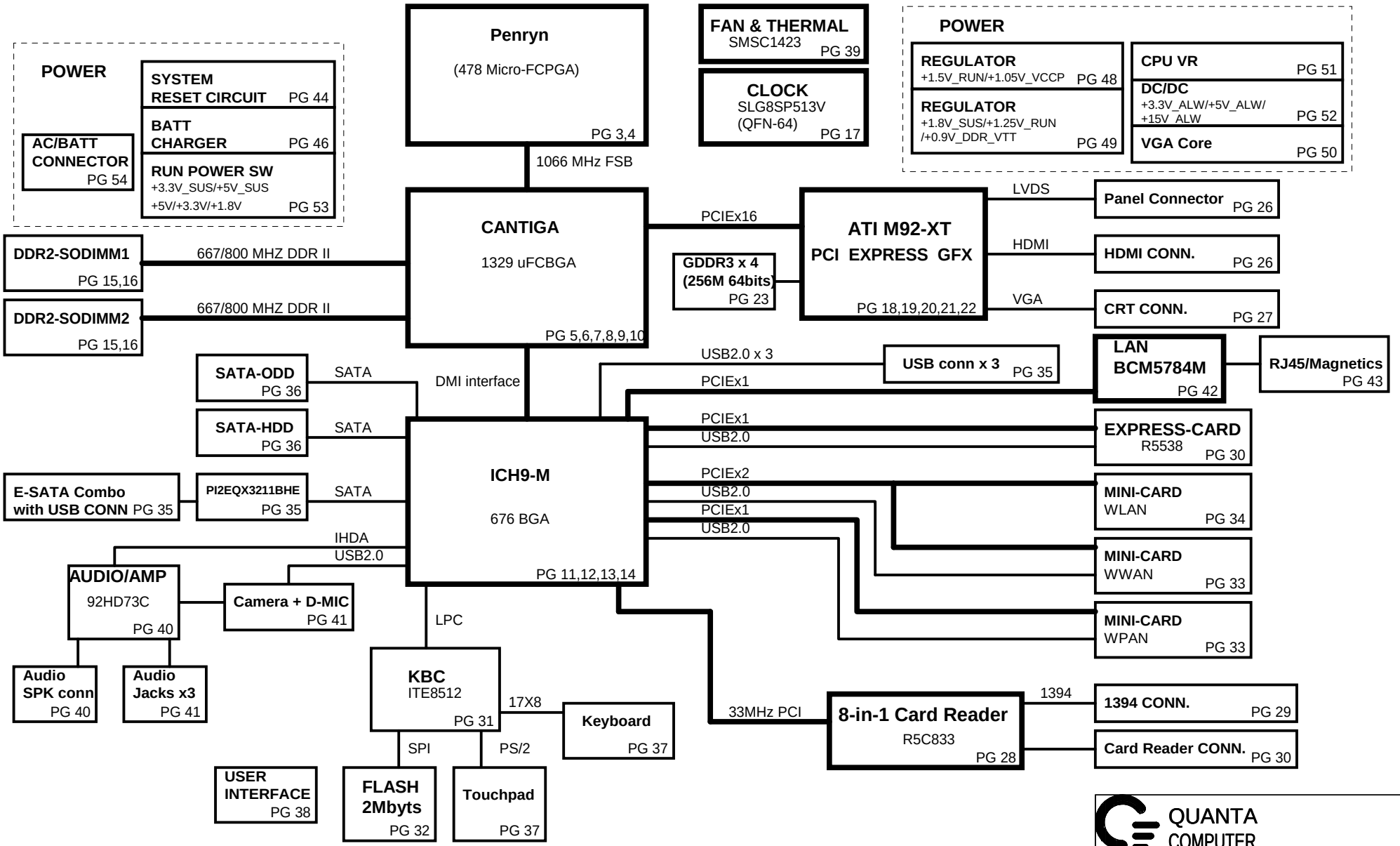
FM8 Hanks Intel Discrete GFX

VER : 3A
PWA:W021J
PWB:W018J



QUANTA COMPUTER

Title	Schematic Block Diagram1	
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Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,26,32,34,46,48,49,50,51,52	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,31,32	RTC		S0~S5
+3.3V_ALW	+3.3V	3,13,31,32,36,37,38,44,46,49,52,53,54	8051 POWER	ALWON	S0~S5
+5V_ALW2	+5V	38,48,49,52,53,54	LARGE POWER	RUN_ON	S0~S5
+3.3V_LAN	+3.3V	42,43	LAN POWER	AUX_ON	
+5V_SUS	+5V	14,35,36,38,50,51,52,53	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,20,26,30,38,43,48,50,51,53	SLP_S5# CTRLD POWER	SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,48,49,50,53	SODIMM POWER	SUS_ON	
+0.9V_DDR_VTT	+0.9V	16,49,53	SODIMM POWER	RUN_ON	
+5V_RUN	+5V	14,20,26,27,36,37,39,40,41,53	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,6,8,9,11,12,13,14,15,17,20,22,26,27,28,30 ,31,33,34,36,39,40,41,42,51,53	SLP_S3# CTRLD POWER	RUN_ON	
+1.8V_RUN	+1.8V	19,20,21,22,23,38,53	SDVO POWER	RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,30,31,33,34,48,53	CALISTOGA/ICH9 POWER	RUN_ON	
+1.2V_LOM	+1.25V	42	LOM POWER	+3.3V_LAN	
+1.1V_GFX_PCIE	+1.1V	21,50	VGA POWER	RUN_ON	
+1.05V_VCCP	+1.05V	3,4,5,6,8,9,11,14,48	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,51	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	26	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	36	Module Power	MODC_EN	
+5V_HDD	+5V	36	HDD Power	HDDC_EN	

GND PLANE	PAGE	DESCRIPTION
GND_CHG	46	
GND_1.05V	47	
GND_VGA	50	
GND_SIGNAL	51	
AGND_DC/DC	52	
GND	ALL	

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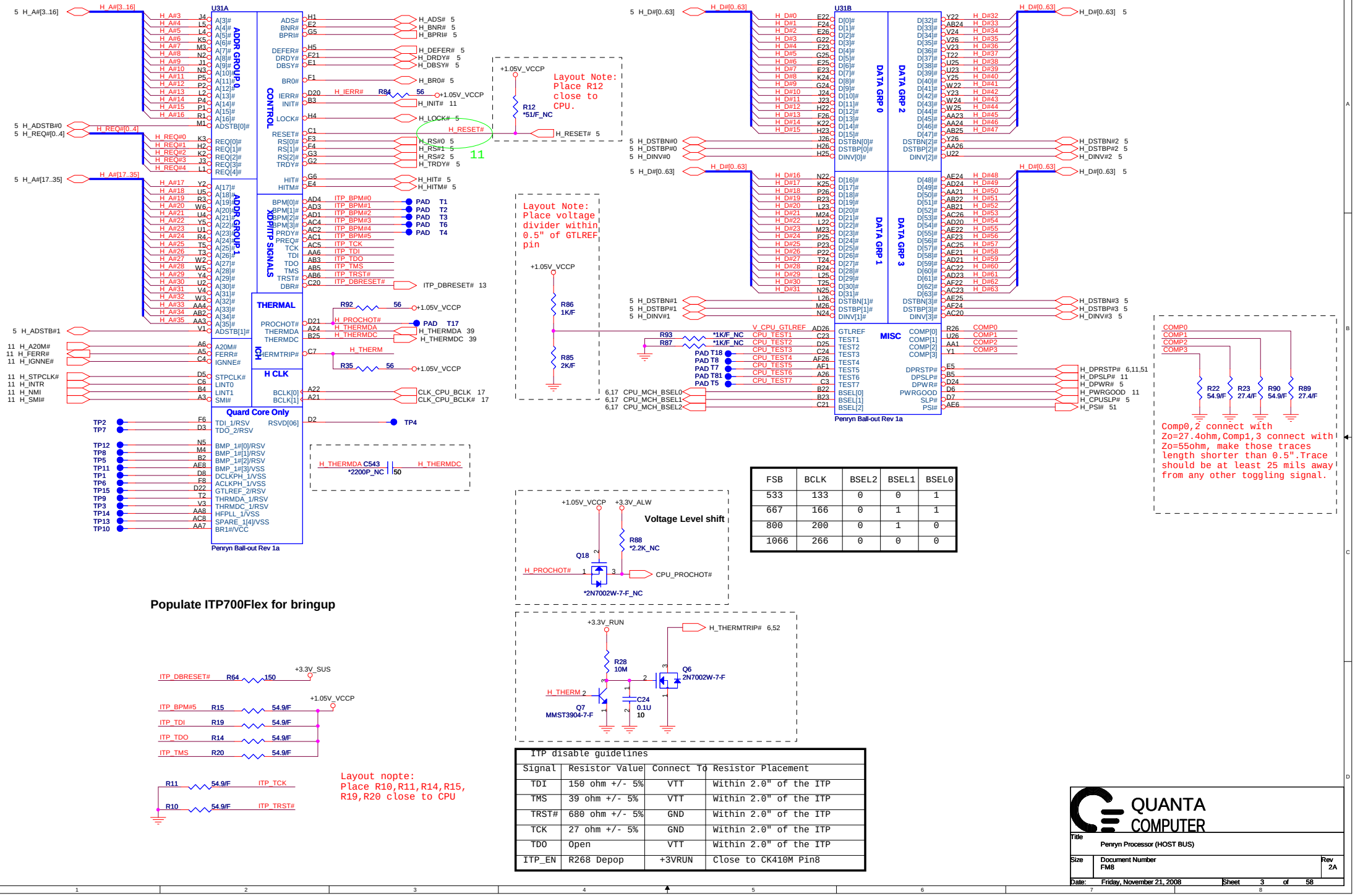

FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

ITP disable guidelines

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

QUANTA COMPUTER

Title	Penryn Processor (HOST BUS)	
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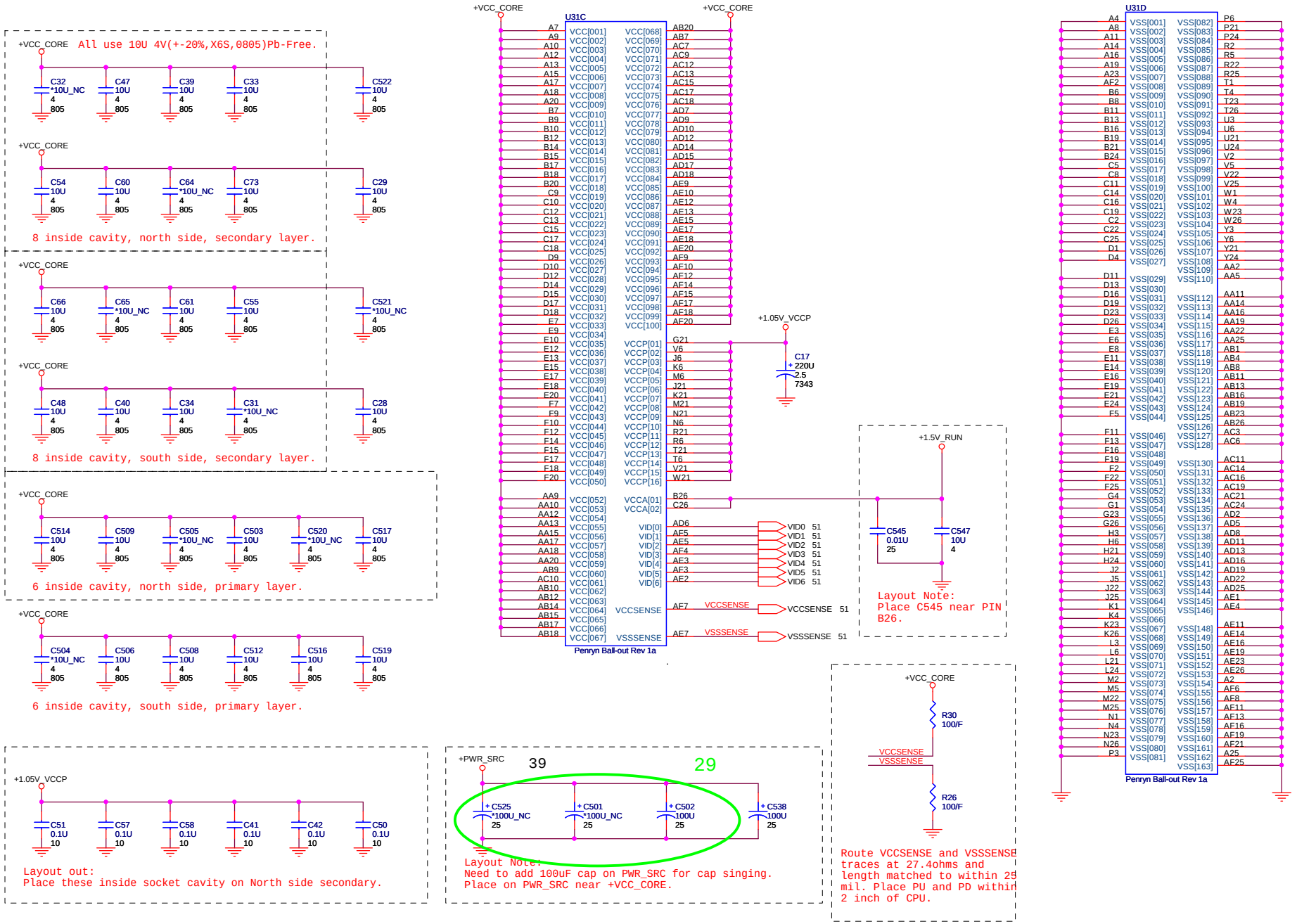

Title	Penryn Processor (HOST BUS)	
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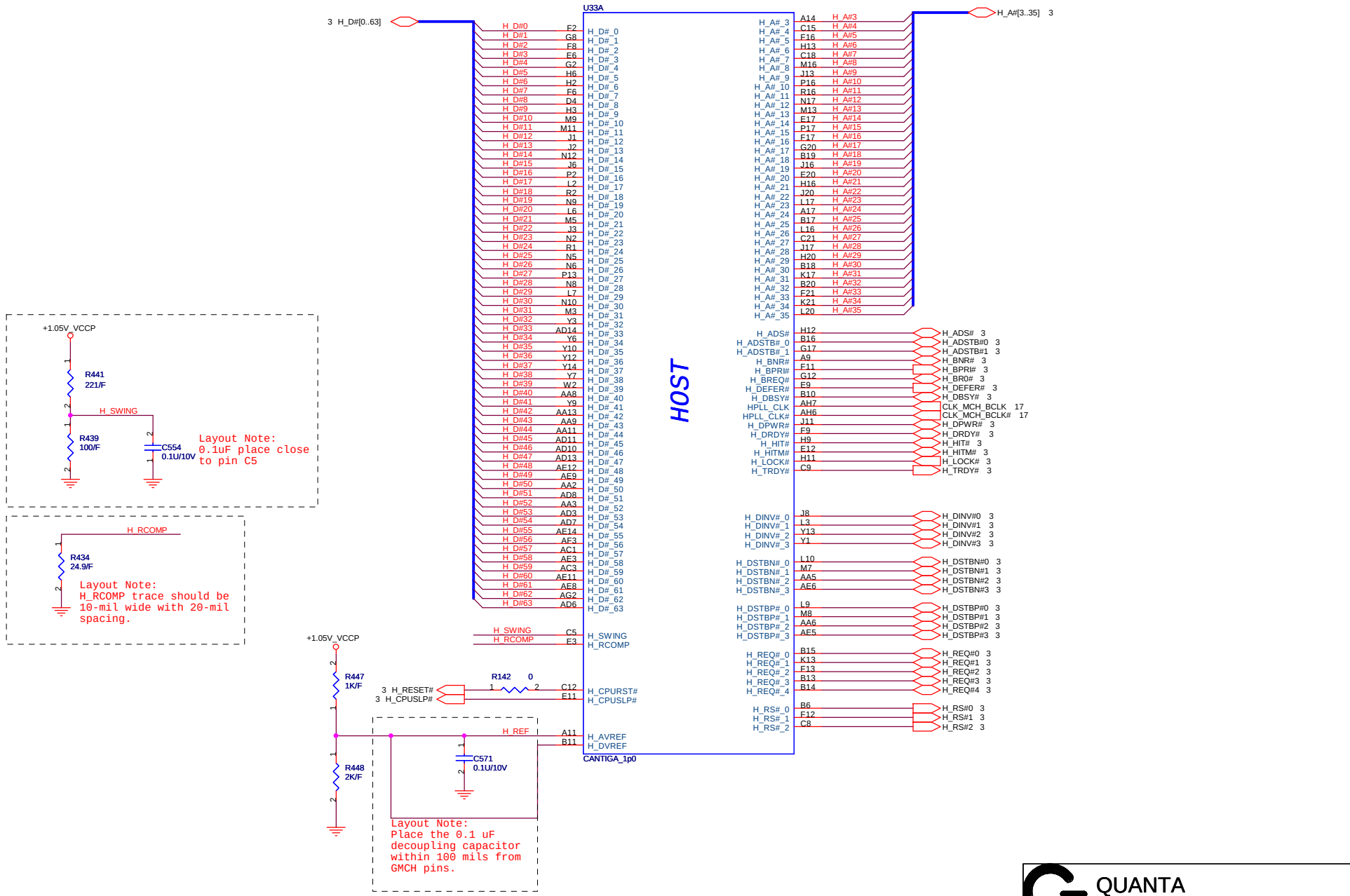
QUANTA COMPUTER



Title	Cantiga (HOST)	
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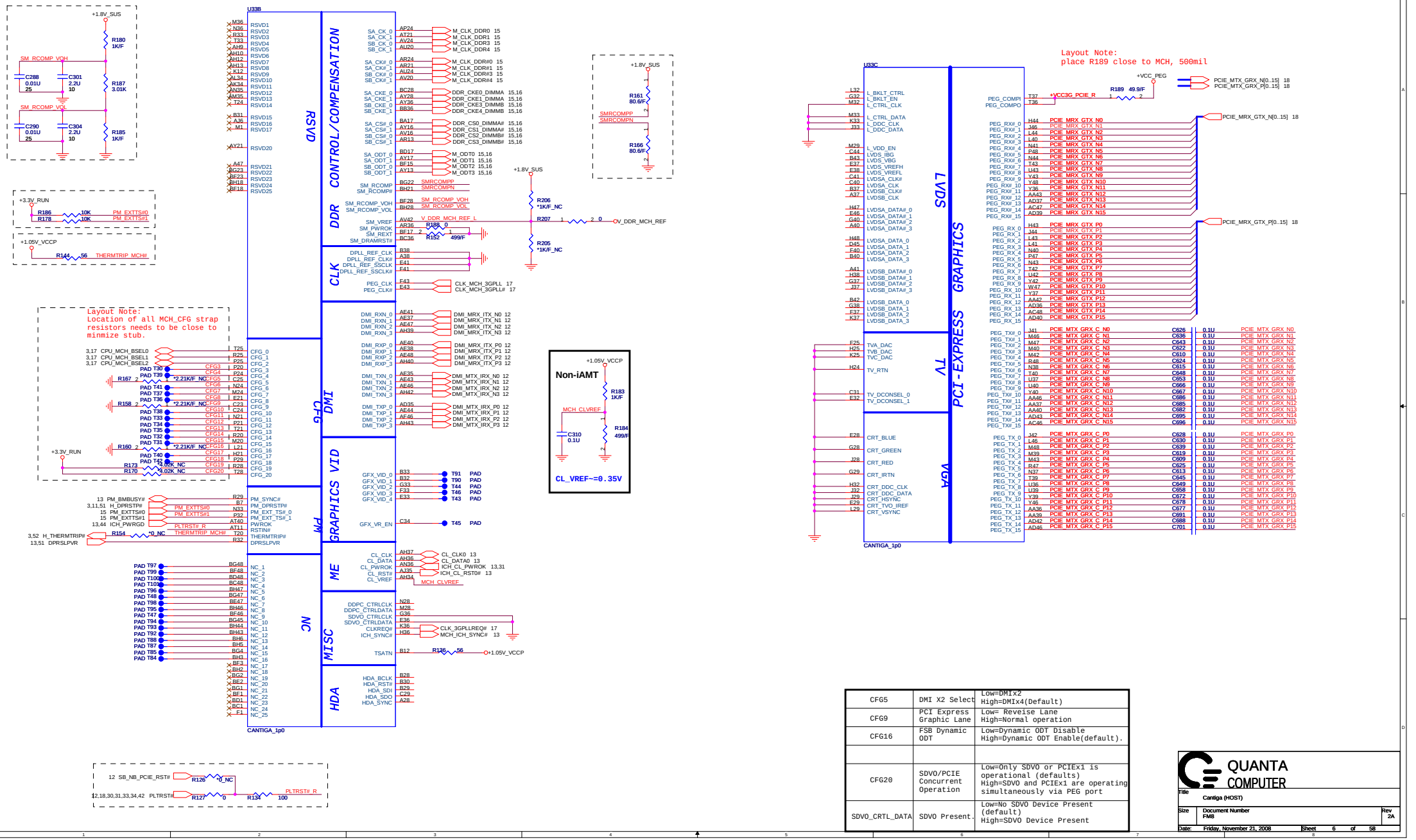
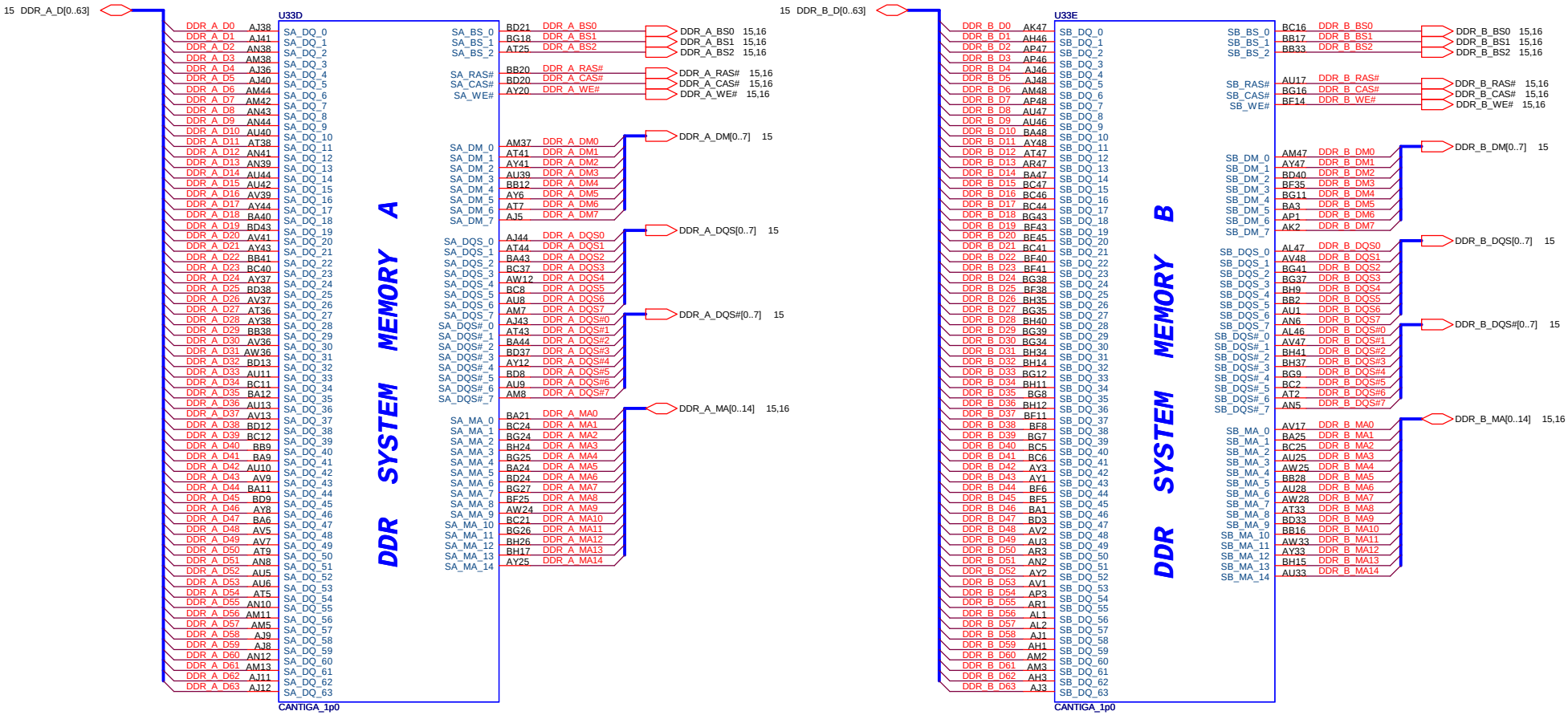
QUANTA COMPUTER



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).
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 (HOST)	
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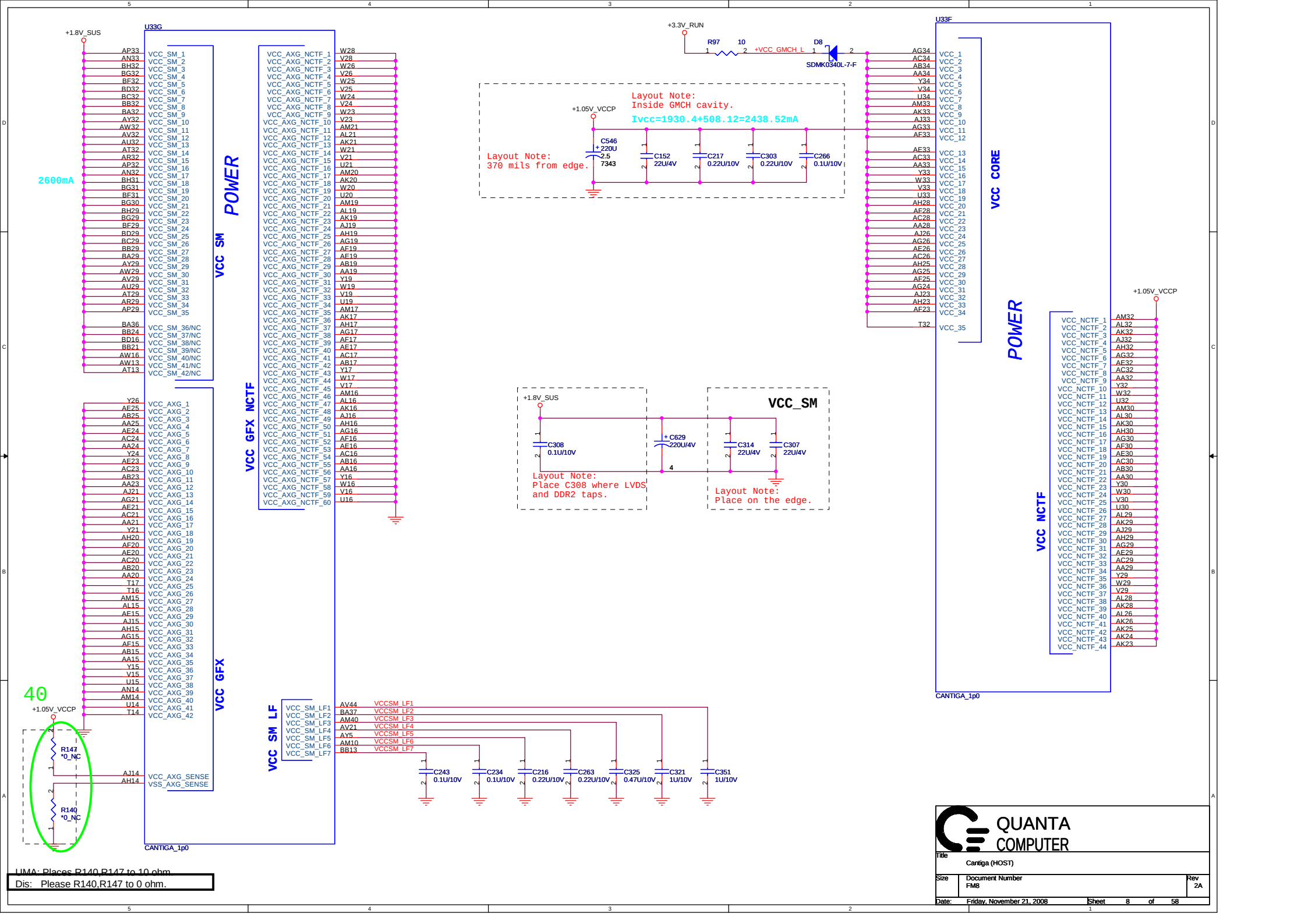
U33G
+1.8V_SUS
2600mA
VCC SM POWER
VCC GFX NCTF
VCC GFX
VCC SM LF
40
+1.05V_VCCP
R147 *0_NC
R140 *0_NC
VCC_AXG_SENSE
VSS_AXG_SENSE
CANTIGA_1p0
+3.3V_RUN
R97 10
+VCC_GMCH_L
D8
SDMK0340L-7-F
Layout Note:
Inside GMCH cavity.
Ivcc=1930.4+508.12=2438.52mA
Layout Note:
370 mils from edge.
C546 220U 2.5 7343
C152 22U/4V
C217 0.22U/10V
C303 0.22U/10V
C266 0.1U/10V
U33F
VCC CORE
POWER
VCC NCTF
C308 0.1U/10V
C629 220U/4V
C314 22U/4V
C307 22U/4V
VCC_SM
Layout Note:
Place C308 where LVDS and DDR2 taps.
Layout Note:
Place on the edge.
C243 0.1U/10V
C234 0.1U/10V
C216 0.22U/10V
C263 0.22U/10V
C325 0.47U/10V
C321 1U/10V
C351 1U/10V
UMA: Places R140,R147 to 10 ohm.
Dis: Please R140,R147 to 0 ohm.
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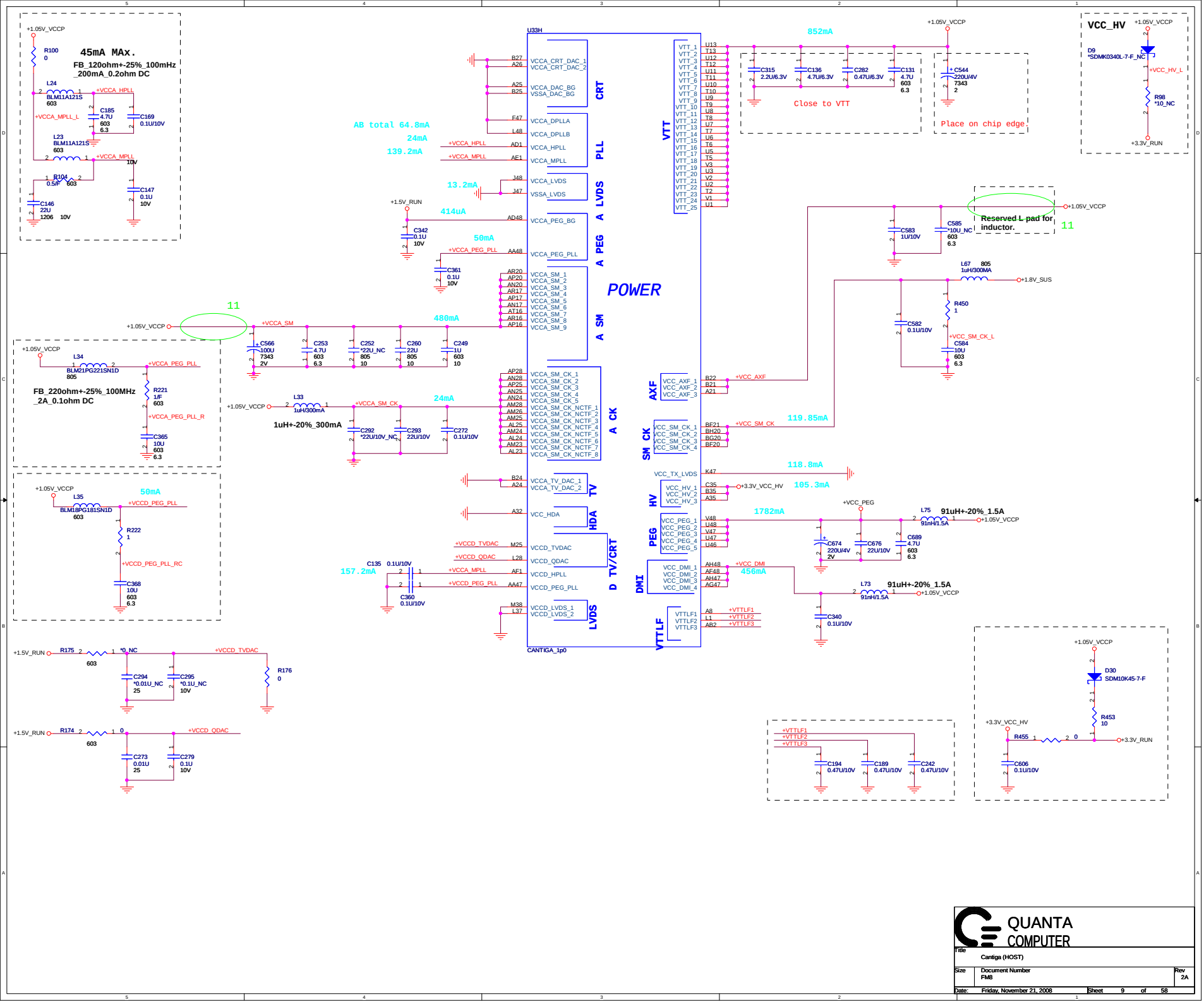

Title	Cantiga (HOST)		
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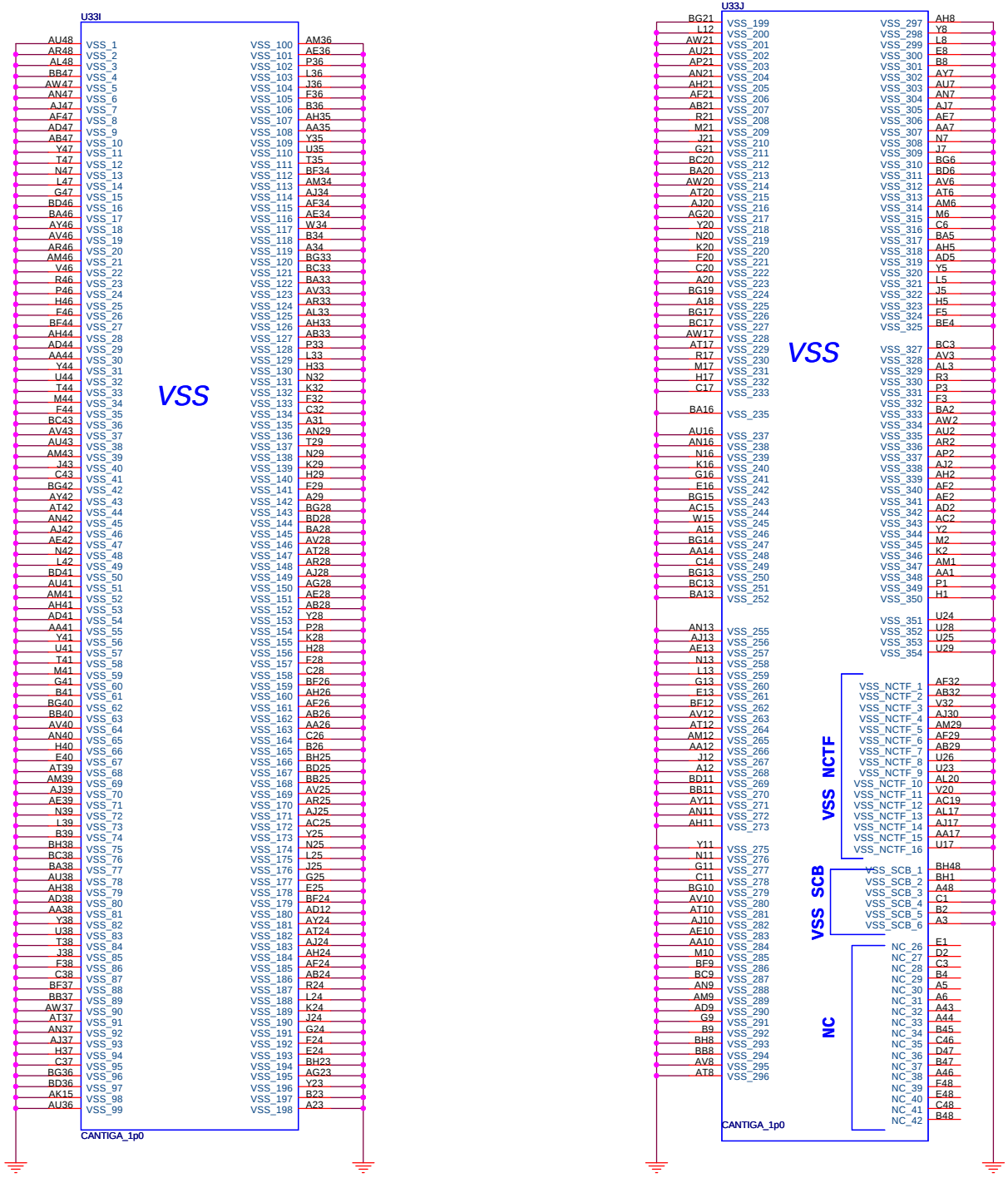

QUANTA COMPUTER		
Title	Cantiga (HOST)	
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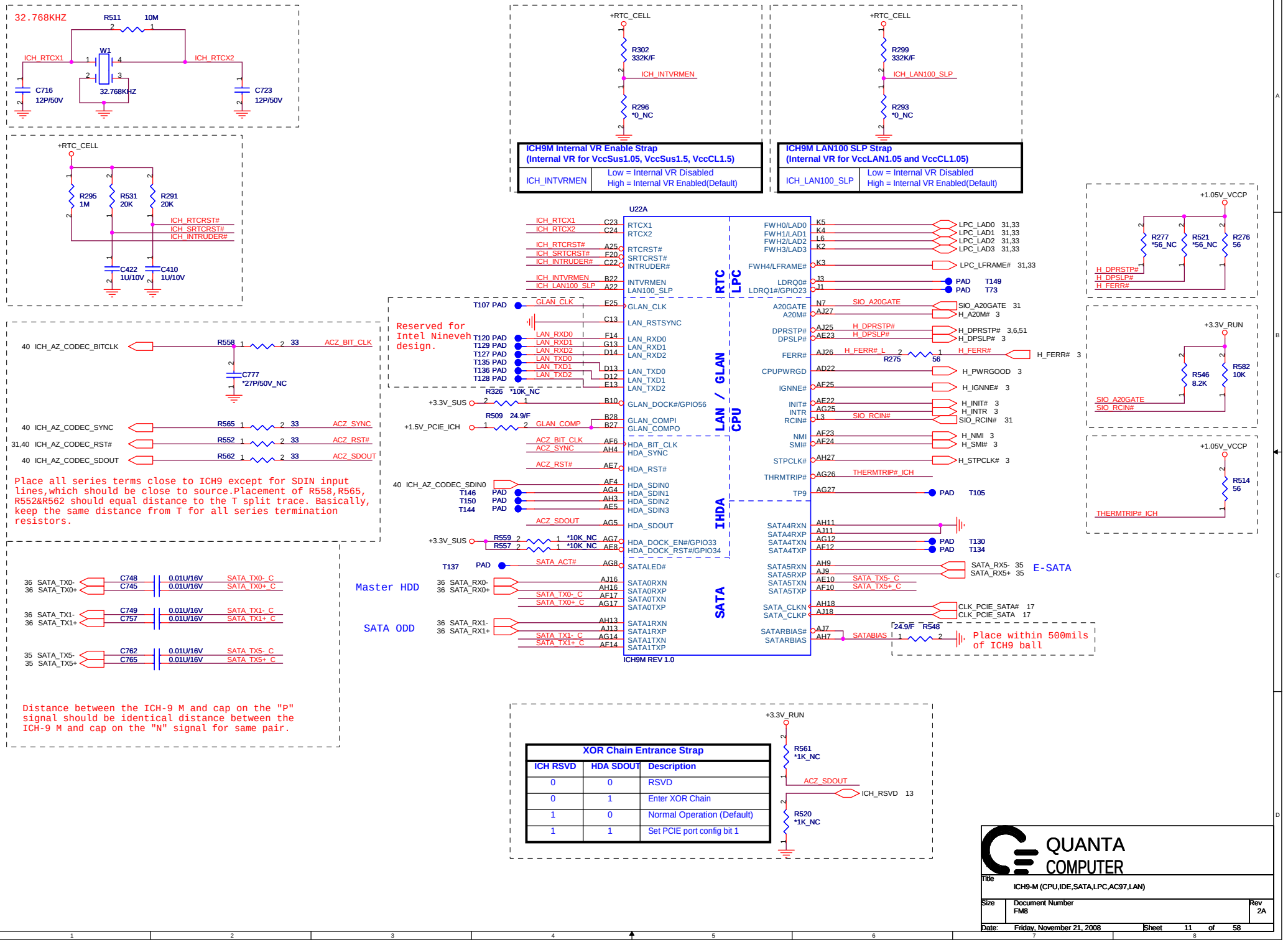
32.768KHZ
R511 10M
W1
ICH_RTCX1
ICH_RTCX2
C716 12P/50V
32.768KHZ
C723 12P/50V
+RTC_CELL
R295 1M
R531 20K
R291 20K
ICH_RTCRST#
ICH_SRTCRST#
ICH_INTRUDER#
C422 1U/10V
C410 1U/10V
+RTC_CELL
R302 332K/F
ICH_INTVRMEN
R296 *0_NC
ICH9M Internal VR Enable Strap
(Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)
ICH_INTVRMEN
Low = Internal VR Disabled
High = Internal VR Enabled(Default)
+RTC_CELL
R299 332K/F
ICH_LAN100_SLP
R293 *0_NC
ICH9M LAN100 SLP Strap
(Internal VR for VccLAN1.05 and VccCL1.05)
ICH_LAN100_SLP
Low = Internal VR Disabled
High = Internal VR Enabled(Default)
U22A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
LAN100_SLP
GLAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
GLAN_DOCK#/GPIO56
GLAN_COMPI
GLAN_COMPO
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
SATALED#
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
RTC
LPC
LAN / GLAN
CPU
IHDA
SATA
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
FWH4/LFRAME#
LDRQ0#
LDRQ1#/GPIO23
A20GATE
A20M#
DPRSTP#
DPSLP#
FERR#
CPUPWRGD
IGNNE#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THRMTRIP#
TP9
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
ICH9M REV 1.0
Reserved for Intel Nineveh design.
T107 PAD
T120 PAD
T129 PAD
T127 PAD
T135 PAD
T136 PAD
T128 PAD
R326 *10K_NC
+3.3V_SUS
R509 24.9/F
+1.5V_PCIE_ICH
GLAN_COMP
40 ICH_AZ_CODEC_BITCLK
R558 33
ACZ_BIT_CLK
C777 *27P/50V_NC
40 ICH_AZ_CODEC_SYNC
R565 33
ACZ_SYNC
31,40 ICH_AZ_CODEC_RST#
R552 33
ACZ_RST#
40 ICH_AZ_CODEC_SDOUT
R562 33
ACZ_SDOUT
Place all series terms close to ICH9 except for SDIN input lines,which should be close to source.Placement of R558,R565, R552&R562 should equal distance to the T split trace. Basically, keep the same distance from T for all series termination resistors.
40 ICH_AZ_CODEC_SDIN0
T146 PAD
T150 PAD
T144 PAD
+3.3V_SUS
R559 *10K_NC
R557 *10K_NC
T137 PAD
SATA_ACT#
Master HDD
36 SATA_TX0-
36 SATA_TX0+
C748 0.01U/16V
C745 0.01U/16V
SATA_TX0- C
SATA_TX0+ C
36 SATA_RX0-
36 SATA_RX0+
SATA_TX0- C
SATA_TX0+ C
SATA ODD
36 SATA_TX1-
36 SATA_TX1+
C749 0.01U/16V
C757 0.01U/16V
SATA_TX1- C
SATA_TX1+ C
36 SATA_RX1-
36 SATA_RX1+
SATA_TX1- C
SATA_TX1+ C
35 SATA_TX5-
35 SATA_TX5+
C762 0.01U/16V
C765 0.01U/16V
SATA_TX5- C
SATA_TX5+ C
Distance between the ICH-9 M and cap on the "P" signal should be identical distance between the ICH-9 M and cap on the "N" signal for same pair.
LPC_LAD0 31,33
LPC_LAD1 31,33
LPC_LAD2 31,33
LPC_LAD3 31,33
LPC_LFRAME# 31,33
PAD T149
PAD T73
SIO_A20GATE 31
H_A20M# 3
H_DPRSTP# 3,6,51
H_DPSLP# 3
H_FERR# 3
H_PWRGOOD 3
H_IGNNE# 3
H_INIT# 3
H_INTR 3
SIO_RCIN# 31
H_NMI 3
H_SMI# 3
H_STPCLK# 3
THERMTRIP# ICH
PAD T105
PAD T130
PAD T134
SATA_RX5- 35
SATA_RX5+ 35
E-SATA
SATA_TX5- C
SATA_TX5+ C
CLK_PCIE_SATA# 17
CLK_PCIE_SATA 17
24.9/F R548
SATABIAS
Place within 500mils of ICH9 ball
+1.05V_VCCP
R277 *56_NC
R521 *56_NC
R276 56
H_DPRSTP#
H_DPSLP#
H_FERR#
+3.3V_RUN
R546 8.2K
R582 10K
SIO_A20GATE
SIO_RCIN#
+1.05V_VCCP
R514 56
THERMTRIP# ICH
XOR Chain Entrance Strap
ICH RSVD | HDA SDOUT | Description
0 | 0 | RSVD
0 | 1 | Enter XOR Chain
1 | 0 | Normal Operation (Default)
1 | 1 | Set PCIE port config bit 1
+3.3V_RUN
R561 *1K_NC
ACZ_SDOUT
ICH_RSVD 13
R520 *1K_NC
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Place TX DC blocking caps close ICH9.

33 PCIE_TX1- C717 1 2 0.1U 10 PCIE_TXN1_C
33 PCIE_TX1+ C718 1 2 0.1U 10 PCIE_TXP1_C

34 PCIE_TX2- C714 1 2 0.1U 10 PCIE_TXN2_C
34 PCIE_TX2+ C715 1 2 0.1U 10 PCIE_TXP2_C

33 PCIE_TX3- C712 1 2 0.1U 10 PCIE_TXN3_C
33 PCIE_TX3+ C713 1 2 0.1U 10 PCIE_TXP3_C

30 PCIE_TX4- C711 1 2 0.1U 10 PCIE_TXN4_C
30 PCIE_TX4+ C710 1 2 0.1U 10 PCIE_TXP4_C

42 PCIE_TX6-/GLAN_TX- C721 1 2 0.1U 10 GLAN_TXN_C
42 PCIE_TX6+/GLAN_TX+ C722 1 2 0.1U 10 GLAN_TXP_C

ICH_SPI_CS1#_R
PCI_GNT0#
R560 *1K_NC
R519 *1K_NC

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

U22D

33 PCIE_RX1- / 33 PCIE_RX1+ — MiniWWAN — PCIE_TXN1_C / PCIE_TXP1_C — N29 N28 P27 P26 — PERN1 PERP1 PETN1 PETP1
34 PCIE_RX2- / 34 PCIE_RX2+ — MiniWLAN — PCIE_TXN2_C / PCIE_TXP2_C — L29 L28 M27 M26 — PERN2 PERP2 PETN2 PETP2
33 PCIE_RX3- / 33 PCIE_RX3+ — MiniWPAN — PCIE_TXN3_C / PCIE_TXP3_C — J29 J28 K27 K26 — PERN3 PERP3 PETN3 PETP3
30 PCIE_RX4- / 30 PCIE_RX4+ — Express Card — PCIE_TXN4_C / PCIE_TXP4_C — G29 G28 H27 H26 — PERN4 PERP4 PETN4 PETP4
T55 PAD, T104 PAD, T106 PAD, T108 PAD — E29 E28 F27 F26 — PERN5 PERP5 PETN5 PETP5
42 PCIE_RX6-/GLAN_RX- / 42 PCIE_RX6+/GLAN_RX+ — Giga Bit LOM — GLAN_TXN_C / GLAN_TXP_C — C29 C28 D27 D26 — PERN6/GLAN_RXN PERP6/GLAN_RXP PETN6/GLAN_TXN PETP6/GLAN_TXP

PCI-Express

T112 PAD, T111 PAD — D23 D24 F23 — SPI_CLK SPI_CS0# SPI_CS1#/GPIO58/CLGPIO6
T110 PAD, T109 PAD — D25 E23 — SPI_MOSI SPI_MISO

SPI

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

USB

USBRBIAS — AG2 AG1 — USBRBIAS USBRBIAS#

ICH9M REV 1.0

Direct Media Interface

DMI0RXN V27 — DMI_MTX_IRX_N0 6
DMI0RXP V26 — DMI_MTX_IRX_P0 6
DMI0TXN U29 — DMI_MRX_ITX_N0 6
DMI0TXP U28 — DMI_MRX_ITX_P0 6
DMI1RXN Y27 — DMI_MTX_IRX_N1 6
DMI1RXP Y26 — DMI_MTX_IRX_P1 6
DMI1TXN W29 — DMI_MRX_ITX_N1 6
DMI1TXP W28 — DMI_MRX_ITX_P1 6
DMI2RXN AB27 — DMI_MTX_IRX_N2 6
DMI2RXP AB26 — DMI_MTX_IRX_P2 6
DMI2TXN AA29 — DMI_MRX_ITX_N2 6
DMI2TXP AA28 — DMI_MRX_ITX_P2 6
DMI3RXN AD27 — DMI_MTX_IRX_N3 6
DMI3RXP AD26 — DMI_MTX_IRX_P3 6
DMI3TXN AC29 — DMI_MRX_ITX_N3 6
DMI3TXP AC28 — DMI_MRX_ITX_P3 6
DMI_CLKN T26 — CLK_PCIE_ICH# 17
DMI_CLKP T25 — CLK_PCIE_ICH 17
DMI_ZCOMP AF29
DMI_IRCOMP AF28 — DMI_COMP — R265 1 2 24.9/F — +1.5V_PCIE_ICH

Place within 500mils of ICH9

USBP0N AC5 — ICH_USBP0- 35
USBP0P AC4 — ICH_USBP0+ 35
USBP1N AD3 — ICH_USBP1- 35
USBP1P AD2 — ICH_USBP1+ 35
USBP2N AC1 — ICH_USBP2- 35
USBP2P AC2 — ICH_USBP2+ 35
USBP3N AA5
USBP3P AA4
USBP4N AB2 — ICH_USBP4- 34
USBP4P AB3 — ICH_USBP4+ 34
USBP5N AA1 — ICH_USBP5- 33
USBP5P AA2 — ICH_USBP5+ 33
USBP6N W5 — ICH_USBP6- 33
USBP6P W4 — ICH_USBP6+ 33
USBP7N Y3 — ICH_USBP7- 30
USBP7P Y2 — ICH_USBP7+ 30
USBP8N W1 — PAD T71
USBP8P W2 — PAD T72
USBP9N V2 — PAD T151
USBP9P V3 — PAD T148
USBP10N U5 — PAD T142
USBP10P U4 — PAD T145
USBP11N U1 — ICH_USBP11- 41
USBP11P U2 — ICH_USBP11+ 41

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

Places within 500 mils of the ICH9

R338 1 2 22.6/F — USBRBIAS

PCI Pullups

RP43: PCI_FRAME# PCI_TRDY# PCI_DEVSEL# PCI_REQ1# +3.3V_RUN — PCI_PLOCK# PCI_STOP# PCI_PIRQD# PCI_IRDY#
RP44: PCI_PIRQA# PCI_SERR# PCI_REQ0# ICH_IRQH_GPIO5 +3.3V_RUN — PCI_PIRQB# PCI_PIRQC# PCI_PERR#

WWAN Noise - ICH improvements

OC6# C788 *0.1U_NC
OC4# C462 *0.1U_NC
OC5# C464 *0.1U_NC
OC7# C465 *0.1U_NC
OC8# C463 *0.1U_NC
USB_OC2# C807 *0.1U_NC
USB_OC0_1# C786 *0.1U_NC
OC9# C789 *0.1U_NC

RP45 10KX8: OC7# OC6# OC5# OC4# +3.3V_SUS — OC9# USB_OC2# USB_OC0_1# OC8#
OC10# R543 10K — +3.3V_SUS
OC11# R563 10K
OC3# R556 10K

SB_WPAN_PCIE_RST# R555 20K
SB_WWAN_PCIE_RST# R540 20K
SB_WLAN_PCIE_RST# R549 20K
SB_LOM_PCIE_RST# R554 20K
SB_NB_PCIE_RST# R352 20K

BIOS should not enable the internal GPIO pull up resistor.

28 PCI_AD[0..31]

U22B

PCI: AD0 D11, AD1 C8, AD2 D9, AD3 E12, AD4 E9, AD5 C9, AD6 E10, AD7 B7, AD8 C7, AD9 C5, AD10 G11, AD11 F8, AD12 F11, AD13 E7, AD14 A3, AD15 D2, AD16 F10, AD17 D5, AD18 D10, AD19 B3, AD20 F7, AD21 C3, AD22 F3, AD23 F4, AD24 C1, AD25 G7, AD26 H7, AD27 D1, AD28 G5, AD29 H6, AD30 G1, AD31 H3

REQ0# F1 — PCI_REQ0# — PCI_REQ0# 28
GNT0# G4 — PCI_GNT0# — PCI_GNT0# 28
REQ1#/GPIO50 B6 — PCI_REQ1# — PAD T143
GNT1#/GPIO51 A7 — PCI_GNT1# — PAD T67
REQ2#/GPIO52 E13 — SB_WWAN_PCIE_RST# — SB_WWAN_PCIE_RST# 33
GNT2#/GPIO53 E12 — PCI_GNT2# — PAD T133
REQ3#/GPIO54 E6 — SB_LOM_PCIE_RST# — SB_LOM_PCIE_RST# 42
GNT3#/GPIO55 E6 — PCI_GNT3# — PAD T139

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

IRDY# D3 — PCI_IRDY# — PCI_IRDY# 28
PAR E3 — PCI_PAR 28
PCIRST# R1 — PCI_RST# G
DEVSEL# C6 — PCI_DEVSEL# — PCI_DEVSEL# 28
PERR# E4 — PCI_PERR# — PCI_PERR# 28
PLOCK# C2 — PCI_PLOCK# — PCI_PLOCK#
SERR# J4 — PCI_SERR# — PCI_SERR# 28
STOP# A4 — PCI_STOP# — PCI_STOP# 28
TRDY# E5 — PCI_TRDY# — PCI_TRDY# 28
FRAME# D7 — PCI_FRAME# — PCI_FRAME# 28

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

Interrupt I/F

T152 PAD — PCI_PIRQA# — PIRQA# J5
28 PCI_PIRQB# — PCI_PIRQB# — PIRQB# E1
28 PCI_PIRQC# — PCI_PIRQC# — PIRQC# J6
T147 PAD — PCI_PIRQD# — PIRQD# C4

PIRQE#/GPIO2 H4 — SB_WPAN_PCIE_RST# — SB_WPAN_PCIE_RST# 33
PIRQF#/GPIO3 K6 — SB_WLAN_PCIE_RST# — SB_WLAN_PCIE_RST# 34
PIRQG#/GPIO4 F2 — SB_NB_PCIE_RST# — SB_NB_PCIE_RST# 6
PIRQH#/GPIO5 G2 — ICH_IRQH_GPIO5 — PAD T154

ICH9M REV 1.0

CLK_PCI_ICH — R564 *10_NC — C783 *8.2P_NC
Reserved for EMI.Place resister and cap close to ICH. 16

PCI_GNT3# — R553 *1K_NC

A16 away override strap.

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

Non-iAMT

+3.3V_SUS — C453 0.047U 10 — U28 TC7SZ32FU(T5L,F,T)
PCI_RST# G — PCI_RST# 28
+3.3V_SUS — C775 0.047U 10 — U23 TC7SZ32FU(T5L,F,T)
PCI_PLTRST# — PLTRST# 6,18,30,31,33,34,42

Add Buffers as needed for Loading and fanout concerns.

QUANTA COMPUTER

Title	ICH9-M (USB,DMI,PCIE,PCI)	
Size	Document Number FM8	Rev 2A
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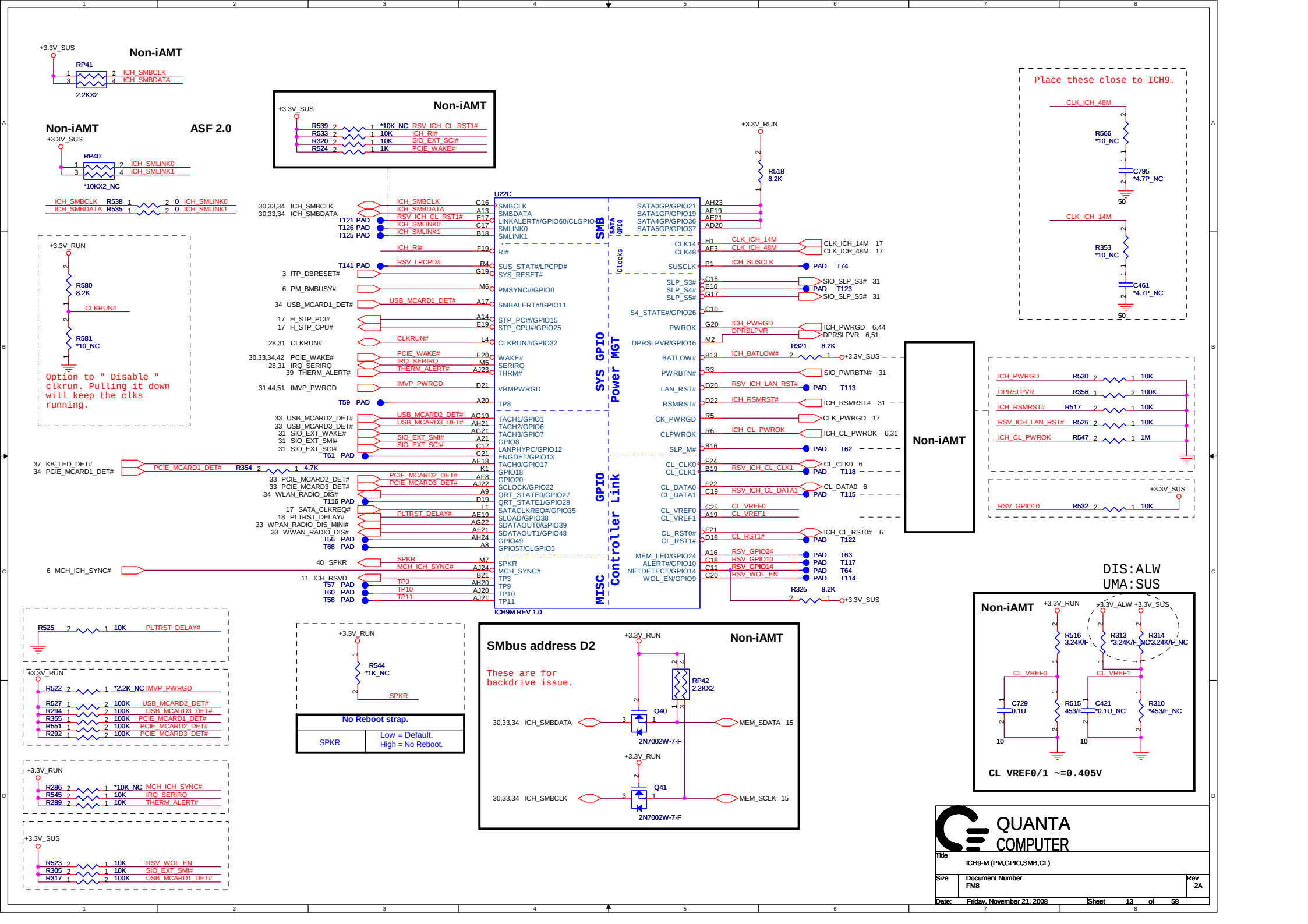
Non-iAMT
+3.3V_SUS
RP41
2.2KX2
ICH_SMBCLK
ICH_SMBDATA
Non-iAMT
ASF 2.0
RP40
*10KX2_NC
ICH_SMLINK0
ICH_SMLINK1
R538
R535
Non-iAMT
R539 *10K_NC RSV_ICH_CL_RST1#
R533 10K ICH_RI#
R320 10K SIO_EXT_SCI#
R524 1K PCIE_WAKE#
+3.3V_RUN
R518 8.2K
U22C
SMBCLK
SMBDATA
LINKALERT#/GPIO60/CLGPIO6
SMLINK0
SMLINK1
RI#
SUS_STAT#/LPCPD#
SYS_RESET#
PMSYNC#/GPIO0
SMBALERT#/GPIO11
STP_PCI#/GPIO15
STP_CPU#/GPIO25
CLKRUN#/GPIO32
WAKE#
SERIRQ
THRM#
VRMPWRGD
TP8
TACH1/GPIO1
TACH2/GPIO6
TACH3/GPIO7
GPIO8
LANPHYPC/GPIO12
ENGDET/GPIO13
TACH0/GPIO17
GPIO18
GPIO20
SCLOCK/GPIO22
QRT_STATE0/GPIO27
QRT_STATE1/GPIO28
SATACLKREQ#/GPIO35
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
GPIO49
GPIO57/CLGPIO5
SPKR
MCH_SYNC#
TP3
TP9
TP10
TP11
SMB
SATA GPIO
iClocks
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
SATA0GP/GPIO21
SATA1GP/GPIO19
SATA4GP/GPIO36
SATA5GP/GPIO37
CLK14
CLK48
SUSCLK
SLP_S3#
SLP_S4#
SLP_S5#
S4_STATE#/GPIO26
PWROK
DPRSLPVR/GPIO16
BATLOW#
PWRBTN#
LAN_RST#
RSMRST#
CK_PWRGD
CLPWROK
SLP_M#
CL_CLK0
CL_CLK1
CL_DATA0
CL_DATA1
CL_VREF0
CL_VREF1
CL_RST0#
CL_RST1#
MEM_LED/GPIO24
ALERT#/GPIO10
NETDETECT/GPIO14
WOL_EN/GPIO9
ICH9M REV 1.0
CLK_ICH_14M
CLK_ICH_48M
ICH_SUSCLK
SIO_SLP_S3#
SIO_SLP_S4#
SIO_SLP_S5#
ICH_PWRGD
DPRSLPVR
ICH_BATLOW#
SIO_PWRBTN#
RSV_ICH_LAN_RST#
ICH_RSMRST#
CLK_PWRGD
ICH_CL_PWROK
RSV_ICH_CL_CLK1
RSV_ICH_CL_DATA1
CL_VREF
CL_RST1#
RSV_GPIO24
RSV_GPIO10
RSV_GPIO14
RSV_WOL_EN
R321 8.2K
R325 8.2K
Non-iAMT
Place these close to ICH9.
CLK_ICH_48M
R566 *10_NC
C795 *4.7P_NC
CLK_ICH_14M
R353 *10_NC
C461 *4.7P_NC
50
ICH_PWRGD R530 10K
DPRSLPVR R356 100K
ICH_RSMRST# R517 10K
RSV_ICH_LAN_RST# R526 10K
ICH_CL_PWROK R547 1M
RSV_GPIO10 R532 10K
+3.3V_SUS
DIS:ALW
UMA:SUS
Non-iAMT
R516 3.24K/F
R313 *3.24K/F_NC
R314 *3.24K/F_NC
CL_VREF0
CL_VREF1
C729 0.1U
R515 453/F
C421 *0.1U_NC
R310 *453/F_NC
CL_VREF0/1 ~=0.405V
+3.3V_RUN
R580 8.2K
CLKRUN#
R581 *10_NC
Option to " Disable " clkrun. Pulling it down will keep the clks running.
R525 10K PLTRST_DELAY#
R522 *2.2K_NC IMVP_PWRGD
R527 100K USB_MCARD2_DET#
R294 100K USB_MCARD3_DET#
R355 100K PCIE_MCARD1_DET#
R551 100K PCIE_MCARD2_DET#
R292 100K PCIE_MCARD3_DET#
R286 *10K_NC MCH_ICH_SYNC#
R545 10K IRQ_SERIRQ
R289 10K THERM_ALERT#
R523 10K RSV_WOL_EN
R305 10K SIO_EXT_SMI#
R317 100K USB_MCARD1_DET#
R544 *1K_NC
No Reboot strap.
SPKR
Low = Default.
High = No Reboot.
SMbus address D2
These are for backdrive issue.
RP42 2.2KX2
Q40
2N7002W-7-F
Q41
2N7002W-7-F
MEM_SDATA
MEM_SCLK
QUANTA COMPUTER
Title
ICH9-M (PM,GPIO,SMB,CL)
Size
Document Number
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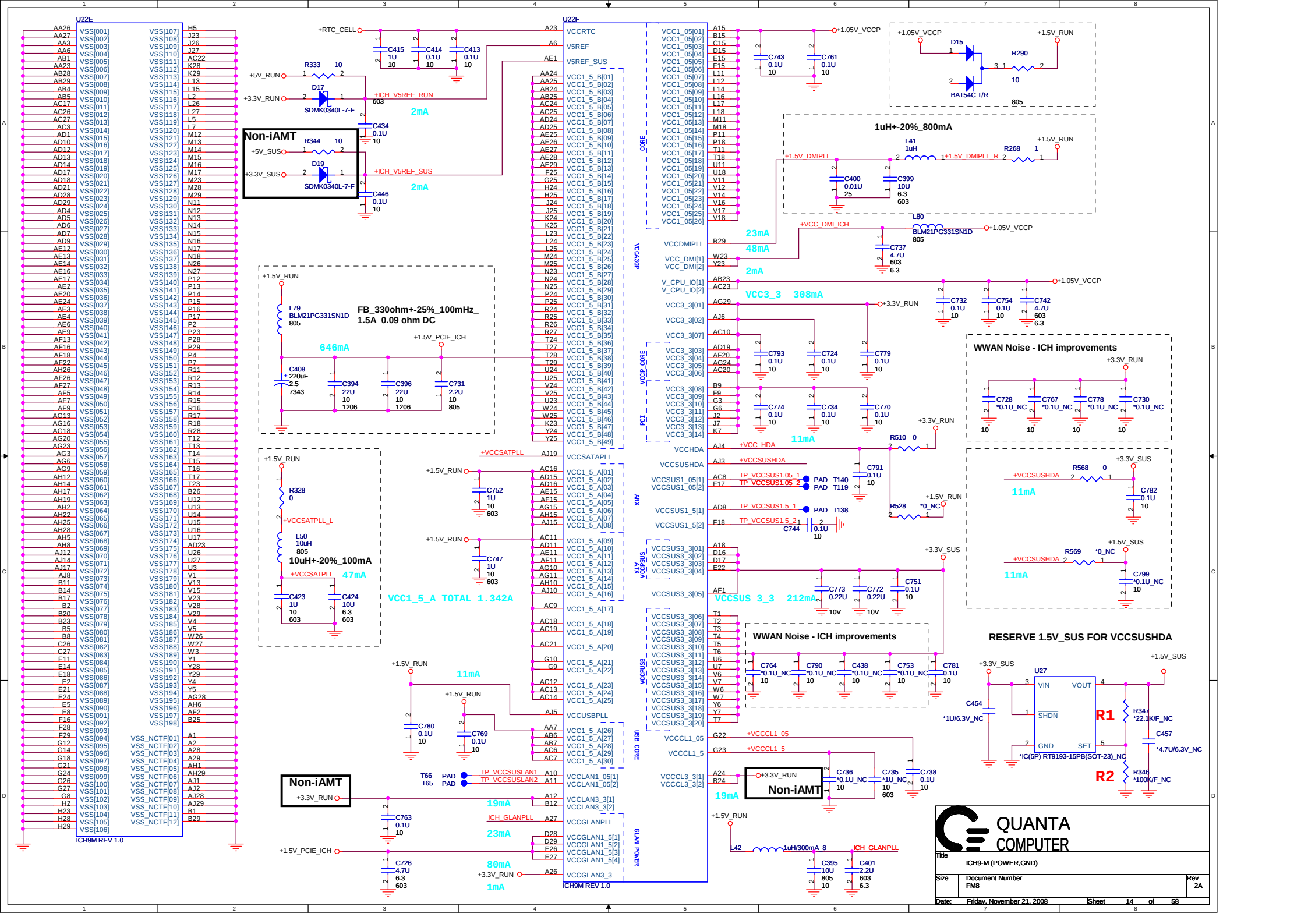
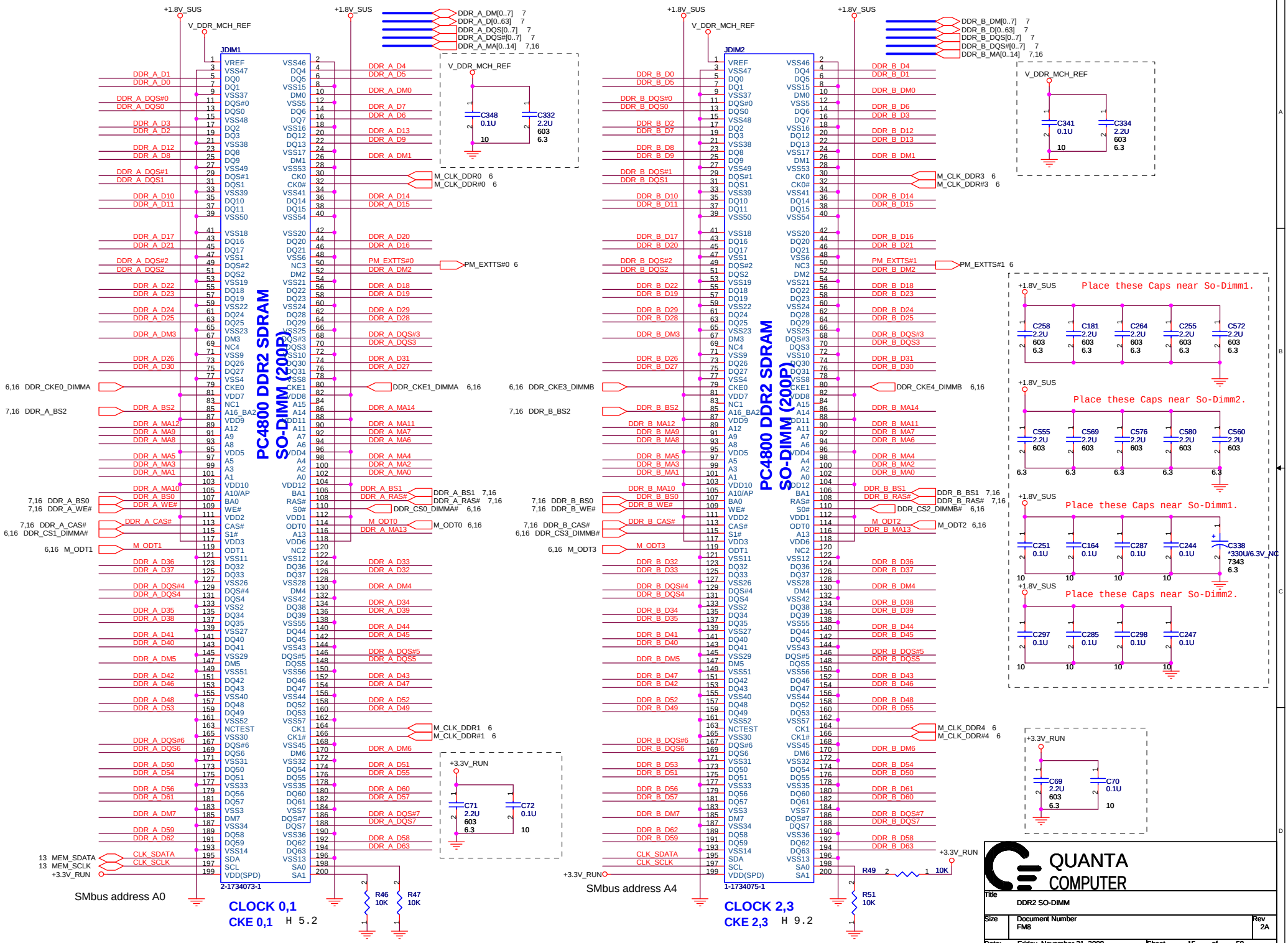

U22E
ICH9M REV 1.0
U22F
ICH9M REV 1.0
Non-iAMT
Non-iAMT
Non-iAMT
WWAN Noise - ICH improvements
WWAN Noise - ICH improvements
RESERVE 1.5V_SUS FOR VCCSUSHDA
1uH+-20%_800mA
FB_330ohm+-25%_100mHz_ 1.5A_0.09 ohm DC
10uH+-20%_100mA
VCC1_5_A TOTAL 1.342A
VCC3_3 308mA
VCCSUS 3_3 212mA
QUANTA COMPUTER
ICH9-M (POWER,GND)
FM8
Friday, November 21, 2008


JDIM1
PC4800 DDR2 SDRAM SO-DIMM (200P)
2-1734073-1
SMbus address A0
CLOCK 0,1
CKE 0,1
H 5.2
JDIM2
PC4800 DDR2 SDRAM SO-DIMM (200P)
1-1734075-1
SMbus address A4
CLOCK 2,3
CKE 2,3
H 9.2
Place these Caps near So-Dimm1.
Place these Caps near So-Dimm2.
QUANTA COMPUTER
Title
DDR2 SO-DIMM
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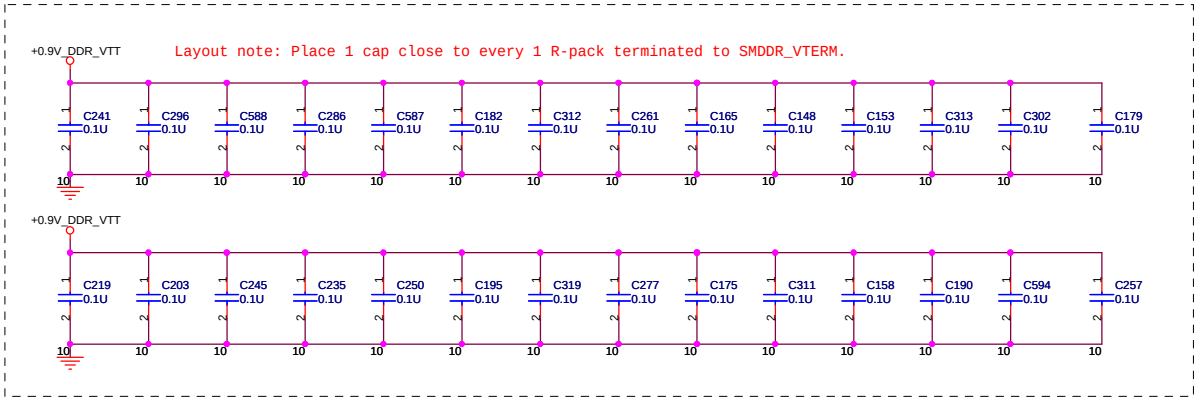

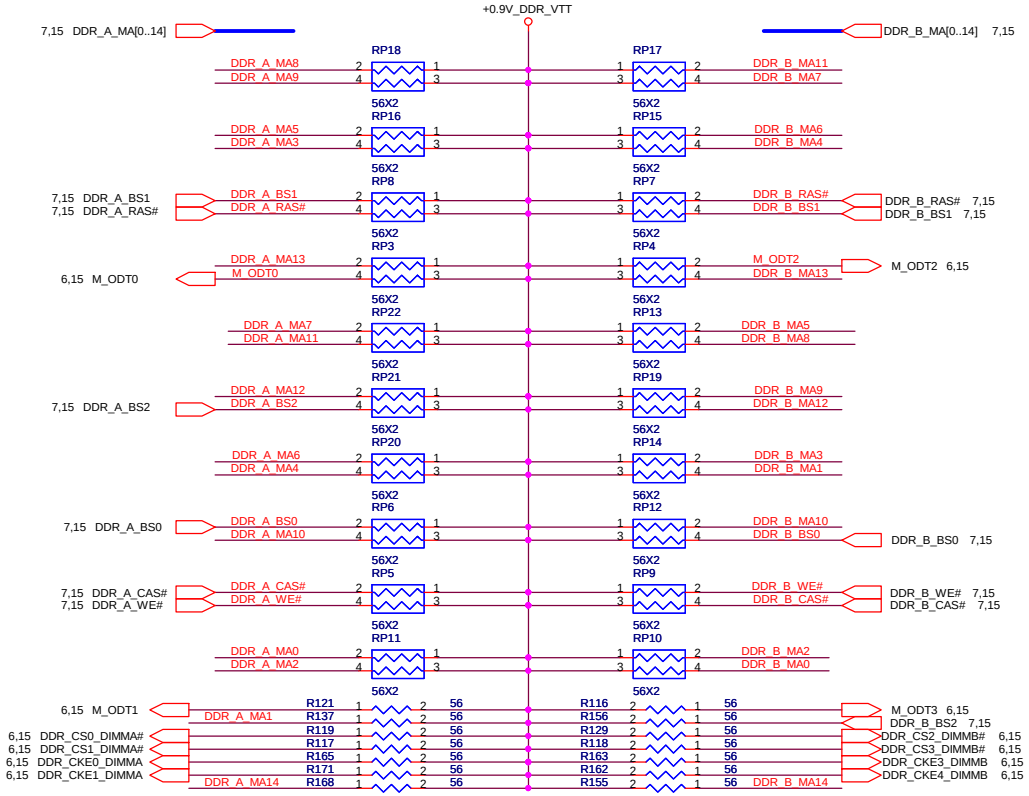

Layout notice:
Please these resistor
closely DIMMA,all
trace length<750 mil.

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

QUANTA COMPUTER

Title	DDR2 RES. ARRAY	
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Add capacitor pads for improving WWAN.

C402 20P 50 CLK_ICH_48M
C392 *27P_NC 50 CLK_ICH_14M
C389 *27P_NC 50 CLK_PCI_8512
C709 *27P_NC 50 CLK_PCI_PCCARD
C398 *27P_NC 50 CLK_PCI_ICH

Y2 14.318MHZ
CLK_XTAL_IN — CLK_XTAL_OUT
C405 33P 50
C406 33P 50
14.318MHz

U21
CK505
QFN64
SLG8SP513V

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

13 SATA_CLKREQ# — SATA_CLKREQ# R261 475/F
6 CLK_3GPLLREQ# — CLK_3GPLLREQ# R260 475/F
SATA_CLKREQ#_C 8 CR#_A/PCI-0
CLK_3GPLLREQ#_C 10 CR#_B/PCI-1
PCI_PCCARD 11 TME/PCI-2
PCI_SIO 12 SRC5_EN/PCI-3
27M_SEL 13 27M_SEL/PCI-4
PCI_ICH 14 ITP_EN/PCIF-5#

33 CLK_LPC_DEBUG — CLK_LPC_DEBUG R508 22
28 CLK_PCI_PCCARD — CLK_PCI_PCCARD R507 33
31 CLK_PCI_8512 — CLK_PCI_8512 R257 33
12 CLK_PCI_ICH — CLK_PCI_ICH R258 33
13 CLK_ICH_48M — CLK_ICH_48M R269 33
3,6 CPU_MCH_BSEL0 — L44 BLM18AG601SN1D R274 2.2K — FSA 17 FSA/USB48
3,6 CPU_MCH_BSEL1 — BLM18AG601SN1D R272 0 — FSB 64 FSB/TEST_MODE
3,6 CPU_MCH_BSEL2 — L39 BLM18AG601SN1D R263 10K — FSC 5 FSC/TEST_SEL/REF
13 CLK_ICH_14M — CLK_ICH_14M R262 33
13 CLK_PWRGD — 55 RESET# / 63 CK_PWRGD/PD#

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

CPU-0 61 — CLK_CPU_BCLK 3
CPU-0# 60 — CLK_CPU_BCLK# 3
CPU-1 58 — CLK_MCH_BCLK 5
CPU-1# 57 — CLK_MCH_BCLK# 5
SRC-8/CPU_ITP 54 — CLK_PCIE_MINI1 34
SRC-8#/CPU_ITP# 53 — CLK_PCIE_MINI1# 34
SRC-0/DOT96 20 — CLK_PCIE_VGA 18
SRC-0#/DOT96# 21 — CLK_PCIE_VGA# 18
SRC-1/SE1 24 — 27M_NSS — R280 33 — CLK_VGA_27M_NSS 19
SRC-1#/SE2 25 — 27M_SS — R281 *33_NC — CLK_VGA_27M_SS 19
SRC-2/SATA 28 — CLK_PCIE_SATA 11
SRC-2#/SATA# 29 — CLK_PCIE_SATA# 11
CR#_C/SRC-3 31 — CLK_PCIE_MINI3 33
CR#_D/SRC-3# 32 — CLK_PCIE_MINI3# 33
SRC-4 34 — CLK_MCH_3GPLL 6
SRC-4# 35 — 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 — CLK_PCIE_EXPCARD 30
SRC-6# 47 — CLK_PCIE_EXPCARD# 30
CR#_F/SRC-7 51 — MINI1CLK_REQ# — R298 475/F — MINI1CLK_REQ# — MINI1CLK_REQ# 34
CR#_E/SRC-7# 50 — CARD_CLK_REQ#_C — R297 475/F — CARD_CLK_REQ# — CARD_CLK_REQ# 30
SRC-9 37 — CLK_PCIE_MINI2 33
SRC-9# 38 — CLK_PCIE_MINI2# 33
SRC-10 41 — CLK_PCIE_ICH 12
SRC-10# 42 — CLK_PCIE_ICH# 12
CR#_H/SRC-11 40 — CLK_PCIE_LOM 42
CR#_G/SRC-11# 39 — CLK_PCIE_LOM# 42
GND 65

+3.3V_RUN
H_STP_PCI# R312 10K
H_STP_CPU# R311 10K

+3.3V_RUN
CLK_3GPLLREQ# R251 10K
SATA_CLKREQ# R252 10K
CARD_CLK_REQ# R300 10K
MINI1CLK_REQ# R301 10K
PCI_PCCARD R505 *10K_NC

PCI_SIO R266 *10K_NC

UMA without iAMT

+3.3V_RUN
L48 BLM21PG600SN1D 805 120 ohms@100Mhz
+CK_VDD_MAIN
C407 0.1U 10
C727 0.1U 10
C418 0.1U 10
C733 0.1U 10
C417 0.1U 10
C409 0.1U 10
C420 *10U_NC 603 6.3

L47 BLM21PG600SN1D 805 120 ohms@100Mhz
R271 2.2 — +CK_VDD_PCI
C720 0.1U 10
C719 0.1U 10
R512 2.2 — +CK_VDD_PLL3
C725 0.1U 10
R270 2.2 — +CK_VDD_48
C403 0.1U 10
C404 4.7U 603 6.3
R529 2.2 — +CK_VDD_SRC
C740 0.1U 10
C739 0.1U 10

Non-iAMT

SMbus address D2

These are for backdrive issue.

+3.3V_RUN
RP39 2.2KX2
Q65 2N7002W-7-F
31,39 SMBDAT1 — CLK_SDATA
+3.3V_RUN
Q64 2N7002W-7-F
31,39 SMBCLK1 — CLK_SCLK

+3.3V_RUN
R506 *10K_NC
PCI_ICH
R503 *10K_NC

R506 POP: For Internal pull-low.
R503 POP: For internal pull-high.

+3.3V_RUN
R253 10K
27M_SEL
R256 *10K_NC

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

QUANTA COMPUTER

Title	CLOCK GENERATOR	
Size	Document Number FM8	Rev 2A
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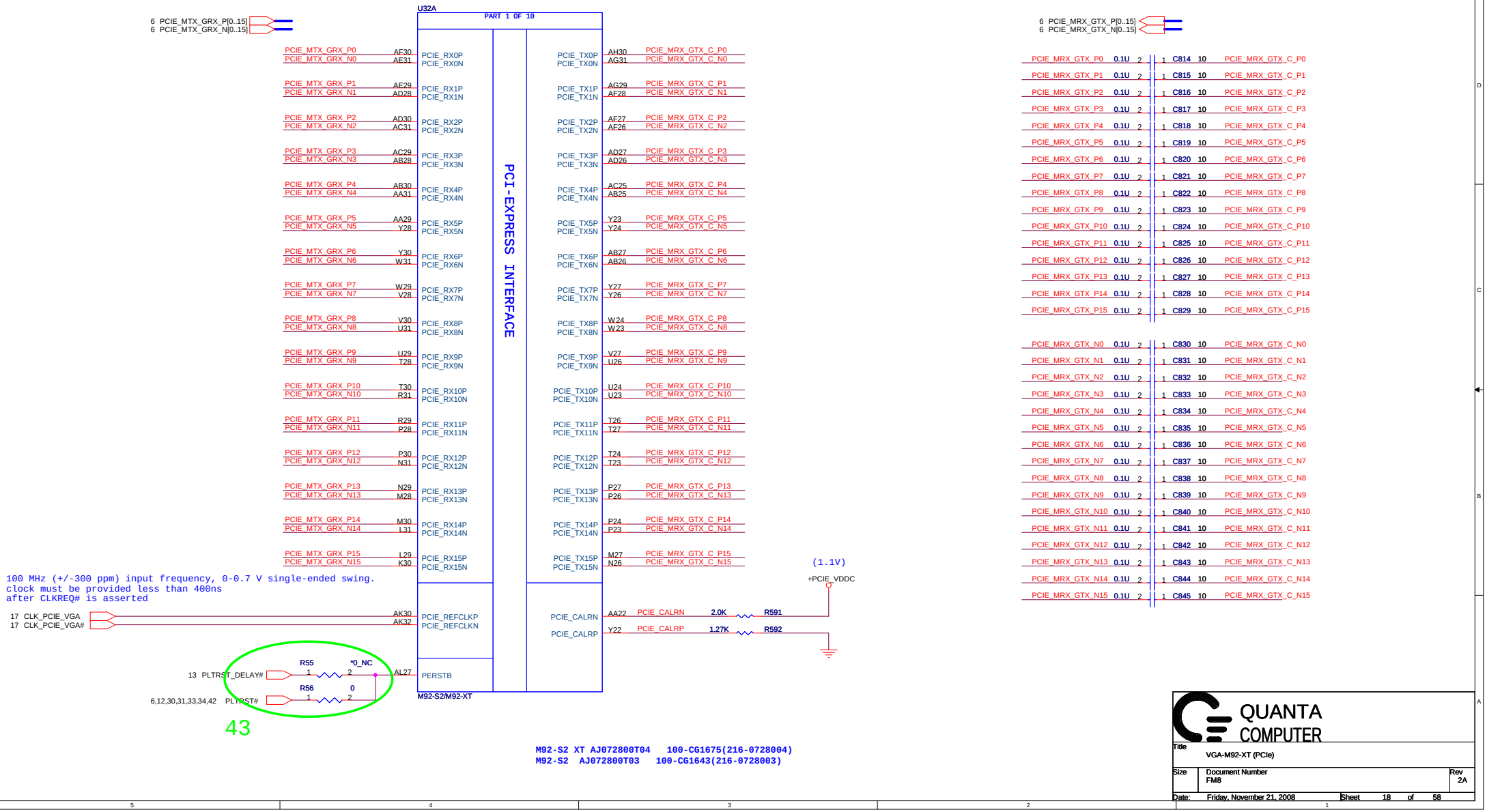

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M92-S2 XT AJ072800T04 100-CG1675(216-0728004)
M92-S2 AJ072800T03 100-CG1643(216-0728003)

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

8

+3.3V_DELAY

8

R895 1 2 10K RAM_CFG0
R597 1 2 *10K_NC RAM_CFG1
R599 1 2 *10K_NC RAM_CFG2

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

R603 1 2 *10K_NC GPIO0
R604 1 2 *10K_NC GPIO1
R605 1 2 *10K_NC GPIO2
R606 1 2 *10K_NC GPIO3
R607 1 2 *10K_NC GPIO4
R608 1 2 *10K_NC GPIO5

R611 1 2 10K HDMI_HD_EN
R613 1 2 *10K_NC TEMP_FAIL
R614 1 2 10K GFX_CLKREQ#
R615 1 2 10K VGAVSYNC
R620 1 2 10K VGAHSYNC

R628 1 2 *10K_NC VGAVSYNC
R627 1 2 *10K_NC VGAHSYNC
R624 1 2 10K TEMP_FAIL

19 48

+1.8V_RUN

R596 1 2 10K RAM_TYPE_CFG0
R598 1 2 10K RAM_TYPE_CFG1
R600 1 2 *10K_NC RAM_TYPE_CFG2
R601 1 2 *10K_NC RAM_TYPE_CFG3

38

Memory Straps	RAM_TYPE_CFG3	RAM_TYPE_CFG2	RAM_TYPE_CFG1	RAM_TYPE_CFG0	Quanta PN (QuantaBuy)	Quanta PN (WinBuy)	Vendor PN	31 level PN
800MHz 512MB(32M*32) Samsung	0	0	1	0	AKD5LWGT501	AKD5LWGT504	K4J10324QD-HC12	31FM8MB0030
900MHz 512MB(32M*32) Qimonda	0	0	1	1	AKD5LWFT^03	AKD5LWFT^00	HYB18H1G321AF-11	31FM8MB0000
800MHz 256MB(16M*32) Samsung	0	0	0	1	AKD5FWGT500	AKD5FWGT503	K4J52324QH-HC12	31FM8MB0040
900MHz 256MB(16M*32) Hynix	0	0	0	0	AKD5FWHTW03	AKD5FWHTW06	H5RS5223CFR-11C	31FM8MB0020

36 48

26,44,48,49,53 RUN_ON
R654 *0_NC
31
21,31 GFX_ON
R656 0
C868 *0.1U_NC 25 603

51

R651 75K/F
C867 0.1U 10
OPTIONAL RC NETWORK TO FINE TUNE POWER SEQUENCING

Q69 SI2303BDS-T1-E3
+3.3V_DELAY
R649 100K
+3.3V_RUN

Q72 2N7002W-7-F

GFX_RUN_ON 50

As M82 design, for GPIO use

RAM_TYPE_CFG0 AB2
RAM_TYPE_CFG1 AC10
RAM_TYPE_CFG2 AC5
RAM_TYPE_CFG3

OSC_SPREAD
R631 *0_reserve
17 CLK_VGA_27M_SS
R633 *0_reserve
CLK_VGA_27M_SSIN_R
R636 *10K_reserve
17 CLK_VGA_27M_NSS
R634 100/F
R637 120/F
R635 0
OSC_OUT
R643 *182R_reserve
XTALIN 23
R644 *1M_reserve
R638 *221/F_reserve
Y4 *27MHZ_reserve
R640 *0_reserve
XTALOUT 23
R642 1M_reserve
C860 *12P_reserve 50
C861 *12P_reserve 50

Spread Spectrum
If U4, the discrete spread spectrum chip is not used, then pop R48 in order to pull-down BXTALOUT for EMI reasons.

+3.3V_RUN
R659 *10K_reserve
R660 *10K_reserve
R664 *10K_reserve
OSC_OUT
R669 *0_reserve
OSC_SPREAD
U45
XIN/CLKIN XOUT
VSS VDD
SO PD#
SSCLK REFCLK
*P1819GF-08SR_reserve
+3VL
L81 *BLM11A05S_reserve
+3.3V_RUN
C955 *10U_reserve 805 10
C956 *0.1U_reserve 10

	S0
-1.75% (DOWN)	0

50 GFX_CORE_CNTRL2
R619 0
31 PANEL_BKEN
HDMI_HD_EN
50 GFX_CORE_CNTRL0
R618 0
21 THERMAL_INT#
CLK_VGA_27M_SSIN_R
R141 *0_NC
TEMP_FAIL
48 52
50 GFX_CORE_CNTRL1
R622 0
20 BB_ENA
GFX_CLKREQ#
R449 1K

35

GENERICA
GENERICB
GENERICC
GENERICD
GENERICE_HPD4

+1.8V_RUN
R639 499/F
VREFG
R641 249/F
C859 0.1U

HPD1

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

26 ENVDD
26 BIA_PWM
R646 0
R621 10K
R57 1K

TESTEN

U32B
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

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

M92-S2/M92-XT

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

VGA_RED 27
VGA_GRN 27
VGA_BLU 27
VGAHSYNC 27
VGAVSYNC 27

R413 150/F
R414 150/F
R415 150/F

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

+1.8V_RUN
+AVDD
L82 BLM15BD121SN1D
C846 10nF
C847 0.1U
C848 1uF
C849 4.7uF

+VDD1DI
L83 BLM15BD121SN1D
C850 10nF
C851 0.1U
C852 1uF
Place very close to ASIC balls

RSET R612 499R

+3.3V_DELAY
R616 10K
R617 10K
HPD1
Q67 MMST3904-7-F
Q68 DTC114TUAT106
HDMI_DET 26
R625 100K

+3.3V_DELAY
C856 *0.1U_NC
+1.8V_RUN
+A2VDDQ
L85 BLM15BD121SN1D
C857 0.1U
C858 1uF

+1.8V_RUN
C863 *0.1U_NC

R646 715

QUANTA COMPUTER

Title	VGA-M92-XT (PCIe)	
Size	Document Number FM8	Rev 2A
Date: Friday, November 21, 2008	Sheet 19 of 58	

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

+1.8V_RUN

C869 10nF, C870 10nF, C871 10nF, C872 10nF, C873 10nF, C874 100nF, C875 100nF, C877 100nF, C878 100nF

C879 1uF_6.3V, C880 1uF_6.3V, C881 1uF_6.3V, C882 1uF_6.3V, C883 1uF_6.3V, C886 100nF

+1.8V_RUN

C895 10U, C896 10U, C897 10U

+1.8V_RUN

L87 BLM15BD121SN1D

C909 10U, C910 100nF, C911 1uF_6.3V, C912 1uF_6.3V, C913 100nF

+VDD_CT

+3.3V_DELAY

C914 1uF_6.3V, C915 1uF_6.3V, C916 100nF, C908 100nF

+1.8V_RUN

C919 1uF_6.3V, C920 100nF, C921 1uF_6.3V, C922 100nF

+1.8V_RUN

L88 BLM15BD121SN1D

+VDDRH1

C923 1uF_6.3V, C924 1uF_6.3V

U32D

PART 4 OF 10

POWER

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	
AA20	VDD_CT#1	
AA21	VDD_CT#2	
AB20	VDD_CT#3	
AB21	VDD_CT#4	
AA17	VDDR3#1	
AA18	VDDR3#2	
AB17	VDDR3#3	
AB18	VDDR3#4	
AA11	VDDR4#1	
AA12	VDDR4#2	
Y11	VDDR4#3	
Y12	VDDR4#4	
U11	VDDR5#1	
U12	VDDR5#2	
V11	VDDR5#3	
V12	VDDR5#4	
L17	VDDRHA	
L16	VSSRHA	

M92-S2/M92-XT

+1.8V_RUN

C888 1uF_6.3V, C892 100nF, C889 1uF_6.3V, C893 10nF, C894 10U

AB23	PCIE_VDDR#1
AC23	PCIE_VDDR#2
AD24	PCIE_VDDR#3
AE24	PCIE_VDDR#4
AE25	PCIE_VDDR#5
AE26	PCIE_VDDR#6
AF25	PCIE_VDDR#7
AG26	PCIE_VDDR#8
L23	PCIE_VDDC#1
L24	PCIE_VDDC#2
L25	PCIE_VDDC#3
L26	PCIE_VDDC#4
M22	PCIE_VDDC#5
N22	PCIE_VDDC#6
N23	PCIE_VDDC#7
N24	PCIE_VDDC#8
P22	PCIE_VDDC#9
T22	PCIE_VDDC#10
U22	PCIE_VDDC#11
V22	PCIE_VDDC#12

(1.1V)

+PCIE_VDDC

C899 1uF_6.3V, C900 1uF_6.3V, C901 1uF_6.3V, C902 1uF_6.3V, C903 1uF_6.3V, C904 1uF_6.3V, C906 1uF_6.3V, C907 10U

(0.9~1.2V)

+VCC_GFX_CORE

C917 100nF, C918 1uF_6.3V

+BBP

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

+VDDCI

(0.9~1.2V)

M13	VDDCI#1
M15	VDDCI#2
M16	VDDCI#3
M17	VDDCI#4
M18	VDDCI#5
M20	VDDCI#6
M21	VDDCI#7
N20	VDDCI#8

U32E

PART 5 OF 10

GND

AA27	PCIE_VSS#1	GND#33	F18
AB24	PCIE_VSS#2	GND#34	F2
AB32	PCIE_VSS#3	GND#35	F20
AC24	PCIE_VSS#4	GND#36	F22
AC26	PCIE_VSS#5	GND#37	F24
AC27	PCIE_VSS#6	GND#38	F26
AD25	PCIE_VSS#7	GND#39	F6
AD32	PCIE_VSS#8	GND#40	F8
AE27	PCIE_VSS#9	GND#41	G10
AF32	PCIE_VSS#10	GND#42	G27
AG27	PCIE_VSS#11	GND#43	G31
AH32	PCIE_VSS#12	GND#44	G8
K28	PCIE_VSS#13	GND#45	H14
K32	PCIE_VSS#14	GND#46	H17
L27	PCIE_VSS#15	GND#47	H2
M32	PCIE_VSS#16	GND#48	H20
N25	PCIE_VSS#17	GND#49	H6
N27	PCIE_VSS#18	GND#50	J27
P25	PCIE_VSS#19	GND#51	J31
P32	PCIE_VSS#20	GND#52	K11
R27	PCIE_VSS#21	GND#53	K2
T25	PCIE_VSS#22	GND#54	K22
T32	PCIE_VSS#23	GND#55	K6
U25	PCIE_VSS#24	GND#56	M6
U27	PCIE_VSS#25	GND#57	N11
V32	PCIE_VSS#26	GND#58	N12
W25	PCIE_VSS#27	GND#59	N13
W26	PCIE_VSS#28	GND#60	N16
W27	PCIE_VSS#29	GND#61	N18
Y25	PCIE_VSS#30	GND#62	N21
Y32	PCIE_VSS#31	GND#63	P6
		GND#64	P9
		GND#65	R12
		GND#66	R15
A3	GND#1	GND#67	R17
A30	GND#2	GND#68	R20
AA13	GND#3	GND#69	T13
AA16	GND#4	GND#70	T16
AB10	GND#5	GND#71	T18
AB15	GND#6	GND#72	T21
AB6	GND#7	GND#73	T6
AC9	GND#8	GND#74	U15
AD6	GND#9	GND#75	U17
AD8	GND#10	GND#76	U20
AE7	GND#11	GND#77	U3
AG12	GND#12	GND#78	U8
AH10	GND#13	GND#79	V13
AH28	GND#14	GND#80	V16
B10	GND#15	GND#81	V18
B12	GND#16	GND#82	V6
B14	GND#17	GND#83	Y10
B16	GND#18	GND#84	Y15
B18	GND#19	GND#85	Y17
B20	GND#20	GND#86	Y20
B22	GND#21	GND#87	Y6
B24	GND#22	GND#88	T11
B26	GND#23	GND#89	R11
B6	GND#24		
B8	GND#25		
C1	GND#26		
C32	GND#27		
E28	GND#28		
F10	GND#29		
F12	GND#30	VSS_MECH#1	A32
F14	GND#31	VSS_MECH#2	AM1
F16	GND#32	VSS_MECH#3	AM32

M92-S2/M92-XT

+BBP

Q71 SI2303BDS-T1-E3

C866 1U <Size> 10

Q70 2N7002W-7-F

(0.9~1.2V) +VCC_GFX_CORE

+1.8V_RUN

R652 100K

+5V_RUN

19 BB_ENA

Q74 2N7002W-7-F

R653 10K

layout note: close to VDDC#[1:25]

(0.9~1.2V) +VCC_GFX_CORE

C925 1uF_6.3V, C926 1uF_6.3V, C927 1uF_6.3V, C929 1uF_6.3V, C930 1uF_6.3V

C931 1uF_6.3V, C932 1uF_6.3V, C933 1uF_6.3V, C934 1uF_6.3V, C935 1uF_6.3V, C936 1uF_6.3V, C937 1uF_6.3V, C939 1uF_6.3V

(0.9~1.2V) +VCC_GFX_CORE

C947 10U, C946 10U, C948 10U

+1.1V_GFX_PCIE

L12 BLM18PG121SN1D

(1.1V) +PCIE_VDDC

(PCIE_VDDC 1.1V @ 1A)

C168 10U 603 6.3, C183 1U <Size> 10, C211 0.1U 10

C68 10U 603 6.3, C74 1U <Size> 10, C196 0.1U 10

(0.9~1.2V) +VCC_GFX_CORE

+VDDCI

L89 BLM18EG221SN1D

C941 100nF, C942 100nF, C943 1uF_6.3V, C944 1uF_6.3V, C945 10U

QUANTA COMPUTER

Title	VGA-M92-XT (PCIe)		
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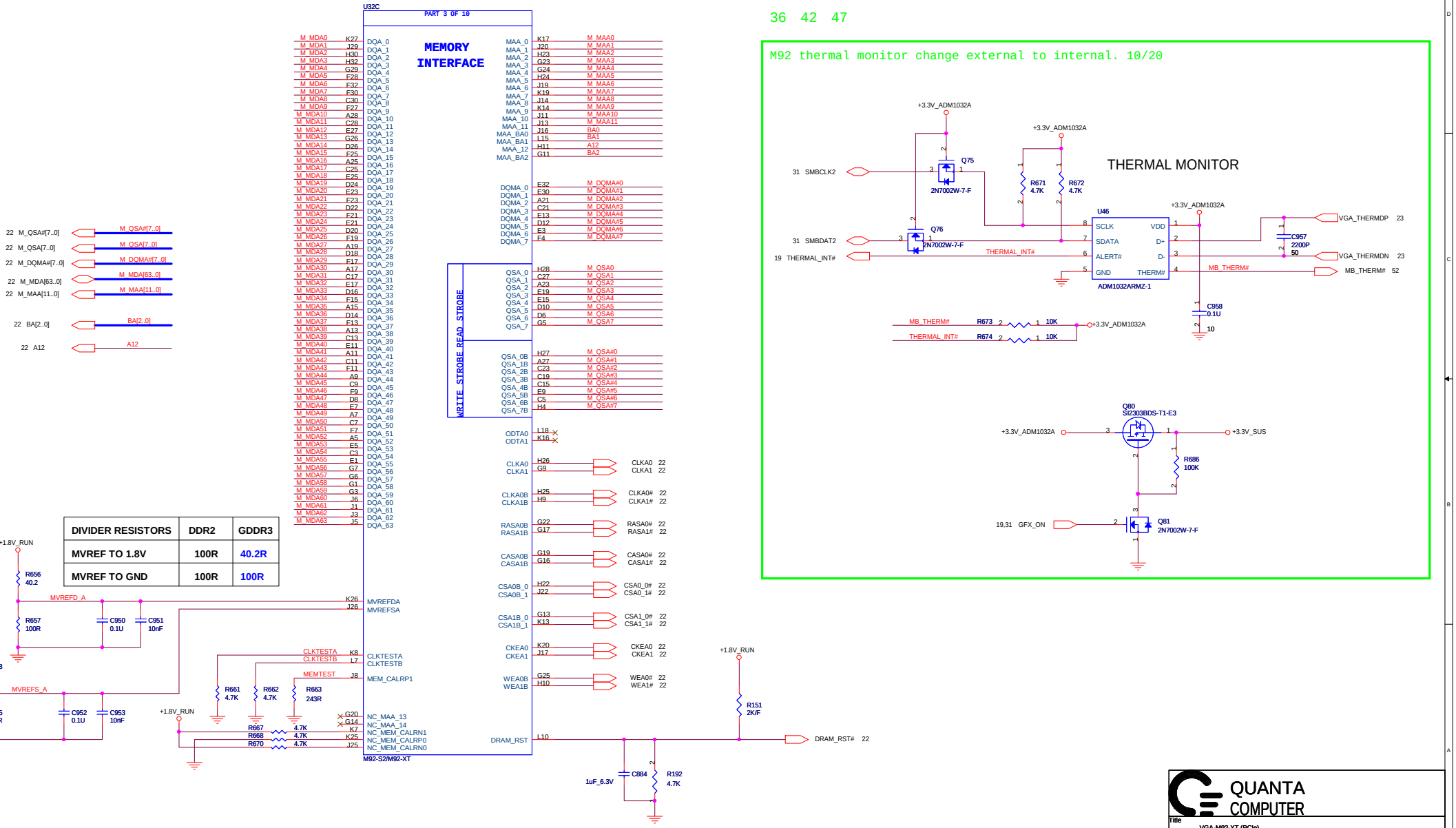
MEMORY INTERFACE



36 42 47

M92 thermal monitor change external to internal. 10/20

Title	VGA-M92-XT (PCIe)	
Size	Document Number FM8	Rev 2A
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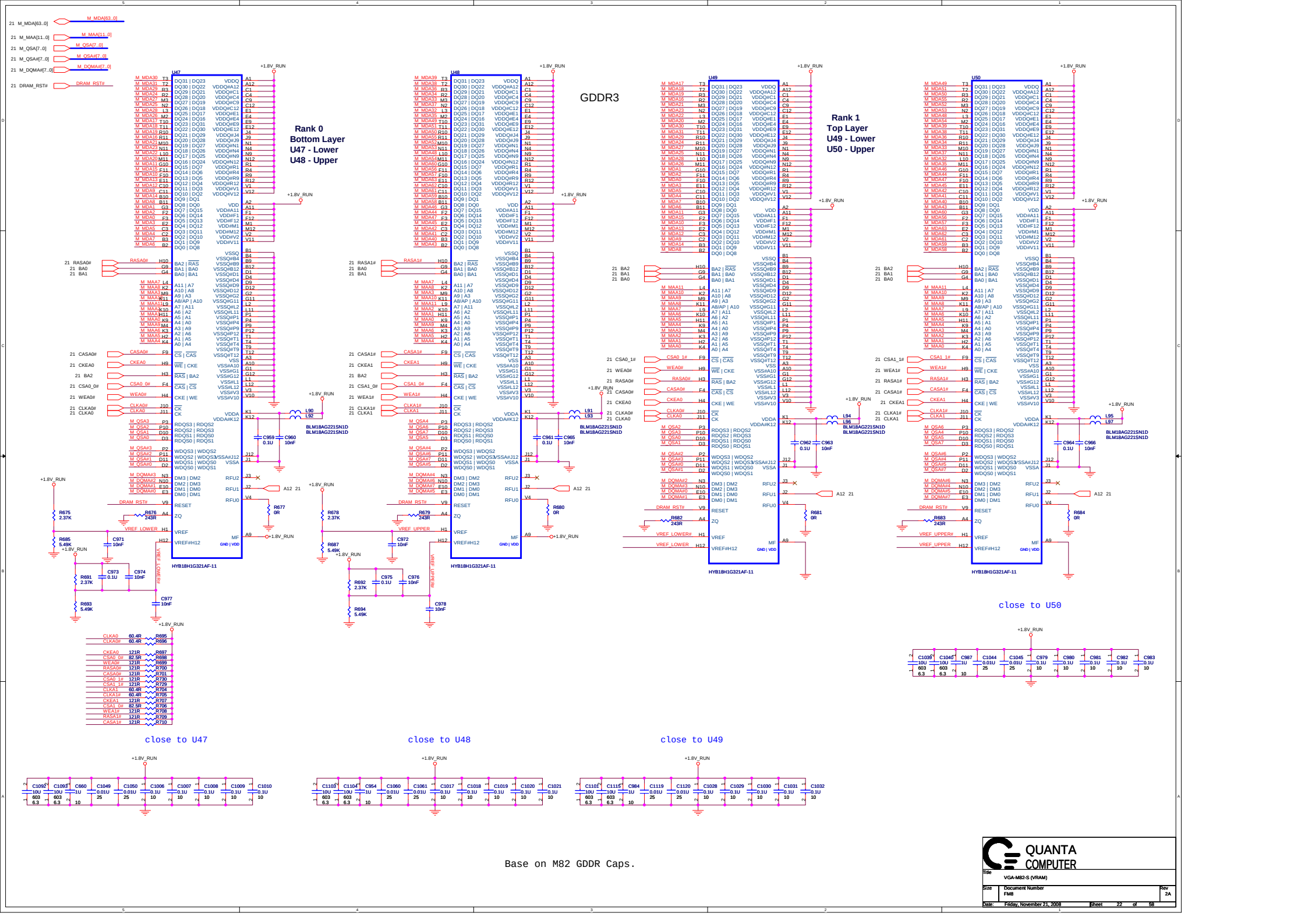
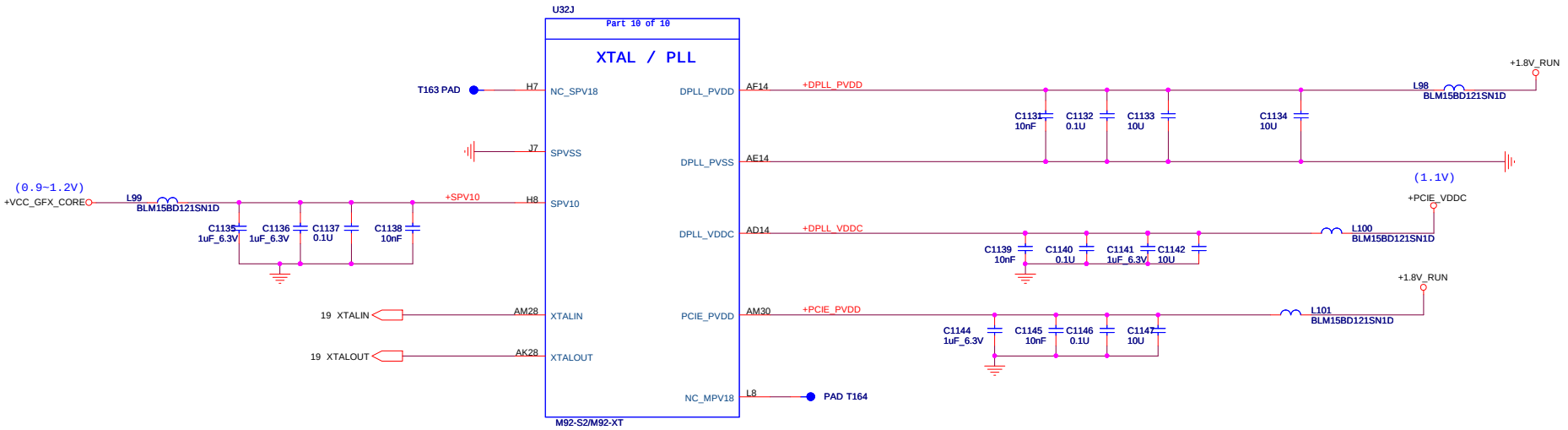
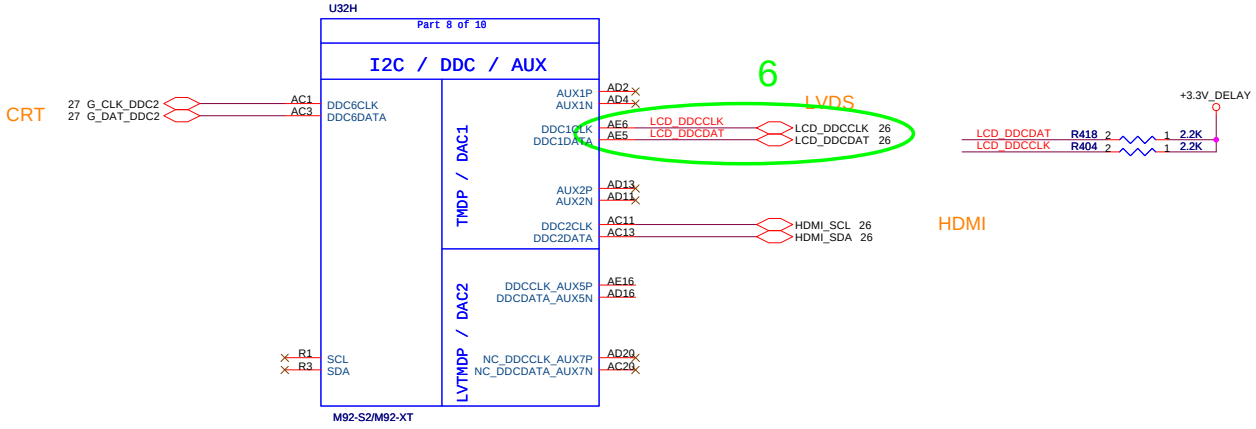
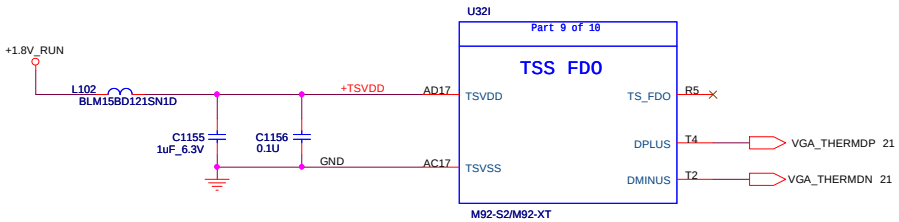
QUANTA COMPUTER


GDDR3
Rank 0
Bottom Layer
U47 - Lower
U48 - Upper
Rank 1
Top Layer
U49 - Lower
U50 - Upper
U47
U48
U49
U50
HYB18H1G321AF-11
BLM18AG221SN1D
close to U47
close to U48
close to U49
close to U50
Base on M82 GDDR Caps.
QUANTA COMPUTER
VGA-M82-S (VRAM)
Document Number FM8
Rev 2A
Friday, November 21, 2008
Sheet 22 of 58



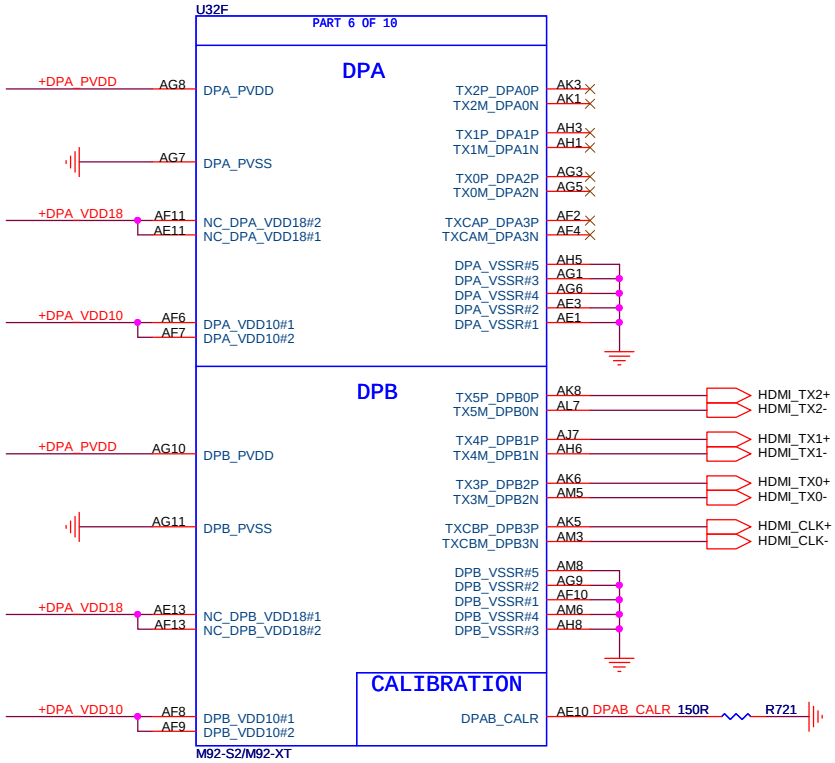


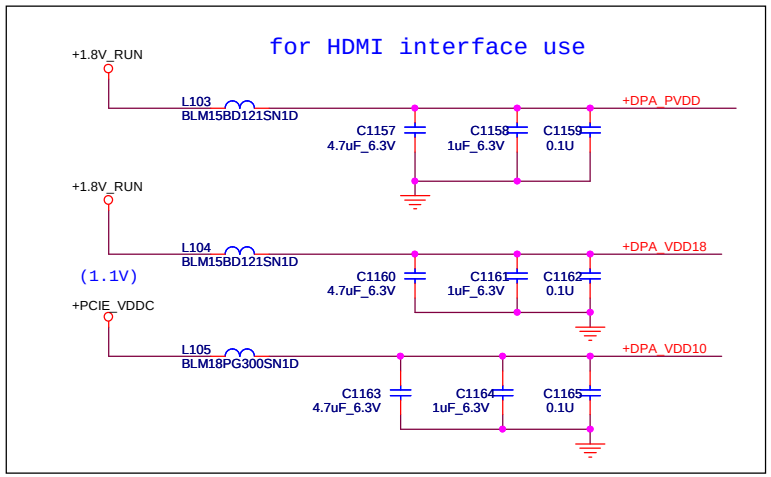


QUANTA COMPUTER

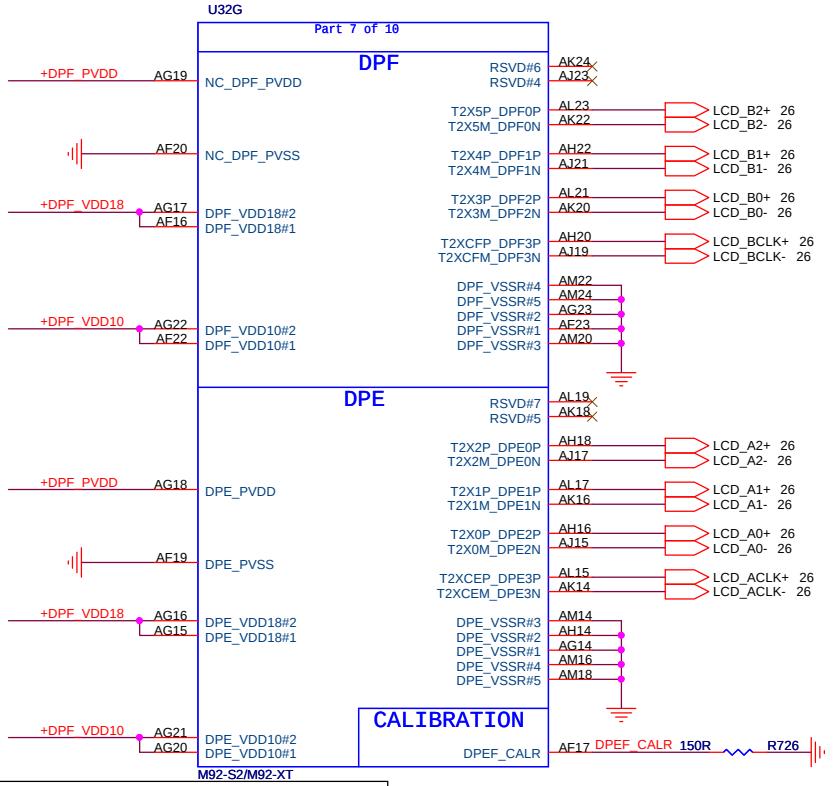
Title	VGA-M92-XT (PCIe)	
Size	Document Number FM8	Rev 2A
Date: Friday, November 21, 2008	Sheet 23 of 58	

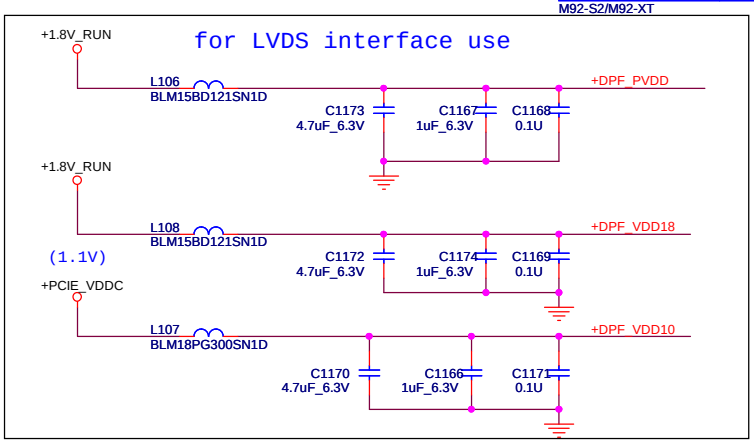
TMDP(HDMI) INTERFACE





LVDS INTERFACE





QUANTA COMPUTER

Title	VGA-M92-XT (PCIe)	
Size	Document Number FM8	Rev 2A
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QUANTA COMPUTER

Title	VGA-M82-S (PCIe)	
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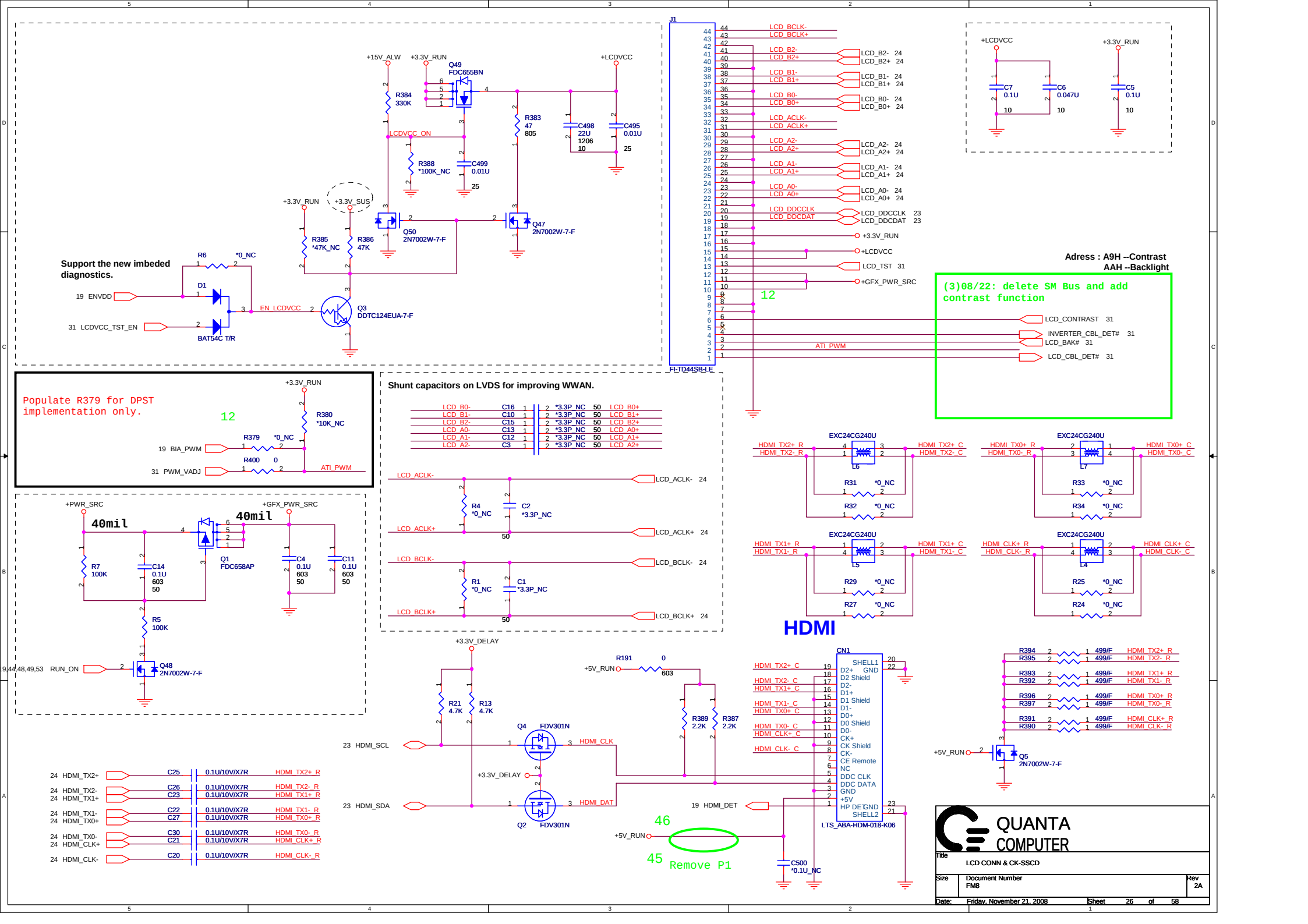
Support the new imbeded diagnostics.
Q49 FDC655BN
Q50 2N7002W-7-F
Q47 2N7002W-7-F
Q3 DDTC124EUA-7-F
D1 BAT54C T/R
J1 FI-TD44SB-LE
Adress : A9H --Contrast
AAH --Backlight
(3)08/22: delete SM Bus and add contrast function
Populate R379 for DPST implementation only.
Shunt capacitors on LVDS for improving WWAN.
HDMI
Q1 FDC658AP
Q48 2N7002W-7-F
Q4 FDV301N
Q2 FDV301N
Q5 2N7002W-7-F
CN1 LTS_ABA-HDM-018-K06
Remove P1
QUANTA COMPUTER
LCD CONN & CK-SSCD
Document Number FM8
Rev 2A
Friday, November 21, 2008
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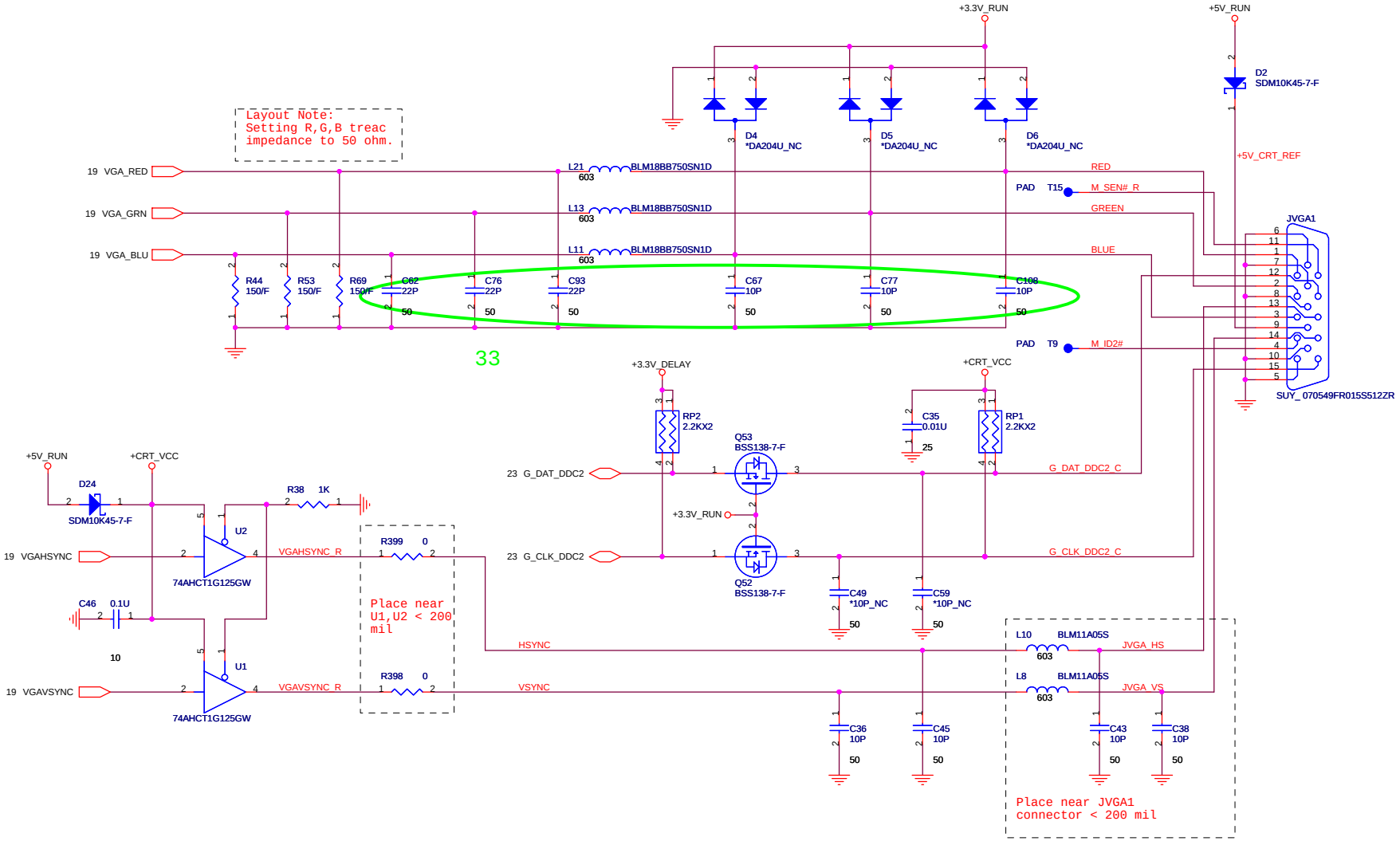
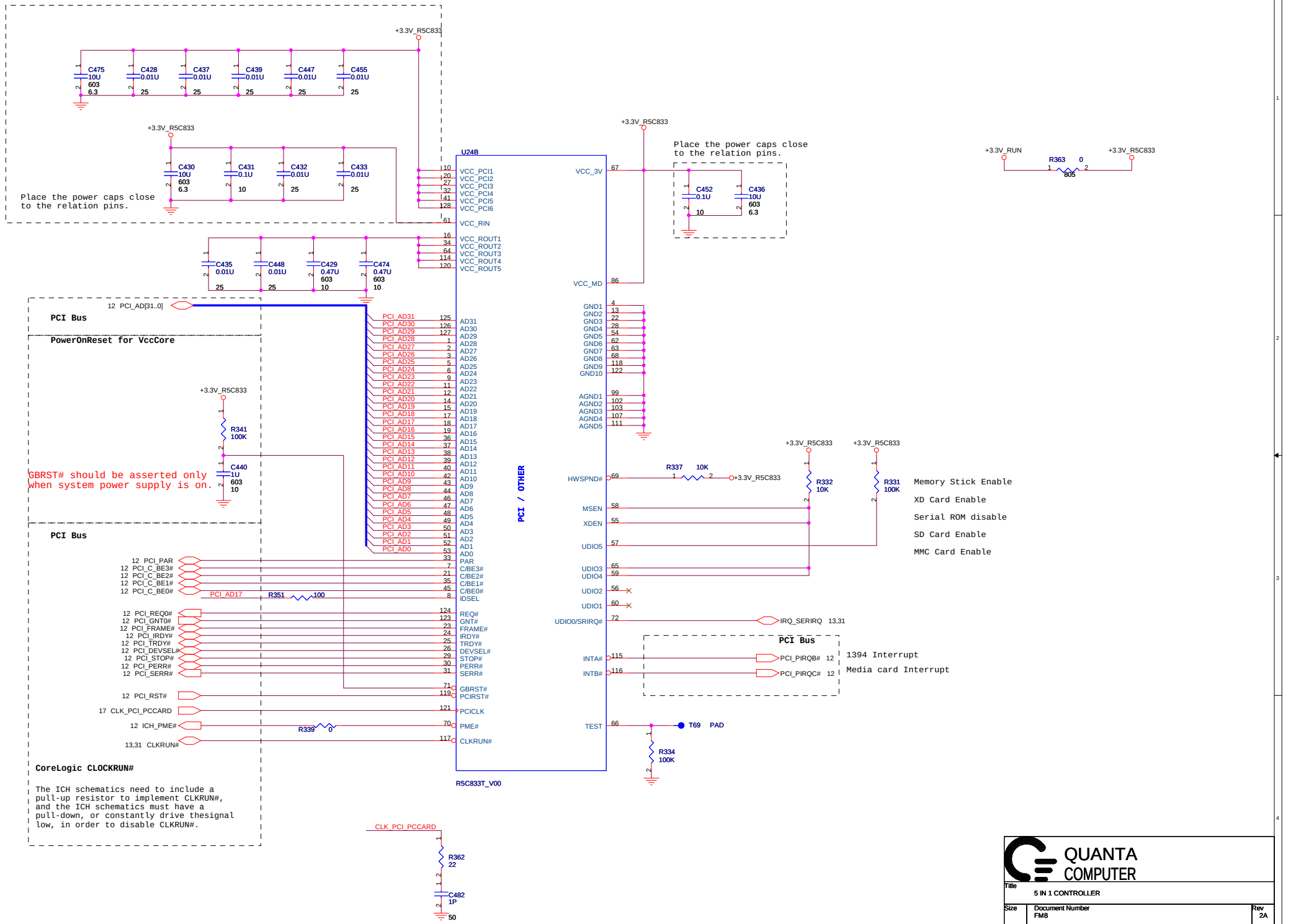
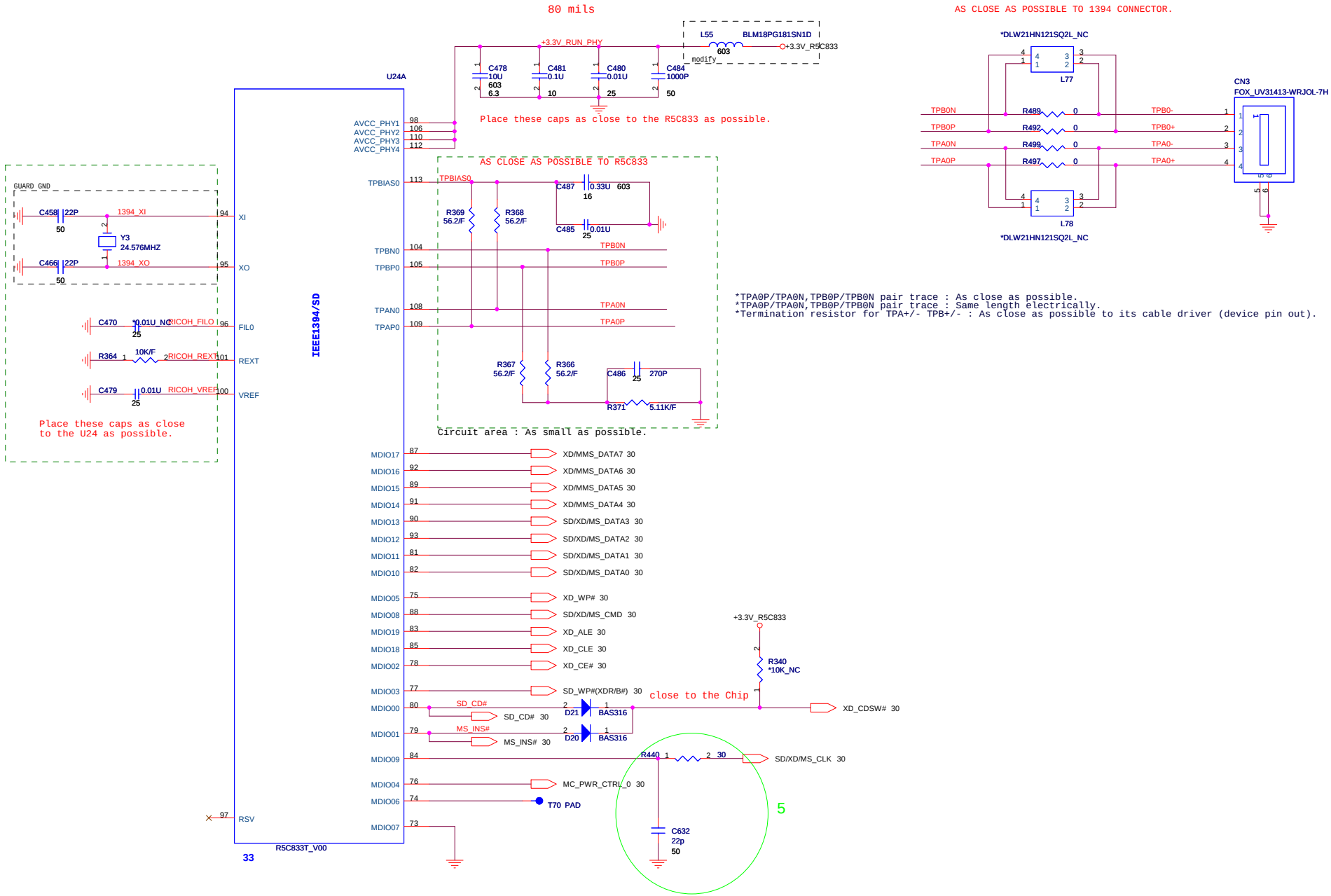


QUANTA COMPUTER

Title	CRT&TV CONN	
Size	Document Number FM8	Rev 2A
Date: Friday, November 21, 2008	Sheet 27 of 58	



Title	5 IN 1 CONTROLLER	
Size	Document Number FM8	Rev 2A
Date: Friday, November 21, 2008	Sheet 28 of 58	



Title	IEEE 1394		
Size	Document Number FM8		Rev 2A
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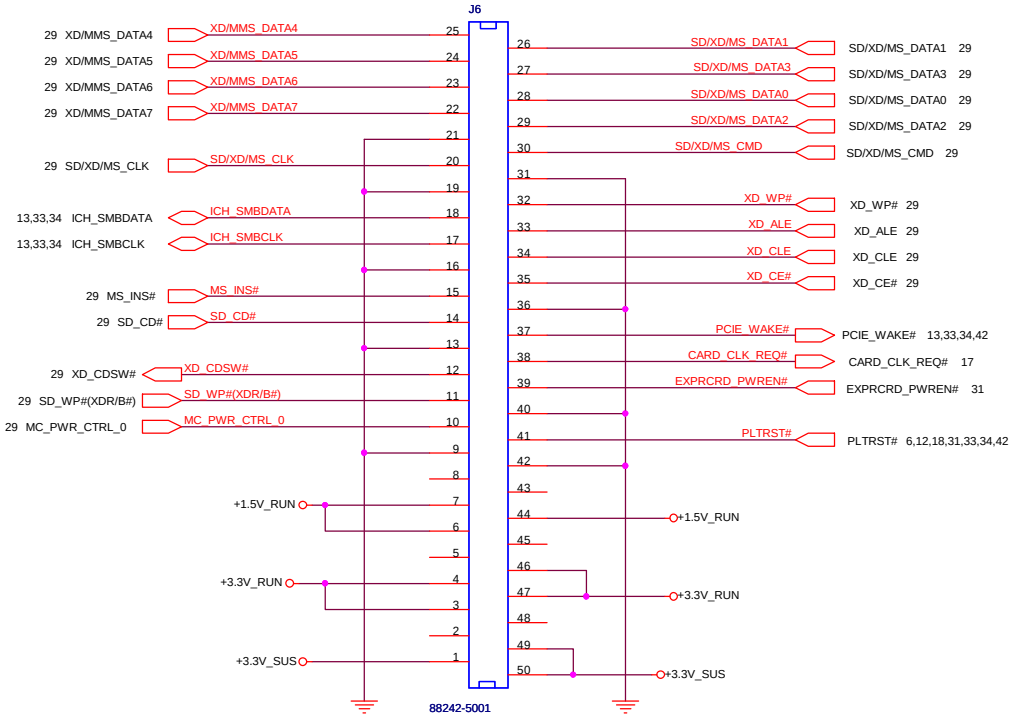
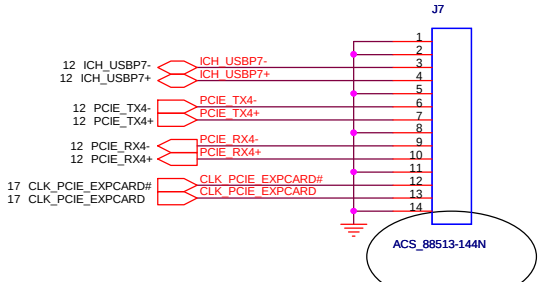
Express Card/CARD READER





8/28:change PN to 88513-144N

QUANTA COMPUTER

Title	ExpressCard/SmartCard	
Size	Document Number FM8	Rev 2A
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ITE8512E LQFP-128L

Place these caps close to ITE8512.

Charge and BAT

CLK, LCD and Thermal

G_Thermal and Media button

KEYBOARD

ADC/DAC

PWM

LPC

IR/UART

SMBUS

LPC/FWH FLASH

EGPC

PS/2

GPIO

(3)08/22: delete SM Bus and add contrast function

Board ID Straps

Discrete

UMA

VGA_IDENTIFY

BID0

CHIPSET_ID1	BID1	USB_BACK_EN#	FM6B(UMA)	FM6 (Dis)
0	0	0	SSI (X00)	SSI (X00)
0	0	1	PT (X01)	PT (X01)
0	1	0	ST (X02)	ST (X02)
0	1	1	QT (A00)	QT (A00)
0	0	0	(A01)	(A01)
0	0	1		

32KHz Clock.

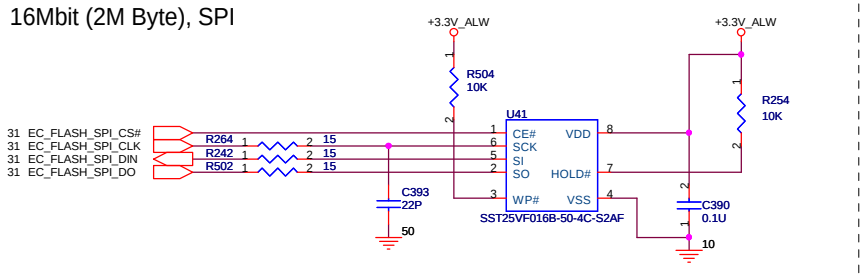
QUANTA COMPUTER

Title: Ultra I/O Controller ECE5028

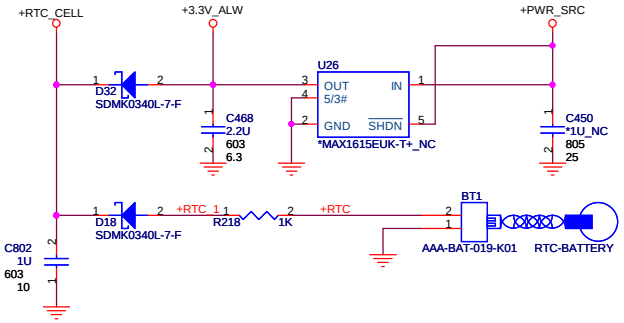
Size: | Document Number: FM8 | Rev: 2A

Date: Friday, November 21, 2008 | Sheet 31 of 58

16Mbit (2M Byte), SPI

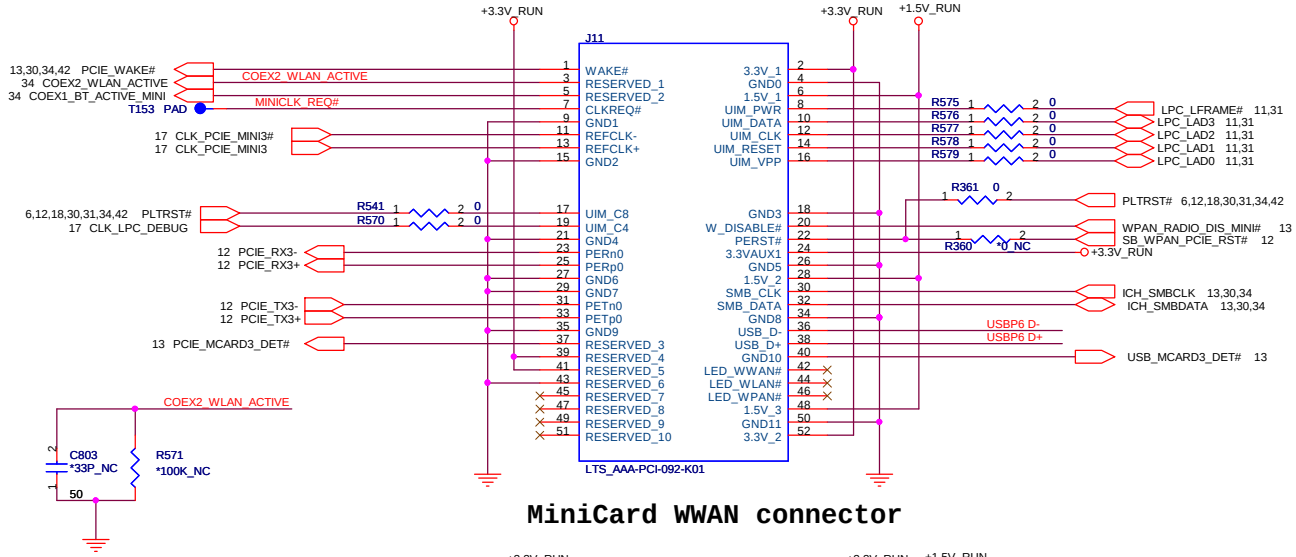


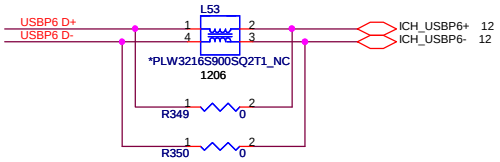
RTC BATTERY

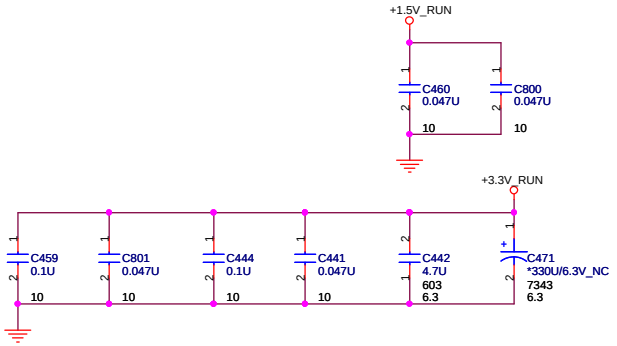


QUANTA COMPUTER		
Title: Ultra I/O Controller ECE5028		
Size	Document Number: FM8	Rev: 2A
Date: Friday, November 21, 2008	Sheet 32 of 58	

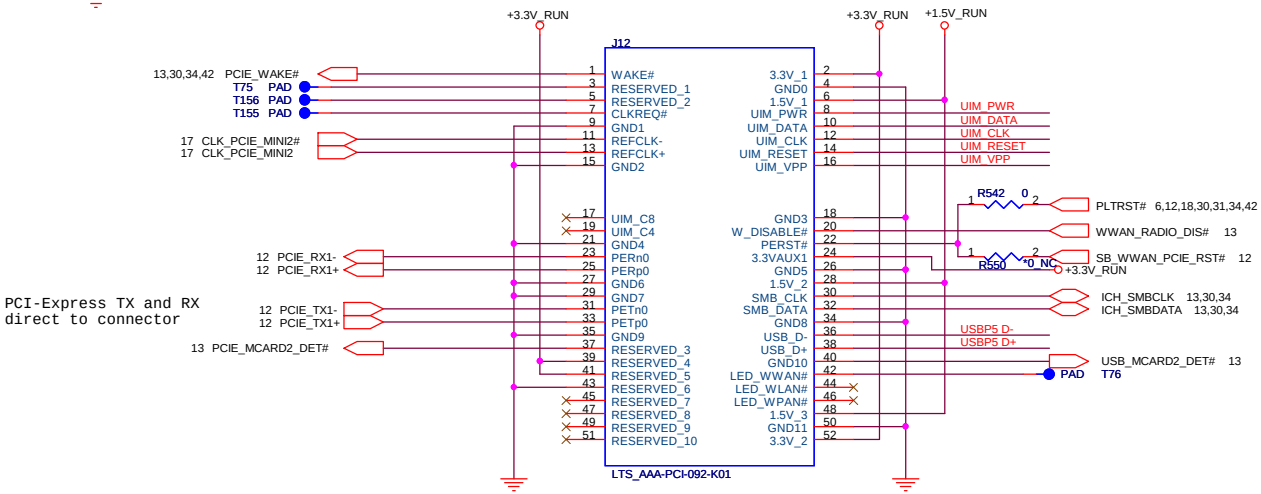
MiniCard Robson, BT. UWB connector

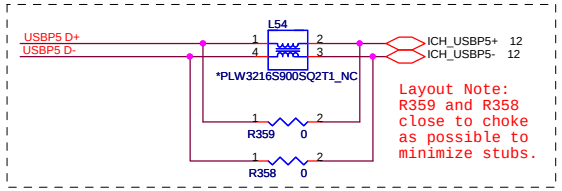


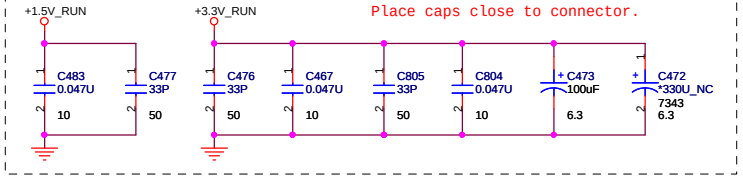


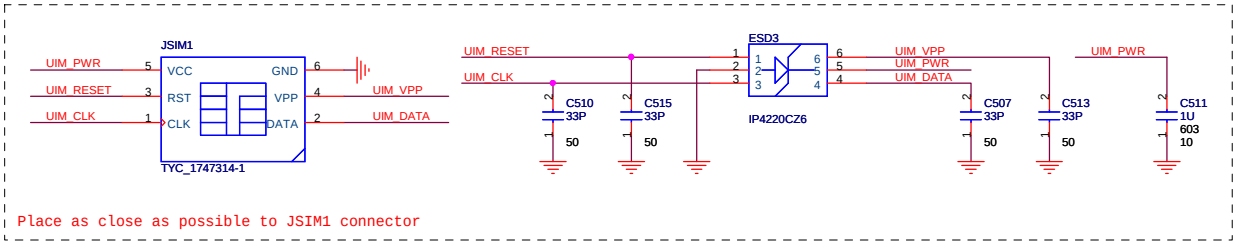


MiniCard WWAN connector









QUANTA COMPUTER		
Title: MINI-PCI		
Size	Document Number: FM8	Rev: 2A
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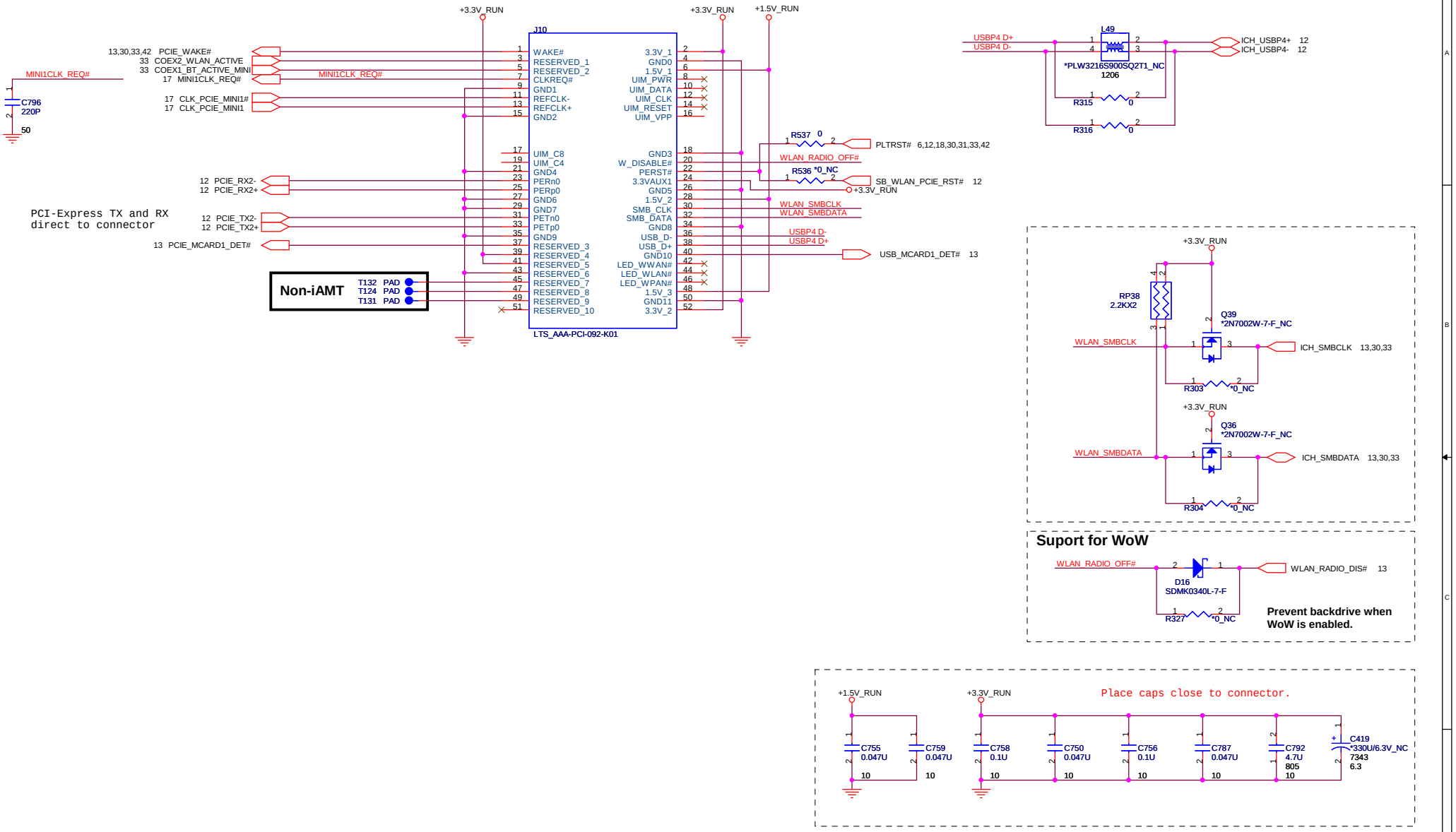
MiniCard WLAN connector



QUANTA COMPUTER

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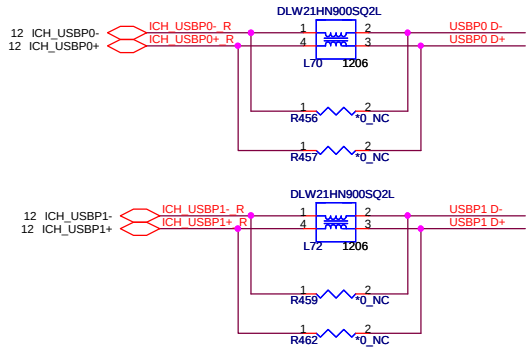
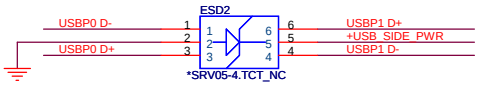
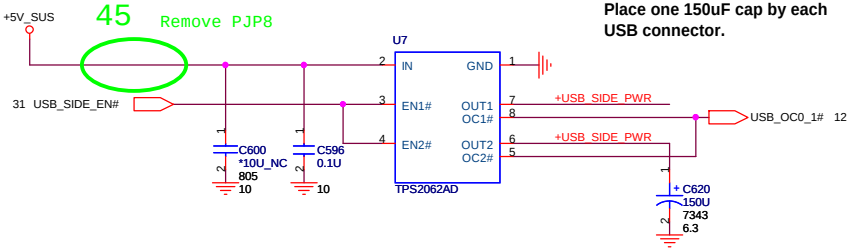
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



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

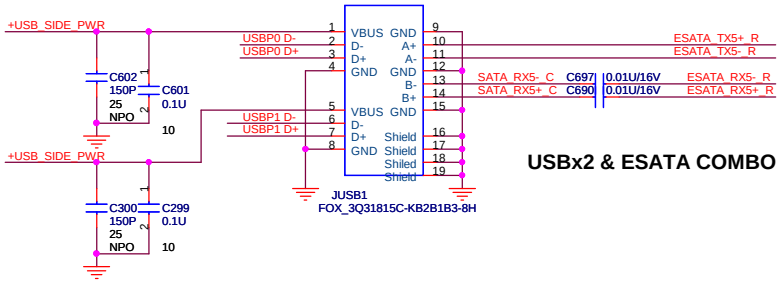
Place ESD diodes as close as USB connector.





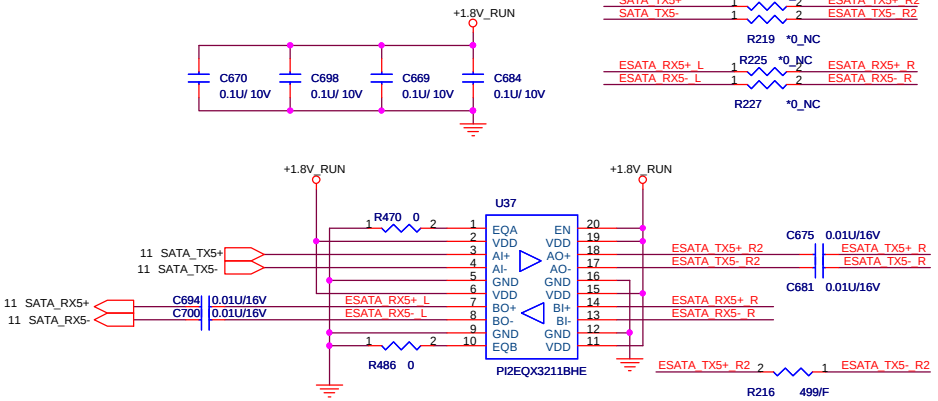
Place one 150uF cap by each USB connector.

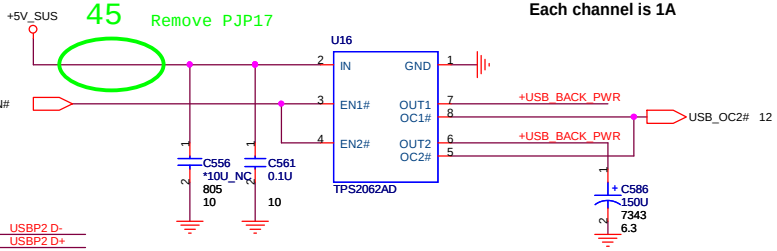
Side External USBX2



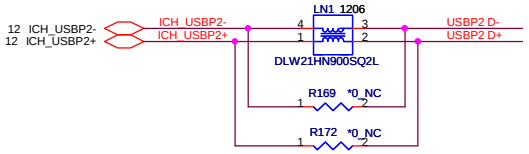
USBx2 & ESATA COMBO

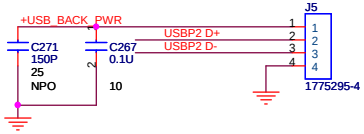
E-SATA Re-driver



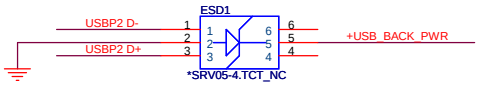


Each channel is 1A





Place ESD diodes as close as USB connector.



QUANTA COMPUTER

Title	SERIAL PORT & USB	
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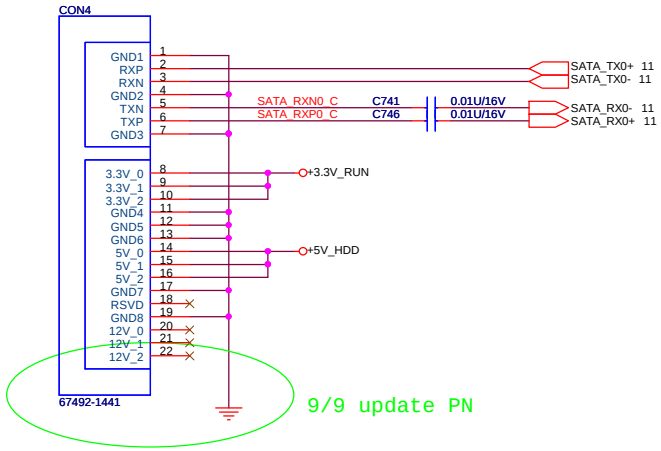
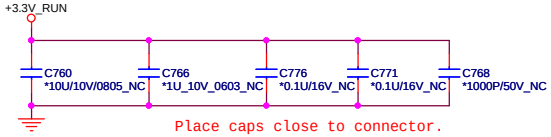
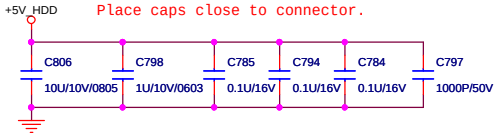
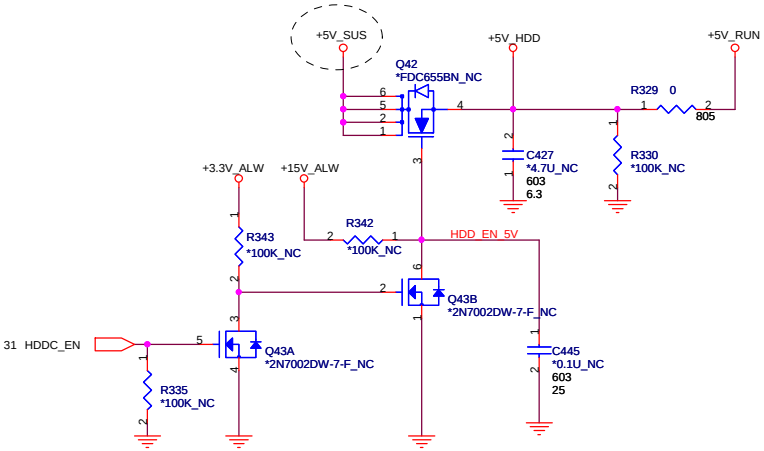
SATA Connector.

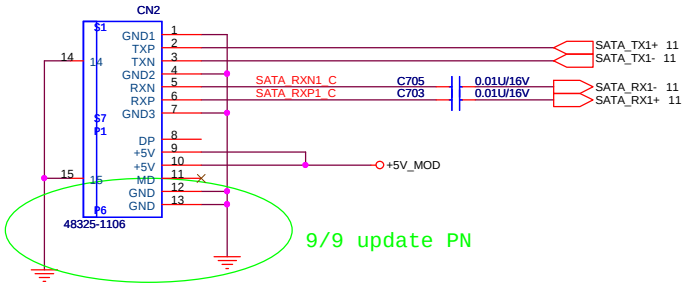


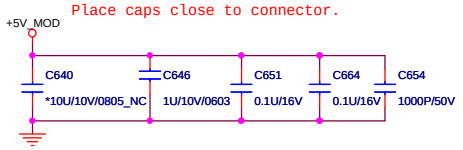


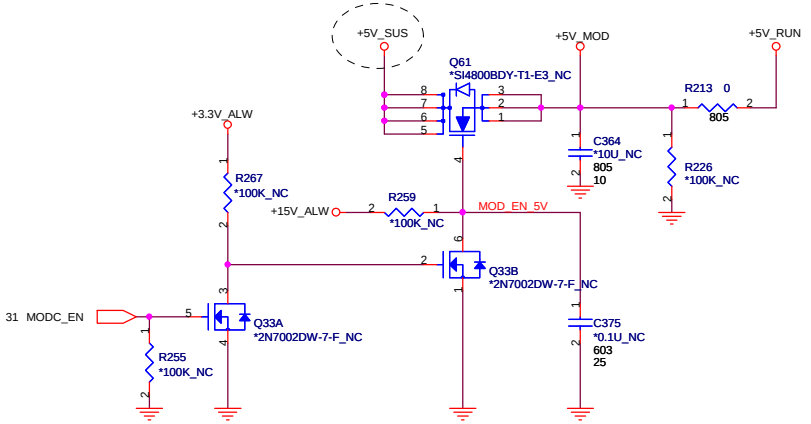




ODD Connector







QUANTA COMPUTER

Title	SATA (HDD&CD_ROM)	
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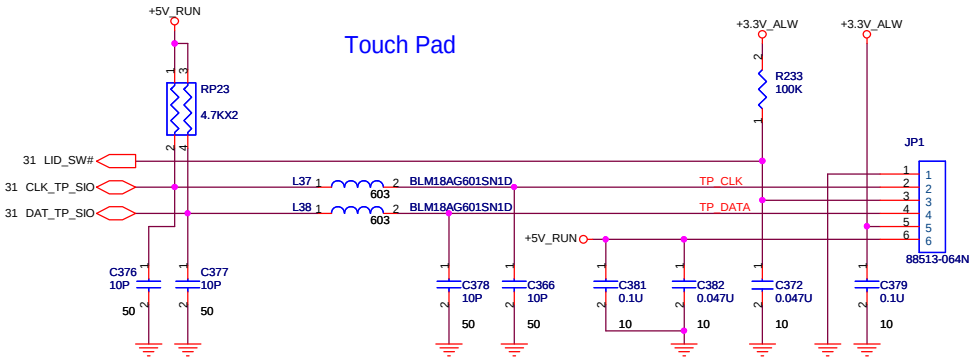
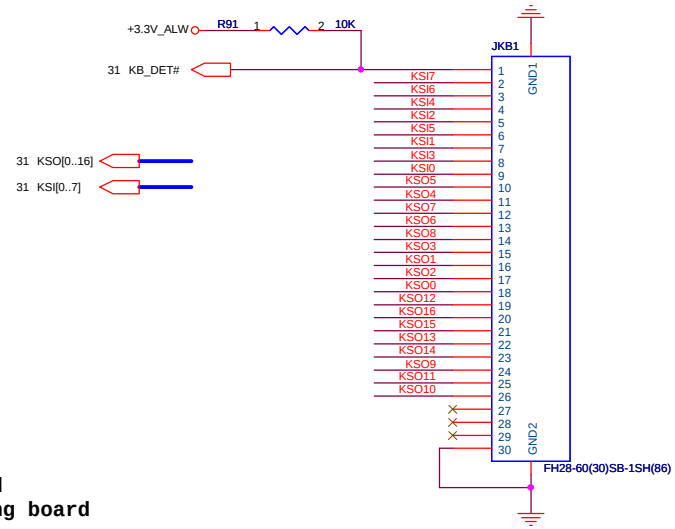
Touch Pad

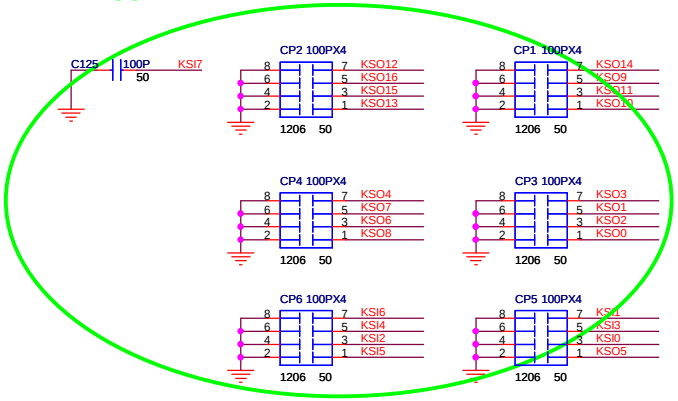


KEYBOARD CONNECTOR



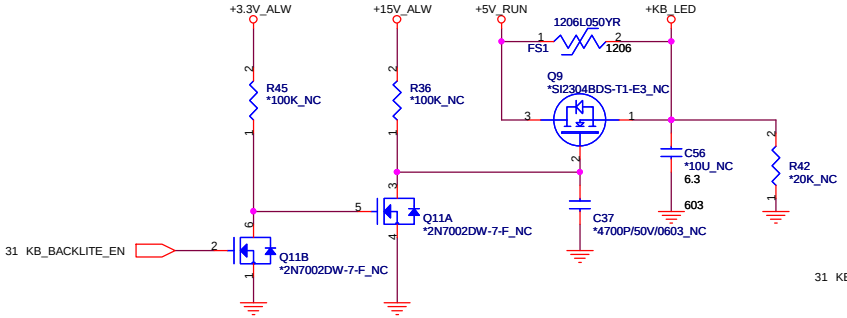
08-05 add
For running board

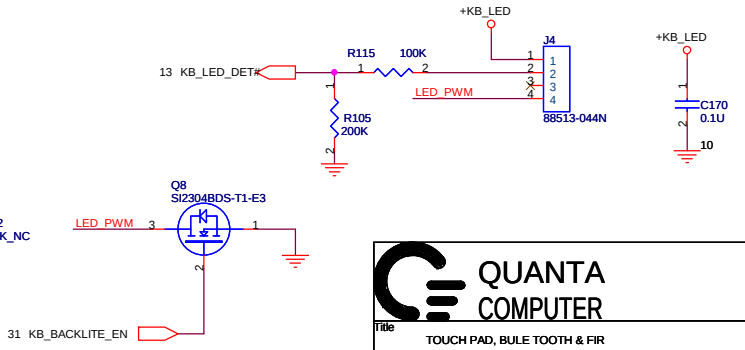
33



100P CAPS CLOSE TO JKB1

Key board Illumination





QUANTA COMPUTER

Title	TOUCH PAD, BULE TOOTH & FIR	
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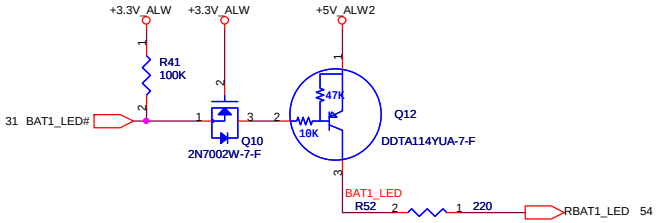
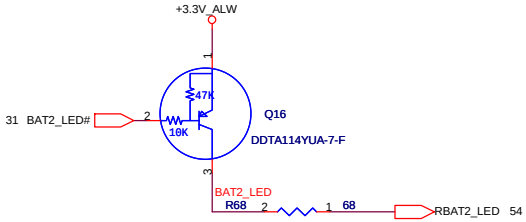
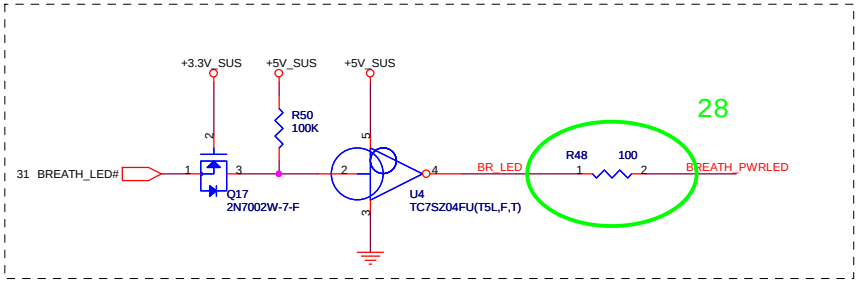
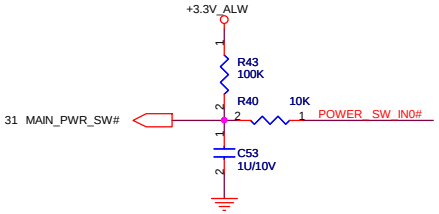
Battery status.

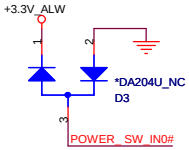




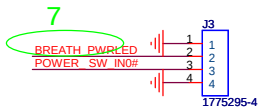


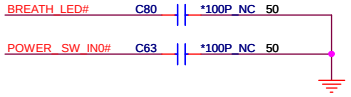
Power Switch





Power button cable





QUANTA COMPUTER

Title	SWITCH, KEYBOARD & LED	
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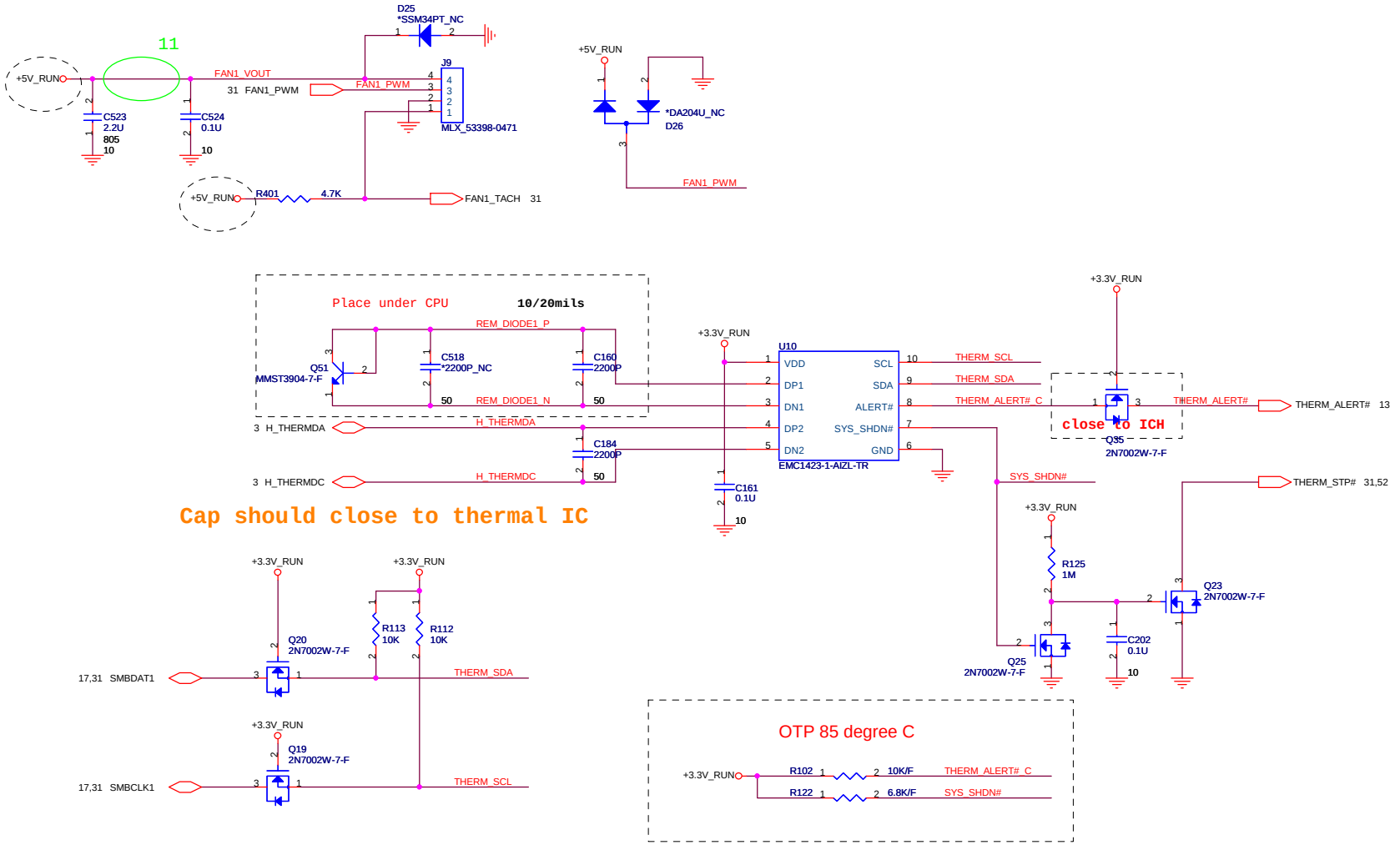

QUANTA COMPUTER

Title	FAN & THERMAL	
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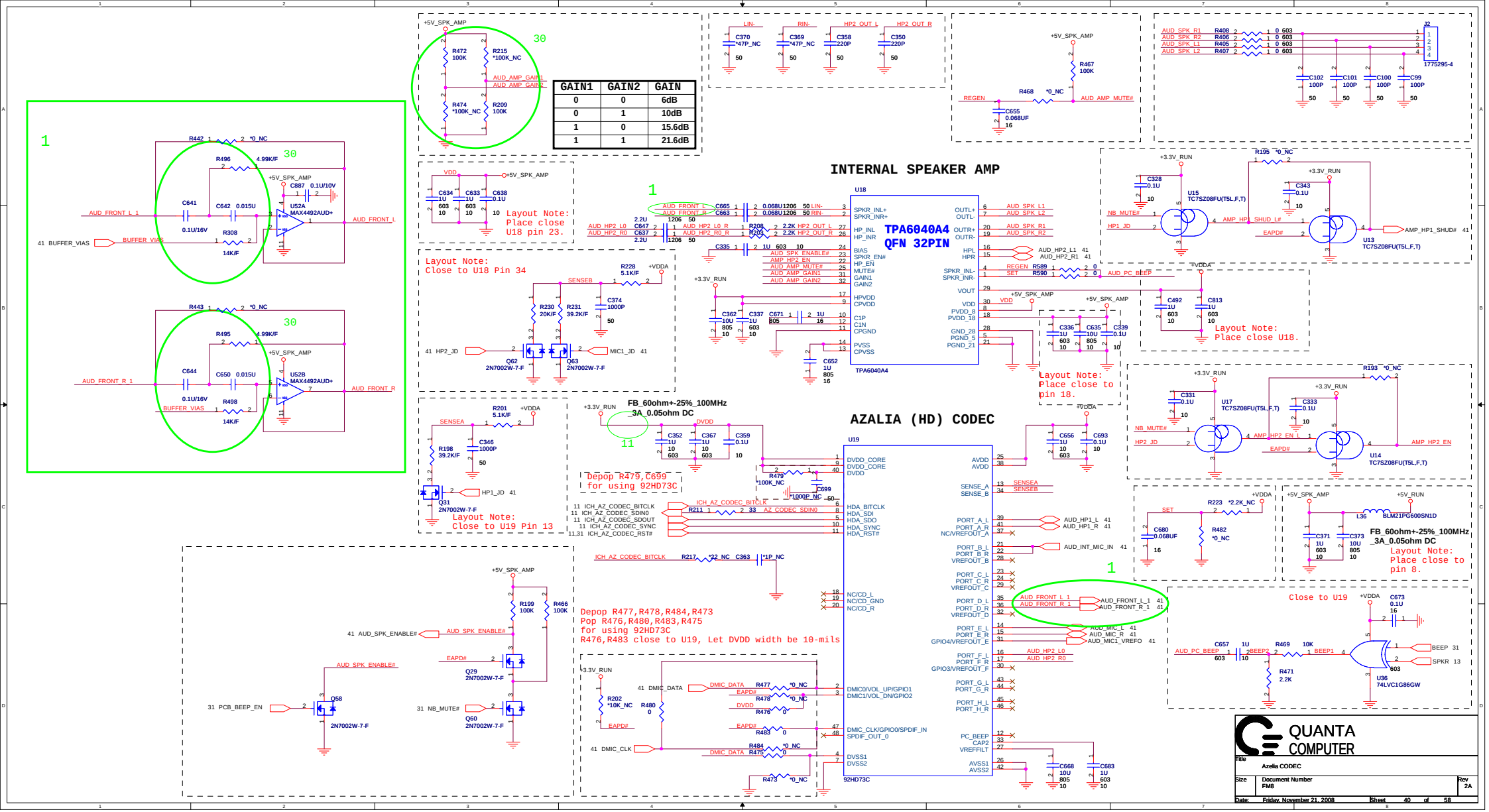
INTERNAL SPEAKER AMP
TPA6040A4
QFN 32PIN
AZALIA (HD) CODEC
92HD73C
GAIN1 GAIN2 GAIN
0 0 6dB
0 1 10dB
1 0 15.6dB
1 1 21.6dB
Layout Note: Place close U18 pin 23.
Layout Note: Close to U18 Pin 34
Layout Note: Close to U19 Pin 13
Layout Note: Place close to pin 18.
Layout Note: Place close U18.
Depop R479,C699 for using 92HD73C
Depop R477,R478,R484,R473 Pop R476,R480,R483,R475 for using 92HD73C R476,R483 close to U19, Let DVDD width be 10-mils
FB_60ohm+-25%_100MHz 3A_0.05ohm DC
Close to U19
QUANTA COMPUTER
Azelia CODEC
Document Number FMB
Rev 2A
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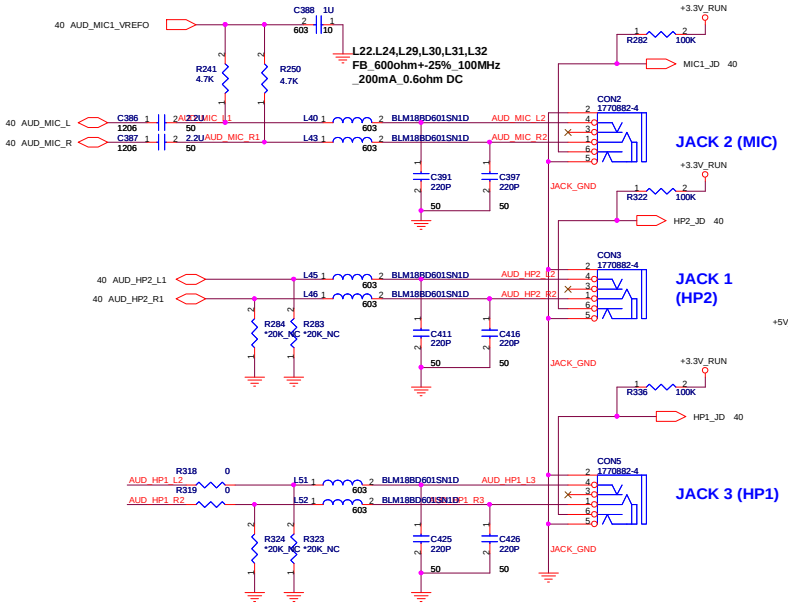
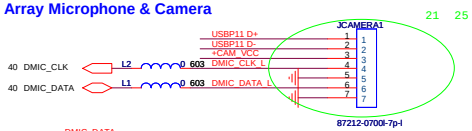
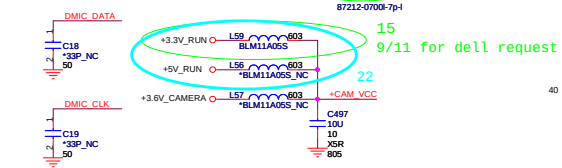
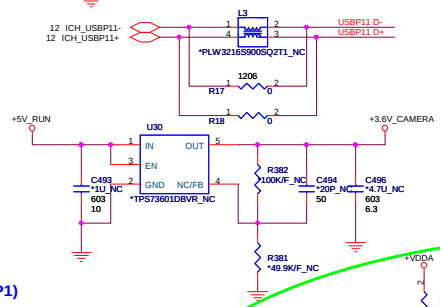
Headphone Jack
Stereo MIC Jack

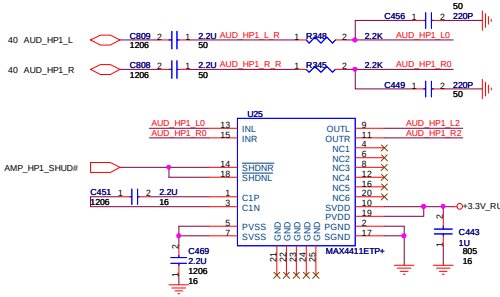


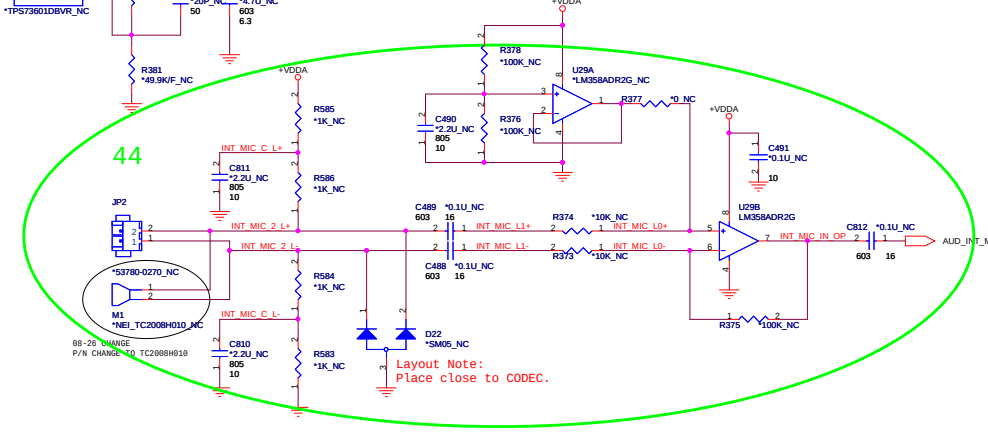
Array Microphone & Camera







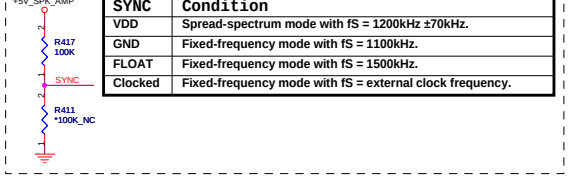


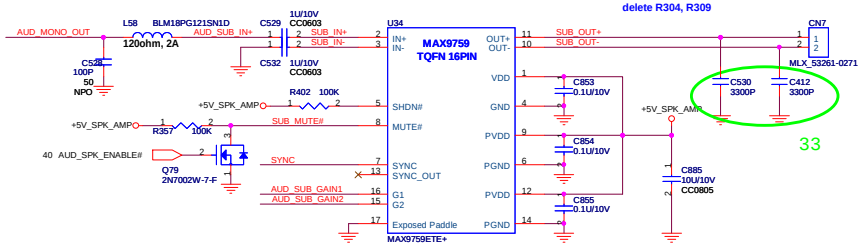


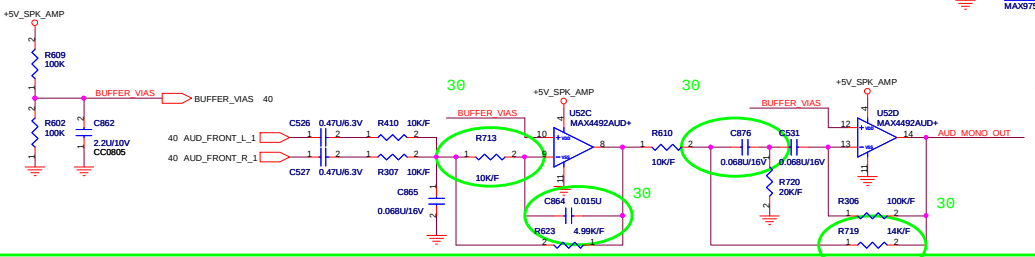
1

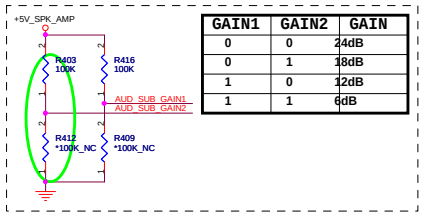
INTERNAL SUBWOOFER AMP

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









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

QUANTA COMPUTER

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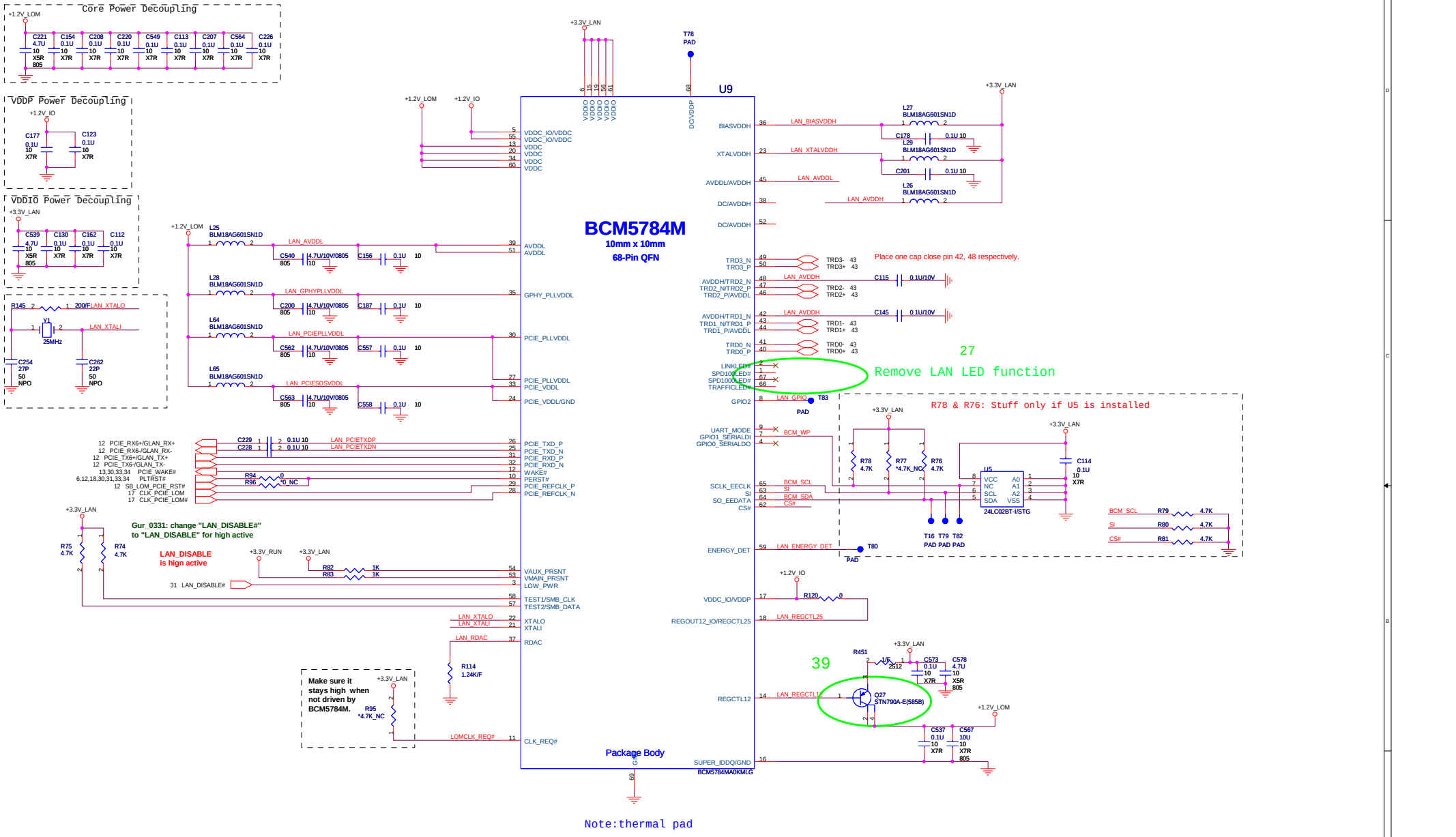

Title	LAN
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RJ-45 Connector

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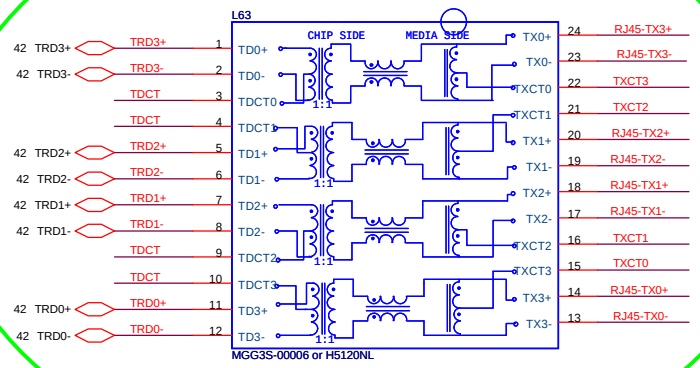
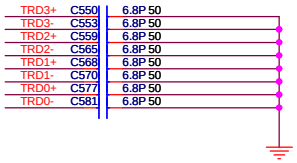
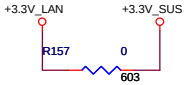
TRANSFORM







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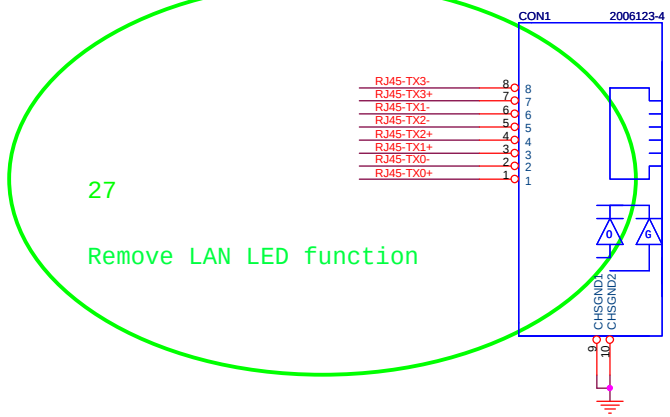
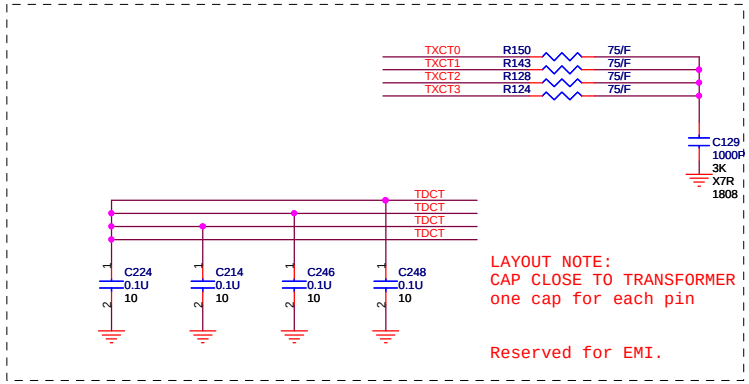
Remove LAN LED function





QUANTA COMPUTER

Title	LAN SWITCH		
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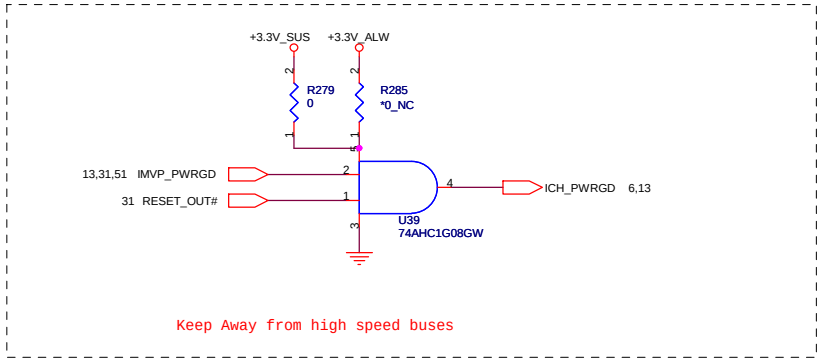

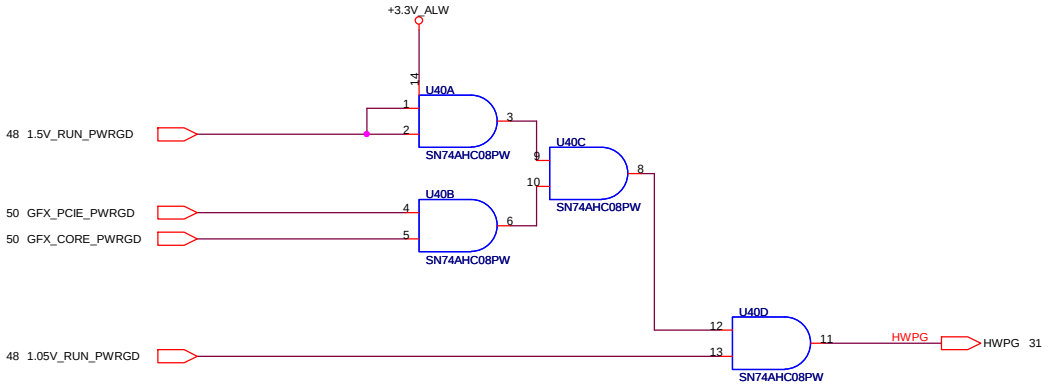

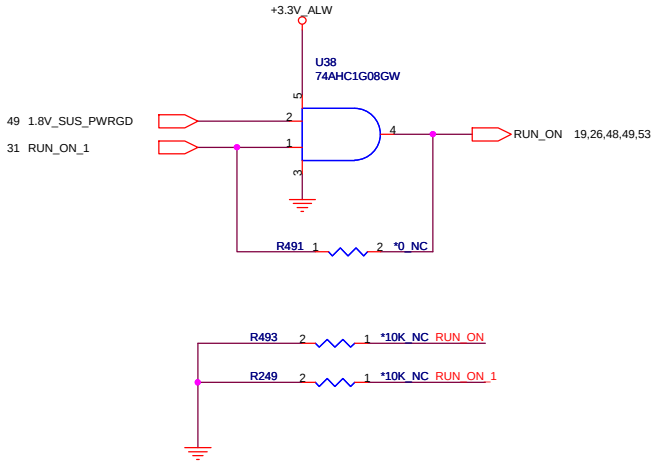

QUANTA COMPUTER

Title	System Reset Circuit	
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QUANTA COMPUTER

Title	Battery Selector	
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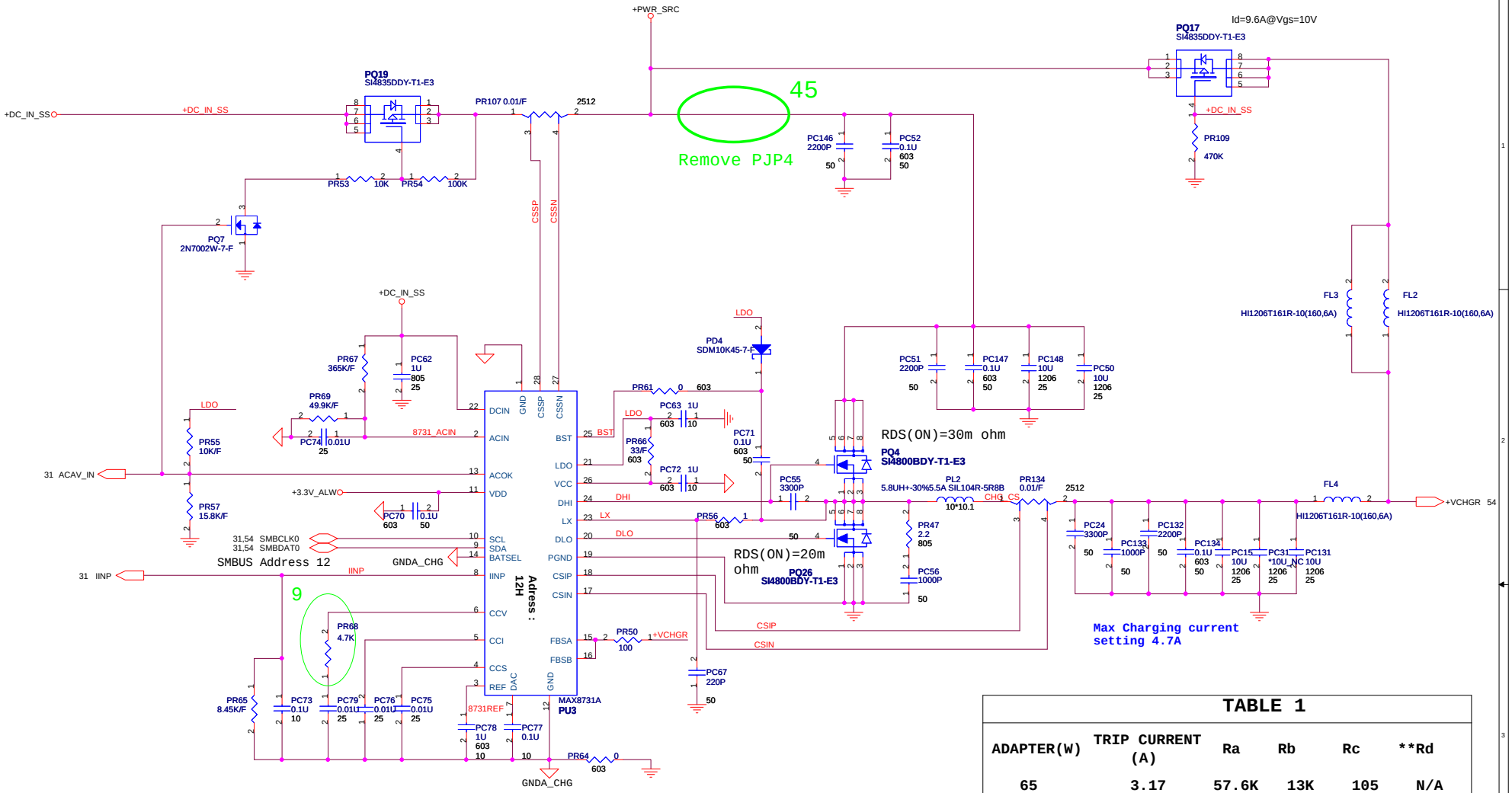

TABLE 1					
ADAPTER(W)	TRIP CURRENT (A)	Ra	Rb	Rc	**Rd
65	3.17	57.6K	13K	105	N/A
90	4.43	51.1K	17.8K	348	33.2K
130	6.43	32.4K	20.5K	100	27.4K
150	7.43	30.9K	24.9K	432	88.7K
200	9.75	19.1K	28K	301	36.5K
230	11.28 (see note3)	32.4K	6.49K	115	N/A

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

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

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

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Title	Charger (ISL88731)	
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Title		
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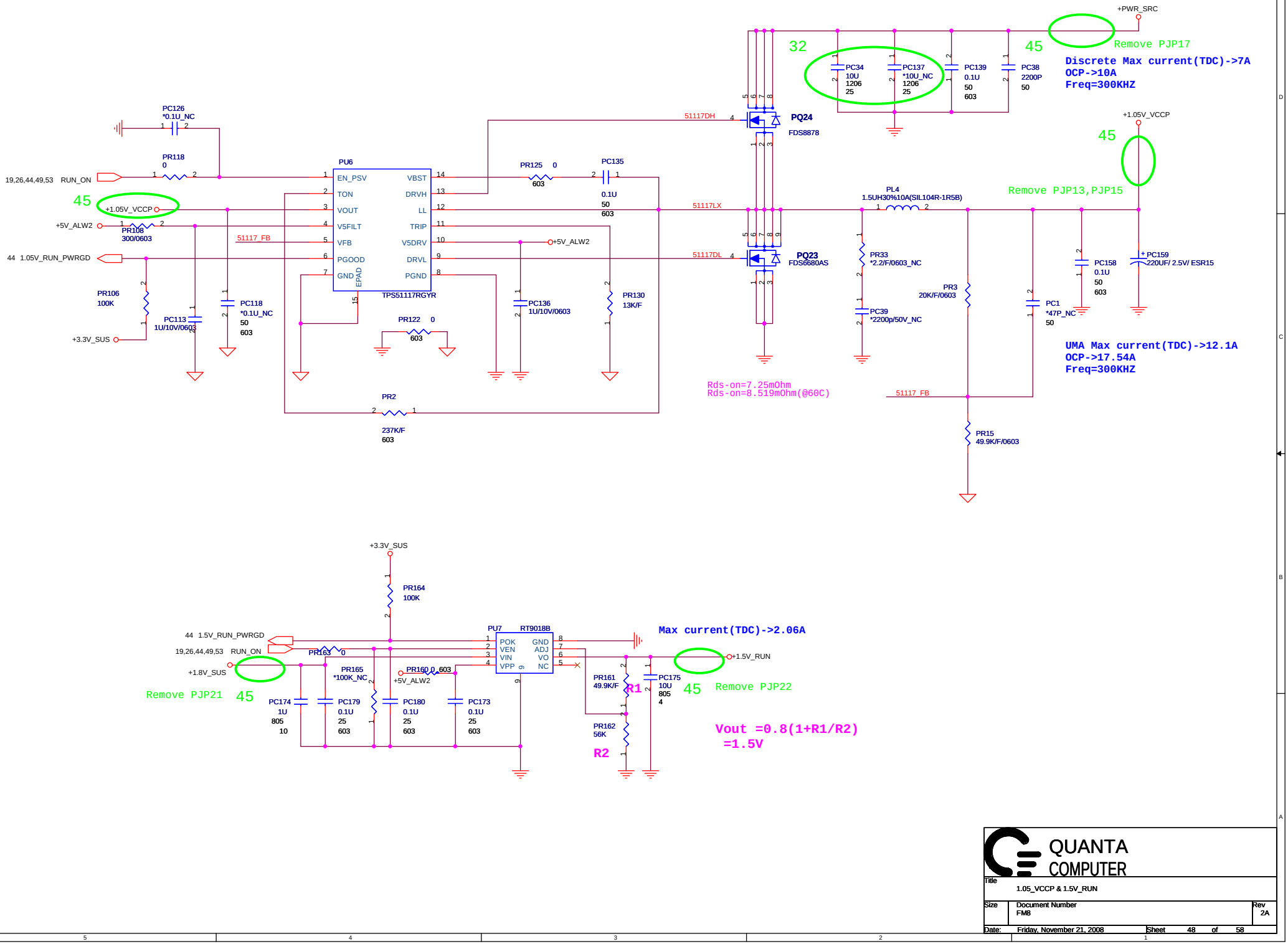

Title	1.05_VCCP & 1.5V_RUN		
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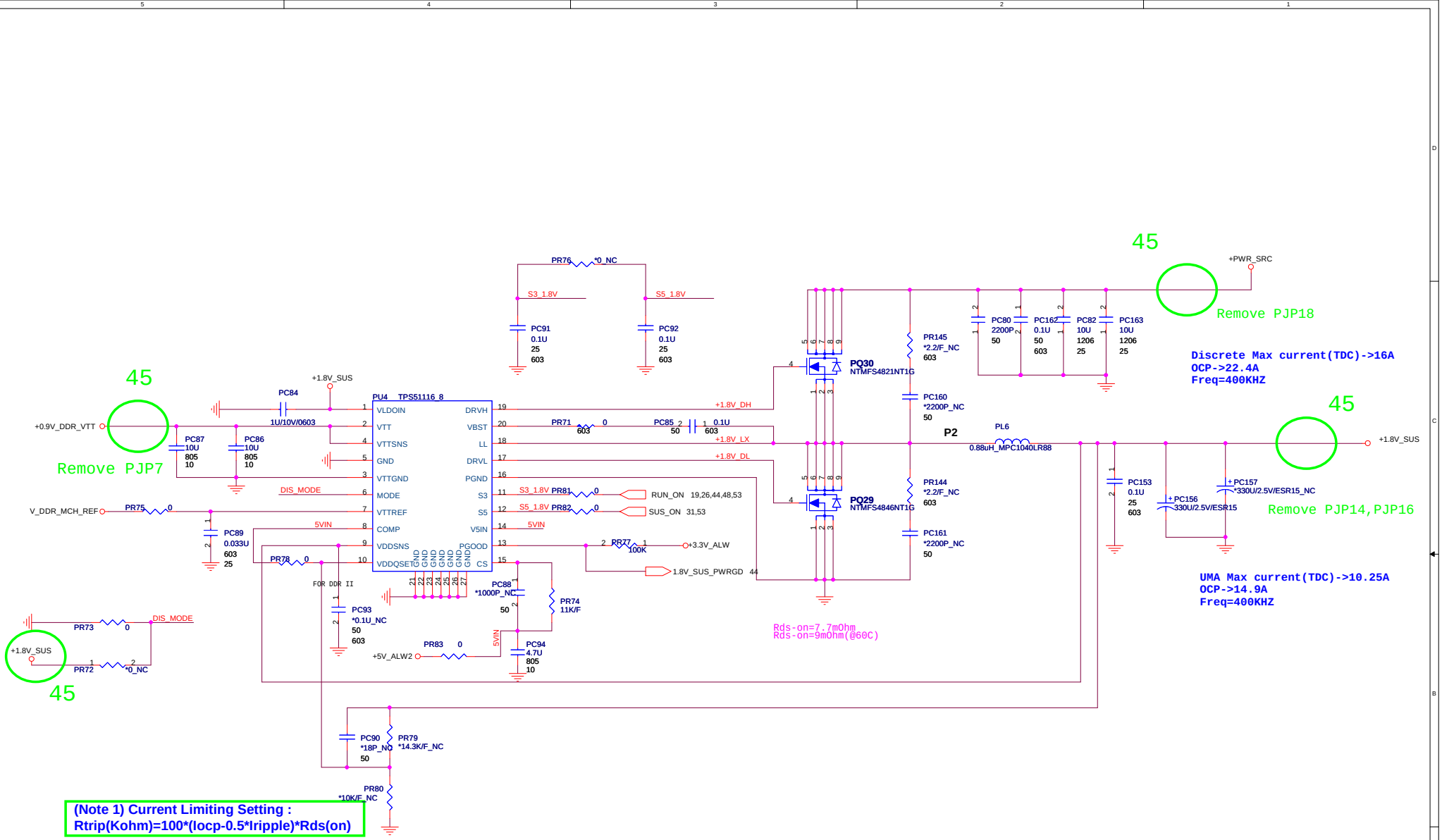

QUANTA COMPUTER		
Title	1.8VSUS & 0.9VTT (TPS51116)	
Size	Document Number FM8	Rev 2A
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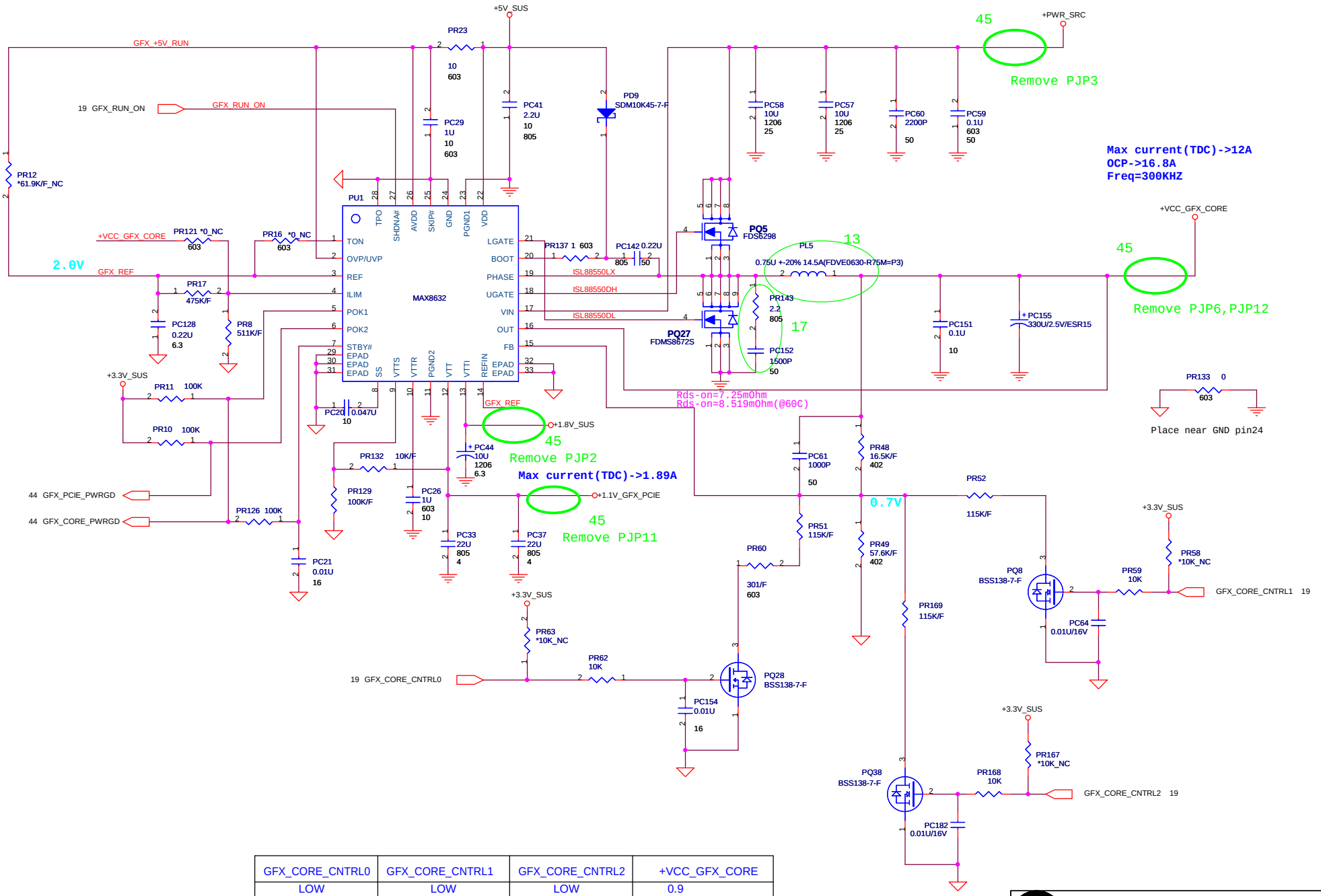

GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	GFX_CORE_CNTRL2	+VCC_GFX_CORE
LOW	LOW	LOW	0.9
HIGH	LOW	LOW	1.0V
HIGH	HIGH	LOW	1.1V
HIGH	HIGH	HIGH	1.2V

QUANTA COMPUTER

Title	VGA DC/DC	
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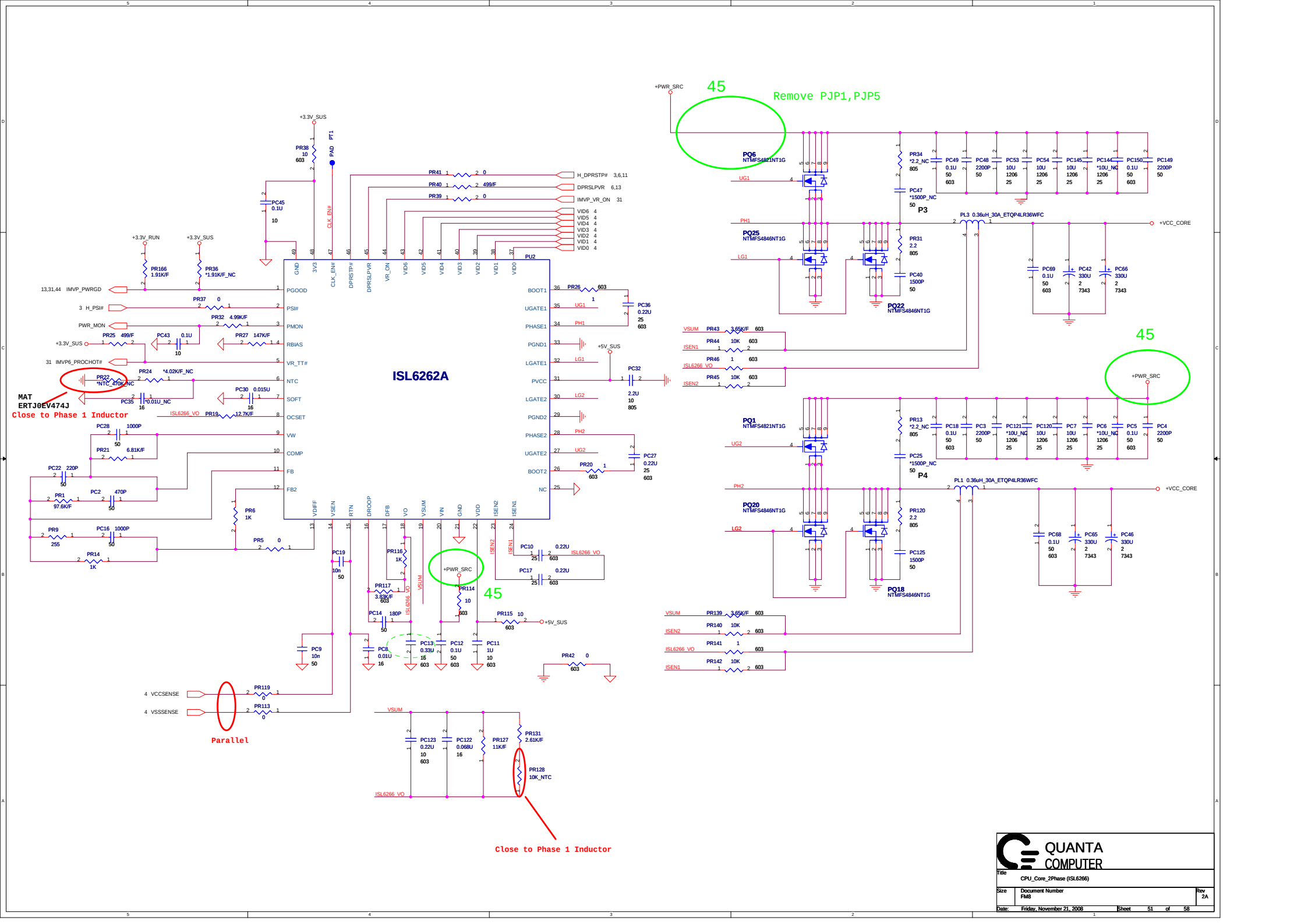

Title	CPU_Core_2Phase (ISL6266)		
Size	Document Number FM8		Rev 2A
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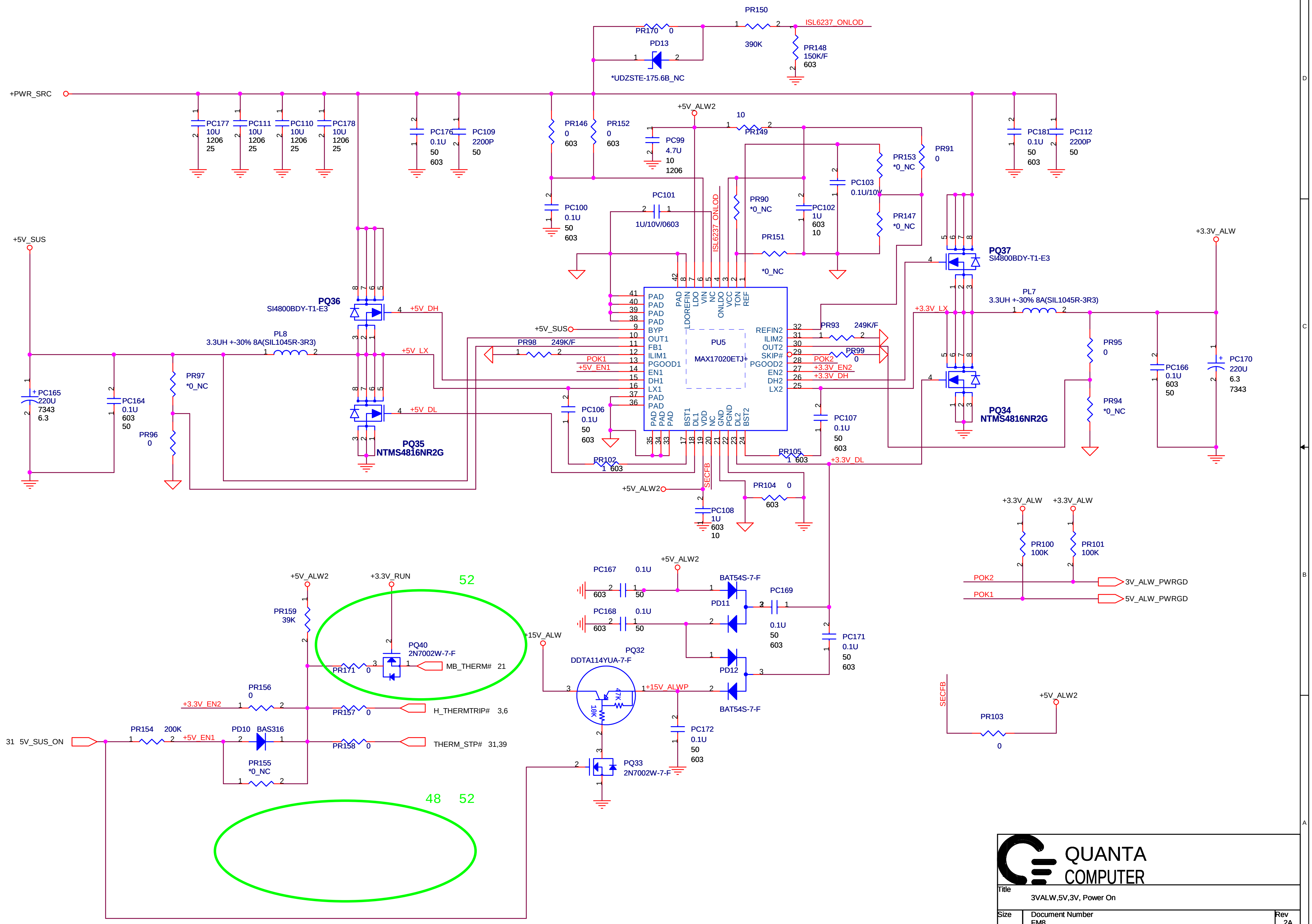

QUANTA COMPUTER

Title	3VALW,5V,3V, Power On	
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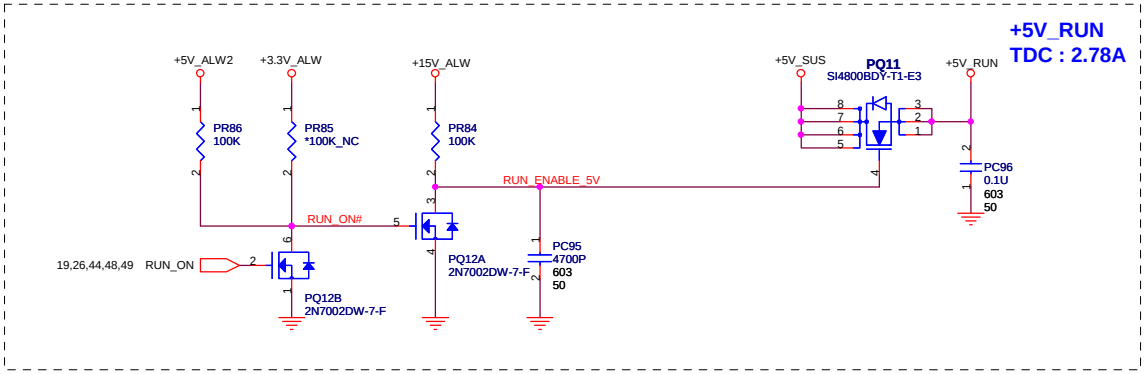

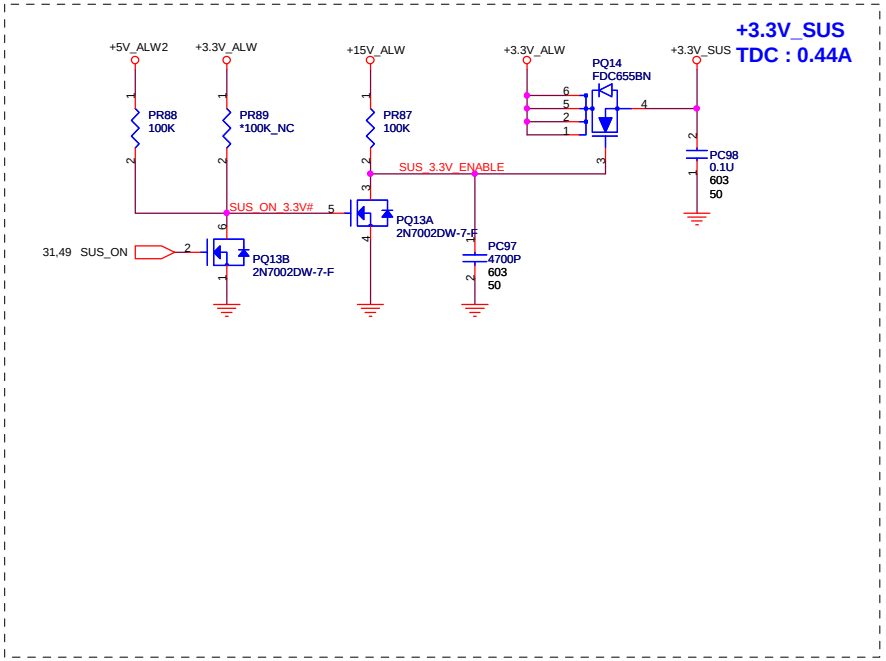

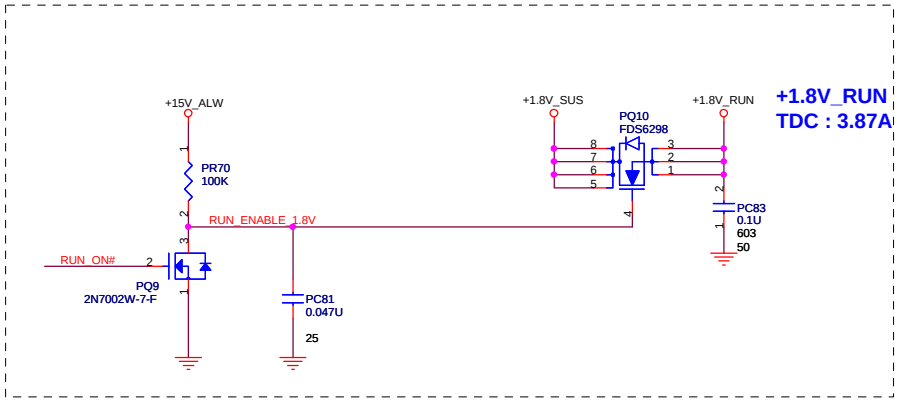

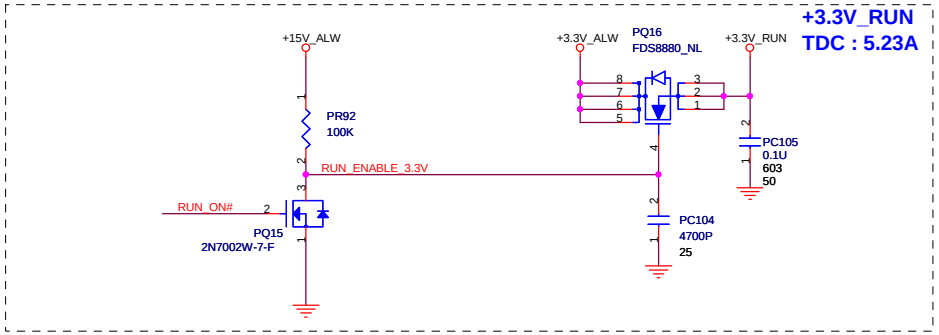

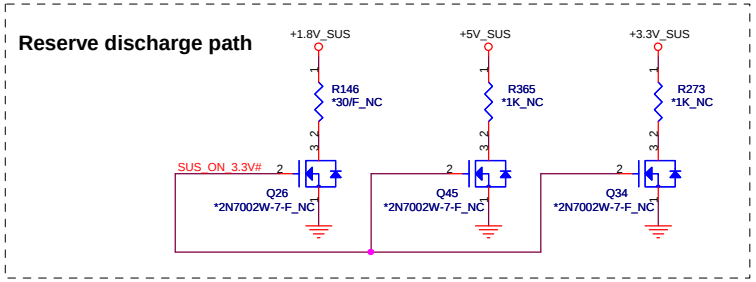

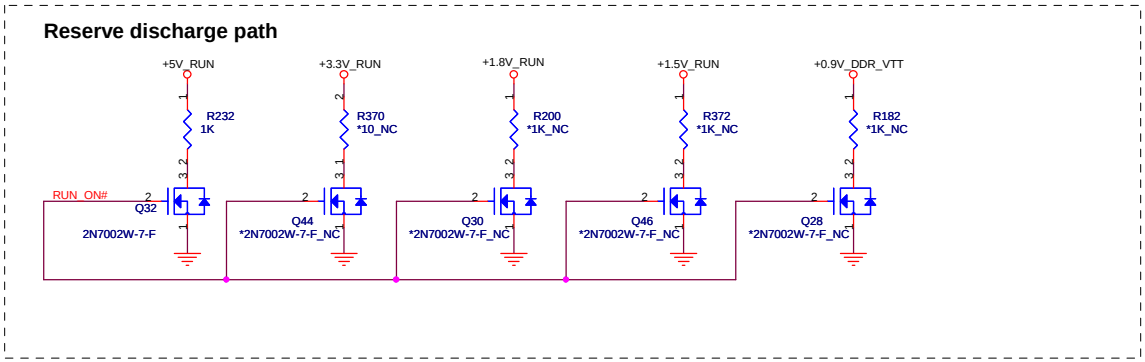

QUANTA COMPUTER

Title	RUN POWER SW	
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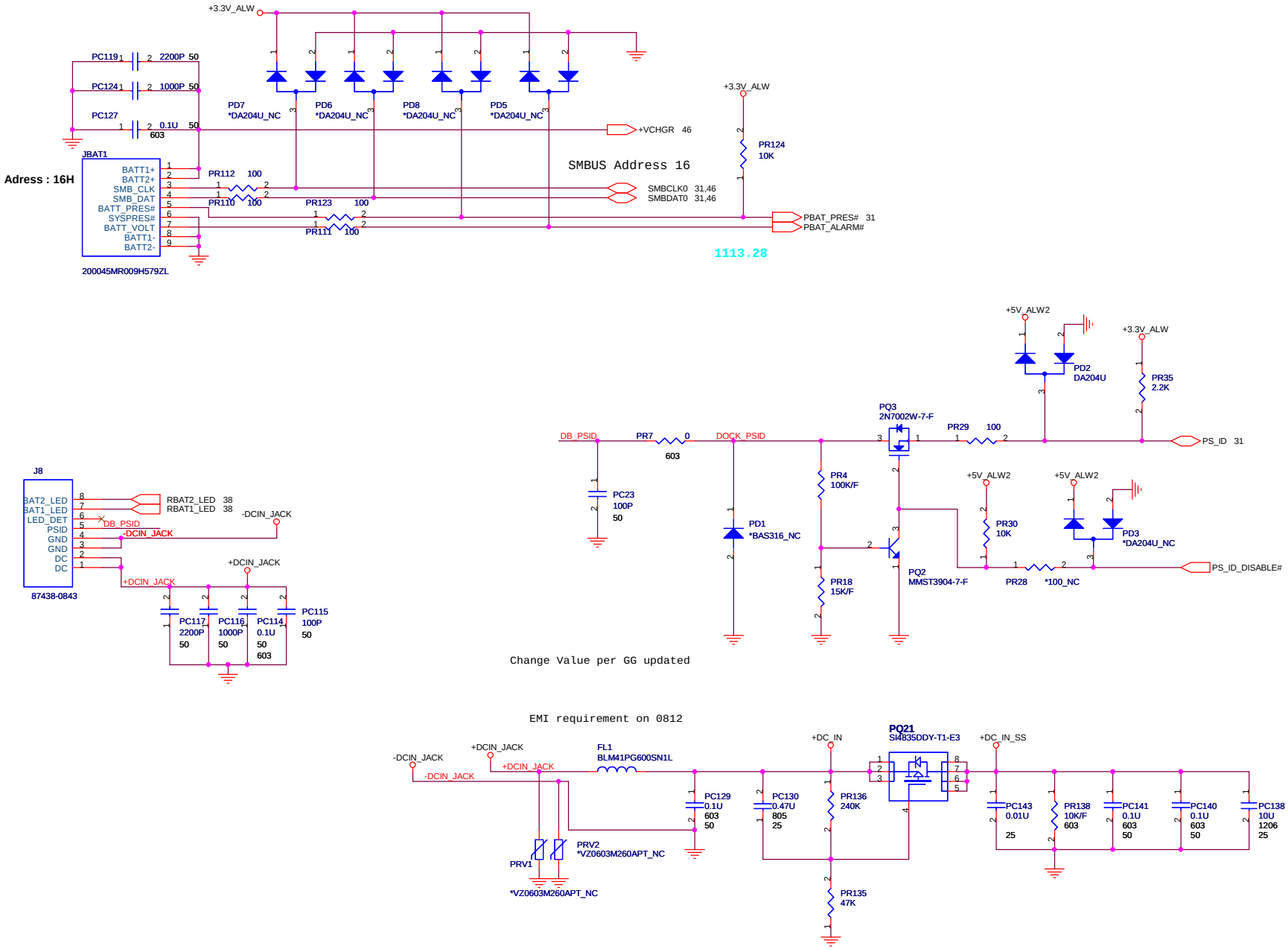

QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
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FOR CPU use

H4
*H-C276D177P2_NC
H-C276D157P2

H12
*H-C276D177P2_NC
H-C276D157P2

H11
*H-C276D177P2_NC
H-C276D157P2

H5
*H-C276D177P2_NC
H-C276D177P2

TH2
H-TC118BC197D63P2

TH1
H-TC118BC197D63P2

TH3
H-TC118BC197D63P2

For MiniCard nut use.
on 31' header

H3
*H-TC315BC394D79P2_NC
H-TC315BC394D79P2

H1
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H20
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H15
*H-TC315BC335D126P2_NC
H-TC315BC335D126P2

H14
*H-C256D154P2_NC
H-C256D154P2

H10
*H-C256D154P2_NC
H-C256D154P2

For GPU nut use.

H2
*o-o177x472d177x472n_NC
o-o177x472d177x472n

H23
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H22
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H18
*h-fm8b-1_NC
h-fm8b-1

PV1
*PAD138X98XH_NC
GND

PV2
*PAD138X98XH_NC
GND

H19
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H16
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H9
*H-TC315BC394D126P2_NC
H-TC315BC394D126P2

H24
*h-TC256BC315D110P2_NC
h-TC256BC315D110P2

H7
*h-tc256bc315d126p2_NC
h-tc256bc315d126p2

H8
*H-C228D228N_NC
H-C228D228N

H6
*H-C228D228N_NC
H-C228D228N

H13
*H-C197D197N_NC
H-C197D197N

H21
*H-C394D394N_NC
H-C394D394N

H17
*H-TC256BC315D126P2_NC
H-TC256BC315D126P2

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Reserved for EMI.

QUANTA COMPUTER

Title	EMI CAP	
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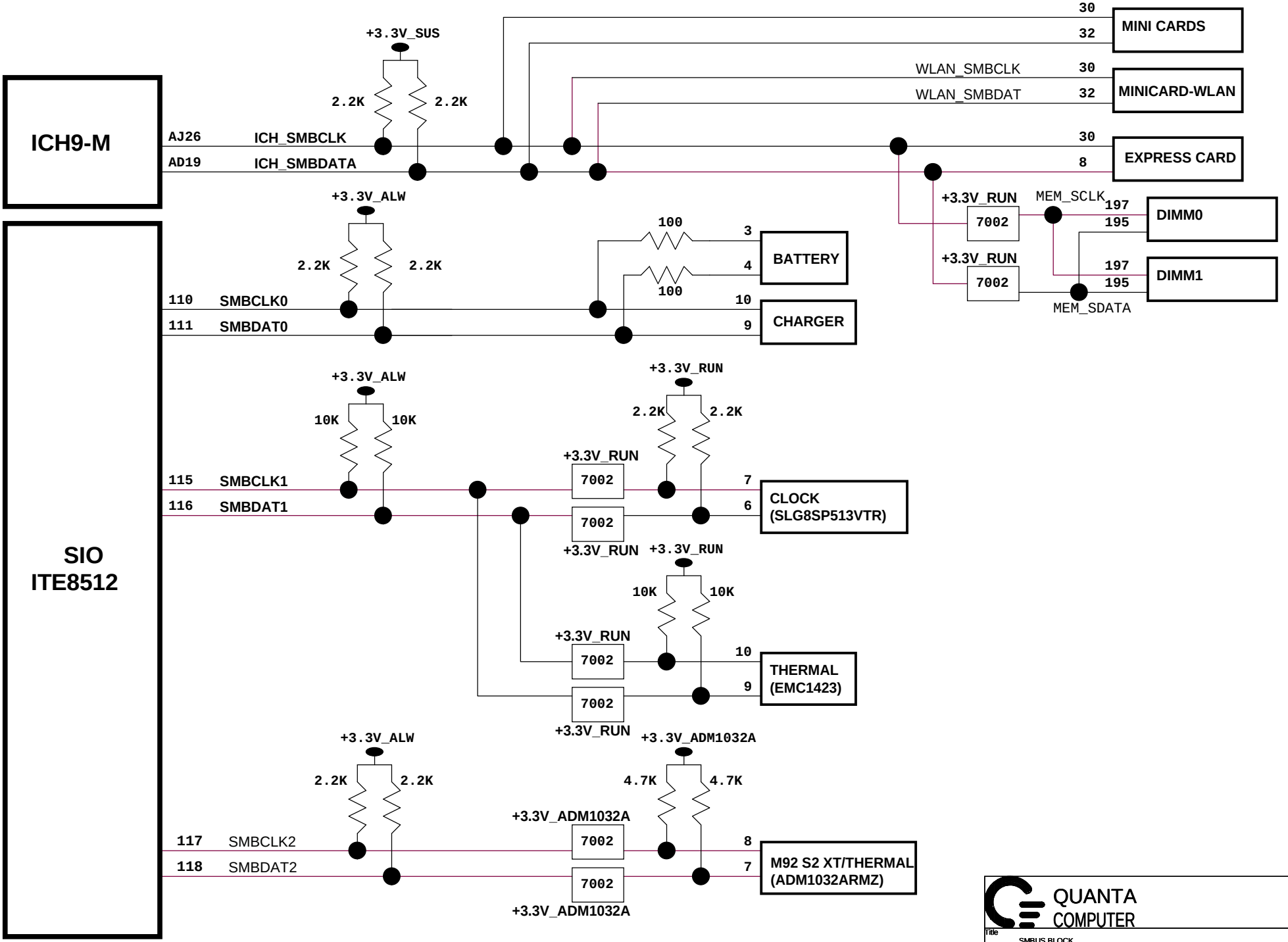

QUANTA COMPUTER

Title	SMBUS BLOCK	
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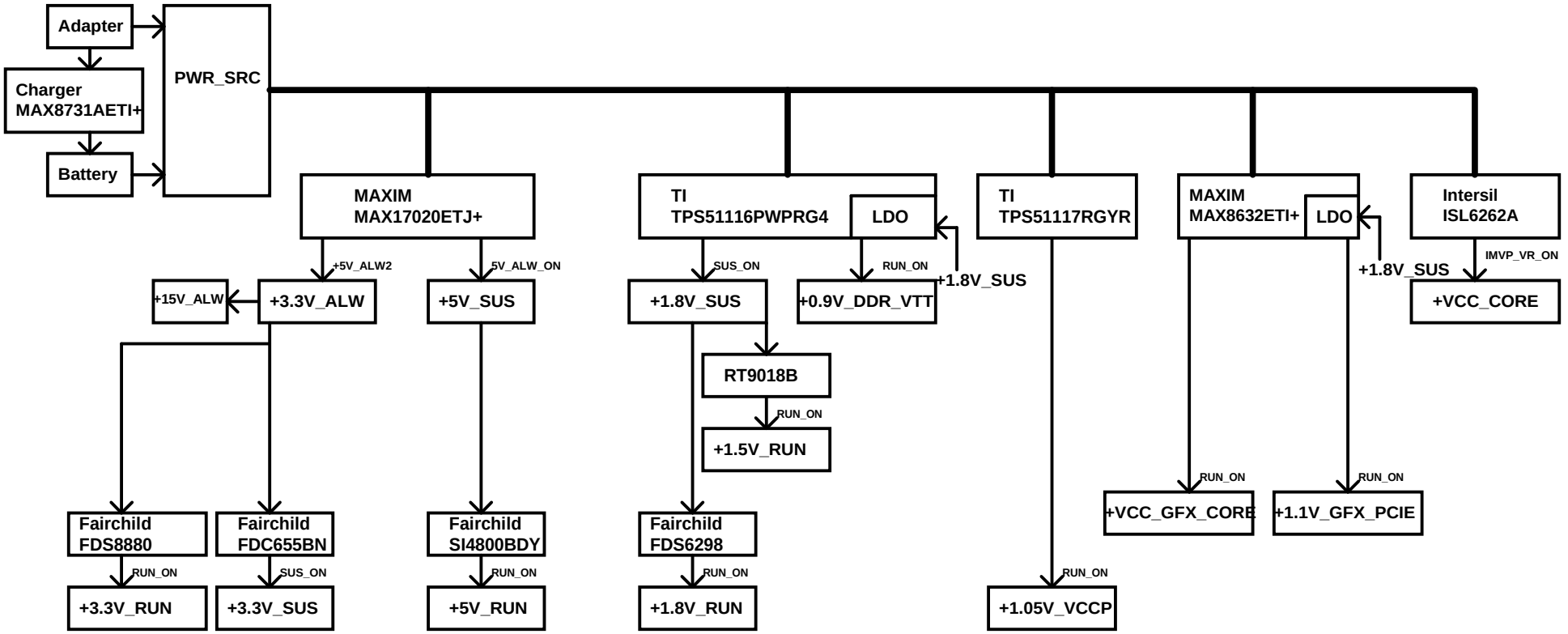
VER : 1A



QUANTA COMPUTER

Title	Schematic Block Diagram1	
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