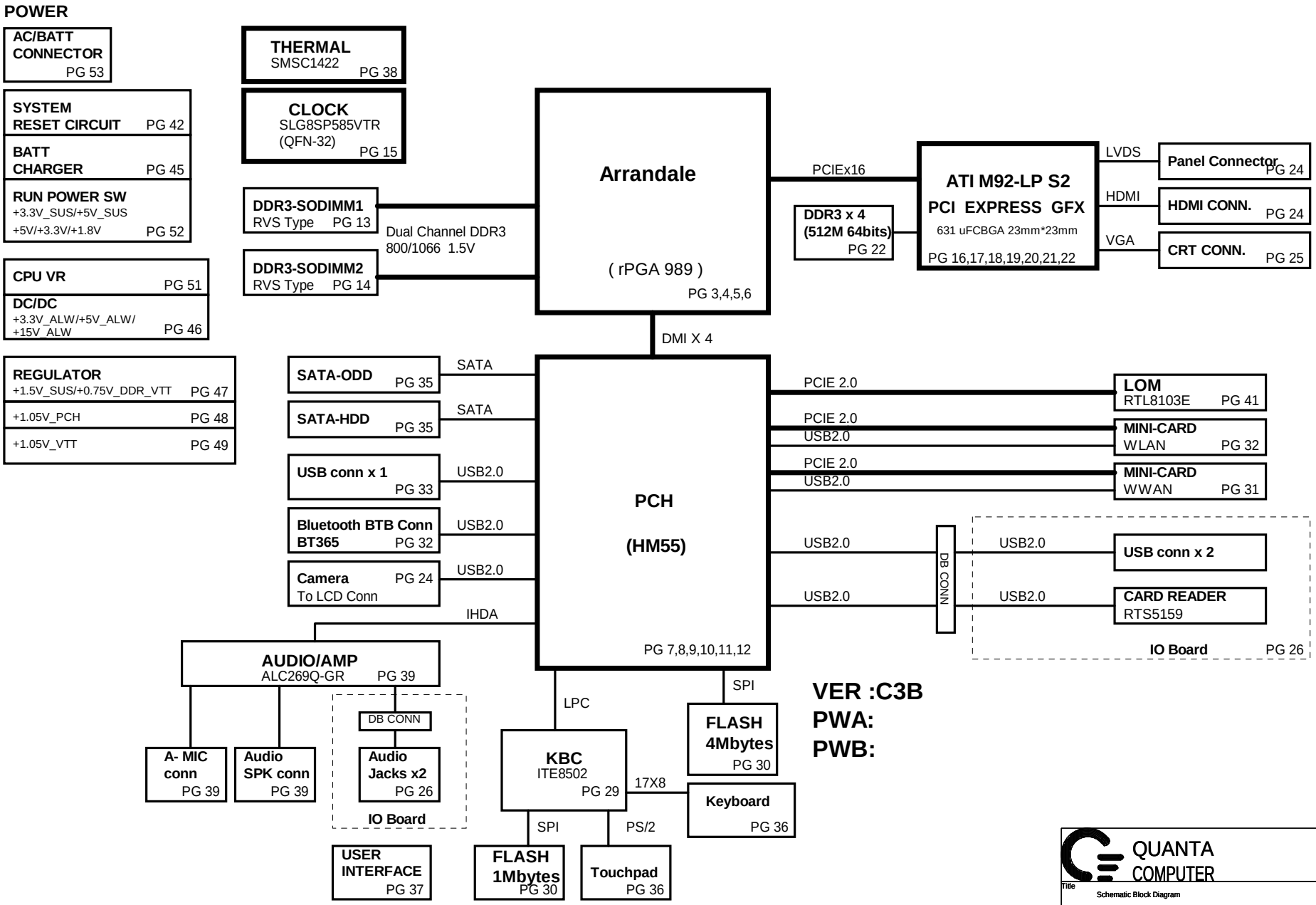
UM3/UM6 SYSTEM BLOCK DIAGRAM



QUANTA COMPUTER

Title	Schematic Block Diagram	
Size	Document Number UM3	Rev 1C
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Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	24,45,46,47,48,49,50,51	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	08,11,29,30	RTC		S0~S5
+5V_ALW	+5V	37,44,46,47,49,50,53	LARGE POWER	ALW_ON	S0~S5
+3.3V_ALW	+3.3V	29,30,37,44,45,46,51,52,53	8051 POWER	3.3V_ALW_ON	S0~S5
+5V_SUS	+5V	11,26,33,37,46,48,51,52	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	07,08,09,10,11,,24,36,37,41,42,44,47,50,52	SLP_S5# CTRLD POWER	SUS_ON	
+1.5V_SUS	+1.5V	03,05,13,14,47,50,52	SODIMM POWER	SUS_ON	
+0.75V_DDR_VTT	+0.75V	13,14,47	SODIMM POWER	RUN_ON	
+5V_RUN	+5V	11,18,24,25,35,36,37,38,39,51,52	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,7,8,9,10,11,13,14,15,17,19,24,25,26,29,30 ,31,32,35,38,39,41,42,51,52	SLP_S3# CTRLD POWER	RUN_ON	
+1.8V_RUN	+1.8V	05,11,44	SDVO POWER	RUN_ON	
+1.5V_RUN	+1.5V	11,18,19,20,31,32,52	VGA POWER	RUN_ON	
+VCC_GFX_CORE	+0.9V~+1.2V	18,21,50	VGA POWER	GFX_ON	
+1.1V_GFX_PCIE	+1.1V	18,50	VGA POWER	GFX_+1.1_EN	
+1.8V_RUN_GFX	+1.8V	17,18,21,22,44	VGA POWER	GFX_+1.8_EN	
+1.05V_PCH	+1.05V	07,08,09,11,15,48	PCH POWER	RUN_ON	
+VCC_CORE	+0.7V~+1.77V	05,51	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	24	LCD Power	LCDVCC_TST_EN & ENVDD	
+1.05V_VTT	+1.1V	03,05,10,11,49	CPU POWER	RUN_ON	

GND PLANE	PAGE	DESCRIPTION
GND	ALL	

QUANTA COMPUTER

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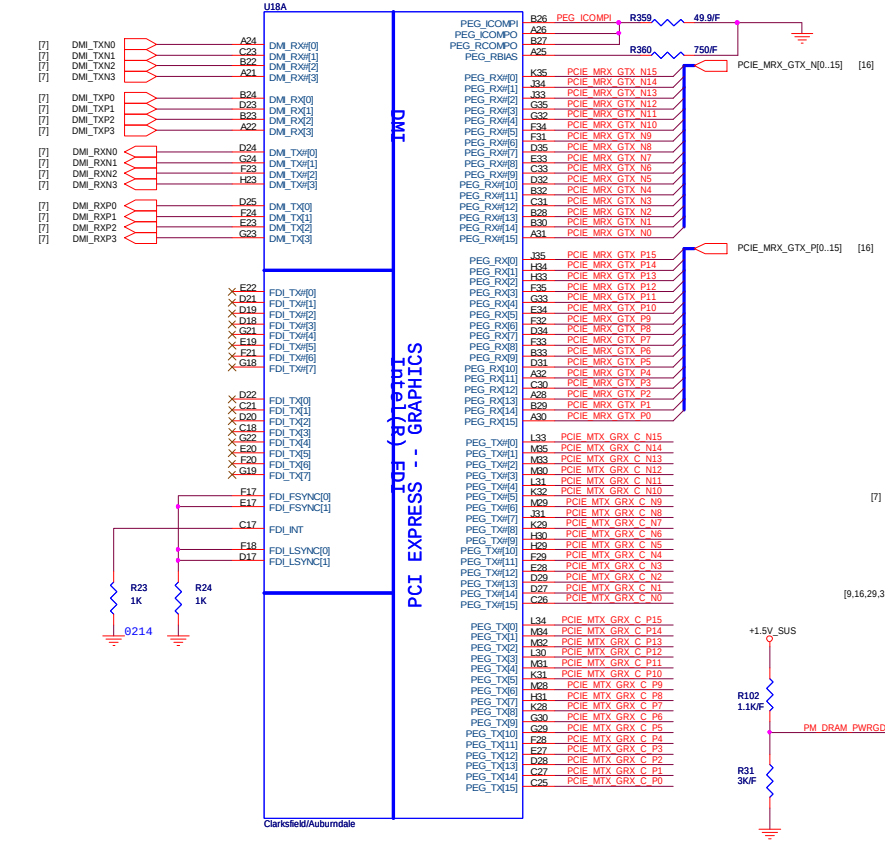
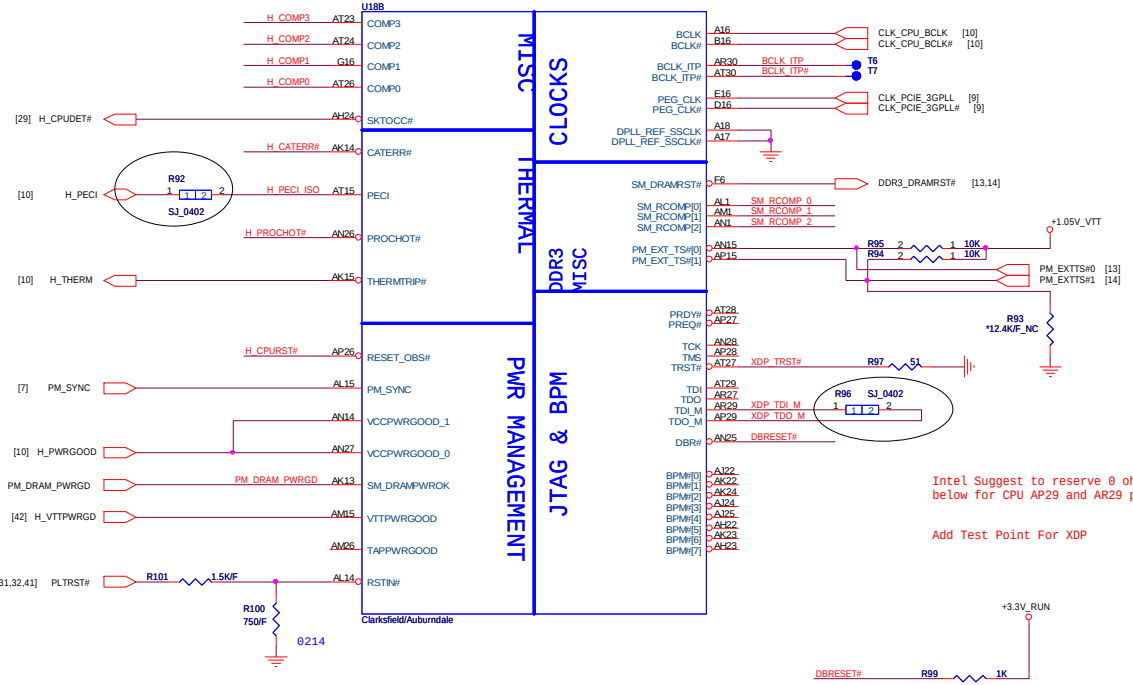
AUBURNDALE/CLARKSFIELD PROCESSOR (DMI,PEG,FDI)

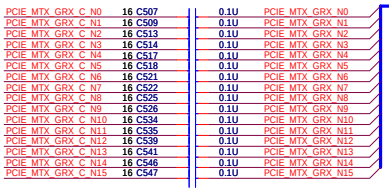


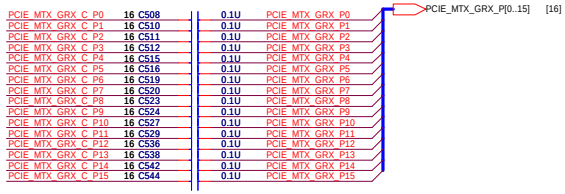


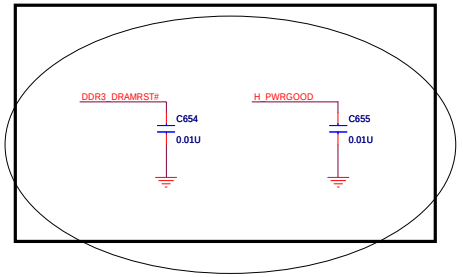
Intel Suggest to reserve 0 ohm below for CPU AP29 and AR29 pins.

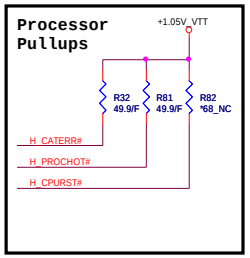
Add Test Point For XDP

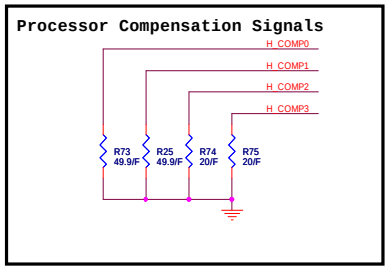
CRB use a 1k pull-up to 3.3V_S for DBR# TRST# use a 51ohm pull down.

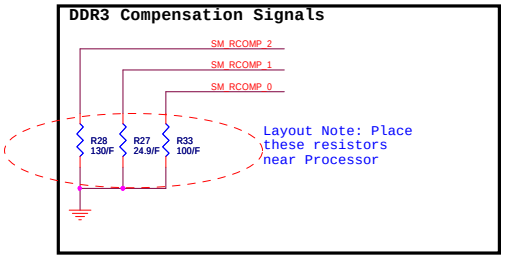












Remove XDP Function

AUBURNDALE/CLARKSFIELD PROCESSOR (CLK,MISC,JTAG)

QUANTA COMPUTER

Title	AUBURNDA 1/4		
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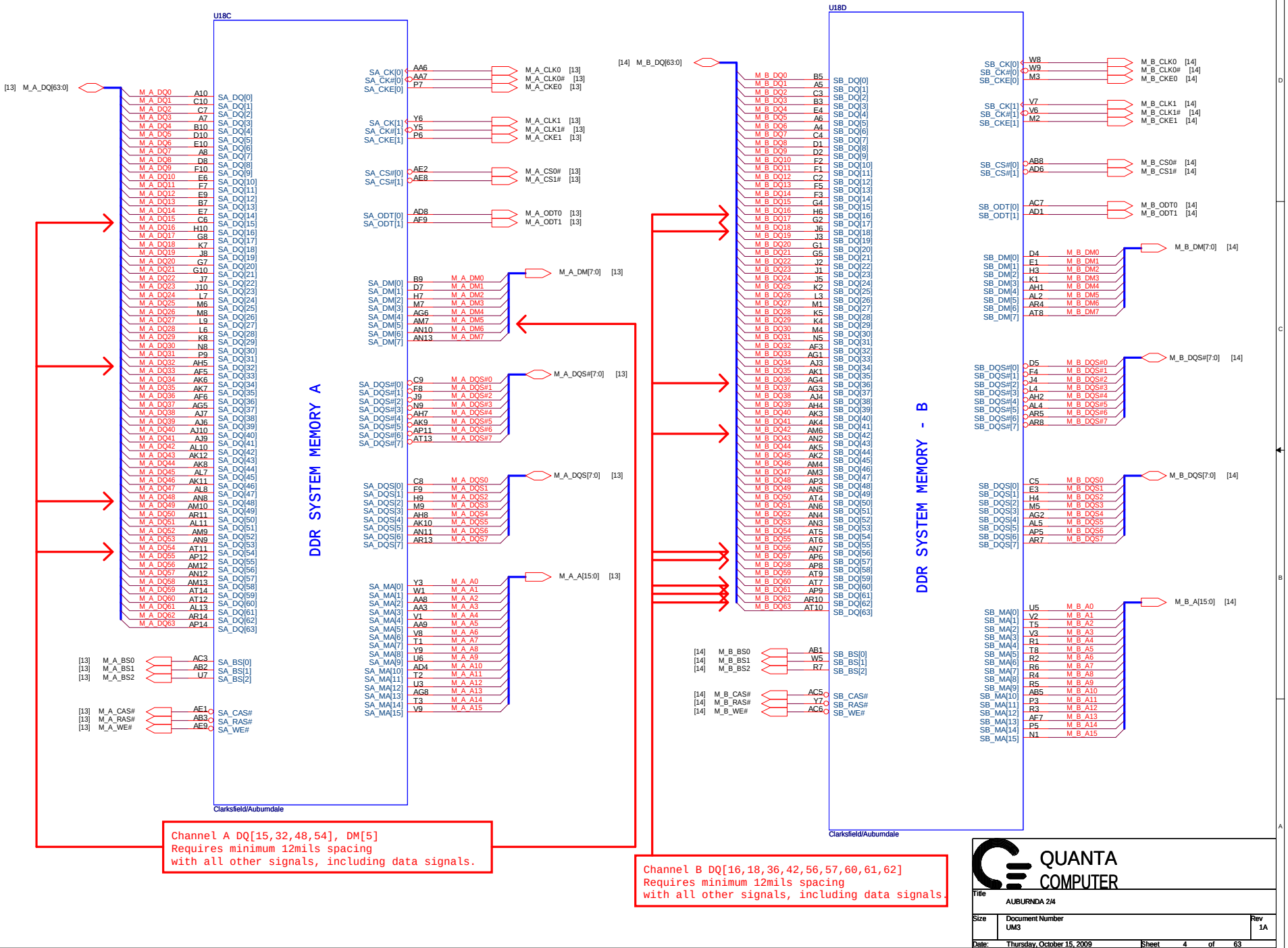
AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



QUANTA COMPUTER		
Title	AUBURNDA 2/4	
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AUBURNDALE/CLARKSFIELD PROCESSOR (GRAPHICS POWER)

CPU Core Power

U18F

+VCC_CORE

1.1V RAIL POWER

CPU CORE SUPPLY

POWER

CPU VIDS

SENSE LINES

Clarksfield/Auburndale

+1.05V_VTT

U18G

GRAPHICS

GRAPHICS VIDS

SENSE LINES

POWER

DDR3 - 1.5V RAILS

1.1V

1.8V

FDI

PEG & DMI

Clarksfield/Auburndale

+1.5V_SUS

+1.8V_RUN

Pop it when Arrandale Graphics disable.

VTT_SELECT:
High level 1.05V for Auburndale
Low level 1.1V for Clarksfield

AUBURNDALE/CLARKSFIELD PROCESSOR (POWER)

QUANTA COMPUTER

Title	AUBURNDA 3/4	
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AUBURNDALE/CLARKSFIELD PROCESSOR (GND)

U18H

VSS

Clarksfield/Auburndale

U18I

VSS

NCTF

Clarksfield/Auburndale

AUBURNDALE/CLARKSFIELD PROCESSOR(RESERVED, CFG)

U18E

RESERVED

+M_VREF_DQ_DIMM0
+M_VREF_DQ_DIMM1

T3 CFG0
T2 CFG3 CFG4
T5 CFG7

No need to pull down RSVD17, 18, 64, & 65,
these resistors are for intel internal test only.

No need to pull down RSVD17, 18, 64, & 65,
these resistors are for intel internal test only.

Clarksfield/Auburndale

R394 SJ_0402

Can be left NC is Intel CRM implementation; ESD/DG recommendation to GND

The Clarkfield processor's PCI Express interface may not meet PCI Express 2.0 jitter specifications. Intel recommends placing a 3.01K +/- 5% pull down resistor to VSS on CFG[7] pin for both rPGA and BGA components. This pull down resistor should be removed when this issue is fixed.

CFG3 R37 3.01K/F

	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed

QUANTA COMPUTER

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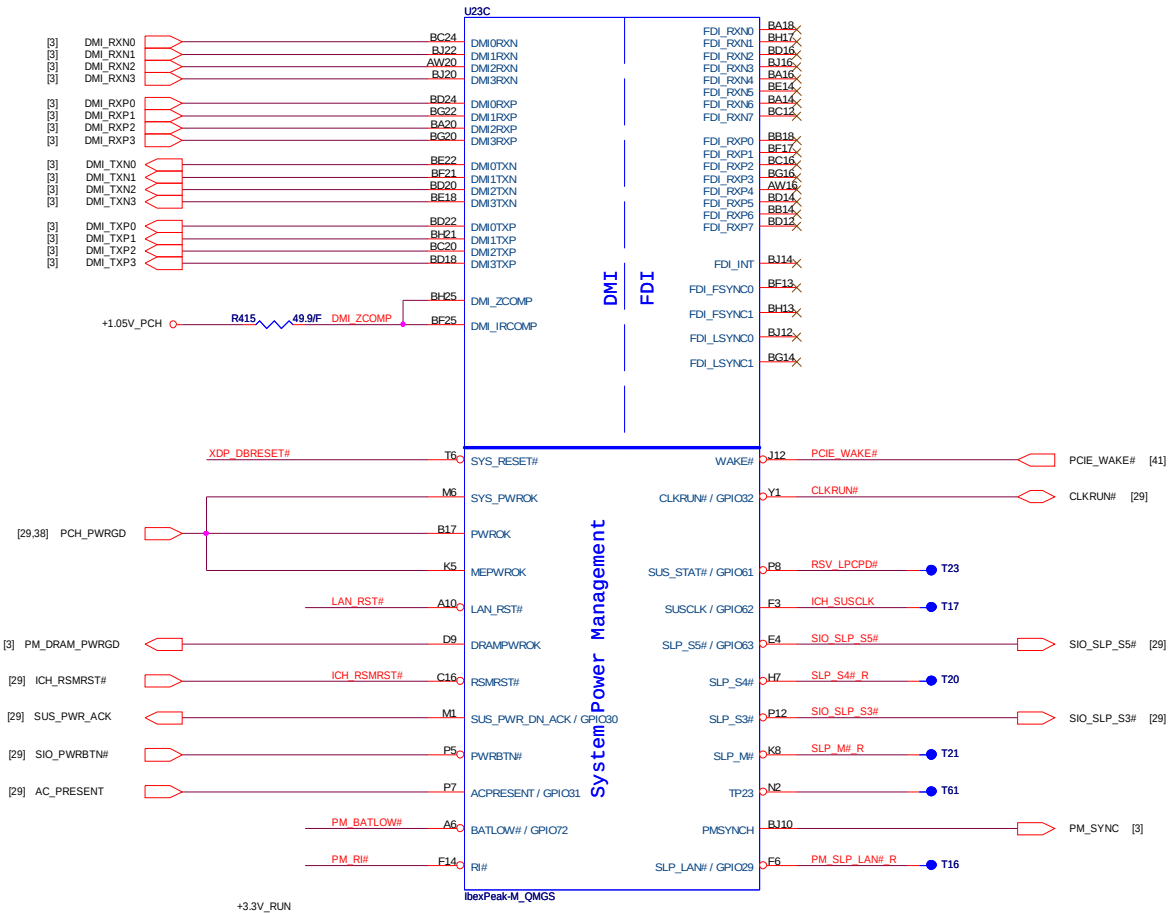
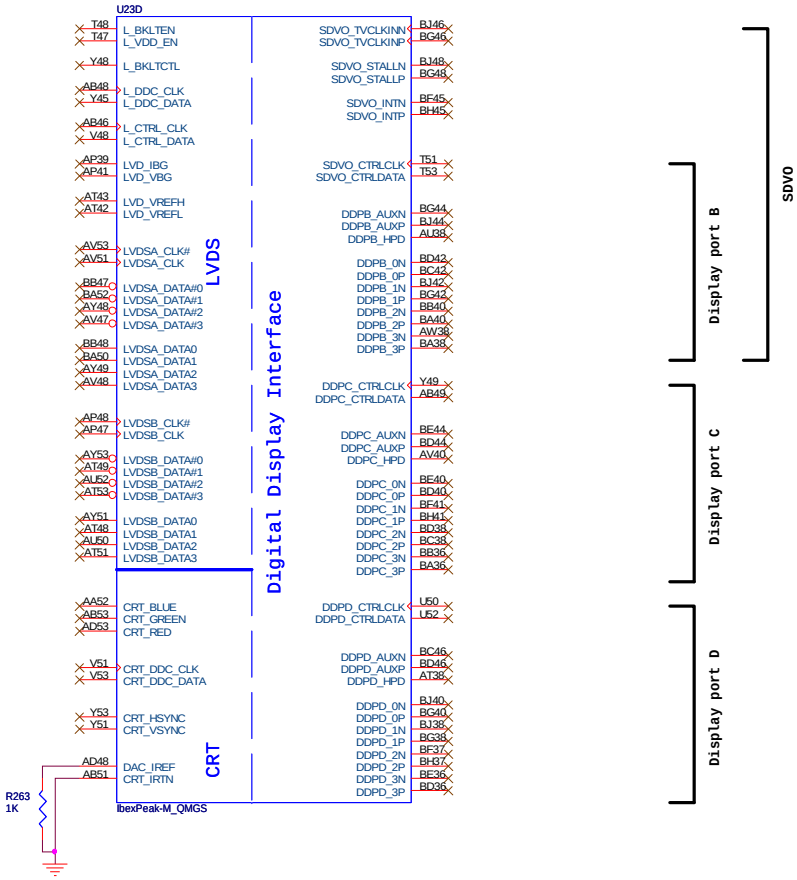
IBEX PEAK-M (DMI,FDI,GPIO)



IBEX PEAK-M (LVDS,DDI)



Title	IBEX PEAK-M 1/6		
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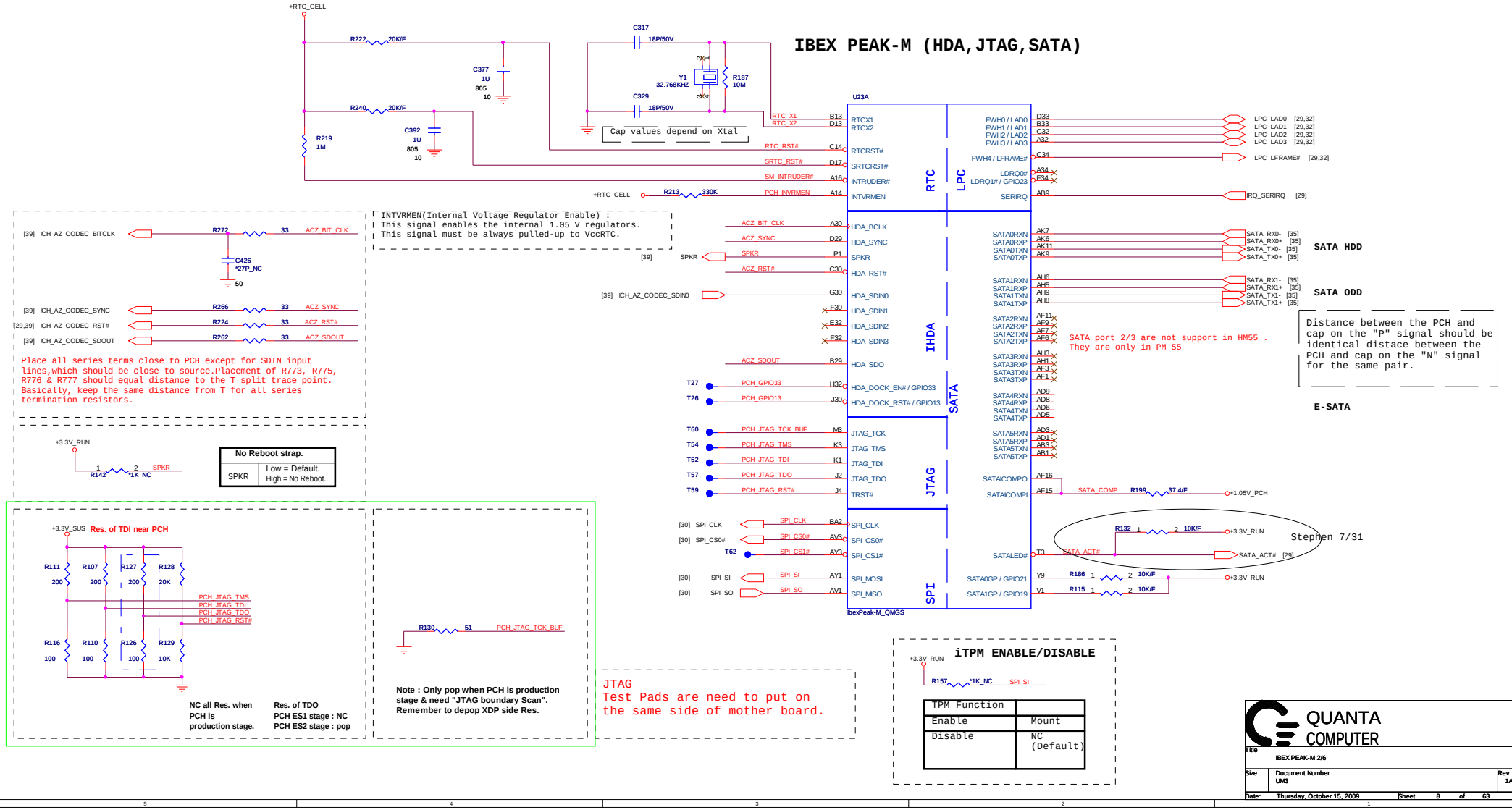
IBEX PEAK-M (HDA,JTAG,SATA)



Title	IBEX PEAK-M 2/6
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QUANTA COMPUTER

IBEX PEAK-M (PCI,USB,NVRAM)

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

Place TX DC blocking caps close PCH.

U23E

PCI

NVRAM

USB

IbexPeak-M_QMGS

U23B

PCI-E*

SMBus

Controller Link

PEG

From CLK BUFFER

Clock Flex

IbexPeak-M_QMGS

MiniWWAN

MiniWLAN

Giga Bit LOM

10/100 LOM

Right Side pair to DB

Right Side pair to DB

Left Side pair

Left Side pair for 17"

Mini Card (WLAN)

Mini Card (WWAN)

Mini Card (WPAN)

Camera

Card Reader

PCI-E port 7/8 are not support in HM55 .
They are only in PM 55

USB port 6/7 are not support in HM55 .
They are only in PM 55

Note : place these resistors near to PCIe Slots

PCIRST#:
DG(V1.0) P277
Can be left unconnected.
PAR:
SC(V1.0) P36
Can be left unconnected
if not using PCI.

PME:
DG(V1.0) P277
Can be left unconnected.

CLKOUT_PCI[0..4]:
22 ohm series resistor is recommend
(single & double load) on PDG v1.1

CLKOUT_PEG_A_P/N,CLKOUT_PEG_B_P/N,
CLKOUT_DMI_P/N,support GEN-1 and GEN-2

CLKOUTFLEX3
EDS(V1.0) :support 48MHz
33MHz and 14.31818MHz.

CLKOUTFLEX[0..3]:
PDG v1.1: 22 ohm series resistor is
recommend (PCI & non PCI routing,
single & double load)

CLKIN_PCILOOPBACK:
PDG (V1.1): 22 ohm series resistor
is recommend

SML0CLK/SML0DATA:
DG(V1.1) P255: The 82577 SMBus signals
(SMB_DATA and SMB_CLK) cannot be
connected to any other devices other than the PCH.
Connect the SMB_DATA and SMB_CLK pins
to the PCH SML0DATA and SML0CLK pins,
respectively.

Reserve capacitor pads for improving WWAN.

Non-iAMT

Add Buffers as needed for Loading and fanout concerns.

PCIE Clock Request

PCIECLKRQ{0,3,4,5,6,7}# should have a 10K pull-up to +V3.3A.PCIECLKRQ{1,2} should have a 10K pull-up to +3.3S

A16 swap override Strap/Top-Block Swap Override jumper

PCI_GNT3#	Low = A16 Swap override/Top-Block Swap Override enabled High = Default

Boot BIOS Strap

PCI_GNT0#	PCI_GNT1#	Boot BIOS Location
0	0	LPC
0	1	PCI
1	0	Reserved (NAND)
1	1	SPI

DMI Termination Voltage

NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH

Danbury Technology Enabled

NV_ALE	High = Enable Low = Disable

QUANTA COMPUTER

Title	IBEX PEAK-M 3/6		
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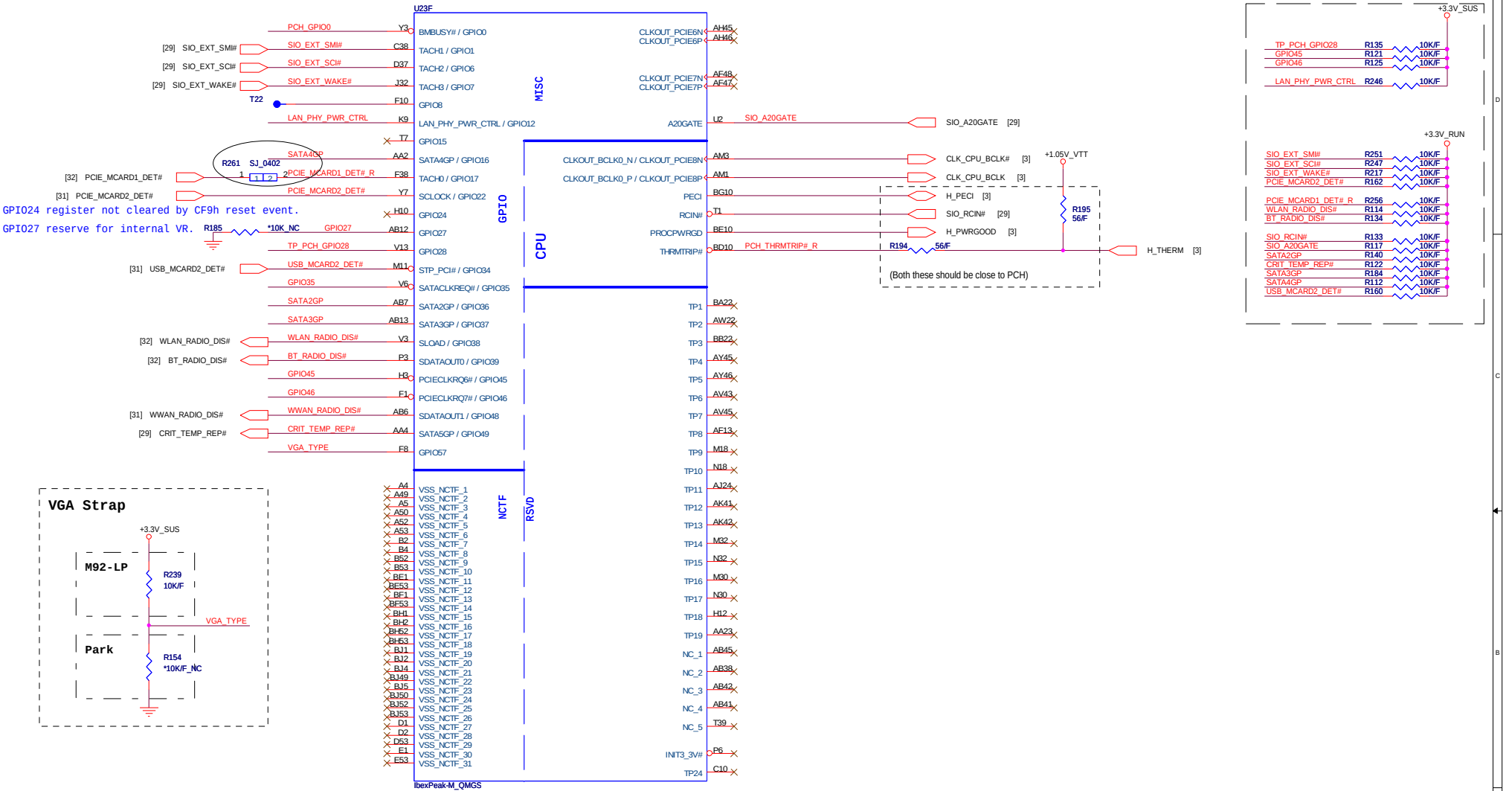
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)



Title	IBEX PEAK-M 4/6		
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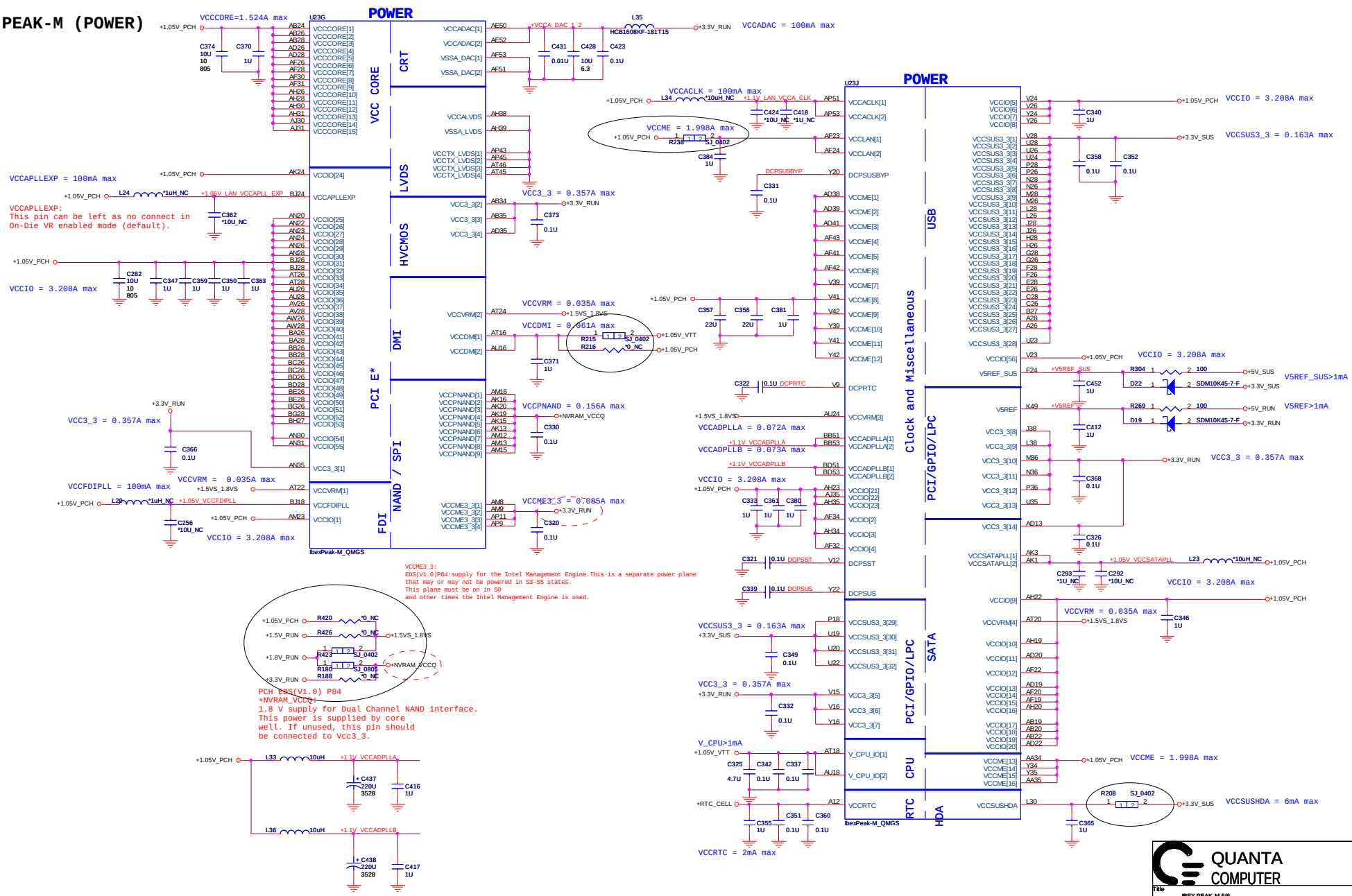
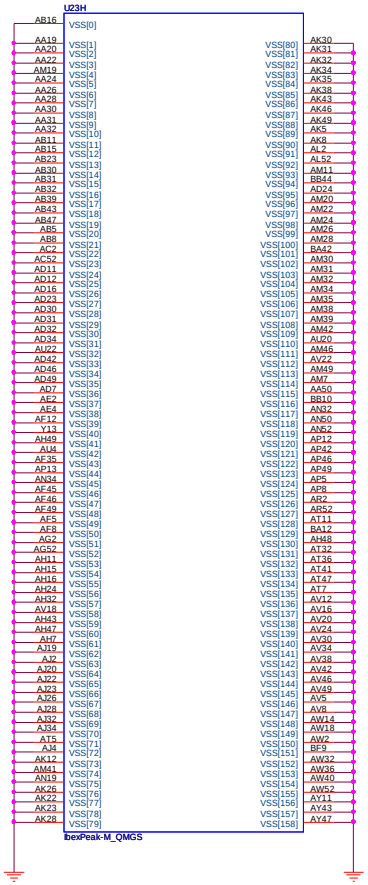
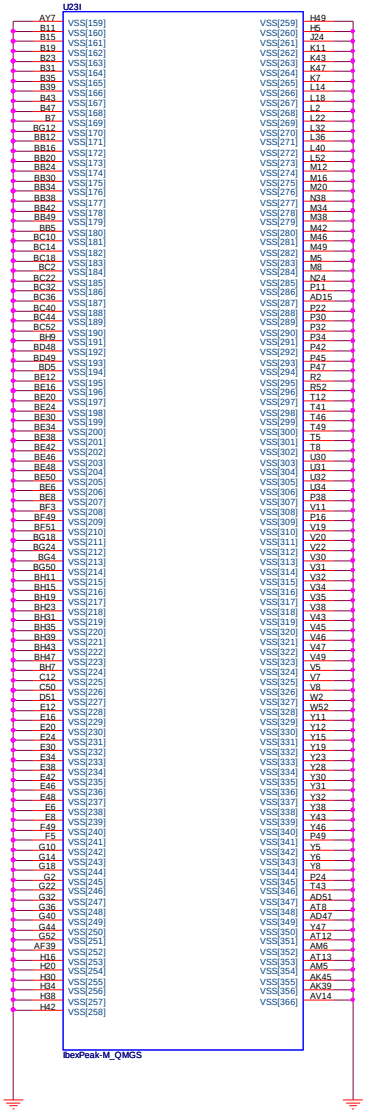
IBEX PEAK-M (POWER)



IBEX PEAK-M (GND)





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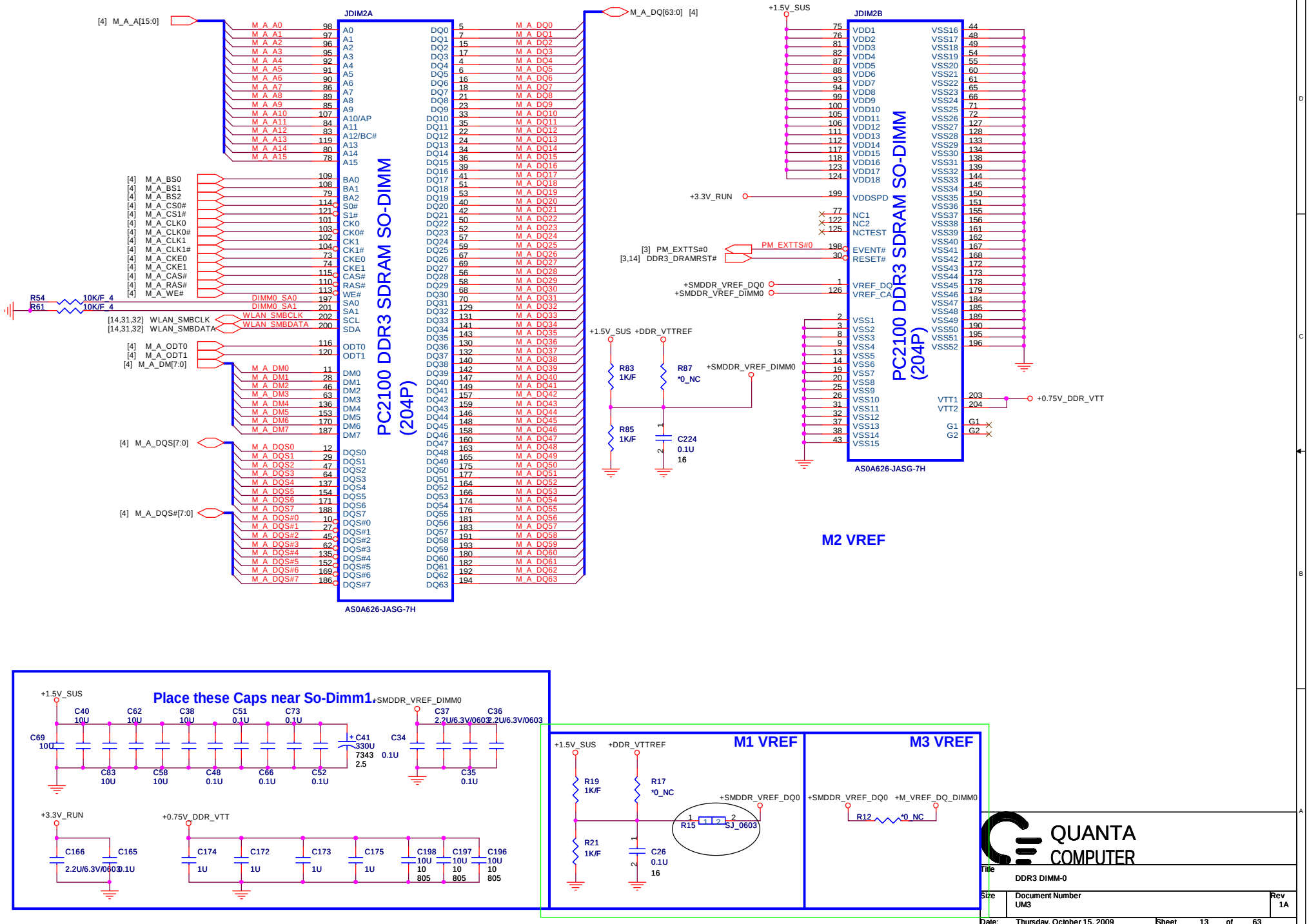
JDIM2A
PC2100 DDR3 SDRAM SO-DIMM (204P)
AS0A626-JASG-7H
JDIM2B
PC2100 DDR3 SDRAM SO-DIMM (204P)
AS0A626-JASG-7H
M2 VREF
Place these Caps near So-Dimm1.
M1 VREF
M3 VREF
QUANTA COMPUTER
DDR3 DIMM-0
UM3
1A
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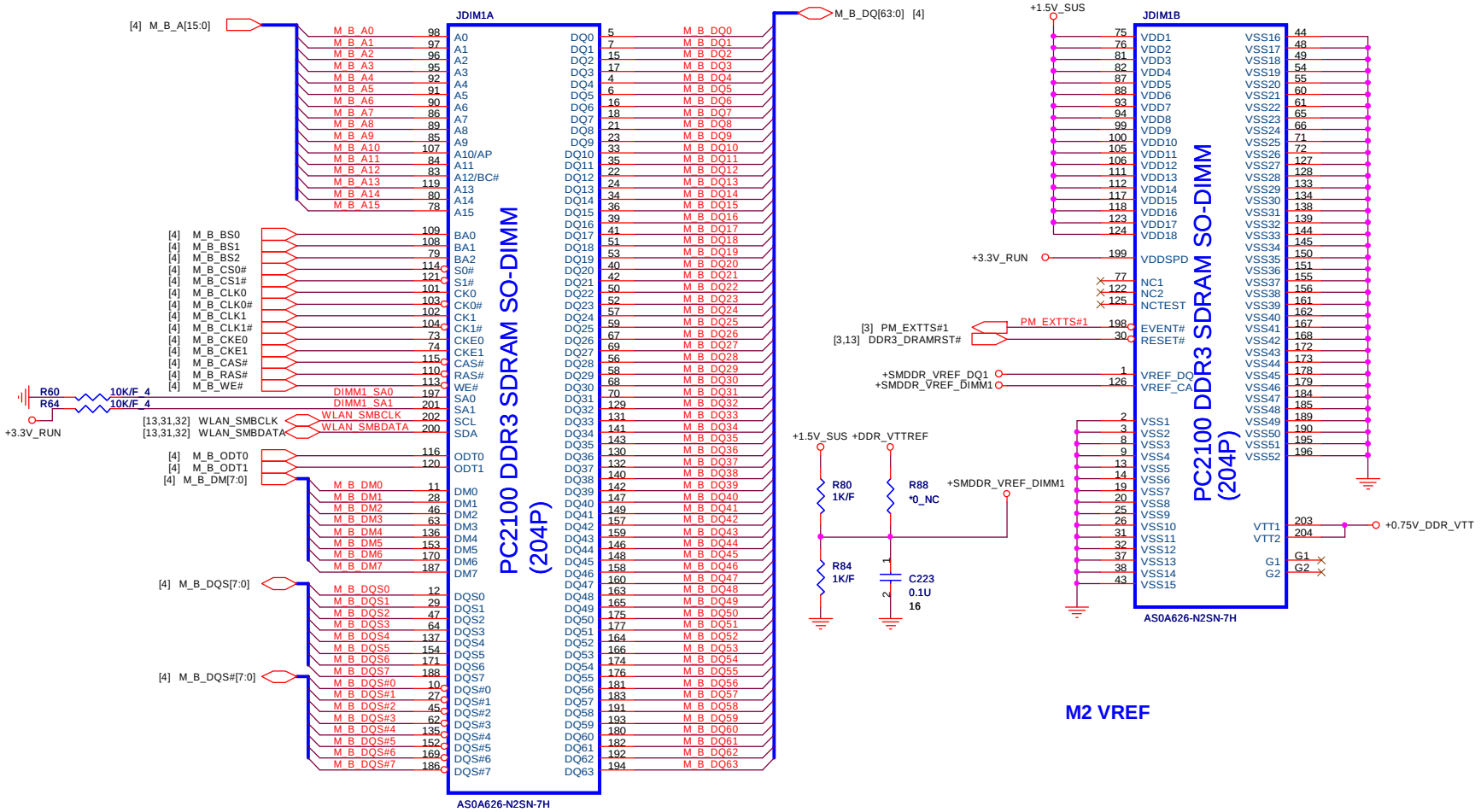

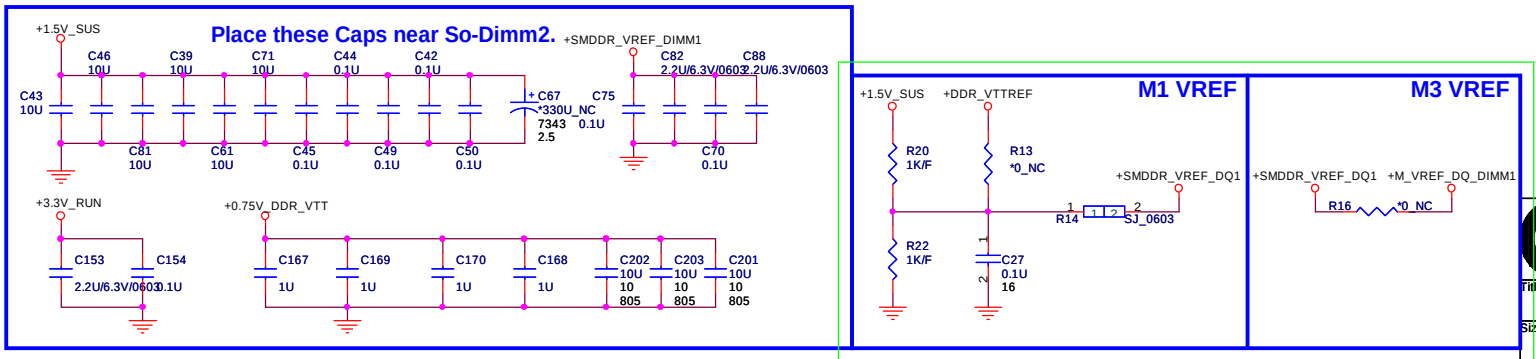

QUANTA COMPUTER

Title	DDR3 DIMM-1		
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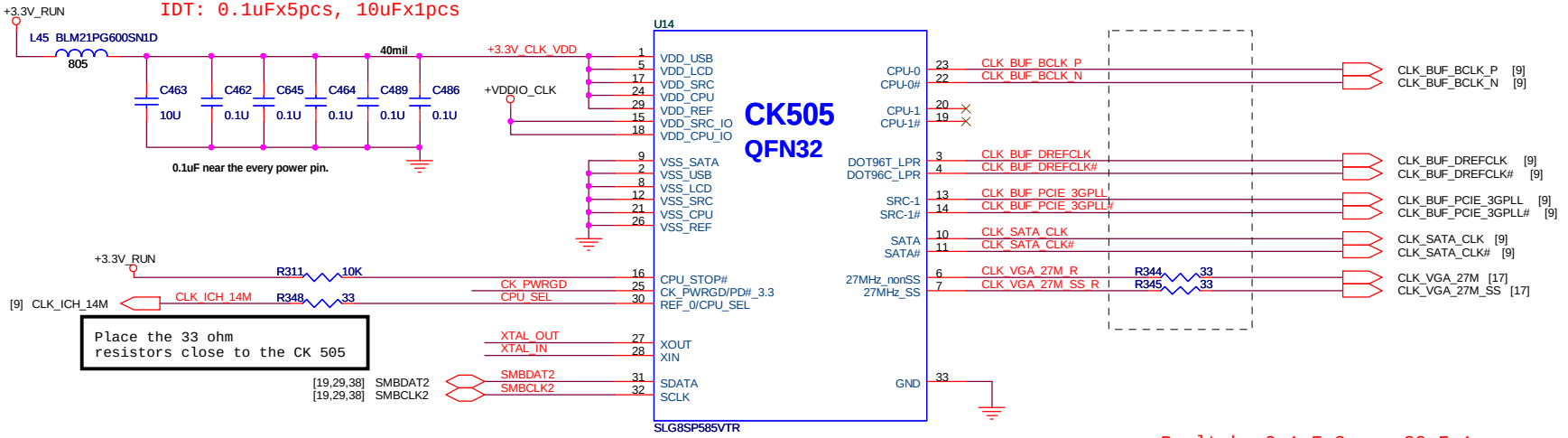
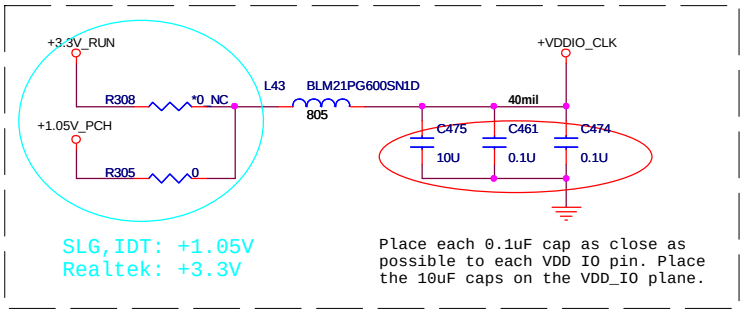
Realtek: 0.1uFx6pcs, 22uFx1pcs
IDT: 0.1uFx5pcs, 10uFx1pcs

Place within 0.5" of CLKGEN

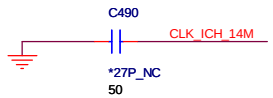


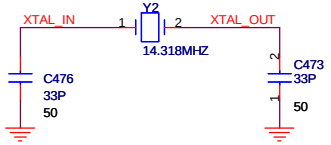
Realtek: 0.1uFx3pcs, 22uFx1pcs
IDT: 0.1uFx2pcs, 10uFx1pcs

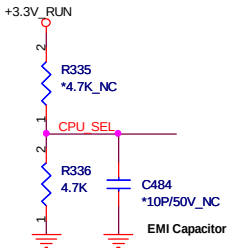


+VDDIO_CLK:
SLG date sheet (V0.2) P15: Min 1.05V,Max3.465V.
Realtek date sheet(V1.2) P11: Min 1.05V,Max 3.3V.
IDT date sheet(V0.7) P10: Min 0.9975V,Max 3.465V.

Add capacitor pads for improving WWAN.

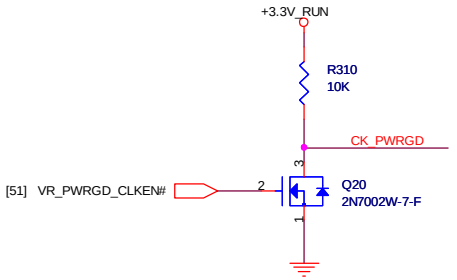






PIN 30	CPU_0	CPU_1
0(default)	133MHz	133MHz
1(0.7V-1.5V)	100MHz	100MHz

CPU_SEL:
SLG date sheet (V0.2) P15:
High Voltage: Min 0.7V, Max 1.5V.
Low Voltage: Min Vss-0.3V, Max 0.35V.
Realtek date sheet(V1.2) P11:
High Voltage: Min 0.7V, Max 1.5V.
Low Voltage: Min Vss-0.3V, Max 0.35V.
IDT date sheet(V0.7) P10:
High Voltage: Min 0.7V, Max 1.5V.
Low Voltage: Min Vss-0.3V, Max 0.35V.



QUANTA COMPUTER

Title	Clock Generator	
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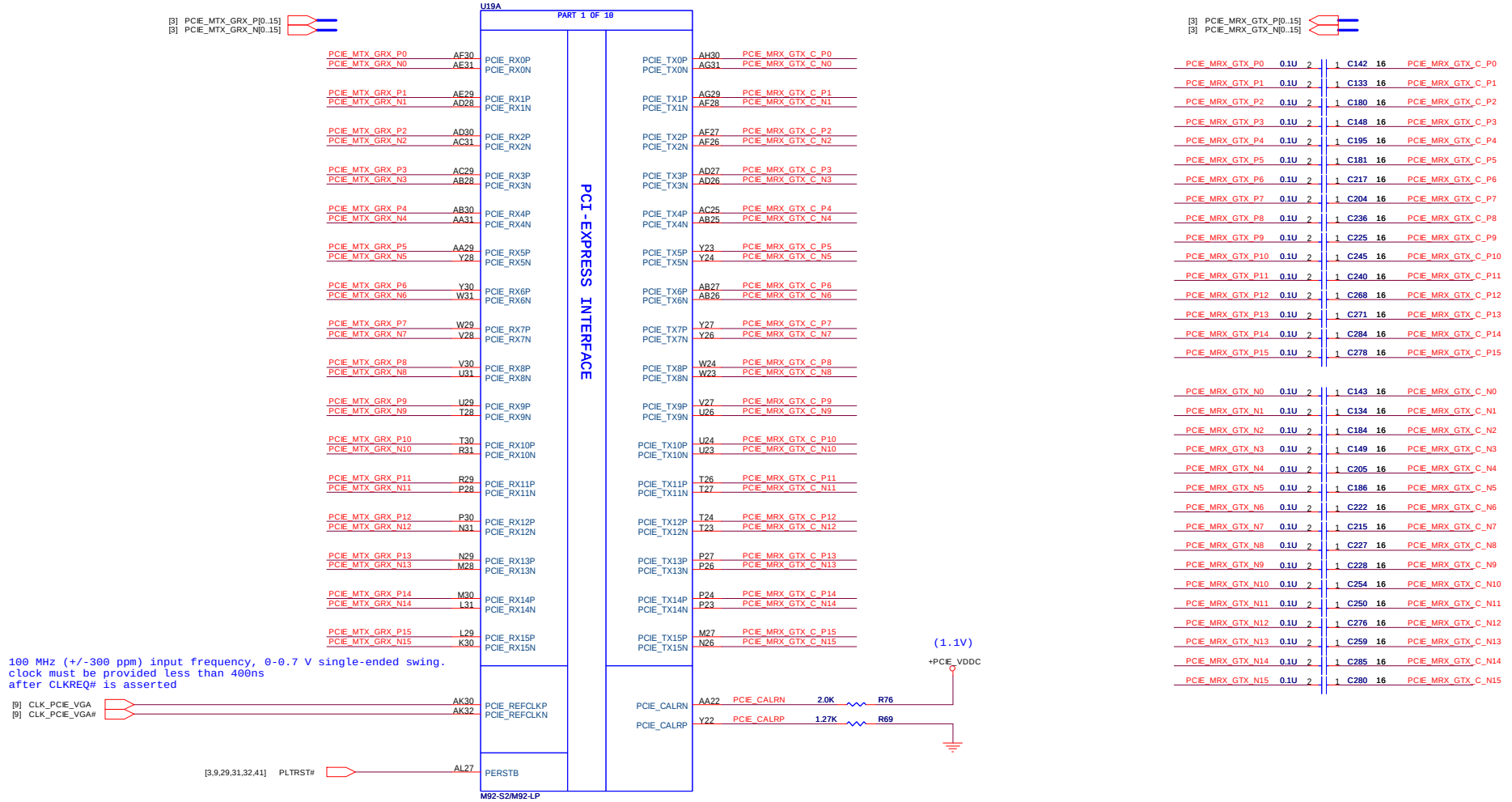

M92-S2 XT AJ072800T04 100-CG1675(216-0728004)
M92-S2 AJ072800T03 100-CG1643(216-0728003)

QUANTA COMPUTER

Title	VGA-M92-XT PCIE	
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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

+3.3V_DELAY

R406 1 2 10K RAM_CFG0
R407 1 2 *10K_NC RAM_CFG1
R408 1 2 *10K_NC RAM_CFG2

GPIO Straps table	DESCRIPTION OF DEFAULT SETTINGS	FM9 setting
GPIO0	GPIO(0) - TX_PWRS_ENB (Transmitter Power Savings Enable) 0: 55% 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: Disable (Default for Controlled Gen2) 1: Enable (Default for 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
HSYNC (AH26) / VSYNC (AJ27)	00: No Audio function 01: Audio for DisplayPort only 10: Audio for DisplayPort only and HDMI if dongle is detected. 11: Audio for both DisplayPort and HDMI. HDMI must only be enabled on systems that are legally entitled. it is the responsibility of the system designer to ensure that the system is entitled to support this feature	11

+3.3V_DELAY

R401 1 2 *10K_NC GPIO0
R403 1 2 *10K_NC GPIO1
R88 1 2 *10K_NC GPIO2
R399 1 2 *10K_NC GPIO3
R400 1 2 *10K_NC GPIO4
R90 1 2 *10K_NC GPIO5

R79 1 2 10K HDMI_HD_EN
R409 1 2 *10K_NC TEMP_FAIL
R405 1 2 10K GFX_CLKREQ#
R378 1 2 10K VGAVSYNC
R379 1 2 *10K_NC VGAHSYNC
R46 1 2 10K DAC1_VGAVSYNC
R48 1 2 10K DAC1_VGAHSYNC

26

R411 1 2 10K TEMP_FAIL

26

DAC1_VGAVSYNC / DAC1_VGAHSYNC	HD Audio straps
0\0	No audio function
0\1	Audio for DisplayPort only
1\0	Audio for DisplayPort and HDMI if dongle is detected
1\1	Audio for both DisplayPort and HDMI

+1.8V_RUN_GFX

R72 1 2 10K RAM_TYPE_CFG0
R396 1 2 *10K_NC RAM_TYPE_CFG1
R395 1 2 *10K_NC RAM_TYPE_CFG2

+3.3V_DELAY R38 1 2 SJ_0603 +3.3V_RUN

OSC_SPREAD R58 *0_NC
R56 *0_NC CLK_VGA_27M_SSIN_R
[15] CLK_VGA_27M_SS
R57 *10K_NC
[15] CLK_VGA_27M R380 100/F R373 120/F R372 SJ_0402
OSC_OUT R369 *182R_NC XTALIN [21]
R367 *1M_NC R371 *221/F_NC
Y2 *27MHZ_NC R370 *0_NC XTALOUT [21]
R368 1M_NC
C563 *12P/50V_NC C564 *12P/50V_NC
50 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
R362 *10K_NC R363 *10K_NC R364 *10K_NC
OSC_OUT
R361 *0_NC OSC_SPREAD
U17
XIN/CLKIN XOUT
VSS VDD
SO PD#
SSCLK REFCLK
*P1819GF-08SR_NC
+3VL L49 *BLM11A05S_NC +3.3V_RUN
C557 *10U_NC C553 *0.1U_NC

	S0
-1.75% (DOWN)	0

Memory Straps	RAM_TYPE _CFG2	RAM_TYPE _CFG1	RAM_TYPE _CFG0	Quanta PN (QuantaBuy)	Quanta PN (WinBuy)	Vendor PN	31 level PN
800MHz 512MB(64M*16) Samsung	0	0	1	AKD5LGGT502		K4W1G1646E-HC12	
800MHz 512MB(64M*16) Hynix	0	1	0	AKD5LZGTW00		H5TQ1G63BFR-12C	

For Park S3:
Install All components in this Box
R402,R397,R398,L9,C136,L19,C261

For M92-S2: DO NOT Install any Component in this Box.

+1.8V_RUN_GFX L9 *BLM15BD121SN1D_NC +1.8V_RUN_GFX_R
C136 *1U_NC
+PCIE_VDDC L19 *BLM15BD121SN1D_NC
C261 *1U_NC
+1.8V_RUN_GFX_R

R402 1 2 *0_NC U1
R397 1 2 *0_NC
R398 1 2 *0_NC

RAM_TYPE_CFG0 RAM_TYPE_CFG1 RAM_TYPE_CFG2

U19B PART 2 OF 10

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

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

GPIO0 GPIO1 GPIO2 GPIO3 GPIO4 GPIO5
[50] GFX_CORE_CNTRL2 [29] PANEL_BKEN HDMI_HD_EN
RAM_CFG0 RAM_CFG1 RAM_CFG2
[50] GFX_CORE_CNTRL0 [19] THERMAL_INT# CLK_VGA_27M_SSIN_R R404 1 *0_NC 2 TEMP_FAIL
[50] GFX_CORE_CNTRL1 [18] BB_ENA GFX_CLKREQ# R410 2 1 1K
T50 PAD T51 PAD T55 PAD T53 PAD T56 PAD T14 PAD T9 PAD T49 PAD T58 PAD T48 PAD T8 PAD
HPD1 R35 499/F R36 249/F VREFG C137 0.1U
For M92: No stuff R1011
For Park: Stuff R1011
R104 *10K_NC XO_IN2 XO_IN R68 SJ_0402
R365 10K R67 10K [24] ENVDD [24] BIA_PWM R366 SJ_0402
+3.3V_DELAY R42 *10K_NC R45 10K [19] TEST_EN
AF24 is TESTEN on both M92S2 and ParkS3. Implement 10K ohm PU and PD for both and connected to K7 pin

DAC1
R AM26 RB AK26
G AL25 GB AJ25
B AH24 BB AG25
HSYNC AH26 DAC1_VGAHSYNC
VSYNC AJ27 DAC1_VGAVSYNC
AVDD AG24 C162 *0.1U_NC
AVSSQ AE22
VDD1DI AE23 C182 *0.1U_NC
VSS1DI AD23
RSET AD22 R66 499R

DAC2
R2 AM12 R2B AK12 VGA_RED VGA_RED [25]
G2 AL11 G2B AJ11 VGA_GRN VGA_GRN [25]
B2 AK10 B2B AL9 VGA_BLU VGA_BLU [25]
H2SYNC AL13 VGAHSYNC VGAHSYNC [25]
V2SYNC AJ13 VGAVSYNC VGAVSYNC [25]
C AH12
Y AM10
COMP AJ9
A2VDD AE20 C566 0.01U
A2VDDQ AE17 C577 0.1U C571 1U
A2VSSQ AE19
VDD2DI AD19 C582 0.01U
VSS2DI AC19
R2SET AG13 R2SET R377 715

+1.8V_RUN_GFX AVDD=70mA max
VDD1DI=45mA max
+3.3V_DELAY A2VDD=65mA max
+1.8V_RUN_GFX A2VDDQ=1mA max
Keep A2VSSQ away from noisy ground.
+1.8V_RUN_GFX VDD2DI=40mA max
Place very close to ASIC balls

DIS only
VGA_BLU VGA_GRN VGA_RED
R376 150/F R375 150/F R374 150/F

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

+3.3V_DELAY R381 10K R386 10K
HPD1
Q27 MMST3904-7-F
Q28 DTC114TUAT106
HDMI_DET [24] R392 100K

QUANTA COMPUTER

Title	VGA-M92-XT I/O		
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layout note: close to VDDR1#[1:17]

VDDR1#[1..17]=2A max

(PCIE_VDDC 1.0~1.1V +/- 5%@ 2A)

PCIE_VDDR#[1..8]=500mA max

PCIE_VDDC#[1..12]=2A max

VDD_CT#[1..4]=110mA max

VDDR3#[1..4]=50mA max

VDDR4#[1..4] & VDDR5#[1..4]=340mA max

VDDC#[2..3]=120mA max

DDCI=2A max

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

For M92-S2:No stuff R455
Stuff R71,R70,R78
Park:No stuff R71,R70,R78
Stuff R455

For PARK:No stuff L53,C591,C590
For M92: Stuff L53,C591,C590

For PARK: Stuff R63
No stuff C155,Q9,Q10,R51,Q8,R49
For M92: Stuff C155,Q9,Q10,R51,Q8,R49
No stuff R63

U19D
PART 4 OF 10
POWER
M92-S2/M92-LP

U19E
PART 5 OF 10
GND
M92-S2/M92-LP

Title	VGA-M92-XT POWER/GND
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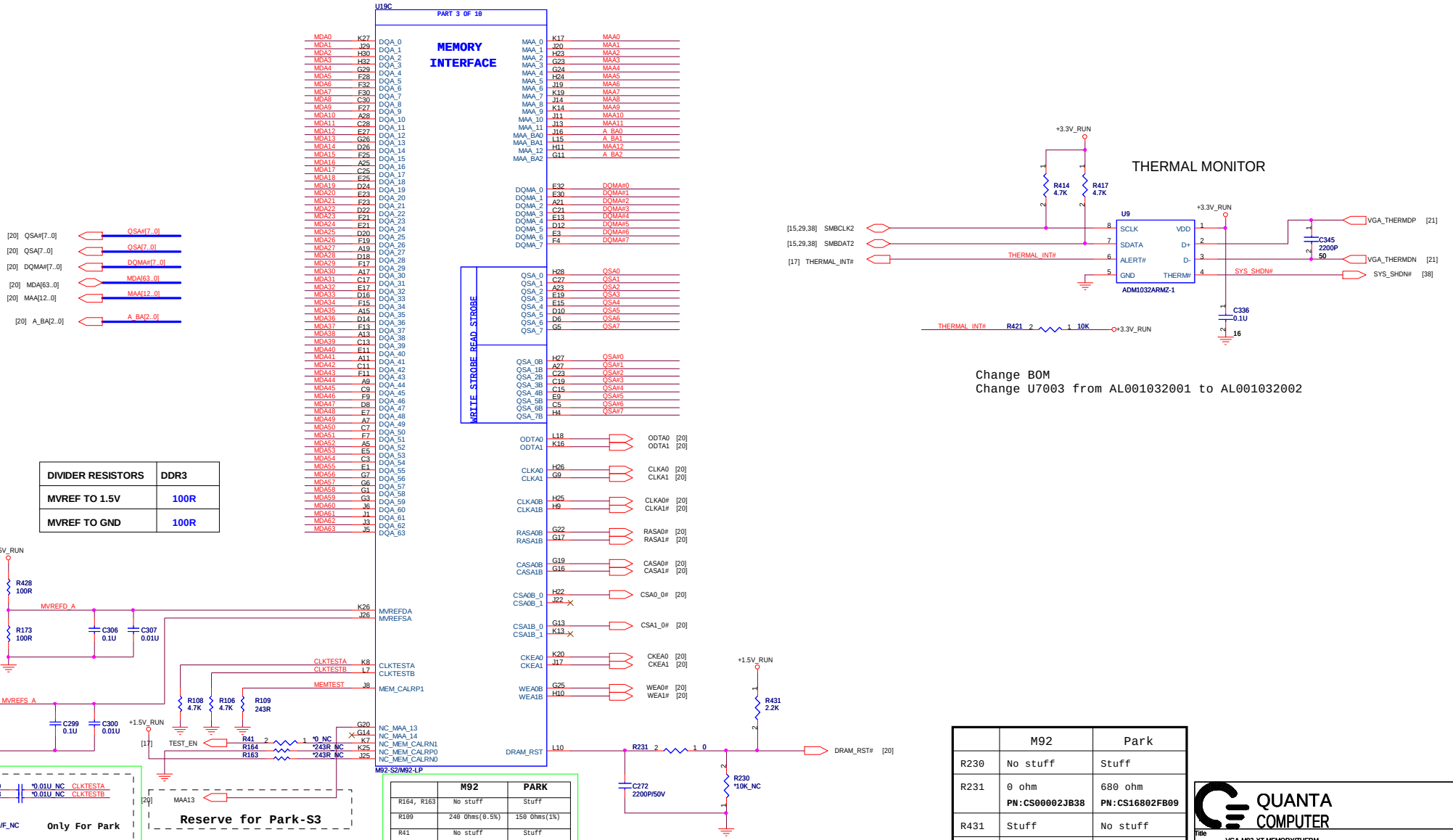
QUANTA COMPUTER

MEMORY INTERFACE



Change BOM
Change U7003 from AL001032001 to AL001032002

	M92	PARK
R164, R163	No stuff	Stuff
R109	240 Ohms(0.5%)	150 Ohms(1%)
R41	No stuff	Stuff
C269,C243 R120,R91	No stuff	Stuff
R108,R106	Stuff	No stuff

	M92	Park
R230	No stuff	Stuff
R231	0 ohm PN:CS00002JB38	680 ohm PN:CS16802FB09
R431	Stuff	No stuff
C272	2200pF PN:CH2226K9B00	68pF PN:CH06806JB01

QUANTA COMPUTER

Title	VGA-M92-XT MEMORY/THERM	
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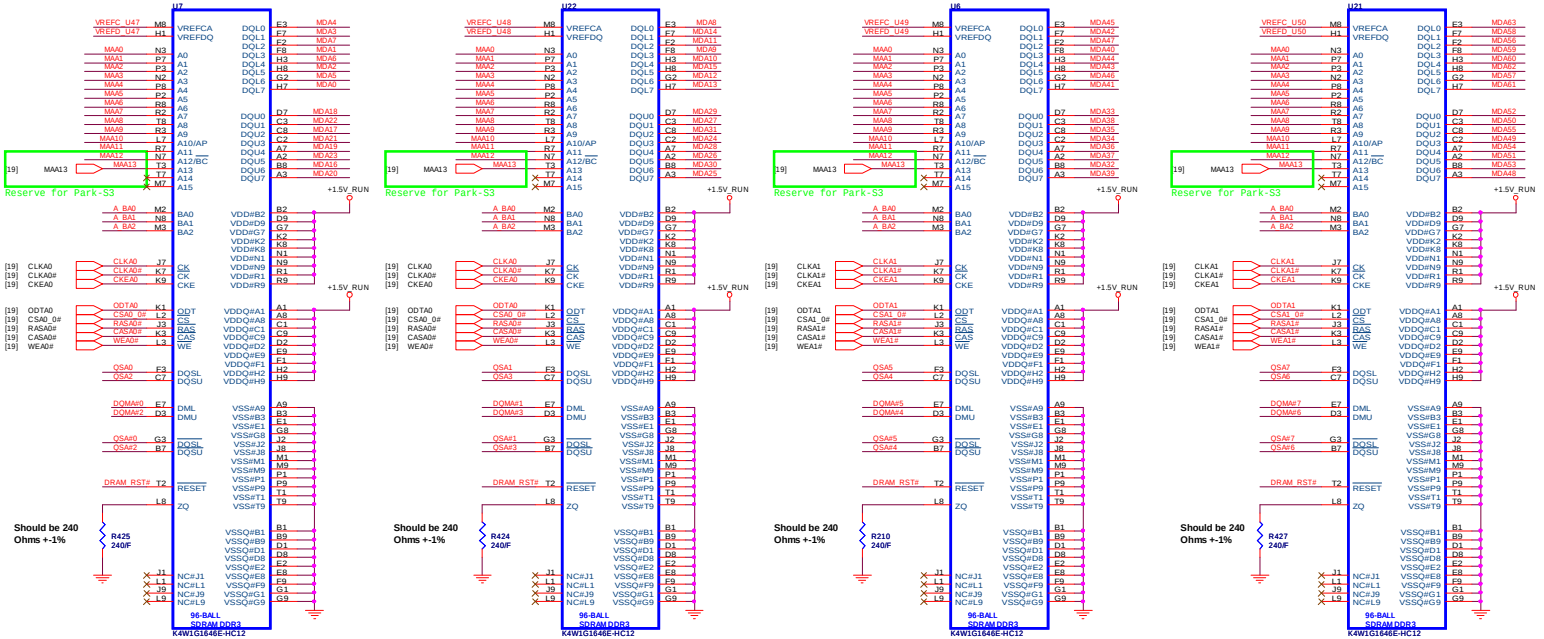
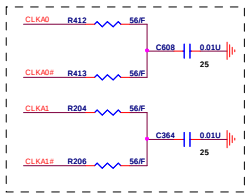
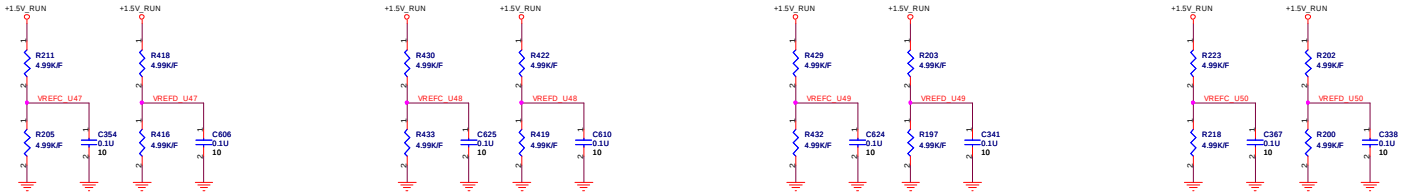
DDR3

[19] MDA[63..0] — MDA[63..0]
[19] MAA[12..0] — MAA[12..0]
[19] QSA[7..0] — QSA[7..0]
[19] QSA#[7..0] — QSA#[7..0]
[19] DQMA#[7..0] — DQMA#[7..0]
[19] DRAM_RST# — DRAM_RST#
[19] A_BA[2..0] — A_BA[2..0]

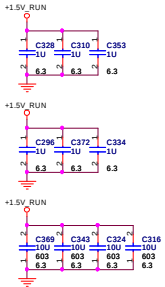


Placement has to be close to VRAM

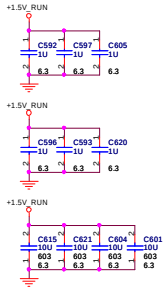




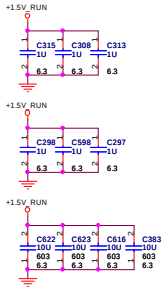
close to U47



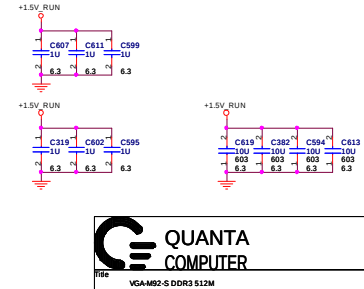
close to U48



close to U49



close to U50



QUANTA COMPUTER

Title	VGA-M92-S DDR3 512M	
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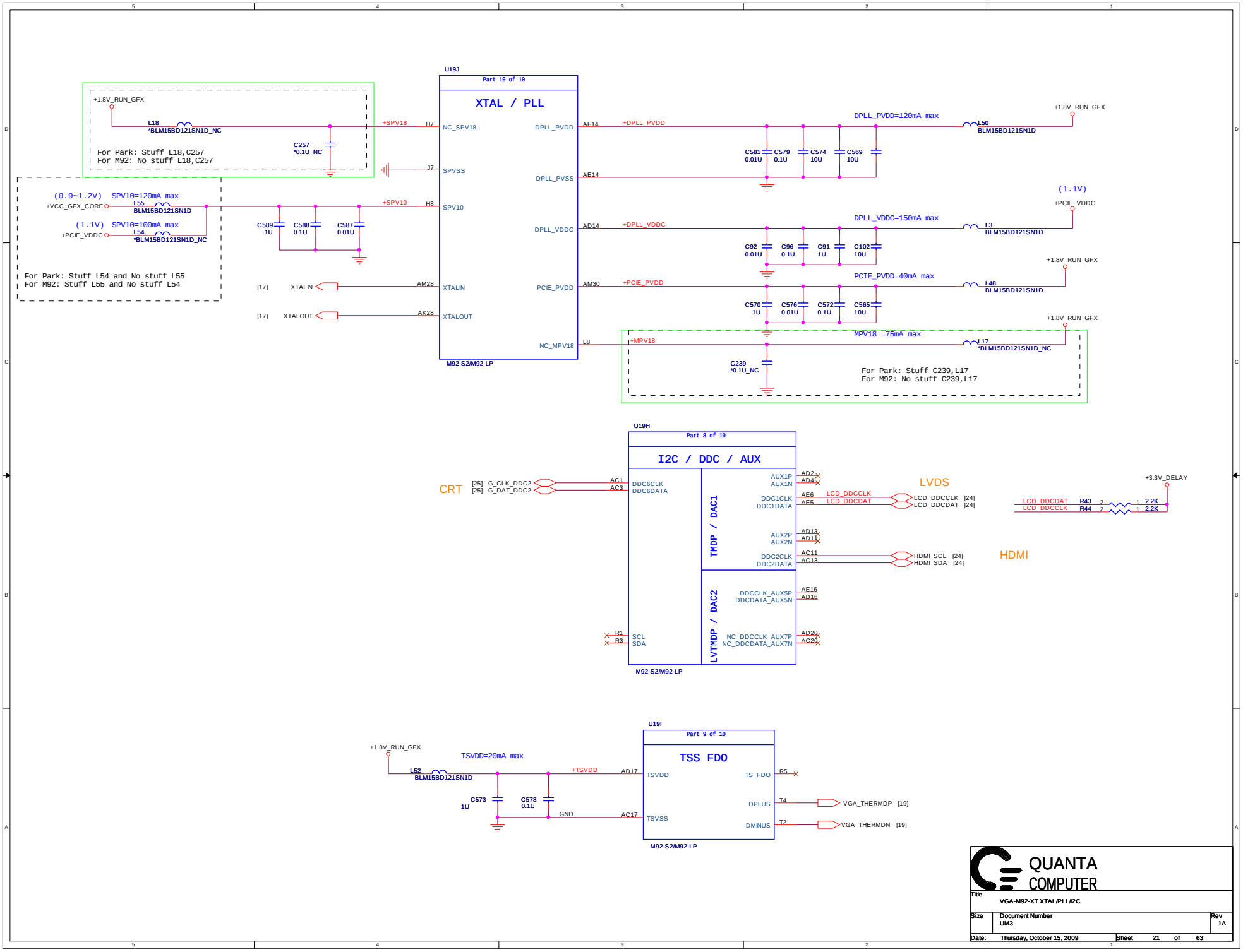

QUANTA COMPUTER

Title	VGA-M92-XT XTAL/PLL/I2C	
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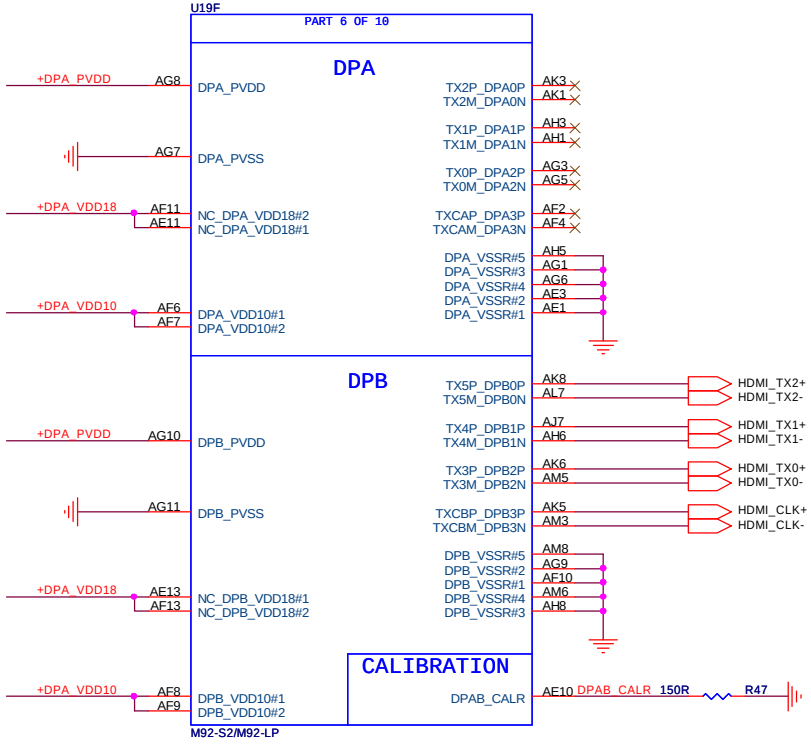
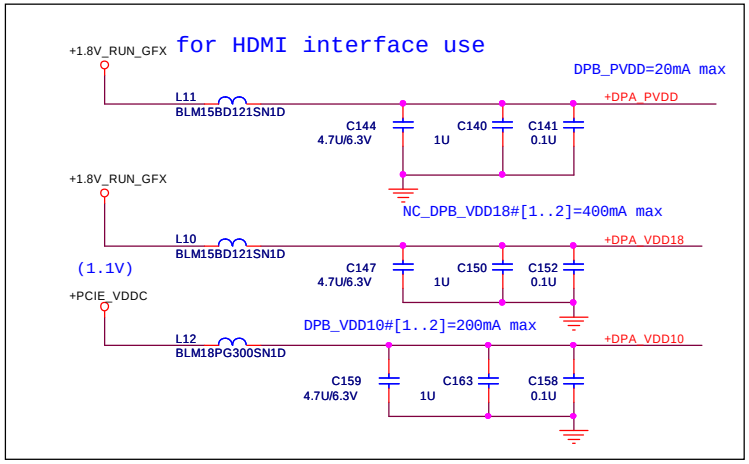
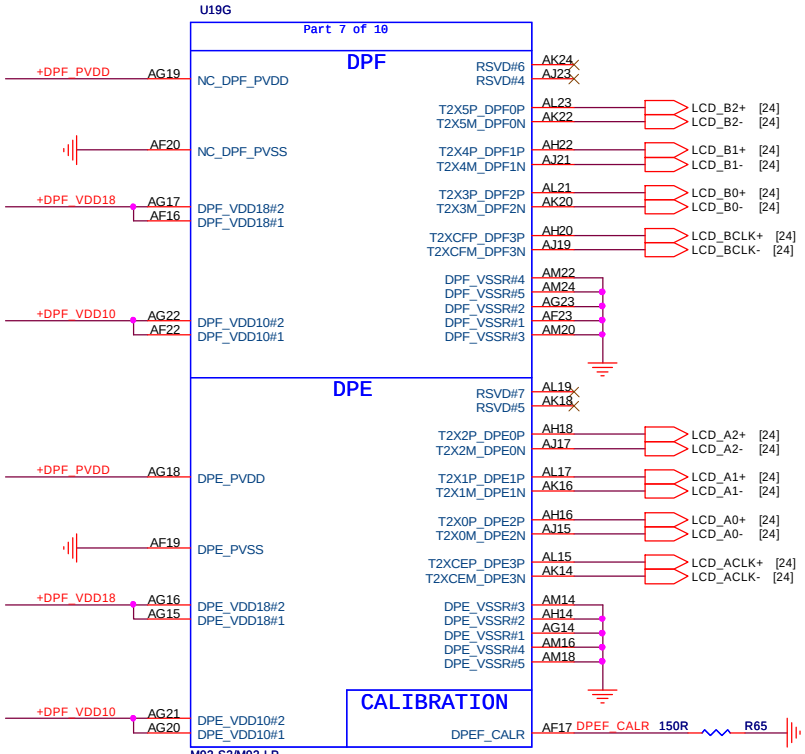
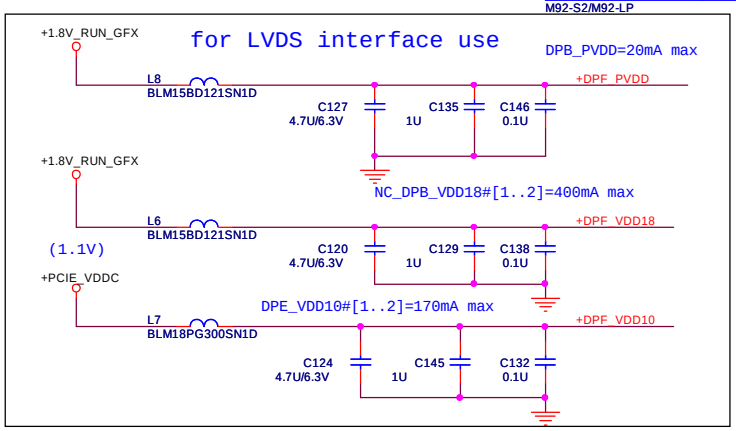
TMDP(HDMI) INTERFACE





LVDS INTERFACE





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Title	VGA-M92-XT TMDP I/F	
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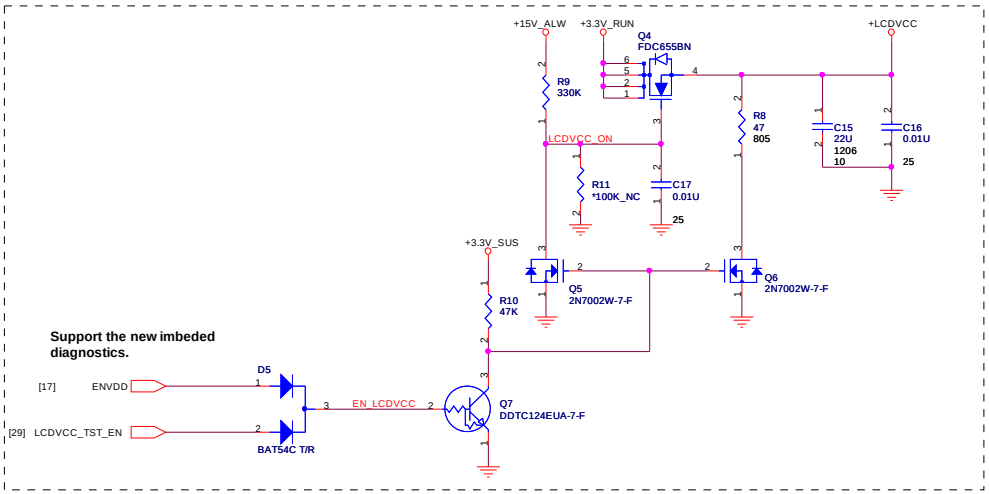
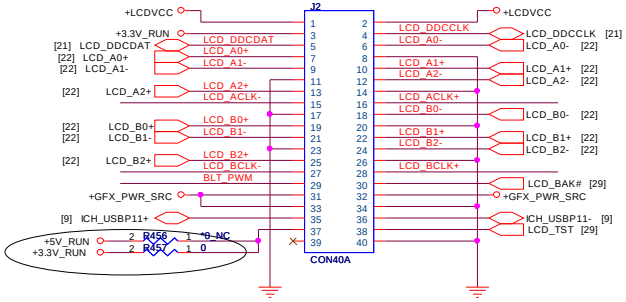
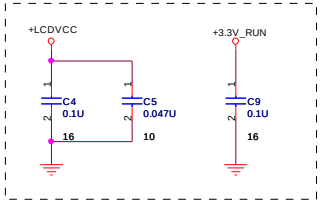
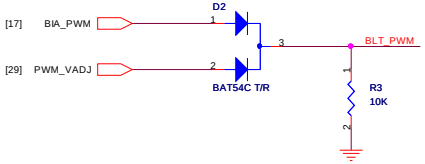
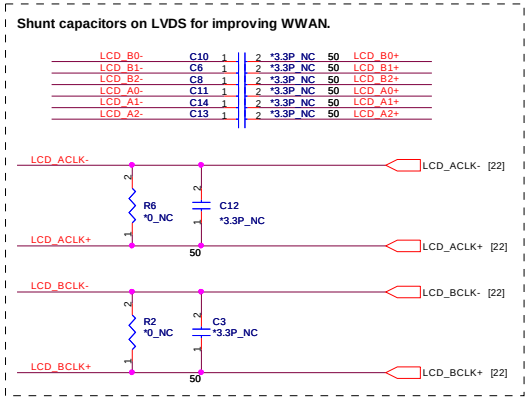


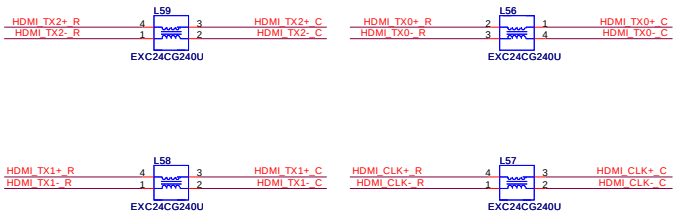


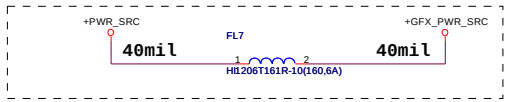


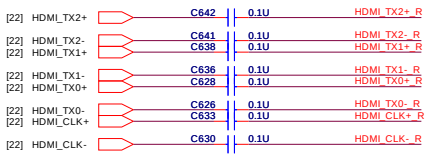
Need to check
DFWF40MR000

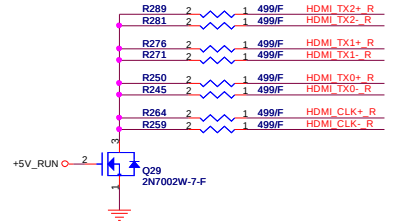


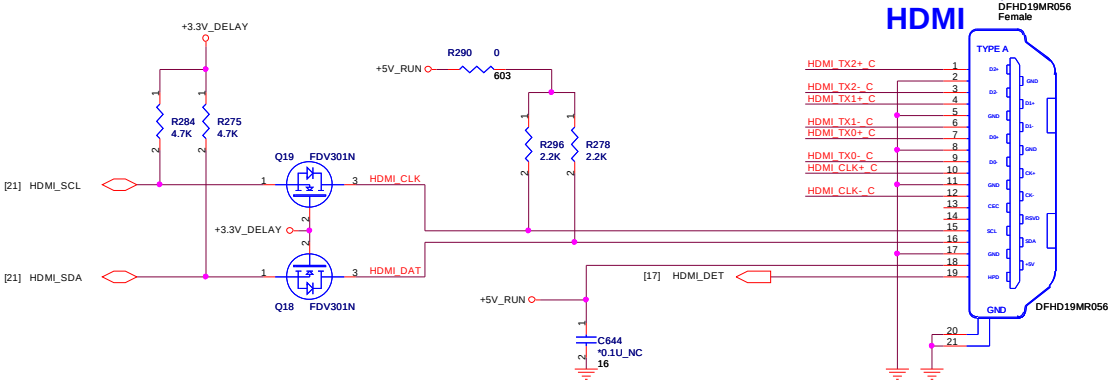












DFHD19MR056

QUANTA COMPUTER

Title	LCD CONN / HDMI CONN	
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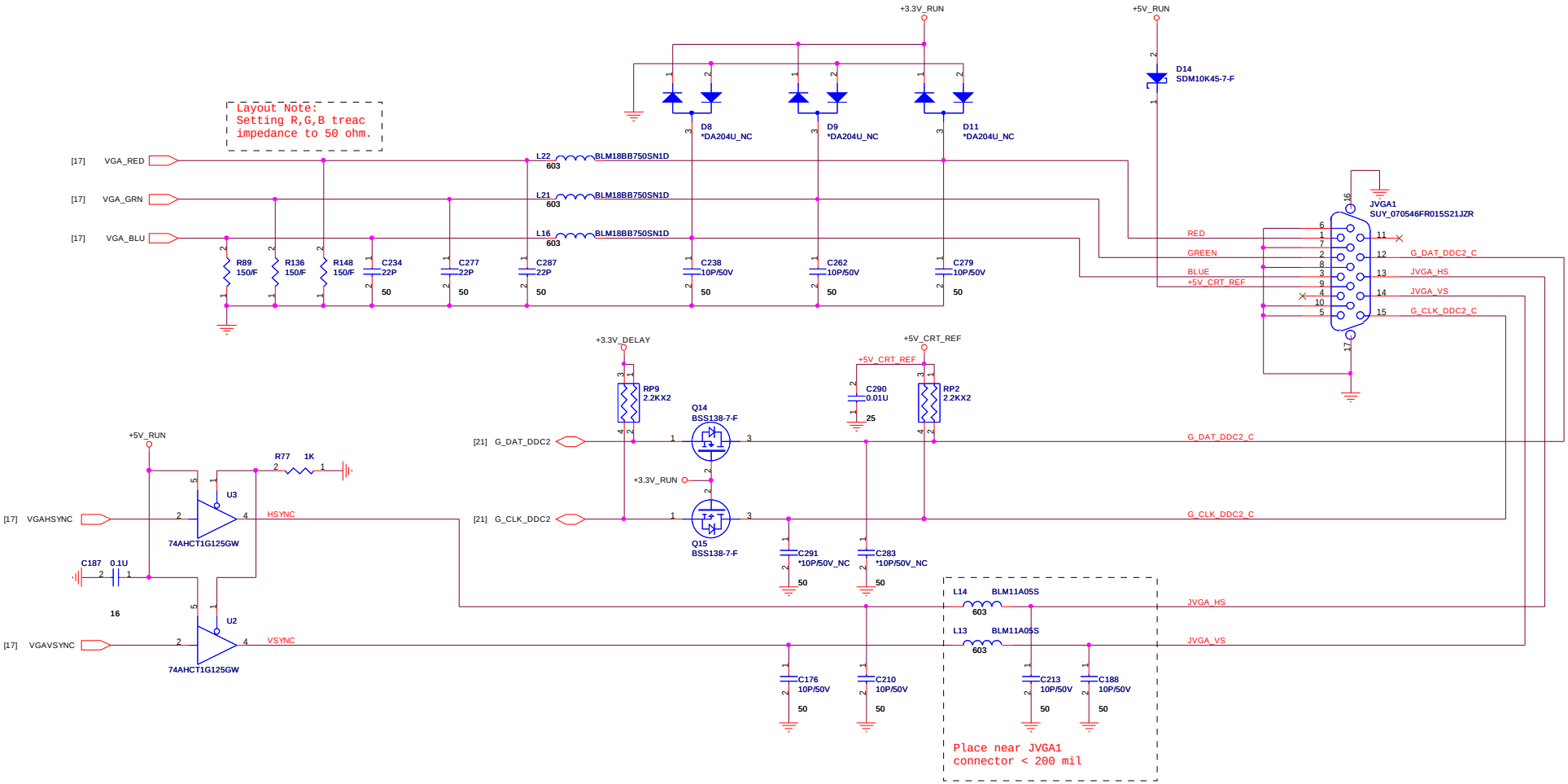

QUANTA COMPUTER

Title	CRT CONN	
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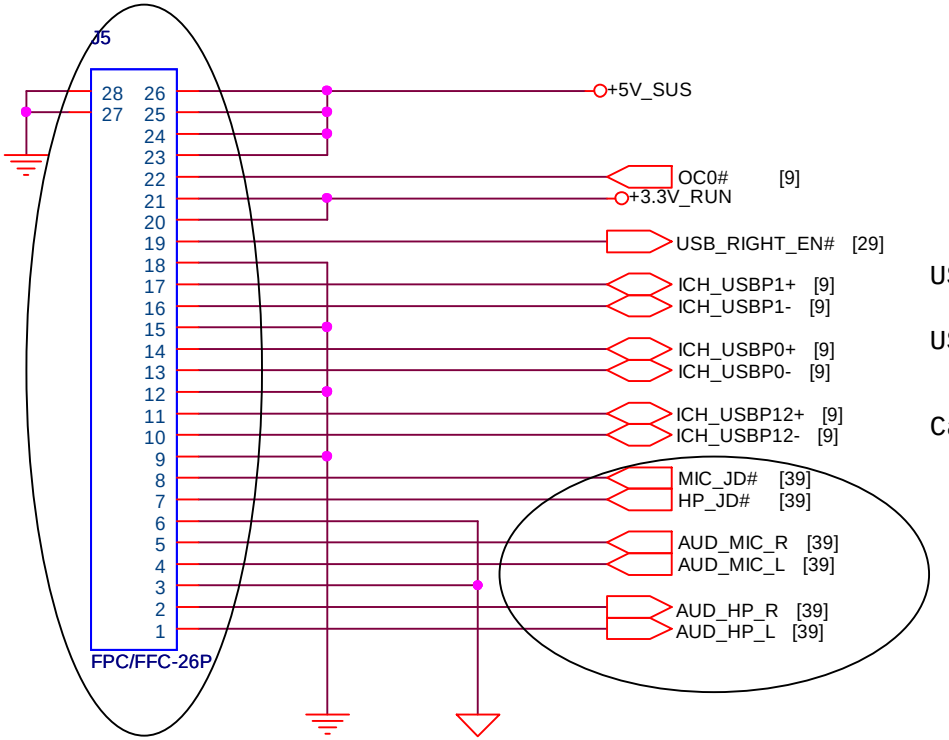
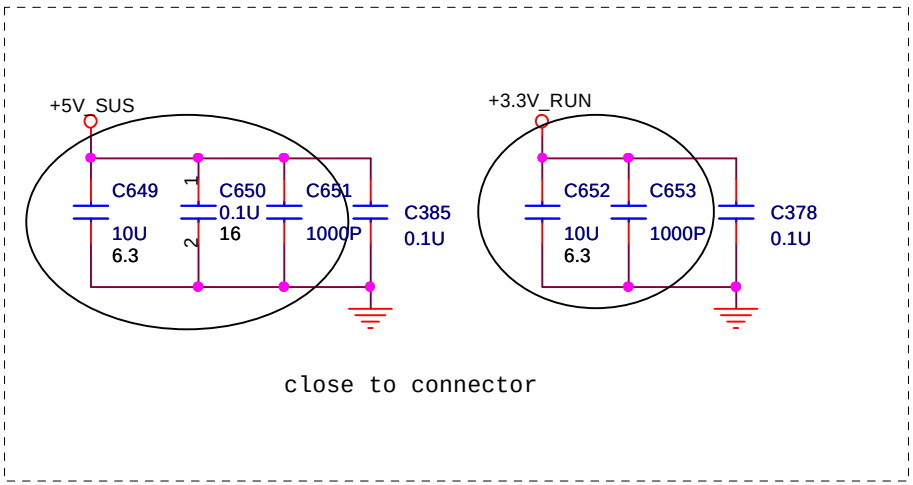


USB RIHGT2

USB RIHGT1

Card reader



QUANTA COMPUTER

Title	DB CONN	
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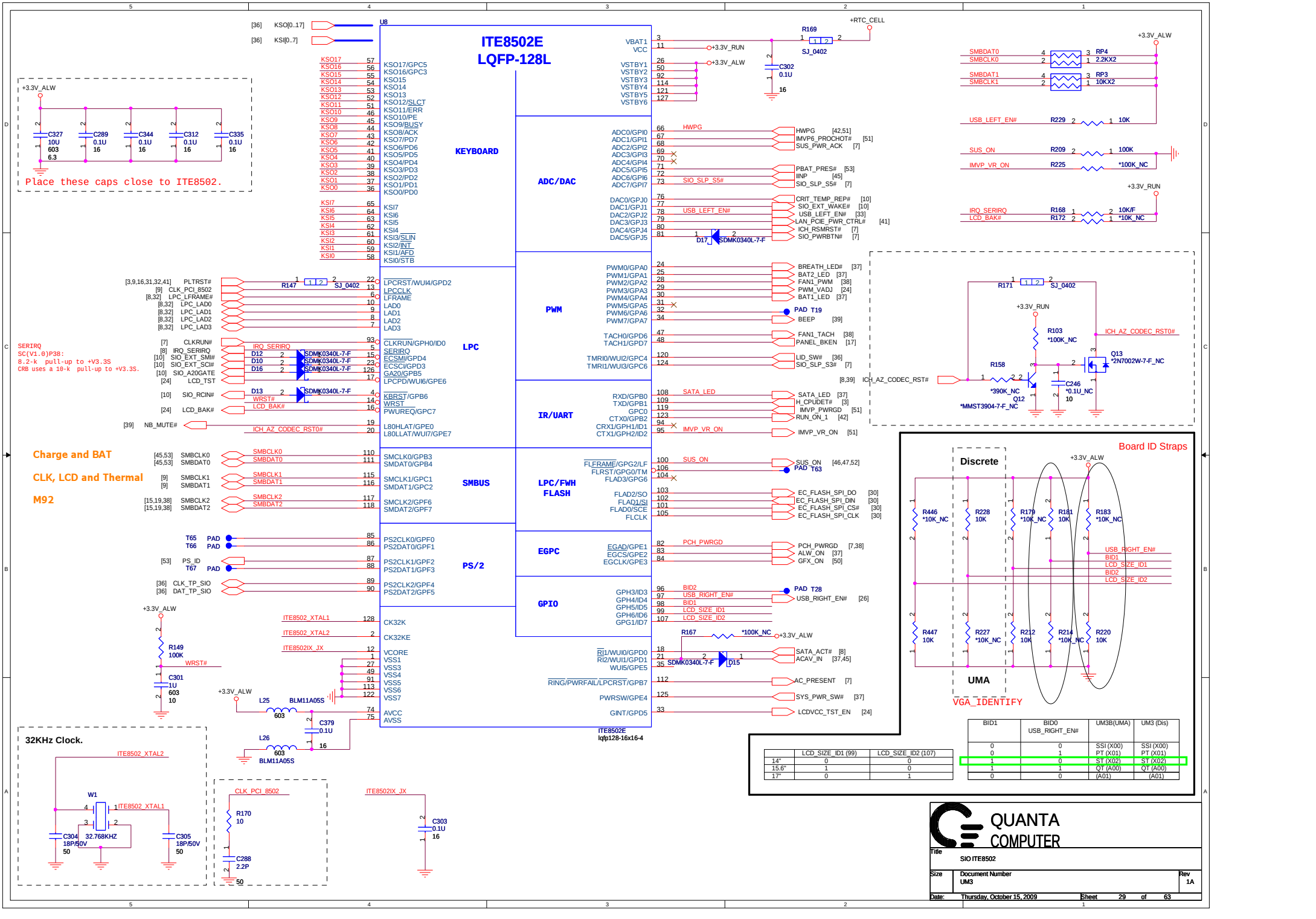
ITE8502E
LQFP-128L
U8
KEYBOARD
ADC/DAC
PWM
LPC
IR/UART
SMBUS
LPC/FWH
FLASH
EGPC
PS/2
GPIO
Place these caps close to ITE8502.
Charge and BAT
CLK, LCD and Thermal
M92
32KHz Clock.
Board ID Straps
Discrete
UMA
VGA_IDENTIFY
QUANTA
COMPUTER
SIO ITE8502
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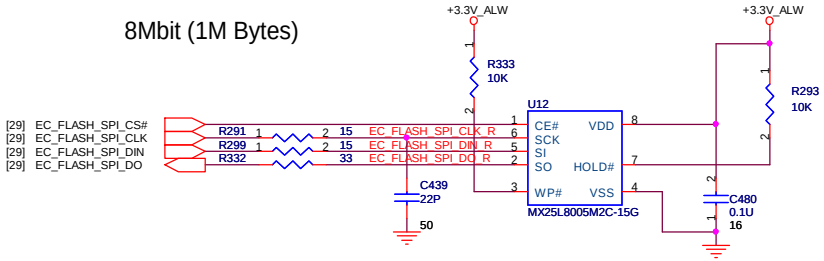
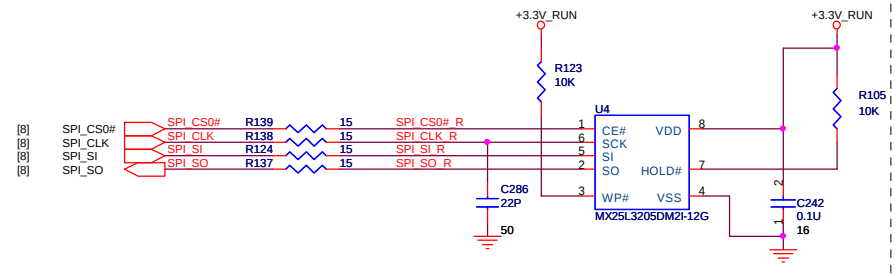
For EC

8Mbit (1M Bytes)

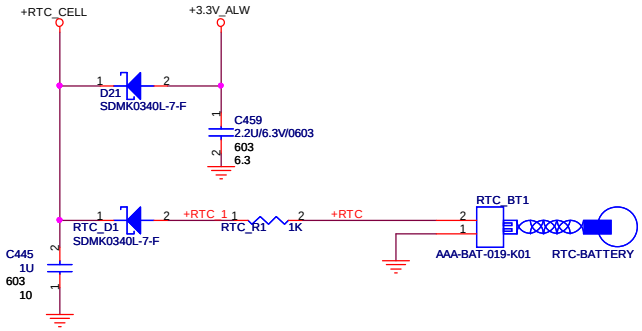


For PCH

32Mbit (4M Bytes)



RTC BATTERY



QUANTA COMPUTER

Title	FLASH/RTC	
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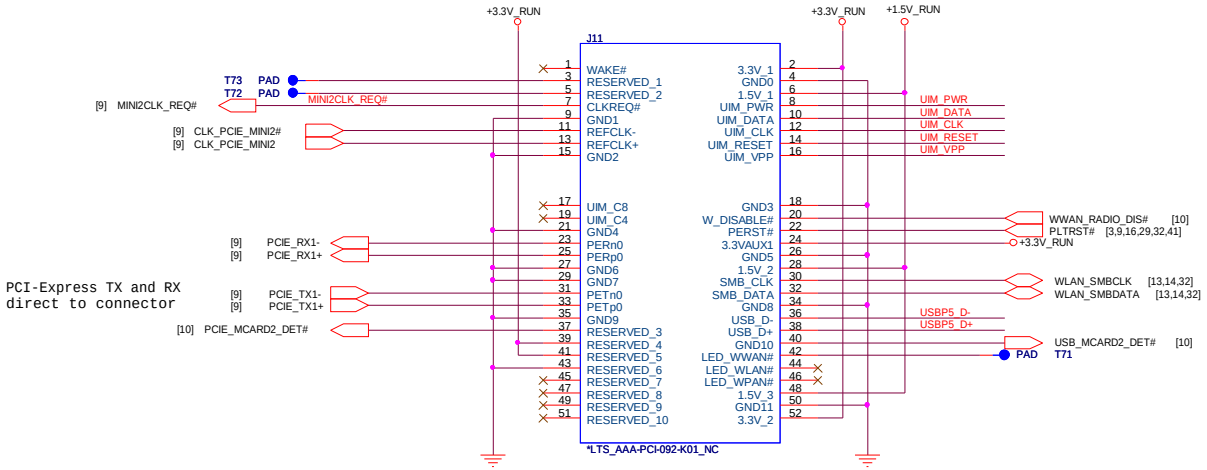
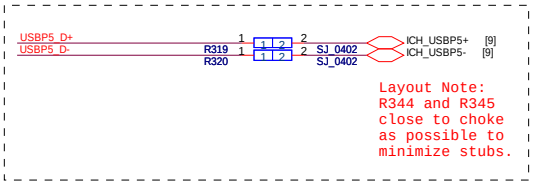
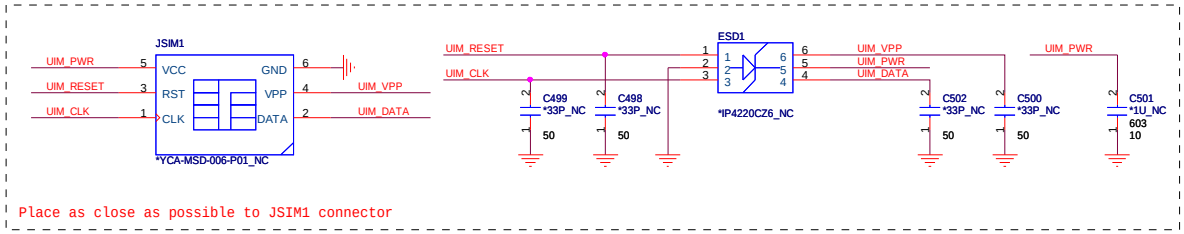
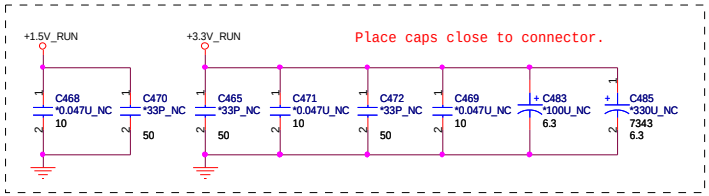
MiniCard WWAN connector



PCI-Express TX and RX
direct to connector







DFHS06FR043

QUANTA COMPUTER

Title	MINI-Card WWAN	
Size	Document Number UM3	Rev 1A
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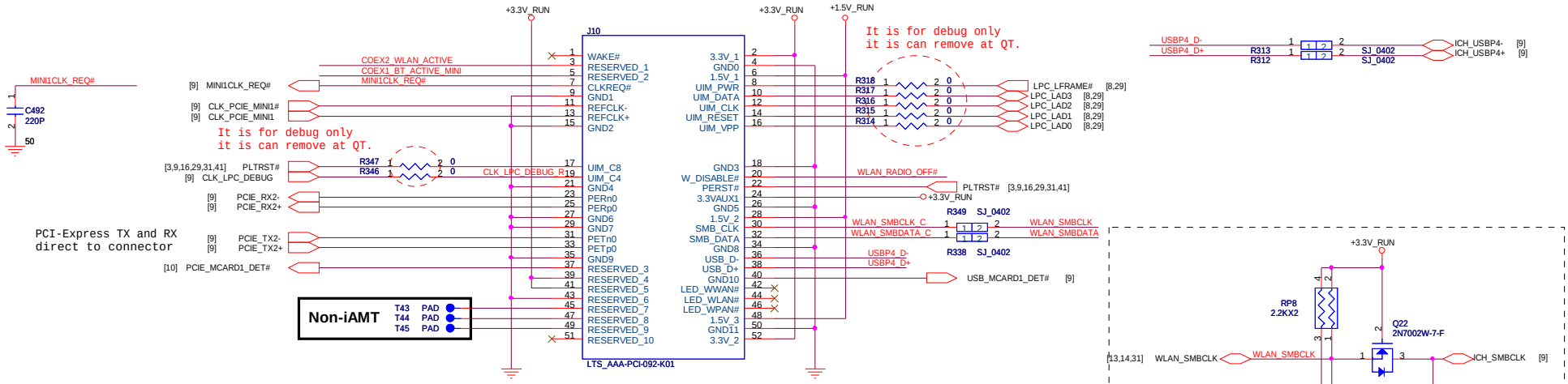
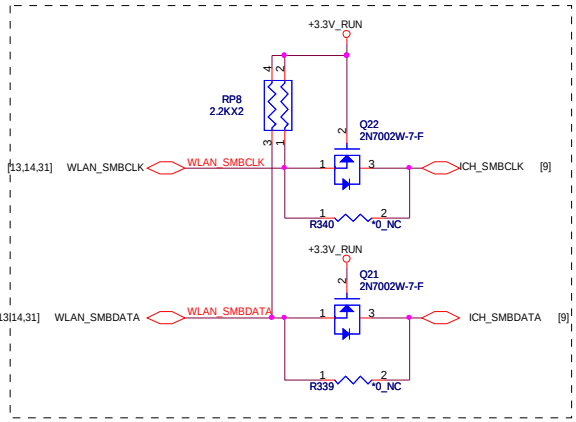
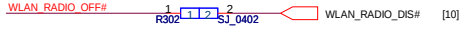
MiniCard WLAN connector



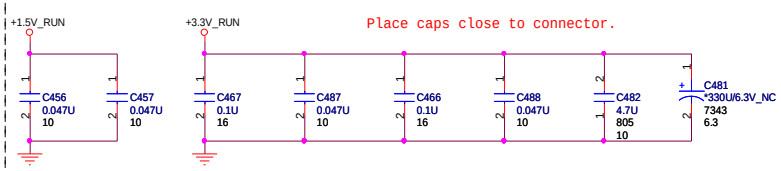
PCI-Express TX and RX direct to connector



Suport for WoW

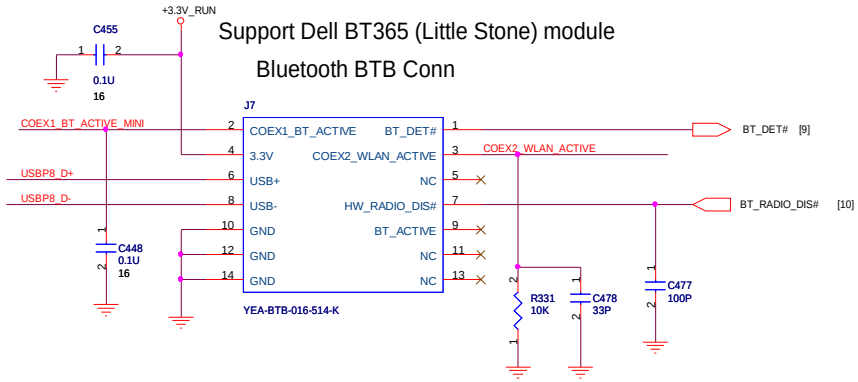


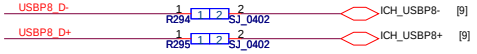
Prevent backdrive when WoW is enabled.



Support Dell BT365 (Little Stone) module

Bluetooth BTB Conn





QUANTA COMPUTER		
Title	MINI-Card WLAN / WPAN	
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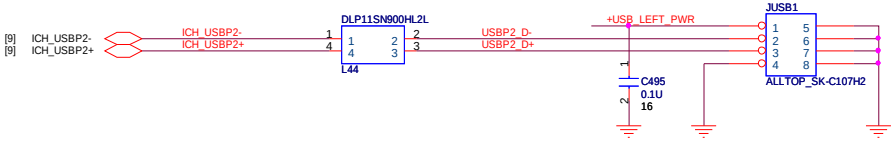
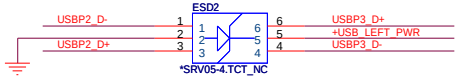
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



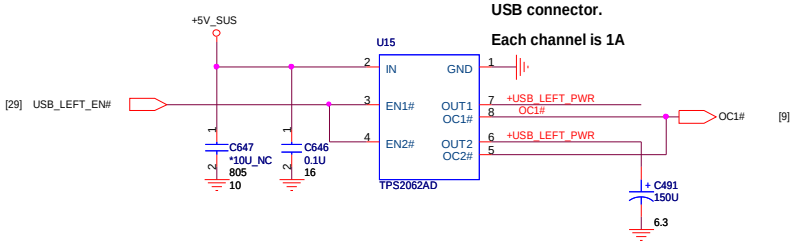
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

Place ESD diodes as close as USB connector.



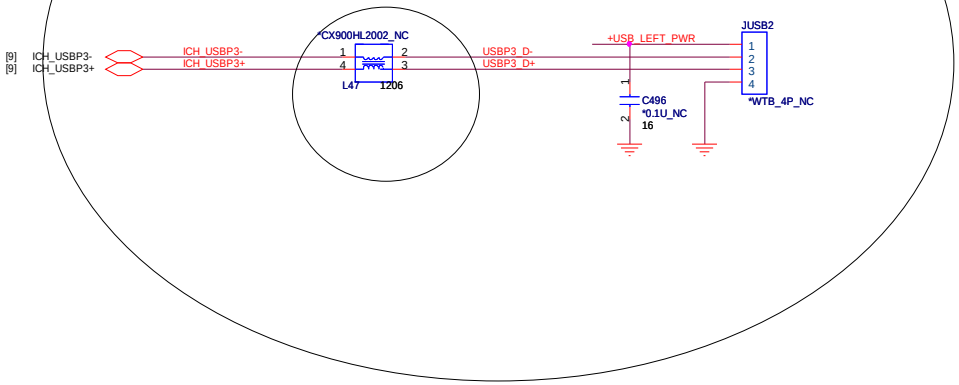
Place one 150uF cap by each USB connector.

Each channel is 1A



REV FOR 17"

Add L47 ,C496 , JUSB2 for UM5



QUANTA COMPUTER

Title	USB	
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QUANTA COMPUTER

Title	Blank Page	
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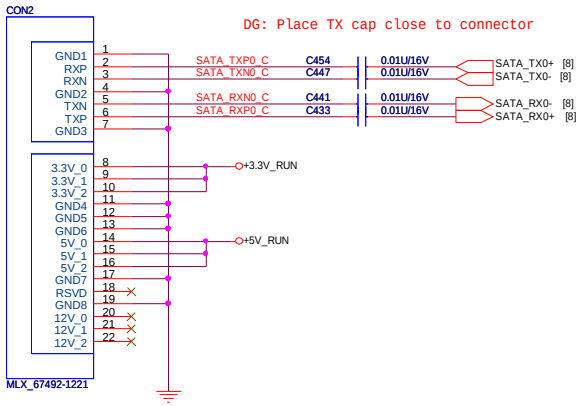
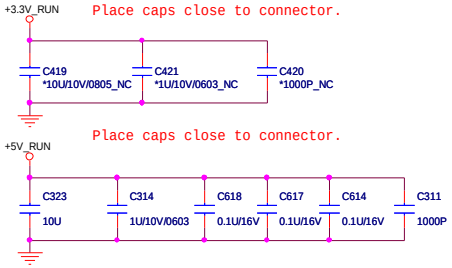
SATA Connector.



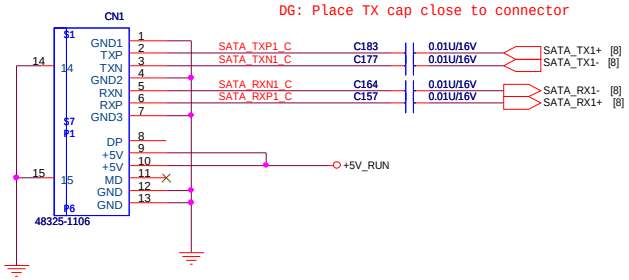
UM5與UM3/6不同, 只差在高度, footprint沒變

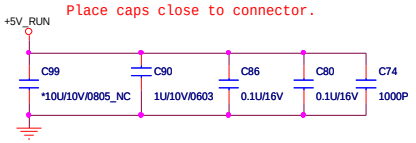
UM5/UM5B
PN:DFHS22FR137
Mfr:67492-1224

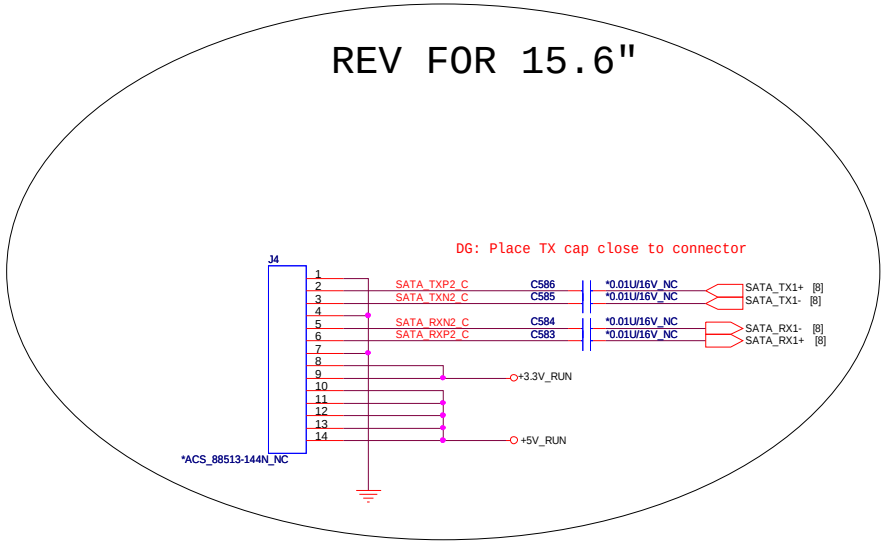
UM3/UM3B/UM6/UM6B
PN:DFHS22FR0B2
Mfr:67492-1921



ODD Connector

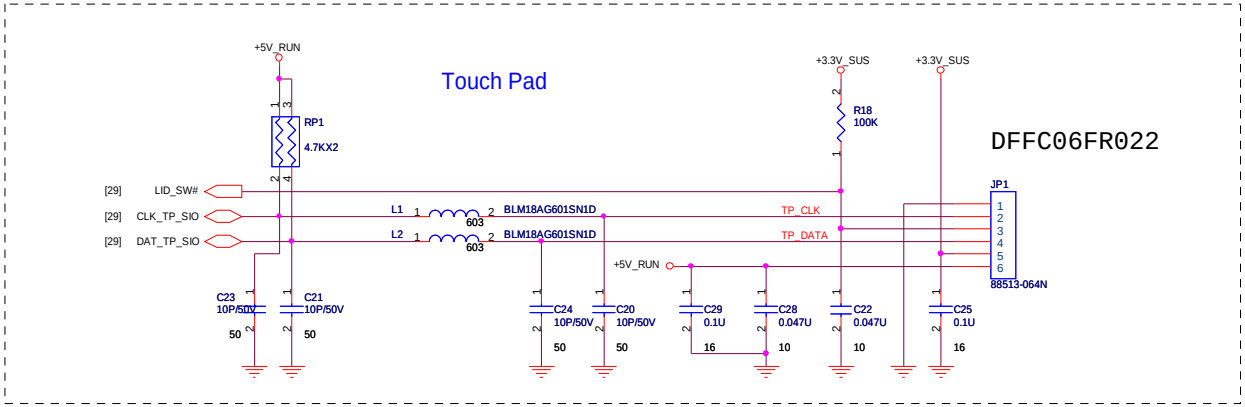






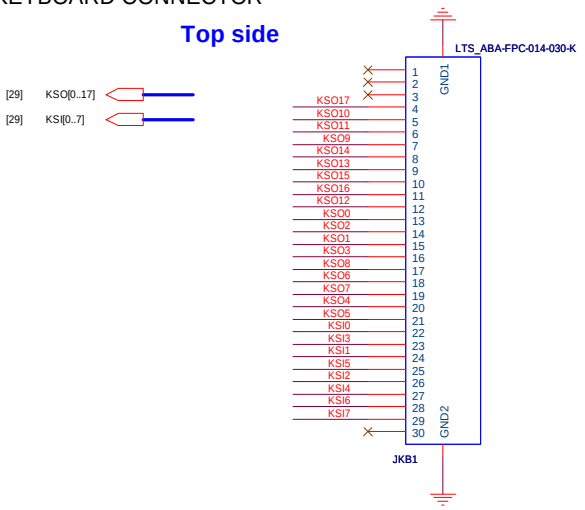
QUANTA COMPUTER

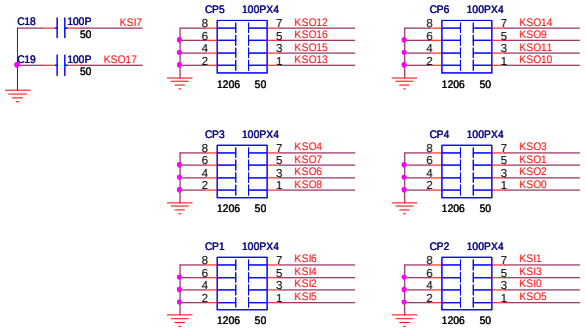
Title	SATA (HDD&CD_ROM)	
Size	Document Number: UM3	Rev: 1A
Date: Thursday, October 15, 2009	Sheet 35 of 63	



KEYBOARD CONNECTOR

Top side



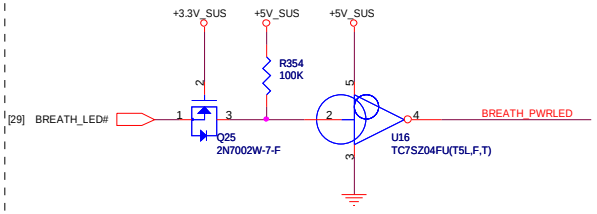


100P CAPS CLOSE TO JKB1

QUANTA COMPUTER

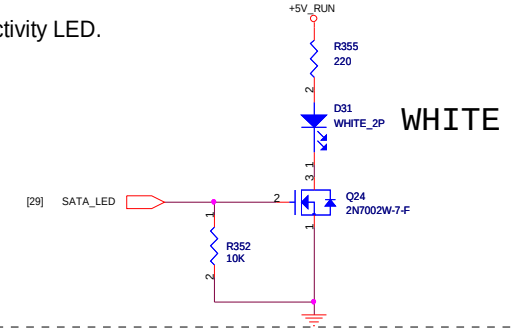
Title	TOUCH PAD, KB	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 36 of 63	

Power



WHITE

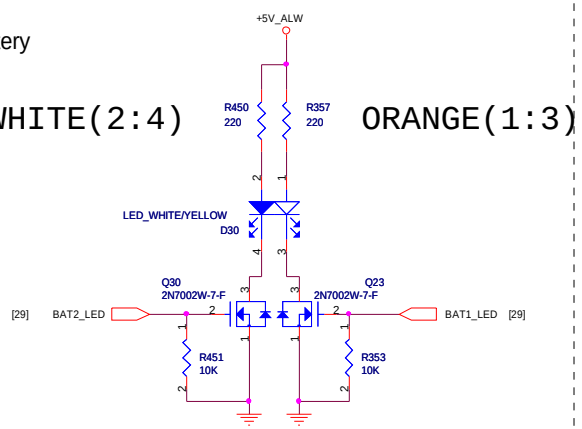
HDD activity LED.



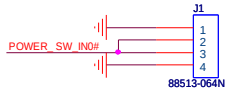
Battery

WHITE(2:4)

ORANGE(1:3)



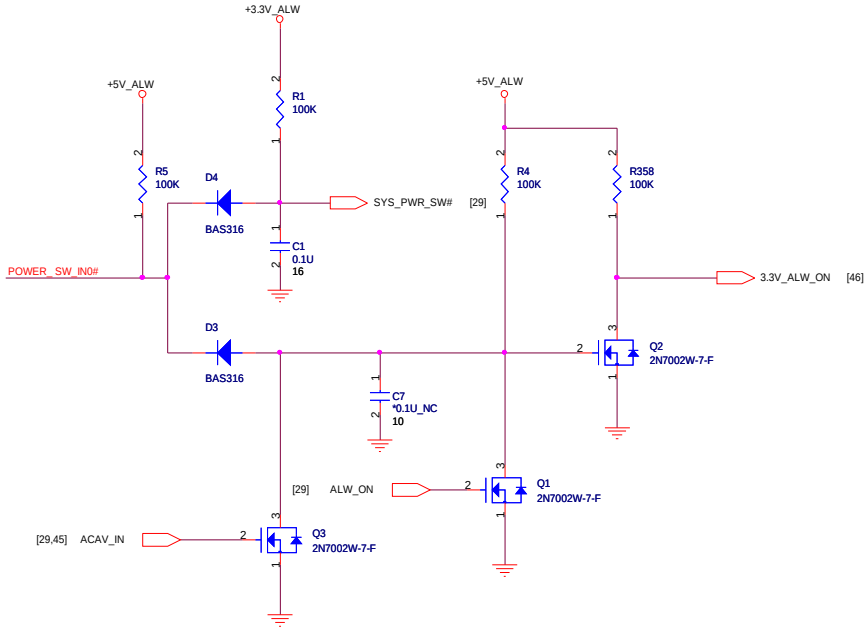
Power button Cable

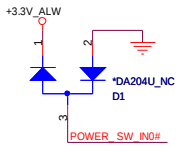


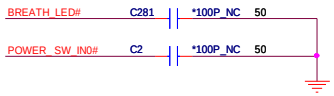
Stephen 7/31

DFFC04FR014

3VALW ON POWER LOGIC







QUANTA COMPUTER

Title	SWITCH, LED	
Size	Document Number UM3	Rev 1A
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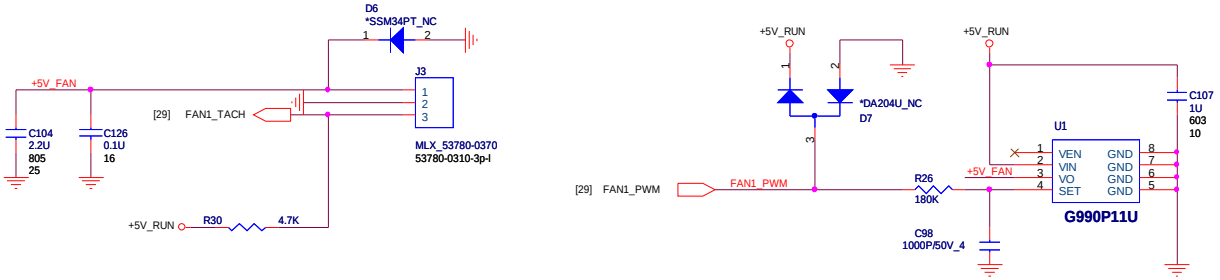
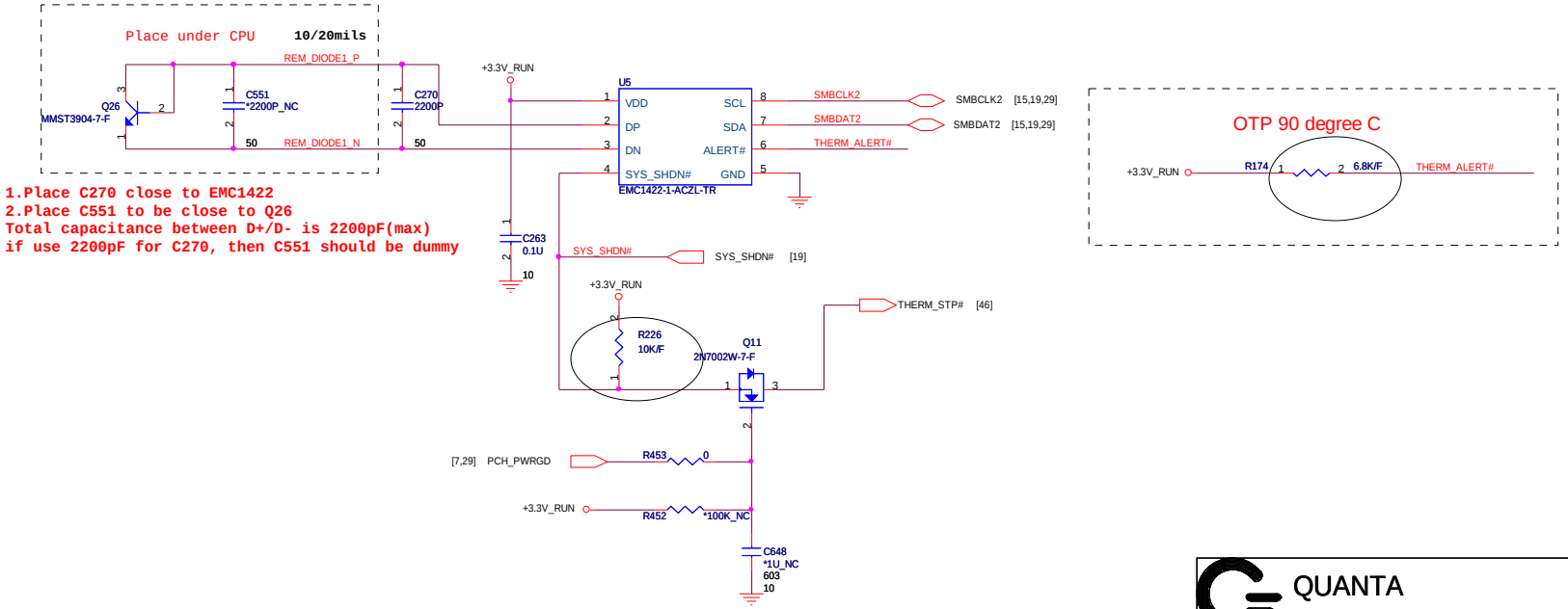
FAN CONTROL

6/23 COPY FROM RM6



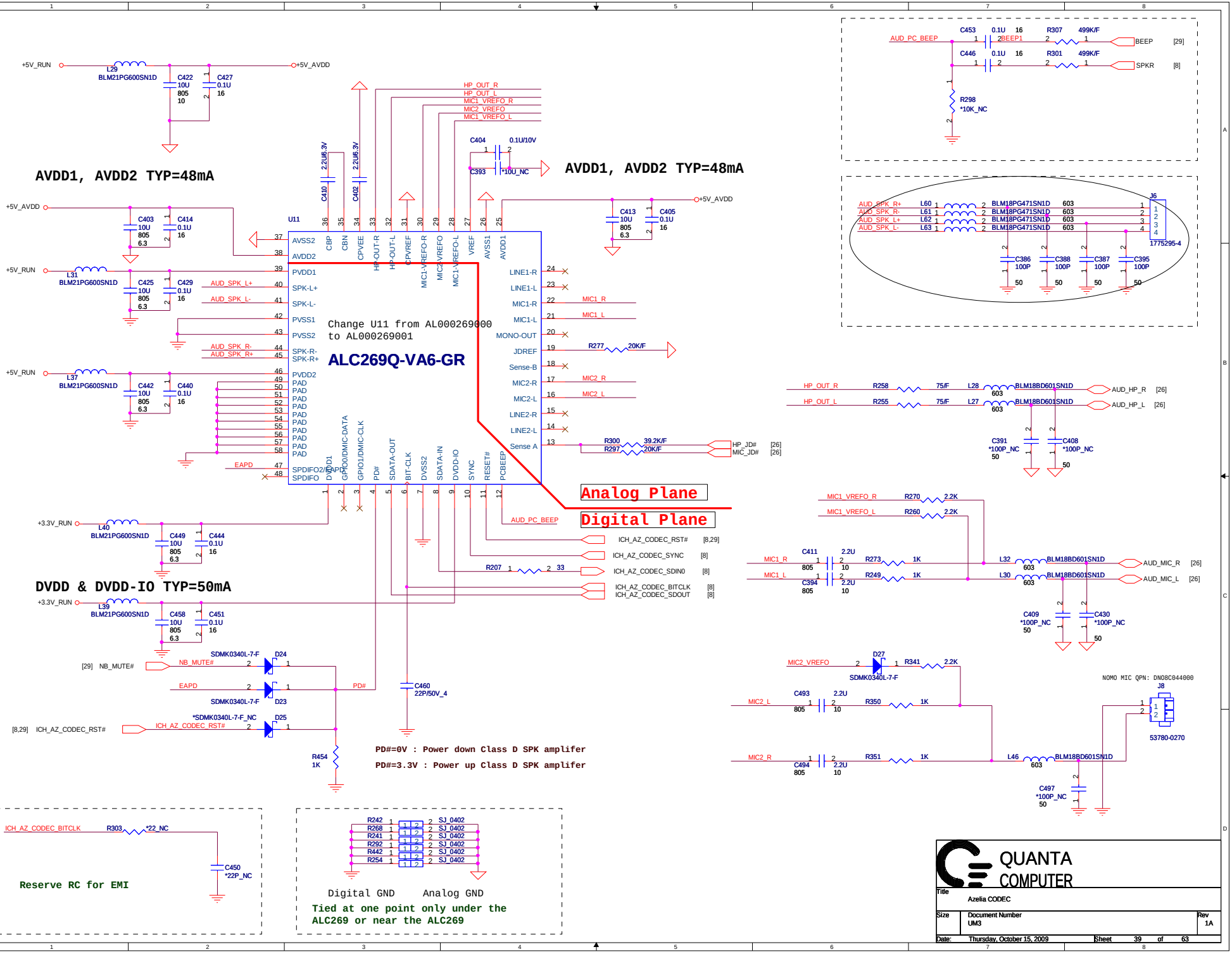
Thermal sensor



1.Place C270 close to EMC1422
2.Place C551 to be close to Q26
Total capacitance between D+/D- is 2200pF(max)
if use 2200pF for C270, then C551 should be dummy

QUANTA COMPUTER

Title	FAN & THERMAL	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 38 of 63	


AVDD1, AVDD2 TYP=48mA
AVDD1, AVDD2 TYP=48mA
Change U11 from AL000269000 to AL000269001
ALC269Q-VA6-GR
Analog Plane
Digital Plane
DVDD & DVDD-IO TYP=50mA
PD#=0V : Power down Class D SPK amplifer
PD#=3.3V : Power up Class D SPK amplifer
Reserve RC for EMI
Digital GND
Analog GND
Tied at one point only under the ALC269 or near the ALC269
NOMO MIC QPN: DN08C044000
QUANTA COMPUTER
Azelia CODEC
Document Number UM3
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QUANTA COMPUTER

Title	Blank Page	
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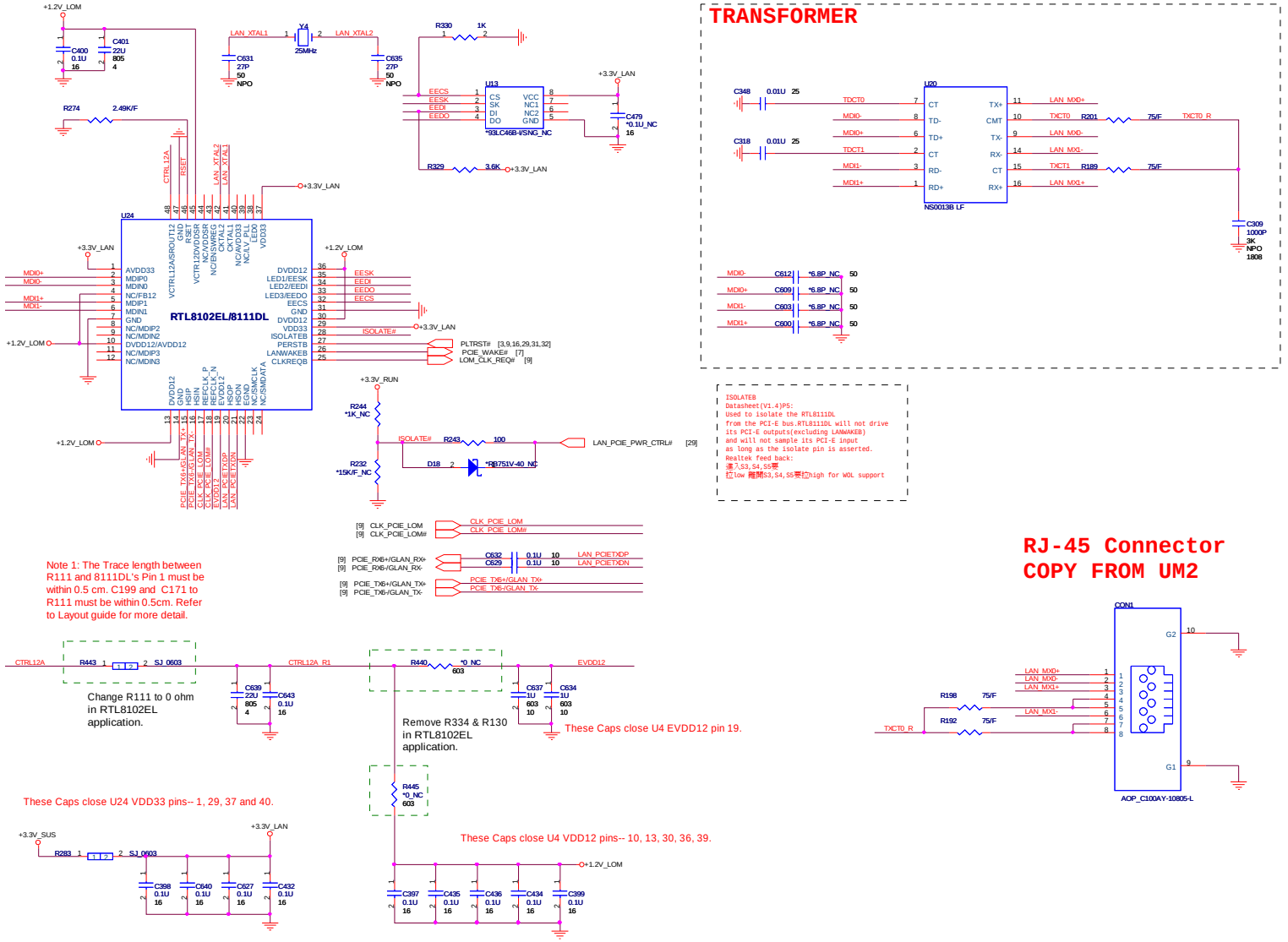
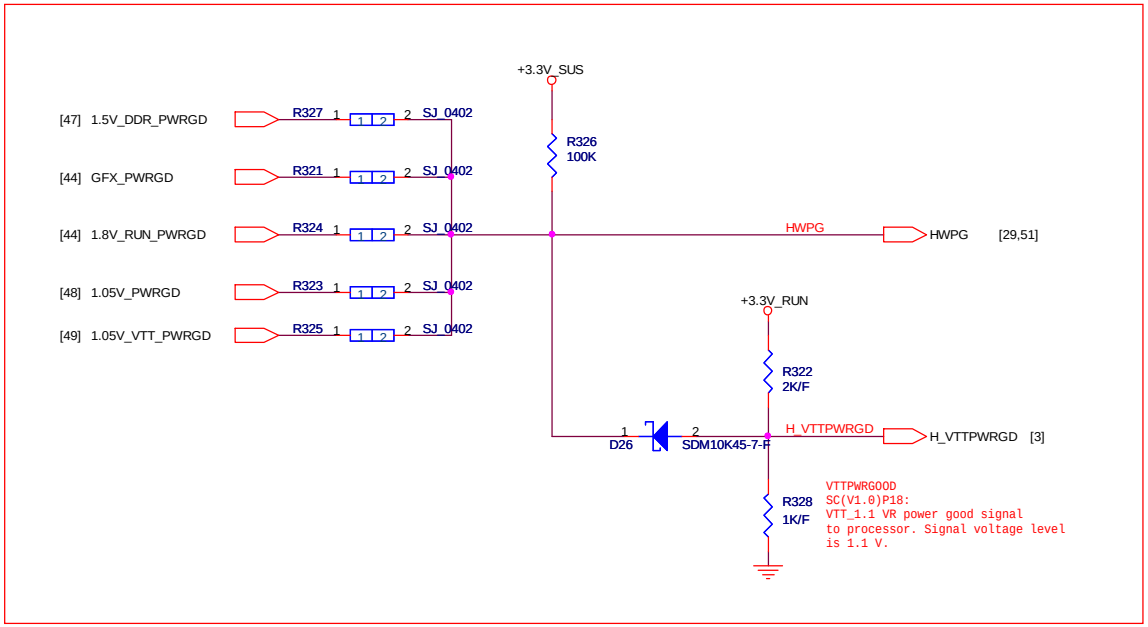


Title	LAN RTL8103E/RJ-45		
Size	Document Number UM3		Rev 1A
Date:	Thursday, October 15, 2009	Sheet 41 of 63	



QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number UM3	Rev 1A
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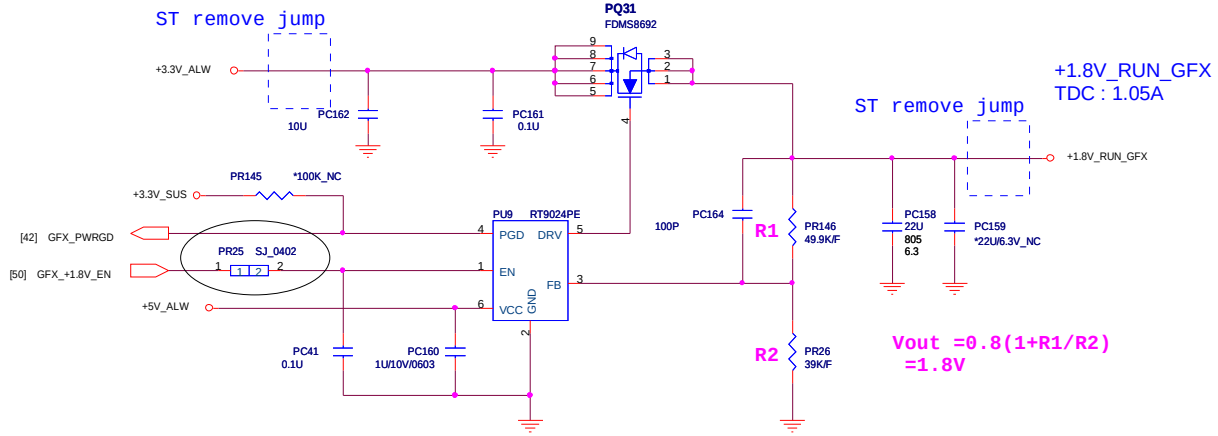
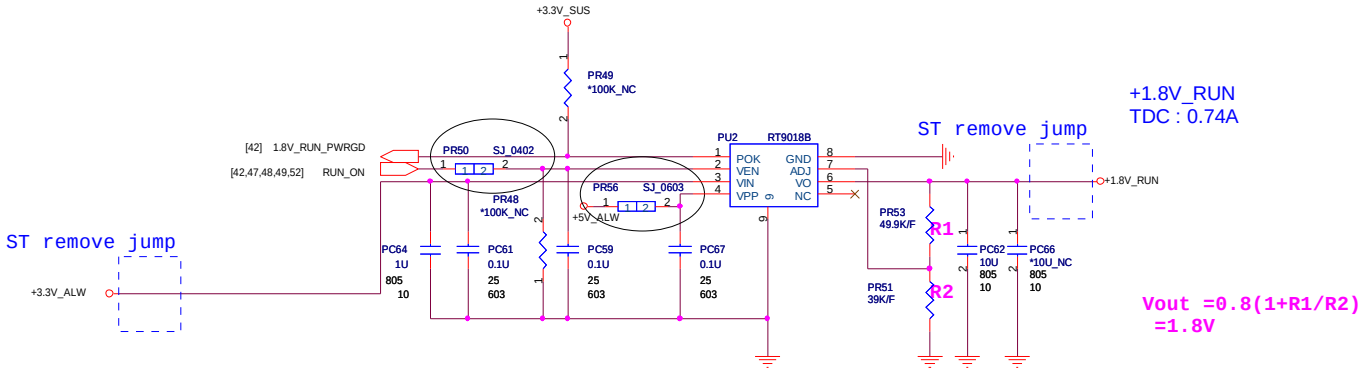
QUANTA COMPUTER

Title	Blank Page	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 43 of 63	

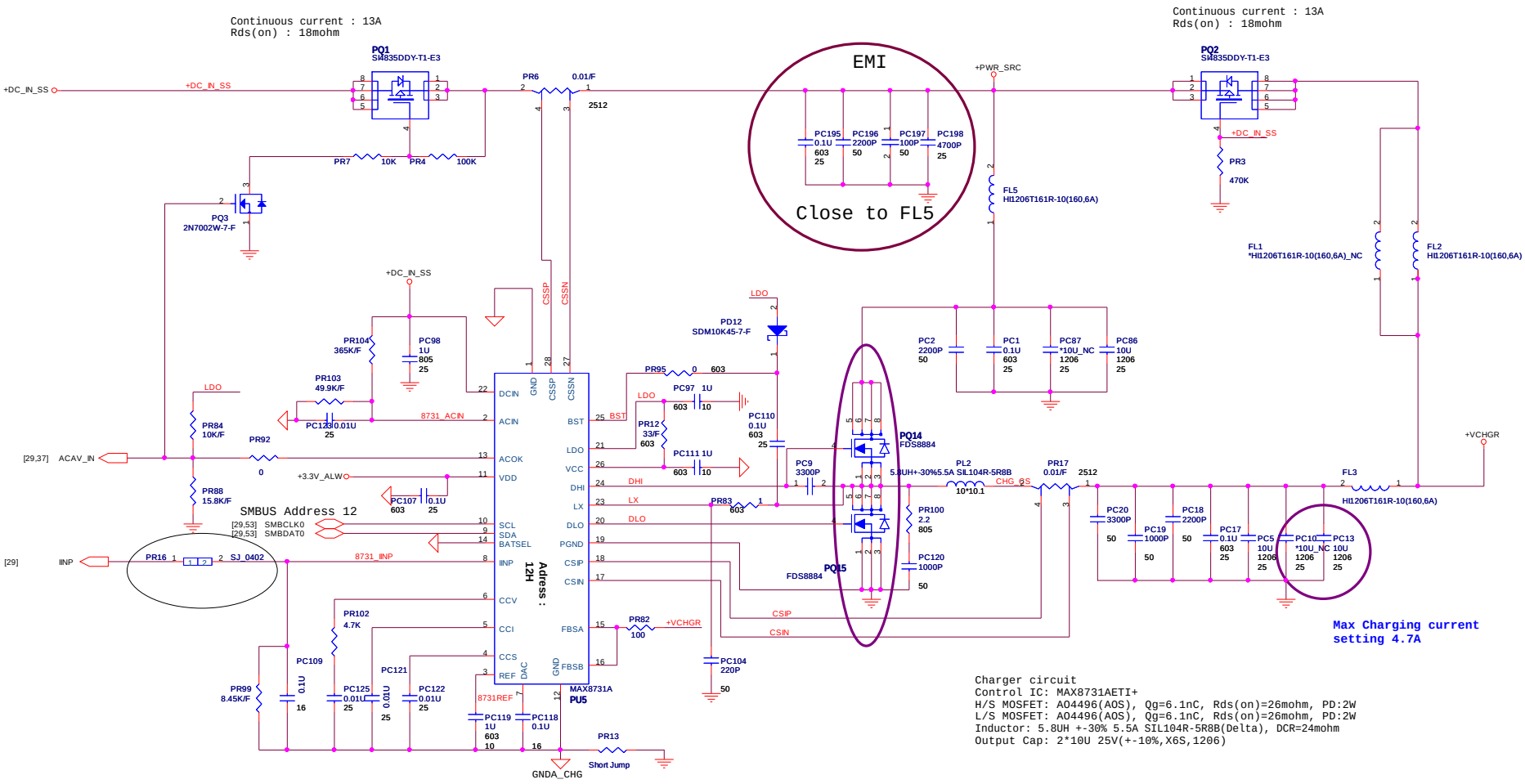


+1.8V_RUN_GFX for VGA 1.8V
+1.8V_RUN for CPU and PCH 1.8V



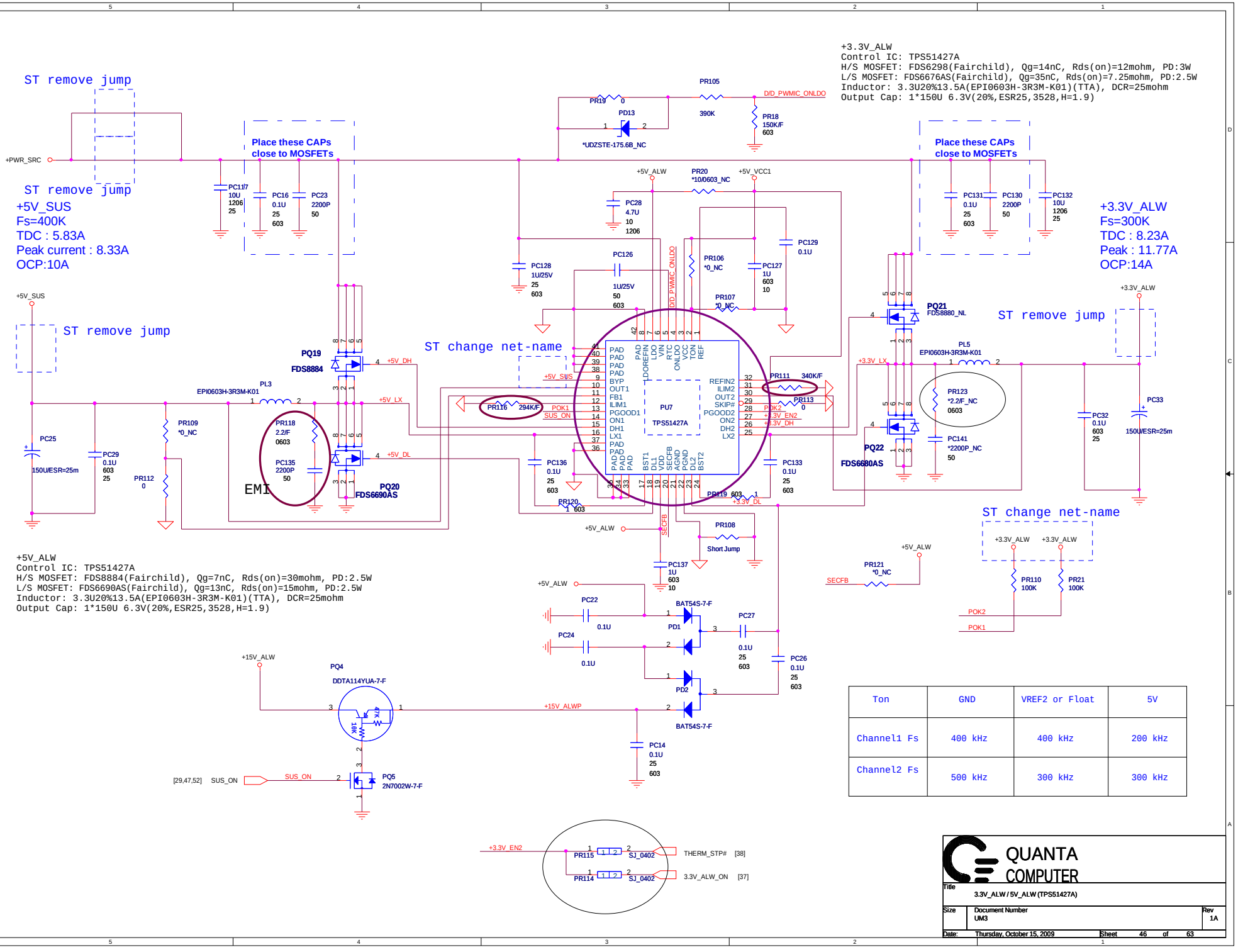
QUANTA COMPUTER

Title	+1.8V_RUN (RT9018/RT9024)	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 44 of 63	



QUANTA COMPUTER

Title	Charger (MAX8731)	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 45 of 63	



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

QUANTA COMPUTER

Title	3.3V_ALW / 5V_ALW (TPS51427A)	
Size	Document Number UM3	Rev 1A
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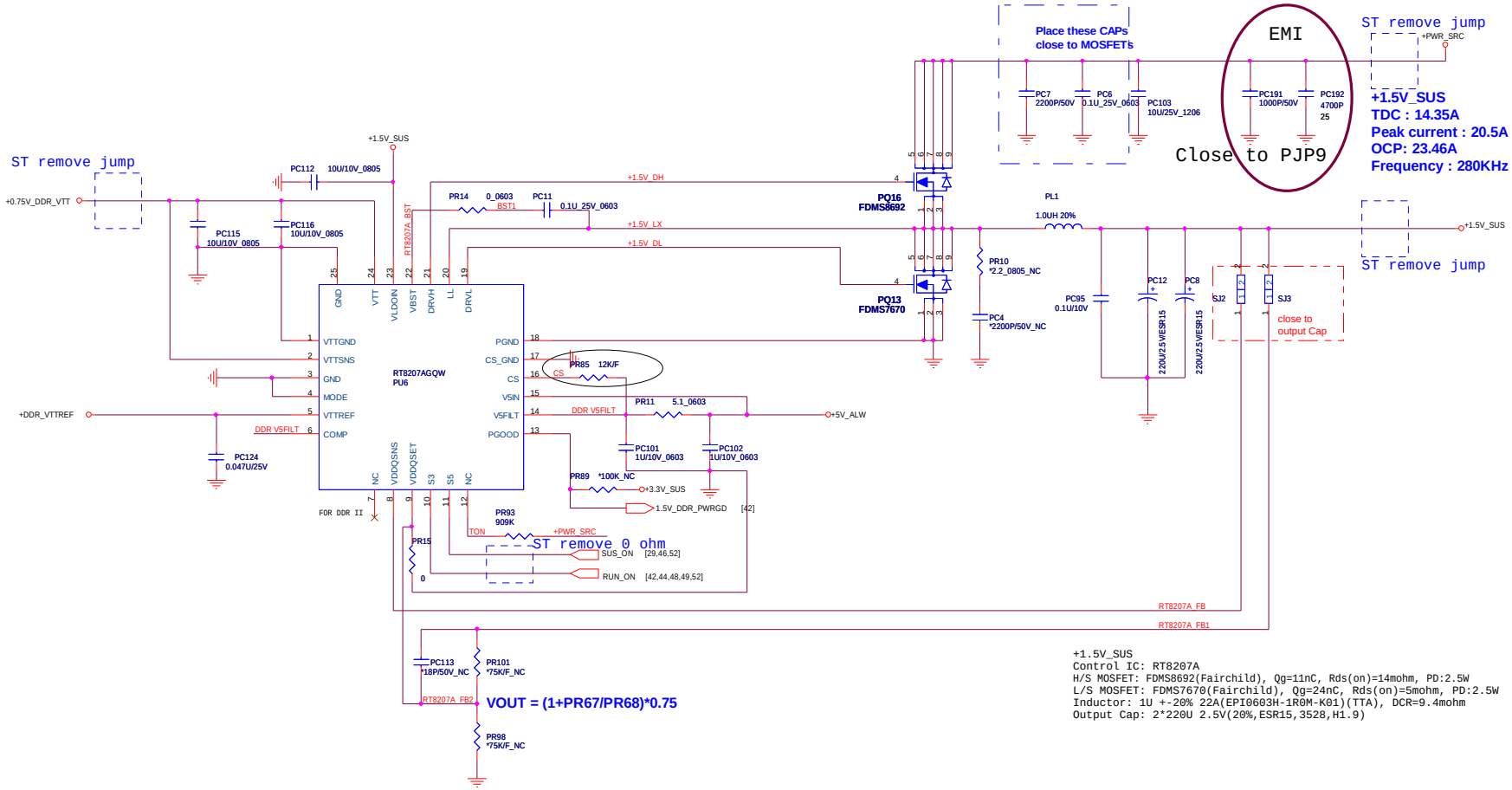


+1.5V_SUS
Control IC: RT8207A
H/S MOSFET: FDMS8692(Fairchild), Qg=11nC, Rds(on)=14mohm, PD:2.5W
L/S MOSFET: FDMS7670(Fairchild), Qg=24nC, Rds(on)=5mohm, PD:2.5W
Inductor: 1U +-20% 22A(EPI0603H-1R0M-K01)(TTA), DCR=9.4mohm
Output Cap: 2*220U 2.5V(20%,ESR15,3528,H1.9)

VDDQ and VTT discharge control

MODE pin	Discharge mode
V5IN	No discharge
VDDQ	Tracking discharge
S4/GND	Non-tracking discharge

VDDQ output voltage selection

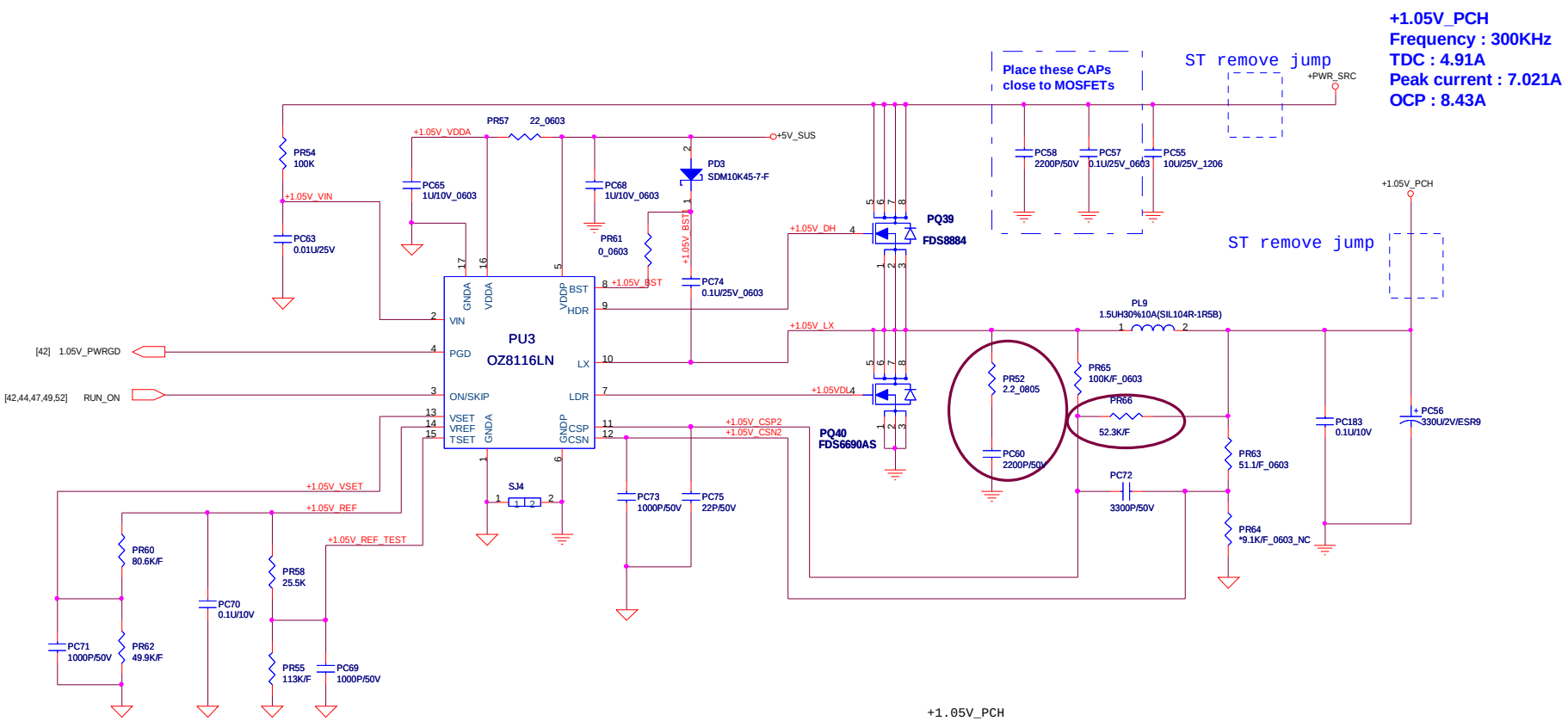
VDDQSET	VDDQ(V)	VTTREF and VTT	NOTE
GND	1.5V	VDDQSNS/2	DDR3
V5IN	1.8V	VDDQSNS/2	DDR2
FB Resistors	Adjusting	VDDQSNS/2	1.5V < VVDDQ < 3V

Outputs Management by S3, S5 control

State	S3	S5	VDDQ	VTTREF	VTT
S0	HI	HI	On	On	On
S3	LO	HI	On	On	Off (Hi-Z)
S4/S5	LO	LO	On (discharge)	Off (discharge)	Off (discharge)

QUANTA COMPUTER

Title	+1.5_DDR/0.75 (RT8207A)	
Size	Document Number UM3	Rev 1A
Date: Thursday, October 15, 2009	Sheet 47 of 63	



+1.05V_PCH
Control IC: RT8209A
H/S MOSFET: FDS8884(Fairchild), Qg=7nC, Rds(on)=30mohm, PD:2.5W
L/S MOSFET: FDS6690AS(Fairchild), Qg=13nC, Rds(on)=15mohm, PD:2.5W
Inductor: 1.5UH +-30% 10A SIL104R-1R5B(Delta), DCR=8.1mohm
Output Cap: 1*330U 2V(20%,ESR9,7343,H1.9)

QUANTA COMPUTER

Title	+1.05 PCH (OZ8116LN)	
Size	Document Number UM3	Rev 1A
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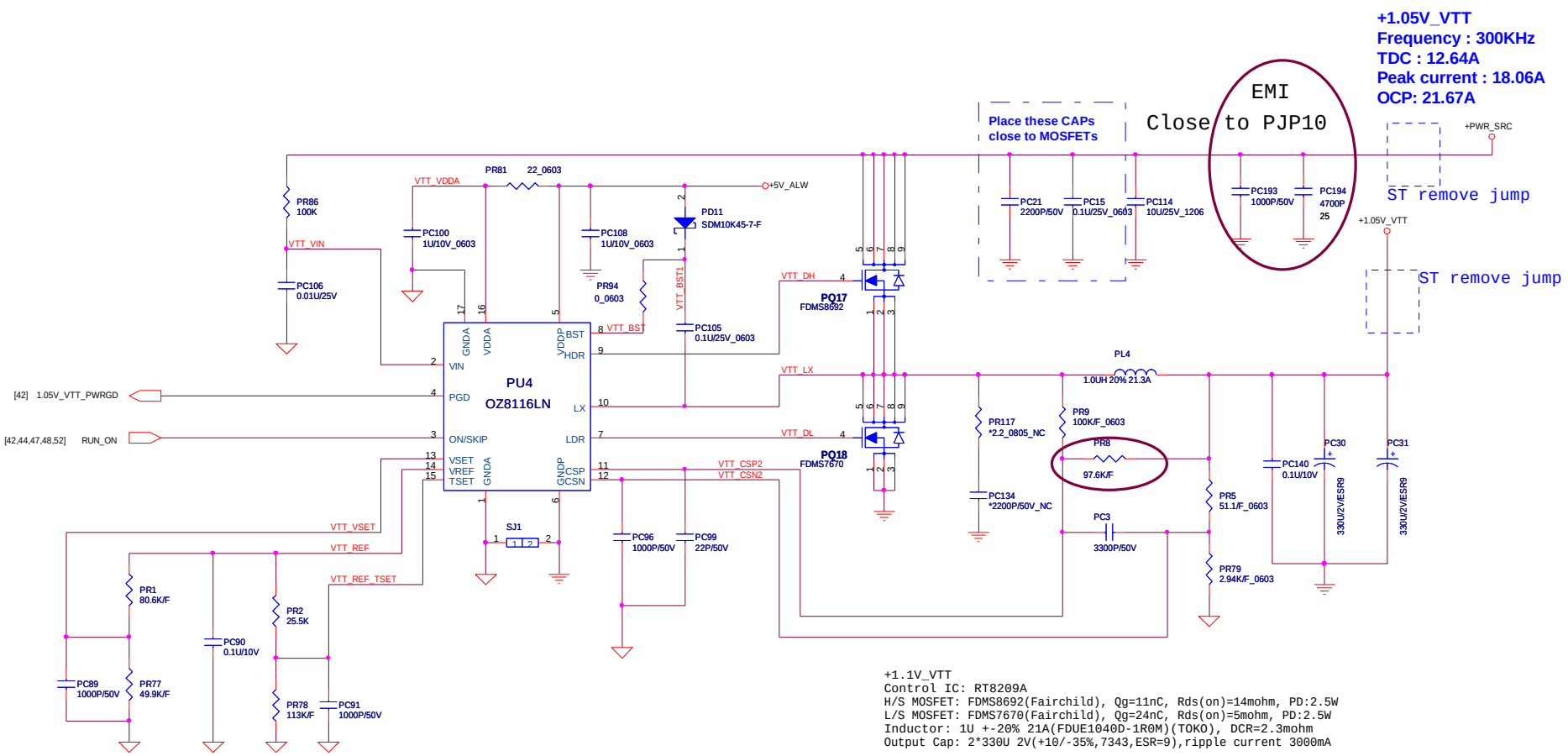

+1.1V_VTT
Control IC: RT8209A
H/S MOSFET: FDMS8692(Fairchild), Qg=11nC, Rds(on)=14mohm, PD:2.5W
L/S MOSFET: FDMS7670(Fairchild), Qg=24nC, Rds(on)=5mohm, PD:2.5W
Inductor: 1U +-20% 21A(FDUE1040D-1R0M)(TOKO), DCR=2.3mohm
Output Cap: 2*330U 2V(+10/-35%,7343,ESR=9),ripple current 3000mA

QUANTA COMPUTER

Title	+1.1 VTT (OZ8116LN)	
Size	Document Number UM3	Rev 1A
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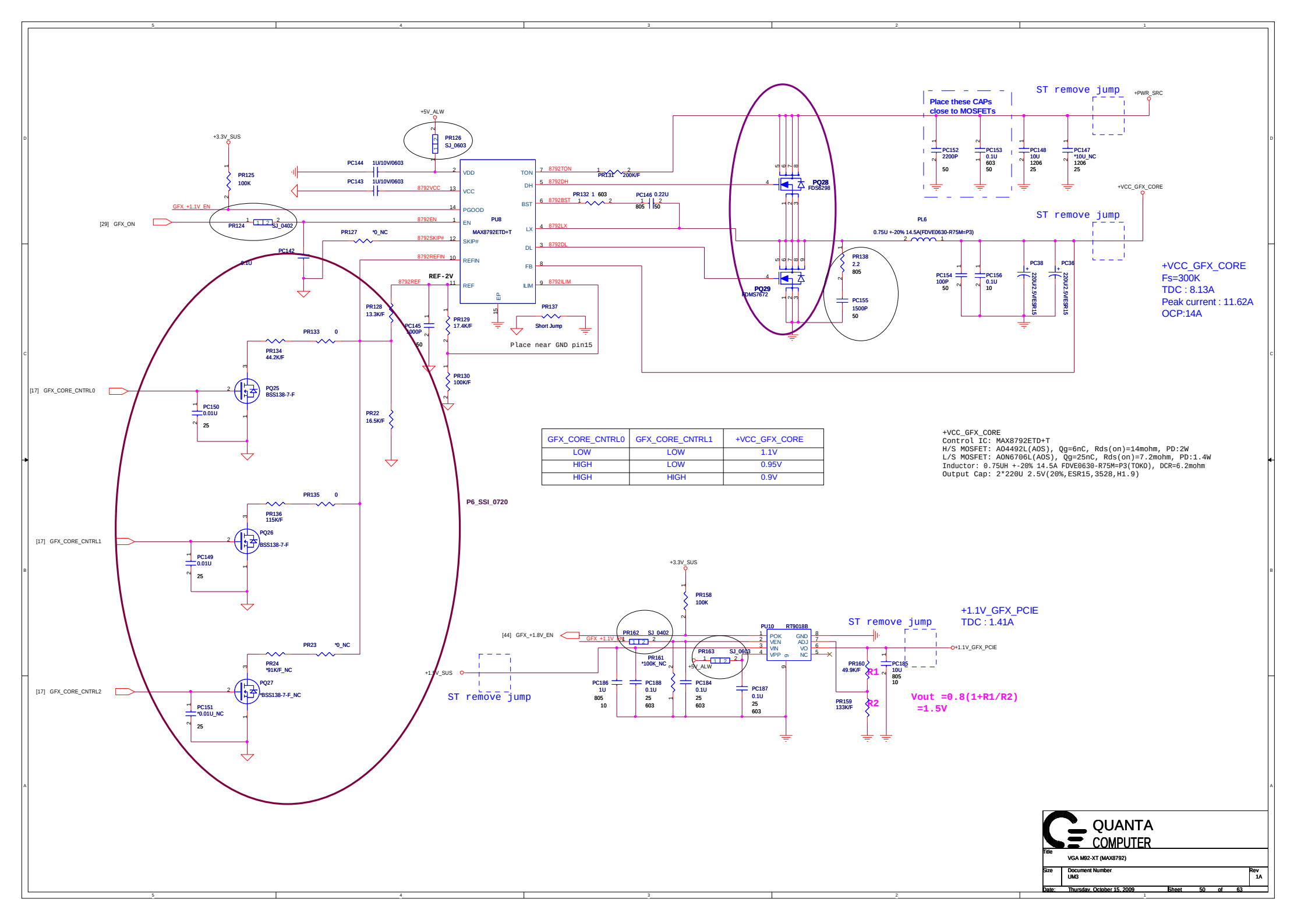
+5V_ALW
+3.3V_SUS
PR126 SJ_0603
PR125 100K
PC144 1U/10V/0603
PC143 1U/10V/0603
GFX_+1.1V_EN
[29] GFX_ON
PR124 SJ_0402
PU8 MAX8792ETD+T
VDD
VCC
PGOOD
EN
SKIP#
REFIN
REF
TON
DH
BST
LX
DL
FB
ILIM
EP
8792VCC
8792EN
8792SKIP#
8792REFIN
8792REF
8792TON
8792DH
8792BST
8792LX
8792DL
8792ILIM
PR127 *0_NC
PC142 0.1U
REF-2V
PR128 13.3K/F
PC145 1000P 50
PR129 17.4K/F
PR130 100K/F
PR131 200K/F
PR132 1 603
PC146 0.22U 805 50
PR137 Short Jump
Place near GND pin15
PQ28 FDS6298
PQ29 FDMS7672
PR138 2.2 805
PC155 1500P 50
PL6 0.75U +-20% 14.5A(FDVE0630-R75M=P3)
PC154 100P 50
PC156 0.1U 10
PC38 220U/2.5VESR15
PC36 220U/2.5VESR15
+PWR_SRC
+VCC_GFX_CORE
ST remove jump
Place these CAPs close to MOSFETs
PC152 2200P 50
PC153 0.1U 603 50
PC148 10U 1206 25
PC147 *10U_NC 1206 25
+VCC_GFX_CORE
Fs=300K
TDC : 8.13A
Peak current : 11.62A
OCP:14A
PR133 0
PR134 44.2K/F
[17] GFX_CORE_CNTRL0
PQ25 BSS138-7-F
PC150 0.01U 25
PR22 16.5K/F
PR135 0
PR136 115K/F
[17] GFX_CORE_CNTRL1
PQ26 BSS138-7-F
PC149 0.01U 25
PR23 *0_NC
PR24 *91K/F_NC
[17] GFX_CORE_CNTRL2
PQ27 *BSS138-7-F_NC
PC151 *0.01U_NC 25
P6_SSI_0720
GFX_CORE_CNTRL0 GFX_CORE_CNTRL1 +VCC_GFX_CORE
LOW LOW 1.1V
HIGH LOW 0.95V
HIGH HIGH 0.9V
+VCC_GFX_CORE
Control IC: MAX8792ETD+T
H/S MOSFET: AO4492L(AOS), Qg=6nC, Rds(on)=14mohm, PD:2W
L/S MOSFET: AON6706L(AOS), Qg=25nC, Rds(on)=7.2mohm, PD:1.4W
Inductor: 0.75UH +-20% 14.5A FDVE0630-R75M=P3(TOKO), DCR=6.2mohm
Output Cap: 2*220U 2.5V(20%,ESR15,3528,H1.9)
+3.3V_SUS
PR158 100K
[44] GFX_+1.8V_EN
GFX_+1.1V_EN
PR162 SJ_0402
PR163 SJ_0603
PR161 *100K_NC
PU10 RT9018B
POK VEN VIN VPP GND ADJ VO NC
+1.1V_GFX_PCIE
ST remove jump
+1.1V_SUS
ST remove jump
PC186 1U 805 10
PC188 0.1U 25 603
PC184 0.1U 25 603
PC187 0.1U 25 603
PR160 49.9K/F
R1
PC185 10U 805 10
PR159 133K/F
R2
Vout =0.8(1+R1/R2) =1.5V
+1.1V_GFX_PCIE
TDC : 1.41A
QUANTA COMPUTER
Title VGA M92-XT (MAX8792)
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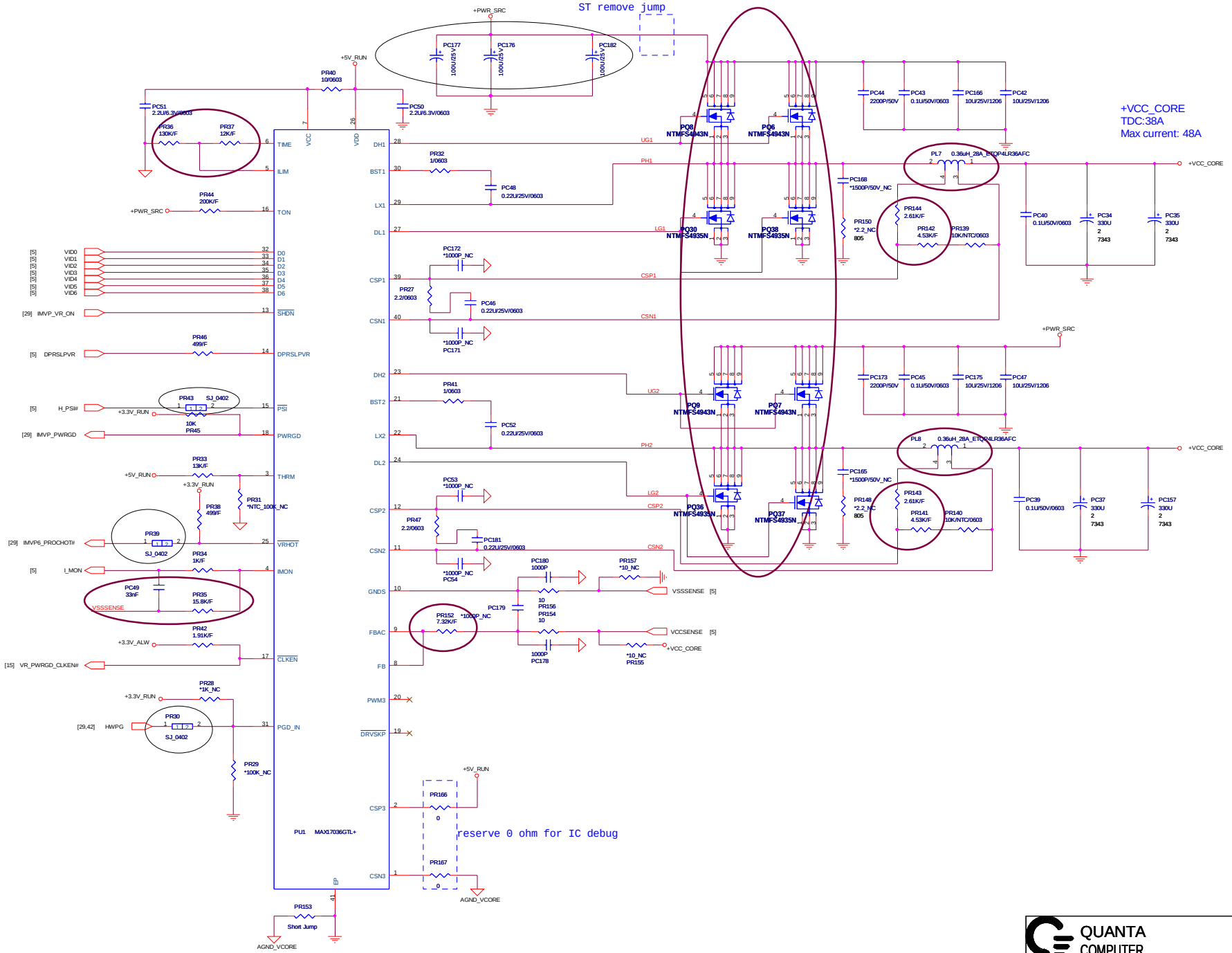

QUANTA COMPUTER

Title	CPU CORE (MAX17036)	
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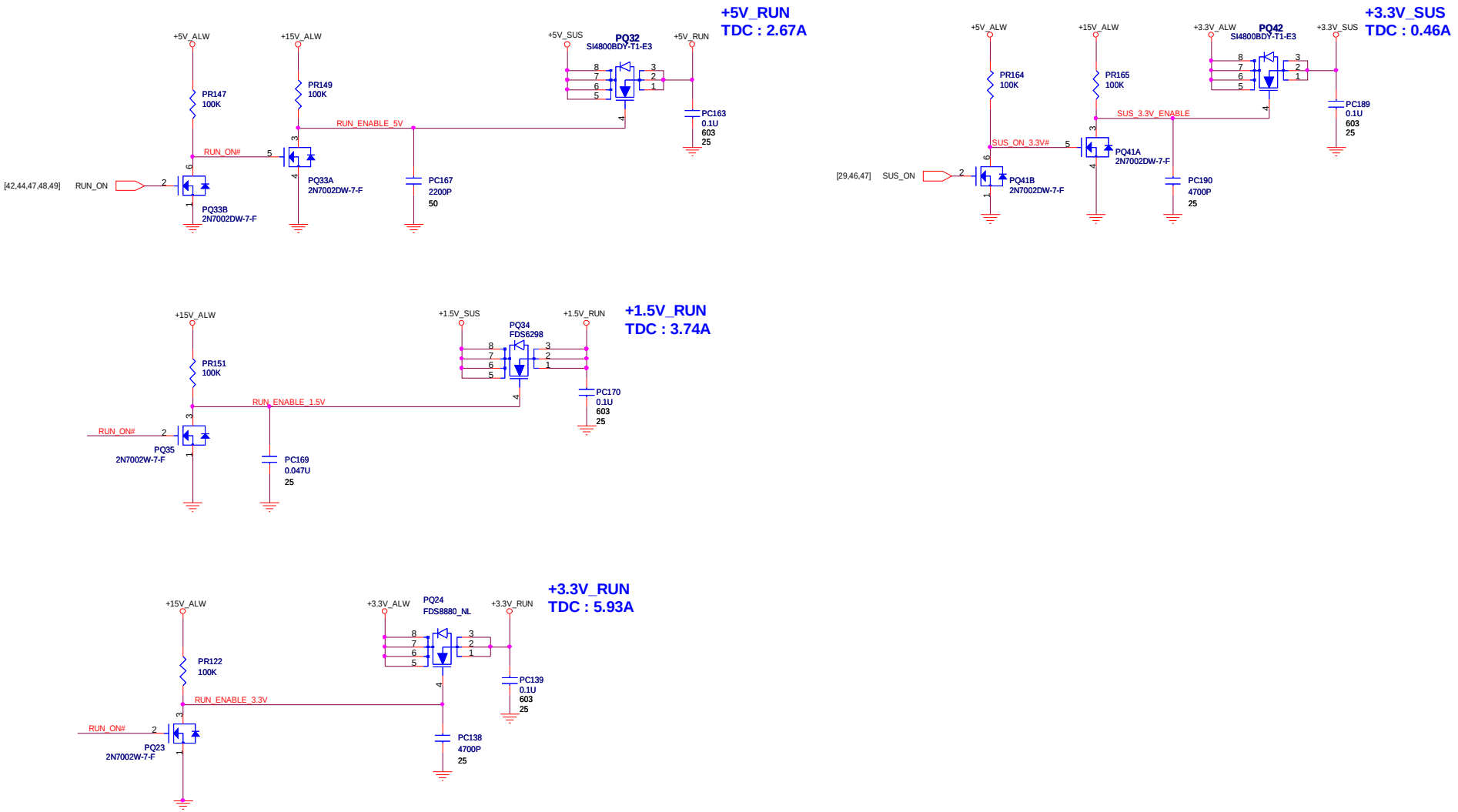
+5V_RUN
TDC : 2.67A
+5V_ALW
+15V_ALW
+5V_SUS
PQ32
SI4800BDY-T1-E3
+5V_RUN
PR147
100K
PR149
100K
RUN_ENABLE_5V
PC163
0.1U
603
25
RUN_ON#
[42,44,47,48,49]
RUN_ON
PQ33A
2N7002DW-7-F
PQ33B
2N7002DW-7-F
PC167
2200P
50
+3.3V_SUS
TDC : 0.46A
+5V_ALW
+15V_ALW
+3.3V_ALW
PQ42
SI4800BDY-T1-E3
+3.3V_SUS
PR164
100K
PR165
100K
SUS_3.3V_ENABLE
PC189
0.1U
603
25
SUS_ON_3.3V#
[29,46,47]
SUS_ON
PQ41A
2N7002DW-7-F
PQ41B
2N7002DW-7-F
PC190
4700P
25
+1.5V_RUN
TDC : 3.74A
+15V_ALW
+1.5V_SUS
PQ34
FDS6298
+1.5V_RUN
PR151
100K
RUN_ENABLE_1.5V
PC170
0.1U
603
25
RUN_ON#
PQ35
2N7002W-7-F
PC169
0.047U
25
+3.3V_RUN
TDC : 5.93A
+15V_ALW
+3.3V_ALW
PQ24
FDS8880_NL
+3.3V_RUN
PR122
100K
RUN_ENABLE_3.3V
PC139
0.1U
603
25
RUN_ON#
PQ23
2N7002W-7-F
PC138
4700P
25
QUANTA
COMPUTER
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RUN / SUS POWER SW
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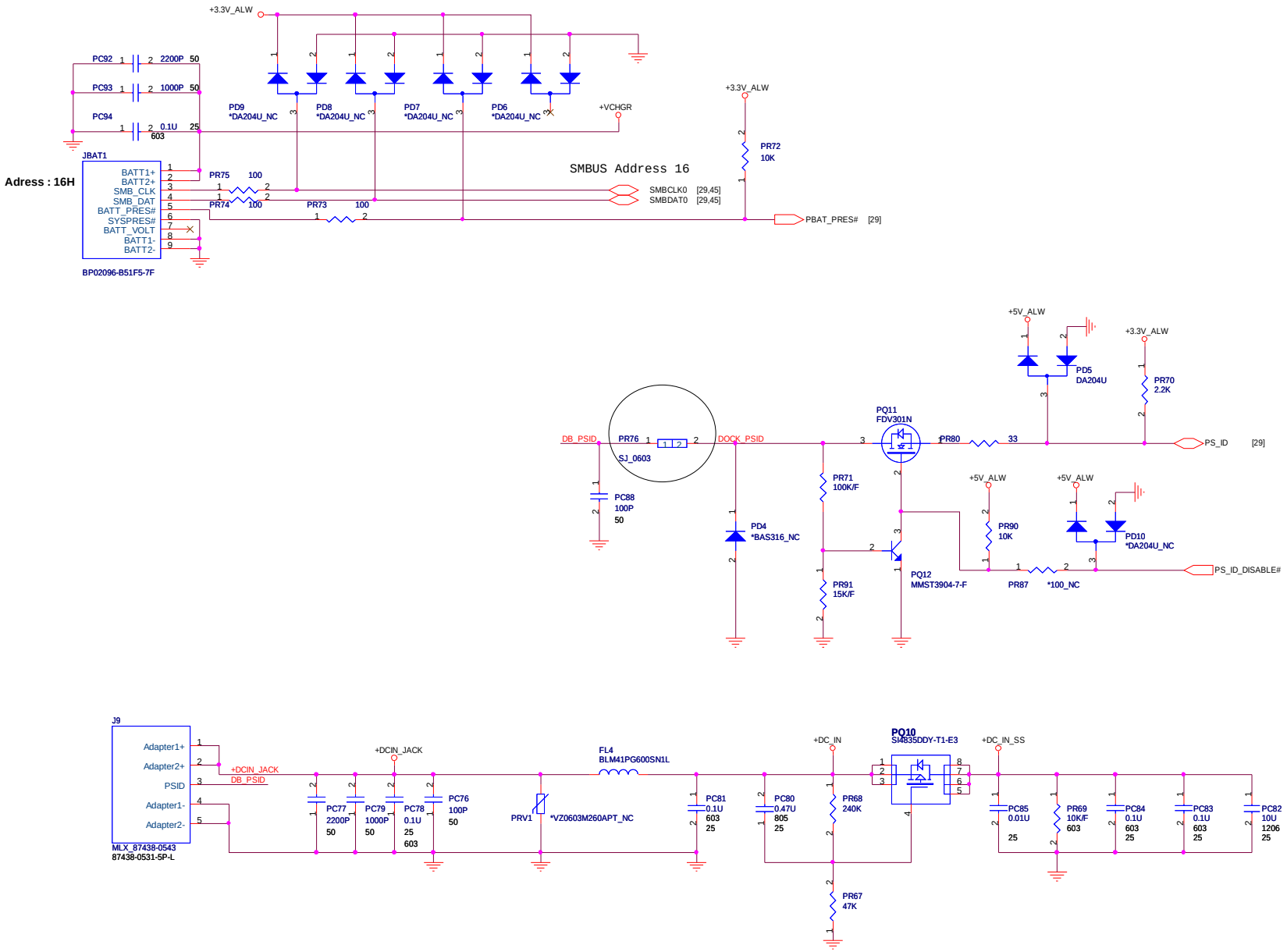

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Title	DCIN,BATT CONNECTOR	
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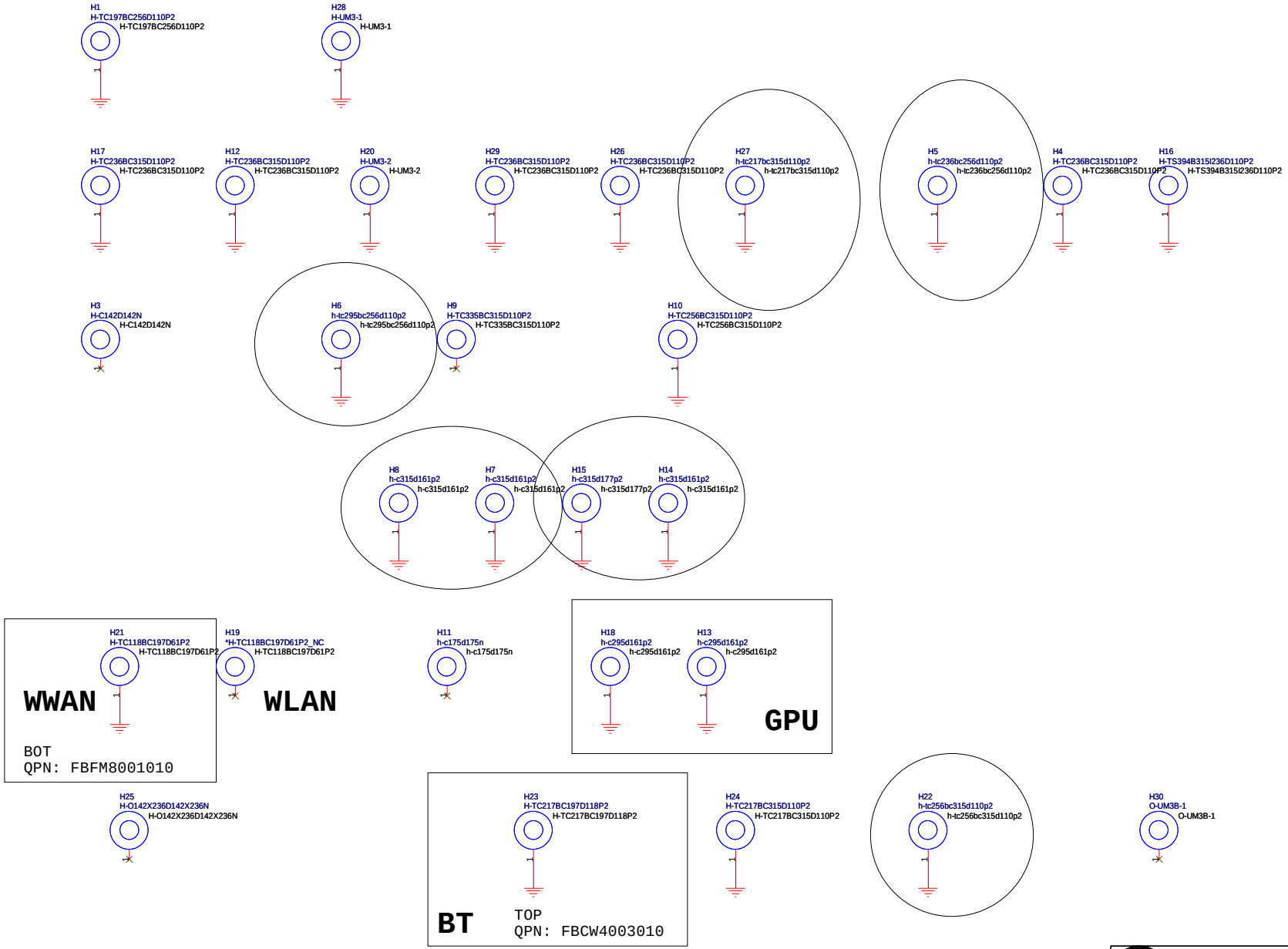

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Title	SCREW PAD	
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Reserved for EMI.

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Title	EMI CAP	
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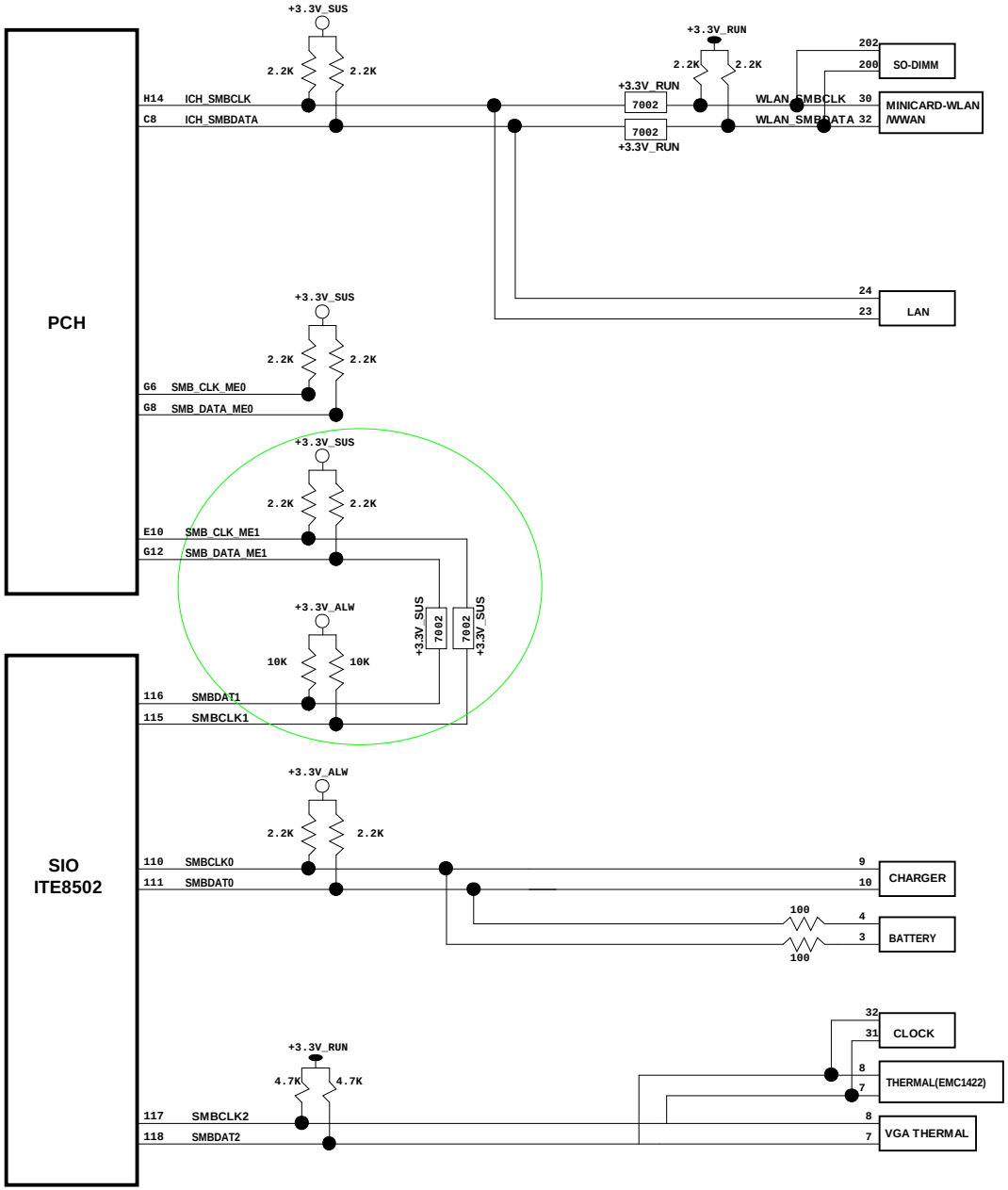

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SMBUS BLOCK

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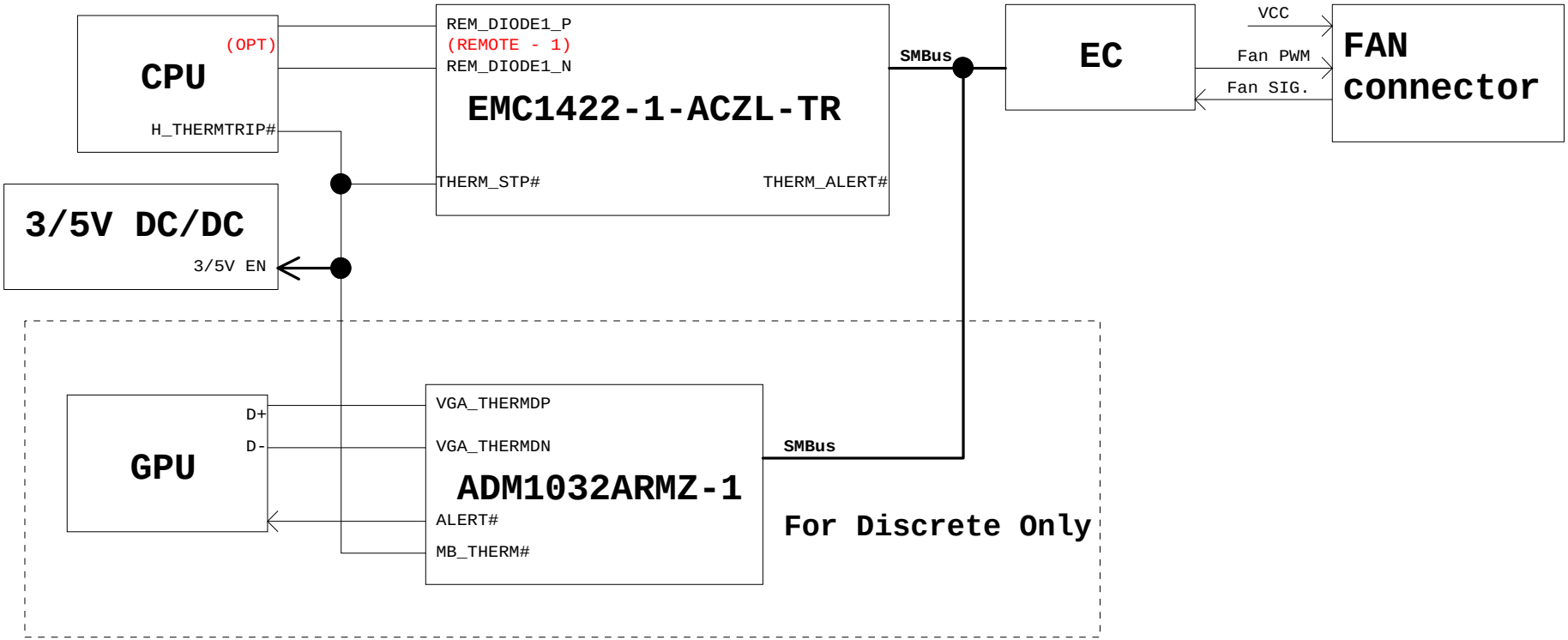

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Title	Thermal Map	
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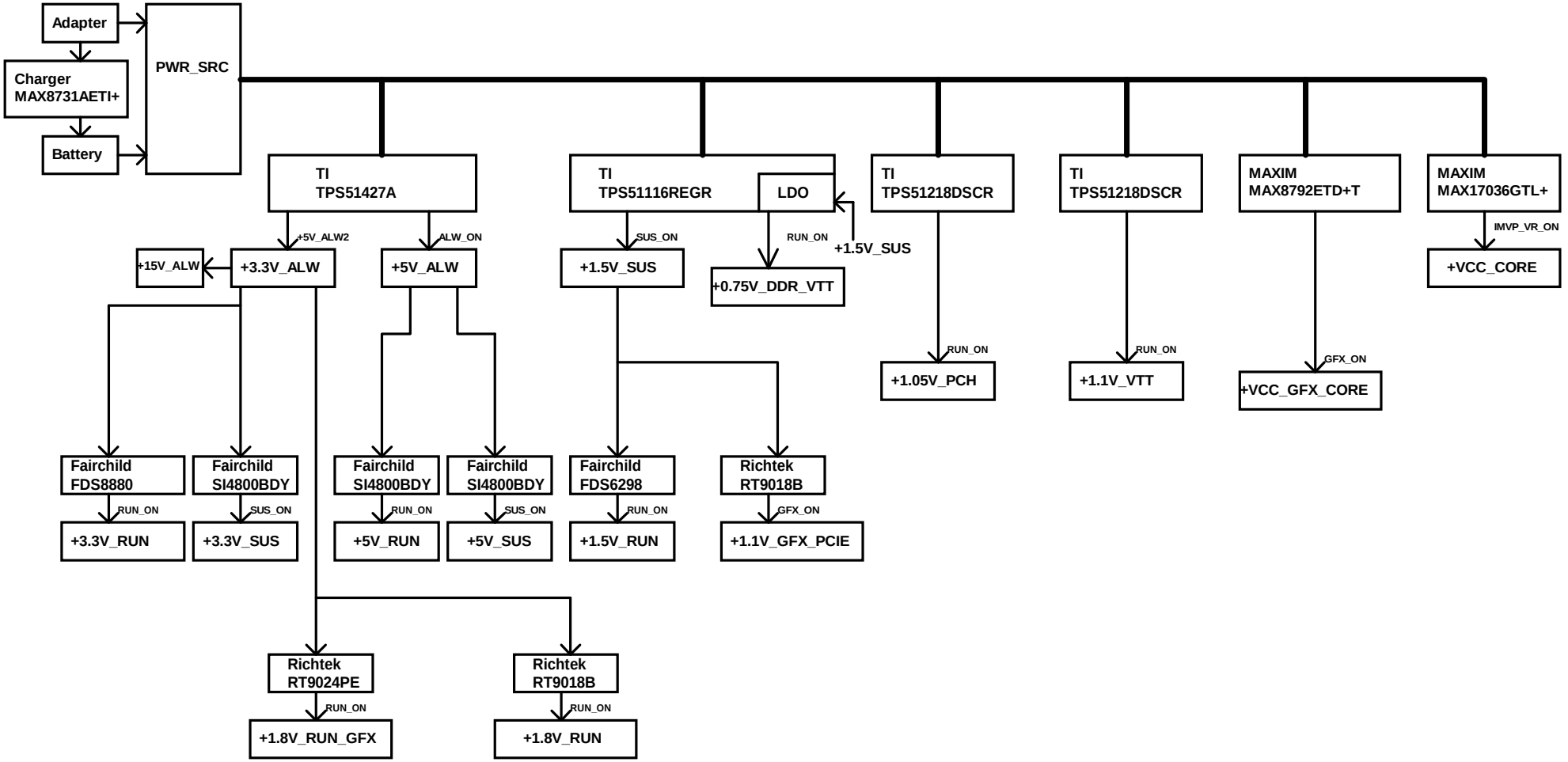

QUANTA COMPUTER

Title	Power Block Diagram	
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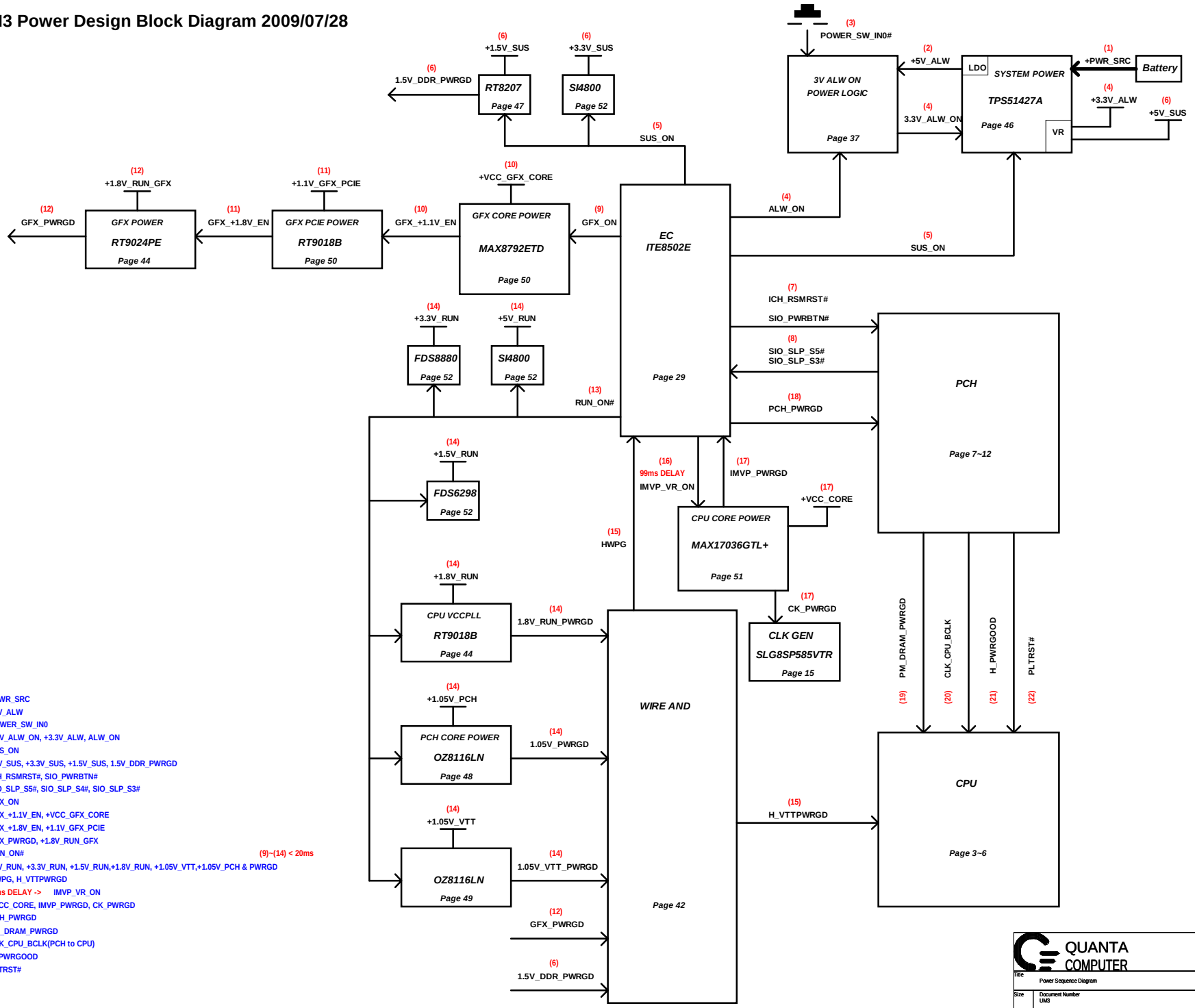
UM3 Power Design Block Diagram 2009/07/28



(1) +PWR_SRC
(2) +5V_ALW
(3) POWER_SW_IN0
(4) 3.3V_ALW_ON, +3.3V_ALW, ALW_ON
(5) SUS_ON
(6) +5V_SUS, +3.3V_SUS, +1.5V_SUS, 1.5V_DDR_PWRGD
(7) ICH_RSMRST#, SIO_PWRBTN#
(8) SIO_SLP_S5#, SIO_SLP_S4#, SIO_SLP_S3#
(9) GFX_ON
(10) GFX_+1.1V_EN, +VCC_GFX_CORE
(11) GFX_+1.8V_EN, +1.1V_GFX_PCIE
(12) GFX_PWRGD, +1.8V_RUN_GFX
(13) RUN_ON# (9)~(14) < 20ms
(14) +5V_RUN, +3.3V_RUN, +1.5V_RUN,+1.8V_RUN, +1.05V_VTT,+1.05V_PCH & PWRGD
(15) HWPG, H_VTTPWRGD
(16) 99ms DELAY -> IMVP_VR_ON
(17) +VCC_CORE, IMVP_PWRGD, CK_PWRGD
(18) PCH_PWRGD
(19) PM_DRAM_PWRGD
(20) CLK_CPU_BCLK(PCH to CPU)
(21) H_PWRGOOD
(22) PLTRST#

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