#8 AG26

PCIE_VDDC#1 L23
PCIE_VDDC#2 L24
PCIE_VDDC#3 L25
PCIE_VDDC#4 L26
PCIE_VDDC#5 M22
PCIE_VDDC#6 N22
PCIE_VDDC#7 N23
PCIE_VDDC#8 N24
PCIE_VDDC#9 R22
PCIE_VDDC#10 T22
PCIE_VDDC#11 U22
PCIE_VDDC#12 V22

(0.9~1.1V)
+VCC_GFX_CORE
+BBP
C196 0.1U
C197 1U

VDDC#1 AA15
VDDC#2 M11
VDDC#3 M12
VDDC#4 N15
VDDC#5 N17
VDDC#6 R13
VDDC#7 R16
VDDC#8 R18
VDDC#9 R21
VDDC#10 T12
VDDC#11 T15
VDDC#12 T17
VDDC#13 T20
VDDC#14 U13
VDDC#15 U16
VDDC#16 U18
VDDC#17 U21
VDDC#18 V15
VDDC#19 V17
VDDC#20 V20
VDDC#21 V21
VDDC#22 Y13
VDDC#23 Y16
VDDC#24 Y18
VDDC#25 Y21

+VDDCI
(0.9~1.1V)
VDDCI#1 M13
VDDCI#2 M15
VDDCI#3 M16
VDDCI#4 M17
VDDCI#5 M18
VDDCI#6 M20
VDDCI#7 M21
VDDCI#8 N20

+BBP
Q5 SI2303BDS-T1-E3
+1.8V_RUN
C198 1U 0402 6.3
Q7 2N7002W-7-F
(0.9~1.1V)
+VCC_GFX_CORE
R71 100K
+5V_RUN
[19] BB_ENA
Q6 2N7002W-7-F
R92 10K

layout note: close to VDDC#[1:25]
(0.9~1.1V)
+VCC_GFX_CORE
C256 1U
C240 1U
C245 1U
C260 1U
C251 1U
C257 1U
C265 1U
C241 1U
C246 1U
C259 1U
C279 1U
C268 1U
C258 1U
(0.9~1.1V)
+VCC_GFX_CORE
C284 10U
C269 10U
C273 10U

+1.8V_RUN
C232 0.1U
C300 1U
C237 1U
C225 0.01U
C291 10U
PLACE NEAR BALLS
PLACE NEAR GPU

+1.1V_GFX_PCIE
L22 BLM18PG121SN1D
(1.1V)
+PCIE_VDDC
(PCIE_VDDC 1.1V @ 1A)
C332 10U 603 6.3
C334 1U 0402 6.3
C335 0.1U
C341 *10U_NC 603 6.3
C336 *1U_NC 0402 6.3
C333 *0.1U_NC

C323 0.1U
C319 1U
C320 1U
PLACE NEAR BALLS
(1.1V)
+PCIE_VDDC
C299 4.7U 603 6.3
C316 10U
PLACE NEAR GPU

U17E
PART 5 OF 10
GND
M92-S2/M92-LP

PCIE_VSS#1 AA27
PCIE_VSS#2 AB24
PCIE_VSS#3 AB32
PCIE_VSS#4 AC24
PCIE_VSS#5 AC26
PCIE_VSS#6 AC27
PCIE_VSS#7 AD25
PCIE_VSS#8 AD32
PCIE_VSS#9 AE27
PCIE_VSS#10 AF32
PCIE_VSS#11 AG27
PCIE_VSS#12 AH32
PCIE_VSS#13 K28
PCIE_VSS#14 K32
PCIE_VSS#15 L27
PCIE_VSS#16 M32
PCIE_VSS#17 N26
PCIE_VSS#18 N27
PCIE_VSS#19 P25
PCIE_VSS#20 P32
PCIE_VSS#21 R27
PCIE_VSS#22 T25
PCIE_VSS#23 T32
PCIE_VSS#24 U25
PCIE_VSS#25 U27
PCIE_VSS#26 V32
PCIE_VSS#27 W25
PCIE_VSS#28 W26
PCIE_VSS#29 W27
PCIE_VSS#30 Y25
PCIE_VSS#31 Y32

GND#1 A3
GND#2 A30
GND#3 AA13
GND#4 AA16
GND#5 AB10
GND#6 AB15
GND#7 AB6
GND#8 AC9
GND#9 AD6
GND#10 AD8
GND#11 AE7
GND#12 AG12
GND#13 AH10
GND#14 AH28
GND#15 B10
GND#16 B12
GND#17 B14
GND#18 B16
GND#19 B18
GND#20 B20
GND#21 B22
GND#22 B24
GND#23 B26
GND#24 B6
GND#25 B8
GND#26 C1
GND#27 C32
GND#28 E28
GND#29 F10
GND#30 F12
GND#31 F14
GND#32 F16

GND#33 F18
GND#34 F2
GND#35 F20
GND#36 F22
GND#37 F24
GND#38 F26
GND#39 F6
GND#40 F8
GND#41 G10
GND#42 G27
GND#43 G31
GND#44 G8
GND#45 H14
GND#46 H17
GND#47 H2
GND#48 H20
GND#49 H6
GND#50 J27
GND#51 J31
GND#52 K11
GND#53 K2
GND#54 K22
GND#55 K6
GND#56 M6
GND#57 N11
GND#58 N12
GND#59 N13
GND#60 N16
GND#61 N18
GND#62 N21
GND#63 P6
GND#64 P9
GND#65 R12
GND#66 R15
GND#67 R17
GND#68 R20
GND#69 T13
GND#70 T16
GND#71 T18
GND#72 T21
GND#73 T6
GND#74 U15
GND#75 U17
GND#76 U20
GND#77 U3
GND#78 U9
GND#79 V13
GND#80 V16
GND#81 V18
GND#82 V6
GND#83 Y10
GND#84 Y15
GND#85 Y17
GND#86 Y20
GND#87 Y6
GND#88 T11
GND#89 R11

VSS_MECH#1 A32
VSS_MECH#2 AM1
VSS_MECH#3 AM32

(0.9~1.1V)
+VCC_GFX_CORE
(0.9~1.1V)
+VDDCI
L18 BLM18EG221SN1D
C270 0.1U
C267 0.1U
C250 1U
C266 1U
C280 10U

QUANTA COMPUTER

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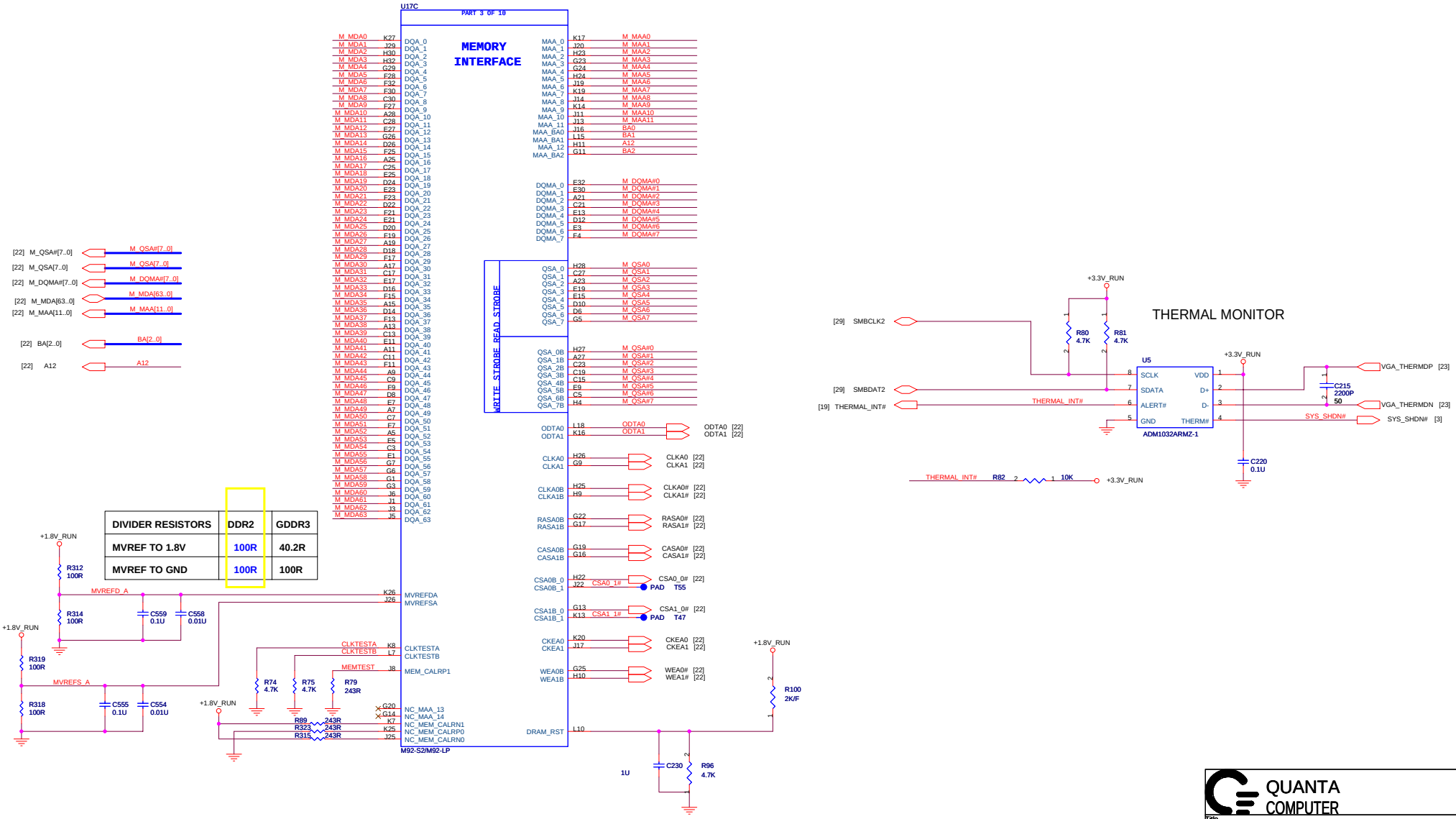
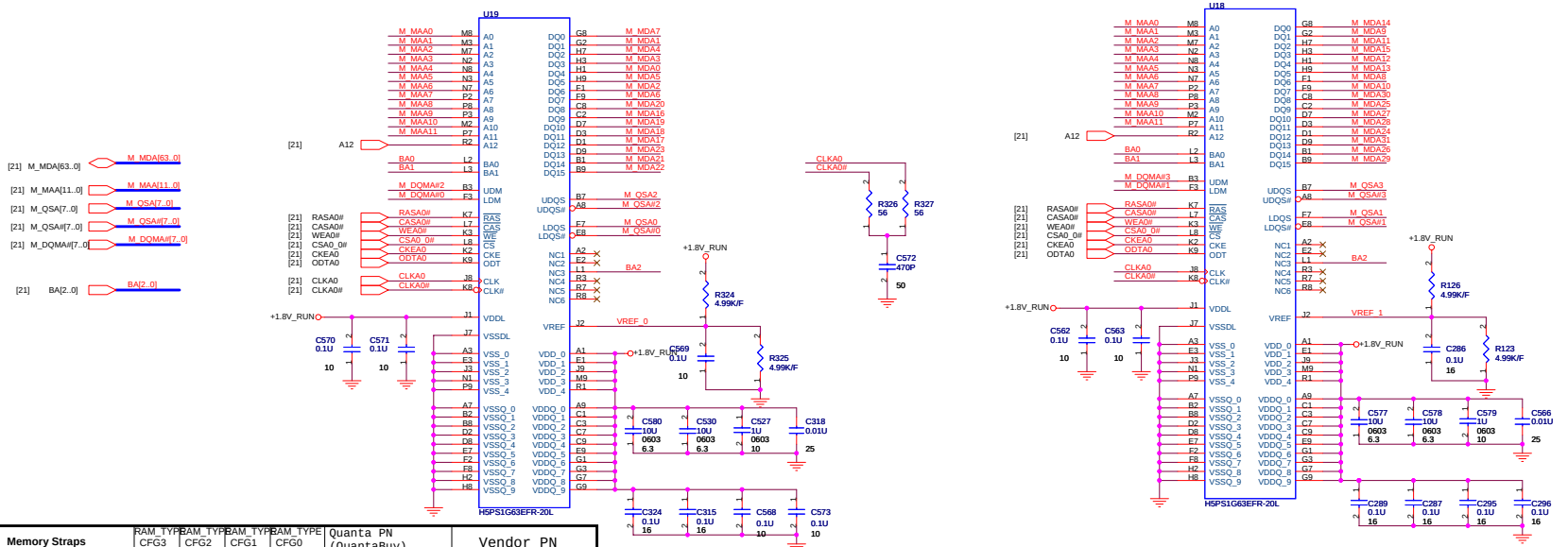
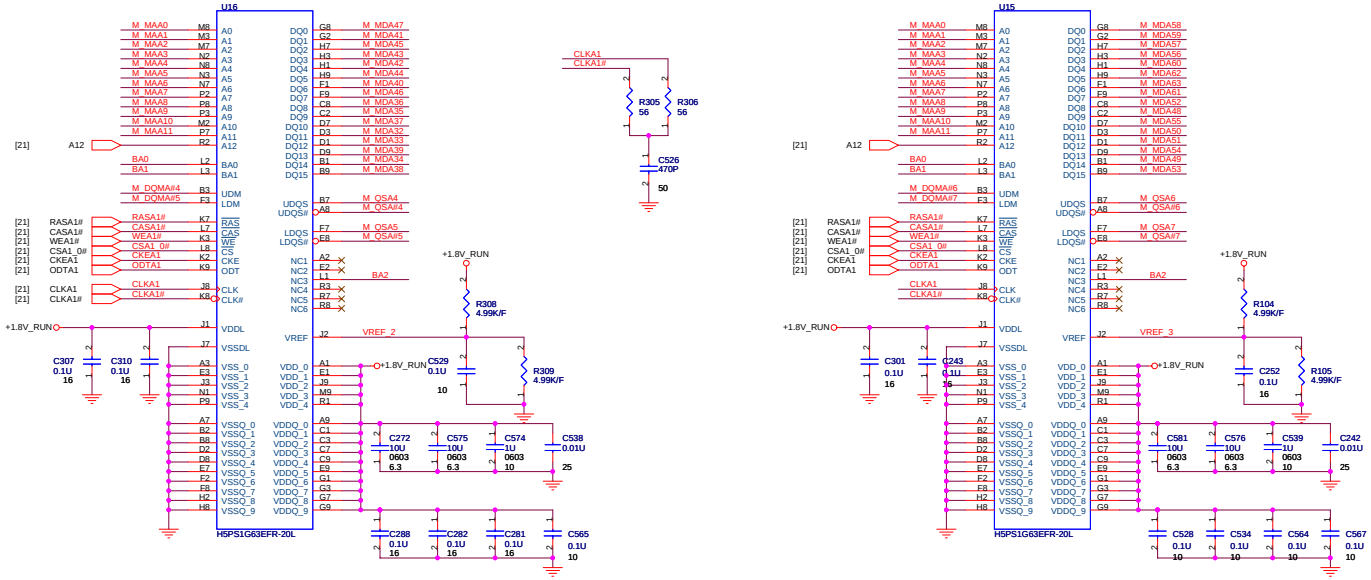
MEMORY INTERFACE



DDR2 64MbitX16 MEMORY



Memory Straps	RAM_TYPE_CFG3	RAM_TYPE_CFG2	RAM_TYPE_CFG1	RAM_TYPE_CFG0	Quanta PN (QuantaBuy)	Vendor PN
500MHz 512MB(64M*16) Hynix	0	0	1	0	AKD5LG-TW01(FR)	H5PS1G63EFR-20L
Remove Qimonda						
500MHz 512MB(64M*16) Samsung	0	0	0	1	AKD5LG-T507(IE)	K4N1G164QE-HC20
Remove						



QUANTA COMPUTER

Title	M92-S2_DDR2_512M	
Size	Document Number VM8G	Rev 1B
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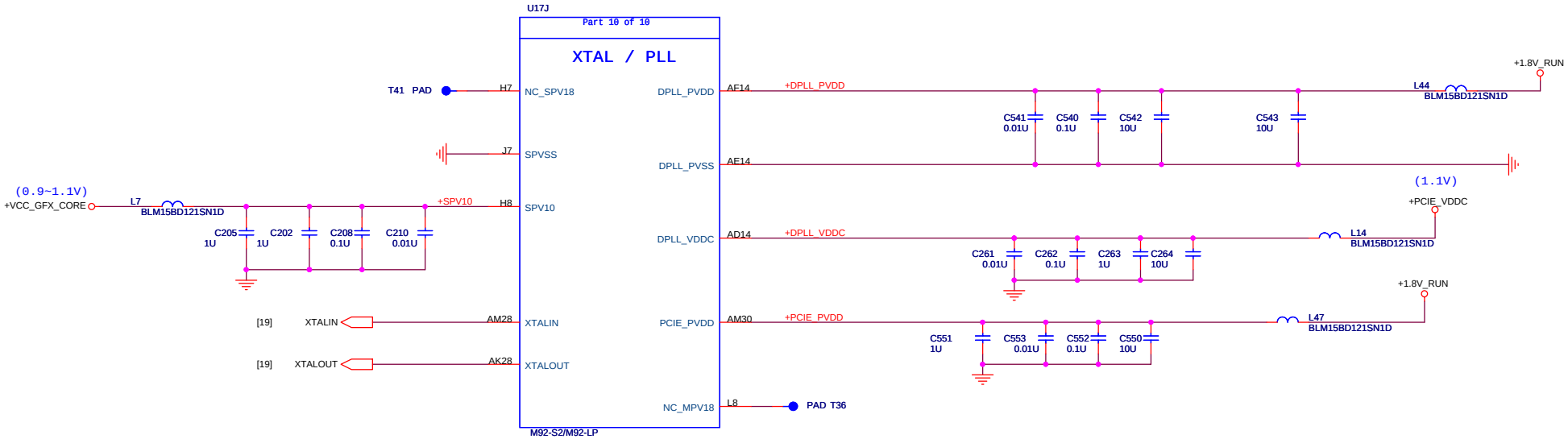

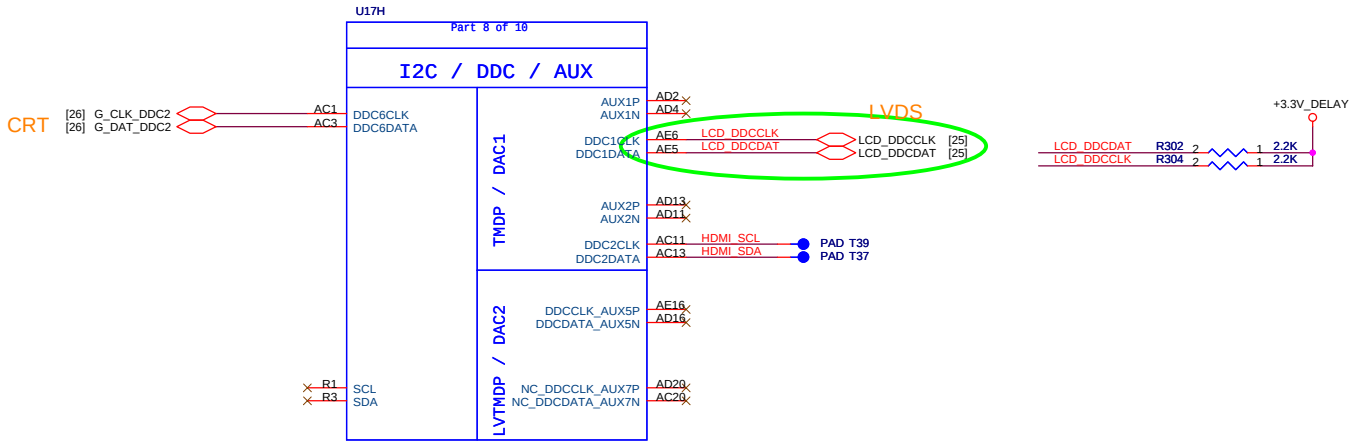

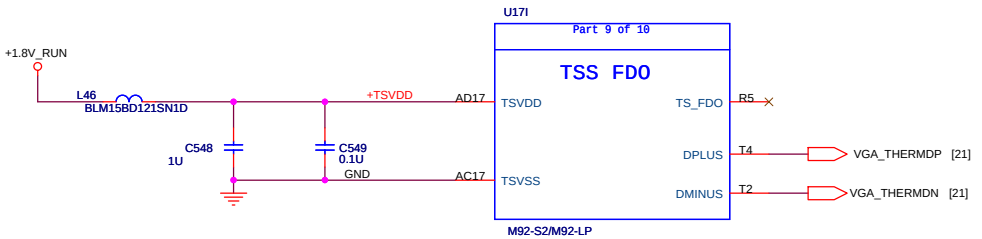

QUANTA COMPUTER

Title	M92-S2_XTAL/PLL/I2C	
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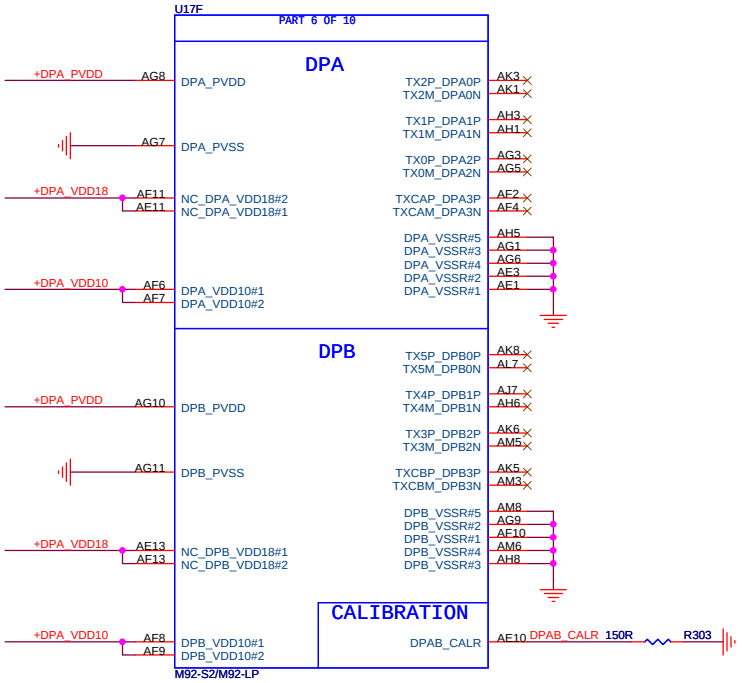
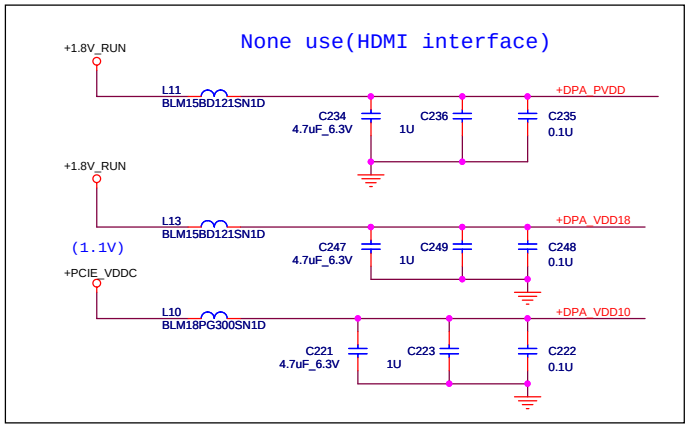
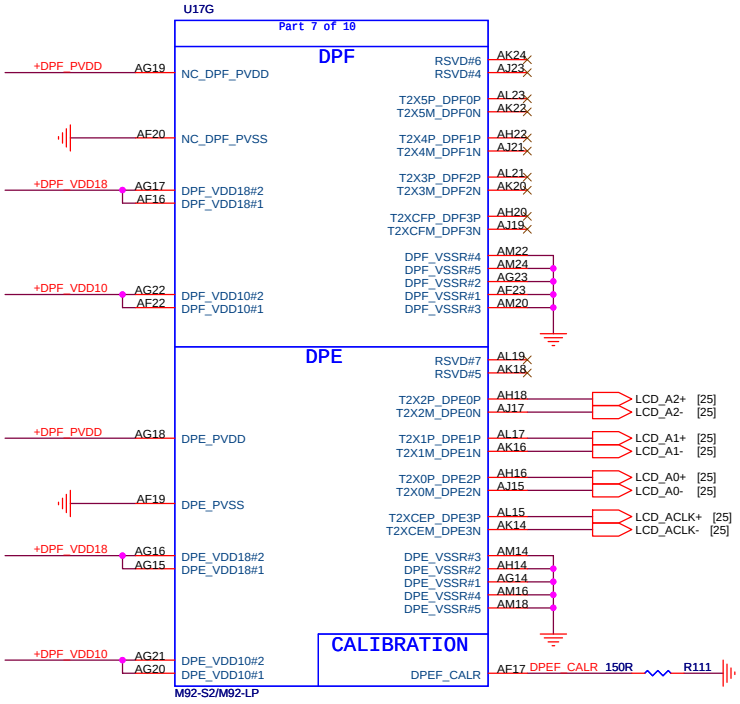
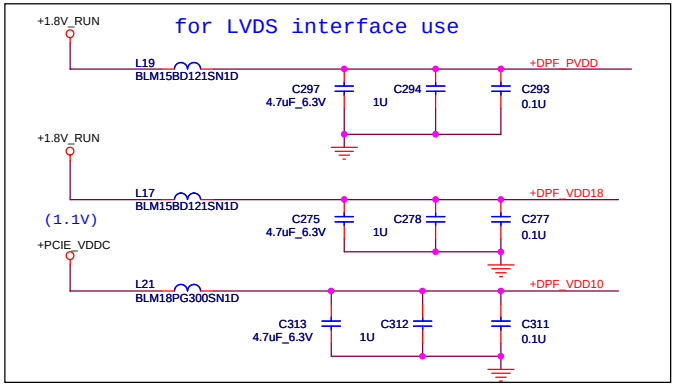
TMDP(HDMI) INTERFACE





LVDS INTERFACE





QUANTA COMPUTER

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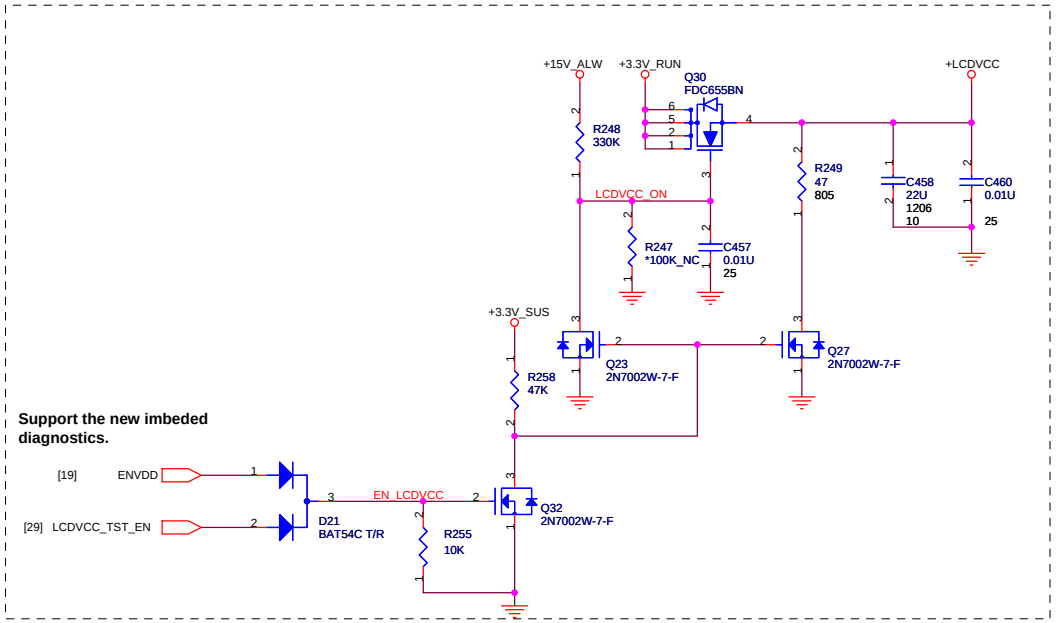
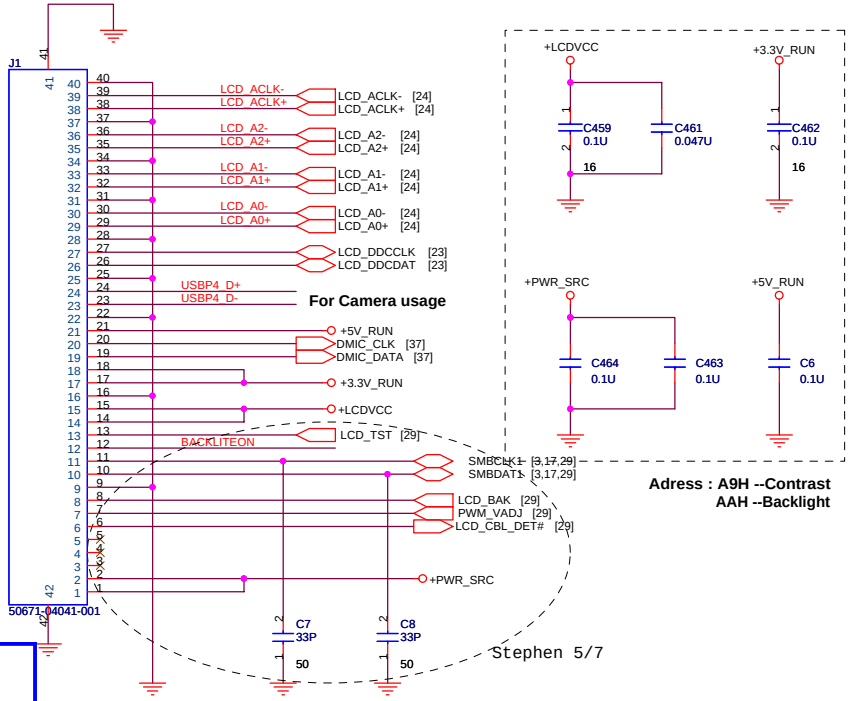
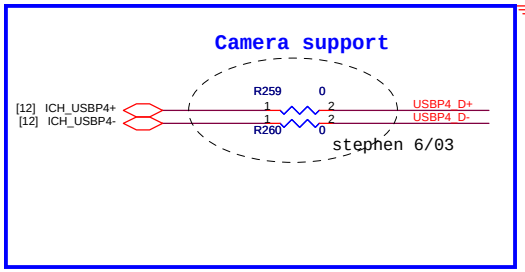
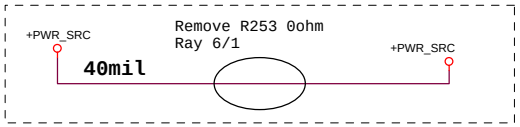
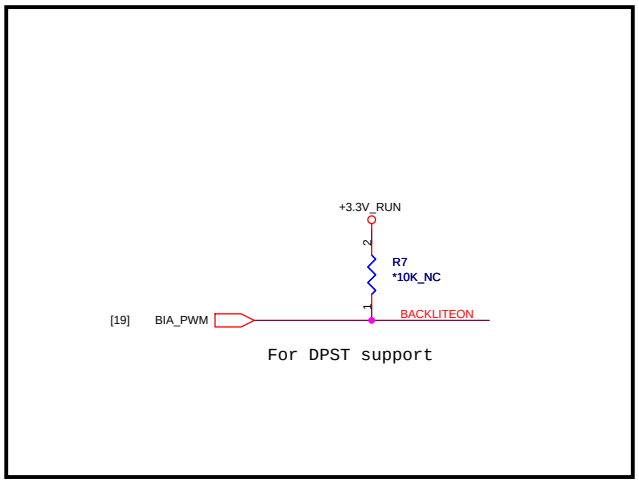
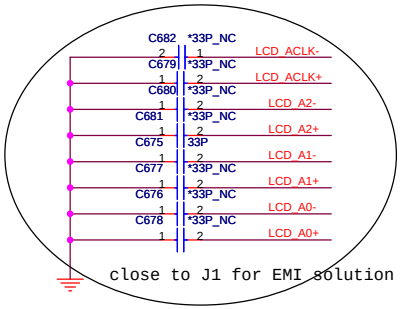






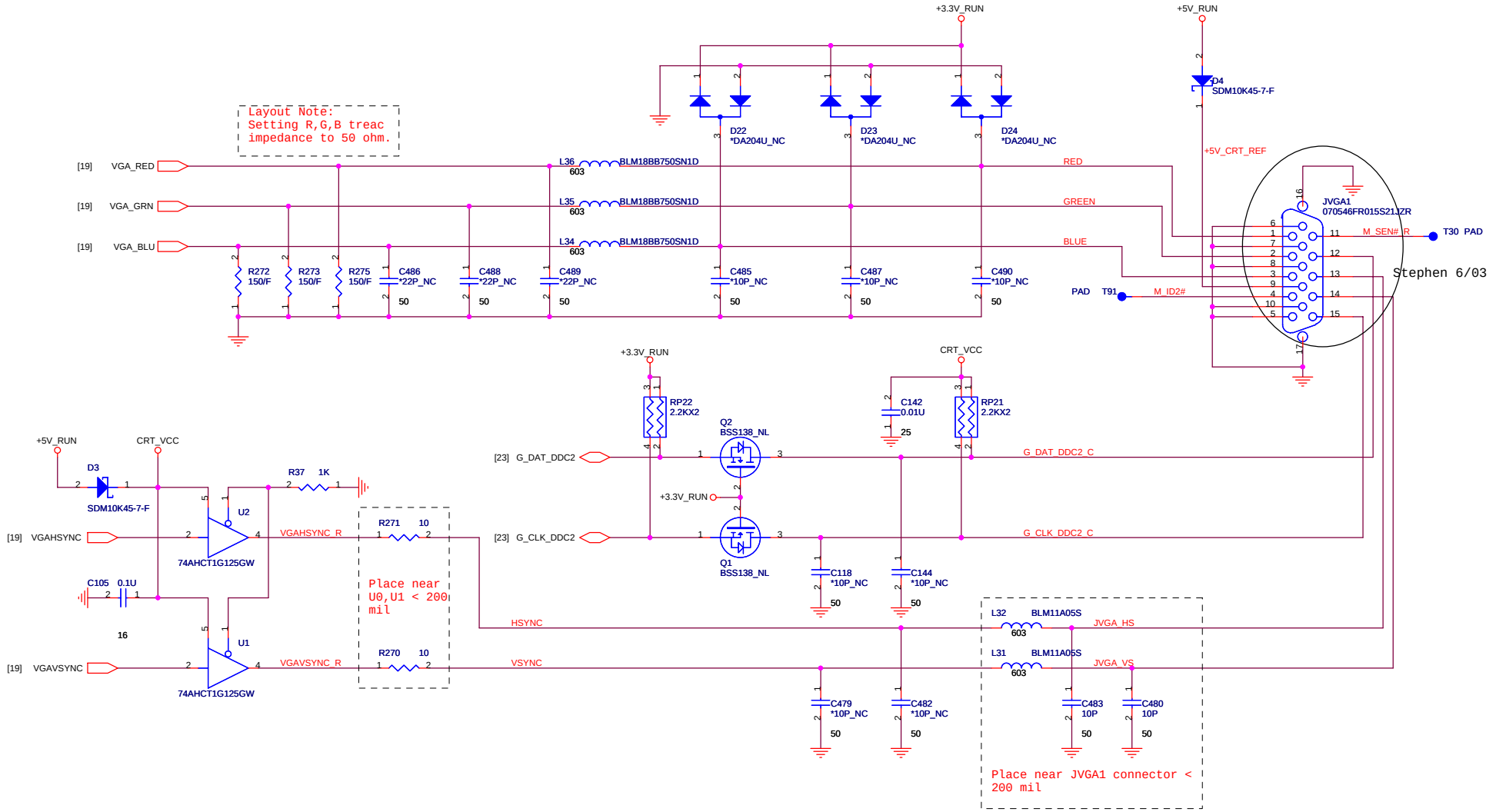






QUANTA COMPUTER

Title	LCD CONN & CK-SSCD	
Size	Document Number VM8G	Rev 1B
Date: Wednesday, June 03, 2009	Sheet 25 of 53	



QUANTA COMPUTER

Title	CRT&TV CONN	
Size	Document Number VM8G	Rev 1B
Date: Wednesday, June 03, 2009	Sheet 26 of 53	

QUANTA COMPUTER

Title	Card Reader-RTS5158E	
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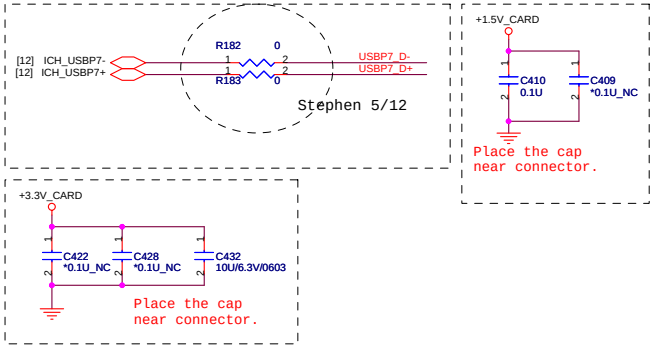
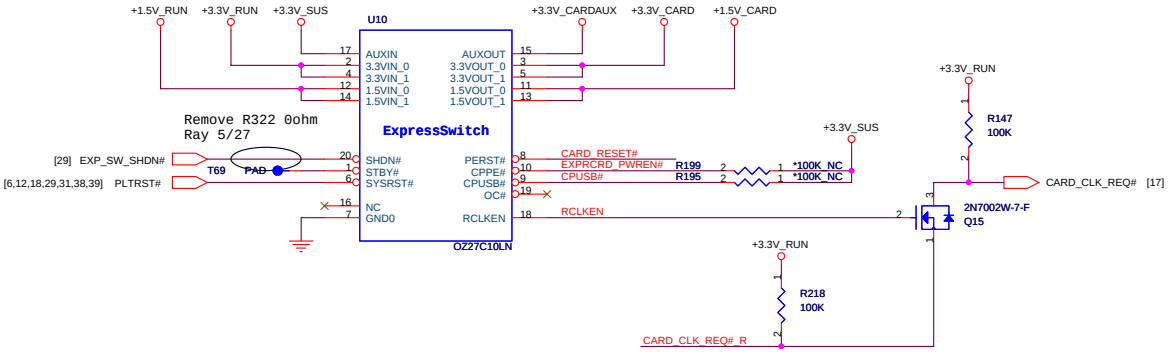
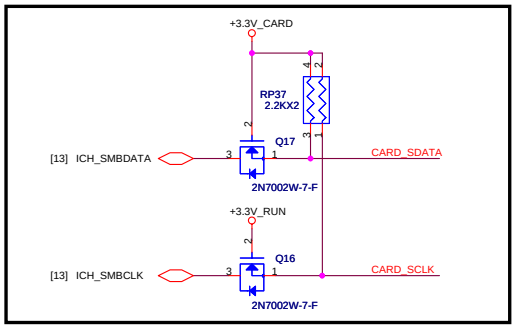
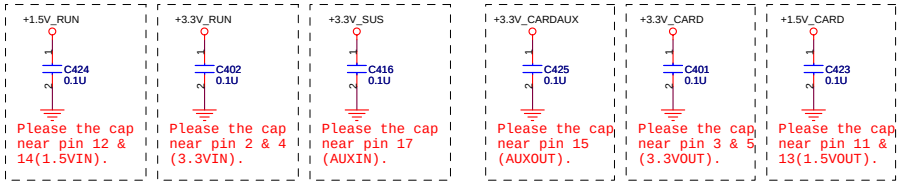
Date: Tuesday, June 02, 2009	Sheet 27 of 53	

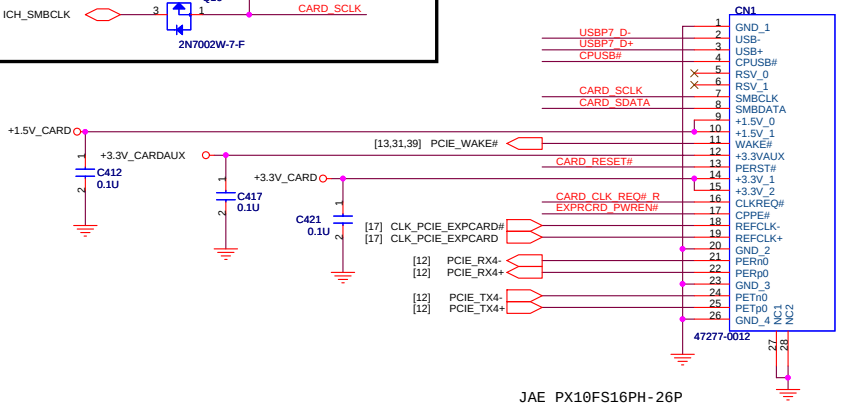
+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.







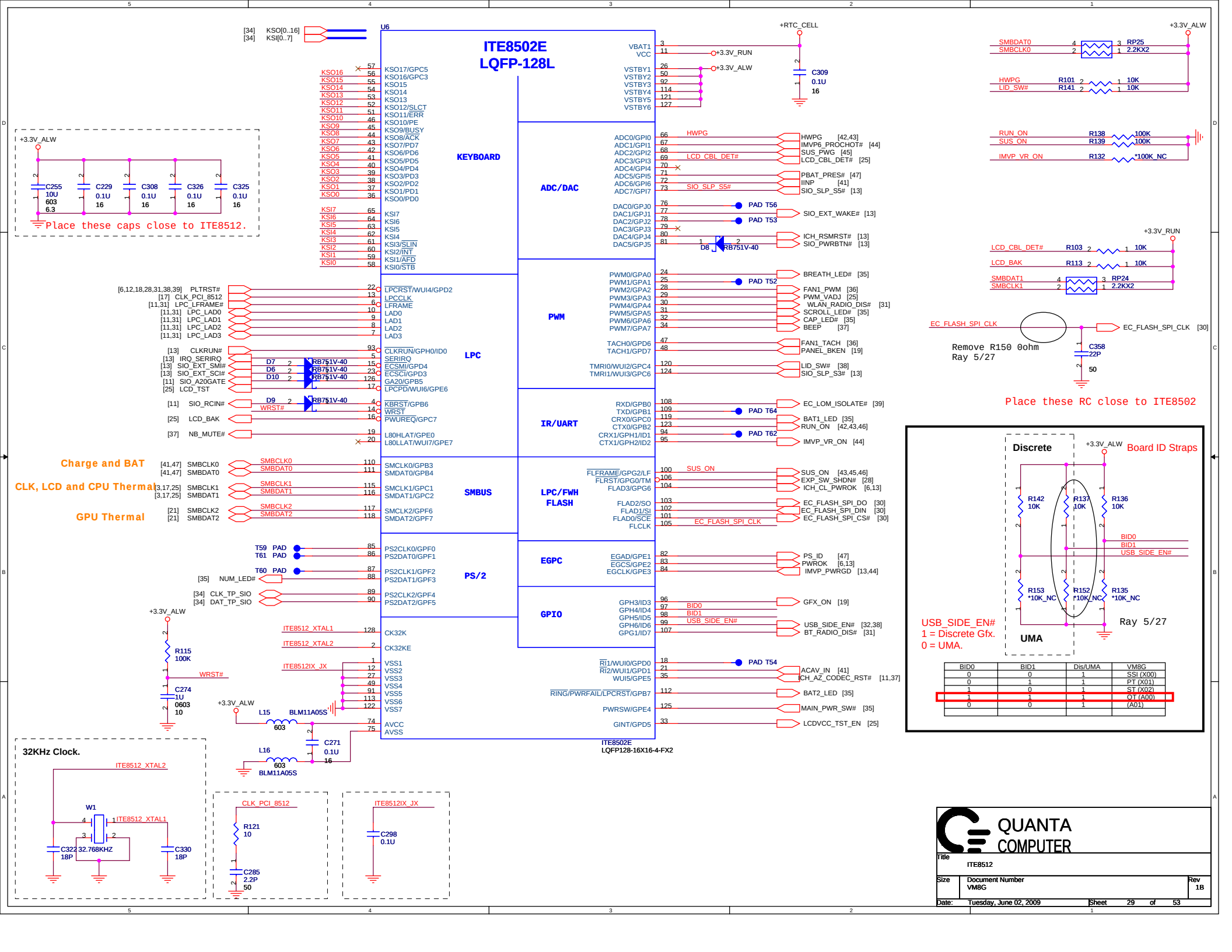




Express Card

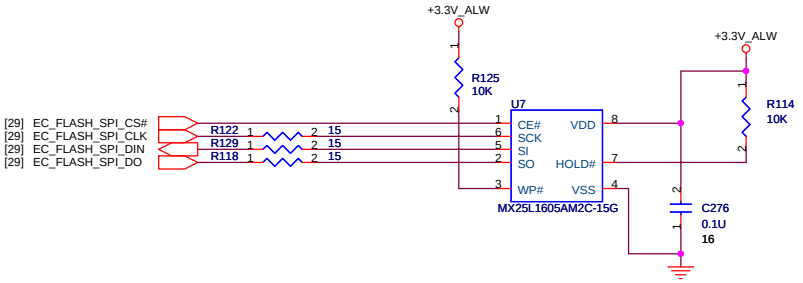
*Express Card cage

QUANTA COMPUTER			
Title: Express Card			
Size	Document Number VM8G		Rev 1B
Date: Tuesday, June 02, 2009	Sheet 28 of 53		

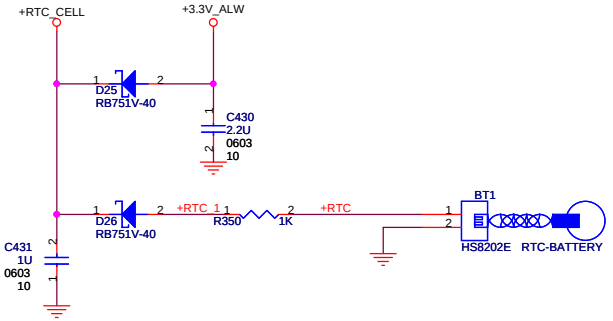


BID0	BID1	Dis/UMA	VM8G
0	0	1	SSI (X00)
0	1	1	PT (X01)
1	0	1	ST (X02)
1	1	1	OT (A00)
0	0	1	(A01)

16Mbit (2M Byte), SPI



RTC BATTERY



QUANTA COMPUTER

Title	FLASH/RTC	
Size	Document Number VM8G	Rev 1B
Date: Tuesday, June 02, 2009	Sheet 30 of 53	

MiniCard WLAN connector

Remove R362 0ohm
Ray 6/1

+3.3V_RUN — +3.3V_RUN

Remove R213,R210,R211,R206,R209 0ohm
Ray 5/27

FOR DEBUG CARD

Remove R197 0ohm
Ray 5/27

Remove R198,R192 0ohm
Ray 5/27

PCI-Express TX and RX
direct to connector

J6

1	WAKE#	+3.3V	2
3	Reserved	GND	4
5	Reserved	+1.5V	6
7	CLKREQ#	Reserved	8
9	GND	Reserved	10
11	REFCLK-	Reserved	12
13	REFCLK+	Reserved	14
15	GND	Reserved	16
17	Reserved	GND	18
19	Reserved	Reserved	20
21	GND	PERST#	22
23	PERn0	+3.3Vaux	24
25	PERp0	GND	26
27	GND	+1.5V	28
29	GND	SMB_CLK	30
31	PETn0	SMB_DATA	32
33	PETp0	GND	34
35	GND	USB_D-	36
37	Reserved	USB_D+	38
39	Reserved	GND	40
41	Reserved	LED_WWAN#	42
43	Reserved	LED_WLAN#	44
45	Reserved	LED_WPAN#	46
47	Reserved	+1.5V	48
49	Reserved	GND	50
51	Reserved	+3.3V	52

88907-5204

[13,28,39] PCIE_WAKE#
COEX2_WLAN_ACTIVE
COEX1_BT_ACTIVE_MINI
MINI1CLK_REQ#
[17] MINI1CLK_REQ#
[17] CLK_PCIE_MINI1#
[17] CLK_PCIE_MINI1
[6,12,18,28,29,38,39] PLTRST#
[17] CLK_LPC_DEBUG
[12] PCIE_RX2-
[12] PCIE_RX2+
[12] PCIE_TX2-
[12] PCIE_TX2+
[13] PCIE_MCARD1_DET#

LPC_LFRAME# [11,29]
LPC_LAD3 [11,29]
LPC_LAD2 [11,29]
LPC_LAD1 [11,29]
LPC_LAD0 [11,29]
PLTRST# [6,12,18,28,29,38,39]
WLAN_RADIO_OFF#
+3.3V_RUN
WLAN_SMBCLK
WLAN_SMBDATA
USBP8 D-
USBP8 D+
USB_MCARD1_DET# [13]
LED_WLAN_OUT# [35]

Non-iAMT

T68	PAD
T66	PAD
T67	PAD

MINI1CLK_REQ#
C434 220P 50

+1.5V_RUN — +3.3V_RUN

C624 0.047U
C607 0.047U
C436 0.1U 16
C628 0.047U
C609 0.1U 16
C403 0.047U
C405 4.7U 805 10
+ C626 *220U_NC 3528 4

Place caps close to connector.

USBP8 D- — R185 0 — ICH_USBP8- [12]
USBP8 D+ — R184 0 — ICH_USBP8+ [12]

Remove L28
Stephen 6/8

WLAN_SMBCLK — SCLK [13,15]
WLAN_SMBDATA — SDATA [13,15]

Suport for WoW

WLAN_RADIO_OFF# — D12 RB751V-40 — WLAN_RADIO_DIS# [29]

Prevent backdrive when WoW is enabled.

Bluetooth

+3.3V_RUN

J4

1	GND	Activity LED	2
3	3.3V(Logic)	COEX2	4
5	Radio Enable/Disable#	COEX1	6
7	RSVD	USB-	8
9	USB+	GND	10

87213-1000G

[29] BT_RADIO_DIS#
[12] ICH_USBP6+
BT_LED [35]
COEX2_WLAN_ACTIVE
COEX1_BT_ACTIVE_MINI
ICH_USBP6- [12]

C617 0.1U 16
C610 100P 50
R353 10K
C615 33P 50
C608 *0.1U_NC 10

QUANTA COMPUTER

Title	MINI Card (WLAN)/BT	
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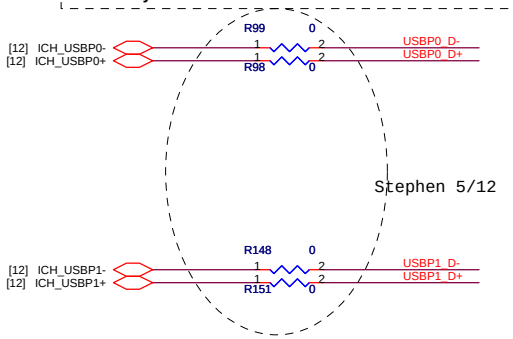
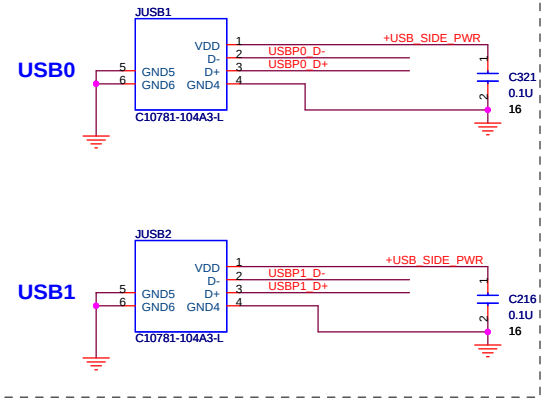
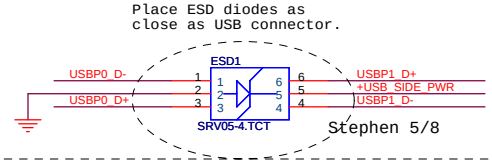
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently

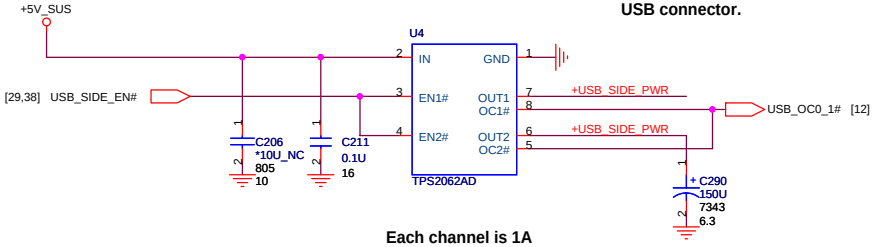


Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.





Place one 150uF cap by each USB connector.



Each channel is 1A

QUANTA COMPUTER

Title	USB	
Size	Document Number VM8G	Rev 1B
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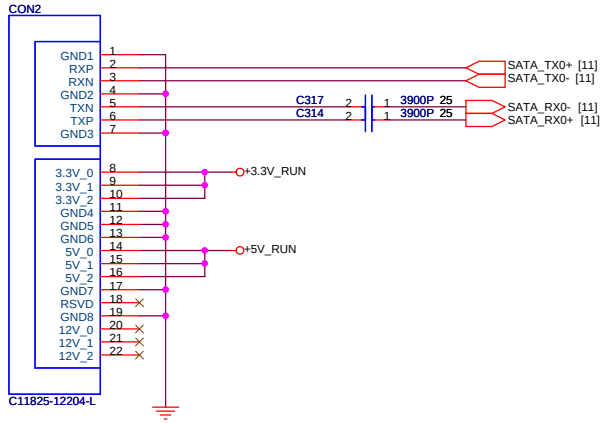
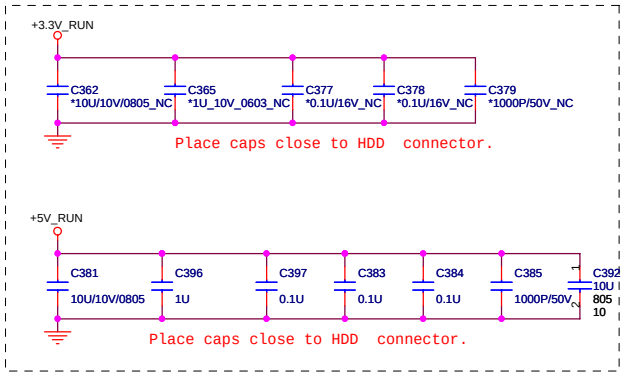
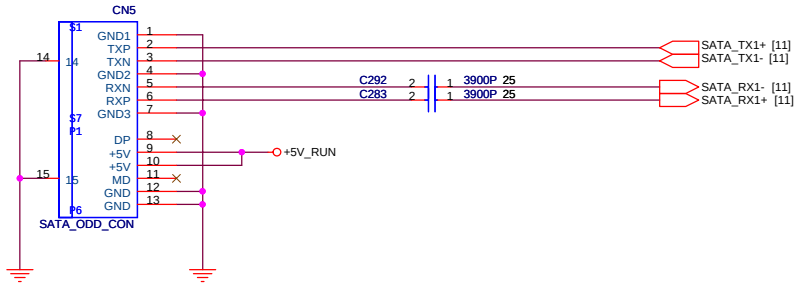
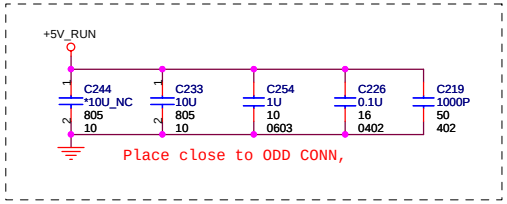
SATA HDD Connector.





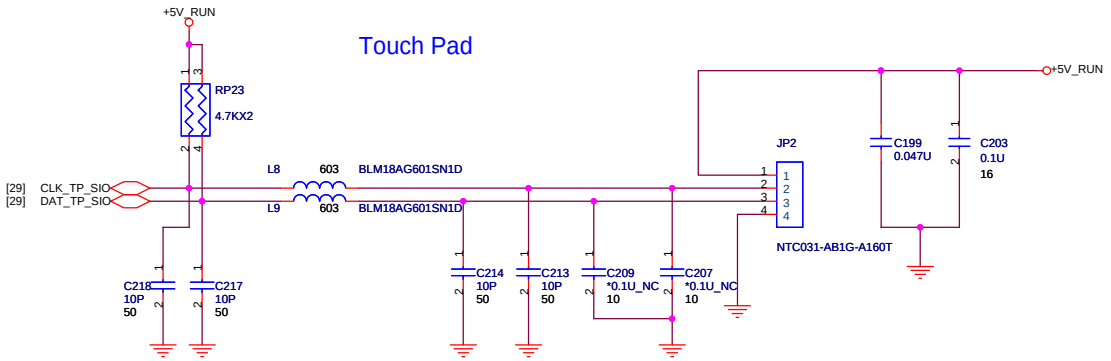
SATA ODD Connector.



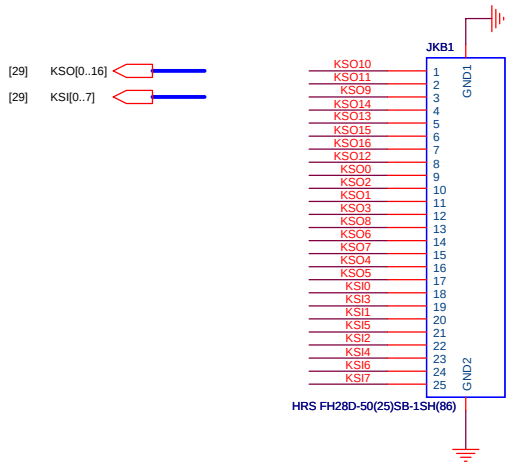


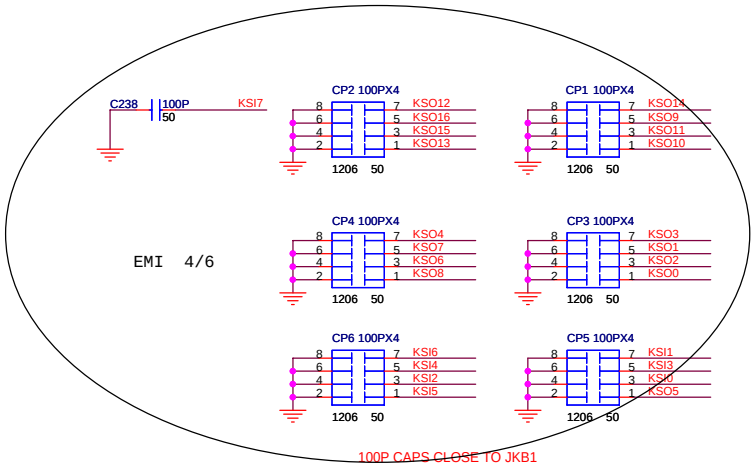
QUANTA COMPUTER		
Title: SATA (HDD&CD_ROM)		
Size	Document Number: VM8G	Rev: 1B
Date: Tuesday, June 02, 2009	Sheet 33 of 53	

Touch Pad



KEYBOARD CONNECTOR



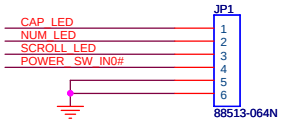


QUANTA COMPUTER

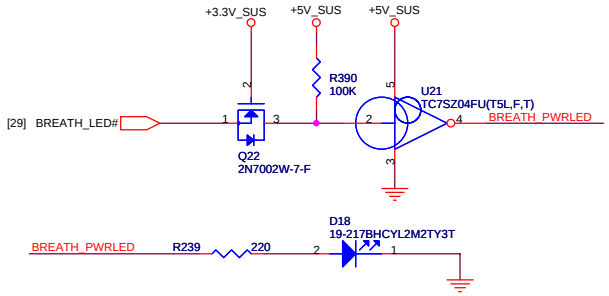
Title	TOUCH PAD, BULE TOOTH & FIR	
Size	Document Number VM8G	Rev 1B
Date: Tuesday, June 02, 2009	Sheet 34 of 53	

Keyboard LED

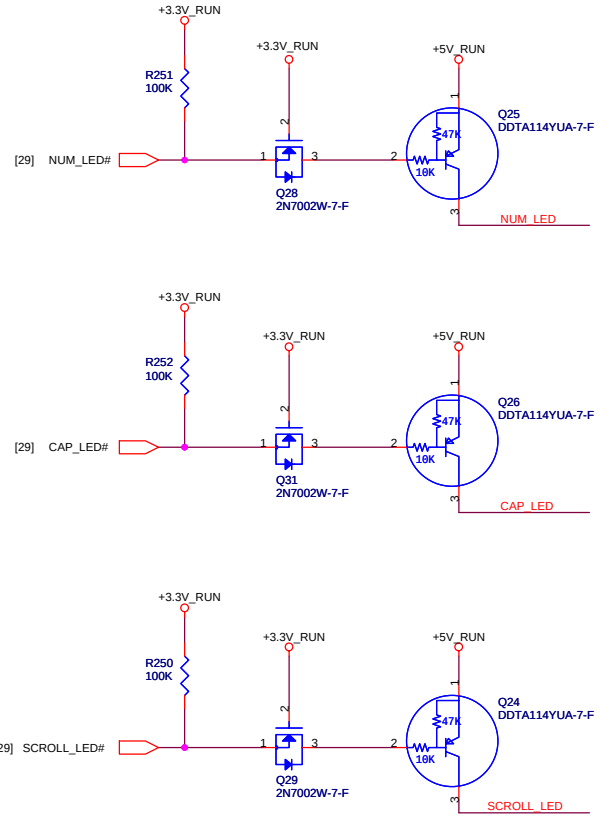
Dash board connector



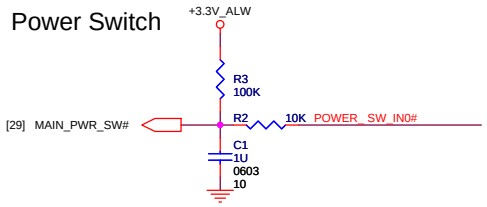
Power & Suspend.



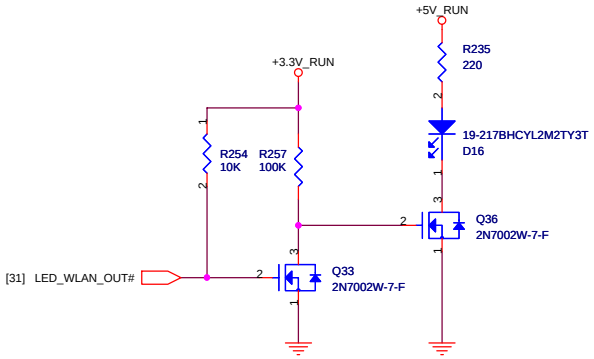
Keyboard LED



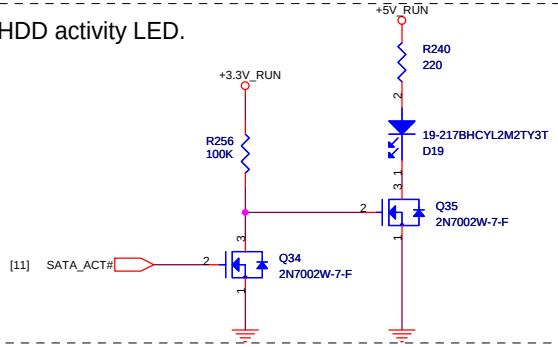
Power Switch



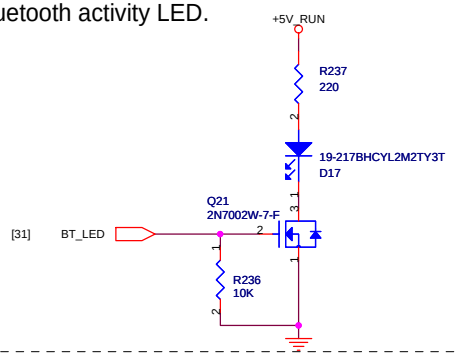
WLAN



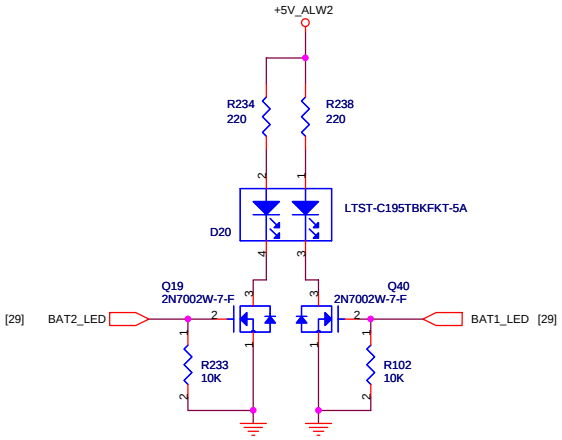
HDD activity LED.



Bluetooth activity LED.



Battery status.



QUANTA COMPUTER

Title	SWITCH, KEYBOARD & LED	
Size	Document Number VM8G	Rev 1B
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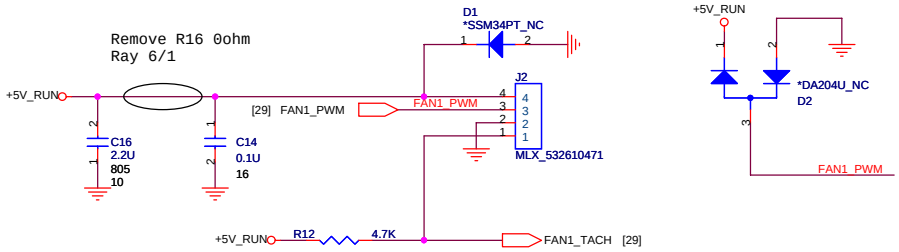
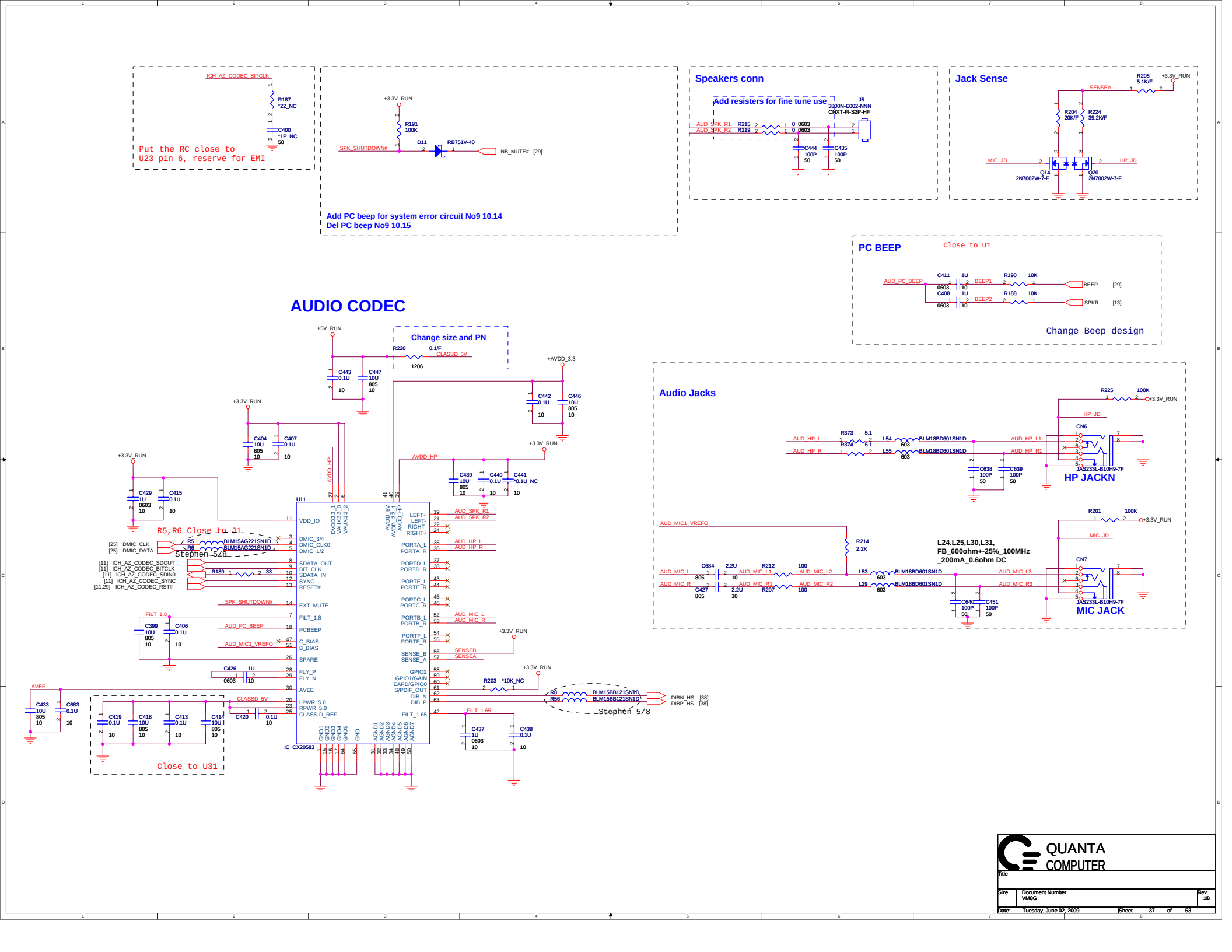


QUANTA COMPUTER

Title	FAN & THERMAL	
Size	Document Number VM8G	Rev 1B
Date: Tuesday, June 02, 2009	Sheet 36 of 53	


ICH_AZ_CODEC_BITCLK
R187 *22_NC
C400 *1P_NC 50
Put the RC close to U23 pin 6, reserve for EMI
+3.3V_RUN
R191 100K
SPK_SHUTDOWN#
D11
RB751V-40
NB_MUTE# [29]
Add PC beep for system error circuit No9 10.14
Del PC beep No9 10.15
Speakers conn
Add resisters for fine tune use
AUD_SPK_R1
AUD_SPK_R2
R215
R219
0603
J5
3800N-E002-NNN
CNXT-FI-S2P-HF
C444 100P 50
C435 100P 50
Jack Sense
R205 5.1K/F
+3.3V_RUN
SENSEA
R204 20K/F
R224 39.2K/F
MIC_JD
HP_JD
Q14 2N7002W-7-F
Q20 2N7002W-7-F
PC BEEP
Close to U1
AUD_PC_BEEP
C411 1U 0603 10
C408 1U 0603 10
BEEP1
BEEP2
R190 10K
R188 10K
BEEP [29]
SPKR [13]
Change Beep design
AUDIO CODEC
+5V_RUN
Change size and PN
R220 0.1/F 1206
CLASSD_5V
+AVDD_3.3
C443 0.1U 10
C447 10U 805 10
C442 0.1U 10
C446 10U 805 10
+3.3V_RUN
C404 10U 805 10
C407 0.1U 10
AVDD_HP
C439 10U 805 10
C440 0.1U 10
C441 *0.1U_NC 10
C429 1U 0603 10
C415 0.1U 10
R5,R6 Close to U1
R5
R6
BLM15AG221SN1D
Stephen 5/8
[25] DMIC_CLK
[25] DMIC_DATA
[11] ICH_AZ_CODEC_SDOUT
[11] ICH_AZ_CODEC_BITCLK
[11] ICH_AZ_CODEC_SDIN0
[11] ICH_AZ_CODEC_SYNC
[11,29] ICH_AZ_CODEC_RST#
R189 33
U11
VDD_IO
DMIC_3/4
DMIC_CLK0
DMIC_1/2
SDATA_OUT
BIT_CLK
SDATA_IN
SYNC
RESET#
SPK_SHUTDOWN#
EXT_MUTE
FILT_1.8
PCBEEP
AUD_PC_BEEP
C_BIAS
B_BIAS
AUD_MIC1_VREFO
SPARE
FLY_P
FLY_N
AVEE
LPWR_5.0
RPWR_5.0
CLASS-D_REF
DVDD3.3_1
VAUX3.3_0
VAUX3.3_2
AVDD_5V
AVDD_3.3
AVDD_HP
LEFT+
LEFT-
RIGHT-
RIGHT+
PORTA_L
PORTA_R
PORTD_L
PORTD_R
PORTE_L
PORTE_R
PORTC_L
PORTC_R
PORTB_L
PORTB_R
PORTF_L
PORTF_R
SENSE_B
SENSE_A
GPIO2
GPIO1/GAIN
EAPD/GPIO0
S/PDIF_OUT
DIB_N
DIB_P
FILT_1.65
GND1
GND2
GND3
GND4
GND5
GND
AGND1
AGND2
AGND3
AGND4
AGND5
AGND6
AGND7
IC_CX20583
AUD_SPK_R1
AUD_SPK_R2
AUD_HP_L
AUD_HP_R
AUD_MIC_L
AUD_MIC_R
SENSEB
SENSEA
R203 *10K_NC
R8
R56
BLM15BB121SN1D
DIBN_HS [38]
DIBP_HS [38]
Stephen 5/8
C433 10U 805 10
C683 0.1U 10
C419 0.1U 10
C418 10U 805 10
C413 0.1U 10
C414 10U 805 10
C420 0.1U 10
Close to U31
C399 10U 805 10
C406 0.1U 10
C426 1U 0603 10
C437 1U 0603 10
C438 0.1U 10
Audio Jacks
R225 100K
HP_JD
CN6
AUD_HP_L
AUD_HP_R
R373 5.1
R374 5.1
L54 603
L55 603
BLM18BD601SN1D
AUD_HP_L1
AUD_HP_R1
C638 100P 50
C639 100P 50
JAS233L-B10H9-7F
HP JACKN
AUD_MIC1_VREFO
R214 2.2K
R201 100K
MIC_JD
CN7
C684 2.2U 805 10
C427 2.2U 805 10
R212 100
R207 100
L53 603
L29 603
AUD_MIC_L
AUD_MIC_R
AUD_MIC_L1
AUD_MIC_R1
AUD_MIC_L2
AUD_MIC_R2
AUD_MIC_L3
AUD_MIC_R3
C640 100P 50
C451 100P 50
L24.L25,L30,L31,
FB_600ohm+-25%_100MHz
_200mA_0.6ohm DC
MIC JACK
QUANTA COMPUTER
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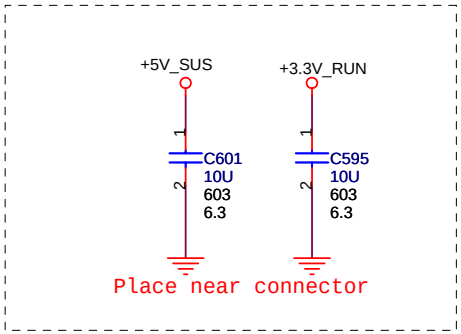

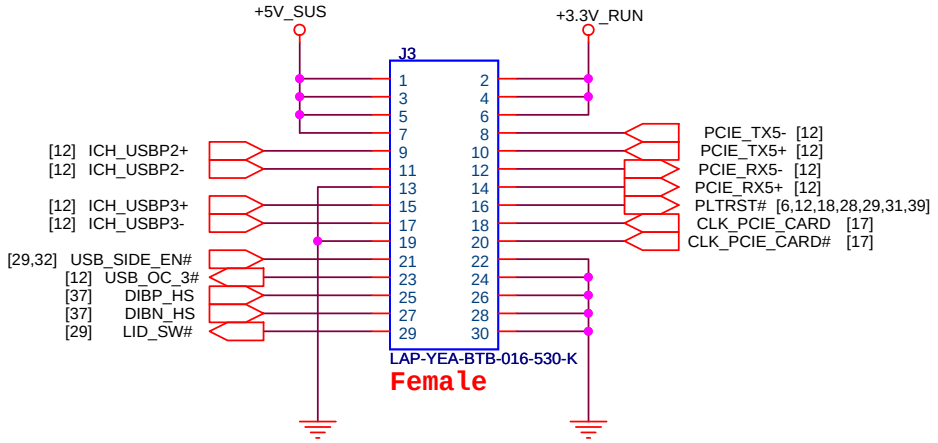

Board to board connector (Modem Card + Cardreader+1394a+ 2 USB Port)

QUANTA COMPUTER

Title		
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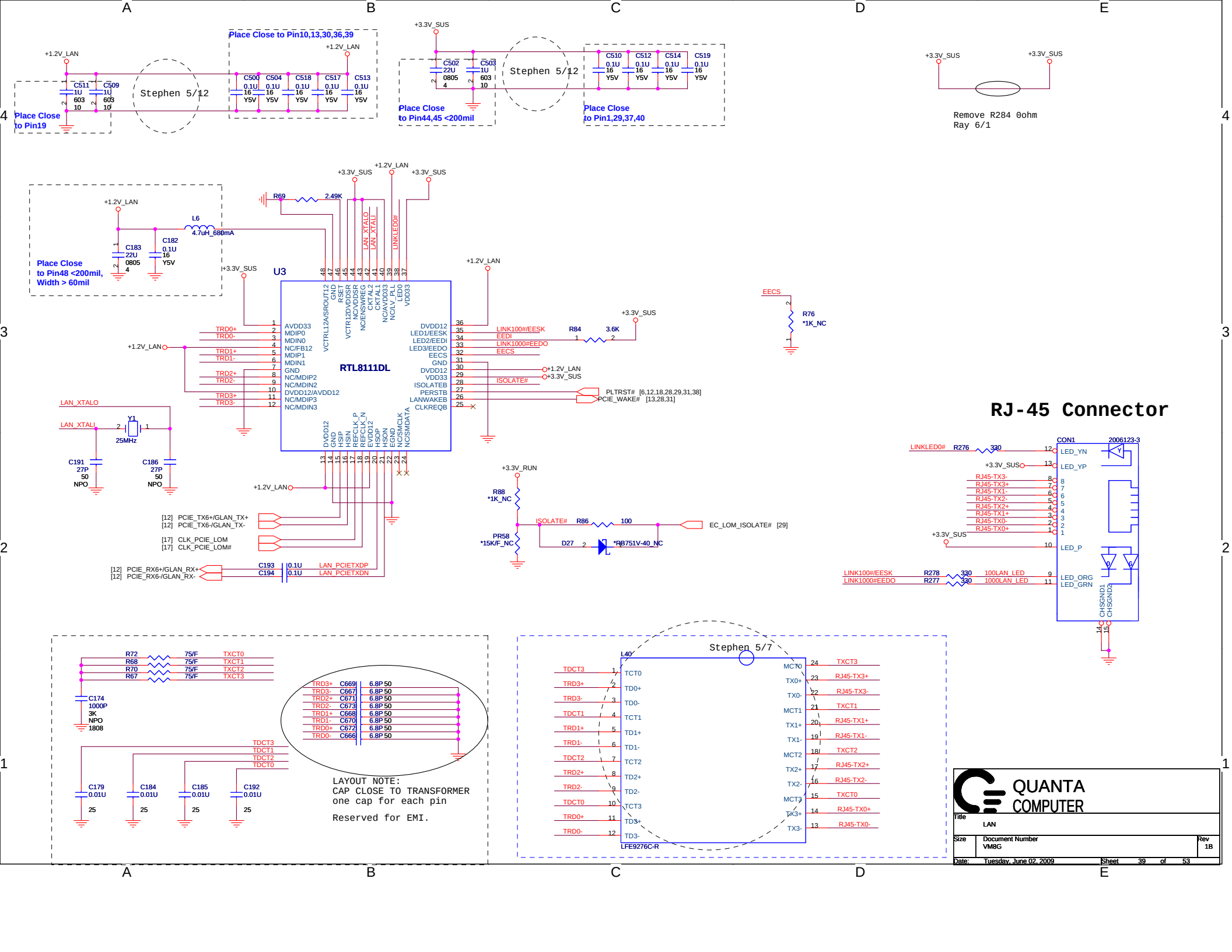
Place Close to Pin10,13,30,36,39
Stephen 5/12
Place Close to Pin19
Place Close to Pin44,45 <200mil
Place Close to Pin1,29,37,40
Remove R284 0ohm
Ray 6/1
Place Close to Pin48 <200mil, Width > 60mil
U3
RTL8111DL
RJ-45 Connector
CON1
2006123-3
Stephen 5/7
L40
LFE9276C-R
LAYOUT NOTE:
CAP CLOSE TO TRANSFORMER
one cap for each pin
Reserved for EMI.
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QUANTA COMPUTER

Title	System Reset Circuit	
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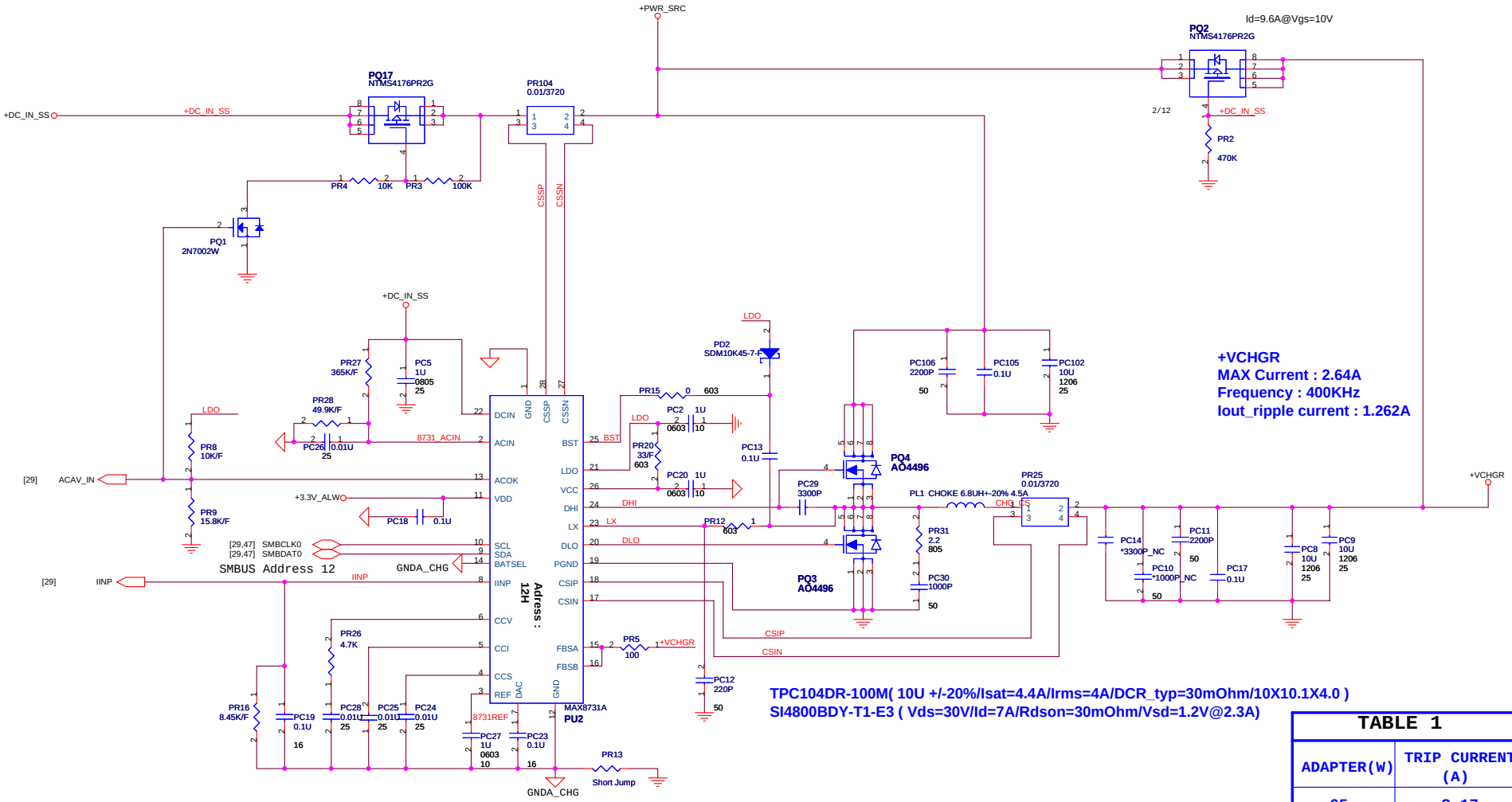

TABLE 1

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

QUANTA COMPUTER

Title	Charger (MAX8731A)	
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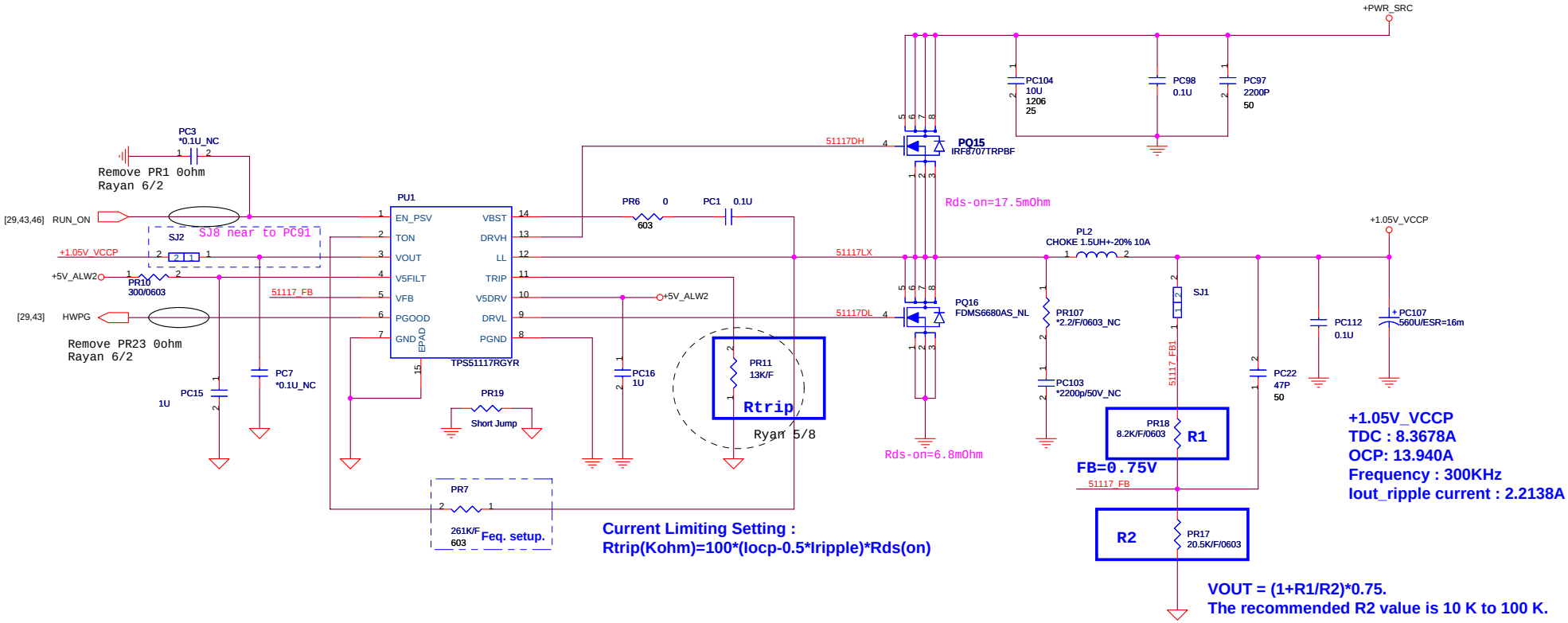
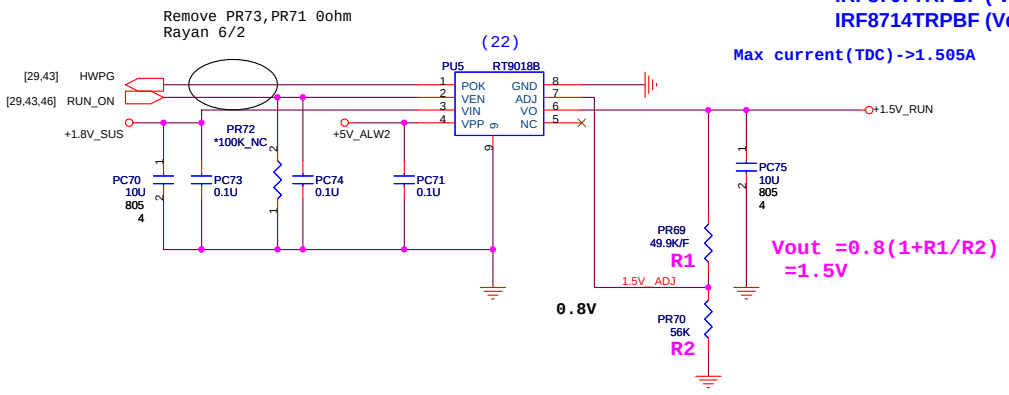


APXE2R5ARA561MF61G (560UF/2.5V/ESR16)
SIL104R-1R5B (1.5U +/- 30%/ Isat=10A/DCR_max=8.1m Ohm/10X10X3.8)
IRF8707TRPBF (Vds=30V/Id=9.1A@75deg/Rdson=17.5mOhm)
IRF8714TRPBF (Vds=30V/ ID=11A@70deg/Rdson=13mOhm/Vsd=1.0V@11A)



QUANTA COMPUTER		
Title: 1.05_VCCP & 1.5V_RUN		
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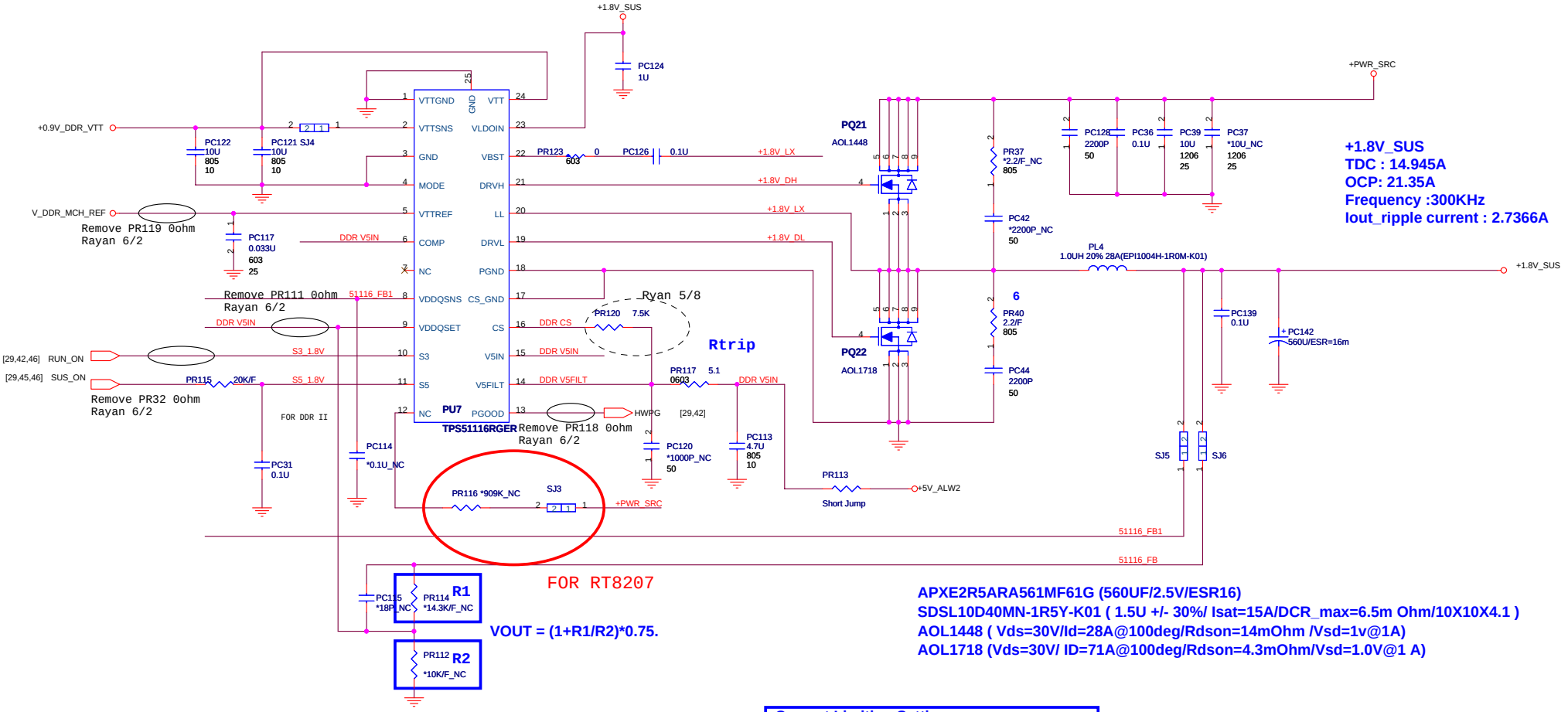

QUANTA COMPUTER

Title	1.8VSUS & 0.9VTT (TPS51116)	
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+PWR_SRC

C473 *100U_NC 25

C466 *100U_NC 25

C465 *100U_NC 25

Layout Note:
Need to add 100uF cap on PWR_SRC for cap singing.
Place on PWR_SRC near +VCC_CORE.

+VCC_CORE
TDC : 35A
MAX:47A
Frequency : 300KHz
Iout_ripple current : 9.64A of each phase.

MAX17410

PU3

PGOOD, PSI#, PMON, RBIAS, VR_TT#, NTC, SOFT(PHSGD), OCSET(PGDIN), VW(FB), COMP(VPS), FB(SGND), FB2(TIMER)

VDIFF(ULIM), VSEN(OUTS), RTN(GNDS), DROOP(CCI), DFB(CSN2), VO(CSN1), VSUM(CSPAVG), VIN, GND, VDD, ISEN2(CSP2), ISEN1(CSP1)

BOOT1, UGATE1, PHASE1, PGND1, LGATE1, PVCC, LGATE2, PGND2, PHASE2, UGATE2, BOOT2, NC

CLK_EN#, DPRSTP#, DPRSLPVR, VR_ON, VID6, VID5, VID4, VID3, VID2, VID1, VID0

+3.3V_SUS

PR33 10 603

PAD PT1

CLK_EN#

PC40 0.1U 10

Remove PR34,PR36 0ohm
Rayan 6/2

PR35 499/F

H_DPRSTP# [3,6,11]
DPRSLPVR [6,13]
IMVP_VR_ON [29]
VID6 [4]
VID5 [4]
VID4 [4]
VID3 [4]
VID2 [4]
VID1 [4]
VID0 [4]

+3.3V_RUN

PR39 1.91K/F

Remove PR41 0ohm
Rayan 6/2

[13,29] IMVP_PWRGD
[3] H_PSI#
PWR_MON
+3.3V_ALW
[29] IMVP6_PROCHOT#

PR125 4.99K/F
PR127 499/F
PC130 0.1U 10
PR42 147K/F
PR43 *4.02K/F_NC
PR128 *NTC_470K_NC
PC131 *0.015U_NC 16
PC46 *0.01U_NC

MAT
ERTJ0EV474J
Close to Phase 1 Inductor

ISL6266_VO PR129 *12.7K/F_NC

PC47 *1000P_NC 50
PR44 4.22K/F
PC133 *220P_NC 50
PR132 *97.6K/F_NC
PC134 *470P_NC 50
PR48 10K/F
PR45 *255/F_NC
PC51 *1000P_NC 50
PR46 60.4K/F

Remove PR49 0ohm
Rayan 6/2

PC50 *0.01U_NC 50

Remove PR134 0ohm
Rayan 6/2

PR133 *4.02K/F_NC 603
PC137 1000P 50
PR136 10 603
PR135 10 603 +5V_SUS

PC55 *0.01U_NC 50
PC54 *0.01U_NC
PC135 0.33U 16 603
PC56 *0.1U_NC
PC57 1U 10 0603

Remove PR51 0ohm
Rayan 6/2

[4] VCCSENSE
[4] VSSSENSE

Parallel

Remove PR50 0ohm
Rayan 6/2

PR126 Short Jump

VSUM
PC136 0.22U 10 0603
PC132 0.1U 10 0402
PR130 11K/F
PR131 2.61K/F
PR124 10K_NTC
ISL6266_VO

Close to Phase 1 Inductor

PR38 603
PC41 0.22U 25 603
Stephen 5/19

+5V_SUS
PC45 2.2U 10 805
Stephen 5/18

PC48 0.22U 25 603
Stephen 5/19

PC53 0.22U 25 603 ISL6266_VO
PC52 0.22U 25 603
Stephen 5/20

+PWR_SRC

PQ20 NTMFS4921NT1G
PQ19 NTMFS4833NT1G

UG1, PH1, LG1

PR122 *2.2_NC 805
PC123 *1500P_NC 50
PC125 0.1U
PC34 2200P 50
PC32 *10U_NC 1206 25
PC118 10U 1206 25
PC119 *10U_NC 1206 25
PC33 10U 1206 25
PC127 *0.1U_NC
PC35 *2200P_NC 50

Ryan 5/20

PR121 2.2 805
PC116 1500P 50

PL3 0.36uH_30A_ETQP4LR36WFC

+VCC_CORE

PC38 0.1U
PC49 *330U_NC 2 7343
PC138 330U 2 7343

VSUM PR139 3.65K/F 603
ISEN1 PR54 1.82K/F 603
ISL6266_VO PR138 1 603
ISEN2 PR52 *10K_NC 603

+PWR_SRC

PQ24 NTMFS4921NT1G
PQ23 NTMFS4833NT1G

UG2, PH2, LG2

PR56 *2.2_NC 805
PC59 *1500P_NC 50
PC140 0.1U
PC145 2200P 50
PC61 *10U_NC 1206 25
PC62 10U 1206 25
PC144 *10U_NC 1206 25
PC143 10U 1206 25
PC145 *0.1U_NC
PC141 *2200P_NC 50

PR57 2.2 805
PC60 1500P 50

PL5 0.36uH_30A_ETQP4LR36WFC

+VCC_CORE

PC58 0.1U
PC129 330U 2 7343
PC43 330U 2 7343

VSUM PR140 3.65K/F 603
ISEN2 PR53 1.82K/F 603
ISL6266_VO PR137 1 603
ISEN1 PR55 *10K_NC 603

D6 D5 D4 D3 D2 D1 D0	Output
0 0 0 0 0 0 0	1.500V
0 0 0 0 0 0 1	1.4875
0 0 0 0 1 0 1	1.4375
0 0 0 0 1 1 1	1.4125
0 0 0 1 0 0 0	1.4000
0 0 1 0 0 0 1	1.2875
0 0 1 1 0 0 0	1.2000
0 0 1 1 1 0 0	1.1500
0 1 0 1 0 0 0	1.0000
0 1 0 1 0 1 1	0.9625
0 1 1 1 1 0 0	0.7500
1 0 0 0 1 0 0	0.6500
1 0 1 0 0 0 0	0.5000
1 1 0 0 0 0 0	0.3000

ETQP4LR36WFC (0.36U +/- 20%/ Isat=24A/DCR_max=1.1m Ohm/11.5X10X4)
NTMFS4921NT1G (Vds=30V/Id=10.2A@85deg/Rdson=10.5mOhm)
NTMFS4946NT1G (Vds=30V/ ID=14.6A@85deg/Rdson=5.1mOhm/Vsd=1.0V@30A)
EEFSX0D331YR (330UF/2V/ESR9)

QUANTA COMPUTER

Title	CPU_Core_2Phase (MAX17410)	
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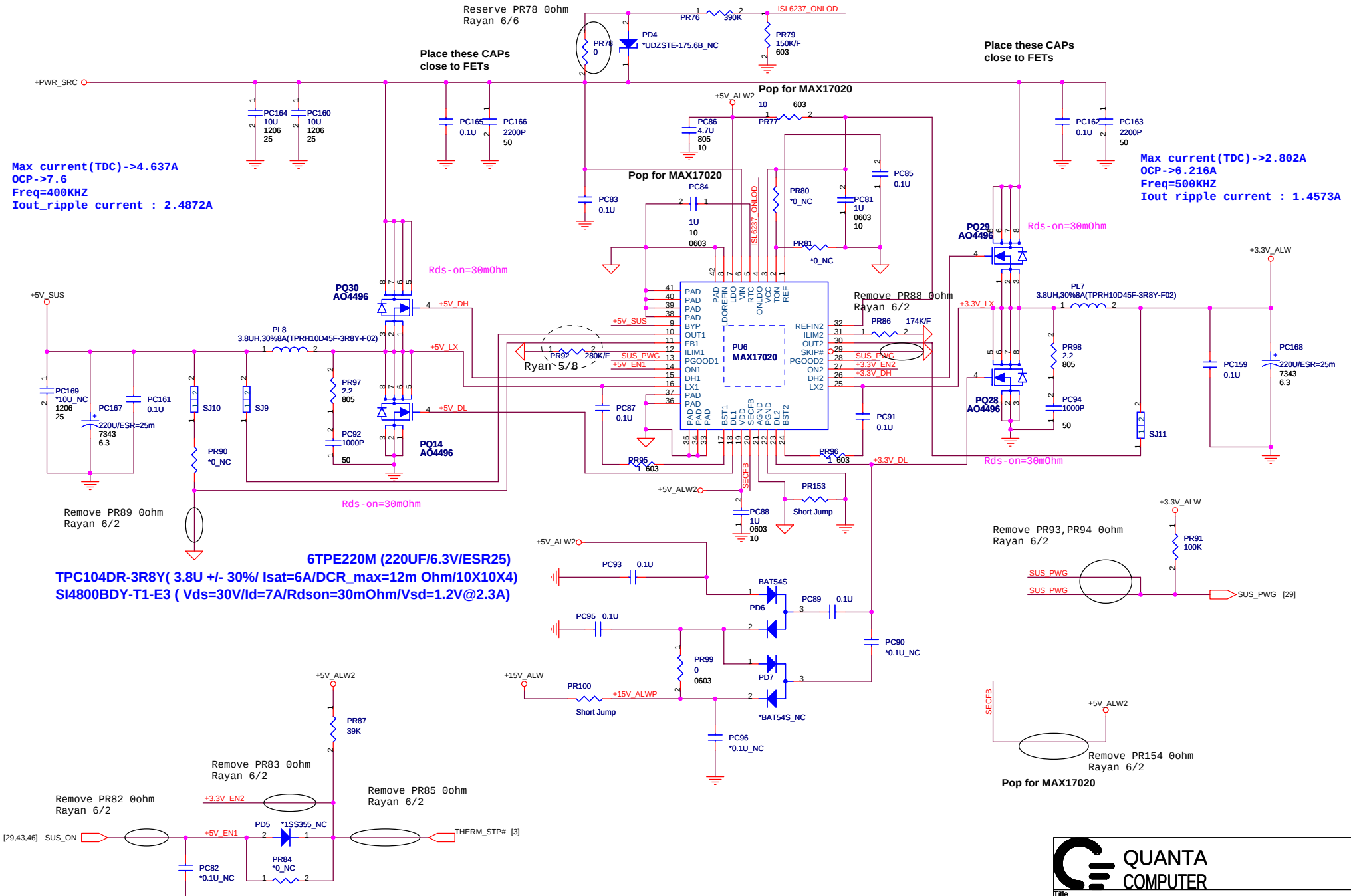
DC/DC +3V_ALW/+5V_SUS/+5V_ALW /+15V_ALW



QUANTA COMPUTER		
Title	3VALW,5V,3V, Power On	
Size	Document Number VM8G	Rev 1B
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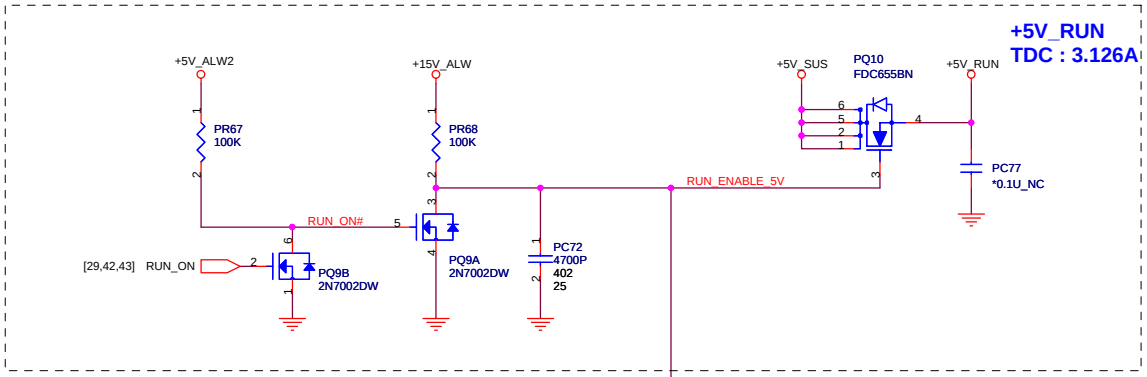

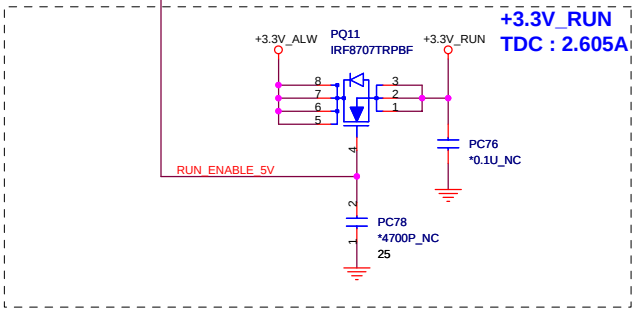

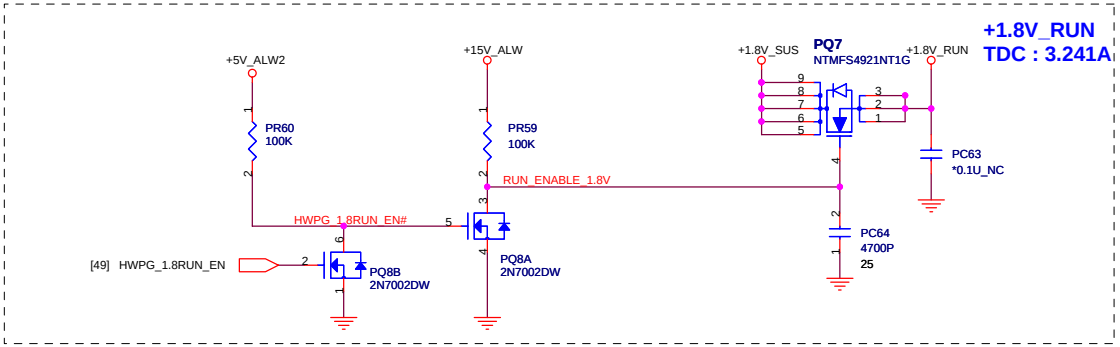

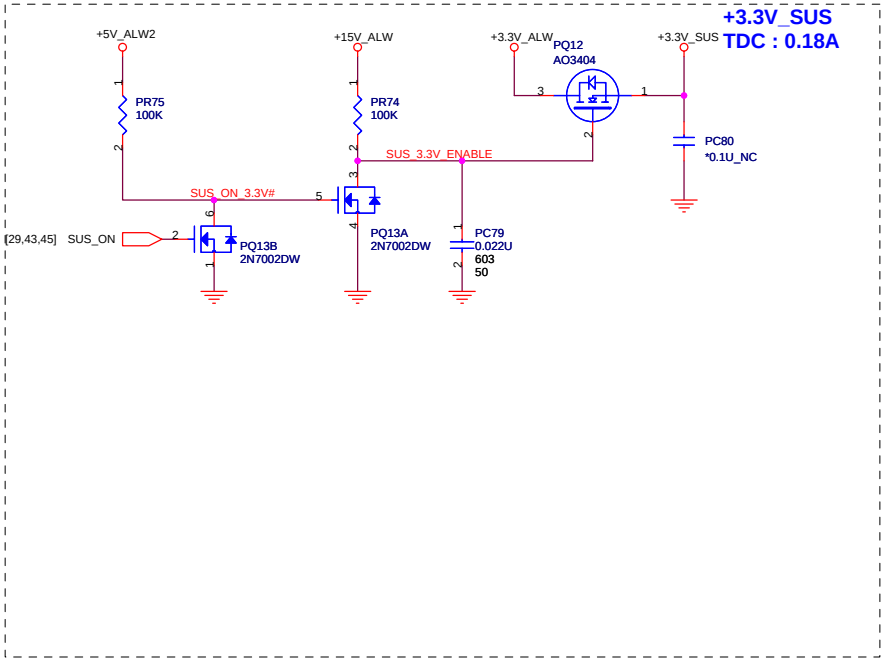

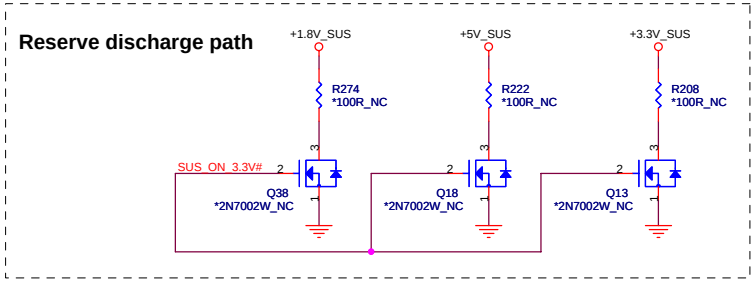

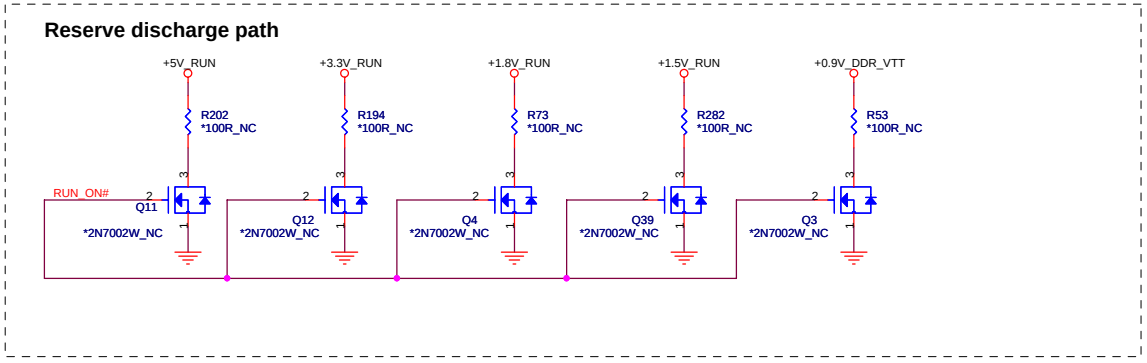

QUANTA COMPUTER

Title	RUN POWER SW	
Size	Document Number VM8G	Rev 1B
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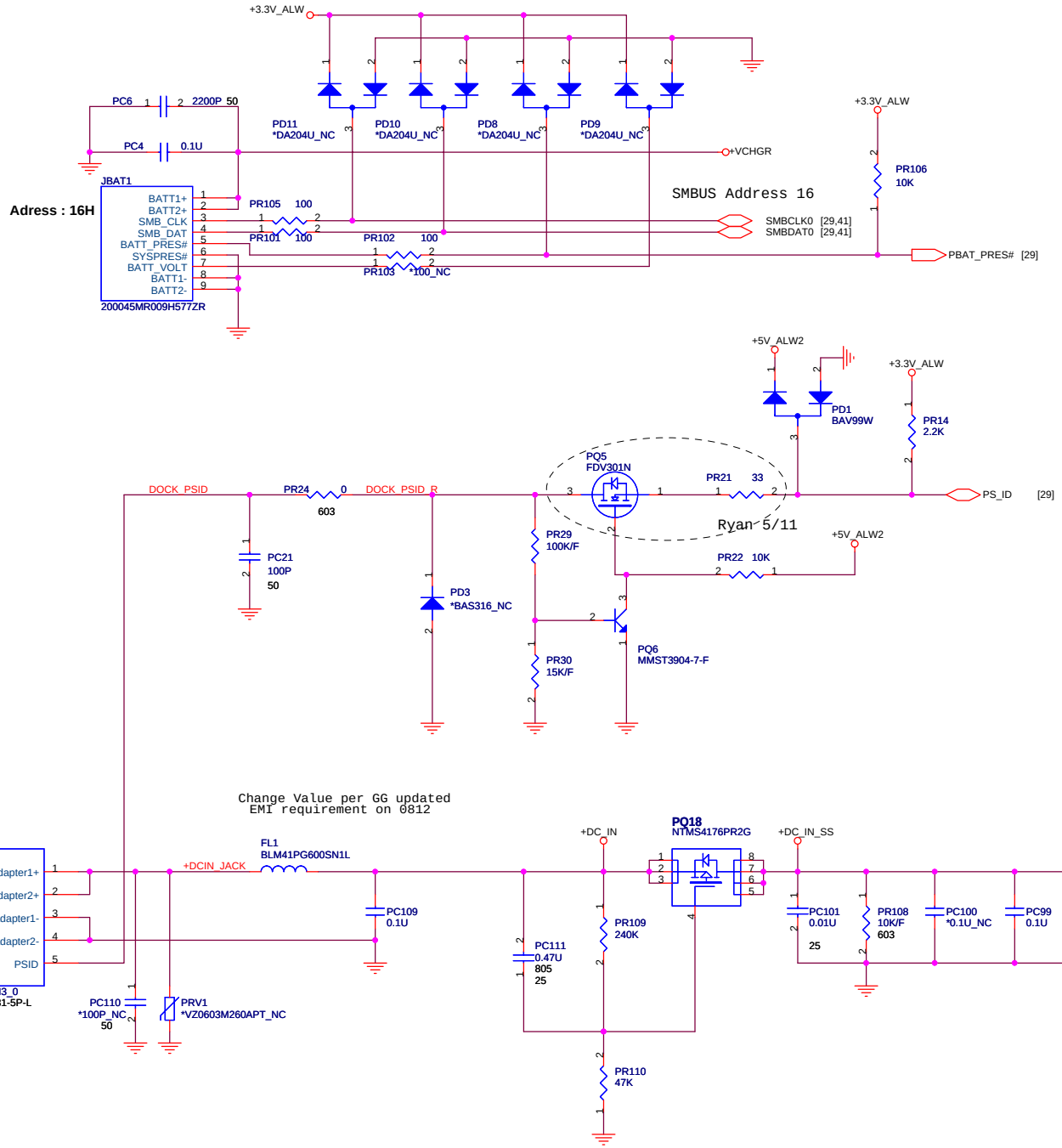

QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number VM8G	Rev 1B
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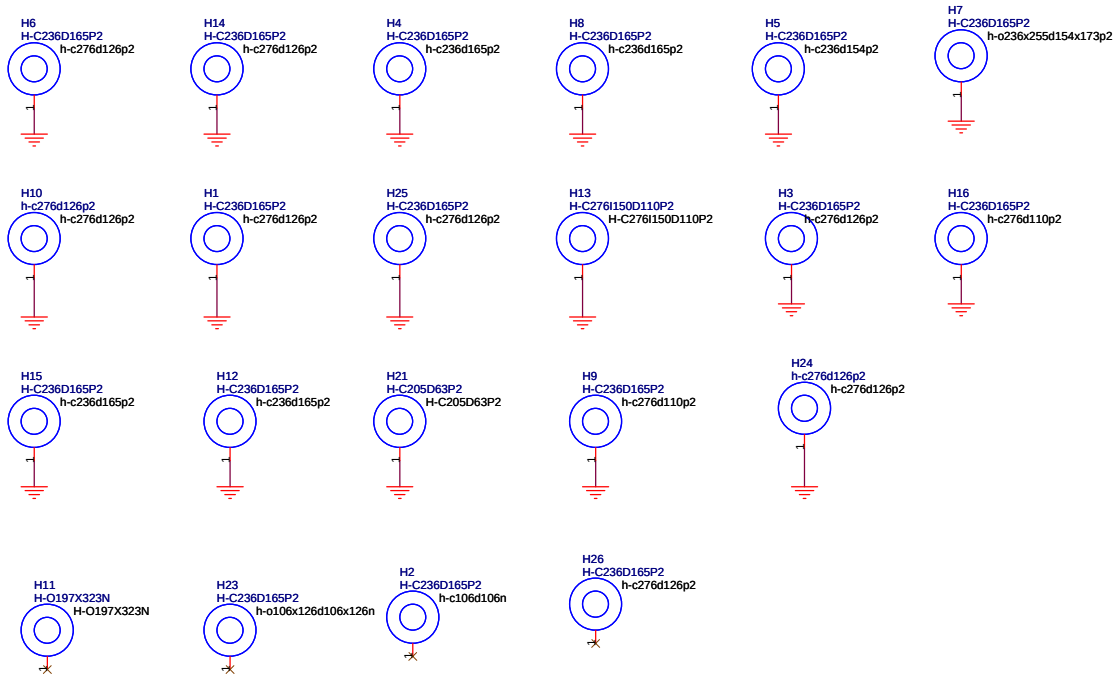

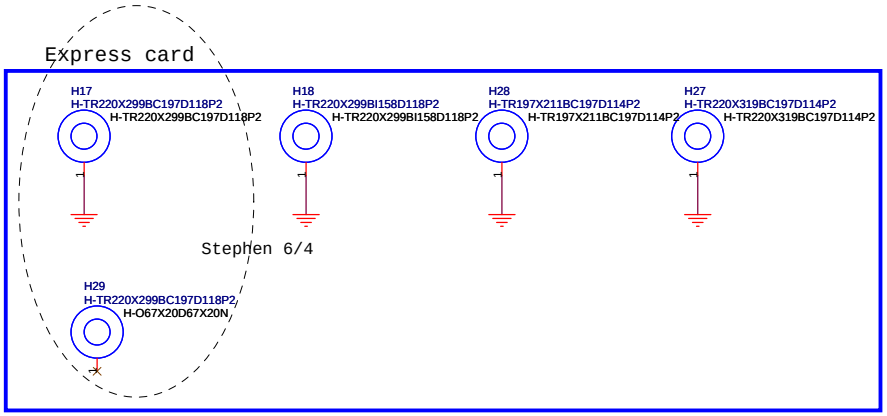

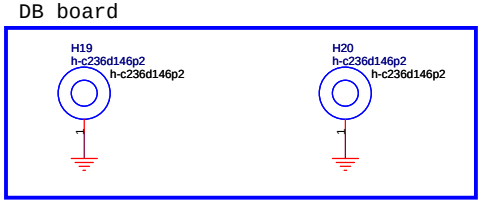

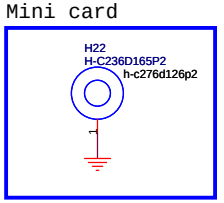

QUANTA COMPUTER

Title	SCREW PAD	
Size	Document Number VM8G	Rev 1B
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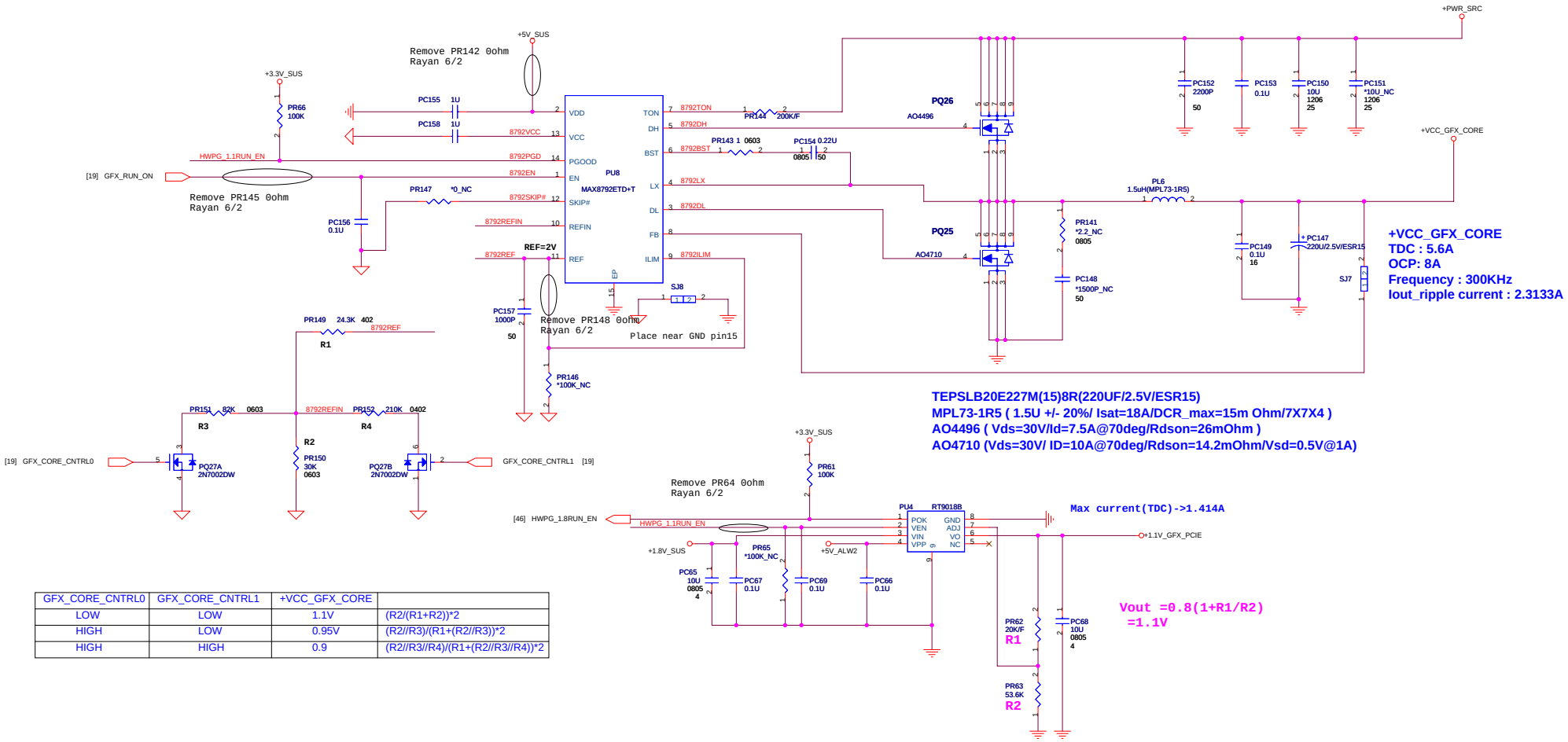

GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	+VCC_GFX_CORE	
LOW	LOW	1.1V	(R2/(R1+R2))*2
HIGH	LOW	0.95V	(R2//R3)/(R1+(R2//R3))*2
HIGH	HIGH	0.9	(R2//R3//R4)/(R1+(R2//R3//R4))*2

QUANTA COMPUTER

Title	+VCC_GFX_CORE(MAX8792)	
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Reserved for EMI.

QUANTA COMPUTER

Title	EMI CAP	
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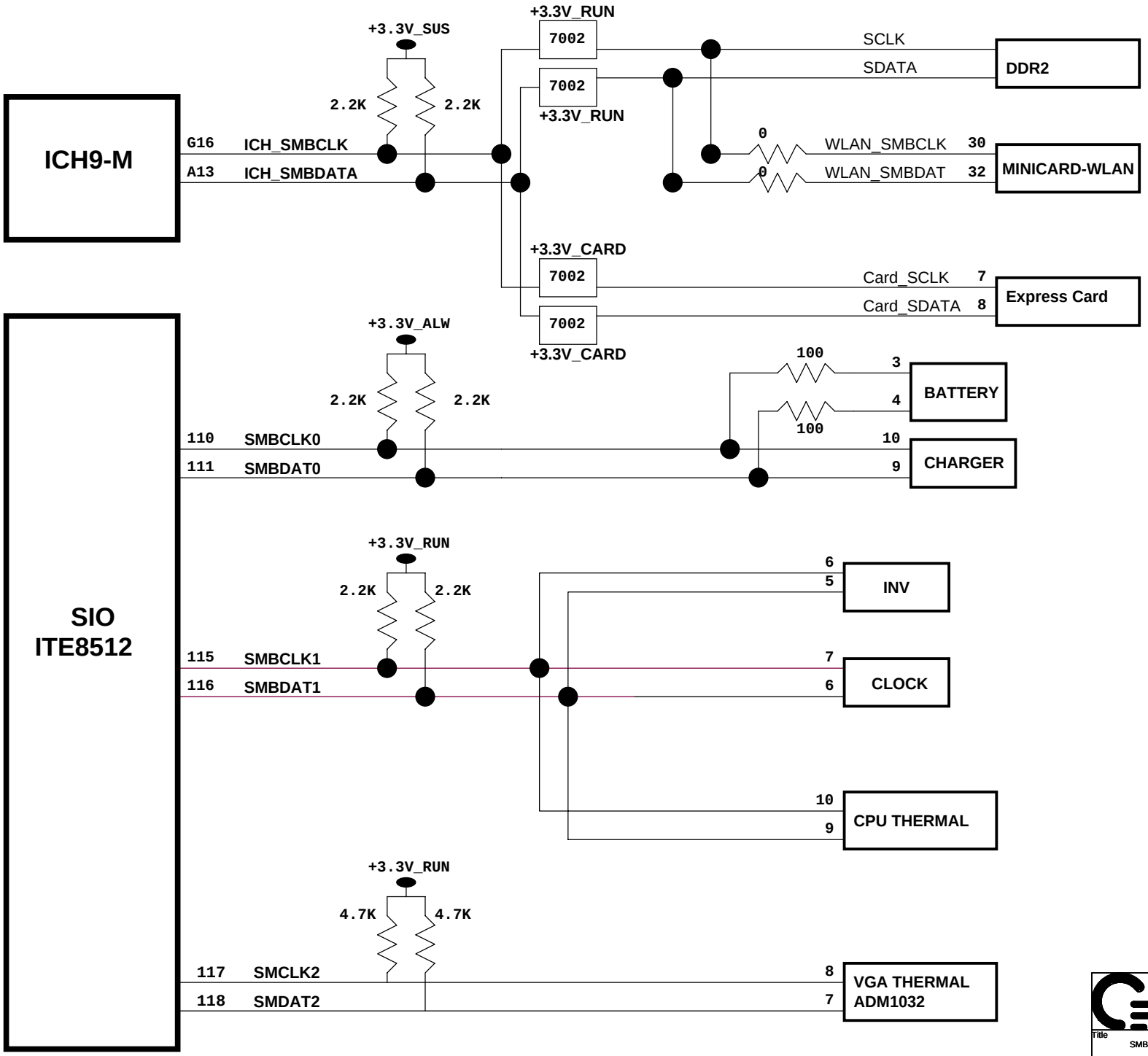

QUANTA COMPUTER

Title	SMBUS BLOCK	
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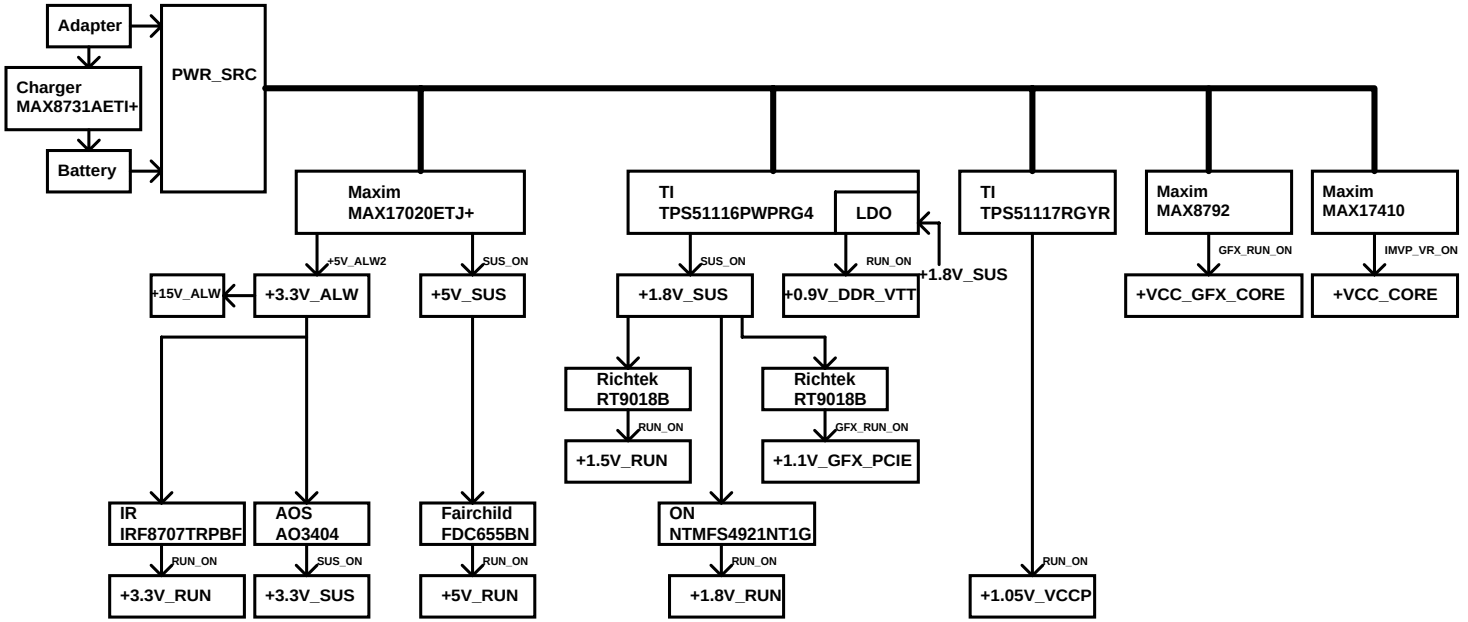
VER : 1A



QUANTA COMPUTER

Title	Power Block Diagram	
Size	Document Number VM8G	Rev 1B
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